THE

GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE

FOR

1849.

LONDON:
PUBLISHED FOR THE PROPRIETORS,
AT 5, UPPER WELLINGTON STREET, COVENT GARDEN.
1849.

LONDON :
BRADBURY AND EVANS, PRINTERS, WHITEFRIARS.

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THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No 1.—1849.] SATURDAY, JANUARY 6. [PRICE 6d.

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GARDENERS' BENEVOLENT INSTITUTION. – Notice is hereby given that the ANNUAL GENERAL MEETING of the Subscribers to this Institution will be held on Wednesday, 17th January, at the London Coffee House, Ludgate, for the purpose of electing officers for the ensuing year, and receiving the accounts of the Charity for the past year. The chair to be taken at 12 o'clock precisely. An Election for Two Pensioners will afterwards take place from among the following Candidates, whose testimonials have been examined and approved of by the Committee.

Name.	Residence.	Age.	
EDWARD MARSHALL	London	69	6th application.
MARY BROWNE	London	82	4th ,,
MARTIN MILLER	Exeter	78	4th ,,
JOHN SKEATES	Clapham	69	4th ,,
THOMAS GOODHALL	Dulwich	72	3rd ,,
THOMAS MILLS	Wandsworth	71	3rd ,,
CHARLES AINSLIE	Leyton, Essex	8?	2nd ,,
JOHN APPLEBY	Clapham	56	2nd ,,
ROBERT DUNCAN	Highgate	69	2nd ,,
OGILVIE NEIL	Scone, Perth	80	2nd ,,
HUMPHREY TAYLOR	Clapham	70	2nd ,,
JAMES BATTEY	London	65	1st ,,
EDWARD BEACH	Gloucester	74	1st ,,
JOHN COCKS	Clapham	62	1st ,,
JOHN ROSS	London	64	1st ,,
RICHARD RUDLAND	Dartford, Kent	76	1st ,,
JOHN SHEPHERD	Clapham	70	1st ,,

The Ballot will commence at 1 and close at 3 o'clock precisely.
The Committee earnestly request those Members whose subscriptions are as yet unpaid, to remit the same without delay, as no person will be allowed to vote whose subscription for the year 1848 is unpaid on the day of election

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PEAS

CLARKE'S NEW LINCOLN GREEN PODDED MARROW.—Being a selected variety from Clarke's New Early Ringwood possessing all the advantages of the original stock, as to earliness and size, and at the same time having a rich Green Pod. To be had (wholesale only) of Mr HENRY CLARKE, Seed Merchant, 39, King street, Covent Garden.

TALL WELL-FURNISHED EVERGREENS, WITH FOREST AND ORNAMENTAL TREES, FOR IMMEDIATE EFFECT.

J. J. FOSTER, of the Edgeware Nurseries, having a fine stock of the above frequently transplanted, and grown on an adhesive soil (which permits them to be drawn with good balls of earth and safely moved), can supply them at very moderate rates. The Evergreens consist principally of Spruce and Scotch Firs, Evergreen Oaks, Arbor vitæ, Portugal and common Laurels, Savins, &c. The Deciduous stock includes Limes, Planes, Beech, Hornbeam, Elms, Scarlet and Horse Chestnuts, Larch, Lilac, Guelder Roses, Laburnums, Acacias, Poplars, Weeping Ash, &c.—Prices given on application, as well as Catalogues of the stock of Fruit Trees, Roses, &c.

MITCHELL'S ROYAL ALBERT RHUBARB still retains its supremacy over all other sorts hitherto produced, it being from two to three weeks earlier than any kind now grown. It has other qualities eminently entitled to notice. It is most delicious in flavour, a splendid red colour, most prolific bearer, and free grower, with large fleshy stalks, and for early forcing is more suitable than any other variety. It has been acknowledged by all the principal growers, attending the London markets, to be by far the best ever introduced. In addition, W. M. begs leave to observe, that this Rhubarb is the same as was sold so early last season in Manchester, Birmingham, Liverpool, Cambridge, Brighton, and other large provincial towns, where it gave universal satisfaction, by its extreme earliness, quality, and beauty. Strong roots, 2s 6d., each; also Myatt's Linnæus, 2s. 6d., and Victoria, 9d.; usual allowance to the trade.—Post-office orders made payable to WILLIAM MITCHELL, Enfield Highway, Middlesex.

MANNINGTON'S PEARMAIN.

JAMES CAMERON, NURSERYMAN, Uckfield, Sussex, begs to inform his friends and the public that he is now ready to send out trees of that most excellent APPLE, called by Dr LINDLEY, "Mannington's Pearmain," a seedling raised at Uckfield and hitherto confined only to this locality. It is a most excellent dessert Apple, with a rich, sugary, and aromatic flavour, superior in every respects to the Ribstone Pippin, and will keep even to the end of May. It has been favourably noticed by Dr. LINDLEY, in the *Gardeners' Chronicle* of April 1848. Plants of this Apple can be obtained, Dwarf Maidens, at 10s. 6d each, by application as above, or to Messrs Gray, Adams, and Hogg, Nurserymen, Brompton-park, Kensington, London.

Remittances expected from unknown correspondents.

DOUBLE ITALIAN TUBEROSE ROOTS.—The Bulbs of this most beautiful and fragrant Flower have been just received from Italy at A. CORBETT'S Old-established Italian Warehouse, 18, Pall-mall, and are warranted double, at 4s. per dozen. Also, expected about the end of January, a choice collection of Orange, Lemon, Citron, and Shaddock Trees, together with Catalonian, Azorian, and Arabian Jessamine plants, any of which may be bespoke.

IMPORTANT TO SEEDSMEN AND OTHERS

NEW AND EARLY PEAS. EARLY CHAMPION OF ENGLAND, EARLY FILE SURPRISE, and BURRIDGE'S ECLIPSE PEAS can be had in any quantity at J. G. WAITE'S Seed Establishment, 181, High Holborn, London, at 5s per bushel lower than any other house in London.

Catalogues of Vegetable Seeds can be had on application, which contain all the choicest kinds in cultivation, at extremely low prices. Jan 6.

KITCHEN GARDEN SEEDS.—No. 1.—A complete collection, consisting of 20 quarts of the best kinds of PEAS, inclusive of Fairbeard's Champion of England, Early Surprize, British Queen, Burbidge's Eclipse, &c., and all other Seeds in proportion, of the newest and best sorts, sufficient for one year's cropping of a large garden, the choicest Melons and Cucumbers inclusive .. £3 5s 6d

	£	s	d
No. 2.—Complete collection in smaller quantities, equally choice sorts	2	2	0
No. 3.—Ditto	1	1	0
No. 4.—Ditto. This is sufficient for a gentleman's small garden	0	12	6

No extra charge for packing, carriage paid to London.

If there should be any sorts of Seeds that would not be wanted in the collection, increased quantities of those most desired would be sent. All orders to be accompanied by a remittance, or a reference from unknown correspondents.

W. J. EPPS can, with pleasure, refer to some of the most respectable families in England, Ireland, and Scotland, who are in the habit of purchasing the above collections every year.

A General Catalogue of Horticultural and Agricultural Seeds may be had on application; also a Trade List of Seeds.

Fine trained Peaches and Nectarines, 2s. 6d. to 5s. 6d. each.

WILLIAM JAMES EPPS, Maidstone.

DUNCAN HAIRS, SEEDSMAN and FLORIST, 109, St. Martin's lane, Charing cross, London, takes the present opportunity of informing the Nobility and Public in general that he has now completed his selected CATALOGUE of VEGETABLE, FLOWER, and AGRICULTURAL SEEDS, which can be had on application.

D. H. is sole agent for the new Enamelled Labels, the most unique of their kind, the Royal Folding Garden Chair, and Bowers' new Watering Pot, all of which can be seen at the above address, or lithographic drawings forwarded per post. Gentlemen purchasing Seeds for distribution among their cottagers or tenants, also emigrants, treated on the most liberal terms. Seeds put up in such quantities as to meet the views of all. Emigrants cannot have it too strongly impressed on their minds the importance of taking with them a few of the most useful culinary and fruit seeds.

DUTCH EVERLASTING POTATOES (imported), 12s. per bushel; MUSHROOM SPAWN, with directions for cultivating; FICUS ELASTICUS, CACTI, ALOES, &c., suitable for in-door cultivation, always on hand.

CUCUMBER GROWERS should not delay purchasing the Seed of TILEY'S VICTORY OF BATH, and GORDON'S WHITE SPINE, E. TILEY having last season received numerous letters when the Seed was all disposed of. It possesses the whole of the properties as laid down by Mr Glenny.

Parties competing for the First Prizes at the forthcoming Cucumber Exhibitions in 1849 should procure the seed in time.

E. T. has numerous letters by him which he has received, authorizing him to make use of the signatures if required, and speaking highly of the merits of the above Cucumbers over all others.

VICTORY OF BATH, 10 Seeds, 2s.
GORDON'S FINE WHITE SPINE, 10 Seeds, 1s. 6d.

Also, LORD KENYON'S FAVOURITE (true), or better known as the SYON FREE BEARER, very superior to the old Syon House, as a Cucumber for winter cultivation: 10 Seeds, 2s. 6d. or a Packet of the above three varieties 5s. The true old Syon House can be supplied in packets of 10 seeds for 1s. 6d.

For further particulars, see E. TILEY'S Advertisement in this Paper of December 16th. A remittance must accompany each order, either in cash or postage stamps to the amount.

Sold at EDWARD TILEY'S General Seed Shop, 16, Pulteney-bridge, Bath.

SEEDS.—CORNER OF HALF-MOON STREET.
THOMAS GIBBS AND Co.,
(By Official Appointment) the SEEDSMEN to the
"ROYAL AGRICULTURAL SOCIETY OF ENGLAND,"
Beg to remind the Members of the Society, and Agriculturists in general, that their only Counting House and Seed Warehouse is at the corner of HALF MOON-STREET, PICCADILLY, London, as for the last Fifty Years.

Priced Lists of Agricultural Seeds are always ready during the season, and may be had on application.

NEW CABBAGE.—"KING OF THE CABBAGES" can be had in any quantity at J. G. WAITE'S Seed Establishment, 181, High Holborn, London, at 8s. per oz. The above warranted the earliest and best known.

J. G. WAITE begs to inform the Trade generally that his unrivalled CATALOGUE OF FLOWER SEEDS is now ready, and can be had on application at his Seed Establishment, 181, High Holborn, London.

THE "TRUE ASHMEAD'S KERNEL" is a most delicious Apple, very different from, and far superior to, the variety generally known by the name of Ashmead's Kernel.

J. CHESLIN WHEELER had the honour of supplying a great many of the Nobility and Gentry with Trees of the true variety last spring, amongst whom may be mentioned the names of His Grace the Duke of Devonshire, the Right Hon. Earl of Harrington, and the Right Hon. Lord Wharncliffe; and the following eminent Nurserymen: Messrs Knight and Perry, Chelsea, Mr. Rivers, Sawbridgeworth, Mr. Cranston, of Hereford, Messrs. Maule and Sons, of Bristol; Mr. Darby, of Cirencester, Messrs Jackson and Co, Bedale Nurseries, and Mr Gregory, of Cirencester. Indeed the demand was so large that he was entirely sold out of all the saleable portion of his large Stock of the true variety, but having propagated a great number, he can now offer fine young plants at 2s 6d each, with the usual allowance to the trade when half a dozen are taken.

A list of those Nurserymen will be published in a future Number who add this first-rate Dessert Apple to their collection.—J. CHESLIN WHEELER, Kingsholm Nursery, Gloucester.

HAMILTON'S IMPROVED FLOWER SUPPORTER FOR HYACINTHS AND NARCISSUS, &c.—As many Hyacinths grown in glasses are now coming into bloom, W. H. recommends the immediate adoption of the above to those who wish to preserve the elegance of this favourite flower. Particulars have been given in the late numbers of this Paper.—156, Cheapside, London.

THE MOST BEAUTIFUL ORNAMENT for SHRUBBERIES AND PLEASURE GROUNDS for the AUTUMN MONTHS, IS THE SPLENDID JAPANESE LILY.

HENRY GROOM, Clapham-rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to recommend to the attention of the Nobility and Gentry the above splendid LILY for planting in their Shrubberies and Pleasure Grounds, as it is quite hardy, and flowers at that period of the year when they are at their country seats; it is also very fragrant. He can supply 100 good flowering bulbs of LILIUM LANCIFOLIUM ALBUM, for 5l., package included. This is the best season of the year to plant them.

For the price of his other Bulbs and Plants he begs to refer to his Advertisement in this Paper of November 11.

JOHN SALTER, F.H.S., begs to inform his friends and the public, that having left Versailles, in consequence of the unsettled state of the Continent his establishment will henceforth be carried on at William-street, North-end, Fulham, (near Hammersmith turnpike), London. His long residence and intimate acquaintance with all the nurserymen abroad, will enable him to procure the finest florists' flowers direct from the growers; he has several novelties for the spring of 1849, among them some striped and tipped Dahlias, totally distinct and far superior to any yet seen in England (Toison d'or and Empereur de Maroc were sent out by him last season). A splendid new Fuchsia corymbiflora, with white flowers; several seedling Chrysanthemums, including the finest blush white ever sent out, together with many other novelties. His Catalogue will be ready in February, and may be obtained by inclosing two postage stamps. Address, Versailles Nursery, William-street, North end, Fulham.

MESSRS. J. AND H. BROWN'S new priced CATALOGUE OF PLANTS for 1849, sent by post on application. They also offer the following, which they will forward to any part by steamer or railway.

		s.	d.
25	New hardy Ghent Azalea, on their own roots, with flower buds, one of a sort, by name	20	0
25	American Azaleas, ditto ditto ditto ..	15	0
12	American plants, with flower buds, fit for forcing ..	10	0
25	Hardy flowering shrubs, one of a sort, by name ..	10	0
12	Rhododendrons, including scarlet, white, and rose, hardy varieties	12	0
	New hardy yellow Rhododendrons each 7s. 6d to	10	6
6	Andromedas, of sorts, including floribunda, for ..	8	0
	Hardy Heaths, Kalmias, and Ledums, per dozen ..	8	0
6	Fine hardy Magnolias, one of a sort	10	0
50	Dwarf Roses, on their own roots, one of a sort, named	16	0
	Standard and half-standard Roses, per doz., 12s and	18	0
	Strong Moss Roses, per 100..	25	0
	New crimson Moss and climbing Roses, per dozen ..	6	0
	Glycine sinensis, extra fine plants, in pots, 15 to 30 ft., ea.	3	6
12	Greenhouse Azaleas, one of a sort, blooming plants ..	20	0
12	Choice Camellias, by name, ditto, ditto	30	0
50	Choice flowering Greenhouse plants, one of a sort ..	15	0
21	Choice Ericas, one of a sort, by name	18	0
6	New Epacris and 6 new Correas	12	0
6	Bulbs of the beautiful new Japan Lilies, one of a sort	12	0
	Double Italian Tuberose roots, per dozen	4	6
	Pæony roots, new double, white, pink, blush, and crimson, per dozen	9	0
	Fine Standard and Dwarf trained Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of those respective kinds, true to name, 2s. 6d. each, or, per dozen	21	0
	Untrained or Maiden ditto, 1s 6d each, or per dozen	15	0
	Fine Gooseberries, Currants, and Raspberries, per doz.	3	0
	Strong Vines, Figs, Apples, and Walnuts, per dozen	15	6
	Cryptomeria Japonica, and 6 choice Pinus for ..	10	0
	Fine new scarlet and yellow-flowering Chestnut, Rosa acacia, and purple Beech, 6 to 8 feet, per dozen ..	18	0
	Evergreen Privet and Beech, 5 to 5 ft., for fences, p. 100	12	6
	Garden and Flower Seeds of all kinds.		

Albion Nursery, Stoke Newington, London, Jan. 6.

NOTICE.

A DESCRIPTIVE CATALOGUE OF FLOWER AND VEGETABLE SEEDS, comprising the NEWEST AND MOST POPULAR varieties for 1849, selected by WILLIAM HAMILTON, Seedsman and Florist, is now published, and may be had on application — 156, Cheapside, London.

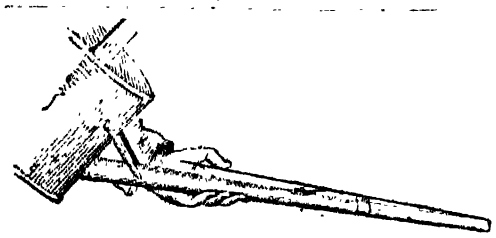
FLOWER POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford-street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.—250, Oxford-street, near Hyde-park.

COLE'S SUPERB DWARF RED CELERY.

WM. PORT AYRES begs to inform his friends and the public that he is prepared to send out this splendid Red Celery (which was awarded a prize at the last meeting of the Horticultural Society) in sealed packets at 3s. 6d. each, free by post. In recommending this Celery, W. P. A. feels confident it will give entire satisfaction, its leading characteristics being a remarkably fine nutty flavour, with great solidity and brittleness; large size (Mr. Cole having a crop of 600 plants at the present time, averaging 6 lbs. each) and the very desirable property of standing 12 months from the time of sowing without running to seed. Specimens of this Celery will be on view during the week at the following seed shops, where also seed may be obtained; Mr F. Warner, Cornhill, Mr. W. Clark, Bishopsgate-street, Mr. D. Hanis, 109, St. Martin's-lane, Charing-cross; Mr Denyer, Gracechurch street; Messrs. Flanagan and Son, Mansion house street; and Messrs. Hurst and M'Mullen, Leadenhall-street.

W. P. A. also begs to announce that his selected assortment of Kitchen Garden and Flower Seeds is now ready for delivery, and the principal kinds having been grown either by himself or by friends upon whose integrity he can depend, can be warranted true to name — Blackheath, Jan. 6.



MR. H. BOWERS being honoured with the thanks of the Horticultural Society of London, and great public patronage, for his New and Improved WATERING-POT TUBE, now offers it at a reduced price to Lady Gardeners, and all who wish to succeed in the management of plants. It is invaluable. Please to observe, by holding the Can in both hands, the fore finger of the left on the spring (key) of the tube, the flow of water is regulated to a nicety, saving your plants from disfigurement, mildew, and decay. So convinced is H. B. of the superiority of this over all known means of watering plants, that to any one disapproving he will return the money. Price from 7s. 6d. to 10s., painted.—Only London Agent DUNCAN HAINS, 109, St. Martin's Lane, or apply to H. B, Godalming, Surrey.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO are supplying 16 oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet

Sizes. Inches.				Inches.				Per foot	Per 100 feet.
				Under	6	by	4	at	1½d. is £0 12 6
From	6	,,	4	,,	7	,,	5	,,	2d. ,, 0 16 8
	7	,,	5	,,	8	,,	6	,,	2½d. ,, 0 18 9
	8	,,	6	,,	10	,,	8	,,	3d. ,, 1 0 10
	10	,,	8	,,	12	,,	9	,,	4½d. ,, 1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 4½d. per square foot, according to size.
21 oz ,, 5½d. 5d. ,, ,, ,,
26 oz. ,, 5½d. 7½d. ,, ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one half. List of Prices and Estimates forwarded on application to JAMES HEELY and Co., 35, Soho-square, London.

GLASS FOR CONSERVATORIES.

JAMES PEILLIE AND CO., 110, Bishopsgate-street Without, are supplying SHEET GLASS at the following reduced Price for Cash.

HORTICULTURAL GLASS FOR CONSERVATORIES, CUT TO SIZE UP TO 40 INCHES LONG.				PRICES OF SMALL SHEET SQUARES,	
16 oz. from	3d	to	3½d per foot	In boxes of 100 feet.	s. d.
21 ,,	3½	,,	,,	Under .. .. 6 by 4	12 6
26 ,,	3½	7½	,,	6 by 4 and under 7 by 5	16 6
32 ,,	4	9½	,,	7 by 5 ,, 8 by 6	18 6
				8 by 6 ,, 10 by 8	20 6

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS in sizes not exceeding 6 feet superficial.

⅜ thick	per foot 1s 0d.	¾ inch per foot	2 0
½-inch	1 2	1 inch	3s. 0d.
⅝-inch	1 6		

PATENT ROUGH PLATE TILES.

⅜ thick	each 0s. 11d.	½ inch	each 1s. 7d.
¾ inch	1 5	½-inch	2 0

GLASS DOMES for SKYLIGHTS, from 15 to 50 inches in diameter. These are well worth notice.

GLASS MILK PANS, PROPAGATING GLASSES, AND BEE GLASSES.

LACTOMETERS for trying the quality of Milk, 4 tubes 7s. 6d., 6 tubes 10s.; Hyacinth Glasses and Hyacinth Dishes; Crocus Glasses; Shades for Ornaments; Fish Globes, Plate and Window Glass; Lamp Shades and Chimneys, and every article in the trade.

METAL HAND FRAMES.

HARTLEY'S PATENT ROUGH PLATE, AND PATENT DOUBLE CROWN GLASS.

SEEDS.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE for 1849 is now ready, which contains many choice additions. Copies forwarded prepaid on application, also wholesale prices to the trade.

Seed and Horticultural Establishment, Sudbury, Suffolk

CHEAP GLAZED LIGHTS OF ALL SIZES.

J. WEEKS AND CO, King's-road, Chelsea, Horticultural Builders, &c. &c. Lights for Hothouses, Greenhouses, Pits, &c &c., made of the best yellow deal, glazed and painted, complete, from 9d. to 1s per foot.

J. WEEKS AND CO.'S PATENT HOT-WATER APPARATUS

is the most efficient, simple, and economical. To be seen extensively in operation at their Horticultural Establishment, King's road, Chelsea.

POLMAISE.—The complete success of SMITH'S POLMAISE APPARATUS, with dome cover, is now firmly established: the late cold weather having been a severe test of its heating powers. It is more simple than hot water, and equally as economical. In point of fuel, it is warranted to answer in every respect. Orders are daily being received, and in no single instance has failure of any kind ensued.— Manufactured by SMITH and Co., Eagle Foundry, Leamington. Prices from 8l. to 15l., according to size.

GLASS FOR GREENHOUSES, CONSERVATORIES, GARDEN FRAMES, &c.

Hothouse Builders, Nurserymen, and others, supplied with every description of Sheet and Crown Glass, Rough Plate, &c. Glass Tiles, Propagating, Cucumber, and all other Garden Glasses.—Address, T. COGAN, 48, Leicester square, London.

PRICES OF SMALL SQUARES IN BOXES OF 100 FEET.

	Crown.	Sheet.
Squares under 6 by 4	10s. 6d.	£0 12s. 6d.
6 by 4 and under 7 by 5	14 0	0 16 6
7 by 5 ,, 8 by 6	15 0	0 18 6
8 by 6 ,, 10 by 8.	16 0	1 0 6

Larger sizes, of all qualities and substances, equally low.

PAINTS.—LITHIC AND OTHER DURABLE PAINTS, ready for use for FARM Buildings, Agricultural Implements, Park Fences, Outhouses, &c, &c Genuine White-lead, Colours, Brushes, &c, best quality, and lowest prices.

GLASS MILK PANS FOR THE DAIRY.

Cream Pots, Lactometers, Glass Rolling Pins, Pastry Pans, Shades for Ornaments, Lamp Shades, &c., as usual. For Lists, (priced) direct to T. COGAN, Glass, Colour, and Lead Warehouse, 18, Leicester square, London.

STEPHENSON AND CO, 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority, or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire work, &c.

CLARK'S METALLIC HOTHOUSE WORKS, 55, Lionel-street, Birmingham.—Proprietor, Mr. THOMAS CLARK, Manager, Mr JOHN JONES.

Mr CLARK presents his grateful thanks to the Nobility and Gentry for their liberal patronage of the above Establishment, during a period of thirty years, and begs to state that the repeal of the duty on Glass enables him to offer his METALLIC HOTHOUSES at a greatly reduced price. These Houses are glazed with British Sheet Glass, in panes of from 24 to 30 inches in length, and of such thickness as to preclude all danger of accidental breakage, whilst that which arises from the action of frost is effectually prevented by the peculiar mode of glazing adopted. As a sample of his Metallic Hothouses, in which all the most recent improvements are happily combined, Mr CLARK refers to the magnificent Range erected by him in the new Royal Gardens at Windsor, admitted by competent judges to be the most complete of its kind in the world.

SPADE CULTIVATION AND DRAINING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

W. A. LYNDON, Minerva Works, Birmingham, Manufacturer of Patent SPADES, SHOVELS, and DRAINING TOOLS.

To Nurserymen, Gardeners, and Agricultural Labourers, these Spades will be found invaluable, and calculated to lessen the labour of digging very materially, they are warranted to carry a knife edge which will neither break nor turn, wear perfectly bright on the surface, and last as long as three spades or shovels of the ordinary kind, and are now coming generally into use amongst the principal Nurserymen, Market-gardeners, and Agriculturists in the kingdom.

The Draining Tools gained two prizes at the Royal Agricultural Society's Meeting held at Northampton, 1847, since which time they have been awarded prizes and commendations from all the local societies where they have been exhibited.

Spurious imitations of these Tools are being made, called Improved and Cast Steel Spades, Shovels, &c., and labelled similar to the above. None are genuine unless bearing the name in full upon the strap and label.

Spades, Shovels, Draining Tools, Digging, Potato, Manure, and Hay Forks made to any pattern, and adapted for every description of soil.—To be had of all Ironmongers in the kingdom.

WARM AIR STOVES.

BENHAM AND SONS respectfully solicit the attention of Architects, Builders, and the Public in general, to their extensive stock of Air Stoves, suitable for Shops, Halls, School-rooms, &c. Also a great variety of Church or Chapel Stoves. Greenhouses, Halls, and other buildings WARMED by HOT WATER from the Servants' Offices, or by the circulation of WARM AIR on the POLMAISE SYSTEM, which is very efficient, and of very moderate cost.—19, Wigmore-street, Cavendish-square, London.

GUANO AND OTHER MANURES.

PERUVIAN GUANO, of the finest quality, direct from import warehouse.
NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of

MARK FOTHERGILL, 201 A, Upper Thames-street, London.

AGRICULTURAL AND SCIENTIFIC TRAINING SCHOOL, HODDESDON, HERTS.—This Institution has been established on the largest scale of efficiency, and will be found complete in every department. For prospectuses and other information, apply to the Head Master, either personally or by letter. WILLIAM HASKELWOOD, Head Master.

LAND PROPRIETORS possessing Waste and Uncultivated Land, under the Enclosure Act or otherwise, and wishing to have the same Drained, Enclosed, Farmed, and Buildings Erected on well organised and economical plans, may do so by Contract or otherwise; also Drain Pipes, Brick-making, and every description of ground and water work performed, or the same superintended in England, Ireland, Scotland, or Wales. For further particulars address WM. HARRIS, Surveyor and Contractor, Almodington, Chichester, Sussex.

A LADY of cheerful disposition, who has had much experience in private tuition, and has just quitted a family in which she resided 14 years, wishes to form another engagement, in which the duties of mental instruction will not be required. She would be happy to enter a family of which the Children, through bereavement, need MATERNAL CARE AND KINDNESS, and she feels sure that docile children would receive from her the tenderness and sympathy which such circumstances claim. Unexceptionable references will be given. Address, prepaid, N. J., Post-office, Turnham Green, London.

CHEAP AND DURABLE ROOFING.—Houses of all descriptions can be roofed at less than one-half the ordinary cost, by using the

PATENT ASPHALTED ROOFING FELT,
Manufactured by
FRANCIS RITCHIE AND SONS, BELFAST,

Who also make INODOROUS FELT for lining damp walls under paper in place of lead. Samples, directions, and all necessary information sent free, on application to the Manufacturers, or any of the following Agents:—

Bristol—Tratman, Brothers.
Carlisle—Edward Jobling.
Hull—Thomas Flint.
Liverpool—Chapman, Bowman, and Co.
London—Hay, Anderson, and Sangster, Newington Butts
Manchester—James Hurst, 14, High-street.
Newcastle-on-Tyne—Richard Warham
Southampton—John Vaux
Whitehaven—Randleson and Forster

Hurst and M'Mullen, Seedsmen, 6, Leadenhall-street, London.

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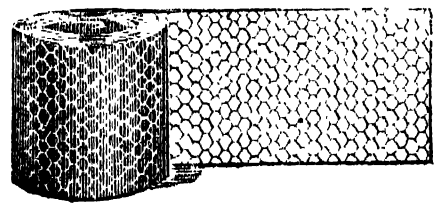

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12 inches wide			3d. per yard	30 inches wide			7½d. per yard
18	,,	,,	4½d. ,, ,,	36	,,	,,	9d. ,, ,,
24	,,	,,	6d. ,, ,,	48	,,	,,	1s. ,, ,,

Galvanised do. 1d. per foot extra.

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SELECT VEGETABLE SEEDS of the NEWEST and BEST SORTS, supplied in large or small quantities, by BASS and BROWN; complete in collections of 63*s*., 42*s*., and 25*s*., also complete collections for small gardens of esteemed and favourite sorts for 15*s*. For any vegetables not required, enlarged quantities of others may be had. A list of the collection sent if required. Carriage paid to London. Post-office orders are payable to either BASS and BROWN or STEPHEN BROWN. Remittances requested from unknown correspondents.

Being growers of an extensive variety of Seeds, we shall be happy to forward our prices to the trade of such sorts as we have this season to offer.

BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

The Gardeners' Chronicle.

SATURDAY, JANUARY 6, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	JAN.	8	Medical	8 P.M.
			British Architects	8 P.M.
			Geographical	8½ P.M.
TUESDAY,	—	9	Syro Egyptian	7½ P.M.
			Civil Engineers	8 P.M.
			Medical and Chirurgical	8½ P.M.
			Zoological	9 P.M.
			Literary Fund	3 P.M.
WEDNESDAY,	—	10	London Institution	7 P.M.
			Graphic	8 P.M.
			Pharmaceutical	9 P.M.
			Royal Society of Literature	4 P.M.
THURSDAY,	—	11	Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	—	12	Astronomical	8½ P.M.
			Chemical	8 P.M.
MONDAY,	—	15	Pathological	8 P.M.
			Statistical	8 P.M.
TUESDAY,	—	16	Horticultural	2 P.M.
			Linnean	8 P.M.
WEDNESDAY,	—	17	Society of Arts	8 P.M.
			Geological	8 P.M.
FRIDAY,	—	19	Royal Institution	8½ P.M.
SATURDAY,	—	20	Asiatic	2 P.M.
			Royal Botanic	3 P.M.

THE disputed question relating to the season at which EVERGREENS SHOULD BE TRANSPLANTED, has been taken up by Mr. GLENDINNING,* whose extensive practice entitles him to attention. Mr. GLENDINNING "entirely dissents" from the common opinion that the proper season is the winter, that is to say from October to the beginning of April; and upon the following grounds:

"It would be traversing over a beaten track to "enter into any general detail respecting the ascent "and descent of the fluids in plants, and the forma- "tion and deposition annually of new wood in all "ligneous vegetation. It will be sufficient for my "purpose to state that this extension and formation "takes place chiefly after Midsummer, and princi- "pally in evergreens during autumn, when the "young shoots begin to attain a certain degree of "consistency. It is during this downward tend- "ency of the fluids, and when the solar action is "in some measure on the decline, that I should "seize and conduct with all rapidity the operations "of transplanting; and, if this is intended to be "conducted extensively, I should recommend the "end of August as a good time to begin, Septem- "ber being the *safest* month in the year; selecting "such plants to commence with as have matured "their shoots. Another and very important reason "remains to be stated why autumn is to be pre- "ferred for undertakings of this kind in preference "to winter. The force of the sun during summer, "although now on the decline, has warmed the "earth to a considerable degree and depth, so that "the mutilated roots are comparatively situated on "a gentle bottom-heat, which rapidly promotes cica- "trization, and frequently aids the emission of young "spongelets during the current autumn."

And he adds that, "the slightest acquaintance "with vegetable physiology will conclusively demon- "strate the truth of this assertion."

He however qualifies his opinion by a limitation. "Let it be clearly understood that I am alluding to "plants of from 6 to 30 feet and upwards in height, "and not to mere nursery stock, which is generally "kept moved about every two years, to ensure its "safety when transplanted out permanently."

In another part of his paper Mr. GLENDINNING has the following remarks in illustration of his views: "I had occasion to superintend the removal of "upwards of 2000 trees and shrubs, all evergreen, "and varying in size from 6 to 40 feet high, during "one autumn. The trees were prepared as for- "merly described the previous spring, and as the "undertaking was rather gigantic, the work was "begun in August and finished with the year. The "result was of course watched with some interest, "and the following summer, when an examination "took place, I found that those trees which were "transplanted early in the season indicated little "change from their removal, but the contrary was "the case with those which had undergone similar "transplantation during December. In fact the "gradual diminution of the motion of the sap, ac- "companied with declining atmospheric action, "which tended, in conjunction with the usual "autumnal precipitations, to cool and saturate the "earth, clearly and progressively exhibited our "comparative success.

"The exact period to commence these operations "must be determined by the nature of the season, "and the state of maturity the current year's growth "has attained: in some seasons an earlier begin- "ning may be made than others; some kinds of "plants also ripen their wood much earlier than "others. These, therefore, should receive the "earliest attention.

"In hot and dry autumns the foliage of some of "the larger specimens of certain species and varie "ties, especially such as have large and succulent "leaves, will flag and droop. To guard against "any injury arising from this, it will be advisable to "well water the roots at planting, not with cold "water from the well, but from the pond, where it "has been exposed to the sun. With specimens of "great rarity and value, it would amply repay the "additional trouble to occasionally syringe the "foliage in the evening for a short period after "planting. This, however, will not be required "should the weather be either cloudy or moist."

For ourselves we have little to object to in these propositions beyond what has been often stated before. There is no objection to the end of August or beginning of September, if circumstances, that is to say, the state of the season, are favourable; quite the contrary; that being so, it is an excellent period. In fact we have formerly shown that the time at which plants are to be removed is determined by external not internal circumstances. Given a favourable atmosphere, *any time is proper*: whether in the growing season or not. There are great Scotch planters who maintain the excellence of the late spring, or even Midsummer. With their cloudy sky and dripping summers they may be right. The great Holly hedges in the Garden of the Horticultural Society were all planted at Mid- summer; and hardly a tree missed. For the sake of experiment we last year ourselves moved, with puddling in stiff London clay, Hollies, Yews, and Douglas Firs during every month from August to October, without a loss; the late rainy summer made it possible, and if our seasons were always rainy, we should always take the period named by Mr. GLENDINNING.

But we cannot count on such seasons, and therefore the question to be settled for England is what time of year is the best upon the average, considering what our seasons are.

The following memoranda show the relative dry- ness and temperature of our autumn months.

Mean degree of dryness according to Daniell's hygrometer, on an average of 19 years.

August	1·45
September	2.11
October	1.62
November	0·93
December	0.72

Dryness of the above period according to the hygrometric scale, saturation being represented by 1000.

August	851.
September	903.
October	947.
November	963.
December	969.

Mean temperature, average 23 years.

August	62°.17
September	56°·72
October	50°·16
November	43°.00
December	39°.76

These facts are our guides; they show that August is fully twice as dry as September, and nearly four times as dry as October. It will also be seen from them that the mean temperature of August is more than 6° higher than that of September, and of Sep- tember than of October. Now as the loss of water by trees is to a great degree dependent upon the dryness of the air, it is obvious that in that point of view August is almost four times as dangerous as October.

It must also be borne in mind that perspiration in plants is caused by the direct action of light, and that loss by perspiration is in proportion to the length of time during which the surface of plants is exposed to sunlight; heat and dryness only increas- ing the amount. Now, in August the days are not only longer but brighter than in September, and in September than in October; and here, again, the state of the atmosphere is against the first month and in favour of the latter.

Upon these grounds, then, we should regard October as offering, on an average, a better chance of success in transplanting evergreens than August or September; and for similar reasons, which the preceding Tables will explain, we should infer that November is better than either, as we have gene- rally found it to be.

But Mr. GLENDINNING has introduced a new and highly interesting argument. He urges the great importance of considering the temperature of the soil in the autumnal months, and prefers the earliest available period, *because of the higher temperature of the soil at an early than at a late period.* He very justly says that early in the autumn the roots of transplanted evergreens find themselves in a "gentle bottom heat." Mr. THOMPSON'S invaluable tables of ground temperature near London show what is the real gain in this respect. He found the mean temperature of the soil, on an average of six years, to be—

	One foot deep.	Two feet deep.
August	62 37	61 95
September	58.35	59.04
October	52.38	53.74
November	46.79	48.09
December	40.75	42 89

Thus, in August, the earth is from 8° to 10° warmer than in October, and in September about 6° higher than in October, 10° to 12° higher than in November, and 16° or 17° higher than in December.

Here we have a great element of advantage in favour of September, for, although evergreens will make new roots all the winter long, if the earth is not too cold, yet it is certain that they will do so much more quickly and abundantly in warmth than in cold; and 10° form what may be called, without exaggeration, an immense difference in their favour.

But, on the other hand, they will be seriously ob- structed in the operation of forming new roots, even in "bottom heat," if their leaves are shrivelled up and destroyed: as is always to be dreaded at too early a period of the year. So that we still find our- selves embarrassed in the choice of a month: for what may be gained by the warmth of the soil may be more than lost by the dryness of the air. The gardener is thus placed in a practical difficulty, out of which it is difficult for him to extricate him- self. And what is more perplexing, experiments are not as yet a guide; for a trial in any one year, even if reported with all accuracy, is not in matters of this kind conclusive. Results in cultivation are often determined by circumstances which the most conscientious and skilful observer fails to perceive, and thus they are led to wrong causes. A series of experiments conducted under equal circumstances for several years, at least in several different places in the same year, are absolutely necessary to satisfy the mind. Solitary experiments in gardening, as well as in farming, may almost be called useless; at the best they can only be taken as indications, the value of which further experiments must determine.

We have, however, this very important gain, from Mr. GLENDINNING'S experience, that for England the danger of planting Evergreens in spring may be regarded as finally determined; and thus the main principle for which the *Gardeners' Chronicle* has been contending for many years is established.

The point now to investigate is whether the planter should select August, September, October, November, or December; the spring being out of the question. Probably it will be safe to regard August and December as the least advantageous of these five months, except under special circum- stances; and that upon the whole, September, October, or November should be preferred—one being better in one year and one in another. We shall only add that a ground temperature of 47°, which may be taken as that of *thoroughly drained*† land near London in November, is sufficiently high for plants like hardy Evergreens to form roots in. We must never lose sight of the great fact that the cause of the death of trees after transplanta- tion is owing to the inability of the roots to supply the system with the water it loses by perspiration; and to no other cause. All the power which it is possible to concede to plants, of replacing their mutilated roots, is nothing before the enormous loss of their fluids by perspiration—provided the season is favourable to that function.

WHILE others are recording the leading events of **Lord Auckland's** political life, and attempting to identify with his memory the imbecilities of the incompetent officers he was compelled to employ, let it be permitted to one who knew him well to put on record other points in the character of this great and lamented nobleman.

Lord AUCKLAND, although not a talker like some men, was wise and good in the truest sense of those terms. Although none speak of his private charity, many will miss it; his whole life was a scene of kindness and consideration for those around and below him; affectionate regard does not sufficiently express the feelings borne towards him by those who had the happiness to form his domestic circle: there his loss is irreparable. It is, however, as a true friend of science that he must be held to merit the gratitude of posterity.

It was Lord AUCKLAND who, while in India, took all learned societies under his protection, aided

* "Journal of the Horticultural Society," Vol. IV. p. 41.

* See "Journal of Horticultural Society." Vol III., page 108.

† Undrained land is not taken into consideration in these remarks.

them in their objects, and held out to the young and rising men of his day the powerful hand of a mighty governor. It was he who brought forward and gave the means of distinction to Mr GRIFFITH, the first of Indian botanists, an early victim to scientific exertions. It was he who caused the capabilities of Assam to be investigated, and who also laid the foundation of those important Tea plantations in the Himalaya, which seem destined at no distant day to win from the Celestial Empire the most valuable part of its commerce; and when the armies of England penetrated into the wild country of the Afghans, it was he who provided the expedition with a scientific staff such as has not been attached to an army since the days of NAPOLEON in Egypt. Gardening was more especially Lord AUCKLAND's favourite pursuit; wherever his power in India extended this art was protected, and advanced by the resources of his native country, which in its return was enriched with all that Indian establishments could furnish. It was at his lordship's instance, seconded by Mr. ROBERT GORDON, one of the then Secretaries of the India Board, that the East India Company laid the foundation of that important system of continually importing Indian seeds, to which we owe the numerous and invaluable Coniferous and other plants that have now become so common in England. No wonder that on departing from his Indian Government Lord AUCKLAND should have been followed by the deep regret of all, for a loss which they knew might not be easily repaired.

On his return to England he fixed his residence at Kensington Gore, where his garden was an inexhaustible source of happiness. He also became an active supporter of the Royal Asiatic and Horticultural Societies, and of University College, in the management of which institutions he took the greatest personal interest, until his appointment to the Admiralty rendered it necessary for him to confine himself to the official duties of his high charge. And these duties, when they killed him, deprived his country of as true-hearted a man as ever wore the chains of State.

IN reply to some enquiries respecting Dr. LINDLEY's examination of the facts connected with the POTATO CROP of last year, we are requested to state that the mass of papers supplied to him from all parts of the United Kingdom is nearly abstracted, and that the result will be speedily made public in our columns.

HANDS grow under-ground in Belgium.

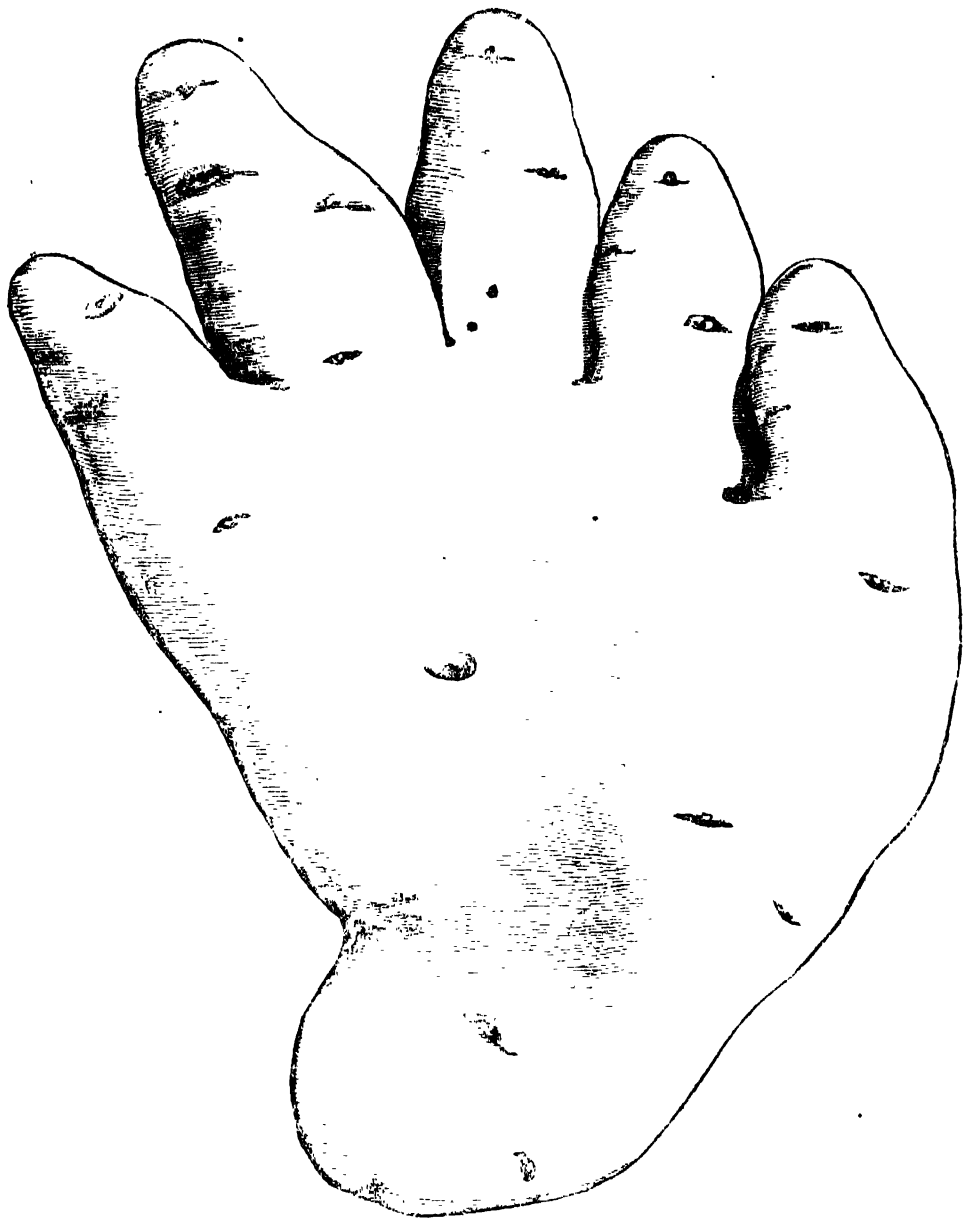
We recommend the discovery to the notice of all the lovers of marvels; it is much more curious than that of a sea-serpent, or a kraken, and has the advantage over them of being true.

There was dug up last autumn, near the Guillemins station at Liege, by a M RODENBOURG, a live object, having all the appearance of a human HAND. A thumb and four little fingers, a hollow palm, a convex back, a wrist, and knuckles as good as are to be found in some gouty martyrs, were possessed by this new body, as is shown in the annexed representation, faithfully drawn from the original, now alive and in our possession, for which we are indebted to Messrs. JACOB MAKOY and Co., of Liege.

Were the worthy Dr. PLOT still here he would have seized upon it as an example of that "plastic force" "by means of which the earth first put forth animals and plants." Were good Mr. LLWYD alive* he would quote it as a proof of the existence of the "sperm of living things being carried into the air by vapours and thence deposited in fitting places," where, according to its quantity and efficiency, it produces whole animals and plants, or pieces of them. In this case, being imperfect, it only produced a hand instead of a man. Modern lovers of marvels may in like manner put their own interpretation upon it. Ingenious and speculative gentlemen might, for instance, suspect it to be a Belgian's hand left in the field when he planted his Potatoes there, and vegetalized by some inscrutable process.

But, alas, for ingenuity! we are obliged to dispel these high speculations. As Professor OWEN pronounced the sea serpent to be nothing but a seal,† so we are obliged to declare that this Belgian hand is nothing but a Potato. A very strange Potato we admit, and such as we never saw before; but still a Potato. The thumb and fingers are five sprouts, springing from a flattened stem, which forms the palm and wrist; a circumstance that happened when all were young, after which the whole swelled together into one flattened body. We need not in these days say that a Potato is but a stem swollen out with starch and other substances for human food; when it grows in yielding ground it swells equally all round; but if subjected to lateral pressure it simply flattens. It may be conjectured that our Belgian hand forced itself between two stones, or two hard clods, when it first began to swell.

After all it is the same kind of production as is often found in Cucumber plants, in the stems of Cabbages, or in the suckers of trees, when they grow excessively fast and are interfered with in their lateral expansion. In such cases they, too, flatten and become monstrous, and, if they had the power requisite for becoming tubers, they might also form another Belgian hand.



* See his "Lithophylacium Britannicum," 1698.

† A friend suggests that the sea serpent was nothing more than a false keel, kept steady by a load of barnacles and seaweeds.

A LECTURE ON THE NUTRITIVE VALUE

OF DIFFERENT ARTICLES OF FOOD.
BY C. DAUBENY, M.D., F.R.S.

[We are indebted to the kindness of Dr. DAUBENY for permission to print two most interesting lectures on Food, lately delivered by him in the University of Oxford: they embody all that is known upon this important subject, and will appear from week to week as we can find room for them.]

IN the spring of last year, whilst the nation was yet suffering from the effects of that awful calamity which, by annulating one of the staple articles of our subsistence, had reduced the inhabitants of the sister island to a state of almost entire destitution, and had at the same time considerably crippled our own means of relieving the distresses of others, I delivered a lecture on the nutritive value of the various articles of human food, by way of explaining how we might apply to the greatest advantage those resources, which the benevolence of individuals, or the assistance of Government, might have placed at our disposal. This led me to consider the relative value of different articles of food, with a view to the selection of that combination of those generally in use which might be capable of supplying, at the smallest expense to the public, the amount of nutritive matter essential to the maintenance of the health and vigour of individuals. The recurrence of the same Potato blight in the present year, although from its somewhat less universal character it may press more lightly upon our population than heretofore, inculcates at least the propriety of similar care in husbanding our resources, and therefore renders it important that we should ascertain, first, how we can obtain the amount of nutriment necessary to the population at the least expense, and secondly, how we can fit it for the digestive organs of man with the smallest amount of waste.

Accordingly, in prosecuting this inquiry, we have first to contrast the relative power of nourishing the human body belonging to different articles of food with the commercial value of each, and secondly to consider the best method of cooking them, with the view of retaining as much as possible all the nutriment belonging to each substance consumed during the process of preparing it for the table. Now it will appear, I think, on looking back to the efforts made during the late scarcity to alleviate the distress at that time so prevalent, that a much greater amount of good might have been brought about by the benevolent efforts so freely tendered, if certain mistaken views with regard to political economy, and what, with reference to these lectures, is more to the purpose, certain erroneous impressions respecting the mode in which the waste of the body is repaired, had been in the first instance corrected. Thus, to begin with the former branch of the subject, I may remark, that at a time when Potatoes were selling at 26s. per sack, one heard of persons to whom the price was comparatively of no object, voluntarily abstaining, as a matter of principle, from their use, under the idea that they were by this act of self-denial saving them for the poor, forgetting that the scarcity which then prevailed placed them under any circumstances beyond the reach of the great bulk of the population, and that by purchasing those offered for sale, they would have in fact supplied the vendor with the means of obtaining a supply of a much larger amount of nutriment, in lieu of the Potatoes which he had disposed of to his richer neighbours.

Thus, too, we found persons fancying they were doing a service to the community, by living as much as possible upon meat instead of farinaceous food, forgetting that every pound of meat which is produced implies the previous consumption of many pounds of vegetables by the animal that furnished it. Some, too, in their praiseworthy exertions to supply food to their famishing neighbours, acted upon the presumption that those substances which are felt to be highly nutritious when taken in conjunction with others, were capable of supporting life alone, and that soups in which gelatine is the main ingredient might be administered as the staff of life. Now, as to persons of the last-mentioned description, a slight insight into the principles of animal and vegetable physiology, as well as of organic chemistry, would have been of essential service, I propose in the present lecture, in the first place, to lay before you a statement of

what is required in the way of nourishment, in order to maintain the human body in a state of health and vigour; and then to proceed to show, in what degree those purposes may be fulfilled by such articles of food as, from their comparative abundance and cheapness, are placed within the reach of the great mass of the community.

I must begin, then, by informing you, that the animal body appears to possess, at least under ordinary circumstances, very limited powers of forming new organic compounds. The principles contained in the blood, which by a slight modification only are converted into muscle, membrane, and tissue, are all obtained from without, derived directly from the animal or vegetable matter upon which the individual may chance to subsist, but ultimately from principles secreted by the vegetable kingdom. These principles are, vegetable albumen, vegetable casein or legumine, and vegetable fibrine or gluten, which entering into the animal organisation constitute the albumen, the casein, and the fibrine, of one or other of which muscular fibre is made up. These are regarded by Mulder as three different modifications of the same primary compound, proteine, but Liebig disputes the existence of this hypothetical principle, and defies us to produce any proteine destitute of sulphur and phosphorus, by the addition of one or both of which the three substances above named are supposed to be produced. Nevertheless, the general inference remains the same, that one or other of these three bodies, whether they be modifications of one common principle or not, is essential to the nutrition of the higher animals, the necessity for a continual supply of one at least of these being obvious from the constant waste which is going on in all the tissues of the body; every act of muscular force, every mental exertion even, serving to deprive some portion of the living system of its vitality, and causing it to be thrown off as dead matter. The oxygen, indeed, or the vital part of the air we breathe, although the necessary condition of our existence—the common parent of all animated beings, is at the same time waging a constant war against its own offspring.

"Omniparens eadem, rerum commune sepulchrum—"

it maintains the vital heat of the animal system by the very means which it employs for its dissolution, and, so far from confining its ravages to bodies destitute of life, it would speedily destroy every animated being, if the latter had not at all times the means provided for appeasing the appetite of its voracious enemy. Its operation upon all animated nature seems to realise the ancient fable of Saturn, who, as mythologists say, would have devoured his own children, if his hunger had not been propitiated by having some tough morsel thrown in his way. To convince you that I am not dealing in unmeaning metaphor, let me call to your mind the condition of an individual cut off from all access to food, or physically incapacitated from swallowing that which is set before him. At first the action of the oxygen of the air will be exerted upon the fat which covers and protects the muscles, but, when this is consumed, the muscles themselves are attacked, and, as soon as these are wasted away, the brain and nerves next become the victims, and mania or delirium terminates the existence of the wretched sufferer. It follows from this, that a certain supply of some one of these modifications of proteine, if such they be regarded, is necessary to compensate for the waste of the body: namely, either albumen (obtained from the flesh and blood of animals), fibrine (the principal constituent of muscular fibre), or caseine (derived from the milk). These, in the case of animals that live exclusively on flesh, are conveyed into the system unchanged, and are, in a manner, transferred with no modification whatever from the dead individual to the living one.

But there are many tribes which subsist wholly or partially upon vegetables, and here too the same principles are received into the system, in consequence of all those which are capable of affording nourishment to the higher classes of animals containing one or other of these same modifications of proteine. Thus Beans, Peas, and other of the Leguminosæ, contain a principle called legumine, which recent investigations have shown to be analogous to caseine, so that the cow that feeds on Clover has only to take into its system a certain amount of vegetable legumine, which goes towards the formation of its milk. In like manner, albumen is supplied by the juice of many vegetables, such as Cauliflowers, Asparagus, Mangold Wurzel, or Turnips, which contain a substance called vegetable albumen, in all respects analogous to that existing in the animal. And, lastly, the gluten of Wheat, and of other farinaceous vegetables, contains a principle so similar to the fibrinous portion of the blood, that it has been denominated vegetable fibrine. Thus, whether an animal subsists upon animal or upon vegetable food, he equally obtains from without the principles necessary for maintaining the bulk of his system unimpaired.

Now, these three substances which are subservient to the nutrition of the animal, all contain a portion of nitrogen, and are therefore denominated their nitrogenised principles. In vegetables, however, they constitute but a small proportion of the bulk, the remainder being made up of starch, sugar, oil, and other ingredients, from which nitrogen is altogether absent, and which are therefore styled their non-nitrogenised principles. It has been calculated by Liebig, that in order to keep up the temperature of adults, in climates such as Germany, in the case of soldiers who have to undergo fatigue, and are assumed to be in a condition of robust health, no less than 13·9 ounces of carbon are consumed daily. This quantity uniting with 37 ounces of oxygen received into the system through the medium of the lungs, would produce 52,085 cubic inches of carbonic acid gas, evolving 197,477 degrees of heat. Now in order to yield this quantity of carbon, about 31 ounces of starch, 33 of cane sugar, or of gum, 35 of sugar of milk, 39 of grape sugar are required. This, although rather an excessive proportion, may give some idea of the quantity of food necessary for keeping up the heat of the body, which must be taken in these climates by an animal subsisting wholly upon vegetable food. But there is a large class of animals, namely, the Carnivora, that subsist solely upon animal nutriment, and these also, as well as the Herbivora, require a consumption of carbon for the same purpose as that which has just been specified.

Now this can only be brought about by the combustion of ingredients present in the muscular fibre taken into their system, and this contains in the 100 parts only 13·6 of carbon. In order, therefore, to provide 14 ounces of carbon for the maintenance of the animal heat in a carnivorous animal, rather more than 100 ounces of meat would be required, whereas the same amount of carbon will be supplied, according to the analysis of Boeckman, quoted by Liebig, by only 16 ounces of bread, for as 150 : 45 : : 46·6 : 14.

Dr. Dalton, on the other hand, calculated that the quantity of carbon contained in the solid and liquid food taken into the stomach by himself daily was 11¼ ounces, and it is probable that in many instances the quantity consumed is much less even than this, for in the Edinburgh workhouse,* only 13 ounces of vegetable and 4 of animal food are allowed daily; the 13 ounces of dry vegetable food consisting of Oatmeal and Barley meal made into porridge and broth. Now, 100 parts of Oats contain 50 of carbon, and the same amount of Barley may be regarded as nearly equivalent, so that about 7 ounces of carbon may be calculated as the quantity consumed in this instance, viz., 6½ from the vegetable and ½ from the animal matter taken into the stomach.

This therefore may be regarded probably as the minimum of carbon consumed, whilst 14 ounces are set down as the maximum.

Perhaps, however, the most accurate account of the proper dietary for persons in an ordinary condition of health, in a state of solitary confinement indeed, but engaged in carrying on certain trades or occupations involving some physical exertion, is given in the report of the Pentonville Prison, presented to the Houses of Parliament in the session of 1847. It appears that the dietary consisted at first, in round numbers, of about

	Together with
5 ounces of meat	4 ounces of soup
17 ounces of bread	16 ounces of gruel
6 ounces of Potatoes	12 ounces of cocoa
⅛ ounce of cheese	2 ounces of milk
¼ ounce of molasses	

On this diet 62 per cent. of the convicts lost in weight. The quantity of bread was then increased to 20 ounces daily, when 43 per cent. lost weight, whilst 15 per cent. gained. Lastly, the dietary has been increased in the articles of meat, soup, and Potatoes, and now stands as follows:

4 ounces of meat	8 ounces of soup
20 ounces of bread	16 ounces of gruel
16 ounces of Potatoes	12 ounces of cocoa
¼ ounce of molasses	2 ounces of milk

Upon this diet 58 per cent. of the convicts gained in weight, 25 per cent. remained stationary, and only 16 per cent. lost weight. Now assuming this to be a fair estimate of the amount of food which will keep a labouring adult in condition and health, let us endeavour to calculate from it, as nearly as we can, what amount of nitrogenous and non-nitrogenous principles is required for the daily support of the body.

(*To be continued.*)

PROPER TREATMENT OF NEPENTHES.

The most suitable situation for the different kinds of "Pitcher Plants" is an Orchid-house, in which air and moisture are well regulated, and where the temperature ranges from 55° to 60° at night: for Pitcher Plants, like Epiphytal Orchids, suffer greatly from stagnant moisture, more especially when the temperature is allowed to get low. They flourish in a warm, moist atmosphere, if it is kept constantly but slowly in motion, and entirely free from sudden changes or strong currents of cold air. It will in general be found that, if Pitcher Plants are placed next the entrance to the house where there is a fresh supply of air put in circulation every time the door is opened, they will flourish much better there than if placed in a more confined part of the house, where the air and moisture are less disturbed. Pitcher Plants also like a good supply of heat and moisture to their roots. They do not thrive under the close glass cases often employed in their culture. These can only be used with advantage when the temperature and moisture of the atmosphere are subjected to great variations, or when the plants are not well established in their pots, in which cases it is absolutely requisite to keep them quite close.

Pitcher Plants grow best potted in an equal mixture of sphagnum (or bog-moss), chopped very small, and the fresh fibre of rough peat, entirely freed from the finer particles. The pots should be well drained, and the material pressed firmly down; they should afterwards be plunged in moss, over a bottom heat of from 70° to 80°, and in an atmosphere well supplied with moisture. The moss in which the pots are plunged should also be well supplied with water.

The different species of Nepenthes are increased either by cuttings, layers, or seeds. When cuttings are employed, the young shoots or offsets, when a few inches in height, which are produced from the base of the old stem, should be selected. They should be potted singly, in rather large pots, well drained and filled with the above mentioned material, plunging them in damp moss in a bottom heat of 80°, and covering with a bell-glass.

When layers are used, they are taken off in the ordinary way, using the same kind of material as for cuttings. Seeds offer the best mode of increasing them when they can be obtained; they should be sown as soon as they are ripe, in pans half filled with broken potsherds, over which a layer of rough sphagnum should be placed, and above that, 3 inches of the same material chopped quite small; the whole should be surfaced with a little fine peat soil, upon which the seeds should be sown, without covering them; the pots should afterwards be plunged in moss in a bottom-heat of 80°, and closely covered with a bell glass. When the plants are large enough to be handled, they should be shifted into pots singly, using the same kind of compost as that in which the seeds were sown; afterwards keep them close and moist, until they have recovered from the effects of their shift; when their roots have become well established, they may be exposed to the full atmosphere of the house, but still with caution that should be done, for it is more difficult to keep them in health when they are beginning to form their woody stems than at any other time. In most cases it will be found that ill health arises from the want of bottom-heat; finally, when the young plants are well established and in good health, they should be at once transferred, either to pots or wooden boxes, which are sufficiently large to keep them in, without the necessity of shifting them again for some years; and as old plants are subject to die suddenly without any apparent cause, it is always desirable to keep up a young stock to replace them. *George Gordon.*

MASTERS VERSUS GARDENERS: THE CASE CONSIDERED.

The transition state of education which is going on perhaps all over the world, certainly in England, produces some evil. There is succeeding fast a new class of educated gardeners, young men who have been brought up under the superintendence of the Erringtons, the Flemings, the Barne-es, or in the lecture-room of the Horticultural Society. They are driving out fast the old rule-of-thumb practitioners, gentlemen who are well studied in the traditions and wisdom of their ancestors, and who by dint of perseverance and practice succeed about once in twice; but as yet one who is not capable of keeping a grand establishment, with a head gardener, apprentices, labourers, mowers, old women, and children, is rather put to it. He has to select between one of the old school, who laughs at deep learning, puts in his seeds on given days by the "Calendar," without reference to change of season, be it wet or dry, early or late; keeps his Vines within the house warm and comfortable, tears them out of the house on a given day, or with the first frost, and leaves them exposed lying on wet borders (as I lately saw my own), and exposes them to a frost of perhaps 10 degrees, and, then on a given day sets them off at full gallop for an early forcing for June, without any thought of the outside border, the branches being inside at 70°, and the poor sopped roots lingering in about a temperature from 40° to 50°, the border itself trampled down and probably covered by some favourite crop of Cos Lettuce, Giant Stocks, &c., and having been made some 10 or 20 years ago, from 5 to 7 feet deep, and a perfect Golgotha of dead horses, cats, and dogs, or a smothered sheep or so. Between this class and a class of very conceited, half-educated young gentlemen, with all the assumed knowledge of Mr. Errington, &c., and who will not hear a suggestion or bear a remonstrance without a sneer; and, what is worse, a determination to act in utter opposition to any hint, there is a wide difference. The latter contains several varieties; some are civil and despise you inwardly, whilst outwardly flattering you.

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* *Dietary of an Hessian [illegible].*

Bread per day	52 ounces	Carbon 9 ounces.
Potatoes	18 ,,	
Meat (Beef and Pork)	6 ,,	
Peas, Beans, Lentils	½ ,,	,, 4.9 ,,
Sour Kraut	1 ,,	
A few other [illegible]	— ,,	
Total	77½ ounces.	13.9 ounces.

[illegible]

Dry vegetable food	26 ounces
Animal food, if salt	9 ,,
	35 ,,
Dry vegetable food ...	28 ,,
Animal food, if fresh	4½ ,,
	32½ ,,

Troops to the East Indies.

Dry vegetable food	23½ ,,
Animal food	8 ,,
	31½ ,,

Penitentiary, Millbank.

Food chiefly vegetable, 31 oz. reduced to 21, followed by scurvy.

Edinburgh House of Refuge.

Food chiefly vegetable, 23 ounces found to be insufficient for health.

New Holland Convict Ship.

Vegetable food	16 ounces.
Animal	7¼ ,,
	23¼ ounces.

Edinburgh Workhouse.—Diet for old people.

Vegetable food made into Oatmeal porridge and Barley broth	13 ounces.
Animal food	4 ,,

This found sufficient.

A good deal depends on constitution and climate; one is never found from the north who will condescend to humour the master. I am aware that there are exceptions, but I sincerely believe they are very rare. I have had some experience in the matter, and more, having been rich enough to engage with one of the really well educated and intelligent, I have, in the different periods of my gardening life, had some of all kinds of both classes, and on the whole I think the dogged old rule-of-thumb man the best of the two; one knows the worst, and by dint of coaxing and ordering sometimes I have been able to get what I wished accomplished. With the half-educated gentleman I have been less successful. With the ill-tempered and the obstinate I have parted; with the civil and conceited I have gone on for a time, hoping that I should be able to convince, but in the end I have found the one as bad as the other. I believe the best off of those who cannot have something superior, are those who do as the late Mr. Andrew Knight did, only have common workmen who did what he directed; but then he had himself great practical knowledge, and was always on the spot to see what he directed was executed, but by all accounts he was not always successful in accomplishing this; at least the only time I saw him (years ago at Ludlow) I recollect his complaining to me. I have tried the experiment of dividing the responsibility by compromising matters, root-pruning some of my trees, and managing others in my own way, and leaving the remaining half to the intelligence of the gardener; but even in this I have not succeeded, and I have more than once given up the care of my garden in despair. I hardly know why I write all this, but I think you may be able, according to your lights and experiences, to give some good advice to gardeners in general. The next generation will produce knowledge coupled with experience, and we common people will be able to have good gardeners.

I have stated the case masters *versus* servant. I am aware, however, that in this, as in all others, there is "much to say on both sides," that the master may be ignorant or impatient, or he may have a smattering of theoretical knowledge and no practical experience; that he may expect too much, think that there are to be no failures, and for very moderate wages expect to have all the virtues under the sun; but as far as my experience goes, I think, if I were a gardener, I would rather serve a master who had some knowledge, which would teach him that he could not command success; who would make allowances for failures from accidents, and take bad seasons into consideration, &c. I recollect having a gardener who was in general well informed, who grew good crops of common things, and managed my flower beds with reasonable success, but as he would hardly ever bear a suggestion, would do nothing that I had a fancy to be done, ridiculing my plan of root pruning, and telling me to wait a few years, and I should get fruit enough without any such trouble or nonsense, and at last, being vexed to see that he would rather not see his master interfere in any way, I determined to part with him; but as I considered him above par as a general gardener, I recommended him to a friend, who never interfered, and never went into his kitchen garden. Here I thought my refractory friend would be in Clover, and matters went on well enough for a year, when I found he had left his place I recollect it was a hot summer, and all the Melons and Cucumbers had been affected with red spider, at least except when the greatest care had been used, and I found my friend had considered that a gardener who did not give him a Melon or Cucumber, &c, every day, and without fail, must be careless or ignorant; he however parted with a good common gardener, and I believe has never had a Melon fit to eat since, and has had a very scanty sprinkling of other matters. There the master was in the wrong, and I dare say there are many cases somewhat similar, and especially where the master reads *Gardeners' Chronicles*, Magazines, and Horticultural Journals, and takes up new theories and expects to have them all put in practice at once, and to have a successful result even before the season is out, but I think the gardeners themselves will take up this part of the argument, and I shall be glad to see the case well handled by them in your journal; the exposure of faults on both sides will do good and lead to forbearance by each party. I recollect many years ago being for a short time at Holkham, where there were many country gentlemen from different parts of England; of, those they listened with reverence to the clinical lectures given *in aperto campo* by their host, the expositions of experiments, heard and wondered at the results, and went away, called up their bailiffs and stated all these marvels, insisted on changes without knowing the whole rationale of what they had only half understood; without referring to and duly allowing for the difference of soil and of climate; the difference of habits, the means at their disposal, or knowledge, &c., much to their own discomfiture and to that of their bailiffs or servants. I recollect a very intelligent old farmer to whom I was expatiating on the great advantage to country gentlemen of their being able to obtain knowledge derived from the great experience, and the unbounded means possessed by the owner of Holkham, who observed to me that "where it did good to one it did harm to 50, the country gentlemen going away without knowing how to apply what they have seen and but imperfectly understood, and the result being always disappointment and discontent as well as loss—always attributing the cause to the ignorance or obstinacy of their bailiffs or tenants."

You will see I am not blind to the faults on either side, but yet I think a little more concession on the part of the gardeners would have a good effect, and tend, in the first place, to make the master contented, to give him an interest in the garden; and in the next place the gardener himself might learn something, or if he followed any suggestion which was wrong, might in the end convince the master. Now, in my own case, I have a gardener half my age; I have for 40 years been fond of gardening, observed the success of others, and marked the progress of my own garden; read all that is usually read by those who take an interest in such matters; but I find it utterly impossible to make him really believe that I could make a suggestion or give a direction that was not founded in ignorance, and the result is that I cannot get an experiment tried or a particular course pursued with any hopes of having my directions fairly and honestly carried out, and I am on the eve of giving up all real interest in my garden, and shall end in being content to keep my temper, and put up with the usual routine of a very middling garden produce, be it of vegetables, fruit, or flowers, and thus lose a delightful occupation and amusement.

I have, however, omitted to state one other great failing of your "middling, conceited, half educated gardener," viz. always finding fault with the means and appliances at his disposal; this is the common fault of all bad artists. Your middling billiard-player is always very nice and dainty about his cue, nay even to the very chalk he uses. Messrs. Windsor and Newton would not sell such a stock of paints and brushes if it were not for the amateurs, nor would Mr. Manton sell nearly so many guns if only good sportsmen bought of him. I believe it was one of the wonders of Mr. Norman's garden at Bromley to see what was done by such small means. Harpagon tells his cook, anybody can dress a fine dinner with plenty of money, but the skill of the cook is shown in giving a grand dinner at a small cost. With your middling, conceited, gardener, there is always something wrong in the heating of the frames; the flues are not like Lord So-and-so's, there is not room enough for this, nor hands enough for that. With a range of some 60 or 80 feet of cold frames, I have seen half my stock drawn up through the winter because some of the pits were too deep, as if half a dozen slabs ripped down, and a few stakes, would not in half a day have saved my etiolated plants, and brought them, according to their stature, within 6 inches or a foot of the light, instead of lingering out the winter in a well. Do what you can for us masters. *Dodman.*

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

WHAT CAN HORTICULTURE DO FOR THE COMING YEAR?—We have now fairly entered on the year 1849, which turns its back on as many startling events as were ever compressed into the short space of 12 months, and is looking earnestly forward to their influence on the coming events of the future. The pressure of circumstances, and the increased competition among all classes at home, and the unsettled state of affairs abroad, are calculated to impart to all men anxiety of spirit and a thoughtful countenance. A wise man will seek to dissipate these forebodings of evil, and to bring all the suggestions of hope together which prudence will consent to encircle. It is a happy art which makes the dark cloud

"Turn forth its silver lining on the night,"

and we wish all our readers to become skilled in it. The elements of discontent and sorrow may be found everywhere; but so may those of a reasonable happiness.

Frost now locks the earth in its iron embrace. The lingering flowers of autumn, indulged with a prolonged existence, are dead. The bright shining of the sun seems only to mock the desolation, as its beams fall aslant on those productions which so lately rejoiced in their warmth, but now receive no benefit from them. But how brief is this triumph of cold destined to be, and at the same time how beneficial! Every man who loves his garden will hail the rule of the northern King, by which the soil is to become pulverised and mellowed, and rendered so fit for future operations. While this work is being so surely, though silently performed, let us exchange active labour for meditation, and endeavour to ascertain what Horticulture may do for 1849; yea, what it will be sure to accomplish. We would accompany the song "God speed the plough," with one entreating the same blessings for the spade. We may be thought enthusiasts, but we know we are reasonable in our anticipations of blessings from the love and culture of Nature, and if it is wise to drive dull care away, nothing can more effectually do so, of a semi-corporeal character, than gardening.

Whatever changes may take place in the modes of governing the world, in fashions, or in the artificial tastes of society, of one thing we are sure, that the earth must be cultivated, and that we shall always be more dependent on that art than on any other. But an increased and increasing population will render it annually more necessary to take advantage of human ingenuity and skill to get from the earth the greatest produce of the best quality, in return for the smallest outlay of money and labour. Now in helping to solve this problem, we have often affirmed that the gardener has much to do. The man who is able to grow more in his garden than his neighbours, possesses so far the secret of national wealth and happiness, and should hasten to communicate it to others. The year 1849, like its predecessors, will bear its part in eliciting the wealth of the ground by the applications of science, and we hope in an increased ratio. If we cannot yet "break swords into ploughshares and spears into pruning-hooks," we can at least cause the operations of the one class of instruments to be as active as those of the other, and we hope to steal a march upon them. If we cannot drive discord from the world, we can nevertheless transfer its energies and activity, and skill, to the arts of peace, until men have become weary of wasting, and find ready to their hands a terrestrial paradise, whose productions have taken root and flourished, in proportion as their desolating propensities have grown old and decayed. May 1849 take rapid strides in this march to a regenerated world.

But how many homes will be made more happy, and how many individual minds be relieved of some of their burdens by the horticultural labours of 1849! There may be speculation in the views expressed in the preceding paragraph, but we are sure there is none in this. From the outstretched hand of the little one seeking to pluck the flower, to the smile of the aged pilgrim who goes out in sunny days to smell the fragrance and gaze upon the beauty of the garden, there will be one expression among thousands of all classes, of gratitude to God for having so magnificently provided for us. False maxims of honour and religion may sour the affections, and misfortune may make us prematurely grey; but the enamelled mosaic work of Nature presents truth to us in characters too attractive to be spurned, and too eloquent to be unlistened to. Often is the heart prevented from becoming hard by the open countenance and artless prattle of a little child; and equally often are lessons of wisdom taught by the calm beauty of trees and flowers. There is yet hope for the world while such pursuits as bring men in contact with these ameliorating influences are becoming increasingly popular. *H. B.*

Home Correspondence.

Culture of Lælias.—In the following statement I shall endeavour to give the best method of cultivating these delightful plants, which no Orchid house should be without, for even in a limited collection one species or another may be had in flower for two months at this dull season of the year. I will begin with Lælia majalis, which I have flowered more successfully, perhaps, than some of my neighbours. Its flowers are very large and beautiful, and they remain in perfection four or five weeks, if kept in the shade. It dislikes a close and strong heat; about 70° is sufficient for it, even during the time of its most vigorous growth. It should be hung up where it can receive a little air daily; during rest it should be kept quite cool, and should receive but little water; the temperature then should be from 50° to 60°. During the period of growth, water well both root and top, and keep the atmosphere moist. During flowering time dispense with syringing, and the temperature should then be from 60° to 70°. Do not expose it to much cold at any stage of its existence, or it will at once show signs of suffering. It appears to succeed best in an open, rough, wooden basket, filled with sphagnum and potsherds; it also grows freely on a block with a little sphagnum on it. Lælia anceps is a fine species, which remains in blossom four weeks, if kept in a cool house. I have a plant having six spikes of flowers from 3 to 4 feet long, and grow it on a block with sphagnum. Treat it as the first-mentioned species. I have Lælia autumnalis, with eight spikes of beautiful flowers open on it at present. I grow this on a rough wooden basket, filled with sphagnum and potsherds. I tie the plant round the top of the basket. It also succeeds on a block. Lælia acuminata and albida, likewise, do well on blocks, with sphagnum; Lælia superbiens, a noble species, succeeds under similar treatment. Cinnabarina is very distinct, and keeps in blossom a long time. L. flava is also a beautiful yellow. I grow these in pots half filled with potsherds, over which I place an inch of sphagnum moss; I then fill the pot with peat in pieces as big as a hen's egg, mixing them with potsherds. The less water given during the season of rest the stronger will be the growth, and the more freely the plants will flower, provided the roots are kept fresh and alive. Plants on logs, especially those without moss, require, as might be expected, more water than those in pots or baskets. I water when growing freely as often as twice a day during sunny weather; when very dry I take the log down and dip it over-head, thus more effectually wetting it. Rain or pond-water is the best to water with, and it is absolutely necessary that it should be nearly as warm as the air of the house in which the plants are kept. I grow these latter-named species in the same temperature as majalis. I find them to do best in a cool house. *B. S. Williams, gr. to C. B. Warner, Esq., Hoddesdon, Herts, Dec.* 19.

Plantago Psyllium was found near Chelmsford by the late Alfred Greenwood, Esq., in the year 1846; so that I trust you will agree that the discovery of this plant belongs to him. In a letter of this lamented gentleman's, now before me, he says: Centaurea solstitialis was abundant with the above Plantago Psyllium. Probably one has as much claim to be considered British as the other. *John Ansell, Chislehurst, Kent, Jan.* 1.

Boiled Salads.—I think you have not followed up your plan of giving receipts for different vegetables so much as you ought to have done. Now I find most of my guests eat boiled salads, whilst there are many who will not (whether in fear of cholera, or for some good dyspeptic reasons) eat a raw salad; and yet I do not at other tables, three times in a year, see a boiled

salad. The best materials are boiled Celery, Cardoons, Jerusalem Artichokes, Artichoke bottoms, Broccoli, Cauliflower, Seakale, roasted Onions, and Beet-root, white and red; any of these (so as the roasted Onion and Beet are of the number) are sure to make a good salad. The vegetables should be quite cold and the dressing should be as for a common salad, viz., oil, vinegar, pepper, cream, and salt, and always a little sugar, but no mustard. Mind, the cream is not to be a substitute for oil, but used as an auxiliary; to make the dish very savoury, a chopped anchovy may be added, or a little cold fish. Cod, turbot, sole, lobster, or crab is a great addition. Cold boiled Seakale alone, with only oil, vinegar, pepper, and salt, makes a capital salad; and those who have not eaten this will be surprised to find how much it resembles crab. I have not mentioned cold Potatoes, so much eaten by the French; it, requires long habit, or a very accommodating stomach to bear a dose of cold Potatoes. I may add that a table spoonful of claret, or light Burgundy, added to the vinegar, is a great improvement, especially now that all our vinegar is that detestable compound called distilled vinegar. The French do not grind their pepper fine, as we do, but merely bruise it; and this gives a better flavour. I believe it is sold at some of the oil shops, under the name of cencapé. *Dodman.*

Emigration.—At the depôt *conform strictly to the Regulations.* Look to your clothes and provide yourself with pieces for the repairs of your different garments, and abundance of needles, thread, buttons of various sorts, hooks and eyes, strong tape, and every little thing of the kind that will be suggested to your mind from previous wants. Get some common canvas tarred and dried, and then secured with broad-headed nails over your boxes to make them waterproof. I have known many a box of clothes spoiled for want of a precaution of this kind. Having attended to all these things, we will consider the day of embarkation to have arrived. At first everything will appear to you in the greatest disorder, and the arrangements for your sleeping, &c. will very likely look extremely uninviting, suppose I say miserable. Do not be disheartened; out of all this apparent confusion will spring the greatest order and regularity if you are in a well or even ordinarily appointed ship, and strange as it may appear, I will engage that you shall not leave that vessel at the end of the voyage, without a feeling akin to that of leaving a home. All the crowding and smallness of space allotted to each individual, forces men into the adoption of numberless little contrivances for convenience and comfort which are useful in after colonial life, and the inconveniences attendant on a voyage have the beneficial effect of preparing them for the life they are to enter upon on landing. Once aboard you must begin and fasten everything tightly upright, let nothing be loose; in a short time all will be subjected to pitching, rolling, going first on one side then on another, so that if things are not secured whilst the vessel is in harbour you will be sorry for it. Strange noises and actions, unaccountable bustle in the getting things and persons aboard and in their places will be succeeded by lifting the anchor, loosing the sails, and a transfer of the ship from the still waters of the harbour to the restless waves of the ocean. Expect to be sea-sick, and to wonder what could have induced you to leave the shore, and all its comforts. You will in that moment forget all former troubles, and be ready to exchange your lot at sea for that of the most miserable on shore. I'll give you a few lines to amuse yourself with in such circumstances:

"Oh there's Paddy O'Blarney and two or three more,
I'll bother them nicely when I get ashore,
Bad luck to them all if they didn't tell me,
I'd be making a fortune by common trade,
And sing Tarry I day, &c."

You may include me if you like among the "two or three more." But here's comfort for you. This sea sickness will not last long, and having thrown overboard all your 'long-shore swash you will be ready, if nothing better offers, for a cut at a jackass with a bamper of greens on his back. By the time you are getting your sea legs aboard, you will find the ship getting into order. Now order on board ship is indispensable, and must be maintained at any cost, and remember your comfort is as much dependant upon it as anyone's. Therefore obey all instructions, not only implicitly but with alacrity. Be among the first to get your bedding up on deck when ordered. Attend with punctuality at the serving out of provisions, water, &c. Have your food always ready for the cook at the appointed time. Take an interest in the cleaning operations, in which you will have to take a part. Let the officers of the ship have your zealous co-operation in this service; never an agreeable one to them. Be ready with a pull here, and a helping hand there. Let Jack see that if you cannot help him aloft you will do so below, at the pump if necessary, at coiling down ropes, and other little labours you are equal to. A sailor is very quick at finding out a willing hand, and is always ready to repay it in his way; and there is much information useful to an emigrant that may be picked up at sea. I need not enumerate the particulars, but you will find it if it is sought for in the daily occupations on board ship. I desire most earnestly to impress upon you that there is nothing more necessary on board ship than a stock of good humour, and a determination to make light of every little difficulty; *Rough and Ready.**

The Weather: Rain.—Mr. Booth's account of the weather in Cornwall for 1848, I am afraid, agrees but too well with that in many counties in England. In Sussex the depth of rain over that of former years has been considerable, and the great absence of sunshine, during most part of the spring, summer, and autumn, has had an unfavourable effect on vegetation in general; but I apprehend the worst effects will be felt next year in the shape of badly ripened wood, more especially in Peaches, Apricots, and out-of-door Figs; and if such a severe winter follows as we had in 1837 8, gardeners would do well to look to their half-hardy and such plants as generally resist our ordinary winters out-of-doors with little protection. I do not remember having seen plants in a condition less able to bear a sharp frost than they are this season, arising from the unripe state of last summer's shoots. Mr. Booth, however, does not give the quantity of rain, but only the number of days on which rain fell in Cornwall in 1848. I, therefore, add below the depth of rain which has fallen at this place during each month of these last three years:

	1846.	1847.	1848.
	Inches.	Inches.	Inches
January	5·50	2·37	2·10
February	2·30	1·62	5·07
March	2·16	1·22	5·94
April	2·13	1·14	3·55
May	2·07	2·29	0·41
June	1·12	1·95	4·65
July	2·34	0·71	1·66
August	4·39	2·62	4·88
September	3·16	1·70	5·83
October	6·61	2·75	1·95
November	2·67	2·12	2·25
December	2·16	4·58	4·01
	36·61	24·75	44·68

A. D., Dale-park, near Arundel.

Cardoons.—About the 24th of May form a trench, as for Celery. Sow in the trench (not transplant), when up, thin to 18 inches apart; earth up as they grow. This plan has never failed to produce me a good crop; *A Devonian, Torquay.*

Low Night Temperature.—The following statement may appear somewhat incredible, but it is nevertheless true. About four years ago this next March, a neighbouring gardener (of the generally useful class) came to me early one morning to know how to act, as the thermometer in his house, containing a collection of plants and Vines, the latter nearly at flowering, stood three degrees below the freezing point. On asking him the reason of his allowing it to get so low, he said, that his master had a party the night previous, that he had to put on livery and assist to wait at table, and that he did not make his fire up, for fear of spoiling his smart clothes (I am persuaded this is not an exceptional case). As the morning was likely to be a sunny one, I told him to cover his house with mats, and to give a good syringing with cold water. A few weeks afterwards his master came to thank me for my advice; no injury was done, the Vines set well and swelled off a nice crop of Grapes. This is, however, certainly an extreme case. *J. Marshall, Shelton.* [Excellent advice].

Fuchsia serratifolia.—I enclose a flower of F. serratifolia, which has been planted out here in a border, having a western aspect, since last May. It has had no protection except a reed covering on the top of the wall, which is 10 feet high. The late frosts did not seem to affect it in the least, while F. fulgens beside it was completely cut up. The thermometer here has not been lower than 29°. I have also "Moore's Emperor," Scarlet Geranium out of doors in bloom, a Pear tree, Mezereum, Violets, Primroses, Cinerarias, together with many other hardy flowers. *S. Topping, Dartmouth, Devon, Dec.* 27.

Potatoes, Cases of Escape from Disease.—Although the failure of the Potato crop has been general in this county (Cavan), yet I hear of some few places where good and sound Potatoes have been grown. Two brothers, T. and P. S., took an upland farm in this county. In Feb., 1846, they broke up a few acres of a wild tract covered with Heather, they burned the clods, and planted Potatoes in lazy beds, *i. e.*, beds 4 feet wide, with a trench of about 18 inches deep cut between each to let off the water. They had excellent Potatoes, not one rotten. This year they did the same with a similar result. The kinds they planted were Toby's Cups and Lumpers, and the seed was put in before April. A man called Sheridan, in the same neighbourhood, had a tract of red bog in his farm, *i. e.*, bog covered with Heath. He levelled 4 acres for the purpose of spreading turf, which he purposed to cut and sell. The agent of the estate interfered and prevented him from cutting and selling the turbary. He burned the surface, planted Potatoes, and had an excellent crop, without a bad Potato. The kinds sown were Cups and Yellowlegs. A tenant of my own brought me through his fields, to show me how much his Potatoes were affected. In the centre of the field arose a knoll, formerly covered with Heath, the soil peaty. I observed that probably the best Potatoes in the field grew there. He seemed surprised, and said I was right, that the Potatoes there were all sound, and that he was keeping them for seed. Mr. J. C., of Cavan, had two acres of sound Potatoes. The kinds (Cups and Lumpers), were planted in the middle of March, in a moory bottom, *i. e.*, of black peaty earth; the manure, horse and cow-dung mixed. In some parts of the same field, where heavy clay was mixed with the peat, the crop was defective. F. M., of C., had excellent Potatoes planted in peat (he calls it reclaimed moor) with common farm manure. They were planted in the early part of March, the kinds being the old Cup and Cork Red. On the road from Sligo to Bundoran there were excellent Potatoes grown in peat, and also in the part [illegible] called blowing sand, having been driven up by the wind from the shore of the Atlantic), with farm manure. In the county of Tyrone, among the Munterloney Mountains, round Potatoes were grown in the peat where it was dry. I believe all were planted whole, or at least the majority of them. These are facts carefully ascertained and may be relied on. *Cavanensis.* [They are in exact accordance with other instances, of which we shall soon have to render an account.]

* *Erratum.*—In my last, read "*looking* about," for "*lurking* about."

Reviews.

The Genera of the Plants of the United States; Illustrated by Figures and Analyses from Nature. By Isaac Sprague. *Superintended*, &c., by Asa Gray. Vol. 1. 8vo. pp. 230. 100 Plates. Wiley. To the student of botany this will be one of the most welcome books that has lately issued from the press. Each genus of plants forms the entire subject of one or two plates, in which is included every detail that is essential to a correct understanding of the generic character. The general aspect, the parts of the flower, the fruit, the seed, and in many cases diagrams illustrating the relative position of the organs, are given in each instance. The whole is illustrated by scientific descriptions and systematical criticism by Dr Asa Gray, the first of the American systematical botanists.

Mr. Sprague, by whom the plates are drawn, has executed his task not only with much ability, but with great taste, and his engraver has seconded him admirably. In this country we have no extensive work in which so much science and artistic skill are combined; nor, so far as we can judge from a cursory examination of the details, has accuracy been in any degree sacrificed to appearance; both are harmoniously blended. The figures appear moreover to be in all cases original. We would however suggest to Mr. Sprague that it is desirable to direct his attention very exactly in all cases to the *true* nature of placentation, which has been overlooked in Hypericum; in consequence of which Dr. Gray has been led into some remarks upon Parnassia, which upon further consideration will be found to require modification.

As we have already stated, the letter press is furnished by Dr. Asa Gray, and we have no doubt that it will add to his fame as an exact observer. For originality in this respect there is little room. We find however here and there scraps of criticism which deserve attention, although we are far from agreeing with the learned author in all his systematical views; but this is not the place for criticising criticisms.

It is proposed to complete the work in ten volumes, and if this is effected its importance in a systematical point of view can hardly be overrated. In the meanwhile no systematical botanist can dispense with it.

The author of *Glenny's Garden Almanack* would probably think it a sorry compliment if we were to say that his is the best of the garden almanacks. Nor will we expose him to the injustice of such a statement, because in reality his little book is this year a good one. It was much improved last year; and experience has enabled him to render it still more generally serviceable.

Calendar of Operations.

(For the ensuing week.)

In opening our Calendar for a new year, it is perhaps necessary to state, that although it is our wish (and it shall be our constant aim) to render it as instructive and interesting as possible, yet we do not expect that these clever practical gardeners who stand at the head of their profession will derive any considerable amount of benefit from our labours. It may sometimes perchance remind them of a needful operation, and for the rest we trust they will be charitable enough to remember that all gardeners are not so well versed in the practical part of their profession as they are. Calendar writing may be compared to a set of bells, whose changes have been so often rung, from the days of Abercrombie to our own, that we doubt much if a single chime is left for us. Entire originality is out of the question, but we shall nevertheless try to furnish such hints as are calculated to be of service at least to the tyro and the amateur.

GENERAL REMARKS.

At this season of the year, one of the most important points which will need attention in almost every department is protection from frost. Any tender shrubs or vegetables should be protected by mulching: half decayed leaves or old tan answer well for this purpose, and are much neater in appearance than litter, which, however, is very useful when other things cannot be procured. In protecting pits and frames, it is of great importance to keep everything as dry as possible. For covering, use shutters in preference to mats, if they are at all convenient; they are better in many respects, particularly in throwing off the wet, and as they do not lie close to the glass the interval is occupied by a stratum of atmospheric air, which, as well as the wood, acts as a non-conductor of heat; they are more easily put off and on, and prevent in a great measure the breakage of glass, which in handling frozen mats with cold fingers is almost unavoidable, and although more expensive in the first outlay, the advantages here enumerated, added to their durability, will amply repay for their cost. It is frequently recommended to place a layer of straw or hay between the mats and the glass. It is, however, a clumsy method, and objectionable on account of its untidyness. When mats are used, it is

important that they should be perfectly dry, and to this end, when not in use, they should be spread out in the sun, or hung up in a warm shed.

PLANT DEPARTMENT.

Little can be done in this department at present, except in making active preparations for the future. Attention should now be paid to securing a stock of different kinds of soils for spring and summer use; these are much better if collected in frosty weather, as many obnoxious insects are at that time buried deep in the earth, for which reason that portion only should be removed which has been acted upon by the frost, the effects of which will have destroyed all animal life. A good stock of Orchid baskets should now be made. Of course every grower will please his own fancy, but no pattern gives us more general satisfaction than the hemispherical wire basket. These may be made of all sizes, and should be painted at once, that they may be ready for use whenever they are required. Watering at this time requires careful attention, and should be applied with the nicest discrimination; care being taken to avoid two very common faults, one of which is watering before a plant actually requires it; and the other is giving water in too small a quantity when it is really needed. When it has been carefully ascertained that a plant is in a fit state to receive water, enough should be given to moisten every part of the soil. Caution in the use of fire-heat during frosty weather is equally necessary: a high night temperature is, above all things, to be avoided. Stoves should range from 50° to 55° at night; intermediate houses, 40° to 50°; Geraniums and soft wooded greenhouse plants, 38° to 43°; New Holland house the same; Heath house, 32° to 38°. The day temperature should range from 5° to 15° higher. This is to be regulated entirely by the amount of light. The practised eye will detect many little alterations which may be made, such as removing to the warmer end of each house such plants as are a little more delicate in constitution than their neighbours, or which, from various causes, require a more favourable situation.

FLOWER GARDEN AND SHRUBBERIES.

Half hardy plants in pits and frames should have all the air which the weather will allow. In severe weather it is often necessary to keep them covered for days and even weeks; when this occurs take advantage of the first opening in the weather to admit daylight at least. this should be done cautiously at first by turning the mats down at the back. It is worth while to run a 2-inch hot water pipe through any pits or frames which are constructed in a substantial manner, if they be contiguous to any of the houses which are so heated. The expense is not great at first, and the benefits of the plan will be found an ample recompense, as it does away with the expense of mats or shutters, economises labour, and secures the advantage of daylight to the plants in the severest weather. Wherever this system is already adopted, care should be taken to prevent the heat from becoming too great by regulating the stop taps according to the state of the weather, and by tilting the lights at the back during the day. Take advantage of fine weather to remove all dead or decaying leaves and plants, lest they should contaminate their neighbours.

FORCING DEPARTMENT.

Pinery.—Fruiting pits 55° to 60° by night, 65° to 75° (or 85° by sun heat) during the day: bottom-heat 80°. Admit as much fresh air as possible, except when the wind is very keen. The day temperature, and the moisture, should be regulated by the clearness of the weather and the amount of air which can be admitted. Do not on any account allow the moisture to be in such abundance as to condense and run into the hearts of the plants. Successions need not be kept quite so high, although it is not necessary to keep them lower. *Vineries.*—In starting these, after washing the Vines, the glass, woodwork, and everything else about the house should be thoroughly cleansed, and painted if necessary. The hot water pipes should have a coat of boiled oil rubbed over them, which gives them the appearance of having been painted, while it more effectually prevents corrosion. If the outside border is not already secured, this should be done before the Vines are started. Unless the roots extend into the interior of the house, the border should be covered with 18 inches of fermenting material. All loose or exhausted soil should be scraped off the inside border as far as the roots, and replaced by a top dressing of charred turf, crushed bones, charcoal, and fresh horse droppings. Commence with a gentle heat of from 45° to 50° night temperature, and from 50° to 60° by day. The amount of moisture should be moderate at first, and increase gradually as the plants advance in growth. Syringe freely in fine weather. *Peach house.*—Outside roots should be protected by a straw thatch, which should throw the wet off into the drain in front of the border. If the buds are just swelling, maintain a temperature of about 50° by night, and sprinkle the trees several times a day in clear sunny weather. *Strawberries.*—Select some of the strongest, best rooted plants, and after examining the drainage and ascertaining that it is in an efficient state, they should be top dressed with a mixture of loam, well rotted dung, and fine charcoal, and plunged close to the glass in a mild bottom-heat, say 65°, with top heat 45° to 50°. *Melons.*—Seed of some approved early kind should now be sown, and a bed prepared.

HARDY FRUIT GARDEN.

Scions, for grafting, of choice fruit trees, should be secured and laid in under a north wall. Planting of fruit trees should be proceeded with, especially of the smaller fruits, as their buds will soon be swelling. It is well to be at some little pains in preparing the ground for the reception of Pears and other choice fruits; if the soil be deep and retentive, a stratum of ashes or some similar substance should be laid within 9 inches of the surface, to check the downward tendency of the roots in such soils. Loam from an old pasture, without manure, forms the best soil for the healthy and fruitful development of the Pear tree. Apricots, if not already protected, should be covered immediately; nothing is better than Spruce or Yew branches for this purpose, and these should be put on in sufficient quantity to defy the weather. The flower-buds of Apricots suffer much earlier than many suspect; if protection were given to them throughout the winter in cold damp situations, they would be found to repay the little additional trouble bestowed upon them.

KITCHEN GARDEN.

Advantage should be taken of the frosty mornings to wheel manure on to the ground, taking care to accommodate the dressing to the nature of the land and to the requirements of the crops which are to be grown. All the refuse from the gardens in the shape of weeds, hedge clippings, &c., if charred according to the directions given in former *Chronicles*, should now be applied to the stiffest ground you have. A crop of Early Kent Peas (or some other early sort), and Early Mazagan Beans, should be sown as soon as the ground is dry; and if carefully attended to, by mulching with old tan when up, and by protecting with Fir boughs on the windward side, they will generally produce a better crop than if sown in November, and, unless in very favourable localities, they will be quite as early. In sowing vegetable seeds, which are liable to be attacked by the mice, it will be found useful to sow chopped Furze or malt screenings in the drills. *Root house.*—Take advantage of wet weather to examine and remove any decayed or decaying roots. Adopt efficient measures for keeping the frost out. Make up a bed of Oak or Beech-leaves (sufficient to produce a gentle bottom heat) for early Potatoes. The Potatoes should be started in boxes of leaf-mould, and planted as soon as they have produced shoots an inch long; by taking this precaution, all gaps are prevented; they should be planted 9 inches apart and 6 inches deep, with 3 inches of soil between the sets and the bed of leaves. By planting them this depth at once, the trouble of earthing up is avoided; and an excellent opportunity is afforded of getting a crop of Radishes, which will be ready to draw before they are in the way of the Potatoes.

FLORISTS' FLOWERS.

So much depends on the weather at this season of the year, with regard to all out-door operations, that the amateur must be guided accordingly. At the moment we are writing (January 3), severe frost prevents much being done; but even now several points in the successful management of florists' flowers must not be overlooked. Of a truth they cannot flourish without proper food (compost), and there is no better time than the present for preparing, mixing, and turning the various soils. We have been in the habit for years of taking especial care that our compost heaps were well frozen through during winter; this we accomplished by removing the hard crust every morning, and thus exposing a fresh surface to the action of the weather; by this simple precaution, many insects, their eggs and larvae are destroyed, saving the amateur much after trouble. The great secret in the successful cultivation of florists' flowers, is regular and minute attention; if Auricula pots are not well drained, the soil becomes soddened, rot and death ensue. If the plant stands in the frame beneath a broken or cracked pane, drip speedily puts an end to the health of the plant, and eventually destroys it. If Ranunculus roots are kept in a damp place and contract mouldiness, it will be immaterial whether the cultivator plants them with the claws upward or downward, they will not make their appearance; and a hundred other things which we could enumerate must be attended to, if the amateur means to be a successful cultivator.

COTTAGERS' GARDEN.

Any patches of herbaceous plants which are too large, should be taken up, divided, and a small portion replanted. If they grew weakly last year, you may conclude the spot they have been growing upon is exhausted; it will be better, therefore, to replant them in another situation. By dividing your patches you will at the same time have an excellent opportunity of exchanging with your neighbours for some pretty or interesting plant which you do not possess. Sow a few Early Warwick Peas and Early Mazagan Beans on a warm slope; do not sow too thick; in the general way of sowing these crops one half of the plants spoil the others. To prevent the ravages of mice, sow a little chopped Gorse or Furze in the drills along with the seeds. Always purchase your seeds from a respectable shop, even if they cost you a few pence more, as that is of much less importance than running the risk of having an entire failure, either from the seed being bad or untrue to name.

State of the Weather near London, for the week ending Jan. 4, 1849, as observed at the Horticultural Gardens, Chiswick.

Dec. and Jan.	Moon's Age	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday [illegible]	7	30.180	30.116	44	30	37.0	N.	.00
Satur [illegible]	8	30.171	30.084	40	21	31.5	N.E.	.00
Sunday 31	9	30.138	30.110	40	30	35.0	N.E.	.01
Monday 1	10	30.179	30.114	38	19	28.0	E.	.00
Tues [illegible]	11	30.124	29.933	[illegible]	20	25.5	E.	.00
Wed 3	12	29.744	29.696	32	23	27.5	E.	.00
Thurs [illegible]	13	29.884	29.764	[illegible]	32	34.5	E.	.14
Average		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]

Dec. 29—Overcast throughout; slight frost at night.
— 30—Foggy, fine, foggy at night.
— 31—Foggy, hazy; slight rain in the evening.
Jan. 1—Overcast, hazy, overcast, frosty.
— 2—Clear, with sharp frost, bright sun; clear and frosty.
— 3—Frosty; dry haze; overcast, frosty.
— 4—Densely and uniformly overcast; rain.
Mean temperature of the week 6 deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Jan. 13, 1849.

Jan.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained	Greatest Quantity of Rain	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 7	40.6	30.3	36.4	6	0.21 in.	1	5	1	2	2	4	6	2
Mon. 8	38.0	30.1	34.2	4	[illegible]	[illegible]	2	7	2		7	1	1
Tues. 9	38.9	31.4	35.2	6	0.20	1	4	1	3	3	4	3	1
Wed. 10	40.3	29.4	34.9	8	[illegible]	1	5	3	1	4	2	2	2
Thurs. 11	40.3	[illegible]	35.0	12	0.88	3	1	3	—	6	6	1	1
Friday 12	41.0	29.7	35.3	10	0.76	2	4	2	2	5	5	2	1
Satur. 13	42.0	32.6	37.3	13	0.29	1	2	4	2	5	3	3	1

The highest temperature during the above period occurred on the 7th, 1845—therm. 54 deg.; and the lowest on the 7th and 8th, 1841—therm. 6 deg.

MONTHLY DEPTH OF RAIN, in inches and hundred parts of an inch, which fell at Chiswick in the years 1841, 1842, 1843, 1844, 1845, 1846, 1847, and 1848.

	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.
	In.	In.	In.	In.	In.	In.	In.	In.
Jan. ..	2.60	1.06	1.33	2.25	2.97	2.85	1.31	1.16
Feb. ..	0.76	1.32	2.35	2.27	0.93	1.47	0.94	3.12
March ..	1.32	1.81	0.47	2.44	1.25	1.09	0.41	3.05
April ..	1.58	0.15	1.62	0.33	0.95	3.93	0.92	3.06
May ..	2.16	1.73	5.26	0.25	2.89	1.35	1.59	0.28
June ..	2.45	1.58	1.62	0.97	1.36	0.80	1.31	3.20
July ..	3.56	1.52	1.67	2.10	2.31	1.78	0.79	2.21
August	2.69	2.81	3.28	1.84	2.79	1.50	1.50	4.70
Sept. ..	3.71	3.39	0.98	1.31	1.77	1.76	1.66	2.20
Oct. ...	4.61	1.71	4.19	1.13	1.39	5.51	1.75	2.93
Nov. ..	3.41	1.47	2.13	3.06	2.11	1.43	2.26	0.90
Dec. ..	2.12	0.76	0.58	0.39	2.61	1.21	1.81	2.03
Annual amount	30.97	22.31	25.48	21.34	23.33	27.71	16.25	28.84

The average annual amount for the above eight years is 24 inches, 53 hundredths. 1847 was drier than any year in the present century.

Notices to Correspondents.

ALMANACKS: *A Constant Reader* must excuse our entering into any examination of astronomical mistakes. It is not our province. The instance to which he refers is probably a misprint.

BRITISH WINE: *J T*. We have received the samples, and will give you an opinion when we have tasted them.

CUCUMBERS: *J B H*. These may be grown in the way you mention, as detailed in the "Annual Register" of 1768, for the growth of Melons, that is, wholly in decayed bark. You may, however, rest assured the modern practice is far superior.‖

FRUITS: *H*. The small early Grape you describe is probably the Black Cluster.§

INSECTS: *N N W*. The insects found in your forcing pit are a minute species of Julus, which will injure your plants, especially weakly ones, if left unchecked. We would advise the plants in pots to be removed into fresh earth, and the ground to be then saturated with a weak solution of corrosive sublimate.—*W—I P*. The insects in your Mushroom bed are the larvae or grubs of a fungivorous gnat, which would probably be dislodged and destroyed by a solution of tobacco and quassia. Will you be so good as to send us some more of the grubs with some of the plants, so that we may see their mode of injuring the Mushrooms. *R*

KITCHEN GARDEN: *A Subscriber*. To dig into the ground all the decayed Cabbage leaves, Carrot and Parsnip tops, Celery tops, and other refuse of every description, and to burn all the Pea and Bean haulm on the several spots where they grew, thus returning to the soil part of what they drew from it, is not upon the whole so good a plan as to remove everything at once to the dung-heap, to be there all rotted down together, provided the dung heap is skilfully managed. It is rather late, but not too late for top-dressing a lawn with soot. April is the most proper month for topping and pruning Laurels and other Evergreens.

LÆLIA: *F B*. Your Lælia seems to be suffering from cold and damp combined. When these plants are growing fast, they will not bear a temperature of 45° with damp.

LAWNS: *W*. Cannot you feed your lawn with sheep? Lime will be a useful dressing if the drains draw well; but in the absence of the latter, little improvement can be expected. It would be as well to harrow it well in damp weather, and to throw over it about 4 lbs. an acre of a mixture of white Clover and black Medick (Medicago lupulina), rolling them in.

MARKET GARDENS: *A B C*. We fear you will never be able to cultivate profitably 6 acres of very poor land for a market garden, which requires to be extremely rich. If not too late you had better attempt something more feasible. If you plant Potatoes, lose no time about it, and employ no manure; this will give you a small crop, but it will increase their chance of escaping disease. Since you ask us for advice, we say to you—if you have any capital, employ it in a more beneficial manner. If you have no capital except your labour, why then you may try the experiment. At all events mind that your soil is dug deep and well drained, not by paltry surface gutters, but with good ground drains.

NAMES OF PLANTS: *S H*. Nephrolepis pectinata. *S.—P B*. 1, Pilumna laxa; 2, Angraecum virens; 3, Laelia furfuracea; 4, Laelia erubescens; 5, Odontoglossum ixiodes, a great rarity and curiosity, which we never saw alive before.—*J D*. Certainly not Phalaenopsis grandiflora, which is figured in our columns for 1848, p. 39. It is a variety of P. amabilis.

POLLEN: *Simplex*. Preserve it perfectly dry in little paper cases in a dry place, and moisten it when you want to examine it. If you can keep the paper cases in a tin box, so much the better.

POULTRY: *S S*. It is difficult to keep poultry out of a garden once they have found a way in. Try what can be done by means of the wire netting advertised at p. 871 of our last Number.‡

ROSES IN POTS: *G R*. All Roses like a rich soil, which should be made light for the delicate rooting varieties, and more tenacious for the robust hardy kinds. Mr. Paul, in his "Rose Garden," says, "to form a light soil, procure one barrow of seasoned turfy loam, half a barrow of well decomposed stable manure, half a barrow of leaf mould and silver sand in proportion to the texture of the loam, which will in no case require more than one-fourth of its own bulk. The heavy soil may be composed of one barrow of stiff turfy loam, one barrow of night-soil that has been mixed with loam and laid by for a year, half a barrow of leaf mould, or well pulverised manure and sand, as before recommended." A little burnt earth added to both composts will improve them. These materials should be thrown together, and frequently turned for at least three months before they are used.‡

MISC.: *W H C*. Seed of Juniperus virginiana will vegetate the first season of sowing.‡—*J T*. Your Pelargonium leaves are attacked by "the spot," which is caused by cold and damp. The spot on the Camellia leaf, which is otherwise healthy, is of little consequence. It has probably been occasioned by drip.‡

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Manufactured solely by MESSRS. STRETTON, HAYWARD and Co.,
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MESSRS. STRETTON, HAYWARD AND Co., have entered into an arrangement with Dr. RYAN, Professor of Chemistry at the Royal Polytechnic Institution, London, whose exclusive services are retained to superintend the manufacture of Chemical Manures, upon entirely new and scientific principles, based upon the analysis of soils and the production of fertilizing agents suited to their various properties and the nature of the desired crops. In submitting Dr. Ryan's latest discoveries to agriculturists, Messrs. STRETTON, HAYWARD, and Co. can with the utmost confidence state, that their Manures will, after the severest test, be found to possess far greater fertilizing powers than any hitherto offered to the public, which, together with their cheapness (being 40 per cent. under the price of Peruvian Guano) must entirely supersede all other Manures. By the use of these fertilizers those crops which so frequently suffer from the ravages of the fly and other insects are in a great measure protected. Horticulturists are particularly recommended to use "Dr. Ryan's Garden Manures" for general purposes. Sent, carriage free, to any part of the kingdom, at

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For Wheat, Barley, Oats, Hops, or any grain or seed .. .. .. 6 10 0 ,,
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Nitrate of Soda, Gypsum, Rough Bones, Sulphuric Acid, &c., tested by their Chemist at lowest market prices.
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Peruvian Guano, direct from Importers' stores—Fishery and Agricultural Salt—Gypsum for Clover—Soda Ash for destroying wireworm, and every other Artificial Manure.

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The Agricultural Gazette.
SATURDAY, JANUARY 6, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY,	Jan.	9—	Agricultural Society of England.
THURSDAY,	—	11—	Agricultural Imp. Society of Ireland.
TUESDAY,	—	16—	Agricultural Society of England.
THURSDAY,	—	18—	Agricultural Imp. Society of Ireland.

FARMERS' CLUBS. Jan. 8, Carlton, Yoxford, Kelley, Great Oakley, W. Market. Jan. 10, Harleston.—Jan. 11, Wadebridge.

THAT all men, in all ages, have shewn the same proneness to exaggerate the importance of their own epoch, is a remark of which each annalist in turn, both ancient and modern, has admitted the general truth, in order to vindicate with the better grace its particular and excepted application to his own time. Year after year the journalist, on a smaller scale, is similarly illuded, and easily falls, dragging his readers with him into the same sincere persuasion. The events of the year 'last past,' and the prospects of the coming one, are annually dressed in the deep rich colours of a foreground, and the philosophic reader, admonished by repetition becomes wary of "high-sounding epithets and splendid superlatives" anent the surpassing goodness or badness, greatness or littleness, of present things and present people.

Perhaps the consciousness of this human tendency, like the cry of 'Wolf!' when there was no wolf, may be felt by many a writer of the present moment to have reached its acme,—to present now in its most vexatious form, the embarrassment of an exhausted vocabulary, at the moment of utmost need. Perhaps the result may be that the tongue and spirit of commonplace being hushed, as it mostly is, by realities, people will consent to wait, in expressive silence for a while, until the vantage-ground of after knowledge shall enable them to view with better effect the gigantic proportions of a year like that just closed, which defies comparison or contrast with any other period of equal length in the history of the human race.

To the jaded, or startled, politician, this course might well be recommended. To his comprehensive yet bewildered view, the crash of empires, the wholesale overthrow of dynasties established by successful wars and treaties, and consolidated by an unprecedented duration of peace and advancing civilization, the rage and roar of a whole continent set on fire by a single—apparently accidental, spark—offers at present a vast and complicated problem unripe for solution, unsafe even for commentary. But happily the affairs of the world are susceptible of division; and as in social life each unit has his separate part to perform and look to, so in the wider phase of events, it is both allowable and necessary in practice to select that particular topic, to choose that point of view, whence we may trace through all the involution of the most tangled maze that thread whose color we recognise as exclusively our own.

Let us ask them what has been the state of *Agriculture* during the past year—what are its prospects for the coming one?

Never perhaps has the question been asked, when a full and fair consideration of circumstances lying outside the immediate pale of the subject, was more imperatively requisite to its useful consideration, and to the understanding of the answer. On the one hand, and open to view at the first sight, we look back upon a year of moderate, and latterly of low, prices; upon a year throughout which the field operations of the Farmer have had to contend with an unmitigated and almost unexampled continuance of trying weather, the clay soils baked by the premature and only summer of May, the lighter and more forward soils, especially in the south, caught by drenching and continued rains at Harvest, and with the exception of a fine fortnight in November, the seed-time indefinitely postponed by constant rains throughout the latter part of the year. Add to this an enormous influx of foreign corn, increased by political causes, to a degree of which we have not yet seen the full meaning, or the reaction, a yield whose deficiency is a general and growing outcry, and the immediate prospect of an ingress of the foreign produce to our market, without even the mild tribute of a low revenue duty. Throw all these elements of complaint together, and you have at once the melancholy view—the north side aspect—of the subject; a view which, it must be owned, some minds do naturally delight to take; and it is right they should, for to any impartial observer it is evident that the balance of Truth and Fairness is preserved not so much by the impartiality or liberal sentiments of every class of thinkers as through the equipoise arising out of opinions diametrically opposed.

Let us then at least hold the balance fairly, which can only be done by a full and equal statement of the other side of the question. This task is the more difficult in the latter case, because in the former one we have had to deal with the Past which can be looked upon at one view, without any effort, with present facts and appearances which are open and at hand to every observer; while in this we have to deal with the Future, which is hidden, with indications which the most careless or interested objector can challenge without difficulty, and with arguments which like an under-current lie beneath that superficial stream which bears along with it all hasty and erroneous views and all judgments which can be formed without the cost of labour, or the pause of reflection.

To shorten our task, we will not waste much time upon the weather and the seasons. Grumblers as we are by very trade and reputation, perhaps there is no class of men who, in reality, have a deeper or more experienced reliance on that inscrutable but perfect Wisdom which "giveth rain upon the earth, and sendeth waters," than those whose part it is to wait upon the elements in almost every act of their calling, and to be "in league with the very stones of the field." Perhaps we may have something yet to learn in the matter of outward language and expression upon this topic,—much, unquestionably, on the laws by which even the winds themselves are governed;—but, of all mankind the farmer has had too sure experience of the *order* and resulting good, which pervades the most inexplicable extremes of atmospheric phenomena to hazard the insane folly of one serious complaint of that which he knows to be at once unchangeable, and impossible to change for the better.

But not so with human legislation. Here we have a sort of handywork to deal with, of which Time, the sure and faithful critic, is not always the approver. And never perhaps did the bungling operation of human laws, and the defect of legislative foresight, exhibit themselves in a more disastrous shape than in the two months we now look back upon, and in the prospect of the two to come. We are far from wishing to lay an undue stress upon the question of Prices; we need not to be told that many other elements determine the profit upon an article, besides the price it fetches in the market. But when through sheer want of that perception of cause and effect which any corn dealer or factor could have foreshewn and remedied, the price of an article is forced artificially *below its real value*, it is fair, though all too late, to point out the mischievous error that occasioned it.

During the past Autumn, down to the end of October, when Trade was at its lowest point of depression, with Anarchy abroad, reduced Exports, and the Share market in a state of panic threatening ruin, and under the importation of a million of quarters of foreign grain, taken into consumption as fast as it arrived, the Corn market alone, though not high, was comparatively firm and healthy. *What ails it now?* With Trade in every branch revived and active to an extent during the last month unprecedented at the close of the year, with an improved foreign demand, and more settled and encouraging tidings abroad, with a share market of recovered health and tone, with a strong Bank,—with the increasing evidence of a most deficient yield from the last harvest, and a seed-time which gives a poor prospect of the next—with every element of a firm corn market, and many of a dear one—*What ails it now?*

The answer, of course, is ready, and loud. "Foreign supplies!" says one. "Free Importation in February" shouts another. Easily answered, no doubt; but let us look a little closer; for since the end of October,—in which a million of quarters of foreign grain were entered for consumption, scarcely causing the market to flinch,—the foreign supplies have been generally bonded; and "the ides of" February are not yet come. The Market is ill then, not of a present disease, but of that most impracticable malady, which has puzzled all the doctors in the world—*Nervous Apprehension.*

Bonded corn accumulating, to be entered presently at a nominal duty! Why this is the old story—the shade of Banquo come back again! Will it "never be laid i' the earth?" For twelve months ending with October, five of them with no duty at all, and the rest under a very low one, we have entered *and consumed* a larger amount of foreign corn than had ever been prophecied or dreamt of by the most desperate alarmist, yet with a market-price of unexampled steadiness throughout; but no sooner does the dreaded '1st of February 1849' come looming within a three months' view, than every Miller, every Baker stops his transactions, buys only on the nearest scale, from hand to mouth: down go the prices accordingly—the needy seller yields to the fall, and down they then go lower still; as they go down *the duty goes up*, the Importer will not pay it, and grumbles into bond, looking hard *for February:*—no one can sell what little there is on sale, for no one will buy—*till February*, even the most experienced trade calculation itself against every assurance of reason, every evidence of past facts, wavers, loses self-reliance, and—gives way at last, to the pressure of numbers not arguments, and postpones all speculation—*till February*, quotations become nominal,—the trade is paralysed. Mr. HEWITT DAVIS in an audible voice

"Grows a growl and groans a groan"

about "Farmers' Prospects;" and—saving one solitary epistle, from 'a Corn dealer' in the *Mark Lane Express* written against his own interest, and which deserves a statue of brass and letters of gold,—it is agreed on all hands to make a clean sweep of the flour bin, and live upon stale loaves—*till February.*

And all this, with strong indications of comparative dearness surrounding us at home, and impending on us from abroad: the Baltic ports closed and in general with firm quotations at the last dates; the prices in the Black Sea and Mediterranean relatively too high to allow any margin for profit on export to this country; France threatening to redeem with interest in the spring the Flour she was obliged to pawn for ready money in the autumn; America entering upon a sort of metallic revolution which—whatever the new exchange may be in—bids fair to close at any rate the account of Corn for Gold with England; all this, with the before mentioned causes of present and future deficiency at home present to our apprehensions.

What a small amount of legislative foresight would seem to have been requisite, at the time of the composition of the present scale of duty in March last, to prevent the purely factitious state of things above described, and which was as sure to have happened, as it is sure that the barometer of a market flutters and sinks more under an apprehension than it ever does under a present fact of twice the magnitude. He must have studied its phenomena to little purpose, who does not see that it is not *Importation* but *enforced Accumulation* which has always operated with most depressing influence upon that fine-fibred sensitiveness and far prescience, which when acting healthily and naturally is the true security against all extremes of fluctuation. It is a lesson which the experience of three-and-thirty years has hitherto vainly taught—in the matter of Corn—to a nation which in every other article of produce or manufacture is the best acquainted with it of any upon earth; but this sometime paradox is now receiving its last proof, and the time is close at hand that will attest it. *H.*

OUR readers will find in another page that we have considerably amplified our report of the CORN MARKET. We must confess the inability of a Saturday's publication to give the earliest and most satisfactory information under this head; but it will, we think, be acknowledged that we have done what we could in the matter. We have supplied the latest returns from five of the most important

markets in the country: and in order to mark the *tendency* of prices, we have given the quotations from each on two successive market days.

WE regret our inability—owing to a delay in the publication of their report for the past year—to remark upon the proceedings of THE ENGLISH AGRICULTURAL CHEMISTRY ASSOCIATION in such detail as is desirable. This we must postpone: but we need not on that account defer appealing to our readers for the support which so valuable a Society deserves, and which we regret to learn it requires. That there is abundant regard among British agriculturists for the progress and improvement of their art, the subscription lists of our national societies and of our agricultural periodicals amply testify. That it is through the thorough elucidation of the art as a *chemical* manufacture that its improvement must chiefly be looked for, all our most intelligent authorities agree. And looking at these two facts together—that the reason why the Chemical Association does not receive a wider patronage must be simply because people do not know of its existence—we firmly believe. It has no "Transactions," such as periodically call attention to the proceedings of national agricultural societies; and its doings, though of the highest importance, have hitherto been almost anonymously published: and to this we must attribute the slight attention they have excited. For consider the wealth of the landed interest, the enormous extent of cultivable land in England: consider that agriculture—already more intensive here than in any other country in the world—is rapidly increasing its investments, deepening its operations, widening its search for assistance, and undergoing unprecedentedly rapid improvement all over the country; and it must be with astonishment you learn that a Society, whose aims and teachings and position might make it the very heart of the whole movement, numbers but 200 members, and possesses an income of but 300*l.* per annum!!

They manage matters much better in the North: there, many times this income have for the past five years been spent in answering the question, What can science do for Agriculture? and yet no such splendid performance rewarded efforts there as has graced the first year of the Society here. The supporters of the Scottish Agricultural Chemistry Association were well satisfied, and justly so, if informed on matters of detail in their profession, and defended from the frauds of the "guano grinder." But those of the English Society in the first year of its existence can point to results achieved by its office-bearers, which are to have a *permanent* influence. Few foresaw the ultimate importance of the guano offered years ago in costly samples as curious specimens of South American produce; and the real value of the fact now made known by Mr. PAINE and Mr. WAY that localities exist in England where a ton weight of *phosphoric acid* can be dug at a cost of 20*s*, may not be immediately, but is sure to be ultimately acknowledged. This discovery ought of itself to secure a more general patronage of the Society by whose assistance it was made; and we do hope that landowners and agriculturists will more generally come forward to support it.*

AGRICULTURAL LABOURERS.

THAT there is room for improvement in the habits, as well as the moral and social condition of agricultural labourers is unquestionable, and if employers had made their condition the subject of consideration with a view to their benefit, they would themselves have been indirect gainers, more frequently than complainers. Though here is a village school free of expense and accessible to the children of the poorest inhabitant, yet the fruits of their education give the impression that the children are kept in the most profound ignorance of all that is really essential to their well being in after life, and their education, meagre as it is, is of very short duration, for as soon as the children can do anything in the fields they are taken from school, the parents plead necessity, through the lowness of their own wages, as the reason for this, the children are then contaminated both by precept and example, and too often encouraged in acts of depredation and pilfering by their parents. This is the sort of material from which the labourers in the southern counties are derived, then when the future labourer is able to do as much work as a man, whatever his age or qualities as a workman, if single he is paid 2*s*. a week less than a married man, and this fact, together with his knowledge that his condition hardly can be worse than it is, causes him to get married at the earliest opportunity; although he knows where food and lodging are to come from on that day, he has not the least thought or knowledge how or where he is to get a meal on the morrow. Such is their ignorance and prejudice that if a new tool or implement is put into their hands it is either broken or the prejudice against it such, that the employer finds he must take to the old plan or tool again of necessity.

This state of things is often owing to the manner in which labourers are treated by their employers, and the former are frequently objects of sympathy rather than censure; one great evil is that the farmer employs as little labour as possible, more especially in winter, from an idea that the 7*s*. or 8*s*. per week he pays a labourer is so much money out of his pocket, and when employed it is always considered as a charity to give a poor man this pittance and have his six days' labour in return; the farmer usually will pay grudgingly 3*s*. or 4*s*. a week to keep a man in the workhouse, rather than 7*s*. or 8*s*. to employ him. The labourer cannot fail to see that his services are dispensed with as soon as ever the farmer can do without them; if the man does not go to the workhouse, he often does worse, as his state when unemployed is usually the prelude to poaching or pilfering, besides acquiring habits of idleness, which are not easily forgot when he may work if he will.

It is well known that in agriculture as in manufacture labour judiciously employed will repay, and is frequently the means of amassing a fortune, as hundreds of manufacturers in Lancashire and Yorkshire are instances, and who will candidly say that employment of labour is the source of their wealth, that the obligation between employer and employed is reciprocal.

There is abundant labour in this country for all who are willing to work, and at a future day, in all human probability, not only additional labour will be employed in existing channels, but new channels will be open for perhaps double the population. I have remarked that where cultivation is most primitive the labourer is in the worst moral condition; the plough may be seen working 4 or 5 inches deep, and the farmer complaining of summers either too wet or too dry, and light crops. I have seen the farmer pay more money in a season for extricating his stock out of the pound than would have paid for labour to keep the hedges in good order; and roads so bad that more horses have been sent for to release his team, when there was plenty of stones upon his land close by for gathering up. I have seen good arable land for weeks together under water, the land producing not a fourth of an average crop, draining considered too expensive; one farmer said his land lost its goodness soon enough without draining it away. I have seen manure spread and exposed to sun and air for a fortnight before it was ploughed in, on land intended for Wheat and Turnips, and the farmer in arrears at rent-day. I have known the farmer's carts going to the nearest town for guano, and in his cattle yard at home was a large place occupied by a dark coloured liquor, reminding one of Barclay and Perkins's stout. I have seen the seeds of Thistles flying in the air, and almost covering the ground for miles in extent, and the farmer only employed women at hay-time and harvest. Can it be wondered that the labourer is in a low condition where such are some of the specimens of agriculture? To make good labourers there must be a good feeling between them and the farmer, as also between the landlord and farmer; when each of these parties have an uncharitable feeling towards the other, the labourer suffers. It is also desirable that piece-work should be adopted, the farmer should be as good a judge of a fair day's work as the manufacturer, who ordinarily has his work executed by the piece.

Good wages are the best means of insuring good labourers, and a man to whom a shilling a week additional is paid may and will often save three or four times that sum to his employer. An employer has it in his power to make men either good, indifferent, or bad, according as they are treated; but when all are placed in one category, all looked upon as bad, and treated as such, no encouragement given for the interest the workman takes in his employer's property, idleness and industry all treated alike, the good are discouraged; and the bad and indifferent, although under proper treatment the latter would have made a good labourer under a humane and feeling employer, becomes a bad one because it is taken for granted that he is a bad one and always treated as such. That solitary instances of ingratitude and dishonesty are seen, is granted, and this more in higher grades than agricultural labourers, and he who says he has reason to denounce the whole class carries with him his own condemnation, for it shows he has made no effort to improve them. I once heard a labourer say in reference to his master, that his master was so good feeling, high principled, and unsuspecting that he would rather a man would rob himself than his employer. *J. H.*

ON THE EMPLOYMENT OF ARSENIC IN AGRICULTURE.

PUBLIC attention having been called to the employment of arsenic in agriculture, by a letter addressed by Dr. Fuller, of St. George's Hospital, to some of the medical journals, I forward you some remarks on the subject, containing the results of the investigation of a commission appointed at Rouen in December, 1842, having for its object to determine the best process of preventing the smut in Wheat, and to ascertain whether other means less dangerous than arsenic and sulphate of copper (both of which are extensively employed in Great Britain), were productive of equally good results. The labours of this commission extended over the years 1843, 1844, and 1845, and the experiments were repeated two years following on the farm of M. Fauchet, one of the commission, at Boisguillaume, in the department of the Seine Inférieure. My friend, M. Girardin, Professor of Chemistry at Rouen, and corresponding member of the institute, took a very active part as a member of the commission, and drew up a report on the subject, a copy of which he presented to me, and to which I am indebted for the information I now forward to you. As long ago as the year 1779 M. Duhamel du Monceau, in his "Elements of Agriculture," noticed the employment of arsenic by the farmers of France for the prevention of smut, and whilst speaking of the dangers arising from the use of arsenic for this purpose, expressly points out the dangers arising from the partridges, pigeons, &c, eating the poisoned seeds, and thus endangering the lives of those who used them for food. It would appear that in the 10 years from 1830 to 1840, there had occurred in France 235 public accusations of poisoning, out of which number 110 were against individuals connected with agricultural pursuits, and it was considered that this arose from the readiness with which they were enabled to obtain poisons, especially arsenic, for the purpose of steeping grain.

The Wheat selected for the purpose of trial was the red Scotch Wheat of the harvests of 1843 and 1844, thoroughly sound, and not in the slightest degree tainted with smut. A quantity of smut was then procured, with which the good Wheat was completely saturated in such a manner that the particles of smut attached themselves to the healthy grains of Wheat, and communicated the disease to them. A piece of ground was selected, from which had previously been taken a crop of Potatoes, and divided out into 13 parcels of 10 square metres each. The piece of ground was level, and of the same nature through its whole extent. Each parcel was separated from its neighbour by a strip of ground which was kept uncultivated whilst the experiments were in progress. They were each sown early in November, in favourable weather, with the same quantity of grain, viz., 3 decilitres.

NATURE OF THE WHEAT, AND MODE OF STEEPING EMPLOYED.

No of Parcel

1. Wheat gathered before arriving at maturity, whilst the perisperm of the grain was still in a milky state.
2. Unripe Wheat, gathered when the perisperm was solidified, but when the epidermis was still green.
3. Wheat gathered when the grain and the ear were yellow; but when the grain might still be cut with the nail.
4. Wheat gathered when the grains had acquired their hardness and transparency.
5. Perfectly ripe Wheat; not smutty, nor having received any preparation.
6. Ripe Wheat, smutty, but without any preparation.
7. Smutty Wheat, washed previously to sowing with double its volume of pure water.
8. Smutty Wheat, plunged for two hours in a solution of sulphate of copper and salt.
9. Smutty Wheat, prepared with sulphate of copper alone.
10. Smutty Wheat, prepared with arsenic.
11. Smutty Wheat, prepared with recently slaked lime.
12. Smutty Wheat, prepared with lime and salt.
13. Smutty Wheat, prepared with sulphate of soda and lime.

At the end of April the Wheats, of which the germination and growth up to that time presented no appreciable difference, appeared as follows:

1. Tolerable, but a little deficient at the right side of the lot.
2. Tolerable; a little less deficient on the same side.
3. Pretty good.
4. Pretty good, but a little less clean than No. 3.
5, 6, 7. Good.
8. Indifferent, clean, but somewhat irregular.
9. A trifle better than No. 8.
10, 11, 12, 13. Good.

At the end of September the Wheats were ripe. The reaping was accomplished with the greatest care; the product of each lot was put separately, and immediately received the number of its order. At the end of October the weight of the sheaves was taken, and the ears cut off with scissors; the smutty ears were separated from the sound, and an account taken of each. The healthy ears of each lot were then threshed in a close sack, so that not a grain might be lost. The Wheat threshed and winnowed was then measured and weighed, and each lot was placed in a separate vessel. The weight of the sound grain and the weight of the smutty ears deducted from the weight of each sheaf, gave the absolute weight of the straw.

The following Table contains the information relative to the products of the different lots:

Number of the Wheat.	Weight of the Sheaf.	Number of sound Ears.	Number of smutty Ears.	Volume of good Grain.	Weight of good Grain.	Weight of smutty Ears.	Absolute weight of Straw.
	Kilogrammes.			Litres	Kilogrammes	Grammes.	Kilogrammes.
1	8 250	...	...	2.32	1 735	...	6.515
2	7 100	...	..	2 93	1 744	....	5.356
3	7 250	...	...	2.35	1.768	..	5 482
4	6 750	...	..	2.27	1 720	..	5 030
5	8 000	.	...	8.00	2.363		5 637
6	7.250	1.463	1.004	1 96	1.50 0	460 0	5.291
7	8.000	2.509	192	3 30	2.416	87.5	5 496
8	7 250	2.187	19	2.95	2 221	6.8	5.020
9	8.250	2.201	46	3.15	2.460	21.0	5 829
10	8 000	1.926	125	2 17	1.676	57 4	6.267
11	8 5.0	1 971	250	2.70	2.101	114.7	6 284
12	8 250	2.642	114	2 50	1 928	52.2	6.270
13	8 000	2.431	60	2 87	2.258	27 5	5.714

A kilogramme is equal to 2 lbs. 3½ oz. avoirdupoise; a litre is equal to 1¾ pint imperial.

This Table clearly shows the effects of the different modes of treatment of smutty Wheat, as well as the influence of the various stages of maturity in the Wheat

* The Hon. Secretary is the Rev. A. HUXTABLE, Sutton Waldron, Blandford.

on the development of the smut. Observe that Nos. 1, 2, 3, and 4, taken at different periods of maturity, present no trace of smut. Two following years the same results were obtained. If we take the per centage, as in the following Table, of the number of smutty ears for each of the last eight lots, we shall better appreciate the influence of this kind of treatment.

Number of the Wheat.	Number of Smutty Ears per cent.
1, 2, 3, and 4	..
5	0.00
6	40 69
7	7.20
8	0.86
9	2.04
10	6.09
11	11.25
12	5.28
13	2.40

The different modes of treatment may be arranged in the following order, to show the respective efficaciousness of each :

No. 8. Sulphate of copper and salt.
9. Sulphate of copper alone.
13. Sulphate of soda and lime.
12. Lime and salt.
10. Arsenic.
7. Washing with pure water.
11. Lime alone.

Thus our experiments permit us to conclude, with assurance : 1. That sulphate of copper is one of the most powerful means of preservation from smut. 2. That lime produces but very little effect, and its use is even less advantageous than simple washing of the seed in water. 3. That common salt exerts a very marked influence, as the substances with which it is associated acquire a more decided beneficial action than that which they possessed alone; for instance, lime then becomes very efficacious, and sulphate of copper produces better results than when employed singly. 4. That arsenic does not possess anything like the destructive action on the smut which is generally supposed. 5. Lastly, that the mode of steeping the grain in a preparation of sulphate of soda and lime is really very efficacious.

Our experiments are both valuable and satisfactory, especially as their results have been uniform, and have also coincided with those formerly made by agriculturists and other careful observers in different localities. Thus, wherever sulphate of soda has been employed, the Wheat has always been entirely free from smut. Six years ago, M. Fauchet adopted this plan with great success; nowhere have we seen finer or healthier crops of Wheat than he reaps every year. In many of the departments the use of lime is abandoned, from its inadequacy to the required purpose. One of our most distinguished agriculturists, M. A. Baudouin, President of the Agricultural Committee of Pavilly, is quite satisfied with sulphate of copper, to which he has given the preference. It is the same case with the agriculturists of Marne, the Haute-Marne, the Farn, the Lot and Garonne, the Lot and Morbiteau; but this salt is a poiso no less dangerous than arsenic, and on this account we should discontinue its use. It is curious as well as useful to ascertain if the different plans of steeping the Wheat exert an influence on the produce both of grain and straw. To obtain these particulars, we took carefully the account of the volume and weight of the grain, and the absolute weight of the straw. To render these differences the more apparent, we have transferred the figures in one of our preceding Tables into hectolitres and kilogrammes. It will thus be more easy to compare the produce of our cultivation with that usually obtained from each hectolitre (equal to 22 imperial gallons) of grain sown.

No of Corn.	Produce in hectolitres by hectolitre of seed	Produce in kilogrammes by hectolitre of seed.	Weight of a litre of good grain.	Absolute weight of straw by hectolitre of seed.
	Hecto.	Kilo.	Kilo.	Kilo
1	7.75	578.333	0.747.8	2171.666
2	7.76	581 .33	0 748 5	1785.333
3	7.83	580 333	0 752 3	1827.333
4	7.56	573 333	0 757 7	1674 666
5	10.00	787 666	0.787 6	1879.000
6	6.53	523 000	0.800.5	1740.333
7 ...	11 00	8 5.333	0.732.1	1822.000
8	9.83	740.333	0 752.8	1673 333
9	10 50	800.000	0.761.9	1943.000
10	7 22	558.666	0 772.3	2089.000
11	9.00	700 333	0.778.1	2094.6 6
12	8.33	642 000	0.771.2	2090 000
13	9.56	752.666	0.786.7	1904.666

The principal conclusions to be drawn from these Tables are the following : 1. That in all respects it is advantageous to employ only sound Wheat for seed. 2. That the Wheats least productive of grain were those which were steeped in arsenic, lime, and salt, and lime alone. 3. That the Wheats most productive of grain were those which were washed in water treated with sulphate of copper, sulphate of copper and salt, sulphate of soda and lime. 4. If the washing with water was favourable to the production of grain, its weight is remarkably diminished. 5. The heaviest Wheat of the same bulk or volume is that which has not received any preparation, and next to that the Wheat treated with sulphate of soda.

Since amongst all the various parcels of Wheat reaped there were found, as may be seen, a certain number of smutty ears, it appears that there is in reality no specific nor radical and infallible remedy for this disease; but it ought to be remarked that to render our experiments more conclusive, we saturated the Wheat with smut. In practice, however, this is never the case; grain is never sown in the state of that which we made use of. It is no doubt to this circumstance we must attribute the fact of having found some black ears amongst the Wheat treated with sulphate of copper and sulphate of soda, which we look upon as the most active and sure remedies for smut. One thing is certain, that our fellow-labourer in these researches, M. Fauchet, has for many years made use of Glauber's salts, and no longer knows what it is to have smut. This salt, then, associated with lime, we must look upon as an infallible remedy.

En resumé, the commission is of opinion—1. That it is best not to sow seed without steeping. 2 That it is best to make use of the sulphate of soda and lime process, inasmuch as it is more simple and economical, and in no way injurious to the health of the sowers, or inimical to the public health, and that it yields the most productive and soundest Wheat. 3. That as arsenic, sulphate of copper, verdigris, and other poisonous preparations can be advantageously replaced by sulphate of soda and lime, the use of the poisonous preparations should be interdicted by the Government. *E. H. Durden, 4, Pleasant-street, Dublin, Dec.* 20.

FRIENDLY SOCIETIES.

THE comparative advantages of savings' banks and friendly societies having already been brought under the notice of your readers, in a little tract referred to at page 596, it will be my endeavour to show that savings' banks, though admirable adjuncts, should never be made substitutes for friendly societies, and that the place which embraces both these institutions, and, if possible, unites them under the same administration, is that from which the most substantial good may be expected by the country. As Dr. Duncan, the inventor of savings' banks, who laboured earnestly to sustain the authority of both classes of institutions, expressly says, "if the country needs one institution, it cannot do without the other," and this sentiment we are willing to employ as the basis of our own argument.

One of the great advantages of the savings' bank over the friendly society is, that it has the benefit of survivorship. If the contributor to a savings' bank dies, the whole of his contribution remains to his family. If, on the contrary, the member of a friendly society dies, the whole of his property, except the sums ordinarily allowed to the widow, and sometimes to his children, is lost to his family. Even in this case, however, it should be observed, that the rate of contribution to a friendly society is ordinarily so much lower than the lowest which is capable of accumulating to any considerable sum in a savings' bank, that the difference of the contribution, if paid into a savings' bank, would still create a fund for the benefit of the survivor. The relics of a friendly society should always be paid into a bank.

Another great advantage of savings' banks over benefit societies, constituted as these last ordinarily have been (and we use the term in contradistinction to the duly enrolled and regulated friendly societies), is, that the benefit societies have been the prolific source of contention and immorality; whereas, the scheme of savings' banks appears liable to no such abuse. Many of our readers may not know the ordinary constitution of benefit societies. Some of the evils of the present system may be thus enumerated :

1. The society transacts all its business at a public-house.
2. Out of the 2*s.* per month subscribed by the members, 3*d.* is to be spent in liquor for the benefit of the house.
3. Whatever the number present may be, the three-pences of the whole society are to be thus spent, so that if the night be bad, or any other obstacle to their meeting arise, 10 men may drink the three-pences of 50.
4. The rules are not enrolled, members therefore have no legal remedy against the society, whatever may be their grievance.
5. Even should the funds not have been borrowed from the society, or spent in articles of show, or other objects foreign to their proper purposes, there is a "breaking up" and division of the money, at a great loss to original members, just when they are getting old, and most liable to sickness.

Now the public house is no essential part or necessary companion to the benefit society; on the contrary, let them be separated, and we think these societies would have as much tendency to improve public morals as they have now to injure them. According to the present constitution of these societies, it is obvious that they are "clubs" rather for the benefit of the publican than the public. If they have a tendency on the one hand to create habits of economy among the poor, they must also have a tendency to promote habits of expenditure, and expenditure of the worst kind; and this is but small part of the evil. As the matter now stands, many a young labourer who would before have halted, from a sense of their danger, at the threshold of an ale-house, is now drawn into it for the business of the club. Once there, he spends the 3*d.* which the club provides for him. This indulgence whets his appetite for more, and the club settlements probably issue in the utter derangement of all his ideas, principles, tastes, and habits. He first drinks for the sake of business, and next for the sake of drinking. He acquires a habit of tippling. Some other club member is always harping about the fatal threshold of the tap to invite him to satisfy the cravings of his new appetite for drink. He thus gradually gets hemmed into the circle of habitual drunkards, who are the pest of most large villages and parishes. But we once more remind our readers that all these evils flow not from the club, but from the public house in which it is commonly held; not from the principle of laying up in health for the hour of sickness and decrepitude, but from spending in liquor what ought to have been given to their family, or laid up in a savings' bank. The three pence spent in beer counteracts the benefit of the seven remaining three-pences paid into the club. Adopt the simple measure of separating the club from the public-house, and hold it in the vestry, parish school-room, or any other private room, and you at once sift the institution of its chaff—you exclude the evil, and retain the good. To those desirous of becoming members of friendly societies, we would say, in the words of the "Address" referred to, "Avoid joining every society, of this description whose meetings are not held apart from a public-house, where a large portion of its funds are spent in periodical eating and drinking, producing many evils." The subject of savings' banks and friendly societies is one of the very highest importance, and as their principles are now pretty generally understood, we would earnestly recommend to our readers not only the establishment of such institutions in their own neighbourhood, but also the diffusion of advice and information relative to them, among those classes whom they are likely to benefit. But it may be asked, and indeed, since the establishment of savings' banks, it frequently has been asked, "Are friendly societies, after all, of any real value; and may not savings' banks be substituted for them?" We answer, confidently, that friendly societies are of the highest importance, and that savings' banks are by no means to be substituted for them. *H.*

Home Correspondence.

The Rural Poor.—I was not vain enough to suppose when I sent you the short article on the ignorance and crime that pervade the rural districts that it was to be made the subject of a leading article, and likewise the means of letting you roll your editorial thunder over my devoted head. In giving you the account I did, I only hoped to have awakened a sense of the degraded and ignorant state of the agricultural labourers generally, and to have aroused the feelings of the upper classes, that something must be done to better their condition in the social scale of society. So far you agree with me, but as to the means and other essential points we materially differ. Passing over the maudlin sentiments and morbid sympathy contained in some of your editorial remarks, I come to the passage, "But what is his condition in the 'midland counties?'" How are 'B. B.'s' 20 labourers? He has lived among them for 'years,' his influence—the greatest that one man can exert over another, the influence of master over servant—has been active all that time, and his account is a history of the present, not of the past; he can 'put trust in very few among them,' their 'ignorance and pilfering habits are enough to disgust any one.' We venture to assert that this writer pronounces his own condemnation." These are bitter words, Mr. Editor, and I hope you will not allow me to condemn myself without an explanation. These labourers have a master above me, and know I can only discharge them for some very flagrant misdemeanour. In trying to work upon their natures by kindness and confidence, I have, to my sorrow, found only ingratitude and treachery of the deepest dye. Now these men have not 8*s.* or 10*s.*, but from 14*s.* to 15*s.* a week, and other advantages that few labourers in the kingdom enjoy; and I can safely say, that the best paid are in general the most unsteady and improvident. It is not three weeks since that one of them stole two sovereigns; he had seen his comrade on the pay-day put his money in a cupboard on the premises, and took the opportunity of filching it the same afternoon. The suspected man the same night commenced drinking and spending money freely, and I found out afterwards that the loser threatened him with going to a "wise man" at —— to tell him the name of the thief. This had the desired effect, for the money was brought back and put in the same place as mysteriously as it had been taken. I have had the charge of quite as many men in another part of the kingdom, where the highest wages were only 10*s.* a week, and yet these labourers, from sobriety and strict habits of economy, were better off than the midland counties labourers with their high wages. Kindness shown to them was repaid with gratitude, and confidence was never abused; this entirely resulted from a higher intelligence, caused by a good system of parochial education and early training. I hope the second man of Ross (Mr. Batsoh) may be successful in his efforts for the advancement of the labouring classes in Herefordshire. The "conscience" part of describing the failure or non failure of his endeavours must rest with himself, but I am convinced he must commence with the young generation to insure an honest breed of

"The bold peasantry, their country's pride."

I own I was wrong in attacking the benevolent societies for converting Jews, Hottentots, and Hindoos; and after your severe reprimand and appeal, I shall certainly try to start a home mission in the neighbourhood, "to strengthen self denial and the affections of the mind." Not wishing to occupy the columns of your valuable Paper at too great a length, in answering your correspondent's strictures on my unfortunate communication, I shall shortly refer to "J. R. V." and his story of meeting the boy about 15 years of age, who scaled the rock, to have a look at the sea, whenever he had a holiday; of his being employed as a printing boy by the Messrs. Chambers, and of their kindness to their workmen in supplying reading-rooms, baths, &c. Now I do not see the drift of drawing a comparison between the Messrs. Chambers's workmen and agricultural labourers, for the latter must be taught to read before fitting up reading rooms for them. Another correspondent "Georgos" says, "from his having lived all his life in the country, he knows the feelings and condition of the labouring classes well;" and from the Arcadian simplicity of the people where he resides, they

must be entitled to his gratitude and admiration, for his description of the state of his parish almost reminds one of the golden age. True, he has lost by thieves, one sheep, a couple of fowls, and a sheet, in his 20 years' residence; but by distributing soup in winter, and selling linen, coals, &c., at prime cost, and an occasional distribution of Turnips, Peas, milk, &c., he has found a remedy for all the social evils of rural life. I hope "Georgos," when he "shuffles off this mortal coil," may have a corner in Madame Tussaud's collection of wax figures, as one of the philanthropists of the age, but let the description in the catalogue be "a mistaken one." *B. B.*—I venture to suggest that those gentlemen signing themselves "B. B," "S. S," "J. R. V.," &c., who have favoured you with opinions so widely differing upon the subject of the honesty and general character of the British labourer, should give the name of the county where their observations are made, because very great, and, I think, unmerited injury may be done to the character of the farm labourer by the circulation of such remarks as are contained in your publication of the 23d ult., under the signature of the letters "S. S.," and others previous to it. My experience as a magistrate, a landlord, and farmer for upwards of 10 years, leads me to think that the farm servants are in general the most respectable and most honest portion of the population of this district of the West Riding of the county of Yorkshire. I do not think they are as well educated as they ought to be, but I am sure that the present generation of farm servants are grateful for kindnesses, are generally honest, are more trustworthy and sober than that portion of the population employed in collieries and trades; and, I believe, feel (as they ought), more attachment for their employers. I therefore beg to suggest that your correspondents should be invited to state the general character and disposition of the farm labourers in each county, and that you should strike a balance between the two accounts. *J. G. Smyth, Heath Hall, Wak field.*—I have found, from long experience and observation, that if masters give and enforce reasonable orders, pay fair wages, let the employed see that your conduct is honourable, you will obtain generally the same conduct in return, quite as much as you will from that part of society who consider themselves educated. I do not think so very much of education, that is classical, for I have suffered great injustice from university men. [!] *One who has Farmed upwards of Five Hundred Acres of Land in Hants.*

Arable or Pasture.—I am induced to contribute the opinion of a great authority among us lawyers, Sir E. Coke, to the discussion of this question; and though he does not touch upon the main ground of the question, viz., which pays best to the farmer, I think his remarks form an interesting contrast to the covenants well known to your readers usually inserted in leases, and particularly so at a time when population is so proportioned to employment as now. He observes: "Agriculture or tillage is of great account in law as being very profitable to the commonwealth, wherein the goodness of the habit is best known by the privation, for by laying of lands used in tilth to pasture, six maine inconveniences do daily increase. First, idleneese, which is the ground and beginning of all mischiefs; 2, depopulation and decay of townes; for where in some townes 200 persons were occupied, and lived by their lawful labours, by converting of tillage into pasture there have beene maintained but two or three heardsmen; and where men have beene accounted sheepe of God's pasture, now become sheepe men of these pastures; 3, husbandry which is one of the greatest commodities of the realme is decayed; 4, churches are destroyed, and the service of God neglected by diminution of church livings (as by decay of tythes, &c); 5, injury and wrong is done to patrons and God's ministers; and 6, the defence of the land against forraine enemies is enfeebled and impaired, the bodies of husbandmen being more strong and able, and patient of cold, heat, and hunger, than of any other. The two consequents that follow of these inconveniences are; 1st, the displeasure of Almighty God; and, 2dly the subversion of the polity and good government of the realm: and all this appeareth in our bookes. And the common law giveth arable land (which anciently is called hyde and gaine), the pre-eminency and precedency before meadows, pastures, woods, mynes, and all other grounds whatsoever; and, *averia carucæ*, the beasts of the plough have in some cases more privilege than other cattell have." Co. Litt. 85 b. *H. G. Allen.*

Scotch and English Farming: On Thatching.—Observing at page 802 some remarks on this subject, which in some degree censure the former for the manner in which they thatch or cover in their corn stacks, I am induced to offer a few remarks in defence of their system, having had considerable experience in both methods, and it being a subject of frequent inquiry by English visitors what real utility such a number of straw ropes possesses over the English method of a single line of Hazel sticks properly secured and carried round just above the eaves, and another one at the apex; to a stranger the latter (if as good) seems to require a much less amount of labour, but a closer inquiry would convince him that this is not always the case. When stacks are covered in in that way, the straw is always wetted, and in harvest time water is not always at hand when wanted, and the carting of it a considerable distance at a time when horses can hardly be spared, is a great sacrifice; and besides that, I think it highly objectionable laying on straw in a wet state; and when it is considered that all the inferior portions of the straw is ejected, and that in some cases amounts to nearly the one-half of it, it will appear the benefits are not always on the side of the English form. In Scotland and the north of England the straw is always laid on dry, and if not in such exact longitudinal order, it is done more expeditiously, and the short or inferior straw all used up. I think "J. F." must be wrong in his conclusions of their resisting the straw sliding off, otherwise those he has seen roped down must be done in an imperfect manner. Most of the circular corn stacks that I have seen have no ropes passing horizontally round them, except one strong one immediately under the eaves, to which the others passing over and crossing each other at the apex are secured or tied to, and the projecting points of the straw at the eaves (never cut) are neatly folded to one side as the work proceeds; the number of ropes required depends much upon the size of the stack and the closeness they are put on; in a general way they are from 12 to 18 inches apart at the eaves (the widest space), and about 30 will do for a pretty large stack, at about 16 inches distance. It often excites surprise to an English observer how it is possible to get them made so sharp at the point or top, when he is told the person who thus arranges the ropes does so without a ladder to stand on. A stick is generally thrust in, to which the first four cardinal ones are attached, and it being a job in which no inconsiderable amount of pride exists in being neatly performed, it is often very skilfully done. I am no advocate for the system of securing the thatch by horizontal roping, the water must be impeded in its descent at every rope it meets, and thereby induced to enter the stack; the oblique methods of crossing each other, so as to form a series of diamonds, is also objectionable, whereas the one above given facilitates rather than retards its descent, and when it is borne in mind the tightness it gives to the thatch, far beyond what any quantity of rope yarn or Hazel rods could give it, there will be less objection to its adoption, and the security it possesses in high winds, storms, &c., gives it a decided advantage. I think it is not too much to say that the whole structure would be as soon overturned as the thatch removed by the elements when the work has been well done, while every one must admit such is not the case with English covered stacks. I have known a high wind in winter lay open on one side the whole of the stacks in a farm of large size, and it is no uncommon thing to see very clumsy expedients made use of to secure it at such times—as old harrows, gates, or hurdles, and these are only imperfect auxiliaries; as wind is often closely followed by rain, much damage is often done. In regard to the relative expense of the two systems, but little difference exists. Three or four ordinary hands, in Scotland, would thatch quite as many stacks in a given space of time as the same number in Herts or Essex; and as the straw ropes are generally made by women and children, or by men in wet days, &c., the difference may be slightly in favour of the Scotch system. With respect to the tying up of Beans, "J. F." must not have duly considered the difference in the two modes of afterwards disposing of them. In England, in many counties, there is sufficient barn room to allow their being taken there at once, consequently an indifferent tie up will suffice; while in Scotland they being stacked outside, and afterwards carried by hand or carted inside, require to be securely done to withstand so much removal, and I am certain Bean stalks alone would not endure such treatment. Here "J. F." will see each country adopts the plan most suitable to its circumstances in this respect, and doubtless, if we examine many things closely, the same may be said of very many differences that exist in the various English counties. In troubling you with this paper I disclaim all intention of eulogising the Scotch at the English fashion. There is much in the latter mode of management in detail which might advantageously be grafted into the former, and *vice versa*; on which, with your permission, I may again trouble you; but as "J. F." has commenced the subject, and his remarks so far being sufficiently clear, it is only an act of common courtesy to allow him to proceed, which I trust he will do with all necessary despatch. I also beg he will not take offence at an "Old English Farmer's" defence of a system he seems to have too hastily condemned, while he may have omitted objectionable practices which, if agreeable, it will be my duty to call your attention at an early period. I cannot close this paper without adverting to the disputed point of thick and thin sowing of Wheat. I have practised them both the last two seasons to some extent, and once or twice before that on a smaller scale, and the conclusion I have come to is, that thin sowing at best is but an uncertainty. In favourable seasons a good crop may follow thin sowing, and a small saving of seed gained, but it is dangerous hazarding the experiment, as, in cases of failure, your land is overrun with weeds, and the utility of the next crop impaired, while at the best it is never better than moderately thick sown, and of course there is a medium in that as well as other things, and those who do not understand where that medium is, know but little of farming. Nevertheless, I am glad to see the subject discussed, and would not have added my voice to the side of the opposers of thin sowing, had I not seen the array of talent enlisted in its favour, and which, of course, require a proportionate number of combatants to equalise the contest, or terminate it in our favour. *An Old English Farmer, S. N. V., Hadlow.*

Box feeding.—I have noticed for some time Mr. Wilkins' writing hard against box feeding, and also several hitting him as hard back. Now it strikes me from what he has written in your Paper of the 9th ult., he means it is the abuse of the system, and not the use which he is so much against. Also the advocates for box feeding have not themselves the proper ideas, or have not expressed them distinctly. What Mr. W. seems to object to most is the accumulation of the urine in pits, and consequent unhealthiness of the cattle. Now several of the writers in favour of box feeding state "only supply the cattle with plenty of dry straw and that will keep them dry." I have no doubt that those whom Mr. W. has gone to visit, and with whom he has seen the system not succeed, have found they could not afford to supply enough of straw to soak up all the urine. Now what I wish to mention is my little experience regarding this matter, which may enable both parties to meet a little, for I consider both are right in what they have in view, and both are wrong in confining themselves to too small a compass, and not looking enough to both sides of the question. I must let you know I farm on a hill side with a good slope, but a clay bottom impervious to water. Long before the use of liquid manure was much noticed in this quarter, I had a covered place for my manure to keep the rain from washing it; this is some 3 feet below the surface, and I have often the dung raised 6 feet above the surface, from this I found much liquid exude, and consequently sent it in the shape of irrigation on Grass; but tanks soon were spoken of, and I did not fail to dig a good one to contain some 30,000 gallons, and carefully conducted all the urine from my houses into it (no rain water getting in), and find with only about 50 head of cattle besides my horses I fill that in a winter season with extra urine, for I have my dung what I consider well moist, besides notwithstanding this I am always short of straw, and every year have to buy some 50 to 60 quarters straw to keep all to my mind. Now I have a fair proportion of straw for my shift; I have annually 50 acres in corn crops (mostly Oats), and 25 acres in Turnips, and some of my Turnips are given to the sheep on the Grass, and do not require straw litter. I certainly endeavour to grow good Turnips, and generally succeed; I give 2 cwt of guano, and 5 to 6 bushels of bone dust per acre, above what dung I have (some 25 to 30 loads). I have furrow drained all my farm (or rather my landlord for me), and subsoil ploughed the most of it; so I try to farm as well as I can, but cannot manage to get straw to soak up all my urine, and am convinced no one can who farms properly, and does not let any run away. I have a few boxes, but they are above the ground and paved and sloped for the extra urine to go into the tank. I do think, with Mr. W., that if pits are dug in the earth for boxes, and cattle put into them, either the urine must get away from them (perhaps unperceived through the earth), or if all is kept the cattle will be necessarily unhealthy. [We keep *all*: and the cattle are dry.] Before I got the tank I had a few young cattle go on my manure under the shed, and they never did well until the dung got above the level of the surface. I also strew my byres every day with sulphate of lime, to keep them as sweet as possible. *M. Y.*

Alluvial soils.—Having seen, in a late number of your journal, an enquiry concerning the draining of marshy land, I beg to lay before you some experiments of mine in this line of improvement. It so happens, that I have a large quantity of this sort of land. When drained, it is perhaps the most valuable of any; it has sufficient strength to bear magnificent crops of Wheat; and as, by being laid dry, it falls into a powdery state, easily worked, it will produce all sorts of roots, particularly Mangold Wurzel or Carrots, to great advantage. But, if undrained, it is much the reverse of this; the wet lodging on its surface, it runs into a sort of putty-like cohesion; it is then little better than the strong clays under similar circumstances. Turnips, not drawn before the weather breaks, have been known to remain until they have become quite rotten, from its being impracticable to have them removed by carting. I will now mention a field of my own about 10 acres, which was drained many years ago, with horseshoe tiles. On examining these drains last year, I found them entirely choked with sand. They were accordingly taken up, and the land was drained early last spring with what are called the D tiles. Some rough bad hay was placed upon the tiles, but on inspecting these after a crop of Potatoes had been taken up, it was found that a considerable quantity of the sand had insinuated itself through the junction of the tiles, and it is believed that in 10 years these drains will be little better than the former. To prevent the admission of sand into the tiles, two methods have been tried; one is the use of tiles with collars. This has been much practised by Mr. Josiah Parkes, at Drayton Manor, and elsewhere. The other method is to put a layer of clay on the tiles. If the collars fit very close, they may exclude the sand, but that is frequently of such a subtile nature, that there is always a danger of its penetrating through the interstices. A layer of clay is a more certain preventative, but then this is often not near at hand, and becomes expensive in the carting. Mr. Linton in the Royal Agricultural Society's Journal, has given a good account of his draining a running sand in this manner, which has been entered in my "New Husbandry," p. 81. He says the tiles and bottoms should be laid as close to each other as possible, and on them should be placed a covering of about 4 inches of the most tenacious soil that can be procured. Clay would be used, but on account of its being in large lumps, it cannot be made sufficiently close to keep out the sand. Here I must observe that it is essentially necessary that the drains be cut 3 or 4 inches wider at the bottom than the width of the tile, so as to admit the strong soil down the sides

to the very bottom; much mischief is done by the sand getting in at the bottom part of the joinings of the tile. Other materials have been used for keeping out the sand, but with bad effect. I prefer clay to anything else when it can be got sufficiently loose and malleable, so as to bed quite close and firm, and leave no crevice. Straw and other perishable materials are to be particularly avoided. *Law. Rawstorne.*

Societies.

SOUTH DEVON, *Dec.* 4.—At the Annual Meeting of this Society, the following remarks were made by Mr. FOWLER, of Prince-hall, Dartmoor:

When I descended this morning from those hills, which have been so long supposed to represent everything that was barren and unfruitful, I confess, although I thought it possible, I did not think it likely that these barren mountains should produce a crop of Turnips which would carry off the prize in competition with this proverbially fertile district. But, gentlemen, I am gratified that it has done so, and I also thank you very cordially for the manner in which you have expressed, in a variety of ways, your feeling with regard to my operations. I also may at once as well tell you, as I tell all my neighbours, that I hope they will follow my example in those things in which they see me prosper, and reject everything that does not answer; because although some crops have answered exceedingly well with me, all have not; for instance, I tried winter Beans last year, the seed was magnificent, but the crop was a total failure and worthless, and I don't try that any more. But the first time I grew Swedish Turnips I merely used 6 cwt. of dressing, not having farm-yard manure I could not use it, so I used 2 cwt. of superphosphate and 4 cwt. of Peruvian guano. But mark what I say now; that Peruvian guano came direct out of the vessel, it did not get into any stores and get what they call qualified. With this manure I got over 25 tons of Swedish Turnips per acre on land which, I need not fear contradiction in saying, never before produced an average of 7 tons of any crop. (Cheers.) I trust you will not deem me egotistical or unnecessarily occupying your time. (No, no.) I mention these circumstances to show what may be done. I don't come here to compliment people, but to speak what I believe, and I tell you all plainly that the farming of Devonshire is inferior to many other parts of the kingdom. Now, to prove this, I will come to facts, in Devonshire the average crop of Wheat is not more than 22 or 23 bushels an acre. If you go to Warwickshire, or Staffordshire, or Leicestershire, and find a higher average of produce (and that is the test of real farming, the number of bushels per acre), it shows that the farming of the county is inferior. Then, again, take the crop of Oats, and you will find the same rule exists. Again, if you take roots you will find the result the same. What did they do last year in Cheshire? Mr. Whyburne got 50 tons of Mangold Wurzel and over 10 tons of Turnips. Now, this year I have got what is considered a large crop of Turnips, by gaining rather more than 27 tons per acre, that is considered a large produce, but how short when compared with 40. I believe we are arrived at a very momentous time, and that you will all find it out before 12 months later. Therefore I counsel every one that hears me now to buckle on his armour and set to work in right earnest. (Hear, hear, and cheers.) I am satisfied that sufficient energy is not shown in the cultivation of the land here in Devonshire. There may be many excellent farmers among you, but I say that that energy is not so diffused, not so universal as it ought to be. The landlords too must come forward in every way, and particularly in draining, for if you manure the land ever so well without draining, you might as well spit on it. (Cheers and laughter.) As my farming career extends over the long space of eighteen months, you must naturally suppose I am a very paramount authority in all matters connected with agriculture. (Laughter.) I can only repeat, that without draining it is useless to manure, you might as well throw it down the stream. It is delightful to watch the effects of draining. I have got land which, last year, before it was drained, was a mere bog, that I could not walk across, now I can gallop my horse over it. But those drains are made in the most excellent manner—soles at the bottom, and 9 inch apertures—and I tell this assembly that if any gentleman would give me the 1½ inch pipes I would not use them. There is a diversity of opinion on this subject I know—and Mr Parkes, and others, who like the 1½ inch pipes, may have them; but I contend that drains ought not to be constructed to last a few years only—we want drains that will last us for 20 or 30 years. (Cheers.) Another subject, which has not been much touched upon, is that of the cultivation of Grass lands. Now I am perfectly satisfied there might be a prodigious increase in the productiveness of this county by ploughing up the inferior Grass lands. You all know well if I am speaking the truth or not. (Several voices, "Quite true.") When I began my experience in this beautiful and fertile spot I began ploughing up the Grass land, and inferior enough it was, and difficulties enough I had with my ploughman. I insisted that the plough should go in 7 inches deep. "Why," said he, "you don't understand it; you will ruin the land, and never get any crop." Well, I said, that is my loss, but in the plough shall go. "But, measter, you will fetch up the deade." Oh, I said, I want to do that—let them arise. (Roars of laughter.) Well, he went on, and the dead arose; and, rather contrary to the experience of my friend, Mr Michelmore, whose opinion I highly value, I had from those "deads," by only giving them 2 cwt. of Peruvian guano, a most prodigious crop of Oats. From about two acres and three quarters I got 3500 sheaves, or five tons of Oats. (A voice, "How many bushels?") I cannot tell the bushels, as in threshing they got mixed with other Oats. Now I have got a steam threshing machine; and I mention this to point out the vast superiority of the steam over the ordinary threshing machine, so that I have no doubt they will become universal, as they thresh so rapidly and so clean. There is another subject I must allude to—that of the tenure of land. As far as I have been able to notice in this country, leases are the exception—that is as far as my experience goes. (The Chairman—Not in this neighbourhood.) If you take the county of Devon, leases are the exception. I tell you more; I have considered for a long time past that there is less common sense in the arrangements between landlord and tenant, than between any other large bodies of men in this wide world. (Hear, hear, and cheers.) I am satisfied that the time is fast coming, when there must either be a very much larger produce from the land, or there will be a wide spread of desolation from one end of the kingdom to the other; and to cause a larger production, the landlords must give leases, or a determinate legal assurance to the tenant, that he shall receive a fair compensation for his unexhausted improvements which is exactly the same thing. (Cheers). Another subject, is the breed of cattle. I am satisfied that great loss is sustained by having inferior cattle—be it horses, or be it cows, or sheep, whatever you have, let them be thoroughly good symmetrical animals, with a disposition to fatten, and if they have not an enormous appetite why so much the better—(laughter). I have watched my animals pretty closely, and some of them I have thrown overboard for the best of all reasons, that when they were fat, they made but very little; and the next good reason was, I never could fatten them at all;—(Laughter)—so I got some Dunhams in their place, I have had them some time on a small scale, but am very much pleased with them. I have also introduced a Cheviot ram; when it first came, it was very much opposed by all my neighbours—they shook their heads and declared it would never do; but I can tell you, that now they all acknowledge that the lambs are 4*s.* or 5*s.* per head better than those of the old Dartmoor breed. Mr. Fowler having stated that his steam engines and farm buildings were open every Wednesday for the inspection of agriculturists, concluded by proposing a toast, "Justice to landlords, equity to tenants"—(Loud cheers.)

NEWBURY CATTLE SHOW.—The great attraction of the day was a valuable prize of 15*l* 10*s.*, given by E. Tull, Esq., of Pensmore, and P. Pusey, Esq., M.P., upon the following conditions: That the breeders of sheep shall sell to Mr. Tull, in October, 1847, four lambs each, marked, and the weights of the several lots to be then taken; that they shall be wintered together, on the same food, shorn, and weighed again, and kept on until the 1st of December, 1848, when they shall be reweighed, and one killed from each lot, and the carcases shown in the cattle-yard, in addition to the three alive from each, and that the breeders of those which have attained the greatest weight shall be entitled to the premiums above named. There were 12 competitors. No. 7, 354 lbs gained. S. King, of Haward, disqualified, not being the breeder. No. 12, 294 lbs. gained. Thomas Spicer, of Lambourn, was awarded the prize, owing to the disqualification of Mr. Stephen King. The result of this interesting competition was not so satisfactory as it might have been, leaving the experiment undecided. *Amicus, Dec.* 4. [Will our correspondent be good enough to give us the details of this experiment?]

Review.

Essay on Land Drainage and Irrigation, &c. By E. L. Williams, M. Inst C.E. Ridgway, 169, Piccadilly.

No one is better able than the conductor of a periodical work to appreciate the effect of a continual harping on one string, however monotonous its voice, or of a continued hammering of one subject on the literary anvil, however alike the blows may be; the long-continued uproar will ultimately attract attention, and perseverance is the real secret of success in all attempts to guide public opinion. The Essay before us is valuable as one effort more added to the numberless attempts, which late years have seen, to impress on owners and cultivators of land the importance of drainage as a first improvement in agriculture. It is neither very original nor always correct; but it goes, as one voice more, to swell the cry which must ultimately be heard and acted upon by landowners, farmers, and capitalists, if agriculture is to furnish labour and food for an increasing population.

All the old arguments on the subject are recounted. The profits of Sir J. Graham, Mr. Woodward, Mr. Denison, &c., &c. are again made to do duty. The low temperature of wet soils is again justly urged as a chief mischief suffered by them; and this cold is again (we believe mistakenly) attributed to the greater evaporation from water-logged lands; we are again told how much water is retained by different descriptions of earth, in order to show need of drainage before they can be cultivated; and the author, again, professes, as regards details, to belong to no sect, to have no rule fitted for all circumstances. And it is very right that these things should be urged again and again; there is no novelty, but there is great utility in doing so; for persevering reiteration is the only way to gain public attention.

The only novelty in Mr. Williams's Essay is the argument for using drainage water as motive power, founded on what Lord Hatherton has done in this way at Teddesley. We shall publish extracts on this point as soon as we can find room for them. At present we would confine our remarks to what might and ought to have been a more capital subject in this Essay than it is.

Drainage and Irrigation: the connection between the two is not so generally perceived as it ought to be; nor does Mr. Williams develope it as he might have done. The two are as nearly identical as Art and Nature can be.

Irrigation properly carried out is simply the supply of water in excess to well drained land. The water is the beneficial agent—it is the water that does the good—the more water, we might say, the better. What then becomes of a phraseology, in which the luxuriance of fertility is spoken of as being consequent upon "the water having been *extracted*," in which "the *abstraction* of water from lands overcharged with it," is mentioned as being the aim of all good land drainage? The whole statement is founded in mistake or misconception. The water certainly does positive mischief if it be stagnant; it induces the formation of what are strictly vegetable poisons, and it hinders the access of the warm shower and the fresh air to the roots of plants; but it is even more especially because of what it does not do, because of the non-performance of the duties which properly belong to it, that water, when stagnant in land, checks the growth of plants, for then, the soil may be full of the richest stores of food for plants, and yet the plant may starve amid it all, just as a man chained to a spot would do in the best filled larder if there were no means for conveying the food to him.

In undrained land each plant exhausts its locality of the food prepared for it, and though no poison were there to injure its vigour, it would ultimately die of simple starvation. But only establish a current of water through the soil, and its roots will have an inexhaustible supply kept up; every drop, as its store is taken, makes way for another laden with nourishment extracted from the soil and the air, and though the plant be chained, as it were, to one place, there is a continuous stream of food passing its roots, on which it must luxuriantly flourish.

And irrigation acts in just the same way; it is to the continual supply of fresh nourishment which running water keeps up that its effects are mainly due. And "an Essay on Land Drainage and Irrigation" ought to have more fully developed the important relationship between them than Mr. Williams has succeeded in doing.

Calendar of Operations.

DECEMBER AND JANUARY.

*** We have to suggest to our correspondents the propriety of making their reports a little more prospective—less a history in dry detail of the doings of the past week, than a statement of what *is* intended to be done during the next week or two. A *weekly* return would not be needed if, besides a statement of intended operations, the writers were to enter at somewhat greater length into matters of general agricultural interest. Modes of feeding horses, cattle, and sheep—the general condition of neighbouring agriculture—the state of the labouring classes—the results of farm experiments, &c.—all are subjects on which our readers have hearty appetite.

BEDFORDSHIRE FARM, *Dec.* 26.—Our horses during the month have been employed with the carriage of manures, earth, and Turnips, &c. The labourers have been taking in, threshing, and dressing corn; cutting hedges, planting trees, repairing Quicks, digging gravel, getting up Turnips, and attending upon stock. The Barley threshed by hand costs 2*s.* 3*d.* per qr.; hedging and ditching, 2*s.* per imperial chain; faggoting, 3*s.* per hundred of six score. The tree planting was not let by number, but cost about 3*s.* per 1000. Gravel cost 1*s.* per yard. Two men and two boys attend upon 500 sheep; upwards of 300 receive cut Turnips, hay chaff, and corn. One man and two boys attend upon 70 head of cattle, 30 of which are fatting, and living entirely on prepared food. [Will you give us details?] The expense of fuel about 1*s.* per day. *R. V.*

BERWICKSHIRE MERSE FARM, *Dec* 29.—Since last report we have been employed ploughing Turnip land for Wheat; sowing Wheat on the Bean land; and ploughing Grass land for Oats; storing Turnips; threshing and delivering Wheat, carrying tiles and slates for the drains, carting dung for fallow land; one pair at the coals, &c.; the workers have been employed at the threshing, in filling Turnips; picking for the sheep and driving the carts that were carrying the dung, one man mending fences, &c. *J. B.*

EAST LOTHIAN FARM *Dec* 30.—As noticed in last report the ploughs were stopped by the frost, which gave way in the beginning of the week when we resumed ploughing lea. We have likewise been threshing Beans, and carting the same to market and to mill to grind for the feeding cattle, to which we are now giving about 4 lbs. each daily—also carting coals for the family, and building bricks intended for new cottages in spring. *M.*

SOUTH HAMPSHIRE FARM, *Dec* 30.—Since our last report the weather has been remarkably changeable, being alternately very wet and mild, followed by a few days of severe frost, which has in many instances damaged and impeded the raising and storing of the root crops, such as Swedes, Carrots, &c., which ought to have been done at an earlier period, but has been delayed by the Wheat season having been later than usual, and by the pressure of other farm work, which has accumulated from the effects of the past wet season. Our horses have been employed carting Carrots a few days, ploughing up Wheat stubbles which are intended for a Turnip crop, working at the threshing machine, carting gravel, &c., during frost, ploughing and sowing Wheat after the plough, in two fields where the second crop of Swedes has been fed with sheep, an odd horse has been constantly at work carting drain tiles and bushes to the drainers, carting hurdles for the removal of sheep, and carting Swedes for the pigs, cows, &c. Our labourers have been digging Carrots, draining, banking, and repairing fences, attending at the threshing machine and forking out Couch-grass from between the rows of Swede Turnips previous to being fed with sheep. Our shepherds are still busy with the ewes lambing, for although our horned ewes have quite finished lambing, the Southdown ewes are now just commencing the season, we having now about 20 lambs fallen within a few days past, yet we do not consider the Down ewes are quite so forward to lamb as in the two past seasons; our horned ewes and lambs and also fatting Down ewes are now all penned upon Turnips, but we do not find they gain condition so fast as we could wish, on account of the weather having been for the most part very wet. The women have been employed preparing Carrots for carting, cleaning Swede Turnips in readiness for the Turnip cutter, and attending at the threshing machine. The root crops turn out quite as well in weight in this part of the county as was expected, our best crop of Swede Turnips (Skirving's kind) weighed 26 tons 12 cwt. per acre; our Carrots of the white Belgian kind weighed 21 tons 13 cwt. per acre, which we consider a good crop, taking into account the past untoward season, our later sown Swedes and general crop weigh varying from 17 to 20 tons per acre, but the best crop we have heard of was the field of Ashcroft Swede Turnips, which gained the first and second prizes at the Turnip Show of the South Hants Farmers' Club held on the 18th Dec., the weight per acre being computed 27 tons 8 cwt. Our own Carrot crop, named above, obtained the prize as the best crop of Carrots at the same Root Show. *J. B.*

SOUTH WIGTONSHIRE FARM, *Jan.* 1.—Our Wheat crop, which is but limited in extent, promises well, although somewhat damaged by the heavy rains of last month. We intend to apply 25 bushels of soot per acre as a dressing for this crop in the spring, which can be procured at 9*s.* 4*d.* Our Carrot crop (produced at an outlay of 5*l.* 15*s.* an acre, including seed and labour) averaged 17 tons, which we are selling at 30*s* per ton. *M.*

STIRLINGSHIRE CARSE FARM, *Dec* 30.—Since last report we have been chiefly employed in the ordinary routine operations of the farm—ploughing as weather permits, and occasionally threshing and sending off grain; cleaning in the rick-yard into the dungstead, and driving home Turnips. The horses are kept on bruised Oats, with cooked food about a-day, and a full allowance of straw. *W. F.*

Notices to Correspondents.

ALSALIKE: *T Rowlandson* It does not appear advisable to carry this particular aspect of the controversy into the new volume. But we shall be glad to re-open the subject, *on its own account*, at any time.

ALSIKE CLOVER: *R H* wants to know the relative merits of Alsike and common white Clover. Has any one an experience on the subject to relate? It is said to be hardier, earlier, and more luxuriant than common Dutch Clover. It was introduced from Sweden by Mr. Stephens in 1834, and Mr. Lawson suggests that from its different habit of growth from common Clover it may thrive on "Clover sick" soils.

BARLEY AND CARROTS: *L M A.* They are never grown together. In Belgium they grow Flax and Carrots together; but no English farmer is likely to copy the practice.

BONES: *An Improving Sub.* Mr. Pusey's plan of laying bones in heaps with dampashes or sand for a month or so, has been perfectly successful, as a method of reducing them to powder.

BONES AND ACID: *T Rose.* You had better not burn the seaweed; lay it in alternate layers with the manure in your dungheaps, and apply it when rotten just as the manure is applied. The bones would exert their full effect though you surfeited the land with sea-weed—because the action of the one depends chiefly on the phosphorus it contains, and that

of the other on its alkalies. You could not substitute the one for the other with advantage.

BOOKS: *J F C.* Parkes's "Essays" explain the theory, and Stephens "On Draining" the practice of draining as satisfactorily as any works we know. The Cyclopædia will not be out for a month or two yet, it is a work of time to collect materials and illustrations.—*H H.* Youatt's book on Swine. —*W C.* "The Art of Wine making" by David Booth, contains a good article on Cider and Perry.—*Clericus.* "The Horse," "Ox," "Sheep," of the Useful Knowledge Society.

CHARCOAL: *J F C.* Thinnings of plantations may be charred in heaps just as charcoal itself is ordinarily prepared.

CLAY SOIL: *L.* That depends on the crop you are about to grow and on the present richness of the soil. A good winter's frost might so prepare it as that with 3 cwt. of guano per acre, you could be sure of Beans or Oats among grain crops, or Mangold Wurzel, Cabbages, &c., among green crops.

DIBBLING MACHINE. *W L C.* Yes—Dr. Newington, Frant, Tunbridge-Wells.

DOMESTIC ECONOMY: *A.* We regret our inability to advise.

DR. NEWINGTON'S DIBBLE: *Falcon.* See last week's Paper. Has any one any experience of it on clay land? It will not answer for Carrot seed. For Beet it would; and for Parsnip and Turnip it might be made to answer.

DUCKS: *J Youell.* Your best plan will be to present a pair of your "distinct species" to the London Zoological Society, with a request to be favoured with an opinion respecting them from some one of the many able naturalists connected therewith. I may observe that there are persons having specimens for sale who are apt to persuade themselves first, and their customers afterwards, that they are in possession of something unique and *extraordinarily* valuable; it is the duty alike of a periodical which lays claim to high character, and of a writer who professes to elucidate any limited province of science, to guard the public against falling into such mistaken estimates of the value of supposed rarities. *D.*

FARM ACCOUNTS: *A Correspondent.* Your positions, as landowner, fund-holder, farmer, and householder, require a distinct process of "book-keeping" respectively. The principle on which the whole proceed is of course one; but the "books" belonging to each position should be kept as entirely apart as if they belonged to four different people Each set of books would consist of day-book or memorandum-book, in which every money transaction is entered, with its date, a journal into which the day-book entries are copied in succession, in such terms as imply the position they are to occupy in the ledger; and a ledger in which the several entries are classified, first into payments and receipts on opposite sides of the cash account, and then into payments or receipts as regards the several heads of expenditure under which you propose to arrange the transactions of each separate business. Thus as farmer you might arrange your expenditure and receipts in three different heads—rent and taxes, green crop, including cattle, &c., and grain crop And having arranged all your money transactions on the receipt and payment sides of your cash account, you would have also to arrange them on the addition (Dr) or subtraction (Cr.) sides (so to speak) of these several heads. The gross balance would signify your financial position on the whole matter satisfactorily enough; but the several balances under these different heads are needed to show how the total result is arrived at, whether by success as a corn grower or feeder The subject has more than once occupied our attention in the leading section of the Paper, and it is impossible to develop it in a short answer like this. We know of no good work upon it.—*J Pease* We know of no work containing a satisfactory statement on this subject. But there is no need of imagining any peculiarity in the matter, the principles of commercial book-keeping must be developed in farm practice. You will find a good essay on the subject in the first number of a Cyclopædia of Agriculture which is to appear in a month or two.

FRAUDS ON FARMERS: *O W.* We know the parties, and so do the guardian societies with which we are in communication. We wish we *could* do all that we *would* in this matter.

GRASS LANDS: *Copy* asks what depth of furrow exists between the old ridges or lands in Leicestershire and Northamptonshire. We know fields, the ridges of which entirely hide from one another boys standing in adjacent furrows.

GREEN MANURING: *Inquirer.* It would be more useful ploughed in green. Your question we suppose presents the alternative of a *cut* crop suffered to lie or be ploughed in; for unless its life were destroyed the mustard would of course seed before it rotted. And Grass land is more benefited by depasturing than by being left untouched—because the Grass will seed before its stems decay. And this process absorbs much fertilising matters from the soil and stores it up in vegetable matters so hard, woody, and undecomposable, that it is long before they are again available for vegetable food.

HORSES. *A B.* Our large horses eat 10 lbs. of Oats, 4 or 5 lbs of hay, and about 60 lbs. of Carrots a day each. We did not notice the case you allude to at Baker-street.

LEAN STOCK: *A Constant Reader* asks whence are the supplies of lean stock now derived, and are such supplies on the increase or decrease?

LIME. *J F Cutor.* Apply 40 or 50 loads per acre of a compost of dung and ditch scraping now; and 100 bushels of lime mixed with ditch scrapings next year, in autumn. It is not always good practice to lime an apparently impoverished soil.

POND MUD: *W H.* We do not know Mr. Braine's address. The mud is dug out and wheeled into a heap and allowed to drain, and after partially dying is turned over, broken small, and mixed with guano, &c.

POULTRY: *Mr S* has sent us a communication for "Northwoods."

ROPY CIDER: *A W G.* Apple juice contains a sweet principle, an acid (the malic), and the albumen or natural ferment or leaven, which is the agent of fermentation. If Apple juice is boiled, this albumen separates in flocks, in a manner similar to that which is observed in the boiling of beer wort. As cider is seldom boiled, the fermentation of the juice is sometimes not sufficiently perfected to employ all the ferment. Therefore, in that case, it becomes separated slowly, and causes that singular change which is called ropiness. We have not seen a ropy cider, and cannot suggest a certain curative process. The only certain prevention is the absolute perfection of the fermenting process of the Apple juice *T.*

SUNDRIES: *B A.* Gorse may be transplanted on to the hedgebank any time during winter in dry weather. Parsnips are better than Turnips as food for cows—they are better per ton but not better per acre; and that is the reason they are not more generally grown.

TILE WORKS: *W W W* asks—Can any of your correspondents favour me with the outlay required in starting a brick and tile yard, being anxious to commence an affair of this kind. I should wish to be informed the most economical way of proceeding, and also, if it be not giving too much trouble, as to the kinds of machines and the price of each that would be necessary. I have some idea of erecting a steam-engine for other purposes, which I could make applicable to this: you would perhaps state also at what expense draining pipes and building bricks might be made, with any information that your obliging readers could furnish.

Markets.

COVENT GARDEN, JAN. 6.

Hothouse Grapes continue to be scarce. Pine-apples are sufficient for the demand. Pears chiefly consist of Chaumontelle, Glout Morceau, Ne Plus Meuris, and Old Colmar. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, Carrots and Turnips are abundant and good; Cauliflowers, Broccoli, &c., sufficient for the demand. Asparagus, French Beans, Rhubarb, and Sea-kale are becoming more plentiful. France, Belgium, and Holland still contribute considerably to the stock of Potatoes. The foreign ones fetch about 5*l.* a ton; the very best home grown ones about 11*l.* a ton. Lettuces and other salading are sufficient for the demand. Mushrooms are pretty plentiful. Cut Flowers consist of Heaths, Pelargoniums, Christmas Roses, Camellias, Gardenias, Fuchsias, and Roses.

FRUITS.

Pine Apples, per lb., 4s to 6s	Almonds, per peck, 6s
Grapes, hothouse, per lb. 4s to 5s	— sweet, per lb, 2s to 3s
— foreign, per lb., 9d to 1s	Walnuts, per 100, 1s 6d to 2s
Apples, dessert, per bush., 4s to 7s	— per bush. 16s to 24s
— kitchen, p. bush., 3s to 5s	Chestnuts, per peck, 4s to 7s
Pears, per doz., 2s to 6s	Nuts, Barcelona, per bush., 20s to 22s
— per half sieve, 6s to 10s	— Filberts, per 100 lbs., 60s to 100s
Oranges, per doz., 1s to 2s	— Cob, per 100 lbs., 90s to 150s
Lemons, per doz., 1s to 2s	— Brasil, per bush., 12s to 16s
— per 100, 10s to 18s	

VEGETABLES.

Cabbages, per doz., 3d to 1s	Onions, per bunch, 3d to 4d
— red, per doz., 1s to 4s	— per bushel, 1s 6d to 2s 6d
Savoys, per doz., 3d to 1s	— Spanish, per doz., 1s 6d to 4s
Greens, p. doz. bunches, 1s 6d to 2s 6d	— pickling, p half sieve, 1s6d to 3s
Cauliflowers, per doz., 2s to 4s	Shallots, per lb., 4d to 8d
Broccoli, white, per bunch, 1s to 2s	Garlic, per lb., 4d to 8d
— brown, per bunch, 6d to 1s 3d	Radishes, per doz. bands, 6d to 1s
Sorrel, per half sieve, 6d to 9d	— Turnip, do., 9d to 1s
Potatoes, per ton, 60s to 130s	Artichokes, per doz., 1s 6d to 2s
— per cwt., 5s to 9s	— Jerusalem, p. half sieve, 1s to 1s 6d
— per bush., 2s 6d to 5s	Lettuce, Cab., per score, 4d to 6d
Turnips, per doz bunches, 1s 6d to 2s	— Cos, do., 9d to 1s
Red Beet, per doz., 6d to 1s	Endive, per score, 9d to 1s
Horse Radish, per bundle, 1s to 6s	Mushrooms, per pottle, 6d to 1s
Asparagus, per 100, 3s to 5s	— per bushel, 4s to 6s
Sea-kale, per punnet, 1s to 2s 6d	Small Salads per punnet, 2d to 3d
Rhubarb, per bunch, 1s to 1s 6d	Fennel, per bunch, 2d to 3d
French Beans, per 100, 2s 6d	Savory, per bunch, 2d to 3d
Cucumbers, each, 1s to 2s	Thyme, per bunch, 3d to 4d
Leeks, per doz., 8d to 1s	Watercress, p 12 small bun., 6d to 9d
Celery, per bundle, 6d to 1s 3d	Parsley, per doz. bunches, 1s 6d to 2s
Carrots, per doz bunches, 3s to 5s	— Roots, per bundle, 1s to 1s 6d
Spinach, per sieve, 9d to 1s 6d	Marjoram, per bunch, 2d
Tomatoes, per half sieve, 3s to 4s	Mint, green, per bunch, 2d

HOPS, FRIDAY, Jan. 5.

Messrs. PATTENDEN and SMITH report that there is more demand for middling and fine samples, which are very scarce, low descriptions are still unsaleable.

POTATOES.—SOUTHWARK, WATERSIDE, Jan. 1.

The Committee report that our market is well supplied with every sort of Potato, particularly from France The demand for the latter is good, but all others meet a very heavy sale, and it is but seldom our highest quotations are realised, the bulk going off at the lowest. The following are this day's quotations: York Regents, 140s. to 170s.; Newcastle and Stockton do., 100s. to 120; Scotch do., 100s. to 120s., Scotch Cups, 60s. to 80s; Scotch Reds, 60s. to 80s; Scotch Whites, 60s. to 70s; French do., 70s. to 95s.; Dutch do., 40s. to 60s.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Jan. 4.

Prime Meadow Hay	66s to 73s	Clover	50s to 90s
Inferior ditto	51 65	New Clover .	— —
Rowen	40 55	Straw ..	24 28
New Hay . .	— —		J. COOPER.

The supply short, and the trade rather better.

CUMBERLAND MARKET, Jan. 4.

Prime Meadow Hay	70s to 76s	Inferior	50s to 80s
Inferior ditto .	50 66	New Clover	— —
New Hay . .	— —	Straw . .	82 85
Old Clover	90 95		JOSHUA BAKER.

SMITHFIELD, MONDAY, Jan 1.

We have a large supply of Beasts. There is no good attendance of buyers, but it is difficult to obtain any advance of price. The choicest Scots realise rather more money. The number of Sheep is moderate; the demand is very limited, and only some of the choicest kinds are more freely disposed of. There are very few Calves, consequently there is an advance of about 2*d.* per 8lbs. From Holland and Germany we have 100 Beasts, 150 from Spain, 150 from Ireland, 400 from Norfolk and Suffolk, 2300 from Leicester and Northampton, and 300 from Lincoln.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ...	4	0 to 4	2	
Best Short-horns	3	8 — 3	10	
2d quality Beasts	3	0 — 3	6	
Best Downs and Half-breds ...	4	8 — 5	0	
Ditto Shorn ...		... ...		

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools .	4	2 to 4	6	
Ditto Shorn ...		.....		
Ewes & 2d quality	3	6 — 4	0	
Ditto Shorn ...		. ...		
Lambs . . .		... ..		
Calves	4	0 — 4	0	
Pigs	4	4 — 5	4	

Beasts, 3891; Sheep and Lambs, 21,090; Calves, 75; Pigs, 150.

FRIDAY Jan. 5.

The supply both of Beasts and Sheep is by no means large; the Friday's demand, however, is at this time of year so very limited, that it is difficult to effect a clearance. The choicest descriptions pretty readily obtain Monday's rates; but they are barely realised for second-rate. Trade is dull for Calves, at a reduction of about 4*d.* per 8 lbs. Pigs sell slowly at about late rates. From Holland and Germany we have 20 Beasts, 150 Sheep, and 28 Calves; from Spain 51 Beasts; from Scotland, 200; and 141 Milch Cows from the home counties.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. .	4	0 to 4	2	
Best Short-horns	3	8 — 3	10	
2d quality Beasts	3	0 — 3	6	
Best Downs and Half-breds ...	4	8 — 5	0	
Ditto Shorn ...		... ...		

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools .	4	2 to 4	6	
Ditto Shorn ...		.....		
Ewes & 2d quality	3	4 — 4	0	
Ditto Shorn ...		.....		
Lambs		.....		
Calves	3	8 — 4	8	
Pigs	4	0 — 5	4	

Beasts, 871; Sheep and Lambs, 4220; Calves, 150; Pigs, 160.

MARK LANE, JAN. 5, 1849.—The weekly reports from nearly all the great leading markets generally write Wheat and Barley somewhat lower, and other grain as before. At Mark-lane to-day, the supply was fair of English Wheat, and many buyers of Foreign; the former, although held firm, is not in much request. Fair consumptive demand for free Foreign at about late prices.—Barley is also abundant, and 1*s.* lower.—Beans and Peas the same, and not at all wanted.—Oats in great abundance, varying much in value.—Flour of first quality, 46*s.*; Norfolk on board, 33*s.*

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Nov. 25....	51*s* 6*d*	33*s* 2*d*	20*s* 2*d*	30*s* 10*d*	36*s* 10*d*	40*s* 6*d*
Dec. 2 ..	50 3	32 0	19 11	31 2	36 2	40 6
— 9	48 9	31 4	19 5	28 5	35 7	40 9
— 16 ...	47 6	31 4	18 11	29 8	34 3	39 8
— 23	47 6	31 4	18 4	29 1	33 7	38 1
— 30	46 10	31 3	18 0	28 6	34 11	35 9
Aggreg. Aver.	48 9	31 9	19 1	29 7	35 1	38 8
Duties on Foreign Grain	9 0	2 0	3 0	2 0	2 0	2 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	Nov 25	Dec. 2.	Dec. 9	Dec. 16.	Dec. 23.	Dec. 30.
51*s* 6*d*						
50 3						
48 9						
47 6						
47 6						
47 10						

PRICES CURR NT.

	London. Jan. 2 qr.	London. Jan. 6 qr.	Liverpool. Dec. 26 70 lbs.	Liverpool. Jan. 2. 70 lbs.	Wakefield. Dec. 22 qr.	Wakefield. Dec. 29 qr.	Boston. Dec. 27 qr.	Boston. Jan. 3. qr.	Birmingham. Dec 28 62 lbs.	Birmingham. Jan. 4. 62 lbs.
	s. s.	*s. s.*	*s. s.*	*s. s.*	*s. s.*	*s. s.*	*s. s.*	*s. s.*	*s. d.*	*s. d.*
Wheat—New, red ...	42 to 44	to	to	6 to 7	to	45 to 48	38 to 44	38 to 44	5s 6d	6s 0d
„ white ...	46—50	—	—	6— 7	—	46—50	40—46	40—46	6 6	6 6
Old, red ...	—	—	—	—	—	45—50	43—45	43—45	6 6	6 6
„ white ...	—	—	—	—	—	—	46—48	46—48	6 6	6 6
Foreign ...	—	—	—	—	—	35—48	—	—	7 0	7 0
			480lbs.	480lbs.					*s. s.*	*s. s.*
Rye—New	23— 28	—	—	—	—	—	—	—	—	—
Old	—	—	—	—	—	—	—	—	—	—
Foreign meal ...	—	—	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	
Barley—Grinding ...	28—32	—	—	—	—	22—25	26—28	26—28	24—29	23—28
Malting ...	27—28	—	—	34—36	—	27—30	30—32	30—32	30—33	30—32
Foreign ...	22—25	—	—	—	—	24—26	—	—	—	—
					6 bush.	6 bush.				
Malt—Home	—	—	—	—	—	39—40	—	—	—	—
Ship	—	—	—	—	—	—	—	—	—	—
			45 lbs.	45 lbs						
Oats—White	16—22	—	—	3*s* 6*d*	—	—	17—24	17—24	18—30	18—30
Black	—	—	—	2—3*s*	—	—	—	—	18—19	19—21
Foreign... ...	17—20	—	—	—	—	—	—	—	—	—
			qr.	qr.						
Peas—Boilers	30—32	—	—	40—41	—	34—36	—	—	36—50	16—50
Grinding	—	—	—	—	—	33—34	—	—	—	12—14
Foreign	22—31	—	—	37—39	—	—	—	—	—	—
Beans—New, small	26—34	—	—	36 - 38	—	32—34	23—32	23—32	11—14	—
„ Longpods, &c. ...	—	—	—	—	—	—	—	—	—	—
Old	—	—	—	—	—	—	38—40	36—33	16—17	—
Foreign	36—39	—	—	—	—	29—32	—	—	12—14	—
Buckwheat	—	—	—	—	—	—	—	—	—	—
Clover Seed—Red, per cwt.	35—44	—	—	—	—	—	—	—	—	—
White „	—	—	—	—	—	—	—	—	—	—
Linseed—Feeding	38—40	—	—	—	—	32—40	—	—	—	—
Linseed Cakes—British ...	—	—	—	43—44	—	—	—	—	—	—
Foreign ...	38	—	—	9*l.* 5*s.*	—	—	—	—	—	—
									190lbs.	
Indian Corn	—	—	—	29—32	—	—	—	—	15—16	15—16

Weekly Averages and Imports.	London. Jan. 2 *s. d.*	London. Jan. 2 qrs.	Liverpool. Dec. 26 *s. d.*	Liverpool. Jan. 2. qrs.	Wakefield. Dec. 22 *s. d*	Wakefield. Dec. 29 qrs.	Boston. Dec. 27 *s. d.*	Boston. Jan. 3. qrs.	Gloucester. *s. d.*	Gloucester. qrs.
WHEAT	49 2	2309	—	36607	48 9	5705	42 2	—	50 11	3829
BARLEY	32 11	2163	—	5481	30 9	4110	28 1	—	33 7	2343
OATS	22 0	1681	—	3997	19 6	742	14 11	—	18 10	—
RYE	27 0	46	—	—	—	—	—	—	—	—
BEANS	31 1	247	—	3659	—	92	30 2	—	—	532
PEAS	36 8	273	—	2954	—	89	—	—	—	82
SIGNED	*KINGSFORD and LAY.*		*SEGAR and TUNNICLIFFE.*		*SANDARS and DUNNS.*		*THOMAS WRIGHT.*		*J and C. STURGE.*	

11113 26.9.76

Sales by Auction.

AN IMPORTATION FROM GHENT.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent Garden, on MONDAY next, the 8th inst., at 12 for 1 o'clock, an assortment of CAMELLIAS, ROSES, PEACH, APPLE and PEAR TREES of the best sorts, and a Case of BULBS, just received from Belgium, to be sold without reserve. On View the morning of sale, and Catalogues had.

SALTHILL, BUCKS.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, and Others. Splendid Collection of Camellias, Azaleas, New Fuchsias, Verbenas, first-rate Rhododendrons, and choice Greenhouse Plants.

MR STEPHENSON will sell by Auction, on TUESDAY, January 9, and two following days, at 11 for 12 o'clock precisely, without reserve, upon the premises, Salthill Nurseries, the property of Mr. Alexander James Stewart, under a Deed of Assignment, for the benefit of his creditors, a splendid collection of Camellias, Rhododendrons (lately imported), Azaleas, fine Specimen Plants, choice Geraniums, Climbers, last year's Fuchsias, new Verbenas, select collection of Phloxes, Alpine and other Potted Plants; Evergreen, Deciduous, and Ornamental Shrubs, comprising large Laurel, Aucuba, Holly, Yew, Berberis Aquifolium, Arbor Vitæ, Box, Cypress, Hybrid and other Rhododendrons, Spruce, Red Cedars, Perpetual and other Roses, &c. The collection of Camellia, Specimen, Propagating, and other Houses, Pits, Frames, Lights, Hot-water Apparatus, &c. May be viewed three days previous and morning of Sale. Catalogues may be had on the Premises; at the Windmill Inn, Salthill; Fighting Cocks, Maidenhead; Chequers Inn, Uxbridge; or forwarded by post upon application to the Auctioneer and Appraiser, High-street, Eton, Bucks.—N.B. The Stock in the under-named Nursery will be Sold in the ensuing week, of which due notice will be given.

SALTHILL, BUCKS.

To Noblemen, Gentlemen, Nurserymen, Builders, and others.

MR. STEPHENSON will sell by Auction, on TUESDAY, Jan. 16, and two following days, at 11 for 12 o'clock precisely, on the premises, the property of Mr. Alexander James Stewart, for the benefit of his creditors, the remainder of the valuable NURSERY STOCK, comprising 1400 choice Standard and Dwarf Roses, 500 Hybrid and other Rhododendrons, Ghent and American Azaleas, Evergreen, Ornamental, and Deciduous Shrubs; fine large specimen Portugal Laurels, Aucubas, Hollies, Yew, Berberis, Box, Lilac, Ribes, Syringa, Poplar, Elm, Birch, Worked Lime, Ash, Thorns, Laburnum, 5000 large Balm of Gilead, Spruce, Larch, and other Firs, together with 2000 choice Standard and Dwarf Fruit Trees.—May be viewed the day previous and morning of sale. Catalogues to be had on the premises; Windmill Inn, Salthill, Fighting Cocks, Maidenhead; Chequers Inn, Uxbridge, or forwarded by post, upon application to the Auctioneer and Appraiser, High-street, Eton, Bucks.

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MR. PEISLEY begs to inform the Public he will Sell by Auction, on the Premises, near the George Inn, Sunbury, Middlesex, on TUESDAY, January 16, at 2 for 3 o'clock precisely, by order of the Executrix, SEVEN RICKS OF HAY, containing from 15 to 50 loads in each. The whole well got up and of good quality. It is situate a few miles from Town, near to the Thames and the Feltham Station.—May be viewed and Catalogues had of the Gardener on the Premises (who will show the lots), and at the George Inn, at the principal Inns in the neighbourhood; at the King's Head, Cumberland Market, Ram, Smithfield; Red Lion, Paddington; Bricklayers' Arms, Kent-road; and of Mr. PEISLEY, Hounslow.

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AND HIS MAJESTY, THE KING OF THE BELGIANS.

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Great attention is paid to the Seed Department of our Business, every sort being carefully proved before sent out. We grow some of the sorts ourselves, and procure the remainder from Seed Growers on whom we can place the fullest confidence for supplying true and genuine Articles. If, however, through any inadvertency, an error should at any time be made, we shall have much pleasure in sending three times the value in other Seed to compensate; and we make a general rule to take back all things that are not thoroughly approved of. And it is particularly desired that any deficiency in quantities, or inattention to orders, be at all times communicated to us. We can give reference to Gentlemen in almost every County in Great Britain and Ireland, who have procured Collections from us; and can produce UNSOLICITED *Testimonials of the highest character, if required.*

COLLECTIONS OF GARDEN SEEDS,

CONTAINING ALL THE CHOICEST SORTS, OFFERED AT THE FOLLOWING PRICES:

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No. 1.—Complete Collection of 20 Quarts of Peas, and all other Seeds in proportion, for one year's supply		2	10	0
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No. 4.—Ditto	ditto	0	12	6

THE GROWING QUALITIES OF EACH KIND OF SEED IS PROVED BEFORE SENT OUT.

RENDLE'S IMPROVED MODE OF PACKING GARDEN SEEDS.

We have the pleasure of introducing to the notice of the Nobility, Gentry, and the Public generally, OUR NEW MODE OF PACKING SEEDS, which we have no doubt will receive universal approbation. There can be no doubt that the present mode of sending out seeds in paper parcels is a very bad and inconvenient plan, for the following reasons:—Supposing a portion only of the contents of a parcel is required for the first sowing, the remainder is wrapped up and placed away (probably) in the garden house, and is liable here to be destroyed by mice or other vermin; and if the weather should be wet during the time of sowing, the names may be obliterated, and hence would arise confusion of sorts, and the seeds from being made damp would become mildewed and consequently useless. In order to guard against these defects, we have made arrangements for the manufacture of a large number of METAL CASES to contain from half an ounce upwards. Labels will be attached to each case with the names printed in full. The expense will be trifling in comparison to the benefit received, and we will undertake to pack the collections named above (except Peas and Beans). Nos. 1 and 2, at 10s. each, extra. Nos. 3 and 4, at 7s. 6d. each, extra. The Cases, after being emptied, will be useful for many purposes.

N.B. Purchasers will be pleased to say, in giving orders, how they would wish their seeds packed.

The following will be the Sorts and Quantities furnished for a **No. I. COLLECTION**, *and contains a general assortment of all the best kinds of Vegetables known, which have been selected with scrupulous care and attention.*

PEAS—1 quart Rendle's first Early Green
2 ,, Early Prince Albert
4 ,, Early Warwick
2 ,, Woodford's Marrow
2 ,, Bedman's Imperial
1 ,, Flack's Dwarf Victory
2 ,, Blue Scimitar
4 ,, Blue Prussian
1 ,, Knight's Dwarf Marrow
1 pint Victoria Branching Marrow
1 ,, Bishop's Early Dwarf
BEANS, 4 qrts. Early White Long-pod
4 ,, Green Windsor
2 ,, Johnson's Wonderful
1 pint Scarlet Runners
1 ,, Dwarf French
BEET—½-oz. Rendle's Superb Crimson
½-oz. Whyte's Black Red
½-oz. Silver or Sea Kale
BORECOLE—½-oz. Dwarf Curled
Packet Green Cabbaging
BRUSSELS SPROUTS—½-oz. Imported
BROCCOLI—½-oz. Grange's Early Dwarf Cape
½ ,, Early Purple Cape
Packet Adam's Superb White
Packet Legg's Late Dwarf White
,, True Walcheren
,, Chapple's Cream
,, Rendle's Improved Willcove
CABBAGE—half-oz. Shilling's British Queen
qr.-oz. Wheeler's Imperial
qr.-oz. Rendle's Early Admirable
half-oz. Early Cornish
qr.-oz. Large Paignton
half-oz. Early Hope
qr.-oz. Red Dutch (pickling)
qr.-oz. Atkin's Early Matchless
SAVOY—half oz. Green Curled
Packet Cattell's Green Curled
CARROT—1 oz. Earliest Horn (for frames)
4 oz. Improved Altringham
2 oz. James's Green top
1 oz. White Belgian
CAULIFLOWER—qr.-oz. Large Asiatic
CELERY—Packet Seymour's Superb White
,, Large Manchester Red
,, Dewsbury Walnut-flavoured
CRESS—1 lb. Curled
CUCUMBER—Packet Rendle's Fine Ridge
,, Sion House
,, Fine Early Frame
DELAWARE GREENS—qr.-oz.
ENDIVE—qr. oz. Green Curled
LEEK—2 oz. Fine Large Broad-leaved Scotch
LETTUCE—qr.-oz. Green Coss
qr.-oz. Aldy's Large Coss
qr.-oz. Bath Coss
hf. oz. Drumhead Cabbage
qr.-oz. White ,,
qr.-oz. Ice ,,
qr.-oz. Maltese ,,
MUSTARD—1 lb. White
MELON—Packet Duncan's Green Flesh
Packet Tom Beechwood
ONION—6 oz. White Spanish
1 ,, Red Deptford
ONION—2-oz. James's Long Keeping
1 ,, Silver-skinned
1 ,, Tripoli
PARSLEY—4 oz. Rendle's Treble Garnishing
2 ,, Myatt's Treble Curled
PARSNIP—2 oz. Improved Guernsey
RADISH—4 oz. Wood's Earliest Frame
8 ,, Early Scarlet
4 ,, White and Red Turnip
SPINACH—1 lb. Round
½ lb. Prickly
TOMATOES—qr.-oz.
TURNIPS—4 oz. Rendle's Early 6 weeks Stone
4 ,, Early White Dutch
4 ,, White Stone
4 ,, Yellow Altringham
2 ,, Six Weeks Yellow
VEGETABLE MARROW—qr.-oz.
HERBS—Packet Sweet Basil
,, Sweet Marjoram
,, Summer Savory
,, Thyme

No. II. COLLECTION.

PEAS—1 quart Rendle's First Early Green
1 ,, Early Prince Albert
2 ,, Early Warwick
1 ,, Woodford's Marrow
1 ,, Blue Scimitar
1 ,, Bedman's Imperial
2 ,, Blue Prussian
1 pint Victoria Branching Marrow
1 ,, Bishop's Early Dwarf
BEANS—2 quarts Early White Long-pod
2 ,, Green Windsor
1 ,, Johnson's Wonderful
1 pint Scarlet Runners
1 ,, Dwarf French
BEET—hf.-oz. Rendle's Superb Crimson
qr.-oz. Silver or Sea Kale
BORECOLE—hf. oz. Dwarf Curled
BRUSSELS SPROUTS—qr.-oz. Imported
BROCCOLI—Packet Grange's Early Dwarf Cape
,, Early Purple Cape
,, True Walcheren
,, Improved Willcove
CABBAGE, ,, Adam's Superb White
,, Shilling's British Queen
,, Early Cornish
,, Rendle's Early Admirable
,, Early Hope
,, Red Dutch (pickling)
SAVOY—hf.-oz. Green Curled
CARROT—1 oz. Earliest Horn, (for frames)
2 ,, Improved Altringham
1 ,, James's Green Top
1 ,, White Belgian
CAULIFLOWER—qr.-oz. London Superior
CELERY—Packet Seymour's Superb White
,, Large Manchester Red
CRESS—half lb. Curled
CUCUMBER—packet Rendle's Fine Ridge
,, Fine Early Frame
DELAWARE GREENS—qr.-oz.
ENDIVE—hf.-oz. Green Curled
LEEK—1 oz. Fine Large Scotch
LETTUCE—qr.-oz. Green Coss
qr. ,, Bath Coss
hf. ,, Drumhead Cabbage
qr. ,, White Cabbage
MUSTARD—hf.-lb. White
MELON—packet Green Flesh
ONION—2 oz. White Spanish
1 ,, Red Deptford
1 ,, James's Long Keeping
ONION—hf. oz. Silver Skinned
PARSLEY—2 oz. Rendle's Treble Garnishing
PARSNIP—1 oz. Improved Guernsey
RADISH—2 oz. Wood's Earliest Frame
4 ,, Early Scarlet
2 ,, White and Red Turnip
SPINACH—hf.-lb. Round
4 oz. Prickly
TOMATOES—Packet
TURNIPS—2 oz. Rendle's Early 6 Weeks Stone
2 ,, Early White Dutch
2 ,, Yellow Altringham
VEGETABLE MARROW—Packet
HERBS—Packet Sweet Basil
,, Sweet Marjoram
,, Thyme
,, Summer Savory

No. III. COLLECTION.

PEAS—1 quart Early Warwick
1 pint Woodford's Marrow
1 quart Bedman's Imperial
1 pint Blue Scimitar
1 ,, Rendle's First Early Green
2 quarts Blue Prussian
1 pint Bishop's Early Dwarf
BEANS—1 quart Early White Long-pod
1 ,, Green Windsor
1 pint Johnson's Wonderful
hf. ,, Scarlet Runners
hf. ,, Dwarf French
BEET—packet Rendle's Superb Crimson
,, Silver or Sea Kale
BORECOLE—hf.-oz. Dwarf Curled
BRUSSELS SPROUTS—qr.-oz. Imported
BROCCOLI—Packet Grange's Early Dwarf
,, Adam's Superb White
,, True Walcheren
,, Rendle's Improved Willcove
CABBAGE—Packet Shilling's Queen
,, Wheeler's Imperial
,, Early Cornish
,, Rendle's Early Admirable
CARROT—1 oz. Earliest Horn
1 ,, Improved Altringham
1 ,, James's Green top
CAULIFLOWER—qr.-oz. Large Asiatic
CELERY—Packet Seymour's Superb White
CRESS—4 oz. Curled
CUCUMBER—Packet Rendle's Fine Ridge
,, Fine Early Frame
DELAWARE GREENS—qr.-oz.
ENDIVE—qr.-oz. Green Curled
LEEK—1-oz. Fine Large Scotch
LETTUCE—Packet Green Coss
,, Bath Coss
,, Drumhead Cabbage
,, White Cabbage
MUSTARD—4 oz. White
MELON—Packet Green Flesh
ONION—2 oz. White Spanish
1 ,, Red Deptford
1 ,, James's Long Keeping
PARSLEY—1 oz. Rendle's Treble Garnishing
PARSNIP—1 oz. Improved Guernsey
RADISH—2 oz. Wood's Early Frame
2 ,, Early Scarlet
2 ,, White and Red Turnip
SPINACH—4 oz. Round
TOMATOES—Packet
TURNIPS—1 oz. Rendle's Early 6 Weeks Stone
1 ,, Early White Dutch
1 ,, White Stone
VEGETABLE MARROW—Packet
HERBS—Packet Sweet Basil
,, Sweet Marjoram
,, Thyme
,, Summer Savory

No. IV. COLLECTION.—Somewhat similar to Collection No. III., but in smaller quantities.

If there should be any sorts that are not required in the above Collections, increased quantities of those most desired could be sent.

CHOICE VEGETABLES.

The following can be highly recommended as being very choice and valuable varieties, and will be FORWARDED FREE by Post, at **6d. per Packet, or Twenty Packets for 8s.**

BEET—Rendle's Superb Crimson (selected from roots of the richest colour)
Whyte's Black Red
BORECOLE—Green Cabbaging (valuable new variety)
BRUSSELS SPROUTS—True Imported
BROCCOLI—Legg's Late White
Adam's Superb White (a most excellent kind, ready in December and January)
Myatt's True Walcheren (saved by Mr. Myatt, the celebrated grower of Deptford)
BROCCOLI—Rendle's Improved Willcove (large late White variety—unequalled)
Chapple's Cream
CABBAGE—Rendle's Early Admirable (almost valuable Early Variety)
Warner's Incomparable (a very superior sort)
Shilling's British Queen
Atkin's Early Matchless
Barnes's New Early
Large Sprotboro' (an Immense variety)
CABBAGE—Enfield Market Early Cornish (a valuable Early variety)
SAVOY—Cattell's Green Curled (superior to the common kind)
CARROT—Improved Altringham
James's True Green Top
CAULIFLOWER—Large Asiatic
CELERY—Seymour's Superb White
Large Manchester Red
Dewsbury, Walnut-flavoured
COUVE TRONCHUDA—(Valuable new Vegetable)
ENDIVE—New Large Batavian Cabbage
LEEK—Large Broad-leaved Scotch
LETTUCE—True Drumhead Cabbage
Ady's Large Coss ,,
Ice Cabbage ,,
London Market ,,
ONION—True Spanish or Portugal
PARSLEY—Rendle's Treble Garnishing
Myatt's Extra Fine
PARSNIP—Improved Guernsey
TURNIP—Rendle's Six Weeks Stone
Early Snowball

CUCUMBERS—ARNOTT'S CHELTENHAM SURPRISE. *We have but a limited supply of this Splendid Variety. Four specimens, 18 to 20 inches in length, were exhibited in London, hanging from one stem, within the space of 11 inches. This Cucumber can be recommended as one of the finest and most prolific yet known.*—2s. 6d. per Packet.

The following choice kinds, 1s. per Packet, free by post.—VICTORY OF HATH, IMPROVED SION HOUSE, STOCKWOOD (Fine Ridge), WEEDON'S FINE FRAME, CHARLTON HERO, BARNES'S MAN OF KENT, ROMAN EMPEROR, and CARPENTER'S WONDER.

MELONS—DUNCAN'S GREEN FLESH, BEECHWOOD, GREEN FLESHED CANTOL, and PRIZE GREEN FLESH.

*** *All Orders above 2l. will be delivered, free of Carriage, by* Messrs. PICKFORD and Co., *to any Station on the Great Western, Bristol, and Exeter, or South Devon Railways; or to any Town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers.*

The South Devon Railway is now open to Plymouth (Laira Green), and we now enjoy Railway communication to all parts of England and Scotland, and have made arrangements with Messrs. PICKFORD & Co. for the cheap delivery of our Goods to every Town in Great Britain. Any instance of Overcharge should be immediately communicated to us, as it is our interest to see that our Customers are charged at the lowest rates. Constant Steam communication from this Port to Cork, Dublin, Glasgow, Liverpool, London, Falmouth, and most of the principal Ports in the Kingdom.

COUNTING HOUSE, UNION ROAD. WILLIAM E. RENDLE AND CO., PLYMOUTH.

Printed by WILLIAM BRADBURY, of No. 6, York-place, Stoke Newington, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the county of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent Garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JANUARY 6, 1849.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No 2.—1849.] SATURDAY, JANUARY 13. [Price 6d.

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GARDENERS' BENEVOLENT INSTITUTION.—Notice is hereby given that the ANNUAL GENERAL MEETING of the Subscribers to this Institution will be held on Wednesday next, 17th January, at the London Coffee House, Ludgate, for the purpose of electing officers for the ensuing year, and receiving the accounts of the Charity for the past year. The chair to be taken at 12 o'clock precisely. An Election for Two Pensioners will afterwards take place from among the following Candidates, whose testimonials have been examined and approved of by the Committee.

Name.	Residence.	Age.	
Edward Marshall	London	69	6th application.
Mary Browne	London	82	4th ,,
Martin Miller	Exeter	78	4th ,,
John Skeates	Clapham	69	4th ,,
Thomas Goodhall	Dulwich	72	3rd ,,
Thomas Mills	Wandsworth	71	3rd ,,
Charles Ainslie	Leyton, Essex	83	2nd ,,
John Appleby	Clapham	86	2nd ,,
Robert Duncan	Highgate	69	2nd ,,
Ogilvie Neil	Scone, Perth	80	2nd ,,
Humphrey Taylor	Clapham	70	2nd ,,
James Battey	London	65	1st ,,
Edward Beach	Gloucester	74	1st ,,
John Cocks	Clapham	62	1st ,,
John Ross	London	64	1st ,,
Richard Rudland	Dartford, Kent	78	1st ,,
John Shepherd	Clapham	70	1st ,,

The Ballot will commence at 1 and close at 3 o'clock precisely.

The Committee earnestly request those Members whose subscriptions are as yet unpaid, to remit the same without delay, as no person will be allowed to vote whose subscription for the year 1848 is unpaid on the day of election.

Edward Roger Cutler, Secretary, 97, Farringdon-st., Jan. 13

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD and SON have the honour of acquainting their Friends that their CATALOGUE of New and Esteemed VEGETABLE, FLOWER, and AGRICULTURAL SEEDS is now ready, and may be had Gratis on application. It will be found to contain many new Peas, Broccolies, &c., of first-rate excellence.—N.B. Copies of the above will be sent, as usual, to all the customers.

QUICK THORN.

FOR SALE, 100,000 of the above, being 3 years transplanted, and extraordinarily fine. Delivered in London or at the Watford Station, North-Western Railway, at 10s. per 1000. A sample, if required.—Robert Josling, Seedsman, St. Alban's.

HENRY DAVIS, of Ogle's Grove Nursery, Hillsborough, Ireland, has to offer a very superior new seedling APPLE, named the OGLE'S GROVE PIPPIN. It is, without any exception, one of the most abundant bearers, keeps remarkably well (till the month of June), is of first-rate quality and appearance, and suitable both for table and kitchen purposes. Fine healthy standard trees, 5s.; dwarf, do., 3s. 6d. each; with the usual discount to the Trade if three or more are ordered. Trees may also be obtained at the Nursery of Messrs. Hugh Low and Co., Upper Clapton, London.

NEW CABBAGE.—"KING OF THE CABBAGES" can be had in any quantity at J. G. WAITE'S Seed Establishment, 181, High Holborn, London, at 8s. per lb. The above warranted the earliest and best known.

WILSON'S WELL-KNOWN EARLY RHUBARB.—J. W. can confidently recommend the above as being far superior to any offered to the public. It is of a highly delicious flavour, a most prolific bearer, and free grower, with large fleshy stalks.

2 years old, from seed ... ... 1s. 6d. per root.
4 years old, do. ... ... 3 0 ,,

A liberal allowance to the trade. Post-office orders payable to Josiah Wilson, Enfield Highway, Middlesex.

DOUBLE ITALIAN TUBEROSE ROOTS.—The Bulbs of this most beautiful and fragrant Flower have been just received from Italy at A. CORBETT'S Old-established Italian Warehouse, 16, Pall-mall, and are warranted double, at 4s. per dozen. Also, expected about the end of January, a choice collection of Orange, Lemon, Citron, and Shaddock Trees, together with Catalonian, Azorian, and Arabian Jessamine plants, any of which may be bespoke.

PEAS.

CLARKE'S NEW LINCOLN GREEN PODDED MARROW.—Being a selected variety from Clarke's New Early Ringwood, possessing all the advantages of the original stock, as to earliness and size, and at the same time having a rich Green Pod. To be had (wholesale only) of Mr. Henry Clarke, Seed Merchant, 87, King-street, Covent Garden.

SEEDS.—ALL PURCHASERS OF KITCHEN GARDEN SEEDS should refer to last week's Gardeners' Chronicle, on the back page of which is

RENDLE'S NEW CATALOGUE,

comprising all the best kinds in cultivation. A copy can be had on application to William E. Rendle & Co., Seed Merchants, Plymouth.

MANNINGTON'S PEARMAIN.

JAMES CAMERON, Nurseryman, Uckfield, Sussex, begs to inform his friends and the public that he is now ready to send out trees of that most excellent APPLE, called by Dr. Lindley, "Mannington's Pearmain," a seedling raised at Uckfield and hitherto confined only to this locality. It is a most excellent Dessert Apple, with a rich, sugary, and aromatic flavour; superior in every respects to the Ribstone Pippin, and will keep even to the end of May. It has been favourably noticed by Dr. Lindley, in the Gardeners' Chronicle of April 1848. Plants of this Apple can be obtained, Dwarf Maidens, at 10s. 6d. each by application as above, or to Messrs. Gray, Adams, and Hogg, Nurserymen, Brompton-park, Kensington, London.

Remittances expected from unknown correspondents.

SUPERIOR NEW GARDEN SEEDS.—Carriage free by Pickford and Co.

	Per quart s. d.
Fairbeard's Champion of England Peas	2 6
Fairbeard's Early Surprise	1 6
Bellamy's Early Green Marrowfats, fine flavour, dark green, very early	1 6
Sutton's superb Green Marrowfats, the best late Pea known	1 6
Thompson's Early Dwarf (8 to 12 inches)	0 10
Cormack's British Queen	2 0
Cormack's Prince Albert	0 10
Flack's Dwarf Victory, very fine large	0 10
White's Queen of Dwarfs, fine	1 6

John Sutton and Sons particularly recommend the above as the very best of all the Peas now in cultivation, and they have also a large stock of the older kinds at 6d. to 9d. per quart. Messrs. Sutton's stock of KITCHEN GARDEN SEEDS is very extensive, all of which are of home growth, and the undermentioned are a few kinds of very superior properties

	s. d.		s. d.
Berkshire Brown Cos Lettuce p. oz.	2 0	Extra Dwarf Curled Parsley p. oz.	0 4
Sutton's superb Green Cos do. p. oz.	2 0	Jersey Marrow Parsnip ,,	0 4
Selected Dark Crimson Beet p. oz.	0 6	Selected Scarlet Horn Carrot p. oz.	0 4
True Walcheren Cauliflower p. oz.	2 0	James's New Green-topped do. p. oz.	0 4
Large White German do. ,,	1 6	Sutton's Imperial Cabbage p. oz.	1 0
Reading Onion, best sort ,,	0 6	Atkins's Dwarf do. ,,	0 8
New White Globe Onion ,,	0 6	Shilling's Queen do. ,,	0 6
Hammond's White Cape Broccoli p. oz.	1 6	Fine French Curled Endive p. oz.	0 9
Snow's Winter White do. p. oz.	1 6	Seymour's Solid White Celery p. oz.	1 0
Mammoth Late White do. p. oz.	1 6	Sutton's superb Pink do. p. oz.	1 0
Howden's superb Purple do. p. oz.	1 0	New Imperial Hearting Kale p. oz.	1 0
Early six weeks forcing Bean p. qt.	1 6	Fresh imported Brussels Sprouts p. oz.	1 0
Marshall's Dwarf Broad Bean p. qt.	1 0	Extra Green Curled Savoy p. oz.	0 8
Berkshire Champion Cucumber p. pkt.	1 0	Early Mousetail Turnip ,,	0 3
Victory of Bath do. ,,	1 0	Wood's Early Scarlet Radish p. oz.	0 3
Cuthill's Black Spine ,,	1 0	Beck's superb Short-top do. p. oz.	0 3
True Beechwood Melon p. pkt.	1 0	New Scarlet Olive do. ,,	0 3

Most of the above kinds are included in Messrs. SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN SEEDS at 3l. 3s., at 2l. 2s., and 1l. 1s. each collection

True Ashleaf Kidney, Chalmore Kidney, Soden's Early Oxford, and Early Frame Potatoes, 2s. 6d. per peck

John Sutton and Sons, having for many years been extensive growers of Garden Seeds, have regular customers in all parts of the Kingdom, and have therefore made arrangements with Pickford and Co. to deliver their goods free to either of the Railway Termini in London, or at any Station on the Great-Western and South-Western Railways

John Sutton and Sons, Reading Seed Warehouse, Reading, Berks.

SUPERB NEW RANUNCULUSES, GLADIOLUS, &c.—The new varieties of Ranunculus consist of very superior and first-rate flowers, which we have selected during the last few years from immense quantities of seedlings, and for vigorous growth and prolific flowering are far preferable to the older varieties.

RANUNCULUSES, free by post, with printed directions for planting and culture,

50 superb new varieties, named, 40s., 25 for 22s. 6d.
50 fine older varieties, named, 15s.; 25 for 8s.
100 finest mixture, 10s.; 100 fine, 5s., or, post free 6s.

GLADIOLUS.

12 splendid early varieties, post free, 15s.
Splendid mixed early hybrids, 3s. 6d., or, post free, 4s. 2d.

The early varieties flower from June to August in the open air, and are best planted without delay.

Gladiolus Gandavensis, large roots, 1s. 6d. each; Brenchleyensis, 5s.; splendens, 5s.; Rosa Mundi, 2s. 6d.; Ramosus, 1s. 6d.; Psittacinus sanguineus, 1s. Those at 2s. 6d. and upwards, free by post, under 2s. 6d., 2d. each extra.

DOUBLE ANEMONES.

Finest mixture, 2s. per doz., or 12s. per lb.; Fine, 1s. 3d. per doz., or 8s. per lb.

12 varieties, named, best scarlets, crimsons, &c., 3s. 6d., post free, 4s. 2d.; Single, fine, mixed colours, 4s. per lb.

Catalogues of Roots, free by post, comprising our superb new Ranunculuses, upwards of 40 varieties of Gladiolus, &c.

Post-office orders made payable to Bass and Brown or to Stephen Brown. Remittances requested from unknown correspondents.

Bass and Brown, Seed and Horticultural Establishment, Sudbury, Suffolk.

JAMES CHARTRES begs most respectfully to inform the Nobility, Gentry, and the Public generally that his CATALOGUE OF SEEDS is now ready, and will be forwarded on application.

J. C. further begs to add that he has the following first-rate Early PEAS, true to their kinds: Warner's Emperor, Shilling's Dancecroft, Fairbeard's Surprise, and Fairbeard's Champion of England.—74, King William-street, London, Jan. 13.

JOSLING'S ST. ALBAN'S GRAPE, the same as patronised by the Queen, Prince Albert, Committee of the Horticultural Society of London, Prof. Lindley, Mr. R. Thompson, Mr. Henderson, Pine-apple Nursery, and the editor of the Gardeners' Journal, as being distinct and one of the best in cultivation. Two year old plants, 10s. 6d. each; one year old plants, 7s. 6d. each, carriage free to London. A remittance expected. The usual allowance to the trade if three are taken. May be had of any respectable Nurseryman, or the grower, Robert Josling, Seedsman, St. Albans.

LARCH PLANTS.

PETER BOOTH, Nurseryman, Falkirk, has for sale a large stock, from two to three millions of transplanted LARCH plants of various sizes, at the following prices per 1000:—12 to 18 inches, 6s. 6d.; 1½ foot, 7s.; 2 feet, 7s. 6d.; 2½ feet, 8s.; 3 feet, 10s. Of the 2½ feet and 3 feet sizes, there are above a million of them, which are well suited for both the Scotch and English markets, and as it is now well known that strong Larch plants are scarce in the country, early application is necessary. This extensive stock of transplanted Larches is well grown, well rooted, and of the very best quality, and can be seen at P. B.'s various Nursery grounds at Falkirk. Of the great variety of plants in these Nursery grounds, a few sorts may be noted, to show the low prices at which they can be obtained, viz., Transplanted Scotch Firs, from 9 to 18 inches, 5s. and 8s.; ditto, 1 foot, 1½ foot, and 2 feet, 5s. 6d.; Spruce Fir, 1 foot, 1½ foot, and 2 feet, 4s. to 8s.; Oaks, 2½ feet, 8s. 6d.; Plane, Elm, Alder, and Beech, 3 feet, 8s. 6d.; Ash, 2 feet to 4 feet, 4s. to 5s.; seedling Pinus austriaca, 2 years, 3s. A very large stock of transplanted Thorns very cheap. A remittance or reference must accompany all orders from unknown correspondents.

TO PLANTERS.

W. DRUMMOND and SONS, Nursery and Seedsmen, Agricultural Museum, Stirling, have for disposal a large stock of FOREST TREES, &c.

TRANSPLANTED LEADING SORTS

Oak and Beech in sizes, 1½ to 3 feet	18s. to 27s.	per 1000
Ash, Elm, and Plane, do. do.	15s. to 18s.	,,
Larch, common, do. 1 to 2½ feet	9s. to 14s.	,,
Do. Tyrolese, do. do.	12s. to 16s.	,,
Scotch Fir, do. 9 to 18 inches	7s. 6d. to 10s. 6d.	,,
Norway Spruce, do. do.	11s. to 14s.	,,
Thorns or Quicks, 2 and 3 years	9s. to 10s. 6d.	,,

Priced Lists, including Shrubs and Fruit Trees, can be had on application. The nursery grounds, consisting of [illegible] gravelly soil, produce hardy fibrous-rooted Trees, well suited for Hill and Moor planting. Orders above 5l. will be delivered free at the principal Ports of Britain and Ireland.

CUCUMBER GROWERS should not delay purchasing the Seed of TILEY'S VICTORY OF BATH, and GORDON'S WHITE SPINE, E. Tiley having last season received numerous letters when the Seed was all disposed of. It possesses the whole of the properties as laid down by Mr. Glenny.

Parties competing for the First Prizes at the forthcoming Cucumber Exhibitions in 1849 should procure the seed in time.

E. T. has numerous letters by him which he has received, authorising him to make use of the signatures if required, and speaking highly of the merits of the above Cucumbers over all others.

VICTORY OF BATH, 10 Seeds, 2s.
GORDON'S FINE WHITE SPINE, 10 Seeds, 1s. 6d.

Also, LORD KENYON'S FAVOURITE (true), or better known as the SYON FREE BEARER, very superior to the old Syon House, as a Cucumber for winter cultivation; 10 Seeds, 2s. 6d., or a Packet of the above three varieties, 5s. The true old Syon House can be supplied in packets of 10 seeds for 1s. 6d.

For further particulars, see E. Tiley's Advertisement in this Paper of December 16th. A remittance must accompany each order, either in cash or postage stamps to the amount.

Sold at Edward Tiley's General Seed Shop, 10, Pulteney-bridge, Bath.

SEEDS.—CORNER OF HALF-MOON STREET.

THOMAS GIBBS and CO.,

(By Official Appointment) the Seedsmen to the "ROYAL AGRICULTURAL SOCIETY OF ENGLAND," Beg to remind the Members of the Society, and Agriculturists in general, that their only Counting House and Seed Warehouse is at the corner of HALF MOON-STREET, PICCADILLY, LONDON, as for the last Fifty Years.

Priced Lists of Agricultural Seeds are always ready during the season, and may be had on application.

CUCUMBER and MELON BOXES and LIGHTS.—One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom, 2-light Boxes and Lights from 3l. 6s. Garden Lights of every description. Conservatories, Green and Hot-houses made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England.

James Watts, Hothouse Builder, Claremont-place, Old Kent-road, London.

FLOWER-POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford-street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.—250, Oxford-street, near Hyde-park.

NEW LETTUCES OF SUPERIOR QUALITY.

SUTTON'S BERKSHIRE BROWN COS requires no tying, the large broad leaves, forming an upright close heart, of superior flavour. SUTTON'S SUPERB GREEN COS, very large, upright, broad topped, turning in close, without tying. The above are very superior Lettuces, sufficiently hardy to stand the winter, but peculiarly adapted for spring sowing, as they endure the greatest heat and drought without running to seed, insomuch that it is difficult to obtain seed. Price 2s. per oz., or 1s. per packet.—Address JOHN SUTTON and SONS, Reading, Berks.

‸ See also Messrs. SUTTON'S List of other choice Seeds in the 1st page of this week's *Chronicle.*

TO PLANTERS.

THE SUBSCRIBER has to offer the following SEEDLING FOREST TREES, &c.

Ash, 1 year per 1000, 2s. 6d.		Gorse, 1 yr., per 1000, 7s. 0d.	
" 2 years ...	3 6	" 2 years ...	10 0
Alders, bedded 2 years,	6 0	Hollies, 2 years	15 0
Beech, 1 year ...	3 6	Oaks, 1 year ..	3 6
Broom, 2 years ...	15 0	" 2 years ...	6 0
Elm, English, bedded 2 years ...	12 0	" Evergreen, bedded, 50	0
		Whitethorn, 1 yr., 2s. to 3	0

TRANSPLANTED FOREST AND ORNAMENTAL TREES.

Acacias, 5 to 6 ft., p. 100, 15s.	0d.	Chestnut, Spanish, 3 to 4 feet, per 1000	60s. 0d.
Alders, 7 to 9 feet ...	8 0	Chestnut, Horse, 6 to 8 feet, per 100 ...	20 0
Ash, 3 to 4 feet, p. 1000,	25 0		
" 4 to 5 feet ...	30 0		
Birch, 2 to 3 ft., p. 1000,	35 0		

Elms, the true Huntingdon, raised here, 3 to 4 feet, 12s. per 100
" " " 4 to 6 feet, 16s. per 100
" " " 6 to 8 feet, 27s. per 100
" " " 8 to 10 feet, 30s. per 100
" " " 10 to 12 feet, 80s. per 100
" Hertfordshire, at the same prices
" common English, 3 to 5 feet, 45s. per 1000
Fir, Spruce, 2 to 3 feet, 30s. per 1000
" Silver, 2 to 3 feet, 80s. per 1000; 3 to 4 feet, 90s. per 1000
Hazel, 3 to 4 feet, 40s. per 1000; 4 to 5 feet, 50s. per 1000
Hornbeam, 8 to 10 ft., 30s. per 100
Limes, red-twigged, from layers, 8 to 10 feet, 70s. per 100
10 to 12 feet, 100s. per 100
Maple, 2 to 3 ft., 25s. per 1000; 4 to 6 ft., 22s. 6d.; 6 to 8 ft., 50s.
" Norway, 8 to 10 feet, 25s. per 100
Oak, English, 3 to 4 ft., 40s. per 1000; 4 to 6 ft., 55s. per 1000
" Turkey, 5 to 7 feet, 15s. per 100
Pine, Scotch, 3 to 4 feet, 40s. per 1000; 4 to 5 feet, 50s. per 1000
Poplar, Black Italian, 5 to 7 feet, 40s. per 1000
" Lombardy, 7 to 8 ft., 25s. per 100; 8 to 10 ft., 35s. per 100
Sycamores, 3 to 4 feet, 25s. per 1000; 4 to 5 feet, 30s. per 1000
Willows, Bedford, 4 to 5 feet, 30s. per 1000; 5 to 6 feet, 40s.

ORNAMENTAL TREES AND SHRUBS.

Acacia (Robinia), several fine species, dwarfs, 9s. per doz.; standards, 12s. per doz.
Ailanthus glandulosus, 8 to 9 feet, 12s. per doz.
Althæa frutex, a fine collection, 9s per doz.
Ash, 12 fine sorts, amongst which are the gold-barked, Chinese, heterophylla, &c., 12s. per doz.
Beech, Fern-leaved, 2 to 3 feet, 9s. per doz.; 3 to 5 feet, 15s. per doz.; 6 to 8 feet, 24s. per doz.
" Purple, 2 to 3 ft., 8s. per doz, 50s. per 100; 3 to 4 ft., 10s. per doz., 75s. per 100; 4 to 5 ft., 15s. per doz., 100s. per 100
" Weeping, 18s. per doz.
Berberry, several sorts, 6s. per doz., 40s. per 100
Birch, Poplar-leaved, 25s. per 100
Elms, fastigiata, curl-leaved, silver-striped, &c., 12s. per doz.
Thorns, 24 varieties, including new double scarlet, dwarfs, 10s. per doz., standards, 15s. per doz.
Laburnums, standards, fine, 6s. per doz., 40s. per 100
Lilac, sorts, 25s. per 100. Mountain Ash, 5 to 6 ft., 12s. per 100
Maple, Eagle's Claw and several choice kinds, 9s. per doz.
Oak, fine collection of American species, 9s. p. doz., 50s. p. 100
Roses, a fine mixture for shrubberies, 21s. per 100
Aucuba japonica, 2 feet, fine, 50s. per 100
Laurels, 3 to 4 feet, fine, 50s. per 100; Portugal, 2 to 3 feet, 50s. per 100; 3 to 4 feet, fine, 100s. per 100
Cedar, Red, 2 to 3 feet, very fine, 9s. per doz.; 3 to 4 feet, 12s.
Arbor-vitæ, Chinese, 2 to 3 feet, 9s. per doz.; 3 to 4 feet, 12s.

Other Ornamental Trees, Evergreens, &c., at similar charges, of which a Catalogue may be had.

Not less than 6 will be sold at the dozen price, 25 at the hundred price, and 300 at the thousand price. For smaller quantities a slight increase will be charged.

N.B.—The above charges are for ready money.

SUSAN WOOD, Nurseries, Huntingdon.

TO BE DISPOSED OF, A CANTELONIAN HYDRO-INCUBATOR, price 15l. 15s. Apply, by letter, post-paid, to A. B., Mr. James Simmonds, Avenue Cottages, Brixton Hill; Agent for the sale of the eggs of the Cochin-China Fowl.

CHOICE AZALEAS, RHODODENDRONS, &c.

BASS AND BROWN are enabled to offer the following, all strong and fine, at the annexed very low prices, in consequence of the recent disposal of the extensive stock of the late Glasenwood American Nursery, in Essex, which has been long celebrated for its very superior collections of these favourite shrubs.

	s.	d.
GHENT AZALEAS, very splendid new hardy Glasenwood seedlings, fine plants, well set with flower-buds, per dozen ...	9	6
HARDY ORANGE AZALEAS, fine with buds, p. doz.	9	0
RHODODENDRON, hardy scarlet, large and fine plants, with buds, 2s. 6d. each, or per dozen	25	0
" Ponticum, with bloom buds, per dozen ...	6	0
" Fine mixed hardy varieties, ditto, per dozen.	9	0
" Fine Glasenwood seedlings, 5s. p. doz., p. 100	35	0
" Catawbiensis, fine, with buds, each ...	2	6
KALMIA LATIFOLIA, large plants, each 1s. 6d., or per doz. ...	15	0
PÆONIES, Glasenwood hybrid Chinese varieties, very choice and strong, per dozen ...	6	0

Also, the following selections of Choice Plants, from our General Collection.

	s.	d.
HARDY FLOWERING SHRUBS, 20 new and fine vars.	12	0
GREENHOUSE PLANTS, 50 choice varieties ...	50	0
" 25 vars., 28s.; 12 vars. ...	15	0
HARDY HERBACEOUS PLANTS, 100 select and showy vars. ...	50	0
" 50 vars., 30s.; 25 vars. ...	17	6
HARDY ROCK PLANTS, 25 fine vars., 12s.; 12 vars.	7	6
ANTIRRHINUMS, 12 fine showy varieties ...	6	0
DOUBLE SWEET-WILLIAM, 12 distinct varieties ...	6	0
CARNATIONS AND PICOTEES, 12 pair superb show vars. ...	20	0
STANDARD ROSES, 12 beautiful varieties ...	20	0
DWARF ROSES, 12 ditto ditto ...	9	0
DWARF PERPETUAL-BLOOMING ROSES, 12 fine vars. ...	12	0
CLIMBING ROSES, 12 fine vars., strong ...	9	0
GOOSEBERRIES, 50 finest named prize varieties ...	15	0
" 12 ditto, 5s.; fine named, per doz.	4	6
RHUBARB, Mitchell's Royal Albert, each ...	2	6
" Myatt's Victoria, 1s. each; per dozen ...	9	0
" Tobolsk and Radford's Giant, per dozen ...	6	0

Goods sent to compensate the long carriage. Remittances requested from unknown correspondents. Post-office orders payable to BASS and BROWN, or STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

KNAP HILL NURSERY, NEAR WOKING, SURREY. TO GENTLEMEN ENGAGED IN PLANTING.

HOSEA WATERER offers the following very desirable plants.

CEDRUS DEODARA, fine plants from seed, 3 to 4 feet high, 84s. per doz.
" " from 5 to 10 feet, 1 to 7 guineas each.
(These are magnificent plants.)
ARAUCARIA IMBRICATA, handsome plants, from 2½ to 3 feet, 42s. each. A few very fine plants, from 3 to 5 feet, 3 to 10 guineas.
CRYPTOMERIA JAPONICA, from seed, 5 to 7 ft., 4 to 6 guis. 1½ foot, 84s. per doz.
TAXODIUM SEMPERVIRENS, good stout plants, 2 feet, 84s. 4 to 6 feet, 1 to 3 guineas each.
PINUS DOUGLASII, from seed, 1½ to 2 feet, 15s. each.
" 3 to 6 feet, 21s. to 63s.
" MENZIESII, 3 to 5 feet, 42s. to 84s. per doz.
" INSIGNIS, 1½ to 2 feet, 7s. 6d. each.
" " a few very fine plants, from 5 to 7 feet, 2 to 5 guineas.
" CEMBRA, 5 to 7 feet, 10s. to 15s. each.
" " large and very handsome plants, 10 to 12 feet, 42s. each.
" CANADENSIS, or Hemlock Spruce, 4 to 5 feet, 21s. per dozen.
" " larger, 7 to 10 feet, 30s. to 60s. per dozen.
" EXCELSA, 3 to 6 feet, 3s. 6d. to 10s. 6d. each.
" FRAZERI, 3 to 5 feet, 30s. to 42s. per dozen.
" MORINDA, or Smithiana, 2 to 4 ft., 2s. 6d. to 5s. each.
" WEBBIANA, 2 to 4 feet, 10s. 6d. to 42s. each.
" PINSAPO
" CEPHALONICA
" LAMBERTIANA
" HARTWEGII
" DOUGLASII
" MACROCARPA

A few of the largest and most handsome plants in the trade. Prices will be given on application.

IRISH YEWS, 6 to 9 feet, 7s. 6d. to 15s. each.

‸ It often happens Irish Yews are injured or rendered unsightly from their tendency to divide in windy or snowy weather. The plants here offered are grown from one stem only, similar to those at Elvaston, which are the finest in the kingdom.

CEDARS OF LEBANON, 2 to 2½ feet, very bushy and handsome, 30s. per dozen.
" " 5 to 9 feet, 10s. 6d. to 42s. each.
(These are splendid plants.)
JUNIPERUS REPANDUS, 4 to 6 feet, 7s. 6d. to 10s. 6d. each.
" " 8 to 10 feet, very handsome plants, 21s. to 42s. each.
" CHINENSIS, 4 to 5 feet, 7s. 6d. to 10s. 6d. each.
" " large handsome plants, 6 to 8 feet, 21s. to 31s. 6d. each.
" IRISH UPRIGHT, 4 to 6 feet, 3s. 6d. to 10s. 6d.
" " 7 to 9 feet, 15s. to 21s.

‸ These two last-named Junipers ought to be planted by every one who has any place approaching a lawn.

THUJA WAREANA (the best variety of Siberian Arbor Vitæ), fine plants, 5 to 7 feet, 5s. to 7s. 6d. each.

The above are all growing in the open ground, are healthy and handsome specimens; they have never been in pots, and consequently are the more desirable.

HOSEA WATERER would also invite attention to his stock of large Spruce Firs, from 7 to 15 feet high; large Red Cedars, Phillyreas, green and variegated Hollies, Common Yews, 4 to 7 feet, fine Standard Weeping Limes, Weeping and Purple Beech, Standard Magnolias, Tulip Trees, &c., all of which are in a capital state for removing, and will be sold reasonably.

The Collection of AMERICAN PLANTS at the KNAP HILL NURSERY is well known as being the most extensive in this country; witness the beautiful Exhibition in the King's-road, Chelsea, every spring.

RHODODENDRONS, best hardy kinds, 30s. to 60s. per dozen.
" fine hardy scarlets, large plants, 60s. per dozen.
AZALEAS, best varieties, from 18s. to 42s.
KALMIA LATIFOLIA, from 18s. to 84s.; for large plants, and upwards.
HARDY HEATHS, a first-rate collection of about 25 of the most beautiful and distinct kinds, good plants, at 65s p. 100.

‸ Hardy Heaths are not planted so generally as they deserve. Nothing can be more interesting and beautiful, and flowering as they for the most part do in the autumn, renders them still more valuable.

FOR PLANTING COVER. CARRIAGE DRIVES, &c.

RHODODENDRON PONTICUM, fine bushy plants, from 10s. 6d. to 21s. per 100.
BOX-LEAVED PRIVET (a new and very superior variety to the old Evergreen), 8s. to 12s. 6d. per 100.
BERBERIS AQUIFOLIUM, bushy plants, 9 inches to 12, 50s. per 1000.
" ditto, larger, 1½ to 2 feet, 7s. to 10s. per 100.
" DULCIS, 1 to 1½ foot, 7s. to 10s, per 100.
" ARISTATA, 1 to 1½ foot, 21s. per 100.
This last is an excellent plant for these purposes, and requires only to be better known to be more extensively planted.

ENGLISH JUNIPERS, 1 to 2 feet, 7s. to 12s. 6d. per 100.
SWEET BRIARS, 8s. to 12s. 6d. per 100.
COMMON LAURELS, fine bushy plants, 10s. to 25s. per 100.
PORTUGAL LAURELS, 2 to 3 feet, 30s. per 100.
QUICK, very strong, transplanted, 8s. to 10s. per 1000.

FRUIT TREES.—Dwarf trained Apples, Pears, Cherries, Plums — Fine trees, 2s. 6d. to 3s. each.
" Apricots, Peaches, Nectarines — Fine trees, 3s. 6d. each.

Goods delivered free to London and to the Slough Station on the Great Western Railway. The Knap Hill Nursery is within an hour's ride of London, being near the Woking Station, South Western Railway.

It is particularly requested that letters intended for this Establishment may be addressed, HOSEA WATERER, Knap Hill Nursery, near Woking, Surrey.

BAKER'S PHEASANTRY, Beaufort-street, King's road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, bernacle, brent, and laughing geese, sheldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

HOTHOUSES, & HEATING BY HOT WATER. BEST MATERIALS AND WORKMANSHIP, AT SMITH'S, GLEBE-PLACE, KING'S ROAD, CHELSEA, LONDON. ESTABLISHED TEN YEARS.

GLASS FOR CONSERVATORIES, &c.

JAMES PHILLIPS and CO., 116, Bishopsgate-street Without, are supplying SHEET GLASS at the following reduced prices for Cash.

HORTICULTURAL GLASS FOR CONSERVATORIES.

CUT TO SIZE UP TO 40 INCHES LONG.			PRICES OF SMALL SHEET SQUARES. In boxes of 100 feet.		s. d
16-oz. from 2d. to 3½d. per foot.			Under ...	6 by 4..	12 [illegible]
21 "	3¼	5 "	6 by 4 and under	7 by 5..	16 [illegible]
26 "	3¾	7½ "	7 by 5 "	8 by 6..	18 [illegible]
32 "	4	9½ "	8 by 6 "	10 by 8..	20 [illegible]

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS in sizes not exceeding 5 feet superficial.

⅛ thick ... per foot	7½d.	⅝ inch per foot	2 0
¼ inch	1 2	1 inch	3s. 0d.
⅜ inch	1 6		

PATENT ROUGH PLATE TILES.

⅜ thick ......each	0s. 11d.	¾ inch ....each	1s. 7d.
½ inch	1 3	1 inch	2 0

GLASS DOMES for SKYLIGHTS, from 15 to 50 inches in diameter. These are well worth notice.

GLASS MILK-PANS, PROPAGATING GLASSES, AND BEE GLASSES.

LACTOMETERS for trying the quality of Milk, 4 tubes 7s. 6d., 8 tubes 10s.; Hyacinth Glasses and Hyacinth Dishes; Crocus Glasses; Shades for Ornaments; Fish Globes; Plate and Window Glass; Lamp Shades and Chimneys; and every article in the trade.

METAL HAND FRAMES.

HARTLEY'S PATENT ROUGH PLATE, AND PATENT DOUBLE CROWN GLASS.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

‸ Messrs. H. and Co. have the undermentioned Houses to dispose of at a great sacrifice:

	Feet.		Feet.
1 Pinery ...	40	by	20
1 Vinery ...	50	"	18
1 Ditto ...	45	"	18
1 Ditto ...	63	"	15
1 Pit ...	45	"	12

GLASS FOR GREENHOUSES, CONSERVATORIES, GARDEN FRAMES, &c.

Hothouse Builders, Nurserymen, and others, supplied with every description of Sheet and Crown Glass, Rough Plate, &c. Glass Tiles, Propagating, Cucumber, and all other Garden Glasses.—Address, T. COGAN, 48, Leicester-square, London.

PRICES OF SMALL SQUARES IN BOXES OF 100 FEET.

	Crown.	Sheet.
Squares under 6 by 4	10s. 6d.	£0 12s. 6d.
6 by 4 and under 7 by 5	14 0	0 16 6
7 by 5 " 8 by 6	15 0	0 18 6
8 by 6 " 10 by 8	16 0	1 0 6

Larger sizes, of all qualities and substances, equally low.

PAINTS.—LITHIC AND OTHER DURABLE PAINTS, ready for use for FARM Buildings, Agricultural Implements, Park Fences, Outhouses, &c, &c. Genuine White-lead, Colours, Brushes, &c., best quality, and lowest prices.

GLASS MILK PANS FOR THE DAIRY.

Cream Pots, Lactometers, Glass Rolling Pins, Pastry Pans, Shades for Ornaments, Lamp Shades, &c., as usual. For Lists, (priced) direct to T. COGAN, Glass, Colour, and Lead Warehouse, 48, Leicester-square, London.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

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The Gardeners' Chronicle.

SATURDAY, JANUARY 13, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	Jan.	15	Chemical	8 P.M.
			Pathological	8 P.M.
			Statistical	8 P.M.
			Medical	8 P.M.
TUESDAY,	—	16	Horticultural	2 P.M.
			Linnean	8 P.M.
			Civil Engineers (Anniversary)	8 P.M.
WEDNESDAY,	—	17	Society of Arts	8 P.M.
			Geological	8½ P.M.
THURSDAY,	—	18	Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	—	19	Royal Institution	8½ P.M.
SATURDAY,	—	20	Asiatic	2 P.M.
			Royal Botanic	3½ P.M.
MONDAY,	—	22	Entomological (Anniversary)	8 P.M.
			British Architects	8 P.M.
			Geographical	8½ P.M.
TUESDAY,	—	23	Medical and Chirurgical	8½ P.M.
			Zoological	9 P.M.
WEDNESDAY,	—	24	Microscopical	8 P.M.
			Ethnological	8 P.M.
THURSDAY,	—	25	Royal Society of Literature	4 P.M.
			Numismatic	7 P.M.
FRIDAY,	—	26	Philological	8 P.M.

IT has long been asserted that although climate cannot be altered to suit plants, yet the constitution of plants may be altered to suit climate: and the process by which this effect is said to be gained is called acclimatising. There is hardly a book in which some traces of this opinion do not occur: there is not a village in which some one may not be found who believes in the dictum as firmly as in his own discernment. Nevertheless the truth is just the reverse; the proposition should stand thus: "Although the constitution of plants cannot be altered to suit climate, yet climate may be altered to suit plants." This is one of the many truths whose importance is only equalled by the unwillingness of the world to believe in them.

When men limit the word climate to the condition of the atmosphere in which birds and quadrupeds move, they express indeed a particular state of things which concerns those parts of the creation, but they omit what is essential in considering the climate necessary to plants. And hence it is that, in the present state of meteorology, cultivators derive so much less advantage from that science than it is capable of furnishing, and which it is now just beginning to furnish. The climate in which their roots are placed is at least as important to plants as that in which their branches spread; perhaps more important. It is this kind of CLIMATE which we shall henceforward call TERRESTRIAL, in contradistinction to atmospheric climate, that man has the power of improving, and which it is most essential that he should thoroughly understand.

It is because the gardener is not sufficiently aware of the nature of terrestrial climate that he so often fails in his operations, and experiences so much mysterious disappointment when he expects the best success. One trenches his ground, manures it well, buys the choicest trees, prunes and trains them with consummate skill, and yet he gains but a poor result; he overlooks terrestrial climate. Another plants in Middlesex an exotic of great rarity and beauty which he has heard of as hardy in the garden of a gentleman near Edinburgh; he has no doubt that with a southern latitude and English skill he can do at least as well as the northern laird: yet he totally fails; his exotic, notwithstanding all his care, perishes in the first winter; he has not thought of terrestrial climate. B fruits Pine-apples out of doors in the summer; A cannot fruit them half so well in his master's hothouse; not dreaming of terrestrial climate, he neglects attending to it, and sets down B.'s success as so much fudge. JASPER THORN's Grapes are magnificent; he has a vast reputation for skill in their management, makes famous borders, trains and prunes with the skill of a CRAWSHAY, and wins all the first prizes at his country exhibitions. TOM BOTHER is his neighbour, and lives a couple of hundred yards off, in a situation exactly similar; he persuades his master to build the counterpart of JASPER's houses, he gets his Vines of the same nurseryman, so as to be "sure it's all right," makes his border according to JASPER's receipt, which he [illegible] the [illegible] to weigh and measure the quantities and proportions of the good things he puts into it, so as again "to be sure it's all right." Then he studies—no not studies—he imitates, JASPER's pruning and training, pays him a visit two or three times a week, in order to know exactly when he begins fires, and how he starts his Vines, and when he stops them, and so forth, still "to be sure it's all right." But in spite of all his imitation it happens to be all wrong, for his Grapes are late, small, shanky, badly coloured, and sour. Mr. BOTHER forgot to inquire into his friend JASPER's terrestrial climate; it was out of sight and he did not know there was such a thing.

It is exactly the same with farmers. JACOB PUDDLE had some of the finest land in Europe; he held it at half-a-crown an acre, and thought it dear; 10 bushels of Wheat an acre were all he could get out of it; and so, after looking at it, and toiling at it, and taking "all the pains he could with it," he "dratted" the place, and gave it up as a bad job. The land next fell into the hands of a stranger to those parts, one JOSHUA CLAYBURN, who, to the amazement of all the neighbours, takes for his first Wheat crop, 50 bushels an acre. Mr. CLAYBURN knows something of terrestrial climate; JACOB PUDDLE, like worthy Mr. BOTHER, never heard of such a thing in all his days.

Terrestrial climate, then, is for plants a subject of at least as much consequence as atmospheric; especially since it can be improved by artificial means. Our allotted space is, however, exhausted for to-day, and we must reserve for another week our explanation of what terrestrial climate is.

THE Council of the ROYAL IRISH HORTICULTURAL SOCIETY have held their promised meeting, as we learn from the Dublin papers, and their proceedings have been marked by their usual want of judgment. After some formal observations upon the state of their accounts, the Council proceed to reply to the complaints that have been made against them; and a very original answer they have given. It amounts to this: that the *Gardeners' Chronicle* has published attacks upon them "violent and calumnious;" that it will not make any reparation; that it "utterly disregards the statement made by the Council," and that it has lent its columns to accusations and frivolous complaints from secret enemies of the Society. The Council further charge said *Gardeners' Chronicle* with having entered into "an elaborate analysis of the value of the prizes offered by the Society," in which analysis are committed sundry "gross mistakes (not to use a harder word)"; but notwithstanding these "gross mistakes" the Council justify themselves for doing some of the very things which are complained of in the analysis in question, upon the ground that they only happen once a year. (This reminds us of the English excuse for matters of another kind, that "Christmas comes but once a year.") Finally they protest that there is "no grievance which they are not willing to redress," and they naively ask, "What more there is required?" We will tell them what is required beyond this smooth promise; and that is, its fulfilment; people are not to be satisfied in these days with more promises of amendment, and we at least have no faith in a body which has hitherto shown itself deaf alike to the voice of reason or remonstrance, and in the face of the notorious fact that Mr. UPTON GLEDSTANES, Mr. TIGHE HAMILTON, and we believe others, have been driven to resign as Members of the Council because they could obtain no change in the most glaring mismanagement.

Nothing is more remarkable in this ingenious document than the care with which everything specific is avoided. Fine phrases and high sounding words of lofty indignation do not on this side the water take the place of that plain straightforward mode of dealing which alone can satisfy the mind. We have not one pledge of specific reform; not a word is said about awarding the prizes to gardeners; no provision is made that practical men shall be the future Judges, and that the Council shall not; and as to all that relates to the prizes, the report is mute, except that after abusing the *Gardeners' Chronicle* for its errors in analysing and comparing their value, the very practices of which complaint was made are justified, as we have already stated. "Fellow," said an English squire to a poor man over whose garden he and his hounds had just swept, "it is false that we ran over your garden; and you know it. But as for trampling down your Cabbages and upsetting your beehives, why I had a right to do that."

The Council say that the charges brought against them, by their own friends and neighbours, for it is needless to say that our columns have merely been the channel through which those complaints have found utterance—that these charges are violent and calumnious—but they take care not to say in what the calumny consists. Upon this point we may quote the opinion of the *Dublin Advocate*, whose editor being on the spot has ample means of forming a correct judgment.

"We have paid particular attention," says the editor, "to the statements put forward by the Council in reply to these charges, and we do not hesitate to state that, to a greater or less extent, *they have been admitted to be well founded*, the question being, as to the *degree* to which the alleged abuses existed." So that according to these learned gentlemen the truth is a violent calumny. Their denial of the accuracy of the analysis which we took the trouble to make of their schedule of prizes is of the same complexion; they declare that it contains gross mistakes, *not to use a harder word*. We ought, perhaps, to be grateful for the leniency of this rebuke; and so we should be if any mistakes existed in the analysis. But the Council are cautious not to specify them, and we assert that there is not a single mistake in the matter; in fact the comparative value of the prizes was taken with the most careful exactness from their own printed schedule. Is it possible that the Council do not know the meaning of their own rules? Let us beg of them to re-examine them *coolly*; or to employ one of their accountant clerks to do so for them. Well may the *Dublin Advocate* say "that the chief subject which occupied the attention of the meeting was an attempt to show that the whole of the charges so made were unfounded — we say *an attempt*, as the Council studiously avoided any reference to the particular charges and the replies which had been given."

One of the complaints which the Council have made against us is, that we have lent our columns to anonymous communications: but these communications were not anonymous to us, as we have before stated; and it is a little unreasonable in them to expect us to gratify their curiosity by revealing the sources from which our information came.

It is especially worthy of remark that not only did the Council avoid the least allusion to anything specific, but they did not venture even to allude to the proposal we had the honour to make to them in December last, that, in order to put an end to all doubt, suspicion, and distrust concerning the motives which have actuated the framers of their schedule of prizes, they should present to their meeting an exact return of the sums received for prizes by the members of Council. Why did they shrink from this?

"It is idle," says the *Dublin Advocate*, which we continue to quote as a sensible and unbiassed looker on, "It is idle for the gentlemen connected with this Society to fall back upon their personal character, as a guarantee for the groundlessness of the charges preferred against them *in their collective capacity*—a point strongly urged at the meeting of Thursday last. No insinuation has been made against the private character of any gentleman connected with the Society; but so long as this is relied upon in disproof of the charges preferred against it, we must declare 'not proven' to their case. Many of these abuses grew up gradually; and we are satisfied they were persisted in chiefly from the silly feeling of not wishing to appear to be coerced by public opinion, more especially as conceding the demands which justice and sound policy imperatively required, would, of itself, be an admission that they were previously in the wrong. This has been the great misfortune of the Council of the Society, as is abundantly proved by the systematic opposition which every movement encountered, having for its object the reformation of the abuses which prevailed. This it was which has, from time to time, *driven those from a seat at the Council-board who really wished to make the Society possess the confidence of the horticulturists of the country*."

The adoption of the report of the Council was seconded by Dr. PLANT, a member of the Council; it would be interesting to read the modest language in which this gentleman must have declared his entire concurrence in the acts in which he had been himself a chief performer. And then followed Mr. CHARLES HAMILTON, who, in a long and misty harangue, admitted the truth of such particular matters of charge as he condescended to notice, having just before declared that they all were acrimonious and unfounded. He pointed out pathetically the difficulty which the Council had experienced in getting persons of rank to send their choice specimens to exhibitions, for which reason it "was thought that the best way of getting over the difficulty was to *make these noblemen and gentlemen the prize-takers themselves!*" talked of Potatoes having deserted Ireland; and announced his determination "to support the Society by every means in his power." We have no idea what the precise amount of Mr. CHARLES HAMILTON's power may be, but we hope, for the sake of those whose cause

mulated heat of summer's sun partially retained near the surface of the earth. A few years ago I remember many clever gardeners who thought lightly of the importance of bottom heat (partly and perhaps mainly), from the perusal of the paper of the late Mr. Knight on Pine culture. Subsequent observations in various parts of the world have however established the fact, that it is a provision of Nature, and an important one, that the roots of plants should be stimulated before the branches. There can be no better illustration of the importance of this than the flourishing state of wall trees, in shallow well drained borders, as compared with those planted in deep and saturated soils. The temperature of the soil to which large plants are removed is then an important consideration, but sufficient heat for our purpose remains till the end of September and the first fortnight in October, and to this period I should give the preference, on account of the diminished light and increased humidity. *Henry Bailey, Nunnham.*

Ice Wells.—I do not agree with your correspondent who condemns the old ice well; and yet, seeing he is so successful in keeping the ice in his other houses, there seems to be no blame to be ascribed to his way of ramming or packing. I am, however, led to believe that the fault in his old-fashioned house must exist in the drain of great length, an important point, I fear too little attended to. Our ice-house here is similar to that condemned by "J. H."; it has brick well and brick passage, double door at entrance to well (which is about 10 feet below the floor of passage), and outside door. The house is built on a bank of gravel, so that the drain is made but a very short distance from the grating in the bottom of the well, and it has no outlet whatever, the gravel receiving what melts away; it is covered over with earth, and planted with evergreens. I can recommend a house of this kind with confidence. I have now filled it six winters in succession. We commence using the ice in June (two months before "J. H."); and having one of Fuller's patent ice-preservers (which no large establishment should be without), it is kept constantly supplied up to Christmas, and the ice-house has never been entirely empty during all that time. I filled it on the 23d ult., when I had 8 or 10 cart-loads of old ice still remaining. My plan of filling is simple, and I believe pursued by most gardeners. I break very small, ram hard, and water, using a fine rosed watering-pot. A house of the above description is no doubt more expensive at first, but when once made, it is always made, and does not require constant repairing, like those of more simple construction. In a place where I once lived, great expense was gone to in a blasting a rock, in order to obtain what was considered to be a proper site for a house. The well was formed, the walls were dry stone work, the drain the same, and the roof and passage thatched. I filled it the first time (even before the thatching was finished), and, although it held only 30 cart-loads of ice, I had plenty for the family during the summer. I believe, however, that it has proved almost a total failure ever since; and, taking into consideration the first cost, and keeping it in repair since that time, I am certain it must have cost what would have put up a good brick house capable of containing 100 cart-loads of ice, and which would ensure at all times an abundant supply of ice. *J. D. MacD., Ireland.*

Large or Small Potatoes for Planting?—Mr. Cuthill tells us that the only drawback to using small Potatoes for seed is that the crop is a few days later in coming to maturity. Is not this contrary not only to received opinion, but also to theory and experience? (Lindley's "Theory of Horticulture," pages 195 and 196). There are two methods of obtaining an increased size of tubers, one is to plant in a rich soil; and no doubt in Mr. Cuthill's highly cultivated garden, and in similar soils, tubers large enough for the table will be obtained from small seed. But if such seed be planted in the fields under the ordinary course of cultivation, the produce will be very diminutive. Another method should be adopted in these cases. Large tubers should be cut into sets, and if in each only a single eye grows, the crop will be the more valuable. Let Mr. Cuthill take a Regent, weighing 4 oz., place it in a warm room until the shoots from the eyes are about a quarter of an inch long, then cut it up to sets of single eyes and plant them in a soil of average quality. Let him also take small Regents, of the number and weight of these sets, and plant them whole in a similar manner, and at the same time. When he takes up the crops in September or October, I have no doubt that the marketable value of the former will be double that of the latter. *Sigma.*

Crinum variabile has been described as the hardiest of that genus. It neither flowers nor flourishes with me, though capense and the variety riparium do. Can you indicate the proper treatment of variabile? *A. H.*

Lilium lancifolium has been so strongly stated by one of your correspondents not to be individually permanent in its coloured varieties, but to relapse into white, that it seems to require some answer from those who cultivate them for sale. Having lately purchased the sorts, I should be glad to know if there is any answer to the statements above alluded to. *A. H.*

Climate of Northumberland.—A few nights ago we had the thermometer down to 19° at a north window on first floor; 21° on south side of the house. I hear of its being as low as 6° in some situations in this county. We have about 1¼ inch of snow, chiefly fallen this morning, and the wind, which has been south-east for the last week, is fallen into the north. I raised 26 plants, good ones, of Pinus Douglasii last year, from cones of my own trees; and my friends, to whom I distributed seeds, raised some. Some Mexican Pines, given me a few years ago by the Horticultural Society, do not show themselves hardy here. Two or three will do. One, I believe it to be apulcensis, appears very hardy. Cryptomeria appears hardy here. I am trying this winter Taxodium sempervirens. My Araucaria imbricata was measured this last October; it is 19 feet high, girted 17 inches at 4½ feet from the ground. It is a straight aspiring plant. Bays were killed to the ground here last winter. Green tea not hurt. *C. M., Jan.* 6.

Pinus Webbiana and Pindrow.—We have, at Bury Hill, P. Webbiana 10 or 12 feet high, with leaves very white on the under side; it has borne cones which are purple. P. Pindrow is from 5 to 6 feet high, and has long green leaves much more slender and longer than those of Webbiana; smaller plants of the two kinds growing here side by side exhibit exactly the same difference in appearance. I believe Webbiana to be scarcer than Pindrow, for most of the seedlings lately raised for Webbiana appear to be Pindrow. *W. S., Bury Hill, Jan.* 6.

Gardeners' Wages.—If any subject deserves attention more than another it is the necessity of placing the wages of the gardener upon a scale which will make respectable men seek the profession, say, from 35*l.* to 40*l.* per annum for a single man, and 65*l.* to 70*l.*, with house, coal, and vegetables, if married. I am persuaded that if "Dodman" would make up his mind to dismiss his obstinate man (who no doubt is a third-class gardener, and engaged at third-rate wages), and advertise for a gardener, offering something like the above wages, he would get an intelligent man; for of the latter there are plenty, even in our own day. We need not wait till the next generation for the pupils of the Errington, Fleming, or Barnes' schools, as "Dodman" supposes. Gardeners who have been brought up where gardening was to be learnt, at such places as Sir Robert Heron's, of Stubton, in Lincolnshire; the Duke of Portland's, Welbeck, in Nottinghamshire, &c.; where, as well as gardening and botany, geometry and natural history were taught by such men as M'Arthur and Thompson; gardeners, I say, brought up at such establishments as these, if well paid and well treated, will take a pride and interest in their garden, and will attend strictly to a system of economy. Underpaying head-gardeners is a bad policy, because some men in a respectable establishment will be cheaper at 70*l.* a year than others would be at 30*l.* The feeling entertained by a good man ill paid, or ill used, is a desire to leave the service, and an intention to do so the first opportunity that offers. *J. R., Jan.* 9. [Under-paying any permanent servant is bad policy.]

Cure for American Blight.—I first scrape off the loose and rough bark as clean as I can, and when the trees are quite dry I give the trunk and principal branches a good coating of linseed-oil with a brush. I am careful to rub the oil well in where there are cracks and rough places, and where there is any possibility of eggs being deposited. I find that wherever the oil touches the blight does not again appear. *E. F. G.*

Hippeastrum (Amaryllis) aulicum.—This noble bulb deserves to be more extensively cultivated than it has hitherto been; if properly treated it retains its gaudy flowers for a great length of time—a quality which renders it especially useful. I find a mixture of two parts turfy loam and one of well rotted cow-dung mixed with drift sand to suit it best. The sizes of pots to be used will depend on the size of the bulbs. I employ 6-inch pots for bulbs 3 inches in circumference, and 9-inch pots for bulbs 6 or 7 inches round. A temperature of from 60° to 75° will suit it when in full growth, and a little manure water once a week would then be of service to it. When your plants have done growing, water must be much reduced, and they should be kept cooler till they are again started into growth; they must then have a higher temperature, till the flowers begin to open, when they should be removed into a cool conservatory or greenhouse, and put in a shady place away from cold draughts; they will keep in blossom for five or six weeks. When done flowering remove them back to the stove to make their growths. Particular care should be taken not to injure the leaves. Most of the other Amaryllids will do equally well under this treatment. *J. Williams, gardener to J. Warner, Esq., Hoddesdon.*

Rain at Cirencester, 1848.—

	Inches.		Inches.
January	1.22	November	1.64
February	4.05	December	3.68
March	3.20		38.01
April	3.50		
May	0.45		
June	4.30		
July	3.08	1844	31.91
August	2.90	1845	28.97
September	4.42	1846	32.10
October	5.05	1847	36.92

Thos. C. Brown.

Rain at the Craig, Windermere, 1848.—

	Inches.			Inches.	
January	4.876	Wet days 13	July	5.618	Wet days 19
February	13.404	,, 25	August	5.874	,, 24
March	5.502	,, 27	Sept.	3.257	,, 11
1st Quar.	23.782	,, 65	3d Quar.	14.749	,, 54
April	1.852	Wet days 17	October	7.797	
May	1.149	,, 11	Nov.	6.062	
June	5.885	,, 22	Dec.	10.488	
2d Quar.	8.886	,, 50	4th Quar.	24.942	

Total 72.359 inches, and 230 days on which rain fell, *i. e.*, on which any was found in the gauge. *T. S. P.*

Blanched Turnip-tops.—The Turnips which were removed from the Wheat lain some two months since, and stacked in ridges under a tolerable covering of thatch, produce at this time blanched greens little inferior in point of appearance to Sea-kale, and although slightly acrid when cooked, make nevertheless an exceedingly good succulent, and are valuable at least in cases of emergency, when from the severity of the weather or other causes any scarcity of vegetables may exist. *James Duncan, Erring-park, Jan.* 9.

Shell Sand a Cure for the Potato Disease in the Parish of Holme, in Orkney.—Mrs. Smith had been in the practice of having shell sand put into the parts of the garden where the early Potatoes were planted, for several years before the disease made its appearance, in order to improve their quality and make them earlier. It had the effect, and from that time she reaped the earliest and best Potatoes in the country. In 1845, the first year of the disease in Orkney, she was prevented from attending to planting, and but a small patch that never before produced good Potatoes was sanded, and it yielded the only part of the crop that escaped the disease. Next year, 1847, all the early Potatoes were manured with shell sand, and proved quite sound, while the general crop was diseased. To test the efficacy of this sand in preventing disease, she, in 1848, had part of the early Potatoes planted with the sand, and part without. The first were perfectly free from disease, and the latter overrun with it, as well as the rest of the crop. The Potato submitted to the experiment was a white Kidney. The sand was strewed rather thickly on the ground before the Potatoes were planted, but it was found to have the same effect when spread over the surface afterwards. Shell sand, of which a sample is forwarded, is what was used. Mrs. Smith was induced to try it from having seen similar sand improve pasture Grass land many years since. *D. G.*

Mr. Cole and his Celery (see p. 23).—The cultivation of Celery has, of late years, much engrossed the attention of the lovers of good gardening. Many new varieties of this esculent have appeared in the market, and Mr. Cole, among others, has announced a new and superior kind. About the merits of this latter I am totally ignorant, but as he has misquoted the substance of a paper of mine on Celery cultivation given in vol. iii., p. 297, of the Horticultural Society's Journal, I feel called upon to set Mr. Cole right. He says, "I perceive Mr. Errington attributes the coarse and bad quality of the large Celery grown for market to the luxuriance of its growth. Here I venture to assert he is wrong." Now it so happens that this is diametrically opposed both to my real views of the matter and to my opinions, as expressed in the paper alluded to. What I objected to was, very early sowing for the main crops. I still beg to aver that Celery sown in the end of January will assuredly be less tender, and indeed more stringy, than the same kind sown in the early part of April. So far from objecting to extreme luxuriance in growth, I consider such alone as the key-stone of the arch. It will be found by Mr. C., on referring to the paper in question, that I recommend sowing in contact with rotten manure; "pricking out" on rotten manure, and very frequently using manure-water during its cultivation. Once more my opinion is, that he who cultivates his Celery in the most luxuriant way, all other circumstances being equal, will grow it finest and most tender, whether it be sown in February or in April. *Robert Errington, Oulton Park, Jan.* 4.

Bees: Brood Comb.—Mr. Wighton complains that I say "nothing respecting the injury done to deprived stocks by the loss of brood when the combs are taken away, especially in end boxes." I can only assure him that I never found any brood comb in either my cap or side boxes. But even had this occurred, my bees would not have sustained any loss; the whole of the brood comb would have been carefully preserved and returned to them. I have several times bought hives of bees, and "driven" them in the middle of the summer; in all these cases there was of course some brood comb in the hive; but on one occasion I found as much as 4 or 5 lbs., containing probably several thousand grubs. To lose so many bees would break an apiarian's heart; I therefore devised the following plan, and have since practised it in other instances with success. Having adjusted the pieces of brood comb to the best advantage in a small box, and fastened them by numerous props and braces of stick in their proper perpendicular position, I placed the box by the side of the bees from which the brood had been taken the day before. I looked in many books on the subject, but could not find that this experiment had ever been tried, and therefore experienced no small pleasure in observing that it answered perfectly. The bees instantly recognised their old combs and their grubs, and waited upon the latter with their usual care, for bees are very faithful nurses. A month after, seeing that the bees did not frequent this small side box much, I took it away, and found that all the grubs had become bees, and had taken their flight, except a few which had been pressed by the sticks, and still remained in the cells dead. All the combs had been fixed in their places by the bees with pillars of wax; so that when the sticks were removed, the combs remained firm. Mr. Wighton also asks why the old-fashioned bee-keeper may get as much honey as his more humane neighbour in good years and not in bad? It is easily explained. When a stock of bees is allowed to swarm, that is to divide itself into two or three colonies, there are three or four queens instead of one, and three or four times as many eggs to be attended to, and grubs to be fed; and almost all the bees being thus employed, little honey can be stored until the middle or end of July. In a bad year the honey season is all over by that time, and the opportunity of storing altogether lost.

In a good year the season continues till some weeks later, that by that time most of the young bees have assumed their perfect form and are able to work; in this case the young bees (produced by three or four queens) are able by their greater numbers to make up for the loss of the earlier part of the season spent in nursing them. This also answers Mr. Wighton's other questions, viz., why in a bad year stocks are more likely to be lost by the old-fashioned bee master than by the modern. *An Essex Man.*

Ice-houses.—I find the preserving qualities of the house here greatly improved by having a perpendicular iron pipe in the middle of the mass, resting on a cart wheel over the drain. This funnel allows the excess of moisture to escape from under the ice into the upper part of the house, thereby prolonging considerably the season of supply. I find a hollow or double door, that is one having a vacuum of 2 inches between the boards, not only better but likely to wear out three of the usual doors. The differences in usefulness of ice-houses arises from mistakes committed in their construction; true, all are on recognised principles, but circumstances alter their application, and he who best applies science to situation will be most successful. *H. Bowers.*

Ice-stacks (see p. 812, 1848).—In answer to the inquiries of "M." I beg to state that there is no arbitrary rule, as far as I am aware, which defines the precise size of ice-stacks. The extent of the required supply must, in a great measure, regulate that matter. Two stacks of the following dimensions have been found amply sufficient to meet the demands of this place. No. 1, space for ice within the wall of Fern, 24 feet by 20; extreme height of stack, when complete, 15 feet. No. 2, interior space, 21 feet by 16. Preference may be given to the larger of the two, if the ice is required late in the season, as a large body undisturbed may be expected to keep longer. It is mentioned, as one of the advantages of the position, that trees clothe the embankment, and accordingly the trunk of one is shown in the woodcut growing near the stack, and springing from the embankment, on the slope of which is built the ice-stack; the embankment rises to the base of the tree shown in the figure. *W. Ingram, Hatfield-house, Herts.*

Reviews.

Species generu et ordines Algarum auctore J. G. Agardh. Vol. I. Algas Fucoideas complectens. Lundæ, 1848. Pp. viii. and 362.

MANY important works on Algology have issued from the press within the last ten years, throwing much light on the structure and fructification of the beautiful productions which it undertakes to describe, or laying down sound principles for the definition and limitation of genera and species. Hosts of new species have been recorded; their geographical distribution has been studied; system upon system has appeared; the Algæ of various countries and districts have been more or less successfully illustrated, and a work professing to compass the whole circuit of the science has attracted considerable attention, from the beauty and correctness of its numerous figures; yet notwithstanding all that has been done, no publication had appeared fit for general use, exhibiting just systematic views, and adapted to the present state of this branch of botany, until the publication of the excellent volume now before us. The work of the elder Agardh, though to a certain extent meeting the wants of the time when it appeared, was completely a work of the cabinet. The worthy author had had but little opportunity of examining Algæ in their natural place of growth, and unfortunately he wrote too often in ignorance of what had been done by writers of other countries, especially those of France, where some most important memoirs had appeared, which were altogether unnoticed. He was also very much of a theorist, which may be well enough where there are sufficient opportunities to correct or confirm the meditation of the closet, but in the absence of these, and where the result is to be eminently practical, the habit of excess in theorising is sure to be prejudicial. With immensely greater opportunities, and as it appears to us with a mind better disciplined for the end in view, the son has followed the father's steps with no unequal pace. In so vast a subject it is impossible that he should not have occasionally erred, either from want of materials or from the mere flagging of physical powers; but though we may occasionally differ from him, we are always forced to give him credit for diligence and a love of truth. He is, indeed, occasionally inclined to be contentious, but he never tries to make the worse appear the better reason. His arrangement is very nearly that of Dr. Harvey, which will be considered no mean praise by those who are acquainted with that gentleman's practical knowledge of the subject. He adopts the notion that the tetrasporos are the normal form of fructification, and regards the active contents of the so-called antheridia as representatively rather than actually impregnation.

It is not within the province of our journal to give any lengthened details as to the systematic result of the author's labours, much less can we enter into any minuter questions as to individual species, our object being rather to direct to the source of information on such points than to supply it. We must content ourselves with recommending the work most cordially, and with the assurance that its reader will not be disappointed.

Garden Memoranda.

BOTANIC AND EXPERIMENTAL GARDENS, EDINBURGH.—The appointment of Mr. James M'Nab, of the Caledonian Horticultural Society, to succeed his lamented father as Curator of the Royal Botanic Garden, reflects the highest credit on those who have conferred it—we hail it with feelings of unmingled satisfaction. On his father's death all eyes were turned on him, not merely as the legitimate, but as the best and highest qualified successor; for, to an extensive acquaintance with our native as well as exotic flora, Mr. M'Nab possesses all that love and enthusiasm for plants which does not rest satisfied with any trite medium, or allow any limit to investigation where labour and research may push it to the discovery of remoter truth, having the courage to resist the fairest theory till tested by the strict appliances of practice. Mr. M'Nab is already favourably known to the botanical world by many able essays and valuable contributions of specimens to the Botanical Society of Edinburgh, in which he has held office for years. While we congratulate Professor Balfour and the public on so judicious a choice, we cannot but lament the loss which another valuable institution will sustain by Mr. M'Nab's appointment. By his untiring energy and judicious management, Mr. M'Nab has greatly promoted the interests and advanced the position of the Caledonian Horticultural Society, of which he has been manager for 12 years. When he entered on office, in 1836, there were but three small hothouses in the Society's garden, viz., a Vinery, greenhouse, and stove. In addition to these, the Society has now a hall, a Camellia-house, two conservatories, a propagating-house, and the splendid erection just finished as a winter garden. How much the Society is indebted to Mr. M'Nab in successively devising these erections, and voluntarily undertaking to raise the necessary funds by subscription, is well known to every member of that numerous body. To contrast, again, the state in which he found the garden with what it is now, would be to contrast an Eden with a wilderness. This remark is alike just as to the state of cultivation, as to the collections of fruits and plants, which are not only judiciously selected and arranged, but comprise all that is rare and valuable. The collection of Camellias, in particular, is extensive, containing most of the finest and rarest varieties. Many of the specimens are large and highly symmetrical, all in the most vigorous health, and models of cultivation. For the greater portion of the larger specimens of these, the Society is indebted to Mr. M'Nab's industry in obtaining exchanges from other gardens. Nor are the collections of Azaleas, Rhododendrons, and Oranges, or the contributions derived from China, New Holland, South America, or the Himalayas (these last comprising all the rarer Coniferæ), less entitled to regard. Their growth and state of health indicate minute acquaintance with, and studious attention to their various habits and conditions in the different climates whence they have been obtained. Many varieties have been raised by Mr. M'Nab from imported seeds, many others have been obtained by exchanges for such seedlings, and not a few novelties have been raised from seeds skilfully hybridised by himself, an art in which Mr. M'Nab excels. A necessary consequence of all this has been a vast increase in the number of the members of the Society. We sincerely trust that so valuable an institution may not suffer by Mr. M'Nab's removal, though this is hoping almost against hope. Yet we understand that the Society has in its own establishment one who, besides being well versed in the sciences of Botany and Horticulture, and possessed of many estimable qualities, has formerly had practical experience as a head-gardener, and is perfectly familiar with Mr. M'Nab's system and mode of management. *Edinburgh Evening Courant.*

Miscellaneous.

Cultivation of Celery.—At a meeting of the Horticultural Society in Regent street, held Dec. 5, Mr. Cole, gardener to H. Collier, Esq., of Dartford, exhibited some very fine Red Celery, to which a certificate was awarded, and with it he sent the following account of its cultivation, which we extract from the last Number of the Society's Journal. "Herewith I take the liberty of handing you six sticks of Celery, of a kind which I have grown for the last three years, and which I think, both in point of size, solidity, and flavour will be found superior to any which has hitherto been cultivated. The specimens sent are not selected, but are merely examples of a general crop, planted without any object in view beyond that of the supply of my employer's table, and entirely without ever thinking of sending any of it for public exhibition. My stock consists of 600 plants, planted in rows, 4 feet apart, and the plants 9 inches apart in the row; and I have not a doubt that the whole crop would average 6 lbs. per stick. Not the least remarkable excellence in this Celery is, that it will stand 12 months without running or starting for seed, and such a thing as a pipy or stringy leaf I have never noticed so long as I have grown it. For a more substantial detail of my method of cultivation, I may remark the seed was sown the first week in February, and so soon as the plants were large enough they were pricked out in garden soil, rich in vegetable matter, under hand-glasses. The trenches were prepared in the usual manner in the first week in June, by excavating them 9 inches deep, and digging in a good dressing of the spent dung of an old Mushroom bed. The plants were of course strong when they were planted out, and each was removed to the trench with a good ball of earth adhering to the roots, so that (afterwards receiving a copious watering) they sustained little or no check. In earthing Celery I generally endeavour to steer between the two extremes of frequently earthing, and earthing only when the plants are full grown, believing that a little earth after the plants are fully established in the trenches, say a month after planting, promotes the rapid growth of the plants, more especially if they receive a good soaking of weak liquid manure or soot-water a day or two before they are earthed. Soot-water is an excellent manure for Celery; and where worms and other insects are troublesome, a little dry soot dashed along the rows will be found a preventive of their ravages. The kitchen garden here being upon a boggy subsoil, and below the level of the river Dart, which passes through the grounds, I do not find it necessary to water the plants more than once or twice after they are planted out; but in more elevated situations it is almost impossible to give too much water, always, however, preferring to give a thorough soaking once every fortnight rather than daily dribblings, which in my opinion do more harm than good. Were I so disposed, I have no doubt I could grow this Celery double the size of that sent; and to effect this I should prepare the plants as before directed, excavate the trenches 18 inches deep and the same in width, and fill them with a compost consisting of good turfy loam, peat, and leaf-mould, or thoroughly decomposed cow-dung, in about equal quantities. Very rich dung is not good for Celery, and strong manure-water should also be avoided. To grow large Celery it would be necessary to place the plants 18 inches apart in the row, and the ground should be kept constantly stirred about the plants, taking great care, however, to prevent the soil getting into the hearts of the plants during the operations. In a late Number of the 'Journal of the Horticultural Society' I perceive Mr. Errington attributes the coarse and bad quality of the large Celery grown for market to the luxuriance of its growth. Here I venture to assert he is wrong. The bad quality of the Celery is attributable to the bad kinds grown, as I am quite sure no person could grow this kind of Celery, which has been named Cole's Superb Red, so as to make it either pipy or stringy or inferior in flavour. Late earthing has more to do with making Celery stringy than anything else, as it is quite certain if the leaves of Celery are exposed to full light and dry air for a length of time, the tissue will become harder than if the leaves were grown in comparative darkness. We need no stronger proof of this than the acrid flavour of the outer as compared with the inner leaves of the same Celery, a fact demonstrating that if the leaves are exposed for a long time they acquire an acrid flavour which no blanching can wholly remove. For an early crop of Celery I sow in heat early in January, and prick the plants out upon a slight hot-bed; for a second crop in February in heat, as before directed, and for a late crop in March in the open garden."

Plant Sales.—A small collection of Camellias, fruit-trees, bulbs, &c., was brought to the hammer the other day by Mr. Stevens. The Camellias fetched from 6*s.* 6*d.* to 15*s.* per lot of from 6 to 12 plants. Azaleas and Rhododendrons, 1*s.* and 1*s.* 6*d.* a piece. Rose trees from 1*s.* 6*d.* to 2*s.* per 10 plants. Apple trees from 3*s.* to 4*s* per ditto. Pear and Peach trees the same, and Dutch Bulbs the following prices: 50 Crocuses, 6 double and single Hyacinths, and 20 Duc Van Thol Tulips, 2*s.* 6*d.*; 6 double and single Hyacinths, 6 varieties of Narcissus, 50 Crocuses, and 20 Van Thol Tulips, 2*s.* 6*d.*; three more similar lots the same; 6 Hyacinths, 24 Van Thol Tulips, and 50 Crocuses, 2*s.* 6*d.*; 12 Hyacinths, 20 Tulips, and 25 Crocuses, ditto; 18 Hyacinths and 25 Crocuses, ditto; and 24 Hyacinths, ditto. Of bulbs there were in all 24 lots.

Calendar of Operations.

(For the ensuing week.)

GENERAL REMARKS.

ADVANTAGE should be taken of frosty weather to cart and wheel soil, manure, &c., on to the ground, taking carefully into consideration the present quality and condition of the land, and the particular requirements of the crop which is to be grown upon it. Where the ground has received the usual dressings of dung, decayed leaves, &c., for a succession of years, it will be advisable to give it a change, by applying a dressing of fresh pasture soil, burnt clay, or charred refuse of any kind; the first of these acts as a complete renovator, and the two last are valuable for their mechanical action on the texture of the soil. A dressing of this description about once in four years will give great satisfaction, and, with an application of liquid manure in summer, will in the kitchen-garden produce a splendid crop of almost any vegetable. If the land is stiff, all the sifted coal-ashes should be husbanded and made use of. If you have not already a stock of burnt clay, no time should be lost, as you will find it not only useful in the kitchen-garden, but in the flower-garden and shrubbery also; I find it very suitable for Conifers, Roses, or indeed any shrubs, including Rhododendrons and other bog plants, which do much better in a mixture of burnt clay and peat than in peat alone. I use it with much success in the cultivation of many plants in pots; among these I may mention Bletias and other terrestrial Orchids, which I have found to thrive and flower better in a mixture of burnt clay, sand, and leaf-mould, than in anything else.

PLANT DEPARTMENT.

As fast as the winter flowering plants are past, they should be removed out of the way, for the growing season is fast approaching, and all the houses and pits should be disincumbered as much as possible, that those plants which make their growth during the early spring may have the advantage of all the light. Euphorbias, Poinsettias, &c., which have done flowering will now

requires some heat and water; they should have at least three months' rest. Do not keep more of the old plants than you will require for large specimens; young plants are easily propagated, and if well grown make nicer plants than the old ones, and by discarding the old stumps you get more room for other things. You will at this time decide what plants you intend to make specimens of; and in doing so, be very careful not to have more than you have proper room for. It is often considered a good fault to have too many, but with regard to plant growing this is a decided mistake, and it is much better to determine what you have not room for, at once, than to have your pets smothering each other in a few months' time, and so making it necessary to throw them away, and along with them all the trouble and care which you have bestowed upon them during that period. Cuttings should be put in of the Begonias, Euphorbias, Poinsettias, Justicias, and other plants you throw away, to flower next autumn and winter. Poinsettias and Euphorbias should be struck in pots of damp white sand, and placed for a few weeks in a cool, dry place, where the temperature is never lower than 40°. When the bases of the cuttings are cicatrised, they may be plunged in a moist bottom-heat. So treated, they will soon make both leaves and roots in abundance. A portion of your stock of Achimenes, Gloxinias, and other summer-flowering bulbs should now be started. The latter should have the whole of the soil shaken from them without rubbing the old roots off, and then dipped into a bucket of water; the bulb should then be held in one hand, and the soil shaken over it with the other: the previous moistening will cause the soil to adhere to the roots: and by this simple method a very important point in potting plants will be gained, viz., the equal distribution of the soil amongst the roots. A very excellent compost for these plants consists of one-third rich mellow turfy loam, one-third leaf-mould, not too much decayed; and the remaining third pigeons' dung, sand, and charcoal. Whenever pigeons' dung or other rich manure is used, it and the sand should be rubbed through the hands till the manure is thoroughly comminuted, and then incorporated with the other ingredients. The Achimenes should be started in their old soil, and not parted until the young growths are about an inch long. Both genera should be plunged at once into a moist bottom-heat, with moderate top heat, that the roots may be in advance of the tops. The plants should be potted at once into the pots in which they are to flower.

FLOWER GARDEN AND SHRUBBERIES.

It is an excellent plan for every gardener to decide upon the arrangement of his flower-beds for the ensuing year before the season is farther advanced; by so doing he is enabled to calculate his requirements pretty accurately, and by comparing this account with his stock in hand, he may tell to a trifle what he has to do in the way of propagating between this time and the 1st of May. The proper time to decide upon the arrangement for a new season is in August or September, as it is much easier to imagine what would form the most pleasing harmonies and contrast with the natural colours before the eye, than when that has to be entirely done in the abstract; but better late than not at all, so let the disposition of the plants for this year be at once decided upon; and for another, we will (if all's well) remind you of it when we make our own observations. Bouvardias are beautiful things for planting out in summer, but are often neglected, being considered rather difficult of propagation; this is however a mistake. The plants at this time are, or ought to be, in a dormant state, and the soil pretty dry; plunge them undisturbed in a moist bottom-heat for a few days, until the soil is moderately moistened; then shake them out and cut as many of the best roots off as you dare; these must be cut into 1 inch lengths and planted half an inch deep in pans of sandy loam and leaf-mould; replunge them in bottom-heat, and they will soon be ready for potting off. They should be grown as vigorously as possible until the beginning of May, and then gradually hardened off by the 1st of June. As this department is naturally deficient in its display of flowers at this season, particular attention should be paid to keeping every place perfectly neat and clean. Cuttings should be put in immediately of many hardy shrubs, as the Jasmine, flowering Currants, Honeysuckle, &c. Look sharp after the beds of Crocus and other spring-flowering bulbs, as mice are very apt to attack them. We use the common figure 4 trap, baited with anything that mice are fond of, and find them answer the desired end.

FLORISTS' FLOWERS.

Pinks.—Perhaps few floricultural favourites have improved so much as these pretty flowers, during the past 5 or 6 years; and of a certainty, from their hardiness and beauty, few deserve a more extended cultivation. In the northern countries plain or Pinks without lacing are exhibited in a separate class, but we very much doubt whether they can be termed anything more than imperfect flowers; we must confess we are fond of the chaste appearance of the plain Pink, but a few circumstances have come under our notice lately, which have considerably shaken our opinion. For instance, one of the favourite black and whites of the northern growers, Parry's Union, will often bloom with the petals half-laced, showing an evident disposition to come in what we should term its proper character; and in 1847 a black and white was let or sold out in Lancaster, called Black-eyed Susan, which last year bloomed under a higher condition of cultivation, a splendid purple laced flower. We would, then, recommend a richer compost for this flower than is usually used; and we hope shortly to give a few hints founded on actual experiment on this matter. Just now Pinks (though perfectly hardy) will require a little protection from sharp winds, and nothing is more suitable for this purpose than small pieces of Spruce Fir, which may be inserted in the bed, and which are most effectual screens. With respect to other florist flowers, little can be done, beyond giving abundance of air to Auriculas, Polyanthuses, Carnations and Pansies in frames, but we may say, "there is a busy time coming," for which we hope all are preparing.

FORCING DEPARTMENT.

If a stock of leaves for fermenting is not already procured, no time should be lost in doing so; they should be raked together when quite dry, and immediately stowed away in open sheds, that they may be kept in that state. The object of getting and keeping them dry is to prevent fermentation from taking place until it can be usefully employed. If you are not fortunate enough to possess such conveniences, they are very inexpensive and may soon be erected; the roof should be supported by pillars of Oak or Fir, with one side open, and the back and ends closed in with rough slabs; the roof may be thatched in the ordinary way. These, of course, will find their place in the "back grounds;" but although cheaply constructed, they, and everything else about the same quarter, may and should be kept perfectly tidy. The same remarks will apply to tan, which should be kept as dry as possible until wanted for use. By keeping a stock of all kinds of materials ready for use, a much greater amount of work may be done, and a greater effect produced, with the same apparent means, as you are enabled thereby to proceed systematically in all your operations. Pineries.—Where the pot system is practised, the plants in all stages should be carefully examined every two or three weeks, and all such as at the time require it should be repotted.

HARDY FRUIT GARDEN.

Pruning and training should be proceeded with now, and without delay, especially on the walls, which will soon require their spring covering. If cuttings of Gooseberries and Currants are not already put in, this should be immediately attended to. In the arrangement of your Gooseberry ground, the most economical method is to plant a row of dwarf bushes and a row of standards alternately. It is a great advantage to have all the Currants trained as standards, as the fruit is preserved free from the splashing effects of heavy rains, besides which I think it is finer in size and flavour, owing to the freer circulation of air around and beneath its branches. The pendant varieties of Gooseberries also produce much cleaner fruit when trained in this way.

KITCHEN GARDEN.

Success in our gardening operations, as in numerous other of the affairs of life, depends very much on the attention which is paid to small matters, many of which examined individually appear trifling, but if omitted or neglected, prove detrimental to the attainment of our hopes. Amongst the little things to be looked closely after at this season of the year, the garden snail (Helix aspersa), the common grey slug (Limax cinereus), and their congeners, may rank first. These hide themselves in the earth, box edgings, and other snug corners, till warm weather occurs, when they come forth and attack every vegetable in their way. On a mild day hundreds may be seen crawling over the walks, of which a great number may be picked up by a quick boy, as they frequently continue visible during the whole of the day at this season. By beginning to destroy them very early in the season we get the ground comparatively cleared of them by the time our young plants appear in spring. Seakale forcing is most profitably done by means of a slight hotbed of leaves and litter with a frame upon it; by covering with wooden shutters the bleaching is ensured; 53° to 55° is sufficient for top heat. Look closely after Endive in damp weather, and remove all decaying leaves. Examine Cauliflowers and Lettuces in frames, and dust a little quick-lime amongst them if it is necessary. Give plenty of air on all favourable opportunities. Make a sowing of Radishes under a south wall, and when they come up protect them with a few evergreen boughs.

State of the Weather near London, for the week ending Jan. 11, 1849, as observed at the Horticultural Gardens, Chiswick.

Jan.	Moon's Age.	Barometer. Max	Barometer. Min.	Thermometer. Max	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday 5	10	29.809	29.770	34	26	30.0	N.E.	.01
Satur. 6	11	30.011	29.995	35	19	27.0	N.E.	.00
Sunday 7	12	30.041	29.804	38	30	34.0	N.W.	.01
Monday 8	13	29.589	29.553	40	34	37.0	S.E.	.11
Tues. 9	14	29.591	29.489	47	37	42.0	S.W.	.08
Wed. 10	15	29.135	29.002	49	37	43.0	S.W.	.04
Thurs 11	16	30.095	29.178	40	24	33.0	N.W.	.02
Average		29.764	29.552	40.4	29.5	35.0		0.28

Jan. 5—Hazy, drizzly and foggy; snow.
— 6—Slight snow; fine in forenoon, overcast, sharp frost.
— 7—Overcast, heavy rain at night.
— 8—Rain, overcast and drizzly.
— 9—Rain; very fine; rain at night.
— 10—Cloudy; boisterous, with few scattered clouds; very boisterous.
— 11—Rain, very densely clouded; small hail, overcast.
Mean temperature of the week equal to the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Jan. 20, 1849.

Jan.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.
Sunday 14	40.4	30.6	35.5	12	0.40 in	
Mon. 15	40.2	29.0	34.6	8	0.54	
Tues 16	40.4	30.9	35.6	12	0.34	
Wed. 17	41.6	30.9	36.2	8	0.11	
Thurs. 18	41.6	30.1	36.3	11	0.46	
Friday 19	41.0	29.7	35.4	11	0.85	
Satur. 20	40.5	30.3	35.5	7	0.65	

The highest temperature during the above period occurred on the 15th, 1834—therm. 56 deg; and the lowest on the night of the 19th and morning of the 20th, 1838—therm. 4½ deg. below zero.

Notices to Correspondents.

Books: *A Constant Reader.* There was no such engagement as you mention. We cannot insert letters containing frivolous complaints founded upon a misconception of facts. Buyers have always an obvious remedy.—*G. L.* The forthcoming Third Part of the "Elements of Botany" will be crowded with woodcuts of medical and economical plants.

Border Bulbs: *Edith.* Plant the following Gladioli, which should either be taken up every autumn or securely protected from frost: *G. psittacinus, Cardinalis, byzantinus, blandus, floribundus,* and varieties. The Japan Lilies are all hardy, and therefore well suited for planting in the open border. No Amaryllis is sufficiently hardy for open border culture, except A. lutea and Belladonna; you may, however, try A. formosissima and glauca; also Vallota purpurea and some of the hardier hybrid Amaryllids, protecting them in winter.¶

Gardeners: *J T C N, W Elliott, H Stephens.* We have received several letters respecting "Dodman's" remarks; but we are obliged to say that some of the writers entirely misunderstand the scope and tendency of his article. We see that we must take this matter into our own hands; in the meanwhile we would recommend some of our correspondents to reconsider "Dodman's" remarks; and they will then thank us for withholding their letters. The subject is very important to good gardeners: but any cause may be ruined by injudicious advocacy.

Glazed Screens: *T.* It is long since the views upon ventilation, to which you refer, were given; and further experience does not support the opinion of Mr. Knight, that ventilation "will not give the proper flavour or colour to a Peach unless the fruit is at the same time exposed to the sun without the intervention of glass." The finest Nectarines that ever were seen in England were grown at Stanwick in a Peach-house, under glass, under circumstances by no means favourable. We believe the fact to be the reverse, and that with good ventilation the best fruit will be obtained with glass. We doubt the expediency of placing the roots under the glass; a diagonal brace at the corners of the sashes would strengthen them, but we want to see some actually made before we form an opinion as to its necessity.

Gooseberries: *An Edinburgh Subscriber.* You will find information respecting the largest Gooseberries in the *Chronicle* of last year; and you may also consult the "Gooseberry Grower's Register" for 1848.‖

Hedges: *Who shall decide?* Yew, Holly, or Tree Box form the best hedges for a maze; but they must be many years before they become large enough to produce an effect. Upon the whole the Beech is what we should take; because it clipped carefully it holds its leaves all the winter. We do not like Hornbeam, because it will not hold its foliage so well. As to the plan of a maze we will see what can be done; that at Hampton Court always appeared to us to answer the purpose of amusement, which is all that is expected of such a contrivance. Your space is very small; the passages should be 5 feet wide; cannot you manage that.

Names of Fruits: *Col. E, Bury St. Edmund's.* The Reinette Grise, and very good.‖—*W D F.* The Pigeon Apple; you will observe on cutting it across that there are only four seed cells, instead of five, the usual number in Apples.‖

Names of Plants: *H W G.* Oncidium divaricatum, and something so crushed in the Post-office that it cannot be identified.—*G A.* Both Picea Webbiana. P. Pindrow has very narrow leaves, which are much longer than those of P. Webbiana.¶—*Idem.* Your specimens are in most cases Cryptogamic, and have no relation to gardening or agriculture, we are obliged to decline naming all such. No. 5 is Carix intermedia, 2 looks like a morsel of Anagallis tenella. For others, which are mere botanical curiosities, consult the Editor of the "Botanical Gazette," Red Lion-court, Fleet-st.

Potatoes: *J P Cousset.* We know of no reward having been offered.

Potentillas: *J C.* These, except the hybrid kinds, seed freely, and they are easily increased in the autumn, after they have done flowering, by slipping off some of the young shoots close to the old plant. The seeds may be sown any time between March and September in the open border.‡

Roses: *M B.* It is only when Roses are hard pruned, or checked in the spring by late frosts, that they throw up such abundance of suckers. The latter may be removed, either now or in summer. Rotten dung is the best manure for Roses; it is best applied as a top-dressing in winter, or well mixed with the soil before the Roses are planted.¶

Royal Horticultural Society of Ireland: The proceedings at the annual meeting of this body are noticed elsewhere. We trust that the interests of Horticulture are now about to be looked to by others, who have both the power, the means, the knowledge, and the will to consult them. To "Hortulanus Hibernicus," in particular, and to all our other friends, we can only offer our thanks for their able and trustworthy assistance. Let us hope that a new æra is about to begin, and that it may be long before public duty compels us again to undertake so disagreeable a task as that which has been accomplished. We have done our part; it remains for Irishmen to do theirs.

Verbenas: *A Lady.* These may be grown successfully in pots, in equal parts turfy loam, leaf mould, and peat. Drain well and water occasionally with weak liquid manure.‡

Vines: *P S.* You need not hesitate in applying liquid manure, and plenty of it, to Vines that are very weak. But remember that this will not strengthen them without good management in other respects.‖

Walls: *Vicarius.* Probably the best thing you can do is to fill in the very rough surface of your flint wall with good mortar, made of the best lime and well washed sand; and wash the whole over with thin cement. It is not likely weeds will grow through this from the other side.‖—*D L.* The thickness of stone walls must depend on the squaring of the materials. If expense in this respect is not a serious consideration, the walls may be constructed of the thickness of 18 inches; otherwise, 2 feet, the standard thickness. The south wall may be 8 feet high; those facing east and west 10 or 12 feet, and that on the north side 15 feet, the higher it is the greater will be the amount of heat on its south aspect.‖

Yuccas: *Edith* and *M B.* Remove all the suckers except two from your Yucca about the end of February, and add some new soil to the roots of the old plant, first clearing away as much old soil as you can without injuring the roots. Let the fresh soil consist of three parts sandy loam and one cow-dung.¶

Misc: *Q C C.* Both the Chrysanthemum and Cineraria leaves are mildewed; they are old leaves. Cut them off and burn them. Had sulphur been applied early enough it would no doubt have acted; you know the common custom of locking the stable door after the steed is stolen. Apply sulphur with a dry painter's brush, which will dust it on without difficulty. Leaves are distorted by various causes: because of cold, of wounds from insects, of the attacks of aphides, &c. The stem roots are of no use, and they do no harm. Do not think of forcing Roses in 60-sized pots; make them good strong plants in the first instance, and when you do force them, begin by a very gentle temperature—not above 50° at night. By all means guard the dormant buds of tender Roses; others do not require protection. Never apply liquid manure except when plants are in full growth. Coal-ashes are of no use to budded Roses; because the roots never suffer from cold; the heads are the tender parts.

* As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those correspondents, the insertion of whose contributions is still delayed.

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The Agricultural Gazette.

SATURDAY, JANUARY 13, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Jan. 18—Agricultural Imp. Society of Ireland.
THURSDAY, — 25— Agricultural Imp. Society of Ireland
FARMERS' CLUB — Jan. 26: Strawraer

MR. J. B. LAWES, OF ROTHAMSTED, published, as our readers know, a long paper in the 8th volume of the "English Agricultural Society's Journal," developing conclusions connected with the chemistry of agriculture, to which a laborious and lengthened series of researches had led him. For these he has been taken to task by an anonymous writer in the *Farmers' Magazine*. "T. L. C." charges him with ignorance of the ordinary language of chemistry—insinuates that his deductions, erroneous upon their own showing, are biassed by his personal interest as a manure manufacturer, and concludes a fluent and confident invective with sympathy for his "brother farmers who are, in the 19th century, provided with such worthless scientific information."

Now there are not yet very many men who claim to hold independent opinions on the subjects of which Mr. LAWES has treated—most readers of agricultural chemistry are still constrained to accept the doctrines of the few who have made it matter of personal investigation—and to attack the character of a teacher is thus perhaps the easiest way to influence the faith of the many who are content to hold it at second hand. Mr. LAWES did not need to defend himself as to his honesty; and as to his chemistry the contrast between the attempted sarcasms of anonymous "T. L. C.," and the respectful bearing of Professors JOHNSTON and WAY, whom men consider to be authorities, was sufficiently in his favour; nevertheless an answer to the attack has appeared; and every impartial reader will consider it to be perfectly conclusive.

It is shown that "T. C. L." himself uses the language approvingly which in Mr. LAWES he condemned as ignorant—that he founds an adverse criticism on misquotation—that out of the *mass* of experimental research which is developed and examined in Mr. LAWES' paper, he makes but two selections as the groundwork of his wholesale condemnation—that his own calculations are repeatedly erroneous, and that he levels his arguments at self-erected opponents, attacking doctrines which Mr. LAWES never taught.

In the current number of the *Farmers' Magazine* he has returned to the subject, but with an evidently diminished elasticity of style; his language does not now flow so confidently; he is engaged in self-defence rather than attack, and in this we must confess he does not cut so good a figure.

We have not referred to the details of this discussion, because our present subject is its style rather than its subject matter. The latter—*the source of the alkalies in plants*, in connection with which all this feeling has been displayed—will furnish occasion for future remark: on the former we have still some observations to make. "T. L. C.," we said, does not in his second paper write so heartily as in his first: certainly, he does not at its outset, but his courage rises as he proceeds, and, after an apparently successful encounter with another opponent who had challenged him, it soon attains its former sticking place; and he ends thus:

"Mr. LAWES has, we believe, promised the infliction of another article on Agricultural Chemistry. We are satisfied it will never see the light—the Journal of the Royal Agricultural Society will never again be disgraced with such worthless scientific information. Thanks to Mr. LAWES' reply, too much attention has now been directed to the matter: it will never happen again. Should, however, Mr. LAWES still persist in his intention, let him take the advice of a farmer for once; 1st, don't *presume* to call his writings Agricultural Chemistry; 2dly, write common sense; 3dly, . . . &c."

Mr. LAWES is, doubtless, well able to sit unmoved under this treatment: but we venture to say that there is no other reader who is not indignant.

—— On the 2d of last month a paper was read before the Newcastle Farmers' Club, on "What science has done for Agriculture;" and a very interesting paper it is, as our readers (we have it in type) shall judge for themselves. The writer, after citing the tasks which science has yet to perform, and the difficulties she has yet to overcome, asks, "How are these difficulties to be solved? Certainly not," he says, "as Professor JOHNSTON wishes us to do by leaving scientific farming to scientific men. Nor will Sir ROBERT KANE help us by saying that all fallows are synonymous with an ignorant and improvident agriculture. Nor will we look for assistance to Dr. THOMSON. * * * Nor even to LIEBIG. * * * In fact we must look to ourselves, and to institutions of our own creating and supporting as the only source of assistance." And very good advice this is. Farmers have a more intimate acquaintance with the circumstances and the difficulties of their position than scientific men can be expected to possess; and they are thus more likely to devise remedies or estimate aright the suggestions of others. Mr. LAWES, remember, is a farmer, and much of his success as a teacher arises from his lengthened experience on a farm. We would by no means leave the task of teaching scientific agriculture to exclusively scientific men; it is indeed very desirable that scientific *farmers* disposed to display their experience for the good of others were more common than they are; in this we quite agree with Mr. T. L. COLBECK, the author of the above paper; but, we ask, What encouragement is there for such men to come forward, if a "T. L. C." be ready to meet them with the insolence which dictated the concluding passages of the critique, quoted above?

Mr. LAWES, a Hertfordshire farmer, for many years pursued his investigations on the subject of vegetable nutrition with the patience of a true BACONIAN philosopher—and when a sufficiently extensive basis of facts had been obtained, his inductions from them were guided by that sound practical intelligence which long experience in the field had conferred. An anonymous writer may pretend to undervalue his labours, but the really eminent in the scientific world, and the really earnest among practical men, unite in placing them among the most important whose results have, of late years, been given to agriculture.

It is, we repeat, much to be desired that many farmers such as he may be induced to devote an equal patience and intelligence in a similar way. Mr. T. L. COLBECK is right in wishing for this; but till the spirit be curbed which has actuated Mr. T. L. C—— in the rough and ungentlemanly critique we have noticed, we must confess that he has little chance of attaining his desire.

OUR columns have abounded with disquisitions on the best mode of feeding sheep and cattle, horses and hogs; we now request the attention of our readers to the scarcely less important subject of feeding slugs. "FEEDING SLUGS," exclaims one of our correspondents, "Why I am engaged in the task of destroying mine, and a SISYPHÆAN labour I find it! I collect half a peck every morning from two acres, and yet they do not appear to decrease." We can tell you, good sir, that you are taking much unnecessary trouble, and incurring much unnecessary expense. By feeding your slugs you will preserve your Wheat more effectually, and at much less cost. Instead of troubling yourself to slice Turnips as slug-traps, to be examined every morning, strew your fields, once for all, with Turnip-tops, which will be preferred by your slim friends, even long after they shall have withered and turned yellow, to the blade of the Wheat in its most sweet and tender state. It is only in this state that they do it any injury, and by the time they shall have devoured one strewing of Turnip-tops, it will be too far advanced in its growth to suffer from them. At all events, if the slugs are so numerous as to require a second strewing, the compromise, even in this its most expensive form, will be much more economical than an ineffectual war of extermination. The thickness of the strewing must depend on the estimate of the probable numbers which require to be fed. In a good slug season like the present, we have covered our Wheat so thickly with Turnip-tops as to conceal the ground, and, in the space of a few weeks, all were devoured except the main ribs of the largest and toughest leaves. It will be best to err on the side of over feeding; this will save after trouble, and will obviate the necessity of carting over the Wheat when the land is in a wet state. All that the slugs do not eat will make excellent manure. The farmers of Norfolk have found that there is no better dressing for Wheat than Turnip-tops ploughed in. The time for strewing is immediately after sowing, or at any rate not later than the time when the seed may be supposed to have sprouted. The slugs will attack the blade before it reaches the surface.

We might urge strong theoretical arguments in favour of feeding slugs instead of attempting to destroy them. We might urge that nothing has been created in vain; that in the chain of being, link is so dependent on link that one cannot be removed without injury to others; and that if man in his presumption attempts the destruction of one of the Creator's works, he either fails in the attempt or suffers from the success of it. We might show that those creatures which in one sense are the enemies of the farmer are in another sense our friends. We might adduce cases of crops destroyed by grubs when war had been waged with the rooks appointed to keep them in check. We might instance the prevalence of the rot among sheep on mountain pastures, ascribed to the destruction of moles, the natural drainers of the soil, by those who had destroyed them. We might mention cases of fertile land, the diminished fertility of which was traced to the drowning, by a sudden flood, of the earth-worms which had previously abounded in it. Though we cannot point out the precise benefit which slugs confer on us, there can be no doubt they have some important office to perform in the economy of Nature. Perhaps when the Wheat has attained a certain state their nibbling of it is beneficial, by preventing it from becoming winter proud; perhaps in the spring this is as efficacious in causing tillering as the nibbling by sheep, to which farmers not unfrequently have recourse. Dismissing these considerations, however, we shall appeal to the success which has attended the practice which we are recommending of preserving young Wheat from the ravages of slugs, by supplying them with food more to their taste. The practice originated rather more than 30 years ago with the farmers of Middlesex. After in vain endeavouring to destroy their enemies with lime and salt they attempted to effect on a large scale the trapping of slugs by means of Turnip-tops, which the neighbouring market-gardeners practised successfully on a smaller scale. Women and children were employed every morning to clear the leaves of slugs to which they had resorted in the night for shelter, it was supposed, and accident caused the change of plan from catching to feeding. A succession of wet days having prevented the collection of the slugs, it was found that they had been employed in the interval in devouring their traps, and that as long as they were supplied with Turnip-tops they would not touch the Wheat.

After this discovery, the practice of slug-feeding soon became general in the district, though beyond it the advantages of the plan are little known. Let those whose Wheat is suffering during this mild and wet season from the attacks of slugs, only try the experiment, and many a farmer will find in it the preservation of his crop.

A SKETCH OF THE FENS.

SOME few years ago the great level of the fens was a district comparatively unknown by the public; but since it has been bridged in various directions by long lines of railway, thousands of travellers, who had heard it described as a low, wet, and dreary expanse, prolific of wild ducks and agues, have found themselves almost unawares within its precincts, and have been conveyed swiftly and safely over its dark surface. If the traveller enters from the south, he finds the cuttings through chalk, gravel, or clay suddenly cease, and speeds along over rich meadows bordering the broad-flowing and winding Ouse or the lesser Cam, and

stretching back from each bank to the wide slopes and bold headland of the high country. During great floods these sides often appear as one vast sheet of water, sprinkled here and there with trees in line indicating a hedgerow, a cluster of half-hidden Thorn bushes, or a half-drowned gate and rails shown dismally above the tide. Leaving the vicinity of high lands, the pastures become fewer, and a surface of black peat soil widens out into a seemingly boundless plain, undiversified with hedges, intersected with reedy ditches and dotted lines of pollard Willow trees; the dulness broken at intervals only by small plantations, isolated cottages, or green Osier beds. The train next approaches a rising ground, and a village sheltered with trees is seen upon the slope. But this and other high lands are quickly passed. Small elevations crowned with towns and hamlets are seen rising like islands out of the fenny tract by which they are surrounded. A river or main drain is crossed, and the passenger perceives that it rides high above the land between lofty and wide-sloping barrier banks, and perhaps observes one of those "gangs" of "lighters" which navigate between the remotest districts of the level and the sea ports, with cargoes of corn, coal, and other merchandise. Occasionally whilst passing a large drain, he will see a line of windmills extending at wide intervals along each bank to the extreme distance, perhaps looking as busy as possible, running with "four points in the wind," and bucketing out the water with their great wheels from the minor up to the main drains, or (as frequently happens) standing pitifully motionless "for want of breath," though in the midst of a heavy rain, with ditches filled to overflowing, suffering the waters to rise for a time over the saturated earth, their own ancient and wonted domain. Or, in the absence of these objects from the scene, he will notice the long cloud of smoke from the tall flue of one of those more powerful and unresting engines, which (alike in calm and boisterous weather) is continually drawing towards itself and sucking up the water from numerous drains, and lifting it into the main channel or river. In wet seasons these machines are taking off the downfall waters from extensive districts; and in fair weather still keep lowering the head of water in the ditches that they may be ready emptied as reservoirs for the next downfall, and that the drainage may be made as perfect as possible by soakage from the porous soil. He will observe that this region, though gloomy, is rich and fruitful; for he is carried, not over wide meres or between waving shoals of reed, but by fields of green bulky Coleseed, by black lands beautified with bright healthy rows of young Wheat, or covered with a golden forest of ripe grain. Even in such a rapid transit, the stranger cannot fail to conjecture that the history of this flat country must be a most interesting one; and indeed he would scarcely credit the vast improvements which have from time to time succeeded each other in bringing the fens into their present fertile condition. The stately fane of Ely is seen rising in grandeur high above the murky fen, standing far away from any quarry, on an isle surrounded on all sides by a tract of deep peat soil; but the country must be wonderfully altered now, when a near view of that building may be had from a firm and strong railroad laid across dry, well cultivated, and flourishing lands, from what it was when King Canute floated over these fens in a boat, and approaching the cathedral, composed his famous poem beneath its walls. Very different was it from its modern state, when Hereward and his Saxon warriors defended the Isle of Ely against William of Normandy; when the fens were wild expanses of lake and morass, the air clouded with dark vapours, the "islands" being the only inhabited, wooded, and verdant spots in the midst of "a horrid silence of bogs and thorns;" and when Ely was so well fortified all round by meres and quagmires, that the invader's bridges sunk beneath the footsteps of his adventurous soldiers, to the destruction of great numbers.

The numerous high grounds in various parts of the level formed suitable sites for monasteries and cells, being solitary and naturally well defended; and it was here that the ferocious Danes plundered and destroyed so many magnificent religious houses. Here too resorted not only Saxon patriots, but also bands of marauding depredators who, secure in these strongholds, lived by robbing the upland borderers. Ever since that period the fens have been the theatre of strife and contest; not of conflicts with deadly weapons, but of more peaceful struggles directed to very different ends. First, there was a combat between various drainers and Nature herself. They endeavoured to effect the desiccation of the inundated level by diverting the rivers from natural channels into artificial cuts, by turning the whole course of the great Ouse, with all the drainage waters from many upland counties, not only into another bed, but to another outfall (viz., from Wisbeach to Lynn, about the reign of Edward I.); and they then attempted to remedy that mistake by a further error (at and after the time of the Commonwealth), of cutting new drains and sluicing rivers, instead of improving the old channels and cleansing the outfalls. The result of this has been a burdensome drainage-tax, by reason of huge engines, multitudes of which have long been indispensable for taking up the water from the land.

After what is called the general drainage (in the 17th century), the fen waters, combined with the hill streams, ran partially off by their natural descent to the sea; and the peat earth, being thus in some degree dried, became contracted and compressed, and the whole surface of the black land sunk several feet, so that the relative levels of land and sea were considerably altered. But the outfalls still remaining unscoured and unrepaired, were the scene of another kind of conflict—between sluggish fresh waters going out and great tides, thick and muddy with silt and sand, flowing in. The result, there, was a constantly augmenting accumulation of deposit; and this, choking the river mouths, together with the diminution of fall, occasioned frequent drownings of the fens and a generally bad state of drainage. This provoked another battle; but the great army of fen-men fought against the waters in the weakest and worst way. Instead of uniting together and driving out the grand enemy at the general outfalls, they each fortified their own property against floods, with embankments (often to the injury of each other), and scooped out the water from each inclosure with a windmill; not considering that unless the means of conveying the waters to the sea were improved, their "poldered" lands would quickly be in as disastrous a state as ever.

The surface has sunk considerably since that time, and many obstructions at the different outfalls have been removed; yet if the river mouths were still further improved (which might be readily done), a very large proportion of the districts at present inefficiently drained (that is, inadequately for purposes of underdraining and first-rate husbandry), by the costly system of wheels and pumps, would have a perfect natural drainage. Immense sums of money have been expended in the drainage fights; so heavy has always been the opposition of some classes of the inhabitants to almost every scheme, good or bad, that has ever been proposed, planned, or executed. There has frequently been a strife between the rich and the poor; indeed, in almost every parish where a common has been inclosed, and in every large district which has been drained. Numerous objections were raised by the fen-men against the plan of a general drainage by the Earl of Bedford. They said they should thereby lose their fishing and fowling. It was answered that there were some deep places in the fens, and also several meres which could not be laid dry, and those were the chief places for fish and fowl; but so great a benefit to the nation as the reclaiming and cultivating so many thousands of acres ought not to be hindered by the small consideration of eels and wild fowl. They complained of losing their reed and sedge; it was shown that good pasture and hay ground would be far more valuable. Besides these and somewhat similar prejudices, there were certain tacit objections, as, for instance, the loss of their land; and again, a spirit of private emulation or mere envy. Thus, the owner had rather be said to be owner of 1000 acres, though they were scarcely worth 1000*s.* a year to him, than part with 500 acres to make the rest worth 500*l.* a year. And as for emulation or envy, it was so "notorious, so diffusive a vice amongst them," says an old writer, "that a man may imagine it to have been bred there, as Hydra was in the fen of Lerna. I will put a case. John Stile has 2000 acres in the fen worth to him perhaps 50*l.* a year, and he has no other livelihood. John Nokes has 200 acres in the same fen worth 50*l.* a year, but besides this he has an inheritance of 300*l.* a year, and thinks himself, and so is a gentleman of some reckoning; the other is but a poor man and lives hardly. When the question of the draining of the fens comes, John Stile is glad, and promotes it all he may; but John Nokes, his rich neighbour, what saith he? Shall John Stile be a better man than I, who has been always glad to shroud himself under my wings—that I cannot, I must not endure: for if the fen be drained, his land may be worth 500*l.* a year, though he part with one-half for the draining; my improvement will be little worth—no drainin; therefore by my consent." Another opposition was from the poor, who hired common rights of the owners, having thus the privilege of feeding a certain amount of stock on the common belonging to their parish. When the undertakers of the drainage had performed their work, and begun to cultivate the portions of that common and of other lands allotted as their recompense—these men, having lost their occupancy and been compelled to sell their cattle, caused riots in several places, broke the new sluices, cut the banks, deluged farms, burnt houses, destroyed crops. Another opposition was from the rich. Sir William Killigrew, in defending the Earl of Lindsey's drainings in Lincolnshire, said, "I say that the chief of our opposers be these rich men whom the poor commoners do petition against for overstocking their commons, and do oppose us that they may still oppress the poor commoners." Others objected, that though many had attempted the work, all had failed; the project had proved a "philosopher's stone, for it had undone most of them that had ever meddled with it." And the cause is plain, said the partisans of many of the commoners, "because it hath proved a grindstone to the faces of thousands of poor people."

Now, the rioters referred to above were not proprietors of common rights; they were merely tenants. The proprietors of rights (with the exception of some few that were unjustly treated) had allotments of the open field (when drained and divided) as proportionate compensation, and their share, covered as it soon became with sweet and good herbage, was worth far more than their former privilege of stocking the wet, course, and rushy common. These cottagers, both possessors and hirers of commonage, were chiefly dairymen who lived on the "lords" or islands in the fen, stocking the commons and fens all summer with their cows, which they kept in winter on hay stored from the grounds allotted as "mow fens." Their chief subsistence was fish and fowl, together with bread made from the spring corn which they grew in small patches on the high lands. For fuel they used peats, dug in the "turf fens" and dried, a week's work providing firing for the whole year. The business of the larger occupiers and landowners was chiefly grazing; but on the gradual improvement of the drainage, and the inclosure of the commons, towards the close of the last century, most of the land became converted into tillage. Thus, though the poorer cotters had to part with their cows, the progress of inclosure and extension of arable culture occasioned a greater demand for labourers: work was plentiful, wages rose, the gunning boat and fish-net were relinquished for the plough and spade, and the improving farms soon brought ample remuneration to the masters, and comfortable subsistence to the men.

Wherever the "turf" or peat moor is found, it has afforded a means of livelihood to a large class of the fen people, who have, from time immemorial, been engaged in cutting, drying, and carrying it to the towns and villages, where it is bought for fuel. Another useful commodity produced by the fens is the reed. Beds of reed, now seen only on the shores of the meres, abounded formerly in many parts of the country; great quantities of these reeds were reaped like corn in the latter part of summer, dried, dressed, and sold in bundles for thatch; this covering, it is said, making cooler houses in summer and warmer ones in winter, than any other roofing material. In some districts a considerable trade was once carried on in supplying the large markets with wild fowl. These were taken in "decoys" (vulgarly called "duck-coys"), but in later years with the waters have disappeared also the birds. In the undrained state of the fens, geese (in some localities) were considered the fenman's treasure; large flocks, even of a thousand each, were kept, and were frequently plucked, as their feathers and quills formed valuable articles of commerce. In early times, too, there were numerous and extensive salt works on the marshes along the coast of "the Wash," and also more inland, upon the margins of the different havens.

The operation of "paring and burning" originated in the fens about the middle of the 17th century, and appeared to be the only way in which the light spongy soil could be brought successfully into tillage. But it was long before it became general; many districts, years after the general drainage, were badly drained, untilled, producing coarse and scanty fodder, and generating miasma in the moistened air. The improvement of live stock seemed all but impossible, from the wretched state in which they lived, or rather starved, upon the wild and swampy commons, all selection being prevented by the mingling together of all sorts of cows with a variety of bulls (belonging to numerous proprietors) in one great herd: how utterly at variance with our modern practice of breeding and box-feeding on scientific principles! The higher grounds lay in wide open wastes, overrun with weeds and rubbish, Rushes and Thistles; the lower parts were frequently flooded, and in the clay fens of some districts the fields are still intersected by frequent hollows and dykes, which were anciently thrown out as receptacles for the water, and the soil raised into large mounds as places of retreat for the cattle. But the unenclosed fens of deep peat presented the most dismal spectacle; wide spaces drowned nearly all winter, and during the rest of the year covered with Reed-plashes, rough Hassocks, and Cotton-grass, areas of loose bog, the residence of snipes, wild ducks, and herons, where cows and horses have been mired and lost, and their skeletons found when the drains were cut.

In course of time, however, even these desolate places were pared and burnt, and clothed with an abundant vegetation of Cole and corn. Under the improved husbandry sprung up increasing stores of vegetable produce, and the live stock multiplied in an enormous ratio; landowners were enriched by the doubling and trebling in value of their estates; and not only was there such improvement in the land, but the climate became drier, warmer, the air less foggy, and the whole country more healthy and pleasant. Paring and burning was universally considered as essential to fen farming, as long as the peat continued light and deep; but as the drainage became more complete, and as the contests between the innovating and the conservative classes of farmers were constantly resulting in the abandonment of wind engines for those of steam, the moor was compressed, the surface kept sinking; the operation of paring was found to be accompanied by a gradual loss of ground, and it was therefore plain that it could not be carried on *ad infinitum*. Hence arose the present system of fen management; the subsoil of clay is dug up and mixed with the moory soil above, thus consolidating the light powdery earth, and greatly increasing its productiveness. The new method was too obviously profitable to be cried against by the lovers of antique usages, and it has thus become universal within the last 20 years. A new era commenced in fen history; the whole aspect and condition of the level was altered, for the soil having become fitted for the reception and retention of manures, the old course of Coleseed, two crops of Oats, or one of them Wheat, and then Grass for five or six years, has been gradually exchanged for a more valuable rotation, namely, a white crop every other year, with Coleseed, Beans, or seeds between. The wretched system of turning sheep and cattle adrift into wild commons has been followed by the more rational and profitable plan of feeding the sheep on green crops and Clovers, and winter keeping the cattle with roots, straw, and artificial food, in warm farm-

yards. With the rich manure thus made, and also that accumulated on the land, by consuming heavy fallow crops (which are universally forced with bone-dust, guano, &c.) yields of produce are obtained equal to any of those on the richest soils in England. And whilst struggles are still going on relative to the great works which concern all, the repelling of the tides, discharging of the upland and fen waters safely into the sea, and perfecting the drainage of the districts least favourably circumstanced—the manifold improvements of modern agriculture have not been neglected. Under-drains are being laid in many places, particularly on the higher ground within the fens; subsoil ploughing is practised, where the land is of a suitable nature for it; clod crushers are being used, with great success, to press down the young Wheats upon light black land, where they must otherwise have been much destroyed by frosts and blasts. But a recital of all the improvements now in course of performance, and of the advantages yet to be enjoyed by the fen cultivators would require a volume; and we conclude this outline of the successive stages of advancement exhibited in the agriculture of the fens, with but one remark:—Surely they who talk and write to disparage the work of "reclaiming wastes," cannot have cast their eyes well around them; and if they really do search for facts in favour of their opinions, it is certain they will find none here. *I. A. C.*

ON BOX FEEDING.

In replying to the polite and courteous letter of the Rev. Sir George Robinson, Bart., of Cranford, on what is called, but I think very inappropriately, "box feeding" of cattle, I wish particularly to observe, that in all my arguments on this or any other subjects, my object is more to elucidate that I myself have taken up a wrong position, and have been in error, than to overcome my opponents; and happy should I be, whilst acting on this principle, if I could say to the honourable baronet and divine, "Sir, I am convinced; I have been in error; your letter on 'box feeding' has wrought a revolution in my mind in favour of your practice; and, therefore, I cannot longer maintain my own views on the subject, but joyfully acknowledge that I have all along been under a cloud." Conduct like this, I observe, would, if I could consistently adopt it, give me great pleasure; but I am sorry to observe, that nearly every inquiry I make tends only to strengthen my previously formed opinions, and confirm my mind that I am altogether on the right side. I do not, however, shut my eyes to the fact, that many gentlemen of high standing and great credit have adopted this novel system of cattle feeding and muck-making; have sunken the deep dungeon graves, and have let down their living machines into them. Mr. G. W. Fowler, I am led to believe, is not the only gentleman of respectability who has his "horses, colts, hogs, and rams," weltering in their own excrements in those sunken dungeons; but neither respectability nor numbers can make error truth, nor wrong right: but I am convinced, that by far the greater numbers arrange themselves on my side the question, and reprobate the "boxes" quite as much as I myself do. But as I never write on mere assumption, nor make statements that I cannot prove, I observe that I know gentlemen who have said to me, "Sir, had we seen your letters on box feeding before we made our boxes we should never have made them. We are not at all pleased with them, and are disposed to fill them up." And to such I have replied, "Gentlemen, be sure give them a complete trial before you destroy them, or at least think for yourselves and let not me think for you."

But as well as this private information, let us candidly investigate the general and public practice of England. I was at the Christmas Cattle Show, and whilst there I made all the inquiries I possibly could to find out who, and how many of the gentlemen who exhibited stock there, had adopted the new plan of feeding; and how many of and which of the oxen, cows, sheep, and hogs, exhibited had been immured in graves on their own urine and dung during the period they were being fattened. To those inquiries, and they were anxiously made on my part, what answers did I receive? Had a score or a dozen gentlemen adopted the novelty out of all the exhibitors of stock? Instead of that, as far as my inquiries could go, I could not learn that one single individual, from the Prince to the tenant-farmer, was a box feeder; nor do I believe that a single animal thereat exhibited had been in one of those miscalled "boxes;" but should I be wrong here, as I am in search after truth, I should be obliged if any gentleman could set me right, and inform me what exhibitors were box feeders, and how many and what kind of cattle each had in his boxes.

But connected with the muck-making machinery is an equally novel and queer kind of compost-making for the food of the immured beasts, a kind of hodge-podge pudding compounded of sundry mysterious ingredients, and which, from their easily digestive qualities, we are told, hasten the filling of the boxes; and so odoriferous are they also, that Arabia's perfumes scarcely excel them in sweetness; nay, even the dung of all animals fed with it partakes of the same dulcet qualities, converting each box into a bed of Violets or Roses, and each ox, therefore, metamorphosed into a kind of musk-deer, and hog into a civet cat, by bolting that slippery pudding in those dark and dismal dungeons.

> Oh! novel box feeder, nothing can be odder,
> Than thy receipt for making fodder.

But I must not forgot the Rev. Sir George Robinson's very obliging letter. I admit that several other gentlemen, as well as he, have adopted this novelty, and maintain that both beef and muck are faster made and are improved in those boxes; but then a practice directly contrary to nature is not made to agree with it because numbers more than if one person only adopted it. How many well-informed men in many respects have maintained, too, that the thick black urinary liquid in a farm-yard is better for cattle to drink than clear and sweet water. Nay, I have heard some affirm that it was both meat and drink for them; and do not even medical gentlemen at one period adopt for general practice that which at another period they all as strongly condemn? At one time it is diureticum, sudorificum, catharticum et omne quod exit in *um*—præter remedium; and at another time all the *ums* are discarded as physic only to be thrown to dogs.

The question therefore with me is, not what men, whether many or few, practise, but what Nature herself dictates to me. In all my reasoning on this subject, Nature alone has been my guide; and to all feeders of stock, I say—Gentlemen, treat animals as you would treat yourself; place Nature nakedly before you, consult her, assist her in all you do, but never thwart her in any of her operations. Every living creature, I continue, from man downwards, has been made to loathe and abhor its own excrements; and therefore, I conclude, you cannot join filth and health together, neither can you separate a bed 3, 4, or 5 feet thick with an animal's own excrements, from a bed generating loathsomeness and disease, whether it be for beast or for man.—In one or two passages the Rev. Sir G. Robinson has either mistaken the meaning of my letter, or I myself did not express my own thoughts, and therefore, as to me the matter is of consequence, I will take the liberty of putting the passage or two right. Sir George writes, that I described the third tier of boxes I visited as having a "porous soil," but my language was this, a part only of the urine of cattle placed in such dungeons can be absorbed by the straw that is under them; the greater portion of it either remains in the pits in a liquid state, or sinks into a porous soil, or drains away and is lost. In these words I think it will be perceived that I was referring to the box feeding system generally, and not to any particular tier of boxes, and especially not to that third tier previously described by me. Sir George, however, disagrees with an advocate of this system, a Mr. G. W. Fowler, who wrote (see *Ag. Gaz.* No. 48, 1848) that he kept horses, colts, pigs, and two rams, in such dungeons; but Sir George dislikes my having introduced a "fur" among them, whom after my manner I jocosely admitted into the menagerie with the castos and the bos; but in doing so I considered him to be a robber of Nature only, and not a common thief.

> "He takes all her smiles, he leaves all her grief:"
> So the thief of all thieves is the box feeding thief.

But, however much I disagree with the Rev. Sir G. Robinson in his box feeding of cattle, and however much I may lament with him "the fattening in Cathedral stalls," I do most seriously and deeply grieve with him that in one of our cathedrals, fattening in boxes has been introduced in its stead. This change I do in my conscience believe with him is a "lamentable precedent," and that the authors of it were certain "rash innovators." I think, also, he compares the change most appropriately to Mr. Warnes's sweeping away the old sweet and comfortable cattle stalls, and substituting in their stead "living graves," 4 and 5 feet deep, with putrifying and nauseating animal odours. Of all the sources of humiliation, secession, disaffection, private strife, and public contention in our rural parishes, none have been so prolific of mischief as the introduction of boxes, called pews, into our parish churches. Archdeacon Hare, I think, has compared them to the sheep pens in Smithfield, and Sir George, I believe, is equally as apt in his comparison in the likening of them to Mr. Warnes's cattle dungeons. "Lamentable innovators," indeed, were the authors of that destructive change in the cathedral at Peterborough; and I assure Sir G. Robinson that nothing would please me so well as to hear that the dry-rot had reduced the whole of those cathedral boxes, fit only to inclose cattle or lunatics, into one heap of dust.

In conclusion, I observe, that as I am anxiously careful to give my opponents in argument all the advantage I can, I admit that animals fed on the box feeders' unctuous slippery hodge-podge, fill their boxes much faster than other animals would when fed upon natural food; I also readily acknowledge that the excrements of beasts so fed very readily pass through the litter to to the bottom of the "boxes;" and I do not deny, if their muck be to be kept under the beasts, but the Rev. Sir George Robinson was quite right in puddling the floorings of his boxes, and erecting around them very strong and impervious mason-work; these, doubtless, are great advantages, and ought to be admitted; but I do not acknowledge that cattle placed in sunken pits, with their own excrements under them, 3, 4, and 5 feet deep, and for many months together, can be in a natural state; nor do I acknowledge that the earthy, cadaverous effluvia arising from such putrifying odours are so sweet as they are represented to be, nor especially are they to be compared to the refreshing Violet-scented sweetness which always is floating in the atmosphere of all well-made, well ventilated, and scrupulously clean cattle-houses. *George Wilkins.*

THE RURAL POOR.

When "S." had hung up his sword, and requested instruction in the husband's peaceful art, he must have little expected to raise a hubbub that from culture of soils, and the feeding his pigs and hens should extend enquiries into the education, the weaknesses, the offences, the neglects, the wrongs, and all other evils to which man in his misery is subject.

The vices of the poor! How much of the severity of our laws is to be attributed to the comfortable assurance in the comparative impeccability of property! How have we sought to remedy the errors of education, check the contagion of example, or diminish temptation to the poor! The state has done little in this; what things have been done, are to be found in the necessarily limited efforts of "ladies who have a taste" for weaning the evil from the evil of their ways, and whose lords have the wit to know when their ladies are right. The legislature truly has had its own way to deter from crime by punishment and example. I have seen soldier after soldier at the halberts till their comrades sank fainting in the ranks, but I have never heard from them but commiseration for the sufferings of the punished one, the example has never excited horror of the offence.

Dry nursing, as "S. S." calls it, is sad stupid work, and to "dry nurse" poverty is little to the taste of property, the *laisez faire* has been suffered to go on till the limbs of the neglected one quivered from the gallows tree. But if poverty and want of employment, sure sources of ill, have been neglected, no complaint can be made for want of "dry nursing" crime and vice. The sinner yet unpractised in vice, for, perhaps, his slight offence receives not the kindly admonition, "go and sin no more;" no Sinbad offers to carry him above the temptation of the world; but thrust into gaol, associated with brother offenders, some more hardened in sin, property judiciously "dry nurses" him till strong enough to assail it more effectually, and then returns him on the world with naught to "awaken his hope," to starve, to beg, to rob—a gaol bird.

For the credit alike of property and poverty, I should hope that "S. S." has started on his journey of life with some of the disease of Sterne's traveller, and has, through such a medium, seen the disorders of his neighbourhood. I hope he is led away by his own strong sense, perhaps rather morbid, of virtue, to expect more from human nature than he ought; to condemn, with somewhat more asperity than he should, the failings of the poor; and from individuality to have proceeded rather rashly to generality: and I am the more disposed to believe such may be the case as I have known how frequently a regiment or a company has acquired a bad reputation from a very few indifferent characters in it; and as I also know that the general impression that prevails in England of the character of the Irish peasantry is from the same reason false, and that the belief of the insecurity of property and of capital employed in Ireland rest on as narrow a foundation—on a few outrages committed against them, which "dirty birds who delight to foul their own nests" have ever been too ready to blaze forth. Had Irishmen the *amor patria* of the Scotchman, we should have heard less of them. I say few outrages, comparatively with the poverty and want of employment of the people, they are very few.

I cannot believe that the rural population of England is so much worse than I know that of Ireland to be, I have in a 30 years' rural residence here found nothing like the amount of crime that "S. S." says exists in his neighbourhood. I do not recollect having been robbed by one of my labourers, but I do recollect a young labourer of mine detecting a thief stealing my Turnips, which were then but little cultivated in the neighbourhood, compelling him to leave them, and refusing to name him, but assuring me he would not return again, and I lost no more. I must, however, admit I have heard others complain, but they were generally close-fisted fellows, even as regards their own interests. I have known piece after piece of an old broken gate carried away to boil the pot of Potatoes, but I have never seen, where even firing was scarcest, where the cow dropping was sedulously turned and dried to use as fuel, a gate in good repair broken for the purpose. The petty pilferings of necessity are, though much complained of, not to the extent that might be expected from a people in so abject a state of poverty. Are the Irish peasantry, then, more moral, more religious, and better educated than the English? And have the sufferings of the poor called forth more sympathy from the higher ranks? I have seen many magistrates on the bench pity and punish with regret.

As speaking of more immediate, and more mature knowledge, I would rather confine myself to Ireland, but I believe it is equally true of all countries, that kindness will do more than severity. I speak from an experience of 40 years, during many periods of which I have had small parties of men under military command, that the silken cord of love will draw more than the chain of authority. In 40 years the only actual punishment I ever inflicted was to put a soldier into the black hole for a night. I will tell our rulers so to govern Ireland, and they will find the "Irish difficulty" one of the most soluble. Convince the people of this country—and they are all alike, high and low—that you seek to promote their welfare without any sinister regard to self, and you may rule them with a rod of straw.

With those kind-hearted correspondents of the *Agricultural Gazette*, which the editor has so judiciously placed as commentaries on "S. S.'s" fillip, I would offer some facts as proofs of the power of kindness in the human breast; it is the history of a life. I had scarcely held a commission in the British army 12 months, I was then also young in years, when my commanding

officer, who had a kindness for me, gave me the command of a company, and which I held for some 18 months, and until my services were called for on other duties. In this company there were no punishments, and my continuation in command is sufficient proof that the discipline maintained was satisfactory. I subsequently commanded a detachment for eight months in the Island of Gozo. A few days after my arrival the civil and military commandant remarked to me the ill conduct of the men, and shortly after I had occasion to put one of them into the black hole for a night, and I sent two more to head-quarters at La Valette, rather an unique thing in military matters, without a charge against them, but that they had not behaved to my mind, and that I requested others in their stead; they were sent. At the expiration of the eight months, when, by a reduction in the army, I was placed upon half-pay, the commandant of the island said that he had never known a detachment so well conducted, and this occurred at a period when flogging was in full vogue. Some years after, I commanded a detachment for four months at Feakle, in the county of Clare; scarcely arrived there, when two of my fellows got mad drunk, and broke the door of a public-house; they were tied to a bedstead for the night, and paraded next morning for head-quarters, but begged off. The detachment behaved well afterwards, and, on leaving Feakle, was accompanied for some distance by the whole population of the village with the strongest expressions of approbation of its conduct. Shortly before reaching the regiment, the serjeant requested leave for the party to halt. He then said he was requested by the men to express their gratitude for the kind manner in which they had been treated; and the two drunkards also returned their thanks, acknowledging they had deserved punishment, and would have been severely flogged had I not forgiven them. At head-quarters I was congratulated as having the only detachment that had not sent men in for punishment.

For the last 20 years I have commanded a body of men in this country (exclusively Irishmen) whose duties expose them to very great temptations, yet, without punishment, they have conducted themselves so as to obtain the approbation of every one who knew anything about them. This is, however, attended with one inconvenience; they are too frequently better provided for by the clergy and gentry of the country, and I lose them. I would mention another fact to show how little will influence men; a newly raised regiment was marched from Chichester to Chatham; I commanded a company; the first day's march was a long one. While nearly half the men of the other companies gave up, by encouraging my men I marched them all in; this gave a spur, and the rest of the six days they could scarcely be restrained from taking the head of the column. "Men, you have taken the lead on the march, let me see you keep it in barrack." They did so; and in ten days after, on the inspection by the commanding officer, he ordered all the non-commissioned officers of the regiment into my men's rooms, that they might learn how to keep their own.

How was this accomplished? by continual watchings and followings, by working on their fears, by scoldings and reprimands, by ceaseless cares and constant solicitudes? Not at all. I did nothing. My men always enjoyed the pride of doing everything themselves. They knew good conduct would please, and they wished to do so; they knew it would conduce to my credit, and they wished me honour; they knew ill conduct would pain me, and to have to punish would grieve me, and they did not wish to cause me uneasiness. My labourers said they might as well rob a priest. The process of reclamation is, however, seldom a rapid one; it is not a sudden call; it requires time, temper, and much forbearance, but it requires still more the love of kind, and the power of impressing on its objects that it is this love which actuates, and that true pride which equally disdains servility to superiors and arrogance towards those beneath us; that gentlemanly feeling which shrinks from wounding the sensibility of others, and disdains the vulgarity of attempting to reclaim by abuse *J. M. Goodiff, Granard, Dec.* 31.

TITHE COMMUTATION.

As your agricultural as well as clerical readers may feel anxious to know the result of the averages for the seven years to Christmas last, which have been published in the *London Gazette* of this evening, viz., Wheat, 6*s.* 10½*d.* per imperial bushel; Barley, 4*s.* 1½*d.* ditto; Oats, 2*s.* 8¾*d.* ditto. I beg to state, for their information, that each 100*l.* of rent-charge will, for the year 1849, amount to 100*l.* 3*s.* 7¾*d.*, or nearly 2 per cent. lower than last year.

The following statement from my "Annual Tithe Commutation Tables" will show the value of 100*l.* of rent-charge for each year since the passing of the Tithe Commutation Act:

		£	s.	d.
For the year	1837	98	18	9¾
,,	1838	97	7	11
,,	1839	95	7	9
,,	1840	98	15	9¾
,,	1841	102	12	5½
,,	1842	105	8	2¾
,,	1843	105	12	2¾
,,	1844	104	3	3¾
,,	1845	103	17	11½
,,	1846	102	17	8¾
,,	1847	99	18	10¾
,,	1848	102	1	0
,,	1849	100	3	7¾
		£1317	0	8¾

General average for the last 13 years .. £101 6 2¾

Chas. M. Widdick, 25, Suffolk-street, Pall Mall, Jan. 5.

Home Correspondence.

Gardeners' Chronicle.—Having observed some of my agricultural friends turn at once to the *Gazette*, considering the *Chronicle* as applicable only to gardeners, I recommend my brother farmers never to omit looking at the Leader at least in the latter; for though it may often contain matter of exclusive interest to the gardener, it frequently contains brief, but very clear, intelligible, and masterly expositions of the principles of vegetation and cultivation of the utmost value to the agriculturist. *C. L., Cirencester.*

The Prospects of Farming.—Mr. Hewitt Davis in a third article under this heading, which is published in your Number for Dec. 30, furnishes an answer to some of the remarks in my letter of the 4th of November last, which appeared in your Number for Nov. 25. He states, "In a late Number of the *Maidstone Gazette* may be seen six advertisements by different auctioneers of sales of farming stock under seizures, and in another paper an agent announces 40 farms to let," and adds, "Coming events cast their shadows before them." Now are these "coming events" profitable returns for capital invested, as suggested by Mr. Davis? This is the practical question, and a satisfactory answer would be highly gratifying to me, and no doubt to many others of your subscribers. But I am apprehensive no such answer can be given, at least under existing circumstances. The same article furnishes an answer also to arguments which have been used in favour of free trade policy. After mentioning the immense supplies of grain which have been sent to us abroad, at "prices that are considerably lower than what have been the averages of any seven years in the last 60 years," Mr. Davis states, "And what is highly important to note—this large quantity has been collected in this short time upon a sudden demand, with no previous anticipation of any such requirement, and after a previous drainage of the old stock, and still its withdrawal has had little effect in raising of foreign prices, the last foreign reports being large supplies and lower markets." And now that I am writing on this subject, I cannot but express regret that my letter was not published entire. The passage on exports, imports, and the free trade theory, was I think correct. I desire only to state and to know the truth; if I was in error I beg to be set right. An anxious desire to prevent mischief, and promote the welfare of the country, has induced me to trouble you with the remarks I have felt justified in making. *A. L. A.* [We have no objection to allusions to free trade when a subject proper for discussion in our columns seems to require it; but free trade itself certainly is not a subject suitable for our columns, and therefore we abridged your letter.]

The Rural Poor.—The condition of the rural poor of the midland counties has recently been commented upon by several of your correspondents, and has furnished a topic for some most judicious observations by yourself. Will you permit a Scotsman to add a word upon this really momentous subject? Your correspondents, I doubt not, are sensible men, who abstractly, and in the guidance of their ordinary affairs, fully recognise the connection between cause and effect. As cultivators of the soil, they are never so absurd as to look for a crop without tilling and sowing; and as parents, they not only bestow upon their children the best elementary education which their circumstances admit of, but, as they are fit for it, they put them under more special training for the particular profession which they desire to follow; and all this just because they know that no man is born a good scholar, an able man of business, or a skilful artisan. Now, how comes it to pass, that so many sensible men fail to apply this sound principle to the case of the peasantry, and vainly expect the sons of toil to grow up industrious, obedient, sober, and honest, in the total absence of any training fitted to yield such valuable fruits? Is there not here a forgetting of the solemn truth, that we all alike inherit a nature which, if left to itself, will as certainly yield the bitter fruits of ungodliness and dishonesty, as the earth, in like circumstances, yields thorns and thistles. Now, we are not left in doubt about our duty in this case. God has said, "Train up a child in the way he should go, and when he is old he will not depart from it," and in the Bible has fully made known to us "the way," which secures eternal life, and fits men for present duty. For proof of what may be done for a whole community by a system of such training as the Bible inculcates, let me briefly refer to the history of my native country. At the era of the Reformation, Scotland was sunk into a state of apparently as hopeless ignorance, vice, poverty, and anarchy, as perhaps Ireland has ever been; and yet, through the blessing of God, on that scheme of instruction for young and old which Knox and his coadjutors succeeded in establishing, the aspect of society began rapidly to improve, and made such progress that about a century after our great Reformer had entered on his public ministry, we find the historian, Kirkton, thus describing the state of the country:—"Every parish had a minister, every village had a school, every family almost had a Bible, yea, in most of the country all the children of age could read the Scriptures, and were provided of Bible either by their parents or ministers. Every minister was a very full professor of the Reformed religion, according to the large Confession of Faith framed at Westminster. None of them might be scandalous in their conversation, or negligent in their office, so long as a Presbytery stood. I have lived many years in a parish where I never heard an oath; and you might have ridden many miles before you heard any. Also, you could not, for a great part of the country, have lodged in a family where the Lord was not worshipped by reading, singing, and public prayer. Nobody complained more of our Church government than our taverners, whose ordinary lamentation was—their trade was broke, people were become so sober." Nor was it a reformation of manners merely that was brought about by these means. Seldom does a number of your journal appear in which there is not some complimentary reference to Scottish husbandry; but it is not so generally considered that it is our schools and our kirk, the shorter catechism, and the Bible, which have given their impress to the national character, and developed those moral and intellectual qualities which have led to such success in our national agriculture. Let me not be supposed to insinuate that the above quotation is a true picture of Scotland as it now is. Alas, no; the provision for the training of young and old has become wholly inadequate for our increased population; and there is growing up on all sides a mass of human beings who are sinking deeper and deeper in ignorance and wretchedness; are ever swelling the ranks of pauperism and crime; and, if the only remedy be not speedily applied, threaten to bring a terrible retribution on those who have neglected to care for them in time. So deep indeed has become the degradation of multitudes of our people, and so thoroughly have they cast off regard either to God or man, that it is no wonder so many persons consider their case as hopeless, and look upon any attempts to remedy it as the dream of well-meaning, but weak enthusiasts. Let all consider that God himself has provided a remedy, and that His blessing has always accompanied its honest and persevering application. To look for any radical improvement in the moral character of the peasantry, from the use of such palliatives as some of your correspondents suggest, can issue only in disappointment and vexation. *A Scots Farmer.*

Hybrid of the Hen and Pheasant.—I have read in a late Paper some remarks by "J. S." on this subject, which reminds me that in the mountains in the county of Kerry, it is quite evident that at some period the hens there have bred with the grouse on the neighbouring moors. The shape and size of the fowl at the herdsmen's cabins, the great number of old cock grouse feathers in the birds, besides being feathered to the toes like the wild bird, hardly admit of a doubt of it; indeed, I have heard some of the herds say, that they have seen them with their hens close to the house, and an old sportsman once told me, that he never got such abuse in his life as he did from an old woman, having shot an old cock grouse close to her residence, that, she declared, came every morning to the door of her hut to mix with the hens. Nothing is easier there to tame them, I have had them at different periods, they are bold and great tyrants to their hens, and should be removed away from the cage the moment the hen grouse begins to lay, as he will not allow her to do so in quiet, and will break the eggs. The next I get I will enclose with a small common fowl, and will let you hear the result. *J. B. Warren.*

Mr. Huxtable's Farm Accounts.—On reading, in the *Agricultural Gazette* of the 23d ult., the report of a speech lately delivered by the Rev. A. Huxtable at Sturminster Newton, near Blandford, my eye passed very hurriedly over all the former part of it, being attracted by "an account" towards the end, which I, in common (I believe) with many other farmers, have always felt interested in obtaining. But never before did I see one rendered so little calculated to give an answer to the important question, namely, Has Mr. Huxtable's system of farming been one productive of profit or loss? Mr. Huxtable occupies two farms, and has done so I believe about five or six years, and for one year only, and that the last year, he gives his "balance sheet" of only one farm. I have not the slightest doubt that the account, so far as it goes, is a perfectly true and correct one; but what can it possibly prove which the public can be benefited by learning? The "balance sheet" (made public) for this past year, should have had connected with it that of the former years, upon which the present results may be chiefly dependent. If these years were attended with loss, such amount of loss might materially affect the "10 per cent. interest" and "138*l.* 8*s.* 1*d.* profit." Farm accounts cannot be relieved from the necessity of having estimated sums introduced into them until the occupier gives up possession, and they are finally closed; but, even with this necessity, Mr. Huxtable has the means of making public, if he be so disposed, such a debtor and creditor account of his farms as would afford every reasonable facility for judging of the soundness of his system to those who have the energy, skill, and capital, to follow it. Let him publish an account showing every direct and indirect payment and receipt which can fairly be attached to his two farms, from the commencement to the present time, and let the deficit thus shown be accounted for by the valuation taken of his "stock and crops" by some person or persons habitually employed for such purposes. It is true that this would be at best but an estimated statement of results, but the principle upon which the account would be conducted would, in my humble opinion, be the simplest and fairest, and reduce the matter as much within the bounds of facts as such a case can admit of. That society generally has profited by the years in which Mr. Huxtable has devoted his time and attention to farming I think indisputable, but that those years have been attended with profit to himself, in a pecuniary point of view, I am as much disposed to doubt as before the statement appeared in the *Gardeners' Chronicle* of "10*l.* per cent. interest," and

"138*l.* 8*s.* 1*d.* clear profit." *An Occupier of Land and Constant Reader.*

Draining.—Having had some years of experience, and having generally arrived at useful results, and wishing to assist in the furtherance of this important work, I am induced to offer a few practical observations. In so doing I will confine my remarks chiefly to the drainage of strong retentive clays, to drain which effectually I have no hesitation in saying that the drains must neither be put in deep nor far apart, say not over 27 inches deep or more than a rod apart. What is here meant by strong clay may be easily known by washing a small quantity in clean water several times following, when if very strong clay it will nearly all pass off with the water, leaving but very little sediment (such as sand or grit) remaining. To drain clays less strong and retentive effectually, it will be found necessary to increase the depth of the drains one inch for every extra yard in width, beginning with the width and depth for strong clays. As regards the proper direction of the drains—and as a drain is nothing more or less than a trap, set to intercept and catch the water—they certainly should be placed as near across the greatest fall as possible, keeping in view a fall of about 1 foot in 80 for the drain itself. In filling up the drains the more porous the material used the better, but if such are not at hand, a very good substitute will be found by an admixture of the surface and subsoil; the nature of each being different, will never be likely to become so consolidated as to be impervious to the water to the pipes. Before leaving this subject, I would impress on the minds of those who really wish to reap the greatest benefit from a proper system of drainage, the great necessity of breaking the hard callous substance directly beneath where the plough and horses have been working for perhaps many years past, by a deeper ploughing once in five or six years, in order that the water may percolate more freely to the drains, otherwise one of the greatest objects of draining will be entirely obviated. I am aware that the depth for drains I have here stated is much less than has been recommended by some others; but knowing that the system of deep draining on strong clays is altogether unsupported by facts and experience, and that a loss of capital is sure to follow, I feel bound to protest against it. *B. Hunt, Basingstoke.*

Societies.

TRAFALGAR, FIFESHIRE.—The Annual Meeting of this Society was held on the 21st October, the anniversary of the battle. After the Secretary had divided upwards of 60*l.* of sweepstakes amongst the successful competitors, for live stock, grain, and growing crops, H. Buist, Esq., Hatton-hill, introduced the comparative merits of thick and thin seeding for discussion, in order to ascertain whether a diminution of the quantity of seed which is usually sown in the district would be advantageous or otherwise. It may be proper to state that the district embraces a considerable variety of soils, possessing various characters, but exhibiting a close connection and relation to the underlying geological series, which embrace the old red sandstone, carboniferous and coal measures, intermixed with trap and alluvium. The usual quantity of seed which is sown broadcast is from 4 to 5 bushels Wheat and Barley, and 6 to 8 bushels of Oats per Scotch acre (⅘ more than imperial measure). Press-rolling is practised to a considerable extent on the lighter descriptions of soil; but the drill has scarcely been introduced. The following is an abridgment of Mr. Buist's paper.

I have chosen this subject in preference to any other that occurred to me, as it involves the important consideration, whether we do not annually waste a greater quantity of seed than is necessary to raise a maximum produce. I am well aware that there are various conflicting opinions, as well as prejudices, regarding this point in our husbandry. But I have studied the subject impartially, with a view to elicit the truth, and shall briefly lay before you a few facts from my own practical experience, as well as others with which I have been favoured by members of this Society. Before entering on the practical results of experiments, I may mention that a greater quantity of seed is always sown than is necessary to stock the ground, to meet the ravages of the grub, wireworm, &c. Much has also been found to depend on the seasons. The want of a sufficiency of frost to pulverise the soil, and too little moisture in the ground, which prevents the seed from germinating equally, act most unfavourably on the crop. Hence care and attention are necessarily required on the part of the agriculturist before he consigns the seed to the earth. The first experiment I shall notice was made on two plots of ground each one-ninth of a Scotch acre, sown with Barley on the 20th of May and reaped 6th Sept. One of these I sowed at the rate of 2½ bushels, and produced 40½ bushels per acre; weight 52 lbs. The other was sown at the rate of 5 bushels. Produce 38½ bushels per acre; weight 51½ lbs. This shows a result of 2 bushels and 1 peck in favour of thin sowing, besides the saving of seed. These plots were adjoining; the soil was rather inferior, but in good condition. I may mention that the thick sown was fully ripe, while the thin sown was scarcely so. I made another experiment with common Oats, sown on hard tilly land, which had been in Grass the two previous years. It was in good condition and free from weeds. The Oats were sown at the rate of 4, 5, and 6 bushels per acre, on three portions of ground of equal extent, on the 7th of March, and all cut down on the 6th October. That portion sown with 4 bushels produced 57½ bushels, weighing 40 lbs. That sown with 5 bushels yielded exactly the same quantity, but weighed 40½ lbs. The 6 bushels produced 50 bushels per acre, weighing 41 lbs. These show a result of 1 lb. weight per bushel in favour of the 6 bushels, but 7 bushels and 2 pecks per acre in favour of the 4 and 5 bushels, exclusive of the seed saved thereby. As this subject can only be proved by practical results, I shall add a few experiments, communicated to me by other members. Mr. Russell, of Kilwhiss, writes thus: "I sowed A patch of Oats, at the rate of 6 bushels per Scotch acre. The adjoining ridge and the rest of the field were sown with 4 bushels per acre. The difference between the products of these was not accurately ascertained, as they were not thrashed separately, but all to whom I showed the two plots decidedly gave the preference to the thin sown. The whole field was press rolled and sown broadcast. Had the former operation not been done, more seed would have been necessary; but in these circumstances, a fair crop can be raised on light land with much greater certainty by reducing the quantity of seed. I have always found that it is better not to press the land if the usual quantity of seed is sown. I made another experiment on a Barley field—Turnips the previous season, half consumed by sheep in winter. 3½ acres were ploughed and press rolled on the worst side of the field, and 2½ bushels of Barley sown per acre. The other part of the field was sown with 4 bushels, on common plough furrow, both sown on 6th April. The whole field was much infested with annual weeds: but the pressure drill enabled me to hand hoe the thin sown crop. The thick sown looked much the best until the end of May, when the other began to show greater luxuriance, which it fully maintained throughout, but was a few days longer in coming to maturity. Both sides of the field were measured, and the Barley threshed out separately. The thin sown yielded 6 quarters per acre, while the produce of the other (although it was on the best land) was barely 5 qrs., as the unchecked growth of the weeds damaged the crop. On one part of the field, where the weeds were very numerous, the hoed portion yielded 2 quarters more per acre than the other. The quality of the thin sown grain was rather inferior, as the awns were nearly all broken off by the stormy weather before harvest, but this was again more than made up by the greater bulk of straw. Mr. Dingwall, of Ramornie, has favoured me with the two following experiments: No 1.—Early English Barley on light sandy soil. Previous rotation—two years pasture, Oats, Turnips carted off the field; Barley lightly manured, and drilled with press-roller on seed furrow; sown broadcast 21st April, cut 18th and threshed 30th August, 1848.

	Bushels of Seed per Scots acre.	Straw. Cwts. and dec.	Grain. Bush. and dec	Weight Per bushel.
No. 1	2	32·8	52·8	52½
2	3	30·2	52·7	52½
3 . ..	4	28 6	54·5	53½

In this experiment the results were even more in favour of the thin sown plot than they appear to be in the preceding tabular statement. All the plots were cut at the same time when No. 3 was thoroughly ripe, No. 2 nearly so, and No. 1 in raw condition. The straw of the last was beautifully straight and stiff, and at least 5 inches taller than No. 3, and the ear was very long and exceedingly well filled throughout. None of the crop was lodged, as frequently occurs. Had it been so, I am convinced, from its general appearance, that the difference of the results in favour of No. 1 would have been much greater. No. 2.—Mixed sandy and Hopetoun Oats on heavy loam. Previous rotation, Swedes manured, Barley, hay top-dressed. Sown 7th April, cut 6th and threshed 16th Sept. 1848.

	Bushels of Seed per Scots acre	Straw. Cwts. and dec	Grain. Bush. and dec.	Weight Per bushel.
No. 1 ..	4	42·3	65·1	42½
2 .	5	42·2	65·8	42½
3 . .	6	45 0	73·6	42½
4 . .	7	44·3	76·5	42½
5 ...	8	42 8	71·8	42½

The land on which this experiment was made was early ploughed, and sown broadcast in rather a damp state without further preparation, although much levelled down on the surface with frost and rains through the winter. The seed was consequently not sufficiently covered, and the field after being sown was battered on the surface with wet weather. These circumstances were very unfavourable to the thinner sown plots. This season a light sandy field of upwards of 20 Scots acres, after two year old pasture, was sown at the rate of 4½ bushels of common or Bothrie Oats. The whole field was pressrolled immediately after the ploughs, and the seed covered at a regular depth in the bottom of the drill formed by the presser. The crop is not yet threshed, but I can confidently say that on the same field which formerly used to be sown with from 7½ to 8 bushels, I never saw a crop approaching to this year's for length and strength of straw, thickness on the ground, and general appearance of produce. From these practical experiments, as well as from general observations, the following deductions may be made:—1. That thin sowing has a tendency to increase the size, vigour, and perfect development of the stem, ear, and kernel, causing a greater growth, but rather delaying maturity. 2. That thick sowing, when the land is in high condition, renders the stock diminutive, and hastens maturity before the kernel and ear have attained their proper size. 3. That an over stocking of the ground with seed will not be so productive to the grower as a less quantity, other circumstances being the same. 4. That the propriety of moderately thick or thin sowing must depend upon the nature, quality, and condition of the soil, the season of the year, the wetness or dryness of the land, and the period most judicious for sowing. Thus the quantity of seed that we would deem necessary for the rich alluvial soil of Strathearn, the Carse of Gowrie, or Stirlingshire, would be altogether insufficient for the bleak ungenial sides of the Ochils or Lomond. These deductions seem to be borne out from the experiments I have now read, and I have no wish to launch into the regions of theory, which will serve little until we obtain a greater number of experiments in the field; for had our agricultural societies given one-half the attention to this, as well as many other interesting subjects connected with cultivation, which they have bestowed on the breeding and rearing of stock, this subject would not have been a matter of discussion to-day, and I think that the attention of our members could not be better applied than to continue our investigation for another year, which would enable us to obtain the results of the two systems on Wheat and the other spring crops, for if we dismiss it in its present state we shall have done little more than introduced the matter.

The reading of this paper gave rise to a considerable amount of discussion, but the members were nearly unanimous in opinion, that to sow a less quantity of seed than is usually sown in the districts on the common plough furrow by the hand, would be extremely hazardous, but that it would be well to know how far the operations of press-rolling and drilling would admit of the seed being diminished. Mr. Buist then put the following resolution to the meeting, which was seconded by Mr. Russell, Parkhill, and unanimously agreed to:

"The Members of this Society being fully impressed with the important principles involved in the quantity of seed which is necessary to obtain the greatest amount of produce, taking the nature and condition of the soil as well as climate into consideration, deem the experiments which have been detailed of sufficient interest to merit a continuation by the members for another year, and that the results be made known at the next annual meeting." *R. R.*

Calendar of Operations.

JANUARY.

*** [We submit the following passage to the consideration of our contributors in this column. It was received after our last week's paragraph in this place was in type. Its remarks cannot apply to the returns with which we have this week been favoured.—

I refer to the Calendar of Operations. I have looked this through for many months, and all I have learned from it is that some 8 or 10 farmers are employing their horses, men, women, and children, precisely in the same way that all other farmers are employing their horses, men, women, and children. If, in a very few instances, any allusion has been made to management, feeding, &c., it has rarely been accompanied by those details which alone afford information. I cannot think your readers would lose anything by the omission of such a Calendar as this. The rising generation of farmers would be greatly assisted and benefited by reports of a different description—for example, if men of some experience in different parts of the country would give the contents of their farms, distinguishing the number of acres in pasture from those under tillage, the general character of the soil and subsoil—the number of horses kept—(if any other power used, the nature of it, whether steam or water)—the number of regular hands, distinguishing men, women, and boys, exclusive of occasional hands for harvest purposes—the rate of wages paid to each on an average; this would afford valuable comparative information—to the too ardent and liberally disposed, a profitable check; to the too timid in the employment of labour, a salutary stimulus; assuming that such reports would be given by those only whose establishments had been formed after mature experience, on sound views of economy. If, in those rare instances in which farmers keep accurate accounts, a statement of the capital invested—the interest on that capital, and the rent charged, showing the annual profit or loss—were added, that would be highly instructive. It would be desirable if all your correspondents would bear in mind the importance of minute accuracy in details—of giving weights and measures; and these not provincial, but metropolitan—the ounce, pound, and ton—the imperial pint, quart, gallon, and bushel—the inch, foot, and yard—the statute acre—are measures about which there can be no mistake, and which convey the same information to every mind. *C. L., Cirencester.*

FEN FARM, *Jan.* 8.—The new year began with a seasonably severe frost, which put a stop to the ravages of the slug. In the low parts of undrained grounds, on some Wheats, after Clover and Beans, where the land is foul, or the seeding "done badly," *i. e.* worked too much in the wet, the slug has made great havoc, in spite of lime and salt, unless they were applied early on a mild morning. The Wheat sown after root-crops is looking generally well, but the season is against a "stolen" crop, and tells tales of land out of condition by a slender and sickly-looking plant, whether sown thick or thin. The most favourable event for future prospects is the providential fall of snow on Thursday night, which threw its protecting mantle 3 inches thick over the greater part of the kingdom. This is particularly acceptable in the Fens, where the land is made very light by the frosts: trampling by men is a common remedy, but either that or rolling would be injurious to the young Wheat, until the cessation of sharp frost. Severe weather brings the ewes off the stubbles to sheltered Grass land, and a few Turnips, with Barley-straw or hay in small quantity, keeps them in condition. The store cattle are brought into the "crew" yard, and served three times a day with fresh straw and Turnips. Every shed is now occupied, and the value of abundance of shelter in the farm steading fully shown. Why should the tenant be restricted from erecting any quantity of valuable conveniences by the fear of losing unrewarded the beneficial interest of his contrivances, and that an accident may at any time transfer the fruits of his expenditure to others? We have lately turned into a small yard 4 cart-horses, having a large open shed, 16 feet wide, to run loose under, with rack and manger, in the corner of the yard is fenced off a crib for fodder: they exercise themselves, and appear to be in better health than when tied up in a stable. We shall finish Carrots in a fortnight; the land was so wet when they were drawn that they require picking over to separate the rotten or mouldy before they are given to the cows; the price here is from 15*s.* to 20*s.* per ton. We shall then commence with Mangold Wurzel, of which we, in common with most of our neighbours, only obtained a moderate crop, none having made their appearance until June, five weeks after being sown. The farmers are now fairly frightened at free trade, Wheat, to weigh 17½ stones per coomb, worth only 2*l.* 2*s.* per quarter, Barley declining, and 11 stones of Oats sold for 1*l.* per quarter, set them wondering where the money is to be raised for labour, rates, and rent, putting tradesmen's bills out of the question; consequently they are shy of employing more than their regular farm servants, and the small farmers reduce even them. The union houses fill, higher rates must be paid if the poor are unemployed, so that doubt and despondency enervate his powers and bewilder his plans, and the half-educated, wholesale-flattered, duped, subservient farmer places his difficulties all at the door of free trade; and how can he blame any other cause? Free trade is anybody, everybody, nobody, but if he blames the game, or the rent, or the hedge rows, or the swampy furrows, or the scanty rotten buildings, or the 50 acres of Gorse and Hassocks, or any other cause in the remotest degree of connection with his landlord—why, if he wants to stay in his farm, he will do wrong, so he must fight it out. If he wants capital, he must struggle with the aid of frugality; if he wants intelligence, he must trust to his hereditary industry, and alas! what will they avail him, lacking wit and short of wealth, in the forthcoming encounter, isolated between his landlord and his labourer? rent and wages, rates and taxes, will obtain the victory, and strife his rude but desperate efforts. I must talk of his emancipation another time. May I ask what "J. B." of the South Hampshire Farm, means by "forking out Couch-grass from between the rows of Swede Turnips, previous to being fed with sheep." If these notices are intended to be suggestive of improvements, why should he have so much Couch-grass with a fallow crop, and if he had, what is the use of such an operation? *J. W., Peterborough.*

GALLOWAY FARM, *Jan.* 8.—During the late hard frost, we have carted home and stored several hundred loads of Swedish Turnips. We have also again emptied the yards of dung, laying it in convenient heaps for applying to the Swedish Turnip land in May. As the dung here, from the quantity of straw produced on the farm, is very rough, we throw it all up in the middens, not carting over it, or consolidating it. It thus undergoes decomposition more perfectly, and requires no further turning or expense to make it ready for laying in the drills. With the return of open weather the ploughing of Grass land for Oats will be proceeded with. Labour is generally well forward in this district. Preparations are being made for planting a considerable extent of Potatoes next spring, the hardy variety called "Pay the Rents" being most in favour for seed. This kind suffered very little from the disease last year, and though coarse, and not very suitable for the table, it is prolific, and sells readily at the farina mills. On the whole, a fair return will be realised from the Potato crop this last season, and the prospect of low prices of grain will have its effect in encouraging

renewed confidence in the Potato. Turnips are a third short of last year's crop, and grain is being used more largely in assisting the fattening of stock, both to economise the Turnips and to keep up the condition of the stock. Markets will be well supplied this season with prime stock, but we fear the feeders have not a good prospect of pay, as the stock must go off two months or six weeks earlier than last year, owing to the short supply of Turnips. Our fattening cattle are now getting three feeds of cut Swedish Turnips, 3lbs. of Bean-meal, 1½ lb. of bruised Oats, and 1½ lb. of bruised Linseed each per day. The Bean-meal, Oats, and Linseed are mixed together, and given in two feeds daily, alternately with the Turnips. The Linseed is bruised, not boiled, as printed by mistake in last report from this farm. The cows giving milk are receiving Bean-meal daily in their drink, besides a supply of Turnips. The pigs, of which we have a large stock, run about loose in the dung court, ferreting out what they can among the chaff and straw, receiving besides a supply of Indian Corn meal, mixed with their drink of "burnt beer" from the distillery. Wheat, though a fine sample, does not thresh out to the bulk of crop. We sold a quantity to-day at an average price of 5s. 6d. a bushel (63 lbs. quality), one-half being white, and the other red, April Wheat. Oats and Beans turn out well, but sell at very low prices. Labourers are well employed; 9s. a week being the common wages for men in regular employment; 10s. is paid by jobbers to picked men, for draining. Ploughmen, being paid partly in kind, partly in money, are not subject to the same fluctuations of wage. The value of their "benefit" at present is equal to from 10s. to 12s. a week.

Pembrokeshire Farm, Jan. 6.—All our land for fallow and green crops is mostly ploughed, and we have begun to plough where the Turnips have been, for Barley, in 18 feet ridges, finishing right above the drains. In this clay soil it requires it so to take off surface water. On land that is thoroughly drained, or is naturally dry, I prefer 13 feet ridges to all others, they being more economical in many respects, such as sowing if by hand, an expert sower can take in half a ridge, or, if capable of sowing with both hands, he can take in a whole ridge at once, and in harrowing, a pair of harrows, if properly made, can take in half a ridge at once; likewise in reaping, they are convenient, allowing three reapers to each ridge. Labourers are employed in cutting and repairing hedges, pulling Turnips, and attending cattle and sheep. *J. H.*

Sussex Farm, Jan. 8.—Our farm labour for this week and next will be, when weather is open, ploughing and subsoiling after Oats for Swedes, all drained 3½ feet deep; carting out dung intended for the green crops, tiles for drains, earth from road-sides, and stones to roads, threshing Oats and Barley with water-power. Our labourers are at present well employed. We have a good number trenching and planting trees, making roads, draining, &c. I am rather sorry to see our neighbour farmers employ so few hands; they never had much spirit, but now they seem quite at a stand-still. They have quite depended on the Hops, and left the other parts of their farms to Providence; whereas, if they had improved part, and grown a little more corn, they would then have had two chances for one. *J. H.*

Notices to Correspondents.

DAIRY MANAGEMENT: *F B H* asks, "Could some one of your correspondents favour me with the form of his milk register. My bailiff, engaged as being able to do everything on a dairy farm required, seems not to comprehend the use of it."

EDUCATION: *J M B* says, if "Pedagogue" would have the goodness to give some particulars of the expense of sending a likely boy to the Training School of St. John's, Battersea, he would much oblige one who might take advantage of it.

LINSEED FOR CATTLE: *Agricola Juvenis* would be obliged, if "B. H." would give a few more particulars respecting his method of preparing Linseed for cattle. "If the inner pan which he describes is perforated with holes, how can it contain the Linseed soup?"

MANURES: *Viator.* Sow 3 cwt. per acre of guano, and 2 cwt. per acre of superphosphate, and 6 cwt. per acre of rape-dust —they will grow anything under ordinary circumstances. Sow about 3 bushels of Italian Rye-grass for a crop to dig in.

MICE: *J L P M.* How are their depredations on winter Beans at this season in the field to be prevented?

NIGHT-SOIL: *A. W.* The smell may be "extracted" by the use of charcoal-dust, which retains those volatile particles to which it is due; the moisture may be dried up in the same way.

RYE: *Inquirer.* Is Rye sown in May likely to yield satisfactorily?—and when? May-day is too late for ewes "in general to lamb."

SHEEP GRAZING WITH DEER: *M M.* The former are injurious to the latter merely by diminishing their available food.

SMITHFIELD: *Anon.* The Prince's ox was sold to Mr. Wendor, of Chelmsford, for 38 guineas. We do not know its weight.

TENANT-RIGHT: *A Regular Subscriber.* You will have nothing to pay or refund at the end of the lease, but what you may have already bound yourself to.

TILE MACHINES: *A Tile Manufacturer.* We do not know anything of Martin's Tile Machine. See Mr. Thompson's report of York Meeting, in the "English Agricultural Journal."

Markets.

HOPS, FRIDAY, Jan. 12.

Messrs. PATTENDEN and SMITH report that there is still a good demand for all fine Hops with colour and quality.

SMITHFIELD, MONDAY, Jan. 8.

The supply of Beasts is shorter—quite adequate however to the demand. The choicest descriptions make nearly late prices, but second-rate meet a very heavy sale. There is rather a larger number of Sheep, and fewer wanted, consequently trade is very bad; all kinds make less money. We have but few Calves on offer, these realise an advance of 2d. per 8 lbs. Trade is dull for Pigs, but as the number is small they are mostly disposed of. From Holland and Germany we have 162 Beasts, 630 Sheep, and 21 Calves; 200 Beasts from Scotland, 900 from Norfolk and Suffolk, and 1000 from Leicester and Northampton.

Per st. of 8 lbs.—s d s d		Per st. of 8 lbs.—s d s d	
Best Scots, Herefords, &c.	4 0 to 4 2	Best Long-wools	4 0 to 4 4
Best Short-horns	3 8 — 4 0	Ditto Shorn	......
2d quality Beasts	2 10 — 3 4	Ewes & 2d quality	3 4 — 3 10
Best Downs and Half-breds	4 6 — 4 8	Ditto Shorn	......
Ditto Shorn	......	Lambs	......
		Calves	3 8 — 5 0
		Pigs	4 0 — 5 0

Beasts, 3715; Sheep and Lambs, 23,030; Calves, 60; Pigs, 140.

FRIDAY, Jan. 12.

We have a moderately good supply of Beasts, and trade is very heavy, owing to the state of the dead markets. Prices are fully 2d. per 8 lbs. lower, and several remain unsold. The number of Sheep is unusually small—quite equal however to the demand; they are with difficulty disposed of at about Monday's quotations. Good Calves are scarce, and are readily disposed of; prices average from 4s. to 5s. Pigs meet with a dull sale at late rates. From Holland and Germany we have 18 Beasts, 20 Sheep, and 9 Calves; from Scotland, 200 Beasts; and 118 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3 10 to 4 0	Best Long-wools	4 0 to 4 4
Best Short-horns	3 6 — 3 10	Ditto Shorn	......
2d quality Beasts	2 6 — 3 2	Ewes & 2d quality	3 4 — 3 10
Best Downs and Half-breds	4 6 — 4 8	Ditto Shorn	......
Ditto Shorn	......	Lambs	......
		Calves	4 0 — 5 0
		Pigs	4 6 — 5 0

Beasts, 856; Sheep and Lambs, 1740; Calves, 111; Pigs, 130.

COVENT GARDEN, JAN. 13.

Pine-apples, though not over abundant, are, nevertheless, sufficient for the demand. Hothouse Grapes continue to be scarce. Foreign ones tolerably well supplied. Pears, chiefly consisting of Chaumontelle, Glout' Morceau, Ne Plus Meuris, and Old Colmar, are now, as might be expected, not over plentiful. Apples the same. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, Carrots and Turnips are abundant and good; Cauliflowers, Broccoli, &c., sufficient for the demand. Asparagus, French Beans, Rhubarb, and Seakale are becoming more plentiful. France, Belgium, and Holland still contribute considerably to the stock of Potatoes, which remain pretty steady in price. Lettuces and other salading are sufficient for the demand. Mushrooms are pretty plentiful. Cut Flowers consist of Heaths, Pelargoniums, Christmas Roses, Camellias, Gardenias, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Almonds, per peck, 6s
Grapes, hothouse, p. lb., 4s to 6s	— sweet, per lb., 2s to 3s
— foreign, p. lb., 9d to 1s	Walnuts, p. 100, 1s 6d to 2s
Apples, dessert, p. bsh., 4s to 7s	— p. bush., 16s to 24s
— kitchen, p. bsh., 3s to 5s	Chestnuts, p. peck, 4s to 7s
Pears, per doz., 2s to 6s	Nuts, Bar., p. bush., 20s to 22s
— p. half sieve, 6s to 10s	— Filb., p. 100 lbs., 60s to 100s
Oranges, per doz., 1s to 2s	— Cob, p. 100 lbs., 90s to 150s
Lemons, per doz., 1s to 2s	— Brazil, p. bsh., 12s to 16s
— per 100, 10s to 18s	

VEGETABLES.

Cabbages, p. doz., 3d to 1s	Spinach p. sieve, 9d to 1s 6d
— red, p. doz., 1s to 4s	Onions, p. bunch, 3d to 4d
Savoys, per doz., 3d to 1s	— p. bush., 1s 6d to 2s 6d
Greens, p. doz. bunches, 1s 6d to 2s 6d	— Spanish, p. doz., 1s 6d to 4s
Cauliflowers, p. doz., 2s to 4s	— pickling, p. hf. sieve, 1s 6d to 3s
Broccoli, white, p. bun., 1s to 2s	Shallots, per lb., 4d to 8d
— brown, p. bun., 8d to 1s 3d	Garlic, per lb., 4d to 8d
Sorrel, p. hf. sieve, 6d to 9d	Artichokes, p. doz., 1s 6d to 2s
Potatoes, per ton, 60s to 180s	— Jerusalem, p. half sieve, 1s to 1s 6d
— per cwt., 5s to 9s	Lettuce, Cab., p. sc., 4d to 6d
— per bush., 2s 6d to 5s	— Cos, do., 9d to 1s
Turnips, p. doz. bun., 1s 6d to 2s	Endive, per score, 9d to 1s
Red Beet, per doz., 6d to 1s	Mushrooms, p. pottle, 6d to 1s
Horse Radish, p. bdl., 1s to 6s	— per bush., 4s to 6s
Asparagus, p. 100, 2s to 5s	Small Salads, p. pun., 2d to 3d
Seakale, p. punnet, 1s to 2s 6d	Fennel, per bunch, 2d to 3d
Rhubarb, p. bundle, 1s to 1s 6d	Savory, per bunch, 2d to 3d
French Beans, per 100, 2s 6d	Thyme, per bunch, 3d to 4d
Cucumbers, each, 1s to 2s	Watercress, p. doz. bun., 6d to 9d
Leeks, per doz., 3d to 1s	Parsley, do., 1s 6d to 2s
Celery, p. bundle, 6d to 1s 3d	— Roots, p. bdle., 1s to 1s 6d
Carrots, p. doz. bun., 3s to 5s	Marjoram, per bunch, 2d
Radishes, p. doz. hands, 6d to 1s	Mint, green, per bunch, 2d
— Turnip, do., 9d to 1s	

POTATOES.—SOUTHWARK, WATERSIDE, Jan. 8.

The Committee report that the arrivals for the past week, both coastwise and Continental, are more than the demand, which has caused a reduction in prices to be submitted to with nearly every sort of Potato. The following are this day's quotations:—York Regents, 100s. to 150s.; Newcastle and Stockton do., 90s. to 100s.; Scotch do., 90s. to 100s.; Scotch Cups, 60s. to 80s.; Scotch Reds, 60s. to 80s.; Scotch Whites, 50s. to 70s.; French do., 80s. to 100s.; Dutch do., 40s. to 60s.; Belgian do., 60s. to 80s.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Jan. 11.

Prime Meadow Hay	68s to 76s		Clover	70s to 95s	
Inferior ditto	50	65	New Clover	—	—
Rowen	40	55	Straw	24	3 0
New Hay	—	—			

J. COOPER.

The trade rather better.

CUMBERLAND MARKET, Jan. 11.

Prime Meadow Hay	70s to 78s		Inferior	56s to 64s	
Inferior ditto	50	65	New Clover	—	—
New Hay	—	—	Straw	28	32
Old Clover	90	95			

JOSHUA BAKER.

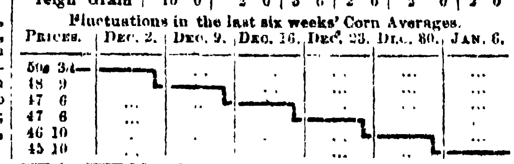
WHITECHAPEL, Jan. 11.

Fine Old Hay	65s to 70s		New Clover	80s to 90s	
Inferior ditto	45	55	Inferior ditto	50	60
New Hay	60	66	Straw	24	28
Old Clover	90	98			

MARK LANE, JAN. 12.—The weekly reports from the principal provincial markets, with little exception, quote grain somewhat lower. At Boston only picked samples of Wheat advanced 1s. Here to-day the prices are somewhat more firm. Holders of Foreign ask more money. The arrivals of Foreign grain are very moderate, and of English less than usual.—Barley is said to be about 1s. lower since Friday last.—Oats in great abundance, at about the same value.—Beans and Peas the same, without much inquiry.—The sale of Flour is very slow, confined to the daily consumption, consequently millers buy Wheat sparingly.—All sorts of opinions are given as to the effect of the great change on the 1st Feb. The prevailing one seems to be that prices will experience some moderate improvement, but the prospect is far from promising to farmers. Still, the cheering accounts from the manufacturing districts—the vast improvement in most commercial affairs—the abundance and cheapness of money—and various other favourable circumstances—may reasonably afford them hope and confidence.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Dec. 2	50s 3d	32s 0d	19s 11d	31s 2d	36s 2d	40s 0d
— 9	48 9	31 4	19 5	28 5	35 7	40 9
— 16	47 6	31 4	18 11	29 8	34 3	39 8
— 23	47 6	31 4	18 4	29 1	33 7	38 1
— 30	46 10	31 3	18 0	28 6	33 11	36 9
Jan. 6	45 10	30 8	17 0	26 4	32 4	37 9
Aggreg. Aver.	47 9	31 4	18 7	28 10	34 4	38 3
Duties on Foreign Grain	10 0	2 0	3 6	2 0	2 0	2 0

Fluctuations in the last six weeks' Corn Averages.



PRICES CURRENT.	London. Jan. 8. qr.	London. Jan. 12 qr.	Liverpool. Jan. 2. 70 lbs.	Liverpool. Jan. 9. 70 lbs.	Wakefield. Dec. 29 qr.	Wakefield. Jan. 5. qr.	Boston. Jan. 3. qr.	Boston. Jan. 10 qr.	Birmingham. Jan. 4. 62 lbs.	Birmingham. Jan. 11. 62 lbs.
Wheat—	s. s.	s. s.			s. s.	s. s.	s. s.	s. s.		
New, red	42 to 47	42 to 47	6s 6d 7s 0d	6s 6d 7s 1d	45 to 48	45 to 48	32 to 46	38 to 46	6s 4d 6s 8d	6s 4d 6s 8d
„ white	46—53	46—53	6 8 7 2	6 8 7 6	46—50	46—50	40—48	40—48	5 0 5 6	5 6 7 6
Old, red	42—50	42—50	7 2 7 4	7 2 7 3	45—50	45—50	43—46	43—46	—	—
„ white	48—55	48—55	7 6 8 0	7 6 7 10	—	—	46—50	46—50	—	—
Foreign	42—58	42—58	4 9 8 0	4 9 7 10	35 48	—	—	—	5 6 7 6	—
			480lbs.	480lbs.					s. s.	s. s.
Rye—New	26—28	—	—	—	—	—	—	—	—	—
Old	—	—	—	—	—	—	—	—	—	—
Foreign meal	—	—	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding	21—26	20—22	—	—	22 25	21 24	26—28	26—28	23—28	23—28
Malting	25—31	25—32	34s—36s	32s—34s	26—30	26—30	30—32	30—32	30—32	30—33
Foreign	20—29	20—30	—	—	24—26	23—27	—	—	—	—
					6 bush.	6 bush.				
Malt—Home	—	—	—	—	—	—	—	—	—	—
Ship	—	—	—	—	—	—	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White	19—25	20—25	3s 0d 3s 6d	3s 0d 3s 4d	—	—	20—25	20—25	18—30	18—30
Black	16—20	16—20	2 6 3 1	2 3 2 6	—	—	17—21	17—21	19—21	19—21
Foreign	17—23	17—23	2 7 2 8	2 6 2 8	—	—	11—18	11—18	—	—
			qr.	qr.						
Peas—Boilers	30—32	28—33	40s—41s	40s—	34 36	34—38	—	—	36—50	36—50
Grinding	25—28	26—27	32—34	32—34s	33—34	33—35	—	—	12—14	12—14
Foreign	23—34	22—32	37—39	36—38	—	—	—	—	—	—
Beans—										
New, small	24—26	22—24	36s—38s	33—35	32—34	31—33	23—32	23—32	—	—
„ Longpods, &c.	26—30	25—28	—	—	—	—	—	—	—	—
Old	27—39	26—38	41—42	37—38	37—38	36—37	36—38	36—38	—	—
Foreign	24—36	24—34	28—39	28—36	29—32	—	—	—	—	—
Buckwheat	—	—	—	—	—	—	—	—	—	—
Clover Seed—										
Red, per cwt.	35—44	—	—	—	—	—	—	—	—	—
White „	38—44	—	—	—	—	—	—	—	—	—
Linseed—Feed	33—40	—	43—44	43—44	32—40	32—40	—	—	—	—
Linseed Cakes										
British	11*l* 10s	—	—	—	—	—	—	—	—	—
Foreign	7*l*—9*l*.	—	9*l*. 5s	—	9*l*. 5s	—	—	—	—	—
									190lbs.	190lbs.
Indian Corn	26—30	—	—	29—32	—	—	—	—	15—15 6	15—15 6
Flour—	—	—	—	—	—	—	—	—	—	—
Weekly Averages and Imports.	Jan. 9. s. d.	Jan. 9 qrs.	s. d.	qrs.	s. d.	qrs.	Jan. 6. s. d.	Jan. 6. qrs.	Gloucester. s. d.	qrs.
WHEAT	47 2	3275	—	19356	47 7	9838	42 8	2165	48 10	1696
BARLEY	29 6	1352	—	5401	20 0	5123	26 9	[illegible]60	32 5	440
OATS	20 6	2737	—	7851	—	—	13 8	610	18 9	43
RYE	27 0	61	—	—	—	—	—	—	—	—
BEANS	27 2	505	—	2571	37 3	1618	34 4	128	30 2	80
PEAS	37 2	551	—	2633	—	—	—	—	—	—
SIGNED	*KINGSFORD and LAY.*		*SEGAR and TUNNICLIFFE.*		*SANDARS and DUNNS.*		*THOMAS WRIGHT.*		*J. and C. STURGE.*	

SAUNDERTON, BUCKS.

To Noblemen, Gentlemen, Nurserymen, Builders, and others.

MR. STEPHENSON will sell by Auction, on TUESDAY, Jan. 18, and two following days, at 11 for 12 o'clock precisely, on the premises, the property of Mr. Alexander James Stewart, for the benefit of his creditors, the remainder of the valuable NURSERY STOCK, comprising 2400 choice Standard and Dwarf Roses, 500 Hybrid and other Rhododendrons, Ghent and American Azaleas, Evergreen, Ornamental, and Deciduous Shrubs; fine large specimen Portugal Laurels, Aucubas, Hollies, Yew, Berberis, Box, Lilac, Ribes, Syringa, Poplar, Elm, Birch, Worked Lime, Ash, Thorns, Laburnum, 5000 large Balm of Gilead, Spruce, Larch, and other Firs, together with 2000 choice Standard and Dwarf Fruit Trees.—May be viewed the day previous and morning of sale. Catalogues to be had on the premises; Windmill Inn, Saithill; Fighting Cocks, Maidenhead; Chequers Inn, Uxbridge, or forwarded by post, upon application to the Auctioneer and Appraiser, High-street, Eton, Bucks.

ABOUT 200 LOADS OF UPLAND MEADOW HAY OF SUPERIOR QUALITY.

MR. PEISLEY begs to inform the Public he will Sell by Auction, on the Premises, near the George Inn, Sunbury, Middlesex, on TUESDAY, January 16, at 2 for 3 o'clock precisely, by order of the Executrix, SEVEN RICKS OF HAY, containing from 15 to 30 loads in each. The whole will get up and of good quality. It is situate a few miles from Town, near to the Thames and the Feltham Station.—May be viewed and Catalogues had of the Gardener on the Premises (who will show the lots), and at the George Inn; at the principal Inns in the neighbourhood; at the King's Head, Cumberland Market; Ram, Smithfield; Red Lion, Paddington; Bricklayers' Arms, Kent-road; and of Mr. PEISLEY, Hounslow.

NURSERY AND SEED BUSINESS.

TO BE DISPOSED OF, within 5 miles of Westminster-bridge, eligibly situated, in a highly increasing neighbourhood, and with an unexpired Lease of 26 years. Any person commanding a capital of 300*l.* or 400*l.* will find this an excellent opportunity.—For further particulars address Y. Z. Y., at the Office of this Paper.

TO BE DISPOSED OF, a NURSERY and SEED TRADE, the first of its class, in one of the most important north-western counties, established nearly 60 years, and having a valuable connection.—Particulars can be obtained by applying to Mr. F. WARNER, 28, Cornhill; or Messrs. NOBLE, Fleet-street; who will explain the reason of the Proprietor relinquishing it.

TO BE LET, on Lease, with immediate possession, THE WARRINGTON SCHOOL FARM, of about 320 Acres of excellent Corn and Turnip Land, 200 being recently and effectually tile drained. Bounded on each side by public roads, and only five miles from Birkenhead. A well-built Tilery and excellent clay in the centre of the farm, with ready access each way. Buildings well adapted for Stall-feeding, and all other accommodation.—For further particulars apply to Mr. NELSON, Arrow Brook, or to Mr. MELVILLE, Cherry Cottage, near Birkenhead Cheshire.

NEW ENAMELLED LABELS—To be properly understood, these should be seen for elegance, lightness, and distinctness of character they have nothing to be compared to them, and being enamelled on copper, and the names burnt in, their lasting qualities are undeniable. No Conservatory, Orchid-house, Arboretum, or flowery should be without them. Noblemen, Gentlemen, and Ladies waited on with specimens in any part of London, or drawings forwarded per post.

BOWERS' NEW IMPROVED WATERING-POT also on show. Asparagus roots for forcing; 100,000 yards of box cheap. Catalogues containing all the new and most choice Vegetable, Flower and Agricultural Seeds, forwarded by post, or can be had on application. Collections of Seeds made for any given space of ground or amount.

Sole Agent, DUNCAN BAIRD, Seedsman and Florist, 100, St. Martin's-lane, Charing-cross, London.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles, Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 10000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LEGG, Cheltenham.

SPADE CULTIVATION AND DRAINING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

W. A. LYNDON, Minerva Works, Birmingham, Manufacturer of Patent SPADES, SHOVELS, and DRAINING TOOLS.

To Nurserymen, Gardeners, and Agricultural Labourers, these Spades will be found invaluable, and calculated to lessen the labour of digging very materially; they are warranted to carry a knife edge which will neither break nor turn, wear perfectly bright on the surface, and last as long as three spades or shovels of the ordinary kind, and are now coming generally into use amongst the principal Nurserymen, Market-gardeners, and Agriculturists in the kingdom.

The Draining Tools gained two prizes at the Royal Agricultural Society's Meeting held at Northampton, 1847, since which time they have been awarded prizes and commendations from all the local societies where they have been exhibited.

Spurious imitations of these Tools are being made, called Improved and Cast Steel Spades, Shovels, &c., and labelled similar to the above. None are genuine unless bearing the name in full upon the strap and label.

Spades, Shovels, Draining Tools, Digging, Potato, Manure, and Hay Forks made to any pattern, and adapted for every description of soil.—To be had of all Ironmongers in the kingdom.

PATENT FLEXIBLE INDIA RUBBER PIPES AND TUBING FOR RAILWAY COMPANIES, BREWERS, DISTILLERS, FIRE-ENGINES, GAS COMPANIES, GARDENING AND AGRICULTURAL PURPOSES, &c.

THE PATENT VULCANISED INDIA-RUBBER HOSE PIPES are made to stand Hot Liquor and Acids without injury—do not become hard or stiff in any temperature (but are always perfectly flexible), and as they require no application of oil or dressing, are particularly adapted for Fire-engines, Pumps, Gas, Beer-engines, Gardens, and all purposes where a perfectly flexible pipe is required. Made all sizes from ¼-inch bore upwards, and of any length to order.

Vulcanised India-rubber Garden Hose, fitted with brass taps, copper branch, and roses complete, ready to be attached to Pumps, Water-butts, or Cisterns.—Sole Manufacturer, JAMES LEWIS HANCOCK, Goswell-Mews, Goswell-road, London.

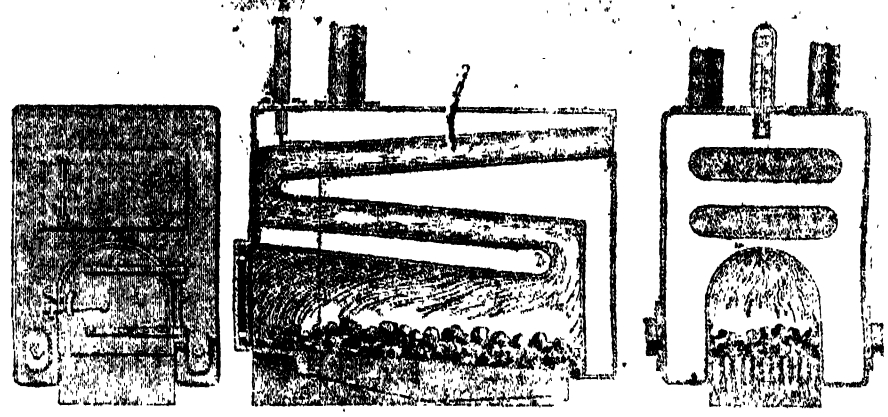
N.B. Vulcanised India-rubber Washers of all sizes for Joints of Hot-water and Steam Pipes, and Vulcanised sheet Rubber, any thickness, for all kinds of Joints, and other purposes.

WILLIAM HILL'S

IMPROVED FLUE BOILER AND FURNACE,

FOR WARMING CHURCHES, CHAPELS, MUSEUMS, MANSIONS, MANUFACTORIES, HORTICULTURAL ERECTIONS, &c.

Registered pursuant to Act of Parliament, 6 and 7 Vict., c. 65.



FRONT ELEVATION. LONGITUDINAL SECTION. SECTION.

For Testimonials, &c., see *Gardeners' Chronicle* of November 4.

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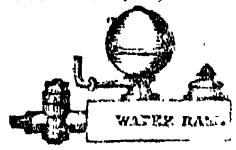

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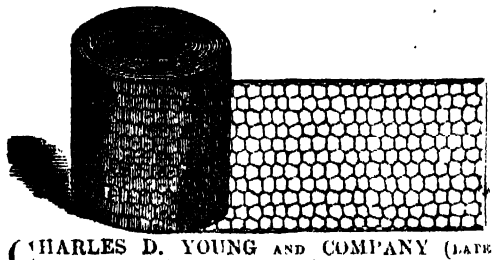

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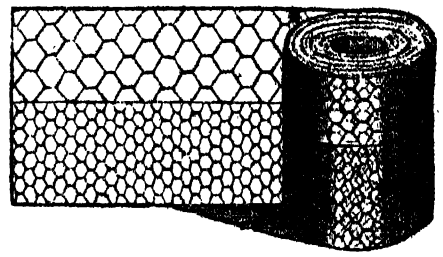

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AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 3.—1849.] SATURDAY, JANUARY 20. [PRICE 6d.

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GARDENERS' BENEVOLENT INSTITUTION.—At a Special General Meeting of the subscribers to the Charity, held on Wednesday, the 17th inst., at the London Coffee House, Ludgate Hill, for the purpose of electing Two Pensioners, the following was the result of the Ballot:—

Name.	Residence.	Age.	Votes.
EDWARD MARSHALL .	London	63	
MARY BROWNE .	London	72	223
MARTIN MILLER	Exeter	75	371
JOHN SKEAVES	Paxton	69	15
THOMAS GOODHALL	Dulwich	7[illegible]	[illegible]
THOMAS MILL	Wandsworth	63	110
CHARLES AINSLIE	Leyton, Essex .	[illegible]	2[illegible]
JOHN SPILLEY	Clapham	[illegible]	[illegible]
ROBERT DUNCAN	Highgate	6[illegible]	[illegible]
GEORGE NEIL	Stone	80	250
RICHARD TAYLOR .	Clapham	[illegible]	[illegible]
JAMES BARTLE	London	[illegible]	[illegible]
EDWARD BEECH	Gomcester		[illegible]
JOHN COOKS	Clapham	[illegible]	[illegible]
JOHN ROSS	London	64	[illegible]
RICHARD ERDLAND	Dartford	70	[illegible]
JOHN SHEPHERD	Clapham	70	1[illegible]

The Meeting then declared [illegible] and MARTIN MILLER, as having the largest number [illegible] elected Pensioners of this Charity.

EDWARD ROGER CUTLER [illegible] Farringdon-street [illegible].

WILSON'S WELL KNOWN EARLY RHUBARB.—J. W. can confidently recommend the above as being far superior to any offered to the public [illegible] of a highly delicious flavour, a most prolific bearer, and free grower, with large fleshy stalks.

2 years old, from seed [illegible] per [illegible]
4 years old, do [illegible]

A liberal allowance to the trade. Post-office orders payable to JOSIAH WILSON, Enfield Highway, Middlesex.

SEEDS.—ALL PURCHASERS OF KITCHEN GARDEN SEEDS should refer to the *Gardeners' Chronicle* of Jan. 6, on the back page of which is

RENDLE'S NEW CATALOGUE,

comprising all the best kinds in cultivation. A copy can be had on application to WILLIAM E. RENDLE & Co., [illegible] Merchants, Plymouth.

TO NURSERYMEN, MARKET GARDENERS, and OTHERS.

WILLIAM MAY, being in possession of a large stock of GOOSEBERRY TREES comprising upwards of 100 approved Lancashire sorts, begs to offer them in quantity at the following low prices. The plants are strong; viz. 1000, or more, 4l. per 1000; for 500, 2l. 5s., for 100, 10s. Post-office orders for which will oblige.

The Hope Nurseries, Bedale, Yorkshire, Jan. 20.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON have the honour of acquainting their Friends that their CATALOGUE of New and Esteemed VEGETABLE, FLOWER, and AGRICULTURAL SEEDS is now ready, and may be had GRATIS on application. It will be found to contain many new Peas, Broccolies, &c., of first-rate excellence.—N.B. Copies of the above will be sent, as usual, to all the customers.

DOUBLE ITALIAN TUBEROSE ROOTS.—The Bulbs of this most beautiful and fragrant Flower have been just received from Italy at A. COBBETT'S Old-established Italian Warehouse, 18, Pall-mall, and are warranted double, at 4s. per dozen. Also, expected about the end of January, a choice collection of Orange, Lemon, Citron, and Shaddock Trees, together with Catalonian, Azorian, and Arabian Jessamine plants, any of which may be bespoke.

TO FARMERS AND OTHERS.

AGRICULTURAL SALT, containing a portion of Saltpetre, Sulphates of Soda and Potash, may be always obtained at a low price by applying at Mr. HILLS' Chemical Works, Creek-street, Deptford.

MITCHELL'S ROYAL ALBERT RHUBARB still retains its supremacy over all other sorts hitherto produced, it being from two to three weeks earlier than any kind now grown. It has other qualities eminently entitled to notice. It is most delicious in flavour, a splendid red colour, most prolific bearer, and free grower, with large fleshy stalks, and for early forcing is more suitable than any other variety. It has been acknowledged by all the principal growers, attending the London markets, to be by far the best ever introduced. In addition, W. M. begs leave to observe, that this Rhubarb is the same as was sold so early last season in Manchester, Birmingham, Liverpool, Cambridge, Brighton, and other large provincial towns, where it gave universal satisfaction, by its extreme earliness, quality, and beauty. Strong roots, 2s. 6d. each; also Myatt's Linnæus, 2s. 6d., and Victoria, 9d.; usual allowance to the trade.—Post-office orders made payable to WILLIAM MITCHELL, Enfield Highway, Middlesex.

KNAP HILL NURSERY, NEAR WOKING, SURREY.
TO GENTLEMEN ENGAGED IN PLANTING.

HOSEA WATERER offers the following very desirable plants.

CEDRUS DEODARA, fine plants from seed, 3 to 4 feet high, 6[illegible]s. per doz.
" " from 5 to 10 feet, 1 to 7 guineas each.
(These are magnificent plants.)
ARAUCARIA IMBRICATA, handsome plants, from 2½ to 3 feet, 42s. each. A few very fine plants, from 3 to 6 feet, 3 to 10 guineas.
CRYPTOMERIA JAPONICA, from seed, 5 to 7 ft., 4 to 5 guis. 1½ foot, [illegible] per doz.
TAXODIUM SEMPERVIRENS, good stout plants, 2 feet, 84s. 4 to 6 feet, 1 to 3 guineas each.
PINUS DOUGLASII, from seed, 1½ to 2 feet, 1[illegible]. each
" " 3 to 6 feet, 21s. to 63s.
" MENZIESII, [illegible] to 5 feet, 12s. to 84s. per doz.
" INSIGNIS, 1½ to 2 feet, 7s. 6d. each.
" " a few very fine plants, from 5 to 7 feet, 2 to 5 guineas.
" CEMBRA, 5 to 7 feet, 10s. to 15s. each.
" " large and very handsome plants, 10 to 1[illegible] feet, 4[illegible] each.
" CANADENSIS, or Hemlock Spruce, [illegible] feet, [illegible] per dozen.
" " larger, [illegible] to 10 feet, 30s. to 60s. per dozen.
" EXCELSA, [illegible] feet, [illegible] to 10[illegible] each.
" FRAZERI, [illegible] feet, 30s. to 42s. per dozen.
" MORINDA, or Smithiana, 2 to 4 ft., 2s. 6d. to 5s. each.
" WEBBIANA, [illegible] feet, 10[illegible] to 12s. each.
" PINSAPO
" CEPHALONICA
" LAMBERTIANA
" HARTWEGII
" DOUGLASII
" MACROCARPA

A few of the largest and most handsome plants in the trade. Prices will be given on application.

IRISH YEWS, [illegible] feet, 7s. 6d. to 1[illegible] each.
N. It often happens Irish Yews are injured or rendered unsightly from their tendency to divide in windy or snowy weather. The plants here offered are grown from one stem only, [illegible] at [illegible] which are the finest in the kingdom.
CEDARS OF LEBANON, [illegible] feet, very bushy and handsome, [illegible] per dozen.
" " [illegible] feet, [illegible] to 12s. each.
(These are splendid plants.)
JUNIPERUS EXPANSUS, 4 to 6 feet, 7s. 6d. to 10s. 6d. each.
" " 8 to 10 feet, very handsome plants, 21s. to 42s. each.
" CHINENSIS, 4 to 5 feet, 7s. 6d. to 10s. 6d. each.
" " large handsome plants, 6 to [illegible] feet, 2[illegible] [illegible] 6d. each.
" [illegible] 4 to 6 feet, 3s. 6d. to [illegible]
" " 7 to 9 feet, 15s. to 21s.
*** These two last-named Junipers ought to be planted by every one who has any place approaching a lawn.
THUJA WAREANA (the best variety of Siberian Arbor Vitæ), fine plants, [illegible] to 7 feet, [illegible] to 7[illegible] 6d. each.

The above are all growing in the open ground, are healthy and handsome specimens; they have never been in pots and consequently [illegible].

HOSEA WATERER [illegible] to the attention of [illegible] of large Spruce [illegible] from [illegible] to 15 feet high, large Red Cedars, [illegible] variegated Hollies, Common [illegible] feet, fine Cornish Weeping Larch, Weeping and Purple Beech, Standard Magnolia, Tulip Trees, &c., all of which are [illegible] for removing, and will be sold reasonably.

The collection of AMERICAN PLANTS at the KNAP HILL NURSERY is well known as being the most extensive in the country, witness the beautiful Exhibition in the King's-road, Chelsea, every spring.
RHODODENDRONS, [illegible] hardy kinds, 30s. to [illegible] per dozen.
" fine hardy scarlets, large plants, [illegible] per dozen.
AZALEAS, best varieties, from 18s. to 42s.
KALMIA LATIFOLIA, from 18s. to 84s., for large plants, and upwards.
HARDY HEATHS, a first-rate collection of about 25 of the most beautiful and distinct kinds, good plants, at [illegible] per 100.
*** Hardy Heaths are not planted so generally as they deserve. Nothing can be more interesting and beautiful, and flowering as they [illegible] for the most part in the autumn, renders them still more valuable.

FOR PLANTING COVER, CARRIAGE DRIVES, &c.
RHODODENDRON PONTICUM, fine bushy plants, from 10s. 6d. to 21s. per 100.
BOX LEAVED PRIVET (a new and very superior variety to the old Evergreen), 8s. to 1[illegible] 6d. per 100.
BERBERIS AQUIFOLIUM, bushy plants, 9 inches to 12, 50s. per 1000.
" ditto, larger, 1½ to 2 feet, 7s. to 10s. per 100.
" DULCIS, 1 to 1½ foot, 7s. to 10s. per 100.
" ARISTATA, 1 to 1½ foot, 21s. per 100.
This last is an excellent plant for these purposes, and requires only to be better known to be more extensively planted.
ENGLISH JUNIPERS, 1 to 2 feet, 7s. to 12s. 6d. per 100.
SWEET BRIARS, 8s. to 12s. 6d. per 100.
COMMON LAURELS, fine bushy plants, 10s. to 25s. per 100.
PORTUGAL LAURELS, 2 to 3 feet, 50s. per 100.
QUICK, very strong, transplanted, 8s. to 10s. per 1000.
FRUIT TREES.—Dwarf trained Apples, Pears, Cherries, Plums — Fine trees, 2s. 6d. to 3s. each.
" Apricots, Peaches, Nectarines — Fine trees, 3s. 6d. each.

Goods delivered free to London and to the Slough Station on the Great Western Railway. The Knap Hill Nursery is within an hour's ride of London, being near the Woking Station, South Western Railway.

It is particularly requested that letters intended for this Establishment may be addressed, HOSEA WATERER, Knap Hill Nursery near Woking, Surrey.

MANNINGTON'S PEARMAIN.

JAMES CAMERON, NURSERYMAN, Uckfield, Sussex, begs to inform his friends and the public that he is now ready to send out trees of that most excellent APPLE, called by Dr. LINDLEY, "Mannington's Pearmain," a seedling raised at Uckfield and hitherto confined only to this locality. It is a most excellent dessert Apple, with a rich, sugary and aromatic flavour, superior in every respect to the Ribstone Pippin and will keep even to the end of May. It has been favourably noticed by Dr. LINDLEY, in the *Gardeners' Chronicle* of April 1846. Plants of this Apple can be obtained, Dwarf Maidens, at [illegible] 6d. each, by application as above, or to Messrs. Gray, Adams, and Hogg, Nurserymen, Brompton-park, Kensington, London.
Remittances expected from unknown correspondents.

SELECT VEGETABLE SEEDS of the NEWEST and BEST SORTS supplied in large or small quantities, by BASS and BROWN; complete collection at 63s., 42s., and 21s., also complete collection for small gardens of esteemed and favourite sorts for 10s. For any vegetables not required, enlarged quantities of other may be had. A list of the collection sent if required. Carriage paid to London. Post-office orders are payable to either BASS and BROWN or STEPHEN BROWN. Remittances requested from unknown correspondents.
[illegible] growers of an extensive variety of Seeds, we shall be happy to forward our prices to the trade of such sorts as we have this season to offer.
BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

JOSEPH SMITH AND SONS, Tansley Nursery, near Matlock, Derbyshire, beg to invite attention to their extensive Nursery stock, consisting of Forest Trees of various sizes, suitable for planting, Thorn Quicks, Evergreen and Deciduous Shrubs, American plants, &c., on the most reasonable terms. Catalogues may be had gratis. Wingfield Station, on the Midland Railway, is [illegible] from the Nursery.
Tansley Nursery, Jan. [illegible].

WHITETHORN.—500,000 very fine 4 year old transplanted WHITETHORN, at [illegible] 6d. per 1000, or select at [illegible] per 1000. Delivered free to the Station at London or Peterborough. The above are extremely fine and well-rooted; a sample [illegible]. The prices as above for larger quantities.
ARTHUR MACKIE, Nursery, Norwich, Jan. 20.

TO PLANTERS.

THE SUBSCRIBER has to offer the following SEEDLING FOREST TREES, &c.

Ash, 1 year per 1000, 2[illegible] 6		Furze, 1 yr., per 1000,	7s. 6d.
" 2 years [illegible] 6		" 2 years,	10 0
Alders, bedded 2 years, 6 0		Hollies, [illegible] years	1[illegible] 0
Beech, 1 year [illegible] 6		Oak, 1 year	[illegible]
Broom, 2 years 15 0		" 2 years	[illegible] 0
Elm, English, bedded		" Evergreen, bedded, [illegible]	[illegible]
[illegible] years 12 0		Whitethorn, 1 yr., 2 [illegible]	[illegible]

TRANSPLANTED FOREST AND ORNAMENTAL TREES.

Acacia, [illegible] to 6 ft., p. 100 [illegible] 0	Chestnut, Spanish,
Alders, [illegible] feet [illegible] 0	[illegible] to 4 feet, per 1000 60s. 0d.
" [illegible] to 4 feet p. 1000 [illegible] 0	Chestnut, Horse, 6 to
" [illegible] feet [illegible] 0	[illegible] feet, per 100 20 0
Beech, [illegible]	

Beech, [illegible] raised here, 3 to 4 feet, 1[illegible]s. per 100
" " 4 to 5 feet, 10s. per 100
" " 6 to 8 feet, 2[illegible]s. per 100
" " 8 to 10 feet, 60s. per 100
" " 10 to 12 feet, [illegible]s. per 100
Hertfordshire [illegible] of the same prices
" Common English, [illegible] to 5 feet, 1[illegible]s. per 100
Fir, Spruce, 2 to [illegible] feet, 50s. per 1000
" Silver, 2 to 3 feet, [illegible] per 1000, 3 to 4 feet, [illegible] per 1000
Hazel, [illegible] to 4 feet, 3[illegible] per 1000, [illegible] to [illegible] feet, [illegible] per 1000
Hornbeam, [illegible] feet, [illegible] per 100
Limes, red twigged, from [illegible] yrs, 8 to 10 feet 70s. per 100
" " " 10 to 1[illegible] feet, 100s. per 100
Maple, 2 to 3 ft. 2[illegible] per 1000, 4 to 6 ft., 22s. 6d., 6 to 8 ft., [illegible]
" Norway, 8 to 10 feet, 25s. per 100
Oak, English, 3 to 4 ft., 10s. per 1000, 4 to 6 ft., 55s. per 1000
" Turkey, 5 to 7 feet, 1[illegible] per 100
Pine, Scotch, [illegible] to 4 feet, [illegible] per 1000; 4 to 5 feet, 60s. per [illegible]
Poplar, Black Italian, 5 to 7 feet, 10s. per 1000
" Lombardy, 5 to 8 ft., 25s. per 100, [illegible] to 10 ft., [illegible] per 100
Sycamore, 3 to 4 feet, 2[illegible]s. per 1000, 4 to 6 feet, [illegible] per [illegible]
Willows, Bedford, 4 to 5 feet, 50s. per 1000, [illegible] to 6 feet, [illegible]

ORNAMENTAL TREES AND SHRUBS.

Acacia (Robinia), several fine species, dwarf, 9s., [illegible] standard 12s. per doz.
Ailanthus glandulosus, 3 to 9 feet, 12s. per doz.
Althea frutex, a fine collection, [illegible] per doz.
Ash, 12 fine sorts, amongst which are the gold-barked, Chinese, heterophylla, &c., 12s. per doz.
Beech, Fern-leaved, 2 to 3 feet, 9s. per doz., 3 to 5 feet, 15s. per doz., 6 to 8 feet, 21s. per doz.
" Purple, 2 to 3 ft., [illegible] per doz., [illegible] per 100, 3 to 4 ft., 1[illegible]s. per doz., 7[illegible] per 100, 4 to 5 ft., 15s. per doz., 10[illegible] per 100
" Weeping, 18s. per doz.
Berberry, several sorts, 6s. per doz., 10s. per 100
Birch, Poplar-leaved, 2[illegible] per 100
Elms, fastigiata, cork-leaved, silver-striped, &c., 12s. per doz.
Thorns, 24 varieties, including new double scarlet, dwarfs [illegible] per doz., standards 15s. per doz.
Laburnums, standards, fine, 6s. per doz., 10s. per 100
Lilac, sorts, 2[illegible] per 100, Mountain Ash, [illegible] to 6 ft., 12s. per 100
Maple, Eagle's Claw and several choice kinds, [illegible] per doz.
Oak, fine collection of American species, [illegible] per [illegible], [illegible] p. 100
Roses, a fine mixture for shrubberies, [illegible] per 100
Aucuba japonica, 2 feet, fine, 5[illegible] per 100
Laurels, [illegible] to 4 feet, fine, [illegible] per 100, Portugal, 2 to 3 feet, [illegible] per 100; 3 to 4 feet, fine, 100s. per 100
Cedar, Red, 2 to 3 feet, very fine, [illegible] per doz., 3 to 4 feet [illegible]
Arbor-vitæ, Chinese, 2 to 3 feet, 9s. per doz., 3 to 4 feet [illegible]
Other Ornamental Trees, Evergreens, &c., at similar charges, of which a Catalogue may be had.
Not less than 6 will be sold at the dozen price, 25 at the hundred price, and 300 at the thousand price. For smaller quantities a slight increase will be charged.
N.B.—The above charges are for ready money.
[illegible] WOOD, Nurseries, Huntingdon.

NEW AND GENUINE GARDEN SEEDS.

CLARKE AND Co., SEEDSMEN, 80, High-street, Borough, beg to inform their Friends and the Public they have now published their CATALOGUE for the ensuing season, which will be sent free on receipt of a postage stamp.
London, Jan 20

HENRY DAVIS, of Ogle's Grove Nursery, Hillsborough, Ireland, begs to offer a very superior new seedling APPLE, named the OGLE'S GROVE PIPPIN. It is, without any exception, one of the most abundant bearers, keeps remarkably well till the month of June, is of first-rate quality and appearance, and suitable both for table and kitchen purposes. Fine maiden standard Trees, 5s., dwarf, do., 3s 6d each, with a liberal allowance to the Trade if three or more are ordered. Trees may also be obtained at the Nursery of Messrs. Hugh Low and Co., Upper Clapton, London.

TO PLANTERS.

W. DRUMMOND AND SONS, NURSERY and SEEDSMEN, Agricultural Museum, Stirling, have for disposal a large stock of FOREST TREES, &c.

TRANSPLANTED LEADING SORTS

Oak and Beech, all sizes, 1½ to 4 feet	15s. to 25s. per 1000
Ash, Elm, and Plane, do. do.	10s. to 15s. ,,
Larch, common, do. 1 to 2½ feet	9s. to 11s. ,,
Do. Tyrolese, do. do.	12s. to 16s. ,,
Scotch Fir, do. 9 to 18 inches	7s. 6d. to 1?s. 6d. ,,
Norway Spruce, do. do.	11s. to 16s. ,,
Thorns or Quicks, 2 and 3 years	? to 10s. 6d. ,,

Priced Lists, including Shrubs and Fruit Trees, can be had on application. The Nursery Ground consisting of sharp gravelly soil, produces hard, fibrous-rooted Trees, well suited for Hill and Moor planting. Orders above £[illegible] will be delivered free at the principal Ports of Britain and Ireland.

TANSLEY NURSERY, NEAR MATLOCK.

JOSEPH SMITH, impressed with gratitude to his numerous friends, begs to return his sincere thanks for the distinguished patronage he has been so liberally favoured with for the last 25 years. It will be his constant study to do all in his power to merit a continuance of their support, and now takes the liberty of stating, that the business will in future be carried on in all its branches by J. Smith and Sons.
Tansley Nursery, Jan. 20

SEEDS.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE for 1849, sent free by post on application. We beg to offer the following collections, including many choice new sorts.

VEGETABLE SEEDS.

	£ s. d.
A complete Collection, including Thurston's Reliance, Dancecroft Rival, Fairbeard's Surprise, British Queen, and other fine Peas, 20 quarts in all, and all other Vegetable Seeds, best and newest kinds, in proportion, for	3 [illegible] 0
The same Collection, in smaller quantities	2 2 0
Do do do	1 5 0
A Collection suitable for a small garden	0 15 0

A list of the sorts furnished if required.

SELECT FLOWER SEEDS.

Free by post, with full directions for sowing, heights, colours &c., viz.	s. d.
100 varieties best and newest Annuals	15 0
50 varieties for 8s. 6d., 30 for 5s. 6d., 20 for	4 0
20 varieties best dwarf kinds, in larger packets, suited for filling bed [illegible], 12 do	5 0
20 varieties best Greenhouse Annuals, 7s. 6d., 12 for	5 0
20 varieties choice Greenhouse Perennials, 10s. 6d., 12 for	7 6
20 varieties choice Hardy Biennial and Perennials, 7s. 6d., 12	5 0
25 varieties imported German Stocks	5 0
20 ditto ditto, 3s. 6d., 12 for	2 6

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of 2l. and upwards a [illegible] extra. Post Office orders payable to Bass and Brown, or to William Brown, Seed and Horticultural Establishment, Sudbury, Suffolk.

SUPERIOR NEW GARDEN SEEDS.— Carriage free by Pickford and Co.

	Per quart s. d.
Fairbeard's Champion of England Peas	2 6
Fairbeard's Early Surprise	1 6
Behamy's Earl, Green Marrowfat, fine flavour, dark green, very early	1 0
Sutton's superb Green Marrowfat, the best late Pea known	1 6
Thompson's Early Dwarf (9 to 12 inches)	0 10
Cormack's British Queen	2 0
Cormack's Prince Albert	0 10
Flack's Dwarf Victory very fine large	0 10
Ward's Queen of Dwarfs, fine	1 6

JOHN SUTTON and SONS particularly recommend the above as the very best of all the Peas now in cultivation, and they have also a large stock of the older kinds at 6d. to 9d. per quart. Messrs. SUTTON'S stock of KITCHEN GARDEN SEEDS is very extensive, all of which are of home growth, and the undermentioned are a few kinds of very superior properties.

	s. d.		s. d.
Berkshire Brown Cos Lettuce p. oz.	1 0	Extra Dwarf Curled Parsley p. oz.	0 4
Sutton's superb Green Cos do. p. oz.	2 0	Jersey Marrow Parsnip ,,	0 4
Selected Dark Crimson Beet p. oz.	0 6	Selected Scarlet Horn Carrot p. oz.	0 4
True Walcheren Cauliflower p. oz.	2 0	James's New Green-topped do. p. oz.	0 4
Large White Spanish Onion ,,	1 0	Sutton's Imperial Cabbage p. oz.	1 0
Reading Onion, best ,,	0 6	Atkins's Dwarf do. ,,	0 8
New White Globe Onion ,,	0 6	Stirling Queen do. ,,	0 8
Hammond's White Cape Broccoli p. oz.	1 6	Fine French Curled Endive p. oz.	0 9
Snow's Winter White do. p. oz.	1 6	Seymour's Solid White Celery p. oz.	1 0
Mammoth Late White do. p. oz.	1 6	Sutton's superb Pink do. p. oz.	1 0
Howden's superb Purple do. p. oz.	1 0	New Imperial Hearting Kale p. oz.	1 0
Early six weeks Kidney Bean p. qt.	1 6	Fresh imported Brussels Sprouts p. oz.	1 0
Marshall's Dwarf Broad Bean p. qt.	1 0	Extra Green Curled Savoy p. oz.	0 9
Berkshire Champion Cucumber p. pkt.	1 0	Early Mousetail Turnip ,,	0 3
Victory of Bath do. ,,	1 0	Wood's Early Scarlet Radish p. oz.	0 3
Cuthill's Black Spine ,,	1 6	Beck's superb Short-top do. p. oz.	0 3
True Beechwood Melon p. pkt.	1 0	New Scarlet Olive do. ,,	0 3

Most of the above kinds are included in Messrs. SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN SEEDS at 3l. 3s., at 2l. 2s., and 1l. 1s. each collection.

True Ashleaf Kidney, Coldstream Kidney, Soden's Early Oxford, and Early Frame Potatoes, 2s. 6d. per peck.

JOHN SUTTON and SONS, having for many years been extensive growers of Garden Seeds, have regular customers in all parts of the kingdom, and have therefore made arrangements with Pickford and Co. to deliver their goods free to either of the Railway Termini in London, or at any station on the Great Western and South Western Railways.

JOHN SUTTON and SONS, Reading Seed Warehouse, Reading, Berks.

KITCHEN GARDEN SEEDS.— No. 1.—A complete collection, consisting of 20 quarts of the best kinds of PEAS, inclusive of Fairbeard's Champion of England, Early Surprise, British Queen, Burbidge's Eclipse, &c., and all other Seeds in proportion, of the newest and best sorts, sufficient for one year's cropping of a large garden, the choicest Melons and Cucumbers inclusive .. £3 3s 0d

No. 2.—Complete collection in smaller quantities, equally choice sorts .. 2 2 0

No. 3.—Ditto .. 1 1 0

No. 4.—Ditto. This is sufficient for a gentleman's small garden .. 0 12 6

No extra charge for packing; carriage paid to London.

If there should be any sorts of Seeds that would not be wanted in the collection, increased quantities of those most desired would be sent. All orders to be accompanied by a remittance, or a reference from unknown correspondents.

W. J. Epps can, with pleasure, refer to some of the most respectable families in England, Ireland, and Scotland, who are in the habit of purchasing the above collections every year.

A General Catalogue of Horticultural and Agricultural Seeds may be had on application; also a Trade List of Seeds.

Fine trained Peaches and Nectarines, 2s. 6d. to 3s. 6d. each.

WILLIAM JAMES EPPS, Maidstone.

SEEDS.—CORNER OF HALF MOON STREET.
THOMAS GIBBS AND CO.,
(By Official Appointment) the Seedsmen to the "ROYAL AGRICULTURAL SOCIETY OF ENGLAND," beg to remind the Members of the Society, and Agriculturists in general, that their only Counting House and Seed Warehouse is at the corner of HALF MOON STREET, PICCADILLY, LONDON, as for the last Fifty Years.
Priced Lists of Agricultural Seeds are always ready during the season, and may be had on application.

BOWERS' NEW WATERING POT.—An ingenious mechanical contrivance in watering choice plants to a nicety, avoiding the unclean slop, disfigurement of foliage, and too frequent loss of good plants, inseparable from the old method of watering. To be had in all sizes, those at 7s 6d. and 10s. each are the most in use. London Agent, DUNCAN HAIRS, Seed Merchant, 109, St. Martin's lane; or apply to H. BOWERS, Godalming, Surrey.

N.B. Utility guaranteed.

FLOWER-POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford-street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.—250, Oxford-street, near Hyde-park.

TO FLORISTS.—The Advertiser is desirous of purchasing an Established Business of this kind, or a share in one of sufficient importance. Address, stating the amount required, to H. T., 4, Albert Cottages, Hammersmith.

POLMAISE HEATING.

J. LEWIS'S IMPROVED REGISTERED STOVES are delivered at the Railroads, with plans for fixing, at the following prices. For a Greenhouse, 20 feet by 12, 6l. 10s.; 30 feet by 14, 8l. 10s.; 60 feet by 18, 10l. 10s. To be seen in operation on the premises, Horticultural Works, Stamford-hill, Middlesex.

GREEN AND HOTHOUSES made by Machinery for one half their usual cost. 1½ inch Greenhouse Lights, made of best material, glazed with 16-oz. sheet glass, painted three coats, and delivered to the railroads or wharfs in London, at 11½d per foot; 2 inch ditto, 1s.
J. LEWIS, Hothouse Works, Stamford hill, Middlesex.

POLMAISE.—The complete success of SMITH'S POLMAISE APPARATUS, with dome cover, is now firmly established; the late cold weather having been a severe test of its heating powers. It is more simple than hot water and equally as economical. In point of fuel, it is warranted to answer in every respect. Orders are daily being received, and in no single instance has failure of any kind ensued.—Manufactured by SMITH and Co., Ironfounders, Eagle Foundry, Leamington. Prices from 5l. to [illegible], according to size.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO., 116, Bishopsgate street Without, are supplying SHEET GLASS at the following reduced Prices for Cash.

HORTICULTURAL GLASS FOR CONSERVATORIES, CUT TO SIZE UP TO 40 INCHES LONG.	PRICES OF SMALL SHEET SQUARES. In boxes of 100 feet. s. d.
16 oz. from 3d. to [illegible]d. per foot,	Under .. 5 by 4 .. 12 6
21 ,, 3½ 5 ,,	6 by 4 and under 7 by 5 .. 16 6
26 ,, 3½ 5½ ,,	7 by 5 ,, 8 by 6 .. 18 6
32 ,, 4 9½ ,,	8 by 6 ,, 10 by 8 .. 20 6

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS in sizes not exceeding 5 feet superficial.

⅛ thick .. per foot	1s. 0d.	¾ inch per foot	2 0
¼-inch ..	1 2	1 inch ..	3s. 0d.
½-inch ..	1 6		

PATENT ROUGH PLATE TILES.

⅛ thick each	0s. 11d.	⅜-inch .. each	1s. 7d.
¼-inch ..	1 3	½-inch ..	2 0

GLASS DOMES for SKYLIGHTS, from 15 to 60 inches in diameter. These are well worth notice.

GLASS MILK-PANS, PROPAGATING GLASSES, AND BEE GLASSES.

LACTOMETERS for trying the quality of Milk, 4 tubes 7s. 6d., 6 tubes 10s., Hyacinth Glasses and Hyacinth Dishes; Crocus Glasses, Shades for Ornaments; Fish Globes, Plate and Window Glass; Lamp Shades and Chimneys, and every article in the trade.

METAL HAND FRAMES.
HARTLEY'S PATENT ROUGH PLATE, AND PATENT DOUBLE CROWN GLASS.

GLASS FOR GREENHOUSES, CONSERVATORIES, GARDEN FRAMES, &c.
Hothouse Builders, Nurserymen, and others, supplied with every description of Sheet and Crown Glass, Rough Plate, &c. Glass Tiles, Propagating, Cucumber, and all other Garden Glasses.—Address, T. COGAN, 48, Leicester-square, London.

PRICES OF SMALL SQUARES IN BOXES OF 100 FEET.

	Crown	Sheet
Squares under 6 by 4 ..	10s. 6d.	£0 12s. 6d.
6 by 4 and under 7 by 5.	14 0	0 16 6
7 by 5 ,, 8 by 6 ..	15 0	0 18 6
8 by 6 ,, 10 by 8 ..	16 0	1 0 6

Larger sizes, of all qualities and substances, equally low.

PAINTS.—LITHIC AND OTHER DURABLE PAINTS, ready for use for FARM Buildings, Agricultural Implements, Park Fences, Outhouses, &c., &c. Genuine White-lead, Colours, Brushes, &c., best quality, and lowest prices.

GLASS MILK PANS FOR THE DAIRY.
Cream Pots, Lactometers, Glass Rolling Pins, Pastry Pans, Shades for Ornaments, Lamp Shades, &c., as usual. For Lists, (priced) direct to T. COGAN, Glass, Colour, and Lead Warehouse, 48, Leicester square, London.

KING AND OLDROYD (many years Assistants to the late Mr. DIXON and Mr. POTTS), NURSERY and SEEDSMEN, 2, High-street, Shrewsbury, beg respectfully to inform the Nobility, Gentry, and the Public in general, that they have commenced as above, and trust, by keeping goods of the best description, to merit a share of future patronage.
Nurseries, London-road, Abbey, Foregate.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho square, London.
See the *Gardeners' Chronicle*, first Saturday in each month.

GUANO AND OTHER MANURES.
PERUVIAN GUANO, of the finest quality, direct from import warehouse
NITRATES SODA AND POTASH
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of
MARK FOTHERGILL, 20½ Upper Thames-street, London.

WHEAT SOWING.

THE LONDON MANURE COMPANY beg to offer as under:—
LONDON MANURE COMPANY'S CORN MANURE.
,, ,, ,, URATE. [LIME.
,, ,, ,, SUPER-PHOSPHATE OF
Peruvian Guano, direct from Importers' stores—Fishery and Agricultural Salt—Gypsum for Clover—Soda Ash for destroying wireworm, and every other Artificial Manure.
The London Manure Company would call particular attention to their Corn Manure and Urate, the former containing a large amount of Ammonia, Phosphates, and Silicates, all so essential for corn crops, while the Urate is richer in Phosphates and other mineral substances required for roots.
Full particulars and prices forwarded on application.
EDWARD PURSER, Sec., 40, Bridge street, Blackfriars.

STEPHENSON AND CO., 61, Gracechurch street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree without the aid of pipes or flues.
S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as references of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.
S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.
Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

FARMERS AND GARDENERS, Liquify all your Manure, and put it on your land and crops day by day, as it is produced; this will increase its value fourfold at the least. COODE'S IRRIGATOR will spread it as gently and equally as rain, without hurt to land or crop, at one-tenth part of the cost of your present process.—Nuneaton.

LAND PROPRIETORS possessing Waste and Uncultivated Land, under the Enclosure Act or otherwise, and wishing to have the same Drained, Enclosed, Farmed, and Buildings Erected on well organised and economical plans, may do so by Contract or otherwise; also Drain Pipes, Brick-making, and every description of ground and water work performed, or the same superintended in England, Ireland, Scotland, or Wales. For further particulars address WM. HARRIS, Surveyor and Contractor, Almodington, Chichester, Sussex.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.
At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronized and adopted by
HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,
And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.
It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.
PRICE ONE PENNY PER SQUARE FOOT.
*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.
☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are
F. M'NEILL AND CO.'S
Patent Felt Manufactory, Lamb's-buildings, Bunhill row, London, where roofs covered with the Felt may be seen.
The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.
NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.
Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

PEAS.

CLARKE'S NEW LINCOLN GREEN PODDED MARROW.—Being a selected variety from Clarke's New Early Ringwood possessing all the advantages of the original stock, as to earliness and size, and at the same time having a rich Green Pod. To be had (wholesale only) of Mr. HENRY CLARKE, Seed Merchant, 33, King-street, Covent Garden.

COLE'S SUPERB DWARF RED CELERY.

WM. PORT AYRES begs to inform his friends and the public, that he is prepared to send out this splendid Red Celery (which was awarded a prize at the last meeting of the Horticultural Society) in sealed packets at 3s. 6d. each, free by post. In recommending this Celery, W. P. A. feels confident it will give entire satisfaction, its leading characteristics being a remarkably fine nutty flavour, with great solidity and brittleness, large size (Mr. Cole having a crop of 600 plants at the present time, averaging 6 lbs. each) and the very desirable property of standing 12 months from the time of sowing without running to seed. Specimens of this Celery will be on view during the week at the following seed shops, where also seed may be obtained, Mr. F. Warner, Cornhill; Mr. W. Clark, Bishopsgate-street; Mr. D. Hairs, 109, St. Martin's-lane, Charing-cross; Mr. Denyer, Gracechurch street; Messrs. Flanagan and Son, Mansion-house-street; and Messrs. Hurst and M'Mullen, Leadenhall-street.

W. P. A. also begs to announce that his selected assortment of Kitchen Garden and Flower Seeds is now ready for delivery, and the principal kinds having been grown either by himself or by friends upon whose integrity he can depend, can be warranted true to name.—Blackheath, Jan. 20.

NEW LETTUCES OF SUPERIOR QUALITY.

SUTTON'S BERKSHIRE BROWN COS requires no tying, has large broad leaves, forming an upright white crisp Lettuce, of superior flavour. SUTTON'S SUPERB GREEN COS, very large, upright, broad topped, turning in close, without tying. The above are very superior Lettuces, sufficiently hardy to stand the winter, but peculiarly adapted for spring sowing, as they endure the greatest heat and drought without running to seed, insomuch that it is difficult to obtain seed. Price 2s. per oz., or 1s. per packet.—Address JOHN SUTTON and SONS, Reading, Berks.

*** See also Messrs. SUTTON'S List of other choice Seeds in the 1st page of this week's *Chronicle*.

NEW ENAMELLED LABELS.—To be properly understood, these should be seen; for elegance, lightness, and distinctness of character they have nothing to be compared to them, and being enamelled on copper and the names burnt in, their lasting qualities are undeniable. No Conservatory, Orchid house, Arboretum, or Rosery should be without them. Noblemen, Gentlemen, and Ladies waited on with specimens in any part of London, or drawings forwarded per post.

BOWERS' NEW IMPROVED WATERING POT also on show. Asparagus roots for forcing, 100,000 yards of Box, cheap. Catalogues containing all the new and most choice Vegetable, Flower, and Agricultural Seeds, forwarded by post, or can be had on application. Collections of Seeds made for any given space of ground or amount.

Sole Agent, DUNCAN BAIRD, Seedsman and Florist, 109, St. Martin's-lane, Charing-cross, London.

The Gardeners' Chronicle.

SATURDAY, JANUARY 20, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	Jan.	Entomological (Anniversary)	8 P.M.
		British Architects	8 P.M.
TUESDAY,	—	Medical	8 P.M.
		Geographical	8½ P.M.
		Medical and Chirurgical	8½ P.M.
		Zoological	8½ P.M.
WEDNESDAY,	—	Microscopical	8 P.M.
		Society of Arts	8 P.M.
		Ethnological	8 P.M.
		Royal Society of Literature	8 P.M.
THURSDAY,	—	Numismatic	7 P.M.
		Antiquarian	8 P.M.
		Royal	8½ P.M.
FRIDAY,	—	Philological	8 P.M.
	26	Royal Institution	8½ P.M.
WEDNESDAY,	—	Geological	8 P.M.
FRIDAY,	Feb.	Botanical	8 P.M.
SATURDAY,	—	Asiatic	2 P.M.

It might have been better to speak of UNDERGROUND CLIMATE rather than of TERRESTRIAL CLIMATE, inasmuch as good Saxon is more agreeable to English ears than fine exotic phrases; but let that pass. We have now to show what underground climate is.

The roots of plants, although they burrow below the surface of the earth, are not, on that account, insensible to the influences which are felt by the stem and branches above the surface. On the contrary, they are fully as sensitive, or more so. If leaves and flowers wither beneath the scorching air, so do roots when the earth around them becomes parched; if the verdant foliage rejoices in the raindrop, not less is it grateful to the earthbound root. If cold paralyses the blossom, and compels the foliage to shrink and perish, roots also are affected in like manner. On the other hand, that warmth which causes the blossom to unfold, and the leaf to open its bosom to the gentle breath of spring, acts equally upon the root, exciting it to growth, and putting in action all that sucking force by which the leaves and flowers are nourished. Nor is the access of air less important to one than to the other; both extremities of plants feed on air, the roots more than the leaves. Place a plant in a place where air can gain no access to its leaves, and they fall off, to be followed by the decay of the stem: roots, under the same circumstances, will gradually shrink and die. Hence it is that the condition of the air which lies in the ground, the temperature of the ground itself, and the moisture of the ground, require to be regulated, as well as that of the atmosphere which rests upon it: and thus the importance of underground climate becomes evident.

It is by perfect and skilful drainage that underground climate is improved, and by that alone. No other means of effecting it on a large scale are known; but these means are ample. It is probable indeed that the superiority of common littery stable manure over artificial composts, as well as the increased efficacy of the latter when mixed with the former, is a mere exemplification of the advantageous effects of perfect drainage. It is because this question does not seem to be generally understood in its most important bearings, notwithstanding all that is now said of the advantage of draining, that these remarks have appeared to be called for.

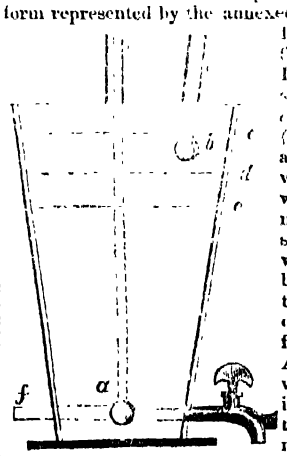
Why is land improved by good drainage? Many believe that the whole advantage consists in removing water. But water is not of itself an evil, on the contrary it is the food of plants, and its absence is attended with fatal results. It is the excess of water which injures plants, just as any excess of food injures animals; with this difference that animals can refuse what is hurtful to them, while plants have no choice, but must take into their system whatever is in contact with the surface of their roots. The latter are therefore more readily gorged than the former.

But undrained land is not merely wet: it is waterlogged. All the interstices between the particles of earth being filled with water, air is necessarily absent, except that small quantity which is dissolved in the water. In this way plants are deprived of the most essential part of their food. But when water is removed air takes its place and holds in suspension as much water as roots can thrive upon: for it is not water in a fluid state which plants prefer: it is when it has assumed the state of vapour that they feed upon it best. So that the removal of water permits air, and air-borne vapour, the best of all food for roots, to take its place.

But those who imagine that this is the whole explanation of the effects of drainage, overlook another circumstance of the highest importance. *Drained land is, in summer, from 10° to 20° warmer than water-logged land.* Professor SCHUBLER long ago came to the conclusion that the loss of heat caused by evaporation in undrained lands amounted to 11° to 13½° Fahr. Mr. PARKES has shown, in his "Essay on the Philosophy of Drainage," that in draining the Red Moss near Bolton-le-Moors, the thermometer in the drained land rose in June, 1837, to 66° at 7 inches below the surface, while in the neighbouring water-logged land it would never rise above 45°, an enormous gain. In the Garden of the Horticultural Society the mean temperature of the thoroughly drained soil at 1 foot below the surface is, in the month of July, 62° 49', if we take that of water-logged land to be the same as spring water, or 47°, there is a gain of 16½°. Thus it is evident that drainage produces the very important effect upon land of raising its temperature; it communicates what gardeners call bottom heat, and those who are least conversant with plants know the value of that, in fact, in the absence of some amount of it, even the common Nettle and Groundsel would perish. No mistake can be greater than to imagine that it is only the Melon and Cucumber, and such tropical productions, to which bottom heat is serviceable; soil requires to be heated in some degree for all plants, but some kinds demand a higher temperature than others. As scarcely any of our cultivated crops are natives of countries so cold as our own, it is manifest that they all require to have the earth warmed for them, or are much the better for it.

The reason why drained land gains heat, and water-logged land is always cold, consists in the well known fact that heat cannot be transmitted *downwards* through water. This may be readily seen by the following experiments, which anybody can try for himself.

EXPERIMENT No. I.—A square box was made of the form represented by the annexed diagram, 18 in. deep, 11 in. wide at top, and 8 inches wide at bottom. It was filled with peat saturated with water to *c*, forming, to that depth (12½ inches), a sort of artificial bog. The box was then filled with water to *d*. A thermometer (*a*), was plunged so that its bulb was within 1½ inch of the bottom. The temperature of the whole mass of peat and water was found to be 59½° Fahr. A gallon of boiling water was then added; it raised the surface of the water to *e*. In five minutes the thermometer *a* rose to 41°, owing to conduction of heat by the thermometer tube, and its guard. At 10 minutes from the introduction of the hot water the thermometer *a* rose to 46°, and it subsequently rose no higher. Another thermometer (*b*), dipping under the surface of the water at *e*, was then introduced; and the following are the indications of the two thermometers at the respective intervals, reckoning from the time the hot water was supplied:



	Thermometer *b*.	Thermometer *a*.
20 m.	156°	46°
1 h. 30 m.	101	45
2 h. 30 m.	80½	42
12 h. 40 m.	45	40

The mean temperature of the external air to which the box was exposed during the above period was 42°; the maximum being 47° and the minimum 37°.

EXPERIMENT No. II.—With the same arrangement as in the preceding case, a gallon of boiling water was introduced above the peat and water, when the thermometer *a* was at 36°; in 10 minutes it rose to 40°. The cock was then opened for the purpose of drainage, which was but slowly effected, and at the end of 20 minutes the thermometer *a* still indicated 40°: at 25 minutes 42°, whilst the thermometer *b* was 142°. At 30 minutes the cock was withdrawn from the box; and, more free egress of water being thus allowed at 35 minutes the flow was no longer continuous, and the thermometer *b* indicated 48°. The mass was drained and permeable to a fresh supply of water.

Accordingly another gallon of boiling water was poured over it, and in

3 minutes	the thermometer *a* rose to		77°
5	"	fell to	76½
15	"	"	74
20	"	remained at	76½
1 h. 50	"	"	70½

In these two experiments the thermometer at the bottom of the box suddenly rose a few degrees immediately after the hot water was added; and hence it might be inferred that heat was carried downwards by the water. But in reality the rise was owing to the action of the hot water on the thermometer, and not to its action upon the cold water. To prove this, the perpendicular thermometers were removed. The box was filled with peat and water to within 3 inches of the top, a horizontal thermometer (*a f*) having been previously secured through a hole made in the side of the box by means of a tight-fitting cork, in which the naked stem of the thermometer was grooved. A gallon of boiling water was then added. The thermometer, a very delicate one, made by NEWMAN, was *not in the least affected* by the boiling water in the top of the box.

The intelligent gardener will at once see the application of this experiment. The wooden box is a field, the peat and cold water represent the waterlogged portion; rain falls on the surface and becomes warmed by contact with soil at a temperature may be of 130°, is thus heated to, say 100°, and so descends. But it is stopped by the cold water, and the heat will go no further: so that if hot water were to be raised on a water-logged field for a month the temperature of the soil would not be raised to the depth of a spade inch below the surface where the cold water naturally stands. On the contrary, if the soil is open, and not waterlogged, the warm rain trickles through the crevices in the earth, carrying with it the high temperature it had gained on the surface, parts with it to the soil as it passes down, and thus produces that bottom-heat which is so essential to plants, although so few ever suspect its existence.

THE return of the POTATO DISEASE in 1848 rendered it evident that this vegetation was likely to be permanent, and that cultivators could no longer rely upon the plant, even when the greatest skill was shown in its treatment, unless better information could be secured than any that had been previously collected. Ordinary means of investigation were exhausted, or had failed, and at the end of four years men were in as much uncertainty as ever, even as to what conditions were most favourable to the security of the crop. A discovery of the cause of the disease appeared to be hopeless. No such general conclusions as were of real value could be drawn from the conflicting testimony that had accumulated. This difficulty was seen to be caused in part by the imperfect manner in which facts were related, in some measure by the doubts which necessarily attach to anonymous communications, and most especially by the impossibility of instituting a safe comparison between cases all the main bearings of which could not be under consideration. In short, although the mass of information that had been collected in four years was apparently very considerable, it was found that after the doubtful, anonymous, imperfect, and self contradictory evidence was eliminated, the total amount of well ascertained and comparable facts was not so great as was generally supposed; that it was more especially difficult to distinguish between real results and the accidental coincidences which are so often mistaken for them; and that the only hope of extracting general rules from particular cases was to reopen the question, and to procure if possible so large an amount of new and authentic evidence as would furnish extensive averages, on which firm reliance could be placed.

It was apparent, too, that a large majority of those who had written on the subject had only addressed themselves to the cases in which the disease had been worst, detailing the amount of loss, and the means employed to prevent its becoming greater; but passing over lightly the highly important cases in which the Potato crop escaped or suffered little injury. Loss being the rule, it became clear that the exceptions required to be more especially studied.

In order to assist in this inquiry, printed circulars were distributed extensively in October and November last, with a request that the gentlemen to whom they were addressed would fill up a printed form with such information as they possessed or could procure, authenticating it by their signature. Of these returns, 999 were filled up and transmitted to London: 679 from England, 182 from Scotland, 92 from Ireland, 32 from Wales, and 14 from persons whose residence could not be ascertained. Of the 999 returns, 28 bear the signatures of noblemen, 401 of gentlemen, 50 of clergymen, 333 of farmers, and 187 of gardeners. To rather more than 1000 circulars no answer was returned. Nevertheless there is not a county in the United Kingdom from which some information has not been received, with the exception of Radnorshire, Selkirk, Kinross, Tipperary, Limerick, and Roscommon, from which counties no person sent a reply to the inquiries that were addressed to him.

The information thus collected is of the highest interest, and forms a permanent record of authenticated facts which will always be of importance for reference. The examination, classification, and abstracting of it has occupied a clerk and his assistants 16 weeks. To print it would demand a space such as no newspaper can command. It has, therefore, been condensed, and put into a tabular form, under different heads, three of which are now printed.* We this week give the dry facts, as they come out upon an examination of the evidence. What the conclusions are which seem to follow from the facts shown in the Tables, we reserve for many future occasions; as well as a comparison of the certain results now elicited, with the mass of floating testimony previously collected in our columns and elsewhere.

* These will be sent to each person from whom answers were received, and it is requested that if gentlemen do not obtain their copies in a few days, they will apply for them by letter. This intimation is rendered necessary by the extreme difficulty experienced in deciphering signatures, and by the occasional absence of the names of residences, or of post towns, near which the informants reside.

TABLE I.—EFFECT OF DIFFERENT PERIODS OF PLANTING.

	Planted in	Blighted in June, and suffered			Blighted in July, and suffered			Blighted in August, and suffered			Blighted in September, and suffered			Period of blight not stated, suffered			Number of Returns	Suffered		
		Much.	Little.	Escaped or Nearly so.	Much.	Little.	Escaped or Nearly so	Much.	Little.	Escaped or Nearly so.	Much.	Little.	Escaped or Nearly so.	Much.	Little.	Escaped or Nearly so.		Much.	Little.	Escaped or Nearly so.
England	October to January	...	2	1	4	11	6	1	...	...	...	...	...	6	18	15	64	11	31	22
	January	...	...	...	1	2	2	...	...	...	...	...	...	...	4	4	13	1	6	6
	February	1	4	...	3	16	12	...	1	1	...	1	...	5	51	10	105	9	73	23
	March	...	9	...	16	40	...	1	8	...	...	1	...	27	64	4	170	44	122	4
	April	4	2	...	41	22	...	9	11	1	...	3	...	78	46	6	223	132	84	7
	May	4	1	...	35	4	...	7	5	...	...	3	1	66	10	3	139	112	23	4
	June	...	...	...	8	...	...	...	...	...	1	...	...	...	5	2	16	9	5	2
Scotland	October to January	...	...	...	...	...	...	...	1	1	...	...	...	...	1	1	4	...	2	2
	January	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	February	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	1	...
	March	...	1	...	2	4	3	...	5	6	...	...	...	1	10	11	43	3	20	20
	April	...	...	1	3	3	4	3	14	11	1	...	4	6	38	16	104	13	55	36
	May	...	...	...	2	2	...	2	2	1	1	2	1	5	9	6	33	10	15	8
	June	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ireland	October to January	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	2	...	2	...
	January	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
	February	...	...	...	...	...	3	...	1	1	...	...	...	1	12	1	19	1	13	5
	March	...	1	...	1	5	1	...	4	...	...	...	...	1	28	3	44	2	38	4
	April	...	...	...	5	3	...	1	1	...	...	...	...	4	5	...	19	10	9	...
	May	1	...	...	3	...	1	2	...	...	...	...	...	17	1	...	25	23	1	1
	June	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	1
Wales	October to January	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...
	January	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	February	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	4	...	4	...
	March	...	1	...	...	1	...	...	...	...	...	...	...	...	5	1	8	...	7	1
	April	1	...	...	1	...	...	...	1	...	...	1	...	3	3	...	10	5	5	...
	May	...	...	...	...	...	...	1	...	...	1	...	...	4	3	...	9	6	3	...

Memoranda.—ENGLAND: TIME OF PLANTING.—February planting much recommended; said to be more beneficial than autumn planting. Some say February planting produces a heavier and as sound a crop as autumn planting; but the returns show that autumn planting escaped disease, where February planting suffered a little. In some of the northern counties, where there was comparatively little rain, April and May planting succeeded well. —— TIME AT WHICH THE CROP WAS ATTACKED BY BLIGHT.—Hardy or coarse growing varieties, in some cases a fortnight later than finer varieties in being blighted, and do not decay so rapidly. Dry, light, and well exposed fields generally about a fortnight later in being blighted than close sheltered situations. In some places where lime was used, even on heavy land (if dry), the blight was about a fortnight longer in appearing.

SCOTLAND.—Autumn planting not recommended; said by some not to produce such a good sound crop as spring planting.

IRELAND.—Autumn planting not better than early spring planting, according to correspondents in Kilkenny and Down.

TABLE II.—EFFECT OF SOIL AND MANURES.

	Crops which	ON LANDS.						MANURES, &c.												
															Mixture of Farm-yard and					
		All.	Good and Rich.	Heavy.	Wet.	Light.	Peat Bog.	Lime.	Guano.	Leaves.	Farm-yard.	Nothing.	Ashes.	Towns.	Fold-yard.	Seaweed.	Lime.	Leaves.	Guano.	Sea-weed.	Ashes.	Peat.
England	Suffered much	134	37	129	24	79	*5	13	21	4	230	32	4	7	14	1	13	6	6	4	9	...
	Suffered little	...	...	*18	...	196	17	14	18	1	128	50	8	2	8	...	15	4	3	3	10	...
	Escaped, or nearly so	...	1	16	...	117	10	11	3	4	59	46	16	3	2	1	6	1	3	1	6	2
Scotland	Suffered much	15	1	11	5	...	...	...	1	...	20	1	...	1	...	2	1	...	5	...	2	...
	Suffered little	...	...	7	1	48	6	1	6	...	48	1	1	1	...	8	...	2	7	1	4	...
	Escaped, or nearly so	...	...	9	...	81	25	...	7	2	77	10	1	2	...	2	...	3	6	4	3	...
Ireland	Suffered much	15	4	11	2	1	*2	...	1	...	14	1	...	...	...	1	1	...	...	2	...	4
	Suffered little	...	...	...	...	37	24	2	2	...	30	5	...	...	1	1	2	...	...	2	1	11
	Escaped, or nearly so	...	...	...	...	11	15	3	...	...	6	2	...	...	...	1	...	...	1	3	...	4
Wales	Suffered much	9	1	2	2	...	...	...	1	...	7	1	...	...	...	...	1	...	...	...	...	1
	Suffered little	...	...	...	...	8	...	...	...	...	6	1	...	...	...	...	...	...	...	1	1	...
	Escaped, or nearly so	...	...	...	...	12	1	1	...	1	3	1	1	...	...	1	2	...	...	1	2	...

Memorandum.—Where PEAT MOSS suffered it had been clayed or marled. Mr. Campbell reports that near Manchester crops almost escaped on unmarled peat, even though manured with night-soil and ashes, at the rate of 40 tons an acre. Mr. Moncrieff, of Nacton, in Suffolk, states, however, that new heath land, planted in May, was half diseased; but he does not say in what condition the land was, except that it had been limed. LIGHT LANDS suffered much when highly manured, planted late, or in confined places, especially if the soil was loamy. HEAVY LAND suffered little if naturally dry, or well drained, or planted early with manure that does not stimulate, such as loose litter, ashes, or without manure.

TABLE III.—Comparative power of resisting the disease possessed by certain varieties. (In this case the numbers express the number of instances in which the variety is mentioned.)

The following varieties suffered.	England.			Scotland.			Ireland.			Wales.			Total.		
	Much	Little	Least	Much	Little	Least	Much	Little	Least	Much	Little	Least	Much	Little	Least
Irish Cups	8	11	22	14	9	65	15	9	15	1	4	1	38	33	103
Irish Apples	3	3	3	...	...	...	...	...	...	...	1	1	3	4	4
Regents	4	31	44	1	6	46	...	...	...	...	...	...	5	37	90
Farmer's Glory ...	1	8	16	...	...	...	...	...	...	...	...	1	1	8	17
Farmer's Profit ...	...	3	10	...	...	...	...	...	...	...	...	...	...	3	10
Shaws	33	28	7	...	...	...	...	...	...	1	...	...	34	28	7
Early Manly	...	5	6	...	1	...	...	...	1	...	...	...	...	6	7
Radicals	2	5	7	...	...	...	...	...	1	...	1	...	2	6	8
Kemps	5	5	7	...	...	1	...	...	2	...	...	1	5	5	11
Ash-leaved Kidneys ...	23	26	46	6	...	1	...	...	3	...	2	1	29	28	51
Pink-eyed Kidneys ...	9	17	5	...	...	...	...	...	...	...	...	...	9	17	5
Taylor's Forty-fold ...	1	14	14	...	5	16	...	1	4	...	1	2	1	21	36
American Earlies ...	...	6	8	3	4	38	...	...	...	...	...	...	3	10	46
American Reds ...	...	2	2	...	2	...	...	...	...	...	...	1	...	4	3
Goldfinders ...	3	1	...	1	...	...	...	...	1	...	...	...	4	1	1
Manchester Blues ...	2	...	1	...	...	...	...	...	...	...	...	...	2	...	1
Jersey Blues	17	5	4	...	...	2	...	...	...	...	...	...	17	5	6
Devonshire Red ...	1	2	1	...	...	...	...	...	...	...	...	...	1	2	1
Oxnoble	...	...	1	...	...	...	...	...	1	...	...	...	...	...	2
Lumpers	...	...	2	...	1	5	3	12	13	...	...	...	3	13	20
Breadfruit	14	6	...	...	...	...	...	...	...	...	...	...	14	6	...
Cheshire Pink-eyes ...	2	1	...	...	...	...	...	...	...	...	...	...	2	1	...
Hen's Nest	1	5	...	...	...	2	...	...	...	...	...	...	1	5	2
Mangold Wurzel ...	...	3	2	...	...	2	...	...	...	...	...	...	...	3	4
Kentish Kidney ...	...	5	1	...	...	...	...	...	...	...	...	...	...	5	1
Second Earlies ...	...	12	14	...	...	...	...	...	...	...	...	...	...	12	14
Irish Rattlers	...	...	2	...	...	3	...	...	5	...	...	...	...	...	10
Black	...	...	...	2	1	...	...	...	...	...	...	...	2	1	...
Scotch Reds	10	6	2	22	...	2	...	...	...	...	...	...	32	6	4
Dons	...	...	...	20	...	...	3	...	...	...	...	...	23	...	...
Buffs	1	2	...	14	...	1	...	...	...	...	...	...	15	2	1
Irish Pink-eyes ...	...	...	1	...	...	...	2	1	2	1	2	2	3	3	5
Peelers	...	...	...	...	...	...	2	1	...	...	...	...	2	1	...

N.B.—In this Table all those kinds are omitted which are quite local or little known, or which bear names to which no particular meaning attaches, as "English Potatoes" in Ireland.

LOW NIGHT TEMPERATURES.

I think that gardeners are much indebted to you for your interesting observations as to the impropriety of maintaining high nocturnal temperatures in our stoves and forcing houses. I quite concur in your opinion that much mischief has been done by ignorant practitioners who have acted thus irrationally; but while we seek to avoid the Charybdis of ancestral empiricism, let us take care that we do not founder upon the Scylla of modern theory. The case of the stove creepers that withstood a temperature of 32° at Drayton Manor, must, I think, be regarded as an extraordinary exception rather than a rule; and I fear that there may be some employers who may insist upon having the same feat performed by their gardeners. It may have been very well to have tried the experiment, but I should conceive that there are many objections to having stove plants upon the back wall of a Vinery, not the least of which (in an early one) would be the discordant treatment required to do justice to the Vines and plants in their various progressions.

The case of the Vines which were frozen in an early stage of vegetation (mentioned by one of your correspondents) is certainly an extreme one, and reminds me that

> Safety consists not in escape
> From dangers of a frightful shape.

It is undoubtedly true that many plants which are carefully nursed in this country endure (as Sir Thomas Mitchell has informed us) very severe frosts in their native climate; but the great secret of all appears to lie in the powerful solar influence under which their growth has been matured, and by which the wood is hardened and endowed with protecting properties. In the murky climate of this country plants are very differently circumstanced, the ripening process is ill accomplished in seasons like the past, with the fullest exposure; how, then, must it be under a canopy of Vine foliage? No good gardener will for a moment dissent from the principle that rest is as necessary to plants as sleep to the animal system. I should be the last to doubt the propriety of the treatment given to the stove plants at Bowood, by my excellent friend Mr. Spencer. He appears to have hit the happy medium—a comparatively but not absolutely low temperature in the dark, dull days of autumn and winter, when the vital functions cannot be properly performed.

Your correspondent "Dodman" has drawn a clever and faithful picture of the self-willed, conceited, and ignorant gardener, and the employer who is led to expect impossibilities from his gardener, or bailiff, because he possesses only a small amount of superficial information, and cannot (for this reason) adjust the balance between cause and effect. Among such persons what is recorded in the *Gardeners' Chronicle* is regarded as gospel truth, and many a poor gardener suffers from the record of occurrences which ought to be regarded in the light of phænomena, rather than fundamental principles. I hope that these remarks may be the means of inviting attention to this subject. I subjoin a statement of an experiment of my own as to the capability of stove plants to resist cold. We have here no stove for plants, but have been in the habit of growing a few of the most popular kinds every year by removing them from one structure to another, as dictated by convenience. This year, some fine specimens were thus grown in pots of Euphorbia jacquiniflora and punicea, Stephanotis floribunda, Clerodendron splendens and others, which having completed their growth by the end of September, were removed into a late Vinery varying in nocturnal temperature from 35° to 43°. In this place they received scarcely any water; their treatment in all other respects being subservient to the preservation of the Grapes, for which slight fires were lighted every morning, and ventilation given on all possible occasions to dispel damp. All went on apparently well, till a house being about to be started for forcing flowers, the plants were removed into it, with a night heat of from 45° to 50°, allowing it to rise 10° more with sun heat. The Clerodendron splendens, which maintained the most luxuriant verdure of leaf up to this time, now sickened and died, every leaf falling off. Euphorbia jacquiniflora has lost all its leaves and is quite disfigured, while the Stephanotis is not materially injured.

I have in past years succeeded better with these plants under this treatment, although they have never enjoyed themselves. I think that the past sunless season did not mature their growth sufficiently to withstand the low temperature, believing that their capability in this respect is in direct proportion to the ripeness of their shoots. *Henry Bailey, Nuneham.*

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

Preparation of Soil for Potting, &c.—Nothing is more vexatious to the amateur gardener than to find it necessary to repot his plants, and be destitute at the same time of the right material. Or perhaps some choice plants are given to him, around the roots of which he sees fragments of a light, porous, and healthy-looking compost, and he looks all round his garden for something of the same quality, in which to pot them, in vain. This vexation would never occur if a little foresight were exercised; and we will now endeavour to initiate our readers into the art and mystery of making a mould-heap. Humble though such a possession may be thought, it will save much trouble to have one, and tend, more than any one thing besides, to ensure a stock of healthy plants.

Two things are necessary to the soil of all potted plants, with very few exceptions: it must be fibrous and porous. Turn out the plant purchased in a respectable nursery from its pot, and you will find the mould is light and spongy, admitting a free passage to the roots, each one of which may be separated without difficulty and injury from the surrounding mass. Perform the same operation on a plant potted by an unskilful hand, and how great a difference will present itself? The soil is heavy, like a mass of kneaded clay; the roots are heavily embedded in it, so that they will break rather than be separated; and water will with difficulty pass through it. Prepare your heap at once, that all your pots may in future be furnished like the first mentioned, for your own satisfaction and the comfort of the plants. First, get a quantity of turf from a loamy meadow; let it be cut rather thick, and then laid in a heap; or, as I have seen done in large gardens, let it be stacked up, and a thatch put on it, to ward off wet. If this is allowed to stand 6 or 12 months, all insects will be dead, the Grass will be decayed, and the whole will be a fibrous mass adapted for almost anything. Add to this an equal quantity of leaf-mould, or leaves thoroughly decayed, and about an eighth part of coarse sand, and you will have a compost to your hand in which any plants will flourish. If you prefer it, you need not mix more than you want at once, and can accommodate your proportions to the various productions you pot. But whichever plan you adopt, the fibre of the turf and the sand will secure you lightness of texture and sufficient drainage, so that when your plants are watered, the liquid will quickly run through.

But what is to be done before this compost heap is made, for a whole season will have passed before turf now stowed away is fit for use? The only advice we can give you is, to get materials as nearly like those recommended as possible, and make shift until you are better provided. If your flower beds have had a layer of rotten leaves put on this autumn, the frosts and rains will by this time have brought it to a nice state for use. Beg a little of that, mixed with the lightest soil you can find. Mix up small stones, bits of rotten wood, &c., all together, for those things will secure a drainage, and it is a fatal mistake to pot plants in *fine* or *sifted* soil, as some ignorantly do. Experience will be the best teacher in this matter, and a practical gardener will know as well what soil will do for a plant as a careful nurse knows what kind of bed and clothing will promote the health and comfort of her infant. *H. B.*

A LECTURE ON THE NUTRITIVE VALUE

Of Different Articles of Food.
By C. Daubeny, M.D., F.R.S.
(*Continued from page 20.*)

These calculations require, of course, to be confirmed, and are liable to be set aside by the more certain test of experience; but I know of no satisfactory trials that have been as yet instituted to determine this problem on the empirical method. The same uncertainty relates to the subject of Indian corn,* of which we have, up to this time, no analysis upon which full reliance can be placed. Boussingault gives in 100 parts:

Albumen	8.3
Gliadine (gluten)	4.5
Oil	7.0
Sugar and gum	1.5
Starch	59.0
Lignine	1.5
Salts	1.1
Water	17.1
	100.0

According to this, Indian meal will contain, of nitrogenised principles, 12.8; non-nitrogenised do., 67.5; so that it stands somewhat higher in the former respect, but lower in the latter, than Wheat flour, which, as we have seen, contains of nitrogenised principles, 10.5; non-nitrogenised, 77.3. Now the relative price of the principal kinds of farinaceous food, at the present time, is as follows:

112 lbs. of Wheat flour	14*s.* 0*d.* to 15*s.* 0*d.*	
,, Potatoes	5 0 — 9 0	
,, Oatmeal	12 0 — 13 0	
,, Indian meal	8 0 — 8 0	
,, Homony	8 6 — 9 6	
,, Maize powder	9 6 — 10 6	
,, Rice	18 0 — 19 0	
,, Meat	65 0 — 66 0	

From this Table one thing at least is clear, namely, that Potatoes are the most expensive kind of farinaceous food that can at the present time be supplied; for although the relative price of a given weight of it is to that of Wheat as 9 to 15 (for good Potatoes cannot be had for less), yet the quantity of heat producing principles in it is only from 15 to 19 per cent., and of nitrogenised, at the most, 2 per cent.; the rest being, water, 75 per cent., and woody fibre, which I imagine does not nourish, from 6 to 8.†

Now Wheat contains in 100 parts:

Water, from	8 to 12	average	10
Nitrogenised matter, viz., gluten	7 — 14	,,	10½
Non-nitrogenised ingredients, viz.:			
Starch	62.0 to 72.0	average	67.0
Sugar	4.2 — 7.4	,,	5.8
Gum	2.8 — 5.8	,,	4.5
	69.0 to 85.0	average	77.3

In short, whilst Potatoes supply only 20 per cent. of heat forming and nutritious principles, together taken, Wheat supplies more than 70 of the former and more than 10 of the latter. The value of Wheat to Potatoes therefore is at least 4 to 1; or if Wheat sells at 15*s.* per cwt., Potatoes, to be equally cheap, ought to sell at between 3*s.* and 4*s.*

It would be well if such truths as this were impressed upon the minds of the poor, some of whom, as I have reason to know, were in the habit (even during the scanty year of 1846, when the price of Potatoes had risen to 18*s.* and 20*s.* a cwt.), if their own gardens chanced to supply them with a sufficiency for their personal consumption, of continuing to use them at their meals, instead of exchanging them against a double quantity of nutritious aliment of another description. The present scarcity suggests the importance of giving them similar cautions against so unthrifty a mode of proceeding, should it still prevail in our rural districts.

It has also been proposed to substitute for Potatoes certain other root crops, such as Mangold Wurzel, Carrot, Beet, Parsnip, and Cabbage; and it becomes accord-

* Three sorts of Indian Corn are distinguished, viz., Indian meal, flour unsifted, Homony, do. once sifted, Maize powder finest and whitest sort.

† Johnston, p. 759.

ingly a question of importance which of these may be most advantageous, and how far any of them are capable of taking the place of that useful vegetable, a crop of which seems, from late experience, to be too precarious to be depended on as an article of daily and general consumption. On this subject Professor Johnston, of Durham, communicated some time back to "Blackwood's Magazine" several useful practical suggestions. He shows that every one of these vegetables is inferior to the Potato, as containing a larger per centage of water, so that weight by weight the quantity of nutritive matter in them all must necessarily be less.

In Potatoes the quantity of water is generally 75 per cent., leaving 25 for solid aliment; in the Turnip it amounts to 89, leaving only 11 for other principles; in Mangold Wurzel, 85; in Carrot, 80; in Parsnip, 79.4; in Cabbage-leaves, 92. In Potatoes the quantity of starch may be reckoned at between 14 and 15 per cent.; and of gum and sugar from 2 to 4; so that 18 per cent. of non-nitrogenised principles are present, whilst of proteine compounds the proportion is about 1½ per cent. Turnips, on the contrary, contain no starch, but only sugar, gum, and vegetable jelly (called pectic acid), together amounting to about 8 per cent., whilst the nitrogenised principles in it amount scarcely to 1 per cent. Mangold Wurzel contains of sugar alone from 10 to 11 per cent., together with a small but variable quantity of gum; the proteine compounds equally small. The Carrot contains both starch and sugar, with a little gum, together amounting to 18 per cent.; it also contains 1½ per cent. of proteine compounds. The Parsnip stands somewhat lower in the scale in both these respects. Thus we find that none of these vegetables comes up to the Potato in point of nutritive value, the Mangold Wurzel and Carrot being nearest to it, but still falling short in the following proportions:

Potato.	Mangold Wurzel.	Carrot.	Turnip.	
			Yellow.	White.
20	15	14	13¼	10½

It must not be forgotten, too, that as a larger proportion of the solid matter in these vegetables consists of sugar, a considerable loss will be incurred in boiling them, owing to the solubility of that substance in water. The greater deficiency also of the proteine compounds in these vegetables than in the Potato would be another objection to their use as the sole nutriment of the population; but by combining them with a certain proportion of Peas or Beans, that ingredient might perhaps be supplied.

I have already remarked in a former lecture, that Pythagoras, the father of asceticism, evinced a more profound knowledge of animal physiology than his modern imitators have done, in including legumes amongst his prohibited articles during periods of abstinence,* which, I believe, has never been the practice in the Romish Church, for Peas contain no less than 26 per cent. of legumine and albumen, field Beans 11.7, and Lentils in a dried state no less than 38.5. Hence it would appear, that a given quantity of many sorts of Legumes contain as much proteine as meat itself, which, as I have stated, consists, of water ¾, fibrine ¼ only; and this may account for the constant use at their meals of some species of legume, as of "*Garbanzos*" in Spain, by those southern nations who eat but little meat. Now the present price of Beans is 30*s.* per quarter, or 1*d.* per lb.,† and Peas 1½*d.*, whilst meat is selling at 7*d.* or 8*d.*; hence Peas or Beans may be recommended as useful additions to a poor man's diet, if he be driven by the failure of Potatoes to resort to other kinds of vegetables, which, as we have seen, are more watery, and less provided with nitrogenised principles. It has been proposed, however, to supply the deficiency of wheaten flour by mixing with it certain proportions of Beet-root, of Parsnips, or of other of the vegetables above enumerated. To this there can be no objection, provided the mixture is found not to be an unpalatable one, and from a calculation made by Dr. Lyon Playfair, in the *Gardeners' Chronicle*, it would appear that a considerable saving might be effected by an admixture of Beet-root, whilst the same remark would probably apply to the rest. Wheat flour contains, as we have seen, 10½ per cent. of azotised principles calculated for the formation of flesh; Beet contains only from 1½ to 2. Wheat contains 77 per cent. of matter adapted for the support of animal heat; Beet only about 10 per cent. Hence the value of Wheat as compared to Beet is nearly as 6 to 1, and as 8 to 1, according as we consider the first or the second of these uses. It may be fair therefore to state it as 7 times as nutritious.

Now 14 lbs. of Beet cost only 2*d.*, whilst the same amount of Wheat costs 1*s.* 10*d.*, or 11 times as much; so that it follows that by employing a mixture of Beet-root, a saving is effected in the proportion of 11 to 7. Nevertheless a more simple way of attaining the same end would seem to be that of substituting those vegetables for a portion of the farinaceous food hitherto indulged in; and if it be objected that inveterate habit renders a certain bulk of the latter almost a necessary, the same bulk of bread may be obtained with a smaller expenditure of flour, by making use of Oatmeal, Rice, or some one of the preparations of Indian corn.

It has been calculated that

112 lbs. of Wheat flour yield	... ...	154 lbs. of bread.
,, Oatmeal ...	... ...	336 ,,
,, Rice ...	... ...	450 ,,
,, Homony and Maize flour	...	560 ,,
,, Indian-meal ...	... ...	450 ,,

Hence though it would be absurd to consider Indian meal more nutritious, merely because it swells into a greater bulk, by absorbing more water than Wheat flour does, yet this property may serve as a recommendation to its use, by enabling us to obtain an equal weight of bread with a less consumption of flour, making up the deficiency by eating more of other and cheaper kinds of vegetables.

(To be continued.)

Home Correspondence.

Protected Trellises—In one of your recent Numbers you suggest the use of moveable sashes for a variety of objects; among others, for accelerating the ripening of wall fruit, and subsequently of the bearing wood. I tried this plan three years ago, but without any success. The reason I took to be was this, the air having free access to the trees from below and at the sides, no elevation of temperature was obtained by means of the sashes placed leaning against the trees, and it did not appear that any advantage was obtained by the transmission of the solar rays through glass. I think this is the point to be determined: "Does the passing of the rays through a glassy medium increase or diminish their intensity?" I came to the conclusion that the use of sashes simply placed leaning against a Peach wall was useless, unless I were to adopt the further measure of shutting up the bottom and sides, in fact, making a temporary greenhouse. Why is a greenhouse warmer than the external air? The exclusion of the external air is, I suppose, the cause; the interior may be called an air chamber, heated by the solar rays, and retaining that heat by its isolation. "Give air," freely, and you soon reduce the temperature to that of the surrounding atmosphere; and then where is your forcing or ripening power? If, then, it be true that a glassy medium is the cause of heat merely negatively, by receiving it freely, and retaining it when received, sashes placed on open walls can be attended with no results unless the experiment be pushed farther than is represented in your drawings, if I understand them correctly. That this is possible, I entertain no doubt; to help forward its success, I have taken the liberty of recording the failure of my little experiment. *J. S. A. C., Tulse Hill, Jan.* 15. [We are aware of this class of facts, and have experienced similar results; but we do not think they affect the question as we have put it.]

"*A New Animal.*"—"Decedente, mihi non est fiducia, cornu." I cannot believe that this animal exists as described by Baron Von Muller. There is something wrong about the supposed horn. It were to be wished that the Baron had had an opportunity of inspecting the A'nasa. How can a long horn (?) capable of being raised and lowered on the head of any animal, be a "formidable weapon!" A weapon to be formidable must be firm. But its erection and depression at the will of the bearer tend to deprive it of this most necessary quality, and would lead us to infer that it partakes of the nature of that substance seen at the beak of the turkey cock, and known by everybody to be anything but formidable. *Charles Waterton, Walton Hall, Jan.* 16.

Emigration.—Yes, there is nothing more necessary on board ship than a stock of good humour and a determination to make light of every little difficulty; and this remark I address to the married, for whom I shall now have a few words of advice, premising that every observation I have offered to single men is equally applicable to them. I shall presume that you hold your rightful place, for

> "Ill fares the hapless family which shows
> A cock that's silent, and a hen that crows."

And if your hen crows at sea, it is to be hoped you are a good sleeper, for a meddling gossiping woman on board ship is a perfect nuisance, and a source of continual vexation to all connected with her. But presuming that you have no such affliction in your partner, let me urge upon you to be very circumspect in your conduct, and carefully to avoid all gossiping about your fellow passengers. Make no hasty acquaintances. You will not be long at sea before you will see everybody in their true colours. Packed together, as people are in a ship, their dispositions soon show themselves, so that a little delay in free communication will be most advisable. This will not prevent you from making yourselves serviceable to others, if occasion for so doing arises. And although I should be sorry to make it a motive for showing kindness to those about you, yet it is worth knowing that a good character obtained on board ship for kindness, propriety of conduct, and industry, always follows the parties ashore to their benefit. You may say, how can a man on board ship be industrious? Perhaps you think, like many more, that nobody there has anything to do but to sit down and let the wind blow them along. You will not be long afloat before you find that no one need be idle. It is to be hoped that you will have a few useful and instructive books, none of that trashy sort, now-a-days the fashion, so ruinous to the youthful mind, teaching it to live in the world of fancy, and unfitting it for the stern realities of life. They will have a deal to answer for who live by creating and fostering this species of mental disease, and I heartily advise you to avoid all such reading. A few weeks' sail to the nearest, or a few months' to the most distant colony, will witness your arrival in port. Now I hope you will prepare your minds for finding things in a very different state to what they are in England. If you expect to find in Australia, or New Zealand, or at the Cape settlements, such houses, such roads, such conveniences of life as you have left behind in your native land, you will be very seriously disappointed. But I can do no more than land you, and then give you one word of advice at parting. Beware of 'long-shore sharks. You will find a set of idle fellows ready to fasten upon any stranger, and to make a prey of him. Now, do not be made a prey of by them. Attend to the advice and directions of the properly authorised party. At first you will find yourself almost bewildered with your apparently forlorn condition so far from home, and all so strange; and it will appear the more so from the habits of regularity you have been accustomed to at sea. But it is time we parted. I have held out to you no extravagant expectations. I shall not therefore be the cause of any disappointment. I will conclude by repeating what I learned only a few days back from a settler whose home is now at Port Philip, and to which he is shortly to return; I know him not, but his stamp was upon the par of a respectable gardener in a single-handed place. In reply to my questions he stated, "Work we must in Australia, and work hard, but we know no want amongst people that are sober and industrious. Drink and idleness are the ruin of all that are in trouble." He gave me a curious instance of the passionate love of our native land. An old woman had told him just as he was leaving the colony, "I would rather live here than anywhere, but I can't bear to die and be buried anywhere but in England." *Rough and Ready.*

Quicklime quite dry and fresh from the Kiln a Preventive of Damp in Plant Frames.—Having had some plants in a hotbed frame more than a month since that were damping off, I placed lumps of quicklime on pans and in garden-pots among them, and found in a day or two after its use a check of the disease. I may be too sanguine, but from the apparent beneficial result of my trials, an anticipation is entertained by me that the application of quicklime to absorb the damp from plants in pits under cover will prove a great benefit to horticulturists in many cases where no other means can be applied so readily. The lime will not be deteriorated for other purposes, and supplies of it fresh can be introduced as required. I have not a hygrometer or other instrument to ascertain the absorbing power of lime, but the absence of drip, and the revival of the plants, were facts to be seen. *Joseph Grubb, Clonmel.*

Master v. *Gardener.*—I am glad that you intend to take this subject in hand, and I am sorry that any of your gardener or master correspondents should misunderstand or mistake the objects of my letter. A little knowledge is a great misfortune, and a half educated man is not seldom conceited. I believe that there is a large class of masters like myself, fond of their gardens, and who have some experience, but who cannot afford to have a first-rate gardener, not only on account of the amount of the wages, but of the necessity of employing assistants, &c. I believe that this class consists of those who keep only one gardener, or one and a labourer, and the general impression seems to be that a guinea a week is the usual wages for such a gardener, and this is what I have paid, making some allowances for milk and finding a cottage and garden, and even this to me is a considerable expense with reference to my means. It is on the behalf of my class that I wrote, not with any special reference to myself or the man I employ; but I did not shut my eyes to the faults of masters as well as those of the servants. Your correspondent, "J. R.," says that the scale which would make respectable men seek for places would be from 35*l.* to 40*l.* per annum for a single man, and 65*l.* to 70*l.*, with house, coals, and vegetables, if married. I do not see why the unmarried man is to be paid less than the married man, unless indeed "J. R." means that the unmarried man is to have his board in the house. I observe one or two misprints in the article, but these are unimportant; but the printing *concapé* for *conoassé* (the bruised pepper) is important, as I found a friend of mine inquiring in vain for this unknown ingredient. *Dodman.* [As soon as we can spare room we shall take up this question, which we think our correspondent "Dodman" has opened fairly. Such a discussion, if conducted with good temper and discretion, cannot fail to be highly advantageous to deserving men, who should be most anxious to see the question fairly argued.]

Gardeners' Troubles.—Your excellent correspondent "Dodman's" statement is good so far as it goes, but it appears to me now that the subject is opened that much more is to be said touching masters and gardeners. In the first place, I must freely admit that there are numbers brought up to the profession only to render their own lives miserable, and themselves a plague and vexation to their employers. It is disgusting to see so many men of narrow capacity, and possessing so few qualifications for the business, let loose on the world as "gardeners." I think if master-gardeners would act with more discretion and discrimination as to those whom they take for apprentices, much good might be done; for myself I have returned the apprentice fee to many a one who I found would never be worth a "hatful of crabs." To be really worthy of the name there is not a class requiring firmer tact, perseverance, and study, than that of gardeners; but there are many would-be gardeners, slopshop gardeners, and pothouse gardeners, as, indeed, is the case with all other professions; with such as these "Dodman" has had to deal,

* The reader may take his choice of this explanation of the Pythagorean injunction and the commoner one which refers it to the flatulent qualities of this species of vegetable, or the ingenious though rather far-fetched interpretation of Jeremy Taylor, adopted without acknowledgment by Coldridge, which supposes it intended as a hint from the philosopher to his disciples that they should abstain from intermeddling at elections.

† This was the case at the time when the Lecture was first delivered, at present it is considerably lower.

and with him I could wish such things reformed. But on the other hand, there is no class of servants so subject to persecution as gardeners. By gardeners I understand men of a very different stamp from those above alluded to; the steady, the sober, the industrious, the striving too often meet with unkindness from their employers, and are subject to all kinds of injustice and unfair dealing at the hands of the other servants of the household, who look on him as quite subservient to them; and should he endeavour to speak for himself the whole establishment is in arms. [Much too true.] I had once an argument with a lady's-maid respecting a worthy friend of mine resident in Oxfordshire, and who is a well known contributor to your Paper. He had, she averred, acted with great presumption in having taken upon himself to show various articles to his master, "He ought to have brought them to the house servants." Now, how stands the fact? There is not a single article produced in the garden for consumption, with the exception of the Pine-apple, that reaches the dining-room in safety, and of the following instances I myself have been an eye-witness. Do you send in a dish of Strawberries comprising half a dozen conspicuously larger than the rest, that half-dozen has been singled out as a *bonne bouche* long before the dish arrives at table. Do you send in a dish of handsome Peaches, they are squeezed and fingered until they are unfit to be seen; what do the house servants know or care about handling them carefully? Do you grow your Celery to the size of your arm, it is reduced to the size of your finger before "John the magnificent" considers it fit to put on the table. If you remonstrate you are told that you have nothing to do with "the things" after they have entered the house. Now, I maintain that it is the gardener's province to see that "the things" are produced in a manner to please his employer and to do credit to himself. No doubt there are men who would eat, drink, sleep, and do anything (or nothing, as the case may be) to keep peace and quiet with these servants; but give me the man who cares for nothing but his profession, and by it alone desires to give satisfaction. Such men are perhaps rare; but if they were even more scarce, it would not be regretted in the housekeeper's room. In my present situation there have been six or seven butlers during as many years, and to describe them all would be needless and irrelevant, but most of them were compounds of conceit and ignorance, always trying to depreciate the gardener and everything coming from the gardens; yet such men are considered or consider themselves to be completely our superiors. Now under such a state of things many a promising young man breaks down, not from fear of displeasing his master, but in utter despair of not suiting his master's servants. *J. L. S., Bedale.*

Pruning Vines.—I am about to prune some Vines of one year's growth, and am anxious to obtain as strong wood as possible next season. It has struck me that if I were to disbud the greater length of the past season's wood, in fact all that portion of wood that under ordinary circumstances would be pruned away, I should obtain more robust shoots than by pruning; of course the disbudded portion would be cut away in the summer. The mode of reasoning by which I have arrived at such conclusions is this — the organised matters stored up in the whole shoot would, in the natural course of things, *i. e.*, if no pruning were performed, contribute to the nourishment of many shoots at the extremity of the branch not pruned. Now the question is, would the excitement of the buds at the base of the shoot produce a lateral or retrograde motion of the organised matter in the upper portion of the branch available to the shoots produced at the base. It is a purely physiological question, and I shall be glad if you will notice it. *G.* [We are of opinion that the organised matter in the upper disbudded portion of shoot will not be rendered available for the nourishment of the young shoot at the base. A cutting, in striking root, certainly returns organised substance; but this is for moisture absorbed; and if any retrograde motion take place in the sap of the budless Vine shoot, a supply of fluids must be drawn from the roots, and to these the return, if any, will tend. A shoot without buds must, however, be considered almost, if not quite, inert as regards organic functions. In another point of view it is worse than useless; in dry weather it will exhale moisture by its whole extent of surface. It will expend, but it can manufacture nothing like an equivalent.‖]

Swindlers.—You exposed the tricks of a lot of swindlers who tried to order from any too confiding tradesman, implements, seed Wheat, or other articles, and as soon as they receive the goods send them to an auction room, and sell them for whatever they will fetch. Now, notwithstanding your voice of warning, I was called upon to-day by a man who (to use his own words) requested me "to buy some things a friend of his had for sale, he did not know what they were," but handed me an invoice from W. Mitchell, Enfield Highway, dated 11th Jan., for 12 dozen Albert Rhubarb, 10*l*, and asked me what I would give for them. I inquired where they were to be seen, and he answered, "At an auction room in this town" (at the same time saying whose); he finally promised to call again, but has not yet done so. I have written to Mr. Mitchell by this post, informing him of the circumstances, and I have also informed the Secretary of our Guardian Society of the matter. Last week I was called upon by a stranger to know if I would buy 8 bushels of Champion of England Peas and 8 bushels of Fairbeard's Surprise ditto; now I know that these have been obtained in a similar way, and there is no intention of paying for them; will you, therefore, again warn the tradesmen respecting such indiscriminate credit. Last spring, an eminent firm in Edinburgh was done out of nearly 200*l*. worth of goods in this way, and a great quantity of Scotch Rye-grass was sent to these swindlers; the senders I could not find, but I told the secretary of our Guardian Society of the transactions. I have saved goods from being sent to these fellows by inducing some of the more business-like tradesmen to write to their friends on whom they could rely, to know if such orders ought to be executed, and not to simply take the swindlers' reference, which they are all prepared with, and which is to one of their own party. I had another instance last week of a party in Manchester ordering a steaming apparatus, and on being asked for a reference, he boldly named a person here, who is now in gaol for swindling. *Thomas Whalley, Liverpool, Jan.* 16.—There was a young man about the neighbourhood of London last week; he is rather short and stout, fresh complexion, of rather respectable appearance; he was once in Lord A.'s gardens, in Hampshire, but has left there nearly four years, and has not long been out of Coldbath Fields Prison, but is now at large imposing on the profession where he can; I beg to say that he is a regular impostor, as most of those are that go about in the same sort of way. *J. Stewart, Putney, Jan.* 17.

Societies.

Horticultural, *Jan.* 16.—J. J. Blandy, Esq., Vice President, in the chair. G. B. Cole and G. T. Davey, Esqs., were elected Fellows. The new Bye-laws, which had been read at two previous meetings, and suspended in the meeting room, were again read. The meeting then proceeded to ballot for the repeal of the old Bye-laws. The Vice President announced the repeal to be carried by 13 ayes to 0 noes. A ballot then took place for the adoption of the new Bye-laws; the result of the ballot was found to be 12 ayes and 0 noes; whereupon the Vice President declared the new Bye-laws to be carried according to the provisions of the charter, and to be the future laws of the Society. With regard to subjects of exhibition, Messrs. Henderson, of Pine-apple-place sent a small collection of Amaryllids, a Lælia from Guatemala, and a specimen of Sericographis Ghiesbreghtiana, which, however, did not exhibit the true character of this (when well grown) fine plant, the foliage being pale, though naturally of a deep green, and the red tubular flowers wanting in brightness. This was the more apparent, on account of the contrast it formed with the same plant from the Society's garden, the latter being in the best of health, the leaves deep green, and the blossoms beautifully bright. When well managed this comparatively new half herbaceous, Justicia like shrub must be regarded as one of our handsomest winter flowering stove plants, its bright scarlet flowers remaining long in perfection. Mr. Glendinning of the Chiswick Nursery, exhibited cut specimens of Pelargoniums, which he had proved to force well, and which are better coloured than the sorts usually employed for that purpose. Among them was a scarlet, very bright, and stated to stand heat well. A Certificate was awarded them.

Among fruit was a collection of Pears from J. Moorman, Esq., of Clapham-road, equally plump and sound as when removed from the trees. It consisted of Glout Morceau, Beurre d'Aremberg, Nelis d'Hiver, Napoleon, Easter Beurré, Beurré Diel, fine well coloured specimens, and Ne Plus Meuris. Mr. Moorman, as our readers must be aware, has exhibited a similar collection about this season for several years past, and every time in the same excellent condition, which makes it very desirable that his mode of keeping them should be made known; at present, however, it remains a secret. A Banksian Medal was awarded to them.—Mr. Davies, gr. to Lord Bridport, exhibited a plant of Black Jamaica Pine-apple bearing three suckers, on each of which was a fruit. Mr. Davies grows his Pines on the Hamiltonian system, whose utility is now beginning to be universally recognised by gardeners; but instead of planting them out in the bed of the Pine pit, as Mr. Hamilton generally does, he cultivates them in pots, which obviates the chief objection to the system, that of having the fruit all ripe at the same time. From the plant exhibited two fruit had been cut on the 28th of February last, one of which weighed 1 lbs. 8 oz., the other 4 lbs. 10 oz.; the old stem was then cut down, and the suckers which it had thrown out produced the fruit shown, each of which apparently would hardly weigh less than 4 lbs. From what has been stated, the advantages of the Hamiltonian over the ordinary mode of fruiting Pine-apples will be perceived, and the labour required in growing them on the former system is trifling compared with that required in the old plan. It was mentioned that the plant exhibited had not been shifted for two years. A Knightian medal was awarded. Mr. Wright, gr. to Mrs. Rushout, of Wanstead, showed a Cayenne Pine-apple weighing 4 lbs. This was stated to have been grown from a gill in 20 months. Mr. Davis, of Oak-hill, East Barnet, received a Banksian medal for bunches of West's St. Peter's Grape, beautifully coloured and ripened.—Mr. Bevington, gr. to M. Philips, Esq., of Stratford on-Avon, sent two sorts of unknown Grapes called black and white Barbarossa Grapes. They had been received from the Continent, along with other sorts, which all proved worthless except those exhibited. The black kind was large both in bunch and berry; it weighed 2 lbs. 9 oz.; it was stated to be a good bearer, and to surpass anything in that part of the country for keeping on the Vines without losing flavour or sinking in the size of the berry, a fact sufficiently apparent from the appearance of the bunch exhibited. It proved inferior in flavour to West's St. Peter's; but keeping, as it will, in perfection for at least a month to come, it will be a useful addition to our late Grapes. The white variety looked like a Muscat, but had none of the Muscat flavour; it weighed 14½ oz. A Certificate was awarded for these.—From Mr. Wilmot, of Isleworth, came an impression of a Vine leaf, measuring 21 inches the one way and 18 inches the other. Its history will be found in another column of to-day's Paper.—Mrs. Rankin, of Dulwich, showed three Citrons, fine specimens, from a greenhouse, for which a Certificate was awarded. A box of Ash-leaved Kidney Potatoes, sprung and ready for planting, came from Mr. Cuthill, of Camberwell. These were sent to prove, by the strength of their shoots, the fallacy of a statement made by a correspondent, viz., that small Potatoes will not produce so good a crop as larger tubers. Mr. Cuthill contends that they will, and in this it was mentioned he is borne out by a series of experiments which had been tried some 16 years ago in the garden of the Horticultural Society, the result of these being that small sets yield as good a crop as large ones.—Mr. Roberts, of Eastcheap, sent wire guards and specimens of earthenware pipes split in two, which fitted into sockets also split, for putting round plants, more especially Strawberries, with a view to keep their fruit clean; also long pipes of the same description for blanching Celery, Cardoons, and for other gardening purposes. Samples of enamelled labels were again shown. It was stated that they will endure frost, but that they break with a sharp knock; they are, however, beautiful labels, and, if they can be made cheap, will be found useful in plant-houses, if not in the open garden. From the Garden of the Society came flowers of Chimonanthus fragrans and grandiflorus, finely flowered specimen of Lycaste lanipes, and other Orchids, two Cape Heaths, three varieties of Epacris, the same of Correa, a pale variety of Gesnera Douglasii, and the Sericographis Ghiesbreghtiana mentioned above.

The Chairman drew attention to the great loss which the Society had sustained by the death of the Earl of Auckland, who had for many years been a most active member of the Council; and he announced that the next meeting would be made special, for the purpose of electing a successor to his Lordship. Mr. Hutton, on the part of the Council, expressed their deep sense of the valuable services which had been rendered to the Society by the deceased nobleman, who might be truly described as one of the most able, useful, and sincere friends which horticulture had ever possessed.

Garden Memoranda.

Mr. Wilmot's, Isleworth.—It is an undeniable fact that the London market gardens are the best schools to learn the art of kitchen-gardening in. In them is practised not only cultivation of the highest order (as Covent Garden amply illustrates), but it is conducted with a profit to the grower, a circumstance which renders these gardens seminaries of the first importance; for, although in some princely establishments things of unusual excellence may be obtained, yet this is by a combination of expensive appliances, or sometimes by accident, profit of course being out of the question. Such is, however, not the case with him who lives by marketing his produce. With the market-gardener, all that labour can effect and economy suggest is now required to compete successfully with the productions of the foreign cultivator, now copiously sent to our markets. This must be evident to every one who has an opportunity of witnessing the vast quantities of fruit and early vegetables which are every year imported; and be it remembered those importations are the produce of the natural soil and climate of the several countries from whence they come, and where labour is at least very much cheaper than that which is employed in our own country. In England, expensive erections and artificial heating are required, to obviate the difficulties of our climate, both of which our more southern neighbours can dispense with. These adverse circumstances the British market gardener has to brave; but he does brave them with impunity: and in no establishment in this country is this more successfully accomplished than in the one which heads this notice.

Mr. Wilmot has been long known to be one of the first cultivators in this country, and his forcing establishment, in point of extent, is, perhaps, unrivalled. If such an extent as he possesses of horticultural erections was not conducted upon the best principles of management, disorder would soon become apparent, and a reduction in the establishment necessary; but so far from this being the case, Mr. Wilmot is annually adding to it; and by this means he is enabled to prove the value of almost every new mode of cultivation which is propounded for the better management, more especially, of the Pine-apple or the Grape, both of which he has made his peculiar study for nearly the last half century. He has also tested the merits of almost every system of heating which has been contrived; and they have been many. Every variety of Pine-apple and Grape procurable in this country or abroad has been grown by him, and its merits defined. Soil of every texture that could be obtained within 20 miles of his establishment has been employed in his long career. There is scarcely a manure of any description that has been suggested as efficacious in horticulture that has escaped

his notice, and a great variety of experiments with them has been conducted by him. In the formation of Vine borders he has tried all kinds of materials, and all the different modes of applying them, and even up to the present day, the same enthusiasm which directed his early efforts in horticultural improvement pertains to him still. The present notice shall be confined to the Grape Vine; the system which he adopts in producing enormous lots of Pine-apples may form the subject of a future paper.

Mr. Wilmot's Vineries are variously constructed, but are generally 90 feet long each, and all or nearly all of them are heated with hot-water pipes, but sometimes the flue is carried along part of the house. Mr. W. ascribes little value to the mode of heating, provided sufficient power can be commanded. A good well drained border is the point on which he depends most, but in this item of Grape culture a curious circumstance has lately presented itself to him. From time to time he had collected a great number of what were given out as varieties of Black Hamburgh, and in order to prove them without loss of time, he planted them, two years ago last June, at the back of two of his low Pine houses, extracting a brick out of the wall for each Vine, and introducing their noses into the house. Two houses 90 feet long were so planted the same day, and under precisely the same circumstances; in fact, both houses were planted in less than two hours. The object being merely to get a bunch or so off each Vine, in order to ascertain their relative merits, instead of an expensive border being prepared, a hole was dug with a mattock and spade barely sufficient to receive the ball when turned out of the pot. This hole was made in the hard beaten path, which is composed principally of clinkers, cinders, and gravel. The Vines grew away immediately and fruited splendidly the following year in the temperature of the Pine stove, all proving, as was expected, to be one and the same kind of Hamburgh. Last October one of the pits began to break. The other (January 9th) is now in about the same stage of forwardness as the other was in October. Mr. Wilmot can assign no reason for this extraordinary freak of Nature. The foliage is of unusual size, measuring 21 inches the one way and 18 the other, and the Vines altogether are very vigorous, bearing a capital crop half swelled, and which will ripen by the end of February.

It is known to gardeners who force their Vines during winter, ripening them exclusively in the dullest and darkest days, that the foliage is more like that of Currants than of Vines, and that the crop is scanty. But Mr. Wilmot has an expansion of foliage (21 by 18 inches) which Vines rarely produce in May, and a crop sufficiently heavy for autumn fruit. When it is recollected that the border—poor and unfavourable in the beginning—has not been fed with putrid horse-flesh or other enriching materials, the thing seems inexplicable, and those who have paid attention to this subject will confer no small obligation by solving this rather knotty matter. Mr. Wilmot, with all his experience, fails to account for it. *G.*

Calendar of Operations.

(For the ensuing week.)

GENERAL REMARKS.

In a precarious climate like ours, we, of course, have weather to which it would be unfair to expose a labouring man. But under proper management many things may be done in unfavourable weather which will tend materially to forward the future work. Among these may be mentioned making besoms, coal baskets, Orchid baskets, and rustic baskets for the flower-garden and shrubbery in summer; making, painting, and writing or printing labels; washing and painting sashes and other woodwork; washing pots, breaking crocks, tying mats, sorting roots and fruits, &c., &c.; but to carry this work on to the best advantage, a sufficient stock of the requisite tools and materials should always be kept ready, that the men may be turned in to the work at a moment's notice. If this precaution be not taken, much of the time which ought to be occupied in doing the work, will be lost in setting about it.

PLANT DEPARTMENT.

Orchids.—These should be carefully watched at this season, as many of them will be starting into growth. As soon as this is perceived in any plant, it should be repotted or supplied with a larger block or basket if necessary. In shifting Stanhopeas or other Orchids which send their flower-stems through the soil, shallow wire baskets should be used without potsherds, charcoal, or other impenetrable material. I find them succeed admirably in lumps of turfy peat, mixed with rough flaky leaf-mould, and plenty of clean sand, which is necessary to keep the leaf-mould and peat from becoming too spongy. The surface of the soil and the inside of the basket should be lined with sphagnum, which protects the roots from sudden gleams of sunshine, prevents the soil from falling out, and, by its powers of absorption, keeps itself and the soil sufficiently moist. That the roots are satisfied with it is evident from the beautiful network which they form throughout its entire surface. Maxillarias, Lycastes, Gongoras, &c., succeed better when treated in this way than they do in pots, but to the soil of these a good proportion of charcoal and potsherds, or pieces of sandstone, may be safely added, as their flower-stems are altogether above the soil. The sphagnum absorbs nearly sufficient moisture from the atmosphere of the house, and by doing away with the necessity of watering, extremes are avoided, and the soil is kept in a uniform healthy state. Syringing will be useful on fine mornings; but this should be made to fall on the plants like a gentle shower of dew, instead of being driven into them with a man's full strength. The plants which are attached to blocks will need an occasional slight syringing, to prevent them from shrivelling, as it is yet too early to keep up a sufficiency of moisture in the atmosphere. Water must be very carefully used, and should always be of the same temperature as that of the house. The rain which falls on the roof should be conducted into a tank within the house; it is preferable to river or pump water, which generally contains eggs of insects injurious to Orchids. For the further protection of the plants from their ravages, the peat and leaf-mould should be thoroughly baked, and the sphagnum immersed in boiling water, in order that all animal life may be destroyed before they are used. This points out another advantage which the wire basket has over the bundle of old fungus-coated sticks in which plants are commonly suspended; the latter, besides being unsightly, affords a certain harbour for insects. As the plants commence their growth remove them to the warm end of your house, if you have only one; but it is impossible to grow them to perfection unless you are able to keep the dormant plants cool and dry, and those in a growing state comparatively warm and moist.

FLOWER GARDEN AND SHRUBBERIES.

Active preparations should now be made for propagating, by getting pits, frames, soil, and pots ready. In taking cuttings off bedding plants, a little care in correctly naming and distinguishing the different kinds will be well spent. It is very tantalising to find the harmonious arrangement of your colours destroyed, for want of a little more care on the part of your propagator. As this is the season for making alterations in the laying out of the ground, and as these improvements are of course intended to be permanent, it will be found more satisfactory to do the work well, although it should occupy a little more time. These remarks more particularly apply to the formation of the ground, the preparation of the soil, and the taking up and replanting of choice shrubs.

FORCING DEPARTMENT.

Vineries.—A little ingenuity is necessary to make young rods break regularly at this season; it may be managed by binding them down to the bottom of the rafter, and curving them in such a manner as to elevate the buds nearest the base, above their more precocious brethren, which, in their turn, must be taught regularity by the same method. After the buds begin to break, let the amount of heat and moisture be carefully regulated, not exceeding 55° by night, until they are all broken, nor 65° by day, unless with sun-heat. Particular care will now be necessary to prevent weak and slender shoots, as an undue amount of artificial heat for a few days at this season will do irreparable injury in this respect. Rub off all buds which do not show fruit, as soon as they are distinguishable, except where an additional spur is required. If useless shoots are allowed to remain, they exhaust the stored up energies of the plant, which ought to be devoted to better purposes, and by the time they are able to elaborate sap, either for themselves or their neighbours, they must be cut out of the way, to allow the bunches a chance. It should be remembered that only a certain area of foliage can be exposed to the direct influence of the sun's rays, and as much as possible of this space should be monopolised by the leaves of the fruit-bearing spurs. It is no less a disadvantage to retain too many of those which do show fruit; if the Vines happen to be in first-rate condition, probably every bud will show a bunch or two, but to allow them all to remain would cause disappointment in this year's crop, and materially injure next year's also. As soon as the most promising shows can be distinguished, they should be reduced to a number consistent with the present power and future strength of the Vines, in no case leaving more than one bunch on a spur.

KITCHEN GARDEN.

Salt.—I can strongly recommend a dressing of this manure, except on very stiff land; to grow Asparagus and Seakale in perfection it is essential, and I find a general improvement effected by its use in the bulk and quality of our culinary crops. It also destroys snails and other insects, by which gardens and gardeners are troubled. For general crops, about ¾ lb. to the square yard will be sufficient; this should be sprinkled evenly over the ground when it is bare, and, if dry, forked in immediately. To the crops of Seakale and Asparagus twice this quantity may be given; it should be spread over the beds in winter, and either forked in at once or left to be dissolved by the rain.

State of the Weather near London, for the week ending Jan. 18, 1849, as observed at the Horticultural Gardens, Chiswick.

Jan	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday 12	17	30.136	29.879	58	46	37.0	S W.	.07
Satur. 13	18	29.736	29.586	53	49	51.0	S W.	.05
Sunday 14	19	29.849	29.174	56	32	44.0	S W.	.08
Monday 15	20	30.015	29.966	55	31	44.0	S W.	.00
Tues. 16	21	29.964	29.720	52	42	47.0	S.	.02
Wed 17	22	29.945	29.772	54	27	40.5	S W.	.05
Thurs 18	23	30.00.	29.951	60	46	48.0	S.W.	.00
Average		29.951	29.784	51.1	37.5	44.2		.27

aJan. 12—Frosty; fine, overcast, rain at night.
— 13—Densely overcast, rain.
— 14—Rain, boisterous, with rain in afternoon; clear at night.
— 15—Clear, slightly overcast, fine; clear at night.
— 16—Fine, rain; mild with slight rain
— 17—Rain; densely overcast; clear; slight frost.
— 18—Fine; cloudy; boisterous and overcast at night.
Mean temperature of the week 9 deg. above the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Jan. 27, 1849.

Jan.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 21	42.6	33.2	37.9	10	0.48 in.	2	3	2	3	5	3	4	1
Mon. 22	43.5	34.1	38.8	11	0.67	1	1	3	3	4	2	3	2
Tues 23	44.0	34.0	39.0	10	0.27	1	3	3	3	4	2	2	4
Wed. 24	43.9	32.5	38.2	9	0.51	2	3	2	1	3	2	4	1
Thurs. 25	43.5	33.0	38.2	9	0.59	1	3	2	1	3	3	4	3
Friday 26	44.5	33.5	39.0	10	0.90	1	2	3	1	3	3	3	3
Satur. 27	44.4	32.7	38.6	9	0.34	1	4	2	2	0	4	1	3

The highest temperature during the above period occurred on the 23d 1844—therm. 58 deg., and the lowest on the 27th, 1827—therm. 17 deg.

Notices to Correspondents.

Books: *L T B.* No such book on Heaths as you require is in existence. You cannot have better advice than is given in the capital articles by "G.," published in our columns during the past year.—*C C R.* Buy Sydney's books on Emigration, and the "Emigrant's Guide to New Zealand," just published by Parker. The dried plants have no market value in London.—*Young Inquirer at Moss C.* Begin by learning the common routine of a gardener, as a guide to which Nell's Gardener may be used, or any such book. Then study the rationale by the "Theory of Horticulture," and work diligently at Loudon's "Self-Instruction for Young Gardeners." The *Gardeners' Chronicle* is misfolded by the newsman, to whom pray address your complaint. You will find, upon examination, that it is printed with perfect accuracy.

Calceolarias: *W H C.* Try the following 12 varieties:—Kinghorn's Exemplar, Masterpiece, Van Tromp, Julia Washington, Conrad, Refulgens, and Ardens, Standishii, Holmes, Tricolor, Holmesii, and Sir T. C. Shepherd.*

Carrots: *Halifax* writes thus—"You perhaps will be kind enough to tell me why it is that Carrots are sound, good, and clear of grub when grown among Onions? Carrots have proved a complete failure grown along side of those among the Onions." We know of no explanation, which must be sought for on the spot, if the fact be as represented, and not a mere accident.

Epacrises: *J Mashuyre.* Your seedlings are pretty, as all Epacrises are; but they exhibit no improvement on the kinds already in cultivation; No. 1 is the best, and No. 2 the worst.‡

Exotic Fruits: *W B.* You will not make any—except Oranges and the like, or Guavas—fruit on a shaded back wall. Those most worth having are Mangos, Bananas, Longans, Rose-apples, Cherimoyers (hard to set), and Chinese Jujubes.

Glass Pipes: *Scotus.* We are unable to answer the enquiry. Perhaps Messrs. Hartley, of Sunderland, could give the information.

Heating: *Anon, Ireland.* For such houses as yours Polmaise is perfectly well suited. If you are near Dublin we would advise you to consult Mr. Moore, of the Glasnevin Garden.

Herbaria: *Anon.* Apply to Mr. Pamplin, Greek-street, Soho. Bentall's paper is the best for drying plants, it has been frequently advertised. Various methods of drying plants are adopted; a very good one is described in our columns for 1847, p. 704. Always observe the natural order in arrangement. We cannot recommend tradesmen. All GOOD opticians supply microscopes, &c., that called Ellis's is the sort commonly used by working botanists, if they do not require achromatic instruments.

Houses: *A Sub, Aberdeen.* Let your houses run east and west.

Hedges *H B.* Prune your Beech hedge now. Thorns will form the best guard till the new shoots are long enough. The disadvantage of all evergreen branches is that they soon die, obstruct light, and offer no defence.

Kidney Beans: *Editor.* No fungal parasite is visible on your leaves; they look as if they had been kept too damp at one time and too dry at another. If this is not the cause it probably lies in the soil. Water some plants with very weak muriate of lime, and see whether the same effect is not produced in time.

Manures: *Late.* According to the analysis, No. 2 is the best; but there is nothing like Peruvian guano, or good stable manure.—*W C K.* Liquid manure is wasted if it is given to plants not in full growth, or just beginning their growth. This is true in all cases. It applied at other periods it will have some effect, but not so much. Azaleas like a solution of cow-dung, but not strong manure. Your leaves cannot heat while drenched with cold water. Drain off the water; prevent the access of more; and they will soon heat.

Names of Plants: *W C.* The plant looks like a variegated variety of the Snowberry. We are unacquainted with it.—*H M* has much to learn, if he considers the specimens of Ferns sent for name to be perfect plants. They are merely seedling plants of the most common British Ferns: viz. No. 1, Lastrea dilatata; No. 2, Polystichum lobatum; No. 3, Polystichum aculeatum; No. 4, Lastrea Filix-mas; No. 5, Lastrea dilatata. *S.*—*F C.* It is Eranthis hiemalis; the common name of Winter Aconite indicates nothing.—*Idem.* We really cannot continue to answer inquiries about wretched fragments, dried, broken, and not in a state for determination. Miserable dried specimens would not be sent if you understood the value of time. 1, May be a morsel of Malabaila graveolens, or it may not; 2, Silene nutans; 3, Mentha—perhaps pulegium coming into flower; 4, ? ¹; 5, perhaps Œnanthe pimpinelloides.—*Saffron Walden.* Sophronitis violacea; Oncidium divaricatum.—*M H A.* Pray read our reply to "Idem." 1, Rumex acetosella; 2, Cerastium vulgatum; 3, Melampyrum sylvaticum; 4, Daphne Laureola.—*S T A.* A Gesnera, and apparently G. lasiantha.—*P B.* 1, Eulophia squalida; 2, Catasetum, one of the many varieties of cristatum; 3, Bolbophyllum umbellatum; 4, Mormodes lineatum; 5, a variety of Oncidium sanguineum.—*Rowdley.* We must beg you to give the localities where your Grasses were found.—*P M.* Erica hiemalis.

Neapolitan Violets: *A Gardener.* Your treatment is correct, with the exception of keeping them close; they should have air on all favourable occasions.‡

Physiological Questions: *Amateur.* We will endeavour to find room for an answer next week.

Pruning: *Shem.* You correctly attribute the superabundant growth of young wood to the reduction of large branches last winter. You must thin it out, cutting one of two shoots clean out where they are very near each other; shorten the others to various lengths, recollecting that generally three shoots will push immediately below where you shorten. Now is the time to render the whole head sufficiently thin; and if you wish to have fruit instead of successions of young shoots, you must attend to summer pruning. With regard to your neglected espalier trees, you must reduce the irregularities as much as possible, and keep similar tendencies in check by summer pruning ‖

Misc: *Piscator* forgets that to carry out his views would require Sunday to be the preparing day. It was part of our original announcement that political articles should never find place. One shilling each will be given for Numbers 3, 1841, and 36, 1846.—*G G.* We are unable to inform you; but a letter addressed to him, under cover, to G. Crawshay, Esq., Colney Hatch, will no doubt be forwarded. We are much in want of a *good* account of the system. The Christian name is Richard.—*R C.* Yes; 6d. each.—*T Davis.* Mr. Yexley, Morton, Surrey. ‡—*Adam* and *T A.* Next week.

SEEDLING FLOWERS.

Pelargonium: *H J W.* Your seedling is pretty in colour, but it wants size; nor will it rank in other properties with the present improved race of these beautiful flowers.*

DR. RYAN'S CHEMICAL MANURES,
Manufactured solely by Messrs. STRETTON, HAYWARD and Co.,
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MESSRS. STRETTON, HAYWARD AND Co., have entered into an arrangement with Dr. RYAN, Professor of Chemistry at the Royal Polytechnic Institution, London, whose exclusive services are retained to superintend the manufacture of Chemical Manures, upon entirely new and scientific principles, based upon the analysis of soils and the production of fertilising agents suited to their various properties and the nature of the desired crops. In submitting Dr. Ryan's latest discoveries to agriculturists, Messrs. STRETTON, HAYWARD, and Co. can with the utmost confidence state, that their Manures will, after the severest test, be found to possess far greater fertilising powers than any hitherto offered to the public, which, together with their cheapness (being 40 per cent. under the price of Peruvian Guano) must entirely supersede all other Manures. By the use of these fertilizers those crops which so frequently suffer from the ravages of the fly and other insects are in a great measure protected. Horticulturists are particularly recommended to use "Dr. Ryan's Garden Manures" for general purposes. Sent, carriage free, to any part of the kingdom, at

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SPADE CULTIVATION AND DRAINING.
BY HER MAJESTY'S ROYAL LETTERS PATENT.

W. A. LYNDON, Minerva Works, Birmingham, Manufacturer of Patent SPADES, SHOVELS, and DRAINING TOOLS.
To Nurserymen, Gardeners, and Agricultural Labourers, these Spades will be found invaluable, and calculated to lessen the labour of digging very materially; they are warranted to carry a knife edge which will neither break nor turn, wear perfectly bright on the surface, and last as long as three spades or shovels of the ordinary kind, and are now coming generally into use amongst the principal Nurserymen, Market-gardeners, and Agriculturists in the kingdom.
The Draining Tools gained two prizes at the Royal Agricultural Society's Meeting held at Northampton, 1847, since which time they have been awarded prizes and commendations from all the local societies where they have been exhibited.
Spurious imitations of these Tools are being made, called Improved and Cast Steel Spades, Shovels, &c, and labelled similar to the above. None are genuine unless bearing the name in full upon the strap and label.
Spades, Shovels, Draining Tools, Digging, Potato, Manure, and Hay Forks made to any pattern, and adapted for every description of soil.—To be had of all Ironmongers in the kingdom.

The Agricultural Gazette.

SATURDAY, JANUARY 20, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Jan. 25—Agricultural Imp. Society of Ireland.
THURSDAY, Feb 1—Agricultural Imp Society of Ireland.
FARMERS' CLUBS.—Jan. 24: Plympton St. Mary. Jan. 26. Stranraer.

A MAN may be a preceptor without being an exemplar: and it is only in relation to moral truth that in such a case he would have cause for shame. Physical truth may be taught by one who is unable to develop it in practice: agricultural *truth*—by a bad farmer.

We hope that Mr. MECHI, and other amateur farmers and agricultural writers, will not think that we are intending this as a suitable introduction to a discussion of their merits as teachers. The remark is made to *meet* a discussion already existing, which we must say has been carried on with more energy than good feeling in the pages of a contemporary. Truth in farming, as in every other subject, will, no doubt, eventually assert itself by its results; a profession of truth here, as elsewhere, must be tested by its fruits: but the test must be fairly applied. Truth may exist in practice or science, though such an one should be unable to prove it; and a doctrine may be true, in economics, though this man or that were unable to make it profitable. And one unfortunate circumstance connected with our agricultural progress is, and always has been, that those who are the most likely to see farthest into the regions of unknown truth are the very men least likely to furnish that kind of proof of it in which alone farmers as business men are generally able to confide. Men having the enlarged views which an acquaintance with Nature in her other departments confers, being guided by a knowledge of those great lines of truth which traverse the comparatively unknown land of Agriculture, certainly are the most likely to predict the course which agricultural progress will take; and, unacquainted, till after a long and expensive experience with those details of management on which, for the most part, profits depend, they certainly, however just their views may be, are the least likely to develop them with financial success. But, surely, it cannot be until a doctrine has been tested with all the tact and skill of an accustomed practitioner, as well as with the goodwill of its advocate, that its profit or loss can be held to determine its value.

How comes it, then, that such a demand upon our amateur farmers exists for BALANCE SHEETS: for, if we had them, they could prove nothing but personal skill or the want of it—points of no public importance? The balance sheet is, no doubt, the true test of the farmer's, as of every other business: and if any one well versed in the business, and anxious to improve it, will give us one showing *his* development of the views of our leading scientific teachers, we shall be heartily glad to publish it; *his* failure in an intelligent attempt to make these doctrines profitable, might well diminish what confidence they inspired, but the failure of an inexperienced farmer, though he were himself their author, ought to have no influence upon us whatever. And we doubt if it be good policy on the part of our scientific men to prejudice their doctrines by publishing the money results of their experience, on which, as we consider it, a most unreasonable curiosity exists.

We must not, however, do ourselves the injustice of omitting to refer to MR. HUXTABLE'S balance sheet, or to thank him for his continued efforts in the cause of agricultural improvement; but we have no hesitation in saying that, whichever way its result had pointed, we should not have allowed it to affect our opinion of his agricultural teachings. Let the soundness of these be tested by a man of such experience and skill in detail, and of such desire for progress in principle, as would have ensured full justice being done to them, and the results which *he* should obtain would be instructive. But when we find a correspondent, as in page 28, asking for the money-result of Mr. HUXTABLE'S experience from the commencement of his farm practice—the amount by which all his agricultural experiments must have landed him in loss—this exhibits such an entire inappreciation of the real value of testimony or evidence in respect of agricultural doctrines, that we could wish no balance sheet had been published at all: for it must mislead all but those who remember the circumstances under which it has arisen. We believe that the real office of the hearty, scientific, amateur agriculturist, who now urges his views on farmers at public meetings, is to point out the course in which their efforts at self improvement may be most usefully directed—to give his own experience, no doubt, on particular points of the art—but, above all, to try and impart some of that energy and hopefulness which, as much as *information*, are agricultural *desiderata*. Let him do us the favour of recording the results—economical and otherwise—of the experiments he performs; and, till people appear able to separate the two, let him do his own doctrines the justice of silence on the money-results of his general management.

Let no one imagine that anything but simple desire for the elucidation of agricultural truth actuates these remarks; we have sincere respect for the men who have broken up the dull routine of farming life, and induced so much thought and discussion on agricultural topics during the past few years, but this shall not bias our candid opinion of their performances. And, while grateful for their many additions to our stores of agricultural information, we must remind them of the mischief as well as the good which an enthusiastic agricultural advocacy may do. Let owners of land be informed by it of all the details and successes, and profits of farming, to the utmost—the more thorough their knowledge of all these subjects, the better for their tenantry: but the publication of exaggerated views on any of them should be carefully avoided; they would not injure those whose landlord has personal experience to guide him; but the industrious farmer has been ousted before now to make way for men of other professions, who have been lured, *to their own injury*, into the offer of an unjust rent by the prospects such statements held out.

THE CHEMISTRY OF AGRICULTURE has all along received heartier agricultural recognition in Scotland than in England. And there is no such need as exists here to appeal for its support in the North. After the sort of outfield cultivation which for five years it has received from them, the Highland Society have resolved on a more intimate embodiment of its objects within their own department: and the Scottish Agricultural Chemistry Association has, with we believe the good understanding of its members, now assumed the form of the 'Chemistry' Committee of the Agricultural Society of Scotland. The appointment of chemical officer has been conferred on DR. THOMAS ANDERSON, a gentleman well known to scientific men for his knowledge and experience as a chemist, and for the energy and skill which have enabled him to extend the science in many important particulars: and these are qualities which will no doubt soon make him equally well known to agriculturists. The whole change, we are glad to know, so far from checking, appears likely to foster that spirit of intelligent agriculture of which Scotland has so much reason to be proud.

But amid the congratulations which seem appropriate to the new birth, as it may be called, of the Scottish movement, we ought not to omit reference to the Society which has just ended its useful career. The Scottish Agricultural Chemistry Association will live long in the history of British agriculture, not only for the positive usefulness of its deeds—a history of which we are soon to have from Professor JOHNSTON—but for the illustration it has given of the high standing of that body of cultivators by whom it was originated and has been supported. It is earnestly to be desired that the energy of its first years may revive to animate the officers and supporters of its present form of existence, and that Scotland, having, by *her* example, induced the establishment of similar institutions in England and Ireland, will maintain her position as leader in the progress of intelligent agriculture.

No one will deny that cultivators and chemists ought to preserve the same degree of relationship as exists between their respective professions: and we have no hesitation in saying that no relationship can be closer than this. "Agriculture is a chemical manufacture:" and it is no answer to this argument that Life, which all recognise as a real agency, puzzles the merely chemical explainer of our processes, and confounds his attempts to predict our experience. This should only redouble efforts at the many chemico-agricultural problems which Life has proposed for solution. The difficulties she presents to the chemist will not deter *him*, if agriculturists will only patronise his attempts to overcome them. And we appeal to those interested in British soil, whether in England, Scotland, or Ireland, to assist in their respective countries the only agency able to elucidate the methods by which its riches are to be developed. They must desire to act in accordance with strict reason and justice in this matter; and, on that very ground, we submit, they should suspect those feelings towards it which the reaction consequent upon exaggerated ideas of its importance has occasioned.

ON BOX FEEDING.

THE AGRICULTURAL GAZETTE is fortunate in having so witty a correspondent as the Rev. Mr. Wilkins. His contributions are, I have no doubt, eagerly read and enjoyed by great numbers of your subscribers. This places considerable responsibility upon himself, and makes it all the more important that his doctrines should be trustworthy and correct. I do not think that they always are so.

For instance, he appears to have an unreasonable antipathy to the method of cattle feeding and housing which Mr. Warnes has advocated—an antipathy which, however appropriate as regards the specimens of the system which he describes as existing in his own neighbourhood, is, I am sure, entirely unjust if held towards the system generally. He correctly describes the condition in which cattle should be kept; and on this point his opinion is that of everybody else: but the thing of which it appears difficult to convince him is, that this very opinion is leading to the more extensive adoption of that very system of box feeding which he appears to condemn. It is because the manure from our feeding oxen is thus capable of being made with less waste, *without* tainting the air or fouling the cattle, that we have substituted the box system for stall feeding on this farm; and it is *because* we can make more beef upon it at less expense, that we have substituted Mr. Warnes' Linseed compound for the oilcake formerly used.

Mr. Wilkins may not yet have seen cattle dry and healthy in boxes where the dung is allowed to accumulate under them; but I can assure him they may be kept so. One piece of positive evidence necessarily outweighs any amount of that which is merely negative. One witness to the existence of a fact is necessarily believed, notwithstanding a number of others who can only say that *they* have never seen it. But there have been *many* witnesses to the success of box feeding, and so far as I remember to have read in your pages but one to its failure; though, to be sure, his energy and hearty activity make him as good as a host. The failures Mr. Wilkins has described must have been owing to the neglect of the circumstances which have been attended with success here and in many other cases. Give an ox in a sufficiently large box, say 10 feet by 12, a sufficient quantity of straw—say 20 lbs. a day—and he will be always dry and comfortable; and the house containing many such boxes will, excepting the once in three months when it is being cleaned out, be healthily fresh and without any ammoniacal or disagreeable smell. That is our experience here. The case described by Mr. Wilkins where the liquid had oozed out and covered the floor of the Turnip house to a considerable depth, could only have happened by such neglect as I should hardly have thought possible. I am perfectly confident that, using the quantity of litter I have mentioned, there

could not be the least waste of the liquid: our boxes are many of them paved, and some of them are on a "porous soil;" this does not make the slightest difference either to the cattle or to the manure, which is removed from under them at the end of ten or twelve weeks as dry as a wet thing *can* be.

The phrases, then, so frequently occurring in your correspondent's amusing contributions are, I have no hesitation in saying, likely to mislead. Cattle fed in "boxes" need not be let down into "deep dungeon graves," nor are they kept "weltering in their own excrement;" and not to dispute about *words*, what can be more ludicrously untrue than the idea conveyed by "bolting that slippery pudding in those dark and dismal dungeons?" *John C. Morton, Whitfield.*

HAVING for some time carried out the system of box-feeding, and seeing in the *Agricultural Gazette* the continued attacks on it by Mr. G. Wilkins, of Wix, though much averse to newspaper controversy, I cannot help making a few observations in contradiction to his statements. That he may have met with all the evils he publishes I do not for a moment doubt, and that he is only anxious to deter other persons from expending capital in so bad a mode of wintering and fattening beasts, I also fully believe; but with all due deference to him, I must say that if he has had only such experience in box-feeding as he publishes, he has only seen one side of the picture, and that truly a most miserable one. That bullocks can be expected to thrive amid dirt, wet, and putrifying odours, such as he has always met with, is quite out of the question; but I have never in my experience found any of those causes existing. On Wednesday last I went, in company with another farmer, a large feeder of cattle, to see the boxes of a mutual friend, and on our arrival found 30 beasts in well littered, dry, clean, comfortable, and sweet boxes; each beast having a space of 9 feet by 10 feet to move in, with good manger, to move up as he rose with the manure, and a good supply of water in an iron cistern, when he chose to drink. They were then eating with evident relish the so-called "mysterious hodge-podge," and half an hour afterwards on our entering were all down at lair, and showing such signs of comfort as I never saw surpassed in any bullock-shed, of what construction soever; and at the same time they were as clean as they could possibly be in a Grass ground, and not plastered over, as we see them when tied up by the neck. But perhaps the best evidence in favour of box-feeding was this, that the remainder of the bullocks on the farm, of the same age and quality, and alike in every respect, were disposed of partly in a straw-yard with an open hovel, and the remainder in a Grass ground, close adjoining the homestead. They had all been fed for the same length of time on the same quality of food, and the result is this; that those in the boxes are going away fat to market, those in the straw yard have eaten one-fifth more food, and are only in good store condition, whilst those in the Grass ground were even more backward in condition. I cannot help thinking that such a result must speak in favour of box feeding, and such, I am sure, was the opinion of my friend, a person of considerable experience, who said when he came away, "That is the perfection of bullock feeding;" and upon this principle, that each beast ate, drank, and rested when he chose, without being molested by his companions, and that he was kept much cleaner than in an ordinary bullock-hovel or straw-yard. With respect to putrifying and nauseating animal odours, nothing of the sort existed, although the manure was three feet deep; neither did I ever know such to be the case, so long as the manure was not allowed to rise above the brickwork of the pit, &c. The place certainly did not resemble a perfumer's shop, but it was, in every respect, clean, wholesome, and sweet, and altogether in such beautiful order as would have done credit to any feeder in the kingdom, let his system be what it might. And now a word about the mysterious hodge-podge, which was just this: a mixture of 3¼ lbs. of Linseed meal and 3¼ lbs. of Bean-meal, boiled, and mixed with hay-chaff. This and Turnips was the daily portion of each beast in the boxes. Those out of doors ate more, as stated before. Consequently, upon 7 lbs. per day of this slippery ingredient the bullocks were fatted, and certainly no beast could handle better or feed faster. Now if any feeder of beasts will calculate the expense of bullocks so fed, with others fed on oil-cake (by the bye, a much more mysterious compound than the one just described, as it has often puzzled the purchaser to say what the cake contained), I fancy he will find that he can afford his beef quite as cheap, fed on the compound, as he can on oilcake; and, in fact, cheaper, which is a very desirable object to gain. Moreover, the manure so made, in consequence of the rain not washing through it, is more valuable, every quality being completely preserved.

I have no idea of becoming a martyr, having no relish for either gridiron or furnace being applied to my flesh; and therefore will offer no challenge to Mr. Wilkins: but should he ever come into Huntingdonshire, I will promise to show him what I have here stated, which would, I am sure, make him more merciful in his remarks upon those who have adopted box-feeding. All that he has hitherto seen and described is certainly very much against the system; but should he ever do me the favour of paying me a visit, I will engage, at all events, to show him box-feeding as it ought to be; which would enable him to use his pen, and to endeavour personally to correct those very bad, ill-constructed buildings he has hitherto very properly condemned. *Edward Compton, Water Newtons, Wansford.*

AGRICULTURE IN IRELAND.

YOUR Leader on a late occasion severely animadverted on the letter of an "Irish Peer" to the *Times*. That letter asserted the impossibility of profitably improving many parts of the west of Ireland. It is my purpose, in this letter, to compare the results of money invested in improving the soil of this country with the returns which similar expenditure would probably yield in the west of Ireland. The balance sheet lately published by Mr. Huxtable affords materials for a suitable comparison. The return he shows for his capital, about 19 per cent., is sufficiently encouraging to all improvers of land. That it is much more than double the average profits of farming in England, I have very little doubt; but granting that such can be realised, under skilful scientific superintendence, in a warm southern county of England, let us examine one of the items of the account; 40 acres of Mr. Huxtable's farm of 100 acres are in Wheat, yield a crop worth 509*l.*, and would be paralleled in the west of Ireland, where Wheat cannot be ripened, on account of the humidity and inclemency of the climate, by 40 acres of Oats, yielding under good management say 50 bushels per acre, viz., 2000 bushels (weighing 35 to 38 lbs.), and worth on the spot not more than 1*s.* 8*d.* per bushel, equal to 166*l.* The difference between these two sums is 343*l.*—an amount which extinguishes at once the whole 19 per cent. of profit. In the other items of Mr. Huxtable's receipts there would be a corresponding deduction to be made, but the above sufficiently explains the reason why capital may be invested profitably in the management of land in the south of England, and ruinously in the west of Ireland. Mr. Baines, Colonel Rawstorne, and others have published instances of great success in reclaiming bog land in this country. Their operations have been made on land at no great distance from the large manufacturing towns, and in the midst of the wealthiest manufacturing population in the world. A ready market existed in their neighbourhood for every article they produced, and an equally ready and abundant supply of the richest manure. Under such circumstances, a judicious outlay of capital could not fail to be remunerative. But it is highly imprudent to encourage the reclamation of waste lands, in the west of Ireland, from such instances of success, dependent, as they are, wholly on circumstances of locality which do not exist in that country. That there are thousands of acres of land in that country, as well as this, capable of profitable improvement, no one who has been in Ireland can doubt. But I agree with the Irish peer in thinking that there is a natural limit to such profitable outlay; and, with your permission, will endeavour farther to elucidate this conclusion, in the hope that reasons which appear to me satisfactory, may throw some light on the Irish difficulty, and afford an explanation of the ultimate want of success which has hitherto attended all extensive plans for reclaiming profitably the waste lands of the west of Ireland.

A much more notable instance than Mr. Huxtable's of agricultural outlay and improvement has been published, viz., that of Whitfield Farm, effected under the superintendence of one whose practical knowledge would avoid the mistakes made by an amateur. After an outlay of capital by the landlord of nearly 30*l.* an acre, and an investment of 15*l.* an acre in cultivation by the tenant, an excess of produce is obtained which leaves for the landlord

5 per cent. for his capital, say 6000*l.*	£400
10 per cent. for the tenant on 1000*l.* capital	400
	£800

Suppose the same sums to be laid out on land of similar quality in the west of Ireland, and under the same skilful superintendence, and what is the result? Take the article of Wheat alone as produced at Whitfield, and compare it with the only kind of grain that can be depended on to ripen in the average seasons of the west of Ireland:

120 acres of Wheat at Whitfield, at 40 bushels per acre = 4800 bushels, at 6*s.* per bushel .. .	£1440
120 acres of Oats in the west of Ireland, at 50 bushels per acre (35 to 38 lbs. per bushel), 6000 bushels, at 1*s.* 8*d.* per bushel on the spot	500
Leaving a difference of	£940

This difference on one article of produce annihilates both landlord's and tenant's returns, and shows at a glance the hazardous nature of such expensive outlays in unfavourable climates.

That the quality of the produce and facility of marketing it has much to do with the profitable investment of capital in cultivating the soil may be clearly understood by this, that good and bad soil require an equal outlay in their improvement and management, while their increased produce is estimated in the one case by the value of bushels of Wheat, in the other by the value of bushels of Oats. By the outlay of 10*l.* in draining good land in a favourable climate you may perhaps increase the produce by 10 bushels of Wheat worth 3*l.* An outlay of the same sum in a bad climate may increase the produce by 10 bushels of Oats, worth in such a locality as the remote parts of the west of Ireland, 16*s.* 8*d.* The difference between these two sums make all the difference between a fair profit and a ruinous loss.

The apparent cheapness of labour is urged by many as a reason why the cultivation of land in Ireland should be remunerative. But this cheapness is not real. Grant that an ill-fed Irish labourer, at 1*s.* 2*d.* a day, does as much work as a well-fed Englishman at 2*s.*, the English farmer can pay his ploughman for his week's work with the value of 2 bushels of Wheat, the produce of his farm; the Irish farmer to pay his labourer little more than half this wage must sell 4 bushels of Oats; the cost to the English farmer being one-twentieth of an acre of his produce of Wheat; to the Irish farmer one-twelfth of an acre of his produce of Oats. The difference of course is really much more, as the well paid labourer will earn by his work the full amount of his additional wage.

Believing these facts to be the true cause of failure in many very earnest attempts made for improving the miserable condition of the west of Ireland, I agree with the "Irish Peer" in cautioning this country against a continued misdirection of its capital. Any one who has travelled through much of Ireland must have been struck with the amazing extent to which agriculture is carried in that country. Bleak hill sides, which in this island, even in populous districts, would be left untouched, are everywhere found in remote parts of that country cut up and divided into little patches of tillage. In the counties of Monaghan, Fermanagh, and Tyrone, I have seen in cultivation hundreds of acres of land every way inferior to the unenclosed moors within a mile of the fashionable watering place of Harrowgate in Yorkshire, or the extensive and still unreclaimed moss traversed by the North-Western Railway, and within a mile or two of the emporium of manufacturing industry, Manchester. If such springs of hoarded wealth remain untapped by British capital at our very doors, can it be doubted that the true reason is the very meagre success which has hitherto attended such speculations? Can we wonder at the wretchedness of those who in a far less favourable climate are compelled to till a miserable soil which, if the Potato fails them, is too poor to bring to maturity a crop of corn. It is madness to encourage agriculture in a climate where corn only ripens in very favourable seasons. Large outlays for such a purpose cause a temporary bustle and apparent prosperity, but being radically injudicious, and certainly unremunerative, they suddenly cease, reaction begins, and then follows the old story of beggared landlords, encumbered estates, and starving people. This has been the case every few years for a century back. Nor is this want of success confined to the west of Ireland. Most people who live in the neighbourhood of elevated and exposed lands can recal instances in their experience of very energetic attempts at improvement in such localities, which in every instance, after a few years' trial and much waste of money, have been abandoned. The result has been an improvement of the place for pasturage, but a conviction in the mind of the improver that as an investment of capital such speculations are altogether unprofitable. Two elements are at work which have a constantly increasing tendency to discourage such enterprises. These are—a gradually diminishing rate of price for corn, and as gradual an increase in the wages of labour. Live stock seems the article most likely to keep its relative value, and stock farmers accordingly are the only class who ever make money in the occupation of farms in a late and uncertain climate.

We continually hear of the laziness of the Celt, and his supine contentedness with his Potato diet. And the fertile parts of Ireland, where cultivation is carried on with great energy and advantage, are pointed to as an evidence of the successful enterprise of the Saxon race. In Scotland as well as Ireland this distinction has been repeatedly drawn. If there is truth in this difference of original races, the Saxons have been remarkably fortunate, for, wherever the soil is fertile and the climate favourable, there have they located themselves, while the supine Celts are always found in the bleak inhospitable districts of the far west. Would it not be wiser to conclude that the more grateful soil, yielding a larger increase to the efforts of the husbandman, has both stimulated him to greater exertions and enabled him to make those exertions by the generous nature of the food it has afforded him? While the man of the same race, obtaining no adequate return for his labour from the barren soil, has neither hope as a stimulus to exertion, nor the necessary nourishment to enable him to make it.

All plans, therefore, of expending large sums of money, lent by the state, in reclaiming waste lands for the purposes of tillage in districts where corn crops cannot be calculated on to ripen every year, I conceive to be injudicious. It is perpetuating an evil which has already lasted far too long. If these districts were left to themselves, the evil would work its own cure. The people would soon starve down, either by death or migration, to the point of support which the soil would naturally yield. It is charity to remove them from such inhospitable lands. This country with her fertile colonies has use for all her children; rich prairies and plains unexhausted by tillage, await the easy labours of the husbandman. Let our statesmen be convinced of this, and there is still hope for Ireland. The money which we contribute year after year to her necessities, if expended judiciously in an organised plan of emigration, would transfer to these colonies the labour which they stand in need of, while the landlords, once cleared of the poor-rates which now swallow up their rentals, might be left to their own resources, as landlords in other parts of the kingdom are. The increasing demand for stock would be a sufficient stimulus to a cautious improvement of the soil, for it may be held as an axiom that no outlay on the soil, however great the change it may make, can be an improvement unless it be remunerative, and all forced expenditure in reclaim-

ng waste lands, that will not repay the enterprise of individuals, if made from the resources of the state will inevitably be an addition to the unproductive debt of the country. *J. C.*

Home Correspondence.

Experiments with Manures on a Wheat Field.—The land was of bad quality, a cold, wet, strong clay; but well drained, subsoiled, and well tilled in the customary way; being summer fallowed without any crop, and well dressed with lime and farm-yard manure (the whole field alike). The Wheat was sown on the 23d of September, 1843, and in the spring the crop looked very promising. A top dressing of the undermentioned manures was applied on the 19th of April, 1844, the result of which was as follows, per statute acre:

Produce of Wheat in Winchester bushels, and of Straw in stones of 14 lbs.

Lot.	Manures.	Bush. of Wheat.	Stones of Straw.
1	Left without top dressing	25	126
2	Rape dust, 5 cwt., at 8*s.* 6*d.* per cwt., 1*l.* 7*s.* 6*d.*	27½	144
3	Nitrate of soda, 1½ cwt., at 16*s.* per cwt., 1*l.* 4*s.*	59½	157
4	African guano, 4 cwt., at 8*s.* 6*d.* p. cwt., 1*l.* 14*s*	30½	171
5	Peruvian guano, 4 cwt., at 10*s.* 9*d.* per cwt., 2*l.* 3*s.*	30½	210
6	Sulphate of ammonia, 1½ cwt., at 20*s.* per cwt., 1*l.* 10*s.*	43	247

Mr. Spedding has reserved samples of the Wheat, and that which was produced on lot No. 6 is decidedly superior in quality to the rest, showing an advantage by the application of the sulphate of ammonia, both in the quantity and quality of the produce. The sulphate of ammonia has now been four years in use, and is found equally advantageous on Grass lands as for grain, especially for hay Grass. In addition to the extra quantity of hay produced, if the ammonia be applied immediately after carrying the first crop, there results a splendid second crop, and an abundant supply of after-Grass, so fresh and sweet that the cattle show a decided preference for it, as on Grass fields which have been partially top-dressed, that part where the ammonia was applied was eaten quite bare. This circumstance shows that the hay must also be of superior quality, and on analysation this is found to be the case, as it contains a larger proportion of nitrogen; and as Oats contain a larger proportion of nitrogen than hay, it follows that the hay which contains most nitrogen approaches nearest to the quality of Oats in its feeding properties. Experiments with sulphate of ammonia may be made as follows, viz.—4 lbs. to 100 square yards, *i. e.*, 100 yards long by 1 yard wide; or, 1 lb. to 25 yards long by 1 yard wide, which is at the rate of about 1½ cwt. to the statute acre. If the ammonia be applied at twice, one-half each time, leaving an interval of three or four weeks, it is found to answer best, and is well worth the extra trouble. In order to be able to spread it thin enough, it may be mixed with fine ashes or sand, &c. For gardening purposes, dissolve 2 oz. to a gallon of water, and apply twice a week. *J. Spedding, Mirehouse, Bassenthwaite, Cumberland.*

The Royal Forests.—"We have often heard of them lately; but where are they? what timber do they produce? and what is done with it? Of course, they produce plenty of British Oak, which is used in building our 'wooden walls.' People are led to suppose that timber sufficient for the building of a squadron might be cut there for naval purposes, and that the extent of at least 20,000 acres, out of 40,000, is covered with monarch Oaks; in fact, that 'they could scarcely see the wood for trees.' But how stands the case? Why, in fact, that you may ride for miles without seeing a tree! Here and there a few stunted pollards relieve the eye ranging over barrenness; and, at fitful distances, a few groves may be found on diligent search on the more fertile portions, and near the inclosures of private owners. Instead of being cut and sent to the docks at Portsmouth, all timber felled in the New Forest is sold without discrimination of use, and the contracts for the navy are given to merchants by tender, who procure their timber where they please, not one stick coming necessarily from the forest." (*Builder*, Dec. 16). The same, this writer asserts, may be said of the forest of Dean, of Windsor, Epping, and sundry others. He then proceeds to estimate the royal forests at 200,000 acres, and to advise that they should be enclosed and let at 5*s.* per acre, when they would produce, he says, a revenue of 250,000*l.* per annum! Only making the trifling mistake of putting 250,000*l.* instead of 50,000*l.* a year. Several authorities differ as to the exact extent of the royal forests, but they appear to contain about 134,500 acres, of which 52,900 acres are appropriated to the growth of timber, and 81,600 acres are open commonable lands, of little use, except as haunts for rabbits and deer, for sportsmen and poachers. The principal of these forests are—

	County.	Acres of Open Common.	Acres of Growing Timber.
New Forest	Southampton	60,678	6,000
Woolmer Forest	Ditto	4,249	1,700
Dean Forest	Gloucester ..	10,478	11,000
Waltham Forest	Essex ...	3,278	...
Windsor Forest	Berks ...	...	4,402
Delamere Forest	Chester ...	...	4,611
Whittlewood Forest ...	Northampton	1,122	3,378
Wychwood Forest ...	Oxford ..	1,808	1,841
		81,608	32,962

The best purpose to which the land could be applied is a matter on which men would be sure to differ, and various plans have accordingly been proposed. One writer (see "British Husbandry," vol. iii., art. "Planting," p. 85), advises that the surface should be pared, burnt, and trenched, at an expense of 10*l.* 17*s.* per acre. It would then produce, he thinks, a crop of Potatoes weighing 6 tons, and worth 13*l.* 4*s.*, leaving a balance of 2*l.* 7*s.* per acre, and would be in the best state for planting. It is pretty evident that these forest lands are now grossly mismanaged, but the best system of cultivating them could only be determined upon by those who know well what "common rights" they are subject to, and after an accurate survey; for they contain all kinds of soil, "deep strong clay, rich deep loam, light loam on freestone gravel, bog, &c." In the French edition of Malte Brun's "Geography," it is stated that Great Britain and Ireland contain 1,869,952 acres of woodland; of this about 950,000 acres are in Scotland! [Including the Deer *Forests* we presume!] Ireland has but a small quantity. *An Essex Man.* [That there is a vast extent of crown land misnamed forest, no one can deny. We cannot discuss the causes which have led to this result, but if our correspondent can suggest methods for more usefully employing these lands, he will do good.]

The Capital of Agriculture.—As statistical facts form the basis of our reasonings and conclusions, it is highly important that they should be accurately stated. Mr. Spackman, in his "Analysis of the Occupations of the People," estimates the farmers' capital at 500 millions of pounds sterling, being a fraction over 10*l.* 15*s.* per acre on 46,522,970 imperial acres.* My own calculation and impression is, from the perusal of sundry evidence on the subject, and from facts within my own knowledge, that the average would not exceed 8*l.* per acre, even if it attained to near that amount, which I very much doubt, when we set off against a few rich gardens and Hop grounds an immense extent of very poor Grass lands. If I am correct, this deduction alone would diminish Mr. Spackman's estimate of the farmers' capital by 128 millions, a most important item. Perhaps you, or some of your talented correspondents, will throw a little more light on this interesting subject. Am I right in calculating that the farmers' gross produce per acre is considerably under 4*l.* If so, his capital would only be turned over once in two years, which I apprehend is correct; but I shall feel obliged by your discussing and clearing it up. I believe the slowness of return is one principal cause of farming being so slow a way of getting money, or rather, in some cases, so quick a way of losing it. *I. J. Mechi, Tiptree-hall, near Kelvedon, Essex, Jan.* 3.

The Labourer.—I am a tenant farmer in the northern division of Lancashire, and have just returned from a visit to the midland counties, where my friends live. It has ever, but still more this time, struck me of the badly managed and ill condition of a vast extent of the lands I passed through, that, if properly drained, they would, with the advantage of climate, produce most valuable crops of Swedes and Turnips, to enable the farmer to make the best of muck, and so increase his corn and seeds. Instead of seeing the poor unemployed labourers walking about more like hospital patients, and those who are employed earning but 3*s.* or 9*s.* a week, not enough to even find bread, much less rent, coals, and clothing for his family, these poor men, who are born never to rise higher all their life than labourers, might earn double the money and do more than double the work if they had a bellyful. From year's end to year's end they are half starving. Instead of poor rates of 3*s.* 6*d.*, 4*s.* 6*d.*, and even 5*s.* 6*d.* in the pound per annum, they might be nearly dispensed with, for there are means to employ the men advantageously. In this parish, which is entirely agricultural, I paid last year 1*s.* 4*d.* in the pound, this year 1*s.* 2*d.*, for poor rates. My men have 12*s*, 13*s.*, and 15*s.* a week, have good houses, live well, and can work well. I could not return to farm in my old country. I could not bear to see the poor labourers who, if properly paid and well treated, are generally very thankful. Landlords! Drain, remove hedgerow timber, and your big fences. Tenants! farm high, be not afraid to employ the labourers, and pay well. Then they will eat more, do more work, and consume not only all our own, but foreign produce, and keep up the prices. We need not then fear foreign importations. In this county we have much to do, and much is being done. *F. T., P. H.*

Prevention of Smut in Wheat.—In my letter on the "Use of Arsenic in Agriculture," which appeared in No. 1., I omitted to give the proportions of sulphate of soda (Glauber's salts) and lime recommended as a substitute for arsenic in the prevention of the smut. The process is as follows:—Dissolve 22 oz. of sulphate of soda in hot water, and slake 4½ lbs. of fresh and well-burnt quicklime in the ordinary way, by pouring on it small quantities of cold water; place 22 imperial gallons of the seed Wheat in a cask or other suitable vessel, and thoroughly water it with the solution of sulphate of soda, stirring well the whole time, so that the whole of the seed may be well moistened, and there be a slight excess of liquid left; then sift in the slaked lime, stirring well until each particle of seed be covered with lime. The seed is now ready for sowing. Should the seed be kept for a few days after it has undergone this preparation, it will be advisable to stir it occasionally, to prevent heating. Carefully conducted chemical analyses show that Wheat, the produce of seed prepared with arsenic, does not contain any of that deleterious substance, whilst Wheat, the produce of seed steeped in a solution of sulphate of copper (the most efficient preventive of smut), contains a notable quantity of copper. The cheapest way is to purchase the anhydrous, or dry sulphate of soda, of the alkali manufacturers, which contains twice as much real sulphate as the crystals, whilst it may be obtained at about the same price. In this case, half the quantity of sulphate of soda above mentioned will suffice, and additional water may be supplied, equal in weight to that of the dry sulphate employed, thus compensating for the water of crystallisation contained in the crystals. The proportion of water above indicated may then be added, and the process followed out. Thus, instead of 22 oz. of crystals, use 11 oz. of dry sulphate of soda, and 2 galls. 11 oz. (or rather better than 2 gallons and ½ pint imperial) of water. *F. H. Durden, Dublin, Jan.* 11.

Small Farms.—For the elucidation of something more connected with the prospects of Scottish farming, I hereby beg leave to address a few questions to the writer on small farms, "W.," who in the *Agricultural Gazette* of Dec. 30, predicts so much calamity to the occupiers of Scottish soil. Have leases had nothing to do with their prosperity? Did England exclude herself from the monopoly of her own market? if not, she had the first chance, and being the resident incurred no expense in transmission of her produce. Can he substantiate the statement that the soil of Scotland is equal to that of England? or will the climate stand the test of comparison? What accurate means of information does he possess whereby he can dive into the light of other days, and vouchsafe for the taste of generations yet unborn, on such a delicate subject as their food? and lastly, can he state the difference in price of female labour in the two countries alluded to, and in which of them most of it is employed? Many more inferences and questions suggest themselves to the mind in the paragraph referred to, not the least conspicuous is the want of proper agricultural statistics, which would arrive sooner at the true state of affairs than years of prejudiced discussion, besides supplying a desideratum which practical agriculture stands much in need of, and which would exhibit to many more besides "W." that we have no reason to expect the agriculture of either Scotland or England has as yet reached its limits. *W. F. Lovley.*

Box-feeding.—As often happens, Sir G. S. Robinson in his strictures on Mr. Wilkins' remarks on box-feeding, seems to go further than sober consideration warrants. The fair import of Mr. Wilkins' statement is, that he visited four homesteads, but only four, not that he selected the four worst out of a greater number which he visited. Then these may be taken as a fair specimen of the homesteads in his neighbourhood at least. It matters little to what cause the mischief is attributable, if it be a mischief which does recur, or is likely to recur. Grant that an idle feeder has emptied the water troughs into the box among the litter; has Sir G. Robinson since cured him of his slovenly habit, or will he engage that the man shall never again commit the like nuisance? If not, the same thing may be expected to happen again, and often, and if it does, it will be attended with the like disadvantage to the bullocks. Nor is it any advantage to the stock that he cannot discern the cause why the second homestead was wet; the fact remains uncontradicted and unanswered that it was wet, and the bullocks are never the healthier because the source of the wet is unaccounted for; one obvious cause to be assigned for it is the dung and urine. The evil in the third case is accounted for in a most extraordinary way, totally repugnant to all received notions of gravity and hydrostatics. We are told that the floor was of a "porous soil, and therefore of course letting in the soaks from below!" I had supposed that a porous soil would suffer fluids to sink through it, but to find that it causes them to rise through it is wholly new to me. I live upon 1500 acres of porous soil, porous to a depth from 400 to 700 feet. I would give scores, yea, hundreds of pounds, to find that the water would spontaneously, or "of course" flow upwards through it. I spend considerable sums to line tanks with brick and cement, to prevent the liquid manure from sinking through this porous soil, but never did a pint of it soak upwards to any manure heap of mine. That Sir G. Robinson may find enough litter to absorb all his fluids, it does not behove me to dispute, but that in the four instances seen by Mr. Wilkins that sufficiency was not applied, and that the cattle were suffering by the practice pursued, appears indubitable. I am not disposed to enter into controversy with the Rev. gentleman or his prototype, whether the system be theoretically good or not, but it must be conceded, that round Mr. Wilkins' neighbourhood the practice of it is attended with injury; and it remains to be proved, by far closer investigation than has yet been bestowed, whether that injury is countervailed by saving the labour which I find requisite to remove the manure out of the boxes twice a day, and deposit it in a covered shed, where its fumes do not annoy the cattle that make it. Under this practice I have never, for 7 years, experienced any indisposition among bullocks or cows, either in stall or box. *Hantoniensis.*

Scotch Farming.—It seems so important to the interests of agriculture that no misconception should occur on the superior merits of Scotch farming, that you will perhaps allow me a small place in your columns to explain more fully a statement made by me in one of your former numbers. A correspondent of yours has stated that the high rents paid in Scotland were chiefly attri-

* Spackman's Tables, page 35.: "England, Wales, Scotland, Ireland, and British Isles—arable and gardens, 19,145,990 statute acres; meadows, pastures, and marshes, 27,386,980."

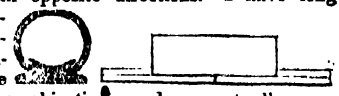
butable to the tenants not being burthened there with heavy poor-rates, as they are in this country. There is no doubt a considerable difference betwixt the two in this respect, but not so great as to account for the difference of rent. The rent of the East Barns Farm near Dunbar is 2250*l.* for 480 acres statute, or about 4*l.* 12*s.* 6*d.* an acre. On inspecting it, I remarked that the high rent might be owing to the tenant having no poor-rate. "No poor rate!" Mr. Murray replied, "I pay 40*l.* a year, and my landlord 60*l.*" This 40*l.* on 480 acres would be about 1*s.* 8*d.* the acre. In this locality, which, from being a manufacturing one, has its rates enormously high, the whole taxes amount to about 6*s.* 8*d* the acre. This would make the difference betwixt the two 5*s.* the acre. Land may be said to let on an average here at about 30*s.* the acre; the rate, therefore, cannot account for the difference of rent; and if this be so, it must be owing to better land or better management. The thrifty habits of the people and the employment of the different classes in the works of the field may be placed to the account of education, which is so general throughout that country. The land itself is not better than the greater part of this country, certainly inferior to many of our alluvial soils; and it can therefore only be owing to management, consisting in greater skill, more educational knowledge, and the industrious habits engendered by this education, that these high rents are paid; and not only paid, but paid with ease, the tenants in many cases growing wealthy under them, living well and in handsome residences; and the labourers in neat good cottages adjoining to the other farm buildings, well instructed, each almost fit to manage the farm, with full employment at adequate wages, perhaps part in money, part in land—having so many drills in a Potato field. It is quite a mistake to suppose that low rents are favourable to any of the three classes named. It is low farming, and not high rents, that are injurious to, and often the ruin of all three. A case here may be mentioned to the point. An eminent land agent, who has done much for agriculture, was called upon to manage a property that had been much run out; the tenants were poor and in arrear, the proprietor much inconvenienced by their non-payments. Did he begin by lowering their rents? No, quite the reverse! He began by raising them, but he accompanied this by two things; he drained their land for them, and what is more, he gave them leases. What were the results? The tenants became thrifty, like the Scotch tenants mentioned by your correspondent; they became improving tenants instead of impoverishing ones; and in a few years they grew quite at their ease in their circumstances, and poured forth their grateful thanks on their deliverer whenever he came to visit them. It may be easily understood by any one not deeply versed in farming concerns, how arable land well cultivated, well worked, and kept perfectly clean, growing from 40 to 60 bushels per acre, or from 25 to 30 tons of Turnips, may be infinitely more profitable than the finest natural Grass land can possibly be; or further, how a crop of Italian Rye-grass, cut perhaps four or five times in the year, if covered each time with liquid manure from the tank in the farm-yard, may be worth infinitely more than the poor miserable pastures that are so commonly visible. The rise and progress of Scotch farming is curious and interesting, as showing what may be accomplished in no very long space of time, by well directed endeavours. In my "New Husbandry" (page 22), a description is given approaching to the ludicrous, drawn by Lord Kames in his "Gentleman Farmer," of what the Scotch farming consisted in 1768. He says, "Our oxen are scarcely able to support their own weight, 10 going in a plough, led on by two horses; the ridges enormous masses of accumulated earth; over the greater part of Scotland a continual struggle going on for superiority between corn and weeds." Well might Sir John Sinclair exclaim in 1812 what a contrast to the present state of Scotch husbandry; and it is singular that, with hardly any exception, these imperfections have been removed. In the same book may be seen the different causes enumerated which have effected this great change. The principal of these are, the establishment of parochial schools; farmers accustomed to travel; landlords either improved their estates themselves, or encouraged their tenants in exertion; leases granted; economy and simplicity of management; good sized farms; rents progressively increased, &c. It must, however, be admitted, that there is a considerable drawback to the return of rent from the large outlay that is going on in farm buildings. Each farm has its steam-engine with its tall chimneys, and at East Barns new buildings, with remarkably neat cottages, had been lately erected, to the cost of many thousand pounds. Indeed Mr. Grey, of Dilston, mentions, in his report of Northumberland farming, that 10,000*l.* had been expended on two of the farm buildings belonging to Earl Grey; but on the other hand the increase of rent had been progressive; seven farms, in the beginning of the present century, produced a rental of 556*l.*, but falling out of lease were relet for 12,057*l.* In like manner the Duke of Roxburgh's rents have been said to have increased 33 per cent., and in the "New Husbandry" a case is mentioned (p. 31) where a landowner near Howick, on renewing a lease with an old tenant, obtained an advance of 100*l.* a year; and after the agreement was concluded inquired whether the occupier had not made a good sum during his late term, to which the reply was, 8000*l.* Do any of the farmers of the old school make 8000*l.* on their farms? Do they not rather content themselves with not being losers, and are satisfied if they can exist and pay their rent at a proper day. There has now been a full statement given of the merits of Scotch farming, and of the grounds upon which it rests; and if these statements were founded on a mere visionary chimera, they might be doing all the mischief your correspondent seems to ascribe to them; but when facts, stubborn facts, are produced; when these are supported by unquestionable authorities, so far from doing mischief, they may lead to incalculable good. They may tend to dispel the mists of prejudice from eyes too long darkened with them; they may hold up for imitation a model of improved practice; and by the rewards attending good farming, they may encourage laudable exertions. A man seated on the false eminence of self-satisfaction, and viewing with complacency the struggle going on, as described by Lord Kames, may please himself, but can never please others. *Law. Rawstorne, Penwortham, Preston.*

Allotments.—One acre: Plan of operation. A good free soil and liquid manure indispensable. Roots—Early in spring plant Early Potatoes in rows 1 yard apart; early in April drill or dibble on half the plot between the rows Mangold Wurzel; one-third of the other half, Carrots, ditto Beet, ditto Parsnips. Take up Early Potatoes in July, and plant in their place between the Mangold, &c., half Turnips, half Cabbage. After storing the whole, plant half Wheat, half Cabbage. Corn—Barley, with Clover under; Wheat, stubble, Turnips after. Grass—Italian Rye Grass, Clover. The Lucerne, with half the Italian Rye Grass, to be cut as green food for cows in summer; the other half and Clover made into hay for winter. *E. Hulme.* N.B. I recommend the whole of the manure to be trenched in with the Grass for the roots in spring. Other crops top dressed with guano, &c.

Water Wheels.—Why is not water power, the cheapest and simplest mode possible, more used in England for threshing machines? Is it because the farms and estates are smaller and the land more level? It cannot be for want of knowledge, for even taking my own vicinity as an example, there are no fewer than 7 water corn-mills on 8 miles of river, running through a level country, and not more than 20 yards wide and 4 feet deep. I have often thought how easily these mills might be turned to threshing corn, sawing wood, cutting chaff and other things, and how the system of grist mills, that is taking part of the produce brought for the work done, might be pursued in these matters as well as in corn grinding; or even the rotatory power itself let out at so much per horse power per hour. In a work on Ireland I once saw Turbine or Terabine water-wheels recommended, as requiring a less fall and less water. Do these resemble a plan I saw in a number of the "Mechanic's Magazine" 20 years old, of using a hollow Archimedian screw for the water to pass through, instead of over or under a water-wheel? *W., Dec.* 4. [The Turbine is a modification of "Barker's Mill."]

Agricultural Labourers.—The poor agricultural labourers of this district are, I fear, likely to be sorely pressed this winter. The farmers are themselves getting a severe lesson as to the necessity of greater skill and caution in their business: much of their corn was ill gathered in, and now fetches a poor price in the market. They turn to their labourers, and either discharge them, or reduce their wages, justifying the act on the ground that the price of corn is falling; that they can no longer afford the higher rate they had previously paid; and yet these men do not occupy what may be termed "small holdings." I am not writing this with the wish for its publication; I wish to draw your attention to a different view of the principle of the tenure of land to that which you appear to advocate. Do you trace no connection between vagrancy in England and the monopoly of land by the system of primogeniture and entails? Do you not think that our unions, and hundreds of "Charitable Institutions" existing throughout the country (unknown on the Continent) owe their origin to the feeling of a necessity for counteracting the pauperising tendency of that monopoly of land that I speak of? Is there no connection between the squalid misery of Ireland—for which the English people are held up by the best informed travellers and writers of Europe to universal execration—and that system of primogeniture and entail which leaves so many acres of cultivable land in that country perfectly unproductive, the property of individuals, as there are starving paupers wandering about without where to lay their heads, or seek relief from the famine that oppresses them? I asked a land agent not long since if he thought that out of 130 farms, of which he had the superintendence, there were 30 on which a sufficient capital was invested. He said, "Not one." I then asked him why the proprietor did not divide his farms, and so let his tenants occupy just that amount of land which their capital would authorise. His reply was, of course, "Where is he to get the money to do this with? He must put up new buildings, and has hardly money to cover his constant expenditure." Thus, we have a law that says the poor are entitled to a living off the land first; the act of Elizabeth carrying out the laws of Nature. The law of entail retains the ownership of the land to individual families, who cannot cultivate it themselves, and have not the means of so disposing of it as to insure its best cultivation by others; the consequences—in their most aggravated forms—fall on the poor labourers, who are hardly ever above the condition of paupers. Such I believe to be the fate of a large proportion; that there are others who have fallen on a happier lot, I have no doubt your own farm would show. "Tenant Right!"—what a world of speculation is involved in those two words! They speak volumes against the present system of landownership. The cry of legislative enactments in favour of "Tenant Right" is to me contemptible; it will fail of any really useful end. If I have judged aright, that cry will gradually change into one for a repeal of the entail system, and that cry will attract the regard and sympathies of many generous natures. *A Tourist, W. H.*

Draining Tiles.—Remarks have been made on the best form of tiles. For clays, I think an oval flattened at the bottom the best shape, and superior to the circular, as requiring no wider room, carrying more water, and standing firmer. The drain is made so that the tile fits tightly, and has to be pressed down to the bottom; it thus presents a free passage for water, and cannot be forced out of its place by the earth thrown in. Tapering pipes, so that one end fits into another, are good for sandy soils, only the passage inside the tube is not level; but tapering tiles lapping over one another with soles obviate this, the only difficulty is, that tiles being made by being pressed through an aperture in a machine cannot be made tapering, though they might by a machine made somewhat similar to that by which tramway rails are made, *i. e.*, large solid wheels, with the wished-for shape cut in them, turning in contact and in opposite directions. I have long thought the annexed modification of the common tile and sole



would obviate many objections, and prevent all movements. To be made so as to slip the tile over the sole laying down a sole and slipping on a tile alternately, the joint of the soles coming in the middle of the tiles. *W.*

Form of Drain Pipes.—The remark in your paper of drain pipes being made with serrated ends for the purpose of preventing individual ones sinking when laid in the drains and thereby obstructing the free flow of water, induces me to suggest what I think a simpler and more efficient plan, that of drain pipes having the ends alternate inner and outer coned as shown in the drawing. A quarter of an inch would be sufficient for one end to enter the other, and when laid thus in a continuous pipes, nothing but fracture could obstruct the continuity of the pipe. The coning the ends I think might be cheaply effected either by an inner and outer concave tool, revolving on its axis, to which the end of the pipes should be applied when in that state of dryness most suitable for forming the cone by cutting away the clay, or by moulds when newly made, or during the process of making, by the mandril expanding at a suitable time for the inner cone, and a collar contracting at a like suitable time for the outer cone. If you think this worth publication in your valuable *Gazette*, I doubt not some of your readers would give it a trial, and I think find it effectual. *H. W. N.*

Farmers' Clubs.

NEWCASTLE, *Dec.* 2, 1848.—Mr. T. L. COLBECK, of East Denton, read a paper on the question, *What has Science done for us?*

It is (said he) with some hesitation that I introduce the subject of this paper to your notice. It requires no little courage to face the prejudices, so openly expressed by farmers, respecting the application of science to agriculture. They seem to think, that because no progress has hitherto been made in this direction, none ever will be, and they ridicule the idea of any one but a farmer being able to give them advice in the management of their farms. Whilst I admit that their conduct in this respect is not without excuse, seeing the character of much of the advice given to farmers by scientific men, yet that they should continue to despise the labours of these men altogether, is nearly as foolish as the sailor would be who ventured across the Atlantic without a compass. He might possibly arrive safe in America without his compass, and agriculture may make progress without the assistance of science; but there must be, at the least, a great loss of time, to say nothing of the many unavoidable mistakes which will assuredly occur in both cases. It is with the hope of removing this prejudice that this subject is introduced to you to-day; and in order that I may succeed in doing so, I will, in the first place, point out a few of the benefits which the arts and manufactures have derived from the application of science. These have been so numerous, that the chief difficulty I have found has been in the selection; and they certainly contrast most unfavourably for the farmer, with the assistance he has derived from the same source. When we read the history of England under the early Sovereigns of the House of Hanover, we must be surprised at the progress made by this country since the commencement of the last century. It is difficult to believe that, at that time, we procured our iron from Sweden; that we sent our webs of linen to Holland to be bleached; that we procured our printed calico from India; that a journey from London to Edinburgh occupied three weeks; that except the road leading between these two cities there were few others in the country passable by wheeled carriages; that (to come to our own neighbourhood) the road leading from here to Carlisle was then in a worse state than it had been left in by the Romans 1200 years before, and that the only communication to other parts of the neighbourhood was by narrow paved causeways, along which our grandfathers brought corn to market on packhorses. Such things, I say, are scarcely credible, when we now have even India within a few weeks' journey—London as near Edinburgh as Newcastle was only five or six years ago—and Newcastle not much farther from Edinburgh than Leith to Portobello. How much of this progress is due to the application of science? A short time ago I met with a striking answer to this question. In a field near Belsay, there was pointed out to me what may justly be called the parent of our present gigantic iron trade. It was a hollow in the ground, about one-fourth of the size of this table, lined with clay and covered with slag, and had evidently been used by our fore-elders to smelt iron (perhaps for their spear heads) long before the Norman Conquest. This is indeed a contrast to our present manufactories, any one of which now produces several thousand tons per annum—indeed more than the whole country did only 60 years ago. The ironstone from which this vast increase of commercial wealth and activity has sprung, was then utterly valueless; because the art of smelting was so imperfectly understood, that only the rich ores of Sweden could be profitably worked. This was our condition until by the pressure of the French war our supply from Sweden was cut off. The attention of scientific and

practical men was immediately turned to our own resources, and means were speedily devised for smelting our own abundant ores. The process has received successive improvements, until, by the application of the hot blast, we bid fair to draw more wealth from what was useless to the last generation than the Spaniards have ever done from their gold mines. Whilst England was reaping such benefits from the application of science, our neighbours the French were not idle, on finding themselves under similar difficulties. The English cruisers having stopped the usual supplies of kelp and barilla, which are used in the manufacture of glass and soap, a reward was offered by the French government for a substitute. This was soon discovered by a French chemist, and became the commencement of the manufacture of alkali, which is now of so much consequence to England, that when the Neapolitan government took upon itself to stop the supply of sulphur (a necessary ingredient in the manufacture of alkali), our government immediately declared war against them. The temporary difficulties our manufacturers were thus involved in, again turned the attention of our scientific men to the subject; and sources of sulphur were speedily discovered in England, which may, at some future day, place us quite independent of all foreign supplies. The manufacture of sugar from Beet-root was, like the instances I have already quoted, the result of France being deprived of the usual supply of sugar from the colonies during the war. Beet has now become of great importance, and is generally a very remunerative crop in those districts where it is used for the manufacture of sugar. Many thousand acres in central Europe, and even in Russia, are now devoted to its culture. This manufacture of sugar is, in its origin and progress, entirely the result of the application of science. I might, instead of a paper such as the present, fill volumes with instances of what science has done for us, and will therefore confine my remarks to such instances as are familiar to you. Many of us have been employed in our youthful days in watering the webs of linen spun by our thrifty mothers and grandmothers, and which could only then be bleached by long exposure to the air and moisture. Near the end of the last century, a poor Swede discovered, in the course of his researches, a green coloured gas, afterwards named chlorine; and for many years after its discovery it was only prepared as a curiosity in the laboratory, until, by the continued application of scientific research, easier means for preparing it were discovered, and, finally, it was ascertained to be present in large quantities in common salt. By the use of this green-coloured gas, thus accidentally brought to light by chemistry, many hundreds of square yards (much more than any one of our industrious fore-elders could have spun in a life-time) can now be bleached in an hour. It would be difficult to over-estimate the importance of this application. Besides these few instances I have named, I might mention nearly every process used in our cotton, silk, and woollen manufactures, as examples for what science has done for us. I can but allude to the manufacture of paper, glass, porcelain, and china, with many others, which are indebted for their present position to the application of science. I might direct your attention to some others, as electro-plating and photographic likenesses, which are indebted to science for their very existence; I might point out the many improvements and discoveries in medicine derived from chemistry; I might point to the Davy lamp, which has been the means of saving the lives of thousands; I might describe to you the electric telegraph, which is certainly the most wonderful achievement of the present day. If we had had time and opportunity for all this, still not a tithe of the instances which might have been, would then have been, brought forward; for there is not one manufactory, and there is scarcely an individual, who does not in some way or other derive benefit from the application of science to some of the every-day processes of life, in the busy, bustling world around us. It is unnecessary to say much about mechanical science, as the beneficial results from its application are obvious to all. Bonaparte called us a nation of shopkeepers forty years ago, alluding to our then extensive manufactories; but what would he now call us, when our railroads can be reckoned by their hundreds of miles, and our steam-engines by thousands? We may justly be proud of our late townsman, Mr. Stephenson; and his name will be remembered along with Watt and Arkwright as long as ever there is an Englishman. I do not expect that mechanical science will ever make any great change in farming, unless we can get locomotive engines to ascend and descend our hilly fields as easily as our horses; though I have no doubt but that steam threshing machines will become more common with us, and fixed instead of moveable ones more common in the south of England. Besides this, and the knowledge of a proper shape of a plough, I see little reason to hope for improvement in farming from the application of mechanical science to agriculture. I trust that I have now said enough to remove the prejudices which you may feel against the application of science to agriculture, by pointing out the benefits which it has conferred on the arts and manufactures. With regard to farming, I am sorry to say, that I must alter the form of the question with which I began this paper, from "What has science done for us?" into, "What can science do for us?" Will it make us better farmers? I think it will. For though the commonest workman may perform the labour on a farm with far more skill and success than the most accomplished scholar; though a plain practical farmer may succeed better in the management of an ordinary farm—though he may obtain better crops, his animals may be better fattened, and he may have, at the end of the year, more money in his pocket than another farmer with ten times his knowledge, but without his practical skill—who can doubt that knowledge and study will prove as beneficial and useful in agriculture as in any other art or science? I admit that many men of highly-cultivated minds have failed in the management of a farm, but it must also be admitted that men without any scientific acquirements have as often failed. Persons do not fail half so often from their science or from the want of it, as they do from the want of the two combined. I have said a great deal about the recent improvements in manufactures, and it would be unjust if I, for one moment, overlooked or undervalued the many improvements which have taken place within the last sixty or seventy years in agriculture. Our progress has been very great; and yet every one acquainted with the subject must admit that much of the land under the plough would grow 20 per cent. more corn if it were properly cultivated. How has this happened? Is science less ready to assist us than our neighbours, who build manufactories, sink pits, or lay railroads? We are compelled to confess that our improvements have only been the result of chance; not, as in the instances I have named in the first part of this paper, the result of knowing the *whys* and the *wherefores*. For if it can be said with truth of a physician that his profession consists in pouring medicines of which he knows little into a body of which he knows less, it is equally true of a farmer that his profession consists in applying manures of which he knows little to a soil of which he knows less. This is assuredly one cause of our deficient progress; we are yet ignorant of the *principles* of agriculture. Notwithstanding our misfortune in this respect, our progress has, however, been considerable within the last two generations. For instance, Turnips are now grown to ten times the extent formerly. Persons are yet living who have ploughed in this neighbourhood with four oxen and two horses in a plough. On one farm I know in this neighbourhood the crops of corn are more than doubled since 1812. The threshing machine is, I believe, not more than 70 years old. Bones were first used about 30 years ago; and I lately met with the farmer who first used them in Tweedside; and, as they were then very cheap, they were applied in such quantities that the field in which he tried them has never yet forgotten their first application. These are a few out of many instances which might be brought forward as examples of the progress which agriculture has made during the last 50 years. But so little real attention has the subject received, that the beneficial result of bones as a manure, for example, has been attributed by some to the animal matter they contain—by others to the phosphoric acid—by others to the lime, and, finally, to the power which they have, in common with other porous bodies, of absorbing and retaining moisture. Such ignorance of the very principles of the profession by which many of us have to make our bread, must be productive of loss to the community—in many instances of ruin and misery to ourselves—and in all cases of deficient rent-rolls to our landlords. The improvement of agriculture, in this view of the case, becomes a question in which all are interested; and I shall now proceed to point out a few of the difficulties we are at present labouring under, and to which, I think, we can only be indebted for solutions to the joint labours of scientific and practical men. To begin with the most important. 1. Much attention has recently been paid to draining, and there has been some discussion as to the proper depth at which the drains should be placed, some advocating 2 feet and others almost 6 feet. In fact, everything connected with drains is disputed. Some people recommend that they should be filled up with clay: others recommend stones. Some drainers recommend pipes like pencil cases; and they are placed at all distances apart, from 15 to 30 feet. Now, as each advocate of these various plans carries out his own views, and as they cannot all be correct, it is obvious that a great extent of draining must be improperly executed. This should not be the case. There must be a proper depth, a proper distance apart, a proper size of tile, and a proper method of filling up the drains; and the sooner these matters are set at rest, by a well-conducted, well-arranged series of experiments, the better it will be for us all. 2. What is the reason that we cannot now grow the long Potato? Science alone can answer this question, and enable us to overcome the difficulty We have tried to get over it by raising Potatoes from the seed, and the use of large quantities of manure; but we have failed. 3. Is there any remedy for the Potato disease? What is its cause? Is it a temporary, or a sign of a permanent, failure? I incline to the former, but I think the remedy yet remains to be discovered, and would strongly recommend those writers in the newspapers and magazines who are continually puffing their remedies to try to discover the cause of the disease, before they calculate upon much faith being put in their nostrums. 4. Much of the land near us, which used formerly to grow Potato Oats, will now only grow Tartar Oats. What is the cause? I consider that the remarks which have appeared both in our local and in some of the London papers, reflecting in no measured terms on the farmers of Northumberland for growing Tartar Oats, were exceedingly ill-timed, and showed a degree of ignorance in agricultural matters by no means uncommon with the writers of newspaper paragraphs. Upon some parts of my own farm I can grow 50 bushels of Tartar Oats where I could not grow 25 bushels of Potato Oats. Of course I should be glad to grow the latter only: it does not require much calculation to discover which is the most valuable crop. 5. My worthy neighbour, Mr. Stephenson, can grow more white Wheat than I can grow brown. The answer to any inquiry respecting the cause of this, has usually been that his land is better than mine. I know it is, but is mine incapable of improvement? 6. Some farmers assert that lime hastens the ripening of corn—others that it retards it. Which is correct? 7 Lime has been used from time immemorial; yet no doubt exists but that it is many a time misapplied and wasted, and will continue to be so until more attention be paid to the subject. 8. We find that, after a certain number of years, our land will not grow red Clover. What is the cause? 9. It has been ascertained that different portions of our food go to different uses in our bodies. For instance, one part goes to form bones—another part goes to keep up the animal heat, or the formation of fat—and another part to the formation of muscle or flesh. When the properties of the various substances used as food are understood, we shall then know what kind to give to our young or growing animals—what kind to give to our fattening animals—and what kind to give to our workhorses or milk cows, so as to obtain the end we wish, without loss to the animal or waste of food. I have mentioned that the same part of the food goes to support the animal heat and the formation of fat. Does not this point out that the common arrangement of feeding cattle in open folds is the worst possible, if we wish to get the full benefit of our Turnips, &c.? I look upon the attempts which are now being made to steam the Linseed and Turnips, and to crush the corn, and to chop the straw and hay, with great interest, and I am satisfied that they will be universally adopted. 10. Every farmer has suffered from the ravages of insects on his Turnips and his Wheat—indeed, on every crop he grows; and yet, from our utter ignorance of the habits of these insects, our attempts to avoid the losses they cause oftener fail than succeed. Some time ago, the Swedish Government sustained serious losses in the royal dockyard, by a small insect boring into the timber, and thus rendering it useless. A scientific man was requested to investigate the matter: he studied the habits of the insect, and recommended that the timber should, at a certain season, be covered with water. This was a perfect cure. How do we know, if similar attention were paid to the insects living on our farm produce, but a similar easy cure might be discovered? 11. There is little doubt but that every crop requires a different manure. How much more information have we on this subject than the Egyptians had when they put their Wheat into the mummy cases, 3000 years ago? 12. Bare fallows have, by the cultivation of the Turnip, been nearly banished from light soils. Can we not lessen their extent on strong clays? 13. The numerous experiments which are tried all over the country are rendered nearly useless from the want of some recognised classification of the soils. Such words as marls, clays, loams, &c., &c., convey no information to be depended on. I think we shall here be indebted to geology, as soils are well known to be derived from the rocks beneath or near them. But I must conclude, or I fear you will be discouraged by such a black list—which might, however, have been extended much further. What, then, has not science to do for us? How are these difficulties to be solved? Certainly not as Professor Johnston wishes us to do, by leaving scientific farming to scientific men. Nor will Sir Robert Kane help us, by saying that all fallows are synonymous with an ignorant and improvident agriculture. Nor will we look for assistance from Dr. Thomson, as he recommends us to cart our newly mown Grass into sheds erected for the purpose, and spread it over floors heated with flues to convert it into hay. This he considers an improvement over our present plan! Nor can we even look to Liebig, so signally has he failed to enable us, as he promised in a circular, to grow white crops, one after another, as long as we wished. In fact, we must look to ourselves, and to institutions of our own creating and supporting, as the only source of assistance. The Royal Agricultural Society and the Highland Society must take the lead. These have done their duty nobly so far: they have attracted attention to agricultural matters, and undoubtedly tended to raise the character both of farmers and farming. But I think cattle are now fat enough. We have seen what can be done; and if it will pay us, we will all try to make our bullocks as round and our pigs as blind as those exhibited in the shows. The Highland Society seem to be of this opinion, for they intend only to have their show once in three years, instead of annually, and purpose devoting some portion of their funds to the advancement of education amongst farmers. So far so good: I trust this is but the commencement, and that they, with the English Society, will see the importance of some of the questions I have proposed, and offer such inducements, either honorary or pecuniary, as will justify a man in devoting a sufficient time to their solution. Those only who have paid attention to such subjects can know the labour involved in such questions. They can only be settled by the scientific and practical man working together; and without some such encouragement as I have named, they are beyond the reach of any private individual. This, then, is what I think science can do for us. We are indebted to Liebig for suggesting the preparation of superphosphate of lime; and it is the only thing science has hitherto done for us. What a field is here opened out! If the powers of the steam engine be unlimited, who can say that so many quarters of Wheat and so many acres of Turnips are all we can grow! One word of apology for farmers, and I have done. If they have got made the progress they ought to have done, it is because they have had difficulties to contend with unknown to the manufacturer. The weather and the seasons are uncontrollable agencies. Farmers' Clubs are also of recent origin. Besides these disadvantages, there is also one more preliminary which must be perfectly settled before the farmer has a chance of reaping the full benefit of scientific research. It is not a Tenant-Right Act—at least not in Northumberland; and it certainly is not a per centage return on his rent in a bad year. It is not one nor both of these combined. It is a lease. This brings me to a subject on which I may, at some future time, address you. If I have spoken too sanguinely of the benefit derived from science, or too discouragingly of our position, you must excuse me, because I am a farmer and a farmer's son, and, like the most of you, dependant upon my farm for my position in life, and I trust you will receive my remarks with the same friendly spirit that has hitherto characterised the pleasant meetings of the Newcastle Farmers' Club. (Applause.)

Calendar of Operations.

JANUARY.

*** We beg those who contribute regularly to this column, not to desist because they find occasionally that their returns are unpublished. We must exert a strict editorship over their reports—with which we nevertheless gladly acknowledge that we are most kindly favoured—but we hope that the abridgment or non-publication of uninteresting details will induce repetition, not abandonment, of the attempt thus to benefit our readers.

Berwickshire Merse Farm, *Jan.* 12.—Since last report we have been carting dung to land for Turnips, threshing Beans for straw for the horses, and also threshing Oats for the servants. Our horses are fed on straw and Oats, with boiled Barley twice a week. [How much of each daily?] The cattle are fed on white Turnips and straw. We have used no Swedes yet. *J. B.* [Will you tell us something about the Berwickshire management of cattle?]

Dorset Farm, *Jan.* 16.—We have this week received and tried one of Garrett's four horse-power threshing-machines, being the one to which the prize of 20*l.* was awarded at the York meeting of the Royal Agricultural Society. Having visited the show for the purpose of selecting machinery, we had the good fortune to make the acquaintance of Mr. L., one of the judges of implements, from whose kindness we derived much information and advantage in our selection. Our threshing-machine performs its work (Barley) admirably, fully equal to the flail, and, with its registered straw shaker, leaves not a particle of grain in the straw. Hornsby's prize corn-dresser is also a most excellent article, and performs its work as much to the satisfaction of ourselves as of our labourers, who seem quite proud of these new machines. We have availed ourselves of the mild weather to dig our Carrots—Early Horn and Belgian, which we estimate at 11 tons per acre of the former, and about 12 of the latter. They were sown by hand in drills, made with the drill-coulters, at 13 inches apart, on the 7th and 12th of April, and having been three times hoed, at 4*s.*, 8*s.*, at 6*s.*, and singled out at 8 to 12 inches apart, received on the 10th of June a top-dressing of 2 cwt. of Peruvian guano and 2 cwt. of superphosphate of lime per acre. The soil is sandy and very light, being the Bagshot formation. Ground ploughed and subsoiled.

South Hampshire Farm, *Jan.* 13.—The weather during the past fortnight has been rather unfavourable for general farm-work, for although the few days of frost we have had has tended to ameliorate the soil, yet it has not been of sufficient duration to allow of some kinds of farm-work of much importance, such as carting chalk, carting manure on to Grass land, &c., being done to much extent. Our horses have been employed carting Wheat to barn and to mill, and when weather has been favourable four two-horse ploughs have been fallowing Wheat stubble, intended for a crop of Swedes next season. We find where the *land* was rafter ploughed, harrowed, &c., and the Couch grass removed, it ploughs up much more free and cleaner, although the past season must be considered unfavourable for the autumn preparation of Turnip fallows. Upon the clay loam farm the first ploughing for Turnips is now finished; if we have about a week of fine weather we shall complete the same operation on the sand-loam farm. Odd horses are kept continually employed in carting hurdles for the removal of sheep, in carting hay for horses, cows, and sheep, in carting Swedes for cows, pigs, &c.; and in carting manure as fast as removed from the cow boxes and pig pens, and spreading it regularly over the farm-yard; carting litter from straw-yard to the cattle-boxes, pig-pens, &c.; also in carting Couch-grass from the Turnip fallows previous to the winter ploughing. Our labourers have been engaged in attending the threshing machine, winnowing Wheat, banking, hedging, and planting quicks, filling chalk, and carting upon land lately grubbed out of copse; also in filling clay and carting upon a part of the same field where the soil is of a light moor description; some of the men have been forking out the Couch-grass from between the rows of Turnips. The past season having been so unfavourable for cleaning the Turnip-land, we have, in most cases, a portion of Couch left among the Turnips, which, if allowed to remain, will increase to an immense extent before the land comes in rotation for a fallow, and likewise do great injury to the growing crops. Our shepherds have now full employment in attending the sheep. Our horned ewes with their lambs are now all feeding upon Swede Turnips in the open field. Our Southdown ewes are not yet upon Turnips, we having a portion of Italian Rye-grass left for them, we have about 100 down lambs, which, together with the ewes, are doing well, being almost free from the foot lameness which for several years past has done so much injury to the flocks in this neighbourhood, our fatting sheep and lambs are all receiving their Turnips cut, and also a good allowance of Clover hay and oil-cake. [How much?] The women have been employed preparing and stacking Swedes in readiness for the cutter, collecting Couch-grass upon the fallows, forking out Couch-grass from between the rows of Turnips, and raking and sweeping leaves together upon the pasture land. *J. B.*

Sussex Farm, *Jan.* 15.—Our labour will be much the same as stated last week. Next week we shall plough for Peas and Beans. Ploughing will be our main object, as wet weather has kept us from getting forward. We have in this part a considerable extent of waste land, and a good deal of it might be improved at a very small outlay. Wheat is under cultivation; for the most part is very wet, it requires draining the old sluggish way of ploughing, too, is very hurtful. The plough has gone from 4 to 5 inches deep, and, in general, 4 horses in a row draw it; the treading of these horses, and the pressure of the plough along the bottom of the furrow, has made it as hard as a road; the water lodges there and the crops perish. Farmers here are not in general men of large capital, but what capital they have, for the want of security, they are afraid to lay out; they are mostly yearly tenants, and can be turned out by a six months' notice. *J. B.*

Notices to Correspondents.

Are Draining Tiles Liable to Toll: *A Somersetshire Farmer.* We do not profess to be "learned in the law," and cannot

give legal information. We believe the decisions on this point have been conflicting.

BOUNDARIES: *A Deep Drainer*. You can go to the outside of your property, and, if you have no other mark than a hedge, with its outside ditch, to a distance beyond the former which varies in different districts; three feet is, we believe, a *large* allowance.

CHICORY: *C P B*. Apply to Mr. Robinson, of *Liburn, Ireland*.

COWS: *B A*. Nature is a safe guide: and to all your questions therefore we say—No. *W. C. S.*

CYCLOPÆDIA: *A B W*. Fullerton's was not referred to by us. We must not advise in this case.

DR. NEWINGTON'S DIBBLE: *Anon*. In answer to enquiries about dibbling on clay soil, we are assured by one who has had ample experience, that if the very smallest dibble-irons be used, the operation is perfectly safe, provided the seed be not placed deeper than 1 inch to 1½ inch beneath the surface.

GRAVELLY SOIL, &c.: *An Inquirer*. If chalk is near, you may safely apply 50 tons per acre, and it will act as lime, chemically as well as mechanically. If you can get a straight and narrow drain dug, common pipe tiles may be safely used.—The English Agricultural Society meets at Norwich next year, in July.—We could name several farms in the south of England, but must not publish them.

MOORLAND: *G R*. Your article has been published: page 889, 1848. We should prefer grubbing up the rubbish and burning it alone, then digging in the turf and with it a little of the yellow under-soil, and the use of lime—to burning the whole top soil together.

OATMEAL: *J H* asks where the coarse Oatmeal, recommended in "Advice to the Million" to form part of the diet of the labourer, can be obtained in London, or any town south of London?

OSIERS, &c.: *J C W*. An intelligent correspondent, at page 69, 1845, says:—"Now, if I had 4 acres to plant with Osiers, I would plant—

One with brindled Osier	.	3 ft. 0 in. by	2 ft. 0 in.
One with last new kind	.	3 0 „	2 0
Half withblack-buddedSpaniard		3 0 „	2 0
Half with yellow-barked Osier	.	2 6 „	1 8
Half with green leaved Osier	.	2 6 „	1 8
Half with real French	.	2 0 „	1 4

And I would try a rod or two of bitter Purple, remembering that the green-leaved Osier and bitter Ornard should be in the wettest ground. Nevertheless, it is a great error to suppose Osiers grow best in swampy ground. They grow best in a loose sandy loam, but do not mind being occasionally overflowed."—Your proposed drainage will no doubt answer. The cuttings, &c, are merely to keep the crumbs out of the stones, we suppose.

PIGEONS: *A Constant Reader*. The word poultry hardly includes them, and the plan of Mr. Dixon's work certainly did not embrace them. The subject is hardly *useful* enough for us; but we should not object to an occasional article, and many of our readers would be glad of instruction upon it; no one is better qualified as instructor than yourself, taught by experience.

QUARTER EVIL OR BLACK LEG: *G Lee*. The rapidity of the disease is such that a cure can rarely be accomplished; bleeding and opening the bowels are, however, the proper means. By way of preventative, do not allow the young cattle to run out in the field at all during the winter months; give them a dry lair and a little oilcake daily. *W. C. S.*

ROPY CIDER: *Maria* says, "If your correspondent 'A. W. G.' puts half-a pound of Mustard *seed* into 60 gallons of his ropy cider, bunging it down closely, it will be fit for use in a week or a fortnight. The same will recover ropy beer."

SMUT: *Questor*. Do not use arsenic: see an article in No. 1 and again to-day on this subject. Barley and Oats should have the Wheat pickle diluted one-half for them. But this is no protection against wireworm, and we put no faith in drills of Mustard beside Turnips; nor in soda ash.

SPRING WHEAT: *A H C*. You had better *hoe in* some 7 or 8 pecks of seed per acre. Talavera, or the bearded April Wheat, is a good spring sort.

SULPHATE OF SODA: *Owen Glendower*. See Home section.

WHEAT: *J S*. There are probably between 7 and 8 millions of acres of Wheat sown annually. From 6 to 8 pecks is the proper seed to use. Dr. Newington's dibble is described in our volume for 1848, page 193. Lime may be applied to Grass lands in autumn, or now in compost. 60 to 80 bushels every four or five years is amply sufficient.

WIREWORM: *C K S*. Soda ash varies in strength exceedingly; we have no faith in it, as against wireworm. Perhaps some of our correspondents may refer to this point.

Markets.

COVENT GARDEN, JAN. 20.

The supply of Pine-apples continues to be sufficient for the demand. Hothouse Grapes are scarce. Foreign ones tolerably well supplied. Pears chiefly consist of Beurre Rance, Easter Beurré, Ne Plus Meuris, and Old Colmar. Apples are not over plentiful. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, Carrots and Turnips are abundant and good; Cauliflowers, Broccoli, &c., sufficient for the demand. Asparagus, French Beans, Rhubarb, and Seakale are plentiful. France, Belgium, and Holland still contribute considerably to the stock of Potatoes. Lettuces and other salading are sufficient for the demand. Mushrooms are pretty plentiful. Cut Flowers consist of Heaths, Pelargoniums, Christmas Roses, Camellias, Gardenias, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., *5s* to 7s	Almonds, per peck, 6s
Grapes, hothouse, p. lb., 8s	— sweet, per lb., 2s to 3s
— foreign, p. lb., 9d to 2s	Walnuts, p. 100, 1s 6d to 2s
Apples, dessert, p. bsh., 4s to 7s	— p. bush., 16s to 24s
— kitchen, p. bsh., 8s to 5s	Chestnuts, p. peck, 4s to 7s
Pears, per doz., 2s to 6s	Nuts, Bar., p. bush., 20s to 22s
— p. half sieve, 6s to 10s	— Filb., p. 100 lbs., 60s to 160s
Oranges, per doz., 1s to 2s	— Cob, p. 100 lbs., 90s to 150s
Lemons, per doz., 1s to 2s	— Brazil, p. bsh., 12s to 16s
— per 100, 10s to 18s	

VEGETABLES.

Cabbages, p. doz., 3d to 5s	Spinach p. sieve, 9d to 1s 6d
— red, p. doz., 1s to 4s	Onions, p. bunch, 3d to 4d
Savoys, per doz., 3d to 1s	— p. bush, 2s 6d to 4s
Greens, p. doz. bunches, 1s 6d to 2s 6d	— Spanish, p. doz., 1s 6d to 4s
Cauliflowers, p. doz., 2s to 4s	— pickling, p. hf. sieve, 1s 6d to 3s
Broccoli, white, p. bun., 1s to 2s	Shallots, per lb., 4d to 8d
— brown, p. bun., 8d to 1s 3d	Garlic, per lb., 4d to 8d
Sorrel, p. hf. sieve, 6d to 9d	Artichokes, p. doz., 1s 6d to 2s
Potatoes, per ton, 60s to 180s	— Jerusalem, p. half sieve, 1s to 1s 6d
— per cwt., 5s to 9s	Lettuce, Cab., p. sc., 4d to 6d
— per bush., 2s 6d to 5s	— Cos, do., 9d to 1s
Turnips, p. doz. bun., 1s 6d to 2s	Endive, per score, 9d to 1s
Red Beet, per doz., 6d to 1s	Mushrooms, p. pottle, 6d to 1s
Horse Radish, p. bdl., 1s to 6s	— per bush., 4s to 6s
Asparagus, p. 100, 2s to 5s	Small Salads, p. pun., 2d to 3d
Seakale, p. punnet, 1s to 2s 6d	Fennel, per bunch, 2d to 3d
Rhubarb, p. bundle, 1s to 1s 6d	Savory, per bunch, 3d to 3d
French Beans, per 100, 2s 6d	Thyme, per bunch, 3d to 4d
Cucumbers, each, 1s to 2s	Watercress, p. doz. bun., 6d to 9d
Leeks, per doz., 8d to 1s	Parsley, do., 1s 6d to 2s
Celery, p. bundle, 6d to 1s 3d	— Roots, p. bdls., 1s to 1s 6d
Carrots, p. doz. bun., 3s to 5s	Marjoram, per bunch, 2d
Radishes, p. doz. hands, 6d to 1s	Mint, green, per bunch, 2d
— Turnip, do., 9d to 1s	

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Jan. 18.

Prime Meadow Hay	67s to 75s	Clover	66s to 85s
Inferior ditto	50 63	New Clover	— —
Rowen	40 60	Straw	24 28
New Hay	— —		J. COOPER.

CUMBERLAND MARKET, Jan. 18.

Prime Meadow Hay	70s to 77s	Inferior	50s to 84s
Inferior ditto	45 65	New Clover	— —
New Hay	— —	Straw	28 32
Old Clover	90 96		JOSHUA BAKER.

WHITECHAPEL, Jan. 18.

Fine Old Hay ...	66s to 72s	New Clover	84s to 90s
Inferior ditto ...	50 55	Inferior ditto ...	50 60
New Hay	63 68	Straw	24 28
Old Clover	95 100		

POTATOES.—SOUTHWARK, WATERSIDE, Jan. 15.

The Committee report that the arrivals for the past week have been limited, but quite equal to the demand, and with the exception of French every other description of Potato is nearly the same price as last week. The following are this day's quotations:—York Regents, 100s. to 150s.; Newcastle and Stockton do., 90s. to 100s., Scotch do., 90s. to 110s.; Scotch Cups, 60s. to 80s.; Scotch Whites, 50s. to 70s; French do., 80s. to 100s.; Dutch do., 40s. to 60s.; Belgian do., 60s. to 80s.

HOPS, FRIDAY, Jan. 19.

Messrs. PATTENDEN and SMITH report that there is a steady demand for all descriptions of Hops.

Midland and East Kents	p. cwt. 50s to 60s	Farnhams p. cwt.	80s — 120s
Weald of Kents	... 40 — 70	Yearling Kents	... 40 — 56
Sussex	... 40 — 65	Yearling Sussex	... 40 — 56
		Old Hops ...	... 20 — 35

SMITHFIELD, MONDAY, Jan. 15.

The supply of Beasts to-day is very small, partly occasioned, as we understand, by the non-arrivals of 500 from Norfolk, in consequence of a disagreement between the graziers and the railway company. Trade is rather more brisk for the choicest kinds, but we cannot quote more than 4s. 2d. as fair average for these. There is also a considerable falling off in the number of Sheep; it is, however, very difficult to obtain more money, the butchers having much stock on hand. Choice Calves are readily sold at rather higher prices. From Holland and Germany we have 188 Beasts, 960 Sheep, and 48 Calves; 700 Beasts from Norfolk and Suffolk, and 1000 from Leicester and Northampton.

Per st. of 8 lbs.—	s d	s d
Best Scots, Herefords, &c.	4 0	to 4 2
Best Short-horns	3 8	— 3 10
2d quality Beasts	2 10	— 3 4
Best Downs and Half-breds	... 4 6	— 4 10
Ditto Shorn	.....	

Per st. of 8 lbs.—	s d	s d
Best Long-wools	4 0	to 4 4
Ditto Shorn	.....	
Ewes & 2d quality	3 0	— 3 10
Ditto Shorn	. .	
Lambs	. .	
Calves	4 0	— 5 0
Pigs	4 0	— 5 0

Beasts, 2784; Sheep and Lambs, 18,200; Calves, 99; Pigs, 155.

FRIDAY Jan. 19

We have to-day a very moderate supply of Beasts; the warm weather and low prices of the dead markets cause a very limited demand, and a reduction of fully 2d. per 8 lbs. is submitted to. There are a few more Sheep, still the number is small; trade is very slow, and prices about the same as on Monday. There are a few more Calves on offer; choice qualities maintain late prices, but inferior meet with a dull sale at a reduction of about 4d. per 8 lbs. Pigs are not much in request, owing to the warm weather; the choicest kinds realise late rates, but inferior are rather lower. From Holland and Germany we have 51 Beasts, 160 Sheep, and 41 Calves; from Norfolk and Suffolk, 260 Beasts; from Scotland, 300; and 150 Milch Cows from the home counties.

Best Scots, Herefords, &c.	... 3 10	to 4 0	
Best Short-horns	3 6	— 3 8	
2d quality Beasts	2 8	— 3 4	
Best Downs and Half-breds	... 4 6	— 4 10	
Ditto Shorn	... ...		

Best Long-wools	4	0	to 4 4
Ditto Shorn	...	.....	
Ewes & 2d quality	3	0	— 3 10
Ditto Shorn	...	.....	
Lambs	...	.....	
Calves	...	3 8	— 5 0
Pigs	...	3 8	— 5 0

Beasts, 886; Sheep and Lambs, 2890; Calves, 154; Pigs, 150.

MARK LANE, FRIDAY, Jan. 19.

The weekly reports from the leading provincial corn markets, with little exception, state grain to be slightly receding in value. The arrival of 36,632 qrs. of foreign Wheat, and upwards of 90,000 sacks and barrels of Flour at Liverpool, has caused prices there to be positively lower, and felt and talked of here. In some parts of Lincolnshire the wet weather and slug have done considerable injury to the young Wheat, which the absence of frost will probably make worse. Here, to-day, the market may be called about the same, with little perceptible variation.—Flour of first quality declined 2s. per sack in London on Monday last, with no reasonable prospect of its being lower. The price, therefore, of first quality is now 44s., varying between that and 33s. 6d. for Norfolk Flour on board. The sale of Flour during the week has been less and slower than for several weeks past.—Barley is very slowly moving at trifling advance.—Malt is also slow and little inquired for at 54s. to 58s.—Oats seem lower, with large quantities on offer.—Beans and Peas are but little sought for at about the same prices.—Rye sells slowly at 26s. to 27s.—Linseed Cake without variation, say English 11*l.* to 11*l.* 10*s.* per 1000; Foreign, 9*l.* 5s. to 9*l.* 10s. per ton.—Seeds without alteration.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Dec. 9.....	48*s* 9*d*	31*s* 4*d*	19*s* 5*d*	28*s* 5*d*	35*s* 7*d*	40*s* 9*d*
— 16	47 6	31 4	18 11	29 8	34 3	39 3
— 23	47 6	31 4	18 4	29 1	33 7	38 1
— 30.....	46 10	31 3	18 0	28 6	33 11	38 9
Jan. 6	46 10	30 8	17 0	26 4	32 4	37 9
— 13.....	45 4	29 11	17 8	27 9	32 2	38 0
Aggreg. Aver.	47 0	31 0	18 3	28 3	33 8	37 3
Duties on Foreign Grain	10 0	2 0	3 6	2 0	2 0	2 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	DEC. 9.	DEC. 16.	DEC. 23.	DEC. 30.	JAN. 6.	JAN. 13.
48*s* 9*d*—		...	...	...	...	...
47 6	..	.	...	...	...	...
47 6	...	...	...	...	...	...
46 10	...	.	.	.	.	...
45 10	..	.	...	...	...	...
45 4	..	..	..	..	..	..

PRICES CURRENT.	London. Jan. 15	London. Jan. 19	Liverpool. Jan. 9.	Liverpool. Jan. 16.	Wakefield. Jan. 5.	Wakefield. Jan. 12	Boston. Jan. 10	Boston. Jan. 17	Birmingham. Jan. 11.	Birmingham. Jan. 18.
	qr.	qr.	70 lbs.	70 lbs.	qr.	qr.	qr.	qr.	62 lbs.	62 lbs.
Wheat—	*s. s.*	*s. s.*	*s. d. s. d.*	*s. d. s. d.*	*s. s.*	*s. s.*	*s. s.*	*s. s.*	*s. d. s. d.*	*s. d. s. d.*
New, red ...	42 to45	42 to45	6 6 7 1	6 6 7 0	45 to48	45 to49	38 to46	38 to46	6 4 6 8	6 4 6 8
„ white ...	48—52	48—52	6 8 7 6	6 8 7 6	46—50	46 - 52	40—48	40 - 48	5 0 7 6	6 2 6 8
Old, red ...	44— 47	44—47	7 2 7 3	7 2 7 3	45—50	42—48	43—46	43 - 46	-	—
„ white ...	52—55	52—57	7 6 7 10	7 6 7 9	—	42—49	46—50	46 -50	—	—
Foreign	42—58	12—58	4 9 7 10	4 6 7 9	—	35—52	—	---	—	—
			480lbs.	480lbs.						
Rye—New ...	26— 28	26—28	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley—										
Grinding ...	21—25	21 --25	—	—	21—24	21—24	26—28	26- 28	23—28	23—28
Malting... ...	26—31	26— 31	32s—34s	31s—33s	26— 30	26—30	30—32	30—32	30—33	30—33
Foreign... ...	20 --26	20—26	—	—	23--27	23—27	—	—	—	—
					6 bush.	6 bush.				
Malt—Home. .	—	--	—	—	39—40	39 -40	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	22—25	22— 25	3s 0d 3s 4d	2s 10d 3s 2d	—	—	20—25	20—25	18—30	18—30
Black...	--	--	2 3 2 6	2 3 2 4	—	—	17—21	17—21	19—21	18—21
Foreign	16—23	16--23	2 6 2 8	2 4 2 6	—	—	11—18	11—18	—	—
			qr.	qr.						
Peas—Boilers	28—31	28—31	40s—	38s—	34—38	34—38	—	—	36—50	36—50
Grinding...	27—29	27—29	32 —34s	32 —33s	33—35	33—35	—	—	12—14	12—14
Foreign . .	—	—	36 —38	36 —37	—	—	—	—	—	—
Beans—										
New, small ...	22—27	22— 27	33 —35	33 —35	31—33	31—33	23—32	23—32	—	—
„ Longpods,&c.	26—30	26—30	—	—	—	—	—	—	—	—
Old	34—36	34—36	37 —38	34 —36	36—37	36—37	36—38	36—38	—	—
Foreign ...	—	—	28 —36	27 —34	—	23—31	—	—	—	—
Linseed—Feed	36—42	36—42	43 —44	43 —44	32—40	32—40	—	—	—	—
LinseedCakes British ...	—	—	9*l.* 5s	9*l.* 5s	—	—	—	—	—	—
									190lbs.	190lbs.
Indian Corn—	26—30	26—30	29 —32	27 —31	—	—	—	—	15—15 6	15—15 6
Weekly Averages and Imports.	Aver. Jan. 16	Impts. Jan. 19	Averages.	Imports.	Aver.	Impts.	Aver. Jan. 13	Impts. Jan. 13	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	*s. d.*	qrs.		qrs.	*s. d.*	qrs.	*s. d.*	qrs.
WHEAT ...	47 5	14740	—	19356	—	5923	43 3	4218	48 10	1696
BARLEY ...	30 3	4820	—	5401	—	6863	25 2	140	32 5	440
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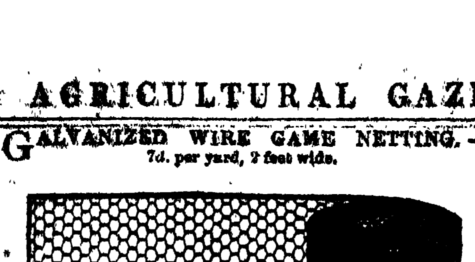

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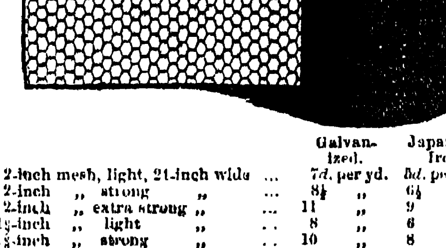

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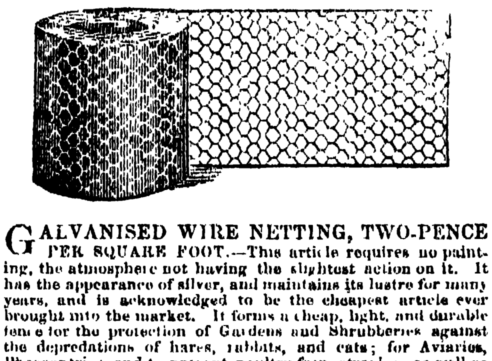

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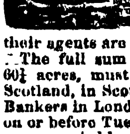

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40	1 5 0	1 6 [illegible]	3 0 7	2 14 10
50	1 14 1	1 10 10	4 6 8	4 0 11
60	3 2 4	3 17 0	6 12 9	6 0 10

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 4.—1849.] SATURDAY, JANUARY 27. [Price 6d.

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100	„ fimbriata alba plena, 1 foot high	5	0	0
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100	„ imbricata rubra „	5	0	0
100	„ in 100 varieties, 2 feet high	7	0	0
100	„ 50 „ „	6	0	0
100	„ 100 „ from 2 to 3 feet high,	12	0	0
100	„ 50 „ „	10	0	0
100	„ stocks, from 1l. 10s. to ...	2	0	0
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50	„ 50 varieties, 3 to 4 years old, with flower-buds	4	0	0
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100	„ „ „ 2 to 3 years old, grafted, in 50 vars.	7	0	0
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12	„ „ „	2	0	0
1	„ strong, with flower-buds	0	8	0
12	„ „	4	0	0
1	Tropæolum Moritzianum majus	0	1	6
1	„ speciosum, strong	0	2	0
12	„ „	0	18	0
1	Pæonia tenuifolia flore pleno	0	4	0
12	„ „	2	0	0
100	Iris germanica, in 100 varieties	3	0	0
50	„ 50 „	1	0	0
1	Ilex latifolia, fine plant, from 4 to 5 feet high	0	15	0
1	Erythrina versicolor	0	1	0
12	„ „	0	10	0
1	Correa Alexandria 1s. to	0	3	0
	„ Milneri triumphans 1s to	0	3	0
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	„ Alba ochroleuca 1s. to	0	3	0
	„ Mutabilis 1s. to	0	3	0
1	Dionæa muscipula	0	3	0
12	„ „	1	10	0
	Pieliets remontants, 25 varieties	0	12	0
	„ „ 25 pairs	0	18	0
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12	„ „	0	10	0
50	fine varieties of Phlox	0	15	0
1	Pimelea Verschaffeltii, new small plant	0	2	0
12	„ „	0	18	0
1	„ „ 1 foot high	0	10	0
1	„ „ very strong	1	0	0
1	Rhododendron aureum (Smith) 6s. to	0	10	0
1	„ carneum elegantissimum 3s. to	0	6	0
1	„ chrysolectum 4s. to	0	8	0
1	„ decorum (Smith) 4s. to	0	8	0
1	„ flavescens 4s. to	0	8	0
1	„ flavum 4s. to	0	8	0
1	„ Norbitonense 5s to	0	10	0
1	„ spectabile grandiflorum 4s to	0	8	0
1	„ yellow 4s. to	0	8	0
1	„ yellowish 3s to	0	6	0
1	„ campanulatum Alexandria 5s. to	0	10	0
1	„ bicolor 5s. to	0	10	0
1	„ grandiflorum 4s. to	0	8	0
1	„ lacteum superbum 4s. to	0	8	0
1	„ latifolium 4s. to	0	8	0
1	„ macrophyllum 10s. to	0	15	0
1	„ roseum 10s to	0	12	0
1	„ speciosum 8s. to	0	10	0
1	„ triumphans 6s. to	0	12	0
1	„ arboreum gloria Gandavensis	0	5	0
1	„ „ „ „ strong	1	0	0
100	Lilium lancifolium album, small bulbs	2	10	0
100	„ „ „ strong	5	0	0
100	„ „ „ stronger	10	0	0
100	„ „ rubrum, seedlings, small bulbs	5	0	0
100	„ „ „ „ strong	10	0	0
100	„ „ „ „ stronger	20	0	0
	These flowers are of a most beautiful red colour, if grown in the open air, but they turn pale if grown in a greenhouse, the same if the bulbs are rotten, but never white.			
1	Lilium lancifolium rubrum, the old species (or rubrum extra), good bulb 10s. to	0	15	0
1	Achimenes Escheriana	0	4	0
1	„ coccinea formosa	0	2	0
1	„ „ grandiflora	0	2	0
1	„ „ Kermesina	0	2	0
1	„ „ Beatoni	0	2	0
1	„ „ splendens	0	2	0
1	„ „ pallida	0	2	0
1	„ „ lilacina	0	2	0
1	„ „ ardens	0	2	0

The following new Achimenes will be sent out for the first time this year, in the month of May, at reasonable prices: they are sent to J. B. by R. Regel, a Botanist of Switzerland.

Achimenes Baumanni	Achimenes hirsuta, splendens
„ „ var. rosea	„ „ (magnifica)
„ „ oculata	„ picta, [illegible]
„ „ fulgens	„ longiflora, [illegible]
„ „ pallida	„ „ rosea
„ Bodmeri	Dicyrta Warszewicziana
„ coccinea striata	Diastema gracilis

N.B. Goods sent free per rail, to the two seaport towns of Antwerp and Ostend.—One penny postage stamp does not prepay any letter to Belgium.

JOSEPH SMITH AND SONS, Tansley Nursery, near Matlock, Derbyshire, invite public attention to their extensive Nursery Stock, consisting of Forest Trees of various sizes, suitable for planting, Thorn Quicks, Evergreen and Deciduous Shrubs, American plants, &c., on the most reasonable terms. Catalogues may be had gratis. Wingfield Station, on the Midland Railway, is 4½ miles from the Nursery.
Tansley Nursery, Jan. 27.

KING'S ROAD, CHELSEA.

SALE OF 100,000 PLANTS, in endless variety, and in the highest state of cultivation, at less than half price. The choicest collection for the Stove, Greenhouse, Conservatory, and Garden, 40 000 of which are Ericas, Camellias, Pimeleas, Pelargoniums, &c., of al sizes. Also many beautiful specimens fit for exhibition, together with a splendid collection of Roses, fine dwarf trained and standard fruit-trees. Vines, &c , all of the best sorts. Catalogues forwarded. —J. WEEKS and Co., United Nursery, King's-road, Chelsea.

TO THE SEED TRADE.

WILLIAM JAMES EPPS begs to offer the following SEEDS, grown from fine selected stock of 1848, warranted neat.

YELLOW GLOBE MANGOLD WURZEL.
IMPROVED LONG RED DO.
DRUMHEAD CABBAGE.—PARSNIP.
SCIMITAR PEAS, &c.

The prices for the above which will be forwarded on application) are exceedingly low.—Maidstone, Kent, Jan. 27.

THURSTON'S RELIANCE PEA.—All persons desirous of growing a good PEA, should lose no time in purchasing and planting the above superb variety, as truly described and advertised in former papers.
G. and J. THURSTON, Stowmarket

SEED POTATOES.

JOHN LEWIS, Axbridge, Somerset, has a few sacks of the Early Ash-leaf; Ditto of the Blossoming Ash-leaf; and a few sacks of the Bath White Potatoes to sell, all of the very earliest and best sorts, and perfectly sound. A line by post will be immediately attended to.

TO SEEDSMEN.

BENJAMIN R. CANT has a quantity of FLOWER-SEEDS, &c., of this season's growth, to offer to the Trade, and will be happy to forward priced lists upon application.
St. John's street Nursery, Colchester.

SEEDLING DAHLIA.

TRENFIELD'S LORD DACRE.—Colour dark Rose tinted with Purple, a first-rate and constant show Flower; in consequence of the early frost was exhibited only three times, and received two first class Certificates. The stock is a short one. Fine Ground Roots, 4*l.* 4*s.* each, may be had of Mr. TRENFIELD, Lewisham, Kent.

OPINION OF THE PRESS.

"Trenfield's Lord Dacre, Seedling Dahlia, 1847. 24 blooms; dark rose shaded with purple; petals cupped, smooth, and well arranged; centre up, outline and form good; the constancy of this flower cannot be doubted."—*Gardener & Florist*, Oct. 14, 1848.

SEEDS—SELECT, NEW, AND GENUINE.

JOHN MITCHINSON AND CO., having a thorough knowledge of the requirements of the Horticultural interest, have made Selections of the best and most approved varieties of KITCHEN-GARDEN SEEDS, which they offer in properly proportioned Collections:

			£	s.	d.
No. 1.	A complete Collection, for a large garden		3	3	0
2.	,, ,,	(equally choice) ...	2	2	0
3.	,, ,,	(a useful assortment)	1	1	0
4.	,, ,,	suitable for a small garden	0	12	6

No extra charge for package; and all orders above 1*l.* delivered free of carriage by Pickford and Co. to London, or to any Station on the Great Western, Bristol and Exeter, and South Devon Railways. For any sorts not required, increased quantities of those most desired will be sent. Catalogues of the Sorts and Quantities in each Collection may be obtained on application to
JOHN MITCHINSON and Co., Seed Establishment, Truro.

CUCUMBER GROWERS should not delay purchasing the seed of TILEY'S VICTORY OF BATH and GORDON'S WHITE SPINE, he having last season received numerous letters when the seed was all disposed of. It possesses the whole of the properties as laid down by Mr Glenny. Parties competing for the first prizes at the forthcoming Cucumber Exhibitions in 1849 should procure the seed in time.

E. T. has numerous letters by him which he has received, authorising him to make use of the names of the writers if required, speaking highly of their approval as to the merits of the above Cucumbers over all others.

VICTORY OF BATH, 10 seeds, 2*s.* GORDON'S FINE WHITE SPINE, 10 seeds, 1*s.* 6*d.*; also, LORD KENYON'S FAVOURITE (true), or better known as the Syon Free Bearer, very superior to the old Syon House as a Cucumber for winter cultivation, 10 seeds, 2*s* 6*d.*, or a packet of the above three varieties, 5*s.* The true old Syon House can be supplied in packets of 10 seeds at 1*s.* 6*d.* A remittance must accompany the order, either in cash or penny postage stamps to the amount. For further particulars, see Advertisement in this Paper of Saturday December 16.—Sold at EDWARD TILEY's General Seed Shop, 16, Pulteney Bridge, Bath.

JOHN STEWART, NURSERYMAN and SEEDSMAN, Dundee, begs to return his thanks to the Noblemen, Gentlemen, and the Public in general, who have favoured him with their orders during the past 20 years; and now begs to inform his patrons that he has assumed his two sons, WILLIAM and DAVID STEWART, as partners, who have had long experience in the Nursery and Seed Trade, and that in future the business will be carried on in all its branches under the firm of JOHN STEWART and SONS.

With reference to the above, JOHN STEWART & SONS, NURSERYMEN and SEEDSMEN, Dundee, beg to make known that they have a clean and well grown stock of NURSERY PLANTS to dispose of. The following will be sold cheap, all fine plants.

LARCH, 2 years transplanted, from 1½ to 2½ feet.
SCOTCH FIR, native, 1 and 2 years transplanted.
SPRUCE, Norway, 2 and 3 years transplanted.
BEECH, 2 years transplanted, 1½ to 2½ feet.
BIRCH, Weeping, 1½ foot. ELM, 3 to 4 feet.
HAZEL, 2 to 3 feet. LIME, 3 to 7 feet.
MAPLE, Norway, 4 to 5 feet. OAK, 2 feet.
PRIVET, 1 to 2 feet. MOUNTAIN ASH, 6 to 8 feet.
PINUS MUGHUS, 2 years transplanted, 1½ foot.
WEYMOUTH PINE, 1½ foot. YEW, 9 to 12 inches.
THORNS or QUICKWOOD, 2 and 3 yrs. transplanted.
PORTUGAL LAURELS, 3 years transpl., 1½ to 2 ft.

SEEDLINGS, 1 and 2 years Ash, Alder, Beech, Birch, Berberis aquifolium, Chestnut, Crab Apple, Cupressus, Elm, Scotch Fir, Spruce, Larch, Silver, Pinus austriaca, Pinus maritima, Pinus Mughus and pumilio, aleppica, altissima, acutissima, Hamiltonii, Cedar of Lebanon, Cedrus Deodara, Hazels, Hornbeam, Holly, Portugal Laurel, Laburnum, Oaks, Evergreen Oak, Pears, Pyracantha, Plane or Sycamore, Red Cedar, Thorns, Yews, Thujas, Arbor-Vitæ, Sweet Briar, Acacia.—All communications regarding prices, &c., will be replied to in direct course of post.—Dundee, Jan. 27.

HOME GROWN SEEDS,
Which can be warranted new and true. Carriage free by Hurford and Co.

JOHN SUTTON AND SONS having various kinds of land, situated in various localities, which they occupy for the purpose of growing SEEDS true to their kinds, and proving the comparative merits of each, are enabled thereby to supply their customers with Seeds of very superior quality, and at low prices.

THE KITCHEN GARDEN SEEDS

Comprise all the best varieties of Peas, Beans, Cauliflowers, Lettuces, Broccoli, &c., among which Fairbeard's Surprise, Champion of England, British Queen, and Queen of Dwarfs Peas; Sutton's Superb Green Cos and Berkshire Brown Cos Lettuces; true Walcheren and Large Asiatic Cauliflowers; Sutton's Early White, Snow's Winter White, and Hammond's White Cape Broccoli; Berkshire Champion and Cuthill's Black Spine Cucumbers; Shilling's Queen, Sutton's Imperial, and Atkins's Dwarf Matchless Cabbages, are particularly recommended. Also true Ash-leaved Kidney Potatoes, 7*s.* per bushel.

THE COLLECTION OF FLOWER SEEDS

Includes all the new and fresh imported Stocks, Zinnias, Asters, Larkspurs, Hollyhocks, Phloxes, Pansies, Petunias, &c., and several hundreds of other showy Annuals and Biennials, which may be had separate or in assortments as under:

FLOWER SEEDS (FREE BY POST).

	s.	d.
The best 40 sorts, hardy showy kinds	10	0
The best 30 ditto ditto	7	6
The best 20 ditto ditto	5	0

Priced Catalogues may be had, gratis, on application addressed J. SUTTON and SONS, Reading Nursery, Reading, Berks.

*** Carriage free to either of the Railway termini in London, or to any Station on the Great Western or South-Western Railways.

PURPLE-TOP SWEDISH TURNIP, Red Round and White Globe Turnip Seeds, as also Long Red Bugle and Yellow Globe Mangold Wurzel Seeds, to be sold. Apply to Mr. JOHN CHANCE, Long Sutton, Lincolnshire.
Mr. C. has long been a cultivator, and his stocks are not surpassed.

UNDER THE ESPECIAL PATRONAGE OF
HER MAJESTY THE QUEEN.

THE TRUE FASTOLFF RASPBERRY.—This valuable and highly esteemed Raspberry, unequalled for its size and richness of flavour, and a long continuance of bearing, as originally sent out by YOUELL and Co., can now be supplied by them of the same stock they had the honour of furnishing Her Majesty's Gardens at Windsor, and most of the Nobility, as well as having Certificates of Merit awarded them for it by the London Horticultural Society. Packages containing 100 canes, 15*s.*; 50 ditto, 7*s.* 6*d.*
Large White Raspberry, 8*s.* per dozen.

FRUIT TREES,

Comprising the finest sorts of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, Gooseberries, and Currants, warranted correct to name, as obtained from the London Horticultural Society.
Also, a fine collection of the newest and best Strawberries.
Giant Asparagus, 2 and 3 year old, 2*s.* 6*d.* and 3*s.* 6*d.* per 100.
Sea Kale, strong, 1*s* per dozen.
Standard Roses, finest sorts, by name, 12*s.* to 15*s.* per dozen.
Tigridia conchiflora, fine flowering bulbs, 6*s.* per dozen.
Great Yarmouth Nursery.

A LIST OF FLOWER, KITCHEN-GARDEN, AND OTHER SEEDS, SOLD BY C. PLATZ AND SON, NURSERYMEN AND SEEDSMEN, ERFURT, PRUSSIA.

1. STOCKS.—CHEIRANTHUS ANNUUS FLORE PLENO, AND INCANUS FL. PL.

	s.	d.
36 Splendid varieties of Summer Stocks, per assortment, containing of each variety 100 seeds	4	6
24 Ditto ditto ditto, 100 seeds	3	0
20 Ditto ditto, each colour separately, per oz. ...	10	0
20 Ditto ditto, mixed ditto	10	0
20 Ditto of Autumnal Stocks, per assortment, containing of each variety 100 seeds	3	0
15 Ditto of Winter Stocks, ditto ditto, 100 seeds ...	2	6
15 Ditto ditto, per oz.	10	0
6 Ditto Branching German ditto, per assortment, containing of each variety 100 seeds ...	1	0
2 Ditto Winter Kaiser (Emperor) ditto, extra, of each colour separately, 1000 seeds ...	3	0

2. ASTERS.—ASTER CHINENSIS FLORE PLENO.

	s.	d.
30 Splendid varieties of tall, quilled, German Asters, per assortment, containing of each variety 100 seeds ...	3	0
20 Ditto ditto ditto, 100 seeds	2	0
20 Ditto ditto, per oz.	6	0
20 Ditto Dwarf Asters, per assortment, containing of each variety 100 seeds	2	0
10 Ditto ditto ditto, 100 seeds	1	0
20 Ditto ditto, per oz.	6	0
8 Ditto Globe-flowered Asters, per assortment, containing of each variety 100 seeds ...	1	0
8 Ditto ditto, per oz.	6	0
6 Ditto Pyramidal Asters, per assortment, containing of each variety 100 seeds	1	0
6 Ditto ditto, per oz.	9	0

3. BALSAMS.—IMPATIENS BALSAMINA FLORE PLENO.

	s.	d.
24 Splendid varieties of Balsams, per assortment, containing of each variety 100 seeds ...	9	0
24 ditto ditto, per oz.	9	0
10 Ditto dwarf ditto, per assortment, containing of each variety 25 seeds	6	0
10 Ditto Camellia ditto, ditto ditto, 25 seeds ..	6	0
10 Ditto ditto, per oz.	9	0
10 Ditto ditto, mixed per oz.	5	0

4. LARKSPURS.—DELPHINIUM AJACIS FLORE PLENO.

	s.	d.
20 Splendid varieties of Dwarf Double Larkspurs, extra, each colour separately, per oz.	1	0
20 Ditto ditto ditto, per lb.	10	6
20 Ditto ditto ditto, mixed, per lb	5	0
10 Ditto Tall ditto, each colour separately, per oz. ..	1	0
10 Ditto ditto ditto, per lb.	10	6
10 Ditto ditto ditto, mixed, per lb.	5	0

5. MISCELLANEOUS SEEDS.

	s.	d.
20 Splendid varieties of Winter Hollyhocks, per assortment, containing of each 1 small packet ..	2	0
20 Ditto ditto, per oz.	1	0
10 Ditto Scabiosa major, per assortment, containing of each 1 small packet	1	0
10 Ditto Lathyrus odoratus (Sweet Pea), ditto ditto.	1	0
12 Ditto Ipomœa (Convolvulus), ditto ditto ...	1	6
12 Ditto Mirabilis jalapa (Marvel of Peru), ditto ditto	1	0
12 Ditto Zinnia elegans, ditto ditto	1	6
12 Ditto ditto, per oz.	2	0
12 Ditto Papaver somniferum flore pleno, extra, per oz.	1	0
10 Ditto Salpiglossis, per assortment, containing of each variety 1 packet	1	0
10 Ditto ditto, per oz.	8	0
Extra Pinks, very fine, 100 seeds	2	0
Cheiranthus cheiri (Wallflower), flore pleno, dark brown, 1000 seeds	4	6
20 Splendid varieties of Creeping plants, very fine, per assortment, containing of each 1 small packet ..	2	0
100 Ditto very superior summer flowers, ditto ...	9	0
100 Ditto ditto, per oz.	0	6
12 Ditto ditto, quite new, per assortment, containing of each 1 small packet	2	0

6. VARIOUS FLOWER SEEDS (Sold in Pounds and Ounces).

		s.	d.
Antirrhinum triphyllum	per oz.	0	6
Bartonia aurea	,,	2	0
Brachycome iberidifolia	,,	4	0
,, ,, alba ...	,,	4	0
Cacalia sonchifolia coccinea ...	,,	1	0
,, ,, lutea ...	,,	1	0
Calliopsis bicolor	,,	0	6
Centaurea americana	,,	4	0
,, suaveolens	,,	2	0
Chænostema polyanthum	,,	2	0
Cheiranthus maritimus cœrulea ...	,,	0	6
Clarkia elegans cœrulea fl. pleno ...	,,	2	0
,, ,, rosea	,,	2	0
,, pulchella rubra	,,	1	0
,, ,, alba	,,	1	0
Collinsia bicolor	,,	1	0
Convolvulus bicolor	per lb.	1	6
,, tricolor	,,	1	6
Crepis barbata rubra	per oz.	1	0
Cynoglossum linifolium	per lb.	2	4
Dianthus chinensis flore pleno, div. ...	per oz.	3	6
,, ,, imperialis flore pleno ...	,,	4	0
,, ,, simplex	per lb.	6	0
Elichrysum bracteatum luteum ...	per oz.	1	0
Eschscholtzia californica	per lb.	10	6

		s.
Hibiscus calisurneus	,,	1
Gilia splendens	per oz.	1
Iberis lusitanica	per lb.	8
,, umbellata purpurea ...	per oz.	1
Ipomœa coccinea	,,	1
Lathyrus odoratus div.	per lb.	2
Lupinus albus	,,	1
,, Cruickshankii	per oz.	1
,, hirsutus cœrulea	,,	1
,, Hartwegii	,,	1
,, suaveolens	,,	0
Malope grandiflora, per lb. 15*s.* ...	,,	1
Mirabilis jalapa, div., per lb. 6*s.* ...	,,	0
Nemophila insignis	per oz.	1
Nigella damascena	,,	0
,, nana flore pleno	,,	1
Papaver somniferum Marschallianum ...	,,	0
,, ,, Murselii	,,	0
Petunia integrifolia	,,	2
Phlox Drummondii, div.	,,	4
Reseda odorata, per lb. 4*s.*	,,	0
Sanvitalia procumbens	,,	1
Scabiosa major, div.	,,	1
,, ,, atropurpurea	,,	1
,, nana, div.	,,	1
Schizanthus pinnatus	,,	0
Senecio elegans flore pleno atropurpurea ...	,,	2
,, ,, ,, lilacia ...	,,	2
,, ,, ,, purpurea ...	,,	2
Sphenogyne grandiflora	,,	1
Tagetes striata	,,	0
,, patula fistulosa	,,	0
,, erecta, orange	,,	0
Tropæolum canariense	,,	1
,, majus div.	,,	0
,, ,, bruneum	,,	2
,, minus	,,	1
Verbena Aubletia	,,	2
,, pulchella	,,	2
Viscaria oculata	,,	2
Xeranthemum annuum flore pleno alba ...	,,	1
,, ,, ,, rubra ...	,,	1
Zinnia elegans alba	,,	2
,, ,, ,, lutea	,,	2
,, ,, aurantica	,,	2
,, ,, carnea	,,	2
,, ,, coccinea	,,	2
,, ,, ,, fistulosa, new ...	,,	4
,, ,, sulphurea	,,	2
,, ,, various sorts	per lb.	12

7. KITCHEN GARDEN SEEDS.

		s.
Cauliflower, best early Erfurt	per lb.	12
Cabbage, large white Erfurt	,,	3
Savoy Cabbage, yellow winter Erfurt ...	,,	3
,, ,, dwarf early Ulm ...	,,	6
,, ,, ,, late Ulm ...	,,	6
Borecole, green curled winter	,,	1
Rapecole, small-leaved early white Vienna, for hotbed	,,	6
,, ,, ,, blue, ,, ,,	,,	6
Onions, red round hard Erfurt	,,	1
,, yellow ,, ,, ...	,,	1
Leeks, large thick-stemmed Erfurt	,,	1
Lettuce, large yellow Asiatic	,,	2
,, ,, variegated	,,	3
,, ,, yellow Prince's-head ...	,,	2
,, ,, red Swede's-head ...	,,	3
Radish, monthly white Turnip Erfurt ...	,,	1
,, ,, pink ,, ...	,,	1
,, ,, all colours mixed ...	,,	1
,, long black Spanish Erfurt ...	,,	2
,, round ,, ,, ,, ...	,,	2
Cucumbers, long green Erfurt	,,	4
,, ,, ,, serpentine ...	,,	5
Carrots, small red Dutch for hotbed ...	,,	1
,, long red Erfurt	,,	1
,, long red Brunswick	,,	1
,, long red horn, early	,,	2
,, yellow Saalfeld	,,	1
Parsley roots, thick	,,	1
Succory roots	,,	1
Celery, large root, Celeriac, Erfurt ...	,,	2
Turnips, white round Dutch	,,	0
,, yellow ,, ...	,,	0
Marjoram	,,	3
Thyme, summer	,,	2
Purslane, green	,,	2
,, yellow	,,	2
Basil, bush	,,	2
Parsley, for cutting	,,	0
Spinach, long-leaved	,,	0
,, round-leaved	,,	0

8. TREE SEEDS.

		s.	d.
Betula alba	p. 100 lbs.	12	0
Cratægus oxyacantha ...	,,	24	0
Fraxinus excelsior ...	,,	16	0
Pinus abies	,,	21	0
,, cembra ...	per lb.	3	0
,, Larix ...	,,	1	6
Pinus picea ...	p. 100 lbs.	21	
,, sylvestris ...	per lb.	2	
Prunus avium ...	,,	0	
Pyrus communis ...	,,	1	
,, Malus ...	,,	1	

M[illegible]'S "PRINCE ALBERT" [illegible] [illegible] from the [illegible] at [illegible] [illegible] DOUGLAS. This splendid new variety, at [illegible] per packet.
PHLOX DRUMMONDII, NEW SCARLET, 1s. per packet.
SEYMOUR'S SUPERB RED CELERY, 6d. per packet.
All the choicest Vegetable and Flower Seeds can be procured on application to
WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.
*** *Our New Seed Catalogue can be obtained on application, Gratis, and should be in the possession of all who have gardens.*

RANUNCULUSES, ANEMONES, AURICULAS, AND LILIUM LANCIFOLIUM.

HENRY GROOM, Clapham Rise, near London, by appointment Florist to Her Majesty the Queen, and to His Majesty the King of Saxony, begs to recommend to the attention of the Nobility and Gentry the above FLOWERS, which he can supply of the best quality at the following prices:

		£	s.	d.
100 RANUNCULUSES, in 100 superfine sorts, named		2	10	0
Superfine mixtures, per 100, from 7s. 6d. to 21s.				
100 ANEMONES, in 50 superfine sorts, named	...	2	2	0
Superfine mixtures, per 100, from 6s. to 10s. 6d.				
25 AURICULAS, in 25 superfine sorts, named	...	2	10	0
12 " in 12 good kinds, named ...	...	0	18	0

LILIUM LANCIFOLIUM ALBUM, each, from 1s. to 2s. 6d.
" " PUNCTATUM, do., 3s. 6d to 7s 6d
" " RUBRUM or SPECIOSUM, do., 5s. to 21s.
" " ROSEUM, do., 5s to 15s.

A new collection of Hybrid Seedling LILIES, 6 sorts for 18s.

H. G. begs to say he continues to supply, for planting in Shrubberies, 100 fine roots of Lilium lancifolium album for 5l., package included. No shrubbery should be without them, as they furnish the greatest ornament during the autumnal months. They are quite hardy.

NOTICE.

A DESCRIPTIVE CATALOGUE, comprising the Newest and most Popular Varieties of VEGETABLE AND FLOWER SEEDS for 1849 is now published by William Hamilton, Seedsman and Florist, and may be had on application at 156, Cheapside, London.

Packages, containing Vegetable and Flower Seeds sufficient for a large garden, forwarded to all parts, carriage free, on receipt of Three Guineas.

JOSLING'S ST. ALBAN'S GRAPE, the same as patronised by the Queen, Prince Albert, Committee of the Horticultural Society of London, Prof. Lindley, Mr. R. Thompson, Mr. Henderson, Pine-apple Nursery, and the editor of the Gardeners' Journal, as being distinct and one of the best in cultivation. Two year old plants, 10s. 6d. each; one year old plants, 7s. 6d. each, carriage free to London. A remittance expected. The usual allowance to the trade if three are taken. May be had of any respectable Nurseryman, or the grower, Robert Josling, Seedsman, St. Alban's.

LISIANTHUS RUSSELLIANUS.— Now ready, fine healthy Plants of the above Splendid Flower, at from 2s. 6d., 3s. 6d, and 5s. each. Cuthill's Black Spine Cucumber Plants always ready. Packets of seeds of Melon, Cucumber, and Lisianthus, at 1s. each. Very fine Strawberry Plants in pots for forcing.

J. C.'s Book upon the Potato, Cucumber, Melon, Strawberry, and Lisianthus, which has given satisfaction to all who have purchased it, only 1s. 4d. by post.

James Cuthill, Florist, Camberwell, near London.

DOUBLE ITALIAN TUBEROSE ROOTS.— The Bulbs of this most beautiful and fragrant Flower have been just received from Italy at A. COBBETT'S Old-established Italian Warehouse, 18, Pall-mall, and are warranted double, at 4s. per dozen. Also, expected about the end of January, a choice collection of Orange, Lemon, Citron, and Shaddock Trees, together with Catalonian, Azorian, and Arabian Jessamine plants, any of which may be bespoke.

LARCH PLANTS.

PETER BOOTH, Nurseryman, Falkirk, has for sale a large stock, from two to three millions of transplanted LARCH plants of various sizes, at the following prices per 1000: —12 to 15 inches, 6s. 6d.; 1½ foot, 7s.; 2 feet, 7s. 6d.; 2½ feet, 8s.; 3 feet, 10s. Of the 2½ feet and 3 feet sizes, there are above a million of them, which are well suited for both the Scotch and English markets, and as it is now well known that strong Larch plants are scarce in the country, early application is necessary. This extensive stock of transplanted Larches is well grown, well rooted, and of the very best quality, and can be seen at P. B.'s various Nursery grounds at Falkirk. Of the great variety of plants in these Nursery grounds, a few more may be noted, to show the low prices at which they can be obtained, viz., Transplanted Scotch Firs, from 6 to 10 inches, 4s. and 5s.; ditto, 1 foot, 1½ foot, and 2 feet, 5s. 6d.; Spruce Fir, 1 foot, 1½ foot, and 2 feet, 4s. to 5s.; Oaks, 2½ feet, 8s. 6d.; Plane, Elm, Alder, and Beech, 3 feet, 8s. 6d.; Ash, 2 feet to 4 feet, 4s. to 5s.; seedling Pinus austriaca, 2 years, 3s. A very large stock of transplanted Thorns very cheap. A remittance or reference must accompany all orders from unknown correspondents.

SEEDS.

BASS and BROWN'S DESCRIPTIVE PRICED CATALOGUE for 1849, sent free by post, on application. We beg to offer the following in collections, including many choice new sorts.

VEGETABLE SEEDS.

	£	s.	d.
A complete Collection, including Thurston's Reliance, Danecroft Rival, Fairbeard's Surprise, British Queen, and other fine Peas, 20 quarts in all, and all other Vegetable Seeds, best and newest kinds, in proportion for ...	3	3	0
The same Collection, in smaller quantities ...	2	2	0
Do. do. do. ...	1	5	0
A Collection suitable for a small garden ...	0	15	0

A list of the sorts furnished if required.

SELECT FLOWER SEEDS.

Free by post, with full directions for sowing, heights, colours, &c., viz.:—

	s.	d.
100 varieties best and newest Annuals ...	15	0
50 varieties for 8s. 6d., 30 for 5s. 6d., 20 for ...	4	0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7s. 6d., or 12 do. ...	5	0
20 varieties best Greenhouse Annuals, 7s. 6d., 12 for ...	5	0
20 varieties choice Greenhouse Perennials, 10s. 6d., 12 for	7	0
20 vars. choice hardy Biennials and Perennials, 7s. 6d., 12	5	0
[illegible] varieties Imported German Stocks ...	5	0
[illegible] ditto ditto, 3s. 6d., 12 for ...	2	0

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of [illegible] and upwards [illegible] presented extra. Post-office orders payable to Bass and Brown, or to [illegible], Seed and Horticultural Establishment, Sudbury, Suffolk.

TO PEAR GROWERS.

RENE LANGELIER, Clarendon Nursery, St. Helier, Jersey, begs to state that he has still trees of BEURRE LEON LE CLERC and BLANC PERNE to dispose of; Beurré Leon Le Clerc 10s. 6d., Blanc perné 7s. 6d. Any amateur wishing to prove the sorts of Beurré Leon Le Clerc, R. L. can send out 10 trees full of fruit-buds in perfect pyramid, at 1l. 1s. each. It is a Pear that should be in every collection, as well as Blanc perné, which will keep till April or May. A selection of the best Table Fruit can be had of R. L. at moderate price, all guaranteed to be correct as described, and proved in his experimental garden. Reference will be required from unknown correspondents.

SEEDS.—ALL PURCHASERS OF KITCHEN GARDEN SEEDS should refer to the *Gardeners' Chronicle* of Jan. 6, on the back page of which is

RENDLE'S NEW CATALOGUE,

comprising all the best kinds in cultivation. A copy can be had on application to William E. Rendle & Co., Seed Merchants, Plymouth.

PEAS.

CLARKE'S NEW LINCOLN GREEN PODDED MARROW.—Being a selected variety from Clarke's New Early Ringwood possessing all the advantages of the original stock, as to earliness and size, and at the same time having a rich Green Pod. To be had (wholesale only) of Mr. Henry Clarke, Seed Merchant, 39, King-street, Covent Garden.

The Gardeners' Chronicle.

SATURDAY, JANUARY 27, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Monday,	Jan.	29	Medical	8 P.M.
Wednesday,	—	31	Society of Arts	8 P.M.
			Geological	8½ P.M.
Thursday,	Feb.	1	Antiquarian	8 P.M.
			Royal	8½ P.M.
			Zoological	9 P.M.
Friday,	—	2	Botanical	8 P.M.
			Royal Institution	8½ P.M.
Saturday,	—	3	Asiatic	3 P.M.
Monday,	—	5	Entomological	8 P.M.
			Chemical	8 P.M.
			Pathological	8 P.M.
			British Architects	8 P.M.
Tuesday,	—	6	Linnean	8 P.M.
			Civil Engineers	8 P.M.
Thursday,	—	8	Royal Society of Literature	4 P.M.
Friday,	—	9	Astronomical (Anniversary)	3 P.M.
			Philological	8 P.M.
Saturday,	—	10	Royal Botanic	3¾ P.M.

In proceeding to discuss the bearing of the evidence now collected concerning the Potato disease, it is desirable to pass by for the present all speculative opinions, and to confine attention to the facts which have been elicited. Hereafter we may proceed to theory. For to-day two points only can be considered.

The most advantageous season for planting demands the earliest notice.

Autumn planting, that is to say from October to January, has been strongly recommended, but very partially practised; nevertheless in the few cases reported upon, it has proved advantageous. Out of 64 English returns 53 are in its favour, and only 11 against. In some Cornish cases this is a striking result; for in that county the crop suffered very great loss. Mr. Simmons, of Gwennap, found that his October planted crop was not diseased, that of November a little, that of February very much. In like manner Mr. Hutchinson, of Camborne, sustained little injury in his crop set in October and November; Mr. Miller, of Morvel, says his October planted Potatoes were excellent, but those of November not so good. Similar statements come from Devonshire, another county ravaged by the disease; R. Saunders, woodman, of Dawlish, found his autumn and January planted crop perfectly safe, while all the rest was very bad. The exceptions to success appear to be heavy rich land, as at Quorndon, near Derby, where Miss *Wilmot Sitwell's* gardener reports that one-half of his Fortyfolds, planted in November, were diseased when they were set in the underspit of an old pasture brought to the top by trenching; but in this same place the November planted Bedford Kidneys were hardly injured when the top spit was kept at the top and dressed with about 2 tons of burnt sods and rubbish. A few instances of autumn planting having failed occur, the explanation of which is not discoverable, as with Mr. Calcraft, of Corfe Castle, whose November planted crop was this year much injured, the disease having appeared in his neighbourhood two or three weeks earlier than usual.——Only four cases of autumn planting are mentioned in Scotland, all of which received little or no injury; in Ireland but two cases are reported, both successful; and in Wales but one, successful.

January and February have been in many cases selected; and it appears that those months have proved highly advantageous. In England only 10 failures are reported out of 118, 1 out of 20 in Ireland, none in Wales; in Scotland no planting seems to take place in these early months. Upon the whole, we find that out of 142 trials of January and February in the southern and western parts of the United Kingdom, there are 131 cases out of 142 in which the crop escaped or was little injured.

March is largely taken for Potato planting; in England we have 170 cases, of which 44 were failures, and 125 were more or less successful; in Scotland 48 cases, of which 40 were successful; in Ireland 44, with 2 great failures; in Wales 8, all more or less successful; or, for Great Britain 265 cases, of which 49 were instances of large loss.

In *April planting* the proportion of bad cases increases. England returns 132 instances of large loss against 91 of little or no disease; Scotland 13 against 91; Ireland 10 against 9; and Wales 5 against 5; or for England, Ireland, and Wales 147 cases of great loss against 105 of escape or inconsiderable loss. In Scotland the little disadvantage attending April planting is explained by the northern latitude and late summers of the country.

May and June may be taken together; and here the proportion of bad cases rapidly increases. In England, out of 155 returns, 121 speak of large loss; in Scotland we have 10 cases of failure against 23 of success; in Ireland 28 against 2; and in Wales 11 against 8; or for the United Kingdom, Potato planting in May and June produces 165 instances of large loss against only 67 cases of comparative escape. Here, again, the proportion is interfered with by the instances from the north of Scotland; leaving them out, we have the important fact that in England, Wales, and Ireland, only 44 out of 155 Potato crops, planted in May and June, or 1 in 3, escaped an almost total loss. Were we to eliminate the mountainous crops, which are subject to a climate analogous to that of Scotland, the proportion of bad cases would, doubtless, be much augmented.

The foregoing calculations may be simplified thus:

	England, Ireland, Wales.		Scotland.	
	Bad.	Good.	Bad.	Good.
Autumn ...	11	56	0	4
Jan., Feb. ...	11	131	—	—
March ...	88	136	8	40
April	147	105	13	91
May and June	155	44	10	23

Showing conclusively that, for the principal part of the kingdom, the autumn, with January and February, are the best months for planting; that March is unsafe, April dangerous, and May and June ruinous. In Scotland, March may be taken as the best month, after the autumn, the rate of loss being about 7½ per cent. in March, 14 per cent. in April; for that country the May crops, known only in the most northerly districts, may be disregarded.

This point may be taken in another view, by comparing the cases of entire escape with the whole number of cases reported upon. The numbers will then stand thus:

	Wholly Escaped.	
	England, Ireland, Wales.	Scotland.
Autumn ...	22 in 67	2 in 4
Jan., Feb. ...	34 in 142	—
March	9 in 222	20 in 48
April	8 in 250	36 in 104
May and June ...	4 in 200	8 in 33

Those facts establish the proposition that, *the earlier Potato planting is performed* the better, *and the later* the worse.

The rapidity with which an erroneous theory, especially if it contain a dash of the marvellous, settles down into a popular conviction, stands in strong contrast to the difficulty of again uprooting it after science has satisfactorily proved it to be unworthy of credit. We have lately had occasion to notice the idle fancy that Thistles and white Clover are spontaneously generated in particular situations; and, strange as it may seem, we have ascertained that this and many other notions, equally ridiculous, are extensively prevailing in certain agricultural districts. The discussion of these questions in Farmers' Clubs does not always tend to correct old prejudices, but, as it should seem, in some cases it only serves to confirm them. We have heard from a correspondent, who was endeavouring to combat the opinion that "the Berberry causes a blight in Wheat," that he was met by so many assertions on the part of those present, who declared they had seen the fact, that it seemed to be past a doubt that it must be true. It was noticeable, however, that no case was mentioned as having occurred since 1821. One advocate for this singular theory asserted that his Wheat had been injured for a mile or more! another that the blight could be traced from a circular patch up to a point, so as to mark out the form of a Pear, and in that point stood a Berberry bush. These facts may be readily admitted, and yet the conclusions to be drawn from a thousand such need not be the theory in question.

"Sir," said a friend of ours to a stout gentleman who was arguing after this fashion, "I constantly observe a yellow waistcoat in close company with your large paunch; and do you there-

fore conclude that the dimensions of the latter are to be attributed to its habitual proximity to the former. You must allow there are other circumstances to be taken into consideration before we can hope to arrive at a just conclusion." The most probable solution of the difficulty which has occurred to practical men why blighted Wheat has often been met with in situations where the Berberry is found to grow spontaneously, has already been given, and not very long ago, by a correspondent in the pages of the *Gardeners' Chronicle*, viz. at p. 675 of the past year (1848). Such as prefer having recourse to mysterious influences for an explanation of observed facts, to searching for plausible and probable reasons, in unison with what science teaches, can consult old GERARDE or any other worthy of two or three centuries back. The wood of the Berberry is deep yellow, and therefore, say our country quacks, it must be good for the jaundice. This is a reason just as potent as any that can be given why these same jaundice doctors (as they are called) recommend burying a bottle full of their patient's fluids, in which a certain amount of blue vitriol has been dissolved, and declare this process will effect a certain cure. A man who has lately come into possession of a small garden, formerly held by one of these worthies, is continually digging up bottles of this unsavoury mixture.

Many who can laugh at such ignorance are often not less behind the science of the present day than was this honest man behind that of the last generation! We were lately much struck with this fact in reading an account of an agricultural meeting, at which one of the first practical men of the day was endeavouring to enlighten the company on the virtues of MR. LAWES' superphosphate of lime, obtained (as he said) from Norfolk, though he should have said from Suffolk. On telling his auditors that this valuable manure was manufactured from the fossil dung of extinct gigantic saurians, his account was received with "roars of laughter," no one believing that he was speaking the truth. Nor, in fact, was he speaking the truth; his statement was grossly at variance with those facts which the researches of geologists have hitherto brought to light; and yet no geologist would have joined in that roar of laughter, because he would have seen where the mistake lay; whereas the company were (uproariously) incredulous as to the mere fact that the fossil dung of gigantic saurians has been found in abundance. But those gigantic saurians had ceased to inhabit our planet before those strata were formed from which Mr LAWES procures the materials for making his superphosphate of lime, and before the other strata that were then named as also containing saurian coprolites It is in fact extremely doubtful (and we are persuaded to the contrary) whether the phosphate nodules alluded to are coprolitic at all. Such blunders may seem to be, and no doubt they are, very venial in the mouth of an unscientific man, but still they grate upon the ear of a geologist, and he would class them with improbabilities quite as great as that of finding one of the vertebræ of the gigantic sea serpent itself upon the shores of England.

Many unscientific readers thought it was a very ingenious conjecture inserted in the newspapers that the sea serpent might possibly be one of those extinct gigantic saurians. But such a conjecture is really little less extravagant than the fancy that the Behemoth and Leviathan of Scripture were the Megatherium and Dinotherium of the preadamite creation; or that those mighty beasts were intended to typify in the old world the Pope and the Emperor. A most single-minded, clear-headed mathematical friend has suggested this latter hypothesis in his attempt to connect the discoveries of the geologist with the views entertained by some of our expounders of prophecy! And here we must say that we totally disagree with one of our correspondents, who assumes, at p. 846, that the question of the sea serpent should be esteemed a "matter of observation, and not of science." Such observations must always be scientifically interpreted before they can be trusted. He says, and with perfect truth, that "naval officers, by early and constant practice, grow up from the time they go to sea as boys in the habit of pretty accurate observation of external objects, and that they are little likely to make so gross a mistake" as taking a seal for a serpent. But, if we remember rightly, the well-trained vision of our naval officers has not unfrequently mistaken fog-banks or mountains. The accounts of our arctic and antarctic expeditions tell us of ships sailing over places where previous observers had mapped down impassable barriers. It is the circumstances under which the observation is made that may induce these delusions. A naval captain is no more likely to mistake a wet fog for dry land, if he were near enough to touch the object, than he could mistake a seal for a serpent, if the creature were quietly lying stretched out for his examination. We have been assured by a gentleman that he and a friend were once looking at some seals playing in the water off the coast of Scotland, and if they had not both felt satisfied of the absurdity of the thing, they would have been prepared to take their oaths that they saw a mermaid raise herself above the waves, comb her hair, and again disappear! The same correspondent says, the amount of evidence produced by the "viper men" would have been sufficient to hang or transport any "honest" man before any jury in the kingdom. Is not this proving too much? What "honest" man was ever hung or transported by "correct" evidence, unless, indeed, he had a rogue for his judge, and rascals for his jury? We do not suppose naturalists to be less liable to ocular delusion than other people who are practised observers; but they certainly are more in the habit of correcting their delusions, and influitely more disposed than some people to admit the possibility of their having been themselves mistaken. *J. S. H.*

A LECTURE ON THE NUTRITIVE VALUE

OF DIFFERENT ARTICLES OF FOOD.

By C. DAUBENY, M.D., F.R.S.

(*Concluded from* p. 38.)

ANOTHER obvious duty at a time like the present is to avoid waste, and one kind often unknowingly practised is the rejection, from prejudice or fastidiousness, of many substances capable of affording a wholesome and nutritious food. The great importance, for instance, attached to having bread perfectly white or pleasing to the eye is a prejudice of this description; it leads to the rejection of a very wholesome part of the food, and one which, although not digestible alone, is sufficiently so, in that state of admixture with the flour, in which Nature has prepared it for our use. Professor Johnston, in the Number of "Blackwood's Magazine" already referred to, has shown that the pollard or inner bran, which we reject, is richer in fatty matter, and likewise in nitrogenised principles, than the grain itself. It contains also more phosphate of lime, and is therefore more efficient in supplying the materials for building up the solid portions of our body. The Professor also assigns very sufficient reasons for supposing that flour, in the state in which Nature has presented it, is more wholesome, as well as more nutritious, than in the perfectly purified condition which fashion has led us to prefer. It appears from the experiments of Majendie, that animals fed upon fine flour died in a few weeks, whilst they thrived upon the whole meal bread. Even the bran or outer envelope is probably very nutritious when mixed with flour, containing, as it does, much phosphate of lime, and other nutritive matters. Brown bread, therefore, should be adopted, not merely on a principle of economy, but also as providing more of those ingredients which are perhaps deficient in the finer parts of the flour. Other methods of economy will be pointed out in my next lecture, but to all these, which aim at making the nutriment supplied to us by Nature go as far as possible, some may be prompted to add the saving which, as they conceive, would be effected, by that voluntary abstinence from a portion of his habitual nourishment, which each individual might be willing to practise for himself. I confess, however, that I have not much confidence in any considerable saving being effected in this manner. When we recollect, that even in a rich and flourishing country like England the great mass of the population do not in general obtain more solid nourishment, than is necessary for the maintenance of their frame in a healthy and vigorous condition, and that the difference between the rich and the poor in this respect lies in the quality rather than in the quantity of the provisions they consume, I fear it will be found, that any serious reduction in point of quantity would not be adopted but from necessity, and if adhered to, might cripple the powers of production in a greater ratio than it would economise the supply, as it would enfeeble those energies by which the means of subsistence are produced. It is certainly quite practicable to habituate the system to a very small proportion of food, as is done by some nations and by some communities of men, and was proved to be compatible in longevity in the celebrated instance of Louis Cornaro, who limited himself to 12 oz. daily. But freedom from disease is a very different thing from activity and vigour of mind and body, and the trustworthy experiments carried on at the Pentonville Prison have shown, that a certain definite quantity of nutritive matter cannot be dispensed with, without injury to health, and enfeeblement of the physical and mental powers.

It is of course quite practicable for persons, influenced by motives which I will not here discuss, inasmuch they are not connected with the subject of these lectures, to abstain from food on certain days, or at certain periods of the year, without feeling any bad consequences from the deprivation. But unless they are guilty of the palpable absurdity, of unfitting themselves by their austerities for the fulfilment of the duties of their respective callings, of sacrificing, that is, the end to the means, I fancy they would find, that if naturally of temperate habits, the laxness is in their case redressed, by partaking more largely of food on the days on which they permit themselves to indulge in it without restraint.

Now without discussing whether it be best or most fitting, to adopt this alternate course of repletion and abstinence, or to spread one's fasting over the week by fasting moderately every day, I will merely have remarked, that on economical grounds it would appear, that the demands of Nature may be satisfied at an easier rate by an uniform and steady mode of living, than by such an oscillation between too much and too little, just as the locomotive is maintained at a certain rate of progress by a less expenditure of fuel, when there are fewer stoppages, than when these are many.

I must, however, now bring to a close the remarks which were originally suggested by the grievous calamity with which Providence has afflicted a sister nation, and the recurrence of which, though it is to be hoped in a somewhat mitigated form, renders a repetition of them at the present time not unappropriate. Fearful and disastrous, however, as this visitation has proved, it is some little consolation to reflect, that it might have pressed even more heavily, had it occurred in a state of lower civilisation, and to a country not provided with such ready means of communication from without. Other famines, which history has reported to us, seem to have been produced by a diminution only in the supply of the staple commodities of life. That to which I allude arose from the almost total annihilation of the one great staple throughout an entire and a thickly populated country. Great as was the misery and destruction of life resulting, the proximity of a wealthy, a commercial, and a friendly people did much to relieve it, and at least prevented that utter depopulation of entire districts which we read of as occurring from lesser causes in the East, and which could hardly have been averted even in Europe, had the calamity happened to a continental country, such for instance as Bohemia, only to be reached by land through the impoverished nations that surrounded it.

TREE MIGNONETTE.

THE Reseda odorata, or common sweet Mignonette, treated after the following manner, forms a real treat in the conservatory during the winter and spring months.

Sow in spring a number of small 4-inch pots. When up, clear off all the plants but one in the centre; as it grows train it upwards to a stick until it is a foot high, or two if you please; do not allow any side shoots to grow on the stem, and remove all leaves to within a few inches of its top. When the plant gets as high as you wish it, top it, and then it will throw out side branches; as they advance, pinch off their tops until you have formed a nice bushy head to your plant, and above all things do not allow any bloom to appear until it has become strong, which will be by winter, if it has been well attended to. For the first winter it will be advisable not to have them in larger than 8-inch pots. Mignonette being an annual, if the seeds are not picked off after flowering, it is ten to one that the plant will die. I have had excellent Tree Mignonette three years old—very bushy, and full of flower all winter. Mignonette is often neglected at Midsummer, when our hands are full of other work, and yet this is the very time when Tree Mignonette wants most care, for the flowers not being wanted during summer, ought then to be removed, in order to have a fine winter display. To keep worms from entering and disturbing the roots, add a handful of soot at each shifting over the drainage.

Mignonette delights in sandy loam, not too light, and being a gross feeder, a little diluted manure-water may be given once a week with advantage. If this is contemplated, the mould need not be made so rich in the first instance.

Winter Mignonette, as it is generally called, requires to be treated differently from the above. It is generally sown about the 20th of August, if later it will not acquire sufficient strength by winter for the London market. I generally grow from eight to ten plants in a 48-sized pot, which is 6 inches deep. For this sowing it is safest to use a light sandy loam rather poor mould, for if the latter is too rich and strong the plants damp off during winter. Out of nearly a thousand pots, I have often scarcely lost one by attending to this, by not allowing a drop of rain to fall on them during winter, by never watering them unless they were flagging, and by admitting at all times plenty of air. In the case of frost coming, however, they are closely covered up, sometimes for a week or fortnight together; and if you have not followed the above rules, you will suffer severely from damp. Do not expose your plants for some days after the frost breaks up, and that only by degrees; above all things do not expose them to the sun. My anxiety to give them light, after being so long covered up, has sometimes led me for the moment to forget this, and I have suffered severely for my negligence.

Should the winter prove mild, the plants will root into the ashes they are placed on; therefore they must be lifted up occasionally, to break the roots. Slugs will annoy you if you do not look after them; they fatten on Mignonette. To retard some of the pots, pinch the heads off the plants; by this means they will not flower so strongly as those not pinched, and will yield a succession of bloom. *James Cuthill, Florist, Camberwell.*

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

GOOSEBERRIES AND CURRANTS.—If not done before, it will soon be time to prune Gooseberry and Currant trees; vegetable life is in activity much earlier in these than with other fruit trees, and it is always desirable that pruning should be finished while the tree is in a state of rest. Every advancing bud which is cut off is so much abstracted from those which remain, and

[illegible] the shoots are cut off, [illegible] of the best [illegible], which will root immediately if [illegible]. On the right management of these cuttings the well-being of the future tree, and the comfort of the cultivator will depend, and therefore a little trouble should be willingly incurred. Select strong shoots, and let the end to be inserted in the earth be cut sharp and clean to a bud; allow 3 or 4 inches to be buried in the soil, and 8 for the stem above ground; 8 inches I mean exclusive of the part which is to form the head of the tree, which must consist of three or four buds, so arranged round the axis that the future branches shall be at equal distances from each other, so as to secure a cup-like form when the head advances. Having determined on the buds to be preserved, carefully exterminate all the rest, especially those on the part to be inserted for the roots. If this is not done, you will be troubled with suckers every year, a pest you will be free from to a great extent if this rule is attended to. I was about to make a more positive statement, but I remember finding suckers proceeding from the larger roots and even from parts of the stem where there was previously no bud. Do all you can to prevent the evil, and its existence must then be provided against in the best manner afterwards, should it occur.

In two or three years the cuttings will have good heads, and they may then be placed in the situations they are finally to occupy. At that time it will be proper to determine whether you will grow them as standards or espaliers, the latter mode being adopted with success, especially in the case of those Gooseberries of a trailing habit of growth, peculiar to some of the best varieties, which makes it very difficult to form a good head. This determination refers more to the position in which the trees are to be planted, as it is manifest that the training of the bush must be regulated from the first, so as to make it an espalier or standard. In both cases avoid close planting, by which nothing can be gained, but most probably much will be lost. Keep the soil around them free from weeds, and dig in every year a little well rotted dung. To prevent the ravages of the caterpillar, it has been recommended to remove the surface soil every autumn, and replace it with fresh, brought from a little distance. It is said that the eggs are deposited near the trees, and are thus removed. A little quicklime sprinkled over might be equally effectual. I must confess I feel a little ashamed of being obliged to speak doubtfully on this important subject, but I am not acquainted sufficiently with the habits of this insect to speak positively, yet few persons have suffered more severely from its ravages than I have.

We now return to the point whence we set out, the annual pruning of the trees. First cut away as much of the bush as will leave it accessible to sun and air, and preserve a compact and open arrangement of the branches. If the tree is old, remove as much as you can of the older wood, and introduce young shoots in its place. Gooseberries and Currants bear on last year's wood, not exclusively, but principally, and yet a very different mode is adopted for each. The former are trained so that last year's growth shall remain as long as possible, one or two buds only at the extremities being cut off. Currants, on the contrary, are spurred, each new shoot being cut down to within two buds, a few leaders excepted, for the future enlargement of the tree. The same plan may be adopted with the Gooseberry, but it will have this disadvantage; the fruit will be too crowded to allow of proper expansion, whereas the pendent form of a bunch of Currants allows of closer quarters. Summer pruning should not be neglected, as there can be no doubt that the removal of the profuse growth of that season, judiciously, will throw greater strength and maturity into that which is permitted to remain.

If very large fruit is wanted, the berries must be thinned out, and liquid manure applied, but a separate paper would be necessary to detail all the arts and crafty ways of Gooseberry fanciers. In picking fruit for use, let discretion guide your hand, as a thinning equally all over will do more good to the remaining berries than the common practice of stripping whole branches at once. *H. B.*

ENTOMOLOGY.

THE LUNAR HORNET MOTH.

In our Volume for 1847 (p. 588) we were enabled, by the attention of a correspondent ("J. C. X."), to give the natural history of a minute two-winged fly, previously undescribed, which attacks the young twigs of Willows and Osiers, rendering them entirely valueless for the use of the basket-maker. The insect whose history forms the subject of the present paper is still more injurious to Willows, infesting the full-grown stems, and, by burrowing into them, rendering them unfit for the rake or hurdle-maker's purposes. This insect is the Lunar Hornet Moth, first described and figured by Mr. Lewin, in the Transactions of the Linnæan Society of London (vol. iii., plate 3, fig. 6—10), under the name of Sphinx Crabroniformis, from its resemblance to a hornet, but which name, although adopted by Donovan and Stephens, it has been necessary to reject, having been previously used by some continental writers for our other British species of hornet moths, which is the Sphinx apiformis of Linnæus. The species is therefore now known under the name of Sphecia Bembeciformis, given to it by Hübner. The perfect insect measures from 1½ to 1¾ inches in the expansion of the fore wings, and in its general appearance it bears so great a resemblance to a large wasp or hornet, that persons, unacquainted with its real character, would never believe it to be a moth; its general colour, transparent wings, and long legs, taking from it the ordinary look of a lepidopterous insect. The general colour of the body is brownish black, with a black head; the upper side of the palpi are yellow. The thorax has a narrow transverse line of the same colour on the neck, and there are two rather obscure, lunate marks of the same hue at the sides of the hind part of the thorax. The whole of the first and second segments of the abdomen, and the broad posterior margin of the third and fourth segments, are black; the remainder of the fourth being dark-red brown, and the remainder of the abdomen is orange yellow, with the hind margin of each segment dark brown. The wings are quite transparent, except the dark veins, margins and fringe along the apical margin; the thighs are brown, with the tibiæ very densely clothed with orange hairs.

This is a comparatively rare species, occurring, however, in many widely-dispersed localities, and appearing in the winged state in July. I have met with it in Osier grounds on the Surrey side of the Thames, near Barnes, where the stumps are not above a foot high, and have observed the males sunning themselves on the leaves of the Osiers, alternately raising and depressing the abdomen, but falling to the ground on the least alarm.

It is in its preparatory states that this insect is injurious to the cultivator of Osiers and Willows; the habit of its larva of burrowing into solid wood, and the manner in which the perfect insect makes its escape from the chrysalis case being very similar to those of the goat moth and wood-leopard moth, described in former articles in the *Gardeners' Chronicle.*

Mr. Lewin, in the article above referred to, states, respecting its habits, that "the larva feeds on the wood of the Sallow (Salix caprea) in the heart of which it spins itself up in November, but does not change to a pupa till May following. The larva enters the wood near the surface of the ground, sometimes from the root and feeds upwards (generally in the pith) for the space of 6 or 8 inches; after which it turns its head downwards and spins itself up within the web, there waiting the proper time to change." From several years' attention to the subject, he thinks that the caterpillar does not enter the wood till the second year of its own age, as among all the numerous larvæ found from June to November, he could perceive but a slight difference in size; probably, therefore, they may feed on the tender bark of the Sallow root the first year after they are hatched, and it seems that they eat into the wood about June.

The Rev. W. T. Bree, in an article upon this insect, published in the first volume of the "Magazine of Natural History," (new series, p. 20), considers that Mr. Lewin's opinion as to the early stage of the larva being passed externally, is confirmed by his not having observed in the wood any perforations of a very small size, or such as have the appearance of having been made by caterpillars newly hatched. This is a question of considerable interest, as it involves the undetermined fact as to the situation in which the eggs are placed by the female moth; and until this is ascertained, we cannot be said to be in a condition to determine what are the most advisable remedies to be employed to prevent or diminish the annual amount of damage which the species certainly causes to the proprietors of Osier grounds.

The caterpillar is whitish and slightly hairy, with a brown spot formed by the spiracles on each side of each joint of the body above the legs. It feeds upwards through the solid wood, but before changing to the chrysalis state it reverses its position, turning its head downwards so as to be opposite to the orifice by which, according to Lewin, it had previously entered the tree, but which we believe the larva itself has the instinct to make, spinning some webs together to form a defence during the helpless period of its chrysalis state, but not sufficiently strong to prevent its protruding its head and body through the meshes just previously to arriving at the perfect state, and forcing its way to the front of the hole by means of the series of short recurved horny points on each segment of the body, as we are informed is its habit by the late Captain Blomer (Loudon's Mag. Nat. Hist., vol. iv., p. 445), in which respect it agrees with the other British species.

Mr. Bree notices that in the neighbourhood of Coventry, when the periodical fall of the coppice wood takes place, he has observed that scarcely a single Willow wand is cut down that does not exhibit proofs of the ravages of the insect, sometimes three or four, or even five separate perforations occurring in the same stem; moreover he finds that the caterpillar does not confine itself to the pith, which is sometimes untouched, all the perforations being in the solid wood between the pith and bark. The wood of the Salix caprea is ordinarily sold to the rake-maker for the purpose of being worked up into rake teeth, or converted into flakes, *i.e.* hurdles made of split stuff nailed together (in contradistinction to the common hurdle, which is formed of round wood twisted and plaited together without the help of nails); but, by the perforation of the larvæ of this insect, the lower, and consequently the thickest portion of each Willow rod, to the length of 5 or 6 ins., or occasionally a foot or more, is spoiled and rendered unavailable to the above purposes. Mr. Bree's practice is to cut coppice wood at about 10 or 11 years' growth, but long before this time comes round he observes that on every stool of the broad-leaved Willow most of the rods have ceased to thrive, and many have even died; this premature decay being probably, in part at least, owing to the injury inflicted at the base of the stems by the larvæ of the insect.

As the female moths are very sluggish and easily perceived on the stumps of the trees within which they have been developed, one of the most advisable means to be adopted for the prevention of the injury which they inflict appears to consist in carefully examining the boles and stumps of the trees at the beginning of July, as soon as the empty pupa cases are perceived protruding half out of the apertures formed for the escape of the moth, in the immediate vicinity of which the moth will be found, and may be easily destroyed. *J. O. W.*

Home Correspondence.

Importance of having "Intermediate" Plant-houses.—The remarks you have recently made upon the temperature of plant-houses, forcibly recal to mind the imperfections of the present mode of classifying the exotic plants cultivated in gardens. There are congregated the vegetable productions of every clime, and these are virtually separated into three groups only, corresponding with the torrid, the temperate, and the frigid zones, in apparent oblivion of the gradation of temperature which obtains from the equator to the poles. Take up any of the catalogues of plants which profess to be the guides and remembrancers of cultivators, and the preceptive information they convey will be found so arranged. Look among the actual scenes of cultivation, and in probably ninety out of every hundred instances they would be found so arranged in practice. There is the hothouse for tropical plants, the greenhouse for those of temperate regions, and, in addition to the open borders for those of colder countries, there may probably be found a cold frame for such of the species as may be thought to require shelter from wet. This is usually the sum of all the accommodation provided for the shelter of exotic plants. It is true we sometimes hear of the addition of an "intermediate" house; and in large establishments, sometimes, of separate houses for those plants of which the cultivated forms are numerous, such as Camellias, Geraniums, Heaths, New Holland plants, Succulents, and such like, the provision of which are so many evidences of the imperfection of ordinary practice in this respect. But even this provision falls short of the mark. Such a country as New Holland, for example, presents too extensive a range of climate to admit of the proper culture of all its products in one structure. Moreover the miscellaneous species, that are still congregated together, when such as those above alluded to are separately provided for, are too varied in their constitutional characteristics, to attain individually a high state of perfection, when all submitted to the same treatment, as must to a great extent be the case when all are collected into one house. It is the same with what are called stove plants; whatever is too tender in its constitution to bear the climate of a greenhouse, is, in the majority of cases, necessarily placed in the stove; and as here are also ranged some plants that must have a high temperature, one or the other set must be sacrificed, or both must be compromised, which latter is what most usually happens. This seems to explain how it is that many of what are called stove plants will bear a much lower artificial temperature than is generally believed; they are not properly stove plants at all, but belong to one or other of those intermediate sets for which it is not the general custom to make proper provision in garden arrangements. No doubt in some cases, a higher temperature than is necessary is kept up in structures devoted to collections of so called stove plants; and probably all such plants will bear, and be benefited by, receiving a less degree of heat than is usually given them at night and in the winter season, but this applies mostly to plants at rest. Hence, as all the plants in a house must be submitted to the same treatment in this respect, it follows that when accommodation is limited, few gardeners can adopt the practice of low winter temperatures so fully as they would, because few under such circumstances can afford to invest their stove plants with the dreariness and winter aspect of the external objects which surround them. The plant stove is, in such cases, for the most part required to stand like an oasis in the desert. As to the rest, most of the good gardeners of the present day are prepared to adopt, and do adopt, low night temperatures, as might be abundantly proved; and admitting and adopting the principle, few indeed, if any of them, would have reason to oppose the carrying out of that principle to the utmost limit of safety, so far as the circumstances in which they happen to be placed will allow. They will, however, not forget that there is a limit which may not be passed with impunity in this no less than in other

matters ; and however little they may actually have occasion to exercise it, they will take care to have in their hands the power of raising a moderately high temperature as a safeguard in rigorous seasons. It is both between the tropical stove and the ordinary greenhouse, and the greenhouse and cold frame, that additional accommodation is required ; and that, not as the exception but the rule, where collections of plants are attempted to be kept up. A simply intermediate structure is moreover, in each case, scarcely sufficient to meet the requirements of cultivation. This, however, is especially the case as regards the interval between the greenhouse and stove as now existing. There is here abundant use for two structures, such as might be described by the titles—cool stove and warm greenhouse. The principle of classification adopted at Kew, where in most cases the several structures are devoted to the plants of a particular country, or to those of a corresponding tract of country, applied on a scale commensurate with the other arrangements of individual establishments, seems to afford the means of most satisfactorily meeting the objection which may be raised against the practice of ranging in so few classes the plants of every country and every clime. Hence, partly, arises the preference that should be given to a larger number of small structures over fewer of a larger size. A greater variety of climate may be thus obtained. *T. Moore.*

Scarlet Egg Plant.—Is this grown in our gardens? I do not recollect to have seen it. I observed it in the gardens at and near Lisbon. It appeared when in fruit very showy. *Dodman.* [Yes ; it is the Solanum betaceum.]

Vine Pruning.—As I have no doubt you will admit that experiment is preferable to theoretical speculation, I venture to differ from your correspondent "||," who seems to think that there will be no advantage in disbudding, over cutting young Vines down, as is usually done. Some years back I made the experiment on three houses of young Vines, cutting the strongest Vines down in the usual manner, and disbudding, as suggested by "G.," the weaker ones ; and in every instance the disbudded plants made the strongest shoots, so luxuriant in several instances as to go blind, and requiring to be cut back and started a second time. Now as I think it cannot be denied that every Vine contains within itself, independent of its roots, a reservoir of organisable matter, and as Mr. Knight proved many years ago that the whole foliage of a plant contributed to the support of a Melon fruit situated at the most distant point, I see no reason why a young growing shoot at the base of a rod should not have the power of establishing a retrogressive movement, and appropriating the sap contained in a disbudded shoot. In my case, the young shoots from the disbudded plants were very materially stronger than the shoots from Vines cut down, and I have no doubt if "G." makes the experiment, the same result will attend the practice, the disbudded shoots were quickly dried up, and that in an atmosphere where they could scarcely have exhaled moisture. If "G." makes the experiment, I hope he will report the result. *W. P. A., Jan.* 22.

Low Temperature for Pine-apples.—The Pine-apple sent herewith was borne by a plant which grew at the coldest end of a pit 70 feet in length, where the temperature was very mild, not averaging more than 55° during the night. My object in sending it is to show that experience fully justifies me in advocating a lower temperature for Pines during winter than they are generally grown in. The Montserrat Pine seldom averages more than 4½ or 5 lbs. during summer or autumn ; this fruit weighed 4 lbs 2 oz. when cut (now a week since), and, as you will see, is swelled quite flat, and is well coloured. I do not find the Pines generally so good at the warm as at the cold end of the pit, showing us that we may economise our employers' fuel, and at the same time improve the health of the Pine plant. *G. Fleming, Trentham Gardens.* [This was an excellent fruit, admirably grown.]

Artichokes.—"Este" can state that salt at the rate of 1 lb. to the square yard is most beneficial to Artichokes. "Este" lays it on just before the growth begins.

Cole's Superb Dwarf Red Celery.—In answer to Mr. Errington's strictures upon my article in the "Horticultural Society's Journal," it is scarcely necessary for me to do more than quote Mr. E.'s own words as a complete answer to himself. Mr. E. complains that I have misquoted him, when I said that he "attributed the [illegible] and bad quality of the large Celery grown for market to the luxuriance of its growth." How far I was wrong in so doing, let the following paragraph from Mr. E.'s own pen, at page 297 of the "Horticultural Society's Journal," testify. He says, "It is well known in these [illegible] days, that much of the gigantic Celery [illegible] its way to market, or appears at our public [illegible], is (although specious in appearance), exceedingly [illegible]. It, moreover, has a [illegible] to run to seed before even winter [illegible] of course, loses that delicate tenderness of [illegible] for which Celery is so much esteemed. [illegible] it is quite commendable to encourage [illegible] not follow that the mode [illegible] stalks [illegible] whose office it is to [illegible] whose taste in [illegible] with that of [illegible] in their [illegible] to [illegible] in [illegible] and [illegible] and therefore I [illegible] interpretation of Mr. E.'s remarks was correct. Mr. E. recommends Celery to be sown in April, and to be highly cultivated afterwards, and for what?—because if sown in February it runs to seed before winter sets in. Now I must repeat that this running to seed is the result of sowing bad kinds—a fact which I am prepared to demonstrate by showing Celery from seed sown in February, which has not run to seed up to the present time, and the majority of which will not run before March or April. I have not the least objection to Mr. E.'s system of late sowing and high cultivation afterwards ; but he must recollect that it is not every gardener who has the time or the means of regular attendance to such a crop ; and it is for this reason, as well as for the excellent quality of my Celery, that I feel warranted in recommending it to the notice of the public, as an improvement upon the kinds at present in cultivation. *W. Cole, Dartford, Jan.* 16.

Transplanting Trees and Evergreens.—As soon in autumn as the leaves of deciduous trees have assumed their autumn tints, a sure indication that their functions have ceased to be active, proceed to remove such as require it. Shrubs, either deciduous or evergreen, may also be moved with advantage at the same season, evergreens will then have completed their growth, although their leaves will be more or less in action during the whole winter. The precise period for moving may vary a few days, according to the season, but it will be some time in September, a favourable month, both on account of the ground temperature and the hygrometric state of the atmosphere. *J. Grey, Hexham.*

Potatoes exempt from Disease.—I read with interest the letter of "Cavanensis" on Potatoes being exempt from disease in peat. I am occasionally hearing of the same favourable results under similar circumstances in this part of the country. But what I most particularly wish to bring under notice is a method of culture pursued for these two past seasons by a very intelligent and extensive farmer in this quarter ; he says, pointing to a lea field, "That field is where I intend to grow my Potatoes next year. In March I will plough it over, then cross plough it, after which I will drill it and put on my farm-yard manure, then plant in the usual way." By this method the sets are planted in turf, as it were, which keeps open and light the whole season, the great aim of this cultivation ; and by this practice he has got sound crops, while destruction has been dealt on every side. I may mention that this farmer stores his crop in old flour casks, of which he has some hundreds piled away in a shed thickly thatched to exclude frost, admitting air freely for some time after the crop is first stowed away. When I last saw them, no Potatoes could look better. *A. Burnett, Roby Hall, near Liverpool.*

Arboriculture.—In the "Journal of the Royal Agricultural Society," vol. ix, page 366 (December, 1848), appears an article by Mr. Denison, M.P., on the "Planting and Management of Plantations at Welbeck," from which the following is an extract : "The land is ploughed, cleaned, and fallowed, and dressed with bones at the rate of 40 bushels per acre. White Turnips are then sown, which are eaten off with sheep. Early in the year the land is again ploughed, and thrown into beds 4 feet wide ; about 1 foot of the soil from an interval of 4 feet is thrown up on the other, which costs about 14*d.* per 28 yards of the 4-feet bed. Two-year-old plants of Oak are used, three rows set in a 4-feet bed, the plants about 10 inches apart ; they require hand-hoeing and weeding twice a year for the first three or four years. The same year, or the following January, Larch are planted in the intervals between the beds, one row down each alley, 2 yards apart. The plantations are then left alone for about 12 years, the plants striving among each other for the mastery. If the woodman in looking round them should observe any of the Oaks growing with very bushy heads, or very crooked, he would cut out such plants. At the end of from 12 to 15 years, according to the goodness of the ground, thinning commences. The weakest plants, and those with dead heads, are cut out for hedge building, averaging about 10 or 12 feet long." Is it credible, that in the 19th century such a ruinous and fatal system as the above should be practised? The plantations named are made at an expense, as afterwards stated in the same article (exclusive of fencing), of 10*l.* 17*s.* 6*d.* per acre, and the plants are neglected and have to fight with one another for the mastery for 12 or 15 years without any stated assistance from the hand of man ; all which time they are standing at rather less than 12 inches apart. It is not until the end of this period that the woodman has the compassion gradually to let in a little of the genial influence of sun and air amongst these smothered striplings, which are stated to be then 10 or 12 feet high. Why, supposing all the Oaks out of the way, the Larches alone, at this age, would be too thick upon the ground. What but disappointment can possibly result from such a system? It may supply his Grace with pheasants, but it will certainly never afford his posterity Oak timber. In the winter of 1844-45 I planted about 20 acres of mountain land, in Flintshire, without any preparation of the soil. The plants (chiefly Larches) were put in a foot high, and as nearly 3 feet apart as the rocky nature of the soil would allow a spade or pick-axe to work. I have strictly followed Dr. Thackeray's system of pruning, and the trees in the best portions of the land are already from 6 to 9 feet high, and crossing one another, at the expiration of four years from planting. What, then, must be the state of plantations, even of Oak, on prepared and manured land, at the end of 12 or 15 years at a distance of less than a foot apart? Manure and [illegible] where land admits of it, may be all very well, and doubtless may give an impetus to the growing trees for a few years, whether of any permanent benefit or not ; but I am persuaded that a judicious, early, and constant attention to pruning and thinning is ultimately worth more than all the manure and trenching in the world. *Larix, Birkenhead, Jan.* 13.

Lilium lancifolium.—In answer to "*R. H.*," I beg to state that I have grown the varieties of L. lancifolium extensively for some years, and I have never met with such an occurrence as that of the L. l. rubrum relapsing into the L. l. album ; the red one certainly varies in intensity of colour, according to the soil in which it is grown, and vigour of the plant, but I believe not so much so as to become white. I have saved hundreds of seedlings which have differed a little in colour, but that only a few shades, either lighter or darker, and none so dark as the true speciosum or rubrum. L. lancifolium punctatum is, in colour, a shade between the red and the white, but in the foliage it is distinct from either, being more lanceolate, and of a paler green. The best soil to grow them in is pure peat mould, very sandy ; and when planting or potting, put a handful of silver sand over the bulb before the mould is applied. *R. S. Mountjoy, F. H. S., Nursery, Ealing.*

Polmaise Heating.—Much has been said and written against this system of heating, but I am happy to inform you that for all the persecution it has met with, it is gaining ground in this part of the country, and has been applied with success where other modes of heating have failed. The opponents of the system have not dealt with it fairly ; they may be compared to jewellers who beat true diamonds to powder in order to cut and polish false ones with their dust. Some time ago the West church of Stirling was attempted to be heated, but the plan failed. I may state that the edifice is a massive stone building, with stone pillars of great thickness, and it is said that the inside of the house is some degrees colder than the external air. A second attempt was tried to heat it, which also proved a failure ; a third time it was tried, and the Polmaise plan was adopted ; and perhaps the church never got such a sweat since the days of John Knox ; the water ran down the pillars in streams. Part of West Plean House has also been heated by the same plan, and is giving satisfaction ; a greenhouse has also been put up here lately, and I had my choice which mode of heating should be adopted. I preferred the Polmaise, and I have no cause yet to repent of the plan which has been made use of, for the system is working well in the frosty weather we have just experienced, which is more than can be said of a hot water apparatus which I visited lately ; it was to have done great things in the way of heating, but it is still many degrees below the mark. *Peter Mackenzie.*

Lisbon Botanical Garden.—In the notice I sent you relating to Gibraltar, Lisbon, &c., I did not mention the Botanical Garden. I send you the following extract from a letter giving an account of this. *Dodman.* "Jan. 7.—I wish I had had the showing of Lisbon to you, for I saw yesterday almost the only thing that would have interested you here. We rode to see the Botanical Garden, which you did not see ; it is near the Ajuda Palace, the situation for Lisbon rather cold ; and I could not make out how it was that, up so high, the garden should be so damp and the walks covered with moss. The situation is magnificent. The garden in excellent Italian style, and just such as I had 'seen in my dreams' from Beckford's descriptions ; not the worse for being in parts totally neglected, because these parts are filled with various sorts of Palm and other curious trees. The garden has the same aspect as the Bragança Hotel, and stands exactly the same ; the upper part (a noble terrace, with splendid balustrade) stands as *I* do, high above the lower part, in which the Palms grow. You ascend beautiful flights of steps in different parts of the garden ; fountains are not wanting in both divisions ; at the back of the terrace are the houses. The famous Bougainvillea was out of flower, but it is the plant we saw covering the back of that great Pine-house at Count Farobo's. The garden is full of curiosities. (I mean to go often when it is fine weather, for really yesterday was the coldest day we have had, or rather that I have been out in, for I avoid the cold when damp ; but we set out with the sun shining, and it turned to a cloudy afternoon.) There are plants worthy of Gibraltar ; still nothing grows here as there, or in the Pátio of the Europa, Seville. But there is the Dragon-tree, the greatest curiosity you can imagine ; it is a gigantic succulent plant under which a patriarch and his family might sit ; huge coral trees (such I imagine them) now in flower. This is, as I suspected, an Erythrina (I shall take a pencil and note-book next time) ; Pepper trees, in full berry, not scarlet yet ; such curious Cactuses—some in great bushes, some shooting up, like column on column, 10 and 15 feet high ; bushes of yellow [illegible], in full flower ; and huge Barbadoes Aloes. [illegible] a pest here, where it takes root ; if near a wall, it pushes it down. Donna Eugenia's garden was full of them, which they have been obliged to destroy. I took seeds of the Dragon tree, and shall send them to Gibraltar. The houses are in the worst possible condition and keeping ; they have been magnificent, with painted ceilings and architectural backgrounds. To-day the weather has quite taken up, and I am not a little sorry that yesterday was the day of my excursion, as in this splendid sun I should have enjoyed it. M. de M. was full of regret when I said, 'This is the garden you ought to have bought, Mr. —— [illegible]

[illegible] young [illegible] the tops of the Palm and other trees the [illegible] lovely. There was a beautiful, large, red-striped Amaryllis in flower, in open air; and many things. The part below, in which the trees and Palms are, is divided into huge parterres by evergreen hedges, with corners cut into various regular forms. When I see this garden again, I shall be able to say more. I was so cold for the first time since in Lisbon, that I did not stay long."

Nitrate of Magnesia in water, and formation of Ammonia by nascent hydrogen, by the agency of Iron in its metallic state.—For some months past my attention has been directed to an extraordinary corrosion of iron pipes, laid down in place of lead, for transmitting water. I observed, in some localities where iron was used, the corrosion lasted for the space of about twelve months, during which time an insoluble rust formed in the interior of the pipes, and afterwards the water was comparatively free from iron; while in other places not far distant the formation of rust was constant, which rendered the water unfit for domestic use. Several applications were made to me upon the subject; at length I determined to analyse the water where the corrosion took place. On examination, I detected the presence of nitrate of magnesia, but after the water had been resting in contact with iron, ammonia was present, and oxide of iron was precipitated. From this observation I was led to conclude that the water and the nitrate of magnesia suffered decomposition; the nascent hydrogen united with the nitrogen of the nitrate to form ammonia, and the oxygen with the iron to form oxide of iron. I have tried the experiment on water containing naturally nitrate of magnesia, and on an artificial compound by introducing cast-iron nails into bottles of the water, when a copious precipitate was obtained, after a few days, of protoxide and peroxide of iron, but chiefly the latter; on examining the water after filtration, ammonia was found in solution. In those localities where nitrate of magnesia is contained in water of certain soils, the conversion of the nitrogen of the nitrate into ammonia by the above simple plan may probably be turned to advantage in giving food to nitrogenous vegetables. When iron pipes are used for conducting water containing nitrate of magnesia, they should be coated with some kind of cement. I have seen a mixture of rosin, bees'-wax, &c, used with success, but some siliceous glaze would perhaps be preferable, if it could be made to adhere firmly. *H. Osborn, Southampton.*

Culture of the Vine.—Supposing you begin to start your house in February, cover your border with litter when the frost is out of the ground, and commence at 50° minimum, 55° maximum; give air freely every fine day until the foliage begins to expand, and to an extent that the thermometer may not rise with sun heat more than 5° above the fire heat. In this way the buds will break strong and vigorous. In a week or 10 days increase your heat from 55° to 60°; and, until the time of budding, the temperature should not exceed 60° from fire and 65° from sun heat; when the buds are in full motion it may be raised to 64° fire and 68° sun heat. When the foliage begins to expand, and until the blossoming is over, and the fruit set, air must not be given so freely; for I have found Grapes set best in a high, moist heat. By the time the bloom expands, the lowest fire heat should be 66°, and the highest 72°; when the sun is powerful increase to 80°. After the fruit is set, the lowest temperature should be 75°, and air must then be freely given. In commencing to force, syringe liberally morning and evening, and keep water in zinc or lead pans on your flues; this will create a moist atmosphere. When the Vine is in blossom, discontinue syringing, and until the berries are set; but during this time keep the house moist by pouring water over the flues several times a day, keeping the zinc pans on the flues as before. Directly after the berries are set, syringe freely until the fruit begins to ripen; discontinue then. In fact, keep the house as dry as possible, and give plenty of air, which will improve the flavour of the fruit. Vines require plenty of water when in a growing state, and until the fruit begins to colour, after which the less they have the better. Reduce the temperature of your house a little in the evening and at night. When you increase or reduce the heat, however, do it gradually; for a sudden change or a violent extreme does not answer even with the Vine. I had nearly forgotten to state that before you commence forcing, tie the Vines down horizontally until the buds have broken; by this means they break more regularly. *W. M.*

Ringing Fruit Trees.—Let me draw attention to the ancient but neglected practice of ringing. If a ring of bark as wide as the edge of a penny piece be removed in the spring from the stem of a fruit tree, the latter will be suddenly checked in its disposition to make wood above the ring; there it will form blossom spurs instead; while below, the latent buds will be excited to action and an abundance of wood be [illegible]. In the course of summer, if the upper [illegible] be well furnished with leaves, the descending cambium will form a lip at the upper wound, which joining the lower will form a channel for the interrupted circulation. I have repeatedly tried this with success, and hope it may be of great service in the cultivation of pyramidal trees. Mr. Rivers, however, in his "Miniature Fruit Garden," lays no stress upon it, though he speaks incidentally of notching the bark and young wood to the extent of half an inch in length, to procure wood. His remedy for a pyramidal tree not well furnished below with branches is the severe one of pinching closely [illegible] [illegible] all the young shoots on the upper tiers, including the leader, till the lower ones have made young shoots of a sufficient length to give uniformity to the tree. This, he well observes, requires much attention and trouble. Those who are disposed to try the ringing method should operate in the spring, when the sap is flowing freely, not cutting too deep to wound the wood, nor too wide for the bark to unite in one season, unless the luxuriance of the tree be great, when an open ring for two years will have an excellent effect. In doubtful cases the ring may be very narrow, at least at one point, where it may soon unite. If there should be blossom buds on the upper tiers, the ringing, if deferred till the blossoms are expanded, will promote the setting, and improve the size and quality of the fruit. *A Subscriber, Goudhurst, Kent, Jan. 6.*

New Zealand.—Copy of a letter from a Cornish settler to his mother, dated Wellington, August 15, 1848:—"I beg to acknowledge the receipt of John's letter, dated Sept. 19, 1847, and have written to him at London. I wrote to you in March last, and I hope before now you are convinced that I am not dead, as the war you so much dreaded did not come near me by a quarter of a mile, and, in justice to Capt. Grey, I must say that it was the best thing ever happened for New Zealand, as the missionary government had become insufferable; but now the arm of British justice is felt as much here as in England. Dear Mother, your next fear I assure you is very erroneous, as there is no beast of prey nor any quadruped of any kind, except the rat and lizard, natural to New Zealand; concerning your next surmise regarding my property, I have made some mention in John's letter, which I hope will satisfy you. The newspaper you were so kind to send me never came to hand, but I am well acquainted with the political state of Europe, and shortly I shall subscribe to some of the leading London journals. My dear Mother, I cannot but congratulate myself on being in such a place as New Zealand, where famine or scarcity is wholly unknown; where every man may have plenty to eat, wear on his body, and money in his pocket; and if you were 10 years younger I should certainly advise you to come here, and you should have as much tea as you might feel disposed to use, and a carriage to ride in besides. Just think what a contrast from the time I wore knee breeches at Plynt, to the present time, just 15 years, when I could scarcely look or think, a complete tool; now I feel as a man ought to feel, that a man is something in the creation of God. I am very happy to hear of your prosperity, as I am well convinced no person in your country receives more than their due for labour, or services of any kind. You will please remember me to Samuel, and tell him I am well and doing well, and that I do not expect ever to see Canada again, as the climate is much better here. I have lately bought a very beautiful place, containing 54 acres of splendid land, about nine miles from Wellington, where I at present carry on my trade, as I have a navigable river quite through it, and where I intend to live the remainder of my days, as I shall soon give up business. You will please remember me to all my sisters and their husbands, and all enquiring friends. My dear Father, I am now in possession, in ready money, sheep, cattle, land, and vessels, of rather a large property. Although my losses, since I arrived in Sydney, amount to 1200*l.*, at present I am not indebted 5*l.*; so that I may with safety sit down and live retired as soon as I like: and should you require any assistance of any kind, do let me know; and although we are 15,000 miles apart, you will find me proud to acknowledge you as my father. You will all please accept my best respects; and ever believe me yours. (Signed) *William Wilcock.*—P.S. My dear Mother, I should much wish to send you my watch, and will as soon as I get an opportunity; so that if I never see you again, you may rest assured I shall never forget you, and you will have something to keep in remembrance of me. *W. W.*"

Societies.

ENTOMOLOGICAL, *Jan.* 1.—W. SPENCE, Esq., F.R.S., President, in the chair. The names of different members intended to be proposed, at the anniversary meeting, as Council and officers for the ensuing year, was read, including that of Mr. G. R. Waterhouse, as President elect. Certificates in favour of 10 new members were read. A magnificent collection of Indian insects was presented to the Society by Mrs. Hamilton, and an especial vote of thanks passed for the same. Mr. W. W. Saunders exhibited a singular scale insect found by him on the edge of a leaf of an Australian Eucalyptus, differing in texture from all the known species. Mr. Douglas exhibited a specimen of the ground beetle, Steropus madidus, infested by a parasitic worm, 6 inches in length. Also the pupa case and nidus of Oxypete gelatella, one of the winter moths, which forms a singular cocoon under the bark of decayed Hawthorn trees; this disagrees with the account given by Freyer, who probably describes a different species under the same name. A letter was read from H. V. Wollaston, Esq., on the entomology of Madeira. He had during his present visit met with not more than 30 new species not captured in 1847-8, among which were no new forms, but among them were many wood-boring weevils (Curculionidæ), which small insects were in fact the only destroyers of the old primeval trees, which were sometimes so thoroughly riddled by them as to fall at a slight touch. Mr. Spence communicated a long and very interesting account of the ravages of another species of weevil, upon the Sweet Potatoes of Barbadoes, from the pen of Dr. Davy, which had appeared in the Barbadoes "Agricultural Reporter." It was also mentioned that the Guinea corn (Sorghum vulgare) was attacked by a species of Cossonus closely allied to C. oryzæ. Extracts were also read from a letter received by Mr. S. Stevens from Messrs. Wallace and Bates, now on an entomological excursion in the interior of Brazil. A box of beautiful lepidopterous insects received from them was also exhibited by Mr. S. Stevens, to whom they are consigned for sale. A letter was also read, addressed to Mr. Evans, from a correspondent at Rio, who stated that it was the general belief that the great Brazilian Fulgora gave out more light from the produced portion of its head than the common Elater noctilucus.

LINNEAN, *Jan.* 16.—E. FORSTER, Esq., in the Chair. J. Hepburn, Esq., and F. Salmon, Esq., were elected Fellows. A paper was read from W. Huxley, Esq., Surgeon, R.N., on the Anatomy of Diphyes, and on the unity of composition in the Diphyidæ and Physophoridæ. Diphyes is a genus of hydrostatic jelly-fishes which, like the whole of the Diphyidæ, embrace two individuals whose structure and relations have been previously only imperfectly understood. These animals are inhabitants of tropical and southern seas, and the author has availed himself of travelling in those parts for clearing up many points in the structure of these curious animals. He has also compared them with another order of jelly-fishes, the Physophoridæ, which, like the other hydrostatic acalepha, possess an air vessel, and shews that a unity of composition exists throughout the very varied forms which these creatures present. The paper was illustrated by a series of well executed drawings.

BOTANICAL OF EDINBURGH, *Jan.* 11.—Professor BALFOUR, President, in the chair. The following communications were read:—1. *Short Notice of Berwickshire Plants*, by J. Hardy, Esq., Penmanshiel.—In this communication Mr. Hardy first alludes to the vegetation of the coast between Cockburnspath and the mouth of the Pease-burn; the chief plants of importance being Glaucium luteum, Astragalus glycyphyllus, Elymus rutus, Carex extensa, and Ligusticum scoticum. The Oyster plant (Steenhammera maritima), used to grow on that shore, but it has now disappeared. It grows, however, abundantly two miles east from the Pease Dean. 2. *Short notice of East Lothian Plants*, by J. C. Howden, Esq., Musselburgh.—In this paper the author mentions the occurrence of Weissia nigrita on Gullane Links, and gives a list of plants found by him in various parts of East Lothian. 3. *Notice of Piassaba, a fibrous matter, from South America, used for the manufacture of ropes, &c.*, by Dr. Balfour.—This fibrous matter was sent to Dr. Balfour by Mr. M. Connal, of Glasgow. It is used for the purposes of manufacture in London, and is imported from Bahia, Pernambuco, &c. Dr. B. gave a general account of the fibrous matter yielded by Palms, and alluded to the microscopic structure of the woody bundles in these plants. He illustrated his remarks by specimens of fibres from the Cocoa-nut Palm, Sago Palm, Talipot Palm, Livistona chinensis, and various species of Chamærops and Corypha, growing in the Edinburgh Botanic Garden. He stated that Dr. Arnott had examined the Piassaba fibre, and referred it to the Attalea funifera of Martius. The Palm is the Cocos de Piacaba of Prince Maximilian's Travels. It attains a height of 20 or 30 feet, and has pinnated fronds 15 or 20 feet long. The fibres of the petioles and spathes, after maceration, are used for forming very tenacious cables, which resist well the action of salt water. The black fibrous matter resembling whalebone, which is connected with the leaves, has been employed for forming brushes. Specimens of this manufacture were exhibited, along with a large drawing of the Palm. The fruit of the Palm, under the name of Coquilla nuts, is imported into this country. The pericarp is thick and hard, and is used for making handles for umbrellas and drawers, &c. When examined under the microscope, it shows thickened cells very much resembling those seen in bone, the thickening matter being deposited in concentric circles. The seeds have an oily albumen, and a kind of solid palm oil is formed from them. Specimens of the nuts, and the articles made from them, as well as of the solid oil, were shown. 4. *Algæ Orientales.* Part V. By Dr. Greville. The paper will appear in the Annals of Natural History, and in the Society's Transactions. 5. *Account of the Musci and Hepaticæ growing on the Pyrenees*, by Richard Spruce, Esq.—Among the subjects considered was the *Distribution according to Altitudes.* He noticed the difficulty of defining accurately the regions of vegetation in different countries by the plants found at certain elevations. Thus, while in the Alps there is [illegible] above the region of the Spruce Fir (Pinus Abies L.), in the Pyrenees there is above this a well marked belt of Scotch Fir (P. sylvestris). Again, in the Alps above the limit of the Oak the Birch (B. alba) is the predominant tree, but in the Pyrenees this tree is very rare. The paper will appear in the Annals and Transactions.

Calendar of Operations.

(For the ensuing week.)

GENERAL REMARKS.

THE correct labelling of plants is a matter very generally neglected in gardens, but it will perhaps not be out of place now to call attention to the subject, especially as there is generally a good deal of [illegible] weather at this season when some of the [illegible] may be usefully employed in preparing and [illegible] labels. It [illegible]

display of flowering plants tastefully arranged is very gratifying, but it is necessary, if we wish it to give continued pleasure, that nothing be left undone which can in any degree contribute to render it more interesting This extra exertion on our part is the more necessary on account of the spirit of intelligence, which is rapidly extending itself among all classes, who besides possessing an increased power of appreciating the beautiful, seek after entertainments more calculated to gratify the mind. Gardeners in general will therefore find it to their advantage to meet as much as possible the wants of the present day—one of which obviously is the neatly and correctly labelling all their plants, which will also add considerably to their own convenience.

PLANT DEPARTMENT.

GREENHOUSE.—Any plants which have done flowering, or which are commencing their growth without showing their colours, may now be potted. This will include Camellias, Azaleas, Acacias, Oranges, &c. By potting them as they go out of bloom, it will save time six weeks hence, when work is more pressing. In potting these plants, particular attention should be paid to making the new soil sufficiently firm to cause the water to percolate equally through it and the old; after potting they should be placed in a moderate temperature, just sufficient to keep them growing at a rate consistent with the amount of light. Oranges will be benefited by a slight bottom heat (without increasing the top heat), to enable the roots to get a little in advance of the tops Great care must be exercised in watering newly potted hard-wooded plants. Hyacinths and Tulips and other forced bulbs, should be freely supplied with water, and occasionally with weak guano water; a little attention in this respect will considerably prolong their period of bloom. Bring successions of these useful plants forward in a mild bottom heat of about 60°, the top temperature not exceeding 50° to 55°, with plenty of air.

FLOWER GARDEN AND SHRUBBERIES.

Propagating half hardy plants for masses should now be proceeded with, in order that they may be well established before turning-out time arrives. Any kinds of which you at present possess only a limited stock, and which you are anxious to make the most of, should be put into a warm moist heat, to induce them to produce young shoots. These will strike freely in the same temperature; and after they also have produced several crops of cuttings, they may be gradually hardened off.

FLORISTS' FLOWERS.

Perhaps the most urgent call on the amateur's attention will be the preparation of his compost for Carnations and Picotees; we often hear parties complain of their want of success in the cultivation of these beautiful flowers, and the reason simply is, because they do not attend in a proper manner to this very important point. Fresh turfy loam, which is an indispensible ingredient, generally abounds with wireworms, to such a degree, that it is absolutely necessary that every particle should be broken, and passed through the grower's hands. We mention this now, that every-one may direct their attention to it. The compost, comprised of decayed turf and vegetable mould, equal parts, with very rotten Melon-bed manure, and wash-sand forming another part, should lie under cover, yet exposed on all sides to the action of the weather. Here, it may be turned and turned again; it will lose nothing of its excellency by frequent commingling, and will thus be ready at a moment's notice to be used for potting. AURICULAS.—Water more abundantly, and expose as much as possible; if early blooms appear pluck off the blossoms; the same advice holds good with regard to the Polyanthus. Top-dress seedlings of last year, and sow seed for the coming season; put Dahlias into a moderate heat, and attend to directions previously given.

FORCING DEPARTMENT.

From the time when the blossoms of Peaches begin to expand, maintain a steady night heat of 57°, not rising higher than from 65° to 67° during the day, unless by sun heat.* Syringing must be avoided until the bloom is set. If the external temperature is not too low, fresh air should be admitted every day in sufficient quantity to produce circulation, but cold currents must be carefully avoided. If the early Melon bed is not made, it should be immediately attended to. It should be constructed in such a manner as to secure a bottom heat until the end of May; if you have not hot water at command, this should be effected by means of a dung chamber beneath your bed and outside linings.

HARDY FRUIT GARDEN.

FILBERT BUSHES.—As soon as the female flowers can be distinguished, the bushes should be systematically pruned All the shoots which do not show fruit should be shortened, regulating their length according to their strength, and spurring the weak ones in close to the old wood; it will be necessary to remove some of the shoots, to prevent over crowding. After regulating the head, clear away the nest of suckers with which these bushes are too frequently encumbered. If the bushes appear weak they should be assisted during the growing season, and if too strong they should be root pruned. There is no reason why a collection of Nut-bushes may not be as fruitful and ornamental as a collection of pyramidal Pear trees. In pruning, a little precaution is necessary not to remove the whole of the male catkins, until some days after all the female flowers are expanded. As many of the bushes will, in all probability, be destitute of male flowers, it will be necessary to procure some well-furnished branches from other bushes, and shake them gently over the female flowers.

KITCHEN GARDEN.

Cucumbers must be carefully attended to during this dull weather; keep a circulation of air passing through the pit or frame: the healthy vigour of the foliage, and the setting of the fruit, depend very much on this. Avoid high night temperature and scalding evaporation, unless you want fruit about the thickness of goose quills, having elongated shanks and curled up points. A sowing of Lettuces and Radishes should be made on a warm border; the seed should be sown in the bottom of drills about 4 inches deep, and lightly covered; the sides of the drills will protect the young plants when up. A sowing of Parsley should also be made under a wall, where it can be easily protected. Forcing of French Beans should be attended to; if a heated pit can be spared for them, it will be found the most economical method of growing them. It should be filled up with fermenting materials to within 12 inches of the glass, and upon this should be laid 9 inches of rich loamy soil, and the seeds sown in drills longitudinally; for as the soil will, of course, be upon the same incline as the glass, the rows will not shade one another.

COTTAGERS' GARDEN.

If the walls of your cottage are not already furnished, they should have immediate attention. Fruit trees form the most profitable covering, but they should be of the description called riders, that their produce may be out of the reach of children. If one of the walls has a south aspect, and if the height is sufficient, a Peach, May Duke Cherry, or Apricot, may be planted against it, if it has the advantage of a chimney it will be particularly adapted for the Apricot: for the other walls Plums, Cherries, or Pears, may be chosen. The following list will be found useful in forming a selection. The letters denote the aspect which will suit them. *Peach*: Royal George, S; Malta, S. *Nectarines*: Pitmaston Orange, S; Violet Hâtive, S. *Plums*: Green Gage, E.W.; Coe's Golden Drop, E W.; Blue Imperatrice, E.W.; Drap d'Or, E.W. *Apricot*: Large red, S.; Moor-park, S. *Cherries*: Morello, N.; Elton, W.E N; Black Tartarian, W.E N. *Pears*: Jargonelle, E W.N.; Beurre Langelier, W.; Beurre Diel, W.; Winter Nelis, E.; Easter Beurre, E. We are aware this list will appear rather formidable for a cottager, but there are many amateur gardeners who think proper to call their dwellings cottages, and it is for this class that these hints are more particularly intended. If they are fond of the choicer of our hardy fruits, they will place a higher value upon them when they have been cultivated with their own hands; but if, on the contrary, they prefer making them a source of profit, a selection from the above will be found to contain fruits which are hardy in their constitution, and will fetch a good price in the market.

State of the Weather near London, for the week ending Jan. 25, 1849, as observed at the Horticultural Gardens, Chiswick

Jan.		Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday	19	24	29.983	29.906	53	42	47.0	S.W.	.00
Satur.	20	25	30.251	30.001	51	41	46.0	S.	.00
Sunday	21	26	30.218	29.966	50	39	41.5	S.W.	.16
Monday	22	27	30.211	29.951	50	48	49.0	S.W.	.00
Tues.	23	28	30.414	30.303	51	46	48.0	S.W.	.00
Wed.	24	●	30.374	30.200	50	47	48.5	S.W.	.00
Thurs.	25	1	30.080	29.907	51	41	47.0	S.W.	.04
Average			30.2 3	30.015	50.8	44.7	47.3		0.20

Jan. 19—Very fine, mild for the season; densely overcast.
— 20 Very fine and mild: densely overcast at night
— 21 Very fine; overcast; boisterous with rain at night.
— 22 –Boisterous, fine; clear and boisterous at night [clear
— 23—Densely clouded; barometer high, although wind S.W., fine;
— 24–Densely clouded; overcast and boisterous at night.
— 25—Densely clouded, boisterous with rain at night.
Mean temperature of the week 10 deg. above the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Feb. 3, 1849.

Jan. and Feb		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No of Years in which it Rained	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday	28	44.5	31.8	38.0	10	0.31 in.	2	3	3	–	2	8	5	
Mon.	29	45.0	31.8	38.4	12	0.53	2		1	–	1	10	5	1
Tues	30	43.6	31.9	3, 7	6	0.32	2	3		1	2	6	6	1
Wed.	31	44.6	31.8	37.7	10	0.12	3	3	2	4	1	4	.	1
Thurs	1	42.8	31.0	35.7	7	0.52	4	1	1	2	3	4	1	4
Friday	2	43.3	30.6	3. 0	7	0.75	2	2	3	3	2	4	4	3
Satur.	3	43.0	31.0	37.7	11	0.49	2	3	3	1	1	9	2	2

The highest temperature during the above period occurred on the 28th Jan., 1843, and 2d Feb., 1845—therm. 56 deg., and the lowest on the 3d Feb., 1841—therm. 14 deg.

Notices to Correspondents.

TO OUR CORRESPONDENTS—May we beg it to be understood that *we cannot answer inquiries privately through the post*. We are ready to give reasonable information through our columns; but we cannot consent to the labour of writing letters

APPLES: *J B*. The principle of constructing a fruit room is to keep it cold, damp, dark, well ventilated, and as clean as a dairy. Your Apples shrivel because they are exposed to light, or to an air which is much too dry.

ASPARAGUS: *T A*. We should prefer mixing the materials, with the exception of the pieces of wood proposed to be laid in the bottom. Wood is apt to breed or propagate fungi, injurious to the roots of many plants, therefore you had better dispense with it ||

BELLA SOMBRA: *J L* would be obliged to any correspondent who would give him the botanical name of the plant thus called in Spain.

BOOKS: *W F W*. We are unable to give you any information respecting the "Florists' Journal."‡

CACTI: *M B*. Wash the seeds out of the seed vessels, sow them in shallow pans in light soil, and cover them but slightly. Place the pans in a gentle bottom heat, or, if that is inconvenient, on a shelf in the stove. They must be watered sparingly. Keep your sickly Cactus nearly dry; if its seeds are ripe, sow them immediately.‡

CALCEOLARIAS: *O T*. See our last week's Number, p. 40, col. c.‡

EMIGRATION: We cannot, as we have often stated, take upon ourselves the responsibility of recommending colonies to our correspondents. They must judge for themselves; for which purpose they must read the books on Emigration now published at a very low price, and the Colonisation Circular and Commissioners' Report of the Government Board of Emigration, at No. 15, Park-street, Westminster; to be had of all booksellers.—*W H North*. Take out all sorts of good kitchen garden seeds, and fruit seeds—together with Acorns of the Cork Oak, and, if you can procure them, the pods of the Locust tree. Hang all the seeds in a canvas bag in your cabin, except the Acorns, which must be rammed in a box of dry clay. As to tools, supply yourself with such as a woodman as well as a gardener requires. Spades and cutting tools are the most important. They ought to be of the best quality.

GESNERAS: *F D C*. Water your Gesneras, which are beginning to grow, sparingly at first, increasing the supply as they progress. After they have flowered, gradually withhold water and give them a season of rest. The same remarks apply to your other bulbs.‡

HYACINTHS: *J J C*. Your Hyacinths should not be kept under tan bark too long, or they will draw. If they have shewn their flower shoots, as you do not wish to force them, you had better remove them at once to a cold pit or greenhouse, in which they will probably flower by the time you want them; if they are likely to be too late, however, stimulate them by a little heat.‡

INSECTS: *Shem*. Without seeing specimens of the insects which attack your Carrots, we can only advise you in a general way to use a mixture of gas-tar water with six or eight times the quantity of common water. We would suggest the propriety of digging up the crop, and letting it lie fallow for three months. *W*.—*W B*. The ants come to the aphides on the Peach trees, you will therefore get rid of the former by cleansing the trees of the latter. The most efficacious plan of getting rid of the scale is to wash the branches carefully with water at 140° or 160°.—It will be duly noticed in our columns when the Stanwick Nectarine is ready for sale. Sulphur, if applied early enough, will kill mildew. *W*.

LAWNS: *J B*. It is not possible to prevent the growth of moss unless you drain your ground thoroughly. Lime and all such appliances merely mitigate the evil. You may kill it by gas water, but more will grow. Drain and it will disappear.

MASTERS *v*. GARDENERS: *Garstang*. As soon as we possibly can find room or time, we will dispose of the pile of letters collected on this subject. There is no doubt, we think, that our opinions are alike.—*A Wilson* shall appear next week, at all events.

NAMES OF FRUITS: *J B Warren*. 1, Grande Bretagne Doré; 2, Ne plus Meuris.||

NAMES OF PLANTS: *A R*. Garrya elliptica.—*H E M*. Amaranthus tricolor.—*Louisa*. 1, Nephrolepis tuberosa; 2, Cheilanthes vestita *S*.—*T L Morgan*. Apparently Kleinia ficoides; we cannot say much for the drawing as a work of art.—*A Kenrick*. It is not possible to name species of such a large and difficult genus as Oncidium from single flowers. 1, looks like O. altissimum; 2, like O. graminifolium.—*Gayton*. Melia Azedarach, apparently; a greenhouse plant. You must break or crush bones to use them economically: if you cannot, then you must bury them near the roots which are to feed on them.—*Romiley*. 1, Poa procumbens; b, P. rigida; 2, P. nemoralis, starved?; 3 Trisetum flavescens; 4, Poa maritima unusually small.—*X*. Myctuema phosphoreum, a plant of the Algal alliance.

PHYSIOLOGICAL QUESTIONS: *Amateur*. Our crowded columns render it impossible to find room for them just yet.

PORTUGAL LAURELS: *Kelso*. We are well acquainted with the appearance of the disease, but ignorant of the cause. Room shall, if possible, be found for your letter next week.

POTATOES: *R Cutbush*. The Ash-leaved Kidney will probably suit you best.‡—*A Z*. A "Treatise on the Practical Culture of the Potato" has just been published by Messrs. Hardy and Co., of Maldon; and there is a new edition of *Mr. Cuthill's excellent Directions*. They are both worth the grower's having. We however, by no means agree in Messrs. Hardy's recommendation of Potato seeds.

PROTECTING FRAMES: *A Sub*. If you refer to the observations made by us upon these contrivances, you will perceive the cause of your misapprehension. It is not so much because of any heat that is gained that they are used, as because of their shelter, and the greater length they give to summers. We want to obtain May in April and to extend October over November—an immense gain, which such frames seem to promise. Grapes do not refuse to ripen in the open air because we have not heat enough; it is because it does not last long enough. Give a Vine a six weeks' start in the spring, with an August in September, and it will ripen, unless it is one of the tender sorts.

RATS: *F J C*. We are situated like yourself. Our rats were disposed of by putting balls of phosphoric rat poison into their holes, and persevering as often as fresh holes were opened We do not think it killed them: perhaps they only migrated to our neighbours; but they went away, and we have no trouble with them now. A few come, but they are not troublesome in number, and we have only to thank ourselves for neglecting to continue the application of the phosphorus balls. Others say they find no advantage. We can only state our own case.

ROSES: *Marie* Liquid manure, applied weak and often, may be given with advantage to Roses while they are growing. Be careful, however, to guard against over growth.‡—*A Z*. Banksian Roses in general are somewhat shy flowerers, and the white is worse than the yellow; they require to have a dry warm situation. Your plant, being on an east aspect, will suffer from sudden checks in spring, occasioned by chilling winds and late frosts. The best way to treat it is to thin out all the very robust shoots of last season's growth, to nail it now, and when spring commences, to protect it from the effects of frost.‡

SHADE OF WALLS OR HOUSES: *J H* inquires "how near to the back of a Vinery, 14 feet high, a range of Melon pits may be built, so that the former may not shade the latter, say on Nov. 1st or March 1st." You must ascertain the latitude of the place; and, in almost any almanack, you can find the sun's declination for every day in the year. To the latitude *add* the sun's declination for the particular day on which you wish to know the length of shadow, if this is between the 20th March and 22d September, but *subtract* the sun's declination between the 22d September and the 20th March; the result will be equal to the angle formed between the back of the wall and the direction of the sun's rays from its top to the ground. The rays form the hypothenuse of a right-angled triangle, of which the wall is the perpendicular and the length of shadow the base. Then, as radius is to the tangent of the angle at top, so is the height of the wall (or other object) to the length of shadow. On the day you mention, Nov. 1st, any object 14 feet high will project a shadow to the distance of 32 feet 2 inches; and on March 1st, to the distance of 23 feet 9 inches.||

VINE BORDERS: *Q C* Night-soil is a good manure; but having no command of artificial heat, you ought to apply it in very moderate quantity, otherwise over luxuriant growth will prove injurious to flavour.||

VINES: *J P W S*. Vines may be successfully grown in a span-roofed house; but if expense is an object, a lean-to house is to be preferred. The trial of rough plate glass which has been made in the garden of the Horticultural Society, so far as it has gone, has proved perfectly satisfactory; and our impression is, that it will answer for all gardening purposes.‡

WALL TREES: *A W B*. These, of the stone-fruit kinds particularly, will not bear so much of the very strongest description of manure applied immediately to their roots ||

MISC: *A Subscriber*. Fairbeard's Champion of England Pea grows from 4 to 6 feet high; same cultivation as that which is proper for other Peas.||—*X Z*. It is not quite certain whether Viburnum japonicum is hardy or not; there has not been a proper trial of it. You had better have a duplicate before you try the experiment.—*Adam*. Only just received as we are going to press.—*Georgina*. Ferns for putting in a Ward's case may be obtained of any nurseryman.‡

KITCHEN GARDEN SEEDS.—No. 1.—A complete collection, consisting of 25 quarts of the best kinds of PEAS, inclusive of Fairbeard's Champion of England, Early Surprise, British Queen, Hurtridge's Eclipse, &c., and all other Seeds in proportion, of the newest and best sorts, sufficient for one year's cropping of a large garden, the choicest Melons and Cucumbers inclusive .. £3 3s 0d

No. 2.—Complete collection in smaller quantities, equally choice sorts 2 2 0

No. 3.—Ditto 1 1 0

No. 4.—Ditto. This is sufficient for a gentleman's small garden 0 12 6

No extra charge for packing; carriage paid to London.

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W. J. Epps can, with pleasure, refer to some of the most respectable families in England, Ireland, and Scotland, who are in the habit of purchasing the above collections every year.

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Beg to remind the Members of the Society, and Agriculturists in general, that their only Counting House and Seed Warehouse is at the corner of HALF MOON-STREET, PICCADILLY, LONDON, as for the last Fifty Years.

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GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
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THE LONDON MANURE COMPANY beg to offer as under.
LONDON MANURE COMPANY'S CORN MANURE.
" " " URATE. [LIME.
" " " SUPER-PHOSPHATE OF
Peruvian Guano, direct from Importers' Stores—Fishery and Agricultural Salt—Gypsum for Clover—Soda Ash for destroying wireworm, and every other Artificial Manure.

The London Manure Company would call particular attention to their Corn Manure and Urate, the former containing a large amount of Ammonia, Phosphates, and Silicates, all so essential for corn crops, while the Urate is richer in Phosphates and other mineral substances required for roots.

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And by their Agents,
GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
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To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to Dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

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BY HER MAJESTY'S ROYAL LETTERS PATENT.

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To Nurserymen, Gardeners, and Agricultural Labourers, these Spades will be found invaluable, and calculated to lessen the labour of digging very materially; they are warranted to carry a knife edge which will neither break nor turn, wear perfectly bright on the surface, and last as long as three spades or shovels of the ordinary kind, and are now coming generally into use amongst the principal Nurserymen, Market-gardeners, and Agriculturists in the kingdom.

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MESSRS. JOHN SUTTON AND SONS, having for many years paid especial attention to the collecting of natural Grass seeds, for laying down land to permanent Pasture, and improving old Meadows, have much confidence in recommending their present stock of Seeds for that purpose. The nature of the soil being stated, J. S. and Sons will be happy to furnish particulars of sorts and quantities, or other information required. The cost of Seeds for laying down land will be 25s. to 35s. per acre; and mixed Perennial Grasses and Clovers, for improving old Meadows and Upland Pastures, 15s. per bushel, half a bushel being sufficient for an acre.

JOHN SUTTON and Sons have also for sale excellent new seeds of home growth of Skirving's Liverpool, Laing's and Ashcroft Swede Turnip, White Belgian Carrot, Guernsey Cattle Parsnip, Yellow Globe and other Mangold Wurzels, Lucerne, Giant Saintfoin, Italian Rye-grass, St. John's Day Rye, Summer Vetches, White Mustard, &c., priced catalogues of which may be had on application, addressed JOHN SUTTON and SONS, Reading Nursery, Reading, Berks.

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Cream Pots, Lactometers, Glass Rolling Pins, Pastry Pans, Shades for Ornaments, Lamp Shades, &c., as usual. For Lists, (priced) direct to T. COGAN, Glass, Colour, and Lead Warehouse, 48, Leicester square, London.

The Agricultural Gazette.
SATURDAY, JANUARY 27, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY,	Feb.	1 Agricultural Imp. Society of Ireland.
TUESDAY,	—	6 Agricultural Society of England.
WEDNESDAY,	—	7 Highland and Agricultural Society.
THURSDAY,	—	8 Agricultural Imp. Society of Ireland

FARMERS' CLUBS.—Feb. 1 Otterv St. Mary Feb. 5 Newcastle, Northampton.—Feb. 5. London, Great Oakley, Clyst Feb 6. Framlingham.—Feb 7: Burnose.—Feb. 9. Halesworth, Needham Market.—Feb. 10 Peterboro

THE difficulties attending the conduct of CONTROVERSIAL DISCUSSION have yet probably to reach their climax in Agriculture. That "Science of the world's advanced age" as it has been truly called, may well begin to feel the throes and struggles of conflicting opinion, and become the arena of contests begun in amity and the simple love of Truth, yet in which the most friendly combatants are presently amazed at their own heat, and the increasing severity of the sport. Accustomed, each, to assert his own opinion as obediently to the laws of polished life, as he in fact relies on it with implicit and credulous security, each is presently amazed to find how rapidly the '*Suaviter in modo*' falls away, like the inconvenient 'glove' from the hand of playful 'practice,' and a hard hit or two has been exchanged, before the earnest disputants had time to think what they were about.

No sooner however is this perceived, than a third party, "mild as the zephyr," steps in to set all straight and put a short and simple end to the little question, grown too warm for pleasure; and "at once to ease the doubt," cut comes some favorite proposition of his own, *so* clear and plain, *so* self evident (to his own mind) that his amazement exceeds all bounds at finding himself all on a sudden, blankly contradicted by some fourth collected reasoner, more cool and self-assured than all before him—and his own lofty position of mediator of others' theories put upon its self defence, for his own.

So the plot thickens: and so it has ever done from time out of mind, upon every subject of the greatest and most lasting importance to the interests and the well-being of man. Each, confident even to infirmity, in the results of his own observation, and though capable of every courtesy and attention to the statement of another's view, yet often led away most by self-illusion at the very moment when he seems to be most deferential to his opponent.

It is but the old story. Of all the difficult conducts of life, the conduct of controversy is the most intractable, even to the humblest and meekest disciple of Truth. Not to be zealous in its cause is not to be a disciple: but alas! not to be able to distinguish between TRUTH, and what seems Truth to our own eyes, is to be but human.

But why, in the name of all that is familiar to man, should such a dust be kicked up because it has just been discovered, in agriculture, that a man may preach better than he can practise? Is the Art—or the infirmity—so new, that a practical and clever writer, or an accomplished chemist, each bringing the aid of their respective talent to the service of the Farmer, is to be considered under contract to afford a perpetual living illustration of the *working profit* of every principle he broaches, or every suggestion he offers *to the judgment* of his hearers; and in default, to be worried down as if he were an impostor?

Does not every practical man know that the detailed economy of farm-management, upon which *profit* depends, is a complete business of itself, only to be acquired by long usage and experience under the unremitting spur of keen self-interest? Is not this as well known to every man of common sense, as any fact can be, in agriculture equally with every other art or trade? And will any man knowing this, and knowing that others know it too, pretend that in joining the deceptive cry of 'Shew your balance-sheet,' he really believes that the farm accounts of an active and charitable clergyman, or of a clever citizen whose main business is in his Trade, and Farming a mere employment of leisure time and capital—can really afford an adequate test or a fair one, of every principle which a scientific education on the one hand, or a shrewd and practical perception joined to remarkable power of illustration, on the other, may enable the possessor to submit to our judgment and experiment.

Nobody believes it: the demandant of the Balance-sheet himself doesn't believe it. He knows perfectly well, on the contrary, and has a pretty strong self-assurance of it too, that *give him* the knowledge of this Scholar, this Chemist, or this Trader, joined to his own and he would *work it to profit*, at ten times the advantage of either, on his Farm; why? because it has been his life-task to acquire that one qualification which they are confessedly without,—long hard practical experience in the economical details of farm-management.

What then is *the motive* of the demand? for it must originate either in ignorance of—or in spite of—this acknowledged fact. It is either a mistake, or it is a covered attack, at once unfair, and inconclusive to any useful purpose.

One gentleman who has farmed 800 acres for an infinite number of years is specially angered with Mr. MECHI, as a setter up of strange doctrines in general, and himself as 'a teacher,' in particular, and makes a regular crusade from Cirencester to Tiptree Hall, which after cleverly "damning with faint praise" (for the letter is a really ingenious specimen of the 'sheathed-claw' style of composition) he politely pronounces "*a failure*," in desperate italics.

Poor Mr. MECHI! You must pull down and rebuild incontinently. In merry England a man's house was once his Castle—but not, it seems, if it have Pipe-Drains and Turnip-fields around it! But your unbidden guest got upon more dangerous ground than Tiptree *Heath*. He put his foot into a man-trap, able to catch even 'a Farmer of 20 years' standing' had you but let go the spring and held him there. He asks one question of fair-sounding phrase—but of a perilous recoil little dreamt of, as it would seem, by the writer. What discovery, *what Invention* in agriculture, quoth he, has derived its birth from Tiptree Hall?

Were the biography of agriculture a little better known than it is by those who ought to be most familiar with it, we should have been spared the blushing of our very Turnip-tops, and not for the first time, at the sound of this 'parlous question': but to hear it from a farmer's mouth is enough to make "each particular hair to stand on end!" Will that lecturer of lecturers confer upon us the everlasting favor—for so we should in verity regard it—of naming to us one single known and used agricultural Invention, Introduction, or Implement, that owes its origin——*to a Farmer?* In vain have we run over the well known yet not half sufficiently well known list of names—FITZHERBERT, GROSHEDE, HARTLIB, BLYTHE, WESTON, TOWNSHEND, FLETCHER, KIRWAN, CAVENDISH, LETTSOM, RICHARDSON, TULL, PRINGLE, MENZIES, HARTE, YOUNG, MARSHALL, RHAM, and others of more recent date, and living name—in vain have we summoned to the eye of memory the multiform images of Harrow, Scarifier, Drill, Horsehoe, Clod-crusher, Threshing and Winnowing Machines, and the vegetable forms of Turnip, Clover, Mangel-Wurzel, Fiorin, Rye-grass, Lucerne, Saintfoin—to find among the various biographical reminiscences they suggest, the solitary name of one—*farmer*.

Do they not, on the contrary, each a separate tale unfold that is enough to give any farmer bred

and born, a separate ache in every separate bone? Why there does not exist in the whole catalogue of human arts, one which has owed its reluctant progress to such a motley tribe of *strangers* as this same anomalous and curious trade of Farming. Two Lawyers, one Scotch advocate, two Diplomatists, two clergymen, one surgeon, *three Musicians*, one Tailor, one Tallow Chandler, Machinists without number—is it possible with such a list as this before our eyes, that the Ticket of admission to the name of 'Farmer' must be vouched and authenticated, crossed like a banker's cheque, with the style and title of some 'Improvement or Invention made or given in the cause of agriculture?

The fight has heretofore been all the other way: and as to balance-sheets, if you want a well known specimen, backed by a well-known name, take that of Jethro Tull, who died broken-hearted and a beggar, if, indeed, that testator may be called insolvent who bequeathed to his ungrateful persecutors the legacy of THE HORSE-HOE and THE DRILL.

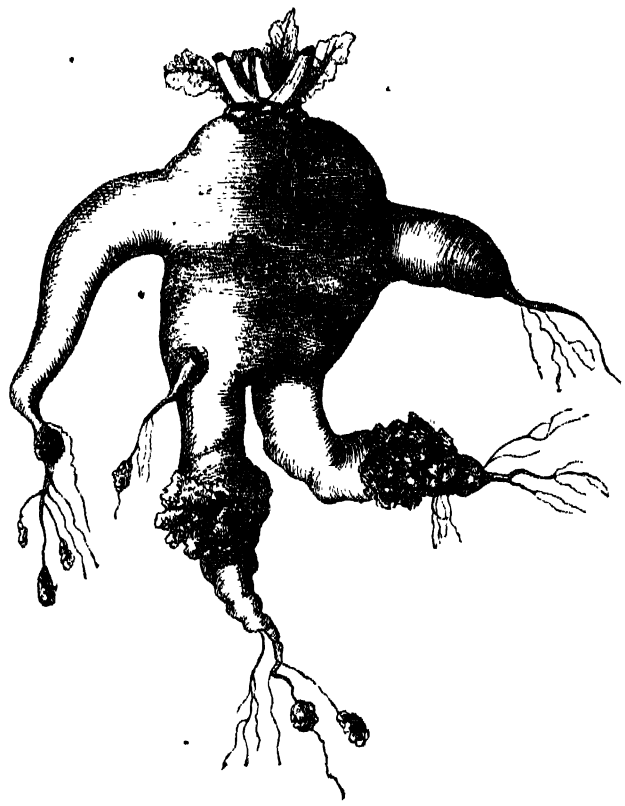
Let the evidence of 'the Balance-sheet' go for what it is worth: let it be set down as certain that the man who can show a good one is a sharp manager, with a steady hand and a keen eye for his own interest, and let it be assumed that the challenger, without the shadow of a doubt, *can show a better*. We are too glad to welcome the implied admission that book-keeping is henceforward to be a part of all good farming, to rob it of one atom of its due, or inquire too closely into the motives of *this* sudden start. But let not the tongue, the pen, *the mind*, that can bring one fact from the store house of science, or one useful suggestion from the analogy of other pursuits, be stopped or stifled in this nineteenth century of ours, by an outcry, which if it really and honestly mean to assume book-profit *to the individual*, as the test of inventive merit or public-spirited experiment, is simply guilty of a blunder whose confutation, bursting in one voice from the whole martyr-history of human art, is more significant nowhere than in the annals of the Plough. *H.*

We warn readers of this Paper in Lancashire—and those in other counties may perhaps also do well to take heed—of the attempts of a "gentleman," writing from Dover-road, Southwark, to introduce among them "an article in use by agriculturists." He is not to be found at the address whence he dates his communications: and this circumstance, along with the method he adopts of procuring "business," is sufficient to justify our advice of caution.

We grow things as strange as any Belgian production. Here is a body, limbs, and all—indeed, the figure conveys a very fair general idea of Mr. DICKENS' ticket porter in the tale of the "Chimes"—a 'prentice hand at portraiture has made worse attempts than this at "THOMPSON VICK." The "hand" figured in No. 1 is not more curious than the "FINGERS AND TOES" of the annexed drawing. We only wish the latter were as rare.

ANBURY, or, as the disease is called from its effects on the Turnip crop—fingers and toes—is a disease commencing with an unnatural and constrained growth, leading to warts and cankers, and hard excrescences on the bulb, and ending in foul putridity. It is apt to attack a crop which, from whatever cause, has not exhibited a genial growth; and thus a dry summer, undrained land in bad condition, and want of manure, are very apt to bring it about. The article in EGLANTON'S Cyclopædia on this subject is so amusing an illustration of the variety of opinions to which all agricultural subjects are obnoxious, that we quote a passage.

"One theory supposes it to be a topical disease, and to have been propagated from one place to another by the carriage of seeds; another supposes it to have arisen from a peculiar combination of soil, climate, and culture in one locality, and to have been propagated by infection; a third supposes it to be the consequence of an excessive or unduly prolonged cultivation of the Turnip, and to have been forced into existence wherever such cultivation had been practised; a fourth supposes it to have originated in variableness and inclemency of weather throughout a season, and to be propagated or repressed according to the adverseness or favourableness of the weather of succeeding seasons; a fifth supposes it to be an inoculation from a similar disease in other varieties of the Brassica tribe, and to have been propagated by the migrations of the insects by whose means it is inflicted: and a sixth supposes that it is strictly constitutional in the Turnip, and must necessarily become developed whenever the plant is produced in a high or even fair degree of healthiness and strength. Nor are these theories respecting its origin and propagation so conflicting as opinions respecting its nature. One theory asserts it to be a disease in the organism of the Turnip; another asserts it to be a disease in the secretions; a third asserts it to be a poisoning from some peculiarity in either soil or manure; a fourth asserts it to be consumption by an insect common to the Turnip with other varieties of Brassica; a fifth asserts it to be consumption by an insect peculiar to itself; a sixth asserts it to be poisoning by the voided secretions of some one or other insect; and a seventh asserts it to be commenced in organic feebleness and completed by insectal depredation."



There is one thing which may help us out of this labyrinth of conflicting opinion—namely, that the disease is of far less frequent occurrence than it used to be, and that its past history gives every reason to believe will ultimately disappear before a more exact attention to the details of good cultivation. The specimen here figured grew in the county of Fife, upon a peaty soil that had grown Turnips every five years for a long time back. The whole field was affected with the finger and toe disease this year, although good farm manure had been applied. Superphosphate of lime, which has been found so wonderfully creative of luxuriant growth in the Turnip, would probably be of service in mitigating or preventing the disease next time the crop is grown. Bone dust, which, in other circumstances might be almost equally efficient, does not decompose very readily in peat soils, owing to their antiseptic nature.

ENGLISH AND SCOTCH FARMING.

My attention has lately been directed to a letter which appeared in your columns a few weeks ago upon this subject, in which the writer expressed a desire for information on some of the chief points of difference in the two systems of agriculture pursued in England and Scotland; and, as were it any longer to remain unanswered, after the high terms of commendation in which your correspondent writes of the skill and management of the East Lothian farmers, I think they would ill merit the compliments he has paid them, especially on their readiness to communicate any experimental knowledge they may have acquired. This is not, indeed, the first time that we have been styled "princes of farmers," for there is scarcely a public agricultural meeting held in this county, at which there is not some noble proprietor present, assuring us that there is no farming in the world equal to that of East Lothian. It is this very fame which, in the case of the professional man, tends so much to his advantage, that has proved so injurious to the Lothian farmer, and is one of the chief causes of our rents being so enormously high as to excite the astonishment of the English traveller. Such is the present competition for land, that, in a short time, there will be few of the old tenants left in this district, a preference being almost invariably given to any man that offers an addition to the rent paid by the previous occupier, who ought surely to be the best judge of the capabilities of his farm. Were our landlords possessed of that nice discrimination in the selection of their tenantry for which your correspondent gives them credit, they surely might perceive that those who are most rash in promising are not always the most ready in fulfilling. This, I think, is in some cases sufficiently evident in the altered appearance and deteriorated condition of what were till lately "crack" farms.

The question which "J. F." very naturally asks is, "How do we contrive to pay these high rents?" The 19 years' lease, no doubt, gives encouragement to the tenant to expend his capital in the improvement of his land, in the hope that, though his profits annually may be small, he may yet be remunerated in the long run. But, had he chanced to see the contents of some of those singular documents, which sometimes extend to 20 or 30 pages, his surprise, instead of being diminished, would have been greatly increased. He would have found in many of them clauses "binding and obliging" the tenant to observe a regular rotation of cropping, forbidding him to sell the straw off his farm, or on any account to molest the game, &c. There is no clause more rigidly enforced than the last, and should the farmer, after fruitless complaints to his landlord, feel himself so aggrieved by the destruction of his crops as to join in an anti-Game-law movement, it is almost tantamount to saying that he has no desire for a renewal of his lease. I have even heard of leases where a clause has been inserted to the effect that, should the present Game-law be repealed, the tenant shall be debarred from any advantage that might thereby accrue to him. But (it may be remarked) the tenant is not compelled to enter into a contract of which he does not approve. True: but to the man who has run a 19 years' lease in a farm, where he has expended a large amount of capital, to leave a home and a neighbourhood to which he is attached by many endearing associations, and to set out, at an advanced period of life, in quest of new friends and a new sphere of enterprise, generally prove a trial so strong that, rather than undergo it, he will submit to conditions which his better judgment condemns.

I would not make use of a single expression which may justly be considered offensive to our landed aristocracy; on the contrary, I hope that the good feeling which so generally exists between them and their tenantry may ever continue and increase. Yet it is to be regretted that, in many cases, these leases are unnecessarily stringent, so as even to embarrass the tenant in the proper management of his farm. I believe about two thirds of the rentals of East Lothian are regulated by the prices of grain; but this is by no means of such importance as our southern brethren seem to imagine. At least, it has not been so in the days of protection; but, now that the clamour of the manufacturing population has succeeded in securing the importation of foreign grain free of all restriction, it is a most dangerous speculation to enter into a farm with a high money rent. Free trade may eventually succeed, but, in the meantime, the prospects for this country are very gloomy, for, with the quarter of Wheat at 40*s.* or 45*s.*, there is actually more general distress than when prices were twice as high, the reason of which is obvious: farmers can no longer afford to lay out their money in permanent improvements, consequently, all extra labourers are thrown out of employment. In this county, so far as I can ascertain, the average outlay for manual labour is from 20*s.* to 30*s.* per acre, and when the expenses connected with horses and implements are added, the whole may be stated to be about 50*s.* or 55*s.* Labour is not so cheap here as Englishmen generally suppose. Our ploughmen are engaged by the year, and even when prevented from working by sickness or bad weather, are entitled to their wages. These are paid partly in grain, and amount to about 10*s.* a week. The extra hands that we require in harvest for carting, &c., generally get from 10*s.* to 12*s.* a week, besides their food, which is equal to 4*s.* additional. Women are paid, with 9*d.* or 10*d* a day, except in harvest, when we give all our reapers, whether men or women, alike, as all do the same amount of work.

In some parts of England I understand that the stubble is left about 18 inches high, and cut after the crop is carried, which appears to be an unnecessary expense. Besides, there must be a considerable loss sustained in allowing this part of the straw, which is the most valuable for manure, to remain so long exposed to atmospherical influences. I quite agree with your correspondent's remarks on our Turnip culture, though in some instances there is danger of carrying it too far. On soils really adapted for them, and where they may be consumed by sheep, Turnips may be grown successfully to any extent; but on heavy lands it is very doubtful whether the Turnip and succeeding Barley crop are together equal to the fallow Wheat. Yet the expenses of a farm must be very much increased when Turnips are not grown to the extent necessary for the conversion of the straw into manure, and where oil-cake and other costly substitutes are so extensively used as they are in most parts of England. In alluding to the advantages derivable from our Turnip crop, "J. F." has made a slight mistake with regard to our after cropping. In the first rotation which he gives he is perfectly correct, but he makes the second to consist of five crops instead of four, as our hay crop is never followed by pasture.

There is one thing which I must not omit mentioning, and it is the difference between English and Scotch ploughing. What was my astonishment in the month of June last, when passing through the county of Huntingdon, to see stubble land only then getting its first furrow, which did not appear to exceed 10 inches in depth, though each plough was drawn by five or four horses. On asking some farmers whom I met their reason for allowing their land to remain so long unploughed, I was more surprised at the answer I got than even at seeing three people and five horses engaged with one plough. It was because "their land was so wet and stiff, that, if early ploughed, it got quite consolidated." Now, here we consider it to be of the greatest advantage to have our stiff soils turned over immediately after harvest, as it is only by exposing them to the frosts and snows of winter that we can get them sufficiently reduced. By following this method, we are even enabled to raise Turnips on land not naturally adapted for their growth. Where the soil is so apt to "run together," would it not be worth while, as an experiment, to ridge some of it up in the same fashion as our Turnip-drills. I have, perhaps, said too much on this subject, but I believe that to know *how* and *when* to plough our land is one of the most important branches of our business.

With regard to the straw ropes, to which, it is said, we have such a "bigoted attachment," I can only say, that in Scotland we are forced to study economy more than appearances, and to prefer a straw-rope to a piece of tar cord, if we find it cheaper. Scotch farmers do not generally speculate much upon their crop by keeping it more than one season, and so do not require to thatch their stacks as if they were houses. In the tying of our Bean crop, we have always considered straw whippies superior to bands composed of Bean-stalks, and not more expensive. I do not think your correspondent's experiment with his Bean-stalk at all satisfactory, as the mere fact of its not having broken, when drawn without being bent, does not prove that it would make a good pliable band. Instead of dragging his "stout friend" across the field, had he succeeded in binding him with it, as he might easily have done with a "straw whippy," perhaps then his "stout friend" would have been much more easily convinced. Neither can I agree with him in his remarks on the drilling of corn, as our experience is directly opposed to that of our English friends. Except on loose, light soils, subject to the growth of annual weeds, or where there may be a difficulty in getting the seed properly covered, we find broadcast sowing preferable to drilling. This I know to be the opinion of the most eminent farmers in this district.

As my letter is already longer than I anticipated, I must not, at present, enter further into details, but shall be happy to communicate, at any time, what information I may have acquired on these subjects.—*I am, &c. East Lothian Farmer.*

AGRICULTURAL DEMORALISATION.

I HAVE read with considerable interest the remarks and complaints of your correspondents, "S.," "S. S.," "B. B.," &c., on this subject.

By residing three years in this neighbourhood, almost surrounded by barren heath, far from any church or school, and without any resident gentry, I am enabled to trouble you with a few remarks and facts on the matter in question. It is a great mistake to assume, under any circumstances, that human beings are naturally ill disposed or ungrateful; on the contrary, I have great dependence on the general kind feeling existing in society; good being the rule, evil the exception. This is proved by the ready submission to law and order in our densely populated island, frequently too under the severe trials of great misery and want.

Tiptree Heath has always been notorious in Essex for its poverty in land and person, poaching, pilfering, and a generally low state of morals; is it to be wondered at? Situated on the verge of several extensive parishes, without religious or moral example or instruction, uncared for, unsought after, this barren spot became occupied by squatters, or persons of poor and irregular habits; scores of mud huts (called cottages) grotesque in appearance, and scarcely fit for dog kennels, have at various periods sprung up as it were from the heath, until we have a numerous though scattered population. Willing stewards of manors readily accorded to any applicant who would build (?), and enclose a patch of the heath, satisfied that death and transfer must soon add something to the manorial advantages and legal charges. No system, no architectural design, no drainage! all left to accident or chance! poor Tiptree Heath was not worthy of such consideration.

The facilities for keeping a half starved pony or donkey on the heath, encouraged every third man to be a higgler, jobber, itinerant, butcher, or beer shop keeper, or all of these; and no doubt in former times there was a very great facility for the transfer of property legally or otherwise, at all events our well enclosed and wealthier neighbours in the valley had a very poor opinion of us. It was no uncommon thing to see knots of able but ragged and unemployed men lounging before the public house or beer shop; but mark the result of agricultural improvements. The erection of new buildings, draining the land, and levelling the fences, acted as if by magic, and our cases of crime diminished, as I am informed, seven-eighths. Am I not justified then in asserting that the first and principal cause of crime is non-employment, resulting first in poverty and ultimately in robbery. It may be said, "Oh! there is the union." Aye, but strong, able, and willing men, in the full vigour of life, will rarely submit to the privations, semi-imprisonment, and restraints of a union, in which they are looked upon as incumbrances. I have reason to know that such men feel irritated and excited, when observing (acutely enough) the half cultivated soil almost imploring their labour, they go to be brow-beaten before a board of economic guardians. The more bold the spirit the more pungent the disgrace. It has been my lot to employ men known as poachers, and having a bad reputation as to temper and regularity, but hard workers when employed; I have reasoned with them, and they candidly admitted that so long as they could find employment it was all they required, but they would catch every hare in the parish rather than go to the union. I have found that employing such men, and reasoning with them in a kindly but firm remonstrance, is far more repressive of crime than severity or neglect.

In the course of three years, with my property much exposed, my whole losses have been three ducks and a sheep. The parties who were assumed to have taken the latter were subjected to the usual legal process (we should always strictly endeavour to punish offenders), but the evidence was inconclusive. Having failed in punishing, my next step was to employ and thus give them an opportunity of redeeming their character and of avoiding a repetition of offence. My motives have been appreciated, and the desired result has been accomplished. Do not suppose for a moment that I would pass by a man of known good character, such men must and do always command a preference; but I am quite sure that a discreet regard to the well being and well doing of our poorer neighbours, a trifling solace in sickness or affliction, a little aid where we know it is required and deserved, wins for us their respect and affection, and stimulates them to act up to our advice or remonstrance; moreover it is our duty. Indiscriminate charity is a great evil, there are most powerful objections to pecuniary relief except under particular circumstances, employment is the great boon

If our poorer neighbours are uneducated, they are not unobservant; the motives and actions of their superiors are keenly and faithfully discussed, and their example for good or for evil must ever have a considerable and important local influence. We are situated six miles from the parish church, and no other church of England establishment exists within a radius of four to five miles." Although a member of the church, I have considered it my duty to aid the only place of worship and education in this neighbourhood, a small dissenting chapel and school, feeling that without that we should be heathens indeed, and hoping that the time may come when the numerous, increasing, and neglected population of this neighbourhood may be provided with a state church and school, to which end I would most willingly contribute. Let us also hope and expect that our heathy waste may be enclosed, and afford food and employment to its inhabitants. The time I hope may soon come when the local position of our churches will receive legislative consideration and correction. At present I could point out numerous instances where the old dilapidated churches are at the extremity of a parish, and without congregations, the congregations being at another part of the parishes without churches. This is the case in our neighbourhood. *I. J. Mechi, Tiptree Hall, near Kelvedon, Essex, Jan. 9.*

RAW *v.* BOILED LINSEED.

AT the recent Smithfield Cattle Show, I promised to afford early and definite information relative to an experiment at Trimingham between eight Scots, one-half fed with boiled Linseed, the other with raw.

Assured that you will readily afford the medium of your Paper, I beg to state, that the bullocks, after three months' feeding, were submitted to public inspection at North Walsham on Thursday last, and that the superiority was awarded to the raw fed, by a great majority of farmers. But, admitting the fattening properties of both systems to be equal, the cold must possess the greater advantages:—1st, because firing is dispensed with.—2ndly, because the mixture does not turn sour,—and 3rdly, because the cattle eat it without waste. It is my intention to continue the experiment till the animals are ready for market, but with respect to the rest of my cattle, I shall substitute the cold for the hot food. The object of either process is to form the Linseed into gelatine [? mucilage], and to incorporate it with any substance, or fibrous material, that will act as a vehicle to the stomach, and as a conveyance to the mouth for rumination. Gelatine, proper for cattle feeding, is obtained either by boiling Linseed reduced to fine meal 5 or 10 minutes; or by soaking it about 25 or 30 hours in cold water.

The method of making the cold compound with which the bullocks in question are fed, is precisely the same as that described for hot in page 231 first edition of my book, and in 215 of the second, viz.:—The half of a large tub being conveniently placed, a bushel of Pea-straw, &c., or hay, and Turnip-tops cut into chaff, is put in. Two or three hand-cups full of the jelly are poured upon it, and stirred up with a three-pronged fork. Another bushel of the Turnip-tops, chaff, &c., is next added, and two or three cups of the gelatine as before; all of which are then expeditiously stirred and worked together with the fork and a rammer. It is then pressed down as firmly as the nature of the mixture will allow, with the latter instrument, which completes the first layer. Similar quantities of the Turnip-tops, chaff &c, are thrown into the tub, the jelly poured upon it, and so on till the copper or vessel in which the gelatine was formed, is emptied. The mass is lastly pressed down with the copper-lid, and in a few hours, the chaff having absorbed the mucilage, the compound is given to the cattle three or four times a day in addition to as many Turnips as they like to eat. The proportion, up to this date, has been one pailful of Linseed meal to eight of water. Next month it will be one to seven, with about two pints of Barley or Pea-meal added by degrees while the compound is being made. Afterwards more Linseed and Barley will be used. By this means the present cost of 1*s.* 6*d* a head per week for the artificial ingredients will be increased to about 2*s.* 6*d.* In adhering to these regulations, I have never failed to obtain ample remuneration for grazing, independent of the box-manure, which is beyond price.

I exhibited also at North Walsham, a Dutch heifer, that cost 8*l.* 10*s* a short time before last Christmas. She was fed according to the above system, at the rate of 2*s.* 3*d.* per week for Linseed till June, when an unlimited quantity, compounded with Grass, Pulse, Grain, or Turnips, was daily placed before her. During this time, however, she consumed on the average only 20 pints of Linseed, and 35 of Barley or Peas per week, the value of which was 4*l.* 16*s.* This sum, added to 2*l.* 14*s.* for the previous six months' compound, amounts altogether to 7*l.* 10*s.* for the year. The heifer is considered to weigh about 70 stones of 14 lbs. Three weeks since I refused 30*l.* for her. On Thursday last, 29*l.* were only offered. Taking the latter sum as the criterion of value, and deducting the original cost, leaves 20*l.* 10*s.* for twelve months' maintenance upon the exclusive produce of the farm, besides the manure, which, I repeat, is beyond price.

To prevent misunderstandings, I think it right to state, that the heifer never had a calf, and that she was one of six purchased at 8*l.* 10*s.* each. They were equal as to size and breeding. One died, and the others were sold at the end of six months for 19*l.* each. Therefore, had this heifer been then disposed of, she also would have repaid 10*l.* 10*s*, whereas, by retaining her six months longer, her value only increased 10*l.*, though at an extra cost of 2*l* 2*s.* for compounds.

It will be seen that the heifer repaid 2*l.* 12*s.* less for the last half year than for the former. We may, therefore, reasonably expect, that if kept another half-year, a proportionable decrease would occur. Depending, however, upon the economy of the system, and believing that a net profit will be obtained from the present value of 29*l.*, I intend to exhibit her at Norwich during the meeting of the Royal Agricultural Society in July, as a powerful illustration of the advantages derived from "fattening cattle with native, instead of foreign, produce."

The weight of the heifer in June was estimated, with the others, at 54 stones of 14 lbs.—now at 70. Then the price was calculated at 7*s.*—now at 8*s.* 3*d.* per stone. Therefore, had not the worth of the meat been increased, bone, instead of grain, must have been noted; and as the increase is only 16 stones or 10 lbs. per week, some idea may be formed of the loss sustained in rearing and fattening cattle for Christmas shows and prizes, at 10, 15, or 20 shillings per week, for oil-cake, &c., &c.

I have published many similar returns to the above, and know from experience that the quickest generally prove the most profitable. But in the present instance, I desired to show, that foreigners possess cattle equally prone to fatten with our own;—that meat can be raised from Linseed compounds at one-third less than the cost for cake; and that through the growth of Linseed, with summer and winter feeding in boxes, nearly all the expenditure throughout the country for artificial manure, and for cattle food, might be avoided. *John Warnes, Trimingham, Norfolk, Dec. 10th, 1848.*

[*Abridged from the* "*Norfolk Chronicle.*"]

ON STORING ROOT CROPS.

FEW things are of greater importance to those engaged in agricultural pursuits than the most effectual and most economical methods of preserving the produce the agriculturist obtains. Here I am, situated in the midst of a spot of land of a remarkably stiff character, where the cultivation of Swedes, Turnips, Mangold Wurzel, and other roots was scarcely known a few years back, except in some refined spot of land of a more friable nature. A different system is now altogether adopted. Most farmers are in the habit of growing many acres where they formerly never grew more than a few yards, and I doubt not but this is something considerable to their advantage. The introduction of these root crops into a rotation doubtless proves advantageous to the tiller of the soil, and hence the reason why a more perfect knowledge of their cultivation seems so very desirable, even to us clay farmers. For my own part, I am one of those traditional beings who are not very easily persuaded to adopt any new method; I was some time before I could see the utility of the drill system over that of broadcast, but now it would indeed be a most difficult task to make me return to my old scheme of growing roots.

The Swede crop is the chief, and is the one to which I principally allude. By this time of year all the Swedes should be removed out of the ground, and stored in some way as to protect them from the effects of the frost of the ensuing season, and from the ravages of our rodent visitors (so plentiful in this neighbourhood), and which so often leave the print of their teeth beneath the epidermis of the bulbs

Many methods of taking up this crop have been tried by various people in the neighbourhood, such as throwing them indiscriminately into heaps, and covering them with soil in the field. The tops in this case

are altogether sacrificed, therefore I do not approve of the method. The plan I have this year adopted, and which I conceive to be the most advantageous, is to remove the crop entirely off the field, and this, by watching opportunities even in this wet season, I have nearly effected (without resorting to the fantastical modes adopted by some). I have the crop taken up in the driest weather possible, and those which are for immediate consumption by our fatting cattle are cleaned ready for use, and are removed from the field to a convenient spot at the homestead when all necessary covering is added. The remaining part of the crop which is not intended for use till a later period of the season is to be taken up, the tops cut off, and the soil removed from round the roots. The large roots I do not suffer to be cut, as it is my impression the bulb will not suffer any injury half so soon as when the roots and fibres are entirely removed. They are thus to be removed and stored in any spare bit of ground either in the stackyard or elsewhere, and should be covered sufficiently with straw to secure the produce from any ungenial weather which may afterwards follow. The tops are all separated from the roots, and may be consumed by young stock on the pasture ground. If it should be thought advisable not to draw them off, they should be spread evenly over the surface of the field, as I hold them to yield a manure of the most fertilising qualities. *G. F.*

ON KYANISING.

I see that one of your correspondents desires some information respecting Kyan's process for preserving timber. As a private person I have had experience of it for more than 20 years, and can vouch for its efficiency, provided the process is perfectly performed; for, like every other undertaking, it has failed through the negligence or default of some who have tried it. When I first used it, the patent was in existence, consequently I had to take out license, and sign an agreement to purchase the corrosive sublimate from the agent of the patentee, and not to use the solution under a prescribed strength, the reason being that so much sublimate of an inferior quality was frequently sold, and many from a mistaken economy made the solution too weak to be effective, that failure ensued, and discredit attached to the invention. Another cause of failure occurred to myself from thoughtlessly putting some old timbers into the tank, which had the remains of iron nails in them; the iron instantly caused the sublimate to precipitate, and deprived the solution of its strength. Care should be taken that the iron used in the formation of the wooden tank is so placed as not to come in contact with the solution; and which should be pounded and mixed in a wooden vessel, and with a piece of wood only.

The corrosive sublimate should be first dissolved in some wooden vessel in a small quantity of boiling water, then put into the tank with cold water, in the proportions of 8 gallons of water to 1 lb. of sublimate. This, if it is good, will make the solution of sufficient strength. There is a gauge sold for ascertaining the proper strength, but the usual test now used is to dip a silver coin into it; if the solution turns it of a brown colour, it is considered of sufficient strength. Timber before steeping should be cut to its intended size, planed, morticed, &c, not to waste the liquid; the length of time it should be steeped depends upon the dimension of the timber; about two days for small timber will probably suffice.

The softest timber becomes hard after being steeped, and turns the edge of tools, on which account carpenters dislike it being steeped before they work it. Cordage and canvas may be steeped six hours. Should the hands of the person who operates get wet with it, he should wash them soon, or he may be injured. I will state a few cases of the success of this process within my own knowledge. A stake of fresh cut timber Sallow, about 5 feet long, 5 inches diameter, was steeped three days; it was then driven into the edge of a marsh, on a river's side, where the tide flowed, and was used to moor a boat to; it was wet and dry, alternately. About seven years afterwards this stake was taken up, it was sawed through, and it was perfectly sound and tough in every part. A small cable was steeped, was after in constant and rough use for many years without decay. A set of sails, steeped about 10 years since, are still sound and white, and not a speck of mildew on them, while a new sail only a week in use unsteeped, being with them three days of bad weather, the boat being at anchor, and no one able to get to her during the storm, became useless from mildew.

There is a cheaper preparation than the above, said to be effective for the same purposes, which was patented some years ago. I have seen it also mentioned, in an old Dublin magazine, of a date about 70 years past, but I have never tried it. It is sulphate of copper, commonly called blue vitriol, dissolved in water in the same proportions as Kyan's solution. *W.*

I took out a licence from the company (I think) in 1838, and continued to use my tank at very considerable expense for several years. I think about the fifth year I began to observe symptoms of decay in the prepared wood, which caused me to discontinue the use of corrosive sublimate, and I have never since resumed it, as further experience only the more convinced me that the results expected from the process would not be realised. I do not mean to say that it did no good, but that the little good derived from it will not nearly cover the expense of the corrosive sublimate, supposing no other expenses attended the process. I Kyanised the whole of the wood I had occasion to use on the estate—for farm-buildings, gates, fences, sleepers, &c. It was in gates, hurdles, sleepers, and fencing, I first discovered its inefficacy, between wind and water. I have since that time had all my hurdles "payed" with boiling coaltar, which I believe to be the best preserver of wood now known, in proportion to the cost. *J. H. S.*

POULTRY NOMENCLATURE.

Exchanging living specimens of fowls is an endless business. For two amateurs each to send a couple of fowls three or four hundred miles, as the "distinct" crack species of their respective counties, and to find that both are alike and are well known under other names elsewhere, is enough to damp a man's ardour in a more important matter than the name of a hen. Yet unless the question of nomenclature is taken up and settled by amateurs, it will not be done by any one else. And until the established breeds of the country are well known, and their history, as far as that can be got, familiar, it will be in vain to discuss the more important questions relating to the mutability or immutability of species, the supposed modification of races by hybridization, the laws relating to the production of colour and shape in fowls, and other questions bearing in a very direct and important way upon the doctrine of breeding in general. One chief cause that so little knowledge of a satisfactory kind is to be found on the subject of breeds—from Col. Smith's and Lawrence's and Knox's speculations on the human species, down to the humble fancies about breeds of poultry in the columns of the *Gazette* — is, that the greater number of the creatures to which our inquiries are directed are too long in coming to maturity and in being reproduced to enable a man, in the 20 or 30 years he has to give to the subject, to arrive at results of any great importance. Thus, though many breeders have studied successfully the methods of improving any individual species or a variety, the way in which any of the varieties originated, not to speak of the higher laws relating to the production of varieties in general, is still wrapped in mystery. In fowls and plants, rapidly reproduced, constantly under our eye, we have perhaps better means of studying this subject than in creatures of greater longevity. The analogies to be drawn from plants are no doubt of great importance, and I wish very much some of your contributors, learned in the breeding of both plants and animals, would give us a paper (there is matter enough for an interesting volume) on the way in which vegetable and animal physiology illustrate each other in the production and development of varieties.* "Hence," says Dr. Lindley, in an article of Dec. 30th, 1848, to which I beg to refer the student of this subject, "we are led to the highly important inference, that the great principle of life within them (plants) is, in its essential nature, the same as our own" I refer also to the brief remarks about hybrids in the "Theory of Horticulture."

Taking it for granted, then, that with a view of helping not only towards a good nomenclature of our domestic fowls, but of aiding in the elucidation of the general doctrines of breeding, many of your readers would very gladly make some effort, I propose that we take advantage of the meeting of the Royal Agricultural Society at Norwich, and send speedily to some place in or near that city specimens of thorough-bred eggs from various parts of England, Scotland, and Ireland, to be hatched and reared there, so that a parliament of poultry fanciers, elected by the members of the society, may examine and report upon them for the general benefit.

Eggs well packed in Oats, or sawdust (not containing any turpentine), in small barrels, will travel any distance with safety. Were a suitable place and person fixed on near Norwich to provide clucking hens, and to superintend the eggs and the fowls, there would be no difficulty in producing specimens of all the best breeds of the various counties for the inspection of the proposed committee, who might thus at once and conclusively clear up many obscurities on the subject. A few trifling subscriptions would furnish the necessary funds for the payment of a suitable cottager or farmer's wife; and perhaps the worthy author of "Ornamental Poultry" would not be unwilling to give an eye to the proper management of the plan. Living on the spot, and so well acquainted with the subject, no one is so likely, if he will kindly undertake it, to see the details successfully carried out. One must not forget the homely details. It would be necessary to have clucking hens round about the country provided, or otherwise those likely soon to cluck purchased at once, and habituated to their new residence; for not one fowl in a score will sit well if removed from her usual home and set down on a nest of eggs. But by having the birds bespoken at various places, the eggs could be marked and set, and the clutches gathered together at a proper time. Three or four different kinds could be put together, and thus the otherwise unmanageable army of cluckers reduced. The eggs sent should be carefully marked in full with the name of the breed and the county they came from.

It may seem to those unacquainted with poultry that this plan would be impracticable, from the great number of breeds. But there is far more similarity in the crack breeds of poultry than is generally supposed. Thus, as Mr. Dixon shows, the Bolton grey, the creole, the coral, and the silver Hamburgh are the same breed under different names, and the same kind is called Prince Albert's breed at Windsor, and the Jew kind (sometimes the silver pheasant kind) in Cumberland, and "the old Scotch breed" at Edinburgh, under which name it got a prize at the meeting of the Highland Society last year. Nay, I am not sure but some of our silver Dorkings will turn out to be the same, for I had a fine cock of this breed with five toes, and a very well known poultry fancier sent some of them to the Newcastle poultry show in 1848, to compete as silver Dorkings, but was told they were Bolton greys. Other synonymes for the same beautiful breed exist, I believe, in other counties. Thus, too, the Polish and the Russian of different counties are the same breed; and the old-established pheasant breed, known under no other name, in many counties of England and Scotland, is really the golden Hamburgh of the London, and the Bolton bay of Lancashire breeders; so that though there may be many names there will be but few breeds. The Spanish, Malay, speckled Dorking, and game fowl cannot be mistaken well. Once named by a competent authority such as that I propose, there would be no longer any doubt or confusion about breeds of fowls in books, and the names then fixed on would in process of time find their way into our farm-houses and cottages. If this proposal is adopted, perhaps you will be so good as to receive a few subscriptions for the purpose; a very few guineas would do the whole. *L., Valley Rock.*

* The article "Breeding," in the new Encyclopædia, will, I hope, give us all the knowledge scattered abroad at present.

Home Correspondence.

Expenses of the Agricultural Society.—I observe in the last financial statement of the Royal Agricultural Society of England that the expenditure of the past year has exceeded the income, so that it has become necessary to make a considerable encroachment on the funded capital of the Society. Whilst this is certainly to be regretted, and must imperatively require the adoption of some economical methods, it is to be hoped that these measures will not be such as to diminish the usefulness of the Society; and least of all should any diminution of the value of the Journal be allowed to take place; for this undoubtedly is the most valuable product of the Society's labour, and returns indeed to all the members a good proportion of the value of their subscriptions, and thus gratifies hundreds who are unable to avail themselves of the country meetings of the Society. When we see the very considerable excess of the expenditure at these meetings over the large returns realised by them, and in spite of the liberal subscription of 1000*l.* supplied by the district, it is, I think, consistent with fairness and justice to the whole body of members, that the expenditure at these meetings should become the subject of financial reform. It appears to me that there is one saving that might be readily effected without any impairment of the real objects of the meeting, and with very little to its *éclat*. I refer to the large sum of nearly 700*l.* which is annually spent in the erection of a temporary building, merely for the purpose of a large body of agriculturists, eating together a very indifferent and not very comfortable dinner; knowing the weeks and months spent in the erection of this wooden shed, and the large amount of its cost, I have been tempted to exclaim with one of Boz's heroes, "Whether it's worth while to go through so much in order to get so little, as the charity boy said when he came to the end of his alphabet," is a matter of doubt. It is quite right to afford every opportunity for the members of the Council and of the Society to be brought together, but this, I take it, can be readily accomplished by public breakfasts and dinners on a smaller scale. The public rooms can generally accommodate parties of 400 and 500, and these, with meetings for discussions, can, I take it, readily be made to answer all the purpose of the meeting. We ought doubtless to consider it as a great fact that upwards of 1000 farmers can safely and perhaps comfortably eat a cold dinner together, but as this great fact has already cost the Society some 6000*l.* or 7000*l.* in establishing, it ought, I think, considering its own requirements and the necessities of agriculture, to adopt a less expensive method of feeding in future. *W. C. S.*

Scotch and English Farming.—I am very glad to see that an "Old English Farmer" has undertaken the defence of the Lothian men, in the matter of straw-ropes *versus* tar-cord and Bean-stalks, for it shows me that I might have staid at home and found fault, without going so far off to correct an old-fashioned error. With respect to the thatching, I would observe, that if equal durability, at no greatly increased expense, can be ensured by tar-cord or hazel-rod bindings and neatly raked thatch, then the superiority of the appearance of this over the loose straw and numberless ropes of the Scotch system, should decide as to the desirableness of the English mode. For, after all, "appearances" are more important, even in farming affairs, than we are apt to imagine. Farmers are famous for becoming slovenly in all comparatively unimportant matters; but they little think how injurious this is to the neat and orderly, and regular business-habits of labourers, who, if permitted to be slovenly in any of the operations in which they are engaged, will be found to be very bad judges of where their slovenliness is to cease. As to the safety and endurance of the raked thatch, fastened with tar-cord, it is no uncommon thing to see such withstanding, sound and unbroken, the storms of two winters. What the expense of the straw ropes may be, I cannot say, but for 6*s.* 6*d.* each, labour and tar-cord, I have had round stacks thatched, containing 40 to 50 quarters of Wheat each. I admit all that is said about our thatch being secured occa-

sionally with "harrows, gates, and bits of wood," indeed I have seen a couple of cart-wheels hoisted on to an ill-thatched stack! but, in comparing two systems, of course only the best specimens of each can fairly be spoken of. "H. N. V." is still more positive about my error in judgment respecting the tying of Beans with a band of its own material. Now I happen to live in a district somewhat famous for the growth of Beans, and I will engage, any year, to show him hundreds of sheaves, tied only with Bean-stalks, that may be thrown over a house unbroken. We grow far too many to house them all on harvest day; indeed they are treated exactly as other corn, and thrown about as much. I must remind the incredulous objectors that, different from any other corn, the Bean sheaf "couches" together in drying, and thus does not require so tight a band to hold it together. The only art in tying the sheaf with Bean-stalks consists in not bending the thick end of the stalk. Our plan is as follows:—the reaper, who generally cuts with a long-handled hook, first pulls up by the roots three or four stalks, on these the sheaf is laid as cut, and in about three days the straw is sufficiently withered to admit of the thinner end of the stalks forming the band being bent over the sheaf, and twisted tightly round the root-end, which need be bent upwards from the ground scarcely at all, so that the shape of the band when tied might be described by the diameter of a circle and the half circumference. I shall not lengthen this discussion any further, for one cannot well be too brief in descriptions of any farming operation; a reader is very soon teased at the idea of being thought so slow as to require an elaborate lecture. Farmers are now-a-days so much on the *qui vive* for improvement, that a hint is sufficient, and I have no doubt that my assertion that hundreds of acres of Beans are tied with Bean-stalks in the Isle of Ely will induce many an "Old Farmer" to try it who has never tried it before. In conclusion, I beg to assure your Hadlow correspondent that I shall anxiously look for any future remarks of his on the Scotch system, and if a man of such evident practical knowledge and intelligence should confirm any of my further notices of the excellence of the Lothian farming, I shall feel assured that my enthusiastic admiration of this district has not wholly destroyed my judgment. *J. F., Isle of Ely.*

Box-feeding.—I had not intended to have again replied to any of the Rev. G. Wilkins's attacks on box-feeding; but his remarks in a late Paper are with more moderation, and I will notice them, endeavouring once more, and I think for the last time, record my sentiment as to the merits or demerits of the system in question. To enter practically upon the subject, I may state I have 70 boxes, each 17 inches deep and 9 feet square, from which, as my nightly custom is, I am just returned (8 P.M.), and left 140 head of stock of various kinds in as much proportionate comfort and cleanliness as my rev. opponent himself can possibly be enjoying, even though surrounded with every possible drawing-room refinement. Most freely do I admit the imperious necessity of keeping animals clean and comfortable, for assuredly if this is not their state, the food given them is to a great extent thrown away. Last week I had two ladies who are accustomed to all the elegancies of a refined life visiting my cattle boxes, who declared they never before witnessed such animal comfort and delight, and if the rev. gentleman would like to put any queries to these two ladies, who reside in this county, he shall privately have their address from me. Certainly, as I remarked in my previous letter, it is a system requiring much straw and constant attention, and with these united it works admirably; but without them, "vexation of spirit" will overtake the man who adopts it. As a new settler on this wild waste I am not in a position as yet to extensively feed cattle, but it is in my power to produce very high testimony of some heifer beef fed in my boxes, and I will now give the rev. gentleman the result of a pig-feeding trial in the "abominable, odious, pestiferous" boxes, alias pits. On the 3d of July last I weighed one sow of the Tamworth breed, and found her 9 scores 7 lbs., and on the 17th of same month she had increased to 11 scores and 7 lbs., or 40 lbs. in 14 days; I also tried a young Devon sow, same age as the Tamworth, both reared here and fed precisely the same; this gained 37 lbs. in the same period—food, Barley sharps and Rye meal; cost of these, 4*l.* 4*s* per ton in Plymouth. Having much thick coarse Grass around me, with one of Glover's admirable paring ploughs, I use this implement when the ground is quite dry, and pare sufficient to make a rick of, which is carted and placed under cover, and every few days, as I find the boxes becoming moist, the pared turf is laid over the previous surface, giving the animals a very dry bed, and much useful amusement in tearing it into pieces; this plan is repeated until the pit is level with the gangway, then it is emptied into the adjoining covered dung pit, and again gets trampled by store pigs, which joyously range the ample covered space of 96 feet by 18 feet. The amount of manure I thus make is almost incredible—700 cart-loads the dung pit is estimated to hold—it was almost emptied in November last and now it is nearly full again; and how shall I, without the aid of chemical knowledge, dilate upon the quality of the manure thus made? Suffice it to say that on my generally esteemed poor land, 1100 feet above the level of the sea, I last year raised 27 tons 10 cwt. 1 qr. 16 lbs. of Swedes per acre without any other dressing. To day I had a farmer with me, who about three weeks since saw in one of my boxes (or rather I should say two boxes made into one) a young Durham bull, which my bailiff purchased at Lord Sherburn's sale; this morning the same farmer wanted to know what bull it was, he could not think it was the same animal he had lately seen, so rapidly has the young bull improved. Eight yearlings I have which spent last winter in my boxes, and they are now luxuriating themselves again in them; and taking breed into consideration, I challenge the rev. gentleman or any other gentleman to show eight yearlings reared on one farm in open sheds that can beat them or equal them. I refer to remarks in my previous letter. *G. W. Fowler, Prince Hall, Dartmoor.*

Calendar of Operations.

JANUARY.

BERWICKSHIRE MERSE FARM, *Jan.* 10.—Since last report we have been ploughing Turnip land and sowing Wheat, and will finish next week, we shall then proceed to plough Grass land for Oats. We have finished draining the old Grass land, and shall plough the earth into the drains, and plough it again for Oats. We have been planting green-top Turnips for seed, and intend to plant some Swedes and yellow. We have been planting green-top Turnips for seed, and intend to plant some Swedes and yellow Turnips; we have also been picking the white Potatoes that came from South America: when they were dug up part of them were covered with earth, they are nearly all rotten; a portion of them were covered with straw without earth, they are almost the same as when they were lifted. We intend pulling and storing Swedes, if the weather is fine. We have 22 acres to lift, in all about 118 acres. *J. B.*

FEN FARM, *Jan.* 15. The great variation of the thermometer last week, amounting to 20° in 24 hours, has produced violent storms and rain, and caused a corresponding uncertainty in the business of the farm; instructions to foreman and labourers which should be issued at the close of each day respecting the operations of the next, have been, as they generally are during winter, conditional: "If fair, and the land dry enough to-morrow morning, plough the 7 acre;" "if the frost interferes, cart manures, or go on with hedging, or grub the roots up and level that bank," or, "if it rains clean out the troughs and cribs in the bullock hovels, oil the harness, put the sacks to rights," &c., but whatever the weather, it is advisable to let a labourer examine once a week the outfalls and open dikes, to remove obstructions which may be caused by a high wind blowing loose thorns in, and choking the upper drains, or the sides of a ditch are broken by a sportsman or trespasser riding or trudging straight "cross country," at one time the frost, at another the cattle will loosen the soil and impede the water-course. I observe in the fields several crops of white Turnips yet unconsumed, and have been led to believe that they ought to have been eaten before Christmas, and am of opinion that a small farmer should prefer Swedes altogether, particularly if he requires any for spring use, but if he has been unable to obtain a plant of Swedes, his only chance then by late sowing (in July) is to try for white or a hybrid. *J. W., Peterborough.*

NORTH LINCOLNSHIRE, *Jan.* 20.—The winter months have hitherto been characterised by great mildness, with the exception of a few days, sharp frost from the 2d to the 8th inst., which enabled the farmers to get a quantity of manure carted to the fields intended for Turnips next season. In consequence of the openness of the weather, farming work is in a state of much forwardness, especially ploughing. Land for Turnips is mostly done, and ploughing for spring corn has briskly commenced. I am sorry to say the Wheat plant is suffering severely from the slug, particularly upon clay soils, and where late sown, which was the case with a great breadth this year. We find salt, which we have been in the habit of sowing for some years past at the rate of 4 cwt. per acre, is almost a complete cure for those things. Turnips, which are principally consumed by sheep upon the land in this county, are being eaten fast, and are advancing in price, old sheep being worth 6*d* per head per week, and hogs in proportion, the latter have done well these two months past, we have just got upwards of 600 upon Swedish Turnips, where they will continue until our spring fairs in April. Notwithstanding the depressed state of the markets for farming produce, our labourers are pretty well employed and at good wages—12*s.* per week being the regular wages for able-bodied men, and when at piecework they are earning from 2*s.* 6*d* to 3*s* per day. I am happy to say the bulk of farmers in this county deprecate low wages. I am satisfied, from an experience of 20 years, they are equally as injurious to the employer as the employed, as when low wages are given the masters have very little control over their men. Should the low price of farming produce continue, which I see no reason to think but it will, from the immense importations we have had and are likely to have, I am afraid it will be the means of checking improvement going on, and throwing labour[illegible] out of employ, which by the-bye ought not to be the case, but still is always the fact. Since the frost we have had 4 [illegible] boys cutting Turnips for sheep, 1 man and 2 boys for about 300 hogs, at which employment they will continue until [illegible] sheep are sold. Our other labourers, [illegible] next few weeks, will be engaged principally threshing and delivering corn, draining, and ploughing for spring seed corn. *S.*

STIRLINGSHIRE CARSE FARM, *Jan* 20.—During the past two weeks the weather has been exceedingly changeable, we have had sudden thaws, accompanied with heavy rains and occasional high winds which have entirely done away with the very severe frost. Our farming operations have been of a somewhat varied character, and we have now commenced, with three pair of horses, lea ploughing, for Oats, and when possible, we prefer that it should be exposed to frost, inasmuch as the soil is thereby rendered more friable, and in consequence requires less labour at seed-time, also in general we find that it secures as good a crop. I have perused the letter of "C. L." which appeared at the top of this Calendar on Jan. 13th, and am quite of his opinion. I think it might be greatly improved by the insertion of some such details as he points out: though to give some of them oftener than once a year, or so, would surely be quite out of place, yet it is quite evident that some of the details he alludes to are manifestly as well adapted to some other part of the Paper. If "C. L." would just take the lead, and show the real profits he derives from the land he occupies, and also the rent he pays per acre, I will probably endeavour to follow him. *W. T.*

SUSSEX FARM, *Jan.* 22.—Many farmers here are very much behind in not keeping a sufficient quantity of stock upon their farms. The cultivation of green crops is very much neglected; they grow no roots, and the consequence is that they keep no stock in the winter, after harvest. When the Wheat and Oats are off the ground, the land lies till the winter, when so many lambs are taken in to keep at so much per week. They are kept on the stubble and Couch-grass half starved through the winter, and then the land is ploughed up in the spring, and called a clean fallow, intended for Wheat or Oats again. A crop of Swedes between would be of great value to the farm, they would create labour, feed the cattle in the winter, and enrich the dung-heaps. *J. B.*

Notices to Correspondents.

AYRSHIRE COWS: *J M'K.* You will have about 2 tons of green food daily, all the year round, beside straw, and this will keep more than 30 Ayrshire cows. But we would not purchase that number to begin with, but feel our way to the full number. Phosphate of lime may be given to cows in the Turnips, but not otherwise.—Rothamsted, St. Alban's, Herts.

BALANCE SHEETS: Will Mr. B. Hunt favour us with his address?

BUTTER: *E C* will feel obliged by having the following question answered. Why does milk which has calved properly, and appears in every respect as usual, when churned, produce no butter? This has been the case for the last three weeks. The food of the cows has not been changed; they are Alderneys, and have always given most excellent butter, and in large quantities. In the present instance the milk after it has been churned for some time becomes bitter, then rises into a froth, in which state it remains, but not an atom of butter ever appears.—*Beurre* says, "Perhaps you or one of your numerous correspondents would solve the mystery how it is that fresh butter in London is always exactly the same at all seasons; sweet, and good, and of the same quality. I have been told that the whole of it is manufactured from good sweet lard and the best Dorset salt butter, but can scarcely believe this."

CARROTS: *L A.* Sow 3 cwt. of guano broadcast, harrow it in; and sow 5 lbs. of seed per acre in rows 18 inches apart.

CHARCOAL: *Enquirer, S.* It has long been used in artificial soil by gardeners, and gives to plants luxuriant growth. But they apply it in much larger proportions than we can. We should take all we could get, and mix it with all the guano we intended to use, and divide that over the acres of our Turnip "break." The more you can get the better.

COWS: *J C.* You must not give them Mangold Wurzel if you want much butter. Have they had it all along, and the poor milk only now occurred? In that case, we cannot explain. There must have been some other cause in operation.

FARM BUILDINGS: *T.* The main points are, to have a close connection in position between those parts which have a connection in use; to arrange the parts so that those of a kind shall be together; to avoid large courts, as being, for the most part, mere catch-waters for the waste of manure; to arrange them so that they shall be sheltered from prevailing winds by the highest parts of the building; &c. Now in criticism of your plan, we would say 17 is too far from 49; 25 and 26 are too large; and, having different aspects, cannot all enjoy a good one; 42 is too near the preparation of food, and the farm-house, and the animals, &c. The idea of a square arrangement of buildings, with large central yards, is not a good one. Shall we return your plans? (Will you favour us with your address?) *S W P.* Professor Low on the Management of Landed Property.

FARM ACCOUNTS: *A B C.* See the answers in the past numbers of this year. We must take the subject up again in the leading section.

FENCES: *Quickthorn.* Enrich the bed with manure, or bone-dust would very probably answer a similar purpose.

GRASS LANDS: *Stercora.* Apply 2 cwt. of guano, and 2 cwt. of superphosphate of lime, mixed with 10 or 12 cartloads of vegetable mould, broadcast, per acre, towards the beginning of March. As for prices and trustworthy merchants, you must consult our advertising columns.

GRASS SEEDS: *A Snowdonian.* Messrs. Lawson recommend, for alluvial lands, liable to floods, Agrostis stolonifera, 2 lbs.; Festuca loliacea, 3 lbs; Glyceria fluitans, 5 lbs; G. aquatica, 5 lbs.; Phalaris arundinacea, 2 lbs; Phleum pratense, 2 lbs.; Lotus major, 1 lb.; Poa trivialis, 2 lbs. And, unless the water is apt to stagnate, you may add 6 lbs. of common Rye-grass, and add 6 or 8 lbs. of mixed Clover seeds per acre. Guano and superphosphate of lime, 2 cwt. of each per acre, would be as good a dressing as you could apply. Lime itself would be a good thing to use; 80 or 100 bushels per acre in early spring, in the form of a compost with vegetable matter.

GUANO AND SALT: *A Constant Reader.* A very good manure: 3 cwt. of each per acre.

IMPLEMENTS: *C S.* 1, Gilletts, of Stourbridge, or Clyburn, of Uley; 2, Barrett's, Keynsham, Bath; 3, Allwood, Lewes, or Robinson, Lisburn.

IRRIGATION: *Ignoramus.* Of course all properly irrigated land has been drained in the first place. It has not been well drained if irrigation chokes the drains.

OATS: *Northwood.* The Dutch, or Friesland Oat, is a hardy variety, well known to Scottish seedsmen.

PRESERVED MEAT: *M B.* Do you really want to understand that paragraph? Why then do you not simply ask for the information? We do not choose to insult our correspondent by the publication of inquiries couched in such terms.

SALT: *T B Voller.* It may be applied at the rate of from 3 to 6 cwt. per acre, on your mossy Grass land, according as the [illegible] is [illegible] or open. Coal ashes and lime are a good thing to apply in such a case.

SCOTCH FARMING: *J T.* Delay was unavoidable.

SMUT: *J M.* Mr. Darden recommends sulphate of soda, and gave the proportions last week. We have used sulphate of copper, 2 quarts of water, and ¼ lb. of the blue vitriol to every 4 bushels of Wheat.

Markets.

COVENT GARDEN, JAN. 27.

Pine-apples continue to be sufficient for the demand. Hot-house Grapes are scarce. Foreign ones tolerably well supplied. Pears consist of Beurré Rance, Easter Beurré, Ne Plus Meuris, and Old Colmar. Apples are not over plentiful. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, Carrots and Turnips are abundant and good. Cauliflowers sufficient for the demand. Quantities of excellent Cornwall Broccoli are supplied every Thursday. Asparagus, French Beans, Rhubarb, and Seakale are plentiful. France, Belgium, and Holland still contribute considerably to the stock of Potatoes. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Christmas Roses, Camellias, Gardenias, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 5s to 7s	Almonds, per peck, 6s
Grapes, hothouse, p. lb., 8s	— sweet, per lb., 2s to 3s
— foreign, p. lb., 9d to 2s	Walnuts, p. 100, 1s 6d to 2s
Apples, dessert, p. bsh., 4s to 7s	— p. bush., 10s to 14s
— kitchen, p. bsh., 3s. to 5s	Chestnuts, p. peck, 4s to 7
Pears, per doz., 2s to 6s	Nuts, Bar., p. [illegible], 20s to 2[illegible]s
— p. half sieve, 6s to 10s	— Filb., p. 100 lbs., [illegible] to [illegible]
Oranges, per doz., 1s to 2s	— Cob, p. 100 lbs., 90s to [illegible]
Lemons, per doz., 1s to 2s	— Brazil, p. bsh., 12s to 16s
— per 100, 10s to 18s	

VEGETABLES.

Cabbages, p. doz., 3d to 1s	Radishes, p. doz. hands, 1s to 1s 6d
— red, p. doz., 2s to 6s	— Turnip, do., 9d to 1s 6d
Savoys, per doz., 3d to 1s	Onions, p. bunch, 2d to 4d
Greens, p. doz. bunches, 1s 6d to 2s 6d	— p. bush., 1s 6d to 2s 6d
Cauliflowers, p. doz., 2s to 6s	— Spanish, p. doz., 1s 6d to 4s
Broccoli, white, per bun., 1s 6d to [illegible]s	— pickling, p. hf. sieve, 1s 6d to 3s
— brown, p. bun., 3d to 2s	Shallots, per lb., 4d to 8d
Sorrel, p. hf. sieve, 1s to 1s 6d	Garlic, per lb., 4d to 8d
Potatoes, per ton, 60s to 180s	Artichokes, Jerusalem, p. half sieve, 1s to 1s 6d
— per cwt., 5s to 9s	Lettuce, Cab., p. sc., 4d to 6d
— per bush., 2s 6d to 5s	— Cos, do., 9d to 1s
Turnips, p. doz. bun., 1s to 2s	Endive, per score, 1s to 2s 6d
Red Beet, per doz., 6d to 1s	Mushrooms, p. pottle, 6d to 1s
Horse Radish, p. bdl., 1s to 6s	Small Salads, p. pun., 2d to 3d
Asparagus, p. 100, 2s to 7s	Fennel, per bunch, 2d to 3d
Seakale, p. punnet, 9d to 2s	Savory, per bunch, 2d to 3d
Rhubarb, p. bundle, 6d to 1s 6d	Thyme, per bunch, 2d to 3d
French Beans, per 100, 2s 6d	Watercress, p. doz. bun., 6d to 9d
Cucumbers, each, 2s to 4s	Parsley, p. hf. sieve, 1s 6d to 2s
Leeks, per doz., 8d to 1s	— Roots, p. bdle., 1s to 1s 6d
Celery, p. bundle, 6d to 1s 3d	Marjoram, per bunch, 2d
Carrots, p. doz. bun., 3s to 5s	Mint, green, per bunch, 6d to 9d
Spinach p. sieve, 1s 6d to 2s	

ENGLISH TIMBER AND BARK.—Jan. 27.

	Round Timber. Per Load.	Plank. Per Foot Cube.	Inch Board. Per Foot Superf.
Oak	£6 0 0 to £8 10 0	3s. 6d. to 5s. 6d.	0s. 4½d. to 0s. 6d.
Ash	5 0 0 — 7 0 0	2 6 — 4 0	0 3 — 0 4
Elm	3 0 0 — 4 10 0	1 10 — 2 3	0 2 — 0 3½
Beech	3 10 0 — 3 10 0	1 6 — 2 2	0 2 — 0 2½
Larch	4 0 0 — 5 0 0	2 0 — 2 6	0 2½ — 0 5

English Bark is in great request, at a further advance; but the best samples of Coppice are bringing 20l., and Timber 18l. per load.—J. S.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Jan. 25

Prime Meadow Hay	68s to 75s	Clover	70s to 98s
Inferior ditto	50 66	New Clover	— —
Rowen	40 60	Straw	25 30
New Hay	— —		J. COOPER.

CUMBERLAND MARKET, Jan. 25.

Prime Meadow Hay	70s to 76s	Inferior	60s to 84s
Inferior ditto	50 65	New Clover	— —
New Hay	— —	Straw	28 32
Old Clover	90 96		JOSHUA BAKER.

WHITECHAPEL, Jan. 25.

Fine Old Hay	65s to 70s	New Clover	—s to —s
Inferior ditto	50 58	Inferior ditto	— —
New Hay	— —	Straw	25 30
Old Clover	88 98		

POTATOES.—SOUTHWARK, WATERSIDE, Jan. 22

The Committee report that from the prevalence of southerly winds our market has been sparingly supplied the last fortnight, which has caused a large quantity of warehoused Potatoes to be cleared away. The following are this day's quotations:—York Regents, 100s. to 140s.; Newcastle and Stockton do., 90s. to 105s.; Scotch do., 90s. to 120s.; Scotch Cups, 70s. to 90s.; Scotch Whites, 60s. to 80s; French do., 80s. to 110s.; Dutch do., 50s. to 70s.; Belgian do., 80s. to 90s.

HOPS, FRIDAY, Jan 20.

Messrs. PATTENDEN and SMITH report that the demand for all good and fine Hops continues brisk. Inferior ones are more inquired for, on speculation. On the whole the market looks healthy, with every prospect of advancing in price.

Mid. and East Kents	p cwt. 50s to 120s	Farnhams p cwt.	80s — 120s
Weald of Kents	40 — 70	Yearling Kents	40 — 56
Sussex	35 — 65	Yearling Sussex	40 — 56
		Old Hops	20 — 35

SMITHFIELD, MONDAY, Jan. 22.

The supply of Beasts is rather larger. Trade is exceedingly dull and prices are the turn lower. Although the number of Sheep is very small, it is larger than the demand. We have a very slow trade at lower prices. Calves are scarce—a choice one readily makes 5s. 4d. Pigs are more in demand at advanced rates. From Holland and Germany we have 132 Beasts, 280 Sheep, and 18 Calves; 1600 Beasts from Norfolk and Suffolk, 700 from Leicester and Northampton; 200 from Lincoln, and 200 from Scotland.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3 10 to 4	2		
Best Short-horns	3 8 — 4	0		
2d quality Beasts	2 8 — 3	4		
Best Downs and Half-breds	4 1 — 4	8		
Ditto Shorn				

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	3 10 to 4	2		
Ditto Shorn				
Ewes & 2d quality	3 0 — 3	8		
Ditto Shorn				
Lambs				
Calves	4 0 — 5	4		
Pigs	4 0 — 5	4		

Beasts, 3126; Sheep and Lambs, 17,430; Calves, 67; Pigs, 160

4, FRIDAY Jan. 26.

We have a very small supply of Beasts, and consequently trade is more cheerful; quotations remain unaltered, but more firmly supported. The number of Sheep is very small, so is the demand; the choicest kinds make nearly 2d. per 8 lbs. more. Good Calves are very scarce, and readily sell at Monday's rates From Holland and Germany we have 50 Sheep, and 56 Calves; from Norfolk and Suffolk, 150 Beasts; from Scotland, 250; and 100 Milch Cows from the home counties.

Best Scots, Herefords, &c	3 10 to 4	4
Best Short-horns	3 8 — 4	0
2d quality Beasts	2 8 — 3	4
Best Downs and Half-breds	4 6 — 4	10
Ditto Shorn		

Best Long-wools	3 10 to 4	4
Ditto Shorn		
Ewes & 2d quality	3 0 — 3	8
Ditto Shorn		
Lambs		
Calves	4 0 — 5	4
Pigs	4 0 — 5	4

Beasts, 710; Sheep and Lambs, 1800; Calves, 171; Pigs, 140.

MARK LANE, FRIDAY, Jan. 26.

THE weekly reports from the principal provincial markets, with little exception, state the value of grain the same as last week. Wheat is reported as having a better sale at Boston; and Barley somewhat dearer at Wakefield. Oats, Beans, and Peas, in some places are rather lower. The general country Wheat markets are all called slow, without variation in value. Here to-day the supply of English Wheat is about the average, and in demand only equal to the consumption. Foreign arrivals of all grain are very moderate, say 4080 qrs of Wheat; of English Flour, 1210 sacks. Holders of foreign grain look forward with confidence to the 1st of Feb, fully anticipating more money. Manufacturers and consumers, just the reverse, wait to buy better. A few days more will determine which is the fortunate party. Barley is without alteration.—Oats are in great abundance, and lower in price.—Old Beans are inquired for.—Peas without notice. Malt sells slowly at former prices.—The same may be said of Maize.—Flour remains, first quality, 44s; Norfolk on board is held firmly at 33s. 6d; Irish unaltered in value.

LIVERPOOL, Jan. 26.—We have had moderate supplies since Tuesday, and some business in Wheat and Flour in bond at improving rates. To day the demand was confined to the supply of present wants, but holders were firm. 1d. per bushel advance on Wheat was made. Full prices were given for Oats, Oatmeal and Flour. Barley, Beans, and Peas were much the same. Indian Corn was rather easier in price, with a fair demand. In bond, good French Wheat sold at 6s. 7d., and fair Stettin at 6s. 8d per 70 lbs. Western Canal Flour, 26s., and Philadelphia, 25s. 6d. per barrel.

Imperial Averages.	Wheat.	Barley	Oats.	Rye.	Beans.	Peas.
Dec. 16	47s 6d	31s 4d	18s 11d	29s 8d	31s 3d	30s 3d
— 23	47 6	31 4	18 4	29 1	33 7	35 1
— 30	46 10	31 3	18 0	28 6	31 11	35 9
Jan. 6	45 10	30 8	17 0	26 4	32 4	37 9
— 13	45 4	29 11	17 8	27 9	32 2	35 0
— 20	45 4	29 1	17 1	28 4	31 1	34 9
Aggreg. Aver.	46 5	30 7	17 10	28 3	32 11	36 6
Duties on Foreign Grain	10 0	2 6	4 0	2 6	2 6	2 6

WIRE-WORK, HOT-WATER APPARATUS, GREENHOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS on improved and economical principles.

Parties waited on in Town and Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 36, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, are supplying SHEET GLASS at the following reduced Prices for Cash.

HORTICULTURAL GLASS FOR CONSERVATORIES. CUT TO SIZE UP TO 40 INCHES LONG.				PRICES OF SMALL SHEET SQUARES. In boxes of 100 feet.	s.	d.
16 oz.	from 3d.	to 3½d.	per foot.			
21 ,,	6½	5	,,	Under .. .. 6 by 4	12	6
26 ,,	8½	7½	,,	6 by 4 and under 7 by 5	16	6
32 ,,	4	9½	,,	7 by 5 ,, 8 by 6	18	6
				8 by 6 ,, 10 by 8	30	6

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS and FLOORS in sizes not exceeding 5 feet superficial.

¼ thick ...	per foot	1s.	0d.
⅜-inch ...		1	2
½-inch ...		1	6
⅝-inch	per foot	2	0
¾ inch ...		3s.	0d.

PATENT ROUGH PLATE TILES.

¼ thick	each	0s.	11d.
⅜-inch		1	3
½-inch	each	1s.	7d.
⅝-inch		2	0

GLASS DOMES for SKYLIGHTS, from 15 to 50 inches in diameter. These are well worth notice.

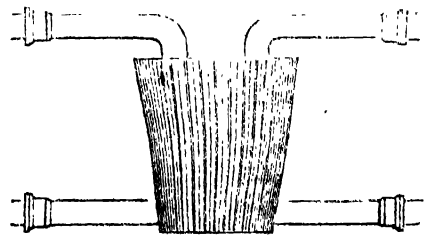
GLASS MILK-PANS, PROPAGATING GLASSES, AND BEE GLASSES.

LACTOMETERS for trying the quality of Milk, 4 tubes 7s. 6d., 6 tubes 10s.; Hyacinth Glasses and Hyacinth Dishes; Crocus Glasses, Shades for Ornaments; Fish Globes; Plate and Window Glass; Lamp Shades and Chimneys; and every article in the trade.

METAL HAND FRAMES.

HARTLEY'S PATENT ROUGH PLATE, AND PATENT DOUBLE CROWN GLASS.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in. will warm	50 ft. 4 in. pipe	£1	15	0
12 in.	do.	75 ft. 4 in. do.	2	5	0
14 in.	do.	100 ft. 4 in. do.	2	15	0
16 in.	do.	150 ft. 4 in. do.	3	10	0
18 in.	do.	250 ft. 4 in. do.	4	10	0
21 in.	do.	350 ft. 4 in. do.	5	10	0
24 in.	do.	450 ft. 4 in. do.	7	0	0
NEW PATTERN BOILERS.					
30 in. will warm	800 ft. 4 in. pipe	15	15	0
36 in.	do.	1500 ft. 4 in. do.	25	0	0

All Boilers with double arms, up to 18 in., 5s. extra; to 24 in., 10s extra; all above, the same price.

130, Fleet-street, London, Jan. 27.

BURBIDGE AND HEALY'S NEW BOILER.—The above is a modification of their Boiler (before published), modelled expressly for the large Conservatory, Chiswick Gardens, where it is now at work. From the observations B. and H. have been able to make, they are warranted in stating it to be the "Ne plus ultra" for warming large plant structures. As a proof, one charge of fuel has been kept burning for 48 hours without any addition, and one boiler of the size used is equal to warm 1500 feet of 4-inch pipe. They are also extensively put up at the Royal Botanic Gardens, Kew. Smaller boilers upon the same plan.

BURBIDGE and HEALY, 130, Fleet-street, London.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.

Horticultural Gardens, Chiswick; particularly the new boilers applied to the large Conservatory.

Large Conservatory, Royal Botanic Gardens, Regent's-park.

Chatsworth Gardens.

Mr. Glendinning's Nursery, Turnham-green.

B. & H. refer to Mr. Glendinning, having put up very extensive works under his superintendence with distinguished success; and at least 500 other important places.

BURBIDGE and HEALY, 130, Fleet-street, London.

TO ORCHIDEA GROWERS.

BURBIDGE AND HEALY, 130, Fleet-street, respectfully call attention to their method of warming Orchidea Houses. They have had the honour of warming the Orchidea Houses at the undermentioned places:

Royal Botanic Gardens, Kew.

Horticultural Gardens, Chiswick, additions to the House.

Also the Orchidea Houses of the following distinguished growers of this interesting class of plants.

The Bishop of Winchester, Farnham Castle.
J. Lyons Esq., Ladiston.
J. Warner, Esq., Hoddesdon.
Messrs. Henderson, Pine-apple Place.
J. Schroder, Esq., Stratford.
R. Hanbury, Esq., Poles, near Ware.
W. Webb, Esq., Clapham.

PRICES CURRENT.

	London. Jan. 19 qr.	London. Jan. 22 qr.	Liverpool. Jan. 16. 70 lbs.	Liverpool. Jan. 23. 70 lbs.	Wakefield. Jan. 12 qr.	Wakefield. Jan. 19 qr.	Boston. Jan. 17 qr.	Boston. Jan. 24 qr.	Birmingham. Jan. 18. 62 lbs.	Birmingham. Jan. 25. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d	s. d. s. d
New, red ...	42 to 45	42 to 44	6 6 7 0	6 6 7 0	45 to 49	45 to 49	38 to 46	38 to 45	6 4 6 8	5 8 6 6
„ white ...	48—52	52—56	6 8 7 6	6 8 7 6	46 - 52	46—52	40—48	40—48	6 2 6 8	6 2 6 8
Old, red ..	44—47	50—53	7 2 7 3	7 2 7 3	42 - 48	42 - 48	43—46	43 46	—	6 4 6 8
„ white ...	52—57	52— 56	7 6 7 9	7 6 7 9	42—49	46— 50	46—50	46 -50	—	5 10 6 9
Foreign	42— 58	45—58	4 6 7 9	6 6 7 6	35 - 52	35 52	—	—	—	5 8 7 2
			480lbs.	480lbs.						
Rye—New ..	26— 28	26—28	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley—										
Grinding ...	21 - 25	21- 25	—	—	21—24	21 - 24	26—28	26 28	23—28	23—28
Malting... ...	26—31	26— 31	31s— 33s	31s—33s	26 —30	26—30	30 —32	30 32	30—33	30—33
Foreign... ...	20—26	—	—	—	23—27	23—27	—	—	—	—
					6 bush	6 bush				
Malt—Ship ...	—	—	—	—	39 - 40	39 42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	22—25	20 —22	2s 10d 3s 2d	2s 5d 3s 0d		—	20—25	20 - 25	18—30	18—30
Black...	—	16—19	2 3 2 4	2 3 2 6		—	17—21	17—21	18—21	18—21
Foreign	16— 23	16— 19	2 4 2 6	2 4 2s. 6		—	11—18	11 —18	—	—
			qr.	qr.						
Peas—Boilers	28—31	28—31	38s—	38s—	34—38	34 - 38	—	—	36—50	36—50
Grinding...	27—29	—	32 —33s	32 —33s	33—35	33—35	—	—	12—14	12—14
Foreign ..	—	—	36 —37	35 —37	—	—	—	—	—	—
Beans—										
New, small ...	22—27	22—27	33 — 35	33 - 35	31- 33	31—33	23—32	23—32	—	11—14
„ Longpods,&c.	26—30	—	—	—	—	—	—	—	—	—
Old	34—36	30—40	34 - 36	34 —36	36—37	36—37	36—38	36—38	—	15—17
Foreign ...	—	27—30	27 —34	27 —28	23 -31	28—31	—	—	—	12—14
Clover Seed—										
Red, per cwt.	—	35—44	—	—	—	—	—	—	—	—
White „	—	32—41	—	—	—	—	—	—	—	—
Linseed—Feed	36—42	37—38	43 —44	43 —44	32—40	32—40	—	—	—	—
Linseed Cakes										
Foreign ...	—	—	9l. 5s	9l. 5s	—	—	—	—	—	—
									190lbs.	190lbs.
Indian Corn—	26— 30	26— 30	27 —31	28 —31	—	—	—	—	15—15 6	15—15 6

Weekly Averages and Imports.	London. Aver.	London. Impts. Jan. 26	Liverpool. Averages.	Liverpool. Imports.	Wakefield. Aver.	Wakefield. Impts	Boston. Aver. Jan. 13	Boston. Impts. Jan. 13	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.		qrs	s. d	qrs.	s. d.	qrs.
WHEAT ...	47 6	4080	—	6132	—	10997	42 4	3836	—	—
BARLEY ...	31 1	1910	—	590	—	3580	26 6	12	—	—
OATS... ...	18 0	1800	—	6140	—	837	13 6	923	—	—
RYE	—	—	—	—	—	—	—	—	—	—
BEANS ...	28 10	—	—	1047	—	772	26 6	114	—	—
PEAS... ...	33 7	—	—	391	—	126	—	—	—	—
SIGNED	KINGSFORD and LAY.		BEGAR and TUNNICLIFFE.		SANDARS and DUNNS.		THOMAS WRIGHT.		J. and C. STURGE.	

EAST INDIAN ORCHIDS.

MR. J. C. STEVENS begs to announce for Sale by Auction, at his Great Room, 38, King-street, Covent Garden, on TUESDAY, Feb. 13th, at 12 for 1 o'clock, several cases of RARE ORCHIDS, which have just arrived from Java in most excellent condition. They comprise beautiful specimen plants of Saccolabium Blumei, and another fine species of Saccolabium, a few plants of the rare and beautiful Aerides maculosa, Aerides virens, and several other fine Aerides, Vanda tricolor and V insignis, Grammatophyllum speciosum, Cypripedium Javanicum (a new species), quite distinct from barbatum and purpuratum, Coelogynes, &c.—May be viewed the day before and morning of sale, and Catalogues had.

TO NOBLEMEN, GENTLEMEN, AND NURSERYMEN.

MR. J. C. STEVENS is favoured with instructions from Messrs. LODDIGES to announce for Sale by Auction, on their premises, at Hackney, towards the latter end of February, about ONE THOUSAND CAMELLIAS of extraordinary fine growth, mostly well set with flower-buds, and consisting of the favourite old, and some good new varieties from 2 to 12 feet high. The days of Sale will be announced in a subsequent Number of the *Chronicle*.

38, King-street, Covent-garden, Jan. 27.

TO GRAPE GROWERS, NURSERYMEN, FLORISTS, AND OTHERS.

TO BE SOLD OR LET, with immediate possession, AN ESTABLISHED BUSINESS in the above line, situate in one of the best localities for such a purpose in the town of Brighton; laying fully open to the south, and completely sheltered from the north and west. The whole of the premises are walled in, and comprise a series of 12 Forcing and Succession Graperies, Peach, Stove, Propagating and Plant houses, besides Pits, &c.; covered by upwards of 10,000 feet of glass. The whole of the external and sectional walls are clothed with full-bearing Fruit Trees of the finest sorts; and water from the Company's main is laid on to various fish pools and ornamental tanks, conveniently placed for the use of every part of the premises. If sold, a large portion of the purchase money may remain on Mortgage, if required.—Apply to Mr PARSONS, Auctioneer and Estate Agent, 30, Marine Parade, Brighton.

TO BE LET, and entered upon at Michaelmas, 1849, a very excellent FARM, consisting of about 117 acres of Meadow and Pasture, 84 acres of Arable, and 103 acres of Down Land, situate near the City of Bath. The Farm is in a good state of cultivation, and it is not often such a very desirable estate is offered to the public.—Apply to J. H. CORTERELL, Land Agent, Bath.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

The terms of the School can be had on application either personally or by letter.

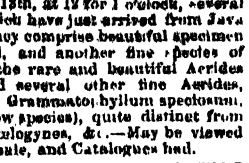
WARM AIR STOVES.

BENHAM AND SONS respectfully solicit the attention of Architects, Builders, and the Public in general, to their extensive stock of Air Stoves, suitable for Shops, Halls, School-rooms, &c. Also a great variety of Church or Chapel Stoves. Greenhouses, Halls, and other buildings WARMED by HOT WATER from the Servants' Offices, or by the circulation of WARM AIR on the POLMAISE SYSTEM, which is very efficient, and of very moderate cost.—9, Wigmore-street, Cavendish-square, London.

PORTLAND CEMENT.—Testimonials received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

THE IMPROVED HYDRAULIC RAM, fixed by FREEMAN ROE, Fountain Maker, 70, Strand, London, can be worked by a small stream of half-an-inch, where a fall of 2 feet can be obtained. The same RAM, without the aid of a Tank or Cistern, arranged to throw a Jet of Water constituting a Fountain with the head of water beneath.



Engines for deep wells of all kinds. Douche and other Baths. Buildings heated by hot water. Water wheels to work small pumps, from 10*l*. Estimates given for the supply of towns, &c.

A newly-invented Portable Vapour Bath, all complete for 2*l*.

PATENT FLEXIBLE INDIA RUBBER PIPES AND TUBING FOR RAILWAY COMPANIES, BREWERS, DISTILLERS, FIRE-ENGINES, GAS COMPANIES, GARDENING AND AGRICULTURAL PURPOSES, &c.

THE PATENT VULCANISED INDIA-RUBBER HOSE PIPES are made to stand Hot Liquor and Acids without injury—do not become hard or stiff in any temperature (but are always perfectly flexible), and as they require no application of oil or dressing, are particularly adapted for Fire-engines, Pumps, Gas, Beer-engines, Gardens, and all purposes where a perfectly flexible pipe is required. Made all sizes from ¾-inch bore upwards, and of any length to order.

Vulcanised India rubber Garden Hose, fitted with brass taps, copper branch, and roses complete, ready to be attached to Pumps, Water-butts, or Cisterns.—Sole Manufacturer, JAMES LYNE HANCOCK, Goswell-Mews, Goswell-road, London.

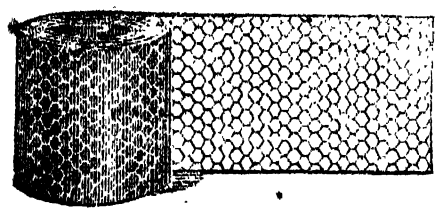
N.B. Vulcanized India-rubber Washers of all sizes for Joints of Hot-water and Steam Pipes, and Vulcanized sheet Rubber, any thickness, for all kinds of Joints, and other purposes.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LEGG, Cheltenham.

SMOKY CHIMNEYS CAUSED BY WIND, are guaranteed to be cured by the application of DAY'S NEWLY-INVENTED SIMPLEX WIND-GUARDS, which offer the following advantages over the tried invention known as Day's Patent Windguard, viz., Greater Cheapness and Durability, Impossibility of Clogging with Soot, and the Prevention of the Descent of Smoke down adjoining Chimneys. Price, in Galvanised Iron, 25*s*.; Zinc for Kitchen Chimneys, 40*s*. To be seen and tested at Mr. JAMES', the Sole Proprietor, 51, Great Russell-street, Bloomsbury. Prospectuses forwarded on application. Country Licenses for Manufacturers granted.

POLMAISE.—The complete success of SMITH'S POLMAISE APPARATUS, wherever now firmly established—the late cold weather having been a severe test of its heating powers. It is more simple than hot water, and equally as economical. In point of fuel, it is warranted to answer in every respect. Orders are daily being received, and in no single instance has failure of any kind ensued.—Manufactured by SMITH and Co., Ironfounders, Eagle Foundry, Leamington. Prices from 8*l*. to 15*l*. according to size.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It has the appearance of silver, and maintains its lustre for many years, and is acknowledged to be the cheapest article ever brought into the market. It forms a cheap, light, and durable fence for the protection of Gardens and Shrubberies against the depredations of hares, rabbits, and cats; for Aviaries, Pheasantries, and to prevent poultry from straying, as well as for training creeping plants, it answers admirably.

Large quantities of the Netting always kept in Stock, samples of which can be forwarded (free of expense) to any part of the United Kingdom. Prices as follows:

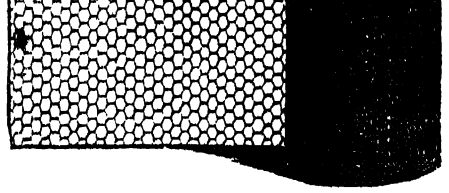
12 inches wide	3*d*.	per yard	30 inches wide	7½*d*.	per yard
18 "	4½*d*.	" "	36 "	9*d*.	" "
24 "	6*d*.	" "	48 "	1*s*.	" "

Galvanised do. 1*d*. per foot extra.

Also Fenders, Fireguards, Fly-proof Dish Covers, Meat Safes, Wire Blinds, Garden bordering and arches, Flower Stands, and every description of Wire Work.

THOMAS HENRY FOX, 63, Snow-hill, London.

GALVANIZED WIRE GAME NETTING.—7*d*. per yard, 2 feet wide.



	Galvanized.	Japanned Iron.
2-inch mesh, light, 24-inch wide ..	7*d*. per yd.	5*d*. per yd.
2-inch " strong " ..	8½ "	6½ "
2-inch " extra strong "	11 "	9 "
1½ inch " light "	8 "	6 "
1½ inch " strong " ..	10 "	8 "
1½ inch " extra strong " ..	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a close mesh, it will reduce the price one fourth. Galvanized sparrow proof netting, for pheasantries, 3*d* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

HORTICULTURAL IMPROVEMENTS.

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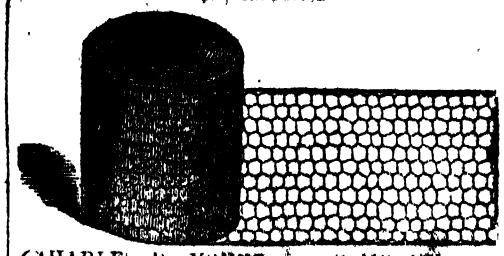

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RHODODENDRON PONTICUM, the very best Evergreen for cover, being free from attacks of hares and rabbits, bushy healthy plants, 1ns. 6d. per 100. Larger ditto, 15s. to 21s. p. 100.

BERBERIS AQUIFOLIUM, bushy, 50s. per 1000. Larger ditto, 60s. per 1000.

COMMON LAURELS, good bushy stuff, 10s. per 100. Larger 15s. to 20s. per 100.

PRIVET, EVERGREEN, 6s. to 12s. 6d. per 100.

CEDARS OF LEBANON, 3 to 5 feet, very bushy and handsome, very suitable for avenues, 2s. 6d. to 5s., and 7s. 6d. each.

IRISH YEW, very handsome and close grown plants, from 3 to 8 feet, 3s. 6d. each, and upwards.

STANDARD WEEPING LARCH, 6 to 9 feet stems, with very handsome pendulous heads, 5s. to 10s. 6d. each.

SPRUCE, SILVER, and WEYMOUTH FIRS, 6 to 12 feet.

TULIP TREES, Weeping and Purple Beech, very large, and all in a fit state for removal.

FOREST TREES of all kinds, suitable for Copse and other planting.

Planting to any extent done by contract. Catalogues forwarded on application.

Printed by WILLIAM BRADBURY, of No. 6, York-place, Stoke Newington, and FREDERICK MULLER EVANS, of No. 2, Church-row, Stoke Newington, both in the county of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent Garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—SATURDAY, JANUARY 27, 1849.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 5.—1849.] SATURDAY, FEBRUARY 3. [Price 6d.

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SEYMOUR'S CELERY.

SEYMOUR'S WHITE CHAMPION CELERY is warranted a very first-rate sort, and now sending out for the first time by H. Lane and Son, Nurserymen, Great Berkhamstead, Herts.

Seymour's Celery, White Champion	..	2s. 6d.	per packet.
,, ,, Red Matchless		1 6	do.
,, ,, Superb White		0 6	do.

Post-office orders or postage stamps from unknown correspondents.

ONE AND TWO YEARS SEEDLING AND TRANSPLANTED LARCH FIRS, ALDERS, &c.

WILLIAM WOOD AND SON having an immense stock of the above, fine strong plants, are determined to offer them on the lowest possible terms. Prices will be furnished on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

PEAS.

CLARKE'S NEW LINCOLN GREEN PODDED MARROW.—Being a selected variety from Clarke's New Early Ringwood possessing all the advantages of the original stock, as to earliness and size, and at the same time having a rich Green Pod. To be had (wholesale only) of Mr. Henry Clarke, Seed Merchant, 39, King-street, Covent Garden.

TO PEAR GROWERS.

RENÉ LANGELIER, Clarendon Nursery, St. Helier, Jersey, begs to state that he has still trees of BEURRE LEON LE CLERC and BLANC PERNE to dispose of, Beurré Leon Le Clerc 10s. 6d., Blanc perné 7s. 6d. Any amateur wishing to prove the sorts of Beurré Leon Le Clerc, R. L. can send out 10 trees full of fruit-buds in perfect pyramid, at 1l. 1s. each. It is a Pear that should be in every collection, as well as Blanc perné, which will keep till April or May. A selection of the best Table Fruit can be had of R. L. at moderate price, all guaranteed to be correct as described, and proved in his experimental garden. Reference will be required from unknown correspondents.

FIRST CLASS FUCHSIAS AND VERBENAS.

GEORGE SMITH begs to inform his friends in general that his DESCRIPTIVE CATALOGUE of the above is now ready, and comprises every novelty of the season. G. S. can with confidence recommend his Seedling VERBENAS, they having taken numerous First Class Certificates. Also his Seedling FUCHSIA, LORD NELSON, has taken three First Class Certificates, and for exhibition will be found the gem of the season. For description, see Catalogue, which will be forwarded on the receipt of one postage stamp.

Tollington Nursery, Hornsey-road, Islington.

TO THE SEED TRADE.

WILLIAM JAMES EPPS begs to offer the following SEEDS, grown from fine selected stock of 1848, warranted neat

YELLOW GLOBE MANGOLD WURZEL.
IMPROVED LONG RED DO.
DRUMHEAD CABBAGE.—PARSNIP.
SCIMITAR PEAS, &c.

The prices for the above (which will be forwarded on application) are exceedingly low.—Maidstone, Kent, Feb. 3.

CORNWELL'S VICTORIA RASPBERRIES.—G. C. can confidently recommend the above as superior to any sort ever offered. Prizes were awarded to them at the Hort. Society's Gardens, Royal Botanic Society's Gardens, and the Surrey Zoological Gardens, as being the best shown for size, colour, and flavour. The fruit in Covent Garden was sold at a higher price than any other. Strong canes to be had at E. Charlwood's, Covent Garden, W. and J. Noble's, 152, Fleet-street; also of George Cornwell, Market-Gardener, Barnet Herts, at 1l. 10s. per 100, or 4s. per doz. The usual allowance to the trade.

SEEDS SELECT, NEW, AND GENUINE.

JOHN MITCHINSON AND CO., having a thorough knowledge of the requirements of the Horticultural interest, have made Selections of the best and most approved varieties of KITCHEN-GARDEN SEEDS, which they offer in properly proportioned Collections.

No. 1. A complete Collection, for a large garden	£3	3	0
2. ,, ,, (equally choice)	2	2	0
3. ,, ,, (a useful assortment)	1	1	0
4. ,, ,, suitable for a small garden	0	12	6

No extra charge for package; and all orders above 1l. delivered free of carriage by Pickford and Co to London, or to any Station on the Great Western, Bristol and Exeter, and South Devon Railways. For any sorts not required, increased quantities of those most desired will be sent. Catalogues of the Sorts and Quantities in each Collection may be obtained on application to

John Mitchinson and Co., Seed Establishment, Truro.

JOHN KERNAN begs to say his LIST OF SEEDS will appear in this Paper on Saturday the 17th February. 4, Great Russell-street, Covent Garden, London.

TO MELON GROWERS.

FLEMING'S NEW HYBRID PERSIAN having been awarded First Prizes at all the Chiswick Shows of the Horticultural Society of London last season, needs no further comment.

Fleming's New Hybrid Persian,	per packet—	2s. 6d.
,, Ispahan	,,	1 6
Seymour's Golden Perfection	,,	1 6

From unknown correspondents post-office orders or postage stamps can be sent to H. Lane & Son, Great Berkhampstead.

DWARF TRAINED CHERRIES.—Very fine strong plants of the following may be had at 3s. 6d. each of H. Lane and Son, Great Berkhampstead.

Bigarreau, Black Eagle, Black Heart, Black Tartarian or Circassian, Early Purple Guigne, Florence, May Duke, Morello, and Late Duke.

HORNBEAMS, for Fencing or Underwood. — A large stock of young Trees of the above, from 1 to 4 feet in height, and from 5s. to 25s per 1000. Carriage paid to London.—Thomas Rivers, Nurseries, Sawbridgeworth, Herts.

J. G. WAITE'S Unrivalled CATALOGUE OF FLOWER SEEDS is now ready, and can be had on application Seed Establishment, 181, High Holborn, London, Feb. 3

ONION SEED Ten tons of Brown Spanish, and 5 tons of White Spanish ONION SEED, the growth of 1848, to be had in any quantities, at extraordinary low prices. Prices and samples likewise of every other kind of Seeds can be had on application to J. G. Waite, Seed Merchant, 181, High Holborn, London.

NEW PEAS. — EARLY BLUE SURPRISE, as early as the Early Frame, and flavour of the Knight's Marrow.

FAIRBEARD'S EARLY CHAMPION OF ENGLAND.—A blue wrinkled marrow, fine flavour.

BURBIDGE'S ECLIPSE. A large blue marrow, 15 inches high. And EARLY DANECROFT.

Can be had in any quantities, and prices to be had on application to J. G. Waite, Seed Establishment, 181, High Holborn, London.

SEEDS, SEEDS, SEEDS.—If you wish SEEDS that will grow, and true to their kind, go to J G Waite's Seed Establishment, 181, High Holborn, where you can obtain every kind of Seeds worthy of cultivation lower in price than any other house in the kingdom.

181, High Holborn, Feb. 3.

KING OF THE CABBAGES.—This Cabbage is warranted by J. G. Waite the best in cultivation; very early, large size, and extra fine flavour; price 8s. per lb. Seed Establishment, 181, High Holborn, London.

KITCHEN GARDEN SEEDS.—No. 1.—A complete collection, consisting of 20 quarts of the best kinds of PEAS, inclusive of Fairbeard's Champion of England, Early Surprize, British Queen, Burbidge's Eclipse, &c., and all other Seeds in proportion, of the newest and best sorts, sufficient for one year's cropping of a large garden, the choicest Melons and Cucumbers inclusive .. £3 3s 0d

No. 2.—Complete collection in smaller quantities, equally choice sorts	2	2	0
No. 3.—Ditto	1	1	0
No. 4.—Ditto. This is sufficient for a small garden	0	12	6

No extra charge for packing, carriage paid to London.

A General Catalogue may be had; also a List of each collection.

SELECT FLOWER SEEDS.

100 packets of the newest and best Annuals, &c.			15s	0d.
50 ,, ditto	ditto	..	8	0
25 ,, ditto	ditto	..	4	0

A fine collection of imported Stocks, Zinnias, Asters, &c., named, 3d. per packet. Sent postage free.

A Descriptive Flower Seed Catalogue sent with each collection by enclosing two postage stamps

William James Epps, Maidstone, Kent.

THE "QUEEN" MELON.

EDWARD TILEY begs most respectfully to apprize the Nobility and Gentry that he has procured the whole of the stock of seed of the above superb Melon, from one of the most noted growers in the West of England. This Melon is allowed to be by competent judges, who have seen it, the earliest and finest flavour grown, it has proved itself by competition for the last three years to be the best yet known. It has been awarded three first prizes. It is a handsome shape, very thin skin, green flesh, and melting flavour, not liable to crack or lose its flavour when kept, as most others do it weighs from 5 to 7 lbs.

This superb Melon is well adapted to small growers, being a very free setter, very productive, and requires less heat than any yet out. Sold in packets of 7 seeds, 2s. 6d; with also the following varieties

Bowood green flesh Melon (true)	6 seeds	1s.	0d.
Ispahan (true)	10 ,,	1	0
Terry prize (true)	10 ,,	1	0
Beechwood (true)	10 ,,	1	0
Cuthill's (true)	10 ,,	1	0
Emperor green flesh	10 ,,	1	0
Windsor prize	10 ,,	1	0
Egyptian green flesh	10 ,,	1	0

Two packets selected of the latter varieties will be included with a packet of the Queen Melon for 4s.

BROCCOLI. The three best varieties in cultivation are the Walcheren, Wilcove, and the Tamworth, at 1s. each per packet.

Sold by Edward Tiley at his General Seed-shop, 16, Pulteney-bridge, Bath; the whole, or any part of the above, will be sent postage free. A remittance must accompany the order, or the amount in 1d. postage stamps.

UNDER THE ESPECIAL PATRONAGE OF HER MAJESTY THE QUEEN.

THE TRUE FASTOLFF RASPBERRY.—This valuable and highly esteemed Raspberry, unequalled for its size and richness of flavour, and a long continuance of bearing, as originally sent out by Youell and Co, can now be supplied by them of the same stock they had the honour of furnishing Her Majesty's Gardens at Windsor, and most of the Nobility, as well as having Certificates of Merit awarded them for it by the London Horticultural Society. Packages containing 100 canes, 15s., 50 ditto, 7s. 6d.

Large White Raspberry, 3s per dozen.

FRUIT TREES,

Comprising the finest sorts of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, Gooseberries, and Currants, warranted correct to name, as obtained from the London Horticultural Society.

Also, a fine collection of the newest and best Strawberries.

Giant Asparagus, 2 and 3 year old, 2s. 6d. and 3s. 6d. per 100.

Sea Kale, strong, 1s. per dozen.

Standard Roses, finest sorts, by name, 12s to 15s per dozen.

Tigridia conchiflora, fine flowering bulbs, 6s per dozen.

ANEMONE SEED,

Saved from the finest selected sorts, is now being sent out per post, free, at 2s. 6d and 5s per packet, sufficient to sow a bed of 12 and 24 yards.—Great Yarmouth Nursery.

ROSES FOR FORCING.— The following select varieties are established one year in 6-inch pots fit for immediate forcing. 20s. per dozen.

Hybrid Perpetual.	
Aubernon	Melanie Cornu
Augustine Mouchelet	Wm. Jesse; & many others.
Baronne Prevost	*Moss Roses.*
Clementine Seringe	Luxembourg
Duchess of Sutherland	Celina
Duc de Aumale	Blush
Lane	Malvina
La Reine	White Bath
Lady Alice Peel	Eclatante
	Prolific, and several others.

Persian Yellow, Crimson Perpetual, also some of the finest Tea-scented, Bourbon, and China Roses, established in 6-inch pots, at the above price. Carriage paid to London.

Thomas Rivers, Nurseries, Sawbridgeworth, Herts.

FLOWER SEEDS. — The most approved Hardy Half hardy, and Tender Annuals, Biennials, and Perennials 18 papers, 5s., 36 ditto, 10s., free by post.

Also, Messrs. Brown's New Catalogue of Plants, &c, and a separate List of Flower and Vegetable Seeds for 1849 can be had by post on application.

Albion Nursery, Stoke Newington, London, Feb. 3.

MITCHELL'S UNRIVALLED DAHLIAS

JAMES MITCHELL begs to announce to his friend, he purposes sending out in May the following first class DAHLIAS, in strong healthy plants.

ECLIPSE, Scarlet.—The best formed scarlet in cultivation; first class certificate, also 7 first prizes; constant show flower; 4 feet 10s. 6d.

SUSSEX HERO, Crimson.—A noble and constant show flower, 4 feet. 10s. 6d.

MRS ROSAMOND STANLEY, Crimson tipped with white.—First class certificate, the best fancy Dahlia of the season constant and beautiful show flower; 4 feet. 10s. 6d

BLACK PRINCE, Crimson —Partially sent out last season, and much admired at all the principal shows, 4 feet. [illegible]

Piltdown Nurseries, Maresfield, Sussex.

TO PLANTERS OF CEDRUS DEODARA.

WM. MAULE AND SONS beg to inform Noblemen, Gentlemen, &c., that they can supply any quantity of superior plants from seed of the above magnificent hardy Himalayan CEDAR. Any Nobleman or Gentleman furnishing mountains or planting by the acre will be supplied on moderate terms. A few thousands of fine selected plants for Lawns and ornamental planting can be had during the present month, before the shifting commences into larger pots, at 30s per doz.

☞ Wm. Maule and Sons' Pamphlet on the Natural Habits and Quality of the Wood of the Cedrus Deodara (which they have published), will be sent gratuitous on the receipt of two postage stamps.—Stapleton-road Nurseries, Bristol

KING'S ROAD, CHELSEA.

SALE OF 100,000 PLANTS, in endless variety, and in the highest state of cultivation, at less than half price. The choicest collection for the Stove, Greenhouse, Conservatory, and Garden, 40 000 of which are Ericas, Camellias, Pimeleas, Pelargoniums, &c, of all sizes. Also many beautiful specimens fit for exhibition, together with a splendid collection of Roses, fine dwarf trained and standard fruit trees. Vines, &c, all of the best sorts. Catalogues forwarded.—J. Weeks and Co, United Nursery, King's-road, Chelsea.

LARGE GUERNSEY PARSNIP SEED

JOHN SUTTON AND SONS having grown a large quantity of the above, from selected fine roots are enabled to offer it in quantities not less than 10 lbs, at 1s. per lb., or 4l 10s. per cwt. Also excellent new Seed of White Belgian Carrot, Yellow Globe Mangold Wurzel, Skirving's Liverpool Swede and other Turnips, of home growth, at low prices, as per Catalogue, which may be had gratis.—Address John Sutton and Sons, Reading, Berkshire.

DOUBLE ITALIAN TUBEROSE ROOTS.—The Bulbs of this most beautiful and fragrant Flower have been just received from Italy at A. CORBETT'S Old-established Italian Warehouse, 13, Pall-mall, and are warranted double, at 4s. per dozen. Also, expected about the end of January, a choice collection of Orange, Lemon, Citron, and Shaddock Trees, together with Catalonian, Azorian, and Arabian Jessamine plants, any of which may be [illegible]

JOHN STEWART, Nurseryman and Seedsman, Dundee, begs to return his thanks to the Noblemen, Gentlemen, and the Public in general, who have favoured him with their orders during the past 20 years; and now begs to inform his patrons that he has assumed his two sons, William and David Stewart, as partners, who have had long experience in the Nursery and Seed Trade, and that in future the business will be carried on in all its branches under the firm of John Stewart and Sons.

With reference to the above, John Stewart & Sons Nurserymen and Seedsmen, Dundee, beg to make known that they have a clean and well grown stock of NURSERY PLANTS to dispose of. The following will be sold cheap, all fine plants.

LARCH, 2 years transplanted, from 1½ to 2½ feet.
SCOTCH FIR, native, 1 and 2 years transplanted.
SPRUCE, Norway, 2 and 3 years transplanted.
BEECH, 2 years transplanted, 1½ to 2½ feet.
BIRCH, Weeping, 1½ foot. ELM, 3 to 4 feet.
HAZEL, 2 to 3 feet. LIME, 3 to 7 feet.
MAPLE, Norway, 4 to 6 feet. OAK, 2 feet.
PRIVET, 1 to 2 feet. MOUNTAIN ASH, 6 to 8 feet.
PINUS MUGHUS, 2 years transplanted, 1½ foot.
WEYMOUTH PINE, 1½ foot. YEW, 9 to 12 inches.
THORNS or QUICKWOOD, 2 and 3 yrs. transplanted.
PORTUGAL LAURELS, 3 years transpl., 1 to 2 ft.

SEEDLINGS 1 and 2 years Ash, Alder, Beech, Birch, Berberis aquifolium, Chestnut, Crab Apple, Cupressus, Elm, Scotch Fir, Spruce, Larch, Silver, Pinus austriaca, Pinus maritima, Pinus Mughus and pumilio, aleppica, altissima, acutissima, Hamiltoni, Cedar of Lebanon, Cedrus Deodara, Hazels, Hornbeam, Holly, Portugal Laurel, Laburnum, Oaks, Evergreen Oak, Pears, Pyracantha, Plane or Sycamore, Red Cedar, Thorns, Yews, Chinese Arbor-vitæ, Sweet Briar, Acacia. All communications regarding prices, &c., will be replied to in direct course of post. Dundee, Feb. 3.

PLANTING SEASON.—The present being one of the most favourable months for transplanting, W. H. R. begs to state that he can supply finely grown Nursery stock of every size and description, including the choicest kinds of Fruit Trees, at a low price.

Contract Planting, the laying out of grounds, and every branch of Landscape Gardening executed in any part of the Kingdom, in the most approved manner and taste.

All orders and communications addressed to W. H. Rogers, 180 High-street, Southampton, will meet with prompt attention.

MITCHELL'S ROYAL ALBERT RHUBARB still retains its supremacy over all other sorts hitherto produced, it being from two to three weeks earlier than any kind now grown. It has other qualities eminently entitled to notice. It is most delicious in flavour, a splendid red colour, most prolific bearer, and free grower, with large fleshy stalks, and for early forcing is more suitable than any other variety. It has been acknowledged by all the principal growers, attending the London market, to be by far the best ever introduced. In addition, W. M. begs leave to observe, that this Rhubarb is the same as was sold so early last season in Manchester, Birmingham, Liverpool, Cambridge, Brighton, and other large provincial towns, where it gave universal satisfaction, by its extreme earliness, quality and beauty. Strong roots, 2s. 6d. each; also Myatt's Linnæus, 2s. 6d., and Victoria, 9d., usual allowance to the trade. Post-office orders made payable to William Mitchell, Enfield Highway, Middlesex.

CUCUMBER GROWERS should not delay purchasing the seed of TILEY'S VICTORY OF BATH and GORDON'S WHITE SPINE, he having last season received numerous letters when the seed was all disposed of. It possesses the whole of the properties as laid down by Mr Glenny. Parties competing for the first prizes at the forthcoming Cucumber Exhibitions in 1849 should procure the seed in time.

E. T. has numerous letters by him which he has received, authorising him to make use of the names of the writers if required, speaking highly of their approval as to the merits of the above Cucumbers over all others.

VICTORY OF BATH, 10 seeds, 2s. 6d.; GORDON'S FINE WHITE SPINE, 10 seeds, 1s. 6d.; also, LORD KENYON'S FAVOURITE (true), or better known as the Syon House Bearer, very superior to the old Syon House as a Cucumber for winter cultivation, 10 seeds, 2s. 6d., or a packet of the above three varieties, 5s. The true old Syon House can be supplied in packets of 10 seeds at 1s. 6d. A remittance must accompany the order, either in cash or penny postage stamps to the amount. For further particulars, see Advertisement in this Paper of Saturday December 16. Sold at Edward Tiley's General Seed Shop, 16, Pulteney Bridge, Bath.

NEW AND SPLENDID SEEDLING DAHLIAS for 1849, Plants of which will be ready, strong and healthy, first week in May.

THOMAS BARNES (many years Manager, and now Successor, to the late Mr Samuel Girling) offers, with great confidence, the under named SEEDLING DAHLIAS, many of which have gained first class Certificates at the open Dahlia Shows, and have been favourably noticed in the various Gardening periodicals, viz.—Queen of the East, Fearless, Madonna, Confidence, Dauntless, and Mulberry, in the Show Class; with Keepsake, Forget-me-not, Discount, Contributor, Honeymoon, and Candidate, in the Fancy Class.

Descriptive Catalogues of the above, including general collection of Dahlias, Fuchsias, Seedling ditto, Petunias, Seedling ditto, Verbenas, Seedling ditto, Phloxes, Seedling ditto, Miscellaneous plants, &c. &c., may be had on application, enclosing postage stamps; but all former patrons to the establishment will receive one in due course.

T. B. has also to offer ground and pot roots of all the leading sorts of last season, at low prices, Catalogues of which may be had on application.

Dancroft Nurseries, Stowmarket, Feb. 3, 1849.

JOHN CATTELL, Nursery and Seedsman, Westerham, Kent, begs to inform his Friends and the Public that his selected collection of VEGETABLE SEEDS is now ready to be sent out, consisting of those of his own improving and the best of others, and generally of his own saving. All orders entrusted to him will be executed with the greatest care and dispatch. Catalogues of the above, and also of Flower Seeds, may be had on application, by inclosing a penny stamp.

1 oz. packets of his superior Dwarf Barnes Cabbage may be had as usual in return for 12 penny stamps. The Best Walcheren Broccoli in cultivation, at 1s. 6d. per packet.

J. C. has also a large stock of the under-named ready for immediate delivery: Calceolaria, Kentish Hero, 1s. 6d. each, 10s. per doz., this is a first-rate bedding plant. Calceolarias—Emperor, Beauty Supreme, Sir Harry Smith, Exemplar, Masterpiece, Professor Lindley, Standishii, Oscar, and other fine varieties, 1s. 6d. to 3s. 6d. each. Pentstemon speciosum, 1s. 6d. each, 15s. per doz. Delphinium Barlowii and grandiflorum maximum, 9d. each, 8s. per doz. Geranium, Pink Pet, 2s. 6d. each; this is an improvement on G. lucea rosea, being of a deeper pink, better shape, and very dwarf compact habit. Fine healthy plants, free from spot, of the leading varieties of fancy and other Geraniums. Cyclamen persicum rubrum flowering plants, 7s. 6d. each. Standard and Dwarf Roses particularly fine, a Catalogue of which may be had by forwarding a penny stamp.

A remittance or reference from unknown correspondents is required.—Westerham, Kent, Feb. 3.

SEED AND HORTICULTURAL ESTABLISHMENT, 180, High Street, Southampton.

SEEDS.—Every description of Vegetable, Agricultural, and Flower Seeds, including all the newest and most superb varieties, may be obtained at the above extensive establishment, of the most genuine quality, at considerably reduced prices. All orders promptly and carefully executed; and, if above 20s., delivered free within 100 miles of Southampton. A Descriptive Catalogue, with times of sowing, may be had on application, gratis.

Address, W. H. Rogers, 180, High-street, Southampton.

SEEDS.—MEADOW AND PASTURE GRASS SEEDS, in mixtures suited to various soils, &c., at 32s. per acre, allowing 2 bushels and 12 lbs. to each acre. Directions for sowing and treatment will accompany the seeds. Mixed sorts for improving old Grass Lands, 1s. 3d. per lb. Fine sorts for forming Lawns, &c., 1s. 4d. per lb.

GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address George Gibbs and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c. &c., 26, Down-street, Piccadilly, London.

SEEDS.—CORNER OF HALF MOON STREET. THOMAS GIBBS and CO., (By Official Appointment) the Seedsmen to the "ROYAL AGRICULTURAL SOCIETY OF ENGLAND," Beg to remind the Members of the Society, and Agriculturists in general, that their only Counting House and Seed Warehouse is at the corner of HALF MOON-STREET, PICCADILLY, LONDON, as for the last Fifty Years.

Priced Lists of Agricultural Seeds are always ready during the season, and may be had on application.

FLOWER-POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford street, near Hyde-park.

BOWERS' NEW WATERING POT.—An ingenious mechanical contrivance in watering choice plants to a nicety; avoiding the unclean slop, disfigurement of foliage, and too frequent loss of good plants, inseparable from the old method of watering. To be had in all sizes, those at 7s. 6d. and 10s. each are the most in use. London Agent, Duncan Hairs, Seed Merchant, 109, St. Martin's-lane; or apply to H. Bowers, Godalming, Surrey.

N. B. Utility guaranteed.

HORTICULTURAL IMPROVEMENTS.

RICHARD READ, Instrument Maker (by special appointment) to her Majesty, begs to inform Amateur and Practical Gardeners, and the public, that he has taken out a NEW PATENT for improvements in the Valves of his Engine, Machines, and Syringes, which are now so simple in construction and perfect in their action, that he will warrant them to keep in repair during the term of the Patent. May be worked with two-thirds the labour of any other instrument of the same power. Manufactured only by the Patentee, 35, Regent Circus, Piccadilly, where they may be seen and proved.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS and CO., 116, Bishopsgate-street Without, are supplying SHEET GLASS at the following reduced Price for Cash.

HORTICULTURAL GLASS FOR CONSERVATORIES.

CUT TO SIZE UP TO 40 INCHES LONG.

16 oz. from	3d.	to 3½d	per foot,
21 ,,	3½	5	,,
26 ,,	3¾	7¼	,,
32 ,,	4	9½	,,

PRICES OF SMALL SHEET SQUARES.

In boxes of 100 feet.	s. d
Under .. .. 6 by 4..12	6
6 by 4 and under 7 by 5..16	6
7 by 5 ,, 8 by 6..18	6
8 by 6 ,, 10 by 8..20	6

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS and FLOORS in sizes not exceeding 5 feet superficial.

¼ thick	per foot 1s. 0d.	⅝-inch	per foot 2 0
⅜-inch	1 2	1 inch	3s. 0d.
½-inch	1 6		

PATENT ROUGH PLATE TILES.

¼ thick	each 0s. 11d.	⅜-inch	each 1s. 7d.
¼-inch	1 3	½-inch	2 0

GLASS DOMES for SKYLIGHTS, from 15 to 50 inches in diameter. These are well worth notice.

GLASS MILK-PANS, PROPAGATING GLASSES, and BEE GLASSES.

LACTOMETERS for trying the quality of Milk, 4 tubes 7s. 6d., 6 tubes 10s., Hyacinth Glasses and Hyacinth Dishes, Crocus Glasses, Shades for Ornaments, Fish Globes, Plate and Window Glass, Lamp Shades and Chimneys, and every article in the trade.

METAL HAND FRAMES.

HARTLEY'S PATENT ROUGH PLATE, AND PATENT DOUBLE CROWN GLASS.

GUANO CHEAPER THAN EVER.

POTTER'S GUANO is now 7l. per ton, and of superior quality, owing to recent chemical discoveries, and an improved mode of manufacture. An experience of eight years has shown it to be fully equal to the best Peruvian Guano, and 25 per cent. cheaper. See testimonials. If a quantity is taken a specific arrangement may be made.

GYPSUM (Great Reduction in Price), is offered at 15s. per ton, at the works, loose, or in bags if required. It has been analysed by an eminent chemist, and pronounced pure.—W. H. Potter, 28, Clapham-road Place, Kennington.

PORTLAND CEMENT.—Testimonials received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. White and Sons, Millbank-street, Westminster.

PATENT FLEXIBLE INDIA RUBBER PIPES AND TUBING FOR RAILWAY COMPANIES, BREWERS, DISTILLERS, FIRE ENGINES, GAS COMPANIES, GARDENING AND AGRICULTURAL PURPOSES, &c.

THE PATENT VULCANISED INDIA-RUBBER HOSE PIPES are made to stand Hot Liquor and Acids without injury—do not become hard or stiff in any temperature (but are always perfectly flexible), and as they require no application of oil or dressing, are particularly adapted for Fire-engines, Pumps, Gas, Beer-engines, Gardens, and all purposes where a perfectly flexible pipe is required. Made all sizes from ¼-inch bore upwards, and of any length to order.

Vulcanised India-rubber Garden Hose, fitted with brass taps, copper branch, and roses complete, ready to be attached to Pumps, Water-butts, or Cisterns.—Sole Manufacturer, James Lyne Hancock, Goswell-Mews, Goswell-road, London.

N.B. Vulcanized India-rubber Washers of all sizes for Joints of Hot-water and Steam Pipes, and Vulcanized sheet Rubber, any thickness, for all kinds of Joints, and other purposes.

PONY FOR SALE, the property of a private person; about 12 hands high, dark roan colour, full black mane and tail, with brown muzzle and four black legs; very handsome, in fact a perfect *dray horse in miniature*, and so gentle any lady or child may ride or drive him without the least fear.—Apply to C. N., James Phillips & Co.'s, 116, Bishopsgate-street Without, who can speak as to the qualities of the Pony. Price 15 guineas.

DR. NEWINGTON'S Dibble and Hand row Culti-vators, with which a man can hoe and stir two acres a day. A Prospectus of these Implements, together with a Lecture on Seeding, Stirring, and Hoeing, will be forwarded gratis on applying to Dr. N., Knole Park, Frant, near Tunbridge Wells, Kent.

PURPLE-TOP SWEDISH TURNIP, Red Round and White Globe Turnip Seeds, as also Long Red Bugle and Yellow Globe Mangold Wurzel Seeds to be sold.—Apply to Mr. John Clarke, Long Sutton, Lincolnshire.

Mr. C. has long been a cultivator, and his stocks are not surpassed.

SCHOOL FOR GENERAL AND SCIENTIFIC EDUCATION (especially with regard to Agriculture), Wickham Market, Suffolk. Under the immediate patronage of the Right Hon. Lord Rendlesham, M. P., and the Gentry, Clergy, and Farmers in the neighbourhood. Conducted by Mr. G. Downes. The Classical and Mathematical branches are entrusted to a gentleman, a Graduate of Cambridge; the Commercial and other departments to efficient assistant masters. A Farm, a Laboratory, a collection of Philosophical Apparatus, a Geological collection, and a Library, are attached to the School. At this establishment, young gentlemen are prepared for the Universities, for Professions, for Agricultural and other pursuits, at moderate terms. For prospectuses apply to Mr. G. Downes, Wickham Market, Woodbridge, Suffolk.

FARM AGREEMENTS.

TEN POUNDS will be given by the Members of the Wenlock Farmers' Club for the Two Best Forms of AGREEMENT BETWEEN LANDLORD AND TENANT; one for heavy soils, the other for light soils, and having special reference to the Interest of both Landlord and Tenant.

Conditions.—1. In drawing out such Form, competitors will have to bear in mind, first, how the interest of the Landlord can be secured, and good cultivation insured, without an accumulation of restrictive clauses as to cropping.

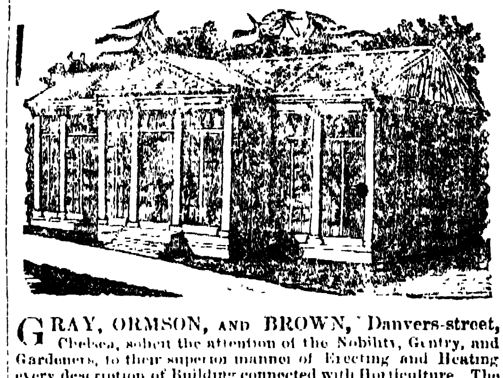
2. How the property of the Tenant may be secured by giving a scale of compensation for permanent improvements, and unexhausted manures at the termination of the tenancy.

3. What is the most simple and advisable mode of ascertaining the amount of such compensation?

4. Competitors will inclose their name and address in a sealed cover, on which only their motto shall be written.

5. The Papers to be sent to the Secretary, Mr. Richard Davis, at the Raven Inn, Wenlock, Salop, on or before the first Monday in October next.—Wenlock, Feb. 3.

A WIDOW LADY, of great respectability, is desirous of establishing herself in a Widower's or Gentleman's Family, to Superintend the Domestic Arrangements and take charge of children. She has for some years had the education of young people. Where the lady is an Invalid the advertiser would be found an acquisition.—Address to M. M., Post-office, Upper Baker-street, New road.



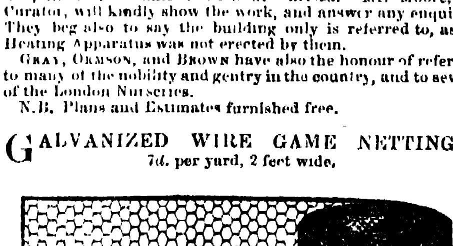
GRAY, ORMSON, and BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr Kingnorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

Gray, Ormson, and Brown have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.

GALVANIZED WIRE GAME NETTING.— 7d. per yard, 2 feet wide.



		Galvanized.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7d. per yd.	5d. per yd.
2-inch ,, strong ,,	...	8½ ,,	6½ ,,
2-inch ,, extra strong ,,	...	11 ,,	9 ,,
1⅝-inch ,, light ,,	..	8 ,,	6 ,,
1⅝-inch ,, strong ,,	..	10 ,,	8 ,,
1⅝-inch ,, extra strong ,,	..	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 8d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

SEED POTATOES.

CHARLES SHARPE, NURSERYMAN and SEEDSMAN, respectfully solicits the attention of the Nobility and Gentry to his POTATOES for Seed. The sorts are very early and productive, and have given general satisfaction to Potato growers in all parts of the Kingdom. They are offered at the following prices, packing included:

	Per bushel of 56 lbs.
Soden's Early Oxford Potatoes	8s. 0d.
Early Ash-leaved Kidneys	8 0
Early Round Frame	7 0
Early Cockneys	6 0
Early Manley	6 0
Fox's Seedling, fine for forcing	6 0

Second early sorts, for Winter and Spring use:

	Per bushel of 56 lbs.
American Native Potatoes	5s. 0d.
York Regents	5 0
Kentish Pink Kidneys	4 0
Forty-fold	4 0

Orders will be forwarded on the receipt of a Post-office Order, and great care will be taken to ensure their safe delivery. A liberal allowance made to the Trade.

CHARLES SHARPE, Seedsman, Wisbeach, Cambridgeshire.

CHAPMAN'S KIDNEY POTATOES.—The above excellent Potato has proved itself to be a more abundant cropper, and in every respect infinitely superior to the Ash-leaved Kidney; it has also suffered less from the disease than that variety.

W. WOOD and SON, having carefully selected a few bushels of sound tubers expressly for seed, have much pleasure in offering them at 10s per bushel. A remittance will be expected from unknown correspondents.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

SEEDS.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE for 1849, sent free by post on application. We beg to offer the following in collections, including many choice new sorts.

VEGETABLE SEEDS

	£	s.	d.
A complete Collection, including Thurston's Reliance, Dancroft Rival, Fairbeard's Surprise, British Queen, and other fine Peas, 20 quarts in all, and all other Vegetable Seeds, best and newest kinds, in proportion for .	3	3	0
The same Collection, in smaller quantities .	2	2	0
Do. do. do. ..	1	5	0
A Collection suitable for a small garden .	0	15	0

A list of the sorts furnished if required.

SELECT FLOWER SEEDS.

Free by post, with full directions for sowing, heights, colours, &c., viz:—

	s.	d.
100 varieties best and newest Annuals	15	0
50 varieties for 8s. 6d, 30 for 5s. 6d, 20 for .	4	0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7s 6d., or 12 do.	5	0
20 varieties best Greenhouse Annuals, 7s 6d, 12 for	5	0
20 varieties choice Greenhouse Perennials, 10s. 6d, 12 for	7	6
20 vars. choice hardy Biennials and Perennials, 7s. 6d, 12	5	0
36 varieties imported German Stocks	5	0
20 ditto ditto, 3s. 6d, 12 for .	2	6

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of 2l. and upwards articles presented extra. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 3, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Day		Date	Society	Time
MONDAY,	Feb.	5	Entomological ..	8 P.M.
			Chemical ..	8 P.M.
			Pathological	8 P.M.
			Medical	8 P.M.
			British Architects	8 P.M.
TUESDAY,	—	6	Linnean	8 P.M.
			Civil Engineers	8 P.M.
WEDNESDAY,	—	7	Society of Arts	8 P.M.
THURSDAY,	—	8	Royal Society of Literature	4 P.M.
			Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	—	9	Astronomical (Anniversary)	4 P.M.
			Philological	8 P.M.
			Royal Institution	8½ P.M.
SATURDAY,	—	10	Royal Botanic	3½ P.M.
MONDAY,	—	12	Geographical	8½ P.M.
TUESDAY,	—	13	Syro Egyptian	7½ P.M.
			Medical and Chirurgical	8½ P.M.
			Zoological	9 P.M.
WEDNESDAY,	—	14	Literary Fund	3 P.M.
			Microscopical (Anniversary)	7 P.M.
			London Institution	7 P.M.
			Graphic	8 P.M.
			Pharmaceutical	9 P.M.
FRIDAY,	—	16	Geological (Anniversary)	1 P.M.
SATURDAY,	—	17	Asiatic	2 P.M.

THE next subject of consideration is the EFFECT OF SOIL on Potatoes, a question far more complicated than that which relates to the period of planting; for the effect of soil is often connected with and dependent upon circumstances not appreciated by the observer, or not reported, or perhaps not susceptible of determination. The returns before us point, however, clearly to some undoubted and highly important general facts.

Peat demands the first consideration. Under this name are included all those districts known in the north of England and Scotland as mosses, in Ireland as bogs, and in the south of England as peat, in which the reporters sometimes include light upland sandy tracts, essentially different in their nature from the drained bog-land. Upon reference to the communications made public in the year 1845, it will be found that, at that early period, attention had been drawn to the remarkable fact that Irish bog Potatoes had often escaped the devastation which swept off the neighbouring crops; it was, however, remarked that what is called "half and half" land, that is to say, land clayed or marled, or otherwise much changed by tillage, or lying on the edge of the bogs, so as to consist in part of bog and in part of clay, had enjoyed no exemption. Since that time, attention has been little directed to this fact; we find, however, upon referring to our own columns, that many cases have been mentioned of a similar exemption, as is shown by the following comparison of reported cases.

	Suffered much.	Suffered little.	Escaped.
1845	0	0	5
1846	2	1	11
1847	0	0	4
1848	1	2	13
	3	3	33

It would thus seem that, in the published reports of peat cases, not more than 1 case in 12 suffered much injury.

The returns now before us seem to indicate that this is a general rule. The following numbers show how the fact stood in the United Kingdom in 1848.

	Suffered much.	Suffered little.	Escaped.
England ...	5	17	10
Scotland ...	0	6	25
Ireland ...	2	21	15
Wales	0	0	1
	7	47	51

So that according to the returns which mentioned peat bog there is not more than 1 case in 15 of much injury. Or it may be put thus; out of 679 English returns we have 5 cases in which peat bog was much diseased; out of 182 Scotch we have 0, out of 92 Irish we have 2; and out of 32 Welsh we have 0.

The following cases seem to explain the history of the apparent exceptions.

On Trafford Moss, near Manchester, Mr. FORSYTH states that part of the bog, reclaimed and marled in 1841 was planted on the 16th May with whole Radical Potatoes in drills, manured with nightsoil and ashes at the rate of 10 tons per acre; the produce was 32 loads of sound and 13 loads of diseased Potatoes per acre. But in this very place, the same Radical Potatoes, planted on the 30th May, on land reclaimed in 1847 and not marled, and manured in the same manner produced per acre 46 loads sound and 1 load diseased.

Mr. FAIRFAX FEARNLEY reports from Scrooby, in Nottinghamshire, that "on common land," of a "somewhat peaty" nature, almost all were bad, planted in the middle of May. This can hardly be called a case of peat-land, even if the lateness of the planting were not taken into account.

Mr. ARCHIBALD MONCRIEFF, Bailiff at Orwell Park, in Suffolk, states that "the antiseptic properties of newly broken up peat-land have not mitigated the virulency" of the disease. This land had a "plenteous dressing of lime," and its Potatoes were half diseased, "including all the largest and finest." Here, again, the land can hardly be called peat moss, and it was largely limed, the effect of which is to destroy the peculiar quality of peat. The planting did not take place till the first week in May. Mr. MONCRIEFF also remarks, what must not be overlooked, that although the neighbourhood was attacked in the beginning of July, his peat-land crop was not seized till the beginning of August. It may be a question whether it would have been attacked at all had the crop been planted in February.

The fourth and fifth cases are those of Mr. HARRISON, of Kendall, already reported in our own columns. His clayed peat was a failure, but the well drained newly broken up peat escaped, as also did similar land in Kendall, in the possession of Mr. ELLISON.

Of the two Irish exceptions, one is mentioned by the Rev. JAS. CROOKSHANK, of Killymaid, in the county of Donegal, where much loss was sustained. Here the remark is, "the safest have been those planted on bog-lea; next, on the same recently broken up." The other is that of Sir GEORGE HODSON, of Hollybrooke, near Bray, in the county of Wicklow; here no land escaped, rather more than half the crop having been lost; it is not, however, quite clear from the words of the report that bog land was under cultivation, although the "heather having been removed" leads to the inference that peat land of some kind is included in the report.

It may be that the exemption of well drained pure peat moss in Ireland is not so great as we assume: because many reporters simply return "all land" as having suffered greatly; against this, however, may be placed the very bad cultivation of many parts of that country; so bad as to render the Potato peculiarly liable to destruction under all circumstances. And if we confine our attention to England alone, the instances of diseased peat land disappear. There we have 27 escapes against 5 so-called failures: but of those failures 2 may be regarded as repetitions, and are referable to the effect of clay, 2 are cases of liming or marling, and 1 is altogether doubtful.

As to the action of peat on the Potato, and the cause of so general an exemption of the crops planted in it when pure, that is a question which may be hereafter discussed. For the present it is sufficient to add to these remarks the further fact, that when peat is mixed with other kinds of manure it seems to act to some extent as a preservative; for there will be found among the returns which allude to the employment of farm-yard manure mixed with peat 2 instances of escape in England, and 15 in Ireland, with no example of failure in England or Scotland, 4 in Ireland, and 1 in Wales. The cases are perhaps not worth much, but it seems desirable to point them out, especially as the losses in England are very great where farm-yard manure alone has been used. This question we shall however pursue when the effect of manure comes under special consideration.

For the present we assume as a second point, proved by the evidence, that PURE WELL DRAINED PEAT MOSS SUFFERS VERY LITTLE FROM DISEASE.

Next week heavy land will come under examination.

ERRATUM.—Miss WILMOT SITWELL begs to correct a misprint in her gardener's report of Potato cultivation, in the 4th Number of the *Gardeners' Chronicle*, p. 51; for *Bedford* read *Redford*, the latter being the early Potato chiefly cultivated in this neighbourhood. *Quorndon near Derby, Jan. 29, 1849.*

AN article headed *Masters v Gardeners*, which appeared in our first number for this year, has produced the same sort of effect as a spoonful of yeast put into a barrel of beer. Every individual in a small section of very young gardeners has found himself an object of persecution, and has thought it "due to himself" to enter a protest against [illegible] we are perfectly unable to imagine what. A few letters on the subject have been published by us or are selected for publication, but we have no fancy for lending our columns to such absurdities as remain unpublished. And, in order to avoid misapprehension, we beg it to be understood that we will print no more letters until we have found leisure to explain our own views of a matter which is of considerable importance to really good gardeners of all classes, although, if we are to judge from our fermenting correspondents, it is extremely unpalatable to some of them.

IN our account of the attempted CULTURE OF AMERICAN COTTON IN BENGAL, we stated that the faults appeared to be those of over luxuriance in a rich soil, combined with a moist and tepid climate. But even when Dacca was most famous for its muslins, much Cotton was imported by the Ganges. Mr TAYLOR stated, in 1788, that the first importations took place in 1783, previously to which Dacca had been supplied from Surat. In 1789, we learn that the weavers of Bengal depended upon the importations from the north-west for seven-eighths of the Cotton which they required. In 1802, of the 450,000 maunds (of 96 lbs.), 180,000 were obtained from the Deccan or Nagpore, and 270,000 from Calpee, the produce chiefly of the district of Etawah, and of Bundlecund, and of the vicinity of Jaloun and Jhansee, and of other Mahratta states immediately to the westward of the Jumna. The imported Cottons were required for the manufacturers of Benares, of Behar, and of Bengal.

When the nature of the different Cottons was less understood than at present, and the effects of soil and of climate in modifying the length and the fineness of the staple of Cotton were almost unknown, it is not surprising that what was found suitable for one kind of Cotton should be considered equally so for another, and that the localities which were found favourable for the growth of the Indian species should have been considered equally so for the culture of the American plant. Indeed, no doubt, by such views, and strengthened by the results of some experiments with this species, the banks of the Jumna in Bundlecund and in the Ganges-Doab, were recommended by the Agricultural Society of India, by Dr. ROYLE, and by General BRIGGS, as suitable sites for the Cotton experiments commenced in 1840.

Before proceeding to detail the results of these experiments in north-western India, it is necessary to take some notice of the climate, in order to contrast it with that of Bengal, as well as of the Cotton districts of America. In the first place, after a mild winter, there is a short spring in February, when several plants known in Europe come into flower, as the Apple, Pear, Peach, and Plum, together with the Chinese Loquat, the Strawberry, Poppy, Flax, &c. In March the Mango flowers, also the Melia and other Indian trees; Strawberries are ripe, and shortly afterwards the Peach. In April a great rise in temperature takes place and goes on increasing throughout May, and to the middle of June, with an unclouded sky, a blazing sun, and a parching hot wind. The maximum of temperature—ranging from 100° to 110° in the shade, but in the sun to 120° and 130°—is now attained. From the 15th to the 20th of June the rains come on and often fall in torrents, usually continuing until the middle of September. The quantity varies in the most northern parts from 20 to 40 inches in different years. A reduction of temperature takes place, but

it is still high, though more equable. The Mango ripens at the accession of the rains, and Rice, with other grains is cultivated. In October the sky is clear, the sun bright and powerful, and evaporation from the surface of the ground and of plants abundant. But during the clear nights radiation is free, the nights become cool, and a copious dew is usually deposited. The cold increases until about the middle of January, but the weather is, upon the whole, mild and pleasant, with occasional frosts and a few showers about Christmas, but it is well calculated for the culture of Wheat, Barley, and other European-like crops. We adduce the means of the thermometer for a few places, and instead of Delhi give that of a place on the Delhi canal, 10 miles to the north of that capital.

	Lat. N.	Long. E.	Height above Sea.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Mean of Year.
Benares . .	25° 18	82° 56'	300 ft.	62.56	72.49	79.07	89 91	94.35	90.28	85.71	85.72	85.99	81 49	72 13	63.45	80.26
Cawnpore	26 29	80 22	500 ,,	63. 8	69. 5	72.15	88.55	96. 5	91.25	86.65	87. 4	85.03	78 95	75.25	67. 5	80.21
Suroull, 10 miles N. of Delhi .	28 41	77 15	800 ,,	51 43	59.29	67.22	75.03	82.53	87.75	88 61	88 90	77.83	72.32	60.26	49.35	71.70
Saharunpore	29 57	77 32	1000 ,,	52. 5	63.25	68.	79.	86. 5	89.	86.75	85.25	78.	74.	64.75	56. 5	73.58
Deyra Doon ..	30 15	78 5	2350 ,,	52. 8	59 5	67.	73.	81.	86.	85.	81.	78. 5	73. 5	57.	56. 5	70.65

Taking the most southern of these localities, Benares, we find Mr. Duncan, in 1788, stating that the best kind of native Cotton, called rarreah, was sown by itself in the month of August, in a good rich soil, a little elevated and near a well, for about the beginning of December the ryots begin to water it once in every four or five days, and continue doing so till the capsules are ripe in March or April. Mr. Vincent, in 1831, stated that in the district of Allahabad, which begins about 50 miles to the west of Benares, the ryots sow their Cotton immediately after the first heavy showers in June or July; irrigation is seldom necessary, and never before the end of September. Some prefer sowing in May, and irrigating until the rains set in. The return is about 300 lbs. of seed Cotton to the begah of 160 feet square, and the crop is not so subject to failure as the grain crop in general. Mr. Bruce, of Calpee, which is on the S.W. bank of the Jumna, and about the same latitude as Cawnpore, gave an account, in 1836, of the different kinds of soil in Bundlecund, and stated that, in the best black soils, upwards of 700 lbs. are obtained from the begah of 18,225 square feet; but, on the average, about half that quantity. The Cotton is invariably sown at the beginning of the rains, and begins to be collected about September or October. He also states that very often the crops cultivated with the Cotton more than pay for the land-rent and labour of the whole cultivation. As these statements refer to native Cotton, we must add that, previous to this period, American Cotton had been cultivated still further to the north by Dr. Royle at Saharunpore, and by Colonel Colvin in several villages along the Delhi canal. The Georgian Cotton had, moreover, been cultivated both at Allahabad and at Delhi: we have heard also in the Deyra Doon; but that the difficulties experienced there were those of over-luxuriance, owing probably to the moisture of the soil and climate in that Himalayan valley during the season of cultivation.

In the year 1840, the Court of Directors of the East India Company obtained, by means of Captain Bayles, whom they had previously dispatched to America, 10 experienced Cotton planters to proceed to India, to introduce there the successful culture and cleaning of Cotton. They were furnished with seed, with ploughs and other tools for the culture of the Cotton, with saw-gins for cleaning it, and with presses for packing it. American editors pronounced this "a gigantic enterprise," and "an extraordinary project of England against the United States."

From the papers published by the House of Commons in 1847, we learn that three of these planters were sent to Madras, three to Bombay, and four having visited Liverpool and Manchester, accompanied Captain Bayles *out* Egypt to the Bengal Presidency. It would no doubt have been desirable to have spread these planters over as wide a surface as possible, in order to get the results of simultaneous experiments over a great diversity of soil and climate. But as the planters naturally desired to be together at first, their wishes were complied with, and the four for Bengal were located near Calpee, on both sides of the Jumna. One afterwards attempted a model farm at Agra, a second went to Goruckpore, a third to Rungpore, still further to the south-east, while an additional planter was engaged, as we have seen, for Dacca, so that we have for reference the results of eight farms on different parts of a line of about 800 miles in length.

The Governor-General directed that the experiment should be first tried near Calpee, in four separate farms, within communicating distance of each other, but owing to the difficulty of obtaining suitable villages, Mr. Finnie alone was settled on the Doab banks of the Jumna, and the three others on the other side; Mr. Mercer furthest in the interior, and about 20 miles from that river at Rueth, which is nearly south of Calpee; Captain Bayles fixed himself at Humeerpore, to be in a central situation. The planters have furnished reports of their proceedings, some of them short as the staple of the indigenous Cotton, and others lengthy as when it has been spun into yarn. All (writing in November of their first year) complain of the lateness of the season (April and May) before they were settled in their farms; also of the smallness of the bullocks which were first supplied them. But they thought favourably of the land. Mr. Finnie writes, "I think, from the appearance of the land, that Cotton can be produced in abundance;" and Mr. Mercer, "There is no question that the soil of this part of the country is excellently suited for Cotton." But in the season they were singularly unfortunate; the rainy season, which usually continues for three months, not having extended altogether beyond six weeks. With Mr. Finnie the first shower fell on the 24th of June, but he had no rain from the 23d of August to the 10th of September. Mr. Mercer had a sprinkle of rain on the 9th of June, but no proper rains until the 24th of July, though it had been raining for a fortnight all round him, but then the country became flooded. During August, and till the 7th and 8th of September, the rain was almost incessant, but on the 11th the weather became clear. "The sun looked down with the fiercest glare, and a hot dry wind, almost like that of June, sprang up from the west." The surface of the earth became hard and baked, the leaves began to wither as if scorched by fire, and the bolls or young capsules began falling in showers. Of these, Mr. M. says, "I never saw a greater abundance or more healthy-looking on plants of the same size." After the 1st October the weather became a little cooler at night, and after the 10th the air somewhat damper. The unblighted leaves of the Cotton assumed a lively look, and the plant afterwards began to revive, and though slowly, to put forth fresh leaves. Mr. M. adds, "if I can get a rain, I yet have hopes of finding a very fair return from what I have planted;" also that "the Cotton has sustained its character, being its first year in a foreign land, as a hardy drought-enduring plant, in having survived such weather at all; and I am most satisfied now, that with anything like the season described as usual in this country, that is, rains followed by heavy dews and cool nights, that the most abundant crops of Cotton can be produced."

Mr. Finnie justly observes, "this country requires more rain than the southern states of America. The season at home would have been called dry, but still the Cotton crops would have been fine;" there "we are anxious to get the ground dry enough to plough after the winter breaks up," but "here we wish to get it wet, to cool the atmosphere and send forth vegetation," and again, "here we plant in a hot-bed." We have seen Mr. Price, in Dacca, complaining of the length of time which the American plant takes to come to maturity. In the Doab it follows a very different course. Mr. Finnie states, in one place, that the Cotton which was planted on the 25th of June commenced opening on the 23d of September; that planted on the 28th of June on the 26th of September, and that he picked some on the 28th of September. But in his journal he states that he first picked on the 8th of August, which was from 20 to 25 days sooner than it blossoms on the Mississippi, and concludes by stating, "It is with the greatest pleasure, however, that I receive the fine produce of the few begahs I planted early in the season." Both planters, however, complain of the destruction of their Cotton by insects.

Captain Bayles, as the result of the whole, states, "We have this year laboured under very great disadvantages; the only thing that has been fully established is the superiority of the American over the native mode of cultivation; for fields of native Cotton planted in the same villages, and in the same soil, have produced almost nothing, and are now almost dried up, whereas the Cotton (native seed) planted by the Americans is still green and bearing fruit."

Though we reserve our final observations on these experiments, it is evident that neither in Dacca nor in the Doab is there any want of heat for the American Cotton plant. But in Dacca, from excess of moisture, there was over-luxuriance, while in the Doab, from a deficient or irregular supply of water, there is extreme dryness, and the plants are burned up. This can be counteracted apparently only by a supply of moisture from rivers, canals, or wells, either for early sowing before the rains come on, or at their conclusion, to make up for the increased evaporation until the weather becomes cooler.

ON CONCRETING FRUIT-TREE BORDERS.

Having been privately applied to by some of your readers for information respecting the concreting of fruit-tree borders, I beg leave to reply to their enquiries through the medium of the *Chronicle*, as by this means others who may feel interested in the matter, will be saved the trouble of further enquiry.

I prepare the borders by thoroughly draining the subsoil, and by forming the bottom with an incline from the house towards a deep main drain in front of the space which the border will ultimately occupy. On this slope I lay open-jointed pipe drains, 5 feet apart, which after crossing the outside border, are continued through the front wall and beneath the inside soil also; by bringing up chimneys at the extreme points of each drain, a current of air is produced, which passes through the border and communicates with the atmosphere of the house. Over each air drain some broken rubble, stone, or other coarse material, is laid in the form of a ridge; and between and over these ridges is laid the compost which forms the border. In forming the ridges, care is taken to place the material as loosely as possible, and to lay the largest pieces nearest to the pipes, as the object is to allow a portion of the air to escape from the open-jointed drains, and to diffuse itself amongst the soil. It will be seen that by this arrangement, a supply of air is secured to the roots, notwithstanding the concreted roof.

When the new border has subsided, a time is chosen for laying on the concrete, when the soil is in a moderately dry state. Our mixture consists of one part (by measure) of lime, and eight parts of fine gravel, with as much water as will bring the whole to the consistence of mortar; when thoroughly incorporated, it is wheeled on to the border, and spread evenly over it, 1½ inch in thickness; the surface should be made smooth with the back of a clean spade, to allow the rain to pass easily off. Boards or planks should be used to prevent the compression of the soil, either by the barrows or the workmen. The concrete soon hardens, and may be walked upon without doing it any injury; but as it is liable to be loosened by frost, a layer of litter or fern should be spread over it as a protection in winter. The border derives its supply of moisture from below, by capillary attraction, and this action takes place to the greatest extent in the hottest weather, while its evaporation is prevented by the concrete. Immediately beneath this, we find the roots most beautifully netted, showing how much they enjoy heat when accompanied by moisture.

As the situation of these gardens is very low and damp, I find it an advantage to concrete the floor of the border, as well as its surface; for it is necessary to prevent the roots from descending into the subsoil, which is a wet, stiff clay, and owes its superabundant moisture to the close proximity of a river. Wherever the same natural disadvantages have to be contended with, this double concreting will be found useful; but in medium soils, where the substratum can be effectually drained, the lower concrete is unnecessary, and, in many instances, would be positively injurious; as the border would be liable to become too dry in summer, and the Vines would be injured thereby. Wherever the soil is open and the substratum naturally dry, concreting is altogether unnecessary. The utility of the practice will of course depend upon the peculiarities of the climate, soil, and situation, concerning which every one must be guided by his own judgment; but I can safely affirm that here concreting has been of immense advantage.

If I were afraid of the soil beneath the concrete becoming too dry at any time, it would be easy to construct the border in such a manner as to place it under as perfect control in this as it would be in every other respect. To secure the means of applying water whenever it was thought needful, I would introduce a row of slates, or small flags, near the front wall of the house, about 2 inches lower than the surface, and cover them with broken rubble or some other pervious material, to the general level. About the centre of each slate I would place a draining collar, or piece of a draining pipe, on the top of the rubble, which would form a tube to convey water into the border after it is concreted. These slates may be from 12 to 18 inches square, and should be placed half way between the ridges over the air drains, so that the water may have to traverse the greatest quantity of soil, before it can escape. It will be necessary to lay the slates perfectly level, in order that the water, when poured on them, may diffuse itself equally on all sides. To enable us to ascertain the state of the soil, a few plug-holes should be made in different parts of the border; and in forming the surface of the concrete, it should be slightly mounded round the plugs, to prevent the rain from washing in. By pushing a tube through these holes into the soil (as you would try a cheese), it would be easy at any time to ascertain the amount of moisture contained in the border; and although the water could not be so equally spread over the surface as it might be if it were uncovered, I

should not apprehend any difficulty in this respect, as it would diffuse itself, by capillary attraction, until all parts of the soil were equally moist. This process of mutual diffusion would, however, go on more freely, if care were taken to supply the water, before the soil had become too dry. I should not, however, think it necessary to introduce more than one row of tubes into borders of an ordinary width; and these I would place within 2 or 3 feet of the house, for as the front of the border would derive a considerable amount of moisture from the damp ground beyond the edge of the concrete, and as the tubes would be situated near the highest part of the border, the water supplied through them would have a natural tendency towards the front. It is scarcely necessary to add, that when water was required, it would be given in the shape of liquid manure. *G. Fleming, Trentham.*

CHOROZEMA ANGUSTIFOLIUM.

Having been successful in the cultivation of this beautiful Chorozema, I am induced to send the following particulars respecting its management.

Procure a young plant, 6 or 8 inches high, in a small pot, about the beginning of March or April. If it be well rooted it may at once be shifted into an 8-inch or a 9-inch pot, using a compost of Wimbledon peat, rotten turf, and well decomposed vegetable mould, in equal proportions, with a good sprinkling of silver sand. The whole should be well broken with a spade, intimately mixed, and passed through a sieve of 1½-inch mesh. Having done this, take a clean 8 or 9-inch pot, place a good sized potsherd over the hole at bottom, and over that an inch of clean drainage, either of crocks or charcoal; then about 2 inches of the roughest of the soil, and fill up with the above mentioned compost, pressing gently as you proceed; but not too firmly, for the roots are very susceptible of injury.

After filling up to, say, within an inch of the rim, smooth the surface of the soil, so as to cause it to incline gently to the edge of the pot. This will prevent stagnant water from lodging round the stem of the plant. After potting, the soil should receive a soaking of soft water, sufficient to moisten its whole mass. The plant may then be placed in a cool pit or frame for five or six weeks, at the expiration of which it may be fully exposed until the end of September (according to the weather), when it should be replaced in its frame or pit, with just sufficient protection to keep it from frost; be careful, however, not to expose it to cold draughts, or it will be found a difficult matter to keep it in good health.

This Chorozema is generally supposed to be very subject to red spider; but if it be fully exposed through the summer months, laid down on its side about once in six weeks and syringed with warm soapsuds, there will be little to fear from spider. Water sparingly in winter.

In the following April the plant should be cut down to within 6 or 8 inches of the pot. This will cause it to push out a quantity of young shoots from the previous year's wood; it should then be shifted into a 12 or 13-inch pot, using the above mentioned compost in a rough state, with plenty of crocks and pieces of charcoal about the size of Walnuts, and, above all, secure a good drainage at bottom. The plant may then be placed out of doors in a not over shady situation, being careful to tie out and regulate the shoots as they grow, stopping them when necessary, so as to form a handsome plant, well furnished with young wood. Pinch off the points of every shoot early in November; this will cause it to bloom profusely in early summer, when its beauty will amply repay any little trouble bestowed upon it. *W. P. Leach, S. Rucker's, Esq., Wandsworth.*

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

The Hotbed.—If our readers grow Cucumbers they will before this have their work in operation, and be devoting a portion of their cares on equalising the temperature of their frames—no easy task, by the way, in the capricious months of February and March. Our hint this week is for gardeners of humbler pretensions, and as an auxiliary to their success in floriculture during the coming season, we advise them to make up a hotbed at once, that all seeds and cuttings requiring heat may be forwarded, ready to bed out in May. Unless this is done, many productions will not have a fair chance of blooming before early frosts cut them off, and some management must therefore be exercised during this month, in order to be prepared in time. For these purposes a bed of leaves and stable manure should be made up, about a foot larger than your frame every way, and not less when made than 5 or 6 feet high. Unless there is some body in the mass of fermenting materials the heat will not be long retained. Let the bed, if possible, be under a wall looking to the south or south-east, to shield it from cold winds. Put on your frame, and on the top of the dung lay turfy mould, not wet, to the depth of 6 or 8 inches. The heat will be brought to a working state in two or three weeks, for it is only a gently raised temperature you will need, say about 45° in the night time, when necessary linings must be applied, until the advancing spring makes you independent of artificial heat altogether.

Into this bed put your Dahlias to shoot, cuttings of Pelargoniums, Verbenas, Fuchsias, and all such plants as are now employed to fill the summer parterres. Also seeds of tender annuals, not forgetting Phlox Drummondii, so beautiful in all gardens great and small. Abundance of air must at all times be given, and care taken to prevent damp, which will often destroy a whole stock, unless cautiously guarded against. When the cuttings are rooted, they should be removed to a colder frame, also the young seedlings after being transplanted out into small pots. *H. B.*

Home Correspondence.

Protected Trellises.—One of these, according to Mr. Rivers' model, has just been erected in the garden of the Horticultural Society. It is 21 feet long, and is covered by six sashes, each 8 feet by 3 feet 6 inches, and made from Mr. Montgomery's steam-cut wood. Three of the six sashes, together with the trellis under them, are rough from the saw; the rebates nailed on, and the sashes resting only by their ends on the front and back plates, agreeably to Mr. Rivers' rough model. The other three sashes are steam rebated, and rest on cross pieces, after Mr. Ker's plan, except that they, with the trellis under them, have been slightly planed, and painted stone colour, which of course gives them a finish not possessed by their neighbours; but much less labour has been bestowed on them than sashes in general receive. Separate accounts of the time and materials employed in each half of the trellis have been kept, in order that persons wishing to construct such contrivances may know the comparative cost of the very rough and the slightly planed and painted plans. In country places, where Fir poles are plentiful, of course such trellises might be put up much cheaper than about London. In the accounts above alluded to the cost stands thus: rough sashes, glazed, complete, 5¾*d.* per foot, and including the trellis, 8*d.* per foot, superficial measure; planed and painted sashes, glazed, complete, 8½*d.* per foot, and including the trellis, 11½*d.* per foot, superficial measure. The wood-work for rough sashes costs 10*d.* each sash less than the steam-cut and rebated bars used in the painted sashes. The difference in price between a rough sash, and a planed and painted one, is 6*s.* Fig. 1 is a section of Mr. Ker's sash; fig. 2, one of Mr. Rivers's rough sash, with rebates nailed on; fig. 3 is a perspective view of one of the rough sashes, showing the plan of halving them together before the rebates are put on. The outside framing is 3 in. by 2; bars, 2 by 1. The pieces forming

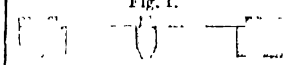


Fig. 1.

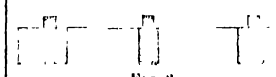


Fig. 2.

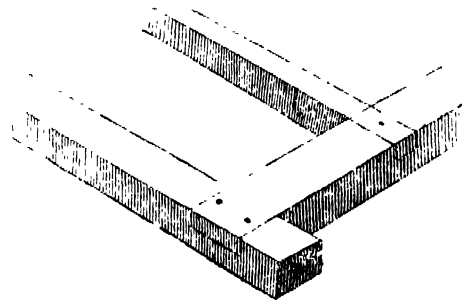


Fig. 3.

the rebates on the stiles and top rail should be about ¼ inch square; those on the bars one-third their thickness. *S.*

Disbudding v. *removing Vine Shoots.*—It appears from the statement of "W. P. A.," at p. 54, that he has experimented on leaving a disbudded Vine rod for the purpose of nourishing the young shoot pushing from near its base; and that the latter, in consequence, fed amazingly, the eyes becoming obscured. I am, however, inclined to suppose that this over-luxuriant condition was induced by favourable circumstances; and that the supply of materials was chiefly derived from the border, by means of the roots. I admit that this kind of disbudding is of great utility in many cases, and I have frequently practised it, but not in the belief that organised matter would be transferred from the disbudded rod to the adjoining shoot at its base. My object was, in some cases, such as that of the Vine for instance, to prevent bleeding, in others, gumming. A Vine shoot may be safely disbudded under circumstances which would render the cutting it off highly injurious; and an over-luxuriant Peach shoot may be completely deprived of its buds, by degrees, with less risk of the tree gumming than if the shoot, with all its buds, had been at once cut away. Now, it becomes a question whether a Vine bud will not push stronger from the base of an inert disbudded shoot, presuming the latter supplies no organised matter, than it would in the proximity of a wound, such as that resulting from the cutting back a shoot in the usual way? If it do push stronger, then the extra vigour described by "W. P. A." cannot be correctly attributed to the appropriation of organised matter. A bud well started is a circumstance of great importance, and under favourable circumstances, the resulting shoot will exhibit a superiority. Supposing a Vine-shoot of last year's growth is shortened to 10 feet in length and disbudded, leaving only an eye at the top, whilst another shoot of equal strength is cut back to a bud within 1 foot of its base; in the disbudded rod, the bud at top is connected with 10 feet of shoot, and may appropriate the organised matter contained in that length. Will it then grow 10 times stronger than the bud near the base of the shoot cut back to 1 foot? Or, making due allowance for greater substance in the 1 foot of the lower part of the shoot, shall we only expect the shoot left at the top of the 10 feet rod to grow with five times the vigour, and at the same time conclude that the practice of cutting back in order to obtain strong shoots is erroneous? This conclusion is warranted if the vigour of a shoot depends on the amount of organised matter in a rod connected with such shoot. I have never observed that one shoot or branch of a tree was disposed to feed upon the organised matter which another had fairly appropriated. We do sometimes say that when a very strong shoot is allowed to run up, it robs the others. Strictly speaking, this is not the case. It does not directly feed upon its weaker neighbours. Favoured by position, or other circumstances, it gains a superiority; but it thrives only by its own exertions, drawing its nourishment from roots which the elaborations of its own foliage have been the means of producing; from these it justly claims support; on these it depends rather than on the substance contained in adjoining shoots. If these shoots should even possess moderate vigour, and meet with some misfortune, some mutilation, perhaps disbudding, to an extent that renders them all but lifeless, and consequently leaves their organisable matter an easy prey; still the strong shoot proceeds on its own resources, maintaining the usual reciprocal communication between its leaves and roots, without exerting its powers to annihilate its less fortunate associates by draining them of their essential substance. The case of a Melon, deriving support from very distant foliage, is not sufficiently analogous to prove that a shoot will appropriate the substance of another shoot. It is as natural for the Melon and Gourd tribe to draw food from very distant leaves as it is for the leaves of some plants to draw fluids from very distant roots. If I am not mistaken, the leaves of the Vine will prefer a supply by means of the roots, however far the latter may travel, far before any stored up substance in disbudded shoots. I agree with "W. P. A." that experiments relating to this subject would be very desirable.‖

Brown Bread.—Dr. Daubeny's valuable lectures on the nutritive value of different articles of food, directly bearing upon a subject which has long interested me, I wish to call your attention to the use of coarse meal bread, to which there can be only one objection—that it acts medicinally or mechanically, as an aperient, and consequently there are a few constitutions which it does not suit, but these bear no proportion (probably not 1 in 100) to those who from a constipated habit of body derive the greatest benefit from the bran being retained in the bread. From its possessing this power of giving a healthy action to the bowels, I have eaten the coarsest brown bread, whenever I could get it, for upwards of 20 years, and I have just cause to be thankful for a knowledge of its qualities, since it has relieved me from the necessity of taking relaxing medicines, and it has never lost its power as drastic drugs do. It is not very many years since it was insisted by high authorities, that no one could work hard who ate brown bread, but now it appears that this very article contains important qualities for sustaining the bone and muscle of man, which are wanting in the finest Wheaten bread, and I confess it always seemed a strange anomaly to me that animals should grow fat when fed upon the bran and toppings, if they were so deficient in nutritive properties when eaten by man. There is another advantage which meal bread possesses over white, namely, that is not subject to adulteration, or at least to be combined with deleterious substances, for as the colour is of no importance the unsifted genuine meal may be used as it comes from the mill. Considering that bread made of corn ground, without sifting and wasting any portion of it, would be both economical and wholesome, inasmuch as red Wheat might be used, and it would admit of Indian corn being mixed with it, as well as Rye, which would be an improvement, by keeping the bread moist for a longer period, it is greatly to be regretted that, owing to the inefficiency of our laws, the bakers are able to charge whatever price they please for this "fancy bread;" and thus there is no inducement to the poor man or economist to buy brown bread. Indeed, he would be very unwise to do so, having to pay a higher price for it than he is charged for Wheaten bread of the best quality, and the difference would be still more as regards the "seconds," as it is termed; for the 4 lb. quartern loaf of the best quality is now 7½*d.* or 8*d.*, and the second best quality ditto, 6*d.* or 6½*d.* But, for a loaf of coarse brown bread, the price is 8*d.*, and it never weighs more than 3¼ lbs. This bread is generally sold in small loaves (the representatives of half-quarterns), and I pay 4*d.* for one weighing 1¾ lb.; and as my baker would not make them the biscuits also, weighing 2 oz. each, are 1*d.*, or at the rate of 8*d.* per lb., a most exorbitant price for such coarse food. As these are great impositions and serious evils, I hope, by admitting these remarks into your valuable Journal, it may be the means of effecting some good to the consumer. I wish also a mill of small size and low price could be invented for grinding corn sufficiently well to supply housekeepers with this meal, which is charged the same price as flour now, although formerly, in the country at least, it was much cheaper;

as, with a Dutch oven, most wholesome bread would be within the reach of every one. And it strikes me that if the peasantry were once to get a taste for the brown bread, which would cost much less, they would eat no other. They would also be enabled to grind all their gleaned corn themselves; and I do not see why farmers should not supply their labourers with corn weekly when they could grind it at home or at a neighbour's. It is true that their wives and daughters may be bad bakers at first, but I trust the day is not far distant when baking, brewing, and similar useful and essential arts, will be taught in the schools for the poor, which would make them better servants and more useful wives than a profusion of knowledge, which often leads to discontent. If any of your correspondents will favour me with a receipt for making coarse brown biscuits, such as are sold in many bakers' shops in London, which will keep for a month or six weeks, and are not very hard, it will oblige *A Mealman*.—The observations of Professor Johnston, cited in Dr Daubeny's lecture (*vide* No 4, p. 52), have received confirmation from the researches of M. Millon, which were communicated to the Paris Academy of Sciences a fortnight since. M. Millon states that he found the proportion of nitrogen to be greater in the pollard than in the flour itself, and that the pollard contained a considerable quantity of gluten. These researches were confirmed by the statements of M Boussingault. M. Millon gives the following as his analysis of the inner bran or pollard of Wheat, the produce of 1848.

Starch, dextrine, and sugar	53·0
Saccharine matter	1·9
Gluten	14·9
Fatty matter	3·6
*Lignin	9·7
Salts	0·5
Water	15·9
Incrusting matters, and aromatic principles	2·1
	100·0

The conclusion, says M. Millon, to be drawn from this analysis is very simple; the inner bran of Wheat is a decidedly nutritive substance. If it contain 6 per cent. more of lignin than Wheat flour, on the other hand it contains more nitrogenous matter, double the quantity of fatty matter, and in addition two aromatic constituents, one of which reveals the perfume of honey, neither of which are to be found in flour. By means, therefore, of bolting, the Wheat is rendered poorer in nitrogen, starch, and aromatic principles, and this for the purpose of removing a small quantity of ligneous matter. *E. H. Dowden.*

Vine Culture.—I have had nearly 20 years' experience in the culture of this fruit, and I have never heard of Vines growing in cinkers, cinders, and gravel. The borders at Bishop Stortford are formed of richer materials than these, I imagine, or the Vines there would not have been so productive. I have made Vine borders in various ways, but for soil I recommend turfy loam from an old pasture, leaf-mould, stable manure, and carrion; I do not glut my borders with carrion, but I find a little to be of real advantage. I cannot understand how Mr. Wilmot manages to grow excellent crops of Grapes in such cheap and hard materials as cinkers, cinders and gravel. *J. W. Roberts, gr., Hatfield Hall, Wakefield, Yorkshire.*

Glass Pipes.—We have received so many applications from divers parties on this subject (each requiring very definite information), that we deem it expedient to submit both pipes and joints to a series of experiments, which will enable us to speak and write with all the confidence which engineers and others seem to expect. We had hoped to have been met half way by the engineers, but they seem to dread the fragility of an extremely tough and durable material when well prepared. Further information will be given in a few days. *C. S. Thornton Coathorpe, Nailsea Glass Works, Bristol.*

The Police Report of the *Times* newspaper having this week given publicity to the following statement, viz., that Thomas Ivory, the son of an extensive florist in the suburbs of London, was charged with highway robbery, I deem it necessary to state that I am the only florist near London of that name, and that I have no relationship or connection with the accused. *William Ivory, Hanover Nursery, Rue-lane, Peckham, Jan.* 31.

New Potatoes Diseased.—I write to state that the Potato disease has already begun its work among the forced Potatoes here. Indeed the young tubers are more affected than I have before seen them at so early a stage of their growth. *C. E, Anglesea.*

Celery, Growing.—If you want fine Celery do not sow it in heat, but sow your seed very thinly in February or March on an old Cucumber bed, in which the heat is entirely exhausted. If you have no Cucumber bed any other spent bed will answer equally well, taking care to have 3 or 4 inches of good light soil on the top of the manure for the seed to root in; cover with the frame, to protect it from unseasonable weather and cold nights. During the day time give abundance of air when the weather is suitable, and water freely, on mild nights give air at the back. By the time the plants are about 3 or 4 inches high, they will be the size and substance of a lady's little finger, rather than that of a stocking needle, which is usually the case. Prepare the ground by digging in a quantity of lime, to kill slugs and other vermin. Try one-half by planting in the usual way, viz., dig a trench and manure as usual, with the other half give a little more room between the rows, and plant it on the surface; having previously dug in a quantity of manure where you intend planting the rows, and earth both as usual when they require it, taking care to keep the soil out of the heart of the plant; by following this plan, you will have it robust and healthy from the beginning to the end, and consequently firmer and better, and not so liable to run to seed. I grew Celery in this way many years ago; the seed was given me by a gentleman who had it in his possession several years; it came up very well. I never removed the plants except when I planted them into the rows, but I kept them from being drawn by thinning them and giving them away, and occasionally adding a little soil from where I took the plants; and, although the garden I then had was in the town, and very poor soil, I never had any Celery near so good. All my gardeners have since that time made it half exotic. *J. R., Hudersfield.*

Culture of the Fig.—At a late meeting in the Sandy, Exotic Nursery, Chelsea, Mr Cox read an essay on the culture of the Fig in hothouses. Lean-to houses, capable of being well ventilated, were stated to be the best Fig houses, the Figs being planted in a bed in the centre of the house. In the bottom of this pit or bed about 2 feet of rough stones or brick rubbish were to be put for drainage, then rough turves, and afterwards the soil composing the bed. It was recommended that the soil in which the trees were immediately planted should neither be too rich nor too poor, the former causing them to make too much wood, and the latter favouring the production of hard fruit, deficient in flavour. Mr Cox stated that the best soil for the Fig, as well as the Vine, is loose, fresh chopped, turfy loam, used in a green state, intermixed with a liberal portion of lime rubbish and charcoal, liquid manure being applied as often as might be required. Dung used with the soil, he remarked, had a tendency to produce too much luxuriance, which, especially in Figs, is always unfavourable to the production of fruit bearing wood. Supposing the plants to be in the centre of the bed, every shoot, he said, must be trained in a serpentine position, and as low down as is convenient; to accomplish this, large hoops were recommended in the first formation of the trees. Every shoot should be twisted as much as possible without breaking, in order to retard the motion of the sap. By attending to this, balancing the trees, and frequently pinching the shoots as they elongate, the plants are rendered much more fruitful. As soon in autumn as it is perceived no more fruit will ripen, or even earlier, he advised exposing the plants to the weather for a few weeks, by removing the lights, in order to ripen the wood perfectly. When the autumn winds had robbed the plants of their foliage, the lights are to be replaced, and no frost allowed to enter the house. Pruning, training, tying, whitewashing, &c., may now be commenced. If the house be started about the end of January, Figs given their wood early in autumn. It is sometimes necessary to use the knife pretty freely. All useless shoots should be displaced, and as many short-jointed fruit-bearing ones retained as possible. As to summer pruning, it was mentioned that due regard must be paid to stopping the shoots at every fourth eye until Midsummer, and never after that time. The following are a few approved sorts suitable for forcing: Brunswick, Lee's Perpetual, Blanche, Violet, Turkey, Nerii, Long White, and Pregussata. About the middle of January is the earliest period at which forcing can be successfully carried out. If they are excited previous to this, they nearly always drop the first crop. The Fig, like the Strawberry, is impatient of much fire-heat. The plants should not be forced until they have been planted two years, and then only very slightly. By the third season they will be in good working condition. Supposing the plants established, and to have been started about the middle of January, little fire should be applied at the commencement, or the result will prove a failure. Excessive heat and excessive cold, together with extreme droughts and humidity, it was stated, are always injurious to the growth of Figs. The condition of the atmosphere, as regards moisture, depends entirely on circumstances, and must be regulated according to the amount of heat applied at the different stages of growth. The experienced eye is the only safeguard in these matters. Some imagine that because Figs emit roots all up their stems, they will endure any amount of moisture that can be given. Mr. Cox had, however, seen fine fruit spoiled through over much steaming. Before commencing to force, the bed should be well watered with tepid water, a few degrees higher than the temperature of the house. They will also be refreshed and invigorated by a good syringing, once or twice a day, overhead, with tepid water, taking care not to syringe the fruit that is approaching ripeness. It is sometimes necessary to shade a little in very hot weather, say from 10 till 1 o'clock. About 48° was mentioned to be sufficient heat for commencing to force with, raising the temperature as the plants progressed in growth. They must be liberally supplied with water at all times; it is sometimes necessary to water two or three times a day in very hot weather. The heat should not exceed a rise of 15° during day, and keep it at 65° at night. Some daub and smear their plants over with a coating of cow dung, or some similar mixture, in order to prevent scale and other insects lodging about them; but it was stated that no such daubing is requisite, if the plants are well treated. *J. Morrison, Secretary.*

Glazing Greenhouses.—Allow me to recommend to amateurs the system of glazing edge to edge for the front or upright lights of greenhouses; it is so very clean compared to the lap, which is the old fashion. I meet with many people who have never heard of such a plan. *R. M.*

Gardeners.—I do not think that such letters as that from "J. L. S." will do much towards elevating gardeners, or of making them more respected, either by their masters or their fellow servants. There can be no harm in speaking about our profession; it is a word that sounds high, and as a body, let us stick to it and live by it; but we should not forget that our employers never think of the profession of gardeners, but of the gardener my servant; if then, we are servants, it is our duty not only to serve our masters with fidelity, but our conduct ought to give no offence to our fellow servants. "Are we not taught to love one another, to do to others as we would have others do to us." It is disgusting, says "J. L S.," "to see so many men of narrow capacity and possessing so few qualifications for the business, let loose on the world as gardeners." Not at all, say I; men with a small portion of brains must be fed, and in no way can they be better employed than in cultivating the ground; teach them to be industrious, sober, and respectful, and they will find employment; but it is certainly a pity to find a man of large capacity holding an argument with a lady's maid about the conduct of a gardener in another county; or in fact to find him arguing with a lady at all. "I have returned the apprentice fee to many a one who, I found, would never be worth a hatful of crabs." Very modest, "Mr. J. L. S.;" it was your duty to return them the money when you could not teach them anything; but if you are a manufacturer of gardeners, pray examine the raw material before you have anything to do with it, for rest assured that you commit a great injury upon every young man so treated; are you aware that men sometimes have not the "capacity" to become teachers? and are you not lowering these young men in the estimation of their fellows, when the fault may possibly lie with yourself; the serpent has been charmed and the goose taught, although the stupidity of the one is proverbial, and so is the malignity of the other. I may surely congratulate the Pine-apple on being the only fruit in the garden that, according to "J. L. S," a servant dare not touch. In this, however, he is at fault; he is evidently off the scent. In an ordinary-sized family, it is seldom that a Pine-apple is eaten up at once; if it is anything of a fruit (and "1 lb. Queens are plentiful as Blackberries about London") it will be sent up again next day, and now comes the time for the servants. "We could not touch you yesterday, master Pine-apple," say they, "but we'll whack you to-day; what could be easier than to take a slice now?" Many Pine-apples are, however, never sent to the dining-room at all, but to the kitchen to be preserved, and only think of a "20 lb. Providence" being eaten by the servants. The Pine-apple, therefore, king of fruits though he be, experiences no immunity from the fate of other fruit. But is it really true that butlers, housekeepers, and cooks can have any wish either to depreciate the character of the gardener or the produce of the garden? A butler when he is out of a situation has as much difficulty in getting another as a gardener, and when he gets a good one he is equally anxious to keep it. The length of time many of them retain their places is a proof of this; and it also proves that most of them are honest men. The same may be said of every other servant in a gentleman's establishment; if the servants agree amongst themselves it will be better for their own interest, as well as for that of their master. This is as strictly true as that the three angles of a triangle make two right angles. If butlers, housekeepers, and cooks are all anxious to set as good a dinner on their master's table as possible—and from all I have seen of them, I believe they are—what advantage could they reap from either squeezing the Peaches or eating the Strawberries? would not their master, who had seen the Peaches growing in his Peach house in the afternoon, want to know why they were spoiled, and who had done it? So far from the house servants destroying any of the fruit in our garden, I find that the housekeeper is most anxious to preserve it, in order to prolong the fruit season as much as possible; what is left from one day is carefully preserved until the next, and let not "J. S. L." think we have no fruit to preserve, for we have yet as many Grapes as, with care, will serve the family till the end of next month. It would not be difficult to prove that the housekeeper not only will not destroy the fruit of the garden, but that she has a direct interest in taking care of it; for the sooner the garden fruit is done, the sooner will she have to fall upon her pots of preserves, and also upon the grocer for Oranges and other things necessary to make up the required number of dishes; and this cannot be done without increasing the household expenses; which every good housekeeper is anxious to keep as low as she can. I have had the charge of a garden for a good many years, and I never once felt any anxiety or troubled myself about its productions after they were in the house. If any one thinks they are wasted or destroyed, why not keep an account of what is sent in every day? Cannot the Grapes be weighed and the Peaches counted? Gardeners however who can only grow six good Strawberries in a dish are not fond of keeping accounts; like some of our London bill discounters, they keep no books. As to the persecution spoken of, if a man thinks more of himself than he ought to do, he will be laughed at, and he deserves it. Well educated men seldom call others ignorant and conceited. *Alexander Wilson, Cannon-hall.*

Physiological Questions.—May I ask you a few questions, which the reading of Dr. Lindley's and other works has not solved to my satisfaction. 1st. Why does not the descending sap or proper juice, as it is called, when obstructed by ligatures or abstraction of a

ring of bark, tend to produce leaf buds as well as blossom buds, if it be the retaining of nourishment in the branch? [Because organisable matter exists in excess.] 2d. Is it not the deprivation of the upward sap that causes a degree of exhaustion or impoverishment in the branch that promotes fruitfulness and blossom buds? [No.] because we know that this effect is produced by poor soil, cutting off part of the roots, and various other ways, by which the returning sap or proper juice is not retained; [How not retained? do you imagine that it sinks into the earth?] therefore it appears to me likely that the ligatures prevent, to a certain extent, though not entirely, the ascent of the sap, as is proved by the effort made below the ring part of the branch to throw out shoots. [But the effort is made *above* the ring part, not below, unless by mere accident.] 3d. Why does poor soil and maiming the stems, ligatures, &c., make a tree bear fruit instead of branches? The advocates of morphology will probably say that the blossom buds would have been branches and are transformed into blossoms; we know the means by which we can accomplish this; but why is it so? [This is obvious as soon as the principles of morphology are understood. We have fully explained it on many former occasions.] 4th. Do fruit buds and fruit require less nourishment than leaf buds? [No.] 5th. Are the tubes which convey the proper juice from the leaves to the extremity of the root in continuous connection? [No.] and if so, would not the stock partake of the nature of the graft? [No.] I know that Mr. Knight sawed them across on both sides of the stem past the middle, which might not prevent the proper juice from finding its way down. If notches were cut out, the juices would be prevented, of course, from following the same tubes as before. One more inquiry on a practical matter; will you have the kindness to inform me which is the proper time for ringing trees for the purpose of producing fruitfulness and flower buds? [Now.] and what time for improving the size, &c., of fruits? [When the fruit is half grown, if the old rings are closed up.] I think you said in one of the December numbers that you would furnish us with the expense of Mr. Ker's plan of frames for Peaches &c., near the ground, open at the sides and ends. I should like to know if you consider that this plan would answer in Lancashire, whether the cold frosty winds blowing through under the frame would not be injurious. I observe that Mr Ker uses the precaution to place a net in front occasionally. I do not understand his reason for covering the bed with a strip of Asphalte felt in autumn to keep off the rains. I know he says he does it to discontinue the growth. I should have thought it would have a contrary effect, by keeping in the warmth of the soil. [But it keeps out the water, which is exactly what is wanted when the soil is warm. Warm wet soil only promotes growth, instead of staying it.] My Louise Bonne of Jersey Pears, standard, grafted three or four years ago, were of too loose a consistence, though not wanting juice; they were probably kept too long (end of November), they may also have hung too long on the tree. *Amateur, Lancaster.* [May we suggest that the *study* of the "Theory of Horticulture" would save you from many doubts and misconceptions.]

Rain.—The following is the fall of rain in the years 1847 and 1848, as indicated by my rain-gauge.

1847.	Inches.	1848.	Inches.
January	1.14	January	0.96
February	1.16	February	2.40
March	[illegible]	March	[illegible]
April	[illegible]	April	3.19
May	1.21	May	0.41
June	2.61	June	3.08
July	[illegible]	July	2.21
August	[illegible]	August	[illegible]
September	1.10	September	2.91
October	[illegible]	October	[illegible]
November	[illegible]	November	1.29
December	[illegible]	December	2.69
	17.63		30.00

Henry Dixon, Witham.

Disease in Portugal Laurels.—In the year 1841 I planted shrubberies of considerable extent round my house, having prepared the ground by trenching it 18 inches deep. The soil is such as is generally considered favourable for evergreens, rather light, but of good quality. The shrubs, and especially the Portugal Laurels, have done exceedingly well, and these now form bushes of 7 or 8 feet high, and in general of very healthy appearance. Three years ago, however, I observed one of these bushes put on a silvery look about the leaves, which gradually increased, till, at the end of two years, the bush died. On examining the roots nothing was seen to account for this. About a year ago I observed another large Portugal Laurel, in quite a different part of the shrubbery, assume the same appearance; this, as in the former case, has gone on increasing, and I have just transplanted it to see if that will save it; but what alarms me is that I now observe the same thing in several others of these shrubs, and I am afraid of losing the whole and having the place laid bare. I inclose some of the leaves, and shall be obliged if you will advise me what to do. Nothing except the Portugal Laurels seem affected, but they form the principal part of my shrubbery. *W. S. K., Kelso.* [This disease is well known; the cause of it is entirely unknown.]

Mildness of the Season.—I gathered the common Pilewort (Ranunculus ficaria) this day on a bank facing the south. I also found Potentilla fragrariastrum at least a fortnight since. According to Dietrichsens' Almanack for 1846, the R. ficaria flowered in 1840, Feb. 28th; 1841, March 3d; 1842, March 9th. *James John Ilott, Bromley, Kent, Jan. 26.*

Colour of Hollyhocks affected by soil.—I find that by transplanting Hollyhocks into soil containing an abundance of lime, the blossoms become nearly black, although they were previously of a light red. The land on which this was effected is on the gault formation; and the lime contained in it was in the state of hydrate. Was this caused by the lime or not? *G. S. Stoke.*

Gardeners' Troubles.—The remarks of "J. L. S.," p. 38, seem to me much more likely to create and aggravate the evils he complains of than to remedy them. I do not understand what he means by such terms as slopshop gardeners, pothouse gardeners, &c.; but I believe that the treatment which gardeners and all other servants generally receive from their employers and those around them is a fair criterion of their deserts; and the idea that gardeners are especially subject to the persecution of their employers and fellow-servants is a trouble of fancy's own creation, and emanates from and only exists in a morbid imagination. On his own showing, he "wars on women and on boys;"

> "I hate when Vice can bolt her arguments,
> And Virtue has no tongue to check her pride."

I have mostly found gardeners intelligent, agreeable, and respectful, and consequently much respected; and I believe that the persons to whom their productions are consigned preparatory to being sent to table can and do handle them as carefully, and mostly take as great pride in sending up a splendid dish of fruit, &c., as the gardener himself does in producing it. I see no reason why gardeners should not prepare their fruit, &c. for table themselves, if they choose to do so; and I believe every facility would be afforded them for doing it. I would also beg to suggest to "J. L. S." that he should serve his Celery ("the size of his arm" on paper only I suspect) at table himself, that he might receive *in propria persona* the compliments he might be thought to merit for so barbarous a production. *John Fisher.*—I have been a reader of your Paper since the first day of its existence, and I am proud to confess that I have received much benefit from its pages. I formerly felt an honest pride in belonging to the humble and hard-working portion of that body of which it formed the head, but latterly my opinions are much changed, and I feel ashamed to belong to a body which requires newspaper controversy to guide it in the private affairs of life. If "Dodman," and others of his class, wish to become their own gardeners, let it be so; no one claims a right to gainsay them: but let not "Dodman" attempt to throw disgrace upon a body of men, simply because one of their number would not follow his advice, which, if acted upon, would possibly have brought discredit to the gardener. No doubt there are amongst us pothouse gardeners, men without or with too much character; but in every grade of society there are such. Your correspondent, "J. L. S.," has raised a complaint against the butler, cook, and still-room maid. Poor man! I could not but think that he must be unfit to superintend the plant stove or conservatory, when his experience is not able to keep such harmless creatures as these in their proper places. Pray banish from your columns such unseemly discussions, and continue to give us that "feast of intellect" which, I am persuaded, the majority of your readers is ready to receive. *J. R.*

Naming of Plants.—If this is done with the view of rendering them more interesting, that object will not be effected by merely affixing botanical names to them. To general observers, the English name, the native country, and year of introduction, will be more interesting, and should be added for their sake. The name of the natural order, accompanied by its Anglicised form, according to Dr Lindley's "Vegetable Kingdom," will afford additional interest to the botanist. The general height which the plant attains and the colour of the flower, are frequently appended, but these are not so essential, as the one is very variable, and depends upon external circumstances, and the other is better explained by the plant itself, in its proper season, than by any description. By omitting these it would allow more room to describe the economical value of the plant, whether medicinal, esculent, or otherwise useful; and under this head any poisonous or dangerous qualities should be particularly mentioned. *A. B.*

Irish Horticultural Societies.—May I trouble you with a brief history of the origin and progress of that Society which must justly be considered as the "original" one, but which throughout the controversy has been looked upon as a mere offspring, or "horticulturally" speaking, a mere offshoot. Previous to 1816, no horticultural society existed in this country, and many of the gardeners who filled important situations in the metropolitan district—feeling the necessity of a regular means of social intercommunication and instruction, first mooted the subject of forming a society, and accordingly they held their first meeting for that purpose on the 31st December, 1816, and so formed a society essentially practical in its constitution and details. According to its rules two-thirds of the committee were always to be practical gardeners, and the other third amateurs; and so jealous were they to guard against abuses, or even the suspicion of partiality, that nurserymen were excluded *in toto* from the council, lest they might be supposed to exercise even an indirect influence upon the adjudications at any time. Prizes were, according to the rules, paid on the day of exhibition, and the mode was this: the committee ordered the plate from some eminent silversmith, who brought it to the show, where it was displayed to view in a circular glass case until the close of the show, when the secretary proceeded to read out the awards, and the chairman of the committee (a respectable gardener) presented each competitor with such prizes as were awarded to him. The plate was then paid for, and the day's business closed; such was the invariable rule pursued by the Society up to 1829, when the office of secretary being held by the foreman of an eminent nurseryman, now no more, and many of its original founders having changed their situations, and left the metropolitan district, the opportunity was taken by some amateurs, who, it seems, had influence enough with the aforesaid nurseryman and his foreman—the then secretary (in both of whom the gardeners about Dublin put the most implicit faith), to induce them to perpetrate as great a piece of injustice and breach of confidence as could be imagined; they were induced to assemble a packed meeting for the purpose of overturning the existing constitution of the Society and handing over the whole management of it to the amateurs, and this act they succeeded in accomplishing in 1830, but the moment the gardeners were made aware of what had been done, they unanimously remonstrated against its injustice. However, such was the influence of the parties before alluded to, that the storm passed off for that time with some loud grumbling. Under the new *regime*, things began to wear a different aspect: the arrangement of the schedule was altered; prizes were no longer paid on the days of exhibition, and the amateurs, now released from the trammels of practical knowledge, dealt out prizes to whom they *list*, until, in the short space of four years, it became a matter of positive speculation, upon which betting might have been safely made, as to the quantity and quality of prizes each person would, in rotation, get—that is, the favoured persons, for it was remarked that out of this circle it was very difficult to obtain a prize, no matter how meritorious the object competed with was. It was in 1835, at the June show, I was first awakened to this system, by some remarkable observations made to me on my way to the Rotunda with a basket of fruit which I intended to exhibit. Incredulous that such a state of things could exist, I determined to test the truth of it, and did so, by submitting the contents of my basket for competition, and, to my utter astonishment, I soon realised the full truth of the strange observations of the morning. However, this circumstance determined me, and I immediately consulted some of the most eminent and reputable gardeners in attendance upon the propriety of changing this monstrous state of things, by forming another Society, based upon the identical principles of the original one. In fact, re-establishing the old one; but here arose a difficulty—the name of the old Society had never been changed, and we must have a distinctive one, to prevent ours from being confounded with the others; consequently, we were under the necessity of giving ours the title of "The Practical Floral and Horticultural Society of Ireland." Thus, in August, 1835, we held our first meeting, and formed our old Society anew, under the above title. Such was our success that we were enabled to adopt that part of the old system, viz., the distributing of the prizes upon the day of exhibition; but, enraged at the amount of our success, every species of opposition was resorted to upon the part of the Council of the other Society to damage and annoy us, even to the actual interference between the employers and the gardeners who dared to join our society. To such a height was this virulence carried, that three gardeners lost their situations through it, and a gentleman, now no more, had the audacity at one of our exhibitions in the Rotunda, to walk up to my employer for a similar purpose; but it matters not now the reply he got. Under such continued and powerful opposition, together with one occasional wet day for our show, the interest of our Society suffered severely in its pecuniary resources, so much so, that we were obliged to discontinue the arrangement for paying prizes on the day of show, and were at times hard pressed for means to pay them at all. However, under all these difficulties, we determined still to persevere in maintaining our principles, and such has been the result after 14 years of fierce and unmitigated hostility from the Council of the usurping Society that our exhibitions have maintained their character, and have more than rivalled those of the other Society in its best days, whilst their's have fallen off notwithstanding the amount of assistance received by them from the gardens of the Royal Dublin Society. From this brief history, then, it will be seen that the Royal Horticultural Improvement Society is in reality the original Society that first instituted flower shows in this country, and that the others had but four years of enjoyed usurpation, and cannot lay the slightest claim to be the original Society. The Royal Horticultural Improvement Society is therefore in all reason fully entitled to the support of every patron of horticulture in this country. Now with regard to another subject—that of the Royal Dublin Society in future taking the matter into their own hands, it may be proper, on the part of that great and useful Society to do so, but it does not appear to be dictated by either reason or sound sense. You say that they ought to appropriate some of the funds placed at their disposal by Government for the maintenance of the department of horticulture for such purpose, but you seem to forget that those funds are scarcely adequate to support their horticultural establishment as it is; and there stands, yet unfinished in their gardens, the Palm-house, for want of funds; but, independent of this, let me [illegible] what has ever the Royal Dublin Society done for the improvement of horticulture? True, there is their fine Botanic Gardens, at Glasnevin, neatly and properly kept, but where is there one instance of improved horticulture ever having been introduced through means of that elegant garden, or where can you point to a solitary instance of any eminent [illegible] ever having emanated from it? It did so happen that in 1819, the committee of the original Horticultural Society made application to the Royal Dublin Society for the use of 2 acres of their grounds at Glasnevin, for an experimental ground upon which to employ a gardener, whom they [illegible], but they refused to grant this. Constituted, however, as the Royal Dublin Society is, it cannot afford that undivided attention to the nature of horticultural exhibiting which would be absolutely necessary to insure complete success, neither would their mode of "medal prizes" be as a proper incitement to horticultural improvement. Their objects, as it is, are sufficiently manifold, if properly carried out, to occupy their whole attention, without their putting any more "irons in the fire." Already the "Royal Agricultural Implement Society," and also "the Natural History Society," are proof that some of the many departmental objects were not efficiently worked out by them, and were they to undertake the working out of horticultural improvement by holding horticultural exhibitions in their grounds, they would ere long find that they had injured the object they sought to improve. Very wide indeed must the distinction be drawn between the "London Horticultural Society," with its vast and powerful funds, for the sole purpose of working out one, and only one object, and the "Royal Dublin Society," with its diminished parliamentary grant, and its widely extended field of operations, a field wider than that embraced by any existing society in Europe. *John Humphreys, Co. Kildare.* [We have omitted a personality which in no way affected Mr. Humphreys' arguments. For the present we believe that our work is done and we must occupy our columns with other matter. We have effectually drawn attention to the way in which Irish gardening has been degraded in Dublin by its great Society, and the residents in that capital must work out further details for themselves. The Council of the Royal Horticultural Society is now crying out for help to the very men whom they have spurned, and it is for the gardeners to make the most of their new position. All that we can do is to hope that honour may be given where honour is really due.]

Calendar of Operations.

(For the ensuing week.)

FORCING DEPARTMENT.

If the early sown Melon seed has germinated successfully, it is time to get the bed ready for planting them out. The following is my method of preparing my Melon beds, by which I have been enabled to keep the plants in a bearing state from the middle of April to the middle of October. My pits are heated by hot water pipes top and bottom, and the heat from the lower pipes ascends to the soil through a bed of rubble.

On the surface of the rubble, 6 or 8 inches of turfy soil is laid, which, after being soaked with water, is pressed into a solid mass; after this is made smooth, some guano is sprinkled over it, and then the hills are put in preparatory to planting. My reason for adopting the above process is to form a compact mass of soil, which will be filled with the ramifications of the roots by the time the first fruits have completed their swelling, and by piercing the soil with a tin tube I am enabled to convey water to these roots during that critical period without wetting the surface soil or producing any moisture in the house to deteriorate the quality of the ripening fruit. Thus the healthy vigour of the plants is maintained, and with the assistance of a couple of top dressings they are kept in a fruitful state for six months.

PLANT DEPARTMENT.

As the season is rapidly approaching when many plants will require repotting, a sufficient stock of all requisite materials should be prepared beforehand, and with regard to soils this should be particularly attended to. It is in many places very difficult to get good peat, and without it fine-rooted hard-wooded plants cannot be grown to perfection. If, however, fine plants are an object worth trying for, they must have soil, whatever may be the trouble of procuring it. As the amount of daylight increases, the temperature of the greenhouses may be slightly raised, particularly in fine clear weather; but be cautious not to excite stove plants, especially hard-wooded ones, until the days are longer, as there is a much greater difference between the light of their natural habitats and of ours than there is between ours and those of greenhouse plants hence these last are less liable to be injured by a temperature approaching their natural one in conjunction with our dull atmosphere. Stoves and the Orchid house should not range higher than 55° to 60° at night; forcing house, 60°; greenhouse 40°; Heath house, 35° to 40°. Take care to prevent moisture from falling on the flowers of Orchids, that their beauties may be preserved as long as possible. Any of those species which are showing flower may be removed into the forcing house, to cause them to expand a little earlier than they would otherwise do.

KITCHEN GARDEN.

A crop of Peas should now be sown in turf, and raised in a little heat, to be planted out about the middle of March. The most economical way of doing this is to cut strips of turf 4 or 5 inches wide, and lay them on boards with their grassy sides downwards; a drill should be made along the middle of the turves by pressing a strip of wood into them, in this the seeds are to be sown and covered with a little light soil. The boards should then be placed under the trellis of a Peach-house, or in some similar place where the night-temperature does not exceed 50°. As soon as they are up they must be fully exposed to the light, and towards the end of the month they will be sufficiently advanced to set out of doors. The best situation is under a south wall, where they should be protected by a few branches of evergreens until they are thoroughly inured to the open air. The variety which I have found best adapted for this purpose is Bishop's Early Dwarf, and they should be sown three-quarters of an inch asunder. To "Luser's" inquiries about the quantity of salt to be used, I reply, it is perfectly safe, but it is my general practice to apply it when there is no crop upon the ground. Three quarters of a pound to the square yard do not injure vegetation, but make it grow with greater vigour (weeds included), but it is sufficiently strong to destroy wireworm, maggots, &c.; this points out its good qualities as a preventive of the losses caused by these pests amongst the Brassica family, and as these plants luxuriate in a strong and rather moist soil, salt is particularly applicable as a dressing for the ground if it be light or sandy. Twelve months ago I gave my Asparagus beds 2 lbs. to the square yard, which caused the plants to make an amazing growth, but the ground was so saturated with salt that it has not produced a weed throughout the season. With the addition of a little lime I consider it particularly useful as a reviver of these soils, and it acts as a rectifier in ground which has received a dressing of the same kind of manure during many successive years.

FLOWER GARDEN AND SHRUBBERIES.

Let no exertion be wanting to render this department perfectly clean and neat, any large trees which are condemned should now be removed, and all dead or decaying branches cut out of those which are to remain. The surface of all the clumps should be dug or forked over, adding manure or compost wherever it is needed. Advantage should be taken of this opportunity to make any necessary alterations in the arrangement of the plants and to remove a portion where they are too thick. If you wish to make fine specimens, let every bush or tree stand distinct and free from its neighbours, spread out all bushes that will admit of it, and prune, support, or draw down according to their individual requirements. It is a great pity to see masses of choice shrubs jostling and squeezing themselves together, and compelling each other to stand on tiptoe to get a peep at daylight; but ludicrous as this may seem, it is too often the case in English gardens. As the regulation of the clumps proceeds, the edgings should be clipped, and the turf and gravel cleaned and rolled. By finishing every part as you proceed, a much greater quantity of work may be done by the same means, and it will give more satisfaction both to yourself and others, than by doing a little everywhere but never completing anything.

FLORISTS' FLOWERS.

THE POLYANTHUS.—To the uninitiated florist these flowers present great similarity, and are passed over as the least interesting of any. Though their precocity and the regularity of their lacing is duly admired, still contrast is wanted, the majority of them having dark grounds. But rapid improvement is making, and some beautiful varieties have lately been originated, with red or scarlet body colour, neatly laced with bright yellow; we allude more particularly to Addis's Kingfisher, Errington's Fire-king, and Bullock's Lancer, the last of not so recent a date as the two previously mentioned. We hold colour to be a matter of taste, and so long as we get form, with other properties finely developed, we do not think novelty of ground-colour highly desirable. To effect this, we say to all, sow seed, and raise fresh varieties, for we know of no florist's flower in which improvement is more required. This may be done now. The compost should consist chiefly of leaf mould and sand, slightly covering and pressing the surface; keep moist, and when the seedlings appear, and during the ensuing summer, they must be kept in the shade. TULIPS.—Hoop the beds, and stretch a very wide-meshed net over them, so that when frosty nights come, they may be securely covered with mats. This may appear troublesome, but we would strongly advise all who possess any sorts worth the trouble to do so. DAHLIAS.—Where extensive propagation is required, these should be got forward on a gentle heat, either tank or hotbed will answer the purpose. We will give directions for striking the shoots in due time.

COTTAGERS' GARDEN.

It is a common thing to see cottage gardens crowded with large fruit trees, most of which are inferior or worthless varieties, and even the good ones, from want of proper management, are generally unproductive; besides which, their roots exhaust the ground and their tops shade it, thereby preventing the proper development of other vegetables. This system should be altogether changed; all inferior varieties should be removed, and of the remaining ones the standards should be drawn down, if they will bear it, and the dwarfs trained as pyramidal or goblet shaped bushes. If the soil is rich, which may be naturally expected amongst vegetables, the production of gross and superfluous wood should be prevented by regular and systematic root pruning. The most economical arrangement of fruit trees for a cottager's garden is to form espaliers on the south side of all walks running east and west, and on both sides of all walks running north and south. On these all the fruit trees, including Gooseberries, Currants, and Raspberries should be trained, and the whole available space of the garden will be left for vegetables. It will be necessary to support the fruit trees with stakes for a few years, after which they will support themselves.

State of the Weather near London for the week ending Feb. 1, 1849, as observed at the Horticultural Gardens, Chiswick.

Jan. and Feb.		Moon's Age	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain
Friday	26		29.941	29.801	46	[illegible]	37.[illegible]	W	.01
Satur	27	3	[illegible]	[illegible]	[illegible]	31	[illegible]	S	[illegible]
Sunday	28	4	[illegible]	29.521	45	31	31.0	W	[illegible]
Monday	[illegible]	5	[illegible]	[illegible]	42	[illegible]	[illegible]	N	.01
Tues	[illegible]	6	[illegible]	[illegible]	48	30	[illegible]	S	[illegible]
Wed	31	☽	[illegible]	[illegible]	47	[illegible]	[illegible]	W	.01
Thurs	1	8	30.2[illegible]	[illegible]	41	[illegible]	[illegible]	S W	[illegible]
Average			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]

Jan. 26—Rain, very fine, clear; slight frost at night.
27—Slight frost, overcast and fine, heavy rain.
28—Cloudy, fine, overcast.
29—Rain, low stratum of clouds scudding from N., cloudy and cold, frosty.
30—Slight fog; drizzle, slight rain.
31—Fine throughout, frosty at night.
Feb. 1—Frosty, foggy; rain at night.
Mean temperature of the week 2 deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Feb. 10, 1849.

Feb.		[illegible]	[illegible]	[illegible]	No. of Years in which it Rained	Greatest Quantity of Rain	Prevailing Winds N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday	4	[illegible]	[illegible]	[illegible]	[illegible]	0.31 in.	3	4	[illegible]	–	[illegible]	1	4	[illegible]
Mon	5	43.[illegible]	31.6	[illegible]	5	0.49	–	3	2	1	3	4	3	5
Tues	6	[illegible]	3[illegible].5	31.0	[illegible]	0.2[illegible]	2	1	1	[illegible]	1	4	[illegible]	1
Wed	7	[illegible]	[illegible].0	39.7	1[illegible]	0.2[illegible]	9	1	1		3	7	6	2
Thurs	8	[illegible]	[illegible]	39.2	14	0.[illegible]7	1	3	2	–	4	9	[illegible]	1
Friday	9	45.4	3[illegible].0	[illegible]	7	0.0		3	1	2	1	9	[illegible]	2
Satur	10	41.[illegible]	[illegible].7	38	9	0.2	[illegible]	4	1	2	4	6	2	1

The highest temperature during the above period occurred on the 10th, 1841—therm. 5[illegible] deg.; and the lowest on the 7th, 1841—therm. 4 deg. below zero.

Notices to Correspondents.

BEES: *G J I.* Although the plan you adopted is highly recommended by some, it is not only unnecessary, but hurtful, to bees. When brood combs are cut from a hive in February or March, much progeny is lost, as in your own case, and the same happens in some measure if the operation is performed in October. The bees have not sufficient time to repair the damage that occurs in the heart of their hive, where they pass the winter and rear early brood in spring. Vapour from the bees, and not the fungus, rendered your hive wet. Your bee-house seems well constructed, but we fear that the situation is damp; if so, you had better adopt straw hives on the depriving plan, and, except when combs are very old and deserted, leave all doctoring to the bees themselves. *W.*—*J T S.* Wait for an early swarm to fill your box, instead of driving the bees from their home and young, which is a great loss. Besides, little time would be gained, for the operation could not be done with any chance of success before April. *W.*

BOOKS: *J Wilkinson.* You had best begin with Dr. Lindley's "School Botany." Thanks; we do not wish to give you any trouble in sending us specimens. For Cactus seed, see p. 56 of last week's Number; and for greenhouse annuals, p. 208 of our volume for 1847.—*H B L.* The Glossary of Dr. Lindley's "Elements of Botany."—*Adam.* The latest and best edition of Donn's Catalogue is that by Don: it has been frequently advertised. The Muscat of Alexandria Grape will not ripen properly under the ordinary temperature of a greenhouse, it may become eatable, and that is all. We cannot answer the question about Pelargoniums; no such case has been reported to us, and yours was probably accidental. Geranium striatum is not considered as indigenous.

CALLA ÆTHIOPICA: *H S.* Examine the roots of your Calla, and, at the same time, divest it of suckers. If the roots exhibit good health, repot into a size larger pot; but if they are unhealthy, shake the soil from them and prune them in, using a smaller pot than that which the plant previously occupied. To flower it well, it should have a rich loamy soil, plenty of water when growing, and heat if that can be commanded. After it has done growing, gradually withhold water, in order to give it a season of rest. ‡

COTTON: *L.* Early sowing is not necessarily advantageous; on the contrary Dr. Wight tried it and failed. Dr. Royle has somewhere observed, with great truth, that cultivation must depend upon the climate of a place, and not upon what is practised elsewhere. That is why some excellent Scotch farmers have failed when they took in hand the dry warm districts of the South of Europe.

DRY ROT: *A Sub.* It resembles Mushroom spawn, and after a time collects into tough white plates, very like kid-leather.

EXHIBITIONS: *M M.* Have you ever applied to the secretary? If not, the delay is your own, not that of the society. There is no difficulty in such matters; you have only to write and make your claim.

GERMINATION: *W Boone.* That of Crinum amabile is the same as in other Endogens, the part which remains in the seed is the cotyledon, not the radicle; see Lindley's "Elements of Botany," p. 116, par. 691.

HEATING: *Clericus, N.* We would advise you to consult Mr. Kendall, Elizabeth walk, Stoke Newington, who, for a small fee, will attend to all your enquiries about Polmaise. Experience shows that each case has its peculiarities, and that well considered *plans* are indispensable, such things are beyond the means of a newspaper. Mr. Kendall has experience and skill, founded upon very happy application of Polmaise to his own case, and he is not connected with any house which sells apparatus.—The plant is Carissa Carandas.

HOPS: *F F.* You have either a male or a bad sort. Plant a female in well manured land, and you will find no difficulty. Do not ring your Magnolia, but have patience, and cramp the roots; it is probably not old enough to flower.

ICE-HOUSES: *A Bungler.* Have nothing to do with the old-fashioned ice-houses. They are expensive to build, and the best of them is but ill adapted for keeping ice. Make one after the fashion of the "little barn" mentioned in Mr. Beaton's communication. The walls should be 14 inches thick, and the size according to the quantity of ice to be kept. Why not try an ice heap according to Mr. Ingram's plan, till your men get a little accustomed to gathering, pounding, and packing ice? A shady situation, but not under the drip of trees, is the best place for ice. ‡

INSECTS: *T D.* Frost will not kill emmets: try the effects of turpentine on them. ‡ *Const. Reader.* Apply hot water when the scale is present; we do not understand what difficulty you find; day time is the most usual time for such operations. Apply sulphur the very moment the mildew is observed.—*J Bowes.* The insects which you have sent are a small species of Julus (J. pulchellus, see *Gard. Chron.* 1841, p. 196). We question if they are the cause of the clubbing of the Cabbages. They, however, feed on vegetable matter to a great extent, and must be driven away by repeated waterings of lime water or gas-tar water at the roots. *R.*

LAND ASSOCIATION: *T S P.* We have great doubts as to the feasibility of the plan. Where are the weekly half crowns to come from? Men would have to pay that in addition to all their outgoings. It would be as to that laying by of 2*s.* 6*d.* a week, which in agricultural districts cannot be expected except in a very limited degree. Many philanthropists are ignorant of the value of 2*s.* 6*d.* to a poor man. It is Utopian.

MELONS: *B P G.* Clear out all soil and other material both from the inside and outside of your brick and mortar pit, then whitewash it with thin lime water. If your pit is deep lay a few faggots in the bottom, which will form excellent drainage. Place the dung on the faggots, the latter must be sweetened for some time before it is applied, or it will kill your plants. If you can command plenty of hot dung for the outside of your pit, you might at once put in the quantity of mould required, which should be about a foot in depth round the inside of the pit, and 18 inches in the middle where the plants are to be planted. As to mould, some use with advantage a turfy top spit, quite fresh cut to pieces. Little water should be given to the plants until they are in full growth, when in a bearing state they like a moderate supply of weak liquid manure. Keep a toad in your pit to keep down woodlice. ‡—*E W B.* The Beechwood is one of the best of Melons, and it is as easy to grow as the other commonly cultivated varieties. ‡

NAMES OF PLANTS: *Pod.* Clavaria corniculata, growing on the decaying wood, the yellow-brown colour is natural to it.—*S P.* What you call "medullary rays in an unusual condition" are plates of the mycelium of some fungus, which has insinuated itself in the place of the medullary rays. It is a capital illustration of dry rot.—*J Ellis.* Odontoglossum Rossii and Erica arbuscula.—*P Bassett.* Your plant from Mitin is quite new to us, and beautiful. In the absence of its fruit it will be very difficult to ascertain its name. It seems to be related to Lasionema; if it swells any fruit pray send it to us hereafter.—*E H M.* Apparently Anchusa versicolor, but there are no flowers, and no stem-leaves.—*C H.* Geranium rotundifolium.

ORANGES: *C H G.* We are unacquainted with this disease; since it follows the course of the veins, it is apparently referable to something which the plant has absorbed; is there no clue to be found in its management?

PELARGONIUMS: *C.* Presuming that the Pelargoniums which you have wintered in your cellar are scarlets, they should be taken out now, provided you have a frame, greenhouse, or even a warm window; shake the soil from their roots, divest them of all dead and straggling shoots, repot them into light sandy soil, and water them sparingly until they have formed new leaves and shoots, when they may be gradually exposed to the air on all favourable occasions. As soon as all danger of frost is over, they may be planted out in the open border, if that is desirable. ‡

POTATOES: *A Sub.* Six inches are deep enough, too deep for heavy land; the best way is to plant them 4 inches deep, and to draw 2 inches of a ridge over them. All you want is to prevent the shoots from appearing before the frosts are gone; and we have no chance of very hard frosts now.—*J M S.* Because they are diseased.—*T F Arrowsmith.* They are sound good-looking Potatoes, but whether they will resist disease is more than we or any one can tell.—*Hortensis.* We must for the present confine attention to the important *general facts* which we shall continue to record for some time to come. The public is heartily tired of detached and too often accidental cases, and has begun, most wisely, to eschew all speculations.

ROSES: *G S, Notts.* For four white pillar Roses, to flower from June till November, procure the following. *Noisettes:* La Pliche, L'Angevine, Hardy. *Bourbon:* Madame Lacharme. Each of these has a tinge of flesh-colour, but they are the whitest *autumnal* pillar Roses. ‡

TANKS: *H Greyson.* Use Portland cement; but it would be better to make your tank of cast iron; we have never yet seen any success with cement when it is exposed to alternate wetness and dryness, with great fluctuations of temperature.

TORENIA ASIATICA: *T T T.* Since you have no peat, employ leaf-mould and a little sand to mix with your loam for Torenia; the same material will also answer for Gesneras, which may be started now. ‡

MISC.: One shilling each will be given for No. 36, 1846; and for Nos. 45, 49, and 50 for 1847.

SEEDLING FLOWERS.

CINERARIAS: *D D.* Specimens similar in colour to your seedling are already in cultivation, surpassing your flower in shape, which is deficient in the size and width of the petals.—*G P.* Your flowers want size and distinctness; they are very inferior to the best cultivated varieties.*

GUANO AND OTHER MANURES.

PERUVIAN GUANO, of the finest quality, direct from import warehouse.
NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of

MARK FOTHERGILL, 201 A, Upper Thames-street, London.

WHEAT SOWING.

THE LONDON MANURE COMPANY beg to offer as under.

LONDON MANURE COMPANY'S CORN MANURE.
" " " URATE. [LIME.
" " " SUPER-PHOSPHATE OF

Peruvian Guano, direct from Importers' Stores—Fishery and Agricultural Salt—Gypsum for Clover—Soda Ash for destroying wireworm, and every other Artificial Manure.

The London Manure Company would call particular attention to their Corn Manure and Urate, the former containing a large amount of Ammonia, Phosphates, and Silicates, all so essential for corn crops, while the Urate is richer in Phosphates and other mineral substances required for roots.

Full particulars and prices forwarded on application.

EDWARD PURSER, Secretary, 40, Bridge-street, Blackfriars.

PERUVIAN AND BOLIVIAN GUANO ON SALE,

BY THE ONLY IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WM. JOSEPH MYERS AND CO, LIVERPOOL;
And by their Agents,
GIBBS, BRIGHT, AND Co., LIVERPOOL and BRISTOL;
COTESWORTH, POWELL, AND PRYOR, LONDON.

To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to Dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

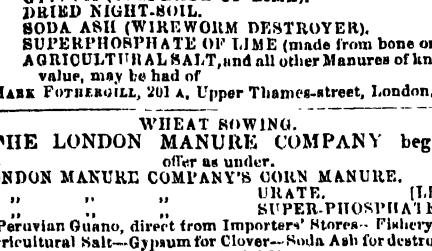
DR. RYAN'S CHEMICAL MANURES,
Manufactured solely by Messrs. STRETTON, HAYWARD and Co.,
GENERAL AGRICULTURAL AGENTS.
Offices, 7, Chandos-street, Cavendish-square, London.
Under Distinguished Patronage.

MESSRS. STRETTON, HAYWARD AND CO, have entered into an arrangement with Dr. RYAN, Professor of Chemistry at the Royal Polytechnic Institution, London, whose exclusive services are retained to superintend the manufacture of Chemical Manures, upon entirely new and scientific principles, based upon the analysis of soils and the production of fertilizing agents suited to their various properties and the nature of the desired crops. In submitting Dr. Ryan's latest discoveries to agriculturists, Messrs STRETTON, HAYWARD, and Co. can with the utmost confidence state, that their Manures will, after the severest test, be found to possess far greater fertilizing powers than any hitherto offered to the public, which, together with their cheapness (being 40 per cent. under the price of Peruvian Guano) must entirely supersede all other Manures. By the use of these fertilizers those crops which so frequently suffer from the ravages of the fly and other insects are in a great measure protected. Horticulturists are particularly recommended to use "Dr. Ryan's Garden Manures" for general purposes. Sent, carriage free, to any part of the kingdom, at

For top dressings	£5 10 0	per ton.
For Wheat, Barley, Oats, Hops, or any grain or seed	£6 16 0	"
Dr. Ryan's genuine Superphosphate of Lime	7 0 0	"

Nitrate of Soda, Gypsum, Rough Bones, Sulphuric Acid, &c., tested by their Chemist at lowest market prices.
English and Foreign Oil-cake.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now

10 in. will warm	50 ft. 4 in. pipe	£1	15	0
12 in. do.	75 ft. 4 in. do.	2	5	0
14 in. do.	100 ft. 4 in. do.	2	15	0
16 in. do.	150 ft. 4 in. do.	3	10	0
18 in. do.	250 ft. 4 in. do.	4	10	0
21 in do.	350 ft. 4 in. do.	5	10	0
24 in. do.	450 ft. 4 in. do.	7	0	0

NEW PATTERN BOILERS.

30 in. will warm	800 ft 4 in. pipe	15	15	0
36 in. do.	1500 ft. 4 in. do.	25	0	0

All Boilers with double arms, up to 18 in., 5s. extra, to 24 in., 10s. extra: all above, the same price
130, Fleet-street, London, Feb. 3.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Chatsworth Gardens.
Mr. Glendinning's Nursery, Turnham green.

B. & H. refer to Mr. Glendinning, having put up very extensive works under his superintendence with distinguished success; and at least 500 other important places.

BURBIDGE and HEALY, 130, Fleet-street, London.

WARM AIR STOVES.

BENHAM AND SONS respectfully solicit the attention of Architects, Builders, and the Public in general, to their extensive stock of Air Stoves, suitable for Shops, Halls, School-rooms, &c. Also a great variety of Church or Chapel Stoves. Greenhouses, Halls, and other buildings WARMED by HOT WATER from the Servants' Offices, or by the circulation of WARM AIR on the POLMAISE SYSTEM, which is very efficient, and of very moderate cost.—2, Wigmore-street, Cavendish-square, London.

CLARK'S METALLIC HOTHOUSE WORKS, 55, Lionel-street, Birmingham.—Proprietor, Mr. THOMAS CLARK; Manager, Mr. JOHN JONES.

Mr. CLARK presents his grateful thanks to the Nobility and Gentry for their liberal patronage of the above Establishment, during a period of thirty years, and begs to state that the repeal of the duty on Glass enables him to offer his METALLIC HOTHOUSES at a greatly reduced price. These Houses are glazed with British Sheet Glass, in panes of from 24 to 30 inches in length, and of such thickness as to preclude all danger of accidental breakage, whilst that which arises from the action of frost is effectually prevented by the peculiar mode of glazing adopted. As a sample of his Metallic Hothouses, in which all the most recent improvements are happily combined, Mr. CLARK refers to the magnificent range erected by him in the new Royal Gardens at Windsor, admitted by competent judges to be the most complete of its kind in the world.

IMPORTANT TO FARMERS, GRAZIERS, GARDENERS, LANDOWNERS, and OTHERS—Showing how to Farm to meet the times and Save Money.—The NEW PATENT MANURE, a SUBSTITUTE for FOREIGN MANURES, may be manufactured without a license by every farmer, 35 bushels per acre, for 1l., being equal to 10 loads of manure. The preparation is simple and cheap, and suitable for all seasons, soils, and crops also showing how to fatten every description of stock and poultry, at one-third the expense now adopted, the best and cheapest method of draining, &c &c. This excellent Treatise on Farming and Grazing, registered and entered at Stationers' Hall, contains a collection of 150 of the most valuable receipts ever discovered in agriculture for profit, &c.; with full directions for use, by the late celebrated agriculturist, Mr ELLMAN, and others, and patronised and highly recommended by H. R. H. Prince Albert, at Windsor Farm, the Royal Agricultural Society of England, their Graces the Dukes of Richmond, Portland, and Bedford, &c., and will be forwarded without fail, pre-paid, by return of post, to any part of the country, by enclosing one shilling, or 12 postage stamps, addressed, prepaid, to Messrs. TAYLOR and Co., 49, Exeter-street, Lisson grove, London.

The Agricultural Gazette.

SATURDAY, FEBRUARY 3, 1849

MEETINGS FOR THE TWO FOLLOWING WEEKS

TUESDAY,	Feb. 6	Agricultural Society of England
WEDNESDAY,	7	Highland and Agricultural Society
THURSDAY,	—	8—Agricultural Inst. Society of Ireland
THURSDAY,	—	15 Agricultural Imp. Society of Ireland

FARMERS' CLUBS.—Feb 5 London, Great Ormsby, Oliver. Feb 6 Framlingham.—Feb 7 Fornham. Feb 8 Hadleigh. Feb 9 Halesworth, Needham Market.—Feb 10 Peterborough. Feb 12, Claydon

THE want of well established facts or data in agriculture as the foundation of a reasonable foresight, either in argument or practice, is a misfortune which, however unfelt by those long accustomed, amid all its faults, to the routine of the art, is sensibly perceived by all those who approach it from unaccustomed quarters. Even on its details there is but little positive information in our agricultural writings on which one may depend so far as to predict the result of his own operations. And in regard to the great results of the business, there is not one of them which is not open to the greatest diversity of sentiment, even among men of high standing as experienced farmers. On the ultimate result of all—the PROFITS of farming—for instance, what can be more various than the published statements of the day? On the quantity of labour which, under given circumstances, it is profitable to employ; on the use of purchased food for stock, or purchased manures for crops—what can be more entirely opposed than the opinions of men, notwithstanding the appeal of each to experience for his proof?

We venture to lead the way to a discussion of one of these points—THE PROFITABLE EMPLOYMENT OF LABOUR in arable cultivation—by the simple statement of an experience to the results of which we have had access. In 1847—a year which is taken merely because it is the only one whose records are open to us in detail—on an arable farm of about 270 acres, where Wheat is grown four times alternately with the four crops, Clover, Turnips, Beans, Mangold Wurzel in every eight years; where the rent paid to landlord, church, poor, &c., amounts to about 580*l* per annum; where wages vary from 10*s*. to 12*s*. a week for able-bodied men throughout the year; the following was the labour bill:

For piece-work	£173	8*s*.	11½*d*	
For 52 weeks of 5 men at 13*s*. a week	169	0	0	
For 1797 days of a man at 1*s*. 10*d*.	164	14	6	
For 3005 days of a woman at 10*d*.	125	4	2	
For 2268 days of a boy at 7*d*.	66	3	0	
	£698	10	7½	

This amounts to upwards of 50*s*. per acre: it is equal to the constant payment of 16 men, 10 women, and 7 boys throughout the year. We cannot say what proportion of this sum is fairly chargeable on the produce of the year in which it was spent; but we know that the labour bill of other years resembles it in amount: and we know that on that farm the accounts are so kept, that if a sum spent in labour or otherwise be not fairly chargeable on the farm returns in any *one* year, it is entered in a dormant capital account which lets its burden out piecemeal per annum over that period of years during which its effects are supposed to last.

The position of adviser between masters and labourers is one of great responsibility; and we do not choose to assume it: but—while urging most confidently the profitableness of the *mass* that remains to be done in the way of draining, breaking up inferior pastures, &c., before good farming can prevail—we are bound to add that on this farm, employing a capital of considerably over 10*l*. per acre, nothing like 10*l*. per cent. of annual profit has yet been realised.

That is the fact, and we leave it for the comments of our readers, hoping that they will come forward with similar statements of their experience.—We desire this Journal to become as much the organ of material truth and experience in the *business* of farming as it is of demonstrative truth and speculation in the *art*. The leaders of improvement necessarily dwell more in the region of the latter, because it has now, for the most part, passed so far in advance of the former. Their's is probably the nobler office of the two—but the assistance of practical men in the work of making an idea *profitable* is at the least as necessary as the labour of the scientific man in proving it to be true: and we hope that no jealousy or anger—such as the controversy of the last few weeks in relation to the labours of Mr. HUNTABLY and Mr MECHI has exhibited—will have the effect of separating workmen whose labour is never so productive as when carried on in concert. It is nothing peculiar to Agriculture that its improvements have originated with amateurs: few other arts can boast a biography of purely professional men: and it appears to be a feature common to all, that progress is due more generally to the infusion of fresh blood than to the extraordinary efforts of men with all the habits and prejudices which accustomed routine inflicts.

These remarks may appear beside our present subject, but they may be permitted notwithstanding, as tending to place in its true light questions of detail—in the prosecution of Agriculture—like the one before us. What we want now is the experience of practical men on the amount of labour which, under given circumstances, they have found profitable.

THE following startling information on the LEGAL MISMANAGEMENT OF IRISH ESTATES has recently appeared in the *Irish Jurist*. If the facts be—and we have no reason whatever to doubt their reality—as stated in the clever article to which we are alluding, the interference of the Legislature is loudly called for, to remedy the evils of the misrule and mismanagement complained of.

We must premise that the periodical from which we are about to copy the article which has so forcibly attracted our attention is professedly conducted by Barristers—a class of men who, if they have a bias either way, incline towards everything which has the authority of Law in its favour, even with its abuses and absurdities: men who distinguish beauty and perfection in multitudinous forms and technicalities, and discern wisdom and the perfection of equity in maxims and usages which men, not bred to the law and living by the law, would mistake for folly and injustice.

When Barristers, then,—all of them, no doubt, aspiring to the highest offices in the law at the end of their perspectives—put forward such statements as we are going to transfer to our pages (from their obvious and intimate connection with the interests of AGRICULTURE), we can have no hesitation in believing that the details in question are but a few instances of general abuses under the present grossly defective system. The public are indebted to the honesty and faithfulness of the legal gentlemen who have published such facts. Surely they deserve the attention of the Legislature.

The *Jurist* shall now state its own case.

"That estates under the control of our Courts of Equity are deteriorated in condition and value, is the experience of every resident in the country, and of every casual traveller who visits our shores. The latter not unfrequently finds himself in a district where poverty and neglect have laid a heavier than ordinary hand,—hovels along the wayside, fields uncultivated, irregularly and ruinously subdivided, agriculture in a state of relapse, no controlling power directing the few remaining energies of the cottier tenantry, the old family mansion of the inheritor presenting a forlorn aspect of dilapidation and decay; oppressed with a sense of painful melancholy, and surprised, even in Ireland, with this scene of desolation, he asks to what proprietor this region belongs—and he feels quite satisfied that such should be its appearance, when he is informed that '*It is in Chancery.*'

"If a proprietor were a man of very limited income, in proportion to the extent of his estate—if he were devoid of intellect and energy—we might excuse his inability or pity his infirmity: but if he had complete control over his estate and its revenues, was endowed with intelligence, active himself, and with the power of compelling activity in others, and yet his estate presented the appearance we have described, leniency itself could find neither excuse nor pity for control so misdirected, for activity so unemployed, and for a management productive of such lamentable results.

"Now, does not a Court of Equity resemble, in many striking features, the latter of these proprietors? It possesses great control, and if not complete, it is because it wrongly forbore to exercise its powers, and has built up a series of precedents, embarrassing to itself, and cumbrous to the properties placed under its *care*. Land and the Court of Chancery seem to have *no* natural affinity; they have never improved by contact with each other.

"But let us not lay on the management of such a court more sins than it is justly chargeable with. The wretchedness of its uncared-for estates is not, in all instances, primarily attributable to it; from the embarrassment of the incumbrances, they had been previously neglected, were rack-rented, and undergoing a rapid process of deterioration. But what we do blame the system pursued by the Court of Chancery for is, that when it finds *such estates* bad, it makes them worse, and sometimes receives them prosperous and leaves them wretched.

"An instance often illustrates a principle. We take one of the many which the annals of the Court of Chancery could furnish; the facts came before the court the last year, and were verified by the affidavit of a Protestant clergyman. In the year 1835, a receiver was appointed over a property of 511*l.* a year, paying a head rent of 161*l.*; at the date of his appointment, the arrears on the property to the previous gale-day amounted to 2*l.* 14*s.* 1½*d.* The rental was higher than that subsequently settled by the court; there was no hanging gale, and the rents, falling due in September and November, were paid in the following December; there was no pressure on the country, and no pauperism on the estate. The very first account passed by the receiver showed an arrear of 522*l.* 10*s.* 1*d.*; this went on progressively accumulating, until in 1842 the arrear had reached the sum of 841*l.* 10*s.* 3*d.*, the greater part of which appearing by the receiver's affidavit to be irrecoverable, the sum of 832*l.* 5*s.* 3*d.* was wiped out by the master in one stroke. It was to be hoped that henceforward each year would have brought a year's rent; but no; the next account showed an arrear of 269*l.* 14*s.* 8*d.*, which went on increasing, till it reached, in 1846, the sum of 678*l.* 12*s.* 6*d.*, and in 1848, upwards of 980*l.* The costs incurred for this *excellent and efficient management* amounted to the moderate sum of 309*l.* 6*s.* 9*d.*, to which is to be added the poundage retained by the officer of the court, for his *meritorious services*. Nor is this the worst. In Trinity Term, 1848, two applications were made to the court; one by the head-landlord for permission to bring an ejectment, the head-rent having fallen into arrear; and a second by the incumbent of the parish, whose tithe-rent charge, amounting to the small annual sum of 16*l.* 4*s.* 2*d.*, was allowed to remain unpaid.

"Nor had the inheritor the satisfaction of knowing that whilst landlord, clergyman, and creditor remained unpaid, his tenantry were improved. For 13 years his property was under the dominion of the court; during that interval, he was deprived of all control over his tenantry, unable to assist them or improve their condition, and not a shilling was expended on the property for its permanent improvement. When, at length, he was restored to his proprietorship, he found his tenantry generally unable to pay rent, and many of them reduced to the necessity of seeking relief under the Poor-law. The condition in which this estate was restored to its owner, evidences strongly the defective management of the Court of Chancery—a management which acts with a peculiarly fearful effect on properties occupied by a numerous and small class of tenantry.

"What is the peculiar vice of this system?

"It deprives the proprietor of the power of aiding his tenantry, of exercising any control in preventing subletting, the ingress of pauper tenants, the over-cropping and mismanagement of land—and it confers that power on nobody. While the control of the Court of Chancery continues, such power is virtually extinct; the receiver, as we have observed in a former article, requires no qualification but to find sufficient securities; he is required to discharge no duties, save to collect rents. It is the worst species of absenteeism, thus managing estates through non-resident agents, who have no discretion committed to them,—who cannot interfere to prevent the subdivision of a farm, to aid a tenant whom a little assistance would enable to become independent, or to exercise any of the thousand privileges of a landlord, except at an expense to the estate which might cost more than the advantage gained was worth, or after a delay which would render his interference useless.

"Why should not the court itself perform those peculiar duties, which it takes from the landlord, and transfers to nobody!—why should it devote its entire attention to the interests of a mortgagee or incumbrancers, to the exclusion of the proprietor and the tenantry? And this consideration acquires much more importance when it is recollected that in 1847 there were over 1000 estates, covering a fifteenth part of the whole rental,—and, in all likelihood more than a fifteenth part of the whole surface—of Ireland, under the dominion of our Courts of Equity; and whilst we now write, the number has increased and is increasing. The Chancellor's list for the present term contains 171 causes, nine-tenths of which relate to land. The business transacted in the Rolls Court is rapidly and progressively increasing; the fees received in the various offices connected with the Court of Chancery are swelled to nearly double their ordinary amount; the ordinary revenue hitherto derived from one, averaged 6000*l.* per annum; last year it exceeded 11,000*l.* Recent legislation also will still further extend the control of the Court of Chancery over land.

"More attractive and dazzling subjects may present themselves to the attention of a legislator, but he could not serve his country more effectually than by devising a practical remedy for the evils we have attempted to describe. The calamities of Ireland do not spring from a single source, and they can be best combated in detail. The proprietors of Ireland are told, that if they will exert themselves, prosperity is within their grasp; if they prefer idleness and inattention, they must inevitably sink. Should not the same reasoning be applied to the Court of Chancery? Is there anything in the property under its control to exempt it from the common lot of Irish estates?

"Let the receivers under the Court of Chancery be more assimilated to agents on well-managed private estates, and if it be considered dangerous to give receivers an independent discretion, at least let the instructions of the court be conveyed with the rapidity of directions from landlords to their agents. The cumbrous and expensive machinery of statements of facts, affidavits, reports, &c., neither suit the circumstances nor exigences of distressed estates. Surely a system can be devised which would accomplish these objects, and without any increase of expense to the country. The costs allowed to receivers during the four years comprised in the return to which we have primarily alluded, averaged above 30,000*l.* per annum. Add to this the 5 per cent poundage on near a million sterling, and there will be a total of nearly 80,000*l.* a year, showing an expense of 8 per cent. on the rental, a greater per centage than is required for the management and improvement of the most flourishing private estates.

"This expense, however great, is not all that is lost under this system, large sums are annually permitted to lie unproductive in the hands of receivers, which should, the moment they were received, be invested to the credit of the different causes, and be made to accumulate for the benefit of the parties interested. Receivers, in this respect, should be placed on a level with private agents. The country might be divided into districts, and all the properties under the courts in each district confided to a resident receiver. By a well-managed system, we feel satisfied half the present expense of managing estates would be saved, the business of the Court of Chancery would be materially lightened, and the properties under its care would be improved during their transition through it, and cease to be the speaking reproach they are now."

IRISH MOSS IMPROVEMENT.

In 1834, Mr. Inglis published his tour in Ireland, at a time when that country was little known to us. He went there for the humane purpose of examining fairly and impartially the real condition of that long suffering people. The horrors he there witnessed, and which he brought before the British public in most affecting terms, were dreadful, beyond any other in the known world. He described different cabins which he visited, particularly in Limerick, where the extremes of human misery and destitution prevailed. But he not only brought these horrors before us in a clear and forcible style, and with underviable accuracy, he also taught us the remedy. This remedy was to be found in the reclamation of the waste lands. The writer of this ventured at the time to follow him with unequal steps, and it may not be saying too much that had his plan been then adopted, 20 millions of money might have been saved to this country; the late wretched rebellion might have been prevented; some hundreds of thousands of lives preserved from the most cruel and horrid death—starvation; the late so-called panic, caused by sending out of the country 8 millions of money for food for the starving poor, might have been avoided; and chief of all, Ireland, instead of being miserable, distracted, disaffected, and trying to throw off its yoke, might by this time have been happy, contented and prosperous. Such might have been the results that would have ensued from the adoption of Mr. Inglis's plan, of the advantages of which he brings forward such-cessful proofs even in Ireland; yet even to this day, no single step has been made towards it, no attempt to try the efficacy of that which is the only real and effectual remedy that can be applied for the enormous evils existing. Whatever difference of opinion may exist as to whether the measure is practicable or not, yet no one will dispute that when there is a redundant population of 5 to 2 on the same area of ground, as compared with this country, you must either find additional work for more than double the number that are employed at present, or you must abstract one-half that number before wages can be raised to the same amount they are with us. Until wages are thus raised, you may try palliatives, you may send round instructions to teach better farming, you may grant loans for draining, you may build colleges, you may restrain agitation by the bribe of endowment, you may check actual starvation by forcing relief from impoverished landlords, but so long as wages are to continue at their present rate, from the competition of labour, so long as a vast mass of population is made to depend on a precarious root, and cannot afford to buy the very corn it assists to grow, so long all hope of amendment in condition, in character in circumstances, is utterly extinguished. Before examining how far the measure alluded to is practicable or not, it may be well to consider how futile are the present plans of the Government. Sir Robert Kane, in his work on the "Industrial Resources of Ireland," full of information, though of a somewhat deceptive character, states the total area of Ireland at 20 millions of acres. The total area of bog is estimated at 2,800,000 acres, nearly one-seventh of the entire surface of the island. Of these bogs there are 1,576 000 acres of flat bog; the remaining 1,254,000 acres are mountain bog. The same work gives the different occupations of the people according to the census of 1841, which are,

In agriculture .. ... 5,406, 743—or 66 per cent.
In trade and manufactures 1 953, 680—or 24 per cent.
In other pursuits ... ... 813, 505—or 9 per cent.

From the cultivation of the soil, therefore, there are at present means of subsistence to be sought for two-thirds of the entire population. By this statement there are 7,200 000 acres of cultivated land. These are supposed to produce a rental of about 14 millions sterling, or at the rate of 17*s.* an acre. The average rent of land in the South of England is not set down at more than 20*s* an acre. If, therefore, the present plan of agricultural instruction should proceed to the utmost, the present rental could only be expected to be increased 3*s.* an acre. This shows that any sure prospect of national relief can never be obtained from the land now in cultivation. It shows that the measures now adopted are quite inadequate to their object; that they are only holding out delusive hopes; that they are consigning over to utter destruction a large portion of our fellow-creatures. They may perhaps better the condition of the landlords, and thus help them to pay their poor-rates, but they cannot enable them to undertake any enlarged plan of agricultural improvement, and thus to provide labour for the numbers that want it. If this resource has hitherto signally failed, if it is sure to fail in future, from the statistics produced, as clear and conclusive as any mathematical proposition, it is very evident some other expedient must be resorted to, if we would ward off the impending evil. This expedient can only be found in the reclamation of the waste lands. Here a field for labour is opened capable of employing any number of hands; one so rich in its qualities and contents, that it would give an immense return; difficult, no doubt, in its operation, but which, by judicious management, may be made easy and practicable. It has been said that the specific measures most relied on, which have had the most powerful advocacy, and which the Government have to a great degree adopted, are, construction of public works, roads, harbours, establishment of fisheries, which, under certain necessary checks, are no doubt good in one sense, as affording employment but the remuneration of the outlay of Government capital is highly problematical. Reclamation of the waste and bog lands is the great national work, at once so simple and so vast in its extent, that we might look to it with confidence for setting all hands to work. Where there is a mine of wealth ready to be worked, capable of raising wages to their proper standard and, at the same time, of bringing an adequate return, not only to the labourer employed but to the proprietor who undertakes it, it seems like something approaching to infatuation that no effort should have been hitherto made by the Government, either on a large or a small scale, to test an experiment which holds out so many advantages. The people themselves cry out for it, yet we are deaf to their prayers. At a meeting in the west of Ireland, at which the Marquis of Sligo presided, the famished paupers begged and beseeched that instead of being set to work at useless employment, such as breaking stones, &c., they might be employed on some reproductive work, in cultivating some of the bog land, of which there is so large a quantity in their immediate neighbourhood; they ask for bread and we give them a stone, either broken or unbroken. In your last number, an anonymous correspondent of yours undertakes to prove that the reclamation of the bog lands cannot be made remunerative. I think, Sir, you have sufficiently proved, from the numerous cases you have adduced, that he must have laboured under an erroneous conception of his subject. He states that "Mr. Barnes, Colonel Rawdorne, and others, have published instances of great success in reclaiming bog lands in this country. Their operations have been made on land at no great distance from the large manufacturing towns, and in the midst of the wealthiest population in the world. A ready market existed in their neighbourhood for every article they produced, and an equally ready and abundant supply of the richest manure. Under such circumstances, a judicious outlay of capital could not fail to be remunerative." But, so far from this being the case, I would undertake to prove, from my own personal knowledge and observation, that the return from moss improvement, if properly conducted, is not so dependant on local circumstances as is there supposed; but the proof of this would require more time than I can command at present. *Law. Rawstorne, Penwortham, Preston.*

THE RURAL POOR.

It is not very often that we find papers in the *Gazette* written in such an Ishmaelitish spirit as those of "S. S." and "B. B." During the last three years I do not recollect a single article or paragraph indicating such low views of the morality of any considerable class of persons, except one by some unhappy farmer, who had been victimised and his stomach soured by large quantities of roasted Turnip seed. I do not only refer to the low moral tone of these paragraphs, which jar so unpleasantly upon those who listen with pleasure to the opinions of such men as Batson, Brown, Goodiff, "H. B.," and many others on both sides of the journal, and which, indeed, are so entirely discordant with the gene-

rally benevolent and practical views of the writers in it; but there is a want of all discipline and respect in the attitude of these members of the two services, which I confess was to me not less offensive than their barrack-room sentiment and forecastle philosophy. No man so likely as your "strict disciplinarian"—your advocate of brute unreasoning obedience, to become turbulent and dictatorial under the milder restraints of such a social regiment as in the columns of the *Chronicle* and *Gazette* are engaged in bloodless conflicts with prejudice, ignorance, and error. Ours is a "republic of letters" it is true, and "liberty and equality" enough there is, or such voices as these would scarcely be permitted to be heard; but, after all, a President ought to be something even with a military democracy. I observe that the turbulent tone of "S. S" has been imitated by his naval friend in a late paper, and it is only because a few of us fear this mutinous spirit may spread, that I have, after much hesitation and reluctance, ventured to send you these remarks, which should have been signed as a "round robin" had such a formality been necessary.

When opinions expressed in the editorial columns of a journal, in which it is well known the majority of the readers concur, for similar opinions have been uniformly advocated by the editors and contributors since the commencement, are spoken of as "downright solemn nonsense," "a milk and water varnish over the precious doctrines of Louis Blanc," "maudlin sentiments and morbid sympathy," &c., it is surely time to be calling out "order," since the President, for the sake of "impartiality" is so modest about ringing his bell.

I question very much whether such interpellations would have been permitted in the "other House." They are quite at variance with the usual decorum and *bonhomie* of the brotherhood of the journal. A few contributors may grow a little warm in a Polmaise stove, or a kind-hearted gentleman may get a little genial roasting on a gridiron or so; but all this spitting is done gently, and the subjects are handled humanely compared to the coarse manipulations of those martial men. I doubt "the services" will not feel themselves complimented either by the moral tone or the discipline of these warlike paragraphs. If these gentlemen have beaten their swords and marlin-spikes into pruning hooks, they seem instinctively given to use their but of cold iron still as a weapon of war. The eye cannot even glance over their paragraphs without being struck with their truculent aspect, so unlike the usual peaceful phrases and pleasant topics of writers on rural affairs; *e. g.*, "The poor wretches are sunk in a state of brutality; they live without God in the world, and die like the dog, whose soul goeth downward." "Young swearing rascals;" "idlers, drunkards, thieves all," "even the boys get drunk and steal;" "ladies who have a taste and think they have a talent for weaning thieves;" "a fellow robbed his master;" "filthy conscience;" besides sneers at missionary societies, men of Ross, and the law of kindness *passim*. Such are the phrases which catch the eye, as it glances over these unwonted paragraphs—phrases which indicate the general tone of the communications. Well might you say that any place to which such descriptions were applicable was "certainly worse than the average of country districts," though "S. S." will not "admit it." Yet he says, "My miller is absent when wanted, his son lies under sentence of transportation, my baker's two sons are committed to prison for housebreaking, and my butcher, a man of large property, is out on bail for felony. These have all received a better education than even you think necessary to ensure universal honesty." Now, so far from thinking this the average condition of any country, or other district in Great Britain, I very much doubt if any other gentleman in the empire is in a similar deplorable condition, and this unique state can alone account, I think, for the extreme opinions of "S. S." The tone used in reference to missionary enterprises and private benevolence indicate clearly the general views of these writers on social topics—common enough after-dinner views in certain circles—by following which society would quickly "advance three steps to rear," but seldom presenting themselves with so much effrontery in the columns of a periodical devoted to progress in rural affairs and rural people. Though, therefore, the contributors to this Paper can suffer no further hurt than the offence to their feelings from such views as those of "S. S." and "B. B.," there may be some among the readers who may be influenced by these opinions, and who may, to their own great mental discomfort, and, so far, to the retardation of a humane social philosophy, adopt them for their lifelong sentiments. For this reason the views in question have received, and will receive, far more attention than their intrinsic value merits. What do such writers as these want to be at? Is the cat-o'-nine-tails to regenerate our peasants, and the discipline of the lash and black hole, now that they are well nigh abolished from "the services," to be introduced into our hamlets and villages? Because the only honest peasant, a shepherd, near "S. S.," can neither read nor write, are we to give up educating the people? That there is sin enough and shame enough among our working, and, alas! other classes, is a melancholy truth. Do the regenerators of the lash and the gibbet think this is unknown to the advocates of a humane political philosophy, that they are for ever everywhere parading the deplorable details? The existence of a large amount of depravity is the very established fact on which the speculations and plans of the friends of humanity have been based, and to the destruction of which their patient, anxious labours have ever been directed. The existence of the disease is as familiar to the one as the other, but there is a wide difference as to its mode of cure. All know alike that many of the branches of the social tree are cankered and barren. Your practical man would hew off the whole at once, while the more experienced and thoughtful cultivator will try a little judicious dressing and pruning, not of the branches only, but of the roots also. Such cultivators as "S. S." and "B. B." will not see how necessary it is to go to the root of the matter in search of health for these branches of the social tree. Is not the fault in ourselves in this business? Does it, without doubt, lie on the surface? Let us see if the mischief be not really in the roots. Have we not sown ignorance and harshness, and reaped crime.

> ——— "The tree has torn us, and we bleed,
> We should have known such fruit would spring from such a seed."

But "S. S." solemnly warns us against the utterance of "morbid sympathy" with the labourer. "Not a peasant or proletary in the kingdom," he says briskly, who is not "waiting with impatience" to put into practice the dogmas of the Editor of the *Gazette*; that is, the "precious doctrines of Louis Blanc," merely disguised by a little "milk and water varnish;" and he concludes oracularly, "believe me, if you wish to benefit the poor, and continue the blessings of social order, you must cease to flatter their (the labourers') besetting sins, and learn to tell them the truth—the whole truth"

Though it may well be doubted whether "S. S." has been better qualified by his residence, as a man of war in semi civilised countries, for giving advice on the social condition of the English peasant, than he is, by his "six months' experience as a farmer," for teaching agricultural knowledge—yet I willingly admit that it is not desirable, if it could possibly be avoided, to goad the labourer to madness by dwelling on his wrongs; but that we should set about a remedy as quickly as possible.

However, it is not likely that many of the class referred to, especially in "S. S.'s" neighbourhood, where postage is so dear, will see these columns. The educated portion of his neighbours seem in gaol or tending thereto; and as the great mass has only "heard of God to blaspheme," they will not be injured by the "maudlin sympathy" of the present writer. We are, therefore, amongst ourselves—we may speak out: Are we not the real delinquents in this deplorable affair? Have we, who enjoy the comforts and luxuries, sought to place our more humble brother in a condition in which he could at least secure the necessaries of life; we who rejoice in a more or less enlightened intelligence have we exerted ourselves to lead his mind out of the dismal regions of ignorance and superstition? and have we made any sustained and vigorous efforts to impart to him the blessings of that religion which consoles us in our sorrows, and which the lot of the labourer, so much more full of privations and sorrows than ours, renders only so much more desirable for him? These are solemn questions, I believe, to a large number of the friends of the *Gazette*, though "S. S." and "B. B." only should not consider them important. Notwithstanding the long honourable labours of the friends of man in this country, the mass of our rural and urban population is uneducated, not only in book knowledge, but in the common love of the heart, the law of kindness. The spirit of the lash and the black-hole, the law of unreasoning obedience, with suffering as the alternative, is still too much abroad amongst us. Until a better spirit becomes general, and education pretty widely diffused, it is vain to hope for practical results. This spirit, however, the friends of ignorance and coercion, had they power equal to their will, would quench for ever.

Observe the shallowness of the reasoning of "S. S." in reference to the effect of kindness upon a man. He takes an especial rogue, and having placed him under the influence of benevolence, perhaps not directed, as he hints, in the wisest way possible, expects he is at once to change his nature and become an industrious, worthy, grateful man, or, what? the beneficial effect of benevolence is disproved for ever. He mentions the failure of an isolated kind-hearted family in their efforts to regenerate such a debased society as he describes, as a proof that kindness will not do. This is a common, though the shallowest of errors. Because one educated mechanic or peasant is idle and dissipated, it is quite common with obstructive philosophers to argue that education is a bad thing, and most of us are old enough to recollect when the majority of those in high places held such doctrines. During the last quarter of a century, however, schools and institutions of various kinds have been more and more advocated by the church, the landlords, and the merchant princes, who of old condemned them; and I think the doctrine that "ignorance is bliss" is pretty much confined to the more idle or the more domineering members of the two "services." The very spirit of aggressive armies is in favour of such doctrines, and my wonder is that so many men of the highest intelligence and benevolence have come with their best feelings scatheless out of such an ordeal as that of war. And so, too, because one or a few instances of benevolence are unsuccessful in removing at once ignorance and vice, because a generation of the wicked does not become a generation of the good in "double quick time," we are to look upon the efforts of benevolent people as useless; nay, even pernicious. "Verily, they shall have their reward in heaven," says "S. S.," "but on earth they meet neither with gratitude nor amendment." Social evils, however, cannot be shot down in this hair-trigger style. As I hinted to "S." (Oct. 7, 1848), "we cannot summer fallow a piece of heavy clay land by a dashing charge of light horse," so I venture to say to "S. S." that neither can we sweep vice and ignorance out of our population or ourselves, without long, painful, laborious efforts. And "gratitude!" alas! let us say it, as we are alone—for what has the labourer to be grateful to society? For the 7*s.* or 8*s.* a week, with intervals during winter and sickness, when even that pittance cannot be had? for his ignorance, or his glimmering knowledge, which is almost worse? for the tender services of those magistrates, who, if they have little heart, have at least a great head—of game? for the gaol? for a life of penury and privation, with the prospect of an old age in the workhouse and a pauper's coffin? In the sacred name of humanity, for what has the labourer to be grateful to society?

The worthlessness and ingratitude of the poor is a common topic amongst many, and a common reason for refusing to assist them. And the same argument is used by the same class of persons to decry the labours of those who, by means of secular and religious instruction—by forbearance, help, and kindness—are striving to elevate the working man of Great Britain. Those who sneer at the missionary subscription are the very persons who, on principle, keep aloof from those very subscribers in other efforts to help the labourer. Can any man look steadily into his own soul, and, having marked the blots that are there, turn, even to the poor uneducated outcast, and speak of worthlessness and ingratitude? Surely the worthlessness of the poor is no reason, but the contrary, for withdrawing from them the helping hand. If they are worthless, they are even yet the more miserable, and, perhaps, with the timely succours of benevolence, they may yet return to happiness and virtue.

But all are not worthless nor ungrateful. I must have had ten times the experience among labouring and poor men which any man whose life has been spent in the army or navy can have had, and I assert that the labouring man of England and Ireland, above all of Scotland, is not the abject debased worthless wretch described by "S. S" and "B. B." My experience of these classes coincides with that of many of your correspondents, and with your own; it is summed up pretty correctly in the pithy proverb "like master, like man." As some captains have always flogging ships and regiments, some farmers and manufacturers have always turbulent servants. But to take instances known to every one, how do we find Mr. Ransome's, of Ipswich men, Messrs. Chambers' of Edinburgh, the Messrs. Carr, the great bakers of Carlisle, which last named gentlemen, as we gather from the able paper of Dr. Lonsdale of that city, in the "Journal of Health," have succeeded during many years, simply by fulfilling the law of kindness, in keeping around them a body of industrious, sober, contented members of that very trade whose misery and drunkenness were the topic of the House of Commons during the last session. This, among the manufacturing working classes, and among the agricultural, in addition to the evidence given in late numbers of the *Gazette*, that of the Cullys—the great farmer of Tweedside—may be mentioned—three brothers of them, dissimilar, but all kind-hearted men, who were and are yet famous for the old, faithful, and contented peasantry that tilled their farms. It is not true that the labouring classes are so much more worthless than others, and there is every hope and indication that the English peasant would, with the same advantages, become as moral, industrious, and worthy as the Scottish. And thus I will say, I believe there will, or at least a quarter of a century ago would have been, found as much sterling worth and good sense in a dozen of the peasants or shepherds of Nithsdale or Galawater, as in any 12 men taken at random out of any class of society in the kingdom.

I confess I have felt somewhat indignant that the common cant of the hard and the worldly should have found its way into columns wherein we generally see genial views of life, and earnest endeavours to promote the best material and moral interests of the tiller of the soil. And I may have spoken the more warmly—that, long familiar with the working man in all his conditions, I have been led to think him worthy of sympathy, pity, and respect, rather than of universal scorn and contempt. His vices and crimes I believe to be very much those of the system; his virtues are his own. I have seen many beautiful instances of kindness and charity among the poor towards each other. I have marked the sympathy and tender assiduity with which one neighbour will sometimes assist another—performing, for long periods, without fee or reward, offices which nothing but the highest motives could induce them to fulfil. I have seen the hovel and the pittance shared by one child of want with another yet more destitute, and beheld the poor submit to privations, in order to assist their friend, before which all the boasted benevolence of the rich dwindles into insignificance. Therefore it is that I will not in silence hear the labourer slandered, and that I fervently bid his friends and advocates God speed. *L.*

OUR PROSPECTS.

Your editorial remarks are always to be admired, at once for their practical boldness and their prudent speculation. Your proper function is to point out to the mass of us farmers the new courses which it behoves us to adopt in any change of circumstances. For once,

however, I must doubt whether you are equal to your usual self when you tell us still to hope (alas! against hope) that corn-growing will again in England repay its cost. I, for one, am persuaded that it will not, and I know many able and practical men who have the same conviction. Yet I am not discouraged. I rather rejoice that legislation, by jerking us so rudely out of the ruts of our old practices, will make us look about us for a way more suited to our times. I even fancy that we may already discern a broader, straighter, sounder and safer road than that we have hitherto travelled.

In times gone by, when we had but a limited means of transit from other countries, before many of the great corn-growing countries and colonies were in a condition, or had facilities, to export, or we had commodities for profitable exchange, the inducements to grow corn at home were sufficient to compel the climate and the more favoured soils of Great Britain to produce the corn required by our then scanty and frugal population. It was easy to go a little further with the aid of a factitious protection, and to force from our better and even our inferior soils a supply—never a liberal one however—for an increased and more consuming population.

Not to open a free trade discussion, let us pass to the fact, that protection is gone—and that we have only to look to our soils and climate, and our present and prospective economical circumstances, to guide us in the selection of the produce we are to raise. We have a vast and increasing population, year by year more and more consumers and less and less raisers of agricultural produce; a commerce and the means of transport adequate to all demands, and capable of infinite increase; and, with this a close connection with colonies and foreigners all too happy to supply our wants, and take the products of our manufacturers and the services of our commerce in return. These economical facts have an irresistible influence on our position as farmers. Our population must be supplied by us or others—and others than ourselves have a voice in determining which part we shall supply. Nature, however, has the paramount voice in this matter.

Corn, pulse, and other seeds, and much dried produce—which we could raise of concentrated value in little bulk or weight—may be profitably brought by our commerce from the Antipodes, from wheresoever soil and climate is more favourable, or the demand for our manufactures may make such produce relatively cheap. In such commodities we have not only to contend with an unlimited competition, but our climate is one of the worst in the world for such concentrated products.

On the other hand, succulent bulky crops, such as our usual root and leaf crops, are physically incapable of distant transport, and their value would not bear it. So of fresh meat and milk. For these, our carnivorous population already affords the best market in the world, and is ready and likely to increase its consumption indefinitely. Above all, these are the products for which our soil and climate are naturally best fitted. As to those we are not only protected by the impossibility of transport, but we are placed beyond competition; we have an inviolable monopoly from the hands of Nature, in the superiority, in quantity, and quality of our own produce. Our natural vocation was to grow arable forage crops and to stall-feed cattle. The perverseness of legislation could alone have made us, in the present state of the world, pretend to ripen Wheat.

But it is very often said, and sometimes believed, that the growth of arable forage and cattle feeding do not pay, except as helps to the corn crops. This I am bold to say, and ready to prove, is a pernicious error, and a gross injustice to our truest friends. On our forage crops is now placed the whole burden of providing for the pampered, but still unnaturalised, aliens to the soil which our extravagant fancy has still preferred to our hardy, never-failing, almost native products. The sailor on the raft petitioned at least for a slice out of his own leg, and our green crops are left to beg for a share only of the credit which properly belongs to them. Cultivated as our forage crops are on arable farms, as if they were, as they are sometimes gratefully called, necessary evils, they have still earned the title of the sheet-anchor of our husbandry, and have long been our real bread getters. But only conceive these crops having the first or only place in the farmer's favour; having all the manure resulting from their own consumption, the pick of the seasons, the whole operations of the husbandman directed to their prosperity as his first and only object. The whole conditions of the calculation are at once changed. It would require more time and space than I dare to ask on this occasion to trace a few of the effects, but I would gladly do it.

But one of the consequent effects will be insisted on as an objection; the great concentration of capital in stock, and of labour in tillage, in foddering, and in the dairy. I grant the objection, and admit that 100 acres on the system, fully carried out, would employ more capital and labour than 300 in a white crop rotation. I know that the system is a combination of the garden farm and of the dairy. But is not the conclusion obvious? So much the better for all of us. The capitalist will not hold back from a concentrated investment, if a good one. The farmer will be a manufacturer of food, and will enjoy the advantages of a manufacturer of a staple which knows no fluctuation of fashion, and no slackening of demand. The landowner will probably find how different it is to draw a net revenue from a soil cultivated in accordance with the highest capabilities of the climate, instead of discounting, as he now does, all the loss incurred by the farmer in his contest against the laws of Nature. Our labourers, now the victims of a stagnant cultivation of cereals, would certainly have little to complain of in a system which doubled or trebled the floating capital and labour of the farm. *George Coode, Nuneaton, Jan. 8.* [The great agricultural problem of the day, we agree with Mr. Coode, is, How to convert our green crops with profit? We hope and believe that it is capable of a satisfactory practical solution, but we do not agree with our correspondent if he thinks that this it has yet received. Hitherto the profits of green crops have been proved only by putting such a value on the manure they produce as it possesses in virtue of its ability to grow *corn*, on the growth of which Mr. Coode considers us to be wasting our strength.]

Home Correspondence.

Box Feeding.—

"Opinionum commenta Dies dolet; Naturæ judicia confirmat."
Cic de Nat. Deo.

In replying to the many excellent gentlemen who have troubled themselves to notice my oftentimes too hastily written communications to the *Agricultural Gazette*, I resume the above motto, which I adopted at the commencement of this important discussion on the "mode of arranging and constructing a farmstead" for the feeding of cattle, in order to show that the guide whom I endeavour to follow is the infallible one which alone has the power to conduct me to the truth.

"Hanc Deus, et melior litem natura diremit."

To the classical scholar I will also beg to recommend a passage in "Plinii Historia Naturalis," lib. xxxi., cap. 7. Shall I also ask the favour of those gentlemen who condescend to notice my communications on this interesting and important inquiry to reperuse some of my earliest letters on it; but particularly those of Dec. 4, 1847, and Feb. 26, 1848. I make this latter request in order that we may clearly understand each other; but particularly that I myself may be understood by the gentlemen who believe that I am in error. I hope, also, that these requests will not be considered unreasonable, when it is remembered that I stand almost alone on one side, and that my opponents are many and powerful on the other; the odds being so fearful against me, it is requisite that I should, as it were, choose my own ground; but I ask for no favour; only let me be understood. With these preliminary remarks I now—but I must on the present occasion do so very hastily, as I am much pressed for time—turn to the articles on box-feeding which appeared in the *Agricultural Gazette* of Saturday, Jan. 20. And first on this list is the article from my friend, Mr. J. C. Morton. The first observation I make here is on the word "doctrines;" this being in the plural number leads me to suppose that box-feeding alone is not the only subject upon which we are at issue. The next observation refers to what I have stated above, and to what I am always drawing the attention of my opponents, that is, to allow me to think for myself, and for them to reply to what I really state, and not to what they state for me. Mr. Morton writes in answer to me alone that "it is because we (*i. e.*, we at Whitfield) can make more beef upon it, at less expense, that we substituted Mr. Warnes' linseed compound for the oilcake formerly used." Now, what have I to do with oilcake formerly used? I have never written nor spoken one single sentence in favour of oilcake. At present no one knows my opinion about oilcake, because I do not know it myself, nor shall I attempt to give an opinion on it until, by analytical examinations, I have made myself acquainted with its merits. I have undertaken to demonstrate a problem something like this; "let it be shown, that what is called box-feeding of cattle is the placing of them in an unnatural position, is not the cheapest mode of making them fat, nor is it the best nor the cheapest method of making pabula for plants." This has all along been what I have undertaken to prove; but what has the oilcake formerly used at Whitfield to do with this problem? Nothing; in fact, I was not aware until now that oilcake was used there. The next sentence I comment upon is this, "Cattle fed in boxes need not be let down into deep dungeon graves." Now, 12 months since, a gentleman,* whose name and address I give you, accompanied me to visit a kind friend, who was, and I believe now is, a box-feeder. Last week I saw the same gentleman, and, when referring to my answer to the Rev. Sir G. Robinson, he said that I exactly described what he himself witnessed; and, to use his own language, he added, the beasts, as he looked down upon them from above, put him in mind of the appearance of the wheel-horses of a stage-coach as he looked down upon them from the coach-box. I appeal to the same gentleman, also, or I should wish Mr. Morton to do so, whether I did not, as strenuously as I could, point out to the hospitable proprietor of that establishment the impropriety of keeping cattle in such places, and particularly the cold, cadaverous feeling of the place, and its dark and gloomy appearance. Let me also refer Mr. Morton to a gentleman well known to him,† who likewise accompanied me on another occasion to where the box-feeding was practised; and I feel confident, also, that that gentleman, and he is a truly scientific one, will confirm all that I have written on the dirty appearance of the box-fed cattle. For obvious reasons, of course, I do not publish the names of other friends without their consent, and they reside too many miles from me to enable me to obtain them in time for this letter to go to the post and be published this week. A few words, also, let me add on the last sentence in my friend Mr. Morton's communication. I dare not set myself forward for a linguist; but I am prepared to prove, that in reference to the subject in dispute between us, the terms "biting that slippery pudding in those dark and dismal dungeons" are far from being ludicrously untrue. I am prepared, as I have stated above, to prove that the dungeons were dark and dismal, and that the hodge-podge I referred to was a slippery kind of pudding, requiring no masticating whatever, and in my opinion it received none I believe, however, the receipt for the making of the compound varies *ad libitum*, or *re nata*, as the doctors write—Mr. Compton's being certainly the most reasonable I have yet seen; but, however made, the proper term for it, I am convinced, is hodge-podge; but still, to adopt Mr. Morton's language, not to dispute about words, I will henceforth adopt any other more appropriate term, if one can be pointed out to me. I have already written much more than I intended on the present occasion; but I must not forget to thank, and most sincerely, all the gentlemen who have lately so handsomely noticed my very humble and imperfect communications on this all-important subject. Although I do not agree with them in box-feeding, I appreciate their motives, and particularly the spirit in which they have replied to my letters. All that I request of them is to confine themselves to what I write, and to give me a little credit, and not conclude that I have placed myself in a position which I am not prepared to defend. This observation particularly applies to one passage, but to that only, in the excellent letter of Mr. Compton, who, like Mr. Morton, concludes that because I condemn one thing, or the hodge-podge, I must recommend oilcake; but, as I have shown this is a mistake, it remains to be exhibited what my thoughts may be on this subject, but at present they are not made known. But should I ever travel within a convenient distance of Water-Newtons, I will certainly pay Mr. Compton a visit, and from the style of his letter I am sure I should receive a hearty welcome. I wished, also, last week to have expressed the same to the Rev. Sir Geo. Robinson, but the length of my letter precluded my doing so; but I now show that I appreciated his kindness also in inviting me to witness his comfortable box, however much I dislike his "boxes," and should like to pay him a visit. I wish, also, I could address "Hantoniensis" in his real name, as I consider that such articles as his are too creditable, and exhibit too excellent thoughts, to appear under a fictitious signature. The same remarks also apply to another gentleman who a few weeks since, if I remember correctly, wrote under the initials "M. Y.," and indeed to several others. In conclusion, I state that it is my intention in my next and perhaps some subsequent letters, more particularly to show the grounds of my objections to box-feeding, and until these shall be made known, of course candid minds will not condemn me. But I again ask those gentlemen who are interested in this matter, in the interim, to turn to my former letters, and especially to those of Dec. 4, 1847, and Feb. 26, 1848. *Geo. Wilkins.*

The Duke of Buccleuch and Farm Cottages.—We will first inform your readers, that in Scotland all farms have cottages for their farm-servants; these cottages are often placed in whole rows or streets, and have the appearance of a village. The hinds or ploughmen occupy a part of these, those that occupy the rest are termed cotters, and these last pay a rent; the former are found these dwellings, but in lieu of rent, the bondager gives his or her labour during the harvest month. Every hind keeps a bondager or female-servant, who is either hired by them or she is a member of his family; these bondagers hoe Turnips, weed the land, help carry in the corn when threshed, stone the land, &c. They form a most useful auxiliary troop on a farm; their wages are 8*d* a-day in winter, and 10*d*. in summer. It is reckoned three of these women will single an acre of Turnips a-day, the cost being 2*s*. 6*d*. The subject of cottages has led me to deviate from speaking of them to give an account of their occupants and their employment, which might be very useful if practised in England. The rural population, *i. e.*, the female portion in our villages and commons, know not how to handle a hoe or perform many farm operations by which they might earn much. In South Hants they can top and tail a Turnip, gather stones off Grass-land, and take a week to do 2 or 3 acres, make hay, &c.; but at harvest time prefer gleaning to taking any share in gathering in the harvest; and what is singular, they put on their best shoes and a white apron and gloves, &c., and when two or three get together in the same fields, are generally found in a cluster, talking over the news of the next parish. To return to the cottages, the Duke complains of their bad condition and the want of cleanliness exhibited by the occupants. He moreover says, as they are handed over to the tenant, together with the farms, the proprietor has no more control over them than over the stock which occupied the stalls of the farm offices. Surely when a tack or lease is granted a tenant, he ought to be bound to keep these cottages in repair; and if the cotters do not keep the inside clean they ought to be at once ejected. To say the buildings are ruinous or that their construction tends to a want of cleanliness, this unquestionably belongs to the proprietor. Lord Roseberry very properly said the only effectual remedy for these evils was to construct a better description of dwellings. We have often examined many of these cottages, and one room

* Absam Constable, Esq., East Bergholt, Stratford St. Mary, Suffolk.

† S. Newington, Esq., M.D., Knole House, Frant, near Tonbridge Wells, Kent.

sufficient for kitchen, sitting-room, and bed-room for four or five individuals; sometimes a dark back cellar serves as a sleeping apartment, if the cottage is crowded, but there is no room above the floor for the removal or quiet of a sick member of the family. However a change is taking place, and the Highland Society of Scotland are exerting all their influence towards the removal of these ill-constructed dwellings of the labourer. At Dalmeny, within a few miles of Edinburgh, a better class of cottages have been erected, tending to improve the health and habits of the rural population. We only hope the Duke, the best and kindest of landlords, will sweep away some if not all these obnoxious dwellings from amidst his large landed possessions, and replace them by such as Lord Roseberry sees around him. The Scotch labourer takes the first rank in the island, let him also have a comfortable dwelling. *X. Y. Z., Hants.*

Liquid Manure Pits.—Profit is doubtless a great attraction, and perhaps there is no more plentiful source of profit open to agriculturists than the more systematic use of liquid manure. But the prospect of profit is inoperative on the majority of men, while trouble and expense are presented in the preliminaries in this pursuit. These do in fact, even when the prospect is most certain, diminish the reward of enterprise, and in times like the present, of doubtful prospect, to expect from farmers a spirit of vigorous enterprise in an untried field would be the height of folly. We are entitled to hope at present for a trial of novel principles only when that trial is both easy and inexpensive. It is therefore matter of regret to find increasing repetitions of such statements as that of "M. Y.," at p. 12. He has constructed a tank for 30,000 gallons, which is filled in the course of a winter. He buys straw to soak up his urine in his cattle boxes. He strews his byres every day with sulphate of lime, to keep them sweet. Here is a large and expensive construction. His liquid is kept, not certainly improving, unprofitably, and indeed with inevitable loss. Sweetness in his byres is attained by another costly, troublesome, and still not effective process, for the accumulation of sulphate of ammonia, together with the other elements of urine and products of decomposition, is very far from a sweet or salubrious result. Contrast all this with a system of which I now have a five years' extensive and profitable experience. A pit of the simplest construction, so it be liquor-tight and only large enough to contain the accumulations of a few days, should receive all the liquid drainage, including a frequent, properly and daily, slushing out of the stables, sheds, and cattle yards with water—the cheapest and most effectual sweetening and sanitary agent of all; but not to receive liquid alone, but all soluble or suspensible manure. If the entire liquid contents of such a pit be applied to the land daily, the solid matters, subjected to so frequent a saturation of corrosive liquid and percolation of atmosphere, rapidly dissolve or crumble into particles suspensible in water. A pump, requisite in all cases, and none the more expensive for being used for an hour every day, and a few score yards of hose, far less costly than a cart and its accompaniments, convey the whole where it is in the safe keeping of the land, and ready to second and multiply the first impulse of growing weather. No water meadow, no other mode of irrigation, brings so early or so large a return in Grass. But every other crop is equally benefited by such a process, which may be so modified as to be bestowed as often as needful to any growing crop. I have known produce trebled and quadrupled, not occasionally but constantly, by this method, which is nevertheless incomparably less costly than the ordinary modes of manuring. This cannot all be explained without space; but I shall be glad to resume the subject if you will allow me, at least as regards the comparison of value of recent manure as against mild, and of liquid manure as against solid. *Irrigator.* [Our experience is entirely opposed to the profit of using the liquid manure cart. Box-feeding, and the use of litter to suck up the liquid, saves the immense cost of labour attendant on the direct distribution of the liquid.]

Education.—The prevailing idea of the present day is the education of the young; which I most sincerely and earnestly advocate. But what is to be done with the millions of adults? do they need no instruction, no sympathy? are they to be left to indulge in drunkenness, and every vice, open to the temptation of the Devil, and no effort made for their deliverance? No wonder "B. B." (p. 817, 1848), has to complain of the pilfering habits of his labourers, whom he has often been obliged to discharge on that account, and being able to trust few among them where confidence is required. First purify the fountain, ["The child is father to the man."] and the streams will be pure: begin with the parents; let some effort be made to lift them up to the standing of Christian men and women, for in most places they are utterly ignorant. *W. U.*

Education.—I know, from experience, that one of the most difficult things an improving agriculturist has to contend with is the obstinacy of ignorant labourers. If a man of that description is set to plough, and you tell him it must be ploughed a certain depth, if he has been in the habit of doing it illess, he will think you know nothing about it; and as soon as your back is turned he will cheat you, and such will be the case with all you set him to do. All the time which may be bestowed in trying to teach such men is thrown away; their mind is fixed, and ignorance makes them obstinate. It is only by teaching man while he is young, while the mind is flexible, he can be taught to think, and he will not forget as he grows older. By these and similar means, labourers of a superior class will grow up, who will have been taught habits of industry, who will not, because they have a greater amount of knowledge, be above their station, but they will know their duty the better for possessing that knowledge; and by attending to their duty repay those tenfold who may have been instrumental in causing their improvement. *Pedagogue, Peckham Rye.*

Reviews.

Annual Supplement to the Tithe Commutation Tables, &c., &c., for 1849. By C. M. Willich, Secretary and Actuary to the University Life Assurance Society. Longmans.

We have been favoured by Mr. Willich with a proof sheet of this tract, to enable us to make the following extract, for the information of an inquirer, regarding the average prices of Wheat, Oats, and Barley, during the past 8 years.

Years.	Annual Average Prices per Imperial Quarter.		
	Wheat.	Barley.	Oats.
	s. d.	s. d.	s. d.
1841	64 4	32 10	22 5
1842	57 3	27 6	19 3
1843	50 1	29 6	18 4
1844	51 3	33 8	20 7
1845	50 10	31 8	22 6
1846	54 8	32 8	23 8
1847	69 9	44 2	28 8
1848	50 6	31 6	20 6

Our readers interested in the subject of annual prices, and their influence on rents, rent-charges, &c., will find the information contained in this tract indispensable.

Calendar of Operations.

JANUARY.

East Lothian Farm, *Jan.* 27.—We have been employed during the week ploughing lea and carting off Swede Turnips, likewise making up drills for Potatoes and carting manure, spreading the same, and planting early Kidney, and the sort named Forty-folds, and a few of the Irish Cups. We have part of a field made up in drills intended for Beans, and will sow next week. *M.*

Lammermuir Sheep Farm, *Jan.* 22.—The farm consists of 4763 imperial acres, at an elevation of 700 to 1200 feet, held under a 19 years' lease. Of this we are prohibited from having more than 220 acres under the plough. The sheep stock amounts to 2000 ewes and 600 hogs, composed of 800 Cheviot and 1200 black-faced ewes with the hogs. Most of the black-faced are crossed with Leicester rams, the rest, with the Cheviot ewes, are kept pure. There being no wedders, the whole produce, except the live lambs required to keep up the stock, are sold off. The Cheviot ewes are drafted at four years old, while half of the black-faced are retained until they are five. About 20 short-horn and Ayrshire cattle are also kept, being grazed in the enclosures during summer, and fed on straw and meadow hay during winter, except the yearlings, which get a small allowance of Turnips. The steer calves are sold when about 6 months old, the heifers being kept and disposed of as cows, when two or three years old, to farm servants in the lowlands. As they are very apt to damage the sheep drains, the cattle are not permitted to graze out of the enclosures on the sheep walk. Five horses are kept for working the arable land, about 120 acres of which is under a 4 years' rotation, the rest lying in Grass. Two men and two lads, with the occasional services of three women, manage the work; in summer three or four more boys or girls being required. One man works almost constantly at the sheep drains. Five shepherds attend to the sheep. Wages will be given on a future occasion. Were it not for the Turnips and hay, which are required for the stock, tillage does not pay at this elevation. We are sorry to say that the late intense frost has destroyed three-fourths of our Turnips (Green-top Yellow), which are still in the ground. They ought to have been pitted or ploughed in two months ago, but, as the weather was fresh, and they appeared to be growing, we delayed and have lost them. This will be severely felt in spring, when they are much needed for the ewes. We had about 150 cart-loads stored, which we expect are safe, and, when the weather permits, we purpose picking out those in the field which are still sound, and storing them. As the rest are still of some use, we intend to put about 300 sheep on them, being the leanest of different kinds and ages. The stock continues very healthy; indeed, we never had so few deaths at this season, and are still in fair condition, though the recent black frosts have killed the ground very much. We expect our first calves in a few days, and places have been prepared for their reception. During frost we were employed carting manure on lea for Turnips (we plough it in now to save time when the Turnips are sown), also spreading lime compost after Turnips and Potatoes for Oats. We are now ploughing this in, having finished the lea, as far as we can get at present, for drains, which are put in every 30 feet, 3 feet deep, and filled 16 inches with broken stones; cost of cutting, 1½*d.* per yard. Similar work will employ us for some time. *A Lammermuir Farmer.*

Notices to Correspondents.

Asphalte: *J C M.* We do not know what are the details of the process for making an asphalte floor; but perhaps this notice may procure the information from some one else.

Bones: *J W N.* They should be crushed. The acid may be purchased at any chemical works or of any wholesale druggist. If the bones are not crushed they will take longer to break down under the acid; and you may fail in getting them to answer your purpose.

Buckwheat: *A Sub.* Can any of our correspondents say if Buckwheat is generally grown in any part of England as a green crop to be eaten by sheep? and if so, is it considered to be fattening? or is it diuretic, or of too purgative a nature for those animals? [Sow a bushel of seed per acre in mid-May, on poor sandy soil, in rows 12 inches apart. You may reap 40 bushels in August.]

Butter: *E C.* It may be satisfactory to the readers of the *Gardeners' Chronicle* to be informed that "E. C.'s" question concerning the mysterious non-appearance of butter, mentioned in last number, has been solved, by its being supposed that either the dairymaid or her mistress has had her name put into the "Fynnon Ellan," *Anglice*—Curing Well, consequently that the milk was bewitched. The following recipe has been recommended: But a red-hot poker (if crooked so much the better) into the churn, turning it round three times, at the last turn the witch will feel it, and take her departure. "E. C" has had some difficulty in persuading the dairymaid that this infliction has not proceeded from her having refused to give milk at the door to every one who asked for it, a custom never infringed in Wales without condign punishment, through the intervention of the Cursing Well or witches. At the same time, "E. C." will feel obliged to any correspondent for a more rational cure.

Dibbling Machine: *Salsola.* Apply to S. Newington, M.D., Knole Park, Frant, near Tonbridge Wells, Kent.

Ejected Tenants: *Q R S.* The tenant can claim the value of seed and of growing crops; unless he entered under the very same circumstances of which he now complains.

Flags: *A Regular Sub.* You must drain the land; or dig them up. The land will send them up if it be wet and their roots be there. There was some information about paling in a late Number.

Guano: *Agrostis.* At least 10 tons of earth, with one of guano, or a much larger quantity than it is convenient to sow. You had much better sow the guano by itself, or mixed with just enough soil to enable its being sown regularly, and the seed by itself, not with the guano.—Superphosphate of lime, as purchased of the manufacturer, should be most of it soluble in water.

Italian Rye-grass: *Practice.* We have sown in March and mown in June.

Mangold Wurzel: *A Subscriber.* Cultivate just as for Turnips. Sow 7 lbs. of seed (Orange Globe) per acre, dibbling it at intervals of 14 inches on the tops of the drills, which should be at least 2 feet apart.

Measurement of Cattle: *Amateur.* A useful set of papers appeared in "The Plough," a monthly periodical; Longman. Multiply the square of the girth, where least, by 5 times the length from the shoulder to end of body, and divide by 21: the quotient is the weight of carcase in imperial stones.

Mountain Flax: *J W L W.* Linum catharticum we suppose; it is indicative of dry but poor soil. Lime or anything which by fertilising the land would encourage the growth of more useful plants, would no doubt be beneficial.

Oilcake to Colts: *A Subscriber.* The results of your practice are surely the best confirmation of its propriety. We give our horses Linseed and chaff at night during winter with good effect.

Swelling in Sheep: *D M.* It was quite right to lance the abscess, which might have originated from an injury, or from some internal cause. There is no other objection to a poultice than the difficulty of applying it. The animal will most probably get well without it; if not, warm fomentations will be desirable. *W. C. S.*

Threshing Machine: *J C E* says: "I have long had proof of your willingness to assist all and everything connected with agricultural improvement. There are but few things of more importance used on a tillage farm than a well arranged threshing machine. I have lately put up a new one, worked by six horses; the horse power is a good one; wheel overhead 12 feet diameter, machine on a floor in the barn, same height as the wheel; but from some cause we have too many small wheels to drive the machine, rake, fan, and rollers, so that we oppress the horses too much if we thresh 120 bushels of Wheat in one day; this will not do, and I am advised by a friend to substitute a peg drum for the beater drum; it is 4 feet wide, beaters 2½ inches deep. Will you or any of your correspondents well versed in the machinery of a peg drum threshing machine, through the medium of your valuable paper, give me an opinion as to the true merits of a peg drum machine. I suppose it will break the straw more than the beaters, and thresh more with the same power, as a matter of course it must work easier without than the beater drum does where rollers are employed. Is it possible to get the Wheat straw sufficiently straight from it to make good thatch, is a most important point for me to consider."

Waterwheels: *Buffer.* Your data are insufficient. You should say not only what depth and width and fall of water you have, but also the rapidity of the stream. And to get its power you must calculate with what weight your water would load the buckets of a wheel of the size possible, going at a given rate.

Wheat: *Salsola.* Where is the large-eared Wheat of Bessarabia, Russia, to be had? You had better apply to Messrs. Lawson, Edinburgh.

Errata: *Lusor.* The produce from nitrate of soda p. 43, col. *a*, should have been 29¾ bushels. The apparent inconsistency in the amount of forest lands in the same page may be reconciled by supposing that land "appropriated" to timber and land actually "growing timber" are two different things.

Markets.

COVENT GARDEN, Feb. 3.

The market continues to be well supplied with Vegetables and most kinds of Fruit. Pine-apples are sufficient for the demand. Hothouse Grapes are scarce; but foreign ones are tolerably well supplied. Pears consist of Beurré Rance, Easter Beurré, Ne Plus Meuris, and Old Colmar. Apples have not altered since last week. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, Carrots and Turnips are abundant and good; Cauliflowers and Broccoli sufficient for the demand. Asparagus, French Beans, Rhubarb, and Seakale are plentiful. France, Belgium, and Holland still contribute to the stock of Potatoes. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Christmas Roses, Camellias, Gardenias, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 5s to 7s	Almonds, per peck, 6s
Grapes, hothouse, p. lb., 8s	— sweet, per lb., 2s to 3s
— foreign, p. lb., 9d to 2s	Walnuts, p. 100, 1s 6d to 2s
Apples, dessert, p. bsh., 4s to 7s	— p. bush., 16s to 24s
— kitchen, p. bsh., 3s to 5s	Chestnuts, p. peck, 4s to 7s
Pears, per doz., 2s to 6s	Nuts, Bar., p. bush., 20s to 22s
— p. half sieve, 6s to 10s	— Filb., p. 100 lbs., 90s to 100s
Oranges, per doz., 1s to 2s	— Cob, p. 100 lbs., 90s to 130s
Lemons, per doz., 1s to 2s	— Brazil, p. bsh., 12s to 16s
— per 100, 10s to 18s	

VEGETABLES.

Cabbages, p. doz., 3d to 1s	Radishes, p. doz. bunds., 1s to 1s 6d
— red, p. doz., 2s to 6s	— Turnip, do., 9d to 1s 6d
Savoys, per doz., 3d to 1s	Onions, p. bunch, 2d to 4d
Greens, p. doz. bunches, 1s 6d to 2s 6d	— p. bush, 1s 6d to 2s 6d
Cauliflowers, p. doz., 2s to 6s	— Spanish, p. doz., 1s 6d to 4s
Broccoli, white, per bun., 1s 6d to 3s	— pickling, p. hf. sieve, 1s 6d to 3s
— brown, p. bun., 9d to 2s	Shallots, per lb., 4d to 8d
Sorrel, p. hf. sieve, 1s to 1s 6d	Garlic, per lb., 4d to 8d
Potatoes, per ton, 60s to 180s	Artichokes, Jerusalem, p. half sieve, 1s to 1s 6d
— per cwt., 5s to 9s	Lettuce, Cab., p. sc., 4d to 6d
— per bush., 2s 6d to 5s	— Cos, do., 9d to 1s
Turnips, p. doz. bun., 1s to 2s	Endive, per score, 1s to 2s 6d
Red Beet, per doz., 6d to 1s	Mushrooms, p. pottle, 6d to 1s
Horse Radish, p. bdl., 1s to 6s	Small Salads, p. pun., 2d to 3d
Asparagus, p. 100, 2s to 7s	Fennel, per bunch, 2d to 3d
Seakale, p. punnet, 9d to 2s	Savory, per bunch, 2d to 3d.
Rhubarb, p. bundle, 6d to 1s 6d	Thyme, per bunch, 2d to 3d
French Beans, per 100, 2s 6d	Watercress, p. doz. bun., 6d to 9d
Cucumbers, each, 2s to 4s	Parsley, p. hf. sieve, 1s 6d to 2s
Leeks, per doz., 8d to 1s	— Roots, p. bdle., 1s to 1s 6d
Celery, p. bundle, 6d to 1s 3d	Marjoram, per bunch, 6d to 9d
Carrots, p. doz. bun., 3s to 5s	Mint, green, per bunch, 6d to 9d
Spinach p. sieve, 1s 6d to 2s	

POTATOES.—Southwark, Waterside, Jan. 29.

The Committee report that the continued adverse winds have left our market so barely supplied with every description of Potatoes, that we have but few sorts to quote prices of this week. The following are this day's quotations:—York Regents, 100s. to 150s.; Newcastle do., 90s. to 110s.; French Whites, 90s. to 110s.; Dutch do., 50s. to 80s.; Belgian do., 80s. to 100s.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Feb. 1.

Prime Meadow Hay	68s to 78s		Clover	60s to 95s	
Inferior ditto... ...	50	63	New Clover	—	—
Rowen	40	60	Straw	24	30
New Hay	—	—			

Trade heavy. J. COOPER.

CUMBERLAND MARKET, Feb. 1.

Prime Meadow Hay	70s to 75s		Inferior	70s to 84s	
Inferior ditto... ...	50	65	New Clover	—	—
New Hay	—	—	Straw	28	32
Old Clover	90	95			

JOSHUA BAKER.

HOPS, FRIDAY, Feb. 2.

Messrs. PATTENDEN and SMITH report that the trade is firm, and a good demand for all descriptions of Hops, both for consumption and speculation.

Mid. and East Kents ...	p. cwt.	50s to 130s	Farnhams ..p. cwt.	80s	— 130s
Weald of Kents ...	40	— 70	Yearling Kents ...	40	— 56
Sussex	35	— 65	Yearling Sussex ...	40	— 56
			Old Hops	20	— 35

SMITHFIELD, MONDAY, Jan. 29.

The number of Beasts is rather larger than on Monday last, but the morning being cool, and the dead markets a little clearer, trade is active, at an advance of about 2d per 8 lbs. on the choicest qualities. The supply of Sheep is again small, and in consequence they are more readily disposed of, at fully 2d. per 8 lbs. advance. Good Calves are still scarce, and maintain late quotations, but trade is hardly so cheerful for middling kinds. There is a steady demand for neat Porkers at late prices. From Holland and Germany we have 316 Beasts, 630 Sheep, and 89 Calves; from Norfolk and Suffolk, 160 Beasts; from Leicester and Northampton 700; and from Scotland 400.

Per st. of 8 lbs.—	s	d	s	d	Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ...	3	10	to 4	2	Best Long-wools .	4	2	to 4	6
Best Short-horns	3	8	— 4	0	Ditto Shorn ...		.....		
2d quality Beasts	2	10	— 3	4	Ewes & 2d quality	3	4	— 4	0
Best Downs and Half-breds ...	4	6	— 4	10	Ditto Shorn ...		.....		
Ditto Shorn ...		.....			Lambs		.....		
					Calves	4	0	— 5	4
					Pigs	4	0	— 5	4

Beasts, 3344; Sheep and Lambs, 17,280; Calves, 150; Pigs, 140.

FRIDAY Feb. 2.

The number of Beasts is considerably larger than on Friday last, and the demand is comparatively small, owing to the unfavourable change in the weather; consequently the advance realised on Monday is not maintained to-day. Our top quotations are extreme prices for the best qualities, and several of inferior description remain unsold. The number of Sheep is larger, and lower prices are taken to make a clearance; choicest Downs maintain Monday's prices, but other kinds are about 2d. per 8 lbs. lower. Calves are more plentiful, and trade is dull, at a reduction of 4d per 8 lbs. Pigs are rather lower, owing to the change of weather. From Holland and Germany we have 20 Beasts, 60 Sheep, and 56 Calves; from Spain, 49 Beasts; from France, 26 Calves; from Scotland, 820 Beasts; and 140 Milch Cows.

Best Scots, Herefords, &c. ...	3	10	to 4	0	Best Long-wools .	4	0	to 4	4
Best Short-horns	3	6	— 3	10	Ditto Shorn ...		.....		
2d quality Beasts	2	8	— 3	4	Ewes & 2d quality	3	4	— 3	10
Best Downs and Half-breds ...	4	6	— 4	10	Ditto Shorn ...		.....		
Ditto Shorn ...		.....			Lambs		.....		
					Calves	3	8	— 5	0
					Pigs	3	8	— 5	0

Beasts, 886; Sheep and Lambs, 2850; Calves, 196; Pigs, 160.

MARK LANE, FRIDAY, Feb. 2.

THE weekly reports from the principal provincial markets, with little exception, write all grain as being somewhat improved in value. At Boston, Wheat brought 1s. to 2s. more money, with very brisk sale, and greatly improved feeling. At Liverpool, although the weather was called *wild* and rainy, a much firmer feeling was manifest. At Wakefield an opinion prevails that the worst is past. At Birmingham and Gloucester holders of grain are firm, and are obtaining more money. Here, to-day, the trade is altogether better, and although much higher prices may not be obtained, there is no reason to contemplate any decline. The expectations of the desponding party are not verified; the reverse is the result of this day's transactions. All grain is decidedly more valuable. Timid ones now say, "What will be its value at Midsummer?" The supply of English Wheat is fair, selling freely at about 1s. advance.—Barley is held firmly. Oats the same.—Beans, 1s. to 2s. dearer.—Peas, scarce and inquired for, making more money.—Rye, little noticed; foreign brings 26s. to 27s.—Malt moves slowly at former value, consumption being greatly reduced.—Seeds are generally a little better.—Linseed cake the same, say 11*l.* 10s. per 1000 for English, and 9*l.* 10s. per ton for foreign.—Flour sells freely at about 1s. per sack advance, though the first price is still called 44s. only; Norfolk on board, 34s. to 38s. 6d.

LIVERPOOL, FRIDAY, Feb. 2.—The expiration of the Corn Bill releases our bonded stock at the 1s. per qr. duty, of Wheat about 200,000 qrs., and of Flour about 480,000 barrels. To meet this we report an increase of demand and a firm, healthy, tone in the trade. At this day's market there was a good business in Wheat, at the full prices of Tuesday. Flour was dearer, but not in so much request. There was a better sale for Oats at Tuesday's rates, and Oatmeal was 6d. per load dearer.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Dec. 23....	47*s* 6*d*	31*s* 4*d*	18*s* 4*d*	29*s* 1*d*	33*s* 7*d*	38*s* 1*d*
— 30	46 10	31 8	18 0	28 6	33 11	35 9
Jan. 6	45 10	30 8	17 0	26 4	32 4	37 9
— 13	45 4	29 11	17 8	27 9	32 2	35 0
— 20	45 4	29 1	17 1	28 4	31 1	34 9
— 27....	45 3	28 10	17 0	28 11	30 3	32 8
Aggreg. Aver.	46 0	30 2	17 6	28 2	32 3	35 8
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	DEC. 23.	DEC. 30.	JAN. 6.	JAN. 13.	JAN. 20.	JAN. 27.
47*s* 6*d*—		...	...	..	...	...
46 10	...		...	...	...	...
45 10	..	...		...	...	...
45 4	...	...	...		...	...
45 4	...	...	...	...		...
45 3	...	...	...	...	...	

PRICES CURRENT.	London.		Liverpool.		Wakefield.		Boston.		Birmingham.	
	Jan. 26	Jan. 29	Jan. 23.	Jan. 30.	Jan. 19	Jan. 26	Jan. 24	Jan. 31	Jan. 25.	Feb. 1.
	qr.	qr.	70 lbs.	70 lbs.	qr.	qr.	qr.	qr.	62 lbs.	62 lbs.
Wheat—	*s.* *s.*	*s.* *s.*	*s.* *d.* *s.* *d.*	*s.* *d.* *s.* *d.*	*s.* *s.*	*s.* *s.*	*s.* *s.*	*s.* *s.*	*s.* *d.* *s.* *d.*	*s.* *d.* *s.* *d.*
New, red ...	42 to44	42 to47	6 6 7 0	6 8 7 2	45 to49	45 to49	38 to45	40 to46	5 8 6 6	5 8 6 6
„ white ...	52—56	46—53	6 8 7 6	6 10 7 8	46—52	46—52	40—48	43—50	6 2 6 8	6 2 6 8
Old, red ...	50—53	—	7 2 7 3	7 3 7 4	42—48	42—48	43—46	44—46	6 4 6 8	6 4 6 8
„ white ...	52—56	50—56	7 6 7 9	7 6 7 10	46—50	46—50	46—50	46—50	5 10 6 9	5 10 6 9
Foreign... ...	45—58	42—58	4 6 7 9	7 2 7 10	35—52	35—52	—	—	5 8 7 2	5 8 7 2
			480lbs.	480lbs.						
Rye—New ...	26—28	26—28	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley—										
Grinding ...	21—25	21—25	—	26s—30s	21—24	21—24	26—28	26—28	23—28	23—28
Malting... ...	26—31	26—31	31s—33s	31 —33	26—30	26—31	30—32	30—32	30—33	30—33
Foreign... ...	—	—	—	28 —32	23—27	23—27	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—40	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	20—22	20—22	2s 10d 3s 2d	2s 6d 3s 0d	—	—	20—25	20—25	18—30	18—30
Black...	16—19	—	2 3 2 8	2 4 2 8	—	—	17—21	17—21	18—21	18—21
Foreign	16—19	18—25	2 4 2 6	2 5 2 6	—	—	11—18	11—18	—	19—25
			qr.	qr.						
Peas—Boilers	28—31	27—30	38s—	38s—	34—38	34—38	—	—	36—50	36—50
Grinding...	—	20—33	32 —33s	32 —33s	33—35	33—35	—	—	12—14	12—14
Foreign ...	—	26—30	35 —37	35 —37	—	—	—	—	—	—
Beans—										
New, small ...	22—27	22—29	33 —35	33 —35	31—33	31—33	23—32	23—32	11—14	11—14
Old	30—40	36—39	31 —36	34 —36	36—37	36—37	36—38	36—38	15—17	15—17
Foreign ...	27—30	—	27 —28	26 —34	28—31	28—31	—	—	12—14	12—14
Clover Seed—										
Red, per cwt.	35—44	38—44	—	—	—	—	—	—	—	—
White „	32—44	—	—	—	—	—	—	—	—	—
Linseed—Feed	37—38	36—40	43 —44	43 —44	32—40	32—40	—	—	—	—
Linseed Cakes										
Foreign ...	—	—	9*l.* 5s	9*l.* 5s	—	—	—	—	—	—
									190lbs.	190lbs.
Indian Corn—	26—30	28—30	28 —31	28 —31	—	—	—	—	15—15 6	15—15 6
Flour ...	—	—	—	—	—	—	—	35—42	—	—
Weekly Averages and Imports.	Aver.	Impts.	Averages.	Imports.	Aver.	Impts.	Aver. Jan. 27	Impts. Jan. 27	Gloucester. Averages.	Imports.
	s. *d.*	qrs.	*s.* *d.*	qrs.	qrs.	qrs.	*s.* *d.*	qrs.	*s.* *d.*	qrs.
WHEAT ...	48 2	10771	—	2173	—	6315	42 11	3541	—	1728
BARLEY ...	29 3	3868	—	774	—	1280	25 6	53	—	511
OATS... ...	18 2	7682	—	6255	—	898	13 1	876	—	506
RYE	30 0	2285	—	8	—	—	—	—	—	—
BEANS ...	37 11	1533	—	6819	—	1196	26 8	303	—	41
PEAS... ...	32 5	1356	—	47	—	160	—	—	—	—
SIGNED {	KINGSFORD and LAY.		SEGAR and TUNNICLIFFE.		SANDARS and DUNNS.		THOMAS WRIGHT.		J. and C. STURGE.	

STEPHENSON AND CO., 61, Grasschurch-street, London, and 17, New Parkstreet, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

SPADE CULTIVATION AND DRAINING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

W. A. LYNDON, Minerva Works, Birmingham, Manufacturer of Patent SPADES, SHOVELS, and DRAINING TOOLS.

To Nurserymen, Gardeners, and Agricultural Labourers, these Spades will be found invaluable, and calculated to lessen the labour of digging very materially; they are warranted to carry a knife edge which will neither break nor turn, wear perfectly bright on the surface, and last as long as three spades or shovels of the ordinary kind, and are now coming generally into use amongst the principal Nurserymen, Market-gardeners, and Agriculturists in the kingdom.

The Draining Tools gained two prizes at the Royal Agricultural Society's Meeting held at Northampton, 1847, since which time they have been awarded prizes and commendations from all the local societies where they have been exhibited.

Spurious imitations of these Tools are being made, called Improved and Cast Steel Spades, Shovels, &c., and labelled similar to the above. None are genuine unless bearing the name in full upon the strap and label.

Spades, Shovels, Draining Tools, Digging, Potato, Manure, and Hay Forks made to any pattern, and adapted for every description of soil.—To be had of all Ironmongers in the kingdom.

LAND PROPRIETORS possessing Waste and Uncultivated Land, under the Enclosure Act or otherwise, and wishing to have the same Drained, Enclosed, Farmed, and Buildings Erected on well organised and economical plans, may do so by Contract or otherwise; also Drain Pipes, Brick-making, and every description of ground and water work performed, or the same superintended in England, Ireland, Scotland, or Wales. For further particulars address WM. HARRIS, Surveyor and Contractor, Almodington, Chichester, Sussex.

FARMERS AND GARDENERS, Liquify all your Manure, and put it on your land and crops day by day, as it is produced; this will increase its value fourfold at the least. COODE'S IRRIGATOR will spread it as gently and equally as rain, without hurt to land or crop, at one-tenth part of the cost of your present processes.—Nuneaton.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of

THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronized and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry; and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

Sales by Auction.

EAST INDIAN ORCHIDS.

MR. J. C. STEVENS begs to announce for Sale by Auction, at his Great Room, 38, King-street, Covent Garden, on TUESDAY, Feb. 13th, at 12 for 1 o'clock, several cases of RARE ORCHIDS, which have just arrived from Java in most excellent condition. They comprise beautiful specimen plants of Saccolabium Blumei, and another fine species of Saccolabium, a few plants of the rare and beautiful Aerides maculosa, Aerides virens, and several other fine Aerides, Vanda tricolor and V. insignis, Grammatophyllum speciosum, Cypripedium Savadicum (a new species), quite distinct from barbatum and purpuratum, Coelogynes, &c.—May be viewed the day before and morning of sale, and Catalogues had.

TO NOBLEMEN, GENTLEMEN, AND NURSERYMEN.

MR. J. C. STEVENS is favoured with instructions from Messrs. LODDIGES to announce for Sale by Auction, on their premises, at Hackney, on TUESDAY, 27th, and WEDNESDAY, 28th February, at 12 for 1 o'clock, about ONE THOUSAND CAMELLIAS of extraordinary fine growth, mostly well set with flower-buds, and consisting of the favourite old, and some good new varieties from 2 to 12 feet high. Also some fine plants of LIMES in fruit, and some of the new hardy Nepal RHODODENDRON ROBUSTUM.—Catalogues are preparing, and may be obtained 10 days prior to the sale, of Messrs. LODDIGES, Hackney, and of Mr. J. C. STEVENS, 38, King-street, Covent-garden, who will forward them to applicants enclosing two postage stamps.

WANDSWORTH COMMON.

To Noblemen, Gentlemen, Nurserymen, Builders, Railway Contractors, and other Companies engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are instructed to Sell by Auction, on the Premises, Wandsworth Common, on TUESDAY, February 13th, 1849, and following day, at 11 o'clock precisely, by order of the Assignees of Mr. R. Neal, a bankrupt (the same not having been cleared pursuant to the former conditions of sale), the whole of the valuable NURSERY STOCK, consisting of a considerable quantity of fine Evergreens, Fruit and Forest Trees, new Ornamental Trees and Deciduous Shrubs, a large and rich assortment of American Plants, Standard and Dwarf Roses, Box edging, &c., several pits, a quantity of Timber, consisting of Elm and Ash Pollards, Fir Poles, &c., a capital stone waggon, a 2-horse iron roller, spring cart, garden pots, manure, &c.—May be viewed prior to the sale. Catalogues may be had (6d. each) of J. B. ROBERTS, Esq., Solicitor, Wandsworth; EDWARD EDWARDS, Esq., Official Assignee, 7, Frederick's-place, Old Jewry; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone.

TO BE DISPOSED OF, a NURSERY, SEED, and FLORIST BUSINESS, in a large Country Town, 40 miles from London, and close to a railway, with 16 years of unexpired Lease, with good range of glass, and doing a good steady business. To any party wishing to engage in the above, this offers an excellent opportunity. The present possessor being desirous of disposing of the same by Lady-day next, if preferred half only of the sum required (from 200l. to 300l.) to be paid on entry, the remainder as may be agreed upon.—For full particulars apply to Mr. W. J. NUTTING, Seedsman, 48, Cheapside, London.

TO BE LET, and entered upon at Michaelmas, 1849, a very excellent FARM, consisting of about 117 acres of Meadow and Pasture, 94 acres of Arable, and 103 acres of Down Land, situate near the City of Bath. The Farm is in a good state of cultivation, and is in not often such a very desirable estate is offered to the public.—Apply to J. H. COTTERELL, Land Agent, Bath.

FLORIST'S BUSINESS TO BE LET.

TO BE LET, with immediate possession, a small Florist's business, situate near the Horticultural Gardens, Turnham Green, consisting of three large Greenhouses and two ranges of Pits 100 feet long, all well filled with plants. Good walled garden, cottage, sheds, &c. Rent, 30l. For particulars, apply to CHARLES STORMONT, Florist, Turnham Green, Middlesex.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE LET, for a term of years, in the centre of a large market town on the Great Western Railway, and in a populous district, FOUR ACRES OF FINE RICH SOIL—Sandy Loam, of great depth, admirably calculated to raise young trees and shrubs. A Dwelling House with suitable buildings adjoin the ground. The whole was recently occupied by a Nurseryman, and there will not be any valuation for an incoming tenant to take.—Apply to JAMES BRADFORD, Esq., Swindon, Wilts.

TO be LET or SOLD.—About 62 STATUTE ACRES of LAND, held for a term of 99 years, if any one of three young and healthy persons shall so long live, situate about 3 miles from the increasingly populous town of Southampton, where there is a good market for any amount of produce, and almost hourly communication with London, Portsmouth, &c. The soil is peculiarly adapted for Market Gardening, comprising extensive well sheltered gardens, with about 1400 feet of glass, Orchard, Water Meadow, and Arable Land. There is a genteel COTTAGE RESIDENCE, containing two sitting-rooms, six bed-rooms, a dressing-room, and all convenient offices; also a barn, stable, extensive piggeries, and every requisite out-building, all conveniently arranged; together with a good Cottage for a labourer. It is a most picturesque spot, surrounded by beautiful and diversified scenery, and excellent roads, having many eligible sites for building, commanding views of the Isle of Wight, the New Forest, and the Southampton Water; and in addition to its contiguity to Southampton, is only about 4 miles distant from the Romsey Station on the Salisbury Railway, and about two miles from the Redbridge Station on the Dorchester Railway.—For particulars, apply to Messrs. BRIDGER and BARNES, Solicitors, Winchester, Hants.

HEAL AND SON'S LIST OF BEDDING, containing a full description of Weights, Sizes, and Prices, by which purchasers are enabled to judge the articles best suited to make a good set of Bedding, sent free by post, on application to their Factory, 196 (opposite the Chapel), Tottenham-court-road, London.

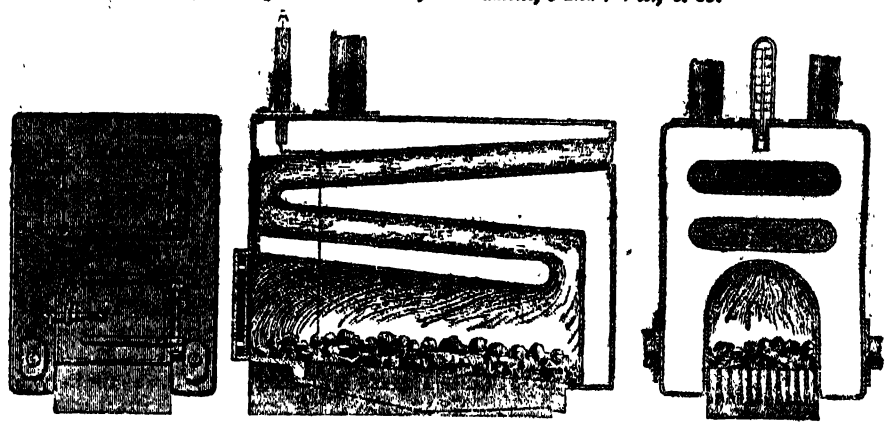
ASTHMA, CONSUMPTION, COUGHS.—Another testimonial just received of the efficacy of Dr. LOCOCK'S PULMONIC WAFERS:—"Man of Ross House, Ross, Jan. 23, 1849. Gentlemen.—A lady a few months ago told us she should never fear a consumptive cough again as long as she could get a box of Dr. Locock's Wafers, although the greater part of her family had died of consumption. Signed, Carey, Cooke, and Roper." Dr. Locock's Wafers give instant relief, and a rapid cure of asthma, coughs, and all disorders of the breath and lungs. To singers and public speakers they are invaluable for clearing and strengthening the voice; they have a most pleasant taste. Price 1s. 1½d., 2s. 9d., and 11s. per box. Agents, DA SILVA and Co., 1, Bridesdane, Fleet-street, London; sold by all medicine vendors.

WILLIAM HILL'S

IMPROVED FLUE BOILER AND FURNACE,

FOR WARMING CHURCHES, CHAPELS, MUSEUMS, MANSIONS, MANUFACTORIES, HORTICULTURAL ERECTIONS, &c.

Registered pursuant to Act of Parliament, 6 and 7 Vic., c. 65.

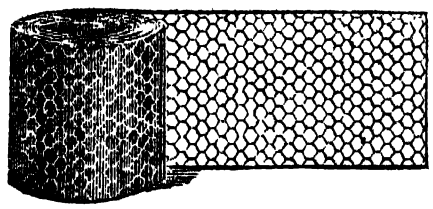


FRONT ELEVATION. LONGITUDINAL SECTION. SECTION.

For Testimonials, &c., see *Gardeners' Chronicle* of November 4.

*** Communications addressed to W. HILL, Horticultural Works, Greenwich, willmeet with prompt attention.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It has the appearance of silver, and maintains its lustre for many years, and is acknowledged to be the cheapest article ever brought into the market. It forms a cheap, light, and durable fence for the protection of Gardens and Shrubberies against the depredations of hares, rabbits, and cats; for Aviaries, Pheasantries, and to prevent poultry from straying, as well as for training creeping plants, it answers admirably.

Large quantities of the Netting always kept in Stock, samples of which can be forwarded (free of expense) to any part of the United Kingdom. Prices as follows:

12 inches wide	3d.	per yard	30 inches wide	7½d.	per yard
18 "	4½d.	" "	36 "	9d.	" "
24 "	6d.	" "	48 "	1s.	" "

Galvanised do. 1d. per foot extra.

Also Fenders, Fireguards, Fly-proof Dish Covers, Meat Safes, Wire Blinds, Garden bordering and arches, Flower Stands, and every description of Wire Work.

THOMAS HENRY FOX, 63, Snow-hill, London.

SMOKY CHIMNEYS CAUSED BY WIND, are guaranteed to be cured by the application of DAY'S NEWLY INVENTED SIMPLEX WIND-GUARDS, which offer the following advantages over the tried invention known as Day's Patent Windguard, viz., Greater Cheapness and Durability, Impossibility of Clogging with Soot, and the Prevention of the Descent of Smoke down adjoining Chimneys. Price, in Galvanized Iron, 25s.; Size for Kitchen Chimneys, 40s. To be seen and tested at Mr. JEAKES', the Sole Proprietor, 51, Great Russell-street, Bloomsbury. Prospectuses forwarded on application. Country Licenses for Manufacturers granted.

EMIGRATION FACILITATED.—Those persons who expect their friends in AUSTRALIA to assist them in their OUTFIT might write to their friends there to pay the money into the hands of S. W. SILVER and Co.'s Agents in Australia, or to their connections in the district, who would be named on application to S. W. SILVER and Co. in London. The agent's acknowledgment would be received by S. W. SILVER and Co. as cash at the exchange of the day, for the outfit. This proposal will be also communicated through the Colonial Journals. Emigrants' fitting-out warehouse at No. 4, Bishopsgate-street (opposite the London Tavern), where colonial information may be obtained, and small parcels received and forwarded to the colonies.

N.B.—Cadets to India, and Cabin Passengers generally to all parts of the globe (with experienced Female Managers in the Department for Ladies), fitted out as heretofore at 66 and 67, Cornhill, by S. W. SILVER and Co., Outfitters, Clothiers for home use, and Contractors; and at St. George's-crescent, Liverpool.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose—1s. An improved Clothes Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes of improved graduated and powerful friction. Velvet Brushes which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s Sole Establishment, 130 a, Oxford-street, one door from Holles-street.

CAUTION.—Beware of the words "From METCALFE'S" adopted by some houses.

GREENHOUSES AND HOTHOUSES MADE BY MACHINERY.—A Lean-to Greenhouse, 12 ft. by 8 ft., glass at both ends, 3 ft. of do. in front, and 1 door, glazed with 16 oz sheet glass, painted 3 times, and delivered to any Wharf or Railroad in London, including a Plan to fix it by, for 15l. 10s.; a do. do., 15 ft. by 10 ft., 21l. 10s.; a do. do., 18 ft. by 12 ft., 28l. 10s.; a do. do., 21 ft. by 12 ft., 32l. 10s. 14 in. Greenhouse Lights, glazed with 16 oz. sheet glass of a large size, and painted 3 times, 11½d.; 2 in. do., 1s., warranted best materials.—J. LEWIS, Machine Hothouse Works, Stamford-hill, Middlesex.

SUBSTITUTE for GARDEN MATS, Tarpauling, &c.—Thick SHEETING, dressed with a composition, admitting light to plants, and excluding frost, 6d. per square yard, or 1s. per yard, 2 yards wide. This is recommended for covering greenhouses, frames, for fumigating cloths, and various garden purposes. It will outlast two mats, give light, keep out more cold, and is nearly the same price. Also tarpauling, 7d. per square yard; 2 yards wide, 1s. 2d.—ROBERT RICHARDSON, 21, Tonbridge-place, New-road, London.

WIRE FENCING, 3d. per square foot, less than 2-inch mesh, painted in various widths from 1 foot wide to 6 feet wide; the 6 feet wide 1s. per yard run, or 6¾d. per yard 1 yard wide. The Wire-work is made by powerful machinery, and is little more than half the price of the cheapest article of the kind in the market. It is worked in oil, and warranted not to rust, or require paint half so often as the ordinary wire-work. Also on Sale, Rabbit-proof Iron Hurdles, 6 feet by 6 feet, 5s. to 6s. 6d. each. The Wire-work is Rabbit proof.—R. RICHARDSON, 21, Tonbridge-place, New-road, near Euston-square, London.

WORSTED GARDEN NETS, 2½d. per yard, four-strand worsted, a protection to wall trees from frost; new twine net, 1½d per yard; old mended fishing nets, ½d. per yard, in a perfect state; three-thread net, to protect the blossom of fruit trees, and the ripe fruit afterwards from wasps and flies, 6d. per square yard, much approved.—R. RICHARDSON, maker of garden nets, fishing nets, and sheep nets by machinery, 21, Tonbridge-place, New-road, London.

ROWLANDS' TOILET ARTICLES.—ROWLANDS' MACASSAR OIL, for the growth, and for preserving and beautifying the human Hair. ROWLANDS' KALYDOR, for improving and beautifying the Skin and Complexion. ROWLANDS' ODONTO, or PEARL DENTIFRICE, for preserving and beautifying the Teeth and Gums. The especial Patronage of Her Majesty the QUEEN, H.R.H. PRINCE ALBERT, the COURT, and ROYAL FAMILY of GREAT BRITAIN, and of every Court of the civilised world, together with numerous Testimonials constantly received of their efficacy, affords the best and surest proof of their merits.

*** BEWARE OF SPURIOUS IMITATIONS. Some are offered under the implied sanction of Royalty and the Government Departments, with similar attempts at deception. The only genuine of each bears the name of "ROWLANDS'" preceding that of the article on the wrapper or label. Their name thus—A. ROWLAND & SONS, is also, in red, on the wrappers of the Macassar Oil and Kalynor, and on the Government Stamp of both the Kalydor and Odonto.—Sold by them at 20, Hatton-garden, London, and by every respectable Chemist and Perfumer throughout the kingdom.

PARR'S LIFE PILLS are acknowledged to be the best Medicine in the world. This Medicine has been before the British public only a few years, and perhaps in the annals of the world was never seen success equal to their progress; the virtues of this Medicine were at once acknowledged wherever tried, and recommendation followed recommendation; hundreds had soon to acknowledge that PARR'S LIFE PILLS had saved them, and were loud in their praise. The startling facts that were continually brought before the public at once removed any prejudice which some may have felt; the continual good which resulted from their use spread their fame far and wide, at this moment there is scarcely a country on the face of the globe which has not heard of their benefits, and have sought for supplies, whatever might be the cost of transmission. The United States, Canada, India, and even China, have had immense quantities shipped to their respective countries, with the same result as in England—universal good.

The sale of PARR'S LIFE PILLS amounts to upwards of 30,000 boxes weekly, more than all other patent medicines put together. This simple fact needs no further comment; it tells plainly that the Pills of Old Parr are the best medicine in the world.

BEWARE OF SPURIOUS IMITATIONS.—None are genuine unless the words "PARR'S LIFE PILLS" are in White Letters on a Red Ground, on the Government stamp, pasted round each box; also, the fac-simile of the signature of the proprietors, "T. ROBERTS and Co., Crane-court, Fleet-street, London," on the Directions.

Sold in boxes at 1s. 1½d., 2s. 9d., and family packets at 11s. each, by all respectable medicine vendors throughout the world. Full directions are given with each box.

FLORISTS TO HER MAJESTY, QUEEN VICTORIA, AND HIS MAJESTY, THE KING OF THE BELGIANS.

SELECT LIST OF CHOICE VEGETABLE AND FLOWER SEEDS,

GROWN AND SOLD BY

WILLIAM E. RENDLE & CO., Plymouth.

ESTABLISHED 1786.

Great attention is paid to the Seed Department of our Business, every sort being carefully proved before sent out. We grow some of the sorts ourselves, and procure the remainder from Seed Growers in whom we can place the fullest confidence for supplying true and genuine Articles. If, however, through any inadvertency, an error should at any time be made, we shall have much pleasure in sending three times the value in other Seed to compensate; and we make a general rule to take back all things that are not thoroughly approved of. And it is particularly desired that any deficiency in quantities, or inattention to orders, be at all times communicated to us. We can give reference to Gentlemen in almost every County in Great Britain and Ireland, who have procured Collections from us; and can produce UNSOLICITED *Testimonials of the highest character, if required.*

COLLECTIONS OF GARDEN SEEDS,

CONTAINING ALL THE CHOICEST SORTS, OFFERED AT THE FOLLOWING PRICES:

	£	s.	d.
No. 1.—Complete Collection of 20 Quarts of Peas, and all other Seeds in proportion, for one year's supply ..	£2	10s.	0d.
No. 2.—Complete Collection in Smaller Quantities	1	10	0
No. 3.—Ditto ditto	1	0	0
No. 4.—Ditto ditto	0	12	6

THE GROWING QUALITIES OF EACH KIND OF SEED IS PROVED BEFORE SENT OUT.

The following will be the Sorts and Quantities furnished in a **No. I. COLLECTION,** *and contains a general assortment of all the best kinds of Vegetables known, which have been selected with scrupulous care and attention.*

PEAS—1 quart Rendle's first Early Green
2 ,, Early Prince Albert
4 ,, Early Warwick
2 ,, Woodford's Marrow
2 ,, Bedman's Imperial
1 ,, Flack's Dwarf Victory
2 ,, Blue Scimitar
4 ,, Blue Prussian
1 ,, Knight's Dwarf Marrow
1 pint Victoria Branching Marrow
1 ,, Bishop's Early Dwarf
BEANS, 4 qrts. Early White Long-pod
4 ,, Green Windsor
2 ,, Johnson's Wonderful
1 pint Scarlet Runners
1 ,, Dwarf French
BEET—½-oz. Rendle's Superb Crimson
½ oz. Whyte's Black Red
½-oz. Silver or Sea Kale
BORECOLE—½-oz. Dwarf Curled
Packet Green Cabbaging
BRUSSELS SPROUTS—½-oz. imported

BROCCOLI—½-oz. Grange's Early Dwarf Cape
½ ,, Early Purple Cape
Packet Adam's Superb White
Packet Legg's Late Dwarf White
,, True Walcheren
,, Chapple's Cream
,, Rendle's Improved Willcove
CABBAGE—half-oz. Shilling's British Queen
qr.-oz. Wheeler's Imperial
qr.-oz. Rendle's Early Admirable
half-oz. Early Cornish
qr.-oz. Large Paignton
half.-oz. Early Hope
qr.-oz. Red Dutch (pickling)
qr.-oz. Atkin's Early Matchless
SAVOY—half oz. Green Curled
Packet Cattell's Green Curled
CARROT—1 oz. Earliest Horn (for frames)
4 oz. Improved Altringham
2 oz. James's Green top
1 oz. White Belgian
CAULIFLOWER—qr.-oz. Large Asiatic

CELERY—Packet Seymour's Superb White
,, Large Manchester Red
,, Dewsbury Walnut-flavoured
CRESS—1 lb. Curled
CUCUMBER—Packet Rendle's Fine Ridge
,, Sion House
,, Fine Early Frame
DELAWARE GREENS—qr.-oz.
ENDIVE—qr. oz. Green Curled
LEEK—2 oz. Fine Large Broad-leaved Scotch
LETTUCE—qr.-oz. Green Coss
qr.-oz. Ady's Large Coss
qr.-oz. Bath Coss
hf. oz. Drumhead Cabbage
qr.-oz. White ,,
qr.-oz. Ice ,,
qr.-oz. Maltese ,,
MUSTARD 1 lb. White
MELON—Packet Duncan's Green Flesh
Packet True Beechwood
ONION—6 oz. White Spanish
4 ,, Red Deptford

ONION—2-oz. James's Long Keeping
1 ,, Silver-skinned
1 ,, Tripoli
PARSLEY ½ oz. Rendle's Treble Garnishing
2 ,, Myatt's Treble Curled
PARSNIP—2 oz. Improved Guernsey
RADISH—4 oz. Wood's Earliest Frame
8 ,, Early Scarlet
4 ,, White and Red Turnip
SPINACH—1 lb. Round
½ lb. Prickly
TOMATOES—qr.-oz.
TURNIPS—4 oz. Rendle's Early 6 weeks Stone
4 ,, Early White Dutch
4 ,, White Stone
4 ,, Yellow Altringham
2 ,, Six Weeks Yellow
VEGETABLE MARROW—qr.-oz.
HERBS—Packet Sweet Basil
,, Sweet Marjoram
,, Summer Savory
,, Thyme

Complete Printed Lists of Nos. II., III., and IV. Collections can be forwarded by post on application.
If there should be any sorts that are not required in the above Collection, increased quantities of those most desired could be sent.

CHOICE VEGETABLES.

The following can be highly recommended as being very choice and valuable varieties, and will be FORWARDED FREE by Post, at **6d. per Packet, or Twenty Packets for 8s.**

BEET—Rendle's Superb Crimson (selected from roots of the richest colour)
Whyte's Black Red
BORECOLE—Green Cabbaging (valuable new variety)
BRUSSELS SPROUTS—True Imported
BROCCOLI—Legg's Late White
Adam's Superb White (a most excellent kind, ready December and January)
Myatt's True Walcheren (saved by Mr Myatt, the celebrated grower of Deptford)

BROCCOLI—Rendle's Improved Willcove (large late White variety—unequalled)
Chapple's Cream
CABBAGE—Rendle's Early Admirable (a most valuable Early Variety)
Warner's Incomparable (a very superior sort)
Shilling's British Queen
Atkin's Early Matchless
Barnes's New Early
Large Sprotboro' (an Immense variety)

CABBAGE—Enfield Market
Early Cornish (a valuable Early variety)
SAVOY—Cattell's Green Curled (superior to the common kind)
CARROT—Improved Altringham
James's True Green Top
CAULIFLOWER—Large Asiatic
CELERY—Seymour's Superb White
Large Manchester Red
Dewsbury, Walnut-flavoured
COUVE TRONCHUDA—(Valuable new Vegetable)

ENDIVE—New Large Batavian Cabbage
LEEK—Large Broad-leaved Scotch
LETTUCE—True Drumhead Cabbage
Ady's Large Coss ,,
Ice Cabbage ,,
London Market ..
ONION—True Spanish or Portugal
PARSLEY—Rendle's Treble Garnishing
Myatt's Extra Fine
PARSNIP—Improved Guernsey
TURNIP—Rendle's Six Weeks Stone
Early Snowball

ARNOTT'S "CHELTENHAM SURPRISE" CUCUMBER, 2s. 6d. per packet.

FLOWER SEEDS.

We have a very superior Stock of all the Newest Kinds, and as some of the Choicest Varieties are grown under our own inspection, we can warrant them to be quite new and correct to name.

SCALE OF PRICES SENT, POSTAGE FREE.

	s.	d.
No. 1—100 Packets Choice Sorts, including all the best Hardy, Half-Hardy, and Greenhouse Annuals, Biennals, and Perennials	18s.	0d.
No. 2—50 Ditto ditto ditto	10	0
No. 3—25 Ditto ditto ditto ..	6	0
No. 4—25 Packets Choice Named Imported German Stocks ..	7	0
No. 5—12 Ditto ditto ditto	4	0
No. 6—25 Packets Choice Named Imported German Asters ...	7	0
No. 7—12 Ditto ditto ditto ..	4	0
No. 8—10 Packets Choice Named Larkspurs	4	0
No. 9—10 Ditto ditto Hollyhocks ..	4	0
No. 10—20 Packets Choice Greenhouse Annuals ..	7	0
No. 11—20 Packets Choice Greenhouse Perennials	10	0
No. 12—20 Packets Choice Hardy Biennials and Perennials	7	0

*** ALL SENT POSTAGE FREE.

A useful Chart, giving the height, colour, and mode of raising the principal sorts of Flower Seeds, will be sent Gratis with each order.

No. I. COLLECTION OF FLOWER SEEDS.

Alonzoa incisa
Aster, fine mixed
Ageratum odoratum
Amaranthus tricolor
Anagallis, new bush
,, Phillipsii
Alyssum, sweet
Brachycome iberidifolia
Balsam, fine mixed
Bartonia aurea
Centaurea Americana
Chaenostoma polyantha
Clarkia rosea, double
,, grandiflora
Clintonia pulchella
Coreopsis atrosanguinea
Convolvulus minor, new dark

Cuphea silenoides
Cacalia coccinea
Calendrinia grandiflora
Calliopsis picta
,, Drummondii
Campanula pyramidalis
Candytuft, new scarlet
,, Normandy
Cynanchum caeruleum
Cockscomb
Collinsia bicolor
Collomia coccinea
Carthamus tinctorius
Clintonia elegans
Convolvulus major
Cuphea platycentra
Delfsens ceruleus

Delphinium, fine, mixed
Erysimum Perofskianum
Eschscholtzia crocea
Fotoei viscida
Helichrysum macranthum
Gilia ovalis, ditto tricolor
Godetia venosa
Heartsease, fine, mixed
Hollyhocks, ditto
Hibiscus Africanus
Hawkweed, new silver
Heliophila araboides
Ipomoea violacea
,, grandiflora
Ipomopsis picta
Ice plant
Jacobaea, double

Kaulfussia amelloides
Lobelia ramosa
Lupinus Cruikshankii
Larkspur, fine German
Leptosiphon densiflora
,, androsaceus
Limnanthus Douglasii
Lupinus nanus
,, Hartwegii
Loasa aurantiaca
Lophospermum scandens
Malope grandiflora
Madia elegans
Mignonette
Martynia fragrans
Marygold, superb, French
,, African

Maurandya Barclayana
Mesembryanthemum tricolor
Nemophila striata
,, insignis
,, grandiflora alba
Nolana atriplicifolia
Œnothera rosea alba
Oxyura chrysanthemoides
Phlox Drummondii
Podolepsis gracilis alba
Papaver, fine mixed
Peas, sweet ,,
Pentstemon
Pink, Chinese
Platystemon Californicum
Portulacca Thellusonii
,, splendens

Primula sinensis
Polyanthus, fine mixed
Rhodanthe Manglesii
Schizanthus Grahamii
,, Hookerii
Schizopetalum Walkerii
Stocks, fine German
,, Victoria
,, White Pyramidal
Salpiglossis, mixed
Sultan, sweet
Sphaenogyne speciosa
Thunbergia alata
Tropaeolum canariense
Viscaria oculata
Xeranthemum lucidum
Zinnia coccinea

Complete printed Lists of Nos. II. and III. Collections can be forwarded by post on application.
If there should be any sorts in the above COLLECTION *not required, we shall have much pleasure in sending any other kinds that may be selected from our General Catalogue, which can be had on application Gratis.*

*** *All Orders above 2l. will be delivered, free of Carriage, by* Messrs PICKFORD and Co, *to any Station on the Great Western, Bristol, and Exeter, or South Devon Railways; or to any Town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers.*

The South Devon Railway is now open to Plymouth (Laira Green), and we now enjoy Railway communication to all parts of England and Scotland, and have made arrangements with Messrs. PICKFORD & Co. for the cheap delivery of our Goods to every Town in Great Britain. Any instance of Overcharge should be immediately communicated to us, as it is OUR interest to see that our Customers are charged at the lowest rates. Constant Steam communication from this Port to Cork, Dublin, Glasgow, Liverpool, London, Falmouth, and most of the principal Ports in the Kingdom.

COUNTING HOUSE, UNION ROAD. WILLIAM E. RENDLE AND CO., PLYMOUTH.

Printed by WILLIAM BRADBURY, of No. 6, York place, Stoke Newington, and FREDERICK MULLETT EVANS, of No. 7, Church row, Stoke Newington, both in the county of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars in the City of London, and published by them at the Office, No. 5, Charles street, in the parish of St. Paul's, Covent Garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, FEBRUARY 3, 1849.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 6.—1849.] SATURDAY, FEBRUARY 10. [PRICE 6d.

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ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.—Under the Patronage of HER MOST GRACIOUS MAJESTY, THE QUEEN. The EXHIBITIONS of the above Society, for 1849, will take place as follows, viz., at the HORNS TAVERN, KENNINGTON, on

WEDNESDAY, 18th April.

And at the ROYAL SURREY ZOOLOGICAL GARDENS, on
THURSDAY 17th May,
TUESDAY, 12th June,
WEDNESDAY, 25th July, and
WEDNESDAY, 12th September.

Subscriptions 20s. per annum, entitling each Member to the privilege of attending all Flower Shows, Lectures, and Meetings of the Society, of Exhibiting Flowers, Fruit, and Plants, their own growth, in competition for Prizes, without any charge of entry; and also to have two free admissions for friends at each Flower Show, Lecture, or Meeting.

J. T. NEVILLE, Secretary, Ebenezer House, Peckham.

CAMELLIA STOCKS.

RENÉ LANGELIER, NURSERYMAN and FLORIST, Clarendon Nursery, St. Helier, Jersey, begs to offer a few thousand CAMELLIA STOCKS, fit for immediate grafting or inarching, clean, free, and healthy, in full vigour, at 50s. per 100. This is an opportunity worthy the attention of Camellia growers, as no stock can be better than that offered by R. L.

Reference or remittance from unknown correspondents.

DOUBLE ITALIAN TUBEROSE ROOTS.—The Bulbs of this most beautiful and fragrant Flower have been just received from Italy, at A. CORBETT'S Old-established Italian Warehouse, 73, Pall-mall, and are warranted double, at 4s. per dozen. Also, expected, about the end of January, a choice collection of Orange, Lemon, Citron, and Shaddock Trees, together with Catalonian, Azorian, and Arabian Jessamine plants, any of which may be bespoke.

FIRST CLASS FUCHSIAS AND VERBENAS.

GEORGE SMITH begs to inform his friends in general that his DESCRIPTIVE CATALOGUE of the above is now ready, and comprises every novelty of the season.

G. S. can with confidence recommend his Seedling VERBENAS, they having taken numerous First Class Certificates. Also his Seedling FUCHSIA, LORD NELSON, has taken three First Class Certificates, and for exhibition will be found the gem of the season. For description see Catalogue, which will be forwarded on the receipt of one postage stamp.

Tollington Nursery, Hornsey-road, Islington.

NEW RANUNCULUSES, ANEMONES, &c.

CAREY TYSO, FLORIST and SEEDSMAN, Wallingford, Berks, begs to announce that February is the best season for planting, and that he can supply, per post, as under.

TYSO'S SEEDLING RANUNCULUSES.

50 first rate show flowers	5l. to £7	0s.	0d.	
100 roots in mixture	10s. to	2	0	0

Selections from the best varieties extant.

100 named sorts, one root of each	50s. to	5	0	0
100 fine mixtures	8s., 15s. and	1	0	0
DOUBLE ANEMONES, 50 sorts	20s. to	1	10	0
CARNATIONS and PICOTEES, 25 pairs	30s. to	3	0	0

Descriptive Priced Catalogues for 1849 sent for two postage labels; "The Ranunculus; how to Grow it," enclosed on receipt of nine postage labels.

FREDERICK WARNER, SEEDSMAN, 28, Cornhill, and 3, Lawrence Pountney-lane, Cannon-street, London, begs to inform his Friends that the True Stock of WARNER'S "EARLY EMPEROR" PEAS are to be had of him at 2s. per qt; also the DANECROFT EARLY GREEN PEAS, at 2s. 6d. These are a green strawed Pea, and quite distinct in habit from any other early kind, and well deserve attention. The LATE WHITE EGYPTIAN WRINKLED MARROW, a very large variety, at 8s. per quart. These Peas grow tall, and will continue bearing until the latter end of October; they are much esteemed for their rich flavour. Every other description of Vegetable Seeds, Catalogues of which can be had on application.

NEW RED ASHLEAF KIDNEY POTATOES, very early, prolific, and boil mealy ... per peck 3s. 0d.
SODEN'S EARLY OXFORD; the best round early Potatoes ... per peck 3 0
True old ASH-LEAF KIDNEY ... " 2 6
(All the above are perfectly free from disease.)
SUTTON'S Superb Green Cos LETTUCE, decidedly the best summer Lettuce ... per ounce 2 0
True Reading ONION .. per lb., 3s. 6d.; per ounce 0 4

Also every other choice kind of Garden Seeds, as see Catalogue, which will be sent post free.

The above are particularly recommended by the growers.

SUTTON & SONS Reading Seed Warehouse, Reading, Berks.

*** Carriage free to London, Bristol, Oxford, or Basingstoke.

ROSES.

H. LANE AND SON can confidently recommend their MOSS ROSE "LANEII;" it is very brilliant, distinct, and beautiful. Standards and dwarfs 7s. 6d. each.

The present season being very suitable, the following can be had. Dwarf Hybrid Perpetuals 12s. to 18s. per dozen.
" Bourbons ... 12s. to 18s. "
" China ... 9s. to 18s. "
" Tea-scented ... 12s. to 18s. "

Strong Hybrid Perpetuals, established in large pots, for immediate forcing, 20s. per doz.

Nurseries, Great Berkhampstead, Herts.

HURST AND M'MULLEN, SEEDSMEN, 6, Leadenhall-street, London, beg to inform their friends and the public that they can supply SEED of the true TRENTHAM HYBRID MELON, at 2s. per packet. This kind is distinct and superior to any other, and took the First Prize at the Chiswick Shows in 1847 and 1848. It was favourably spoken of by Dr. LINDLEY and others. Also, agents for COLE'S SUPERB RED CELERY, 1s. 6d. per packet. THURSTON'S RELIANCE PEA, 4s. per quart; Ditto CONQUEROR POTATOES, 2s. 6d. per peck.

J. G. WAITE'S Unrivalled CATALOGUE OF FLOWER SEEDS is now ready, and can be had on application. Seed Establishment, 181, High Holborn, London, Feb. 10.

ONION SEED.—Ten tons of Brown Spanish, and 5 tons of White Spanish ONION SEED, the growth of 1848, to be had in any quantities, at extraordinary low prices. Prices and samples likewise of every other kind of Seeds can be had on application to J. G. WAITE, Seed Merchant, 181, High Holborn, London.

NEW PEAS.—EARLY BLUE SURPRISE, as early as the Early Frame, and flavour of the Knight's Marrow.

FAIRBEARD'S EARLY CHAMPION OF ENGLAND.—A blue wrinkled marrow, fine flavour.

BURBIDGE'S ECLIPSE.—A large blue marrow, 15 inches high. And EARLY DANECROFT.

Can be had in any quantities, and prices to be had on application to J. G. WAITE, Seed Establishment, 181, High Holborn, London.

HOBART TOWN GARDENERS' AMATEUR HORTICULTURAL SOCIETY.

WM. HAMILTON begs to inform the Public that the letter which appeared in the *Gardeners' Chronicle* of Jan. 27th (p. 61), from the above Society, thanking him for the SUPERIOR VEGETABLE AND FLOWER SEEDS, which he sent to Hobart Town in the years 1846 and 1847, as also their approbation of the manner in which they were packed, was inserted at their expense, and unsolicited by him. The following are the Seeds which were sent to the Society: Calceolaria, Cineraria, Fuchsia, Martynia fragrans, Antirrhinum, Gloxinia, Gesneria, Petunia, Verbena, Geranium, Balsam, Rhododendron, Azalea, Thunbergia, and a few other flower seeds, as also a variety of vegetable seeds.

For prices of the above, see W. H.'s Catalogue, which will be forwarded on application. Packages of 25 varieties, popular Annuals, 5s. 6d., 12 varieties, 2s. 6d. Packages of Vegetable Seeds, including the newest and best varieties, in sufficient quantities for a large garden, and 25 varieties of Annuals, forwarded carriage free on receipt of Three Guineas. Smaller packages, with 12 varieties of Annuals, forwarded carriage free on receipt of 1l. 1s.

Seedsman and Florist, 156, Cheapside, London.

JOHN CATTELL, NURSERYMAN and SEEDSMAN, Westerham, Kent, begs to inform his Friends and the Public that his selected collection of VEGETABLE SEEDS is now ready to be sent out, consisting of those of his own improving and the best of others, and generally of his own saving. All orders entrusted to him will be executed with the greatest care and dispatch. Catalogues of the above, and also of Flower Seeds, may be had on application, by inclosing a penny stamp.

1 oz. packets of his superior Dwarf Barnes Cabbage may be had as usual in return for 12 penny stamps. The best Walcheren Brocoli in cultivation, at 1s. 6d. per packet.

J. C. has also a large stock of the under named ready for immediate delivery: Calceolaria, Scotish Hero, 1s. 6d. each, 15s. per doz; this is a first-rate bedding plant. Calceolarias—Emperor, Beauty Supreme, Sir Harry Smith, Exemplar, Masterpiece, Professor Lindley, Standshit, Oscar, and other fine varieties, 1s. 6d. to 3s. 6d. each. Pentstemon speciosum, 1s. 6d. each, 15s. per doz. Delphinium Barlowii and grandiflorum maximum, 9d. each, 8s. per doz. Geranium, Pink Pet, 2s. 6d. each; this is an improvement on G. lucea rosea, being of a deeper pink, better shape, and very dwarf compact habit. Fine healthy plants, free from spot, of the leading varieties of fancy and other Geraniums. Standard and Dwarf Roses particularly fine, a Catalogue of which may be had by forwarding a penny stamp.

A remittance or reference from unknown correspondents is required. Westerham, Kent, Feb. 1.

KITCHEN GARDEN SEEDS.—No. 1.—A complete collection, consisting of 20 quarts of the best kinds of PEAS, inclusive of Fairbeard's Champion of England, Early Surprize, British Queen, Burbidge's Eclipse, &c., and all other Seeds in proportion, of the newest and best sorts, sufficient for one year's cropping of a large garden, the choicest Melons and Cucumbers inclusive .. £3 3s. 0d.

No. 2.—Complete collection in smaller quantities, equally choice sorts ..	2	2	0
No. 3.—Ditto ..	1	1	0
No. 4.—Ditto. This is sufficient for a small garden	0	12	6

No extra charge for packing; carriage paid to London.
A General Catalogue may be had; also a List of each collection.

SELECT FLOWER SEEDS.

100 packets of the newest and best Annuals, &c.			15s.	0d.
50 " ditto	ditto	ditto	8	0
25 " ditto	ditto	ditto	4	0

A fine collection of imported Stocks, Zinnias, Asters, &c., named, 3d. per packet. Sent postage free.

A Descriptive Flower Seed Catalogue sent with each collection by enclosing two postage stamps.

WILLIAM JAMES EPPS, Maidstone, Kent.

ONE AND TWO YEARS SEEDLING AND TRANSPLANTED LARCH FIRS, ALDERS, &c.

WILLIAM WOOD AND SON having an immense stock of the above, fine strong plants, are determined to offer them on the lowest possible terms. Prices will be furnished on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

PEAS.

CLARKE'S NEW LINCOLN GREEN PODDED MARROW.—Being a selected variety from Clarke's New Early Ringwood possessing all the advantages of the original stock, as to earliness and size, and at the same time having a rich Green Pod. To be had (wholesale only) of Mr. HENRY CLARKE, Seed Merchant, 39, King-street, Covent Garden.

SUPERB NEW RANUNCULUSES, GLADIOLUS, &c.—The new varieties of Ranunculus consist of very superior and first rate flowers, which we have selected during the last few years from immense quantities of seedlings, and for vigorous growth and prolific flowering are far preferable to the older varieties.

RANUNCULUSES, free by post, with printed directions for planting and culture.

50 superb new varieties, named, 40s.; 25 for 22s. 6d.
50 fine older varieties, named, 15s.; 25 for 8s.
100 finest mixture, 10s.; 100 fine, 5s., or, post free 6s.

GLADIOLUS.

12 splendid early varieties, post free, 15s.
12 splendid mixed early hybrids, 3s. 6d., or, post free, 4s. 3d.

The early varieties flower from June to August in the open air, and are best planted without delay.

Gladiolus Gandavensis, large roots, 1s. 6d. each; Brenchleyensis, 5s.; splendens, 5s.; Rosa Mundi, 2s. 6d.; Ramosus, 1s. 6d.; Psittacinus sanguineus, 1s. Those at 2s. 6d. and upwards, free by post; under 2s. 6d., 3d. each extra.

DOUBLE ANEMONES.

Finest mixture, 2s. per doz., or 12s. per lb.; Fine, 1s. 3d. per doz., or 8s. per lb.

12 varieties, named, best scarlets, crimsons, &c., 3s. 6d.; post free, 4s. 3d.; Single, fine, mixed colours, 4s. per lb.

Catalogues of Bulbs, free by post, comprising our superb new Ranunculuses, upwards of 60 varieties of Gladiolus, &c.

Post-office orders made payable to BASS and BROWN or to STEPHEN BROWN. Remittances requested from unknown correspondents.

BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

MITCHELL'S UNRIVALLED DAHLIAS.

JAMES MITCHELL begs to announce to his friends, he purposes sending out in May the following first DAHLIAS, in strong healthy plants.

ECLIPSE, scarlet.—The best formed scarlet in cultivation first class certificate, also 7 first prizes; constant shower, 4 feet. 10s. 6d.

SUSSEX HERO, Crimson.—A noble and constant show flower; 4 feet. 10s. 6d.

MRS ROSAMOND STANLEY, Crimson tipped with white.—First class certificate, the best fancy Dahlia of the season, constant and beautiful show flower, 4 feet. 10s. 6d.

BLACK PRINCE, Crimson.—Partially sent out last season, and much admired at all the principal shows, 4 feet. 3s. 6d.

Piltdown Nurseries, Maresfield, Sussex.

AMERICAN NURSERY, BAGSHOT, SURREY.
Near the Farnborough Station, on the South-Western Railway.

JOHN WATERER begs to state that he is prepared to execute orders for the following Splendid Hardy RHODODENDRONS. Good strong bushy plants, the colours of which consist of clear and spotted Whites, Scarlet, deep Rose, Dark Purple, Rose-edged, &c., from 30s. to 42s. per dozen.

Album elegans	Scalit	Lyonese
" speciosum	Pellucidum	Victoria regina
Atrorubrum purpureum	Perspicuum	Multimaculatum
Catawbiense bicolor	Pictum	Guttatum
" flora pleno	Purpureum elegans	Hyacinthaeflorum
" splendens	Coelestinum	Formosum
Campanulatum	Pollorum	Glennyanum
Candentissimum	Roseum elegans	Gloriosum
Cyaneum	" album	Vacranthum
Delicatissimum	Leopardi	Marginatum
Eburneum	Variabile	Maculatum novum
Everestianum	Splendidum	Mirandum
Nivaticum	Russellianum	Maculosum

Standard Rhododendrons, 7s. 6d., 15s., and 21s. each and upwards.

AZALEAS, good mixed sorts, 18s. to 21s. per dozen. The very best kinds in cultivation, 24s. to 30s. per dozen.

KALMIA LATIFOLIA, handsome bushy plants, 1 to 1½ foot, 3l. per 100. Larger ditto, 1s. 6d. to 2s. 6d. each. Fine specimens for lawns, 10s. 6d. to 63s. each.

HARDY HEATHS of the very best varieties, 50s. per 100.

To the above, J. W. invites particular attention, and being the largest grower of American plants, has induced him to offer them at the low prices quoted. Also the following for GAME PRESERVES.

RHODODENDRON PONTICUM, the very best Evergreen for cover, being free from attacks of hares and rabbits, bushy healthy plants, 10s. 6d. per 100. Larger ditto, 15s. to 21s. p. 100.

BERBERIS AQUIFOLIUM, bushy, 50s. per 1000. Larger ditto, 60s. per 1000.

COMMON LAURELS, good bushy stuff, 10s. per 100. Larger 15s. to 20s. per 100.

PRIVET, EVERGREEN, 8s. to 12s. 6d. per 100.

CEDARS OF LEBANON, 3 to 5 feet, very bushy and handsome, very suitable for avenues, 3s. 6d. to 5s., and 7s. 6d. each.

IRISH YEW, very handsome and close grown plants, from 3 to 8 feet, 3s. 6d. each, and upwards.

STANDARD WEEPING LARCH, 6 to 9 feet stems, with very handsome pendulous heads, 5s. to 10s. 6d. each.

SPRUCE, SILVER, and WEYMOUTH FIRS, 6 to 12 feet.

TULIP TREES, Weeping and Purple Beech, very large, all in a fit state for removal.

FOREST TREES of all kinds, suitable for Copse and other planting.

Planting to any extent done by contract. Catalogues forwarded on application.

PURPLE-TOP SWEDISH TURNIP, Red Round and White Globe Turnip Seeds, as also Long Red Bug's and Yellow Globe Mangold Wurzel Seeds to be sold.—Apply to Mr. John Clarke, Long Sutton, Lincolnshire.

Mr. C. has long been a cultivator, and his stocks are not surpassed.

SEYMOUR'S CELERY.

SEYMOUR'S WHITE CHAMPION CELERY is warranted a very first-rate sort, and now sending out for the first time by H. Lane and Son, Nurserymen, Great Berkhampstead, Herts.

Seymour's Celery, White Champion	...	2s. 6d. per packet.
,, ,, Red Matchless	.	1 6 do.
,, ,, Superb White	.	0 6 do.

Post-office orders or postage stamps from unknown correspondents.

TO MELON GROWERS.

FLEMING'S NEW HYBRID PERSIAN having been awarded First Prizes at all the Chiswick Shows of the Horticultural Society of London last season, needs no further comment.

Fleming's New Hybrid Persian,	per packet—	2s. 6d.
,, Ispahan ...	,,	1 0
Seymour's Golden Perfection	,,	1 6

From unknown correspondents post-office orders or postage stamps can be sent to H. Lane & Son, Great Berkhampstead

JOSLING'S ST. ALBAN'S GRAPE, the same as patronised by the Queen, Prince Albert, Committee of the Horticultural Society of London, Prof. Lindley, Mr. R. Thompson, Mr. Henderson, Pine-apple Nursery, and the editor of the Gardeners' Journal, as being distinct and one of the best in cultivation. Two year old plants, 10s. 6d. each; one year old plants, 7s 6d. each, carriage free to London. A remittance expected. The usual allowance to the trade if three are taken. May be had of any respectable Nurseryman, or the grower, Robert Josling, Sexton, St. Alban's.

SEEDLING PLANTS WANTED.—Arbutus, Bay, Arborvitæ, Holly, Portugal Laurel, Cedars, Sweetbriar, &c. From 2000 to 5000 of each. Apply, stating lowest price per 1000, to Wm Enstern and Co., Nurserymen, Edgeware-road, London.

TO PEAR GROWERS.

RENÉ LANGELIER, Clarendon Nursery, St. Heller, Jersey, begs to state that he has still trees of BEURRE LEON LE CLERC and BLANC PERNE to dispose of; Beurré Leon Le Clerc 10s. 6d., Blanc perné 7s. 6d. Any amateur wishing to prove the sorts of Beurré Leon Le Clerc, R. L. can send out 10 trees full of fruit-buds in perfect pyramid, at 1l. 1s. each. It is a Pear that should be in every collection, as well as Blanc perné, which will keep till April or May. A selection of the best Table Fruit can be had of R. L. at moderate price, all guaranteed to be correct as described, and proved in his experimental garden. Reference will be required from unknown correspondents.

NEW VEGETABLE AND FLOWER SEEDS.

RENDLE'S CATALOGUE of VEGETABLE AND FLOWER SEEDS appeared in full on the back page of the *Gardeners' Chronicle*, dated Saturday, Feb. 3, copies of which can be had on application to

William E. Rendle and Co., Seed Merchants, Plymouth.

Our Agricultural Seed List will soon be ready, and we shall be happy to forward copies, when published, to any address we may be favoured with.

SEEDS.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE for 1849, sent free by post on application. We beg to offer the following in collections, including many choice new sorts.

VEGETABLE SEEDS.

	£	s.	d.
A complete Collection, including Thurston's Reliance, Dancroft Rival, Fairbeard's Surprise, British Queen, and other fine Peas, 20 quarts in all, and all other Vegetable Seeds, best and newest kinds, in proportion, for	3	3	0
The same Collection, in smaller quantities	2	2	0
Do. do. do.	1	5	0
A Collection suitable for a small garden	0	15	0

A list of the sorts furnished if required.

SELECT FLOWER SEEDS.

Free by post, with full directions for sowing, heights, colours, &c., viz.:— s. d.

100 varieties best and newest Annuals	15 0
50 varieties for 8s. 6d., 30 for 5s. 6d., 20 for	4 0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7s. 6d., or 12 do.	5 0
20 varieties best Greenhouse Annuals, 7s. 6d., 12 for ...	5 0
20 varieties choice Greenhouse Perennials, 10s. 6d., 12 for	7 6
20 vars. choice hardy Biennials and Perennials, 7s. 6d., 12	5 0
36 varieties imperial German Stocks	5 0
20 ditto ditto, 3s. 6d.; 12 for	2 9

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of 2l. and upwards articles presented extra. Post-office orders payable to Bass and Brown, or to Stephen Brown, Seed and Horticultural Establishment, Sudbury, Suffolk.

THE "QUEEN" MELON.

EDWARD TILEY begs most respectfully to apprize the Nobility and Gentry that he has procured the whole of the stock of seed of the above superb Melon, from one of the most noted growers in the West of England. This Melon is allowed to be by competent judges, who have seen it, the earliest and finest flavour grown; it has proved itself by competition for the last three years to be the best yet known. It has been awarded three first prizes. It is a handsome shape, very thin skin, green flesh, and melting flavour, not liable to crack or lose its flavour when kept, as most others do: it weighs from 5 to 7 lbs.

This superb Melon is well adapted to small growers, being a very free setter, very productive, and requires less heat than any yet out. Sold in packets of 7 seeds, 2s. 6d.; with also the following varieties:

Bowood green flesh Melon (true) ...	6 seeds	1s. 0d.
Ispahan (true)	10 ,,	1 0
Terry prize (true)	10 ,,	1 0
Beechwood (true)	10 ,,	1 0
Cuthill's (true)	10 ,,	1 0
Emperor green flesh	10 ,,	1 0
Windsor prize	10 ,,	1 0
Egyptian green flesh	10 ,,	1 0

Two packets selected of the latter varieties will be included with a packet of the Queen Melon for 4s.

BROCCOLI.—The three best varieties in cultivation are the Walcheren, Willcove, and the Tamworth, at 1s each per packet.

Sold by Edward Tiley at his General Seed-shop, 16, Fulteney-bridge, Bath; the whole, or any part of the above, will be sent postage free. A remittance must accompany the order; or the amount in 1d. postage stamps.

COLE'S SUPERB DWARF RED CELERY.—This splendid prize production, described in former advertisements, may still be obtained in sealed packets, with directions for cultivation, by enclosing 3s. 6d. to the subscriber, or to any respectable Seedsman in London or the country. The usual discount to the trade.

William Post Ayres, Brookland Nursery, and 4, Tranquil-place, Blackheath.—Feb. 10.

SEED POTATOES FROM HEATH LAND, Grown on newly broken black heath, for two years. Sound small Potatoes of excellent quality. Price per sack of 2 cwt., 22s., packing included.—Apply to Mr. James Dunning, Wareham, Dorset.

FREDERICK WARNER, Seedsman, 28, Cornhill, and 3, Lawrence Pountney-lane, Cannon-street, London, begs to inform his friends that his List of New and Choice FLOWER AND VEGETABLE SEEDS for the season, is in "Harrison's Cabinet" for the present month, and may be had by post, on application.

WHITE BELGIAN CARROT SEED, new and genuine stock, 1s. 3d. per lb., or 112s. per cwt. LONG RED, YELLOW GLOBE, and RED GLOBE MANGOLD WURZEL, 1s. per lb., or 100s. per cwt; and all other Agricultural Seeds at the lowest market prices, can be obtained on application to

William E. Rendle & Co., Seed Merchants, Plymouth.

*** *Our Agricultural Seed List will be ready shortly, and will be forwarded Gratis to all who may wish to see it.*

KING'S ROAD, CHELSEA.

SALE OF 100,000 PLANTS, in endless variety, and in the highest state of cultivation, at less than half price. The choicest collection for the Stove, Greenhouse, Conservatory, and Garden, 40 000 of which are Ericas, Camellias, Pinceleas, Pelargoniums, &c., of all sizes. Also many beautiful specimens fit for exhibition, together with a splendid collection of Roses, fine dwarf trained and standard fruit-trees, Vines, &c., all of the best sorts. Catalogues forwarded.—J. Weeks and Co., United Nursery, King's-road, Chelsea.

NEW VARIETY OF FIELD CARROT SEED.—Large Yellow Belgian CARROT Seed, 3s. 6d. per lb. This variety is much superior in sweetness to the common White Belgian Carrot, but is quite equal to it in size and keeping qualities; it vegetates quicker, and grows more vigorously when in a young state.

White Horn-shaped Belgian CARROT, 8s. per lb. This variety has been carefully cultivated for four years; it is quite equal in size to the original White Belgian, but it has the advantage in economy of labour in drawing, being much shorter, and consequently bulking near the surface.

Carriage paid to London.

Post-office orders are requested from unknown correspondents. Direct to John Rivers, Seedsman, Sawbridgeworth, Herts.

SEEDS, SEEDS, SEEDS.—If you wish SEEDS that will grow, and true to their kind, go to J. G. Waite's Seed Establishment, 181, High Holborn, where you can obtain every kind of Seeds worthy of cultivation lower in price than any other house in the kingdom.

181, High Holborn, Feb. 10.

KING OF THE CABBAGES.—This Cabbage is warranted by J. G. Waite the best in cultivation; very early, large size, and extra fine flavour; price 8s. per lb.

Seed Establishment, 181, High Holborn, London.

COCHIN-CHINA FOWL.—Eggs of these Fowls may be had by applying by post-paid letter to A. B., care of Mr. James Simmonds, Avenue Cottages, Brixton-hill, Surrey.

SEED POTATOES.

CHARLES SHARPE, Nurseryman and Seedsman respectfully solicits the attention of the Nobility and Gentry to his POTATOES for Seed. The sorts are very early and productive, and have given general satisfaction to Potato growers in all parts of the Kingdom. They are offered at the following prices, packing included:

	Per bushel of 56 lbs.
Soden's Early Oxford Potatoes ...	... 8s. 0d.
Early Ash-leaved Kidneys ...	... 8 0
Early Round Frame	... 7 0
Early Cockneys	... 6 0
Early Manley	... 6 0
Fox's Seedling, fine for forcing ...	... 6 0

Second early sorts, for Winter and Spring use:

	Per bushel of 56 lbs.
American Native Potatoes ...	... 5s. 0d.
York Regents	... 5 0
Kentish Pink Kidneys	... 4 0
Forty-fold	... 4 0

Orders will be forwarded on the receipt of a Post-office Order, and great care will be taken to ensure their safe delivery. A liberal allowance made to the Trade.

Charles Sharpe, Seedsman, Wisbeach, Cambridgeshire.

MESSRS. J. AND H. BROWN'S descriptive priced CATALOGUE OF PLANTS for 1849, with a separate List of Flower and Vegetable Seeds, can be had by post; and they are also now supplying the following desirable Hardy Shrubs and other plants.

		s.	d.
25	New hardy Belgian Azaleas, on their own roots, with flower buds, one of a sort, by name	20	0
25	American Azaleas, ditto ditto ditto ..	15	0
25	Hardy flowering shrubs, one of a sort, by name ..	10	0
12	Rhododendrons, including scarlet, white, and rose, hardy varieties	12	0
	New hardy yellow Rhododendrons each 7s. 6d. to	10	6
6	Andromedas, of sorts, including floribunda, for ..	8	0
	Hardy Heaths, Kalmias, and Ledums, per dozen ..	8	0
6	Fine hardy Magnolias, one of a sort	10	0
50	Dwarf Roses, on their own roots, one of a sort, named	16	0
	Standard and half-standard Roses, per doz., 12s. and	15	0
	Strong Moss Roses, per 100..	25	0
	New crimson Moss and climbing Roses, per dozen ..	6	0
	Tea-scented Roses, one of a sort, per doz. ..	9	0
	Glycine sinensis, extra fine plants, in pots, 15 to 30 ft., ea.	3	6
12	Greenhouse Azaleas, one of a sort, blooming plants ..	25	0
12	Choice Camellias, by name, ditto, ditto	30	0
50	Choice flowering Greenhouse plants, one of a sort ..	45	0
24	Choice Ericas, one of a sort, by name	18	0
	Best Petunias and Verbenas, one of a sort, per doz. ..	6	0
6	Bulbs of the beautiful new Japan Lilies, one of a sort	12	0
	Double Italian Tuberose roots, per dozen	4	0
	Peony roots, new double, white, pink, blush, and crimson, per dozen	9	0
25	Choice Herbaceous Border Plants, for	7	6
	Fine Standard and Dwarf trained Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of these respective kinds, true to name, 2s. 6d. each, or, per dozen	24	0
	Untrained or Maiden ditto, 1s. 6d. each, or per dozen	15	0
	Fine Gooseberries, Currants, and Raspberries, per doz.	3	0
	Strong Vines, Figs, Apples, and Walnuts, per dozen	15	0
	Cryptomeria Japonica, and 6 choice Pines for ..	10	0
	Fine new scarlet and yellow-flowering Chestnut, Rosa acacia, and purple Beech, 6 to 8 feet, per dozen ..	18	0
	Evergreen Privet and Beech, 3 to 5 ft., for fences, p. 100	12	0

Albion Nursery, Stoke Newington, London, Feb. 10.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WILLIAM WOOD AND SON have much pleasure in offering the following, all strong healthy plants.

HOLLIES, green, very fine, 3 to 4 feet ...	per 100—40s 0d
LAURELS, common, 2 to 3 feet	... 15 0
Ditto ditto very bushy, 3 to 4 feet	... 20s. to 25 0
MAHONIA AQUIFOLIA, bushy	... 10s. to 15 0
RHODODENDRON PONTICUM, nice young plants, 6 to 12 inches	10s. 6d. to 15 0
Ditto 15 to 18 inches	20s. to 25 0
Ditto 2 to 3 feet, very bushy	60s. to 75 0

AZALEAS, of sorts, fine varieties ..	per dozen— 9 0
,, PONTICUM, fine and bushy	... ... 6 0
,, Ditto 1½ to 2 feet	... ... 9 0
KALMIA LATIFOLIA, 1 to 1½ foot, fine	... ... 15 0
Ditto ditto 2 feet do. .	... ... 24 0
LEDUMS, of sorts	... ... 9 0
,, THYMIFOLIUM	... ... 8 0
RHODODENDRON CATAWBIENSE, 1½ to 2 ft., strong	12 0
,, ,, CAMPANULATUM, 9 inches	... 36 0
,, ,, HIRSUTUM	... 10 0
ARBORVITÆ (Ware's compact Siberian), 2 to 4 feet, very fine	9s. to 15 0
BOX, variegated tree, 2 to 4 feet ...	... 4s to 6 0
,, green, very bushy	... 3s. to 4 0
LAURELS, Portugal, fine, 3 to 4 feet ...	... ... 9 0
,, ,, fine and bushy ...	... 12s. to 18 0
LAURUSTINUS, fine bushy plants, 2 feet ...	... 6 0
,, ,, very ditto 3½ to 4 feet	12s. to 15 0
PHOTINIA SERRULATA, 3 to 5 feet, strong	15s. to 18 0
PRIVET, Chinese, strong . ..	... 9s. to 12 0

ABIES DOUGLASII, 1½ foot	... each— 7 6
,, KHUTROW, 1½ to 2 feet	... per doz.—15 0
,, MORINDA, 1½ to 2 feet ...	... ... 15 0
ARAUCARIA IMBRICATA, 2 to 15 inches, each, 1s. 6d. to	5 0
CEDRUS DEODARA, 6 to 9 inches, fine, from seeds,	per doz.—10s. to 12 0
,, 1 to 1½ foot ..	18s. to 24 0
CEDAR OF LEBANON, 2 to 3 feet, very fine ..	30 0
CUPRESSUS ELEGANS, 1 foot	12 0
,, OCCIDENTALIS, 2 to 3 feet	30 0
,, TORULOSA, 1½ to 2 feet	12 0
,, 2½ to 3 feet, fine	15 0
JUNIPERUS RECURVA, 1½ to 2 feet .	12s. to 18 0
PICEA PINSAPO, 2½ to 3 feet	30 0
PINUS CEMBRA, 1½ to 2 feet	12 0
,, EXCELSA, 1 foot	12 0
,, INSIGNIS, 1½ foot	... each—10 6
TAXODIUM DISTICHUM PENDULUM, 2 to 3 feet,	each—2s. 6d. to 5 0

ASH, new Weeping, Chinese, 8 to 10 feet, each 1s. 6d.;	per dozen, 12s.
,, Weeping, 6 to 10 feet, each, 1s to 1s. 6d.;	per doz., 12s.
BEECH, fern-leaved, 5 to 6 feet, each, 1s. 6d.,	per doz., 15s.
,, Weeping, fine, 6 to 8 feet, each, 2s. 6d.;	per doz., 24s.
ELM, New Weeping, Scampston, 6 to 8 feet, each, 2s. 6d.;	per dozen, 25s.
HORSE CHESTNUTS of sorts, fine, 6 to 10 feet, each, 1s. to	1s. 6d.; per doz., 9s. to 12s.
OAK, Weeping, 6 feet, each, 8s;	per doz., 30s.
THORNS, of sorts, each, 1s.;	per doz., 9s.

Collections of the following have been selected with the greatest care, and are offered at the annexed reasonable prices, the selection being left to Wm. Wood and Son.

ROSES, OF THE MOST APPROVED SORTS.

Superb Dwarf and Dwarf Standards, 12s to 18s. per dozen.
Fine Dwarfs (on own roots), in 50 varieties, 50s per 100.
Climbing, 9s. to 12s. per dozen.
China, superb varieties, in pots, 9s. to 12s. per dozen.
Tea-scented and Bourbon, 12s. to 18s. per dozen
Mixed Roses, for Plantations, 30s. per 100.

CAMELLIAS, fine healthy plants, and all the best varieties in cultivation ... ... per doz.—25s. to 42s 0d
CHINESE AZALEAS, of the most select kinds 12s. to 18 0
CINERARIAS, very select collection, fine strong plants, COMING INTO BLOOM ... 9s. to 18 0
CHRYSANTHEMUMS, all the newest imported varieties .. .. 6s. to 18 0

A liberal quantity of plants allowed for carriage. A reference or remittance respectfully solicited from unknown correspondents. General Catalogues of Nursery Stock, Greenhouse plants, Roses, Seeds, &c., may be had GRATIS, on application.

Woodlands Nursery, Maresfield, Feb. 10.

TO PLANTERS AND THE TRADE.

WM. URQUHART AND SONS, Dundee, have still a good stock of Seedling and Transplanted FOREST TREES and SHRUBS, at very low prices, to be obtained on application.

CUCUMBER AND MELON BOXES AND LIGHTS.—One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 6s. Garden Lights of every description. Conservatories, Green and Hot-houses made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England.

James Watts, Hothouse Builder, Claremont-place, Old Kent-road, London.

SEEDS.—CORNER OF HALF-MOON STREET.

THOMAS GIBBS AND CO.,

(By Official Appointment) the Seedsmen to the "ROYAL AGRICULTURAL SOCIETY OF ENGLAND,"

Beg to remind the Members of the Society, and Agriculturists in general, that their only Counting House and Seed Warehouse is at the corner of HALF MOON-STREET, PICCADILLY, LONDON, as for the last Fifty Years.

Priced Lists of Agricultural Seeds are always ready during the season, and may be had on application.

SEEDS.—MEADOW AND PASTURE GRASS SEEDS, in mixtures suited to various soils, &c., at 32s. per acre, allowing 2 bushels and 12 lbs. to each acre. Directions for sowing and treatment will accompany the seeds. Mixed sorts for improving old Grass Lands, 1s. 3d. per lb. Fine sorts for forming Lawns, &c., 1s. 4d. per lb.

GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address George Gibbs and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c. &c., 26, Down-street, Piccadilly, London.

THE FOLLOWING MANURES are manufactured at Mr. Lawes' Factory, Deptford Creek:

CORN AND GRASS MANURE, ...	per ton	£9	10 0
CLOVER MANURE	,,	8	0 0
TURNIP MANURE	,,	7	0 0
SUPERPHOSPHATE OF LIME ...	,,	7	0 0
SULPHURIC ACID AND COPROLITES	,,	5	0 0

N.B.—PERUVIAN GUANO, from selected cargoes (in Dock), 9l. 10s. per ton. SULPHATE OF AMMONIA, &c.

Office, 69, King William-street, City, London.

UNDER THE SPECIAL PATRONAGE OF

HER MAJESTY THE QUEEN.

THE TRUE FASTOLFF RASPBERRY.—This valuable and highly esteemed Raspberry, unequalled for its size and richness of flavour, and a long continuance of bearing, as originally sent out by YOUELL and Co., can now be supplied by them of the same stock they had the honour of furnishing Her Majesty's Gardens at Windsor, and most of the Nobility, as well as having Certificates of Merit awarded them for it by the London Horticultural Society. Packages containing 100 canes, 15s.; 50 ditto, 7s. 6d.

Large White Raspberry, 3s. per dozen.

FRUIT TREES,

Comprising the finest sorts of Peaches, Nectarines, Apricots, Plums, Cherries, Pears, Apples, Gooseberries, and Currants, warranted correct to name, as obtained from the London Horticultural Society.

Also, a fine collection of the newest and best Strawberries.

Giant Asparagus, 2 and 3 years old, 2s. 6d. and 3s. 6d. per 100.

Sea Kale, strong, 1s. per dozen.

Standard Roses, finest sorts, by name, 12s. to 15s. per dozen.

Tigridia conchiflora, fine flowering bulbs, 6s. per dozen.

ANEMONE SEED,

Saved from the finest selected sorts, is now being sent out per post, free, at 2s. 6d. and 5s. per packet, sufficient to sow a bed of 12 and 24 yards.—Great Yarmouth Nursery.

MITCHELL'S "PRINCE ALBERT" RHUBARB can be obtained from the Subscribers at 1s. 6d. each.

PHLOX OCULATA. This splendid new variety at 2s. 6d. per packet.

PHLOX DRUMMONDII, NEW SCARLET, 1s. per packet.

SEYMOUR'S SUPERB RED CELERY, 6d. per packet.

All the choicest Vegetable and Flower Seeds can be procured on application to

WILLIAM E. RENDLE & Co., SEED MERCHANTS, Plymouth.

*** *Our New Seed Catalogue can be obtained on application, Gratis, and should be in the possession of all who have gardens.*

RANUNCULUSES, ANEMONES, AURICULAS, AND LILIUM LANCIFOLIUM.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to recommend to the attention of the Nobility and Gentry the above FLOWERS, which he can supply of the best quality at the following prices:

100 RANUNCULUSES, in 100 superfine sorts, named	£2	10	0
Superfine mixtures, per 100, from 7s. 6d. to 21s.			
100 ANEMONES, in 50 superfine sorts, named	2	2	0
Superfine mixtures, per 100, from 5s. to 10s. 6d.			
25 AURICULAS, in 25 superfine sorts, named	2	10	0
12 " in 12 good kinds, named	0	18	0
LILIUM LANCIFOLIUM ALBUM, each, from 1s. to 2s. 6d.			
" " PUNCTATUM, do., 3s. 6d. to 7s. 6d.			
" " RUBRUM or SPECIOSUM, do., 5s. to 21s.			
" " ROSEUM, do., 5s. to 15s.			

A new collection of Hybrid Seedling LILIES, 6 sorts for 18s.

H. G. begs to say he continues to supply, for planting in Shrubberies, 100 fine roots of Lilium lancifolium album for 5l., package included. No shrubbery should be without them, as they furnish the greatest ornament during the autumnal months. They are quite hardy.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 10, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	Feb. 12	Medical	8 P.M.
		Geographical	8½ P.M.
		Syro Egyptian	7 P.M.
TUESDAY,	— 13	Civil Engineers	8 P.M.
		Medical and Chirurgical	8½ P.M.
		Zoological	9 P.M.
		Literary Fund	3 P.M.
		Microscopical (Anniversary)	7 P.M.
WEDNESDAY,	— 14	London Institution	7 P.M.
		Society of Arts	8 P.M.
		Graphic	8 P.M.
		Pharmaceutical	9 P.M.
THURSDAY,	— 15	Antiquarian	8 P.M.
		Royal	8½ P.M.
FRIDAY,	— 16	Royal Institution	8½ P.M.
SATURDAY,	— 17	Asiatic	2 P.M.
		Pathological	8 P.M.
MONDAY,	— 19	Chemical	8 P.M.
		Statistical	8 P.M.
		British Architects	8 P.M.
TUESDAY,	— 20	Horticultural	2 P.M.
		Linnean	8 P.M.
WEDNESDAY,	— 21	Geological	8½ P.M.
THURSDAY,	— 22	Royal Society of Literature	4 P.M.
		Numismatic	7 P.M.
FRIDAY,	— 23	Philological	8 P.M.

IN considering the effect of heavy land upon the POTATO DISEASE, the observer is necessarily struck with the large proportion of bad cases which occurred in soil of this description. According to the printed Tables the numbers stand thus:

	Suffered much.	Escaped, or nearly so.
England	129	34
Scotland	11	16
Ireland	11	0
Wales	2	0
	153	50

or only one escape in every four crops.

But what is called wet land in the Tables may be included in heavy land, and then the proportions are, England, 153 to 34; Scotland, 16 to 17; Ireland, 18 to 0; and Wales, 4 to 0: or, on the whole, 186 to 51.

The exceptional cases appear, however, to be too numerous to allow any general conclusion to be drawn absolutely to the prejudice of heavy land; and they have, therefore, received a very careful examination, for the purpose of ascertaining, if possible, what circumstances tend to render heavy land fit for Potatoes; the result is as follows:

Eight cases of small loss, according to the Tables, ought, in fact, to have been placed among large loss, viz.: SOMERSETSHIRE: 1. *A. Adair, Esq., Bradford*; Half diseased, except when the haulm was pulled up early.—KENT: 2. *J. Rogers, Esq., Sevenoaks*; One-fourth diseased. 3. *Sir John Lubbock, High Elms and Down*; Loss, one-fifth, one-third, and one-tenth.—ESSEX: 4. *Mr. J. Ferguson, Palmer*; One-fourth diseased.—STAFFORDSHIRE: 5. *Mr. J. Myine, gardener, Drayton Manor*: 35 per cent. diseased.—SHROPSHIRE: 6. *Mr. E. B. Hamilton, Tasley*; Nearly all diseased, except where the haulm was pulled. 7. *R. Gardner, Esq., Leighton Hall*; Land, stiff clay, but dry; one-fourth affected.—EDINBURGH: 8. *Mr. J. Nicol, Mid Calder*; All affected more or less, except a small piece of an unknown white variety from Morayshire.

Eight other cases of exemption appear to be connected with peculiar dryness, viz.:

KENT: 1. *Mr. S. Hooker, Brenchley*; Land, rather stiff. The only Potatoes that in any great degree escaped were planted by some of the porters at the Paddock Wood Station of the Dover Railway, on the embankment near a bridge; the earth was rather stiff, but it was taken from fresh grubbed wood land, and *is, therefore, very porous*, being mixed with small roots and coarse Grass. It was, at the time of planting, in spring, overrun with weeds, which were turned in in digging. No manure was used. Crop, when dug, was large and fine, without the least appearance of disease.—CUMBERLAND: 2. *Capt. James, Lothian Gill, Carlisle*; Land, *dry* and strong. Potatoes planted from April to May among fold-yard, night-soil, and ashes, at the rate of 10 to 30 tons per acre (the quantity or quality of manure did not make any difference). Produce comparatively sound.—NORTHUMBERLAND: 3. *Mr. J. Crozer, gardener, Alnwick*; Land, a good red loamy soil, broken up from old pasture, *and well tile-drained* in March last. Scotch Reds and Irish Cups were planted, without any manure, in April, with spade culture. Crop sound, owing, as it is supposed, to the good drainage and fresh broken up pasture.—HADDINGTON: 4. *Mr. T. Smith, gardener, Monkrigg*; Land, stiff loam, with open exposure and *dry situation*. American Earlies, &c., were planted *in April*, with stable manure and vegetable refuse at the rate of 15 tons per acre. Crop nearly sound; *on wet parts of the field they were about one third diseased*.—EDINBURGH: 5. *Mr. W. M'Lachlan, gardener, Cramond*; Land, rich friable loam, *thoroughly drained*. Potatoes planted in April in drills, with 30 loads per acre of farm-yard manure, used at planting time. Crop not more than 5 per cent. diseased. 6. *Mr. J. Reed, gardener, Millbank*; Land, light subsoil, dry, and gravelly, escaped. Land somewhat heavy and *well drained* suffered very little.—FIFESHIRE: 7. *Mr. J. Gow, land-steward, Abbotshall*; Land, deep *dry* strong loam. Early Americans were planted in April in drills, with 20 to 24 tons of farm-yard dung placed in the bottom of the drills along with the cut Potatoes. Crop, when pitted, about 20 lbs. to the ton were diseased.—BANFFSHIRE: 8. *Mr. A. Gordon, gardener, Duff house*; Land given to clay, *which had been subsoil ploughed*. Irish Cups, White Irish and Black Kidneys were planted in April in drills *without manure*. Crop heavy and sound; crops in neighbourhood generally heavy and very little diseased.

Of these 8 cases it will be remarked that 7 are northern; and it will be seen hereafter that really bad *northern cases* are rare, the disease having been most virulent in the south and west.

And in like manner the following 11 other cases appear to be connected with climate, viz.:—DURHAM: 1. *Rev A. Wade, Rector of Elton*; Land, strong clay. Hen-nests and American Reds, planted the latter end of May or beginning of June, with lime and farm-yard manure; generally only with the latter. Land after being worked up as fine as possible, ridged, the manure spread between the ridges, then the ridges split and furrowed up. Crop had 2 or 3 diseased bushels in 4 or 5 acres of Potatoes. (Scarcely any diseased in parish).—LANARKSHIRE: 2. *Mr. P. Chalmers, brewer, Wishaw* (a report of Mr. W. RENWICK'S farm); Land, heavy. Prince Regents, American Earlies, Richmond Wonders, planted in April, with 40 tons per acre of stable-dung used at planting time. Potatoes cut. Crop of Regents one-sixteenth diseased, Americans one-fifth, Richmond Wonders one-twenty-fourth.—PEEBLES: 3. *Mr. W. Downie, gardener, Traquair*; Lands, light on gravel, and damp clay soils. Cups planted in April in drills, with 12 tons farm-yard manure, and 1½ cwt. of guano per acre, placed in the bottom with the cut sets above, and covering up with the soil; crop on the light soil sound, on the damp clay scarcely 1 in 100 diseased; Dons and Buffs were also planted in the latter soil, and were fully one-third diseased.—EDINBURGH: 4. *Mr. W. Baxter, gardener, Riccarton*; Land, rather stiff yellow loam, containing a considerable quantity of sand. Irish Cups planted in April in ridges, with horse and cow manure, at the rate of 20 tons per Scotch acre, placed in the bottom and the cut Potatoes above, afterwards covered in with the soil; crop perfectly sound. Some Dons were also planted with the Cups, but were much diseased.—HADDINGTON: 5. *Mr. J. Street, Biel, near Preston-kirk*; Land, light clay, about 100 feet above sea level. Dons, Cups, and Irish Whites planted in May, in drills 28 inches apart, with 20 loads per acre of farm-yard applied at planting time. Crop moderate, nearly all sound.—PERTHSHIRE: 6. *Mr. D. Doig, farmer, Kinnaird*; Land, a dry, deep, strong loam. Regents and Hen-nests planted with 15 tons per acre of manure; crop about one-twentieth part diseased; Perthshire Reds also planted with the others, and about one-tenth diseased. 7. *Messrs. Dickson and Turnbull, nurserymen, Kinnoul*; Land, clay, having a good slope. American Earlies, Fortyfolds, New Windsor, Abercairney Early, Wallace's Early, Regents; planted in May, in rows with 30 loads per acre of farm-yard; crop suffered little; a few more sorts were planted at the same time, but were much diseased.—BANFFSHIRE: 8. *Mr. James Calder, gardener, Rathein*; Land, sandy loam, and heavy black, &c. Irish Cups planted from March to May, in drills 30 inches apart, with cow-dung at the rate of 12 to 16 loads per acre; crop suffered very little.—9. *Mr. J. Petrie, gardener, Cullen House*; Land somewhat light and exposed suffered least; heavy strong land suffered more, but neither of them suffered much: Potatoes planted in April, in drills, with farm-yard manure at the rate of 10 to 12 tons per acre. In consulting with a farmer he says he manured a field in October 1847 (soil rather heavy land), and ploughed it down; it was left until planting time in April, when it was drilled and planted with Irish Cups; crop was sound.—INVERNESS SHIRE: 10. *D. Martin, Esq., Mulart*; Land, rich garden ground; several sorts were planted with farm-yard manure, and produced a sound crop.—ROSS-SHIRE: 11. *Mr. J. Smith, gardener, Balnagowan Castle*; Land, clay and sand. No failure in the parish this year worthy of notice. The nature of the soil varying from nearly clay to sand.

Another and numerous class of exceptions comprises those which are planted in the autumn and very early spring. Of these 16 are found in the returns, all in English counties, and none more northern than Derbyshire, viz.:—HERTFORDSHIRE: 1. *T. H. Powson, Esq., Hitchin*; Land, stiff clay. Ash-leaved Kidneys and American Earlies, planted in *November* in trenches 8 inches deep; the trenches sprinkled with quick lime: crop suffered very little, being nearly fit for digging up before attacked by disease. Some were also planted in November, December, January, and February; they also suffered little, but the earlier they were planted the less they suffered. Howie Kidney (a red sort), was planted on the same soil in March, and were nearly all diseased.—KENT: 2. *W. D. S. (anonymous), farmer, Deal*; Land, stiff loam on clay. Ash-leaved Kidneys planted in *November* with spade, in rows 5 inches deep, with a covering of 2 inches of burnt earth, without any manure. The soil in spring was stirred instead of being earthed up, thinking that Potatoes are best not earthed up, provided they are planted sufficiently deep to prevent them from turning green; crop good and sound.—MIDDLESEX: 3. *Mrs. Lawrence, Ealing Park*; The finest Potatoes tasted this year; taken up as soon as the haulm became diseased; 5 sacks rotted out of 59; some still decaying in October (although in a dry airy loft); soil a stiff rich loam, with a very small proportion of stable-dung. Those *planted in autumn* of 1847 turned out much better than those planted last spring. Sorts, Ash-leaved Kidney and Regents.—SHROPSHIRE: 4. *Mr. E. Davis, farmer, Stanton Long*; Land, a strong loam, on the Ludlow-rock. Farmer's Glory, planted *in November*, with 12 tons per acre of farm yard manure, in drills 30 inches apart, using whole Potatoes about the size of duck eggs, planted in the bottom of the drill, covered with the manure, and the drill closed in upon to the depth of 14 inches. Produce good, but one-twentieth of the crop diseased; *same sorts planted same way on the same ground in the spring are nearly worthless.*—BUCKINGHAMSHIRE. 5. *Mr. James Nash, brewer, Chesham*; Land, a strong tenacious clay. All the crop very bad, except in the following case in the garden culture. The Bell Kidney *planted in October* last, with hay and lime rubbish placed in the drills; crop quite escaped, and excellent in quality. *The same kind planted in March with common manure*, and beside the e of October planting, were attacked with disease, and the produce *exceedingly bad*.—SUSSEX: 6. *Mr. G. Gates, farmer, Steyning*; Two friends planted Potatoes *in October*, and had good crops without being affected. Soil, a rich

golden sort. Some were planted on the same soil in January, but the produce was slightly diseased; and some were planted in April, which produced a heavier crop than those of autumn planting, but scarcely one good Potato was to be found amongst them.—Guernsey: 7. *J. Cockburn, Esq., Elmhouse;* Land, in garden, light loam and heavy loam. Early Kidneys planted in *November*, with light vegetable rubbish in the bottom of the drills at least 10 inches deep; Potatoes planted whole, 6 inches deep; crop quite ripe in the end of June; when dug up, there were not 20 diseased Potatoes in 5 or 6 bushels.—Dorsetshire: 8. *E. St. V. Digby, Esq., Minterne* (reported by his gardener); Land, rich garden ground. Ash-leaved Kidneys *planted in February*, with stable manure, at the rate of 22 tons per acre; produce excellent, and no symptoms of disease until second week in July. Those planted a month later were attacked with disease a fortnight sooner, consequently were more diseased.—Cornwall: 9. *Mr. J. Davison, gardener, Egloshayle;* Land, a new-made south border of very strong soil, but not clay. Ash-leaved Kidneys cut to one eye, *planted in March*, 6 or 8 inches deep; sets slightly covered with sea-sand; then a good dressing of half sea-sand and half fowls' dung, which was newly taken from the poultry-house, and which was placed directly upon the sand covering the seed, and afterwards covered in with the soil. The crop dug up on 17th July before quite ripe, dried in the sun a few hours, and placed in a cool, dry house 1 foot thick, covered lightly with mats. A month afterwards they were spread out thin, and left uncovered. They are now (Oct. 19) quite sound. 10. *J. Hutchinson, Esq., Camborne* (a report of his gardener); Land, a rich loam with granite bottom. Early Dublins and Yorkshire Whites planted *in January*, and *early in February*, among straw, dung, and leaf-mould mixed; produce of the earliest planting was best, but both plantings produced excellent crops.—Devonshire: 11. *Mr. W. Craggs, gardener to Sir T. Acland, Killerton;* Land, loamy on honeycomb-rock. Various sorts *planted in February*, or *early in March*, in drills 2 feet apart, with 80 loads of leaf-mould and 80 bushels of lime per acre. Crop was but little injured, being nearly ripe before any appearance of disease. Those planted a month later had half of the crop diseased.—Derbyshire: 12. *G. C. Hall, Esq., solicitor, Alfreton;* Land, strong clay. American Natives, planted whole *in March*, in drills, with wood-ashes. Suffered very little from disease, and, in some instances, escaped entirely.—Essex: 13. *Capt. Du Cane, Braxted Park, Kelvedon;* Land, a good mellow loam. Early Shaws, Early Champions, Fortyfolds, and Ash-leaved Kidney, planted the *second week in February*, in ridges, with a covering of 3 inches of good rotten stable dung; the Potatoes prepared in the autumn; and planted in the same way as recommended by Mr. Cuthill. Crop suffered very little injury.—Kent: 14. *G. W. Norman, Esq., Bromley and Hayes;* All lands escaped with little injury, *when planted in February*, with early Potatoes; but are greatly diseased when planted in April and May with late Potatoes. 15. *J. R. Neame, Esq., Norton;* Land, loamy and moist, but not wet enough to require draining. Ash-leaved Kidneys, Early Shaws, and Dunne Hill Kidneys, were *planted in February*, in furrows 9 to 16½ feet (? inches) apart, with 40—50 loads per acre of farm-yard manure. Crop, scarcely any diseased; those late planted, from two-thirds to three-fourths diseased.—Staffordshire: 16. *Mr. G. Fleming, Trentham;* Land, a rich sandy loam, part of a pasture field recently broken up near the bank of a river. Devonshire Reds planted between *January* and *March*, in rows at least 3 feet apart, with a slight manuring of sweepings from a poultry roosting-house. Crop all sound, with the exception of a few in the low ground, near the bank of the river. Another piece of strong loam, well drained, planted with Blue Farmers' Glory, *between January and March*, without any manure, produced a sound crop, and of excellent quality. Also part of an old ley, near a plantation of trees, soil a strong loam, was planted about the same time as the others with Round Chiaese Whites, and White Farmers' Glory, manured with peat and farm-yard manure. Crop slightly diseased, owing, he thinks, to the want of a free circulation of air.

The remaining cases of escape are entirely from the south and middle of England, and offer no apparent cause for exemption; possibly they require more particular examination.—Dorsetshire: *H. Williams, Esq., Stinsford;* Land stiff, heavy, planted with Potatoes for 20 years. Early Dogdales planted in May, ground not manured for three years; produce good, and very little diseased. *Mr. W. Sweeting, Surgeon, Abbotsbury;* Land, stiff clay, by the sea-shore. Early and late sorts planted in March and April, with common stable dung. Crop little or none diseased.—Kent: *A. F. Slade, Esq., Chislehurst;* Land, clay loam. Regents planted on 20th May in furrows; Peruvian guano, at the rate of 3 cwt. per acre, was horse-hoed into the ground when the plants appeared. The leaves upon the whole crop were much blighted, but the stems and tops of the same remained green throughout. "*Late planting* was probably the reason of the crop suffering little or no injury"! *Mr. A. Gardner, farmer, Ash, near Sandwich;* Land, very gentle clay, almost a loam, perfectly dry. Ash-leaved Kidneys and six other sorts were planted on part of this land at the latter end of April by hand-labour, with 20 tons of very good home-made manure, which was applied to the ground in autumn, and 2 cwt. of guano per acre sown broadcast. Crop of all sorts, with one exception, was about half-rotten; Irish Kidneys and Shaws were planted on same soil about a fortnight or three weeks later than the former, matured the same way without any guano, and ploughed in; crop good, and scarcely 1 sack per acre diseased.—Worcestershire: *J. Howard Galton, Esq., Hadzor;* Land, a rich friable loam. Potatoes planted in May, with 5½ bags of guano per acre, by spade culture. Crop suffered little.—Berkshire: *Mr. C. Pocock, farmer, Fulham;* None escaped entirely. The best are grown in a good deep and rather strong soil, and planted early.—Essex: *A. Hardy and Son, Seed-growers, Maldon;* Land, strong ploughed soil and clayey subsoil, highly elevated. Victoria Dwarfs, Albert Dwarfs, Golden Cluster Dwarfs, Kidney, Pitman's Seedling: these were planted in March, April, and May, in drills, with no manure. Potatoes whole, of middling size; crop not large but good; some other sorts were planted with these, but were half diseased.—Hertfordshire: *C. G. Thornton, Esq., Marden Hill;* Land, one part loamy another part strong stony land. Ash-leaved Kidney, Early Shaws, Breadfruits, and Fortyfolds, planted in April without any manure; produce of crop 70 bushels per three-fourths of an acre, and four bushels of these diseased.

In this examination "good and rich land," has in some instances been included; and as such soil is usually a highly fertile state of some form of heavy land, there does not appear to be any necessity for separating it. We may therefore regard the three columns distinguished in the published tables as good and rich land, heavy land, and wet land, as being for all practical purposes the same. The heavy land returns will then be represented by the following numbers, viz.:—

	Suffered much.	Suffered little or nothing.
England	197	28
Scotland	18	16
Ireland	17	0
Wales	5	0
	237	44

Which represent about 1 instance of escape in every 5.

But, of these 44 instances of escape,
- 8 are apparently referable to dryness,
- 11 to the coldness of climate,
- 16 to autumn or early spring planting,
- 9 to unexplained circumstances.

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44

Whence we arrive at the conclusion, that Potatoes in very rich, wet, or heavy land, are exposed to disease in a most dangerous degree (as 272 to 9); unless the land is very dry, or the climate cold, or the planting performed in the autumn, or very early spring. In other words, not more than 1 crop in 30 can hope to escape in such land.

The consequences of planting in light land must occupy our next consideration.

HARDY ORNAMENTAL SPRING-FLOWERING SHRUBS.

As nearly all the extensive shrubberies which I have seen exhibit a great deficiency in ornamental flowering plants, the following remarks are offered with a view of pointing out their adaptation for ornamental and picturesque effect in pleasure-grounds, &c. I will begin with—

Wistaria sinensis.—This is, without exception, the most magnificent and graceful of all hardy climbing shrubs. One of the finest specimens of it in the kingdom is the one in the Horticultural Society's Garden at Chiswick, where at each successive May exhibition it forms an object of universal admiration. Some have imagined that this handsome oriental shrub cannot be grown except on a wall; but experience has proved that it will succeed wherever a dry subsoil exists, or where there is room for an upright shrub to grow. As far north as York it is found to thrive luxuriantly in the open borders, trained as an upright shrub, or round wooden stakes or trellis work, in which positions it flowers profusely. The plants vary from 5 to 6 feet in height. As an instance of their rapid growth, I may state that two groups of two and three plants, each 18 inches high, were planted almost 12 months ago, and they attained nearly 6 feet elevation in the year. The habit of the plant being well known, it is unnecessary to mention that it is very suitable for planting against pillars or trellis-work, &c., or for forming a component feature in the covering of an arbour. Supported by firm wire-work or wooden stakes, it may also be rendered extremely graceful in the most limited flower-beds. In very heavy and retentive soils it should be planted in a quantity of artificially prepared gritty soil on the summit of partially elevated mounds. In order to induce a uniform expansion of bloom, cut back the current year's shoots, either partially at the plant's most luxuriant period of growth, or in autumn to within 4 or 6 or more inches of the previous year's joints. Every ripened second or side shoot that springs from the principal growing stems in summer will eventually become blossom-bearing spurs or branches. No arboretum or shrubbery should be without its rural or artistic pillars, around which to wreathe the long, fertile branches of this fine plant.

Cydonia (Pyrus) japonica.—As a conspicuous ornamental branching shrub, is unrivalled for background effect on flower-borders, or for the front ground of shrubberies and pleasure grounds. At Nonsuch Park, near Cheam, in Surrey, it constitutes the most beautiful feature in the flower-garden throughout the early spring months. The plants stand at respective distances on the further side of the flower borders, trained upright to the height of from 3 to 5 feet, and when adorned with congregated clusters of scarlet flowers, impart a brighter feature than could be obtained by any other plant. The very partial interest which attaches to this shrub, under ordinary management, arises from not attending to the restriction of its annual growth to a medium length. In fact, if it were pruned and trained like a Gooseberry-bush, we should reap better crops of flowers from it than we usually do. Not many yards from whence these remarks are penned, is a plant about 6 feet high, and the same in diameter, which, last spring, was covered with the richest scarlet bloom, and no reason exists why the same should not be experienced in every flower garden. Whilst its growth is encouraged to attain a requisite elevation, its current year's shoots should be cut back to 2, 4, or 6 inches in length, according to its vigour. Though artificial stimulus to growth is seldom required in good soil for shrubs of this description, leaf-mould may be applied with advantage where high culture is desired. The pliability of its branches renders it a willing subject for different modes of training on flower borders.

Amygdalus persica flore pleno (Double-flowered Peach).—If less florid in feature, this is not less beautiful than the preceding, forming, as it does, a stout clean growing Peach-like shrub, or small tree, laden profusely with long branched racemes of the loveliest double rich Peach-coloured blossoms, in March and April. It is a fine object seen as a rising tree in the background of a warm sheltered shrubbery or plantation. It is also valuable for forcing in pots, being one of the earliest shrubs to greet the dawn of spring, and at the season referred to it is admirably adapted for bouquets. Planted against a wall, it is exceedingly pretty. Parallel with the Cydonia plant, previously mentioned, is one of this Peach 7 feet high, and 12 feet in diameter, which, in its season, forms quite a treasury of flowers. *William Wood, Fishergate Nurseries, York.*

LECTURE ON ECONOMICAL COOKERY;

Or, The Methods of Preparing our Food with the least Degree of Waste.

By C. Daubeny, M.D., F.R.S.

In my former lecture I pointed out to you the most economical materials for providing subsistence to the population of this country, and have next to consider the means at our disposal for rendering such materials as nutritious and as wholesome as possible. The effecting this latter purpose ought indeed to be considered the more proper design of cookery; an art therefore which must not be cried down as one that panders to the gross indulgence of the appetite, but held in respect as being in some sense subsidiary to the labours of the agriculturist, the physician, and the political economist, inasmuch as it shows us how best to economise those resources which the former puts before us, and to apply them in the manner which the two latter deem most advantageous.

The processes indeed of the culinary art may be regarded as so many contrivances for assisting and taking the place of the chemical and mechanical operations by which the stomach and other parts of the alimentary canal endeavour to extract from the raw material presented to it the substances necessary, either for supplying the wants of the system, or for maintaining the animal heat. In order to understand this, let us in the first instance consider for a moment the functions of the human stomach, which is indeed a wonderful organ, for although it may not be able, like that of the dog or hyæna, to digest bone or to dissolve cartilage; nor yet, like the alimentary canal of the ruminants, to extract sugar and gluten from crude and tough vegetable fibre, yet its flexibility and power of adaptation to the various processes which so omnivorous an animal as man requires it to perform, exceeds perhaps that belonging to any amongst the other tribes of mammalia.

Now, as Dr. Prout observes, the primary function of this organ seems to be a *reducing one*, that is, the bringing the alimentary matters submitted to it to a semifluid con-

dition by intimate admixture with water. This process is the most important of any, as it is preparatory to all the rest, and must be gone through before any part of the food can be assimilated, and it is in this that assistance may be obtained from the ordinary operations of cookery, which perform a part at least of this labour for it.

Dr. Prout also maintains, that the stomach likewise converts one alimentary matter into another, as, for instance, sugar into oil, and oil into albumen; and Liebig concurs with him in supposing the former kind of transmutation to take place, for it is in this way that fat, according to him, is often produced. Even Dumas, who formerly maintained the contrary, has, I believe, been obliged to concede this point on the authority of Dr. Milne Edwards, whose experiments confirm those of Liebig with regard to the convertibility of starch, sugar, and gum, into animal oil.

But the power of forming albumen, a substance containing nitrogen, from materials destitute of that element, is more difficult of belief; striking at the foundation, as it would seem to do, of the whole doctrine which Liebig, Mulder, and others have built up, as to the necessity of our food consisting in part of materials already nitrogenised. Whilst, therefore, I am loth to contradict the weighty authority of Dr. Prout, who thinks that the stomach is capable on extraordinary occasions of forming albumen, and would give due attention also to the opinion expressed by that able physiologist Dr. Alison, which is to a similar effect, I may remark that the formation of albumen is not, at least, like the production of oil from sugar, one of the ordinary functions of the stomach, and that exercise which, as Dr. Alison alleges, increases the muscular strength, even without any addition to the amount of food, may act, not by causing the stomach to produce albumen out of sugar, but by imparting greater activity to the secreting surfaces, and thus better enabling the system to make the most of the nitrogenised principles actually contained in the food.

At any rate, this function of converting one principle into another is one in which the stomach can derive but little assistance from the preliminary operations of cookery, which scarcely does more in this respect than change the starch into forms of matter possessing greater solubility, and effect a few other trifling alterations in the chemical nature of the bodies submitted to it.

The third function of the stomach pointed out by Dr. Prout, that of organising and vitalising the different alimentary substances, is one in which of course cookery can pretend to take no part. The agency is vital, and its nature is entirely unknown.

Thus we perceive that in the three functions exercised by the stomach, cookery can afford but little aid, excepting in the first, that is, in the *reducing* process, but here its assistance is very material, and thus what is wanting in this respect to the natural powers of the human stomach is made up by the influence of that instinct which prompts man to become, alone among the tribes which people the earth, *a cooking animal*, and which induces him to subject his provisions to processes calculated to render them more digestible, by giving him a distaste for crude vegetables, and by rendering raw animal food an object of strong disgust. The universality of this repugnance is itself the best evidence of the importance of the object aimed at by Nature in inspiring it; it prevails even amongst cannibals, and seems in all states of society to be coincident with the adoption of an animal diet, unless indeed the bull-feasts of the Abyssinians may be regarded as an exception.

(To be continued.)

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

POTATOES.—The past season having been more favourable to the Potato than some previous years, encourages us th hope that by care and skill in cultivating, this valuable vegetable may be preserved to us. The important information collected from all parts of the kingdom by Dr. Lindley will assist very much in future operations, by pointing out those modes of cultivation which are most likely to succeed. The results of that varied information are now being published in leading articles in the *Chronicle*, and to them we refer our readers; those of them especially who have land enough to raise their own Potatoes. For amateur gardeners we would recommend growing only early kinds, unless any feel disposed to institute experiments; this may be done anywhere, and those who have time for careful observation may do good service in this way. We have often made the remark, and now repeat it, that the possessor of the smallest garden may make discoveries which shall have a bearing on the wealth of nations.

The sooner Potatoes of every kind are in the ground the better; but this is indispensable with the early sorts, such as the Ash-leaved Kidney, if the produce is wanted for the table. I will detail the plan I pursued yesterday in my own garden, and shall feel happy if any part of it is of service to my readers. I first looked over my stock, and separated those which had sprouted from the rest, taking care not to injure the young shoots; for it is evident that much time is gained if we can plant a Potato which has already made some advance in its growth, not to mention the exhausting effect of a healthy sprout being broken off. The spot I chose for planting was that occupied last year by Scarlet Runners, the soil there being light, and having in it the thoroughly rotten manure employed for that crop, nothing being more certain than that fresh dung or strong stimulating soils are unfit for Potatoes. I dug out a trench with a fork about six inches in depth, loosening the subsoil as much as possible, as I went along, and into the trench I put a good layer of old straw, Potato haulm, or other dry and light rubbish. The Potatoes were then carefully placed in the midst of the straw, the shoot upwards, and a good sprinkling of dry ashes was laid over the whole. The soil which had been turned out was then put back, and the rows finished off with a gentle ridge. A little early Radish seed might be sown on the top, and would do well if covered lightly with long litter. Potatoes treated in this way will be kept from an excess of moisture during heavy rains; the tubers will more freely expand, and the ashes will check the depredations of insects.

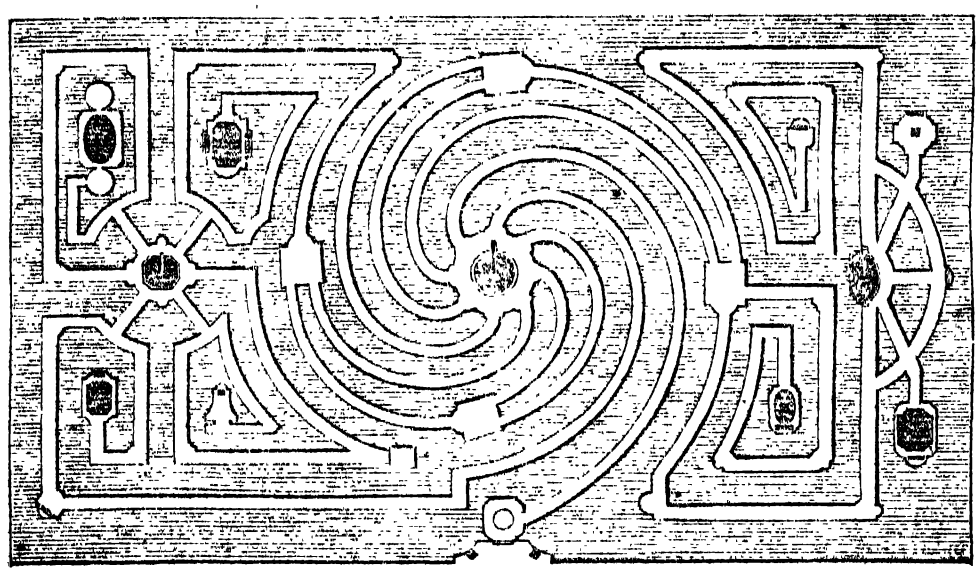
Notwithstanding the information which has been diffused in so many ways respecting the importance of planting Potatoes in the early spring, and even in winter or autumn, it is to be lamented that great ignorance and perverseness still exist on the subject. A lady in my neighbourhood last week jogged the memory of her gardener (a professional man), and wished him to get in a few rows of Potatoes; but he told her it would be of no use doing so, since the frosts would be sure to kill them. This is adherence to old custom in opposition to the new light of science and experience. I have no doubt the same wiseacre keeps his Tulips out of the ground until the shortest day, according to the orthodox statute made and provided. I have a great respect for gardeners, but I must say their usefulness is much crippled by their dogged determination to learn nothing but what they can weave out of their own brains, in addition to the traditionary lore in which they have been brought up. I found the following in an old Cyclopædia among many other practical matters, regarding the Potato.

"METHOD OF RAISING POTATOES IN WINTER.—Make a compost of earth, sand, and coal-ashes. With this mixture fill a tub about 16 inches deep. Plant this artificial soil with some sets of the early round Potato, and place the tub in a stable opposite to a window, taking care to water the earth now and then. In all seasons the sets will sprout and give a tolerable increase of Potatoes. Last November I planted some sets in the above manner, and in February following I took up a considerable number of young Potatoes, clean-skinned and well-flavoured." *H. B.*

A MAZE.

A CORRESPONDENT having begged for a plan of a maze or labyrinth, we republish the above, which is the best we know of, in the hope that it may be useful to others as well as to the first enquirer.

"It is a large volute or spiral walk, in the centre of which is a basin, accompanied with a hall (1) pierced by eight walks, which carry you to four cross-ways, from whence you pass insensibly into the windings of the maze, set off with cabinets, latticed-arbors, green-plots, fountains, figures, &c. which very agreeably surprise and amuse those that have lost their way in it. The great number of alleys, and the various turnings in the composition of this labyrinth, render it extremely intricate and puzzling, without taking anything from the beauty and regularity of the design. There is but one entrance into it, which is also the outlet, where there is placed a cabinet of lattice-work, on purpose to render it still more difficult. This labyrinth requires some room to be handsomely executed, and can scarce be planted in less than seven or eight acres of ground, without the alleys coming too near each other, which would take away the intricacy of it, and consequently all its merit." *From the Theory and Practice of Gardening, by John James; London*, 1712.



ON THE CULTIVATION OF TROPICAL FERNS AND LYCOPODS.

THE most suitable place for growing the different kinds of Ferns and Lycopods is a stove or an Orchid-house where there is plenty of moisture, with a temperature ranging from 55° to 60° in the winter season. Most Ferns delight in shady places, in which they develope their delightfully green foliage to advantage. Besides forming objects of attraction when growing, Ferns are very useful for bouquets, some of them lasting a long time in water, and intermixed with flowers they produce a charming effect. Adiantums, Cheilanthes, and the Gold and Silver Ferns are useful for that purpose. Many Ferns will grow under bell-glasses, or in glass cases in a warm room, provided they have a little air. Many of the Lycopods also succeed under the same treatment. Some of the British Ferns, as Hymenophyllum Tunbridgense and Wilsoni, and Trichomanes brevisetum, likewise do well under bell glasses, provided they are kept moist and have plenty of drainage; for the grand point to be observed in the successful culture of Ferns, as well as of other plants, is efficient drainage; without this no plant will continue long in health.

Ferns like a mixture of equal quantities of good rotten turf, peat, and leaf-mould, with a little river sand. These materials should be well mixed together, and, if dry, should be moistened; after they are potted they should be watered, to settle the mould firmly round the root. They should never be allowed to get very dry, or they will suffer.

Ferns are increased either by division of the roots or by seeds; the latter may be sown at any time in pots half filled with broken potsherds, over which a layer of rough sphagnum moss should be placed, the remainder to be made up of peat, leaf-mould, and a little silver sand. The mould should be pressed even, the seeds sown without covering, and the pot plunged in a bottom-heat of 75°, and closely covered with a bell glass. When the plants are large enough to be handled they should be potted off singly into 3-inch pots, using the same kind of compost as that in which the seeds were sown; afterwards give them a gentle watering, in order to settle the mould firmly round the roots.

Lycopods, like Ferns, delight in a moist atmosphere, and in shade. I grow some in pots half filled with broken potsherds, the remainder being sphagnum moss mixed with a little river sand. Some of them, as Braziliense, stoloniferum, cæsium, and denticulatum, do best in sphagnum. The other sorts succeed in peat, rotten turf, and a little river sand. If cæsium is kept in shade, with plenty of moisture, it will put on a beautiful blue colour. Lycopods are increased either by cuttings or layers; when cuttings are employed, they should be potted in small pots in the above-mentioned material, and plunged in a little heat; when layers are used, they should be pegged down with small sticks, and as soon as they have taken root, they should be potted and gently watered. We have in one end of our Orchid-house here a piece of rockwork, 25 feet long and 10 feet wide, on which we grow a few choice Ferns and Lycopods.

To grow specimen Ferns, the best way is to plant them out on rockwork, in about 8 inches of earth. We have had the following planted out about two years and four months; they were small when they were planted: Asplenium nidus, now 5 feet high and 7 feet across; Gymnogramma Massoni, the Gold Fern, 2 feet high and 5 feet across; Adiantum formosum, 4 feet high and as much through; Didymochlæna pulcherrima, 4 feet high and 5 feet across; Adiantum trapeziforme; A. cuneatum; Polypodium aureum; and A. effusum. There is a wall behind the Ferns 10 feet high, on which some of them are climbing up. Polypodium phymatodes and Aspidium exaltatum are the best for that purpose. Intermixed with the Ferns, we have the Sugar-cane (Saccharum officinarum), the Fan Palm (Chamærops humilis), Bambusa arundinacea, Maranta zebrina, Tillandsia splendens, and one of the tree Ferns. Over these in large wooden baskets are suspended Æschynanthus Boschianus, Lobbianus, radicans, a few Dendrobiums, Vanda teres, and Renanthera coccinea. Plants grown in this fashion have a wild luxuriance

about them unknown in the specimens cultivated in the ordinary manner, which renders them exceedingly attractive. The following is a list of a few good Ferns and Lycopods :

Adiantum assimile	Gymnogramma calomelanos
,, cuneatum	Doodia lunulata
,, forianum	,, rupestris
,, formosum	Diplazium Shepherdi
,, lucidum	Goniopteris fraxinifolia
,, macrophyllum	,, vivipara
,, pubescens	Anemidictyon phyllitidis
,, trapeziforme	Cibotium baromez
Darea cicutaria	Platycerium grande
Didymochlæna pulcherrima	Cheilanthes tenuis
Hemionitis palmata	,, lendigera
Nothochlæna distans	Blechnum polypodioides
Polypodium aureum	,, australe
,, phymatodes	Asplenium Nidus
,, glaucum	Leptobrochia leptophylla
Pteris elegans	Acrostichum scandens
,, falcata	Cassebeeria hastata
,, umbrosa	Lycopodium circinale
,, rotundifolia	,, Braziliense
,, vespertilionis	,, cordatum
Platyloma cordifolia	,, denticulatum
Aspidium macrophyllum	,, cæsium
,, falcatum	,, umbrosum
,, augescens	,, Willdenovianum
Gymnogramma Massoni	,, cuspidatum

B. S. Williams, Gardener to C. B. Warner, Esq., Hoddesdon, Herts, Jan. 30.

Home Correspondence.

Origin of Fossil Phosphates.— When Mr. Huxtable told the Dorsetshire farmers that his manure was the dung—not of oxen, but—of "extinct gigantic lizards," he was greeted with "roars of laughter ;" no less incredulous, and more hard-hearted, the *Gardeners' Chronicle* exclaims "untrue !" It would be easy to reply, "this is a small matter to be so seriously taken to task about, and sent to Coventry, with after dinner-discoverers of sea serpents, believers in Berberry blight, and viper swallowers ; besides, you must not blame me, but the distinguished Cambridge professor from whom I had the tale, for though I read his account (given at the British Association Meeting in 1845), I never guessed he had since recanted." However, the assertion of Mr. Huxtable is substantially true, for it is of no consequence to a farmer whether his fossil manure was made by "Og's, Bull's, or Magog's pet lizard," * or whether all the tribes in Noah's mighty menagerie contributed to swell the primitive stercorarium. The coprolite beds of the Dorsetshire green-sand are likely to be very poor, as the rock is mostly a dry calcareous sandstone used for making whetstones and mending roads ; in Kent and Surrey it is much more largely developed, and includes beds of tenacious clay, above which water accumulates and deposits in every hollow or porous substance the phosphate of lime which it has dissolved out of the chalky and sandy beds above. No one questions that the source of the phosphoric acid must be looked for in the animal remains and excrements existing, or formerly existing in these strata, but which have been wasted away by the constant percolation of rain-water, just as the liquid manure in a ditch indicates the waste of some neighbouring dung-heap. But the great sea Saurians—were there none living then ? Let the collections of Mr. Carter of Cambridge, Mr. Bensted of Maidstone, and a host of others show ; Ichthyosauri as large as those of the Lias, the still more gigantic Polyptychodon and the Leiodon (or Mosasaurus) flourished up to the close of the cretaceous epoch, and hordes of sharks—animals whose special destiny is to devour others and convert them into excrement—inhabited that sea in which the chalk accumulated to the depth of 1200 feet (as shown by the Southampton well) entirely from the powdered remains of animal life—for every particle of that dust was once animated. The second and most important coprolite bed to which Mr. Huxtable alluded, has a more modern date ; the sea saurians had vanished from the earth, only modern, vulgar-looking crocodiles, were left in the fens of Battersea and Sheppy ; but soon after the dry land itself—even the wastes of Tiptree-heath, were trodden by more monstrous cattle than any our Smithfield shows—and in the adjacent sea were half-a-dozen kinds of enormous whales, who as they were not hunted in those days, took it quietly, and made manure enough for Mr. Lawes to grind up by hundreds of tons. To call these whales lizards would be very bad at Cambridge, but in Dorsetshire it is excusable. We are indebted to an amateur Essex farmer (Mr. John Brown of Stanway), for the discovery that this shingle-bed at Felixstow, on the Suffolk coast, from which Mr. Lawes obtains his fossil phosphate, is derived from the wreck of the upper beds of the London clay, such as were seen in some of the recent railway cuttings near Ipswich ; and, as it is a matter of faith in geological science that each stratum has been derived more or less from the destruction of others pre-existing, so in the present instance we must believe that the soft parts of the clay stratum were carried far away by sea currents, leaving the hard and heavy nodules of phosphate of lime, and the equally ponderous bone-fragments of whales (which clink when struck, like porcelain) in the form of a bed of pebbles now stained [illegible] by rust of iron. *S. P. W.*

Disease in Portugal Laurels.—I have suffered much from this disease. I have, however, never known it to [illegible] except in cases where the plants have been [illegible] to grow large, and have then been very severely [illegible]. It does not always happen, even in these [illegible], as I am in the habit of cutting my evergreens at all periods of the year, I am disposed to think that it may arise from very severe pruning (such as cutting out the greater part of the body) at an improper season. *X. Y.*

North's Seedling Potato v. *the Disease.*—An experiment of some interest and importance to the public has been tried by William North, gardener at the Manor House, Elsfield. In the year 1844 he gathered the berries of a crop of white Kidney Potatoes, from which he has succeeded in producing a new excellent variety. The yield last year was large, the quality exceedingly good, and perfectly free from disease ; which is the more remarkable as the Potatoes in that district suffered to a greater extent last season than in any previous year, and this variety was thoroughly tested by being planted alternately with 13 other sorts, all of which were very much damaged, whilst this remained perfectly sound. *Richard Gordon, Elsfield Vicarage, Oxford, Feb.* 3.

Concreting Fruit-tree Borders.—Mr. Fleming states that his subsoil is thoroughly drained ; that drain-pipes are laid down on the floor of the border for the circulation of air into the house, and, to supply the soil and the roots of the Vines with that element ; he also states that the border derives its supply of moisture from below by capillary attraction, and this to the greatest extent in the hottest weather, while evaporation is prevented by the concrete ; it is also found advantageous to concrete the floor of the border, in order to prevent the roots of the Vines from descending into the subsoil. Now, the subsoil being thoroughly drained, and the floor of the border concreted, no water can rise into the soil above the concrete, and the upper surface of the border being also concreted, no rain water can descend. The concreted bottom will obstruct the ascending current of terrestrial heat, [What is that ?] and the upper concrete will resist the action of the sun's rays on the soil ; the soil composing the border is therefore nearly excluded from the action of atmospheric air ; but little capillary attraction can ever take place, and consequently less evaporation. The question then is, whether the roots of the Vines are placed in the most favourable condition under such circumstances ? The soil composing the border no doubt contains vegetable and animal matters in combination with lime, silica, potash, and other saline and earthy matters ; but to convert those substances into food suitable to be taken up by the roots of plants, they must be changed by chemical action into a gaseous form, [How is that to be done ?] and the amount of the gases liberated will depend principally on the amount of heat, air, and water admitted to and retained by the soil at all seasons, and although air pipes are introduced through the border (which may but to a very limited extent be of service), yet the most active agents, solar heat, air, and water, are nearly excluded, consequently the soil composing the border will remain at a low temperature. Mr. Fleming states that immediately below the concrete the roots are found beautifully matted. The same thing would occur were the border covered with stone or tiles ; but it is a question whether any roots of consequence occupy the centre of the border. The cause of the roots being found matted under the concrete is doubtless owing to the air being purer and warmer there than in any other part of the border, and also owing to a portion of the lime used in the concrete being converted into carbonate ; which, becoming soluble in carbonic acid, supplies the roots with that element. Close compact soils and hard surfaces are bad conductors of solar heat ; owing to their tenacity they absorb heat slowly, but reflect it rapidly from their surfaces. Chemistry teaches, and daily observation and practice confirm the truth, that open porous soils, rich in animal and vegetable substances, are those best adapted to support vegetation. Such soils absorb heat and moisture rapidly, and through the agency of these fertility is promoted. Do we not find it beneficial to stir the ground deep and often amongst growing crops of vegetables ? By so doing we allow heat, air, and water to penetrate the soil, the temperature of which is greatly increased ; and by their action and influence they effect those chemical changes in the organic and inorganic substances deposited in the soil, whereby gaseous matters are freely liberated and supplied to the roots in a fit state for absorption. Are fruit tree borders to be exempted from such benefits ? If there be any truth in these remarks, then concreting the surface of borders is not only wrong but injurious. Concreting the bottom of fruit tree borders is allowable where springs of water interfere, and where perfect drainage cannot be secured ; otherwise I think it is better discarded altogether : and although exceptions, as in Mr. Fleming's case, may occasionally succeed, the adoption of concreting can be only partially successful. *T. W. D., Portnall Park, Virginia Water, Surrey.* [We print this letter notwithstanding the errors to which we have drawn attention, because the writer is a sensible man and a good gardener.]

Skeleton Leaves (see p. 531, 1848).—The best example of home-made skeleton leaves I have seen, were prepared by some ladies at Devizes ; they were simply steeped in water for a fortnight, more or less, according to their texture, and the pulp removed by pumping on them. The only mystery is in the time of the year ; autumn leaves will not do—their tissues are filled up with insoluble salts and lignine, which neither acids nor alkalies will remove, except with the entire destruction of the leaf. *S. P. W.* [But among the most beautiful preparations of this kind are full grown tissues, such as the ripe fruit of Stramonium, ripe Hyoscyamus calyxes, and old Holly leaves.]

Liming Fruit Trees, &c.—At this season of the year the use of lime is known to all, and my manner of applying it I hope will not be thought unworthy of notice. I choose a moist day, or even a wet one, to slack the lime, and I put it on by dusting the bush or tree with it, a mode of application which takes less time than the white-wash brush. After it has been on long enough to satisfy those who apply it, it may be dusted off again with little trouble ; and after a shower it will scarcely be seen. This obviates the unsightly appearance of white-washed trees, and does not injure the buds. *J. Divers, Feb.* 7.

Climate of Anglesea.—A few days ago I observed in a cottager's garden bordering on the Menai Straits, a plant of Salvia fulgens in full bloom. Several Verbenas and Ageratum mexicanum were in a green and healthy state, showing no symptoms of having received the slightest injury from frost. On inquiry I was told that they had stood unprotected. The situation commands a southern aspect, and is wholly surrounded by woods, in which I found Ficaria verna, and the common Primrose, blooming in abundance. In the gardens here several Pear trees are in bloom. *W. S., Baronhill Gardens, Anglesea.*

Gooseberry Caterpillar.—It is well known that the Gooseberry caterpillar is the young of a particular saw-fly. Towards the end of the season many of these caterpillars descend to the ground, and pass the winter in the chrysalis state, from which the fly emerges in summer and proceeds to lay its eggs along the midrib and veins of the Gooseberry leaf. If you examine the back of a leaf soon after the young caterpillar begins its ravages, you will see the long lines of clear white eggs the size of pin points, from which the caterpillar has just emerged, or is about to do so. The larger sized caterpillars, which are often seen at the same time with the minute or newly-hatched ones, may possibly have passed their early stage in the ground during winter, and make their appearance prepared for action after the sun has matured them. The greatest number, however, I should think, and those by which most damage is done, are those hatched from the eggs laid that season. With regard to the remedy, I was recommended to try the powder of white Hellebore, and from my experience last year I should be inclined to declare it a complete specific, were I not kept in check by the feeling that something may have been owing to the season, and that it is not the part of a searcher of the truth to be too dogmatic. The remedy is cheap, however, and easily applied, and the success of it would soon be thoroughly tested were a few only of your correspondents to give it a fair trial. The mode of using it is, whenever you discover the least symptom of the caterpillar, to give the bushes a good syringing of water and then dust them over with the powdered Hellebore, by means of a common flour-dredge or other contrivance of that sort. In a few minutes you will see the caterpillars dropping in great numbers from the bushes, and in such a state as to be unable ever to creep up again. What is better, the application seems to be effectual in keeping the saw-fly from laying its eggs, so that one or two applications are effectual for the season. The powdered Hellebore can be got from any druggist. It does not seem to have any material effect on the caterpillars which infest Apple and Pear trees. *A Learner.*

Has a Clergyman the power to part with any of his Glebe ?—A friend of mine is "the squire" in a neighbouring parish, where he owns a considerable property. One of his neighbours is the parson, whose glebe runs up within a quarter of mile of my friend's house, and consists partly of valleys, with steep banks clothed now only with Furze, Fern, and Brambles. The clergyman's life is not worth more than 15 years' purchase. The patronage is in the hands of the freeholders, and my friend is one of the largest of them, and one that possesses the greatest influence. He is very anxious to plant these hillsides, but does not know upon what terms he ought to set about it. He is ready to exchange other land for this, but has the clergyman the power to part with any of his glebe ? Perhaps some of your legal readers can assist me in this matter. Unless he (my friend) purchases the land he cannot plant it without loss, and the clergyman, were he inclined to plant, cannot probably do so without a loss either, as his friends after his death could not come upon the new incumbent for the value of the timber he planted. My friend has another neighbour who is willing to let him some other ground of the above description, which he is anxious to take and plant. Can you inform me what rent per acre he should pay, and for what number of years he should lease it. The ground is now a waste, and fit for nothing but planting. What conditions should be agreed upon in the lease ? *Cambro Briton.* [We are not lawyers : perhaps some legal friend may supply at least a "travelling" opinion.]

Bella Sombra.—I have always heard this name given to Cestrum nocturnum, the powerful odour of which in the evening will at once distinguish it. I once, however, at Gibraltar, heard this name given to Phytolacca dioica, cultivated there in the Alameda, and which has no smell. The former plant is very much branched from the base, the latter a small naked-trunked tree, with a spreading top of very rapid growth. *C. L.*

Polmaise Heating.—Last week I paid Mr. Kendall, of Stoke Newington, a visit, and what I saw there did certainly remove every doubt which I had previously entertained as regards the efficiency of Polmaise. He has two large greenhouses and a stove, containing

* [illegible] Tom Hood's "Geological Excursion to Tilgate

upwards of 1000 feet heated by hot water. His knowledge of Holmaise has enabled him to carry it out in its simplest form, either for a greenhouse or stove. From the clear manner in which he answered every question put to him, I feel certain that he will not be displeased at the following attempt to describe his stove, for the benefit of those who may be disposed to adopt this cheap and efficient plan of heating. His stove is a span-roofed building, 30 feet long and 20 feet wide; it is used principally as a propagating house, and also for forcing flowers for the London market, a department of gardening in which no one can certainly be more successful than Mr. Kendall. On the south-west side is a brick pit, the length of the house, about 3 feet 6 inches wide, and about the same depth, filled with mould, in which young Vines are planted, some of which have already made shoots 6 feet in length. On the opposite side of the house is a trellis, about 4 feet wide, and in the middle of the house, and running the whole length, is a pit, 6 feet wide, for bottom heat. This bottom heat is ingeniously supplied by means of a smoke flue, which traverses the whole length of the pit in a hollow chamber, about 2 feet deep, and closed in with iron plates, on the top of which are placed about 8 inches of brick rubbish, and then the soil or plunging material, as the case may be. On the top of the flue, and in this hollow chamber, is an iron cistern, about 3 feet square, and about 3 inches deep, for evaporating water; it is filled from a hole in the wall, about 4 inches square. Besides this cistern, there is another so placed that a portion of the heated air from the stove is compelled to pass over it before entering the house, and thus, by keeping water in both one, or in neither, any degree of moisture or dryness that is necessary is easily obtained. I believe the stove was furnished by Mr. Lewis, and, if I understood Mr. Kendall correctly, the whole of the heating apparatus cost about 13*l.*; that is to say, the hot-air stove, the flue, and the material and labour of setting. *W. B., Brentford, Feb.* 5.—I erected a small lean-to greenhouse, 22 feet by 11 feet 6 inches (inside measure), with a shed at one corner of the back, meaning to have applied Messrs. Burbidge and Healey's ribbed boiler and hot-water pipes (than which I believe nothing can answer better). The expense, however, and the unsightly appearance of the pipes, deterred me from adopting them. I had often read of the Polmaise system, and always thought the principle an excellent one, but having never seen it in operation, I could say little about it. However, in the course of last year, I by chance had an introduction to Mr. Fortune, of the Botanic Gardens, Chelsea, who kindly showed me an old house which he had altered into the Polmaise, having introduced various plants by way of trial, and certainly none could look better or healthier than they did. He at the same time informed me that he was then erecting a range of houses, which were to be heated in the same way, and that he meant to adopt the apparatus of Messrs. Smith, of the Phœnix Foundry, Leamington, which he considered the best that had been introduced. I was satisfied, and immediately on my return to the country I requested the Messrs. Smith to send me their apparatus, suited to a house of my description. This they did, at a cost of 8*l.*, delivering it within 18 miles of my house. I likewise had their own man to erect it, at an additional cost of 2*l.* The materials used were 50 fire, and about 600 common bricks. The rest was done with the stone of the country and Painswick paving, which covers the hot-air flue. During the late frosts, which in this exposed situation were very severe while they lasted, I had a good opportunity of testing the plan, and though I did not follow out Messrs. Smiths' plan exactly, as the apparatus should be placed in the centre of the house (though under the floor and perfectly concealed), instead of in the corner, nothing can answer better; and this is shown by the health of the plants, which consist chiefly of greenhouse, though some may be considered hothouse plants. I burn cinders and small coal, a coalbox full of which is sufficient for 12 or 15 hours; and when the fire is once lighted, no further attention whatever is required. I find that by increasing the fire, I can get up any heat that may be necessary for stove plants; and so convinced am I of its advantages, from the pleasant atmosphere of the house, from the health of the plants, and though last, not least, the economy of the thing, that were I to build a house of any size, or for any horticultural purpose, I should adopt the system in preference to any other that I have seen. *Minimus.* [Our correspondent is misinformed as to Polmaise not having been adopted at Chelsea, But as constructed there by Mr. Fortune, it has not answered the purpose, for reasons which we shall explain in good time, after some alterations now under consideration shall have been made.]

Reviews.

The Letters of Rusticus on the Natural History of Gosherbury. London. Van Voorst. 1849. 8vo. pp. 164, with a few woodcuts.

This work is a reprint of a series of letters by an anonymous writer which appeared many years ago in the pages of the "Magazine of Natural History," the "Entomological Magazine," and the "Entomologist." They consist of notes relative, for the most part, to the habits of birds and obnoxious insects, written in a familiar (in some places too much familiar) style, and will be read with interest by those who love useful, not natural history—the author treating the professed zoologist very cavalierly in various parts of his work.

The sixth chapter, devoted to blights or insects injurious to vegetables, is that which more especially calls for notice in the *Gardeners' Chronicle*. We have here the natural history in detail of the "Gooseberry grub," by which name (unaccompanied by any scientific one), the author intends the larva of the Gooseberry saw-fly (Nematus trimaculatus), an account of which will be found in our volume for 1841, p. 548. The author proposes hand-picking, the burning of vegetables to the windward, and the treading of the ground very hard about the roots of the bushes, as the best remedies; then follow some general observations on aphides or plant lice, and on the Hop-fly (Aphis Humuli), in particular (see *Gardeners' Chronicle*, 1846, p. 404), and its insect parasites; then comes the American blight (Eriosoma lanigera, *Gardeners' Chronicle*, 1844, p. 16); the Apple weevil (Anthonomus pomorum, *Gard. Chron.* 1844, p. 556); the Apple moth (Tortrix pomonana), the little ermine moth (Yponomeuta padella), the yellow-tailed moth (Arctia chrysorrhœa), the little green Oak moth, (Tortrix viridana), the Turnip-fly, or rather flea-beetle (Haltica nemorum), in which Mr. Le Keux's excellent history of its transformations is copied verbatim, and yet by a parenthesis the reader is led to suppose him not entitled to the merit of its discovery. To this succeed the black caterpillar of the Turnip (Athalia spinarum, *Gard. Chron.* 1842, p. 620), the Turnip weevil (the grub of which forms warts on the roots), the Turnip moth, and Turnip aphis, (which three last are dispatched in half a page, although, from their being comparatively unknown, they were worthy of a more extended notice;) Apple aphides, the Vine coccus, and the burying beetle.

We have only room for one passage, but as it details a fact which we believe no other author has noticed, we are tempted to give it here, in the hope that some of our readers may confirm its correctness. "I have to-day (August 15, 1835) cut open Codling after Codling, and found the pips garrisoned with them (aphides); not one lone aphis, but a whole troop, of all sizes. When I let in the daylight there was a considerable sprawling and waving of legs, and no small alarm in the hive, but by degrees they got used to light and fresh air, and were quite still. I tried to tickle them with a straw, in order again to watch their movements, when, lo and behold, they were all dead—gathered to their fathers—gone to the tomb of all the Capulets! Some had heaved anchor and dropped from the pips; others, fixed more firmly, had died at their post, and tucking their legs together under them, hung by their beak. In no Apple was there any road in or out; there was no chance of passing to the outer air, or of their having come from it; indeed their speedy death proved that change of air did not agree with them. I was particularly careful in my search for a *vis*, but there was none. I have often seen the same thing in a bloated Poplar leaf; but here is a possibility of the egg being laid between the cuticles of the leaf, then the sap-suction commencing the bloat may be caused, but this is impossible in a huge Apple with 1½ inch of pulp in every direction. I am unable to explain the mystery; so, like many wiseacres, I content myself with wondering how, in the name of Fortune, the aphides got there!"

An outline of the Flora of the neighbourhood of Godalming has been communicated by J. D. Salmon, Esq., who gives 674 as the number of flowering plants discovered in its vicinity. To those who do not possess the works in which these letters first appeared, the present volume will doubtless afford a pleasant evening's entertainment. *J. O. W.*

Garden Memoranda.

Mr. Wilmot's, Isleworth (see p. 39).—The cultivation of the Pine-apple has of late engaged much attention, and from the discussions which have taken place on the subject, much useful information has been elicited. We have Mr. Hamilton's system energetically supported by men of reputation and experience, while others, equally eminent in their calling, have abandoned it as unsuitable for general adoption, because of the unavoidable necessity of maintaining the same degree of moisture or dryness to a plant ripening its fruit, swelling its fruit, and in flower. This is an objection to the Hamiltonian plan which practical men have, before now, urged, and one which Mr. Wilmot considers would be fatal to it for market purposes; nor does he consider that by this system he could realise half the money he now does with the same number of pits.

The Meudon system has been practised on a small scale by him for years, and the Cayenne Pines lately exhibited before the Horticultural Society, by Mr. W., were produced by this mode of culture; but large Pines are unsaleable, consequently any system of cultivation which would produce them generally would prove unprofitable. Mr. Wilmot practises the Meudon plan with all his succession Queen plants, which start at the end of summer. He employs small pits for them, planting them into a bed of soil, precisely as has been formerly stated in detailing the Meudon practice, and the result is that these little plants produce fruit from 3 to 4½ lbs. each, scarcely any of them being higher than 18 inches from the soil to the top of the crown.

Mr. Wilmot cultivates nearly every variety of Pine-apple of any value, but the great bulk of his stock consists of Ripley and Moscow Queens, two sorts of first-rate excellence, and which are capable of being quickly ripened and of moderate size. He considers that the smooth and prickly leaved Cayenne Pines are of first-rate quality, and invaluable for fruiting in winter. They acquire a high degree of flavour even at that season, and swell out their pips flat and smooth. Mr. Wilmot's extensive stock is grown in pots with the exceptions mentioned, and in semi span-roofed pits heated with hot-water pipes. The pots are plunged in tan beds, and the plants exhibit the highest possible health, free from scale, and (as the colour denotes) from jaundice or liver complaint, a matter of some moment when we consider the number of Pine pits in this establishment.

Mr. Wilmot is never without ripe Pine-apples, but he aims at having the bulk of them in May and June—the season when there is the best demand for them; and this is accomplished with as much precision and certainty as that of the plant grower who manages to grow his specimens and set their blooms in autumn, keeping them quiet during winter, and bringing them out in perfection the day on which he requires them for exhibition. Any one visiting Mr. Wilmot's now will see what probably he never saw before in one establishment at this season, viz., 600 plants started and coming into bloom with the utmost regularity. These consist of Ripley and Moscow Queens, in addition to which there are about 200 different kinds of black Pines, presenting one of the finest sights we ever witnessed in this branch of gardening.

With respect to soil, loam of every variety of texture, either used separately or in combination with all sorts of manures, has been employed with varied success; the different kinds of London peat have also been extensively used. These have all been abandoned, and turfy loam, from an old pasture, in a half decayed state, without any mixture whatever, substituted. The plants are assisted occasionally with a little liquid manure, but very sparingly, the loam being found sufficient to swell off the fruit large enough for market purposes. The great object aimed at is to produce the largest quantity of Pines in a given space and in the shortest possible time, and this Mr. Wilmot has effected most satisfactorily. It would not pay for him to be burdened with "stand overs" nor yet "stand stills." His plants universally complete their work in from 12 to 18 months. It would not accord with his cultivation to be stating in May that he expected such and such pits of Pines to have started three or four months earlier. His object would thus be defeated. As before stated, they come up at the period required, and no unnatural means are adopted to effect this. They would be unprofitable with their roots burnt off, and their leaves blenched in getting them into fruit. His system has reduced fruiting to a certainty, without either roasting or scorching, retaining their functions in all their vigour. *G.*

Miscellaneous.

Montreal Horticultural Society.—We learn from the second annual report of the Board of Directors of this Society, published in the *Montreal Weekly Herald*, of January 17, 1849, that the experience of the past year has realised all that its best friends could desire. Its ordinary Shows have been well attended, and have yielded a considerable revenue. The proceeds of the Ladies' Floral Bazaar at the annual exhibition amounted to 11*l.* 15*s.* 4*d.*; the sale of tickets of admission to 79*l.* 18*s.* 6*d.* It was stated that it appeared by the treasurer's report that the Society not only stands free of debt, but that a small balance remained in the treasury.

Statement of the Weather in Jersey, in 1848.—

Month.	Temperature. deg.	Density. inches.	Rain. inches.
January	36.0	29.670	4.579
February	44.0	29.590	6.820
March	45.3	29.500	6.574
April	49 2	29 725	6.920
May	61.4	29 830	0.519
June	60.6	29 160	5 017
July	63 5	29.830	5.863
August	61 2	29.880	4.784
September	51.7	29.780	1.903
October	52.4	29.840	10 683
November	46.4	29 945	4 462
December	44.8	29.800	4.325
Average	51.9	29.762	Total 61.899

The rainy months, in a series of years, are November, July, September, October, December, and January. The dry months, August, February, March, June, May, and April. During the past year, the rainy months were October, April, February, March, July, and June; the dry months, August, January, November, December, and September; with the exception of October, July, and August, the reverse of the observed system. *From the Jersey Times.*

Calendar of Operations.

(For the ensuing week.)

GENERAL REMARKS.

Do not forget to look closely after the wood ranger just now, in order to secure a sufficient quantity of Pea-stakes, Bean-rods, and stakes of all sizes, for the season's supply. Avoid Willow stakes, on account of the scale with which they are generally infested, and also on account of the troublesome tenacity with which they cling to life. The Hazel makes the neatest stake, but for durability the Larch is preferable to anything else. Perhaps the cheapest method of manufacturing first-rate stakes for gardening purposes, is to plant some 1 year old seedling Larches, which may be had for 1*s.* 6*d.* per thousand, 2 inches apart, in nursery rows 9 inches asunder. At the end of the first year, every third plant may be removed, which, though small, will be found very useful. In the second winter after planting, half the remaining plants will be cut away, and the same process may be repeated every season till

the fifth or sixth, when the remaining ones may be all removed; the latter will make splendid stakes for Hollyhocks, Dahlias, Standard Roses, &c. By planting a few thousands every year, a constant supply will be secured. Stakes for gardening purposes should be cut in winter, and trimmed, pointed, and bound up in tight bundles immediately; by so doing they will form straight, well-seasoned stakes by the time they are required for use.

FORCING DEPARTMENT.

In clear fine weather assist Nature by giving some additional heat to all the Pineries, as well as to the Vineries and Peach-houses, now in operation. This increase of heat, accompanied by a proportional circulation of air, by means of the ventilators, will be very beneficial; during dull, cloudy weather, however, it is advisable to be sparing of artificial heat, for the double purpose of husbanding the energies of the plants and preventing the needless waste of that expensive article fuel. Avoid at present keeping too moist an atmosphere in the Pineries, or some of the shows will be liable to come without their crowns; and be very careful in syringing not to allow any moisture to fall upon the flowers. A little neglect on these points, added to a deficient circulation of air, is productive of monstrous crowns, and frequently of deformed fruit. A slight syringing may be given about 3 o'clock, P.M., to Peaches which are fairly set; but with caution, for much splashing of water at this season is injurious both to roots and branches. Leave a small portion of air on at all times.

PLANT DEPARTMENT.

FORCING-HOUSE.—The main thing to be aimed at is to render the artificial temperature, and other circumstances under which plants are placed, as nearly proportioned to those in which they naturally flourish as art and ingenuity can make them. As the summer season is to be imitated when the sun's rays have the greatest power, the structure used for plant forcing should be of the lightest possible description, painted or coloured white inside, and the plants on or plunged in white gravel or light-coloured sand, in order that the greatest possible amount of light may be reflected and diffused amongst their foliage. The glass and laps should be perfectly clean. The ventilation should be so arranged that air may be admitted under the pipes, and thus be warmed to the temperature of the house before it comes in contact with the plants. Top air should be given by opening every sash a little, in preference to admitting the same quantity in several large currents. As the flowers expand, the plants should be removed to a cooler and drier atmosphere, with a view to prolong their period of blooming. It should be remembered that forced plants require a greater supply of water than the generality of plants at this season, the latter being in a comparatively dormant state. The syringe may be used with advantage once a day, except in very dull weather; use water of the same temperature as the house for this purpose as well as for watering the plants. Strong exertions should now be made to eradicate any scale, mealy bug, or other insect with which any of the plants (particularly those in the stoves), may be infested. Hot water is the best remedy; it may be safely used at 130°, and even higher, and it may undoubtedly be applied much hotter, at this season, on the old well ripened shoots and leaves, than would be safe a month or six weeks hence, when the plants have commenced their new growth, and when every opening day will bring more than its own work with it.

FLOWER GARDEN AND SHRUBBERIES.

It is no uncommon thing to see the walks in this department very much covered with moss; the usual remedy for which is to break them up. This is an unsatisfactory process, for it brings up dirt and sand to the surface, and leaves the walks for a long time afterwards in a very unenjoyable state, besides, the effect is so temporary as to render it necessary to repeat the operation nearly every year. It will be said that hot salt and water will answer the purpose, and so it will; but it must be used of considerable strength or it will assist in the production of a splendid crop of weeds during the following summer; this of course renders it expensive, and were it not so, it could not be used near Box-edgings. An efficient and much cheaper method is to scrub the walks with a birch broom when there is an inch or two of snow on the ground, just as a thaw commences; the snow will act something like a soap lye and the moss and weeds will be scrubbed to death without disturbing the gravel. If the walks are properly rounded the first sharp shower of rain will wash all the rubbish to the edges, from whence it may be easily removed as soon as the weather is dry. A rolling will be necessary as soon as convenient, to restore smoothness to the surface. Some walks which I have recently treated in this manner look as clean and bright as new ones, while their solidity is undisturbed.

FLORISTS' FLOWERS.

The amateur's chief attention will be directed towards Auriculas and Polyanthuses. Both will require top dressing; but in performing this important operation great care must be taken that the tender fibres which are now emitted are not injured. Formerly Emmerton advocated strong and stimulating manures, which, however they might force and strengthen the bloom, acted most detrimentally on the constitution of the plants. We know of nothing safer, for flowers and also for insuring the future welfare of the stock, than decayed leaf mould and very rotten cow-dung; this we have used for years with unfailing success. In surface-dressing the plants will have to be "made up for flowering," that is to say, all decayed leaves will have to be removed, and if the plant exhibits a naked stem the compost should carefully be drawn to it, being lowest at the margin of the pots, so as to prevent an accumulation of damp near the heart of the plant. Water may be given, but it is advisable to place an oyster-shell on the soil, and by pouring water on this the roots are not laid bare. TULIPS.—As soon as sufficiently high the beds should be carefully gone over, noticing those whose foliage may be cankered; by taking them thus in time, and removing the diseased part, valuable roots are often saved. Sow Ranunculus seed in shallow pans or boxes in vegetable mould and peat soil; cover very thinly, or the seed will not appear. For Dahlias, &c., attend to last week's instructions.

KITCHEN GARDEN.

It is or should be the custom of every gardener about this time of year to decide in what manner the several quarters and subdivisions of his vegetable garden are to be occupied during the forthcoming season. This arrangement should not be made in reference to one year only, but should comprehend a regular system or rotation of crops extending through a series of years, taking advantage of the preparation which the cultivation of one crop necessarily makes for another of a different family. Our culinary vegetables may be very simply arranged into three sets or classes: 1st. The perennial crops, as Asparagus, Artichokes, Rhubarb, Horseradish, and Sea-kale. These being permanent crops, demand a special preparation; the most suitable situation should therefore be chosen for them, regardless of the present condition of the soil, as that must be made good. In the 2d set I include deep-rooted plants, such as Carrots, Beets, Parsnips, Salsafy, and Scorzonera, and those crops whose cultivation includes a very extensive turning over of the soil, as Celery and Cardoons. By cultivating these two last crops on the wide-trench system, broad ridges will be left between them, in order to afford soil to earth them up with; and on these may be grown, Peas, Beans, Round Spinach, and early Turnips. All these are deep rooting plants, and in their cultivation a considerable quantity of soil from below is brought to the top, thereby paving the way for class 3d, which contains the Onion, the Leek, and the surface rooting, ground exhausting Cabbage family. A portion of this compartment will also be required for late Turnips and winter Spinach, and for early Potatoes, if the ground is moderately light. This last crop should be planted without manure. A 4th class will include odds and ends, as seed beds, Salads, herbs, and garnishings. These will be sufficiently accommodated under the walls, on the borders, and along the sides of the walks.

State of the Weather near London, for the week ending Feb. 8, 1849, as observed at the Horticultural Gardens, Chiswick.

Feb.		Moon's Age	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind	Rain
Friday	2	9	30.118	30.20	46	43	44.5	S.W.	.01
Satur.	3	10	30.408	30.358	50	44	47.0	S.W.	.01
Sunday	4	11	30.416	30.174	52	37	44.5	S.W.	.00
Monday	5	12	30.461	30.428	52	40	46.0	W.	.00
Tues.	6	13	30.412	30.388	45	41	43.0	S.W.	.00
Wed.	7	14	30.419	30.308	48	38	43.0	S.W.	.00
Thurs.	8	15	30.299	30.035	51	32	41.5	S.W.	.03
Average			30.327	[illegible]	49.8	39.1	44.4		[illegible]

Feb. 2. Foggy; hazy; slight rain.
— 3. Foggy; hazy and damp; densely overcast.
— 4. Overcast throughout.
— 5. Very fine; overcast; fine; overcast.
— 6. Overcast; hazy; fine; densely overcast at night.
— 7. Overcast; hazy; densely overcast.
— 8. Fine; very fine, with bright sun; overcast; rain; clear.

Mean temperature of the week 6 deg. above the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Feb. 17, 1849.

Feb.		[illegible]	[illegible]	[illegible]	No. of Years in which it Rained	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday	11	44.1	31.6	37.9	11	0.74 in.	4	2	[illegible]	–	6	6	[illegible]	4
Mon.	12	44.3	30.7	37.5	10	0.23	3	2	–	–	4	8	4	2
Tues.	13	44.8	31.8	38.3	10	0.50	1	2	1	1	5	7	3	2
Wed.	14	46.0	32.4	39.2	7	0.90	–	1	2	1	4	7	6	2
Thurs.	15	45.4	32.2	39.4	10	0.25	1	2	2	–	4	6	6	[illegible]
Friday	16	46.1	31.8	38.9	4	0.21	3	3	1	2	–	7	5	2
Satur.	17	[illegible]	[illegible]	39.0	9	0.42	3	1	2	3	3	2	8	1

The highest temperature during the above period occurred on the 17th, 1847—therm. 5 deg.; and the lowest on 11th, 1845—therm. 3 deg. below zero.

Notices to Correspondents.

BRITISH FERNS: *J E P Z.* The species you enumerate, with the exception of Asplenium lanceolatum, may be grown on exposed rock-work. Under culture, however, all Ferns succeed best in the shade, and where there is a free supply of moisture. Use turfy peat soil, intermixed with leaf-mould and charcoal or old bricks broken into fragments of the size of nuts. For Polypodium calcareum, add some old mortar. Take care that no stagnant water can collect about their roots. Asplenium lanceolatum grows well in pots under shelter of a frame. You will find the details of culture explained in Moore's "Handbook of British Ferns," recently advertised. *N.*

CHARCOAL: *J L* asks where good practical instructions can be obtained on the burning of charcoal.‡

FRUIT TREES: *J S P.* It is not advisable to plant dwarf standards on a wall border only 12 feet wide. Better trench and make good the soil under the walk, and plant the trees to be trained as espaliers on the other side. On the wall you may plant a Moor-park Apricot; a Noblesse Peach—if found necessary in your climate, you can easily cover this with glass; Glout Morceau, and Knight's Monarch Pears. For the espalier, Marie Louise, Broom-park and Knight's Monarch Pears.‖—*J Turner.* Fruit-trees planted last autumn need not be cut back farther than is necessary for training. The same remark applies to a tree intended for Mr. Ker's method of training. The Noblesse Peach will be suitable for this purpose.‖—*T. Moore, Isle of Man.* For a wall the following are likely to prove suitable in your climate. *Pears:* Marie Louise, Knight's Monarch, Thompson's, Glout Morceau, Passe Colmar, Ne plus Meuris. *Cherries:* May Duke, Elton, Downton, Knight's Early, Black Florence. *Plums:* Royale Hâtive, Greengage, Purple Gage, Jefferson, Kirke's, Coe's Golden Drop. *Apples:* Cornish Gilliflower, Scarlet Nonpareil, Ribston Pippin, Blenheim Pippin, Court of Wick.‖

HEATING: *J W S.* A tank such as you describe should answer for Cucumber growing, provided you cover it closely with slate, leaving sufficient space in front for the ascent of heat.‖

INSECTS: *Const Reader.* Now is a good time to apply hot water to kill scale on Pear trees.‡

LAWNS: *H C.* It will be best to dig it over, and lay it down with proper seeds; but take care that it is well drained, or your lawn will never be good.

LESCHENAULTIAS: *A Young Gardener.* Without some knowledge of the treatment to which your plants have been subjected, it is impossible for us to answer your inquiry satisfactorily. When Leschenaultias become old, they get bare, and sometimes lose their branches; but we never saw this happen with young plants well treated.‡

MANURES: *A Lady.* Superphosphate of lime is a capital material for mixing with guano. It may be applied with advantage for all the purposes for which other manures are applied.‡

MONSTROUS TURNIP: *M E A.* Very ingenious, and perhaps right. We will publish it, and then consider your opinion more fully.

MOSS: *Killington.* You may kill it by a mixture of lime-wash and sulphur; but it will return unless you drain your land thoroughly.

NAMES OF FRUITS: *J C X.* The Apple received under the name of "Castle Major," probably a good kitchen Apple, is not known to be synonymous with any other sort.‖—*W H.* Dumelow's Seedling.‖—*M, Reigate.* Wyken Pippin.‖—*W M H.* A very good dessert Apple, probably the Scarlet Nonpareil.‖

NAMES OF PLANTS: *J H M.* Asplenium lanceolatum (the Madeira form of it). If you can send a few good specimens of it to our office you would oblige us. *S.—Anon.* It may be a leaf of the Cape Holly, Ilex crocea; if hardy, it is new.—*T M.* It is the Roman Candle or Candlebush, Kleinia articulata.

PEAS: *Amicus.* Six dwarf sorts, to form a succession, may consist of the true Early Frame, Fairbeard's Early Surprise, Groom's Superb Dwarf Blue, Blue Prussian, Milford Marrow, and Knight's Dwarf Marrow.‖—*J L.* You sow too thickly. They should never touch one another; at least an inch should intervene between each Pea.‡

PHYSIOLOGICAL QUESTIONS: *A Subscriber.* In physiological discussions, terms require to be used in their strict physiological sense. When "Lancaster" used the term wood, we supposed him to mean woody matter; if he meant young shoots, employing the term in a gardener's way, that would alter the whole question. Our answer was perfectly correct, and your own case proves it to be so; but we cannot enter now into a discussion while we have so many other objects that press for attention.

POLMAISE HEATING: *A B C, Waterford.* Thin flags will answer every purpose; thin slate is apt to crack and break with the heat. A layer of at least 6 or 8 inches of brick rubbish or broken pots on the top of the flues is necessary before putting on the plunging material. Tanners' bark, saw-dust, or half decomposed leaves, are good materials for plunging pots in. We refer you to a description of Mr. Kendall's stove in another column of to-day's Paper as a case in point. *L.*

POTATOES: *Hampshire.* Lime is well spoken of by some, though others fail to discover its advantage. It is much more likely to do good than harm, and perhaps you will be wise to employ it.—*J L.* Whole Potatoes, the size of pigeon's eggs, make better seed than cut sets.‡ *O S.* We doubt whether you will be able to take two crops off your ground in the time you mention. The experiment is, however, worth a trial, and we shall be glad to hear the result. The Ash-leaf Kidney will suit you best. In the present state of Potatoes, it is not advisable to use any manure; but on this point, as well as on others connected with the cultivation of the Potato, we are endeavouring to collect all the information we can, and if you will begin at No. 3, 1849, and read forward with us, you will then be in possession of the result of our enquiries.‡

RHODODENDRONS: "Sir William Hooker, in describing the beautiful Rhododendron Nilagiricum, mentions a new species raised by Messrs. Dickson, of Chester, as 'a distinct arborescent Rhododendron of great beauty, with dark red or puce-coloured heads of flowers, large coriaceous glossy foliage, &c.' I would inquire if there is a spurious variety of this Rhododendron in cultivation, as I possess a plant bearing the same name, 'R. barbatum,' which I purchased of a most respectable nurseryman, which, though it has the distinguishing bristles on its young branches, is yet, in other respects, totally unlike the one described, as its habit is weak, its foliage sickly and its general appearance unsatisfactory. Perhaps Messrs. Dickson would give your readers some description of their plant; its general appearance, growth, age, and size when flowering, if grown under glass or in the open ground. All the Indian species succeed so well with me (the one I allude to excepted), that I desire to add every really distinct sort to my collection." *A Devonian.*

UNDERGROUND CLIMATE: *J W.* Such questions can only be answered on the spot. As far as we can judge, you would gain your purpose by cutting through the pan of gravel which lies below your soapy loam. It would also be much improved by burning it as opportunities occur.

VINE BORDERS: *"Who shall decide?"* You cannot have a better bottom for the Vine than that which yours naturally is, magnesian limestone. All you need to do is to lay on this a compost of rich fibrous turf, dung, and bone manure, to the depth of 4 feet; it will sink to little more than 3. The width of the border may be at first 12 feet; and just before the roots extend so far, add 6 feet more. You can most economically adopt the pipes used in your old Vinery.‖—*W A D.* One of the best borders with which we are acquainted, is that at Castle Malgwyn, near Pembroke; an account of it is given in No. 40, 1847, but, as you may not possess this No., we will give you a brief description of it. The bottom of the border is gently sloped from the houses to the extreme edge, where is built a box-drain extending the whole length of the border. This drain is a foot square, the top of it being level with the bottom of the border. When this is completed, dwarf walls are built across the border, 3½ feet apart, 1 foot square, in the pigeon-hole manner; on the top of these walls are laid rough flags; these, in reality, form the bottom of the border, and upon these are placed about 6 inches of broken stones and bricks, then turf, with the grassy side down, to prevent the soil mixing with the stones. There are flues or chimneys at each end of the border, and centre, communicating with the drains in the bottom. The top of these flues is nicely made of stone 10 inches square, through which is cut a hole 6 inches square, in which is inserted a plug of a wedge-like form, so as to fit tightly; but removable at pleasure; these flues are about an inch above ground. At the back of the border are placed cast-iron pipes perpendicularly, and also communicating with the drains underneath, those being higher than the flues in front cause a motion in the air beneath the border. After a long continuance of rain the plugs in the flues in front are taken out, thereby creating a great circulation of air, and thus accelerating the drying of the border. In winter, the border is covered with leaves and stable manure to the depth of 12 inches. From the Vines in this border, Black Hamburgh Grapes have been obtained weighing from 2 lbs. 9 oz. up to 5 lbs. a bunch.‡

MISC: *F Fairbank.* It is immaterial whether you use a pit or frame for raising Cape Broccoli early; the principal aim should be to rear them as hardy as possible.—*Anti-Kawensis.* We cannot meddle needlessly with our neighbour's business. —*S S G.* The Apple shoots you sent are sadly infested with American blight. Naphtha will kill it, and this substance may be safely applied to the old wood, but it is rather injurious to young shoots. For these a powerful engine should be employed, and that frequently.‖—*X Y.* Now is as good a season as any for pruning your fruit-trees.‡

PERENNIAL GRASS SEEDS.

MESSRS. JOHN SUTTON AND SONS having for many years paid especial attention to the collecting of various kinds of Grasses which grow naturally in the various soils of Great Britain, for the purpose of introducing an improved system of laying down land to Permanent Pasture, are thereby enabled to supply the sorts and quantities of Seeds, varied to suit the soil for which they are intended; and the cost this season will be from 28s. to 32s. per acre, according to sorts and quantities the soil requires. For laying down Waste Lands, or making cover for game, coarser kinds may be had, at much less expense.

The nature of the soil being stated, J. S. and SONS *will be happy to furnish particulars of sorts and quantities or other information required.*

MIXTURES FOR IMPROVING OLD PASTURES.

Many old Upland Pastures, Parks, and Meadows, are nearly destitute of Clovers and the nutritious sorts of Grasses, in which case Messrs. SUTTON are in the practice of examining the sward, and furnishing such sorts only as are wanting, if these seeds are sown early in the season, the pastures being previously harrowed, and afterwards rolled, the improvement in the crop will be very considerable.

Mixed Clovers and fine Grass Seeds for this purpose, 2s. per gallon; quantity required 2 to 4 gallons per acre, according to the condition of the pasture.

FINE GRASS LAWNS AND BOWLING GREENS.

The great expense of cutting and carting turves from a distance may be avoided, and a *superior* turf produced in a few months, by sowing Messrs. SUTTON'S Lawn Grass Seeds, which consist solely of the finest and shortest growing kinds, perfectly *free from moss and other weeds.* Price 3s. 6d. per gallon, or 25s. per bushel.

JOHN SUTTON and SONS have also for sale excellent new seeds of home growth of Skirving's Liverpool, Laing's and Ashcroft Swede Turnip, White Belgian Carrot, Guernsey Cattle Parsnip, Yellow Globe and other Mangold Wurzels, Lucerne, Giant Saintfoin, Italian Rye grass, St. John's Day Rye, Summer Vetches, White Mustard, &c., priced catalogues of which may be had on application, addressed JOHN SUTTON and SONS, Reading Nursery, Reading, Berks.

N.B. All goods delivered free to either of the Railway Termini in London, or to any station on the Great Western or South Western Railways.

STEPHENSON AND CO., 61, Gracechurch street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

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The Agricultural Gazette.

SATURDAY, FEBRUARY 10, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, Feb. 13. Agricultural Society of England.
THURSDAY, — 15. Agricultural Imp. Society of Ireland.
THURSDAY, — 22.—Agricultural Imp. Society of Ireland.
FARMERS' CLUBS.—Feb. 12. Claydon. Feb 22. Darlington.

LOUIS BLANC objects to 'competition' as the principle by which value and remuneration are determined. He is for reducing men to the condition of children, and for elevating a representative Government as the common father: and of the latter he would require food, and employment, and protection, for the family, according not to the ability, but the necessity, of its members. He has not considered that the natural instinct of self-preservation is so generally sufficient for its purpose: nor that the law of neighbourly kindness is able to supplement what deficiencies the former may occasionally exhibit; he has forgotten that, while he puts these aside, he necessarily checks the growth of that robust manhood on the one hand, and of that social benevolence on the other, which they naturally tend to cherish. He has, in fact, fought against the laws of Nature, and of course he has failed in the contest. His theory is radically faulty to begin with; and its fruits, as in a late instance, have thus been fearfully mischievous.

The 'commercial principle,' as the necessary consequence of the human constitution, we have always held up as that with which it must only injure any body of men to contend: the principle of piece-work payment, as the true method of remunerating labour, has always been advocated in this Journal: the recommendation of indiscriminate benevolence, or of constant and unvarying assistance to the needy, we have always condemned—in all these instances, it must be acknowledged, pursuing a course utterly opposed to that which LOUIS BLANC would have followed: and yet "S. S." and others have accused us of "mandlin sentiment," and of a mere varnish separation from the doctrines of Socialism. Surely it cannot be necessary to defend the conduct of the *Agricultural Gazette* from such a charge as this; and we shall, therefore, be more usefully employed by inquiring into the doctrines of those who bring it.

We submit that the ideas of these gentlemen on the means of improving the labouring classes differ from the whole truth upon that subject as much by deficiency as those of LOUIS BLANC do by contrast. We believe that the strict exercise of the mere duties of master, even though under a thoroughly right and efficient government of the country, which they justly consider an important element of the subject, would be insufficient to raise a degraded population; and that simple payment of services, and just punishment of carelessness and misconduct, desirable as both of these are, would be unable of themselves to maintain an existing moral status, even though the people were assisted by the utmost reduction of taxation that true economy could permit, and were benefited by a Poor-law which, in unanimous opinion, did justice to the industrious without encouraging the idle. They omit from their calculations a reality which *will* make itself known, whether it be neglected or not—that the duties of NEIGHBOUR are as binding upon them as those of MASTER: and, what is more a subject for discussion here, that attention to the former is as necessary to their true interests as is attention to the latter. A sensitive appreciation of the miserable condition of a labouring population may induce a "morbid" sympathy, or it may not: but we are very sure that the course of conduct to which, in a benevolent and energetic man, it will lead, will be of the highest pecuniary advantage to himself and others. "S. S." will fail to benefit his neighbours by more discipline or military severity; and, till he adopts the kindly methods which a more social humanity suggests, he will have, as a master, to suffer from their obstinate ignorance, and, as a neighbour, from their persecuting annoyances. Let employers adopt these better methods, and, while they fulfil a duty, they will reap the personal benefit of intelligent and well-intended service. The education which they would confer is not the mere practice of reading, writing, and arithmetic, of which, as a moral agent, "S. S." has so poor an opinion. There is no education more influential than that which the example of an honest, upright, and kindly disposition conveys when it is exercised by a master towards his men. Such a mind as this will exhibit itself in many ways beside the mere establishment of schools: and though it may not be directly—because, if directly, it would not be usefully* influential in raising wages, it would raise the standard of comfort among labourers by exciting in them that good will towards others in return, on which, as much as upon external circumstances, comfort depends.

We are clear for maintaining the position of master in all its integrity—servants will be all the better conditioned for their services being strictly exacted; but the strict justice, which seems the only bond of this relationship, is not inconsistent with the good will, and sympathy, and benevolence, which the relationship of neighbour implies, if its duties be rightly fulfilled.

The whole truth presents both of these aspects: and, while in the one it exhibits to us two honest men, who are actuated by no other sentiment than that sense of justice which demands its due, exchanging with one another labour for money, according to the market value of the former; in the other it presents these same men as equals in a far higher sense than that in which they are respectively superior and inferior—as neighbours claiming mutual sympathy, and the *expression* of that sympathy, to the extent of their respective abilities. There is nothing in this statement, we honestly believe, which is not thoroughly defensible: and we are well assured that the most successful master is he who has regard to the truth of this matter in both of its aspects: and, while he is actuated by determined justice on the one hand, and by kindly good will on the other, his men will be good labourers and good neighbours; and they will repay him in both ways for his intelligent benevolence.

To the methods in which *intelligent* benevolence on the part of employers towards agricultural labourers exhibits itself, we must refer on another occasion.

LAW RELATING TO DRAIN-BRICKS.

[WE are indebted to a friend for the following exact copy, from the short-hand writer's notes, of the important judgment in the Court of Exchequer in the late case of the ATTORNEY GENERAL *v.* WALKER, delivered Jan. 30, 1849.]

MR. BARON ROLFE: This is an information for penalties against the defendant, under the 2d and 3d Victoria, cap. 24, sect. 18. As the case turns upon that section, it is necessary to refer to it. The section is this: "Whereas it is expedient to exempt from the duties by this act imposed bricks made for the sole purpose of draining wet and marshy lands, be it therefore enacted, that it shall be lawful for any person to make bricks for the sole purpose of draining wet and marshy lands without being charged or chargeable with any duty for or in respect of such bricks, all such bricks being in the making thereof stamped or moulded with the word 'drain' in or near the centre of such bricks, in so plain and distinct a manner that the same may be easily and clearly legible to any officer of Excise or other person examining the same, both before and after such bricks shall have gone through the process of burning and become fit for use. Provided always, that it shall not be lawful for any person to employ or make use of any such bricks for any other purpose than in draining wet and marshy lands, and in constructing the necessary drains, gouts, culverts, arches, and walls of the brickwork, proper and necessarily required for effecting and maintaining the drainage of such lands; and every maker of such bricks or other person who shall sell, or deliver, or use, or employ any brick with the word drain so stamped or moulded thereon for any other purpose than as aforesaid, shall forfeit fifty pounds."

The question in this case arises by reason of works executed under a local act for draining Bardney Fens, 6th and 7th Victoria, cap. 76. Under the provisions of that act, the defendant made large and extensive drains some of which crossed, and others ran alongs de of public highways.

In order to protect the public from danger arising from those drains, and to enable them to use the highways crossed by the drains, the defendant erected parapets and bridges, and it must be taken that these parapets and bridges were necessary, at least necessary in the sense that the defendant would have

* We cannot here discuss—what we believe to be a fact—the circumstance that wages are a mere effect: and that it is useless, by artificially raising them, to attempt attaining those circumstances out of which, by the natural method, high wages arise. To this subject we shall return.

been liable to indictment for a nuisance in obstructing the highway, and making the passage alongside the drains dangerous, if he had not made the parapets and bridges in question. In erecting those parapets and bridges, the defendant used drainage bricks, and the information was for penalties incurred under the 18th section for so doing.

At the trial, the Lord Chief Baron thought that none of the bricks used were liable to duty. The court has already intimated its opinion that some at least of the bricks were liable to duty, so that there ought to be a new trial. The Attorney-General desires to have a distinct rule laid down as to what line upon this subject is to be drawn. It must be observed that it is impossible to define that line so clearly as that difficult questions of fact may not arise; but the just rule seems to me to be that no bricks are exempt from duty, except those which are used immediately for the purpose of drainage. The proviso in the section I have read limits very closely indeed the purpose for which drainage bricks may be used. "Provided always that it shall not be lawful for any person to employ or make use of any such bricks for any other purpose than in draining wet and marshy lands, and in constructing the necessary drains, gouts, culverts, arches, and walls of the brickwork proper and necessarily required for effecting and maintaining the drainage of such lands." Now, in this case, the necessity for the bridge arises from matter collateral to the drainage, which drainage would be quite as perfect without it. It arises from the drain happening to traverse a highway. There is no necessity for a bridge except that which arises from the obligation on the part of the defendant not to violate the law, nor to be guilty of a nuisance. The word "necessary" in the proviso must, I think, mean physically necessary, or giving to the word a fair extension of interpretation, reasonably used with reference to physical necessity.

Suppose it to be a matter of dispute whether there is a highway across a field traversed by the drain in this case. Suppose it was a matter of doubt whether there was a highway at the place in question, and that the party making the drain considering that there was no highway made no bridge, denying that any highway existed, but that after the drainage has been completed he is indicted for a nuisance, and a highway is established. It would become necessary for him, according to the provisions of the Act of Parliament, and the common law of the land, to make a bridge, in order that the public might pass along that which was established to be a highway. Could the party then erect a bridge with duty free bricks, alleging that the bridge was in the language of the proviso necessary for the drain? Clearly not. The drainage, *ex hypothesi*, had been effected, and clearly might have been maintained without it.

On these grounds I think that the only rule capable of being acted on is that no duty-free bricks can be used for drainage which are not used as being physically necessary for "constructing the drains, gouts, culverts, arches, and walls of the brickwork" necessary for the drainage.

Mr. Baron Alderson: I am of the same opinion with my brother Rolfe, and I will state very shortly my reasons for so thinking. I believe the whole court are agreed in this, that the Act of Parliament which gives this exemption intends it to bricks used solely for the purposes of drainage, and does not extend to bricks used for a collateral purpose. The difference of opinion arises as to the question what is a collateral purpose? It appears to me that bricks are used for a collateral purpose where they are employed in constructing that the construction of which is not required with reference to the direct improvement of the drainage itself. It may be necessary as a condition to being allowed to make the drain, and yet collateral to the drainage. The test is, is the drainage the better for it, or not? Can the drainage be allowed to be made without making it?

I will suppose that in making of a drain a man desires to make two ponds, and as a condition for being allowed to make it a house is to be built on the second part of it for the more convenient occupation of that part of the land. I suppose no one would say that the house might be built with bricks exempted from the tax. Or suppose, for the convenient management of any works situated upon any part of the drain, a lock-house to be built for the watchman or lock keeper, I apprehend that that would be a purpose perfectly collateral to the drainage. Or suppose the erection of houses, for the convenient occupation of servants required to keep the drains in repair, all these would be purposes collateral to the drainage. Any construction however of the drain itself, any particular shape given to it, or any particular thickness, any aqueduct for carrying it across low grounds, could we suppose such a thing necessary that the water would not properly be drained directly into the valley, would be a part of the drain itself, directly contributing to the drain, and the bricks so employed would be exempted from duty. The Legislature has left the form of the drain to the discretion of the maker. So if he chooses to construct a barrel drain, the same consequence would follow.

But a bridge, as to which the question arises, is wholly collateral. It in no way assists the drainage. If it does anything it obstructs it. The drain, as a drain, would be better without it; and, indeed, in times of flood it might even be prejudicial to the drainage, by obstructing the water.

It is true it is not lawful to make a drain unless a bridge is also made, for it would be a public nuisance to deprive the neighbourhood of a highway already existing. But this is only a legal necessity for the maker of the drain, a condition upon his being allowed to make it, and is in principle the same as the condition of building a house or doing any other collateral thing. I think, therefore, that a bridge which in no way assists the drainage, but rather tends to obstruct it, must be built of bricks which are subject to duty, including the parapets. I cannot say that bricks are used solely for the purpose of the drainage where they are used for a purpose which does not directly facilitate or improve the drainage itself. I think, therefore, there must be a new trial.

Mr. Baron Parke: The question in this case arises upon the 18th section of the 2d and 3d Victoria, cap. 24. Does that statute exempt all the bricks which, on the evidence on the trial, were used by the defendant? I am of opinion that it does not. It does not, I think, exempt those which were used to build the bridge, either the arch or the parapet or the fleet walls rendered necessary by the bridge being constructed.

I do not think it of any use on this occasion to refer to the prior statutes, all of which were brought before us in the argument. They do not throw much light on the construction of the 18th section, the section in question, the construction of which I own appears to me to be clear, although some questions of nicety may arise in adapting it to the facts of each case. I think, however, there is no difficulty in this case, and that some bricks have clearly been used which render the defendant liable to the penalty.

The section in question provides that it shall be lawful "to make bricks for the sole purpose of draining wet and marshy lands," without being liable to duty, "provided always that it shall not be lawful for any person to make use of such bricks for any other purpose than in draining wet and marshy land, and in constructing the necessary drains, gouts, culverts, arches, and walls of the brickwork proper and necessarily required for effecting and maintaining the drainage of such lands." I think that the exemption given by this section is confined to the bricks actually used in the construction of the drains themselves, and the works therein mentioned, and the brickwork necessary for effecting and maintaining them as drains, gouts, &c., and does not extend to bricks used for any other collateral purposes.

Under all the circumstances under which the drainage takes place the exemption is the same, and is, in my judgment, limited in all cases to the bricks actually used in the very works of drainage. But the law leaves to all persons the full liberty to make such drains as they please, however varying in situation, number, depth, width, or construction—however erroneous or injudicious the principle may be on which they are constructed—however great the waste of bricks may be in the mode of construction. A man may make 10 barrel drains where one open drain would equally well answer the purpose, and he would be entitled to the exemption from duty for all the bricks he uses for that purpose. This the Legislature has left, I think, to the discretion of each individual. By the term, "necessarily used for the drainage," they did not mean to limit the number of bricks to the number necessary for making the drainage in the most economical way, or the number necessary to carry out a plan which any other person might choose to adopt.

But he cannot extend this exemption, if he chooses, contemporaneously with making the drains, to make other works upon his own estate which, but for the drainage he would not have made; as, for instance, bridges over drains on his own land, or if, as the price of being permitted to conduct a drain through his neighbour's land, he agrees to build a bridge or a wall for him, or to make any other species of brickwork, though without so doing he could never have made the drain, and the use of the bricks was necessary in one sense to enable him to do so.

In like manner, if in a private Act of Parliament for the drainage of a district, the Legislature stipulate, as the price of permitting the public right of way to be interfered with, that bridges shall be built, are the bricks used in their construction to be exempted, any more than if Parliament had provided that the adventurers should erect a boat house and provide a boat to ferry across a wide drain? or, indeed, that they should build a church or chapel for the increased population which might be introduced for the improvement of the land. Would the bricks used for those purposes be exempted? I think not; and if Parliament does not require bridges to be built over a drain, but the adventurer makes them voluntarily or to avoid being indicted, the bricks used are equally disentitled to be exempted. It appears to me that the exemption is, in all cases, confined to the drains and works themselves, and that it has never been extended to buildings or constructions made for a collateral purpose. I think therefore there must be a new trial.

Lord Chief Baron: In this case I have the misfortune to differ from the rest of the court. My brother Rolfe has most fairly and accurately stated the question at the opening of his judgment. I shall proceed therefore to state what appears to me to be the rule under which the law is to be administered which relates to the section of the act in question.

The rule I am prepared to lay down is this: That drain bricks may be used in constructing drains and all gouts, culverts, arches, and walls, which are physically or legally necessary for the existence and maintenance of the drains; and that in this (as in every other case) the word "necessary" does not mean absolutely necessary, but reasonably necessary with reference to the circumstances of the case. My learned brothers appear to think indeed they have so given their judgments, that the act permits the use of duty free bricks only in the case of physical necessity. In my judgment the framers of this law did not intend to provide for the laws of Nature being observed in utter oblivion and forgetfulness of the laws of the land. I think they intended to provide for any exigency that might arise out of either.

It may be as well at once to illustrate this position by an example of each kind of necessity. If a drain has to be carried across low-lying land, which requires foundation walls of strength and considerable depth necessary to its security, or if it crosses a valley or a street, or the deep cutting of a railway, so as to require support from below by a chain of columns, in that case there is a physical necessity for such walls, arches, or columns, and they may be constructed of drain bricks as well as the drains themselves. So if a large open drain be made in a country where its existence as an open drain would be dangerous to the lives of Her Majesty's subjects, where any right of way of a public or private way exists, or in the course of passing along where now a very [illegible], but I think there is a legal necessity to protect the public from danger, so that a parapet wall to protect the public and the drain is as necessary a part of the drain as the act contemplates; and the portion of it on which the water flows, and such is a proper and necessary part, and may be constructed of duty-free bricks without incurring a penalty.

This rule of course excludes any work not *bona fide* erected with a view to drainage; and it excludes anything done under any mere voluntary contract or bargain, and otherwise any collateral purpose, such as my learned brother Alderson has referred to in his judgment. What is done must be in reason done from physical necessity, or in discharge of some legal duty or obligation immediately and necessarily arising out of and connected with the making of the drain. I propose to state shortly the grounds upon which I have come to this conclusion.

I think nothing whatever directly turns on the local act in respect of remission of duty. The commissioners, by the 97th section of their act, are authorized to make bridges, but bridges are not mentioned in the Excise Act. Arches alone are mentioned as capable of being made of duty free bricks. I do not think that the commissioners are, for this reason, entitled to make any bridges they may think necessary. For the commissioners render them not more empowered to do many things which, without the act, they could not accomplish, but with reference to exemption from the duty on bricks I think they stand in the same situation as any other of her Majesty's subjects. The act, however, removes any impediment arising from the want of consent, and enables them as a matter of public right to cross public ways, or even private lands, and construct such works as they may think necessary. They are, therefore, not done by way of bargain or agreement with any one, but as of public right and under the authority of the law.

My learned brothers having alluded very shortly to the statutes upon this subject, I will mention that the first statute I find on the subject of bricks is the 5th George IV., cap. 7?, sec. 9. There had previously been other statutes giving an exemption from duty to drain-tiles, but I believe this is the first statute which gives such an exemption in respect of bricks. The privilege conferred by that statute was very small. It required that bricks should be made upon the land drained, not a very easy course to comply with, because it would be very difficult for each brick to be made upon the land it was intended to drain. There is this condition, however, that the bricks must be made upon the land, or within a quarter of a mile.

The next statute is the 7th George IV., cap. 49, sect. 3, by which it was made lawful to make tiles or bricks for the sole purpose of draining wet or marshy land. *And that purpose alone* was mentioned in the Act of Parliament. The use of bricks for any other purpose than that of draining wet or marshy land incurred a penalty. In that statute there was no mention of arches, walls, or of brickwork *in general*, but the only purpose mentioned was "draining wet or marshy land." If this statute had contained, however, the same expressions, it is very possible that I might have concurred in the construction of that statute in the judgment which my learned brothers have pronounced on the present one.

But the act in question, the 2d and 3d Victoria, cap. 24, contains other words than those which are to be found in any of the prior statutes. The present statute adds these words in substance, that duty-free bricks may be used "in constructing the necessary drains, gouts, culverts, arches, and walls of the brickwork proper and necessarily required," which I think may be read in point of necessity reasonably required "for the effecting and maintaining the drainage of such lands." I think it may be well argued that the introduction of the new words was intended to introduce new matter, and as the 7th George IV. had certainly much improved on the liberality of the 5th George IV., so experience of the beneficial effects of draining gave rise to the larger expressions of the more recent statute.

Still the question recurs, what is the true legal construction of the statute as it is now found? The object of the statute in this part of it was to encourage the draining of wet and marshy lands for the general public benefit of the whole kingdom. It ought, therefore, in my judgment, to receive the largest and most liberal construction that any of the words found in it are capable of receiving. It is not a statute passed to alter or derogate from the common law, and therefore there is no pretext for viewing it with jealousy, and making it do as little as possible, and assigning to it a minimum of meaning. It was passed with the liberal spirit, and with the enlightened view, of suspending a tax, in order to render available all the resources of the country, and to bring into cultivation land which might otherwise be comparatively barren. I think we are bound to construe the law in the same enlightened and liberal spirit in which it was framed, and to give the fullest effect to every word in it, and I think the expression to be found in Lord Coke, 3d Reports Heydon's Case, page 7, repeated in the Magdalen College Case, 11th Reports, page 73, applies to this case. "The office of judges is always to make such construction as to suppress the mischief and advance the remedy, and to suppress subtle inventions and evasions for the continuance of the mischief, and to add force and life to the cure and remedy according to the true intention of the makers of the act *pro bono publico*." And I think the maxim to be found in Bacon's Abridgment Title Statute on the rule to be observed in the construction of statutes strongly applies to the present case, "such a construction ought to be put upon a statute as may best answer the intention which the makers of it had in view, for *qui haeret in litera haeret in cortice*. The intention of the legislators is sometimes to be collected from the cause or necessity of making a statute; sometimes from other parts of the same statute, and sometimes from foreign circumstances. Whenever this can be discovered, it must be followed with reason and discretion in the construction of the statute, although such construction seem contrary to the letter thereof."

I do not, and cannot doubt that it was the intention of the Legislature that all brickwork within the meaning of the words of the act, "necessary for draining," should be constructed with duty-free bricks, and that it was not intended to give the stunted benefit of doing part of the work with duty-free bricks, and paying a tax for the remainder, which was equally necessary. Nor was it intended to give the power of squandering bricks upon a lengthened and unnecessary tunnel or barrel drain, as some compensation for denying the convenience and economy of an arch or bridge, unless it was constructed of taxed bricks, nor do I think the Legislature intended the laws of Nature to be obeyed and at the same time made no provision for obeying the laws of the land.

But to proceed to some of the details to which the judgment of the court applies, such as the cases of parapets or arches by the side of, or under which the drain is to travel. It is manifest, and, I think, is conceded on all hands, that the privilege of using duty free bricks is not limited to the mere watercourse itself, that is, to the portion of the entire work where the water runs. For, if the ground require it, a brick foundation may be made, the depth of which may be commensurate with the necessity that calls for it. If a deep place is to be crossed (which may be a valley, ravine, deep cutting, or street), supports may be made of drain bricks, whether by walls or arches, according to the most convenient mode of supporting the drain, which then becomes a sort of aqueduct.

If it pass under a hill, or under houses or buildings, the arch must be constructed with reference to the incumbent weight, not the mere flowing of the water, and the side walls with reference to the lateral pressure, not with reference to the mere purpose of allowing the water to flow. In short, wherever the use of bricks is necessary to overcome a difficulty or impediment, and to prevent danger or give security, duty-free bricks may be used, the only limit to their use being the extent of the necessity which gives rise to their use at all.

If, then, it be established, that duty-free bricks may be used to overcome any physical difficulty, or to guard against any physical danger, let us see whether cases may not and must not occur, in which moral, social, or legal grounds may be presented for the use of drain bricks in constructing works connected with drains, although not physically necessary. If there were the general law that, for some reason, all drains must be made of a certain thickness, though not necessary to their existence as drains, or their efficiency as such, can it be doubted that drain-bricks might be used for the whole thickness, and could it be successfully contended that drain bricks could be used for that portion only that was necessary for draining, and that the superfluous thickness required by law should be made with duty-paid bricks? So if for sanitary purposes it were enacted by statute that all drains, if open, should have a high wall on each side of them, I am clearly of opinion the wall so required by law would be a necessary part of the drain, and might (as well as the mere watercourse) be constructed of duty-free bricks. But by the common law, without any statute, a drain must not be a nuisance, and must not be so constructed as to endanger life or property, and if a convenient parapet wall be essential to its lawful existence in particular cases, and to its not being a nuisance dangerous to life, health, or property, such parapet wall is, in point of law, as necessary to the drain as the foundation on which it rests, or the arch which prevents the earth above it from crumbling into it and destroying it; such work may, therefore, in my judgment, be made of duty-free bricks as well as the waterway itself, otherwise the permission to make the drain with duty-free bricks is illusory, and the subject who has entered on the task of draining lands on the faith that whatever brickwork was necessary might be constructed of duty-free bricks, finds he must complete the work with taxed bricks. This consideration appears to me to dispose of all the cases where parapet walls have been made to drains, with a view *bona fide* to prevent its being a public nuisance.

I cannot say that the case of bridges is equally clear. If the word "bridge" had been actually used, I presume there would have been no doubt; but what are the bridges in this case but arches necessarily required to enable the drain to pass under the public way? I cannot in principle distinguish between passing a drain over a valley, deep cutting, or public street, and passing it under a public way. In the former case I believe it is admitted that an aqueduct may be made to support the drain. In my judgment, in the latter case a bridge may be made to enable the drain to pass under the public way. It seems to be admitted that a barrel-drain may be made in order to pass the drain under the public way. If so, why not a bridge? The real nature of the construction appears to be mistaken. It is this—not that the bridge is made that the public may pass over the drain, but the bridge is made that the drain may pass under the public way, and it could not pass under it without it. The bridge is, therefore, essentially necessary to the drain.

I own I cannot see the distinction taken in my brother Alderson's judgment, whether the necessity for the bridge arises before or after. I think in either case the doctrine equally applies, and herein I think is the fallacy of a different view of the subject. It is supposed that the arch or the bridge is made for the accommodation of the public. In my judgment it is no such thing; the arch is made singly and solely that the drain may go under it; the drain is not merely the "*sine qua non*," but it is actually the "*causa causans*" of the erection of the arch, and necessarily in point of law compels the use of bricks. I think, therefore, the construction of the act which would allow the lower part of the work necessary to take the drain across the public way to be made of drain bricks, but would compel the upper part of the work (call it by what name you will),

tunnel, barrel-drain, arch, or bridge, to be made of duty-paid bricks, is too *narrow* and *technical* (if indeed it be even *technical*), and overlooks the principle upon which, in my judgment, the statute was framed, namely, the extension of drains for the general public benefit of the kingdom.

The practice of former times is conformable to this, and it was proved on the trial that one of the old bridges which it became necessary to enlarge on widening the drain, had been in fact constructed of drain-bricks.

I think, therefore, if an artificial drain is to cross a public way, and the public way cannot lawfully be stopped or impeded by the drain, that the proper and reasonable means that skilful engineering would select to pass the drain under the public way may be adopted, whether by a bridge or a barrel-drain, and that in such a case a bridge, such as these bridges were, of single arches, is directly within the very words of the act; it is an arch "proper and necessarily required for the effecting and maintaining the drainage."

Those who framed the statute must have been aware that any system of drainage to be effectual must extend for some distance, and of necessity must interest many public and private ways. I cannot impute to them the deliberate intention of compelling those who had to cross public or private ways to do so exclusively by means of tunnels, barrel drains, or culverts, and so abstain from making an arch (except with taxed bricks), though the arch might obviously be the best, the most economical, and the most convenient mode of making the drain across the way, public or private. I think the word "arch" is found in the section expressly with the intention of allowing arches to be made for that, among the other purposes, for which an arch may be useful, and I think it forms no objection that such an arch may be called "a bridge," and that the word "bridge" itself does not occur in the section.

It was, however, very confidently urged at *nisi prius* that even if a bridge could be considered as merely the upper part of a barrel drain, as I think in some sense it may, and therefore capable of being made of duty-free bricks, the parapet walls of the bridge could not be considered as necessary; to which I think an answer has already been given, that where the law authorizes a thing to be done, it authorizes it to be done legally, perfectly, and in such a manner as not to endanger the public health or safety.

On the whole, therefore, I am of opinion that the object of the statute being to encourage the draining of wet lands in order to increase the prosperity and promote the public welfare of the country, it is to receive as large and liberal a construction as the language used can enable us to give to it; and as the language of the act is, that "the necessary drains, gouts, culverts, arches, and walls of brickwork, proper and necessarily required for effecting and maintaining the drainage," may be made of duty free bricks, I think if the walls and arches complained of were proper and necessarily required, whether by physical necessity or by the law of the land, if they were immediately connected with and arising out of the making of the drain, so that physically or legally the one could not be made to exist without the other, the defendant is entitled to our judgment. But as the majority of the court is of a different opinion, there must be a new trial.

CHRONICLES OF A CLAY FARM.

SECOND SERIES.—No. I.

The town of Bogmoor is not famous in History: nor indeed geographically. It may not perhaps have challenged a very responsible amount of public notice hitherto, either for its own merits in general, or for that reflected virtue in particular, which has cast a queer distinction upon Marlborough, Wellington, and a few other 'small towns with great names' that might be mentioned, and that sometimes *are* mentioned, in fact, with a sort of yawn of careless wonder, why 'Duke of Blenheim' and 'Duke of Waterloo' wouldn't have done as well,—perhaps better, than tying on the name of an obscure town to the Laurels of the Hero, like a penny ribbon on a prize Elephant.

But however that 's not the present subject,—indeed as far from it as possible,—for the real point was to shew that whatever the world at large might say or think—or not say or think at all, about Bogmoor, it had a comfortable kind of self-opinion of its own that amply outbalanced all public indifference. Indeed the place was utterly chloroformed against any sensibility of the kind, and was quite of the opposite way of thinking; reminding one of those folks often met with, who for some cabinet reason that never can be got at, seem to view every other object in life through that lens by which the dilated eye of the drunkard is said to make every thing *look small*. As you walked or rode up its one long flat dull straggling street, it was striking to remark the contrast between the street itself and the faces that met you in it. How upon earth so much self-satisfaction had ever been got together in so unsatisfactory a spot was the indefinite wonder that was stirred afresh in the mind by every object that met one's eye. The very curs popping extemporaneously out of wet narrow alleys, imaged, while partaking of, the character of the place, cocking up head and tail as you passed, and exerting both together in one short 'Who are you?' bark of inconceivable impudence.

Whether in aggravation, or explanation, of the whole scene one can hardly undertake to say,—but there was one large bow-window visible a long way up the street and down the street—and indeed up and down another street too, (the only attempt at a cross street there was,) for it was a corner window, commanding therefore at a glance all the news of the town.

Ay! and a deal more too! Its wide look-out, like the little dogs just observed upon, was emblematic as well as actual. It was the News-room, Reading room, Petty-Sessions-room, Literary-and-Scientific-room, Farmers'-Club-room, and a great many other rooms besides, that there is not time to tell. Enough to say that the smallest pin ever manufactured could hardly have alighted point downwards on the floor of that room—metaphorically to speak—but everybody heard it ten miles round, and could tell you the shape size colour and manufacturer's name within the twenty-four hours: and that was short time in those days.

I shall not describe that room or its bow-window any further. I conceive that the heaps of news-papers, with the noses and spectacles poring over them, and the polished mahogany tables, to sit and read them at in the windows, so as to command the news inside *and outside*, are sufficiently visible to all average minds'-eyes without more specification.

Now it happened that at the top of a column in the advertisement-page of the Wetlandshire Mercury which was lying, fresh and damp from the Press, and casting a hazy pattern of itself upon the polish of one of those same mahoganies, there appeared one Saturday morning in the autumn of the year Eighteen hundred and-thirty-something, a short dab of an advertisement in the following spasmodic phraseology.

"Wetlandshire.—Farm to let; on Lease. 250 acres. One third Meadow and Pasture. Has been drained and otherwise improved in the hands of the proprietor. Capital required, 10*l*. to the acre. Application, to Messrs Penn and Debbitt, Bogmoor, Wetlandshire."

"I say, Mr. Bowles, have you seen this Farm that's advertised here?"

—said a gentleman *sitting* in the window, to another gentleman, in deep perusal at the fireplace, of which he had taken sole seisin, holding it by the two hobs—with his feet.

"Ye:—No: What is it:" said the voice from the fireplace, unenquiringly, and smothered in a 'leading article.'

"Why here's a Farm of 250 acres to let '*drained and otherwise improved by the proprietor*.' I wonder whose it is: that's just the sort of Farm young what's 'is name was wanting—that 'ou'd just suit him, would n't it?"

"Well, *what is* his name," returned the other voice, unenquiringly again, and never looking up.

"Why young—oh! what is his name—I shall forget my own soon"—(a grunt from the fireplace) "—young Leejohn, you know him. You don't mean to say you don't know him!"

"I didn't say I didn't," answered Mr. Bowles with provoking gravity of iteration, bent upon giving the smallest modicum of intellect to anything else till he had finished his 'Leader:' which having just accomplished he starts up, lets go the hobs, and parting his coat tails, turns round, and again takes possession of the fire; indescribably; and waking up to the subject, asks, "But how can *he* take it: you said 10*l*. to the acre didn't you? He hasn't the money."

"'ord blesh ye"!

Added to a toss up of the chin out of the cravat, to give emphasis to the middle word, this inter-jection conveyed all the answer that was heard, to the difficulty started by Mr. Bowles. What the exact meaning was that lay wrapped up in the blessing—whether it was peremptorily favorable to young Leejohn's pecuniary capabilities, or conclusive of some indifference attaching *in toto* to the inquiry, has remained dark to the present day. The subject fell, strangled by some larger topic of news room discussion: and the Chronicle is without a scholiast.

Two or three days after the appearance of this epigrammatic announcement in the Mercury, a thick and weighty-looking pacquet, directed in what may (for contradistinction's sake) be called 'Square-text' might be seen lying upon the margin of a breakfast table, on which lay also an admired disorder of newspapers, books, farm accounts, and coffee cups. The room itself in which the table stood is just worth a moment's notice before anybody comes in. Small, oak panelled, and too square for proportion, it was crammed in every corner and upon every table with miscellaneous piles of articles which seemed to have grown together by degrees in spite of original incongruity, and become reconciled at last by lying under the same dust. 'Indoor' and 'out o'-door' seemed to contend for the mastery all over the room: if you looked into the corners you might have fancied yourself in a garden-tool-house, if you looked on the mantel piece you thought of a chemist's shop: four dried lumps of soil, as hard as stones, lay at one end of it on separate pieces of ex-white paper, and through their coating of dust feebly indicated the three primary colours, blue, red and yellow, with a sort of grey for the fourth. Over several tiers of newspapers between the windows, at the further end of the room lay at full length two 'new and improved' Drainage Levels—out of Spirit however—for each was carefully tied up with a direction card *to the maker*: 'rejected addresses' evidently. Odd conditions, numea ing and half meaning, disported themselves over the confusion of the little den: the end of a large pruning-knife peered out between the sheets of a new half-cut volume marked 'Dendrology,' suggesting something about Theory and Practice, and clearly exhibiting by the jagged leaves the moral as well as physical truth that *sharp knives are bad paper cutters*. An old quarto volume of Raleigh's History of the World, in black letter, lay open on a little table near the fireplace, with a bundle of Cigars and some papers of Potato-seed on one page;—and a *small sharp Axe* on the other. A small bone lay near, and a drop of blood along the edge had left mark of some awkwardness or haste and had smeared the page below with an ugly red line under the word gratitude. Except a tolerably well filled book case but too much stuffed with stitched reports and periodicals, there was nothing else noticeable in the general medley, excepting an ingenious atrocity in the shape of an easy-chair with a traversing desk, and a shaded reading-lamp, screwed into one of the arms. A wood fire had burst out in the hearth, leaving the ends of the brands reclined despondently against the dogs, old-fashioned and biped articles, which reared each a long swan neck and head of silver, by way of focal ornament and finish, and which people who came on business always fixed their eyes upon, and at some convenient pause registered their approval of, in a tone that took some credit for originality of taste.

The windows looked east-ward, and the sun was shining in: the weighty-looking pacquet had not been long on the table before the door opened, and a shooting-jacket, waistcoat, and trousers, all of the same pattern, entered the room: a cup of coffee was hastily poured out, and the seal of the pacquet broken. A quantity of letters fell out; one of which ran as follows.

"Dear Sir,—We enclose to you applications for Farm marked 1. to 11. of which be pleased to return those you wish answered. We had yesterday six parties who called, wishing to inspect personally and have refusal of the same. We will forward you further particulars to-morrow. We are, Sir, yours very truly,

"Penn and Debbitt."

'Marked *one to fourteen—plus six*' muttered the owner of the shooting jacket, slowly putting down the letter amongst the others, seating himself in the arm-chair and swallowing the lion's half of the first cup of coffee. 'Two days' notice—"no! not so much; not two"—and *twenty applications*.—Hum!'

Having delivered himself of this reflection with that deliberate and abstracted utterance betokening more thought than syllables, he gradually fell into a posture—the head upon the hand and the elbow on the chair-arm—which indicates that state of mind—deriving its name from the habit of the cloven hoofed race we wot of, that dine at one hour and chew at another,—Ruminating.

'And so, my poor old Farm, I must now bid you farewell. I who have taken your part through good and ill report,—know the course of every drain and could find blindfold every weeping outflow that has wrought so fair a change in your once untoward look, and ill names each its tears of penitence and Promise! I who have taught you by anxious toil through many a long dull day that serene and smiling look you wear this lovely morning, which even in your plain face betokens something good at heart. Well! may he who wins deserve, as many a sad heart has said, after all its watchful care, in cases not altogether dissimilar.—Now let us see something of the suitors!'

This last remark seemed to have reference to the heap of letters 'marked 1 to 11,' but before the action could be suited to the word, it was arrested by something which also came has arrested a good many words and actions: a gentle knock. *Talpa.*

THE RURAL POOR.

The condition of our farm labourers is a subject for serious inquiry. Whatever may be the morality of individuals on particular estates or in favoured parishes, as a class the rural poor are no credit to our civil and religious institutions, and should any political commotions suspend the action of the laws, these are the men, depend upon it, to sink the state in irremediable ruin. We are unwilling from pride to admit this, and instead of submitting our judgment to the just influence of a million of facts, seen, felt, and incontrovertible, we prefer listening to the trifling arguments of partial and incompetent witnesses. For the proof of this I need do no more than point to the correspondence on this subject which has appeared within the last few weeks in the columns of your Journal. There we find the *bavardage* of "T. R. V.," and the silly, mischievous suggestions of "Georgos," who coolly tells us that with a little poverty he feels certain he should have been a successful candidate for the hulks. I hope he is no neighbour of mine. Several others follow on the same side, but with more discretion, though each in his turn tells us with many vanity flourishes of self congratulation, that the rural poor in his neighbourhood are sober, orderly, and honest, thanks to himself; and that in localities where this is not the case, it is for want of sympathy and humane treatment. The last, though not the least, of your correspondents is an extraordinary genius. His bodily presence suffices everywhere, and under all circumstances alike, to produce order, obedience, and honest dealing. One feat on which he dwells with pride deserves a statue. I mean the march from Chichester to Chatham.

This clever officer supposes that "'S. S.' has started on his journey of life with some of the diseases of Sterne's traveller." In reply, "S. S." started on his journey some 40 years ago free from all disease, not only that of sentimentalism, but also that other which evidently afflicts the noble captain when he is on the subject of his own exploits. On the score of experience, whether acquired amongst individuals or masses, at home or abroad, "S. S." is not afraid to stand muster with travellers of a much wider range than "T. M. G.;" but what has such "leather and prunello" to do with the question at issue? Is the social, moral, and intellectual condition of the labouring classes such as becomes the English nation? Are pauperism and crime on the increase, or are they not? These are the questions to be answered. If Mr. T. M. Goodiff have any nostrum for the cure of the great and growing evil that sits, like a nightmare, in stifling oppression on the sources of our prosperity, let him produce it, and a monument high as the clouds, in one solid mass of Californian gold, shall celebrate his glory and our gratitude. This discussion, sanctioned by your leading article, has grown out of my letter to "S." I had no intention of getting into troubled water, but, being in, I am not sorry it has so happened; and, in defiance of the current and the sharks, I will now plunge in deeper and strike out farther.

Pauperism, and consequently crime, is increasing, notwithstanding the presence of circumstances more favourable to the proletary classes than are to be found in any other country of the world. Compared with any part of the continent of Europe we have an abundance of labour highly remunerated; public and private enterprise, gigantic undertakings, giving employment to tens of thousands of artisans and craftsmen, oft-times at excessive wages. For decrepitude, age, infirmity, and misfortune, the orphan and the widow, we have hospitals, asylums, and institutions, without number. Subscription funds to warm, clothe, and regale the necessitous. Private charities beyond conception or calculation, piously concealed, but constantly flowing from the holiest sources of benevolence and pity. Add to these the millions of the poor rate, and what is the result? All is cast into a *gulf*; pauperism is insatiable, and still cries "give, give, give." At the rate we are steaming, the communism of wealth is not far off. While the name is a bugbear to our thoughts, the principle is weaving its meshes about us. The industry and thrift of the few will soon be to the idle and the dissolute of the many what rivers are said by engineers to be to canals, mere sources of supply. The cleverest charlatans of the day tell us that education will remedy this state of things, forgetting, probably, that the ratio of crime is almost, if not altogether, as great in that class which can read as in the class totally unlettered. It would be gratifying to know that every poor child received an education sufficient for its intellectual wants, but let us not overrate its worth nor shut our eyes to its consequences. Will education endow a man with more strength, more courage to sweat and toil; will he be able to fill his children's bellies by writing on the table "bread and bacon?" will it be a receipt for his rent? in short, will it teach him to do his duty cheerfully in that state in which it has pleased God to call him? To learn men to see their miseries more clearly, to feel them more acutely, is only to hasten a catastrophe, and render social government impossible. The education which leads to diligence, sobriety, and honest purpose, is that which inculcates self dependence, and writes over every cottager's fire place "Help yourselves and God will help you." Our bold peasantry were formerly ashamed to receive relief tendered in secret, and would have scorned to be *seen* cringing at the workhouse-gate. With a higher average rate of wages, and education far more disseminated among them, what are they now? and how have they descended to what they are? I will tell you, at the risk of stirring up a host of *soi disant* philanthropists, some of them probably who never gave away a guinea in real charity in their lives, and others, too, who make a little generosity go a long way. I say, an unwise Poor-law has aggravated poverty by inviting to idleness and waste, and that rampant pauperism has been superinduced by a mischievous sympathy which has exaggerated the rights of the poor and the duties of the rich. The poor have their duties as well as their rights, and when they forget the former they forfeit the latter. For their souls' sake as well as their bodily comforts they require to be subjected to a searching surveillance; their conduct noted, their earnings ascertained and energies tried, that when they apply for relief their claims may be estimated. To this end the minister and overseer of the parish, the master who employs labourers, and the magistrate of the district, must be required to co operate. Instead of a demoralising sympathy, capricious and wavering in its action, let there be substituted merciful laws, administered with the just severity that a father would exercise over his children for the encouragement of the good, the reclamation of the weak, and the punishment of the incorrigible. We may now give a necessary education to every poor man's child. His intelligence will be awakened when his spirits are no longer oppressed. He will understand his bettered condition, and be proud to maintain it; he will be once more the peasant of former days, bold, frank, and honest. *S. S.*

Home Correspondence.

Rural Poor.—If "S. S." were better acquainted with the rural poor, he would pause before passing such a sweeping condemnation on them as he has done lately in the *Agricultural Gazette*, perhaps you will allow one of themselves to inform "S. S." of a few of the many difficulties the poor man has to encounter in this land of boasted wealth. In my opinion his greatest difficulty is, he has no opportunity, especially in rural districts, of giving his children even the plainest education, because the fees for schooling are generally more than he can afford to pay from his miserable income. Want of education, combined with a good moral example from the parent, lies at the bottom of all the evils. "S. S." complains that the present generation has been neglected by the one that is gone; they have been allowed to grow up in worse than beastly ignorance. The rising progeny of the poor man at the present day are growing up in the same dreadful state as their forefathers, and except those whom heaven has blessed with this world's good things, stretch forth a helping hand, it will be a long time before the poor man can, of his own exertions, have his children properly educated. The truth is, he is unable to pay for it, and too ignorant to teach them himself. Charity in any shape or form, except in extreme cases, has a debasing tendency. If half the sums expended in supporting poorhouses were spent in remunerative labour; for instance, in better cultivation (there is plenty of room for improvement, as many poor farms in England will testify), we might then find constant employment, do better for ourselves and children, and proprietors of land would find that the more labour expended on their land, so much the more valuable would their land become; the labourers would be grateful; and though last, not least, would be less poor-rates. *A Working Man*

Lime.—In your Paper of Dec. 30 there is a letter on the use and abuse of lime by a Mr. W. H. Fisher; and from the nature of his communication he understands less of the true use of lime than he would lead others to suppose. From all I can gather from Liebig, Johnson, and others, the burning of stone for lime is not entirely for the purpose of driving off the carbonic acid, but to render the stone more liable to be finely divided and mixed with the soil and that the use of lime to land is as follows: first to alter its mechanical texture, and next, and more especially, for the purpose of absorbing this same carbonic acid, and supplying it to the roots of plants, [Not so; but for the purpose in the act of becoming saturated with this acid of inducing such chemical changes in the soil as shall convert inert vegetable matter into useful food] and thus we see, where chalk is easily procured, farmers seldom use lime, because chalk is much more easily divided and mixed with the soil than stone, of which the greater portion of lime is made. And my opinion is, that it matters not however long the lime lies on the surface of the land; and if Mr. Fisher will read Johnston's "Agricultural Chemistry for Young Farmers," he will see the important part carbonic acid forms of the food of plants, from the experiments of Sir H. Davy, Dr. Priestly, and others. *Practice*.

Linseed Compound.—I have succeeded in making a very good Linseed compound for my cows, by boiling first sliced Carrots, then adding the Linseed meal, and pouring both over a mass of cut hay chaff on a brick floor. By this plan I save at least half my former quantity of hay, and the cows thrive admirably on it. But I cannot succeed in getting my fatting sheep to eat it, though horses devour it greedily. Can you advise me how to prepare it for sheep? Should it be put into moulds, or how can I make it into cake, for I imagine they dislike the oiliness of the Linseed? *Sussex.* [Sheep will eat it if starved into it for a day. We get them to eat our Linseed compound readily enough.]

Extent of Barn Floor.—Can any of your numerous correspondents, on agricultural subjects, inform me whether any kind of rule has yet been established for the guidance of landlords, as to the proper extent of barn accommodation that ought to be provided by them, in proportion to the arable acreage of farms? A tenant who commenced the occupation of a farm about 16 years ago, with 90 acres under the plough, was then contented with one barn and floor, but the quantity has been gradually increased by additions to the farm, to 120 acres, and he now presses for a second barn and fl or adjoining his present one, alleging that he suffers frequent loss from being unable to thresh all his different kinds of produce at the most advantageous moments. He has however a threshing machine, but he does not use it for any other grain besides Wheat, not an uncommon practice in the country. The tenant shows great attention to his business, and much anxiety to increase the produce of his farm, by making more manure, in which respect he has received the encouragement and assistance of his landlord, by the construction of a good range of cattle sheds, with a well sheltered straw barton for the wintering of cattle; but the question now is whether if further money is to be laid out on farm buildings, the erection of another barn is the best mode of applying it. *A Somersetshire Man.* [The answer to the question depends altogether on the system of management adopted. In Scotland the extent of barn accommodation is very small and yet perfectly sufficient; and where grain is stacked, and threshed by machine, and granary room exists, there is no need of any fixed proportion between quantity of arable land, and extent of barn floor.]

Quinquennial Exhibition of the products of French Industry.—This exhibition has been fixed for the month of June, and will be held in a spacious temporary building, erected for the occasion in the Champs Elysees. The forthcoming exhibition will, in one respect, differ from all those which have preceded it. Agriculture, which hitherto has been but imperfectly represented at these exhibitions, will now occupy a more conspicuous position. The plan which has been adopted for the construction of the building, contains two side galleries, placed at a distance from the principal building, and appropriated for the reception of specimens of live stock, horses, &c. The cost of transport to and from the exhibition of the produce of all the Departments, with the exception of the Seine, will be defrayed by the state. A sum of 600,000 francs (23,800*l.*) has been voted by the National Assembly for the purposes of the exhibition, and for medals to those exhibitors whose productions shall be judged worthy. *E. H. Durden.*

Pigs.—I give the result of feeding pigs upon Buckwheat, as worthy of observation. On the 15th December, 1848, I put up two pigs of the black Chichester breed, weighing each 71 lbs. and 74 lbs.; on the 22d the first had gained 10 lbs. and the latter 15 lbs.; on the 29th they were weighed again, when it was found that during the last week the first had gained 16 lbs. and the last 17 lbs., making a total gain of 58 lbs. on the two pigs in 14 days. They were killed the following week, but as they were weighed fasting I cannot give the accurate increase; however, this result is quite sufficient to determine the excellence of Buckwheat meal as sold at 11s. per cwt. The pigs were scrubbed every week, and allowed free access to clear water to drink. The pork was very superior. *J. Price, Eastcott.*

Ancient Egyptian Wheat.—Various inquiries and statements made in the *Agricultural Gazette* some time ago, respecting the alleged germination of Wheat taken from the mummy-cases, induced me to put the question at head-quarters, in our national Museum. The charred appearance of the Wheat is considered the result of age, and not of any artificial process, but still no authentic instance is known of success in raising plants from it. If such instances should be brought forward, we might be well excused for want of faith, so little dependance can be placed on the genuineness of any of the samples of seed. Fresh seeds of plants unknown in ancient Egypt have been found mixed with them, by fraud or accident, just as the Dahlia in the mummy's hand (which went the round of the papers) had been substituted for the more ancient, but less romantic Onion. *S. P. W.*

"*Beurre*" is, I believe, misinformed that fresh butter in London is manufactured from good sweet lard and the best Dorset salt butter; at least he is very fortunate if he can meet with such. An eminent and venerable judge, now no more, informed me while I was his pupil some 47 years since, that an action between two butter dealers, in which some facts were likely to transpire which the parties did not wish to be brought forward in Guildhall was referred to him, and in the course of the cause evidence was given of the way in which the best Epping butter was produced. The parties bought Irish butter which was too rank for the salt butter market; they cut it into thin flakes or slices, and exposed it to the dew and air on the top of a high building till it was perfectly bleached, (the use of chlorine was not known in those days), and had lost all smell and colour. They then added a colouring material, to give it the hue which distinguishes the best Epping butter, and made it up into the forms in which it is so eagerly purchased, and so agreeably eaten. But its excellence is of a very fugitive nature. Any bachelor who has lived in chambers, and had occasion to set by his pat of butter for the second day's breakfast, may remember that he has found a very different taste and colour on the second morning from that which he would have found on the first, and on the third day it is scarcely eatable, but needs to have the bleaching process repeated, while a pound of country butter made by a thoroughly cleanly dairywoman, in cool weather, will be good at a fortnight's end. *Hantoniensis.*

Societies.

Royal Agricultural of England.—A Monthly Council was held at the Society's House in Hanover-square, on Tuesday last, the 6th of February. Present: The Earl of Chichester, President, in the chair; Duke of Richmond, Earl of Ducie, Colonel Austen, Mr. Raymond Barker, Mr. Barnett, Mr. S. Bennett, Mr. Blanshard, Mr. Burke, Colonel Challoner, Mr. Childers, M.P., Mr. S. Druce, Mr. Garrett, Mr. Grantham, Mr. Hamond, Mr. Fisher Hobbs, Mr. Hudson (Castleacre), Mr. Jonas, Mr. Kinder, Mr. Miles, M.P., Mr. Milwood, Mr. Pendarves, M.P., Mr. Shaw, Mr. Shaw, jun., Mr. Shelley, Mr. R. Smith, Mr. Stansfield, M.P., Mr. Thomas Turner, Professor Way, and Mr. Jonas Webb.

The following new members were elected:

King, Frederick, Oxford
Spelman, William, Norwich
Fellows, Thomas Abdy, Chippenham, Wilts
Chamberlin, Frederick, Toft Monks, Norfolk
Ambler, Henry, Watkinson Hall, Halifax, Yorkshire
Penrice, Rev. Charles, Plumstead, Norwich
Martin, John Williams, Shoborough, Tewkesbury, Glouc.
Ormerod, Ven. Archdeacon, Redinghall, Harleston, Norfolk
Nicholson, Henry, Froughton, Brigg, Lincolnshire
Gilbert, Robert, Ashby Hall, Bergh-apton, Norfolk
Nicholson, Charles, Staniwells, Brigg, Lincolnshire
Edwards, Thomas, Hapton Hall, Long-Stratton, Norfolk
Butler, Ambrose E., Kepstliam, Kirkstall, Leeds
Wright, David Hepworth, Ixworth, Suffolk
Donovan, George, Buckham Hill, Uckfield, Sussex
Cartwright, Sir Thomas, Bart., Aynhoe Park, Brackley, Northampton
Bigg, Edward Smith, The Hyde, Slaugham, Sussex
Newton, William, The Close, Norwich
Tanner, James, Kingsnympton, Chumleigh, Devon
Thornton, Rev. John, Head-master, Agricultural School, Kimbolton
Roscoe, Ralph, Newport, Monmouthshire
Marden, William, Gerpens, Rainham, Essex
Barrow, Charles James, Lopham, Norfolk
Johnson, Rev. P., Wimbworthy, Chumleigh, Devon
Back, Hatfield James, Hethersett Hall, Norwich
De Rutzen, the Baron Fritz, Slebeck Hall, Narberth, Pembrokeshire
Miller, Rev. M. H., Hopton, Lowestoft, Suffolk
D'Orten, the Baron Mertens, Prussels
Cole, William Henry, Pulham, Harleston, Norfolk
Smith, William, Easthorpe, Bottesford, Notts
Brasnett, Thomas, Saham, Watton, Norfolk
Seppings, William, Mayor of Lynn Regis
Holmes, John, Norwich.

The names of 72 candidates for election at the next meeting were then read.

Finances.—Col. Challoner, Chairman of the Finance Committee, presented the report of that committee to the end of the previous month; from which it appeared that on the 31st of January last the current cash balance in the hands of the bankers was 1848*l.* The chairman explained, that this balance included the sum of 1000*l.* received through the authorities of Norwich as a subscription towards the expenses of the ensuing country meeting to be held in that city in July next, as well as 314*l.* received on account of arrears of subscription paid up, and 534*l.* as that of compositions for life received since the December meeting. The chairman also reported that 1000*l.* stock had been sold out of the invested capital of the Society for the purpose of com

pleting the sum required to repay to the bankers of the Society the loan contracted with them in August last. The chairman further presented to the Council the following report of a special meeting of the Finance Committee held on the 5th instant, namely: "It appearing that the Journal is a principal inducement to the agricultural public to join the Society, and to keep the subscriptions paid up, the Finance Committee are of opinion that it would prove advantageous if the Council would increase the price of all future Journals to 10*s*. each Part for all non-members of the Society." These reports and the special recommendation of the committee were unanimously adopted and confirmed by the Council.

LIST OF MEMBERS.—On the motion of Mr. FISHER HOBBS, seconded by the Duke of Richmond, the Journal Committee were requested to prepare for publication, in the next volume of the Journal, a list of the Governors and Members on the books of the Society at the date of publication.

COTTAGE TRACTS.—The Council ordered a further reprint, to the amount of 1500 copies, of the Society's Cottage Tract on Gardening, for distribution, at prime cost, by members of the Society.

NORWICH MEETING.—The Council decided that the Norwich Meeting should be held in the week commencing Monday, the 16th of July next. The Council then ordered the Norwich Prize Sheets for final publication; and the Duke of Richmond, having presented, on the part of Mr. Thompson, V.S., a silver and elastic gum tube, intended to be used in assisting the flow of milk from cattle suffering from diseased teats; Mr. Shelley a copy of his work entitled "A Plea for Truth," and Mr. Jonas a copy of Mr. Hine's work on the Giant Saintfoin; numerous papers were reserved for discussion at the ensuing Weekly Meeting, to be held on Tuesday next, the 13th instant.

Calendar of Operations.

FEBRUARY.

BEDFORDSHIRE FARM, *Feb.* 7.—The chief employment of our horses has lately been, and will for some time be, ploughing Turnip-land after sheep, carting dung, Turnips, and composts for pastures, drilling corn, &c. We have found on an average of seasons that the sooner after this all kinds of spring corn are sown the better, provided the soil be in a proper state for the reception of the seed. We have drilled white Peas after Carrots at the rate of 4 bushels per acre, and red Lammas Wheat after Turnips at the rate of 2 bushels per acre. The red Lammas Wheat has been found superior for February sowing, for an entire crop, to many other kinds, such as the well known Spalding, Golden drop, Whittington, and Talavera, &c. We have filled up winter-sown Wheat, where defective, by Talavera, so that the spring sown may ripen as early as the other; but this by no means argues that Talavera would be better, or equal to other kinds for an entire crop. We purpose drilling Barley very soon, at the rate of from 2 to 3 bushels per acre. The old English Barley is preferable to Chevalier for ordinary soils, as generally, a finer description of straw is produced. Both Potter's and the Providence Barleys are good, although a change of seed from one kind and condition of soil to another is of far more importance for the yield and quality of the crop, than the name of any particular variety. Barley seed ought always to be sown in a well pulverised soil. Such land as may have been ploughed two or three months ago, may require another furrow or moving by a scarifier to prepare the soil for the seed, but that which has to be ploughed at or this would not generally require re-ploughing. As a general rule, if the surface of the land is or can be rendered suitable for the seed without disturbing the bottom of the furrow, it is advisable to let the bottom alone; but, on the other hand, if the surface be not posted over, and consolidated by long exposure to wet weather, and there appears an advantage in bringing the bottom to the top, and improving the tilth, it is then advisable to use the plough. We, however, think it bad management, in a general way, to plough Barley land more than once. Bean planting is now common, 4 bushels of seed is generally applied to the acre. We drill part and plant part, the usual prices paid for planting are 5*s*. and 6*s*. per acre. Some of our neighbours pay a certain price per bushel for planting, but this method is very objectionable on many accounts, and gives rise to irregular seeding, plunder and loss of time. We have seen many men get their stated quantity of Beans for a day's work all finished by 1 o'clock, and then go home and spend their time and money on beer; such a system is, therefore, a loss to the employer and employed, and ought, by all means, to be abandoned. We are staunch advocates for punctuality of time, discipline, and order among labourers; it is for their benefit to keep to rule, for the avoidance of petty altercations, so frequently caused by the director's want of system. Our labourers are at present employed in threshing, draining, and hedging, and attending to stock. Their occupation for some time forward will be pretty similar. We intend transplanting some Turnips for seed in a few days, and shall also commence Potato planting for a crop. Potatoes have kept much better in pit than could have been expected at storing time. Frequent moving is good for Potatoes, Mangold Wurzels, Carrots, and Turnips, when long stored. We think the earthing up of roots a bad system on the whole; there is generally far more decay and loss this way than by simply covering with dry straw and a little earth in places to prevent its blowing away. We have Carrots, Mangolds, and Turnips in store covered with straw, and there is no loss by rotting, while there are many earth covered roots near us much destroyed. Our fatting cattle still continue to thrive very fast upon the prepared food. We weighed a quantity of meal, hay, and Turnips, and by this means ascertained the cost per head over a lot of 28. The meal is a mixture of Linseed, Lentils, and Barley, in about equal proportions, and costs, including grinding, 1*d*. per lb. The hay consumed on the ground where it was grown we value at 2*l*. per ton, the Turnips we value at 7*d*. per cwt., or about 11*s*. 8*d*. per ton. The following account will therefore show the cost of each beast per week:—

5¾ lbs. meal per day, at 1*d*. per lb., or 40 lbs. per week	£0	3*s*.	4*d*
56 lbs. Turnips per day for seven days, at 7*d*. per cwt.	0	2	0½
20 lbs. hay chaff per day, or 140 lbs. per week, at 2*s*. per cwt.	0	2	6
Cost of food per week	0	7	10½
Attendance and interest upon capital employed, about 1*d*. per week	0	0	1
Total cost	£0	7	11½

The system of preparing and giving the food is nearly similar to Mr. Warnes's, and need not be repeated here. Butchers who have inspected our stock annually, and previous to the adoption of feeding on prepared food, confidently assert that the beasts thrive faster now than before. We are quite satisfied this is the case, and ought not to omit to state that the unprepared food cost from 12*s*. to even 16*s*. per week per head, in the years 1845 and 1846. Beasts of equal ages and equal sizes, when tried upon prepared and unprepared food, consumed by far the largest quantity of raw food, without a corresponding increase in size or value. I recently saw some fatting beasts living upon hay and oilcake, at an expense of 14*s*. per week, and thought such a system enough to ruin a mint. I have no personal interest in recommending the fatting of cattle on prepared food, apart from a desire of diffusing an economical system of farm management. But should any one feel desirous of more detail, I shall be happy to furnish it. Butchers have given us 10*s* per week for allowing half-fed beasts to live on the prepared food, and are satisfied with the proportionate increased value of their animals. This certainly goes very far to prove the advantage of keeping beasts on prepared food, at little more than half the cost of unprepared. We feel assured that no one who gives the system a fair trial, will be disappointed. *R. V.* [Many thanks.]

BERWICKSHIRE MERSE FARM, *Feb.* 2.—Since last report we have been ploughing Oat stubble land for Turnips, and Turnip land, and sowing it with Wheat, and are going on with the old Grass field that was drained; threshing and delivering Wheat; threshing Oats for the servants, as they are partly paid in grain; storing Turnips, &c. We are feeding the cattle with Swedes, sliced with the cutter; 6 heifers in stalls are getting 4 lbs. of Bean meal each per day, the horses get each half-a-bushel of Oats per day. *J. B.*

DORSET FARM, *Feb.* 5.—We are still employed taking up and storing Carrots, Parsnips, and Swedes, in order to clear the land for ploughing. The Carrots and Parsnips of course are dug, and the ground left as rough as possible, to have the benefit of frost and air; and for the same reason we have the land after Swedes and Turnips ploughed quickly, as we find that if the surface on which the seed is to be deposited lie exposed for some time, the plant will come up earlier and more vigorously. We have now about 200 of our ewes lambed (we lamb 520), and so far they have done very well. We take out from the flock those likely to lamb first, giving them hay and Turnips by themselves, and drive them into a sheltered yard at night, in which there is a small house to put them in when they lamb, if there are any signs of weakness in either ewe or lamb. After they have lambed they have what hay, Turnips, and Cabbages they can eat, and a pound of oilcake per day is added after the first week. But we do not give the cake so early in all cases, as it might cause inflammation, being of a heating nature; and I am rather doubtful if it is a very good thing for producing milk, and whether it does not tend to fatten the ewe rather than benefit the lamb. We have a few wethers that we are feeding in the field on cut Swedes, hay, and a pound of oilcake per day, but, owing to the wet weather, they have not made much progress in fatting; if we had a house suited for them to stand in, with a small enclosure attached, I have no doubt but the carting of the Turnips to it, and the dung from it, would have been paid for by the difference of time required to fatten them, and the dung will be more effectually made altogether, carted out, and ploughed in more quickly, than if dropped on the land and left exposed to all the changes of the weather. Hay given in the field to the sheep when eating off Turnips is no doubt one of the most fruitful sources of weeds we have; the seed is scattered about, ploughed in, and there it has the chance of establishing itself for three or four years to come, for in the rotation common here, viz., Turnips, Barley, Clover, and Wheat, little or no opportunity is given to clean the ground of these weeds until preparing again for Turnips. It is true that with the improvements in the horse-hoe something may be done to keep them down among Wheat, but among Barley this cannot be done, on account of the Clover. Could not some sort of moveable shed be constructed, which could be placed at the most convenient spot both for carting the Turnips to it and dung from it? We shall be employed as the weather permits of it, in carting dung out upon the Clovers. We have also a few Swedes to store, and stones to gather off the pastures; this, with threshing Barley and Wheat, and ploughing after our roots for Barley, will keep us employed for some time to come. *G. S.*

SOMERSETSHIRE FARM, *Feb.* 5.—For some time past we have been engaged in ploughing for, and drilling, and dibbling Wheat, drilling at the rate of 2 bushels per acre, dibbling (with Newberry's machine), 1½ bushels. Hauling stones for repairing roads, draining, ditching, and repairing fences, threshing Wheat; hauling Swedes for sheep, part of our fatting sheep are on pasture ground, supplied with Swedes, hay, and corn, the remainder are under cover on a stage, receiving Swedes, corn, and hay. *R. C.*

SOUTH HAMPSHIRE FARM, *Feb.* 3.—During the three weeks which have passed since our last report, we have experienced unusually mild weather, which, although it has allowed the operations of the plough, the sowing of Wheat, and in some instances the drilling of Peas, yet upon the whole it cannot be considered favourable weather for farming work usually in hand at this period of the year; neither do we consider the influence of such mild weather at all beneficial upon vegetation in general, for we observe in many instances the Wheat plant is getting too forward, in others the prospect is much injured by the ravages of the slug, many fields in this county not appearing to be worth saving, and perhaps would be better ploughed and re-sown with other grain. It is more than probable that this mild weather will be (as we have often noticed it) followed by a backward, cold, and ungenial spring. The horses have been employed ploughing and harrowing land, where a heavy crop of Swedes has been fed off with ewes and lambs, which we have sown with Wheat, mixed red and white, 3½ bushels per acre, which quantity we do not think too much when we consider the advanced period of the season; for we have found in past seasons, when we have sown a liberal allowance of seed, the Wheat plant leaves the ground quicker, and is not required to tiller so much, which only weakens the plant, and delays the harvest, rendering it more susceptible of blight, and other injurious effects, deteriorating both quantity and quality. The horses have been also employed carting chalk, carting clay upon light moor soil, carting Wheat from rick to the barn, several days at the threshing machine, threshing Wheat, which at present makes far short of remunerating prices. Our labourers are now employed in draining and levelling land intended for tillage, recently grubbed out of copse, trussing hay for sheep and cattle, and attending threshing machine several days. Our labourers are at present receiving 9*s*. per week, the carter and shepherds 2*s*. to 3*s*. per week extra, or house rent, &c. The shepherds are fully employed by tending the flocks; our Southdown ewes have for the most part done lambing, and are now kept entirely upon Turnips and Swedes, with about 1 lb. of Clover hay, ½ lb. of oilcake, and ½ pint of Oats each per day, with as many cut Swedes as they can consume. The lambs are allowed to run in advance of the ewes, eat of the Turnip greens, and are supplied with plenty of cut Swedes passed twice through the cutter, whilst the lambs are quite young, in addition to which they have as much as they can eat of oilcake mixed with a third portion of old cracked Peas; a portion of the ewes which lambed last, and are intended for breeding purposes another year, do not get cake or corn, but white Turnips and 1½ lb. of hay per day each. Our horned ewes are kept precisely in the manner above described, except a little extra hay. Our early fall of lambs are nearly all fit for the butcher; some we have sold, commencing last Christmas, but the sale as yet is very small, the general season for lamb not having commenced. Our ewes, too, are mostly fat, and will be fit for the butcher as soon as the lambs are gone. Our Carrots we find a useful crop, although some are rotten, owing to the frosty weather at the time of storing. Our milch cows receive a liberal allowance of them with hay at night, at which time they remain in their boxes, and only go out into pasture a few hours in the day; the manure they make, from remaining in the pens so much of their time, is valuable and improves, both in quantity and quality. The pigs, of which we have a considerable stock, for the most part of the Neapolitan breed, get as food the milk, &c., from the dairy, plenty of Carrots and Swedes, and a small allowance of Egyptian Beans, which we find assist them very much at this period of the year. Our weaning calves are fed upon milk and Clover-hay tea, mixed with a little Barley meal, and kept in open yard with shed; the in-calf heifers are also kept in open yard with shed, not being allowed to pasture at all, and are fed upon cut Swedes and hay. *J. E.*

STIRLINGSHIRE CARSE FARM, *Feb.* 3.—This farm contains 1?? imperial acres—all arable—and consists partly of a strong clay soil, and in part earthy inclining to loam; it is farmed on the six-course shift, consisting of 1st Wheat, 2d Beans, 3d Barley, 4th Clover, 5th Oats, and 6th Fallow with a few Turnips. In consequence of the changeableness of the weather for the past fortnight, our labour in the field has been anything but constant, but what we did consisted chiefly in ploughing lea for Oats; on other occasions, our men and horses have been for the most part preparing grain for seed. *W. F.*

SUSSEX FARM, *Feb.* 5.—As the weather has been open, many of our neighbouring farmers have sown their spring Wheat, Peas, and Beans. We shall sow our Beans this week, if fine, but I consider the Peas soon enough, as the land is light. We are now ploughing for Barley and Oats, and subsoiling for the green crops; threshing Oats and Barley for straw for the cattle, planting hedges, digging stones for making roads. Three weeks since I took the Turnips from the calves and lambs, and since that time I have given them Drumhead Cabbages. I give two feeds each day to the calves, and one cart-load to the lambs; they eat them greedily, and if they improve as they have done, Cabbages will be one of the best kinds of food we can grow for young stock. I have a fine crop grown on very poor soil; they are given to the stock in all weathers; they need no preparing but cutting off the roots. *J. E.*

Notices to Correspondents.

CARROT: *A Constant Reader.* Sow 5 cwt. of guano per acre, or 4 cwt. of Rape-dust, a fortnight before sowing the seed. That will be better than applying it over the young plants.

EDUCATION: *T M B.* The expense of educating a likely boy at St John's Battersea, would be 32*l*. 12*s*. for 12 months, in addition to which 5*l*. worth of books would be necessary; 10*l*. would therefore cover all expenses. By writing to the principal of the college, all the required information would be obtained. One who is practically acquainted with agriculture should be sent; for those who know nothing but theory are but ill qualified to teach. *Pedagogue.*

FARM BUILDINGS: *C J.* A townsman of yours takes this subject in the "Cyclopædia." Our "friend 'Morton'" recommended box feeding, not yards; and a little experience will satisfy you that the nuisance of effluvia is tenfold in the latter what it is in the former.

FOWLS AND GARDENS: *A.* If the fences are good, and the walls not less than 4 feet high, fowls may be easily excluded. Cut pretty close to the quills from 12 to 14, and no more, of what are called the flight feathers, at the extreme point of one wing only. They are then lop sided, and cannot fly higher than they can jump. *D. S. F.*

POTATOES: *B X.* Soot and guano are too good for them. If your turf be rotten, the crop needs no manure.

SHEEP-ROT: *Corydon.* Notwithstanding the wet season, we have not heard that the rot has been prevalent. We presume that you have found flukes in the liver, and have satisfied yourself as to the nature of the disease. With regard to a remedy, medicine offers none. We advise a removal to dry pasture, with plenty of corn and cake, with good hay. The salt should be continued. *W. C. S.*

STEEPS: *Hassett.* We tried these steeps in great variety for two or three years, and derived no benefit from them; 8 or 10 lbs. of the salt in a tub holding 20 gallons of water, with a basket of seed dipped into it, and suffered to remain a couple of hours, and then lifted out and suffered to drain, is as convenient an apparatus as any.

SULPHATE OF AMMONIA: *A Constant Subscriber* must apply to any wholesale druggist or chemical manufactory.

THE HAMBURGH BREED OF FOWLS: *A.* This breed is mentioned more than a century back, yet all books differ in their description. It is a Poland, with a muff, obtained by a cross from the Russian fowl; when true, either gold or silver-spangled. Those with combs and wattles are what may be now called the Boulton Greys or the Boulton Bays, or speckled. They are often confounded with the Dutch fowl. *D. S. L.*

THRASHING MACHINES: *J C F.* You sufficiently explain the reason of your machine being so heavy; the cause is the overhead wheel. On many farms in Aberdeenshire, machines with beating drums, and shakers to separate any loose corn left in the straw, and a cleaning machine which half dresses the corn, are driven by four horses with ease, from 8 to 10 quarters of Oats, and from 6 to 8 quarters of Barley, are threshed in an hour. The horse-power of these machines are as nearly as possible level with the machinery, and the wheel, instead of being overhead, is in a pit underneath. The cost of fixing such a machine complete would be about 100*l*. *H. Smith.*

WIREWORM: *Leyton.* Sow Rape or Mustard, and consume on the land with sheep. Your best plan was to have pared and burnt the old sward.

Markets.

SMITHFIELD, MONDAY, Feb. 5.

The number of Beasts is rather smaller, but owing to the mildness of the weather the demand is very limited. Last Monday's quotations are with difficulty realised, and several remain unsold. The supply of Sheep continues to be very small; it is however, quite equal to the demand, and no quotable advance in price is obtained. Trade is dull for Calves, prices remain about the same as on Friday last. From Holland and Germany we have 211 Beasts, 150 Sheep, and 62 Calves; from Norfolk and Suffolk, 1500 Beasts; from Leicester and Northampton 200; and from Scotland 100.

Per st. of 8 lbs.—	s d	s d	Per st. of 8 lbs.—	s d	s d
Best Scots, Herefords, &c. ...	3 10 to	4 0	Best Long-wools .	4 0 to	4 4
Best Short-horns	3 8 —	3 10	Ditto Shorn ..		
2d quality Beasts	2 10 —	3 4	Ewes & 2d quality	3 4 —	3 10
Best Downs and Half-breds .	4 6 —	4 10	Ditto Shorn		
Ditto Shorn			Lambs		
			Calves ...	4 0	5 0
			Pigs ...	3 8	5 0

Beasts, 6227; Sheep and Lambs, 16,290; Calves, 107; Pigs, 156.

FRIDAY, Feb. 9.

We have a large supply of Beasts, and Monday's top quotations are with great difficulty obtained for some of the choicest kinds. Several of inferior quality remain unsold. The number of Sheep is still small; it is, however, quite adequate to the demand. Late prices are freely given, but no quotable advance is observable. Trade is dull for Calves. Owing to a considerable arrival of foreign since Monday, second-rate are much lower; there is also an average reduction in the best, although a very choice one makes nearly as much as of late. Prices may be said to range from 3s 6d to 4s 8d. Trade is more cheerful for Pigs at a trifling advance. From Holland and Germany we have 202 Beasts, 240 Sheep, and 160 Calves; and 161 Milch Cows from the home counties.

	s d	s d		s d	s d
Best Scots, Herefords, &c.	3 10 to	4 6	Best Long-wools .	4 0 to	4 4
Best Short-horns	3 8 —	3 10	Ditto Shorn		
2d quality Beasts	2 8 —	3 4	Ewes & 2d quality	3 4 —	3 10
Best Downs and Half-breds	4 [illegible] —	4 10	Ditto Shorn		
Ditto Shorn			Lambs .		
			Calves	3 6	4 [illegible]
			Pigs	3 8	5 0

Beasts, 1619; Sheep and Lambs, 2170; Calves, 260; Pigs, 158.

COVENT GARDEN, Feb. 10.

The market continues to be well supplied with Vegetables and most kinds of Fruit. Pine-apples are sufficient for the demand. Foreign Grapes are tolerably well supplied. Pears consist of Beurré Rance and Easter Beurré. Apples are getting scarce. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, Carrots and Turnips are abundant and good; Cauliflowers and Broccoli sufficient for the demand. Asparagus, French Beans, Rhubarb, and Seakale are plentiful. Potatoes have not altered in price since our last account. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Christmas Roses, Camellias, Gardenias, Cinerarias, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 5s to 7s
Grapes, foreign, p. lb., 9d to 2s
Apples, dessert, p. bsh., 6s to 12s
— Kitchen, p. bsh., 2s to 5s
Pears, per doz., 2s to 6s
— p. half sieve, 12s to 18s
Oranges, per doz., 1s to 2s
Lemons, per doz., 1s to 2s
— per 100, 10s to 18s
Almonds, per peck, 6s
— sweet, per lb., 2s to 3s
Walnuts, p. 100, 1s 6d to 2s
— p. bush., 16s to 24s
Chestnuts, p. peck, 4s to 7s
Nuts, Bar., p. bush., 20s to 22s
— Filb., p. 100 lbs., 60s to 100s
— Cob, p. 100 lbs., 90s to 150s
— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 3d to 1s
— red, p. doz., 2s to 6s
Savoys, per doz., 8d to 1s
Greens, p. doz bunches, 1s 6d to 2s 6d
Cauliflowers, p. doz., 2s to 6s
Broccoli, white, p. bun., 1s to 2s
— brown, p. bun., 9d to 1s 3d
Sorrel, p hf. sieve, 1s to 1s 6d
Potatoes, per ton, 60s to 180s
— per cwt., 3s to 9s
— per bush., 2s 6d to 5s
Turnips, p. doz. bun., 1s to 2s
Red Beet, per doz., 6d to 1s
Horse Radish, p. bdl., 1s to 6s
Asparagus, p. 100, 2s to 7s
Seakale, p. punnet, 9d to 2s
Rhubarb, p. bundle, 6d to 1s 6d
French Beans, per 100, 2s 6d
Cucumbers, each, 2s to 4s
Leeks, per doz., 8d to 1s
Celery, p. bundle, 6d to 1s 3d
Radishes, p. doz. hands, 1s to 2s 6d
Carrots, p. doz. bun., 3s to 5s
Spinach p. sieve, 1s 6d to 2s
— Turnip, do., 9d to 1s 6d
Onions, p. bunch, 2d to 4d
— p. bush., 1s 6d to 2s 6d
— Spanish, p. doz., 1s 6d to 4s
— pickling, p. hf. sieve, 1s 6d to 3s
Shallots, per lb., 4d to 8d
Garlic, per lb., 4d to 8d
Artichokes, Jerusalem, p. half sieve, 1s to 1s 6d
Lettuce, Cab., p. sc., 4d to 6d
— Cos, do., 9d to 1s
Endive, per score, 1s to 2s 6d
Mushrooms, p. pottle, 6d to 1s
Small Salads, p. pun., 2d to 3d
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Watercress, p doz. bun. 6d to 9d
Parsley, p. hf. sieve, 1s 6d to 2s
— Roots, p. bdle., 1s to 1s 6d
Marjoram, per bunch, 2d
Mint, green, per bunch, 6d to 9d

POTATOES.—Southwark, Waterside, Feb. 5.

The Committee report that there have been a few arrivals during the past week, which have met a ready sale at a trifling advance. The following are this day's quotations:—York Regents, 100s. to 150s.; Newcastle do., 80s. to 110s.; Scotch, 100s. to 130s.; Scotch Cups, 90s. to 100s.; French Whites, 180s. to 110s.; Belgian do., 90s. to 100s.

HOPS, Friday, Feb. 9

Messrs. Pattenden and Smith report that the market continues firm at late prices.

Mid. and East Kents	p. cwt.	50s to 120s	
Weald of Kents	...	40 — 70	
Sussex	... ...	35 — 65	
Farnhams	p. cwt.	80s — 120s	
Yearling Kents	...	40 — 56	
Yearling Sussex	...	40 — 56	
Old Hops	... ...	20 — 35	

HAY.—Per Load of 36 Trusses.

Smithfield, Feb. 8.

Prime Meadow Hay	65s to 75s	Clover	80s to 90s
Inferior ditto... ...	50 60	New Clover	— —
Rowen	40 60	Straw	24 30
New Hay	— —		

Trade dull. J. Cooper.

Cumberland Market, Feb. 8.

Prime Meadow Hay	70s to 78s	Inferior	70s to 84s
Inferior ditto... ...	50 65	New Clover	— —
New Hay	— —	Straw	28 32
Old Clover	90 95		

Joshua Baker.

Whitechapel, Feb. 8.

Fine Old Hay ...	65s to 79s	New Clover	84s to 90s
Inferior ditto ...	55 60	Inferior ditto.	60 70
New Hay	63 68	Straw	24 28
Old Clover	95 100		

Trade very dull.

MARK LANE, Friday, Feb. 9.

The reports of this week's business from the markets named at foot, in the early part of the week, were all somewhat higher; on Wednesday, however, a change was perceptible, which became more evident to-day, and grain may now be stated lower. The value may be written in figures about the same, but a decline is too visible.—Flour sells very slowly at somewhat less money. —Barley dull and little doing.—Oats and Rye the same. —Beans and Peas the same.—Seeds the same.—Clover seed abundant, and offering at low prices.—Oilcake, Linseed, Buckwheat, and Indian Corn, about the same.

Liverpool, Friday, Feb. 9.—There has been a good supply since Tuesday, and buyers have been cautious in their operations. At this day's market we had a thin attendance of dealers, and the transactions were of limited amount. Wheat was 2d. per bushel and Flour fully 6d. per barrel lower. Oats and Oatmeal were bought on easier terms. Barley, Beans, and Peas also the turn cheaper, and for Indian Corn Tuesday's prices were not obtainable, the inquiry having materially fallen off.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Dec. 30	46s10d	31s 3d	18s 0d	28s 6d	33s11d	35s 9d
Jan. 6	45 10	30 8	17 0	26 4	32 4	37 9
— 13	45 4	29 11	17 8	27 9	32 2	35 0
— 20	45 4	29 1	17 1	28 4	31 1	34 9
— 27	45 3	28 10	17 0	28 11	30 3	32 8
Feb. 3	45 1	28 10	16 11	28 5	30 3	32 6
Aggreg. Aver.	45 7	29 9	17 3	28 0	31 8	34 9
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Dec. 30.	Jan. 6.	Jan. 13.	Jan. 20.	Jan. 27.	Feb. 3.
46s10d—			...	...	...	...
45 10	...		...	...	...	...
45 4	...	...		...	...	...
45 4	...	...	...		...	•
45 3			...	...		...
45 1			...	...	...	

PERUVIAN AND BOLIVIAN GUANO ON SALE,

By the only Importers,

ANTONY GIBBS and SONS, LONDON;

WILLIAM JOSEPH MYERS and CO., LIVERPOOL;

And by their Agents,

GIBBS, BRIGHT, and CO., LIVERPOOL and BRISTOL; COTESWORTH, POWELL, and PRYOR, LONDON.

To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the import Warehouses.

GUANO CHEAPER THAN EVER.

POTTER'S GUANO is now 7l. per ton, and of superior quality, owing to recent chemical discoveries, and an improved mode of manufacture. An experience of eight years has shown it to be fully equal to the best Peruvian Guano, and 25 per cent. cheaper. See testimonials. If a quantity is taken a specific arrangement may be made.

GYPSUM (Great Reduction in Price), is offered at 15s. per ton, at the works, loose, or in bags if required. It has been analysed by an eminent chemist, and pronounced pure.—W. H. Potter, 28, Clapham-road Place, Kennington.

GUANO AND OTHER MANURES.

PERUVIAN GUANO, of the finest quality, direct from import warehouse.
NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of
Mark Fothergill, 201A, Upper Thames-street, London.

WHEAT SOWING.

THE LONDON MANURE COMPANY beg to offer as under.

LONDON MANURE COMPANY'S CORN MANURE.
" " " URATE. [LIME.
" " " SUPER-PHOSPHATE OF

Peruvian Guano, direct from Importers' Stores—Fishery and Agricultural Salt—Gypsum for Clover—Soda Ash for destroying wireworm, and every other Artificial Manure.

The London Manure Company would call particular attention to their Corn Manure and Urate, the former containing a large amount of Ammonia, Phosphates, and Silicates, all so essential for corn crops, while the Urate is richer in Phosphates and other mineral substances required for roots.

Full particulars and prices forwarded on application.

Edward Purser, Secretary, 40, Bridge-street, Blackfriars.

FLOWER-POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford street, near Hyde-park.

BAKER'S PHEASANTRY, Beaufort-street, King's road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, bernacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

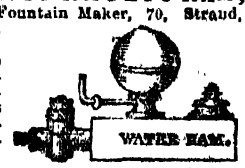
WIRE-WORK, HOT-WATER APPARATUS, GREENHOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS on improved and economical principles.

Parties waited on in Town and Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

THE IMPROVED HYDRAULIC RAM, fixed by Freeman Roe, Fountain Maker, 70, Strand, London, can be worked by a small stream of half-an-inch, where a fall of 2 feet can be obtained. The same RAM, without the aid of a Tank or Cistern, arranged to throw a Jet of Water constituting a Fountain with the head of water beneath.



Engines for deep wells of all kinds, Douche and other Baths; Buildings heated by hot water. Water wheels to work small pumps, from 15l. Estimates given for the supply of towns, &c.

A newly-invented Portable Vapour Bath, all complete for 4l.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY and CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes. Inches.				Inches.			Per foot.	Per 100 feet.
			Under	6	by	4	at 1½d.	is £0 12 6
From	6	,, 4	,,	7	,, 5	,, 2d.	,, 0 16 8	
	7	,, 5	,,	8	,, 6	,, 2½d.	,, 0 18 9	
	8	,, 6	,,	10	,, 8	,, 2¾d.	,, 1 6 10	
	10	,, 8	,,	12	,, 9	,, 3½d.	,, 1 2 11	

Larger sizes, not exceeding 40 inches long.
16 oz. from 8d. to 8½d. per square foot, according to size.
21 oz. ,, 8¼d. 8d. ,, ,, ,,
26 oz. ,, 8½d. 7¼d. ,, ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to James Hetley and Co., 35, Soho-square, London.

PRICES CURRENT.

	London. Jan. 29 qr.	London. Feb. 5. qr.	Liverpool. Jan. 30. 70 lbs.	Liverpool. Feb. 6. 70 lbs.	Wakefield. Jan. 26 qr.	Wakefield. Feb 2. qr.	Boston. Jan. 31 qr.	Boston. Feb. 7. qr.	Birmingham. Feb. 1. 62 lbs.	Birmingham. Feb. 8. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	42 to47	42 to44	6 8 7 2	6 8 7 2	45 to49	45 to50	40 to46	40 to48	5 8 6 6	5 9 6 6
„ white ...	46—53	46—50	6 10 7 8	6 10 7 8	46—52	46—53	43—50	44—52	6 2 6 8	6 2 6 9
Old, red ...	—	12—45	7 3 7 4	7 3 7 4	42 48	42—48	44—46	41—48	6 4 6 8	6 4 6 8
„ white ...	50—56	48—52	7 6 7 10	7 6 7 10	46—50	46—50	46—50	46 52	5 10 6 9	6 0 6 10
Foreign	42—58	44—60	7 2 7 10	6 8 8 0	35—52	40—52	—	—	5 8 7 2	5 8 7 2
			480lbs.	480lbs.						
Rye—New ...	26—28	26—28	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley—										
Grinding ...	21—25	21—26	26s—30s	26s—30s	21—24	22 25	26—28	26 28	23—28	23—27
Malting...	26—31	25—27	31 —33	31 —33	26—31	29—32	30—32	30—31	30—33	29—33
Foreign.. ...	—	20—29	28 —32	27 —30	23—27	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—42	—	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	20—22	20 - 22	2s 6d 3s 0d	2s10d 3s 2d	—	—	20—25	20 - 25	18—30	18—30
Black...	—	—	2 4 2 8	2 4 2 8	—	—	17—21	17—21	18—21	17—19
Foreign	18— 25	16— 23	2 5 2 6	2 5 2 6	—	—	11—18	11—18	19—25	17—19
			qr.	qr.						
Peas—Boilers	27—30	28— 30	38s—	38s—	34—38	34 - 38	—	—	36—50	36—46
Grinding...	20—33	—	32 —33s	32 —33s	33 —35	33—35	—	—	12—14	12—14
Foreign ..	26—30	27—33	35 —37	35 —37	—	—	—	—	—	—
Beans—										
New, small ...	22—29	21— 30	33 35	33 36	31- 33	31—33	23—32	26—32	11—14	11—14
Old	36—39	27—36	34 —36	34 —36	36—37	36—37	36—38	36—38	15—17	15—17
Foreign ...	—	22—36	26 —34	26 —34	28—31	28—31	—	—	12—14	11—14
Clover Seed—										
Red, per cwt.	38—44	35—41	—	—	—	—	—	—	—	—
White „	—	38—44	—	—	—	—	—	—	—	—
Linseed—Feed	36—40	36—40	43 —44	43 —44	32—40	32—40	—	—	—	—
Linseed Cakes										
British ...	—	—	—	9l.—9l. 5s	—	—	—	—	—	—
Foreign ...	—	—	9l. 5s	—	—	—	—	—	—	—
									190lbs.	190lbs.
Indian Corn—	28—30	25—30	28 —31	—	—	—	—	—	15—15 6	13—14 6
		p. sack					p. sack	p. sack		per sack
Flour ...	—	35—44	—	—	—	—	35—42	35—42	—	37—40

Weekly Averages and Imports.	Aver.	Impts.	Averages.	Imports.	Aver.	Impts	Aver.	Impts.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.		qrs.	s. d	qrs.	s. d.	qrs.
WHEAT ...	48 2	25235	—	3327	—	2196	44 8	2354	50 4	2262
BARLEY ...	31 1	2359	—	949	—	902	—	—	31 3	586
OATS... ...	17 11	4335	—	2843	—	21	13 11	896	17 0	338
RYE	27 3	1950	—	—	—	—	—	—	—	—
BEANS ...	28 8	3563	—	7275	—	57	27 9	138	40 0	20
PEAS... ...	33 2	210	—	2	—	31	—	—	40 0	15
Signed	Kingsford and Lay.		Segar and Tunnicliffe.		Sandars and Dunns.		Thomas Wright.		J. and C. Sturge.	

Sales by Auction.

EAST INDIAN ORCHIDS.

MR. J. C. STEVENS begs to announce for Sale by Auction, at his Great Room, 38, King-street, Covent Garden, on TUESDAY, Feb. 13th, at 12 for 1 o'clock, several lots of RARE ORCHIDS, which have just arrived from Java in most excellent condition. They comprise beautiful specimen plants of Saccolabium Blumei, and another fine species of Saccolabium, a few plants of the rare and beautiful Aerides maculosa, Aerides virens, and several other fine Aerides, Vanda tricolor and V. insignis, Grammatophyllum speciosum, Cypripedium Javanicum (a new species, quite distinct from barbatum and purpuratum, Cœlogynes, &c.—May be viewed the day before and morning of sale, and Catalogues had.

TO NOBLEMEN, GENTLEMEN, AND NURSERYMEN.

MR. J. C. STEVENS is favoured with instructions from Messrs. Loddiges to announce for Sale by Auction, in their premises, at Hackney, on TUESDAY, 27th, and WEDNESDAY, 28th February, at 12 for 1 o'clock, about ONE THOUSAND CAMELLIAS of extraordinary fine growth, mostly well set with flower-buds, and consisting of the favourite old, and some good new varieties from 2 to 12 feet high. Also some fine plants of LIMES in fruit, and of the new hardy Nepal RHODODENDRONS.—Catalogues are preparing, and may be obtained one week prior to the sale, of Messrs. Loddiges, Hackney, and of Mr. J. C. Stevens, 38, King-street, Covent-garden.—On View the day prior, and mornings of sale.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition, by Auction, at the Auction Mart, Bartholomew-lane, on FRIDAY, Feb. 23, 1849, about 300 Camellias, from 18 inches to 8 feet, well furnished with bloom-buds; also about 200 fine Standard and Dwarf Roses, consisting of Noisettes, Hybrids, Bourbons, Perpetuals, &c., together with a fine collection of American Plants, comprising Ghent and other Azaleas, Andromeda floribunda, Magnolias, &c., Lilium lancifolium album, speciosum or rubrum, and punctatum, &c.—May be viewed prior to the sale. Catalogues to be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

WANDSWORTH COMMON.

To Noblemen, Gentlemen, Nurserymen, Builders, Railway Contractors, and other Companies engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are instructed to Sell by Auction, on the Premises, Wandsworth Common, on TUESDAY, February 13th, 1849, and following day, at 11 o'clock precisely, by order of the Assignees of Mr. R. Neal, a bankrupt (the same not having been cleared pursuant to the former conditions of sale), the whole of the valuable NURSERY STOCK, consisting of a considerable quantity of fine Evergreens, Fruit and Forest Trees, new Ornamental Trees and Deciduous Shrubs, a large and rich assortment of American Plants, Standard and Dwarf Roses, Box edging, &c., several pits, a quantity of Timber, consisting of Elm and Ash Pollards, Fir Poles, &c., a capital stone waggon, a choice iron roller, spring cart, garden pots, manure, &c.—May be viewed prior to the Sale. Catalogues may be had (6d. each) of J. B. Roberts, Esq., Solicitor, Wandsworth; Edward Edwards, Esq., Official Assignee, 7, Frederick's-place, Old Jewry; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone, Essex.

STREATHAM.

To Noblemen, Gentlemen, Nurserymen, Builders, and Public Companies engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are instructed to sell by Auction, on the premises, Streatham Nursery, on MONDAY, Feb. 26th, 1849, and following days, at 11 o'clock precisely, by order of the Assignees of Mr. R. Neal, a bankrupt, the whole of the valuable NURSERY STOCK, consisting of a large quantity of very fine Evergreens, Fruit and Forest Trees, Ornamental Trees, and Deciduous Shrubs, American Plants, &c., and at the same time the valuable Lease of the said premises, comprising 5 acres of Nursery Ground, held at 30l. per annum, for an unexpired term of about 64 years, which rental is reduced to 10l. per annum under a yearly agreement during the period the premises are occupied in their present state.—May be viewed prior to the sale. Catalogues may be had (6d. each) on the premises, of the principal Seedsmen, J. B. Roberts, Esq., Solicitor, Wandsworth; Edward Edwards, Esq., Official Assignee, 7, Frederick's-place, Old Jewry; and of the Auctioneers, American Nursery, Leytonstone, Essex.

DALSTON NURSERY.

To Noblemen, Gentlemen, Nurserymen, Builders, and Public Companies engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Smith to sell by public Auction, on the premises, Dalston, Middlesex, about the last week in February, in consequence of the Land being required by the London and Birmingham West India Dock Junction Railway Company, the first portion of the VALUABLE NURSERY STOCK, consisting of a large assortment of very fine Evergreens; Ornamental and Deciduous Shrubs; the finest description of Fruit-trees; American plants in great variety. The Stock is in the finest condition, and particularly worthy the attention of Noblemen and Gentlemen laying out their grounds, as well as the Trade, from its excellence. Further particulars in next week's Paper. May be viewed one week prior to the Sale.—Catalogues may be had on the premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO BE LET, and entered upon at Michaelmas, 1849, a very excellent FARM, consisting of about 117 acres of Meadow and Pasture, 94 acres of Arable, and 103 acres of Down Land, situate near the City of Bath. The Farm is in a good state of cultivation, and it is not often such a very desirable estate is offered to the public.—Apply to J. H. Cottrell, Land Agent, Bath.

TO FLORISTS, &c.

TO BE LET, A COTTAGE AND GARDEN, adjoining the high road, with a large Greenhouse, in a situation well suited for a person beginning business. The Greenhouse and Frames may be had at a valuation. Rent only 13l. per annum.—Apply by letter to H., 21 and 22, Ironmonger-lane, City.

TO NURSERYMEN, FLORISTS, AND SEEDSMEN.—AN OPPORTUNITY RARELY OCCURRING.

TO BE LET ON LEASE, a valuable CORNER PLOT OF GROUND, in the vicinity of Westbourne Terrace and the Great Western Railway Terminus, with Cottage and Stabling, situate in the most improving and fashionable part of the west end of the town, and in a great public thoroughfare. It is well suited for the sale of choice shrubs, flowers, seeds, &c., and an extensive business may be easily secured.—Apply to Messrs. Haywood and Co., House and Land Agents, 25, Upper Seymour-st. West, Connaught-sq., London.

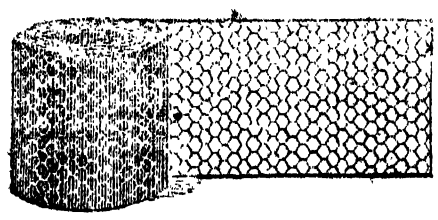
FARM WANTED immediately, or at Lady-day, from 120 to 200 acres of useful land, with a moderate-sized house and good out-buildings.—Full particulars to be sent to X. Y., 11, King's-road, Grays-Inn, London.

TO BE SOLD, WARRANTED SOUND, TWO FOUR-YEAR OLD SUFFOLK STALLIONS, the property of T. Beale Browne, Esq.; both were shown at York. One, more than 17 hands high, is at the College, Cirencester. Price 150 Guineas. The other, nearly 17 hands high, is at Hampen Farm, near Andoversford, Cheltenham. Price 100 Guineas.

TO FLORICULTURISTS AND AMATEURS.—Important Notice.—A large collection of 300 varieties of that beautiful flower called HEARTSEASE, said to be the finest in Europe, is now first offered for SALE. Drawings of the plants can be seen at Mr. W. Thomas's Foreign Agency Office, 21, Catherine-street, Strand, London, where terms and conditions of sale can be procured.

FARMERS AND GARDENERS, Liquify all your Manure, and put it on your land and crops day by day, as it is produced; this will increase its value fourfold at the least. COODE'S IRRIGATOR will spread it as gently and equally as rain, without hurt to land or crop, at one-tenth part of the cost of your present processes.—Nuneaton.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It has the appearance of silver, and maintains its lustre for many years, and is acknowledged to be the cheapest article ever brought into the market. It forms a cheap, light, and durable fence for the protection of Gardens and Shrubberies against the depredations of hares, rabbits, and cats; for Aviaries, Pheasantries, and to prevent poultry from straying, as well as for training creeping plants, it answers admirably.

Large quantities of the Netting always kept in Stock, samples of which can be forwarded (free of expense) to any part of the United Kingdom. Prices as follows:

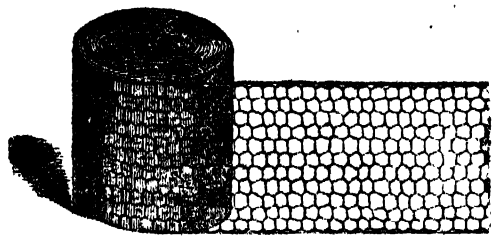
12 inches wide	3d. per yard	30 inches wide	7½d. per yard
18 " "	4½d. " "	36 " "	9d. " "
24 " "	6d. " "	48 " "	1s. " "

Galvanised do. 1d. per foot extra.

Also Fenders, Fireguards, Fly-proof Dish Covers, Meat Safes, Wire Blinds, Garden bordering and arches, Flower Stands, and every description of Wire Work.

Thomas Henry Fox, 63, Snow-hill, London.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c., Castle Buildings, Derby square, Liverpool; 128, High-street, Edinburgh; and 82, St Enoch square, Glasgow, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire neat for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

Prices.—18 ins. high, 0d.; 24 ins., 1s.; 30 ins., 1s. 3d.; and 36 ins., 1s. 6d. per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3 15 0
Do. of 100 yards, 24 ins wide	..	.. 5 0 0
Do. of 100 yards, 30 ins. wide	..	.. 6 5 0
Do. of 100 yards, 36 ins. wide	..	.. 7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. Young and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s. is equal to 24 yards of another article in the market, the same width, at 9d. per yard. Samples for inspection sent free of expense.

C. D. Young & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

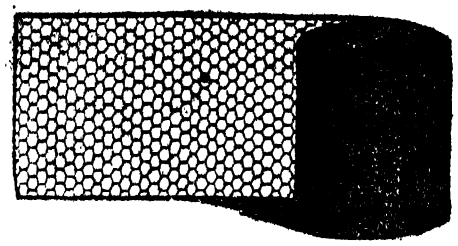
Workmen sent to all parts of Scotland, England, and Ireland.

GERMAN SPRING MATTRESSES, permanently elastic, very durable and cheap.

3 feet wide	£2 8 0	4 feet 6 in. wide	£3 3 0
3 feet 6 in. wide	2 13 0	5 feet " ditto	3 10 0
4 feet ditto	2 18 0	5 feet 6 in. ditto	3 18 0

One of these, with a French Mattress on it, is a most excellent and soft bed. HEAL and SON'S LIST of BEDDING, with full particulars of weight, size, and prices, of every description of Bedding, sent free by post.—Heal and Son, Bedding-manufacturers, 196 (opposite the Chapel), Tottenham-court-road.

GALVANIZED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



	Galvanized.	Japanned Iron.
2-inch mesh, light, 24 inch wide	7d per yd.	5d. per yd.
2-inch " strong "	8½ "	6 "
2-inch " extra strong "	11 "	9 "
1½-inch " light "	8 "	6 "
1½-inch " strong "	10 "	8 "
1½ inch " extra strong "	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BAITNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

IMPORTANT TO FARMERS, GRAZIERS, GARDENERS, LANDOWNERS, and OTHERS—Showing how to Farm to meet the times and Save Money.

THE NEW PATENT MANURE, a SUBSTITUTE for FOREIGN MANURES, may be manufactured without a license by every farmer, 35 bshls. per acre, for 1l., being equal to 10 loads of manure.

The preparation is very simple and cheap, and suitable for all seasons, soils, and crops: also showing how to fatten every description of stock and poultry, at one-third the expense now adopted, the best and cheapest method of drilling, &c. &c. This excellent Treatise on Farming and Grazing, registered and entered at Stationers' Hall, contains a collection of 150 of the most valuable receipts ever discovered in agriculture for profit, &c.; with full directions for use, by the late celebrated agriculturist, Mr. Ellman, and others, and patronised and highly recommended by H. R. H. Prince Albert, at Windsor Farm, the Royal Agricultural Society of England, their Graces the Dukes of Richmond, Portland, and Bedford, &c., and will be forwarded without fail, by return of post, free to any part of the country, by enclosing one shilling, or thirteen postage stamps, addressed, pre paid, to Messrs. Taylor and Co., 10, Exeter-street, Lisson grove, London.

DR. NEWINGTON'S HAND DIBBLES, with a Machine with 9 Depositors.—Dr. N. will guarantee that a man shall dibble 1½ acre of Beans a day at 18 inches apart, or ⅔ of an acre of Wheat, Barley, &c., at 9 inches apart, depositing 1, 2, 3 or more grains in each hole, as is required. These implements have been greatly improved during the last month; one-third of the weight has been removed, and they are warranted perfect in every respect. The price is according to the number of depositors, being 10s. for each depositor, with four sets of cups for every kind of seed.

Dr. N.'s HAND-ROAD-HOES and STIRRERS, warranted that a man shall hoe and stir, most effectually, from 3 to 4 inches deep, on any soil, however stiff, with perfect ease, more than 2 acres a day. Price 11. 10s.

Dr. N.'s HAND-DROP-DRILLS, for Seed and Manure.—The Coulters can be shifted to any distance from row to row, or from seed to seed. On a light soil a man could do from 2 to 3 acres a day. Price from 7l. to 5l.

Prospectuses will be out on application to Dr. N., Knole park, Frant, near Tonbridge Wells, Kent.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO., 116, Bishopsgate street Without, have the pleasure to hand their New List of Prices of SHEET GLASS for Cash.

HORTICULTURAL GLASS,

In Sheets of about 40 inches by 30, and packed in Cases of 200 ft. net. Cut to the size required, but not to exceed 40 inches long.

13 oz. to the foot	£2	1s.	0d.				
16 "	2	5	0	from	2½d.	to 3½d	per foot.
21 "	3	2	6	....	3	5	"
26 "	4	9	6	....	3½	7½	"
32 "	5	15	0	....	4	10	"

Case not charged. Boxes charged, but allowed for when returned.

SMALL SQUARES IN BOXES OF 100 FEET.

Squares under	Crown.	Sheet.
6 by 4	10s. 6d.	£0 12s. 6d.
6 by 4 and under 7 by 5	14 0	0 16 6
7 by 5 " 8 by 6	15 0	0 18 6
8 by 6 " 10 by 8	16 0	1 0 6

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS in sizes not exceeding 5 feet superficial.

¼ thick ... per foot	1s. 0d.	½-inch per foot	2s. 0d.
⅜-inch	1 2	1 inch	3 0
¾-inch	1 6		

PATENT ROUGH PLATE TILES.

⅜ thick ..... each	0s. 11d.	⅜-inch ..... each	1s. 7d.
½-inch	3	½-inch	2 0

SHEET GLASS TILES, AND SLATES.

	16-oz.	21-oz.	26 oz.	32-oz.
Tiles made of Sheet Glass	8d.	10d.	1s.	1s 4d.
Slates, 20 ins. by 10	10d.	1s.	1s. 6d.	1s. 8d.

Slates are kept on stock of the usual sizes, and made to any dimensions.

GLASS MILK-PANS, PROPAGATING AND BEE GLASSES, Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, Lamp Shades, and Lactometers for trying the quality of Milk, 4 tubes 7s. 6d.; 6 tubes, 10s. Self Registering Thermometers for Greenhouses.

HARTLEY'S PATENT ROUGH PLATE GLASS.

METCALFE'S ALKALINE TOOTH-POWDER will be found to be the best that has yet been produced; it contains no acids, nor anything that can injure the finest enamel; it thoroughly removes the tartar and all impurities, produces that beautiful white appearance so much to be desired, and its fragrant perfume tends to sweeten and purify the breath. M. and Co., from the many years they have been celebrated as Tooth-brush Makers, have had opportunities (that occur to few) of testing the relative merits of those powders that have been brought before the public. They have now succeeded in procuring the receipt from which the above Powder is prepared, and confidently recommend it as universal adoption. Wholesale and retail at Metcalfe, Bingley, & Co.'s, Brush makers to H.R.H. Prince Albert, 2s. per box. Caution.—The genuine powder will have the Royal Arms, combined with those of H.R.H. Prince Albert, on the lid of the box, and the signature and address of the firm, thus: "Metcalfe, Bingley, and Co., 130 s., Oxford-street, London."

CATALOGUE OF VEGETABLE AND FLOWER SEEDS,

SOLD BY

ROBERT COOPER, SION NURSERY, CROYDON.

						£	s.	d.
No. 1.	COMPLETE COLLECTION OF KITCHEN GARDEN SEEDS, FOR ONE YEAR,					£2	10	0
2.	Ditto	Ditto	Ditto	Ditto	Smaller quantities	1	10	0
3.	Ditto	Ditto	Ditto	Ditto	Ditto	1	0	0
4.	Ditto	Ditto	Ditto	Ditto	For Small Gardens	0	12	6

GARDEN SEEDS, CARRIAGE PAID TO LONDON—FLOWER SEEDS, FREE BY POST.

VEGETABLES.

	s.	d.
Asparagus per oz.	0	2
Beans, Early Mazagan, per qt.	0	6
,, Sword Longpod	0	6
,, Large Windsor	0	8
,, Green	0	8
,, French, Dun colour	1	0
,, ,, Fulmer's	1	0
,, ,, Liver colour	1	0
,, ,, Negro	1	0
,, ,, Robin's Egg	1	0
,, ,, Speckled	1	0
,, ,, White	1	0
Beet, Red, fine ... per oz.	0	4
,, Mitchell's superb dark crimson	0	6
,, Silver or Seakale	0	4
Borecole, fine green curled	0	6
,, Jerusalem	0	6
Broccoli, Brimston	1	0
,, Chappell's Cream	1	0
,, Danish	1	0
,, Early Cape	1	0
,, ,, Malta	1	0
,, ,, White	1	0
,, Grange's White	1	6
,, Hampton Court	1	6
,, Imperial Winter	1	0
,, Miller's Late White	1	0
,, Sprouting	1	0
,, Walcheren	2	0
,, Wilcove Late White	1	0
Brussels Sprouts, fine	1	0
Cabbage, Atkin's Matchless	0	8
,, Early Battersea	0	8
,, ,, Dwarf	0	8
,, ,, Imperial	0	8
,, ,, London Market	0	8
,, ,, Nonpareil	0	8
,, ,, York	0	8
,, King of the	1	0
,, Red Dutch	0	8
,, Shilling's Queen	0	8
,, Sugarloaf	0	8
Carrot, Early Horn	0	3
,, Long Altringham	0	3
,, ,, Orange	0	3
,, ,, Studley	0	3
,, James's New Scarlet	0	4
Cauliflower, Early	1	6
,, Late	1	6
,, Large Asiatic	1	0
Cardoon	0	6
Celery, White Giant	0	6
,, Red Giant	0	6
,, Seymour's White	0	8
,, ,, Superb Red	1	0
,, Soup	0	3
Chervil, Curled	0	6
Chou de Milan	0	8
Corn Salad	0	8
Couve Tronchuda	0	8
Cress ... per qt.	1	0
,, Curled	1	6
,, American ... per oz.	0	8
Cucumber, Cuthill's Black Spine ... per paper	1	0
,, Long Prickly	0	8
,, ,, Ridge	0	6
,, Manchester Prize	0	6
,, Stockwood	0	6
,, Walker's Rambler	0	6
Endive, Green Curled	0	8
,, Batavian	0	8
Kale, Asparagus	0	8
Leek, London Flag	0	6
Lettuce, Brown Cos	1	0
,, Brighton Cos	1	0
,, Egyptian Cos	1	0
,, Green Cos	1	0
,, Paris Cos	1	0
,, White Cos	1	0
,, Snow's Compact Cos	1	0
,, Wellington Cos	1	0
,, Ady's Cos	1	0
,, Cabbage, White	1	0
,, ,, Brown Silesia	1	0
,, ,, ,, Dutch	1	0
Lettuce, Cabbage, Drumhead, p. oz.	1	0
,, ,, Hampton Court	1	0
,, ,, Hardy	1	0
,, ,, Malta	1	0
Love Apple, large Red	1	0
Mustard ... per qt.	1	0
Melon, Adair Green-flesh per paper	1	0
,, Beechwood	1	0
,, American Green	1	0
,, Incomparable	1	0
,, Scarlet-flesh	1	0
Onion, Blood Red ... per oz.	0	6
,, Deptford	0	6
,, Globe Brown	0	6
,, ,, White	0	6
,, Lisbon White	0	6
,, Portugal White	0	6
,, Silver-skin	0	8
,, Spanish White	0	6
,, ,, brown	0	6
,, Strasburgh	0	6
,, Tripoli	0	6
,, Welsh	0	6
Parsley, fine Curled	0	4
,, Hamburgh	0	6
Parsnip, large	0	3
Peas, Early Frame, per qt.	0	8
,, ,, Kent	0	10
,, ,, Prince Albert	0	10
,, ,, Warwick	0	8
,, Bishop's Dwarf	0	10
,, Bedman's Imperial	0	8
,, Blue Prussian	0	8
,, ,, Scimitar	0	8
,, British Queen	2	0
,, Dancer's Monastery	1	6
,, Dwarf Marrow	0	8
,, Fairbeard's Champion	2	6
,, ,, Surprise	1	6
,, Matchless Marrow	0	10
,, Noble's Green	1	0
,, Knight's Tall	1	8
,, ,, Dwarf	1	8
,, Queen of Dwarfs	1	6
,, Tall Victoria	1	0
,, Woodford Marrow	0	10
Radish, Early Short-top	2	0
,, Long Scarlet	2	0
,, Red Turnip	2	0
,, White Turnip	2	0
,, Long white, per oz.	0	3
,, Olive-shaped	0	3
,, Wood's Frame	0	3
Rampion	1	0
Runner's, scarlet, per qt.	1	0
,, white Dutch	1	0
Salsafy per oz.	0	6
Savoy, green curled	0	8
,, yellow	0	8
Scorzonera	0	6
Seakale ... per qt.	2	0
Sorrel ... per oz.	0	6
Spinach, prickly, per qt.	1	0
,, round	1	0
Turnip, early Dutch, p. oz.	0	3
,, ,, Mousetail	0	3
,, ,, Snowball	0	3
,, ,, Stone	0	3
,, Red American Stone	0	3
,, Yellow Malta	0	3
,, ,, Altringham	0	3
Vegetable Marrow	1	0

Sweet Herbs.

	s.	d.
Balm per paper	0	3
Basil, sweet	0	3
Borage	0	3
Clary	0	3
Fennel	0	3
Lavender	0	3
Marjoram, sweet	0	3
,, pot	0	3
Marigold, pot	0	3
Sage	0	3
Savory, summer	0	3
,, winter	0	3
Thyme	0	3

HARDY ANNUALS.

per paper.—	s.	d.
Agrostemma coeli rosea	0	3
Agrostis pulchella	0	6
Anagallis carnea	0	3
,, caerulea	0	3
Balm, Moldavian	0	3
,, ,, white	0	3
Bartonia aurea	0	3
Blumenbachia insignis	0	6
Briza maxima	0	3
Calandrinia adscendens	0	3
,, compressa	0	3
,, speciosa	0	3
Callichroa platyglossa	0	3
Campanula Lorei	0	3
,, ,, alba	0	3
,, pentagonia	0	3
,, ,, alba	0	3
Candytuft, Rocket	0	3
,, Normandy	0	3
,, purple	0	3
,, superb	0	4
,, sweet scented	0	3
,, white	0	3
Carthamus tinctorius	0	3
Catchfly, Lobel's, red	0	3
,, ,, white	0	3
Caterpillars	0	3
Centaurea Crocodylium	0	3
,, crupina	0	3
Cerinthe major	0	3
,, minor	0	3
Chrysanthemum, dbl. white	0	3
,, double yellow	0	3
Cladanthus arabicus	0	3
Clarkia elegans	0	3
,, ,, rosea	0	3
,, pulchella	0	3
,, ,, alba	0	3
Clary, purple and red	0	3
Collinsia bicolor	0	3
,, grandiflora	0	3
Collomia coccinea	0	3
,, grandiflora	0	3
,, linearis	0	3
Convolvulus major	0	3
,, minor	0	3
,, ,, new dark	0	3
,, ,, white	0	3
,, ,, variegated	0	3
Coreopsis atrosanguinea	0	3
,, Drummondi	0	3
,, tinctoria	0	3
,, ,, double	0	6
Coronilla securidaca	0	3
Cotula aurea	0	3
Cuphea viscosissima	0	3
Cysticapnos africanus	0	3
Datura tatula	0	3
Echium violaceum	0	3
Erysimum Perofskianum	0	3
Eucharidium grandiflorum	0	3
Eutoca divaricata	0	3
,, Menziesii	0	3
,, viscida	0	3
,, Wrangeliana	0	3
Fedia cornucopiae	0	3
,, graciliflora	0	3
Flos Adonis	0	3
Galinsogea trilobata	0	3
Gilia achilleaefolia	0	3
,, capitata	0	3
,, nivalis	0	3
,, splendens	0	3
,, tricolor	0	3
,, ,, alba	0	3
Glaucium phoeniceum	0	3
Godetia albescens	0	3
,, lepida	0	3
,, rubicunda	0	3
,, vinosa	0	3
,, Wildenovii	0	3
Hawkweed, pink	0	3
,, straw colour	0	3
,, yellow	0	3
Hedgehogs	0	3
Helenium Douglasii	0	3
Hibiscus africanus	0	3
Iberis Lagascana	0	4
,, superba	0	4
Kaulfussia amelloides	0	3
Larkspur, double dwarf	0	3
,, ,, branching	0	3
,, ,, tall	0	3
Lagurus ovatus	0	6
Lasthenia californica	0	3
Lathyrus azureus	0	3
Lavatera, red	0	3
,, white	0	3
Leptosiphon androsaceus	0	3
,, densiflorus	0	3
Limnanthes Douglasii	0	3
,, grandiflorus	0	3
Linaria bipartita	0	3
,, Perezii	0	3
,, triphylla	0	3
Linum multicaule album	0	3
,, verticillatum	0	3
Loasa Bryoniaefolia	0	3
,, tricolor	0	3
Lupines, blue	0	3
,, ,, large	0	3
,, rose	0	3
,, straw colour	0	3
,, white	0	3
,, yellow	0	3
Lupinus bicolor	0	3
,, Cruikshankii	0	3
,, Hartwegi	0	3
,, micranthus	0	3
,, mutabilis	0	3
,, nanus	0	3
Lychnis, dwarf	0	3
Malope grandiflora	0	3
,, ,, alba	0	3
,, trifida	0	3
Mallow, curled	0	3
,, zebra	0	3
Marigold, dbl. Ranunculus	0	3
Mignonette	0	3
Nasturtium, dark red	0	3
,, dwarf	0	3
,, tall	0	3
,, spotted	0	3
Nemophila atomaria	0	3
,, aurita	0	3
,, discoidalis	0	3
,, insignis	0	3
,, striata	0	3
Nigella, dwarf	0	3
,, damascena	0	3
,, Spanish double	0	3
Œnothera Lindleyana	0	3
,, purpurea	0	3
,, rosea alba	0	3
,, Sellowi	0	3
,, viminea	0	3
Oxyura chrysanthemoides	0	3
Papaver Marshallii	0	3
Peas, Lord Anson	0	3
,, Painted Lady Crown	0	3
,, Tangier	0	3
,, Wing	0	3
,, yellow	0	3
,, Sweet, mixed	0	3
,, ,, black	0	3
,, ,, Painted Lady	0	3
,, ,, purple	0	3
,, ,, striped	0	3
,, ,, white	0	3
Persicaria, red	0	3
,, white	0	3
Phacelia congesta	0	3
,, tanacetifolia	0	3
Poppy, double Carnation	0	3
,, ,, scarlet	0	3
,, ,, fringed	0	3
,, ,, lilac	0	3
,, ,, white	0	3
,, Ranunculus	0	3
Prince's Feather	0	3
Saponaria calabrica	0	3
,, scarlet	0	3
Scorzonera tingitana	0	3
Snails	0	3
Sphenogyne anthemoides	0	3
Stock, Virginian	0	3
,, ,, white	0	3
Sunflower, double dwarf	0	3
,, ,, tall	0	3
Sweet Alyssum	0	3
Venus's Looking-glass	0	3
,, Navelwort	0	3
Vicia Nissoliana	0	3
Worms	0	3

HALF-HARDY ANNUALS.

	s.	d.
Ageratum mexicanum	0	3
Argemone grandiflora	0	3
Aster, Chinese, mixed	0	3
,, German, mixed	0	6
,, ,, ash-grey	0	3
,, ,, dark blue	0	3
,, ,, dark red	0	3
,, ,, ,, striped	0	3
,, ,, early crimson	0	3
,, ,, ,, rose and white	0	3
,, ,, lt. blue striped	0	3
,, ,, lt. red & white	0	3
,, ,, lilac	0	3
,, ,, pale yellow	0	3
,, ,, purple & white	0	3
,, ,, rose	0	3
,, ,, white, fine	0	3
,, tenellus	0	3
Cacalia aurea	0	3
,, coccinea	0	3
Calandrinia discolor	0	4
,, grandiflora	0	3
Cosmanthus fimbriatus	0	4
Cuphea silenoides	0	6
Centaurea americana	0	3
Chrysanthemum tricolor	0	3
,, ,, yell.	0	3
Clintonia elegans	0	3
,, pulchella	0	6
Cucumis Dudaim	0	6
,, flexuosa	0	4
,, prophetarum	0	6
Didiscus coeruleus	0	3
Gaillardia picta	0	4
Gourds à la moelle	0	3
,, de Barbarie	0	3
,, maliformis	0	6
,, Orange	0	3
,, Pear-shaped	0	3
,, Pumpkin	0	3
,, White	0	3
Helianthemum guttatum	0	3
Helichrysum bracteatum	0	3
,, ,, album	0	3
,, macranthum	0	3
Impatiens glandulifera	0	3
Ipomoea hederacea	0	3
,, Nil	0	3
,, purpurea carnea	0	3
,, ,, dark	0	3
,, ,, erubescens	0	3
,, ,, violacea	0	3
Lobelia erinus	0	3
,, gracilis	0	3
,, ,, alba	0	3
,, ramosa	0	6
Marigold, African Lemon	0	3
Marigold, African Orange	0	3
,, double French	0	3
Marvel of Peru, mixed	0	3
,, ,, red	0	3
,, ,, red & yellow	0	3
,, ,, white & red	0	3
,, ,, sweet-scented	0	3
,, ,, white	0	3
Nolana atriplicifolia	0	3
,, paradoxa	0	3
Œnothera Drummondi	0	3
Phlox Drummondi	0	6
Platystemon californicum	0	6
Podolepis gracilis	0	6
Sanvitalia procumbens	0	3
Schizanthus pinnatus	0	3
,, Priestii	0	3
Sedum coeruleum	0	6
Senecio elegans	0	3
,, ,, white	0	3
Solanum cerasiforme	0	3
Sphenogyne speciosa	0	3
Stocks, German, mixed	0	6
,, ,, brick colour	0	4
,, ,, cinnamon	0	4
,, ,, crimson	0	4
,, ,, dark brown	0	4
,, ,, ,, purple	0	4
,, ,, flesh colour	0	4
,, ,, lilac	0	4
,, ,, mordore	0	4
,, ,, pale blue	0	4
,, ,, purple	0	4
,, ,, rose	0	4
,, ,, scarlet	0	4
,, ,, white	0	4
,, Intermediate	0	3
,, Ten-week, purple	0	3
,, ,, scarlet	0	3
,, ,, white	0	3
,, Wall-leaved, purple	0	3
,, ,, scarlet	0	3
,, ,, white	0	3
Sultan, Sweet, purple	0	3
,, ,, white	0	3
,, ,, yellow	0	3
Tagetes lucida	0	6
,, signata	0	3
Tobacco, Virginian	0	3
Tournefortia heliotropioides	0	3
Tropaeolum canariense	0	6
Viscaria oculata	0	6
Xeranthemum annuum	0	3
,, ,, album	0	3
Zinnia elegans, mixed	0	6
,, ,, alba	0	6
Zinnia elegans aurea	0	6
,, ,, coccinea	0	6
,, ,, purpurea	0	6
Zinnia elegans violacea	0	6
,, multiflora	0	3
,, revoluta	0	3

TENDER ANNUALS.

	s.	d.
Balsam, double mixed	0	6
,, ,, lilac	0	4
,, ,, mottled	0	4
,, ,, purple	0	4
,, ,, red	0	4
,, ,, rose	0	4
,, ,, scarlet	0	4
,, ,, ,, flake	0	4
,, ,, white	0	4
Brachycome iberidifolia	0	6
,, ,, white	0	6
Browallia elata	0	3
,, ,, alba	0	3
Calceolaria pinnata	0	3
Capsicum Chili	0	3
,, long red	0	3
,, ,, yellow	0	3
,, square	0	3
Cockscomb, dwarf red	0	6
,, silver spiked	0	6
Egg Plant, purple	0	3
,, ,, white	0	3
Globe, purple	0	3
Globe, variegated	0	3
,, white	0	3
Ice Plant	0	3
Ipomoea coccinea	0	3
,, lutea	0	3
,, quamoclit	0	6
Ipomopsis elegans	0	6
Martynia annua	0	6
,, fragrans	0	6
,, lutea	0	6
Mesembryanthemum caudatum	0	3
,, pomeridianum	0	6
,, tricolor	0	6
,, ,, album	0	6
Portulaca grandiflora	0	6
,, splendens	0	6
,, Thellusoni	0	6
Rhodanthe Manglesii	0	6
Schizanthus Grahami	0	6
,, retusus	0	6
Sensitive Plant	0	6

GREENHOUSE PERENNIALS.

	s.	d.
Alonsoa grandiflora	0	6
Ardisia grandiflora	0	6
Balm of Gilead	0	3
Bossiaea thymifolia	0	6
Calceolaria, fine mixed	1	0
Canna indica	0	6
Chaenostoma polyantha	0	6
Cineraria, fine mixed	1	0
Cobaea scandens	0	6
Dolichos Lablab	0	6
Eccremocarpus scaber	0	6
Fuchsia, fine mixed	1	0
Gesnera discolor	1	0
Gloxinia, fine mixed	0	6
Heliotropium grandiflorum	0	6
,, peruvianum	0	6
Humea elegans	0	6
Ipomoea bona nox	0	6
Kennedya glabrata	0	6
,, monophylla	0	6
,, rubicunda	0	6
Loasa Herberti	0	6
,, lateritia	0	6
Lophospermum Hendersoni	0	6
Lotus jacobaeus	0	6
Maurandya Barclayana	0	6
Musk	0	3
Pelargonium, fine mixed	1	0
,, fine scarlet	[illegible]	0
Petunia, purple	0	6
,, fine mixed	1	0
,, white	0	3
Pitcairnia punicea	1	0
Primula sinensis	0	6
Salpiglossis, mixed	0	6
Statice Besseriana	0	6
,, eximia	0	6
,, Limonium	0	6
,, ,, angustifolium	0	6
,, pseud-armeria	0	6
,, sinuata	0	6
,, tatarica	0	6
Streptocarpus Rexii	0	6
Tetranema mexicana	0	6
Thunbergia alata	0	6
,, ,, alba	0	6
,, aurantiaca	0	6
,, Fryerii	0	6
,, new light yellow	0	6
Veronica Lindleyana	0	4
,, speciosa	0	4

HARDY BIENNIALS AND PERENNIALS.

	s.	d.
Alstroemeria pelegrina	0	6
Ammobium alatum	0	3
Anemone rivularis	0	6
Antirrhinum, mixed	0	6
Auricula, Alpine	0	6
,, finest mixed	1	0
Barbarea variegata	0	6
Campanula carpatica	0	6
,, pulcherrima	0	3
,, pyramidalis	0	3
,, ,, alba	0	3
,, spathulata	0	3
Canterbury Bells, double	0	6
,, ,, white	0	6
Carnation, mixed	0	3
,, finest double	[illegible]	6
,, mixed Picotee	1	0
Cardancellus mitissimus	0	4
Catananche bicolor	0	3
,, coerulea	0	3
Centaurea diluta	0	3
Columbine, mixed	0	3
Colutea, scarlet	0	3
Commelina coelestis	0	3
Coreopsis Atkinsonia	0	3
Cowslip	0	3
Crucianella stylosa	0	3
Cynoglossum glochidiatum	0	3
,, longiflorum	0	6
Dahlia, fine, mixed	0	6
,, repens	0	3
Delphinium azureum	0	3
,, sinense	0	3
Dianthus latifolius	0	3
,, superbus	0	3
Digitalis ferruginea	0	6
,, grandiflora	0	3
Eschscholtzia crocea	0	3
,, californica	0	3
Ferula neapolitana	0	3
,, tingitana	0	3
Forget-me-not	0	3
Foxglove, spotted	0	3
,, white	0	3
,, yellow	0	3
Fraxinella, red	0	3
,, white	0	3
Gentiana acaulis	0	6
,, amarella	0	6
,, asclepiadea	0	6
,, ,, alba	0	6
,, campestris	0	4
,, cruciata	0	4
,, lutea	0	6
,, punctata	0	6
,, purpurea	0	6
Geum montanum	0	3
,, reptans	0	3
,, sanguineum	0	3
,, Wicoii	0	3
Heartsease, mixed	0	3
,, fine mixed	1	0
Helianthemum, mixed	0	6
Heracleum sibiricum	0	6
Hollyhock, double red	0	3
,, ,, Antwerp	0	3
,, ,, black	0	3
,, ,, Mulberry	0	3
,, ,, pink	0	3
,, ,, purple	0	3
,, ,, scarlet	0	3
,, ,, white	0	3
,, ,, yellow	0	3
Honeysuckle, French	0	3
Iberis Tenoreana	0	3
Lobelia cardinalis	0	6
,, syphilitica	0	6
Lupinus pubescens	0	3
Lychnis, scarlet	0	3
,, white	0	3
Morina longifolia	0	6
Papaver bracteatum	0	6
,, croceum	0	6
Peas, Everlasting	0	3
,, ,, white	0	6
Pentstemon campanulatum	0	3
,, carneum	0	3
,, Chandleri	0	3
,, digitalis	0	3
,, gentianoides	0	3
,, venustum	0	3
Polemonium grandiflorum	0	3
Pink, Indian	0	3
,, mixed Belgian	0	4
Polyanthus, mixed	0	6
Potentilla insignis	0	6
,, obscura	0	3
Primula cortusoides	0	6
,, farinosa	0	6
Rose Campion	0	3
Saponaria ocymoides	0	6
Scabiosa grandiflora	0	3
Silene Schafta	0	6
Soldanella alpina	0	6
Sonchus Plumieri	0	6
Stenactis speciosa	0	3
Stipa pinnata	0	6
Stock, Brompton, purple	0	3
,, ,, scarlet	0	3
,, ,, white	0	3
,, Queen, scarlet	0	3
,, ,, white	0	3
Sweet Scabious	0	3
,, William, fine	0	4
,, ,, mixed	0	4
Telekia speciosa	0	6
Thistle, Globe	0	3
Verbena, mixed	0	6
Vesicaria utriculata	0	6
Wallflower, fine dark	0	3
,, lilac	0	3

	s.	d.
Fine mixed Lawn Grass, per lb.	1s.	6d.
Mixed Clovers for Lawn, per lb.	1	0
Large Russian Mats, each	1	0

Budding and Pruning Knives, &c., &c.

Printed by William Bradbury, of No. 6, York-place, Stoke Newington, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the county of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent Garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, February 10, 1849.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 7.—1849.] SATURDAY, FEBRUARY 17. [PRICE 6*d.*

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ERRATUM. In the Advertisement headed "FARM AGREEMENTS. —Ten pounds," &c., which appeared in No. 5, Feb. 3, col. *c*, page 66, In the last line, *for* "the first Monday in October next," *read* "the first of June next."

SEYMOUR'S CELERY.

SEYMOUR'S WHITE CHAMPION CELERY is warranted a very first-rate sort, and now sending out for the first time by H. LANE and SON, Nurserymen, Great Berkhampstead, Herts.

Seymour's Celery, White Champion ... 2*s.* 6*d.* per packet.
" " Red Matchless ... 1 6 do.
" " Superb White .. 0 6 do.

Post-office orders or postage stamps from unknown correspondents.

NEW VEGETABLE AND FLOWER SEEDS.

RENDLE'S CATALOGUE OF VEGETABLE AND FLOWER SEEDS appeared in full on the back page of the *Gardeners' Chronicle*, dated Saturday, Feb. 3, copies of which can be had on application to

WILLIAM E. RENDLE and Co., Seed Merchants, Plymouth.

Our Agricultural Seed List will soon be ready, and we shall be happy to forward copies, when published, to any address we may be favoured with.

ONE AND TWO YEARS SEEDLING AND TRANSPLANTED LARCH FIRS, ALDERS, &c.

WILLIAM WOOD AND SON having an immense stock of the above, fine strong plants, are determined to offer them on the lowest possible terms. Prices will be furnished on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

TO PLANTERS AND THE TRADE.

WM. URQUHART AND SONS, Dundee, have still a good stock of Seedling and Transplanted FOREST TREES and SHRUBS, at very low prices, to be obtained on application.

NEW VARIETY OF FIELD CARROT SEED.—Large Yellow Belgian CARROT Seed, 3*s.* 6*d.* per lb. This variety is much superior in sweetness to the common White Belgian Carrot, but is quite equal to it in size and keeping qualities; it vegetates quicker, and grows more vigorously when in a young state.

White Horn-shaped Belgian CARROT, 3*s.* per lb. This variety has been carefully cultivated for four years; it is quite equal in size to the original White Belgian, but it has the advantage in economy of labour in drawing, being much shorter, and consequently bulbing near the surface.

Carriage paid to London.

Post-office orders are requested from unknown correspondents. Direct to JOHN RIVERS, Seedsman, Sawbridgeworth, Herts.

TO CUCUMBER GROWERS.

EDWARD TILEY begs to inform the public that he has yet to dispose of good sound seeds of his unequalled CUCUMBERS, "The Victory of Bath," and Gordon's "Fine White Spine," which has given the greatest satisfaction to those who have already purchased them.

Victory of Bath, 10 seeds ... 2*s.* 6*d.*
Gordon's White Spine, 10 seeds ... 1*s.* 6*d.*

A remittance must accompany the order, either in cash, or postage stamps to the amount. Sold at EDWARD TILEY'S General Seed Shop, 16, Pulteney-bridge, Bath.

DOUBLE ITALIAN TUBEROSE ROOTS.—The Bulbs of this most beautiful and fragrant Flower have been just received from Italy, at A. CORBETT'S Old-established Italian Warehouse, 18, Pall-mall, and are warranted double, at 4*s.* per dozen. Also, expected, about the end of January, a choice collection of Orange, Lemon, Citron, and Shaddock Trees, together with Catalonian, Azorian, and Arabian Jessamine plants, any of which may be bespoke.

MITCHELL'S ROYAL ALBERT RHUBARB still retains its supremacy over all other sorts hitherto produced, it being from two to three weeks earlier than any kind now grown. It has other qualities eminently entitled to notice. It is most delicious in flavour, a splendid red colour, most prolific bearer, and free grower, with large fleshy stalks, and for early forcing is more suitable than any other variety. It has been acknowledged by all the principal growers, attending the London markets, to be by far the best ever introduced. In addition, W. M. begs leave to observe, that this Rhubarb is the same as was sold so early last season in Manchester, Birmingham, Liverpool, Cambridge, Brighton, and other large provincial towns, where it gave universal satisfaction, by its extreme earliness, quality, and beauty. Strong roots, 2*s.* 6*d.* each; also Myatt's Linnæus, 2*s.* 6*d.*, and Victoria, 9*d.*; usual allowance to the trade.—Post-office orders made payable to WILLIAM MITCHELL, Enfield Highway, Middlesex.

KNAP HILL NURSERY, NEAR WOKING, SURREY.
TO GENTLEMEN ENGAGED IN PLANTING.

HOSEA WATERER offers the following very desirable plants.

CEDRUS DEODARA, fine plants from seed, 3 to 4 feet high, 84*s.* per doz.
" " from 5 to 10 feet, 1 to 7 guineas each.
(These are magnificent plants.)
ARAUCARIA IMBRICATA, handsome plants, from 2½ to 3 feet, 42*s.* each. A few very fine plants, from 3 to 6 feet, 3 to 10 guineas.
CRYPTOMERIA JAPONICA, from seed, 5 to 7 ft., 4 to 5 guis.
" 1½ foot, 84*s.* per doz.
TAXODIUM SEMPERVIRENS, good stout plants, 2 feet, 84*s.*
" " 4 to 6 feet, 1 to 3 guineas each.
PINUS DOUGLASII, from seed, 1½ to 2 feet, 15*s.* each.
" " 3 to 6 feet, 21*s.* to 63*s.*
" MENZIESII, 3 to 5 feet, 42*s.* to 84*s.* per doz.
" INSIGNIS, 1½ to 2 feet, 7*s.* 6*d.* each.
" " a few very fine plants, from 5 to 7 feet, 2 to 5 guineas.
" CEMBRA, 5 to 7 feet, 10*s.* to 15*s.* each.
" " large and very handsome plants, 10 to 12 feet, 42*s.* each.
" CANADENSIS, or Hemlock Spruce, 4 to 5 feet, 21*s.* per dozen.
" " larger, 7 to 10 feet, 30*s.* to 60*s.* per dozen.
" EXCELSA, 3 to 6 feet, 3*s.* 6*d.* to 10*s.* 6*d.* each.
" FRAZERI, 3 to 5 feet, 30*s.* to 42*s.* per dozen.
" MORINDA, or Smithiana, 2 to 4 ft., 2*s.* 6*d.* to 5*s.* each.
" WEBBIANA, 2 to 4 feet, 10*s.* 6*d.* to 42*s.* each.
" PINSAPO
" CEPHALONICA
" LAMBERTIANA
" HARTWEGII
" DOUGLASII
" MACROCARPA

A few of the largest and most handsome plants in the trade. Prices will be given on application.

IRISH YEWS, 6 to 9 feet, 7*s.* 6*d.* to 15*s.* each.
*** It often happens Irish Yews are injured or rendered unsightly from their tendency to divide in windy or snowy weather. The plants here offered are grown from one stem only, similar to those at Elvaston, which are the finest in the kingdom.
CEDARS OF LEBANON, 2 to 2½ feet, very bushy and handsome, 30*s* per dozen.
" " 5 to 9 feet, 10*s.* 6*d.* to 42*s.* each.
(These are splendid plants.)
JUNIPERUS REPANDUS, 4 to 6 feet, 7*s* 6*d* to 10*s* 6*d.* each.
" " 8 to 10 feet, very handsome plants, 21*s.* to 42*s.* each.
" CHINENSIS, 4 to 5 feet, 7*s.* 6*d.* to 10*s.* 6*d.* each.
" " large handsome plants, 6 to 8 feet, 21*s.* to 31*s* 6*d.* each.
" IRISH UPRIGHT, 4 to 6 feet, 3*s.* 6*d.* to 10*s.* 6*d.*
" " 7 to 9 feet, 15*s.* to 21*s.*

*** These two last-named Junipers ought to be planted by every one who has any place approaching a lawn
THUJA WAREANA (the best variety of Siberian Arbor Vitæ), fine plants, 5 to 7 feet, 5*s.* to 7*s.* 6*d.* each.

The above are all growing in the open ground, are healthy and handsome specimens; they have never been in pots, and consequently are the more desirable.

HOSEA WATERER would also invite attention to his stock of large Spruce Firs, from 7 to 15 feet high; large Red Cedars, Phillyreas, green and variegated Hollies, Common Yews, 4 to 7 feet, fine Standard Weeping Limes, Weeping and Purple Beech, Standard Magnolias, Tulip Trees, &c, all of which are in a capital state for removing, and will be sold reasonably.

The Collection of AMERICAN PLANTS at the KNAP HILL NURSERY is well known as being the most extensive in this country; witness the beautiful Exhibition in the King's-road, Chelsea, every spring.
RHODODENDRONS, best hardy kinds, 30*s.* to 60*s.* per dozen
" fine hardy scarlets, large plants, 60*s.* per dozen.
AZALEAS, best varieties, from 18*s.* to 42*s.*
KALMIA LATIFOLIA, from 18*s.* to 84*s.*, for large plants, and upwards.
HARDY HEATHS, a first-rate collection of about 25 of the most beautiful and distinct kinds, good plants, at 63*s.* p. 100.
*** Hardy Heaths are not planted so generally as they deserve. Nothing can be more interesting and beautiful, and flowering as they for the most part do in the autumn, renders them still more valuable.

FOR PLANTING COVER, CARRIAGE DRIVES, &c.
RHODODENDRON PONTICUM, fine bushy plants, from 10*s.* 6*d.* to 21*s.* per 100.
BOX-LEAVED PRIVET (a new and very superior variety to the old Evergreen), 8*s.* to 12*s.* 6*d.* per 100.
BERBERIS AQUIFOLIUM, bushy plants, 9 inches to 12, 50*s.* per 1000.
" ditto, larger, 1½ to 2 feet, 7*s.* to 10*s.* per 100.
" DULCIS, 1 to 1½ foot, 7*s.* to 10*s.* per 100.
" ARISTATA, 1 to 1½ foot, 21*s.* per 100.
This last is an excellent plant for these purposes, and requires only to be better known to be more extensively planted.
ENGLISH JUNIPERS, 1 to 2 feet, 7*s.* to 12*s.* 6*d.* per 100.
SWEET BRIARS, 8*s.* to 12*s.* 6*d.* per 100.
COMMON LAURELS, fine bushy plants, 10*s.* to 25*s.* per 100.
PORTUGAL LAURELS, 2 to 3 feet, 30*s.* per 100.
QUICK, very strong, transplanted, 8*s.* to 10*s.* per 1000.
FRUIT TREES.—Dwarf trained Apples
" Pears
" Cherries
" Plums

Fine trees, 2*s.* 6*d.* to 3*s.* each.

" Apricots
" Peaches
" Nectarines

Fine trees, 3*s.* 6*d.* each.

Goods delivered free to London and to the Slough Station on the Great Western Railway. The Knap Hill Nursery is within an hour's ride of London, being near the Woking Station, South Western Railway.

It is particularly requested that letters intended for this Establishment may be addressed, HOSEA WATERER, Knap Hill Nursery, near Woking, Surrey.

PEAS.

CLARKE'S NEW LINCOLN GREEN PODDED MARROW.—Being a selected variety from Clarke's New Early Ringwood possessing all the advantages of the original stock, as to earliness and size, and at the same time having a rich Green Pod. To be had (wholesale only) of Mr. HENRY CLARKE, Seed Merchant, 30, King-street, Covent Garden.

LARCH PLANTS, &c.

PETER BOOTH, NURSERYMAN, Falkirk, is selling off a very large stock of Transplanted LARCH plants, in sizes from 1 foot to 2½ feet. Transplanted Scotch Firs, from 9 inches to 2 feet; transplanted Spruce Firs, 1 to 1½ foot. Strong Transplanted Thorn Quicks, and 2-year Seedling Pinus Austriaca, all very fine plants, and at further reduced very low prices.

ROSES.

A PAUL AND SON have still a fine stock of all the most beautiful sorts of ROSES, which they will be happy to supply on the following advantageous terms—the selection of kinds being left to them.

Standards ... ... 21*s.* to 30*s.* per dozen.
Dwarf Standards ... 18*s* "
Dwarfs ... ... 9*s.* to 18*s.* "

Varieties selected by the purchasers at Catalogue prices. Catalogues forwarded free by post, on the receipt of two postage stamps.—Nurseries, Cheshunt, Herts.

FINEST LAWN GRASS SEEDS.—The great expense of cutting and laying turves may be avoided, and a Very Superior Lawn produced in a short time by sowing Messrs. SUTTON'S LAWN GRASS SEEDS, which consist solely of the finest and shortest growing kinds, free from moss and other weeds. Price 3*s.* 6*d.* per gallon, or 25*s* per bushel. Also an excellent mixture of Perennial Clovers and finer sorts of Grasses, for improving old Pastures, at 2*s.* per gallon. Quantity required being 2 to 4 gallons per acre, according to the condition of the pasture.

*** Carriage free to London, Bristol, or Basingstoke.

JOHN SUTTON and SONS, Reading, Berks.

PLANTING SEASON.

A COLLECTION OF RARE AND HARDY ORNAMENTAL CONIFERÆ FOR 5*l.*

The following collection of CONIFERS is offered by YOUELL and Co, in very healthy plants in pots, for 5*l.*, package included, and carriage paid to London or Hull.

Pinus Ayacahuite	Picea pinsapo
" Llaveana	" Webbiana
" australis	" pindrow
" excelsa	Cryptomeria japonica
" Montezuma	Cedrus Deodara, 3 fine plants
" insignis	Araucaria imbricata, 3 ditto
" Gerardiana	Cedrus Libani
" cembra	Cupressus torulosa
" cembroides	" Uhdeana
Abies Khutrow (true)	Juniperus Bedfordiana
" orientalis	" excelsa
Picea cephalonica	Taxodium sempervirens

CEDRUS DEODARA FROM SEED.

YOUELL and Co. beg to call attention to their fine and healthy stock of the above most elegant and hardy ornamental tree, and can supply fine bushy plants, in pots, 9 inches to 1 foot, at 12*s.* per dozen. Also, fine plants of a larger size in any quantity. Specimens of the wood from the Himalaya Mountains can be seen at the Nursery.

THE FINEST SHOW CARNATIONS, PICOTEES, AND PINKS.

YOUELL AND CO. are now executing orders from their celebrated collections of the above, comprising upwards of 700 of the finest varieties known, and is the most extensive and unique collection extant. The plants are very strong, healthy, and well rooted, and, if preferred, can be forwarded with safety per post, at the extra charge of 2*s.* per dozen pairs, the prices of which are as follows:

12 pairs of very fine show flowers, by name, 1*l.* 4*s.* and				£1	10 0
25	ditto	ditto	ditto	2	10*s.* and 3 0 0
12 pairs of newest and finest first class show flowers				2	10 0
25	ditto	ditto	ditto	5	0 0

Fine mixed border Carnations, 12*s.* per dozen pairs.

PINKS.

Finest first class show varieties, 12*s.*, 18*s.*, and 24*s* per dozen pairs.

GREAT YARMOUTH NURSERY.

SEEDS.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE for 1849, sent free by post on application. We beg to offer the following in collections, including many choice new sorts.

VEGETABLE SEEDS.

	£	s.	d.
A complete Collection, including Thurston's Reliance, Dancroft Rival, Fairbeard's Surprise, British Queen, and other fine Peas, 20 quarts in all, and all other Vegetable Seeds, best and newest kinds, in proportion for	3	3	0
The same Collection, in smaller quantities	2	2	0
Do. do. do.	1	5	0
A Collection suitable for a small garden ...	0	15	0

A list of the sorts furnished if required.

SELECT FLOWER SEEDS.

Free by post, with full directions for sowing, heights, colours, &c., viz.:—

	s.	d.
100 varieties best and newest Annuals	15	0
50 varieties for 8*s.* 6*d*, 30 for 5*s.* 6*d.*, 20 for	4	0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7*s.* 6*d.*, or 12 do. ...	5	0
20 varieties best Greenhouse Annuals, 7*s.* 6*d.*, 12 for ...	5	0
20 varieties choice Greenhouse Perennials, 10*s.* 6*d.*, 12 for	7	6
20 vars. choice hardy Biennials and Perennials, 7*s.* 6*d.*, 12	5	0
36 varieties Imported German Stocks	5	0
20 ditto ditto, 3*s.* 6*d.*; 12 for	2	6

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of 2*l.* and upwards articles presented extra. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

MITCHELL'S "PRINCE ALBERT" RHUBARB can be obtained from the Subscribers at 1*s.* 6*d.* each.
PHLOX OCULATA. This splendid new variety at 2*s.* 6*d.* per packet.
PHLOX DRUMMONDII, NEW SCARLET, 1*s.* per packet.
SEYMOUR'S SUPERB RED CELERY, 6*d.* per packet.
All the choicest Vegetable and Flower Seeds can be procured on application to
WILLIAM E. RENDLE & Co., SEED MERCHANTS, Plymouth.
*** *Our New Seed Catalogue can be obtained on application, Gratis, and should be in the possession of all who have gardens.*

CORNWELL'S VICTORIA RASPBERRIES.—G. C. can confidently recommend the above as superior to any sort ever offered. Prizes were awarded to them at the Hort. Society's Gardens, Royal Botanic Society's Gardens, and the Surrey Zoological Gardens, as being the best shown for size, colour, and flavour. The fruit in Covent Garden was sold at a higher price than any other. Strong canes to be had at E. CHARLWOOD'S, Covent Garden; W. and J. NOBLE'S, 152, Fleet-street; also of GEORGE CORNWELL, Market-Gardener, Barnet, Herts, at 1*l.* 10*s.* per 100, or 4*s.* per doz. The usual allowance to the trade.

WM. HAMILTON, SEEDSMAN and FLORIST, 156, Cheapside, London, begs respectfully to make it known that he will forward, free by post, 50 varieties of CHOICE ANNUALS on receipt of 11*s.*, 25 varieties for 6*s.*, 12 varieties for 3*s.* A collection of the most useful VEGETABLE SEEDS, in sufficient quantities for a large garden, forwarded, carriage free, and including 25 varieties of Annuals, on receipt of 3 guineas; smaller quantities, with 12 varieties of Annuals, 25*s.* The seeds in the above collections may be relied on as being of the best quality.
W. H.'s Catalogue forwarded gratis, on application.
A superb collection of German Stocks, Asters, Balsams, Zinnias, &c.—156, Cheapside, London.

MITCHELL'S UNRIVALLED DAHLIAS.
JAMES MITCHELL begs to announce to his friends, he purposes sending out in May the following first class DAHLIAS, in strong healthy plants.
ECLIPSE, Scarlet.—The best formed scarlet in cultivation; first class certificate, also 7 first prizes; constant show flower; 4 feet 10*s.* 6*d.*
SUSSEX HERO, Crimson.—A noble and constant show flower; 4 feet. 10*s.* 6*d.*
MRS ROSAMOND STANLEY, Crimson tipped with white.—First class certificate, the best fancy Dahlia of the season, constant and beautiful show flower; 4 feet. 10*s.* 6*d.*
BLACK PRINCE, Crimson.—Partially sent out last season, and much admired at all the principal shows; 4 feet. 3*s.* 6*d.*
Piltdown Nurseries, Maresfield, Sussex.

SUPERB NEW RANUNCULUSES, &c.—The new varieties consist of very superior and first-rate flowers, which we have selected from immense quantities of seedlings, and for vigorous growth and profuse flowering are far preferable to the older varieties.
RANUNCULUSES, free by post, with printed directions for planting and culture.
50 superb new varieties, named, 40*s.*; 25 for 22*s.* 6*d.*
50 fine older varieties, named, 15*s.*; 25 for 8*s.*
100 finest mixture, 10*s.*; 100 fine, 5*s.*, or, post free 6*s.*
GLADIOLUS Gandavensis, large roots, 1*s.* 6*d.* each; Brenchleyensis, 5*s.*, splendens, 5*s.*, Rosa Mundi, 2*s.* 6*d.*; Ramosus, 1*s.* 6*d.*; Psittacinus sanguineus, 1*s.* These at 2*s.* 6*d.* and upwards, free by post; under 2*s.* 6*d.*, 3*d.* each extra.
DOUBLE ANEMONES.
Finest mixture, 2*s.* per doz., or 12*s.* per lb.; Fine, 1*s.* 3*d.* per doz., or 5*s.* per lb.
12 varieties, named, best scarlets, crimsons, &c., 3*s.* 6*d.*; post free, 4*s.* 3*d.*; Single, fine, mixed colours, 4*s.* per lb.
Catalogues of Roots, free by post, comprising our superb new Ranunculuses, upwards of 40 varieties of Gladiolus, &c.
Post-office orders made payable to HASS and BROWN or to STEPHEN BROWN. Remittances requested from unknown correspondents.
HASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

TO PLANTERS OF CEDRUS DEODARA.
WM. MAULE AND SONS beg to inform Noblemen, Gentlemen, &c., that they can supply any quantity of superior plants from seed of the above magnificent hardy Himalayan CEDAR. Any Nobleman or Gentleman furnishing mountains or planting by the acre will be supplied on moderate terms. A few thousands of fine selected plants for Lawns and ornamental planting can be had during the present month, before the shifting commences into larger pots, at 30*s.* per doz.
☞ WM. MAULE and SONS' Pamphlet on the Natural Habits and Quality of the Wood of the Cedrus Deodara (which they have published), will be sent gratuitous on the receipt of two postage stamps.—Stapleton-road Nurseries, Bristol.

GRIGOR'S AQUILEGIA GLANDULOSA.—The subscribers have now ready to send out stout plants of their new and beautiful COLUMBINE, respecting which, Dr. LINDLEY, in the *Gardeners' Chronicle* in June last, says: "This plant is, perhaps, the handsomest hardy perennial in cultivation; its stems rise about 2 feet high, and sometimes carry from 50 to 60 blossoms. We have a plant now before us, which, after a journey from Scotland, has 21 expanded flowers, each 3½ inches in diameter, with broad, thin, delicate, spreading sepals, of the deepest ultramarine blue, surrounding five shorter petals, the upper half of which is pure white, resting on an azure ground. The effect is beautiful in the extreme; and no description we have formerly given of it has done justice to its exquisite appearance." Stout healthy plants are sent free by post, with the mode of treatment, at 2*s.* per pair, or 3*s.* per dozen; and seeds at 1*s.* per packet, or for postage stamps of that value.—JOHN GRIGOR and Co., Nurseries, Forres, N. B.

JOHN CATTELL, NURSERY and SEEDSMAN, Westerham, Kent, begs to inform his Friends and the Public that his selected collection of VEGETABLE SEEDS is now ready to be sent out, consisting of those of his own improving and the best of others, and generally of his own saving. All orders entrusted to him will be executed with the greatest care and dispatch. Catalogues of the above, and also of Flower Seeds, may be had on application, by inclosing a penny stamp.
1 os. packets of his superior Dwarf Barnes Cabbage may be had as usual in return for 12 penny stamps. The Best Walcheren Broccoli in cultivation, at 1*s.* 6*d.* per packet.
J. C. has also a large stock of the under-named ready for immediate delivery: Calceolaria, Keatlah Hero, 1*s.* 6*d.* each, 9*s.* per doz; this is a first-rate bedding plant. Calceolarias—Emperor, Beauty Supreme, Sir Harry Smith, Exemplar, Masterpiece, Professor Lindley, Standfieldi, Oscar, and other fine varieties, 1*s.* 6*d.* to 3*s.* 6*d.* each. Pentstemon speciosum, 1*s.* 6*d.* each, 15*s.* per doz. Delphinium Barlowii and grandiflorum maximum, 9*d.* each, 4*s.* per doz. Geranium, Pink Pot, 2*s.* 6*d.* each; this is an improvement on G. lucen rosea, being of a deeper pink, better shape, and very dwarf compact habit. Fine healthy plants, free from spot, of the leading varieties of fancy and other Geraniums. Standard and Dwarf Roses particularly fine, a Catalogue of which may be had by forwarding a penny stamp.
A remittance or reference from unknown correspondents is required.—Westerham, Kent, Feb. 17.

AIGBURTH SEEDLING STRAWBERRY, 25*s.* per 100.—25 strong plants of this fine Strawberry (superior to British Queen, as to its hardy character and fruitfulness, and equal to it in flavour) may be had free by post for 8*s.* 6*d.*, from JAMES TYRAN, Seedsman, 184, Park-road, Liverpool.

CHEAP DAHLIAS FOR 1849—WARRANTED TRUE TO NAME.
J. COURCHA can supply nearly all the new Dahlias of last year at 7*s.* per dozen, comprising Shylock, Golden Fleece, Delight, Walter Hilson, Boule de Feu, and Crocus, the best yellow out, &c. FANCY DAHLIAS—Jenny, Lind, Remembrancer, Mrs. Shaw Lefevre, Empereur de Maroc, &c. Older Varieties at 2*s.* 6*d.* per dozen.
FUCHSIAS and VERBENAS at 2*s.* 6*d.* per dozen. Plants carefully packed to all parts of the country. Catalogues may be had on application to J. COURCHA, Florist, 8½, Wellington-row, Hart's-lane, Bethnal-green-road, London.
*** Orders by post punctually attended to.

THE "QUEEN" MELON.
EDWARD TILEY begs most respectfully to apprize the Nobility and Gentry that he has procured the whole of the stock of seed of the above superb Melon, from one of the most noted growers in the West of England. This Melon is allowed to be by competent judges, who have seen it, the earliest and finest flavour grown; it has proved itself by competition for the last three years to be the best yet known. It has been awarded three first prizes. It is a handsome shape, very thin skin, green flesh, and melting flavour, not liable to crack or lose its flavour when kept, as most others do: it weighs from 5 to 7 lbs.
This superb Melon is well adapted to small growers, being a very free setter, very productive, and requires less heat than any yet out. Sold in packets of 7 seeds, 2*s.* 6*d.*; with also the following varieties:

Bowood green flesh Melon (true) ...	6 seeds	1*s.* 0*d.*
Ispahan (true)	10 ,,	1 0
Terry prize (true)	10 ,,	1 0
Beechwood (true)	10 ,,	1 0
Cuthill's (true)	10 ,,	1 0
Emperor green flesh	10 ,,	1 0
Windsor prize	10 ,,	1 0
Egyptian green flesh	10 ,,	1 0

Two packets selected of the latter varieties will be included with a packet of the Queen Melon for 4*s.*
BROCCOLI.—The three best varieties in cultivation are the Walcheren, Wilcove, and the Tamworth, at 1*s.* each per packet.
Sold by EDWARD TILEY at his General Seed-shop, 16, Pulteney-bridge, Bath; the whole, or any part of the above, will be sent postage free. A remittance must accompany the order; or the amount in 1*d.* postage stamps.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.
WILLIAM WOOD AND SON have much pleasure in offering the following, all strong healthy plants.

HOLLIES, green, very fine, 3 to 4 feet ...	per 100—40*s.* 0*d.*
LAURELS, common, 2 to 3 feet	15 0
Ditto ditto very bushy, 3 to 4 feet	20*s.* to 25 0
MAHONIA AQUIFOLIA, bushy	10*s.* to 15 0
RHODODENDRON PONTICUM, nice young plants,	
6 to 12 inches	10*s.* 6*d.* to 15 0
Ditto 15 to 18 inches	20*s.* to 25 0
Ditto 2 to 3 feet, very bushy ...	60*s.* to 75 0
AZALEAS, of sorts, fine varieties ..	per dozen— 9 0
,, PONTICUM, fine and bushy	6 0
,, Ditto 1½ to 2 feet	9 0
KALMIA LATIFOLIA, 1 to 1½ foot, fine	15 0
Ditto ditto 2 feet do.	24 0
LEDUMS, of sorts	9 0
,, THYMIFOLIUM	8 0
RHODODENDRON CATAWBIENSE, 1½ to 2 ft., strong	12 0
,, ,, CAMPANULATUM, 9 inches ...	36 0
,, ,, HIRSUTUM	10 0
ARBORVITÆ (Ware's compact Siberian), 2 to 4 feet, very fine	9*s.* to 15 0
BOX, variegated tree, 2 to 4 feet	4*s* to 6 0
,, green, very bushy	3*s.* to 4 0
LAURELS, Portugal, fine, 3 to 4 feet	9 0
,, fine and bushy ...	12*s.* to 18 0
LAURUSTINUS, fine bushy plants, 2 feet	6 0
,, very ditto 3½ to 4 feet	12*s.* to 15 0
PHOTINIA SERRULATA, 3 to 5 feet, strong	15*s.* to 18 0
PRIVET, Chinese, strong	9*s.* to 12 0
ABIES DOUGLASII, 1½ foot	each— 7 6
,, KNUTROW, 1½ to 2 feet ...	per doz.—15 0
,, MORINDA, 1½ to 2 feet	15 0
ARAUCARIA IMBRICATA, 9 to 15 inches, each,	1*s.* 6*d.* to 5 0
CEDRUS DEODARA, 6 to 9 inches, fine, from seeds,	per doz.—10*s.* to 12 0
,, ,, 1 to 1½ foot	18*s.* to 24 0
CEDAR OF LEBANON, 2 to 3 feet, very fine	30 0
CUPRESSUS ELEGANS, 1 foot	12 0
,, OCCIDENTALIS, 2 to 3 feet	30 0
,, TORULOSA, 1½ to 2 feet	12 0
,, ,, 2½ to 3 feet, fine	15 0
JUNIPERUS RECURVA, 1½ to 2 feet ..	12*s.* to 18 0
PICEA PINSAPO, 2½ to 3 feet	30 0
PINUS CEMBRA, 1½ to 2 feet	12 0
,, EXCELSA, 1 foot	12 0
,, INSIGNIS, 1½ foot	each—10 6
TAXODIUM DISTICHIUM PENDULUM, 2 to 3 feet,	each—2*s.* 6*d.* to 5 0

ASH, new Weeping, Chinese, 8 to 10 feet, each 1*s.* 6*d.*; per dozen, 12*s.*
,, Weeping, 6 to 10 feet, each, 1*s.* to 1*s.* 6*d.*; per doz., 12*s.*
BEECH, fern-leaved, 5 to 6 feet, each, 1*s.* 6*d.*; per doz., 15*s.*
,, Weeping, fine, 6 to 8 feet, each, 2*s.* 6*d.*; per doz., 24*s.*
ELM, New Weeping, Scampston, 6 to 8 feet, each, 2*s.* 6*d.*; per dozen, 25*s.*
HORSE CHESTNUTS of sorts, fine, 8 to 10 feet, each, 1*s.* to 1*s.* 6*d.*; per doz., 9*s.* to 12*s.*
OAK, Weeping, 6 feet, each, 3*s.*; per doz., 30*s.*
THORNS, of sorts, each, 1*s.*; per doz., 9*s.*

Collections of the following have been selected with the greatest care, and are offered at the annexed reasonable prices, the selection being left to WM. WOOD and SON.

ROSES, OF THE MOST APPROVED SORTS.
Superb Dwarf and Dwarf Standards, 12*s.* to 18*s.* per dozen.
Fine Dwarfs (on own roots), in 50 varieties, 50*s.* per 100.
Climbing, 9*s.* to 12*s.* per dozen.
China, superb varieties, in pots, 9*s.* to 12*s.* per dozen.
Tea-scented and Bourbon, 12*s.* to 18*s.* per dozen
Mixed Roses, for Plantations, 30*s.* per 100.

CAMELLIAS, fine healthy plants, and all the best varieties in cultivation	per doz.—25*s.* to 42*s* 0*d*
CHINESE AZALEAS, of the most select kinds	12*s.* to 18 0
CINERARIAS, very select collection, fine strong plants, COMING INTO BLOOM	9*s.* to 18 0
CHRYSANTHEMUMS, all the newest imported varieties	6*s.* to 18 0

A liberal quantity of plants allowed for carriage. A reference or remittance respectfully solicited from unknown correspondents. General Catalogues of Nursery Stock, Greenhouse plants, Roses, Seeds, &c., may be had GRATIS, on application.
Woodlands Nursery, Maresfield, Feb. 17.

LAWN TREES.—The following species and varieties will be found highly ornamental.
WEEPING TREES, grafted on straight stems, 6, 7, to 8 ft. high.

Ulmus glabra pendula	each—3*s.* 6*d.*
,, montana pendula nova	3 6
,, rugosa pendula	3 6
The above are three new varieties of Weeping Elms.	
Populus pendula (the Weeping Poplar)	2 6
Tilia alba pendula (the Weeping Lime)	2 6
Sophora japonica pendula	5 0
Salix americana pendula (the new weeping Willow)	2 6
Betula pendula nova (new Weeping Birch) ...	3 6
Fagus pendula (the Weeping Beech)	3 6
,, pendula nova (the new Weeping Beech)	3 6
Cerasus depressa	2 6
,, chamæcerasus	2 0
,, semperflorens	2 0
Pavia humilis pendula	2 6
Cytisus supinus	2 0
Planera Richardii pendula	7 6
Weeping Mountain Ash	3 6
Robinia inermis, 8 feet	3 6
,, tortuosa pendula	5 0
Golden-twigged Weeping Ash	3 6

FLOWERING TREES AND SHRUBS, grafted on stems 5 to 8 feet in height.

White Portugal Broom	3 0
Pink do. do.	3 0
Cream-coloured Broom	3 0
Yellow do.	3 0
Cytisus elongatus	1 6
,, falcatus	2 0
,, nigricans	2 6
,, purpureus	2 0
,, purpureus major	2 6
,, purpureus elongatus	3 6
,, purpureus atropurpureus (new) ...	2 6
,, sessilifolius	1 6
,, Weldenii	2 6
These are all grafted on the Laburnum.	
1. Æsculus laciniata, 6 feet (the Fern-leaved Horse Chestnut)	2 6
2. Æsculus flore pleno, 6 feet	2 6
3. Æsculus rubicunda flore pleno, 6 feet ...	7 6
No. 2 is the double white Horse Chestnut, which blooms with a long spike like a double Hyacinth.	
Althæa frutex, double carnation striped ...	3 6
,, ,, double pink	3 6
,, ,, double purple	3 6
,, ,, double red	3 6
These are grafted on straight stems of the common Althæa frutex, 5 feet in height.	
Genista purgans	2 0
,, anxantica	2 6
These are grafted on Laburnums.	
Pavia carnea pubescens	2 6
,, discolor	2 6
,, rubra	2 6
,, neglecta	2 6
These are the American red and crimson Horse Chestnuts, grafted on the common.	
Prunus spinosa plena (the double Sloe) ...	2 6
,, candicans, (the Snowy Plum) ...	2 6
Cerasus nigra	2 6
Cotoneaster microphylla	2 6
Pyrus salicifolia	2 6
,, floribunda	2 6
,, grandifolia	2 6
,, pubens	2 6
,, depressa	2 6
Carriage paid to London.	

For descriptions of above and other species and varieties, see Descriptive Catalogue of Trees and Shrubs, sent per post for six postage stamps.
THOMAS RIVERS, Nurseries, Sawbridgeworth, Herts.

MILFORD NURSERY, near GODALMING, 6 miles from the Guildford Station, South Western Railway.
WILLIAM YOUNG informs Gentlemen, Nurserymen, and others, that he has a fine stock of MAHONIA AQUIFOLIA, or American Berberry, to dispose of, bedded plants, 9 inches to 1 foot, 20*s.* per 1000; if 10,000 taken, 15*s.* per 1000. Ditto, 1 to 2 feet, 25*s* per 1000; if 10,000 taken, 20*s.* per 1000. They are well rooted, and are the best size for planting out. Also about 10,000 to 15,000, fine, straight, healthy, well-rooted English Oak, 60*s.* per 1000; ditto, 3 ft. to 5 ft., 30*s.* per 1000. Scotch Elms, 4 ft. to 5 ft., 25*s.* per 1000. About 100,000 2 years bedded Larch Fir (fine), from 18 inches to 2 feet, and from 2 ft. to 4 ft., from 15*s.* to 20*s.* per 1000. And a million of strong bedded Quicks, of the most healthy description; samples with prices (which will be regulated according to the quantity taken) sent on application.—Feb. 17.

100,000 PLANTS AT LESS THAN HALF-PRICE.
J. WEEKS AND CO., HOTHOUSE BUILDERS and HOT-WATER APPARATUS MANUFACTURERS, having lately erected, in the King's-road, Chelsea, an extensive Ornamental Nursery, expressly for the purpose of exhibiting all the modern improvements in Horticultural Building, Heating, and Ventilating. Plants of the choicest varieties are grown and are on sale at less than half price.
J. WEEKS and Co., King's-road, Chelsea.

MESSRS. SUTTON'S LIST OF PRICES OF AGRICULTURAL SEEDS is now ready, and will be forwarded, post free.
J. S. and Sons being extensive growers of Seeds, and intimately known to the agriculturists of Berkshire and the surrounding counties for nearly 40 years, trust that the above Catalogue will be read with interest, and be found useful to all who are desirous of obtaining genuine home-grown Seeds at low prices.—N.B. Goods delivered free to London, Bristol, Gloucester, or Basingstoke.
JOHN SUTTON and SONS, Reading, Berks.

SLATE WORKS, ISLEWORTH.—The following articles manufactured in Slate for Horticultural Purposes may be seen in use at WORTON COTTAGE, upon application to the Gardener, Sundays excepted: Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot-water Tank Covers, Flower-beds for Balconies, Shelves fitted to hold Water for Orchidaceous Houses, &c.—Estimates given for Work as shown upon Drawings and in Specifications.
A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

DOUBLE ITALIAN TUBEROSE ROOTS, 8*s.* per dozen.
ROBERT HALL begs to advise the arrival of his annual importation of the above ROOTS, which are this year remarkably fine, in consequence of their having been left in the ground a sufficient time to mature, instead of being taken out before due season for the sake of creating an early sale in England.—Italian and Foreign Import Warehouse, 63, South Audley-street, Grosvenor-square, facing the Chapel.

BOWERS' NEW WATERING-POT.—An ingenious mechanical contrivance in watering choice plants to a nicety; avoiding the unclean slop, disfigurement of foliage, and too frequent loss of good plants, inseparable from the old method of watering. To be had in all sizes; those at 7*s.* 6*d.* and 10*s.* each are the most in use. London Agent, DUNCAN HAIRS, Seed Merchant, 369, St. Martin's-lane; or apply to H. BOWERS, Godalming, Surrey.

BELGIAN CARROT SEED, new and genuine stock, 1s. 3d. per lb., or 112s. per cwt. LONG RED, YELLOW GLOBE, and RED GLOBE MANGOLD WURZEL, 1s. per lb., or 100s. per cwt.; and all other Agricultural Seeds at the lowest market prices, can be obtained on application to

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

*** *Our Agricultural Seed List will be ready shortly, and will be forwarded Gratis to all who may wish to see it.*

NEW RANUNCULUSES, ANEMONES, &c.

CAREY TYSO, Florist and Seedsman, Wallingford, Berks, begs to announce that February is the best season for planting, and that he can supply, per post, as under.

TYSO'S SEEDLING RANUNCULUSES.

50 first-rate show flowers	5l. to £7	0s.	0d.
100 roots in mixture	10s. to 2	0	0

Selections from the best varieties extant.

100 named sorts, one root of each ...	50s. to 5	0	0
100 fine mixtures	8s., 15s., and 1	0	0
DOUBLE ANEMONES, 50 sorts	20s. to 1	10	0
CARNATIONS and PICOTEES, 25 pairs ...	40s. to 3	0	0

Descriptive Priced Catalogues for 1849 sent for two postage labels; "The Ranunculus; how to Grow it," enclosed on receipt of nine postage labels.

TO MELON GROWERS.

FLEMING'S NEW HYBRID PERSIAN having been awarded First Prizes at all the Chiswick Shows of the Horticultural Society of London last season, needs no further comment.

Fleming's New Hybrid Persian,	per packet—2s. 6d.
" Ispahan	" ... 1 6
Seymour's Golden Perfection ...	" ... 1 6

From unknown correspondents post-office orders or postage stamps can be sent to R. Lane & Son, Great Berkhampstead.

FIRST CLASS FUCHSIAS AND VERBENAS.

GEORGE SMITH begs to inform his friends in general that his DESCRIPTIVE CATALOGUE of the above is now ready, and comprises every novelty of the season.

G. S. can with confidence recommend his Seedling VERBENAS, they having taken numerous First Class Certificates. Also his Seedling FUCHSIA, LORD NELSON, has taken three First Class Certificates, and for exhibition will be found the gem of the season. For description, see Catalogue, which will be forwarded on the receipt of one postage stamp.

Tollington Nursery, Hornsey-road, Islington.

SEED POTATOES.

CHARLES SHARPE, Nurseryman and Seedsman, respectfully solicits the attention of the Nobility and Gentry to his POTATOES for Seed. The sorts are very early and productive, and have given general satisfaction to Potato growers in all parts of the Kingdom. They are offered at the following prices, packing included:

	Per bushel of 56 lbs.
Soden's Early Oxford Potatoes ...	... 8s. 0d.
Early Ash-leaved Kidneys ...	.. 8 0
Early Round Frame	... 7 0
Early Cockneys	... 6 0
Early Manley	... 6 0
Fox's Seedling, fine for forcing ...	... 6 0

Second early sorts, for Winter and Spring use:

	Per bushel of 56 lbs.
American Native Potatoes .	... 5s. 0d.
York Regents	... 5 0
Kentish Pink Kidneys	... 4 0
Forty-fold	.. 4 0

Orders will be forwarded on the receipt of a Post-office Order, and great care will be taken to ensure their safe delivery. A liberal allowance made to the Trade.

Charles Sharpe, Seedsman, Wisbeach, Cambridgeshire.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 17, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Monday,	Feb.	19	Pathological	8 P.M.
			Chemical	8 P.M.
			Medical	8 P.M.
			Statistical	8 P.M.
			British Architects	8 P.M.
Tuesday,	—	20	Horticultural	2 P.M.
			Linnean	8 P.M.
			Civil Engineers	8 P.M.
Wednesday,	—	21	Society of Arts	8 P.M.
			Geological	8½ P.M.
Thursday,	—	22	Royal Society of Literature	4 P.M.
			Numismatic	7 P.M.
			Antiquarian	8 P.M.
			Royal	8½ P.M.
Friday,	—	23	Philological	8 P.M.
			Royal Institution	8½ P.M.
Saturday,	—	24	Royal Botanic	3¾ P.M.
Tuesday,	—	27	Medical and Chirurgical	8½ P.M.
			Zoological	9 P.M.
Friday,	March	2	Botanical	8 P.M.
Saturday,	—	3	Asiatic	2 P.M.

From the first appearance of the Disease in Potatoes, an opinion has been entertained that *light land* is exempt from serious injury, in the great majority of cases. Upon turning over the returns collected during the last four years in the columns of the *Gardeners' Chronicle*, we find the proportions mentioned to be these:

	Suffered much.	Suffered little or nothing.
1845	10	21
1846	2	34
1847	0	20
1848	1	17
	13	92

There being only about one-seventh of the recorded cases in which considerable injury was sustained.

The returns recently collected give the following numbers:

	Suffered much.	Suffered little or nothing
England	79	313
Scotland	0	129
Ireland	1	48
Wales	0	20
	80	510

And here, again, it is to be remarked that the proportion of great disease in light land is about a seventh.

It is especially worthy of note that there is no return of light land having suffered much in either Scotland or Wales, and that the whole of the bad cases are English, with the exception of one in Ireland, which is reported by *Mr. H. Wiggins, land-agent, Faughanvale*, Londonderry, who states that his crop was most injured on gravel.

Seventy-nine bad cases against 313 good in England are, however, too numerous to justify any general conclusion. But a careful scrutiny of the circumstances under which they occurred gives the following results:

As regards *climate*, no case is reported from the north of Yorkshire; 11 are from Kent, 5 from Norfolk, 5 from Hampshire, 4 from Yorkshire, 4 from Shropshire, 3 from Lincolnshire, and the remainder are scattered through the intervening counties; one only is reported from Cornwall. Climate, therefore, does not seem to offer an explanation of the prevalence of disease in light land.

Late planting seems to be a general cause of failure: of the 79 cases under inquiry no fewer than 46, or more than half, are evidently connected with late planting: and among them are some highly instructive examples. *Mr. Cotterell, Land-agent, Bath*, had his crop planted in May much diseased; but that planted in December suffered far less. *The Rev. J. J. Peach, of Holme, near Nottingham*, lost one-third in sandy loam on gravel; but his autumn planted crop on the same soil was little injured. *G. W. Norman, Esq., of Bromley, in Kent*, experienced large loss in the April and May planted crop, but that of February suffered little. Similar cases are reported by others.

Six other cases are where late planting and heavy manuring were combined: among them is the instance of the *Rev. G. H. Egerton*, who reports from Shropshire that in his highly manured land two-thirds were diseased, but where no manure was used the crop did not suffer so much.

Three instances are where light land rested on a heavy or wet subsoil.

There then remain 24 cases, which are altogether anomalous, and of which no solution can be obtained from the information before us. They are distributed through the counties of Wilts, Warwick, Surrey, Stafford, Salop, Norfolk, Middlesex, Kent, Bucks, Hants, Cornwall, Gloucester, Dorset, and Hereford. In some cases they are connected with rich ground, or probably high manuring; *Mr. Youell, of Great Yarmouth*, lost two-thirds of a March planted crop, in pure sea sand, covered a foot deep with river mud. *Mr. J. Bell, of Lakenham, near Norwich*, lost from one-third to one-half his crop, except where Pink-eyes were planted with gypsum. Several of the reporters in this class speak of the loss having been smaller where the crop was planted very early: others, however, perceive no difference. It is to be hoped that attention will be hereafter given to the exact circumstances connected with the Potato failure on light lands. In the meanwhile the above analysis of the reports gives this result:

Bad Cases.

Connected with late planting	46
Late planting and heavy manuring.........	6
Heavy or wet subsoils	3
Unexplained	24
	79

Whence it may be concluded that in England the chances are 313 to 24 against the appearance of much disease in light lands unless planting is late, or manuring excessive, or there is a heavy or wet subsoil; in other words, not more than 1 crop in 13 suffers much in light land, if moderately manured, planted early, and not resting on a wet subsoil.

As to the rest of the United Kingdom it has been already stated that no return mentions failures in light land, except in one instance near Londonderry.

We hope to be able by next Saturday to complete the examination of our returns with a view to elicit the connection which the Potato disease had with climate, or at least with latitude. In the meanwhile it is clear that to have a reasonable chance with the crops of the present year the land ought to be planted by the end of this month; that perfectly well drained land should be selected; and that all strong manures should be avoided.

We are sorry to see that our efforts to vindicate the claims of natural science to better attention than many are inclined to bestow upon them have given umbrage to a correspondent who is probably well disposed to coincide with our wishes in this respect. "S. P. W." (at p. 86) has entirely mistaken our motives when he imagines that we are classing the geological blunder of a gentleman whose abilities and practical information as an agriculturist we rate very high, with the crude notions of those who would force us to believe in sea serpents, Berberry-blightings, and viper-swallowings, without better testimony to their truth than the supposed evidence of their own eyesight.

The blunder to which we appealed in illustration of our position, we distinctly allowed to be "very venial in the mouth of an unscientific man," and we do not perceive that "S. P. W." has been arguing for anything more. It was just such a blunder as any man, however well acquainted with one department of science, might have made with respect to another department with which he was unacquainted. Such a blunder, as we expressly stated, would not have induced any geologist to join in the "roar of laughter" with which the account in question was received, not because it really involved this blunder, but because it glanced at a well established truth! We know very well that gigantic saurians existed down to the period of the chalk formation, and we have seen the very specimens referred to by "S. P. W." But in the account of the meeting to which we alluded, no mention was made of coprolites derived from secondary strata. It was the phosphate nodules of the crag and London clay which were distinctly stated to be the coprolites of gigantic saurians! When we remarked this statement to be untrue, we had not the slightest intention of calling any one to task for the mistake, but we were not unnaturally struck at this jumble of truth and error, and we considered it an excellent example in illustration of those crude notions of well established facts in natural history which often prevent even the learned and the well informed from recognizing the absurdity of such speculations as those to which we are more particularly referring. No one impressed with the fact that the gigantic saurians of the secondary strata had disappeared for vast ages before the present creation was called into existence, would be inclined to listen to the suggestions of the supposed sea serpent being an ichthyosaurus.

That we meant nothing more than this, a re-perusal of our article will probably be sufficient to satisfy "S. P. W." We are desirous to show that natural science already occupies a position which has qualified her for pronouncing decidedly on the impossibility of certain popular opinions being correct, and the extreme improbability of others. We wish to convince our readers that no amount of assertion in such cases, from numerous eye witnesses, unless they are accompanied by positive proof, ought to be admitted as conclusive evidence of what they may suppose they have seen. Although "S. P. W." seems inclined to class the accounts of viper-swallowings among things which are even more than highly improbable, we cannot (with all our scepticism) consider them to be at all more likely to be untrue (according to the present state of our knowledge) than finding the coprolites of a gigantic sea-saurian in the crag of Felixton. As to any change of opinion respecting the coprolitic character of the phosphate nodules of the crag, the opinion itself originated in the insuperable difficulty of supposing these nodules could have had a concretionary origin in the matrix of comminuted shells and rubble in which they occur. When Mr. Brown stated that he had met with similar nodules in the London clay, it then seemed highly probable that those of the crag had originated in that formation, as was mentioned to the British Association when it met at Cambridge (see Reports, p. 50). The phosphate of lime dispersed through various strata may have originated in the decomposition of animal remains, whether these were previously digested or not. But the re-arrangement of such dispersed matter into the form of nodules is a very different thing from such matter retaining its form, as in the true coprolite. As soon as the Dean of Westminster (and he is a good judge of such matters) saw the Felixton nodules, he denied that they were true coprolites.

The subsequent discovery of these phosphate nodules in their original beds, in the London clay at Colchester, was noticed to the British Association at the Oxford meeting (see Reports, p. 64); their peculiar condition seemed to confirm the idea of their not being genuine coprolites. That they are not the coprolites of gigantic saurians we presume "S. P. W." will readily allow, but whether they are of coprolitic origin may perhaps be still a subject open to dispute. We confess to many a scientific blunder far less venial than that to which we have referred. One of the points we are most anxious to press upon the unscientific advisers of the agricultural interest is, to put no trust in any master of one science, who may be a mere novice in some other which also bears upon their practice. When Liebig first expounded his views respecting the part which he asserted ammonia played in the nutrition of plants, we gave him more credit than he deserved for having sufficiently established the truth of his own principles. We accordingly wished that agriculturists would try to find out how his

principles could be most advantageously applied to practical improvements. But when Liebig a few months afterwards completely shifted his ground, we were disposed to think his censures on botanical physiologists might have been justly retorted by an exposure of his own imperfect conceptions of what was really known in Vegetable Physiology. In all efforts to connect the practice of Cultivation with Science, the chemist must be checked by the physiologist, and the physiologist assisted by the chemist, and both must refer to the geologist, or to the mineralogist, or to the entomologist, &c., as occasion may require. It is in this way that geology has so rapidly attained to the pre-eminent position it now occupies. The foremost labourers in that field have willingly submitted to the judgment of the skilled anatomist, the professed zoologist, conchologist, ichthyologist, botanist, chemist, &c., for advice and assistance in their respective departments; and then they have deduced their generalizations with direct reference to such authorities.

I fear we can hardly expect that agriculture will receive due assistance from science, if such ardent and intelligent promoters of their union as Mr. Huxtable are to be met by one party with an outcry for a balance sheet, or to be regarded by another as sufficient authority in all matters that are purely scientific. *J. S. H.*

We are requested to say that a package of trees, addressed "J. Hanford, &c., Manchester," has been detained by the Society for the Protection of Trade in that town, and that they are anxious to obtain the address from which it has been sent.

AN INQUIRY INTO THE GENERAL CONDITIONS NECESSARY TO BE EMPLOYED IN ATTEMPTING TO OBTAIN THE GREATEST DEGREE OF DEVELOPMENT IN PLANT CULTIVATION.

In a series of papers which I intend to give, under this head, I wish it to be understood, in the outset, that general principles will form the prominent feature of discussion; and that no particular opinion will be advocated, no system of practice beyond that of another, be considered as superior; in fact, that no partiality to any known theory or system of practice will be attempted.

It is the writer's wish to lay before the readers of the *Chronicle* a mass of ideas and observations resulting from reasonings in the course of his every-day occupations as a gardener; and be it remembered, without any presumption on his part, that such reasonings have always resulted in truth. In the course of these papers very many topics of gardening interest will be brought under notice, and if the writer's comments on them shall be the means of establishing a principle of cultivation in advance of the time, they will not have been written in vain.

Before I can enter fully into this inquiry, and I have no idea of plunging *in medias res*, it will be necessary to assume (which, by-the-bye, is a well-attested fact) that a plant is not only an organised being, but a living, breathing, sentient individual, and, as such, is capable of being influenced in a great degree by external agents. In a word, that a plant is a highly complex structure, endowed with the principle of life; that the whole series of its developments, from the germination of its embryo to the reproduction of its own semblance, is depending, in degree, upon the energy of that vital principle; and that that vital principle is sustained by the action, in combination, of light, heat, moisture, and air. It will be readily seen that, in a course of pot-culture, the application of these agents is greatly under the control of the cultivator.

The matter then stands thus: That, as any given plant is dependent entirely upon external agencies for the degree of development it may assume, in proportion as those agents are under the control of the cultivators and their application understood, so will be the amount of perfection reached. Taking this as a starting point, it is evident that a wide field of inquiry is before us, and that not only does much of the routine of gardening operations come under consideration, but garden architecture claims attention. But of the minutiæ of cultivation these papers do not profess to take cognizance; general principles alone will be my object. The former can only be correctly ascertained by a knowledge of local circumstances obtained on the spot where they are to be applied. The latter can be based on scientific data. It is on correctly modifying general principles, and applying such modifications to suit special occasions, that depends the theory of gardening, in contradistinction to the mere mechanical portion of the art; or rather, it is that which makes gardening a science, a thing of intellect rather than as a mere art, subject to the dry formality of rule.

It will be but justice to confess, in the commencement of my labours, that one object I have in view, and one that I shall strenuously endeavour to carry out—at least as far as rendering the subject evident—will be to raise the gardener as a man, and as a member of society; to raise him in the estimation of those who are content to consider him as a subject of matter rather than of mind; and to lift his occupation to a sphere commensurate with its recognized importance.

The late attempt to discuss the subject connected with the above remarks, in some recent copies of the *Chronicle*, can do no service to the cause whatever, but, on the contrary, much harm may accrue from such a course. The relative position between servant and servant and between servant and master is not a matter of discussion in the columns of a newspaper, and however such a course may be applauded by a certain class of men, and by a few other well meaning but mistaken individuals, depend upon it the majority of the really intelligent gardeners will repudiate it. They shrink from the public parade of petty grievances between parties—in which master and man are combined—whom no reasonings can teach intelligence, gentleness, kindness, and charity—I use the word philanthropically—and are loth to be mixed up in print with pot-houses, with butlers' and ladies-maids' squabbles. If a man's general bearing and conduct as a man, if his ability and intelligence as a servant, will not obtain him respect alike from equals and superiors, all the records of grievances endured, aye, if you backed them with a leader to boot every returning Saturday, will not procure it. *G.*

LECTURE ON ECONOMICAL COOKERY;

Or, The Methods of Preparing our Food with the Least Degree of Waste.

By C. Daubeny, M.D., F.R.S.

(*Continued from p.* 85.)

The true and legitimate end, then, of cookery is to bring the various articles of human subsistence into the condition most favourable for being assimilated with the smallest possible amount of waste, and if the rendering them at the same time agreeable to the palate be also an object that may be fairly aimed at, it must be recollected, that unless in some degree palatable, the food would either not be taken in sufficient quantity for health and vigour, or if introduced into the system, might, from the very repugnance felt towards it, be either rejected or imperfectly assimilated.

Accordingly the processes of the culinary art do not aim at producing any new proximate principle, and are only so far of a chemical nature, as they tend to bring the different alimentary substances into a semifluid condition, or to alter their mechanical structure, either taking the place of those efforts which would otherwise be required to be made by the animal itself in order to render the food capable of assimilation, or else compounding the several ingredients necessary for supporting life in the most suitable proportions. The former, indeed, is the object to which English cookery chiefly confines itself, whilst the Continental pretends to embrace both; the object aimed at by our cooks being in general only to place before us in a digestible form the aliments which Nature herself has provided; whereas the foreign cook is ambitious to mix them together in those proportions which experience has shown to be at once most palatable and most salubrious, although, it must be confessed, that the second object is too often sacrificed to the first, Now it will not be denied that the second of these objects, namely, the compounding of various articles of food, may be in great measure dispensed with, provided the former can be duly effected without the loss of any of the ingredients which the substances, before they came into the hands of the cook, contained; but here, unfortunately it happens, that in the very act of rendering the food more digestible, a portion of its nutritious contents is often lost, and not only a waste is thereby occasioned, but some one ingredient is frequently dissipated, without which the aliment becomes unfitted to fulfil all the purposes for which it was by Nature intended.

In order to understand this, let us recur to the subjects treated of in the foregoing lectures, and consider the various proximate principles contained in the ordinary materials of vegetable and of animal food. The former, it will be seen, in its crude state contains much which can in no degree be digested—as, for instance, the woody fibre contained in the bran of the Cerealia, the tuber of the Potato, or in the bulbs of the Turnip.* This, however, is in a great degree removed when the Grasses are prepared for human subsistence, by the separation of the straw in the first instance, and of the bran and pollard afterwards; whilst in the Potato and Turnip, when softened by boiling, the digestive organs are able without difficulty to accomplish its separation from the saccharine, amylaceous, and albuminous portions which are capable of assimilation. But in animal substances there is probably no portion, excepting the earthy part of the bones, which is not capable of supplying nourishment, for although the human stomach does not dissolve bone and cartilage, like that of the dog, yet the whole of its animal matter may, by mechanical contrivances, such as the Papin's Digester, be extracted and rendered digestible, so that in times of scarcity that portion which now ministers to the support of dogs and other inferior animals, might be made available for that of our own species.

But omitting this, which in the common course of things should rather be kept as a reserve to meet the exigencies of an unpropitious year, than regarded as a part of the staple food of man, I will proceed to consider the nature of those ingredients existing in animal food which are extractable by the ordinary methods of cookery. Now the flesh of animals may, in a popular sense, be divided into the fat and the lean or muscular portion, the former of which, as has been explained in a former lecture, is subservient merely to the production of animal heat, the latter alone serving to supply the waste of the system. As these are the only two known or recognised uses of food, it would seem to follow, that animal nutriment, if presenting a proper admixture of both these portions, would alone be capable of supplying us with all that is necessary for healthy subsistence; but here experience has got the start of theory, for it is found that animal food, without the admixture of vegetables, is, under ordinary circumstances, unfitted to support an individual in a state of health. In certain states of disease, indeed, as in diabetes, where the system is incapable of bringing about the change from sugar into urea, a diet exclusively composed of animal food may be advisable, because the presence of unassimilated sugar itself acts injuriously as a source of irritation, or in some other unexplained manner, and during a state of vigorous exercise, as has been stated in the former lecture, when the stomach is capable of digesting very large quantities of food, even the lean muscular fibre of the animals killed in the chase may, for a certain time at least, maintain the health and vigour, the animal heat, as well as the muscular frame, of the individual. But these appear to be exceptional cases, and in the ordinary condition of humanity it would seem better, if an exclusive diet must be resorted to, that it should consist entirely of vegetable rather than of animal food, since the former is what maintains the great majority of the human species in all states of society, and the entire population in several, whilst animal food is always taken intermixed with vegetable, except in a few cases where the latter happens not to be accessible.

Perhaps a remark of Dr. Prout's may point at the reason of this law, as well as indicate that we are not yet arrived at the full knowledge of the principles upon which the nutrition of the human body depends. Milk, he remarks, is the fluid prepared by Nature for the subsistence of the young in all the various tribes of mammalia, and in every one its composition is the same, namely an albuminous principle, an oily, and a saccharine one. These then, therefore, may be regarded as the essential ingredients in every complete dietary. The two former are present in meat, provided it consist of fat as well as lean, but the third can only be furnished by vegetables. It would seem, therefore, that substances convertible into sugar, such as starch and gum, are important parts of human subsistence, and that when they are not present, a much larger expenditure of animal matter is required than would otherwise have sufficed.

Let us turn then to the lean part of the flesh of animals, and consider what substances it may be expected to contain. The basis of the flesh of animals is fibrine, and contains the same ingredients as dried blood, viz., $C_{48}\ H_{36}\ N_9\ O_{14}$. With this are intermixed blood, membranous and nervous matter, albumen, and, in all tame or domestic animals, fat. There is likewise a considerable quantity of a fluid, enclosed either in peculiar vessels, or, more probably, in the cells of the fibrous and cellular tissues, to which Liebig has given the name of the juice of flesh. Now this latter contains several distinct substances, and, amongst the rest, one which has recently been examined by Liebig, denominated *kreatine*. It exists in the flesh of all animals, whether of fish or of quadrupeds, but in various proportions, that of fowls yielding the most, being about 3 parts in the 1000. It is a transparent colourless substance, crystallising in prisms, and very soluble in water. In wild animals, which are lean, the proportion is much greater than in tame ones, which are fat. Besides this, lactic acid, the acid which exists in sour milk, is an ingredient in the juice of flesh, and appears to perform, according to Liebig, some very important purposes in the animal economy. It is found in the gastric juice, and, consequently, may be regarded as the substance which imparts acidity to it, for although Prout obtained from the gastric juice by distillation free muriatic acid, this, it is suggested, may have been nothing more than the acid of the common salt always present, which was disengaged from its base by the action of the lactic and phosphoric acids upon it. It would seem, therefore, as if the presence of lactic acid was somehow connected with digestion, a process which, as Liebig explains it, is dependent on the same causes as fermentation, namely on the presence of a minute quantity of a substance in a state of incipient putrefaction, which communicates its own tendency to change to the bodies about it. But besides all these, the juice of meat contains various inorganic ingredients, amounting, according to Chevreuil, to rather more than a fourth part of the entire weight of the matters dissolved in water. On drying up and concentrating the solution, 19 per cent. were found to be insoluble in water, 81 per cent. continuing soluble. The 19 grains of insoluble matter consisted of phosphate of lime, 5.77 grains, and phosphate of magnesia, 13.23 grains: whilst the 81 grains of soluble contained several alkaline salts, of which the most important is the phosphate of potass, having an acid reaction, its composition being $P\ O_5 + K\ O + 2\ H\ O$, and with this is found associated chloride of potassium. Now it is remarkable that the corresponding salt found in the blood has an alkaline reaction, being phosphate of soda, consisting of $P\ O_5 + 2\ Na\ O + H\ O$, and that with this is associated common salt (chloride of sodium) in lieu of chloride of potassium; a substitution, therefore, of soda for potass must have taken place, in both instances, before the chyle enters the blood, and at the same time a change from an acid to an alkaline condition has supervened. Now it would appear, in the first place, that this acid reaction which belongs to the juice of flesh is due in part to lactic acid, for when the latter is dissipated by heat, the phosphate of potass which remains is not acid but alkaline, containing 3 atoms of

* Autenrieth indeed pretended to have converted woody fibre into digestible food, but I have repeated his process, and have reason to believe the experiment to be quite illusory.

base instead of 2, that is, the potass which had been combined with lactic acid has now appropriated to itself a portion of the phosphoric acid previously united with a smaller portion of base.

(To be continued.)

OBSERVATIONS ON THE VEGETATION OF THE COMMON WALNUT (*Juglans regia*).

By M. Cardan.

Everybody who knows anything about Walnuts is aware that there exists a variety of this tree which does not begin to grow until a month or five weeks after the others; the latter bud towards the end of April, and are covered with leaves in the latter half of the month of May. The June-leafing variety does not bud until the 15th or 20th of May, and is not in full leaf before the latter half of June; so that in May, when the common species is about to leaf, the June-leafing variety is in the same state as in winter; the sap does not rise, the bark sticks to the sapwood, the leaf-buds are neither swollen nor covered with that mucous substance which precedes their expansion; in fact, the trees look as if they were dead. They give no signs of life until the end of May; they then begin to bud when the others are in leaf; a great difference between their respective times of flowering is the consequence, the May-leafing variety flowering a month sooner than the others. In the month of August Walnut trees take another start, whilst the fruit is being developed; at this period the June-leafing and May-leafing varieties are in the same state. It would be almost impossible for one who saw them for the first time to distinguish the early from the late variety. In October, the leaves of the early varieties are dead, and they drop off of themselves from the 15th of October till the end of November. The leaves of the late variety, on the contrary, are still green, the nuts are in their pericarpe, and are still astringent; as soon as the cold weather comes, the leaves are frozen, and the nuts, though neither ripe nor free from astringency, fall with the first hoar frost.

If the nuts of the common Walnut be sown, the young trees will all appear between the months of May and September, or some time in the following spring; that is to say, they will remain 12 or 15 months in the earth; but at whatever time they may be born, they will all begin to grow between the 20th of April and the 15th of May. If the fruit of the June leafing variety be planted, whatever the month may be in which the young trees appear, they will only bud between the 20th of May and the 15th of June, a month or five weeks after the others.

Some sorts are more productive than others; as, for example, those called by the French Lalandes, Marbots, Sheep-horned, Almond-shelled; they all begin to grow towards the end of April and in May. To make them more productive, they are grafted on wild stocks. The productive species are grafted on May-leafing and June-leafing wild stocks; in the first case the two varieties bud at the same time, and their sap rises at the same time; it is easy, then, to take a bud from one and place it on the other. For grafting a May-leafing on a June-leafing variety, two methods are employed: 1st, a branch is cut early in May, and kept for a month in clay, until the sap of the late variety is in motion; 2d, all the buds on a branch do not push; out of 20 buds on a young branch of a productive variety, six or seven at the end grow, those below do not. In June, when the sap of the late variety is in motion, the buds which would have been perishing in a variety already in leaf, as on a Lalande or a Marbot for example, are taken; and then, old as they are, are placed in contact with the rising sap of the other, when they often take.

Several curious circumstances here deserve to be noticed. It has already been stated that the nuts which are planted always produce trees which begin to grow at the same time as their parents; when trees are grafted things are not quite the same. A Lalande buds from the 20th of April to the 15th of May; its nuts would produce plants with their sap in motion at exactly the same time, with that certainty which pervades all the laws of creation. Now a Lalande, which leafs in May, grafted on a wild stock that does the same, will give a good crop of nuts; if the latter be sown, they will give birth to wild trees, which will begin to grow when they can, generally from the 3d to the 5th of May, and from the 2d to the 5th of June. How is this? seeing that the wild tree, as well as the Lalande, both leaf in May, and that their nuts, in their natural state, invariably produce young trees also leafing in May.

If a Lalande or a Marbot be grafted on a June-leafing variety, and their nuts be sown, wild trees will be produced, which always leaf in June, although the nuts of the Lalande alone produce trees which bud from the 20th of April to the 15th of May. How is it that in the first case any difference results? How does it happen that the young plants leaf some in May and others in June, when both their parents leafed in May? Why, in the second case, do the young plants always leaf in June, when one of their parents, the Lalande or the Marbot, invariably leafs in May? The conditions of fecundation being the same in all the cases cannot help us out of our difficulty, nor can they in any way be supposed to influence the result, seeing that whatever influence they might have, it would be exactly the same, although the results are so different, which is scarcely probable.

There are some other totally different but equally curious phenomena; a June-leafing tree cannot be grafted on an ordinary one, since the latter being already in leaf cannot take the former in which the sap is just beginning to move; but, as we have stated, a Lalande or an Almond-shelled variety may be grafted on a June-leafing species. The bud having once taken, when will it begin to grow? In May like its parent tree, or in June like the stock, which will from henceforth nourish it? The first and the second year it will begin to grow in June, when the sap of the trunk is usually in motion; but in a short time the action of the parasite will change the course of the sap, hurry it on, and at the end of 6 or 8 days the branches, instead of having their sap in motion in May, as is their nature, will cause it to rise from the roots a month sooner than it would have risen, and will bud in exactly the same week as they would have done had they been grafted on a tree of their own species.

This circumstance is very singular. The following appears to me to be still more difficult of explanation: On an upper branch of a June-leafing Walnut I grafted a bud of Lalande, which leafs in May. At the end of six or eight years, the branch produced from the bud of the Lalande began to grow in May, as the Lalande always does; but the natural branches of the stock did not begin to grow until a month later. How does it happen that, in the trunk, there is sap for the parasite while there is none for the natural branches? How is it that, the grafted branch being, as was stated, above the other branches, the sap rises a whole month earlier from the roots to the parasitic branch, whilst none or not enough of it stops with the lower branches to swell a single bud? If indeed the grafted branch were the lowest, then we might suppose that it was the first to receive the sap; but this is not the case, and even if the grafted branch were the highest of all, it would begin to grow a month before the others, just the same. *Comptes Rendus, Dec* 1848.

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

The Ranunculus. — All who have ever seen a well-conducted bed of this lovely flower will agree that there is nothing which grows in the open air to surpass it, and that some expense and care are well laid out in procuring one. Yet, how rarely do we find even a moderate collection in the gardens of persons who are otherwise devoted florists. The reason of this is to be found in the great difficulty of preserving the tubers from year to year. A good bed may be easily grown if strong roots are procured from the cultivator, in a plump and healthy condition; but, after one year, it is often found there is a complete failure. The tubers either rot in the ground or they shoot again before they are taken up; or, being stored away, they get mouldy, shrink up, and produce only feeble flowers. The grower becomes discouraged; and as good Ranunculuses are too expensive to be purchased every year, the amateur relinquishes his attempts, and turns his attention to flowers less precarious. Carnations are touchy matters to deal with, but there is more certainty with them than with the Ranunculus; while many fine flowers demand comparatively scarcely any anxiety.

But we think the causes of failure intimated above are only such as could be easily overcome, and we write this paper in the hope of stimulating our readers to make a vigorous attempt this season, as the time for planting has now arrived. A bed of Ranunculuses was a grand exhibition in the time of our forefathers, but modern cultivators have shed upon it still greater glories. The process of hybridising has been eminently successful in producing new varieties, and, what is of more importance, it has thrown a vigorous and healthy habit into a plant particularly liable to degenerate. A bed of the old kinds is covered with scant and feeble foliage, and the flowers, although very lovely, have a frailness of stem and smallness of petal indicative of extreme delicacy. But look at a bed of seedling varieties, and how great is the contrast! It is like turning from a plantation of Pines on some ungenial soil, to the same species growing on their native mountains. The foliage is larger, and of a deeper green; the stems are robust and tall; and the petals attain a size far beyond that of the more ancient kinds. At first these seedlings are apt to sport an eye, but this disappears by cultivation. Is it not a questionable taste, by the way, which complains of the existence of a piece of floral handy-work so exquisitely beautiful as the seed vessel of the Ranunculus?

There are some situations where it is scarcely possible to grow the Ranunculus successfully, as in arid and gravelly soils; for although the impediment may be partly overcome by the introduction of composts, it can never be quite removed. Such localities are in all their circumstances droughty and uncongenial, and success can only be obtained by considerable scientific knowledge, and daily watchfulness. A moist subsoil is indispensable for the successful growth of the Ranunculus, and as it strikes its roots very deeply in congenial situations, the beds should be prepared to the depth of 2 feet some time before planting. The plentiful use of rotted cow-dung is recommended for keeping up a cool moisture in the bed. A thick layer of this at the depth of 18 inches below the surface will be highly beneficial. At the same time a moist soil must not be confounded with a heavy one, for if it is not well drained the Ranunculus will not prosper in it. Marshy grounds, which are the natural habitat of this plant, are spongy and porous, pointing out to us the distinction between light and heavy wet lands. We have always found the Ranunculus grow best in beds which are thoroughly porous, and yet composed of a soil not disposed to become dry.

To preserve the roots, wire-worms must be guarded against; and after the foliage decays, no water must be allowed to come on the beds. If you earnestly intend to grapple with the difficulties in the way of securing an annual show you must watch the weather; and if rains come on before you can take up the tubers, protect the beds by some kind of covering. When taken up, lay the tubers in a room perfectly dry, but cool, for if subjected to heat they are apt to shrivel up. It is desirable to retain their plumpness as much as possible, and this can only be done by a gradual process of drying. We prefer placing them in drawers where they can be often looked at to burying them in sand. Dryness and coolness are the requisite conditions for preserving Ranunculus tubers in a state of health until planting time arrives. *H. B.*

Home Correspondence.

An Exchange of Glebe Lands can be effected with consent of the incumbent, patron, and bishop of the diocese. Within the last few years an act has been passed to enable clergymen, on certain conditions, to grant leases of glebe lands for longer terms than their own life. The timber on a glebe is, I believe, subject to much the same laws as that on entailed estates, where the proprietor has only a life interest. The legal gentlemen connected with the office of the bishop's secretary would be most likely to give useful advice and assistance in the matter. *D.*—Unless there is some peculiarity in the tenure of the squire's land, "Cambro-Briton" will find no great difficulty in exchanging the whole or any part of his glebe for other land. His plan is to agree with his neighbour about an exchange, both parties understanding that in real value, the "church" will require a full equivalent and "something more" for what is surrendered. Having determined between themselves, application is made to the bishop for his sanction. By him a commission is appointed to take evidence in "open court"—notice given—that commission makes its report and on that report the bishop acts, giving or withholding as he sees fit his sanction to the exchange. Such was the course pursued in a case where my brother was concerned some years since. A living was given to him, when he found himself

"Passing rich with 40*l.* a year."

The situation was beautiful, but his house and lawn were so close to his squire's, as to appear one property; there was no saying where or when one party trespassed on the grounds of the other. They agreed that the weaker party should withdraw, terms were agreed upon, a commission appointed, who asked a little more land and a good deal more money, all of which the unhappy "squire" was forced to give, and now both parties are satisfied. *Subscriber.* [Many thanks for the views enclosed; they are good specimens of modern art.] —"Cambro-Briton" is no doubt aware that there are two kinds of corporations recognised by law, viz, aggregate and sole, to which latter class the clergyman belongs. Now, the parson or vicar has an estate for life only in the glebe, and the freehold is said to be in abeyance; nevertheless, at the common law, he might make leases just as freely as a tenant in fee simple, with the consent of the patron and ordinary, the latter of whom is in this case the bishop. But the statute 13th Eliz., cap. 10 (explained by others, viz., 14th Eliz., caps. 11 and 14; 16th Eliz., cap. 11; and 43d Eliz., cap. 29) enacts that no parson or vicar shall make any lease for more than three lives or 21 years. But this lease will not bind his successor, unless it be made with the consent of the patron and ordinary. The reason of this is obvious, viz., that by no arrangement can the incumbent have any other than a life interest in the glebe, and therefore it would not be just that he should permanently lessen the property of his successor, who can have no control over his actions. It appears to me that the rent to be reserved on waste land, and the conditions of the lease, must entirely depend upon circumstances, as whether there is any especial accommodation, &c. I do not see how any rule could be laid down on such a subject. *Forensis.* — Apply to the Tithe Commissioners for instructions to exchange glebe land, and every facility for doing so will be afforded at a very small expense. The bishop, patron, and incumbent, must give their consent to the transaction. *C. W.*

To Make Charcoal. — Lumps of wood should be packed close in the form of a cone, and then set on fire, and kept closely covered with good, tough Grass-clods, cut about 3 inches thick. The heap should be watched day and night, and when the fire breaks through, a clod should be immediately placed on the spot. When the charcoal is made, the heap should be opened and cooled with water. *C. A. A. Lloyd, Osweatry.*

Brown Bread.—This has been constantly used in my family for many years past, and, having given myself some trouble to investigate its properties, I am fully able to bear testimony to the correctness of the remarks made by "A Mealman." He wishes that "a small mill of low price could be invented for grinding corn sufficiently well to supply housekeepers with this meal," &c. Now, for the last nine or ten years I have ground my own Wheat by means of a small steel mill, which does its work perfectly. This mill I procured from Mr. Z. Parkes, of Digbeth, Birmingham; the cost however was high, viz 3*l.* 10*s.*; but I have no doubt whatever, if steel mills came to be in general demand, a very good mill could be sold for less than half that sum. I was induced to get my mill in consequence of the high price at which brown bread has always been sold of

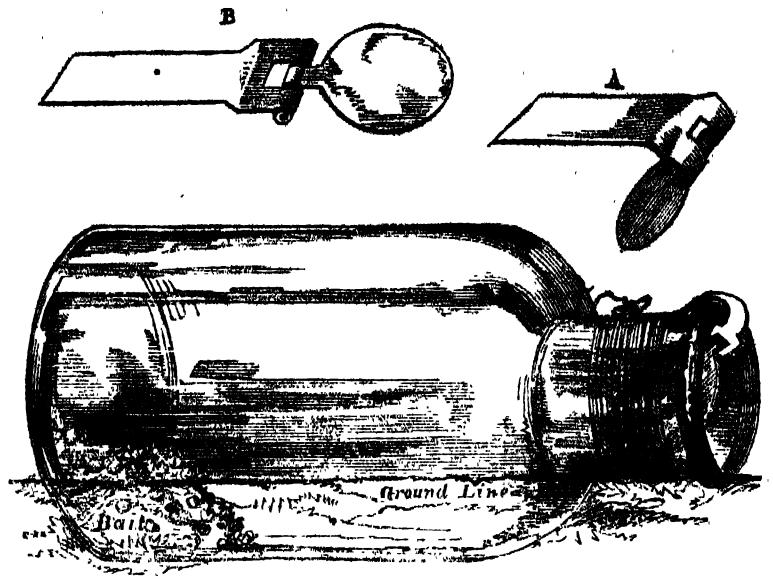
late years, and the roguery of millers when I employed them to supply me with Wheat meal. In addition to what "A Mealman" states in respect to brown bread, I would observe that very delicate stomachs cannot bear the coarse bran, as it will sometimes create flatulency; the remedy for this is to pass the meal through a coarse sieve, and thus remove the very coarse bran. In my family we commonly use a 4th or 5th part of Rye with the Wheat, the effect of which is to improve the flavour of the bread, and preserve its moisture longer. Prejudice will long prevent the use of brown bread very generally amongst that class of the community to which cheapness is of most consequence, but for small families, and especially where the master likes a little wholesome exercise, I would strongly recommend the use of a small steel mill. *Miles*

Polmaise Heating.—I had become satisfied, from what I saw in your Paper, that this system, if properly applied, must answer; accordingly I tried it in the case of a small chapel of which I am the minister. In the first instance the stove was badly placed against a bad wall, the result was a fire in the chapel; the fire was extinguished without much injury being done, and the necessary repairs were made; not being satisfied, however, that all was safe, I sent for the person who supplied the stove, and the whole work was taken to pieces, and reconstructed according to his order; but I still was dissatisfied, for though all was safe, the effect produced was by no means such as I had been led to expect; a great deal of fuel was consumed before any heat was produced, and the hot air did not come into the chapel for 2½ hours after the fire had been lighted. The flue which conducted the hot air into the building was carried outside for some 10 feet or so, and the hot air introduced at that height, I was still persuaded that the fault was in the application of the system, not in the system, and I thought that the construction of the flue, as above described, might account for the failure; not feeling disposed to apply again to the party employed at first, I sent to Messrs. Benham, of Wigmore-street, London, whose advertisement I noticed in your Paper; under their hands I am happy to say we have at length succeeded. The result, then, of my experience is, that failure is the fault, not of system but of the application of it; that it is unwise to trust to any country builder for the planning or execution (entirely) of the work, and that any one will save trouble and expense, and also have a fair chance of success if he applies at once to a competent person to put up his apparatus. *C. E. C.*

Premature Withering of Orchid Flowers.—I have a Dendrobium nobile, with nearly 200 blossoms upon it, open and unopened. On one of the flowers I observed a greatly discoloured and shrunk labellum, which was consequently detached. Shortly afterwards on looking more narrowly, I found a second flower with the whole of its parts discoloured and shrunk, and having a small bee-like insect stuck within it head first. The whole of the blossoms on the plant having only been open a few days, I should be glad to know whether this premature decay is an example of injury caused by insects, and if occurrences of this kind are common among Orchids. *J. B.* [This probably arises from the flowers being set by the wild bees: as soon as the flowers of Orchids are set they immediately wither; if not set they remain expanded for a long time.]

Planting Potatoes.—As the season has arrived when all who plant Potatoes should commence, I venture to recommend a plan which I have followed for years with great success, and which is published at page 826, 1847. I continued the same method last year, and with like result. No blight or other mishap has occurred to my crops. Along with this note I send you a sample of the "Chats," which are now being planted; one of the sorts is the Lady's Finger or Rufford Kidney, an early and productive kind; the other is Shaw's Early, a very good sort, and one well known in the London market. The land on which I plant is a rich sand after Mangold Wurzel, the latter grown large by ploughing in an abundance of manure from the cattle sheds and yards. No stable-dung is used, but tank liquid liberally applied. The Potatoes are planted as described at the above-mentioned page; as soon as the shoots appear a top-dressing of sulphur of magnesia is applied. On the following season Carrots or Parsnips succeed the Potatoes; 10 acres under this rotation have been for some years the most productive portion of my farm. The Potatoes, as you will perceive, were harvested with care, and kept in a dry pit erected especially for seed Potatoes. I beg to add that I sold the whole of my crop at 8*l.* per ton some time ago. *Amicus, Newbury, Berks.* [The Potatoes sent were clean skinned, and apparently quite free from disease.]

Mouse trap.—I have no doubt many of your readers have, like myself, been frequently annoyed by the partial or entire destruction of their early Pea crops by the depredations of mice scratching up and devouring the seed just as it germinates, in which state it seems to be peculiarly attractive and palateable to these little vermin. I am happy, therefore, to be able to communicate a mode of entrapping them, which I have tried with perfect success the last two years, and which possesses the recommendation of being very easily applied, inexpensive, and self-acting. My trap is simply a preserve bottle, having its mouth (which ought to be from 2 to 2½ inches in diameter) closed by a valve or faller of light tin, opening, of course, inwards, projecting into the neck of the bottle about an inch, and attached by a hinge, shown in the sketch, to another piece of tin fastened round the top by a piece of string or wire. The cost of such a bottle, of which most families have, at this season of the year, a considerable number empty, and which will not be in the least degree injured by being appropriated to this novel purpose, is about 6*d.*, and the tin, &c., something less than a halfpenny. I have used various baits, but I have found none more attractive than a few Peas, the commonest sort will do, soaked till nearly ready to germinate, and then put into the bottom of the bottle with a little moist sand. By this means I have cleared my garden of mice, and have been able to preserve my first crop of Peas, whilst my neighbours have been unsuccessful, even after two or three attempts. The bottle should be pressed into the soil, so that its opening is on a level with the surface. The mode of constructing it, the ease with which the mice find ingress, and the impossibility of their escape, will, I trust, be obvious on examination of the accompanying sketch. I shall be happy to answer any further inquiries, and will gladly, if you wish it, send one of my traps for your inspection. *William Law, Marston Rectory, near Welford.*



Explanation of Woodcut.—A, faller and hinge, as they appear when the trap is set; B, pattern of faller and hinge attached.

Whole Potatoes or Cut Sets for Planting?—Writers on this subject give us the most conflicting advice. Professor Lindley says, "I have proved by a series of numerous experiments that the weight of Potatoes per acre is greater, under equal circumstances, from sets than from whole tubers, by upwards of from 7 cwt. to 3 tons per acre; and considerably more, on comparison of the clear produce, after deducting the weights of the sets employed in both cases." Again, "Large tubers cut into sets, each containing a single eye, are preferable to small Potatoes with the eyes cut out excepting one, even supposing the weight to be the same in both cases. Here lies the difference: the large Potato has a large eye or bud, which remains undiminished in the section composing the set; on the contrary, the small Potato has a small eye or bud, from which, in the first instance, only a weakly shoot proceeds, whereas the other starts vigorously, producing early an extensive breadth of foliage, supported on a stem capable of bearing it up to the light, and hence producing better tubers than one weak stem or multitude of such." In the face of this we are told that "whole Potatoes, the size of a pigeon's egg, make better seed than cut sets." (*Gardeners' Chronicle* for 1849, p. 88, *c.*) Mr. Glenny, in his Almanack, insists upon the same practice, to which Mr. Cuthill and others add the authority of their names. On the other hand, Mr. Paxton advocates the theory of Professor Lindley, and quotes the latter of two passages, which I have given with this preface, "We will give Dr. Lindley's own words for the reason of this, which we are sure will convince every one capable of thinking for a moment." My experience hitherto has been without exception in favour of cut sets, and the disease adds an additional reason for their use. It is dangerous to use manure, therefore we cannot hope for large crops. We must endeavour, then, to avoid a multitude of diminutive tubers, too small for the table, which will often be the case if small whole tubers are planted. I have a Regent on the table before me weighing two-thirds of an ounce, from eight of the eyes of which shoots are distinctly growing. What can be expected from it, if planted, but a bunch of slender stems above and a tuft of fibres below, with a multitude of small Potatoes attached to it? But my object for writing now is, that the two systems may be tried by amateurs and others, that we may ascertain which is really the most profitable plan, or whether it is indifferent which is used. I have already planted, for this purpose, I have employed Regents of an average weight of 4 oz. These had been placed in a warm room, and every productive eye before cutting had sent forth its shoot, giving an average of eight sets to one Potato. These have been planted in alternate rows in a field without manure, which bore a crop of Mangold last year, after having been well manured with cow-dung and night-soil. In the intervening rows, Regents, from the same crop as the large tubers, of the average weight of half an ounce each, were planted at the same time. If a few others will make similar experiments, the question will at once receive an answer. *Sigma.*

Rain in the parish of Wauchope, Dumfriesshire, in 1848.

	Inches.		Inches.
January	4.22	August	5.80
February	12.45	September	1.95
March	5.45	October	6.55
April	1.33	November	7.10
May	1.85	December	7.86
June	4.70		
July	7 85		66.15

Average fall of last six years, 56.83

The last three months in the year 21.06. Last year (1847), the fall in these months amounted to 27.61—a greater fall than you had in London, for the whole year. Who can farm in such a climate? *L.*

Pinus patula.—It may be interesting to lovers of Conifers to know that there is a perfect specimen of this lovely plant at Claremont, Cheshunt, above 14 feet high. It was planted out about nine years ago, and received slight protection for the first two or three years only. The side branches have once or twice shown signs of susceptibility of frost, but the leader has never been in the least injured. The tree has apparently suffered nothing from the recent frost, the beautiful drooping bright green leaves are fresh and firm as ever. Having always considered this a tender kind I have been looking out for the cause of the anomaly. Is it the soil, or is it the situation? The former is clayey, cold, and, although on the side of a hill, not well drained; indeed, within a few paces the water moves about your feet as you walk along. It is not to be accounted for by the soil, then, but it may be by the situation. The dwelling-house is on the south-east side of a hill, and the object about which I write is on the north side of the house; a few large trees rise near it, which shade it from the sun, and to this I attribute its escape from injury—the plant is never exposed to the killing alternations of rapid thawing and freezing. There are smaller specimens of Pinus Hartwegii, P. apulcensis, and P. Montezumæ on the south side of the house similarly shaded, also uninjured. These are the facts of the case, but for their application; is it not a question worth asking whether others of the beautiful Mexican species might not prove hardy under similar circumstances? If so, how greatly may the attractions of our pleasure-grounds be varied and increased by their liberal introduction. *William Paul, Nurseries, Cheshunt, Herts.*

New Plan of Cooking Potatoes.—About this season of the year the skin of Potatoes becomes so exceedingly tough that it will not crack in the operation of boiling, the superabundant moisture and other matters contained in the Potato cannot escape, and the consequence is that the tuber boils soapy and wet. I believe that cooks peel Potatoes at this time of the year, because of the toughness of their skins, which emit a disagreeable smell in cooking. I have at all times found that before Christmas the less water Potatoes are boiled in the better, using plenty of salt; but that after that time, and up to the period when the old ones begin to go out, in spring, the more water used the better, not with the view of improving the Potato, but of obviating the smell which arises from its skin. In making this and the following statements, I am aware that I am placing myself in the same position with regard to cooks that the bear was in with respect to the bees. By the dab of a wench of all-work up to the great Soyer himself, I shall be told that by boiling Potatoes at this time of year with their jackets on a bad flavour is imparted to the whole mass, and this is no doubt true; but if I advocate the bane I will also give the antidote. My plan is as follows: Let the Potatoes be washed clean with a brush; then take a knife and cut the skin through all round the Potato, do the same lengthwise and put them in plenty of water (salted). It will be found, when the Potatoes are boiled, that where the skin was cut it will have separated considerably and allowed the moisture to escape. The labour of peeling moreover will not occupy one quarter of the time which is required in removing the skins before cooking, leaving out of the question deep peeling, by which the most farinaceous part of the Potato passes to the hog tub. If a cook in a large family cannot afford time for skinning Potatoes at dishing up time, they might be boiled a quarter of an hour before they are wanted, and put into an oven, where they can be kept hot; but Potatoes are best sent to table with their jackets on, for the latter keep them longer hot; and if cooked on my plan, the skins peel off with the greatest ease; all who have tried my method like it uncommonly well. *James Cuthill, Florist, Camberwell.*

Societies.

Horticultural, of London, *Feb.* 2.—The Treasurer in the chair. Various donations to the library and herbarium were announced, and six new members were elected. Several specimens from Mr. H. Watson, Mr. F. Parham, Mr. W. H. Purchas, and Mr. S. P. Woodward, in illustration of recently distinguished species, curious varieties, &c., were exhibited. Among them were examples of Hieracium alpinum, with the scapes branched and leafy, showing a transition to the section of stem-producing species; also a curious example of Carex atrata, in which the character and position of the flower-spikes were widely different from their ordinary condition, giving to the specimen at first sight an appearance similar to that of a very luxuriant C. rigida, the terminal spike being almost entirely male and cylindrical; for inferior spikes of female flowers, with a few males interspersed, cylindrical or oblong, erect, and placed rather distantly one below another, the lowest about 3 inches beneath the terminal male spike. The specimen had grown in Mr. Watson's garden on a root of Carex atrata, brought from the Grampians a few years ago.

Entomological, *Feb.* 5.—G. R. Waterhouse, Esq., President, in the chair. Mr. Whittington exhibited a specimen of the very rare British Velleius dilatatus, recently captured; and Mr. Westwood a specimen of its larva, obtained from a hornet's nest by Professor Henslow. Mr. Westwood also exhibited specimens of Smynthurodes Betæ, a new British genus of Aphidæ, found at the roots of the common Beet; also a specimen of the male of the wild bee Osmia bicornis, and several of its cocoons found by Mr. Albert Way inside the lock of a door, at the beginning of December; and Mr. Waterhouse stated that it was customary for many species of wild bees to be developed at the close of the autumn and to remain prisoners in their cocoons till the following spring. Mr. Westwood also gave an account of the discovery by Mr. Hart of a great number of specimens of Ptinus fur in vessels used in galvanic experiments, under circumstances similar to those in which the Acarus had been found by Mr. Crosse. Mr. Stainton exhibited specimens of the true Cucullia lactucæ, which had been erroneously given as British; and Mr. Douglas, portion of a chest of opium from India, the leaves of which had been attacked by the larvæ of a species of Tinea. Mr. Turner exhibited a remarkable Goliath beetle, intermediate between Cacicus and Drurii; and Mr. Gould gave an account of a species of coccus which lives upon the Eucalypti in New Holland, and which is eaten by the parrots of the genus Platycercus. A series of notes upon the insects of Adelaide was also read by Mr. Wilson, a corresponding member of the Society. Mr. White exhibited some singular nests of spiders collected in Jamaica by Mr. Gosse, being of a semi-globose form, and furnished with a trap door, covering the mouth. A paper by Mr. Dalla, on the Cimicidæ of Bootan, in the East Indies, and another by Mr. W. W. Saunders, on the tailed species of Erycinidæ, were read; the beautiful little butterflies belonging to the last named group are natives of South America.

Reviews.

A Campaign in New Mexico with Colonel Doniphan. By Frank Edwards. 8vo. Hodson. Pp. 134, and a Map.

This book relates the history of a foray of Missouri volunteers into New Mexico, and of the doings of some stout Anglo-Saxons upon the poor creatures called Mexican soldiers. It tells of a "battle," in which nobody was killed on one side, and a couple of hundred killed or wounded on the other; and of another desperate "battle," in which one major was really killed outright. It is, therefore, a piece of American *fanfaronade*; the harmless production of one who does not know what a campaign is. But it contains some interesting accounts of the country and its vegetable productions, for which reason we notice it.

We knew little of New Mexico, except from travellers ignorant of natural history, until the collection of Fendler's Santa Fé plants, which have not yet been examined. Mr. Edwards is, therefore, a welcome recruit; and we pick from his pages sundry passages which the gardener will read with interest.

Maize Sugar.—"Here I witnessed the fabrication of sugar from corn stalks. The alcalde owns the mill and boiling-house, and the using of these is paid in syrup. The owner of the corn stalks assembles his neighbours, and, proceeding to the mill, places the stalks, cut into short pieces, into a large wooden trough; and each man, arming himself with a heavy mallet, soon breaks the stalks into small fragments. Boiling water is poured upon them, and then the mass is put into a hollow tree set upright in a trough; into this a plug is loosely fitted, across which a long pole fixed at one end is laid, and all the young people getting upon this lever, the juice is soon pressed out and poured into earthen pots built into the top of a large furnace kept burning night and day; women continually stirring the liquor, until it is thick, when it is run into small clay moulds (unless it should be wanted for molasses). The workmen are repaid by an invitation to the house of the owner of the sugar, where they are regaled with molasses and tortillas."

The Soap Weed.—"We first met, on this part of the road, with the species of Palm called by us Soap-weed, from the fact that the Mexicans use its root as a substitute for soap, for which it answers very well. Indeed, it is considered superior to it for the washing of woollens. I believe it is rightly named the Lechuguilla. This singular shrub, which is to be also met with on the prairies, but where it never grows to any considerable size, consists of a trunk, very pithy, surmounted by a fine head of stiff leaves, each of which is about 2½ feet in length, and armed at the end with a long Thorn. The leaves project from the stalk on all sides, and set as close as possible, and are of a dark green colour. The flower is white and very pretty. As each year's foliage decays, it drops down against the trunk, of a light brown colour. These dry leaves, when fire is applied, flash up like gunpowder, and burn with a bright light. Our night marches could be marked by their flames, which, as the nights were cold (although the days were comfortable), were cheering. I have been thus particular in describing this plant for several reasons: one is, its many uses—of the leaves the natives make their hats; also, when dressed like hemp, it is formed into ropes and sacks, looking like the material known as Manilla-hemp, though coarser. These plants have a singularly provoking quality; being from 2 to 8 feet in height, they will assume to the eye, in the twilight, the most deceptive forms. To the sentinel they will appear as forms of men; and many an unconscious Soap-weed has run the chance of a sentry's shot, from not answering to the challenge of 'Who goes there?'"

The treatment of the *American Aloe* at Santa Cruz is different from what it is related to be in Mexico Proper:

"In order to obtain the liquor from this Aloe, the leaves are cut off level with the ground, and the root is dug up. The latter is about the size and shape of a quart bowl, and is of a dry woody texture; but, on being piled in large heaps, and roasted, it becomes very juicy and tender, and of a sweet taste. The roots are then pressed, and the liquor allowed to ferment; after fermentation, it resembles beer in appearance, and somewhat in taste, but a little smoky, and is called pulque. It is drunk very extensively by the lower classes. From the pulque there is distilled a clear, colourless liquor, of a most acrid and burning taste, which is the mescal. It is only fit for a Mexican to drink—he can do it without winking; but I shall never forget a glass of it which I swallowed at San Rosalia, and which was considered of an extra good quality. It appeared to draw my tongue half way down my throat, and took my breath away for an instant. It was the first and last glass of mescal I ever drank."

Agricultural Condition.—"The general appearance of the country has not been previously mentioned. The whole extent of what we had travelled through, except just along the banks of streams, is of the most barren description, being principally composed of a hard yellow clay, so poor that, in most places, Grass cannot be raised. I have travelled more than a hundred miles at a time without seeing sufficient Grass to furnish my horse with a meal, and without meeting with a stone as large as a pebble. The roads, except in a few places where they happen to cross mountains, are excellent, being as hard and level as a floor. The land can only be cultivated just along the banks of the streams; and there the fertility of the soil amply repays the farmer, as the crops do not seem to exhaust the ground. Many farmers work the same ground 50 years or more, without spreading upon it a particle of manure. The seasons are also favourable to the husbandman. Rain, however, is rare. Before we left El Paso, which was in January, the inhabitants were ploughing and sowing corn. I have no doubt that, were the Mexicans not so excessively lazy, they might produce anything they chose; but when they have put seed into ground, they think they have done enough; and if it should not come up and the plant thrive, instead of doing as we should, setting to work to remedy it, they simply 'call on Hercules;' in other words, fall upon their knees at the altar before the priest, tell him how unfortunate they have been, buy a blessing from him, and go home in blessedness. The inhabitants produce Maize, Oats, Wheat, Onions, Melons, Grapes, and several other fruits. I never saw any Potatoes, although, as we know, it is currently said that the root grows wild in the southern parts of Mexico. I have seen as fine Melons, Grapes, and corn in Mexico as I have observed anywhere; and I have purchased Onions as large as an ordinary sized dinner-plate."

Garden Memoranda.

The Edinburgh Winter Garden, Inverleith-row.—Mr. M'Nab will not quit the charge of the Experimental Grounds of the Caledonian Horticultural Society at Inverleith, without leaving behind him a testimony of his attention to the advancement of public taste in Floriculture, in the elegant structure just completed from his original designs by Mr. Drummond, as contractor, on the summit level of the garden, introducing, for the first time in Scotland, a fashionable promenade similar to the *Jardin D'Hiver* at Paris. We visited this new temple of Flora last Saturday, and found portions of the intended quadrangle, 126 feet long by 30 feet broad, not only completed, but in a full blaze of internal beauty, from such an array of resplendent Rhododendrons and chaste Camellias, along with showy flowering shrubs, and rare exotic plants, as we could not possibly have anticipated in the dead season. Mr. M'Nab explained that, with a view to the opening of the promenade, this profusion of bloom had been brought on by forcing; and to this might probably be attributed the extraordinary purity of colour by which all the blossom was pervaded. But, indeed, although the supply of plants in bloom at the Winter-Garden must necessarily rob the other conservatories and hothouses of their decorations, the plants were never before exhibited to the same advantage. We must particularise that extraordinary plant of the Himalayas, the Arum cordatum, the singular flower of which, though fast shrivelling up, displays the remarkable frond of miniature leopard's skin of russet and gold, fully a foot in length. The intermediate spaces, which, in most conservatories, are given up to atmospheric vacuity, are, in the houses of the Experimental Garden, ingeniously hung with fine suspension plants, fed by a water-glass, and worsted syphon. One of these, a crimson Camellia, of two years' standing, is a thriving plant for such airy quarters. The *coup d'œil* presented by the spacious front passage, along which the principal flowering specimens are arranged in a stand, beside the delicately attenuated pillars of fluted iron supporting the roof, forms a magnificent vista. Mr. M'Nab has exhibited immense tact in facing the structure to the north, by which means he not only calculates on preserving the plants longer in bloom, but on affording a more uninterrupted light to the public arcade, here glazed over with panes of large size, without burning the plants with the glass (as now complained of so frequently in England), since the south and other parts of the structure, through which the sun's rays are to act, are glazed with small pieces. The contractor, Mr. Drummond of Canonmills, has great credit in his handiwork, as the building, frames, sashes, &c., are fitted up in a style of airy elegance impossible to be surpassed, and invested with all the means and appliances of modern invention, whether for heating or ventilation. Altogether the three-gabled structure on the top of the green knoll fronting the Horticultural Hall, has a wonderfully fine appearance. Seen from behind the lodge, at the forcing house, it appears imposing from its elevation of site. It ought to be generally known, that, although on all other days of the week the Winter Garden, and Experimental Garden generally, are open only to members of the Caledonian Horticultural Society and their friends, admitted by written orders, yet, on Saturday, every week, the whole are now thrown open to the public. We think this only requires to be mentioned to attract crowds to the spot, as, until the opening of the Exhibition, we have absolutely no fashionable lounge in town for even one day in the week. Mr Evans, who now succeeds Mr. M'Nab in the charge of this garden, will, therefore, have a responsible task before him, in sustaining the credit of the Society through the medium of an open and perpetuated exhibition; but, we believe, the resources at his command will be found adequate to the undertaking. *From the Scottish Agricultural Journal, Jan.* 30.

Miscellaneous.

Dr. I. T. Mackay.—We learn with much pleasure that the authorities of Trinity College, Dublin, have conferred the degree of L.L.D. upon Mr. I. T. Mackay, the Curator of their Botanic Garden, and the Nestor of Irish Botanists.

Sale of Orchids.—The following is some account of the prices realised by the Orchids which were brought to the hammer on Tuesday last by Mr. Stevens:—Vanda suavis (fine specimen) fetched 11*l.*; Vanda tricolor (ditto), 6*l.*; a new Java Saccolabium, 7*l.*; other plants of the same from 3*l.* to 4*l.*; Saccolabium Blumei (fine plant), 5*l.* 15*s.*; Phalænopsis grandiflora (good specimen), 5*l.* 5*s.*; Aerides virens (ditto), 3*l.* 3*s.*; an Aerides like virens, with long leaves, handsome, and free flowering, 3*l.* 5*s.*; a new Java Aerides, 3*l.* 5*s.*; Aerides maculosum, 2*l.* 4*s.*; Cypripedium Javanicum, 11*s.*; Grammatophyllum speciosum, 12*s.*; Dendrobium triadenium, from 13*s.* to 1*l.*; Coelogyne speciosa, 1*l.* 18*s*; Bolbophyllum Lobbianum, 1*l* 16*s*; Angræcum bilobum, 18*s.*; other lots from 7*s.* to 1*l.* The total amount of sale was 324*l.* 2*s.* 6*d.* for 151 lots.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Plants which are beginning to grow should be critically examined at least once a week, and guided in their growth by frequently turning them round, judiciously stopping any shoots which are unduly taking the lead, and occasionally tying any that require it. A careful man, who takes a proper interest in his work, will notice these little matters as he performs the operation of watering, and will at the same time remove dead leaves, decaying flowers, and weeds, before they accumulate and render the plants unsightly. Another portion of your stock of Gesneras should now be placed in heat, and the Achimenes of the former lot will now be ready for potting off. Let them all be put at once into the size of pot in which they are to flower, as no family of plants suffers so much from the checks and sudden starts of frequent repotting. If they are treated as recommended, they will make growth proportionate to the size of the pot, and then work themselves into a flowering state. One of the effects of the opposite method is to cause the embryo flower buds to be metamorphosed into small scaly bulbs. They are most useful when grown in a brisk bottom heat with a liberal supply of top heat, as they make sturdier, better shaped plants than when grown in a close temperature, besides which, they are better enabled to endure the cold currents of air in the conservatory and other places where they are set when in flower. Many stove plants, especially of the soft-wooded, free-growing kinds, may now with advantage be placed in a moderate bottom heat for a week or two

before potting, to set the roots in motion; this will prepare them to take immediate advantage of the fresh compost. Get all plant trellises painted, in order that they may be ready for use when required. Besides conducing to their preservation and neat appearance, the paint effectually smothers any insects or eggs which may be lurking about them.

FORCING DEPARTMENT.

Vines in action, having their roots outside, must be carefully managed with regard to the fermenting material on the borders. A steady mild heat should be maintained, as nothing is more injurious than alternately exciting and starving the roots. It should, therefore, be considered before the forcing commences, whether the supply of litter at your command will be sufficient to produce the necessary temperature as long as it is required. The thermometer should be daily examined, and litter kept at a heat ranging from 65° to 75°. With proper attention this can be effected at a small cost, either of labour or fermenting material *Strawberries.*—A succession of these should be brought forward once a fortnight, by advancing each section a stage, and following them up with a further supply from the cold frames. As they are removed to the shelves of the forcing-house, it will be an advantage to place pans under the pots, as the water is liable to pass off without properly moistening the soil—an evil in the cultivation of such a moisture-loving plant as the Strawberry. The water which runs into the pans should not be allowed to remain in them longer than an hour, as that will be sufficient time for the roots and soil to absorb as much as they require; any remaining in the pans after that time should be emptied out.

HARDY FRUIT GARDEN.

Any Peaches or Nectarines on the open walls, which have any show for fruit, should be protected, if this has not yet been attended to. Among the espalier fruit trees, the flower-buds of many of the hardier kinds have swelled very much during the late mild weather; protection from frost will be necessary for these during the sharp weather which we may yet expect. For this purpose nothing is better or cheaper than Spruce or Yew branches, which are also of considerable service in retarding the opening of the blossoms until the time of year is more favourable for their safe development. The ground amongst bush fruit should be forked over, taking care to injure the surface roots as little as possible, as the fertility of the tree depends mainly upon these. The Strawberry beds should also be looked over; the dead leaves and runners removed, the plants thinned when they require it, and some dry soot dusted in amongst them, to destroy snails, after which the spaces between the rows should be manured and dug.

FLOWER GARDEN AND SHRUBBERIES.

Propagating half hardy plants should now be going on with activity. Instead of the old customary method of potting off the young stuff intended for masses in the summer, it will be found more economical to plant them out into prepared frames of nice soil, consisting of one-third loam (from an old Melon bed), one-third flaky leaf-mould, and one-third sand, with a good drainage. The soil should not be more than 4 or 5 inches deep, and may rest on a bed of coal ashes. The young plants should be set in rows from 4 to 6 inches apart, according to the habit of the plant and the length of time which will intervene before they are planted out. By passing a knife or sharp trowel down into the soil, between and across the rows, once or twice during the time, their roots will be prevented from growing into each other, and when required for planting out they will lift with nice balls of fibrous roots. Their tops also must be kept within bounds by timely and periodical stopping. I am aware that one of these plants will occupy as much space under a glass as two or three thumb-pots will; but I am also satisfied that when turning out season arrives, one of the plants grown as recommended will be worth half a dozen of the miserable things which have been starved in pots, besides which, the labour of watering is materially lessened—an important matter during the busy spring months.

FLORISTS' FLOWERS.

RANUNCULUSES.—Plant the first favourable opportunity, that is to say when the soil of the bed is dry. We are not particular to a week, but the sooner the better. If our directions have been followed little will have to be done except levelling the bed and planting; we prefer opening small trenches in which the bulbs are planted, covering the tubers about an inch. Our usual plan is to put the small roots of old varieties in a bed by themselves, which will make bloomers for the next season. Those of our readers who have saved their seedling roots during the winter must now put them in; if they have not previously grown them it will be necessary to plant them at least 4 inches apart; some advocate a greater distance, but we prefer having the bed well covered with foliage, and seedling plants are remarkable for their luxuriance. After planting them beat the surface of the bed with the back of a spade; in fact some of the best growers of Ranunculuses that we know trample over their beds after planting, but this must not be done if the soil is wet. Now is the time to look carefully over the stock of Carnations and Picotees, clean them and bring them forward for potting by removing decayed and mildewed leaves, &c. Attend to the compost; let it be under cover, and on wet days, or whenever opportunity serves, look it carefully over. Each wireworm caught is worth a shilling. Give more water to all plants in pots, and air on all possible occasions.

KITCHEN GARDEN.

Draw up ridges of soil on each side of the rows of early Peas which are above ground, in order to protect them from cold sweeping winds; it will be as well, also, to put the stakes to them at once, and by using the small spray to fill up the bottom it will contribute to their more perfect protection. Care must be taken to prevent the ravages of mice and birds; rats also frequently attack broad Beans just as they are starting, and if not noticed in time, they will destroy the entire crop. In planting out Cabbages, if you have more than enough for the regular crops, the rows may be planted only half the usual distance asunder, and the alternate rows drawn and used as Coleworts when about half grown. A sowing of one of the larger Cabbages may now be made, and also of Red Cabbage, in a frame, if you have not sufficient autumn-sown plants. Some Cauliflowers should also be sown in a frame, for the earliest crop, and some more under a warm wall, to succeed them. A sowing of Celery should now be made on a moderate hotbed; it should be sown very thinly, that plants may not require pricking out so soon, and that when pricking out is necessary they may be moved with more soil to their roots. It is especially necessary to grow the earliest crop with as little checking as possible, as a little attention on this point will in a great measure prevent its running to seed. A successional sowing of round Spinach should be made this week. Garlics and Shallots should now be put in on dry ground; they should be planted 6 inches asunder, on the surface of the soil, with merely sufficient fastening to prevent their being blown away. Those who possess, or can procure bulbs of the Potato Onion, should plant them now, in good ground, about 6 inches apart; they are very prolific and will be ready for use by the end of June. Autumn sown Tripoli Onions should now be planted 6 inches apart in rich soil, for Midsummer use; these should be secured in their places by closing the soil about the roots, not about the bulbs, the bases of which should always rest on the surface of the soil. The small button Onions which were sown very thickly in autumn should now be transplanted in the same manner; if the ground is good without being over rich, these will make splendid specimens by autumn. Vegetables, intended for seeding, should now be planted in good situations, where they can easily be protected from birds when their seed is ripening: the principal of these will be Onions, Leeks, Celery, Chicory, Carrots, Brussels Sprouts, or Broccoli

State of the Weather near London, for the week ending Feb. 15, 1849, as observed at the Horticultural Gardens, Chiswick.

Feb.	Moon's Age	Barometer. Max	Barometer. Min	Thermometer. Max	Thermometer. Min	Thermometer. Mean	Wind.	Rain.
Friday 9	16	30.461	30.380	49	33	41.0	S.W.	.00
Satur 10	17	30.572	30.513	52	25	38.5	S.W.	.00
Sunday . 11	18	30.380	30.274	51	32	39..	N.	.00
Monday 12	19	30.758	30.575	44	21	32..	S.W.	.00
Tues. . 13	20	30.830	30.610	42	21	31.0	W	.00
Wed. . . 14	21	30.871	30.578	51	41	46.0	S.W.	.00
Thurs. . 15	☾	30.619	30.491	57	32	44.5	W.	.00
Average		30.632	30.54	49.1	29.9	38.8		1.00

Feb. 9—Fine; overcast, fine, overcast at night.
— 10—Overcast, clear, slight frost. [high
— 11 Hoar frost; very fine, clear and frosty at night; barometer very
— 12 Frosty and foggy, fine, clear and frosty
— 13—Dense fog with frost, foggy, frost at night.
— 14—Frosty and foggy, fine, partially overcast.
— 15 Fine very fine; overcast, clear at night.
Mean temperature of the week 3 deg. above the average.
The barometer was higher on the 11th than it has been since Feb 7, 1758.

State of the Weather at Chiswick during the last 28 years, for the ensuing week, ending Feb 21, 1849.

Feb.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained	Greatest Quantity of Rain	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 18	44.3	31.8	38.1	11	0.30 in	3	1	3	1	3	4	8	1
Mon 19	45.1	31.2	38.1	12	0.64	4	1	2	1	1	6	3	2
Tues 20	45.1	32.7	38.9	13	0.71	3	1	2	4	2	4	2	2
Wed. 21	47.0	33.1	40.0	13	0.20	2	2	5	1	1	4	4	3
Thurs. 22	45.8	34.7	42.2	10	0.29	1	2	4	2	0	5	4	1
Friday 23	46.7	34.7	40.2	9	0.14	2	1	1	1	—	9	2	3
Satur 24	47.3	33.3	41.0	12	0.29	2	5	2	2	5	1	3	6

The highest temperature during the above period occurred on the 24th 1845—therm. 59 deg; and the lowest on the 19th, 1845—therm 16 deg.

Notices to Correspondents.

BACK NUMBERS OF THE GARDENERS' CHRONICLE: In answer to inquiries respecting back Numbers, the publisher begs to say that any of the following may be had. Any subscriber who will forward postage stamps equivalent to as many numbers as are required, will have them sent free by post. A few copies of the volume for 1847 are still on hand, price 30*s.* each, also the volume for 1848, price 30*s.* 6*d.* each. The volumes of former years are out of print.

1841—1, 8, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 34, 45, 46, 47, 48, 49, 50, 51.

1842—3, 4, 5, 6, 8, 10, 11, 12, 16, 17, 18, 20, 21, 31, 32, 34, 39, 41, 42, 45, 49, 50, 51, 52, 53.

1843—13, 16, 17, 18, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38, 40, 41, 42, 43, 48.

1844—1, 2, 3, 4, 5, 6, 7, 8, 9, 10 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 34, 35, 37, 38, 39, 40, 41, 42, 43, 44, 45, 48, 49, 51, 52.

1845—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 17, 18, 19, 20, 21, 23, 25, 27, 28, 31, 33, 39, 40, 41, 44, 45, 48, 49 50, 51, 52.

1846—4, 5, 6, 7, 10, 11, 12, 15, 14, 15, 16, 17, 18, 20, 22, 23, 26, 29, 30, 42, 43, 46.

1847—1, 2, 3, 4, 5, 8, 10, 11, 13, 14, 18, 19, 21, 22, 23, 27, 31, 32, 33, 36, 37, 41, 42, 43, 44, 46, 47, 48, 51 52.

1848—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 44, 45, 51, 52, 53.

AGAPANTHUS: *Sub.* It should be grown in a rich sunny soil, and abundantly watered during the growing season. After it has done growing diminish the supply of water in order to give it a period of rest. In winter it requires the protection either of a greenhouse or frame.‡

BEES: *Cottager.* It is difficult to say what sorts of shrubs will answer for a hedge so near the sea, and be of service to bees. No fence, if close shorn, affords much bloom, consequently it matters little what shrubs it consists of. If you mean a sort of imperfect hedge, try Sea Buckthorn mixed with Privet, Sloe, Snowberry, Tree Box, white and black Willow, Gooseberries, and Currants. If there be a bank, plant it with Wood Sage and Willow Herb. *W.*—*R B.* It is of great advantage to put swarms into hives filled with combs in good condition. We cannot recommend dealers in bees. Wax is extracted from the combs by boiling them in a bag, with sufficient water to prevent them from burning; press the bag with a spoon, in order to extract the contents; skim and drop the wax into cold water. In order to refine it, melt the wax in a saucepan over a slow fire; pour it into proper vessels containing a little water. *W.*—*A Young Apiarian.* Borage grows from 1 to 2 feet high. The best early flowers for bees are the Crocus, wiuter Aconite, white Willow, Tree Box, Mezereon, Apricot, Gooseberry, and Currant; also Chickweed, Dandelion, and Pilewort. *W.*—*P T O.* Honey taken from the hive may be preserved in the combs for a considerable time, provided they are not squeezed, but are kept in a dry place free from dust; and if a lesson is to be taken from the way in which honey is kept in the hive, the the combs should be deposited in a place which is rather warm than cold. *W.*—*H B S.* If possible, try to keep your bees in the old hive, and secure the swarms from it, by which you will obtain the benefit of the brood, which you would lose by shifting them now. Autumn is the best time to drive the bees from the old hive, when they may be united to a weak stock. More directions next week. Some London dealers may give 2*s.* per lb. for very pure honey in the comb, but half that sum is about the common price. *W.*

BIRDS: *A B C.* Their water and food should never be kept in vessels of metal, because of the metallic soluble salts that are apt to form. Oxide of zinc is poisonous. Glass, wood, slate, and earthenware are not open to this objection. Grow Canary Grass, Groundsel, Millet, Quinoa, or any common Chenopod.

CHURCHYARDS: *R A.* Plant Yews, Hollies, Weeping Willows, Phillyreas, common Alaternus, common Junipers, Juniperus excelsa, Arbor-vitæ, and Cedars, and all such things as do not form gay flowers, but possess a deep evergreen foliage. Cypresses, if they will bear your climate; but not Savin bushes, for a reason which your medical adviser will explain to you.

CLEMATIS MONTANA. If "N. S. H." has any of the seed of the Clematis montana which he said had seeded at Thruston, near Bury St. Edmund's, to give away, "D. M. R." would be very glad of some. [May we venture to inquire by what process "N. S. H." is to find "D. M. R.," seeing that no clue to residence, &c., is furnished.]

CUCUMBERS: *W R.* Walkers' Improved may be had of any respectable seedsman. We cannot recommend dealers.‡

DISBUDDING: *W P A.* It is very long, and has been received late. We will see what can be done with it.

DWARF ANNUALS: *L.* Nemophila insignis and maculata, Clintonia pulchella, Phlox Drummondi (pegged down), Gilia tricolor, Leptosiphon densiflorus, Limnanthes Douglasii, Collinsia grandiflora, Clarkia pulchella, and perhaps Lupinus nanus. The above will possibly suit you. Their heights will however depend much on the nature of the soil you grow them in. They will be stronger and taller in rich than in poor sandy soil ‡—*C H.* You will find such a list as you require at p 161 of our volume for 1848.‡

EMIGRATION: We cannot, as we have often stated, take upon ourselves the responsibility of recommending colonies to our correspondents. They must judge for themselves; for which purpose they must read the books on Emigration now published at a very low price, and the Colonisation Circular and Commissioners' Report of the Government Board of Emigration, at No. 15, Park-street, Westminster; to be had of all booksellers.

FRUIT TREES. *A New Beginner.* Your newly planted wall trees, with shoots from 2 to 4 feet in length, should have the latter more or less shortened. You should study the articles on Pruning in the volumes of the *Chronicle* for 1847 and 1848. In the meantime you cannot err in shortening the shoots one-third of their length. You have adopted a proper mode of planting.‖ *B R* Better cut back your Chaumontel (flavourless on a N E. aspect), and graft with Knight's Monarch.‖ —*E F* The Eyewood, Suffolk Thorn, Froom Park, Knight's Monarch, and Ne plus Meulis Pears; and the Jefferson, Washington, and Royale Hâtive Plums will probably suit your strong soil.‖

GLOXINIAS: *A Learner.* They should be starting into growth now; encourage them by warmth and moisture.‡

HYACINTHS. *A Learner* We have the very same case now before us, and very curious it is. Our plant is perfectly healthy. Perhaps we may have something to say about it next week. What is your variety? Ours is Voltaire, single white.

INSECTS: *G K Cotton* The mass of insects consists of multitudes of a species of millepede, Julus pulchellus, which have propagated so extensively owing, to the decaying vegetable manure. We know nothing more serviceable than repeated dosings of gas-tar water, the ground being first turned up. *W.*—*Alpha.* The grub sent is that of a small kind of goat-like, two-winged fly (Platyura sp). The transparent globules are the eggs of snails. *W.*—*Shem.* Thanks for the Carrot grubs, which are the larvæ of the Psilla, as already stated. The other insect is a common millepede (Polydesmus complanatus), and has nothing to do with the former. Gas-tar water may be obtained at gas-works. Lime water is better than common salt for destroying worms. *W.*

LIQUID MANURE: *W G.* The fluid is excellent; apply it to the roots of plants while they are growing, or beginning to grow; or, if you find it inconvenient to do so, pour it over leaves, charcoal, peat, or any such matter; you will form a good compost that may be applied advantageously as manure wherever manure is wanted.

NAMES OF FRUITS: *J M.* Not known; you may compare the tree and fruit with the Dutch Mignonne.‖—*D. Parsons.* Very like the Syke House Russet.‖

NAMES OF PLANTS: *Ignoramus.* Trapa bicornis, a water plant. —*H S Yates* Oncidium unguiculatum.

PINUS INSIGNIS: *J H.* It is as hardy as a Weymouth Pine, and not unlike it in its manner of growth. Do, pray, mend your spelling.

POTATOES: *H T.* The statement you make is inexplicable in the absence of further information. We have a strong opinion that your case would come within the rules that have been proposed, provided you could supply ALL the facts. What you have given are material only in a very small degree.

PROTECTING FRUIT TREES. *A R.* Your letter has been forwarded to Mr Rivers.‡

TO KEEP RABBITS FROM BARKING TREES: *W S.* Soot mixed with milk, or butter-milk, till as thick as paint, and laid on with a brush on a dry day, is said to answer perfectly. See page 27, 1847.‡

TRANSPLANTING: *Torbay.* That autumn is the best time for this operation there can be no doubt; the point now to be settled is what month is best—whether September or November. In the choice of a month, however, the planter must always be guided by the state of the season.‡

UNITED STATES: *Zeta.* We are not aware that there is anything to tell about American Gardening. It is carried on with spirit and success near the principal cities, and it is probable that in England we are not much in advance, except in the highest departments of gardening.

WORMS, HORNS, SNAILS, CATERPILLARS, AND HEDGEHOGS: *W S C H.* These are the old garden names of the pods of various kinds of Leguminous plants belonging to the genera Lotus, Scorpiurus, and Medicago. They are curious enough, but not handsome.

WORMS: *B K F.* The best remedy for these is lime-water.‡

MISC.: *T W F., Northwich.* Our agent here will supply you, if you desire it, but he will charge the same as you are now paying.—*P T O.* Daphne Cneorum is usually propagated by layers. D. indica, by cuttings, grafts, or layers, in autumn. We are unable to answer your other questions ‡—*A Cottager.* Melloco is the name of the plant to which you allude. There are no tubers of it in this country at present. The price of the "Theory of Horticulture" is 12*s.* All booksellers.

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POTTER'S GUANO is now 7*l.* per ton, and of superior quality, owing to recent chemical discoveries, and an improved mode of manufacture. An experience of eight years has shown it to be fully equal to the best Peruvian Guano, and 25 per cent. cheaper. See testimonials. If a quantity is taken a specific arrangement may be made.

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DRIED NIGHT-SOIL.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
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BY HER MAJESTY'S ROYAL LETTERS PATENT.

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To Nurserymen, Gardeners, and Agricultural Labourers, these Spades will be found invaluable, and calculated to lessen the labour of digging very materially; they are warranted to carry a knife edge which will neither break nor turn, wear perfectly bright on the surface, and last as long as three spades or shovels of the ordinary kind, and are now coming generally into use amongst the principal Nurserymen, Market-gardeners, and Agriculturists in the kingdom.

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HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry; and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

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The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co's Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

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Manufacturers, J. B. WHITE and SONS, Milbank-street, Westminster.

The Agricultural Gazette.
SATURDAY, FEBRUARY 17, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, Feb. 20—Agricultural Society of England
THURSDAY, " 22—Agricultural Imp. Society of Ireland.
TUESDAY, " 27—Agricultural Society of England.
THURSDAY, " 29—Agricultural Imp. Society of Ireland.

FARMERS' CLUBS.—Feb. 22: Darlington.—Feb. 26: Botley.—March 1: Ottery St. Mary.

As it is doubted that the RECLAMATION OF THE BOGS AND MOUNTAIN TRACTS OF IRELAND by the proprietors is remunerative, we shall lay before our readers one case in particular, the circumstances of which are of the most unfavourable nature that can be imagined. If it shall really appear that decidedly advantageous results have been obtained by the individual who has expended large sums in the promotion of his object, there can be no doubt that still more beneficial results would follow from similar operations, undertaken under ordinary or average disadvantages.

About eight years ago, Lord GEORGE HILL, brother of the late Marquis of DOWNSHIRE—who, besides being one of the most extensive, was also one of the kindest and most judicious of the Irish land proprietors—purchased some estates in the wildest parts of the north-west of Donegal. The gloomy grandeur of the scenery in that district, however attractive for an occasional visit by the painter or the poet, is one of the least likely to tempt a nobleman, or any gentleman of high station and fortune, to become the purchaser and improver of it. Indeed, excepting the western portions of Mayo, and, perhaps, some tracts of the county of Kerry, we do not think that Lord GEORGE HILL could have selected, throughout Ireland, for his patriotic and generous labours, a more discouraging tract of soil, or a more uncivilised and wretched tenantry of 3000 souls, than the portion of the parish of *Tullaghobegly* which has become the field of his lordship's successful experiments.

The whole parish, according to the ordnance survey, contains 66,796 acres of arable and mountain land, of which large tract there are not 20,000 acres applotted (under the Tithe Act), of which the entire tithe is valued at only 220*l.* a year! The writers of "Lewis's Topographical Dictionary of Ireland" have noticed the existence of *two gentlemen's seats* in the parish.

The pamphlet entitled "Facts from Gweedore," which has been compiled from notes by Lord GEORGE HILL, commences with an authentic copy of a memorial which had been forwarded by a country schoolmaster, named PATRICK M'KYE, to the Lord Lieutenant of Ireland, in 1837. This document, though not unexceptionable in style or grammar, is authenticated as to facts by competent authorities, and it is a gem far more worthy of preservation in our national archives, than many of the curious, ungrammatical, ill-spelt, official documents, which, from time to time, have been rummaged out of old record *bureaus* by the seekers of literary curiosities, to illustrate bygone barbarisms, national habits, or, as in this case, local destitution and misery. Nay, we shall not find, even among the scholar-like and elegant reports of such men as SPENSER and Primate BOULTER, anything more graphic or *more in point* respecting the starvation, misery, and savage condition of the Celtic Irish in their secluded dens, than we find in the humble memorial of Mr. PATRICK M'KYE, who had, when he wrote his appeal, but 8*l.* a year for teaching the youth of Tullaghobegly the rudiments of the English language, with the usual *accomplishments*, and without extra charge—an income by no means excessive, when it is taken into account that he had seven children and a wife to support out of that sum, "without benefit from any other source." If the agricultural condition of Ireland shall improve, as we hope that it will after a few years, the memorial to which we are referring will probably be looked upon, a century hence, as of apocryphal credit, even in Ireland, as it will be considered at this day by some of our English readers. The limits of our space oblige us to omit the greater part of its *almost* incredible details, and to insert those only which have a direct reference to the *agricultural* circumstances of 4000 people in the western division of Tullaghobegly.

After enumerating the entire stock* of this multitude, which, from its heterogeneous character, reminds us of "the mousetraps and other sweetmeats" of the Irish petty shopkeeper in days of yore, the memorialist proceeds to state to the doubtless astonished representative of majesty at Dublin, that the natives have no means of "harrowing their land but with meadow rakes; their FARMS! are so small, that from four to ten farms can be harrowed in a day with one rake." After some soul harrowing details of general distress endured by those poor people, "ready to expire in the jaws of starvation," eating the flesh of famine-stricken and diseased cattle, our energetic memorialist boldly challenges the world, excepting *the landlords and landholders of the parish*, to contradict any part of his statement.

With a very liberal allowance for exaggeration and *mistakes* in parts of the foregoing statement, we can yet have no doubt that the district in question was in a dreadful state of wretchedness, that both the moral and physical condition of the inhabitants was unparalleled in any civilised country, when Lord GEORGE HILL ventured to undertake the Augean task of relieving it from its foul condition; *Augean* even more than figuratively, for it is stated that many of the houses, or *stable*-houses (for the human beings herded in one end and the more decided brutes in the other), there were accumulations of dung, from 1 to 30 cwts., cleaned out once a year.

Leaving the melo-dramatic petition of this prince of country schoolmasters, who has made us laugh and almost weep by turns, we proceed to the statements of Lord GEORGE HILL himself. From his "Notes" we learn that the lamentable condition of that district "was not fairly to be attributed, so much to individual neglect or apathy, as to the system which had held its sway, and which no one proprietor could grapple with, unless he was prepared resolutely, patiently, and expensively to introduce and work out a counter system." The whole of that wild mountain district was, when his lordship purchased it, divided into small properties, which had no resident proprietor, and those properties were of such trifling value, though of considerable area, that it was difficult to find any respectable person who would act as agent for them. Rents were picked up casually and by stratagems,† no receipts

* One cart, one plough, 16 harrows, eight saddles, two pillions, 11 bridles, 20 shovels, 32 rakes, seven stable forks, 33 chairs, 243 stools, 10 iron grapes, no swine, hogs, or pigs, 27 geese, three turkeys, two feather beds, eight chaff beds, two stables, six cow-houses, one national school, no other school, one priest, no other resident gentleman, no bonnet, no cloak, three watches, eight brass candlesticks, no looking glasses above 3*d.* in price, no boots, no spurs, no fruit trees, no Turnips, no Parsnips, no Carrots, no Clover, or any other vegetables but Potatoes and Cabbage, and not more than 10 square feet of glass in windows in the whole, with the exception of the chapel, the school-house, the priest's house, Mr. Dombrain's house, and the constabulary barrack. "None of either married or unmarried women can afford more than one shift, and the fewest number cannot afford any, and more than one half of both men and women cannot afford shoes to their feet nor can any of them afford a second bed, but whole families of sons and daughters, of mature age, promiscuously lie together with their parents, and all in the bare buff."

† A daring bailiff on one occasion carried off a defaulter who had concealed his cattle swearing that he would impound him, *under the authority of a new Act of Parliament*, which authorised him to shoot such a rascally tenant dead if he showed his nose over the pound wall.

were given, no accounts were kept, arrears of from eight to 20 years' standing were due, and, in case of a distress, the proprietor had to bring with him the whole yeomanry corps which he commanded. When an agent of Lord GEORGE HILL was desired to state why certain tenants refused to pay the amount of rent returned in the rental, the reply was, that each of them had always "fixed" his own rent, and paid what he pleased. Every paragraph of the "Facts from Gweedore" is highly graphic, and often of a melo-dramatic character, alternately affording us exquisite amusement and surprise, or affecting our graver sensibilities.

The cattle were of the worst kind, the improved breed from the west highlands of Scotland (which that amiable and anxious landlord, the late Colonel CONOLLY, M.P., and Mr. HAMILTON, of St. Ernan's, had introduced among their tenantry), had not yet found their way to this most desolate region of Gweedore: the harrow was sometimes fastened to the tail of a pony, and the sheep were more calculated, in their form, for speed and constant pedestrian exercise, than for acquiring flesh. Respecting them, we shall not garble the extract with our own feebler language. "They are subjected, not only to a general shearing once a year, but also to repeated, though partial, 'clippings' at all seasons. Thus, if a woman was making up stockings for an approaching fair, and became short of wool, she would catch her sheep or lamb, and cut off *quantum sufficit*. This gave the poor animal a very strange and ridiculous, yet pitiable appearance." As the wool was cut, and not torn off, the sheep suffered no pain, and therefore the case is not analogous, as it otherwise would be, to the Abyssinian practice, as veracious travellers have informed us, of cutting from the living cow a *beef-steak*, when wanted for immediate use, and leaving the mutilated animal to recover its flesh at leisure. Yet it is new information to us, who have our prejudices in favour of the prevailing mode of shearing once in the season. It is a singular circumstance that there were no pigs upon the property, a fact which can only be accounted for by the Arab mode of life which the natives pursued. Pigs, though very manageable and social animals, with reference to man, ready to share the cabin floor with their human associates, by day or by night, are unpleasant travelling companions for the latter. And it appears that the natives—not the swinish, but the human multitude—under our present consideration had no fixed habitations. They led the nomadic life of a pastoral life, substituting, however, for the moveable tent four bare walls of rough stones, which had neither a chimney nor a window, properly so called; a roof, however, of sods and heath, or of rushes, was superadded. A family sometimes had three of these rude dwellings, "one in the mountains, another upon the shore, and the third upon an island, the family flitting from one to another of these habitations," according to the seasons, and as the cattle required change of pasture or wanted food. The children made the land journey "on the top of the household goods, with which the pony may often be seen so loaded, and, at the same time, so *obscured* that little more than the head can be observed, and thus the chair or two, the creels, and the iron pot, the piggin, and the various *et ceteras*, as if invested with a sort of dull locomotive power, creep along the roads. The little churn is slung on one side of the animal, into which the youngest child is often thrust, its head being the only part visible; and in this plight it resembles, in various particulars, a sweep peeping, and screeching too, at the top of a chimney."

The habitations were in villages, because what is termed the *rundale* system had full sway there. Under this system the respective villages held large farms in common, and the evils which arose from this practice, were of the most complicated kinds. The tenant frequently could not tell what quantity of land he held. One of the witnesses examined before Lord DEVON'S land commission, as it is familiarly designated, has stated with respect to his own holding, that "he was informed that the agent said it was so much." We are not surprised that on rough, bleak mountain land, of little value in its undrained and unsheltered state, the surveyor's chain was rarely used, but we were not aware of the precise manner in which the *subdivisions* of the indefinite term 'a cow's Grass,' were (or are) designated in Donegal. 'A cow's Grass' expresses the extent of land which one cow is supposed to require for its subsistence. It varies, of course, with the quality of the land, and cannot be estimated with any degree of precision. The townlands are divided into so many cow's Grasses, the fourth part is called a 'foot,' and the eighth a 'cleet.' The subdivisions under the rundale system were multiplied—as in parts of France—until only shreds, or '*skibberlins*,' as they are termed, fell to the share of each individual, either by equal inheritance among all the children, or through the trafficking which prevailed in land, by sale or by mortgage, instead of money interest on sums borrowed. "The people, being left to themselves, did as they pleased," every man what was right in his own eyes. They divided and subdivided, and sold the land, without being interfered with, or in anywise controlled, and, accordingly, the holdings became, in very many cases, reduced to such small patches as to be incapable of producing anything like sufficient food for the family, or else scattered in so many bits here and there, that it would take a very "*cute*" man to *find* them. One instance of this may be mentioned, about half an acre was held by 26 people!

Maps in the pamphlet before us, which Captain KENNEDY, secretary for the land commission, had drawn up, illustrate the effects of such subdivision. One of these maps shows an area of 205 acres, which was held in one farm two generations ago, divided ultimately into 422 different lots, in 29 holdings. The average quantity of arable in each holding was 4 acres, held in 14 different parts of the townland: the largest portion under 8 acres, the smallest about 2 roods; the average quantity of pasture, 3 acres, held in lots in common. A new arrangement was proposed, which consolidated the lots under the different holdings, and did not contemplate the ejectment of a single tenant. But, "the people, upon seeing what was proposed, felt all their prejudices outraged. They had been in the habit of subdividing their lands not into two, when a division was contemplated, but into as many times two as there were qualities of land in the gross quantity to be divided. They would not hear of an equivalent of two bad acres being set against one good one, in order to maintain union or compactness. Every quality must be cut in two, whatever its size or whatever its position; each must have his half perches, although they be ever so distant from his half acres. And this tendency is attributable to the conviction of these poor ignorant people, that each morsel of their neglected land is at present in the most productive state to which it could be brought."

If the arrangement which the tenants proposed to the proprietor had been adopted, some of the results would have been, that every holding averaging 7 acres would have been divided into two lots, about 124 perches asunder, and that the mean length of the best circumstanced farms (of about 15 acres) would have been nearly 30 times its breadth, and that the least advantageously circumstanced would have a mean length 332 times its breadth! As the system of grazing cattle, either directly for the tenants themselves, under the rundale system, or for the land occupiers of other localities during the summer months, rendered those people indifferent to any attempts at reclamation, enclosure, and tillage, except where Potatoes could be raised, or Bere or Oats, for the purpose of illicit distillation, which more than any other cause demoralised them; horses for farm purposes were so little needed that one horse has been known to suffice for the various services of different families holding land in common. This horse* was often principally employed, no doubt, in taking back loads of Barley to some obscure mountain nook, where it could be malted without detection, or in conveying the distilled spirit to some private place of sale. Sometimes in taking a sack of Oats to market to pay a little rent or county cess: and as the markets were many miles distant, and few roads to them, all the grain in some parts of the property was converted into whiskey as the most portable and remunerative form in which it could be removed for sale. Now and then, indeed, a seizure took place, and some individuals were ruined, but the temptations continued, the profits of success were great, and the risk of loss in many cases inconsiderable.

By this system all the corn which should have furnished meal for them in summer, before the new Potatoes came in, was consumed; and often in July and August they were without provisions, and could only obtain "credit meal" at an exorbitant price from meal-mongers and other extortioners. It was owing to this wholesale destruction of the corn by making it into whiskey, and the waste of time consequent upon it, causing their farms to be almost totally neglected, that *famine* was several times brought on, and hundreds must have inevitably perished but for the immense relief, in money and meal, which was supplied by Government and the English people."

The Celtic is still the vernacular tongue in that rude country, the English† is imperfectly spoken in some parts. The "Facts from Gweedore" have, we think, even in the condensed form in which we have adduced them, shown that a more apparently hopeless field for experimental operations, whether we regard the soil or its people, could scarcely have been selected than that which we have been contemplating.

In our next number we shall give a digest of the plans devised and carried out, by which a different view will be presented.

* *Three families* (on one of the islands of the property) had one pony in common; the *fourth* hoof was washed at one time because none of the three owners would acknowledge his liability to supply a shoe. The matter came before a magistrate on the mainland. One of the 'company' deponed, "that he had not only kept up decently his proper hoof at his own expense, but had shod this *fourth* foot *three to boot!*" yet the other two owners resolutely refused to shoe more than their own foot.

† The word 'modest' has a peculiar meaning amongst those who do speak English. A gentleman walking over the hills became alarmed at seeing a bull in his way, and on asking his guide if he was wicked, received the reply, "Och yer honour *that's* the modestest baste in all Tullaghobegly."

BENEFIT SOCIETIES.

Your pages have lately been opened to discussions concerning the condition of the agricultural labourers; and among the methods that have been suggested for assisting this often locally depressed class, allusions have been made to benefit societies. These societies may be considered either among the very happiest resources which the agricultural labourer possesses of helping himself, or else among the most discouraging of all the efforts which he is advised to make for this purpose. There are points upon which some of those who undertake to assist in the management of these societies are much at variance. As a local director of one of them, whenever I am appealed to by a labourer who may be desirous of entering the society, I constantly advise that every one should enter as early as he can, because his monthly payments will be ever after less in proportion; and I also advise every one who can contrive to afford it, to enter the highest of our three sickness tables (which are for 6*s*., 8*s*., or 10*s*. weekly pay in sickness), partly for the same reason, but more especially because his annuity, after attaining the age of 65, will be proportionably greater. To my surprize, I lately received an intimation that it was unanimously the opinion of some directors at a quarterly meeting, that no agricultural labourer should be encouraged to enter a sickness table, from which the benefit that would accrue to him would be higher than his weekly wages. Without discussing a policy which seems calculated to throw suspicion upon a whole class, because our medical advisers may happen to be here and there deceived by some rogue who shall feign sickness, there appears to me a very great mistake in our discouraging any active young lad of 15 from entering a 10*s*. table merely because his weekly wages at the time he enters may not be more than half that sum. He is deprived of belonging to the 10*s*. table for ever, on the advantageous terms that are held out to him in our prospectus. But there seems to me a method of overcoming any difficulty of this sort, which I should be very glad to see considered and decided upon by those who are interested in the well-being and general progress of these institutions. Tables might be constructed by which increased payments in sickness could be allowed in proportion as the insuring member became older, and more likely to need such increase. Perhaps, also, a better annuity might be afforded after the age of 65, if less were allowed as a burial fee, the monthly payments remaining much the same as in the present tables, or even a trifle diminished, to meet the proposed alterations. Thus, proper calculations might be made for the first column in the following table, or any other which might seem to be more advisable for particular localities.

	Weekly Benefit during Sickness from the ages of—	Burial fee.
Monthly payments in proportion to ages at time of entering the Club.	15 to 20 to be 6*s*.	20*s*.
	20 — 25 — 7*s*.	30*s*.
	25 — 30 — 8*s*.	40*s*.
	30 — 35 — 9*s*.	50*s*.
	35 — 65 — 10*s*.	60*s*.
	Annuity — 6*s*.	

Although a burial fee may, to many, seem to be better left out altogether, it is a point too strongly insisted on by the agricultural labourer to be entirely disregarded.
J. S. Henslow, Hitcham, Feb. 6.

I HAVE read with great attention the remarks of your correspondent, "H." upon these societies, and have long acknowledged the force of the objections he enumerates. The compulsory payment for liquor had been long resisted by the honorary members of a society of which I have the rules by me, and at length upon registration under 10 Geo. IV., c. 56, the question was thus disposed of.

Rule 10.—Every member on his admission shall pay 5*s*. to the funds of the society, and 3*d*. to the clerk, and 1*s*. 3*d* monthly.

Rule 12.—Every member who does not attend at the monthly meeting before the hour appointed by the stewards for closing the book, shall pay 1*d*. for and towards the use of the room where the meeting is held.

This, with the voluntary custom of those who are present, will, I think, generally be found ample payment for the landlord. It may be useful to add the rules for the annual feast, which if any of your correspondents object to, let them adjure their own Agricultural—aye, and their Christmas dinner too.

Rule 87.—On Whit Monday in each year there shall be a general meeting of the society; when every member shall attend, decently attired, by 10 o'clock in the forenoon, and proceed to church, in the order arranged by the stewards, to attend divine service, and hear a sermon which the officiating minister shall be requested to preach. Every member who shall not arrive by half past 10, and proceed orderly to church, shall pay a fine of 2*s*. 6*d*.

Rule 87.—On the same day there shall be a dinner provided by the stewards, towards which, and the other expenses of the day, each member who partakes thereof shall pay his proportion; no part to come out of the funds of the society. No liquor shall be drawn for any member, except the stewards, under a penalty of 5*s*. Every member who does not intend to be present at the dinner shall give notice to either of the

stewards one week, at least, before the day of meeting, and if absent without such notice, he shall forfeit 2*s.* 6*d.* to the box. The two preceding rules are not to be construed to extend to honorary or sick members.

There is another difficulty I have witnessed in the management of these clubs—the extreme severity with which the rules with regard to sick members are enforced; *e.g.*, a man with a heart complaint, middle-aged, and no doubt a great drag on his club (which not being enrolled may perhaps one day be broken up), lives with an aged mother in a cottage having about a rood of garden, and when he has paid to have it dug, is not permitted so much as to plant his own Cabbages; he cannot read, and his existence is simply a blank. Again, one laid up with a temporary illness did not dare to light his own fire, and was obliged to pay a person to fetch his medicine though perfectly able to do so himself. I will again quote the rules of the before-mentioned society.

Rule 26.—Any member receiving full allowance and doing any work whereby he may gain, pay, profit, or benefit, except giving directions to his servant, or keeping his accounts, shall cease to receive any further allowance for six months at least, and any member on half pay earning, or being capable of earning, more than three shillings a week, shall in like manner lose his allowances, and no member shall be entitled to receive allowance as a pensioner who is able to earn more than four shillings per week.

One word to those who have it in their power to encourage such institutions. The labourer, as well as others, likes managing his own affairs, and this is a case in which, with a very little assistance, he is quite capable of doing so. The legislature has done its duty, let them also do theirs; and, above all, in the name of the old and the sick, let them promote the immediate registration of the society. *Faunus.*

LAW RELATING TO DRAIN-BRICKS.

(*See page* 89.)

Your report of the judgment given for the crown in the case of the Attorney-General against Walker cannot fail to be highly interesting to agriculturists. For that reason I will venture to hazard a few remarks on it. Although the greater number is with the crown, yet in my humble conception the better reason is with the minority; and if *ponderentur sententiæ non numerentur*, I should not be afraid, were I a drainer within the district in question, to try the point again, and that for the following reasons:

In the first place, it is to be observed, the act for draining the fens is 6th and 7th Victoria, a recent act. Now, Lord Coke says, "*Leges posteriores priores abrogant*," or, as Sancho Panza hath it, when two ride upon one horse, one must ride behind. Though I have not the Bardney Fen Drainage Act before me, I will venture to assume that it empowers the drainers to cut their drains where it will drain the level most effectively. Suppose, then, that the best line of drainage shall run for a long distance parallel and closely contiguous to a king's highway, and that it needs to be very deep. If a man were to cut such a drain without the aid of an Act of Parliament, and leave it unfenced, he would be guilty of a public nuisance, and whether upon a judgment in an action on the case to be brought by some person who should sustain a peculiar damage by such nuisance, or on a judgment upon an indictment to be brought against him for creating that nuisance, one part of the judgment would be, that the sheriff should abate that nuisance, by filling up the drain again. But not only must the sheriff, in obedience to process, fill up the drain, if it be found a public nuisance, by the verdict of 12 men, but even every one of the Queen's subjects, who may choose to judge for himself that it is a nuisance, and that has a head sufficiently clear to judge rightly, may with his own spade lawfully abate that nuisance, and trust for his justification to a subsequent instead of a previous verdict.

But when an Act of Parliament is shown which authorises the making of the drain, here we have the old common law conflicting with a new statute, which declares that the act is lawful. Which is to give way? Undoubtedly the poor common law is abrogated *pro tanto*. Is there no way, then, of reconciling the safety of the subject with the work of improvement of the husbandry of the realm? Yes, a very plain way. The law imposes on the drainer the necessity that he shall guard his new works with such walls or other defences as may secure every subject travelling that road, who uses ordinary caution, from danger. The law of England recognises no more stringent necessity than the necessity of obedience to the laws. No one is exempt from it. Mr. Baron Rolfe would restrict the sense of the word necessary to a physical necessity; but there is no such expression in the statute. He cites no authority for that construction; there appears no reason for that construction. The word necessary ought to have the same meaning in law wherever it is used. Its obvious and ordinary meaning includes every species of necessity. Suppose the drainer has built his drain with walls up to the level of the turnpike road, but no higher, with drain-bricks; he is indicted for a nuisance; he makes answer, "The law gives me right to build with duty-free bricks all that is necessary to construct this drain; the law empowers me to bring the drain into contact with the turnpike road; the Court of Exchequer holds that I must not employ duty-free bricks to build a parapet wall to render the drain safe to the public; but I may employ duty-free bricks for all walls of the brickwork proper and necessary for maintaining such drains; therefore a parapet wall is not necessary to the walls of this brickwork; therefore I am guilty of no nuisance, though the Queen's subjects fall in and are drowned."

If a pleader were to draw an indictment for constructing such a drain without a fence wall, I apprehend he would aver not that the drainer wrongfully cut a wide and deep drain, but that the drainer cutting a wide and deep drain, wrongfully neglected to raise a proper and necessary wall to secure persons using the highway from falling into the same. Is not a wall necessary for maintaining such drains, even physically? when, for want of such wall, the sheriff may be enjoined by a judgment to fill up the drain. For, I speak with deference and under correction of persons more experienced in criminal law; but I am not aware that if an indictment were found against a person, who, making a statutable drain, had left it so incomplete for want of fences, or otherwise, as to constitute a public nuisance, that the form of the judgment of abatement would be changed, and that the sheriff, instead of being commanded to abate the nuisance by filling up the drain, would be commanded to abate the nuisance by building a fence wall. I have never seen a precedent of such a judgment. I apprehend the incomplete work would not be a work authorised by, and entitled to, the protection of the Drainage Act. It is a known maxim of the English law, that when a statute renders an end legal, it renders the ancillary means also legal. *Ex hypothesi*, the line of drainage by the side of the highway is the best; or, what is equivalent, a discretion is given to the commissioners to choose the best line, and they have chosen this as such. Mr. Baron Alderson puts the case that the line of drainage crosses the highway, and asks is a bridge necessary? By the Bardney Act, the drain may legally cross the highway; there is no condition, no proviso that it shall not cross a highway; and suppose that it crosses the line of road merely on a level? The crown is driven to this dilemma; either it is unnecessary to build a bridge, in which case the traffic of the country may be interrupted, and travellers and trade sent 50 miles round, or else it is necessary to build a bridge, in which case duty-free bricks may be legitimately employed for that purpose; and if a bridge, then a safe bridge, with protecting walls on each side, with approaches which replace the traveller with ease and convenience on the line of road.

The case of the bridge, and the case of a lateral fence wall by the side of a drain contiguous to a road, are *idem per idem*. The learned Baron, by exemplifying the bridge, places the subject in no new light. But if the court declares the side wall unnecessary, if it declares the bridge unnecessary, it cannot the more shake off the stringency of the statute, which has declared that the drain in that very line, flanking one road for miles, bisecting another road, is the more illegal for the great inconvenience it causes to the country. If a statute were to enact, in express words, that there shall be no highway from London to Hounslow, the court cannot say the statute is void. But if a statute were to say, it shall be lawful for commissioners to cut a sewer from the Serpentine to the Thames, performing all necessary works, there is no court which would not say, that either a bridge to carry the great Western road over the sewer at Knightsbridge, or a tunnel under the road at Knightsbridge, was a necessary work to accompany that tunnel, because the public convenience requires it. In vain would the commissioners plead to a mandamus requiring them to make a bridge there, that the bridge was for a collateral purpose, the mere passage of the public, and not for the outlet of the putrescent water to the Thames.

The cases of a lock-house and a boat-house, still more of a church or chapel, are more widely removed, and I humbly conceive not similar, and that there is no occasion for the present purpose to decide them. But as the common law is the perfection of reason, and would in consonance to the maxim *ita utere tuo, ne alienum lædas*, require that these extraordinary powers should be executed if possible without creating a public nuisance, it imposes a necessity for fencing and bridging the drains, and that which it is necessary to do, the excise statute declares may be done with untaxed bricks Further, the subject is not to be taxed unless the statute which imposes the duty is so plain that he who runs may read, a clearness which cannot be predicated of this splitting of necessities into physical and legal. *Hantoniensis.*

Home Correspondence.

Labourers in the Midland Counties.—In a late number of your journal I perceive a paragraph headed, "The Labourer," and written by a tenant farmer after a Christmas jaunt from Lancashire into the midland counties. If we are to believe all he says, it would appear that he travelled from a garden of Eden to the most wretchedly farmed country one can imagine, where the unemployed labourers walked about like hospital patients, and those employed earned but 8*s.* or 9*s.* per week, and were half starved. As such statements as these may mislead a number of your readers, it appears to me but right to give you a brief account of the state of the poor in this neighbourhood. My own labourers are earning from 12*s.* to 15*s.* per week at the present time. The poor-rates last year were 10*d* in the pound, and are rarely more than 1*s.* 2*d.* This is not the case in my district alone, but other with which I am acquainted; and it has been stated by practical men who have seen the best farming in England, that the cultivation in the north of this county is second to none. Far be it from me to deny we have bad husbandmen scattered about, but not to the extent which "F. T." appears to insinuate by his sweeping term, "the midland counties." Every honourable man must, I think, acknowledge with me, that the district should have been named where the evils which the "tenant farmer" alludes to abounded, without casting a serious reflection upon numbers who do not deserve it; and amongst others, *A Notts Farmer.*

Poor-Rates.—I see the landlords in Ireland are crying out at having to pay 3*s.* in the pound towards a poor-rate, and finding such rate is to be raised to 5*s.* in the pound has exceedingly alarmed them. What do they imagine we in Hampshire pay towards the maintenance of the poor, and also, in the shape of interest, for the erection of these huge asylums for housing the poor, as well as the able-bodied pauper. In South Hants we have paid, these 10 years and more, at the rate of 3*s.* in the pound, and during a part of the past year as much as 6*s.* Indeed the parishes of England have not only been maintaining their own poor, but also a vast number of Irish vagrants: this last class of paupers have cost the union to which our parish belongs as much as 10*l.* to 12*l.* in one week. England has not only granted 10 millions to aid the famishing Irish, but has sent its thousands of pounds in subscriptions towards their relief; and what sums it is impossible to say have been expended throughout the length and breadth of this country, at the several unions, towards the sustenance and relief of these outcasts of Ireland. The Irish landlord has no reason to complain at paying 5*s.* in the pound. Englishmen work to gain a livelihood, but an Irishman, so long as he can find support by the hand of charity, will sit down and grieve over his misfortunes! *X. Y. Z., Hants.*

Box feeding.—In replying to Mr. Fowler, I might, in a few words only, state that he is completely and altogether on my side. I do not wish a better advocate in my behalf than this very respectable gentleman has exhibited himself to be in his letter of January 27; and although I should regret extremely if I have hurt his feelings by any previous remark, I cannot but rejoice that I have caused him to publish his last letter, which clearly establishes most that I have written against what is called "box-feeding." Mr. Fowler has tried two experiments on hogs, one on the "Tamworth breed" and the other on the Devon; now, I am rather surprised that he did not know the "Tamworth breed" better than to venture another experiment upon it; why his native Devon was sure to beaten, and he ought to have expected nothing else. But Mr. Fowler proceeds to show, that when the ground is perfectly dry he ploughs up a sufficient quantity of turf, containing much coarse Grass, to make a rick with, and which is carted and placed under cover; and every few days, he continues, as he finds the boxes become moist, the pared turf is laid over the previous surface, giving the animals a very dry bed, and much useful amusement in tearing it to pieces. "This plan," he also adds, "is repeated until the pit is level with the gangway, and then it is emptied into the adjoining covered dung pit, and again gets trampled by store pigs which joyously range the ample covered space of 96 feet by 18." Now, does not all this confirm what I have all along written against box feeding? Have I not contended that straw alone will not absorb the urine made by oxen and cows in those "living cattle graves?" And does not Mr. Fowler's practice clearly confirm this? He makes a rick of turf adjoining his boxes, and as often as the boxes become wet he throws into them a part of this rick of turf to absorb the liquid; and then as often as his boxes are filled with this powerful absorbent, and straw, and urine and excrements, he causes them to be emptied into a judiciously made tank, and covered over, enclosing an area of 2728 square feet of ground. I have never opposed such a system as this; but on the contrary, it approaches nearly to what I have advocated. But let Mr. Fowler try to keep his Tamworth and Devon sows, and horses and colts, on Mr. Warnes's system, which was what I wrote against, and which he unwittingly defended; and I am fully persuaded, that both his hogs and horses will be entirely ruined, if not killed. As I have repeated over and over again, I wish gentlemen would attend to the arguments and the subject in dispute. Had Mr. Fowler at first described his rick of turf and his capacious and judicious, and covered over tank, he would have heard nothing from me but praise. *George Withams.*

Societies.

Royal Agricultural of England.—A Weekly Council was held at the Society's House, in Hanover-square, on Tuesday last, the 13th February. Present—Mr. Raymond Barker, in the Chair; Mr. H. R. Raymond Barker; Dr. Calvert; Mr. F. C. Cherry; Mr. Dyer; Mr. Foley, M.P.; Mr. Fuller, M.P.; Mr. T. C. Hincks; Mr. C. W. Hoskyns; Mr. Majendie; Mr. W. Miles, M.P.; Mr. Parkins, Mr. R. Robson; Mr. Slaney, M.P.; Dr. Spurgin; Mr. T. Turner; and Mr. T. R. Tweed.

The following new Members were elected:

Bignold, Samuel, Mayor of Norwich
Caldwell, Captain William, 3, Audley-square, London
Sherringham, Edward, Sculthorpe, Fakenham, Norfolk.
Kaye, Lister Lister, Denby Grange, Wakefield, Yorkshire
Butcher, Edward, Tring, Hertfordshire
Sherringham, Edward, jun., Sculthorpe, Fakenham, Norfolk
Dugdale, John, Manchester [moreland
Yeates, John Yeates, Parkhead, Levens, Milnthorpe, West-
Francis, William, Raynham, Fakenham
Davies, Mrs. Susanna, Rocklaresston Manor, Nottingham
Savory, John, Burnham-Overy, Norfolk
Tayton, William, Syderstone, Fakenham
Chapman, Benjamin, Lambcroft, Gunborough, Yorkshire
Sappings, Johnson, Creake, Fakenham
Pierson, John, Thornton-fields, Guisborough
Wiffin, William, Crabcastle, Fakenham
Proctor, Robert, Gays House, Maidenhead, Berkshire
Griggs, Money, Creake, Fakenham

Wrench, Samuel, Great Holland Hall, Colchester, Essex
Hudson, Peter, Warham, Wells, Norfolk
Allday, John, Griston, Watton, Norfolk
Cator, Captain, Peatwood House, Southampton
Phillipps, Elisha, Tacolnestone, Wymondham, Norfolk
Sparke, Alfred, Norwich
Quinn, Peter (J.P.), Newry, Ireland
Hudson, John, Warham, Wells, Norfolk
Legard, Capt. Jas. Aulaby, Lenton Hall, Nottingham
Gill, William, Billingford, Dereham, Norfolk
Bannerman, H., Hunton-court, Maidstone, Kent
Bircham, Robert, Dunton, Fakenham
Randall, Alexander, Maidstone, Kent
Ellis, Thomas R., Oxnead Hall, Buxton, Norwich
Shepherd, J., High House, Campsey Ash, Woodbridge, Suffolk
Knatchbull, Rev. J., Elmham, Dereham, Norfolk
Barlow, Frederick, Burgh, Woodbridge, Suffolk
Blyth, William, Wenseuham, Bougham, Norfolk
Gossett, Captain, Town Court Farm, Eltham, Kent
Kerrison, John, Ranworth, Norwich
Sherringham, Valentine, Thornage, Holt, Norfolk
Mallinson, John, Thickhollins, Huddersfield, Yorkshire
Gillett, Richard, Plumstead, Norwich
Dennison, Wm., jun., Ridbrooke Manor Farm, Blackheath
Buxton, Sir Edward North, Bt., M.P., Runcton, Norfolk
Bawtree, F., Abberton, Colchester, Essex
Stables, William Alexander, Cawder Castle, Nairnshire, N.B.
Beaumont, John, Dalton, Huddersfield, Yorkshire
Tunnicliffe, Frederick Warner, Bina, Eccleshall, Staffs.
Dickinson, William Lindow, Workington, Cumberland
Beaumont, Joshua, Huddersfield, Yorkshire
Dixon, William Frederick, Birley House, Sheffield, Yorks.
Walker, Dr. Thomas, Lower Seymour-street, London
Hudson, Thos. Moore, The Grove, Warham, Holkham, Norfolk
Atherton, George T., Mount Alyn, Wrexham, Denbighshire
Barnard, Charles, Norwich
Cooper, L. J., Leeds, Yorkshire
Moore, Thomas Sewell, Warham, Holkham
Bishop, John, Norwich
Lowdell, George, Baldwin Hill, East Grinstead, Sussex
Blomfield, John, jun., Warham, Holkham
Burroughs, James Burkin, Burlington Hall, Norwich
Campion, Arthur, Exeter, Devonshire
Blake, Thomas, LL.D., Horstead, Norwich [Berks
Pocock, T. Wernham, Green's Farm, Chieveley, Newbury,
Blakiston, Thomas, Thorpe Old Hall, Norwich
Powell, John Thomas, Easton, Pewsey, Wiltshire
Page, Robert, jun., Bawburgh Lodge, Norwich
Ridgway, John, Fairlawn, Wrotham, Kent
Custance, Hamilton, Weston, Norwich
Hanbury, Rev G., Swaffham, Norfolk
Humfrey, Robert Blake, Wroxham House, Norwich
Barker, William, Poulton cum-Spital, Birkenhead, Cheshire
Wellingham, E., Walton, Lynn, Norfolk.

The names of five candidates for election at the next meeting were then read.

PROGNOSTICS OF WEATHER.—Mr. CHARLES FULBROOK, of Dallington, near Hurst-green, Sussex, having favoured the Society with a series of weekly communications on the probable state of the weather during the previous five weeks, those communications were laid before the Council. Mr. Fulbrook stated that his weekly predictions of weather were founded on the average result of meteorological observations made by Mr. Luke Howard in the neighbourhood of London, as well as by himself at no great distance from the metropolis; and that they had reference only to a geographical region comprised by that portion of the South-eastern district of England, of which London might be considered as the centre. The Secretary having reported that Mr. Fulbrook's predictions had been remarkably fulfilled, the Council directed their thanks to be transmitted to Mr. Fulbrook for the favour of his communications, with a request that he would continue them, and when he was sufficiently prepared with just data connected with the principles on which his law of probabilities was founded, that he would have the goodness to report the same to them for consideration as to the desirableness of a reference being made of such report to the Journal Committee.—Mr. Luke Howard presented to the Society the fourth and fifth parts of his "Barometrographia," being the conclusion of that important and interesting series of illustrations of changes of weather as shown to the eye by proportional diagrams exhibiting the results of his long-continued and well-known observations of the weather, especially in reference to the climate of London. The Council ordered their best thanks for the favour of this present.

CUTTING OUT AND FILLING-IN DRAINS.—Mr. GEORGE BLAKEWAY, of Arley Green near Bewdly, informed the Council of the success with which he had employed a machine of his own invention for the purpose of cutting out drains in the stiffest clay, and at the same time of laying down pipes and tiles with the greatest facility, and as exactly as by manual adjustment. He referred to the case of the Rev. E. Hardwick, and to that of Mr. Wright, of Park Attwood, near Kidderminster, on whose lands many thousand draining pipes had been laid down by the aid of the machine in question, and with perfect success. The depth of the drains was 20 inches, but by first ploughing a furrow, the depth might be increased accordingly. He conceived that by this machine, the present expense of draining might be reduced one-half. He had also succeeded in contriving a plan for a stove to burn small pipe-tiles.—Mr. Slaney, M.P., remarked that the Council had done him the favour, at the Northampton meeting, of proposing a prize, at his suggestion, for the best drain plough to cut out at one, two, or three cuts, to the greatest depth, with not more than 4 horses, so as to prepare a drain so far for deeper cutting, to which prize he had the leave of the Council to offer an additional sum on his own part for the encouragement of competition for an implement in which he felt so sanguine an expectation of a successful issue. He had also leave to offer, on his own part, a further premium, independently of the former, for the best plough to fill in the soil cast out of drains, with not more than 4 horses (two and two abreast), and not to exceed 5*l.* in cost. The prizes for these implements having been withheld, on account of the unsatisfactory state of the ground, at the season of the meeting, for the trial of such implements ("Journal," vol. viii. p. 345), Mr. Slaney was perfectly willing (notwithstanding the opinion given on the subject by Mr. Parkes, in reference to the inutility of such implements) again to offer premiums for these ploughs, to which he hoped other members of the Society would make additions, in order that the competition for their construction and use might be revived, and the trial conducted (as suggested by Mr. Miles) at a more suitable season, namely, in the months of November and December, when the land had absorbed a great quantity of moisture, and the implements would, in consequence, work to the greatest advantage. For, however difficult it might be to attain perfection in these implements, or to construct them for attaining all the objects required, Mr. Slaney felt quite convinced that a great saving of labour might be effected by only the partial cutting out and filling in of drains by implements of the kind proposed. If only a plough of a simple character were employed, drawn by horses separated from each other, and removing by two cuts the soil only to the depth of 2 feet, and another adapted for the purpose of filling in, a greater economy, both of time and money, would, in his opinion, be the result, than in the case of the work executed by hand labour. He concluded by expressing his hope that this subject would receive the attention of the Council.

COKE FOR DRAINING.—Dr. SPURGIN, of Guildford-street, Russell-square, reported to the Council the economy and success with which he had applied the common coke, obtained from coal by stifled combustion, to the purposes of under-draining, instead of pipes or tiles. He found this substance, which might be regarded as enamelled charcoal, to be perfectly permeable by water. During the early part of last summer, he had an opportunity of putting this material to the requisite test, and the result proved perfectly satisfactory, for, although the experiment was made in a stiff clay, rammed down closely over the coke, the water in due course ran freely from all the drains thus constructed. He found that 30 lbs. was sufficient to form a permanent and efficient drain along every rod of trench; and the expence only one-half of that incurred when employing the ordinary pipes or tiles. He also intended making use of coke for the purpose of irrigating his salt marshes, as well as land reclaimed from the sea and meadows conveniently situated for such an operation; and he expected to be able to effect this object independently of open water-courses.

STOPPAGE OF DRAINS.—Captain RICHARDSON, of Sutton-hurst, near Lewes, transmitted to the Council a specimen of the fibrous matter that had stopped up a portion of his pipe-drains, and impeded the progress of the water through them. Although a hedge of Willows had formerly run across the land where these drains were laid down, from the roots of which still remaining in the ground the long attenuated fibrous masses thus collected in the drains might probably have had their origin; it was to him remarkable, that the exact limit of the stoppages was the extent to which Mangold Wurzel had been planted on the land in question; and he was, therefore, inclined to attribute the stoppages, either to fibres proceeding from the Mangold Wurzel roots, or to some effect their presence might have had on the growth of the roots of the Willow.

POTATO CULTURE.—Mr. BOSANQUET, of Broxbournbury, Hertfordshire, reported to the Council the result of his cultivation of the South American Potatoes, of which the seed had been obtained from Chili by Mr. Miles, M.P., and presented to the Council at their meeting on the 15th of March last year, for distribution among such of the members then present as were willing to favour the Society by the trial and report of its merits. From a portion of these seeds, Mr. Bosanquet in that month raised plants in pots with light rich earth placed in his Vinery, paying great attention to the regulation of the heat and the gradual exposure of the plants to the open air, as well as to a gradual extension of the mass of soil required for their growth. The plants throve well, and grew very luxuriantly, the tops being full 2 feet high. The appearance of the leaves was rather different from that of other Potato plants, as they were longer, smoother, and of a darker green. About the middle of July, the Potato disease having made its appearance in his garden, he noticed that the Chilian plants were also affected, the appearance of the disease being similar to that exhibited by the common Potato, excepting that on the new plants was observed a greater degree of Botrytis or mouldiness about the stalks, while the progress of the disease was not so rapid. By degrees, however, the whole of the tops were destroyed; but it was found that the disease had not extended in every case to the roots, a considerable number of these having remained sound and formed small tubers. On digging up the ground in November, the produce was found to be nearly 3 quarts, containing above 1200 small tubers, varying in size from that of a large Pea to that of a Cherry; the number of plants raised and set out having been about 150. Mr. Bosanquet stated that, as the tubers appeared to be perfectly sound, he intended to keep them in sand until the spring, and then to plant them in the open ground; and he remarked that there was nothing extraordinary in the smallness of the tubers, as Potatoes raised from seed were never large ones the first year. He considers the circumstance of these Potatoes having been attacked by the rot, to be presumptive evidence that the disease does not originate in the Potato itself, but that in fact it is purely atmospheric. He thinks also the opinion, that it commences in the tuber, to be erroneous, as well as that which entirely attributes its origin to the soil in which the Potatoes are grown, as Potatoes grown in different soils are attacked indiscriminately, excepting that whatever causes a luxuriant growth of the tops of the plant, predisposes them to the attack of the rot, and renders its effects more destructive, the disease appearing to be more prevalent in all rich garden ground, and in fact in all highly-manured ground. Mr. Bosanquet then proceeded to detail the results he had obtained from the cultivation of the common Potato under different circumstances. In 1847, he grew some Potatoes (planted between the end of February and the middle of March) on a piece of ground which had previously been a plantation, and grubbed up. It had been trenched, but there was no manure put on. About the 16th of July the disease made its appearance, and the whole of the tops were destroyed, and became so rotten as to be quite offensive. He had them pulled up, and the Potatoes left in the ground until November. When taken up they were found to be remarkably good, there not being above 50 bad Potatoes in the space of about 1¼ acre, and they have kept perfectly well through the winter. In 1848, he again grew Potatoes on one-half the same ground, manuring them; and planted the other half with Mangold Wurzel. The Potatoes came up very well on the side planted with fresh sets; and on the other, where the Mangold Wurzel had been put in, the portions of Potato which had remained in the ground produced a great number of fine plants with plenty of tubers. About the middle of July, however, they were attacked by the disease, which first showed itself in the same spot where it had commenced the year before, being a part of the field rather lower and more damp than any other part. Thence it spread over the whole field as it had done in the previous year. The self-sown plants, although the largest and finest, suffered the most severely. He had all the tops pulled off, as in the year before, and saved a very fair crop of good Potatoes; the proportion of bad ones being however greater, in consequence, as he imagined, of the greater degree of wetness in the season. He had also grown Potatoes last year on a piece of gravelly soil which had been cropped with Barley in the year preceding, and was manured for the Potatoes. These were not planted so early as the others by about a month. The crop was a very promising one, but was attacked by the disease about the beginning of August. He had the tops pulled off, and saved about 700 bushels of good Potatoes (besides small ones) out of about 4 acres. In another field of 8 acres, a stiff clay soil except in one part where it is rather gravelly (it being woodland recently grubbed up), he had a crop of Potatoes which had been planted at about the end of April. They had not done very well, on account of the wetness of the season, excepting in some parts. At the beginning of August the disease manifested itself, commencing on a spot where some charcoal had been burnt, and where the tops had grown more luxuriantly than elsewhere. It extended gradually over the whole field, and did a great deal of mischief to the tubers, so much so that he did not save above 500 bushels of good Potatoes out of the whole. In this case, the tops had not been taken off. Mr. Bosanquet concluded his communication with the following observations: "I trouble you with these remarks upon a matter of so much importance as the saving of this valuable crop; but I am fearful that preventing the Potato disease is beyond the power of man. It is one of those mysterious visitations of which the causes will most probably be for ever hidden from us, but which, like other visitations of the same kind, will no doubt pass away in time. I am decidedly of opinion that it arises from some atmospheric influence, and that it always commences in the tops, and not in the tubers; and extends gradually from the former to the latter: very much in the same way as mortification extends in the human frame from diseased parts towards sound ones. As far as one can judge by appearances, it is more prevalent when the atmosphere is much charged with electric matter, and when there is a fall of temperature accompanied with much wet. A return of fine dry weather seems to arrest the progress of the disease, if it does not entirely stop it. I have found that Potatoes affected by the disease may be preserved for a long time, if kept in a dry warm place; but that if left in the ground, or in a damp place, they speedily rot, showing, what is singular, appearances of premature vegetation, by throwing out shoots. The most certain plan of securing a crop is to plant early—say at the end of February or during March. The tubers will then be completely formed and ripe by the period when the disease usually attacks them. I am also a strong advocate for pulling off the tops. It can be done at an expense not exceeding the value of 1 bushel per acre, and what is that compared with the chance of saving perhaps 100?"—Mr. Miles, M.P., had also been able to preserve some tubers raised from the same seed from Chili that as he had the pleasure last year of presenting to the Council. The peculiarity observable in the plant was the enormous leaf it bore; he had never seen such a leaf on any other Potato plant: and the haulm was so strong as to be less affected by disease than that of the common Potato. He had the satisfaction of believing that the Potato disease was now wearing out; the tubers being less affected and infinitely better. His own were perfectly sound; and agreeably with the result of his trial of seedling Potatoes in 1847 (Journal, vol. viii., p. 420) indicating different effects of disease in different varieties of Potato, he had found one variety that during the last three years had uniformly resisted every

taint of disease; and this was the white Scotch Kidney. —Mr. Parkins had obtained a similar result from the trial of the seed from Chill, and fully agreed with Mr. Miles in the modified condition of the Potato disease He intended to have the tops of his Potatoes twisted off in July as soon as the plant came into flower. —Mr. Fuller, M.P., had sound Potatoes on his estate in Sussex, but in Anglesey and Carnarvonshire they were all diseased. He concurred in all that had been said as to the value of early planting. In Ireland, by converting the bog-land into what were termed "lazy-beds," sound Potatoes had been grown where previously the result was that of diseased ones.—Mr. Slaney, M.P., believed the disease to have become much more mitigated in its character. He had found the white varieties the least affected.—Dr. Calvert thought there was a great difference in the different varieties in reference to disease under particular circumstances, but, in all cases, he concurred in opinion with those who advocated early planting. He thought an excess of moisture induced to the disease.—Mr. Thomas Turner considered the removal of the haulm decidedly beneficial. He had Potatoes planted about the first week in June last year, after the growth and removal of a crop of Rye by the scythe, and the appearance of disease in the haulm presented itself at the latter end of July, when the plant was in flower, and no disease whatever could at that time be detected in the tuber, which was then about the size of a trap-ball.—Mr. Miles had the haulms removed by a man standing over the plant, with his feet placed firmly on each side of it, for the purpose of securing the root and tubers in the ground while the head was pulled off upwards by his two hands.

Seed-Wheat.—A communication was laid before the Council on the accidents resulting from the employment of arsenic as a steep for seed Wheat to prevent disease in the grain, in consequence of such grain being picked up by pheasants and other game, causing their flesh to become poisonous as food.—Dr. Calvert stated the success with which he had removed smut from Wheat, by washing it by means of a stream of water. Before such washing the grain had been as black as if mixed with soot, but became perfectly clean by that process; and when sown, the crop was found to be perfectly free from taint of disease of any kind. He had tried the various methods proposed to remove smut, but washing had proved the only one he could depend upon.—Mr. Dyer had used the sulphate of copper, or blue vitriol, with uniform and perfect success, at the rate of 3 lbs. to the sack. His land at first was very subject to the production of smut in his Wheat crops, but now he had 95 acres without a smutty ear in it.—Mr. Tweed had never met with any accident from arsenic; it was a most effectual remedy in preventing disease in seed corn.

Portable Railway.—Dr. Spurgin favoured the Council with the inspection of a model for a rotary railway, on the principle of the simple roller, for use in farms, docks, warehouses, and other places where heavy weights were to be conveyed short distances without the aid of horse-power, as manure from yards, corn from stack-yards, timber from woods, Turnips or Mangold Wurzel from flat heavy land. He considered that this mode of conveyance would prove in these and similar cases fully efficient in its action, particularly as it would combine great simplicity with ready adaptability for the purposes required, at a cost not exceeding 10*l*.

Miscellaneous Communications. — Mr. Edmund Clowes, of Cheltenham, on disinfecting (on a change of tenancy) stables, cowhouses, &c., where horses, cattle, or sheep have been infected with disease of any kind. —Mr. White on diseases amongst neat stock.—Mr. Joseph Long, on Flax Culture.—Mr. Postle, of Blofield, on the destruction of rats.—Dr. Searle, of Bath, on the nutrition of animals in relation to the production of muscular substance or flesh, instead of fat.—Mr. Majendie on a variety of Wheat from the Asturias, adapted for high mountainous districts.

The Council having ordered their best thanks for these several communications, adjourned to Tuesday next, the 20th of February.

Review.

An Account of the Discovery, Properties, and Cultivation of the Giant Saintfoin. By Thomas Hine. Ridgway, Piccadilly, London.

This is a tract which all who cultivate land on a rocky calcareous subsoil would do well to procure. It details the writer's experience of Saintfoin—a plant suited to such soils—his experience of a variety which seems to be remarkable for its vigorous growth. We extract a passage descriptive of its peculiarities.

"Having by this time, from my own observation, discovered the peculiar properties of this species of the plant, I shall proceed to detail them, and, with a view to make myself more clearly understood, I shall do so principally by showing in what respects it stands contradistinguished from the common stock. There is very little difference in the appearance of the two varieties, but it is generally a shade darker in its colour and more rapid in its growth in the spring, and still more so after the first cutting, which, in this locality, generally takes place very early in June; after this it shoots much earlier and grows much faster than the common stock, and by the end of July will be again in flower. The bulk of the second crop will mainly depend upon the state of the weather. Upon whatever soil it is planted, it will always be much more bulky in a moist season than a dry one; still, however, be the season moist or dry, it will go to flower at the same time, and produce as much or more seed in a dry season than in a dripping one. If cut a second time for hay, it will be in flower a third time in September, but if left for seed, it will be ready for cutting in August, after which it will produce an eddish nearly equal to what is generally produced by the common stock after the first mowing. Again, the root of the Giant species is not so large as that of the common stock, roots of which I have sometimes known to penetrate upon a chalky soil to the depth of 4 or 5 feet, being proportionably large, but the roots of the Giant species are much smaller. The stalk, also, will be larger and taller, especially the first year it is in plant; the reason of this is, its maturing itself much sooner than the common stock. The stalk, it is true, will possess a greater cavity in the middle, and, as a matter of course, will flatten more in the hay stack; but whether this is advantageous or not I really cannot take upon myself to determine; but if it be equally nutritious, it must be beneficial. With regard to its nutritious properties, I have no knowledge of its having undergone an accurate test by a chemical process, but I shall be quite ready to contribute my quota to the expense of proving it. In the absence of which, I beg to state that I have known, that when both species have been sown side by side, and depastured, the stock have given a decided preference to the Giant species; this, moreover, is corroborated by the observations of some highly respectable individuals, whose testimonials will accompany these remarks. I have also known where a party grew a small quantity, and placed it in the middle of a large stack of the common stock, that the horses gave a decided preference to the few cakes of the Giant species whenever it was arrived at in cutting down. I have also clear proof that the fodder arising therefrom, when it is cut for seed, is superior to that produced by the common stock, when each are equally well gotten.

"But before I leave the subject of the peculiar properties of this species, I must remark that it matures itself much quicker than the common stock, which never attains full perfection before the second, or, in some cases, the third year after it is in plant; but I have known the Giant species produce, upon a chalky soil, two tons of hay per acre, the first season it was in plant. Still, however, I have never yet known a crop of this species but what produced a greater bulk in the second than in the first year of its growth, provided the season was equally favourable. I have also known seed sowed in April, without the intervention of a crop of corn, produce a most abundant crop of hay the same year. It must be admitted that the land was good and in high condition, having been sown where a crop of Turnips had been previously fed off. I have also known seed to have been produced under similar circumstances, and cut in September. There is also a crop now growing upon land of a heavy character, well drained, which was sown in February last with a crop of Oats, which was not only cut with the Oats, but has since then produced another crop, which was used for soiling the working horses upon a large farm. I shall now close my remarks upon the contradistinguished merits of the two species (except so far as an observation or two may be necessary in my further remarks, to make myself more intelligible to my readers) with this important fact, viz., I have frequently known the two species tested side by side, but never, during the period I have recommended it should be continued in plant, have I ever known an instance wherein the decided superiority of the Giant species was not clearly apparent; and from others who in different parts have tested them in a similar way, I have received communications giving the most unequivocal testimony of the same results attending their experiments."

Calendar of Operations.

FEBRUARY.

West Gloucestershire Farm, *Feb.* 10.—When I offered a few remarks on the Calendar in the *Gazette*, and ventured to suggest the description of information which appeared to me more useful and instructive, I had contemplated giving particulars of my own farm by way of illustration, but being near the close of the second year only of my occupation of a farm in a transition state from a very low state of cultivation in all respects to one of superior condition, involving much more labour and power than would be necessary on the same farm when in proper condition, I felt that the details could not be quite a fair subject for general comparison. This consideration would operate still more strongly in reference to any details of income and expenditure. I have acted upon the notion of Shakspeare, that

> "If 'twere well done when 'twere done,
> It were well it were done quickly,"

consequently the return for a large outlay in repairing roads, fences, thorough cleansing, deep tillage, extra manures, and artificial food incurred during 18 months can only be looked for in future years, free trade permitting. This will explain to one of your correspondents my inability to give at the present time the particulars suggested by him, which I hope to have all the materials for in time to come. Our farm is on the oolitic range, which traverses this county, and the subsoil is what is commonly distinguished as stone-brash, with a few acres intermixed of heavy land on clay. It comprises 264 acres, of which 57 are pasture. The power consists of a steam-engine, rated at 4 horse power, but which drives the threshing and winnowing machines, the Linseed crusher, and the chaff machine at the same time; and 4 pair-horse teams, with an odd horse, carter, and 3 ploughmen, a man and a boy, who have the exclusive charge of 24 fatting beasts, and about 40 pigs, feeding, cleaning, and littering all the lit or being cut for them by the chaff machine; a shepherd and a boy, in charge of 100 fatting sheep, and 200 ewes and ewe tegs; 3 good labourers, and an older man, chiefly employed in keeping the roads in good order, 6 women, and 2 boys. The carter, shepherd, and herdsman have 12*s*. a week throughout the year, and houses and gardens found them; the ploughmen 10*s*., and the other men 12*s*. half the year, and 10*s*. the winter half; the women 4*s*. a week in winter, and 5*s*. in summer. During July, August, September, and October, hay and corn harvest, hoeing and getting in the root crops, several extra hands are required. Our cattle have been kept on the box system from the first, and it was so entirely satisfactory, and so much more free from dirt or smell than ordinary stalls, that boxes were built for the horses; and that answered so well, that we have since adopted the same plan for the pigs, which thrive well, and seem to enjoy their home. The inveterate habit most pigs have of poking their noses into and rooting up the litter, in some degree counteracts our desire to keep them dry as sweet an atmosphere as the beasts and the horses; and until they arrive at a lazy condition, they stir up almost as much offence as is to be found in ordinary sties. We adopt, with occasional exception, the four-field system—Roots, Barley, Seeds, Wheat. We keep, on an average, about 10 young store beasts. For all our root-crops we plough as deeply as we can with the ordinary plough, which is followed by Reid's subsoil plough, with a pair of horses. This we shall continue until the fourth year, when all the land will have been subjected to that operation. After that, we expect that the aid of steam power will enable us to dispense with one pair of horses and a ploughman. *C. L.*

Notices to Correspondents.

Agricultural Schools. *H. F. G.* The Cirencester College is the only institution of which we know that has a farm attached to it. There are numbers of farmers who take pupil boarders.

Bacon: *Inquirer.* Can any one state their experience in detail of greaves or grease as food for pigs?

Chicory: *D. N. A.* If you have a crop of roots, you should wash them, cut them up into dice, and kiln-dry them, and send them to some Liverpool salesman. That will be far more profitable than feeding cattle.

Deodorisers: *J. Allnutt.* Powdered charcoal.

Draining Engines: *W. J. P., from Demerara,* asks for information on this subject. Perhaps some of our Fen readers may oblige him and us with it. He asks about first cost, expense of working, extent drained by it, actual water discharged, height to which it is raised, kind of machinery employed, and power of engine. He alludes particularly to engines able to drain 400 or 500 acres.

Gas lime: *A Sub.* Their real value is no doubt greater than any market value we ever heard quoted of them. Soapers' ashes are more valuable than the gas lime. They are the same, but stronger—so to speak.

Gorse: *J. C. C.* A late number of the "English Agricultural Society's Journal" contains all that need be said upon it.

Hay-rick: *Inquirer.* If cut into chaff, and placed in a large box with a sparred hole in the bottom of it, you might place this on the top of your boiler, and so steam it.

Lucerne: *Caxton.* Sow, in mid April, about 10 lbs. of seed per acre, in rows 14 inches apart, on deeply tilled and well manured loamy soil. The Kohl Rabi ought, probably, to have been consumed before this; they may have been sown too early.

Mangold Wurzel: *Taff.* Two cows during the past winter have been repeatedly, at fortnigh ly intervals, off and on Mangold Wurzel, the alternate fortnightly diet being Swedes and Carrots. Their produce of butter was white and bitter, and very small on Mangold Wurzel; and of good colour and taste, and plentiful, on the mixed food.

Meadow: *Inquirer.* The Grass would undoubtedly manure the land; it should be cut off late in autumn. But we imagine it would not have the effect on the ensuing produce that the manure of animals fed on it would exhibit, because the latter is in a more useful condition. The yield of grain this year certainly is deficient, green crops are understood to be generally good.

Pigeons: *P. T. O.* asks how he is to form a pigeon colony, and how he can induce them to "feed on their distant neighbours' fields, and not in the home garden."—About brewing, you had better purchase a tract on the subject by Mr. Shore, which the booksellers know.

Practical Instructors: *A Speckled Bird.* Declined.

Scotch Ploughmen: *A John Bull.* We must decline publishing your letter.

Seeds. *J. N. L.* 4 lbs. of Parsnip, 5 lbs. of Carrot, and 6 lbs. of Mangold Wurzel, per acre, are abundant seedings. All to be drilled: the two former in rows 18 inches apart, and the last to be drilled or dibbled in rows 29 inches apart.

Salt: *A Devonshire Farmer* will find what he wants at p. 43.

Markets.

COVENT GARDEN, Feb. 17.

The market continues to be well supplied with Vegetables and winter Fruit. Pine-apples are sufficient for the demand. Foreign Grapes are tolerably well supplied. Pears consist of Beurre Rance and Easter Beurré. Apples are getting dearer. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, Carrots and Turnips are abundant and good; Cauliflowers and Broccoli sufficient for the demand. Asparagus, French Beans, Rhubarb, and Scakale are plentiful. Potatoes are rather on the rise. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Christmas Roses, Camellias, Gardenias, Cinerarias, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 5*s* to 7*s*	Almonds, per peck, 6*s*
Grapes, foreign, p. lb., 9*d* to 2*s*	— sweet, per lb., 2*s* to 3*s*
Apples, dessert, p. bsh., 6*s* to 12*s*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
— kitchen, p. bsh., 2*s* to 5*s*	— p bush., 16*s* to 24*s*
Pears, per doz., 2*s* to 6*s*	Chestnuts, p. peck, 4*s* to 7*s*
— p. half sieve, 12*s* to 18*s*	Nuts, Barc, p. bush., 20*s* to 22*s*
Oranges, per doz., 1*s* to 2*s*	— Filb., p. 100 lbs., 60*s* to 100*s*
Lemons, per doz., 1*s* to 2*s*	— Cob, p. 100 lbs., 90*s* to 150*s*
— per 100, 10*s* to 18*s*	— Brazil, p. bsh., 12*s* to 16*s*

VEGETABLES.

Cabbages, p. doz., 3*d* to 1*s*	Spinach p. sieve, 1*s* 6*d* to 2*s*
— red, p. doz., 2*s* to 6*s*	— Turnip, do., 9*d* to 1*s* 6*d*
Savoys, per doz., 3*d* to 1*s*	Onions, p. bunch, 2*d* to 4*d*
Greens, p. doz. bunches, 1*s* 6*d* to 2*s* 6*d*	— p bush., 1*s* 6*d* to 2*s* 6*d*
Cauliflowers, p. doz., 2*s* to 4*s* 6*d*	— Spanish, p. doz., 1*s* 6*d* to 4*s*
Broccoli, white, p. bun., 1*s* to 2*s*	— pickling, p. bl. sieve, 1*s* 6*d* to 3*s*
— brown, p. bun., 6*d* to 1*s* 3*d*	Shallots, per lb., 4*d* to 8*d*
Sorrel, p. bf. sieve, 1*s* to 1*s* 6*d*	Garlic, per lb., 4*d* to 8*d*
Potatoes, per ton, 60*s* to 180*s*	Artichokes, Jerusalem, p. half sieve, 9*d* to 1*s*
— per cwt., 5*s* to 9*s*	Lettuce, Cab., p. sc., 4*d* to 6*d*
— per bush., 2*s* 6*d* to 5*s*	— Cos, do., 9*d* to 1*s*
Turnips, p. doz. bun., 1*s* to 2*s*	Endive, per score, 1*s* to 2*s* 6*d*
Red Beet, per doz., 6*d* to 1*s*	Mushrooms, p. pottle, 6*d* to 1*s*
Horse Radish, p. bdl., 1*s* to 2*s*	Small Salads, p. pun., 2*d* to 3*d*
Asparagus, p. 100, 2*s* to 8*s*	Fennel, per bunch, 2*d* to 3*d*
Scakale, p punnet, 9*d* to 1*s* 6*d*	Savory, per bunch, 2*d* to 3*d*
Rhubarb, p. bundle, 6*d* to 1*s* 6*d*	Thyme, per bunch, 2*d* to 3*d*
French Beans, p. 100, 2*s* to 3*s*	Watercress, p doz. bun., 6*d* to 9*d*
Cucumbers, each, 3*s* to 6*s*	Parsley, p. bf. sieve, 1*s* 6*d* to 2*s*
Leeks, per doz., 6*d* to 1*s*	— Roots, p. bdle., 1*s* to 1*s* 6*d*
Celery, p. bundle, 6*d* to 1*s* 3*d*	Marjoram, per bunch, 2*d*
Radishes, p doz. bunds, 1*s* to 2*s*	Mint, green, per bunch, 4*d* to 8*d*
Carrots, p. doz. bun., 3*s* to 5*s*	

POTATOES.—Southwark, Waterside, Feb. 12.

The Committee report that the arrivals during the past week have been quite equal to the demand, which has been very heavy, and on several lots less prices have been submitted to. The following are this day's quotations:—York Regents, 100*s*. to 150*s*.; Newcastle do., 100*s*. to 120*s*.; Scotch, 100*s*. to 130*s*.; Scotch Cups, 90*s*. to 100*s*.; French Whites, 80*s*. to 110*s*., Belgian do., 80*s*. to 100*s*.

SMITHFIELD, MONDAY, Feb. 12.

The supply of Beasts is larger and the demand has decreased; we have consequently a very slow trade, at a reduction of fully 2d. per 8 lbs., and a considerable number remain unsold. Although there are more Sheep, the supply cannot be called large; however, trade is in such a depressed state that it is difficult to effect a clearance at a slight reduction. We have but few Calves, they therefore make rather more money, but trade is slow. From Holland and Germany we have 558 Beasts, 520 Sheep, and 46 Calves; from Norfolk and Suffolk, 2000 Beasts; from Leicester and Northampton, 250, and from Scotland, 150.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	8 to 3	10	
Best Short-horns	3	6 — 3	8	
2d quality Beasts	2	8 — 3	2	
Best Downs and Half-breds	4	6 — 4	10	
Ditto Shorn				

Per st. of 8 lbs.	s	d	s	d
Best Long-wools	4	0 to 4	4	
Ditto Shorn				
Ewes & 2d quality	3	4 — 3	10	
Ditto Shorn				
Lambs				
Calves	3	10 — 5	0	
Pigs	3	8 — 5	0	

Beasts, 3616; Sheep and Lambs, 19,180; Calves, 94; Pigs, 138.

FRIDAY Feb. 16.

We have a large number of Beasts on offer, principally consisting of foreign, and those left over from Monday. Very little business is doing, and although a very choice Scot may make 3s. 10d., more than 3s. 8d. cannot be quoted as the fair average of best qualities. The number of Sheep is quite equal to the demand, indeed Monday's quotations can scarcely be realised. Trade for Calves is rather more cheerful, but it is difficult to obtain the slightest advance. Pigs sell slowly; prices are a trifle lower. From Holland and Germany we have 848 Beasts, 520 Sheep, and 60 Calves; from France, 16 Calves; from Scotland, 240 Beasts; and 136 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	8 to 3	8
Best Short-horns	3	4 — 3	6
2d quality Beasts	2	6 — 3	2
Best Downs and Half-breds	4	6 — 4	8
Ditto Shorn			

Best Long-wools	4	0 to 4	4
Ditto Shorn			
Ewes & 2d quality	3	4 — 3	8
Ditto Shorn			
Lambs			
Calves	3	10 — 5	0
Pigs	3	8 — 4	10

Beasts, 1122; Sheep and Lambs, 2680; Calves, 195; Pigs, 166.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Feb. 15.

Prime Meadow Hay	66s to 74s		Clover	60s to 92s	
Inferior ditto	50	60	New Clover	—	—
Rowen	40	60	Straw	25	30
New Hay	—	—			

Trade very heavy. J. COOPER.

CUMBERLAND MARKET, Feb. 15.

Prime Meadow Hay	70s to 76s		Inferior	50s to 80s	
Inferior ditto	50	65	New Clover	—	—
New Hay	—	—	Straw	28	32
Old Clover	90	95	JOSHUA BAKER.		

WHITECHAPEL, Feb. 15.

Fine Old Hay	65s to 70s		New Clover	90s to —s	
Inferior ditto	50	58	Inferior ditto	60	70
New Hay	—	—	Straw	22	28
Old Clover	95	—			

HOPS, FRIDAY, Feb. 16.

MESSRS. PATTENDEN and SMITH report that there is a fair demand for fine Hops, which are daily becoming more scarce. Prices are fully supported.

MARK LANE, FRIDAY, Feb. 16.

The report of the past week's proceedings at the markets below, with little exception, note declining prices in nearly all grain. In some places there is a little demand for Lent seed-corn and Pulse, but nothing promising or cheering for the British farmer, whose prospects become more and more clouded. It is well known very little Wheaten bread is consumed through the vast European Continent, and that the food of the million there is principally vegetable; what bread they eat is made from Barley, Rye, Oats, Beans, Peas, Maize, &c., and it is more than probable all their Wheat will find its way to English Markets, in exchange for English gold. The only mode at present open for giving some little aid to the British agriculturist seems to be the removal of the excise duty from Malt. The Market to-day is extremely dull, scarcely anything doing.—English produce is passed over for foreign.—First price of English Flour is still called 44s. per sack; French, 35s. to 36s.; Norfolk, 33s. on hand; American barrels, 27s. to 28s.—In Wheat there is nothing new to quote, so little is doing.—Barley brings, for fine malting samples, 32s. to 33s.—Oats somewhat lower, in great abundance.—In Beans and Peas not much doing at former prices.—Maize, 28s. to 33s.—English Oilcake, 11l. per 1000.—Foreign, 7l. to 8l. 10s. per ton.

LIVERPOOL, FRIDAY, FEB. 16.—We have had firm supplies of foreign Wheat and Indian Corn since Tuesday, and the trade has been quiet. At this day's market we had a fair attendance of dealers, but only a moderate demand. The sales were generally at a decline of 1d. to 2d. per bushel on Wheat, 3d. to 6d. per load on Oatmeal, and 6d. per barrel on Flour. Oats were taken slowly at former prices, holders being tolerably firm. Very little done in Barley, Beans, or Peas. Indian Corn 6d. to 1s. per qr. cheaper.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Jan. 6	45s 10d	30s 8d	17s 0d	26s 4d	32s 4d	37s 9d
— 13	45 4	29 11	17 8	27 9	32 2	35 0
— 20	45 4	29 1	17 1	28 4	31 1	34 9
— 27	45 3	28 10	17 0	28 11	30 3	32 8
Feb. 3	45 1	28 10	16 11	28 5	30 3	32 6
— 10	45 11	29 3	17 3	27 2	30 11	33 0
Aggreg. Aver.	45 5	29 5	17 2	27 10	31 2	34 3
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	JAN. 6.	JAN. 13.	JAN. 20.	JAN. 27.	FEB. 3.	FEB. 10.
45s 11d	—	...	...	...	...	—
45 10	—	...	...	...	..	...
45 4	..	..	...	...	..	...
45 4	..	...	...	...	..	...
45 3	..	...	...	...	...	...
45 1	...	...	...	..	—	...

SEEDS.—CORNER OF HALF-MOON STREET.

THOMAS GIBBS AND CO.,

(By Official Appointment) the Seedsmen to the "ROYAL AGRICULTURAL SOCIETY OF ENGLAND,"

Beg to remind the Members of the Society, and Agriculturists in general, that their only Counting House and Seed Warehouse is at the corner of HALF MOON-STREET, PICCADILLY, LONDON, as for the last Fifty Years.

Priced Lists of Agricultural Seeds are always ready during the season, and may be had on application.

SEEDS.—MEADOW AND PASTURE GRASS SEEDS, in mixtures suited to various soils, &c., at 32s. per acre, allowing 2 bushels and 12 lbs. to each acre. Directions for sowing and treatment will accompany the seeds. Mixed sorts for improving old Grass Lands, 1s. 3d. per lb. Fine sorts for forming Lawns, &c., 1s. 4d. per lb.

GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address GEORGE GIBBS and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c. &c., 20, Down-street, Piccadilly, London.

KITCHEN GARDEN SEEDS.—No. 1.—A complete collection, consisting of 20 quarts of the best kinds of PEAS, inclusive of Fairbeard's Champion of England, Early Surprise, British Queen, Turbidge's Eclipse, &c., and all other Seeds in proportion, of the newest and best sorts, sufficient for one year's cropping of a large garden, the choicest Melons and Cucumbers inclusive .. £3 3s 0d

No. 2.—Complete collection in smaller quantities, equally choice sorts 2 2 0

No. 3.—Ditto 1 1 0

No. 4.—Ditto. This is sufficient for a small garden 0 12 6

No extra charge for packing; carriage paid to London.

A General Catalogue may be had; also a List of each collection.

SELECT FLOWER SEEDS.

100 packets of the newest and best Annuals, &c. 15s. 0d.

50 " ditto ditto ditto .. 8 0

25 " ditto ditto ditto .. 4 0

A fine collection of imported Stocks, Zinnias, Asters, &c., named, 3d. per packet. Sent postage free.

A Descriptive Flower Seed Catalogue sent with each collection by enclosing two postage stamps.

WILLIAM JAMES EPPS, Maidstone, Kent.

"FARMERS' PROFIT" POTATOES FOR SEED. A few tons of this valuable sort, grown by F. J. GRAHAM, Esq., of Cranford, which has resisted the disease in a most remarkable manner for the last three years, while several other sorts planted amongst them were nearly half bad. May be obtained of Mr. W. RICKMAN, Potato Salesman, James-street, Covent Garden. It is a good bearer and of excellent quality.

FLOWER-POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford street, near Hyde-park.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, have the pleasure to hand their New List of Prices of SHEET GLASS for Cash.

HORTICULTURAL GLASS.

In Sheets of about 40 inches by 20, and packed in Cases of 200 feet. Cut to the size required, but not to exceed 10 inches long.

13 oz. to the foot	£2	1s.	0d.			
16	2	5	0	from	2½d.	to 3½d. per foot.
21	3	2	6	....	3	.. 5 "
26	4	9	6	.....	3½	.. 7½ "
32	5	15	0		4	.. 10 "

Case not charged. Boxes charged, but allowed for when returned.

SMALL SQUARES IN BOXES OF 100 FEET.

	Crown.	Sheet.
Squares under 6 by 4	10s. 6d.	£0 12s. 6d.
6 by 4 and under 7 by 5	14 0	0 16 6
7 by 5 " 8 by 6	15 0	0 18 6
8 by 6 " 10 by 8	16 0	1 0 6

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS in sizes not exceeding 5 feet superficial.

¼ thick ... per foot	1s. 0d.	½-inch per foot	2s. 0d.
⅜-inch	1 2	1 inch	3 0
½-inch	1 6		

PATENT ROUGH PLATE TILES.

¼ thick .....each	0s. 11d.	⅜-inch ..... each	1s. 7d.
½-inch.....	1 3	⅝-inch	2 0

SHEET GLASS TILES AND SLATES.

	16-oz.	21-oz.	26-oz.	32-oz.
Tiles made of Sheet Glass ...	8d.	10d.	1s.	1s. 4d.
Slates, 20 ins. by 10	10d.	1s.	1s. 4d.	1s. 8d.

Slates are kept on stock of the usual sizes, and made to any dimensions.

GLASS MILK-PANS, PROPAGATING AND BEE GLASSES, Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, Lamp Shades, and Lactometers for trying the quality of Milk, 4 tubes 7s. 6d.; 6 tubes, 10s. Self Registering Thermometers for Greenhouses.

HARTLEY'S PATENT ROUGH PLATE GLASS.

IMPORTANT TO FARMERS, GRAZIERS, GARDENERS, LANDOWNERS, and OTHERS—Showing how to Farm to meet the times and Save Money.

THE NEW PATENT MANURE, a SUBSTITUTE for FOREIGN MANURES, may be manufactured without a license by every farmer, 35 bshls. per acre, for 1l., being equal to 10 loads of manure.

The preparation is very simple and cheap, and suitable for all seasons, soils, and crops: also showing how to fatten every description of stock and poultry, at one-third the expense now adopted, the best and cheapest method of draining, &c. &c. This excellent Treatise on Farming and Grazing, registered and entered at Stationers' Hall, contains a collection of 150 of the most valuable receipts ever discovered in agriculture for profit, &c.; with full directions for use, by the late celebrated agriculturist, Mr. ELLMAN, and others, and patronised and highly recommended by H. R. H. Prince Albert, at Windsor Farm, the Royal Agricultural Society of England, their Graces the Dukes of Richmond, Portland, and Bedford, &c., and will be forwarded without fail, by return of post, free to any part of the country, by enclosing one shilling, or thirteen postage stamps, addressed, pre-paid, to Messrs. TAYLOR and Co., 49, Exeter-street, Lisson-grove, London.

PRICES CURRENT.	London. Feb. 5. qr.	London. Feb. 12 qr.	Liverpool. Feb. 6. 70 lbs.	Liverpool. Feb. 13. 70 lbs.	Wakefield. Feb. 2. qr.	Wakefield. Feb. 9. qr.	Boston. Feb. 7. qr.	Boston. Feb. 14 qr.	Birmingham. Feb. 8. 62 lbs.	Birmingham. Feb. 15. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	42 to 44	42 to 44	6 8 7 2	6 4 6 10	45 to 50	45 to 50	40 to 48	38 to 45	5 9 6 6	5 9 6 6
" white ...	46—50	46—50	6 10 7 8	6 9 7 6	46—53	46—53	44—52	40—49	6 2 6 9	6 2 6 9
Old, red ...	42—45	42—45	7 3 7 4	6 10 7 0	42—48	42—48	44—48	40—46	6 4 6 8	6 4 6 8
" white ...	48—52	48—52	7 6 7 10	7 3 7 8	46—50	46—50	46—52	46—50	6 0 6 10	6 0 6 10
Foreign	41—60	44—60	6 8 8 0	5 6 8 0	40—52	40—52	—	—	5 8 7 2	5 8 7 2
			480lbs.	480lbs.						
Rye—New ...	26—28	24—25	—	—	—	—	—	—	—	—
Old ...	—	25—27	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	21—25	22—25	26s—30s	—	22—25	22—25	26—28	26—28	23—27	23—27
Malting... ..	25—27	26—32	31—33	31s—33s	29—32	27—32	30—31	30—32	29—33	29—33
Foreign... ...	21—29	24—31	27—30	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	—	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	20—22	21—24	2s 10d 3s 2d	2s 10d 3s 0d	—	—	20—25	17—25	18—30	18—30
Black...	—	17—21	2 4 2 8	2 4 2 7	—	—	17—21	11—18	17—19	17—19
Foreign	16—23	16—23	2 5 2 6	2 4 2 6	—	—	11—18	—	17—18	17—19
			qr.	qr.						
Peas—Boilers	28—30	28—30	38s—	37s—	34—38	34—38	—	—	36—46	36—46
Grinding...	—	21—26	32—33s	31—32s	33—36	33—35	—	—	12—14	12—14
Foreign ...	27—33	25—33	35—37	34—36	—	—	—	—	—	—
Beans—										
New, small ...	21—30	21—30	33—36	32 35	31—33	31—37	26—32	26—32	11—14	11—14
Longpods, &c....	—	26—32	—	—	—	—	—	—	—	—
Old	27—36	32—39	34—36	34—36	36—37	36—37	36—38	34—36	15—17	15—17
Foreign ...	22—36	24—36	26—34	25—33	28—31	28—31	—	—	11—14	11—14
Clover Seed—										
Red, per cwt.	35—44	30—42	—	—	—	—	—	—	—	—
White "	38—44	30—44	—	—	—	—	—	—	—	—
Linseed—Feed	36—40	36—40	43—44	43—44	32—40	32—40	—	—	—	—
Linseed Cakes										
British ...	—	11l. 5s	9l.—9l. 5s	9l.	—	—	—	—	—	—
Foreign ...	—	7l. 5s	—	—	—	—	—	—	—	—
									190lbs.	190lbs.
Indian Corn—	25—30	25—30	28—31	—	—	—	—	—	15—15 6	13—14 6
	p. sack	p. sack					p. sack	p. sack		per sack.
Flour ...	35—44	35—44	—	—	—	—	35—42	—	37—40	—
Weekly Averages and Imports.	Aver.	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Impts.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.		qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	48 10	27070	—	11097	—	7108	44 8	3207	49 10	1717
BARLEY ...	30 11	10647	—	2701	—	1198	—	—	31 0	618
OATS... ...	19 3	13563	—	11625	—	478	13 11	1573	23 0	263
RYE	26 4	10	—	—	—	—	—	—	—	—
BEANS ...	28 5	1831	—	4708	—	122	27 9	238	40 0	16
PEAS... ...	35 1	1129	—	330	—	26	—	—	43 0	105
SIGNED {	KINGSFORD and LAY.		SEGAR and TUNNICLIFFE.		SANDARS and DUNNS.		THOMAS WRIGHT.		J. and C. STURGE.	

Sales by Auction.

TO NOBLEMEN, GENTLEMEN, AND NURSERYMEN.

MR. J. C. STEVENS is favoured with instructions from Messrs. Loddiges to announce for Sale by Auction, on their premises, at Hackney, on TUESDAY, 27th, and WEDNESDAY, 28th February, at 12 for 1 o'clock, about ONE THOUSAND CAMELLIAS of extraordinary fine growth, mostly well set with flower-buds, and consisting of the favourite old, and some good new varieties from 2 to 12 feet high. Also some fine plants of LIMES in fruit, and of the new hardy Nepal RHODODENDRONS.—Catalogues are preparing, and may be obtained one week prior to the sale, of Messrs. Loddiges, Hackney, and of Mr. J. C. Stevens, 38, King-street, Covent-garden.—On View the day prior, and mornings of sale.

HOUNSLOW, MIDDLESEX.

TO NURSERYMEN, GENTLEMEN, AND OTHERS.

37,000 Forest and Fruit Trees of sorts, Ornamental Shrubs and American plants, 200,000 Transplanted and Seedling Quick, Roses, and other Valuable Nursery Stock. To be Sold by Auction by

MR WATERER, on TUESDAY next, February 20, and following day, at 10 o'clock, on the Premises, near Hounslow, all the VALUABLE NURSERY STOCK of Mr. Edward Lane, who is giving up the business, comprising 5,000 Striped and Green Hollies, from 1 to 4 feet; 10 0 Aucuba japonica, from 1 to 4 ft.; 1000 Irish and common Yews, from 1 to 10 feet; 300 Striped and Green Box, from 1 to 5 feet; 2000 common and Portugal Laurels and Laurestinus, from 1 to 6 feet; 250 Red Cedars, Cedar of Lebanon, and Cedrus Deodara; 4000 Rhododendrons, Azaleas, and Kalmias; Standard and Dwarf Roses; 3000 Chinese and common Privet; 1000 Chinese and American Arbor Vitæ, Cryptomeria japonica, Araucaria imbricata, Juniper juniperus, Arbutus and Phillyreas; 16,000 Sweetbriars; 4000 Standard and Dwarf Apricots, Peaches, Nectarines Plums, Cherries, Pears and Apples; 4000 Gooseberries and Currants; 5000 Larch, Scotch, Spruce, Balm of Gilead, Stone, Pine, and other Firs, from 2 to 8 feet; 300 Filberts and Nuts; 5000 Berberis of sorts; 5000 Poplars, Beech, Sycamore, Birch, and Turkey Oaks; Horse Chestnuts, Alders, Hornbeam, Limes, and Mountain Ash; Weeping Limes, Elm, Ash, Cherries, Beech, and Willows; Standard Cytisus, 200,000 Transplanted and Seedling Quick, Box Edging, and other Valuable Nursery Stock, the whole of which is in a safe moving condition, and well worth the attention of persons about planting. May be viewed three days previous to the Sale, and Catalogues had on the Premises, and of Mr. Charlwood, Seedsman, Tavistock-row, Covent-garden, London; and will be forwarded by post on application by letter, enclosing four postage-stamps, to Mr. Waterer, Auctioneer and Estate Agent, Chertsey, Surrey.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition, by Auction, at the Auction Mart, Bartho'omew-lane, on FRIDAY, Feb. 23, 1849, about 300 Camellias, from 18 inches to 8 feet, well furnished with bloom buds; also about 200 fine Standard and Dwarf Roses, consisting of Noisettes, Hybrids, Bourbons, Perpetuals, &c., together with a fine collection of American Plants, comprising Ghent and other Azaleas, Andromeda floribunda, Magnolias, &c., Lilium lancifolium album, speciosum or rubrum, and punctatum, &c.—May be viewed prior to the sale. Catalogues to be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

STREATHAM.

To Noblemen, Gentlemen, Nurserymen, Builders, and Public Companies engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are instructed to sell by Auction, on the premises, Streatham Nursery, on MONDAY, Feb. 26th, 1849, and following days, at 11 o'clock precisely, by order of the Assignees of Mr. R. Neal, a bankrupt, the whole of the valuable NURSERY STOCK, consisting of a large quantity of very fine Evergreens, Fruit and Forest Trees, Ornamental Trees, and Deciduous Shrubs, American Plants, &c, and at the same time the valuable Lease of the said premises, comprising 5 acres of Nursery Ground, held at 30l. per annum, for an unexpired term of about 64 years, which rental is reduced to 10l. per annum under a yearly agreement during the period the premises are occupied in their present state.—May be viewed prior to the sale. Catalogues may be had (6d. each) on the premises, of the principal Seedsmen, J. B. Roberts, Esq., Solicitor, Wandsworth, Edward Edwards, Esq., Official Assignee, 7, Frederick's-place, Old Jewry; and of the Auctioneers, American Nursery, Leytonstone, Essex.

DALSTON NURSERY.

To Noblemen, Gentlemen, Nurserymen, Builders, and Public Companies engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Smith to sell by public Auction, on the premises, Dalston, Middlesex, on MONDAY, March 5, 1849, and the two following days, at 11 o'clock each day, in consequence of the Land being required by the London and Birmingham West India Dock Junction Railway Company, the first portion of the VALUABLE NURSERY STOCK, consisting of a large assortment of very fine Evergreens; Ornamental and Deciduous Shrubs; the finest description of Fruit-trees; American plants in great variety. The Stock is in the finest condition, and particularly worthy the attention of Noblemen and Gentlemen laying out their grounds, as well as the Trade, from its excellence.—May be viewed prior to the Sale. Catalogues may be had, 1s. each (returnable to purchasers), on the premises, of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone, Essex.

"PRETENDER," A FAST-TROTTING STALLION.

TO BE SOLD, or Exchanged for a first rate Cart Stallion, or Colts, "PRETENDER," who has proved himself a first-rate stock getter, as good a roadster as any Stallion of his size in England, and also a good hunter, having carried 16 stone twice a week for two seasons up to as good a pack of foxhounds as ever was hunted, viz., R. D. Cookburn, Esq.'s crack pack, the Hursley Hounds. "Pretender" is a dark bay, 16 hands high, and was got by Mr. Ramsdale's "Old Performer," dam a thorough-bred mare by "Old Stripling." For further particulars, apply to Mr. William Walton, Hursley, near Winchester, Hants.

TO BE SOLD, WARRANTED SOUND, TWO FOUR-YEAR OLD SUFFOLK STALLIONS, the property of T. Beale Browne, Esq.; both were shown at York. One, more than 17 hands high, is at the College, Cirencester Price 150 Guineas. The other, nearly 17 hands high, is at Hampen Farm, near Andoversford, Cheltenham. Price 100 Guineas.

DELIGHTFUL SITUATION.—To Nurserymen and Others.

TO BE LET, A NURSERY GROUND, in Grosvenor-park, Camberwell-road, containing 1 acre 3 roods, with a Cottage. The Nursery Stock to be taken at a fair valuation. Unless let before the 27th of February, a Sale by public Auction will take place. Enquire of Mr. Ualwin, Brunswick-place, Walworth-road.

WANTED TO RENT, about 7 Acres of LAND, near London, suitable for Garden-ground; old Grass land would be preferred; and a Residence on or near the ground would be desirable.—Particulars by letter, addressed to William Clark, 12, Devonshire-street, Bloomsbury, London.

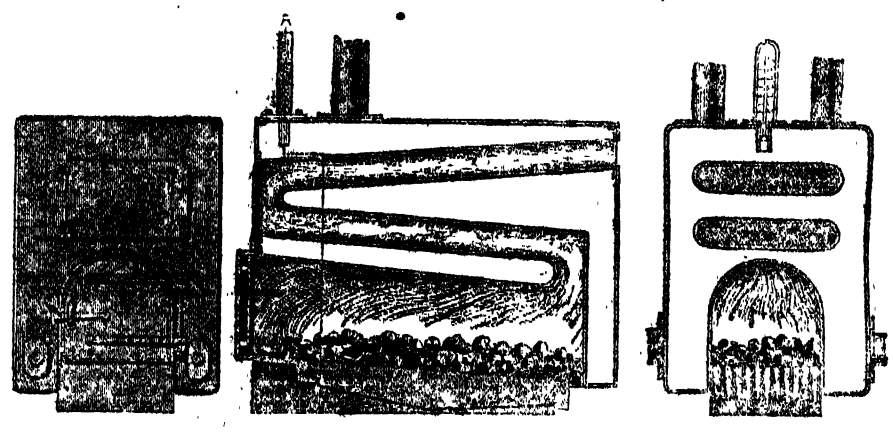
WILLIAM HILL'S

IMPROVED FLUE BOILER AND FURNACE,

FOR WARMING CHURCHES, CHAPELS,

MUSEUMS, MANSIONS, MANUFACTORIES, HORTICULTURAL ERECTIONS, &c.

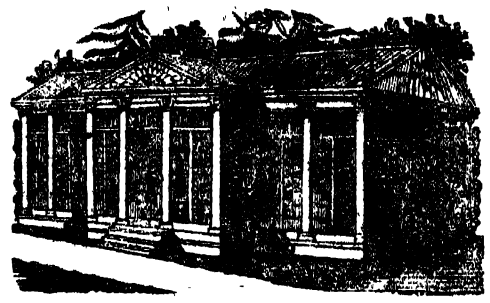
Registered pursuant to Act of Parliament, 6 and 7 Vic., c. 65.



FRONT ELEVATION. LONGITUDINAL SECTION. SECTION.

For Testimonials, &c., see *Gardeners' Chronicle* of November 4.

. Communications addressed to W. Hill, Horticultural Works, Greenwich, will meet with prompt attention.



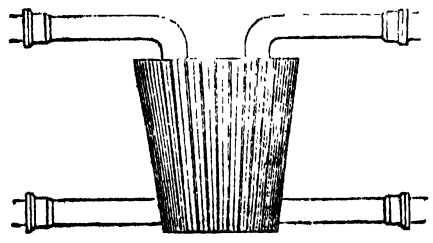
GRAY, ORMSON, AND BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kingnorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

Gray, Ormson, and Brown have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in. will warm	50 ft. 4 in. pipe	.. £1	15 0
12 in. do.	75 ft. 4 in. do. ..	.. 2	5 0
14 in. do.	100 ft. 4 in. do. ..	... 2	15 0
16 in. do.	150 ft. 4 in. do. ...	... 3	10 0
18 in. do.	250 ft. 4 in. do. ..	.. 4	10 0
21 in. do.	350 ft. 4 in. do. ..	... 5	10 0
24 in. do.	450 ft. 4 in. do. ...	... 7	0 0

New Pattern Boilers.

30 in. will warm	800 ft. 4 in. pipe	.. 15	15 0
36 in. do.	1500 ft. 4 in. do. ...	... 25	0 0

All Boilers with double arms, up to 18 in., 5s. extra; to 24 in., 10s. extra; all above, the same price.

150, Fleet-street, London, Feb. 3.

PATENT FLEXIBLE INDIA RUBBER PIPES AND TUBING FOR RAILWAY COMPANIES, BREWERS, DISTILLERS, FIRE-ENGINES, GAS COMPANIES, GARDENING AND AGRICULTURAL PURPOSES, &c.

THE PATENT VULCANISED INDIA-RUBBER HOSE PIPES are made to stand Hot Liquor and Acids without injury—do not become hard or stiff in any temperature (but are always perfectly flexible), and as they require no application of oil or dressing, are particularly adapted for Fire-engines, Pumps, Gas, Beer-engines, Gardens, and all purposes where a perfectly flexible pipe is required. Made all sizes from ¼-inch bore upwards, and of any length to order.

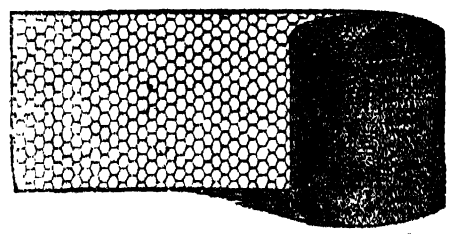
Vulcanised India-rubber Garden Hose, fitted with brass taps, copper branch, and roses complete, ready to be attached to Pumps, Water-butts, or Cisterns.—Sole Manufacturer, James Lyne Hancock, Goswell-Mews, Goswell-road, London.

N.B. Vulcanised India-rubber Washers of all sizes for Joints of Hot-water and Steam Pipes, and Vulcanised sheet Rubber, any thickness, for all kinds of Joints, and other purposes.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Duke of Devonshire's, Chatsworth Gardens.
Earl of Gainsborough's, Oakam, Rutlandshire.
Earl of Zetland's, Uplentham, Yorkshire.
Robert Hanbury, Esq., Poles, near Ware, Herts.
And at least 500 other important places
Burbidge and Healy, 130, Fleet-street, London.

GALVANIZED WIRE GAME NETTING.—7d. per yard, 2 feet wide.

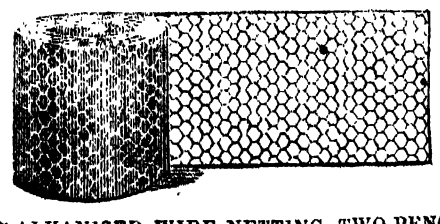


	Galvanized.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d. per yd.
2-inch ,, strong ,, ...	8½ ,,	6½ ,,
2-inch ,, extra strong ,, ...	11 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ...	10 ,,	8 ,,
1½-inch ,, extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It has the appearance of silver, and maintains its lustre for many years, and is acknowledged to be the cheapest article ever brought into the market. It forms a cheap, light and durable fence for the protection of Gardens and Shrubberies against the depredations of hares, rabbits, and cats; for Aviaries, Pheasantries, and to prevent poultry from straying, as well as for training creeping plants, it answers admirably.

Large quantities of the Netting always kept in Stock, samples of which can be forwarded (free of expense) to any part of the United Kingdom. Prices as follows:

12 inches wide	3d. per yard	30 inches wide	7½d. per yard
18 ,, ,,	4½d. ,, ,,	36 ,, ,,	9d. ,, ,,
24 ,, ,,	6d. ,, ,,	48 ,, ,,	1s. ,, ,,

Galvanised do. 1d. per foot extra.

Also Fenders, Fireguards, Fly-proof Dish Covers, Meat Safes, Wire Blinds, Garden bordering and arches, Flower Stands, and every description of Wire Work.

Thomas Henry Fox, 63, Snow-hill, London.

HEAL AND SON'S LIST OF BEDDING, containing a full description of Weights, Sizes, and Prices, by which purchasers are enabled to judge the articles best suited to make a good set of Bedding, sent free by post, on application to their Factory, 196 (opposite the Chapel), Tottenham-court-road, London.

JOHN KERNAN

4, Great Russell Street, Covent Garden, 1849.

Begs to offer a Select List from his

GENERAL CATALOGUE OF VEGETABLE AND FLOWER SEEDS,

WHICH MAY BE RELIED ON WITH CONFIDENCE AS THE MOST DESIRABLE FOR CULTIVATION.

Peas.

Per qt.—	s.	d.
Shilling's Early Grotto Marrow	1	0
Prince Albert	1	0
Early Warwick	0	9
Early Racehorse	1	6
Matchless Marrow	1	0
Fairbeard's Early Surprise	1	6
Thompson's Early Dwarf	1	0
Blue Prussian	0	8
Blue Scimetar	0	8
Bedman's Improved Imperial	0	9
Woodford, or Nonsuch	1	0
British Queen	1	6
Knight's Dwarf Green Marrow	1	6
Knight's Tall Green ditto	1	6
Queen of Dwarfs	1	6
Victoria Marrow	1	0

With all other varieties worth cultivating.

Beans.

Per qt.		
Early Mazagan	0	8
Sword Longpod	0	8
Taylor's Windsor	0	8
Johnson's Wonderful	0	8
Green Genoa	0	9
All the varieties of dwarf French Beans	1	0
Painted Lady and Scarlet Runners	1	0

Per oz.		
Beet, fine London Red	0	6
Beet, Silver, or Seakale	0	6
Beet, Castelnaudary	0	6
Borecole, dwarf curled	0	6
Brussels Sprouts (foreign seed, fine)	1	0
Kohl Rabi, per paper	0	6
Borecole, red and white, variegated, for garnishing (very beautiful)	0	6

Broccoli.

Per oz.		
Myatt's Early Purple Cape	1	0
Miller's Dwarf	1	0
Chappell's Cream	1	0
Bowles's Sulphur	1	0
Sommer's Late White	1	0
Grange's Early White,—from the original raiser	1	0
Invisible White	1	0
Purple Sprouting	1	0
Brimstone	1	0
Walcheren	1	0
Imperial Winter	1	0
Hampton Court	1	0
Dwarf Siberian	1	0

Cabbage.

Per oz.		
Nonpareil	0	9
Shilling's New Queen, fine	1	0
Atkin's Matchless	1	0
Heart-shaped	0	6
Knight's Early Dwarf	1	0
Early York	0	6
Early Battersea	0	6
Peake's Incomparable	1	0
Robert's Emperor	1	0
True Cornish, per packet	0	6
Hardy Green (very early)	1	0
Perpetual	1	0
Vaugirard (Winter) per packet	0	6
Large Drumhead (for cattle), per lb.	2	6

And all other kinds in cultivation.

Carrot.

Per oz.		
Early Scarlet Horn	0	4
Long Orange	0	4
Fine Surrey	0	4
Parsnip, Hollow crown	0	3
Altringham, per lb.	2	0
White (for Agriculture), per lb.	2	6

Cauliflower.

Per oz.		
Mercer's fine Early	1	0
London Particular	1	0
Large Asiatic	1	0
Walcheren	1	0
Fine late	1	0

Cress.

Plain, per pint	0	6
Curled	1	0
American, per oz.	0	3
Broad-leaved, per oz.	0	3
Water, per paper	0	6
Mustard, per pint	0	6

Furze, per lb., 1s.; Broom, per lb., 1s.
Coarse Grasses for Game Covers, 8s per bushel.
Long Red and Globe Mangold Wurzel, per lb., 1s.
White Silesian, or Sugar Beet, per lb., 2s.
Chevalier Barley: Hopstown, Tartarian, Sandy, and other Oats; Tick Beans; Field Peas, &c.
A fine Collection of all the best permanent Grasses (hand picked), separate or mixed; if mixed, per bushel, 10s.
Sweet Vernal, the earliest and most suitable Grass for early Lambs, clean seed, 5s. per lb.
Ditto, seed in pod, 2s. 6d. per lb.
White and Red Clover, Lucerne, Trefoil, &c., per lb. or cwt.
Kohl Rabi, for Agriculture, per lb., 2s. 6d.
New Tartarian Buckwheat, per packet, 6d.
Italian Rye Grass. Spring and Winter Tares.
A few of the very finest Grasses for Lawns, per lb., 1s. 6d.
Myatt's fine new Strawberries.

Parsley.

s.	d.	
Plain, for feeding early lambs, per bushel	16	0
Extra Curled, per oz.	0	3

Celery.

Per paper.		
Seymour's Superb White	0	6
New Rose, solid	0	6
Dwarf White Siberian, very solid, per packet	0	6
Seymour's Superb Red, per packet	0	6
New Giant	0	6

Cucumber.

Victory of Bath	1	0
Acme of Perfection	1	0
Syon House	1	0
Weedon's Free bearer	0	6
Early Frame	0	3
Kerrison's	1	0
Walker's Rambler	0	6
Windsor Prize	0	6
Early Handglass	0	3
Early Ridge	0	3

Melons.

Seymour's Golden Perfection	0	6
True Syon House	0	6
Snow's Hybrid Green flesh per packet	0	6

And all the better sorts cultivated for this market.

Endive.

New Imperial, per packet	0	6
Batavian per oz.	0	6
Green curled	0	6
White curled	0	6
Herbs, all the kinds, per packet	0	6

Lettuce.

Per oz.		
Brighton Cos, per oz.	1	0
Imperial Cos	1	0
Spotted or Tiger Cabbage (new), per packet	0	6
Artichoke leaved, a fine new hardy sort	0	6
Fine London White Cos, per oz.	0	9
Paris Cos, per oz.	1	0
Ady's Cos	1	0
Drumhead	0	9
Bath Cos, & others, p. oz.	1	0

Onion.

Per oz.		
James's Long Keeping	0	6
Fine White Spanish	0	6
Globe	0	6
Strasburgh	0	6
Deptford	0	6
Silver-skin	0	9
Tripoli	1	0
Blood-red	0	6
Two-bladed, for pickling	0	8

Radish.

New Scarlet Olive-shaped, a delicious new variety, per packet	0	6
New rose, per packet	0	6
Early Frame, per pint	1	0
Long Scarlet	1	0
Red and White Turnip	1	0
Black Spanish, per oz.	0	3

Spinach.

New Flanders, per pint	0	6
Round, or Summer	0	6
Lettuce-leaved (new), per paper	0	6
New Zealand, per oz.	0	6

Turnips.

Early Snowball	0	3
Teltow, for stewing	0	3
Early Dutch	0	3
Yellow Maltese	0	3
,, Stone	0	3
Early Snowball, per lb.	1	6
Early Dutch (earliest), true imported	2	0

AGRICULTURAL TURNIPS.

Yellow Bullock per lb.	1	0
Skirving's Swede	1	0
Laing's ditto	1	0
Ashcroft ditto	1	0
Dale's Hybrid	1	0
Red Round	1	0
White Round	1	0
White Globe	1	0
Oxheart	1	0

Asparagus plants, according to age, per 100, 2s. 6d. to 5s.
Seakale do. do. do. 3s. to 10s.
Dulley's Early Scarlet Admirable Rhubarb, per root, 1s. 6d.
Myatt's Victoria do. (the largest in cultivation), 1s. 6d.
Mushroom Spawn, per bushel, 5s.
Cornwell's Victoria Raspberry, per dozen, 4s.
All the fine new Raspberries, 2s. 6d. to 3s. per dozen.
Seeds of all the new Strawberries, Raspberries, Gooseberries, and Currants, per paper, 6d.

Potatoes.

s.	d.	
Soden's Early Oxford, per bushel	10	0
Barnard's Early Frame, per bushel	8	0
Shilling's Early Prolific, per peck	2	6
Ash-leaved Kidney, bshl.	10	0
Forty-fold	7	0

And many other most productive late kinds; also seed saved from the best varieties, 6d. per packet.

s.	d.	
Walnut-leaved Kidney, per bushel	10	0
Early Hen's Nest do.	8	0
Early Shaw do.	6	0
Prince Regent's do.	6	0
Kentish Mignon do.	6	0
Albany Kidneys do.	6	0
Flour-ball do.	6	0

Garlic, per lb., 6d.
Shalots, per lb., 6d.
Budding and Pruning Knives.
Russia Mats, 1s. 6d. each.
Cuba Bass, per lb., 2s.
Buckwheat, Indian Corn, Rape, Hemp, &c., for Aviaries.
The trade supplied on moderate terms, with every article true to its kind.

Flower Seeds.

Asters, 20 distinct German varieties, in sealed packets, suitable for exhibition, the collection 10s.
A mixture, including all the colours of the above, per paper, 6d.
Do. in 12 distinct colours, the collection 5s.
Superb German and Prussian Stocks, 25 distinct varieties, for exhibition, the collection 10s.
12 varieties of do., distinct in colours, 4s.
12 autumn flowering do., in distinct colours, 4s.
A mixture of all the finest varieties of Ten-week, per paper, 6d.
A mixture of Brompton do., per packet, 6d.
12 named varieties of Hollyhocks, 5s.

Per packet—	s.	d.
Achimenes, seeds & bulbs of all the varieties.		
Anagallis Phillipsii	0	6
,, superba grandiflora	0	6
,, indica	0	3
,, carnea	0	3
,, latifolia	0	6
Anomatheca cruenta	0	6
Amethystea cærulea	0	6
Anthemis arabicus (dwf. yellow)	0	3
Antirrhinum (all the new kinds)	0	3
Argemone grandiflora	0	3
,, Barclayana	0	3
,, speciosa	0	3
Aquilegia glandulosa	1	0
,, sibirica	0	3
,, fine mixed German varieties	0	6
Auricula, from fine named flowers	1	0
,, alpine	0	6
Brachycome iberidifolia	0	6
,, alba, new	1	0
Balsams, 12 very fine distinct colours, all double	5	0
,, mixture of above	0	6
Bartonia aurea	0	3
Blumenbachia insignis	0	6
Browallia, of sorts	0	6
Calceolarias, from a collection of named shrubby kinds	1	0
Calceolarias, from Herbaceous do.	1	0
Calceolaria pinnata	0	6
Calendrinia discolor	0	3
,, grandiflora	0	3
,, umbellata — (new), fine for rock-work	1	0
Campanula pulcherrima	0	6
,, Loreli	0	3
,, capillaris	0	6
,, stricta	0	6
,, sylvatica new	0	6
And many other sorts, fine, as a contrast with bedded out Verbenas, &c.		
Cockscomb, Dwarf Scarlet	0	6
Cuphea viscosissima	0	6
,, silenoides	0	6
,, platycentra new	1	0
,, miniata	0	6
,, lanceolata	0	6
Cineraria, selected from 36 of the latest new kinds	1	0
Commelina cœlestis	0	3
Carnation, from named flowers	1	0
Clarkias, all the varieties	0	3
Coreopsis, of sorts	0	3
Candytuft, new crimson	0	3
,, purple	0	3
,, white	0	3
,, Sweet scented	0	3
Convolvulus major	0	3
,, minor	0	3
,, do. new dark	0	6

Per packet—	s.	d.
Helianthemum (Rock Cistus) 6 vars. for rock-work	0	3
Do., all the vars., mixed	0	6
Hollyhock, Chinese	0	6
,, fine mixed	0	3
Hydrolea spinosa	1	0
Ipomœas, of sorts	0	6
Ipomopsis elegans	0	6
,, Berichii, new	1	0
Isotoma axillaris	0	6
Jacobæa, double crimson	0	3
,, ,, purple	0	3
,, new lilac	0	3
Kaulfussia amelloides, for edging	0	3
,, tracheliodes	0	6

HANDSOME ORNAMENTAL GRASSES.

Lagurus ovatus (Hare's-tail Grass)	0	6
Agrostis pulchella	0	6
Briza gracilis	0	6
,, maxima	0	6
Stipa pinnata	0	6
Larkspurs, 12 distinct German vars.	4	0
,, mixed dwarf Rocket	0	3
Leptosiphon densiflorus	0	3
,, androsaceus	0	3
Loasas, of sorts	0	3
Linum monogynum, fine	0	6
,, grandiflorum	0	3
,, perenne	0	6
,, album	0	3
Lymnanthus grandiflora (new)	0	6
,, Douglasii	0	3
Lobelia heterophylla major, fine	0	6
,, bicolor	0	3
,, gracilis, for edging	0	3
,, ramosus	0	6
,, erinoides	0	3
,, propinqua	0	6
And many other biennial and perennial varieties.		
Lisianthus Russellianus, in plants (seed does not vegetate well).		
Lupinus luculus	0	6
,, Hartwegii	0	3
,, nanus	0	3
,, Cruickshankii	0	3
,, Dicksonii and many others	0	3
Lychnis speciosa, new	0	6
,, flos Jovis	0	3
,, calli rosa	0	3
,, prostrata	0	3
Malope grandiflora, and others	0	3
Marvel of Peru, 6 distinct colours, each	0	3
Marigolds, all the vars.	0	3
Mesembryanthemum tricolor	0	6
Mignonette, per oz.	0	9
Mimosa sensitiva (Sensitive plant) per packet	0	6
Mimulus, from 12 distinct named varieties	0	6
Mimulus regius, strongly scented of Musk	0	6
Martynia fragrans	0	6
Nasturtiums, all the sorts	0	3
Nemophila insignis major	0	3
,, insignis alba (new)	0	6
,, discoidalis (new)	0	3
,, Cranboides, and others	0	6
Nemesia floribundus	0	6

CLIMBERS.

Per packet—	s.	d.
Cobæa scandens	0	6
Calampelis scaber	0	6
Lophospermum erubescens	0	6
,, Hendersonii	0	6
Loasa aurantiaca	0	6
Maurandya Barclayana	0	6
Tropæolum peregrinum	0	6
,, pentaphyllum	0	6
,, Jarrattii	1	0
,, tricolorum grandiflorum	1	0
,, trimaculatum, new	1	0
Ipomœa rubra cærulea	0	6
,, punctata	0	6
,, nil	0	6
,, rosea	0	6
,, striata & others	0	6
Thunbergia alata	0	6
,, ,, alba	0	6
,, ,, aurantiaca	0	6
,, Fryeril	1	0
Cleome pentaphylla	0	6
,, rosea	0	6
Collinsia grandiflora	0	3
,, bicolor	0	3
,, ,, new dwarf	0	3
Dahlia scabigera (dwarf lilac)	0	6
Delphinium or Larkspurs, distinct or mixed	0	3
Ditto, biennial and perennial varieties	0	3
Digitalis grandiflora	0	3
,, new spotted	0	3
Dianthus, double white, Indian pink	0	6
,, Knight's new hybrid	0	6
,, double Indian	0	3
,, latifolia	0	3
,, Cheri	0	6
,, superbus	0	6
and others.		
Didiscus cæruleus	0	6
Dahlia, fine mixed	1	0
Eucharidium grandiflorum	0	6
Eutoca viscida	0	3
,, Wrangliana	0	3
Egg plant, white	0	6
,, purple	0	3
Eschscholtzia, 3 sorts	0	3
Erysimum Perofskianum	0	3
Fuchsias from named sorts	1	0
Gaillardia picta	0	6
,, bicolor	0	3
,, Richardsonii	0	3
Globe Amaranthus, of sorts	0	3
Gentianas, of sorts	0	6
Geum splendens	0	6
,, Wiest	0	6
Geranium, from fine sorts	1	0
Grahamia aromatica	0	6
Godetia, all the new sorts	0	3
Heart-ease, from first-rate prize flowers	1	0
Humea elegans	0	6
Helichrysum macranthum	0	6
,, bracteatum album	0	3
Heliotropium Peruvianum	0	6
Hibiscus Richardsonii	0	6
,, africanus	0	3
,, Humboldtii	0	6
Heliophila araboides	0	3

Per packet—	s.	d.
Neirembergia splendens	0	6
,, violacea	0	3
,, fine mixed	0	6
,, nyctaginiflora	0	3
Nolana atriplicifolia	0	3
,, paradoxa	0	3
Œnothera Sellowii	0	6
,, Drummondii	0	3
,, Hartmania	0	6
,, densiflora	0	6
,, macrocarpa	0	6
,, and others	0	3
Papaver Marcelli	0	3
,, nudicaulis	0	3
,, 16 new Prussian varieties, very showy for borders	5	0
Peas, sweet, all the colours separate or mixed	0	3
Pentstemon, of sorts	0	6
Phlox Drummondii, various shades	0	6
,, Drummondii, white	1	0
,, Leopoldii, new	1	0
,, new, scarlet	0	6
Picotees, from named flowers	1	0
Platystemon californica	0	3
Potentilla Garnieriana	0	3
,, Russelliana	0	6
,, insignis, fine new	0	6
Polyanthus, fine mixed	0	6
Portulaca splendens	0	6
,, Thellusonii	0	6
,, grandiflora	0	6
Primula sinensis (white fringed)	1	0
,, lilac	1	0
,, cortusoides	0	6
Rhodanthe Manglesii	0	6
Salvia patens	0	6
,, bicolor	0	6
Sanvitalia procumbens	0	6
Schizanthus Hookerii	0	6
,, Grahamii	0	6
,, humilis & others	0	3
,, Priestii	0	3
,, venustus	0	3
Schizopetalon Walkerii, very sweet	0	6
Sphænogyne speciosa	0	3
Streptocarpus Rexii	0	6
Silene shafta	0	6
,, compacta	0	6
Stock, white pyramidal	0	6
,, Buck's Intermediate, 16 out of 20 certain to come double	0	6
,, Chapman's Scarlet 10-week	0	3
,, Shepherd's White and Purple	0	3
Sedum cæruleum, for rock-work	0	6
Sultan, yellow	0	3
,, white and purple	0	3
Thunbergia *see* Climbers.)		
Tropæolum (*see* Climbers).		
,, Shillingii	0	3
Viscaria oculata	0	3
Violet, Russian (everflowering)	0	6
Verbena, a mixture of 6 best sorts	0	6
Veronica Lindleyana	0	6
Wahlenbergia grandiflora	0	3
,, capillaris	0	6
Wallflower, blood red	0	3
,, Double German, of sorts	1	0
,, changeable	0	6
Zinnia elegans coccinea	0	6
,, purpurea	0	6
,, mixed, from 20 separate varieties	0	6

Ornamental Trees and Shrubs of all descriptions.

Cedrus Deodara, Cryptomeria japonica, Taxodium sempervirens, } 2s 6d. to 10s. 6d. each.

Named Double Anemones and Ranunculuses, Gladiolus ramosus and floribundus; Tigridia pavonia and conchiflora; with many other flowering Bulbs and Herbaceous Plants, which may be planted out till the middle of May.

Carnations, Picotees, and Pinks, per pair, from 1s. to 3s. 6d.
All the better named Heartsease from 6s. to 30s. per dozen.
Fine named Dahlias, per dozen, 12s.
,, Chrysanthemums, new kinds, 12s.
Standard Dwarf and Climbing Roses, 1s. to 2s. 6d. each.
Rivers' Miniature Fruit Garden, with directions for culture and root-pruning, 2s.
Rivers' new edition of the "Rose Amateur's Guide," 6s.
Paxton's "Cottagers' Calendar," 3d., which ladies and gentlemen should distribute to cottagers.
Collection of 24 Annuals, mixed, recommended by Dr. Lindley as suitable for Shrubberies, 5s.
Seeds for distribution by Gentlemen to their Tenants and Cottagers on the most liberal terms.
24 papers of Hardy Annuals, 5s.
Seeds selected and carefully packed for North and South America, India, New Zealand, and Australia, in the most secure way to arrive safe at any of the above places.

Where a post-office order accompanies an order for any of the above-named Seeds, J. Kernan will allow, as discount, additional articles to the amount of 2s. in the pound.

J. Kernan, knowing that even during the best years, it is difficult to procure Seed of a sound and genuine sort in any quantity, and that the late deficiency in the crops is calculated, as the season advances, to cause a demand, particularly in many of the later kinds of Peas, wholly disproportioned to the present supply, begs to direct Gentlemen, Agriculturists, and Farmers, to the policy of favouring him with their commands before the drain upon the Market has commenced. J. Kernan having secured from time to time the best samples of Turnips, Carrots, Clover, and Grasses of every description, can with confidence recommend his stock.

Old meadow turf, which will take a considerable time to decompose and char by the regular or natural means, may be produced by the following simple and short process. Place four bricks, raised two on two, about 3 feet distant from four others similarly arranged, upon which place a sheet of iron large enough to rest fully on the bricks. By making a fire under this simple machine, and allowing your turf to remain until charred, it will, when bruised, make an excellent stimulant for Annuals, Herbaceous and Pot Plants of all sorts. If the vermin or the season do not disturb them, you will not require more than one plant in a hundred of those that come up. Be careful to begin thinning when the plants are quite young. Do not sow delicate Annuals in the open borders until the end of April, or (what is better) make two sowings, one in the middle of April, and the other the beginning of May. These will succeed each other until October.

Although this list is condensed in the present enumeration, all other new and necessary seeds may be ordered. Gentlemen coming to town, having but one day to remain, wishing to take on return plants of any kind, will greatly oblige by giving one day's notice.

Printed by William Bradbury, of No. 6, York-place, Stoke Newington, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the county of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent Garden, in the said county, where all Advertisements and Communications are to be

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 8.—1849.] SATURDAY, FEBRUARY 24. [PRICE 6*d*.

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DOUBLE ITALIAN TUBEROSE ROOTS, 3*s*. per dozen.

ROBERT HALL begs to advise the arrival of his annual importation of the above ROOTS, which are this year remarkably fine, in consequence of their having been left in the ground a sufficient time to mature, instead of being taken out before due season, for the sake of creating an early sale in England.—Italian and Foreign Import Warehouse, 63, South Audley-street, Grosvenor-square, facing the Chapel.

N.B.—Postage stamps taken in payment.

DOUBLE ITALIAN TUBEROSE ROOTS.—The Bulbs of this most beautiful and fragrant Flower have been just received from Italy, at A. COBBETT'S Old-established Italian Warehouse, 18, Pall-mall, and are warranted double, at 4*s*. per dozen. Also, expected, about the end of January, a choice collection of Orange, Lemon, Citron, and Shaddock Trees, together with Catalonian, Azorian, and Arabian Jessamine plants, any of which may be bespoke.

FIRST CLASS FUCHSIAS AND VERBENAS.

GEORGE SMITH begs to inform his friends in general that his DESCRIPTIVE CATALOGUE of the above is now ready, and comprises every novelty of the season.

G. S. can with confidence recommend his Seedling VERBENAS, they having taken numerous First Class Certificates. Also his Seedling FUCHSIA, LORD NELSON, has taken three First Class Certificates, and for exhibition will be found the gem of the season. For description, see Catalogue, which will be forwarded on the receipt of one postage stamp.

Tollington Nursery, Hornsey-road, Islington.

SEYMOUR'S CELERY.

SEYMOUR'S WHITE CHAMPION CELERY is warranted a very first-rate sort, and now sending out for the first time by H. LANE and SON, Nurserymen, Great Berkhampstead, Herts.

Seymour's Celery, White Champion	...	2*s*. 6*d*. per packet.
,, ,, Red Matchless	..	1 6 do.
,, ,, Superb White	..	0 6 do.

Post-office orders or postage stamps from unknown correspondents.

TO MELON GROWERS.

FLEMING'S NEW HYBRID PERSIAN having been awarded First Prizes at all the Chiswick Shows of the Horticultural Society of London last season, needs no further comment.

Fleming's New Hybrid Persian,	per packet—	2*s*.	6*d*.
,, Ispahan	... ,,	.. 1	6
Seymour's Golden Perfection	... ,,	... 1	6

From unknown correspondents post-office orders or postage stamps can be sent to H. LANE & SON, Great Berkhampstead.

NEW RANUNCULUSES, ANEMONES, &c.

CAREY TYSO, FLORIST and SEEDSMAN, Wallingford, Berks, begs to announce that February is the best season for planting, and that he can supply, per post, as under.

TYSO'S SEEDLING RANUNCULUSES.

50 first-rate show flowers	... ...	5*s*. to	£7	0*s*. 0*d*.
100 roots in mixture	... ...	10*s*. to	2	0 0

Selections from the best varieties extant.

100 named sorts, one root of each	..	50*s*. to	5	0 0
100 fine mixtures	... ...	8*s*., 15*s*., and	1	0 0
DOUBLE ANEMONES, 50 sorts	...	20*s*. to	1	10 0
CARNATIONS and PICOTEES, 25 pairs	..	40*s*. to	3	0 0

Descriptive Priced Catalogues for 1849 sent for two postage labels; "The Ranunculus; how to Grow it," enclosed on receipt of nine postage labels.

AIGBURTH SEEDLING STRAWBERRY, 25*s*. per 100.—25 strong plants of this fine Strawberry (superior to British Queen, as to its hardy character and fruitfulness, and equal to it in flavour) may be had free by post for 8*s*. 6*d*., from JAMES TYNAN, Seedsman, 12½, Park-road, Liverpool.

LARCH PLANTS, &c.

PETER BOOTH, NURSERYMAN, Falkirk, is selling off a very large stock of Transplanted LARCH plants, in sizes from 1 foot to 2½ feet. Transplanted Scotch Firs, from 9 inches to 2 feet; transplanted Spruce Firs, 1 to 1½ foot. Strong Transplanted Thorn Quicks, and 2-year Seedling Plums Austriaca, all very fine plants, and at further reduced very low prices.

SAVOY, "MARCELLIN."—The most delicate in flavour of its class, and will stand the severe winters of northern Germany. It should be sown from the 15th to the end of June, transplanted in July. It is highly recommended. Price, 3*s*. per oz., or 8*d*. per packet; can be forwarded per post on receipt of seven postage stamps. Also, every description of Vegetable and Flower Seeds at the lowest prices.

Agent for the New Enamelled Labels, and Mower's Improved Watering-pot.—DUNCAN MAINE, 102, St. Martin's-lane, Charing-cross, London. Catalogue of prices sent free.

MESSRS. J. AND H. BROWN'S descriptive priced CATALOGUE OF PLANTS for 1849, with a separate List of Flower and Vegetable Seeds, can be had by post; and they are also now supplying the following desirable Hardy Shrubs and other plants.

		s.	*d*.
25	New hardy Belgian Azaleas, on their own roots, with flower buds, one of a sort, by name	20	0
25	American Azaleas, ditto ditto ditto	15	0
25	Hardy flowering shrubs, one of a sort, by name	10	0
12	Rhododendrons, including scarlet, white, and rose, hardy varieties	12	0
	New hardy yellow Rhododendrons each 7*s*. 6*d*. to	10	6
6	Andromedas, of sorts, including floribunds, for ..	8	0
	Hardy Heaths, Kalmias, and Ledums, per dozen ..	8	0
6	Fine hardy Magnolias, one of a sort	10	0
50	Dwarf Roses, on their own roots, one of a sort, named	16	0
	Standard and half-standard Roses, per doz., 12*s*. and	15	0
	Strong Moss Roses, per 100..	25	0
	New crimson Moss and climbing Roses, per dozen ..	6	0
	Tea-scented Roses, one of a sort, per doz. ..	9	0
	Glycine sinensis, extra fine plants, in pots, 15 to 30 ft., eq.	3	6
12	Greenhouse Azaleas, one of a sort, blooming plants ..	25	0
12	Choice Camellias, by name, ditto, ditto	30	0
50	Choice flowering Greenhouse plants, one of a sort ..	15	0
24	Choice Ericas, one of a sort, by name	18	0
	Best Petunias and Verbenas, one of a sort, per doz. ..	6	0
6	Bulbs of the beautiful new Japan Lilies, one of a sort	12	0
	Double Italian Tuberose roots, per dozen	4	0
	Peony roots, new double, white, pink, blush, and crimson, per dozen	9	0
25	Choice Herbaceous Border Plants, for	7	0
	Fine Standard and Dwarf trained Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of these respective kinds, true to name, 2*s*. 6*d*. each, or, per dozen	24	0
	Untrained or Maiden ditto, 1*s*. 6*d*. each, or per dozen	15	0
	Fine Gooseberries, Currants, and Raspberries, per doz.	8	0
	Strong Vines, Figs, Apples, and Walnuts, per dozen	15	0
	Cryptomeria Japonica, and 6 choice Pines for ..	10	0
	Fine new scarlet and yellow-flowering Chestnut, Rosa acacia, and purple Beech, 6 to 8 feet, per dozen ..	18	0
	Evergreen Privet and Beech, 3 to 5 ft., for fences, p. 100	12	6

Albion Nursery, Stoke Newington, London, Feb. 24.

EDWARD GEORGE HENDERSON, Wellington-road, St. John's-wood, London, is now sending out

ACHIMENES PATENS MAJOR, at 3*s*. 6*d*.—A variety worthy of a place in every collection; the habit of the plant is good, and the flower a rich dark plum colour.

ACHIMENES GHIESBRICHTII, at 5*s*.—This is one of the most beautiful of the whole tribe, and quite distinct; the habit is close and compact, and it is a profuse bloomer. The length of flower 1½ inch, a rich vermilion colour, and has a beautiful glossy appearance.

ACHIMENES KNIGHTII, white, profuse bloomer, dwarf habit, 8*s*. 6*d*. The above can be forwarded by post.

BROWALLIA JAMESONII, 5*s*.

PLUMBAGO LARPENTÆ, nice plants, in free growth, 8*s*. 6*d*.

E. G. H also begs to offer the following at their annexed prices, when left to his selection, and which will be much to the advantage of the purchaser.

FANCY GERANIUMS, 12*s*., 18*s*., and 30*s*.

CINERARIAS, distinct in colours, 12*s*. and 18*s*. per dozen.

INDIAN AZALEAS, ditto, fine large plants, at 12*s*., 18*s*., and 30*s*. per dozen. The list will contain a description of more than 130 of the choicest varieties.

ERICAS, distinct varieties, 12*s*., 18*s*., and 30*s*. per dozen.

EPACRISES, ditto. 12*s*. and 18*s*. per dozen.

GREENHOUSE PLANTS, and Ditto Climbers, 12*s*., 18*s*., and 30*s*. per dozen.

STOVE PLANTS and Stove Climbers, 18*s*., 30*s*., and 42*s*. per dozen.

The Trade supplied.

N.B. Catalogues for 1849 will be published on the 1st of March. No. 1 will contain a list of Stove and Greenhouse plants; 2, Ericas and Epacris; 3, Azaleas, Rhododendrons, and Camellias; 4, Cinerarias and Geraniums; 5, Select Miscellaneous plants; and in April, 6, Bedding plants.

JOSLING'S ST. ALBAN'S GRAPE, the same as patronised by the Queen, Prince Albert, Committee of the Horticultural Society of London, Prof. Lindley, Mr. R. Thompson, Mr. Henderson, Pine-apple Nursery, and the editor of the Gardeners' Journal, as being distinct and one of the best in cultivation. Two year old plants, 10*s*. 6*d*. each; one year old plants, 7*s*. 6*d*. each, carriage free to London. A remittance expected. The usual allowance to the trade if three are taken. May be had of any respectable Nurseryman, or the grower, ROBERT JOSLING, Seedsman, St. Alban's.

SEED POTATOES.

CHARLES SHARPE, NURSERYMAN and SEEDSMAN, respectfully solicits the attention of the Nobility and Gentry to his POTATOES for Seed. The sorts are very early and productive, and have given general satisfaction to Potato growers in all parts of the Kingdom. They are offered at the following prices, packing included. Per bushel of 56 lbs.

Soden's Early Oxford Potatoes	... ..	8*s*.	0*d*.
Early Ash-leaved Kidneys	... ...	8	0
Early Round Frame	... ...	7	0
Early Cockneys	... ...	6	0
Early Manley	... ...	6	0
Fox's Seedling, fine for forcing	...	6	0

Second early sorts, for Winter and Spring use:

American Native Potatoes	... ..	5	0
York Regents	... ...	5	0
Kentish Pink Kidneys	... ...	4	0
Forty-fold	... ...	4	0

Orders will be forwarded on the receipt of a Post-office Order, and great care will be taken to ensure their safe delivery. A liberal allowance made to the Trade.

CHARLES SHARPE, Seedsman, Wisbeach, Cambridgeshire.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON beg to invite attention to their Advertisement of TREES AND SHRUBS, at pages 82 and 97 of this Paper, dated Feb. 10 and 17.

N.B. Seedling and Transplanted Larches at unprecedented low prices.

N. GAINES begs to say his LIST OF DAHLIAS is now printed, which contains his new Seedling Dahlias, Seedling Fancy Geranium, and Seedling Calceolarias. Also, Mr. Kinghorn's Seedling Calceolarias, which can be had by applying at the Nursery, Surrey-lane, Battersea.

ORCHIDS.—For Private Sale by valuation, a small choice collection of about 500 healthy plants, including some of the rarest kinds.—For particulars, apply to Dr. LINDLEY, 21, Regent-street, London.

GRASS SEEDS.

H. R. SMITH, of Eastling, Faversham, Kent, informs the public that his mixtures of Grass Seeds, with a proportionate admixture of the Perennial Clovers, for laying land down to permanent pasture, are now ready at 8*s*. per bushel. Also to form Lawns and mend old Grass land, 1*s*. per lb. The seeds are collected under his immediate superintendence. A description of the soil, situation, &c., is requested; also a reference from unknown correspondents.

PEAS.

CLARKE'S NEW LINCOLN GREEN PODDED MARROW.—Being a selected variety from Clarke's New Early Ringwood possessing all the advantages of the original stock, as to earliness and size, and at the same time having a rich Green Pod. To be had (wholesale only) of Mr. HENRY CLARKE, Seed Merchant, 39, King-street, Covent Garden.

SUDBURY NURSERY, DERBYSHIRE.

UNDER THE DISTINGUISHED PATRONAGE OF
HER MAJESTY QUEEN VICTORIA,
HER MAJESTY QUEEN ADELAIDE,
AND HIS ROYAL HIGHNESS PRINCE ALBERT.

W. H. HOLMES, F.H.S., LANDSCAPE-GARDENER, NURSERYMAN, and FLORIST, respectfully announces that his selection of Ten fine Seedling Varieties of CALCEOLARIAS will be ready to send out the first week in March next. Descriptive Catalogues may be had on prepaid application, containing the favourable reports of the above Seedling in the *Gardeners' Chronicle* of 1848.

CAMELLIA STOCKS.

RENÉ LANGELIER, NURSERYMAN and FLORIST, Clarendon Nursery, St. Helier, Jersey, begs to offer a few thousand CAMELLIA STOCKS, fit for immediate grafting or marching, clean, free, and healthy, in full vigour, at 50*s*. per 100. This is an opportunity worthy the at[illegible]tion of Camellia growers, as no stock can be better [illegible] offered by R. L.

Reference or remittance from unknown correspondents.

BEAUTIFUL STRIPED DAHLIA "STRIATA PERFECTA," PICOTEES, &c.

JOHN SALTER'S DESCRIPTIVE CATALOGUE of these and other New Foreign Fancy Varieties, with New Phlox, Fuchsia Corymbiflora alba, Lobelia Thapsoides, Heliotrope Grisau, Chrysanthemums, &c., is now ready, and may be obtained by inclosing two stamps. A coloured drawing of "Striata Perfecta" will be sent upon receipt of six stamps.

Versailles Nursery, William-street, North-End, Fulham.

DAHLIAS, 1849, raised by J. BUSHELL, Kennington-lane, London:—

DUCHESS—White, free bloomer, middle size, very easy growth. First class Certificates at Royal South London Floricultural, the London Floricultural, and other societies; favourably noticed in the various journals during the blooming season.—Plants in May, 10*s*. 6*d*. each.

LA REINE—White free bloomer, middle size, will bear very strong growing, J. B.'s locality not open enough.—Plants in May, 7*s*. 6*d*. each.

J. B. has offered the following prizes to be competed for in 1849, which have been accepted by the societies:—3*l*. for the best three blooms of Duchess, 2*l*. for the second, and 1*l*. for the third best, at the Royal South London exhibition. 15*s*. for the best single bloom of Duchess, 10*s*. for the second, and 5*s*. for the third best. 10*s*. for the best single bloom of La Reine, 5*s*. for the second, at the London Floricultural exhibition.

OLD-ESTABLISHED NURSERY STOCK FOR SALE.
SUNBURY NURSERY, MIDDLESEX.

J. T. WILLMER, Senior, begs respectfully to announce that he has determined upon relinquishing the Nursery Business, which he has carried on at the above premises for the last 32 years; and in order to effect an immediate clearance of his Land, he has resolved to dispose of the whole of his extensive and valuable stock of EVERGREENS, SHRUBS, and FOREST TREES, at an immense reduction of price. The stock comprises Fanned Yews, 5 to 7 feet; Arbutus, 3 to 5 feet; Laurestinus, 3 to 4 feet; Aucuba, 2 to 4 feet; Phillyrea, 6 feet; Variegated Box, 3 to 5 feet; Variegated Hollies, 3 to 7 feet; Green do., 2 to 4 feet; Sweet Bay, 2 to 4 feet; Yucca gloriosa, strong; Peony moutans; Alexandrian Laurel; Rhododendron hirsutum, ferrugineum, and ponticum; Spruce Fir, 4 to 6 feet; Weymouth Firs, 5 feet; Balm of Gilead do., 4 to 5 feet; Scotch and Larch, 6 to 8 feet; Common Laurel, 2 to 5 feet; Portugal do., 2 to 4 feet; 2-years Seedling Quick; 3-years do.; English Elm, Oak, Beech, Lime, Horse Chestnut, Birch, Syringa, Gueldre Rose, 5 to 7 feet; new Scarlet and other Thorns; Standard Cherry Trees, of sorts, 7 feet in stem; Currants, in new varieties; large Lancashire Gooseberry, of sorts, &c. &c. As this is a genuine Sale, it is an opportunity offered to parties about to form or extend Plantations such as is seldom offered. Applications, personally or by letter, will meet with prompt attention. The Floricultural business will be continued as hitherto.

BISHOP'S GERMAN ASTER.

WILLIAM H. HEALE is enabled to offer a few packets of Seed of this superb Flower at 2s. per packet, grown by Mr. Bishop.

Mr. B has always taken first prizes in the West of England, whenever he exhibited. Last year he was first at Bath, Devizes, Sutton Benger, and Chepstow; his blooms were the admiration of every visitor, being perfect half globes. There are 20 varieties (mixed) in each packet, and the advertiser confidently recommends it as being much superior to any imported. Post-office orders are respectfully requested from unknown correspondents.—Victoria Nursery, Swindon, Feb. 24.

STRONG ONE YEAR SEEDLING OAKS.

JAMES MELDRUM, having an immense stock of the above strong seedlings, is determined to offer them on the lowest possible terms. Prices will be furnished on application.—Peat Lane Nursery, Kendal, Feb. 24.

TO MARKET GARDENERS, NURSERYMEN, & OTHERS.

HENRY MEYERS, of Boston-road, Brentford, begs to inform the public that he has a large stock of "Riffleman" GOOSEBERRY BUSHES for sale, also a few hundreds of a very fine sort of large White CURRANT, at low prices, for ready money only.

NEW ZEALAND SEEDS.

MR. F. U. GLEDHILL, 20, Old Market-place, Halifax, Yorkshire, can supply packets each containing 50 different kinds of NEW ZEALAND FOREST, MYRTLE, and FLOWER SEEDS. Also Plant and Parasitical Seeds, collected by himself in that country. A packet will be sent free for 6s. 6d., either for a Post-office order or postage stamps.

AZALEA INDICA ALBA MAGNA.—This fine Azalea has flowers of very large size, great substance, and excellent form, colour, fine white, with purple stripes and spots, of strong compact habit, and very free bloomer; was exhibited as a seedling at the Royal Botanic last May, and obtained the first prize. Plants, 15s. each; a few very strong, at 42s. each. Apply to J. and J. FRASER, Nurserymen, Leyton, Essex, who have also to offer fine collections of Hardy Belgian Azaleas, at 24s. to 30s. per dozen; Hardy Rhododendrons, including fine scarlet, white, and crimson varieties, at 42s. to 60s. per dozen; with a large assortment of other American Plants at moderate prices.—A post-office order is respectfully requested from unknown correspondents.

COLE'S SUPERB DWARF RED CELERY.—This splendid prize production, described in former advertisements, may still be obtained in sealed packets, with directions for cultivation, by enclosing 3s. 6d. to the subscriber, or to any respectable Seedsman in London or the country. The usual discount to the trade.

WILLIAM PORT AYRES, Brookland Nursery, and 4, Tranquil-place, Blackheath.—Feb. 24.

AMERICAN NURSERY, BAGSHOT, SURREY.

Near the Farnborough Station, on the South-Western Railway

JOHN WATERER begs to state that he is prepared to execute orders for the following Splendid Hardy RHODODENDRONS. Good strong bushy plants, the colours of which consist of clear and spotted Whites, Scarlet, deep Rose, Dark Purple, Rose-edged, &c., from 30s. to 42s. per dozen.

Album elegans	Nealii	Lyonese
,, speciosum	Pallucidum	Victoria regina
Atrorubrum purpureum	Perspicuum	Multimaculatum
	Pictum	Guttatum
Catawbiense bicolor	Purpureum elegans	Hyacinthiflorum.
,, flora pleno	Caelestinum	Formosum
,, splendens	Belloanum	Glennyanum
Campanulatum	Roseum elegans	Gloriosum
Candentissimum	,, album	Mucranthum
Cyaneum	Leopardii	Marginatum
Delicatissimum	Variabile	Maculatum novum
Eburneum	Splendidum	Mirandum
Everestianum	Russellianum	Maculosum
Nivaticum		

Standard Rhododendrons, 7s. 6d., 15s., and 21s. each and upwards.

AZALEAS, good mixed sorts, 18s. to 24s. per dozen. The very best kinds in cultivation, 24s. to 30s. per dozen.

KALMIA LATIFOLIA, handsome bushy plants, 1 to 1½ foot, 5l. per 100. Larger ditto, 1s. 6d. to 2s. 6d. each. Fine specimens for lawns, 10s. 6d. to 63s. each.

HARDY HEATHS of the very best varieties, 50s. per 100.

To the above, J. W. invites particular attention, and being the largest grower of American plants, has induced him to offer them at the low prices quoted. Also the following, for GAME PRESERVES.

RHODODENDRON PONTICUM, the very best Evergreen for cover, being free from attacks of hares and rabbits, bushy healthy plants, 10s. 6d. per 100. Larger ditto, 15s. to 21s. p. 100.

BERBERIS AQUIFOLIUM, bushy, 50s. per 1000. Larger ditto, 60s. per 1000.

COMMON LAURELS, good bushy stuff, 10s. per 100. Larger 15s. to 25s. per 100.

PRIVET, EVERGREEN, 8s. to 12s. 6d. per 100.

CEDARS OF LEBANON, 3 to 5 feet, very bushy and handsome, very suitable for avenues, 3s. 6d. to 5s., and 7s. 6d. each.

IRISH YEW, very handsome and close grown plants, from 3 to 8 feet, 3s. 6d. each, and upwards.

STANDARD WEEPING LARCH, 6 to 9 feet stems, with very handsome pendulous heads, 5s. to 10s. 6d. each.

SPRUCE, SILVER, and WEYMOUTH FIRS, 6 to 12 fee

TULIP TREES, Weeping and Purple Beech, very large, all in a fit state for removal.

FOREST TREES of all kinds, suitable for Copse and other planting.

Planting to any extent done by contract. Catalogues forwarded on application.

SEEDS.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE for 1849, sent free by post on application. We beg to offer the following in collections, including many choice new sorts.

VEGETABLE SEEDS.

	£	s.	d.
A complete Collection, including Thurston's Reliance, Hancroft Rival, Fairbeard's Surprise, British Queen, and other fine Peas, 20 quarts in all, and all other Vegetable Seeds, best and newest kinds, in proportion, for	3	3	0
The same Collection, in smaller quantities	2	2	0
Do. do. do.	1	5	0
A Collection suitable for a small garden	0	15	0

A list of the sorts furnished if required.

SELECT FLOWER SEEDS.

Free by post, with full directions for sowing, heights, colours, &c., viz.:—

	s.	d.
100 varieties best and newest Annuals	15	0
50 varieties for 8s. 6d., 30 for 5s. 6d., 20 for	4	0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7s. 6d., or 12 do.	5	0
20 varieties best Greenhouse Annuals, 7s. 6d., 12 for ...	5	0
12 varieties choice Greenhouse Perennials, 10s. 6d., 12 for	7	6
20 vars. choice hardy Biennials and Perennials, 7s. 6d., 12	5	0
12 varieties imported German Stocks	5	0
20 ditto ditto, 3s. 6d.; 12 for	2	6

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of 2l. and upwards articles presented extra. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

CORNWELL'S VICTORIA RASPBERRIES.—G. C. can confidently recommend the above as superior to any sort ever offered. Prizes were awarded to them at the Hort. Society's Gardens, Royal Botanic Society's Gardens, and the Surrey Zoological Gardens, as being the best shown for size, colour, and flavour. The fruit in Covent Garden was sold at a higher price than any other. Strong canes to be had at E. CHARLWOOD'S, Covent-Garden; W. and J. NUBLE'S, 152, Fleet-street; also of GEORGE CORNWELL, Market-Gardener, Barnet, Herts, at 1l. 10s. per 100, or 4s. per doz. The usual allowance to the trade.

ROBERT WHIBLEY is now executing orders from his choice collection of FUCHSIAS, comprising all the finest varieties in cultivation. The plants are very fine, well established in 60-pots, fit for shifting immediately, and will give satisfaction to purchasers.

12 fine varieties, all quite new	...	...	...	15s. 0d.
12 Do. do. superior sorts	...	...	...	10 6
12 Do. do. older sorts	...	...	...	5 0

Plants presented with all orders to compensate for carriage. A remittance is respectfully requested with the order, payable at Kennington-cross. Catalogues can be obtained on the receipt of one penny postage stamp.

N.B. Gardens and Pleasure-grounds tastefully arranged and planted; also attended by the day, month, or year on the most reasonable terms.—Chester Nursery, Kennington-road, London.

SPLENDID NEW SEEDLING PANSIES, "ALBION," "AZORE," and "CANARY."

JOHN SCHOFIELD AND SON beg to offer the above fine SEEDLINGS for 10s. the set. To those who show the Pansy they will be indispensable. "Canary" is a yellow self, and without doubt the best of its class. For full description see their Catalogue. Also now ready, a fine healthy stock of the leading sorts of Pansies, Carnations, and Picotees. Terms for cash very low. Pansy seed, select, 2s. 6d. per packet.

*** Single plants of "Canary," 5s. each, sent free by post, with Catalogues on application.

Knowsthrope, near Leeds, Yorkshire.

EXHIBITION OF CAMELLIA JAPONICA.—A Collection of these Beautiful Exotics is now in bloom at CHANDLER and SONS' Nursery, Wandsworth-road, Vauxhall. Admittance Gratis. C. and Sons have a fine stock of last year's plants of CHRYSANTHEMUMS, which they can supply at 12s. per dozen. These plants will make strong flowering specimens for the autumn.

SELECT HARDY HERBACEOUS PLANTS AND SUPERB DWARF ROSES.

WILLIAM MAY, F.H.S, begs to inform the admirers of the above that he has provided a large supply for the present season, which may be planted from this time to the middle of April with safety.

100 Herbaceous Plants, in 50 sorts, 2 each, for		25s.
100 Ditto	in 100 sorts, for	35s.
100 Select Roses .....in 50 sorts, 2 each, for		30s.
100 Ditto .....in 100 sorts, for		50s.

The Herbaceous Plants will be selected from a collection of upwards of 700 species and varieties, all showy; and the Roses from more than 400 varieties, the whole good sorts and good plants. W. M. has also a few dozens of his very select Double Hollyhocks, at 12s. per dozen.

The Hope Nurseries, Bedale, Yorkshire, Feb. 24.

EVERGREEN OAKS.

RENÉ LANGELIER, NURSERYMAN, &c, St. Helier, Jersey, begs to offer Several Thousands of the above, well worth the attention of the public; they are sure of success, having been transplanted several times, and are of fine growth. Many may at once be with safety planted where they are intended to grow. A vast quantity are also fit for potting; they will require to be only a few months in pots, having no pivot or tap roots. Price 50s. and 60s. per 1000. A reference or remittance required from unknown correspondents.

100,000 PLANTS AT LESS THAN HALF-PRICE.

J. WEEKS AND CO., HOTHOUSE BUILDERS and HOT-WATER APPARATUS MANUFACTURERS, have lately erected, in the King's-road, Chelsea, an extensive Ornamental Nursery, expressly for the purpose of exhibiting all the modern improvements in Horticultural Building, Heating, and Ventilating. Plants of the choicest varieties are grown and are on sale at less than half price.

CHARLES DALY AND SON beg to inform the public that they are now selling out the remainder of their large stock of Thorn, Quick, &c., at the following prices, 2 years seedling, 1s. 6d. per 1000; 2 years do., 2s. per 1000; 2 years fine, thin in the beds, with good roots, 3s. per 1000; 1 year transplanted, 3s. per 1000; 2 years transplanted, 4s. per 1000. 1 year seedling Beech, fine, 1s. 6d. per 1000; 1 year do. Sycamore, 1s. 6d. per 1000; 1 year do. Larch, 1s. 6d. per 1000; 2 years do., 3s. per 1000; 2 years do. Scotch Fir, 1s. 8d. per 1000; 3 years do. Spruce Fir, 1 year bedded, 2s. 6d. per 1000; 1 year Evergreen Cypress, 2s. 6d. per 100; 1 year do. Alder, 1s. 6d. per 1000; Irish Yews, 1 to 1½ foot, 24s. per 100; 2 to 2½ feet, 50s. per 100; 3 to 4 feet, 100s. per 100; 5 to 6 feet, 5s. each; common Yews, 2 feet, 20s. per 100; Rhododendron, 2 feet, 25s. per 100; Variegated Holly, good plants, 1s. each; Aucuba japonica, 2 feet, 6s. each; common Laurel, good plants, 9s. per 1000; Portugal Laurel, 1 to 1½ foot, 6s. per 100; Beech for hedges, 2 to 3 feet, 2s. per 100; Horse Chestnut, Elm, Ash, Mountain Ash, Poplars, and Hazels, 4 to 5 feet, 12s. 6d. per 1000; Limes, 5 to 6 feet, 6s. per 100. The usual credit given by naming any respectable seed-merchant in London; 5 per cent. allowed for cash; freight paid to Liverpool or Glasgow on all but forest trees.—Coleraine, Feb. 24.

THE "QUEEN" MELON.

EDWARD TILEY begs most respectfully to apprize the Nobility and Gentry that he has procured the whole of the stock of seed of the above superb Melon, from one of the most noted growers in the West of England: This Melon is allowed to be by competent judges, who have seen it, the earliest and finest flavour grown; it has proved itself by competition for the last three years to be the best yet known. It has been awarded three first prizes. It is a handsome shape, very thin skin, green flesh, and melting flavour, not liable to crack or lose its flavour when kept, as most others do: it weighs from 5 to 7 lbs.

This superb Melon is well adapted to small growers, being a very free setter, very productive, and requires less heat than any yet out. Sold in packets of 7 seeds, 2s. 6d.; with also the following varieties:

Bowood green flesh Melon (true) ...	6 seeds	1s.	0d.
Ispahan (true)	10 ,,	1	0
Terry prize (true)	10 ,,	1	0
Beechwood (true)	10 ,,	1	0
Cuthill's (true)	10 ,,	1	0
Emperor green flesh	10 ,,	1	0
Windsor prize	10 ,,	1	0
Egyptian green flesh	10 ,,	1	0

Two packets selected of the latter varieties will be included with a packet of the Queen Melon for 4s.

BROCCOLI.—The three best varieties in cultivation are the Walcheren, Wilcove, and the Tamworth, at 1s. each per packet.

Sold by EDWARD TILEY at his General Seed-shop, 16, Pulteney-bridge, Bath; the whole, or any part of the above, will be sent postage free. A remittance must accompany the order; or the amount in 1d. postage stamps.

ROSES.

EDWARD DENYER, NURSERYMAN, Loughborough-road, Brixton, near London, has much pleasure in informing his friends and patrons that he has still a fine stock of ROSES for sale; especially, E. D. is provided with a very large quantity of Roses in pots that will turn out for grouping in beds at any distant period. Standard Roses 20s. to 24s. per dozen, if left to E. D.; selection, Half Standard Roses, 12s. to 18s. per dozen, if left to E. D.; selection, Dwarf Roses, 6s. to 15s. per dozen, if left to E. D.; selection, Dwarf Roses, 33s. per 100; Roses in pots, 12s. to 18s. per dozen; Herbaceous and Flower Roots in great variety, 4s. per 100; Evergreen Shrubs, from 1 foot to 10 feet; Dwarf Trained Peaches, Nectarines, and Apricots, 5s. each; Dwarf Trained Pears, Plums, and Cherries, 3s. 6d. each; Standard Fruit Trees in great variety, 1s. 6d. to 2s. 6d. each. The above are all in a fine Fruit-bearing condition. Planting by contract, performed on the most approved plans. A Descriptive Catalogue of Trees, &c., will be sent on receipt of two postage stamps.

CAUTION.—E. D. respectfully informs his friends that he has no place of business in London, the only establishment he has is at Brixton.

LISIANTHUS RUSSELLIANUS.—Strong healthy plants of the above, at from 2s. 6d. to 3s. 6d. each. CUCUMBER plants always ready. Very fine STRAWBERRIES in pots for forcing; also fine rooted runners of the early Black Pine Strawberry, at 20s. per 100, or 11s. for 50, or 6s. for 25. This Strawberry has given great satisfaction to those who bought it two years ago. CUTHILL'S Cucumber, Melon, and Lisianthus Seed, at 1s. per packet each.

CUTHILL'S Treatise on the Potato, Cucumber, Melon, Strawberry, and Lisianthus, price 1s. 4d. post free.

JAMES CUTHILL, Camberwell, near London.

MILFORD NURSERY, near GODALMING, 6 miles from the Guildford Station, South Western Railway.

WILLIAM YOUNG informs Gentlemen, Nurserymen, and others, that he has a fine stock of MAHONIA AQUIFOLIA, or American Berberry, to dispose of, bedded plants, 9 inches to 1 foot, 20s. per 1000; if 10,000 taken, 15s. per 1000. Ditto, 1 to 2 feet, 25s. per 1000; if 10,000 taken, 20s. per 1000. They are well rooted, and are the best size for planting out. Also about 10,000 to 15,000, fine, straight, healthy, well-rooted English Oak, 6 to 8 ft., do. 60s. per 1000; 3 ft. to 5 ft., 30s. per 1000. Scotch Elms, 4 ft. to 5 ft., 25s. per 1000. About 100,000 2 years bedded Larch Fir (fine), from 18 inches to 2 feet, and from 2 ft. to 4 ft., from 15s. to 20s. per 1000. And a million of strong bedded Quicks, of the most healthy description; samples with prices (which will be regulated according to the quantity taken) sent on application.—Feb. 24.

TURNIP SEEDS, &c.

W. DRUMMOND & SONS, Agricultural Museum, Stirling, N.B., will furnish, free, on application, priced Lists of TURNIP and other AGRICULTURAL SEEDS.

N.B. All parcels of Seeds above 2l. value (with the exception of Grain and Vetches), delivered free of carriage in London, Liverpool, Hull, Newcastle, and many other parts to which there is a direct communication.

AGRICULTURAL SEEDS.—Purchasers can be supplied with very superior stocks of all sorts of Turnips, Mangolds, Carrots, Kohl Rabi, Parsnips, Cabbages, Clovers, Grass Seeds, &c., at very low prices. Quantities for cash treated as wholesale.—DUNCAN HAIRS, 109, St. Martin's-lane, Charing-cross, London. Prices sent free.

AGRICULTURAL SEEDS.

THOMAS WHALLEY begs to state that his ANNUAL PRICED LIST OF AGRICULTURAL SEEDS is now ready, and will be sent free on application. Gentlemen requiring seeds for their tenantry supplied at wholesale prices.

T. W. has just published a New Descriptive Catalogue of Garden and Flower Seeds, which may also be had on application.

*** Freight paid to any port in Scotland, Ireland, or Wales.

12, St. George's Crescent, Liverpool.

FINEST LAWN GRASS SEEDS.—The great expense of cutting and laying turves may be avoided, and a Very Superior Lawn produced in a short time by sowing Messrs. SUTTON'S LAWN GRASS SEEDS, which consist solely of the finest and shortest growing kinds, free from moss and other weeds. Price 3s. 6d. per gallon, or 25s. per bushel. Also an excellent mixture of Perennial Clovers and finer sorts of Grasses, for improving old Pastures, at 2s. per gallon. Quantity required being 2 to 4 gallons per acre, according to the condition of the pasture.

*** Carriage free to London, Bristol, or Basingstoke.

JOHN SUTTON and SONS, Reading, Berks.

KITCHEN GARDEN SEEDS.—

No. 1.—A complete collection, consisting of 20 quarts of the best kinds of PEAS, inclusive of Fairbeard's Champion of England, Early Surprize, British Queen, Burbidge's Eclipse, &c., and all other Seeds in proportion, of the newest and best sorts, sufficient for one year's cropping of a large garden, the choicest Melons and Cucumbers inclusive .. £3 3s 0d

No. 2.—Complete collection in smaller quantities, equally choice sorts 2 2 0

No. 3.—Ditto 1 1 0

No. 4.—Ditto. This is sufficient for a small garden 0 12 6

No extra charge for packing; carriage paid to London.

A General Catalogue may be had; also a List of each collection.

SELECT FLOWER SEEDS.

100 packets of the newest and best Annuals, &c.				15s. 0d.
50 ,,	ditto	ditto	ditto	.. 8 0
25 ,,	ditto	ditto	ditto	.. 4 0

A fine collection of imported Stocks, Zinnias, Asters, &c., named, 3d. per packet. Sent postage free.

A Descriptive Flower Seed Catalogue sent with each collection by enclosing two postage stamps.

WILLIAM JAMES EPPS, Maidstone, Kent.

SEEDS.—MEADOW AND PASTURE GRASS SEEDS, in mixtures suited to various soils, &c., at 32s. per acre, allowing 2 bushels and 12 lbs. to each acre. Directions for sowing and treatment will accompany the seeds. Mixed sorts for improving old Grass Lands, 1s. 3d. per lb. Fine sorts for forming Lawns, &c., 1s. 4d. per lb.

GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address GEORGE GIBBS and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c. &c., 28, Down-street, Piccadilly, London.

SEEDS.—CORNER OF HALF-MOON STREET.

THOMAS GIBBS AND CO.,

(By Official Appointment) the Seedsmen to the "ROYAL AGRICULTURAL SOCIETY OF ENGLAND,"

Beg to remind the Members of the Society, and Agriculturists in general, that their only Counting House and Seed Warehouse is at the corner of HALF MOON-STREET, PICCADILLY, LONDON, as for the last Fifty Years.

Priced Lists of Agricultural Seeds are always ready during the season, and may be had on application.

FLOWER-POTS AND GARDEN VASES.

JOHN MORTLOCK, 250, Oxford-street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford-street, near Hyde-park.

RANUNCULUSES, ANEMONES, AURICULAS, AND LILIUM LANCIFOLIUM.

HENRY GROOM, Clapham Rise, near London, by appointment Florist to Her Majesty the Queen, and to His Majesty the King of Saxony, begs to recommend to the attention of the Nobility and Gentry the above FLOWERS, which he can supply of the best quality at the following prices:

100 RANUNCULUSES, in 100 superfine sorts, named £2 10 0
Superfine mixtures, per 100, from 7s. 6d. to 21s.
100 ANEMONES, in 50 superfine sorts, named ... 2 2 0
Superfine mixtures, per 100, from 6s. to 10s. 6d.
25 AURICULAS, in 25 superfine sorts, named ... 2 10 0
12 ,, in 12 good kinds, named 0 18 0
LILIUM LANCIFOLIUM ALBUM, each, from 1s. to 2s. 6d.
,, ,, PUNCTATUM, do., 3s. 6d. to 7s. 6d.
,, ,, RUBRUM or SPECIOSUM, do., 5s. to 21s.
,, ,, ROSEUM, do., 5s. to 15s.

A new collection of Hybrid Seedling LILIES, 6 sorts for 18s.

H. G. begs to say he continues to supply, for planting in Shrubberies, 100 fine roots of Lilium lancifolium album for 5l., package included. No shrubbery should be without them, as they furnish the greatest ornament during the autumnal months. They are quite hardy.

SUPERB NEW RANUNCULUSES, &c.—The new varieties consist of very superior and first-rate flowers, which we have selected from immense quantities of seedlings, and for vigorous growth and prolific flowering are far preferable to the older varieties.

RANUNCULUSES, free by post, with printed directions for planting and culture.

50 superb new varieties, named, 40s.; 25 for 22s. 6d.
50 fine older varieties, named, 15s.; 25 for 8s.
100 finest mixture, 10s.; 100 fine, 5s., or, post free 6s.

GLADIOLUS Gandavensis, large roots, 1s. 6d. each; Brenchleyensis, 5s.; splendens, 5s.; Rosa Mundi, 2s. 6d.; Ramosus, 1s. 6d.; Psittacinus sanguineus, 1s. Those at 2s. 6d. and upwards, free by post; under 2s. 6d., 3d. each extra.

DOUBLE ANEMONES.

Finest mixture, 2s. per doz., or 12s. per lb.; Fine, 1s. 3d. per doz., or 8s. per lb.

12 varieties, named, best scarlets, crimsons, &c., 3s. 6d.; post free, 4s. 3d.; Single, fine, mixed colours, 4s. per lb.

Catalogues of Roots, free by post, comprising our superb new Ranunculuses, upwards of 40 varieties of Gladiolus, &c.

Post-office orders made payable to Bass and Brown or to Stephen Brown. Remittances requested from unknown correspondents.

Bass and Brown, Seed and Horticultural Establishment, Sudbury, Suffolk.

ROSES.

A PAUL AND SON have still a fine stock of all the most beautiful sorts of ROSES, which they will be happy to supply on the following advantageous terms—the selection of kinds being left to them.

Standards ..... 21s. to 30s. per dozen.
Dwarf Standards ... 18s. ,,
Dwarfs ..... 9s. to 18s. ,,

Varieties selected by the purchasers at Catalogue prices. Catalogues forwarded free by post, on the receipt of two postage stamps.—Nurseries, Cheshunt, Herts.

NEW VEGETABLE AND FLOWER SEEDS.

RENDLE'S CATALOGUE OF VEGETABLE AND FLOWER SEEDS appeared in full on the back page of the *Gardeners' Chronicle*, dated Saturday, Feb. 3, copies of which can be had on application to

William E. Rendle and Co., Seed Merchants, Plymouth.

Our Agricultural Seed List will soon be ready, and we shall be happy to forward copies, when published, to any address we may be favoured with.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 24, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Monday,	Feb.	26	Medical	8 P.M.
			Geographical	8½ P.M.
Tuesday,	—	27	Civil Engineers	8 P.M.
			Medical and Chirurgical	8½ P.M.
			Zoological	9 P.M.
Wednesday,	—	28	Ethnological	8 P.M.
Thursday,	March	1	Antiquarian	8 P.M.
			Royal	8½ P.M.
Friday,	—	2	Botanical	8 P.M.
			Royal Institution	8½ P.M.
Saturday,	—	3	Asiatic	2 P.M.
Monday,	—	5	Entomological	8 P.M.
			Chemical	8 P.M.
			Pathological	8 P.M.
			British Architects	8 P.M.
Tuesday,	—	6	Horticultural	3 P.M.
			Linnean	8 P.M.
Wednesday,	—	7	Society of Arts	8 P.M.
			Geological	8½ P.M.
Thursday,	—	8	Royal Society of Literature	4 P.M.
Friday,	—	9	Astronomical	8 P.M.
			Philological	8 P.M.
Saturday,	—	10	Royal Botanic	3½ P.M.

IT is now six months since the fitness of HARTLEY'S ROUGH PLATE GLASS to supersede the common sheet was suggested in these columns. The impossibility of obtaining the latter, with any certainty that it will not burn the leaves beneath it, had become notorious, and cheap rough plate was suggested as a substitute. This kind of glass is made of the same materials as sheet, but by a very different process. Instead of being, in the first instance, blown into the form of a cylinder, or "muff," then slit and flattened—a difficult process, incapable of making it level or free from large irregular lenses — rough plate is at once rolled into plates, and left with an irregular granulated surface, which breaks and bends and separates the rays of light as they pass through it, thus rendering their concentration, and the burning consequent upon it, impossible.

But it was objected, by those whose opinion in all practical matters has deservedly the greatest weight, that, although this rough glass might be suitable for glazed structures in the summer, it could not be safely employed in winter, "because of the small quantity of light that was able to pass through it;" and that, therefore, any advantage that might attend it in one season would be counterbalanced at another. This was entirely at variance with our own opinion; we saw no difference in the quantity of light that passed through: on the contrary, the amount appeared to be the same in both cases, the difference being that, by rough plate, light was dispersed, and by common sheet concentrated, or at least not interfered with by dispersion. It was, however, felt that the objections taken to the former would be better answered by an experiment than by any man's opinion; and therefore the Garden Committee directed it to be tried in the Garden of the Horticultural Society at Chiswick.

For this purpose a small pit, unventilated except by sliding the sashes, and heated by hot-water pipes, was selected. In the last week of August this pit was filled with soft-wooded plants, which can only be kept in health in the presence of a large quantity of light, among which were the following, viz.: the Begonias odorata, undulata, argyrostigma, and dichotoma, Torenia asiatica, Pentas carnea, Adamia sylvatica, Calostylis aurantiaca, and Achimenes picta. The four Begonias, Calostylis, Adamia, and Pentas had been cut close back, and were leafless, Torenia was a cutting just struck, and of Achimenes the dry tubers were employed. The experiment was thus set in action, without any special care having been taken to make it succeed; on the contrary, everything was against success.

It is needless to say that the months of October, November, and December, 1848, were more than usually gloomy, and that neither January nor February offered any advantage over those months in ordinary years. In addition to this, it was often necessary to leave the plants in the dark all day long, in consequence of the sashes being covered with frozen mats, which could not be removed. Nevertheless, and notwithstanding these impediments, the experiment was perfectly successful.

On Tuesday last, at the Meeting of the Horticultural Society, Mr. GORDON, to whom the experiment was confided, produced the plants above named in the most beautiful health, with firm short wood, broad, thick, clean, bright-green leaves, and, in the case of the Gesnera and Pentas, flowers perfect in colour, size, and form. In short, it may be said, without the least exaggeration, that more perfect examples of high cultivation were never seen, and few so perfect. It was clear that there had been no deficiency of any element or condition which is required for the most perfect health.

This conclusive proof of the excellence of rough plate glass possesses the highest horticultural interest. It shows that gardeners are now secured effectually from the scorching effects of the sun during summer, and that all the costly as well as inconvenient contrivances for shading may be in future dispensed with. A gentleman of our acquaintance has lately been called upon to pay for shading a single span-roofed house no less a sum than 60*l.*, which is little less than the whole cost of the glass roof; had the value of rough plate glass been known only nine months ago, this vexatious outlay might have been avoided. Such glass does all that a screen can do, and no light is intercepted.

There can be no doubt that the result of the experiment now detailed will be the abandonment of transparent sheet glass in gardening, and that every handglass, sash, roof, or screen, hereafter to be erected, will be glazed with rough plate. In many cases, indeed, it would certainly be worth while to unglaze the south side of houses, and to substitute rough plate, reserving the former glass for repairs of the north side.

It is, however, to be understood that the glass in question is not common rough plate, which is too heavy and expensive, but a patent, thin, rough plate, our sample of which was received from Mr. HARTLEY, of Sunderland.

IN another column will be found a report upon the periods at which the POTATO DISEASE made its appearance in different parts of the United Kingdom, and an estimate of the amount of loss sustained, according to our informants, in their several districts. In preparing this report, it has seemed advisable to take the districts somewhat according to their latitude, without distinguishing England, Wales, Scotland, and Ireland, commencing with the most southern counties, and ending with the most northern.

The examination of the periods at which disease showed itself, teaches us that, although it may have been, and no doubt was, in some measure, determined by climate, yet that its progress was regulated by some influence of which we have no knowledge. Omitting exceptional and very local cases, such as one at Hemsworth, in Yorkshire, and two others in Sussex and Ayrshire, and taking the periods at which the disease became generally observed, we find that it was first noticed in the Scilly Isles about May 15, and last in Selkirkshire, about September 20; we have, however, no return as to this point from Caithness or the Orkneys. In the extreme south, it appeared much earlier than elsewhere, for we have no evidence that it was seen generally in May in any other districts than Scilly and the Channel Islands. In June, the earliest return is from Warwickshire; but it is obvious that, from statements like those before us, no conclusions can be drawn as to a few days sooner or later, and therefore we may regard the first half of June as practically the same point of time. Assuming this to be so, it appears that by the middle of June the disease had appeared, not only in the southern counties but here and there as far to the north as the county of Norfolk. By the end of June or beginning of July it had reached Derbyshire, Yorkshire, and the south of Scotland; but it is not reported to have been seen earlier than the 1st of July to the north of Edinburgh; by the middle of July it was in Aberdeenshire; by the 1st of August in the Isle of Lewis, and by the middle of the same month in Ross-shire. It is, however, worthy of notice, that although the disease had been observed in Inverness-shire so early as the 20th of July, it was not noticed till some days later in Merionethshire, the Isle of Man, Fermanagh, Cumberland, and Northumberland; till a month later in Kirkcudbright, Lanark, Peebles, Dumbarton, and Angus. Nothing was seen of it till September in Durham, Selkirk, and Linlithgow.

The column of loss has been obtained from a very careful comparison of the estimates of our various correspondents; but it is necessarily conjectural, and therefore to be taken with some allowance. The estimates for certain counties seem very high, as for example in Dorsetshire, where the loss is set down as amounting to 75 per cent.; we however give the statements as we find them. The loss really sustained will never be accurately determined: but the comparative price of the best Potatoes in Covent-Garden for a few late years will throw some light upon that question. Our own weekly returns show the prices to have been as follows:

Prices of the best Potatoes per ton in Covent-Garden Market for the years 1843, 4, 5, 6, 7, 8, 9.

	1843.	1844.	1845.	1846.	1847.	1848.	1849.
	s.	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*
January	75	75	80	160	200	160	180
February	70	80	80	160	240	190	180
March	75	75	90	170	240	190	—
October	70	80	80	160	120	160	—
November ...	75	70	130	160	130	180	—
December ...	75	70	160	180	140	180	—

If we bear in mind that, when any common article of food is much advanced in price, we have an indication, not only of a smaller supply, but of a diminished consumption, the average amount of loss in the Potato crop during the last four years may be conjectured without the risk of any serious error.

A CORRESPONDENT has sent us a "print" of a Pea, advertised under the name of GRIMSTONE'S EGYPTIAN PEA, otherwise the Mummy Pea. It has received the first name from a Mr. GRIMSTONE, who says that he raised it from seeds taken out of an antique vase, "hermetically" sealed, found in a mummy pit in Egypt, and computed to have lain there about 3000 years.

People will receive this statement with various degrees of belief, according to the amount of credulity with which each has been supplied by Nature or education. We have only to deal with such evidence as is now tangible. As for the print, we may safely say that it represents nothing which has existed on earth, either before or since the days of the PHARAOHS. The seeds, which are sold by Mr. GRIMSTONE under this name, are in no way distinguishable from the "Branching Marrow Pea" of the gardens; and the plants which have been raised from them are as like that variety as one egg is to another. Mr. GRIMSTONE tells us, indeed, that there is something peculiar in the constitution of his Pea, for it possesses the remarkable quality of "requiring no water or artificial means." Experience does not, however, confirm this statement, for plants raised in May, 1847, after growing into what had all the appearance of the Branching Marrow aforesaid, soon afterwards died for want of water in fine old garden mould in the neighbourhood of London, and that, too, where other Peas throve perfectly well.

We, therefore, have nothing to say in favour of the Egyptian mummy as an object of either use or curiosity.

WE advise SEEDSMEN and GARDENERS to beware. There is a gang of about a dozen fellows, located in Manchester and the neighbourhood, who are carrying on their swindling vocation with great assiduity. Their system is to write to the various seedsmen and gardeners in the south of England for seeds, roots, plants, &c., and to give references one to another; they are all penniless, and living upon their wits. There is also a smaller gang, located in Liverpool, who use the address, "Rainhill, near Liverpool," and are pursuing the same system. We have heard of one

or two who have been victimised, but we hope our readers will see this paragraph, and act cautiously with orders from the places mentioned. The safest and shortest answer to such orders is to write for the cash before the goods are sent off, or to send the letters to any of the various Guardian Societies, for the inspection of the Secretaries, who can at once give the information as to the genuineness of the writers. We gave a list of the societies in a late number of the *Gazette*. *Rhubarb* plants are just now in great demand by these worthies. *Ashen* plants well applied to their backs would be a suitable acknowledgment of their intended favours. We advise our readers to copy this paragraph, and paste it in some conspicuous place in their counting-houses, that the caution may not be lost sight of.

HARDY AND ORNAMENTAL SPRING-FLOWERING SHRUBS.

CHIMONANTHUS FRAGRANS AND C. GRANDIFLORUS.—Though these are not, strictly speaking, spring-flowering plants, yet, from their value and interest in mid-winter, they are worthy of notice here, forming, as they do, a connecting link with the plants which succeed them. They are, as is well known, adapted for wall culture, and are the only winter flowering hardy shrubs that possess fragrant flowers; they therefore deserve a place in every garden. The blossoms are principally produced on ripened laterals and branches of the current year's growth, and fertility in these is encouraged by pruning the shoots back (but sparingly), until a proportionate number of flower-bearing branches is formed. In replenishing a lady's portable flower-basket, or a drawing-room artistic flower-vase, during the late autumn and spring months, they are worthy of a place with the forced flowers of the season, as Hyacinths, Lily of the Valley, Violets, &c.

JASMINUM NUDIFLORUM.—Besides being well adapted for early forcing, this forms a neat, ornamental hardy shrub of medium size, and Spartium-like habit. It blooms at the same season as the Chimonanthus, producing its bright golden-yellow salver-shaped blossoms in abundance.

RHODODENDRON DAURICUM ATROVIRENS.—This is the earliest flowering species of the genus, producing numerous rich purple salver-shaped flowers in February and March; it forms a compact, small, branching shrub, from 1 to 2½ feet high, of semi-evergreen habit, with dark green leaves. Amongst American plants, requiring heath-mould, this species appears a conspicuous and ornamental object.

ERICA CARNEA.—This is certainly the most valuable and interesting of hardy Heaths. It flowers early, is compact and dwarf in habit, and, when grown in quantity, enlivens the American borders and beds at a season when ornament is most required. This species is well adapted for a bed or group. It also succeeds in large pots or vases, if kept cool and moist at the roots and replaced early. It is valuable for replenishing winter bouquets, especially in cool rooms. It may not, perhaps, be generally known that if half the plant or plants be covered with soil (or probably with any other light material), for a period before the flowers attain their colour, it will blanch them to such a degree as to present the appearance of a distinct pale or white variety, forming a lively contrast with the rosy-pink hue of the unblanched plants. This Heath may be planted in the ordinary flower borders, using as a substitute for peat or heath-mould, one-half finely sifted, pure unfermented leaf-mould (divested of its earthy matter), the remainder equal portions of fine river or white sand and sandy loam, well mixed. This compost should be well pressed previous to the plants being firmly planted in it. *William Wood, Fishergate Nurseries, York.*

LECTURE ON ECONOMICAL COOKERY;

OR, THE METHODS OF PREPARING OUR FOOD WITH THE LEAST DEGREE OF WASTE.

By C. DAUBENY, M.D., F.R.S.

(*Continued from p.* 101.)

THERE must, therefore, be a constant change going on in the relative proportion of alkali, according as the lactic acid is diminished or increased. Now, lactic acid appears to be continually undergoing diminution in the blood by the process of respiration, it being, according to Liebig, the material into which the sugar, starch, and gum are converted, in order that they may be consumed in the production of animal heat. Hence we see why, although the juice of the flesh we eat is acid, the blood replenished by it is alkaline, owing to the destruction of lactic acid during the process of respiration. But we have yet to explain why the flesh contains so much more potass than the blood, and why in the latter fluid the alkali which seems to predominate is soda. The presence of potass in the secretions of the body may be traced ultimately to the vegetables upon which those animals which afford nutriment to man subsist, as well as to the vegetable food which forms a part of our own diet. All inland plants contain a predominance of salts of potass, and consequently these must be taken into the system when such plants are digested. On the other hand, the reason why flesh contains salts of potass, to the exclusion, in a great degree, of those of soda, must be sought for in some difference in the permeability of the parietes of the vessels to these fluids. Were this permeability in all cases the same, there must have been found as much of the salts of soda and potass in the juice of flesh as in the blood, whereas, in the blood of the ox and fowl, for instance, a third of the whole saline contents consists of chloride of sodium, while hardly a trace of this compound occurs in the juice of flesh.

The same remark applies also to milk, in which salts of potass preponderate greatly over those of soda, although derived from the blood, in which the reverse is the case. On the other hand, the presence of phosphate of soda, instead of phosphate of potass, in the circulatory fluid, arises, according to Liebig, from the occurrence of common salt, which decomposes within the blood-vessels the phosphate of potass, forming in its room the corresponding salt of soda. Now the necessity for the existence of phosphate of soda in the blood seems to arise from its property of absorbing and afterwards disengaging carbonic acid gas. Water containing phosphate of soda takes up twice as much carbonic acid as it would do alone, and this by simple agitation, or by a diminution of the atmospheric pressure, is again given out. In other words, carbonic acid displaces phosphoric acid from its combination in soda; but slight mechanical causes suffice to give to the latter its preponderance, and to cause it to displace the carbonic acid from its solution. By the union of carbonic acid with the soda, carbonate of soda will be formed, but this will be expelled by the kidneys, whilst the carbonic acid when set free escapes by the lungs. But this important function cannot be discharged by phosphate of potass, because the latter is already acid, and therefore will not absorb carbonic acid, as phosphate of soda has been shown to do. If these views be well founded, we may perceive a new reason for the necessity of common salt in digestion, and may account for the diseases that occur when a proper supply of it cannot be obtained. On the other hand, it is probable that some necessary function is discharged by the presence of phosphate of potass in muscular fibre, and that the fact of sea scurvy arising from a diet consisting of salt food without due admixture of vegetables, may admit of being thus explained. Liebig suggests, that as the blood-vessels and lymphatics, by virtue of the phosphate of soda they contain, have an alkaline reaction, whilst the fluid contained in the surrounding flesh, in consequence of the presence of phosphate of potass, is acid, an electrical current may be created, by which the functions of the system will be considerably influenced.

Be that, however, as it may, and even making all due allowance for the doubts which some may entertain with regard to the soundness of the ingenious speculations thrown out by Liebig concerning the uses of the several ingredients present in animal food, the probability must surely be admitted, that every one of them is essential, and that none can be omitted with impunity in the dietary of man. It remains, therefore, to point out how far the processes of cookery enable us to preserve undiminished all the several constituents which flesh naturally contains.

Let us begin with the process of boiling, in which it is imagined that flesh is prepared for human food with the least possible amount of waste. If a piece of lean flesh be steeped for some time in cold water, the latter when expressed from it will be found to contain all the constituents which impart flavour, for that which remains after the separation of the soluble matter is perfectly insipid, tough, and indigestible. If this cold solution be afterwards raised to a temperature of about 150°, the albumen previously dissolved in it will coagulate, the remaining ingredients still remaining as before.

Supposing this same piece of meat to be introduced into boiling instead of cold water, the separation of its otherwise soluble matters will be rendered imperfect by the coagulation of the albumen. When, therefore, the object is to retain in the meat as much as possible of those juices, which give it flavour, and contribute to its nutritive qualities, the best method probably is to plunge it in the first instance into boiling water, by which the albumen is coagulated, and therefore becomes insoluble, and then to continue the operation in water reduced to the temperature of about 150°, by pouring cold water into that already brought to the point of ebullition. This is most important when the wasteful English practice is adopted of throwing away the liquor in which the meat has been boiled, for under these circumstances the less the water takes up the better, whilst in French cookery a more economical plan is resorted to, namely, that of serving up in the first instance the liquor as broth, and afterwards handing round the *bouilli*, which contains little more than the fibres of the meat divested of flavour, tough, and stringy. When treated in the manner recommended, the albumen coagulating forms a crust or shell which no longer permits the water surrounding the meat to penetrate into the interior of the mass. Hence by the further application of a moderate heat a change takes place in it from the state of raw to that of boiled meat, without any loss of its flavour or juices.

It is on the same principle that the cook envelops little birds, and other small portions of flesh, with a covering of lard, which prevents the loss of the sapid constituents of the flesh, and that evaporation of its juices, which would cause the flesh to become hard and tough. To the coagulation of the albumen we may refer the loss of that red bloody appearance which belongs to underdone meat; and hence flesh which, like beef or mutton, contains much blood, requires a longer period of cooking, in order to deprive it of this red and bloody appearance. In order, therefore, to render meat fit for the table with the least possible loss of its nutritious matter, it should be first introduced into boiling water, and then kept simmering in water maintained at a much lower temperature; but when we wish to employ it as the material for making good soup, the very contrary plan will prove most successful, and the raw meat should be first placed in cold water, which is afterwards to be brought gradually up to the boiling point. Under these circumstances the albumen is dissolved before it becomes coagulated, the water gains admission to the whole substance of the meat, and all its juices are consequently extracted. That which remains is tough and insipid, and indeed has so completely lost its natural flavour, that Liebig assures us he has imparted to the flesh of a fox thus treated the flavour of beef, by impregnating it with the juices obtained from this latter description of meat.

Owing to the property which boiling water has of coagulating albumen, five times as much matter may be extracted from flesh by cold water as by hot, the only one of its ingredients which is taken up by the latter, but not acted upon by cold water, being the gelatine. To this principle, indeed, the nutriment contained in soups has hitherto been principally referred; but this Liebig maintains to be a mistake, because the quantity present is much too small to exert any appreciable influence upon their quality. Gelatine, too, or animal jelly, although it is useful as an addition to other things, supplying the animal frame with the material for the tendons, bones, and cartilage, which must otherwise be obtained from muscle, is in itself incapable of supporting life, for though it appears to be formed within the system, out of the so-called proteine compounds, yet its ingredients cannot be brought back again by any reflex process to their original constitution, so as to supply the waste in muscular fibre that is at all times going on.

It is to the kreatine, then, the lactic acid, and the other ingredients present in the juice of flesh, that we must look for the most nutritious ingredients present in soup; and hence an extract of meat made with cold water, and, after being strained off, concentrated by evaporation, has been found to be the most supporting kind of food for invalids recovering from illness. Parmentier has already recommended it as a restorative for wounded soldiers, and its utility in provisioning ships and fortresses, where fresh meat is scarce, is sufficiently obvious. Very different from this is the common portable soup sold in tablets; this consisting principally of gelatine, and therefore affording but little nourishment. It may be distinguished from the genuine extract of flesh by alcohol, which dissolves only 4 or 5 per cent. of it, but takes up 80 per cent. of the latter.

Where the above precautions are observed, a very small amount of meat, combined with other matters, will supply a soup of a supporting, and, comparatively speaking, of a nutritious character, as in that prepared by M. Soyer according to the following receipt.

RECEIPT No. I.—FOR TWO GALLONS OF SOUP.

Two ounces of dripping	0½*d.*
Quarter of a pound of solid meat, at 4*d.* per lb., cut into dice, one inch square	1
Quarter of a pound of Onions sliced thin; quarter of a pound of Turnips; the peel will do, or one whole one cut into small dice. Two ounces of Leeks; the green tops will do sliced thin	1
Three ounces of Celery	1
Three quarters of a pound of flour	1
Half a pound of pearl barley, or one pound of Scotch	1½
Three ounces of salt; quarter of an ounce of brown sugar	0½
Fuel	0½
Two gallons of water	—
	7*d.*

Directions.—The 2 ounces of dripping are first put into a saucepan capable of holding 2 gallons of water, with the meat cut as directed, and 2 Onions peeled and sliced. These are to be fried for a few minutes in the saucepan over a coal fire. The other vegetables are then introduced, and stirred over the fire for 10 minutes, then 1 quart of cold water and ½ lb. of common flour, and the pearl barley are added; after mixing which well together, the rest of the water and the other ingredients are to be put in, and the whole allowed to simmer for three hours, by which time it is fit for use.

Now, it may be true that a quart of this soup does not contain one quarter of the nutritive and heat-producing principles, which, from the statement given in the last lecture, appears to be requisite for maintaining the system in health and condition; but the ill effects arising from a deprivation of food are attributable, not merely to the physical exhaustion or wasting of the tissues consequent upon it, but likewise to the derangement of health caused by a suspension of the ordinary periodical functions of the stomach, and other parts of the system dependant on it, which will be occasioned by the absence of those *ingesta* that serve to excite and maintain the healthy action of these organs. Indeed, if death by starvation were brought about solely by the former cause, perfect quietude, by diminishing the waste of the tissues, would render a supply of animal food uncalled for, and under such circumstances even vegetables perhaps might be dispensed with, so long as any fat remained in the body to be expended in the production of animal heat.

(*To be continued.*)

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

THE STUDY OF BOTANY.—It is to be regretted that so many gardeners are not botanists, and that amateurs who excel in the growth of beautiful flowers often know so little of the construction and physiology of plants. Anyone who has been familiar with Horti-

cultural Societies must have noticed this destitution of scientific knowledge on the part of their members, and wished to remove it. It is desirable to do so on two accounts. Botanical knowledge will vastly increase the pleasure of the cultivator; and it will enable him to add to the common stock of information respecting this interesting department of natural history. We shall be happy if we can induce any of our readers to become botanists as well as gardeners, and with a little attention this can be attained. Begin at once. Get Lindley's "School Botany" as an introduction, and when you have mastered that proceed to higher works.

A book has lately come under our notice which we cordially recommend to all gardeners, whether they become botanists or not: it is Paxton's "Pocket Botanical Dictionary," which has indeed been before the public for some time, but a new and enlarged edition of which has just issued from the press. This work is, as its title promises, small enough for the pocket; but very voluminous in its contents. By the typographical skill of Messrs. Bradbury and Evans, a very densely crowded page exhibits a mass of important information with surprising distinctness. The smallness of the type is accompanied with a system of abbreviations, so that a duodecimo volume about 1¾ inch in thickness is made to contain as much as, at least, six octavos of ordinary printing. As to its contents, it comprises the names, history, and culture of all plants known in Britain, with a full explanation of technical terms. It is thus a gardening as well as a botanical dictionary, and the methods of propagation most successfully employed in the case of each plant, with the soil adapted to it, and other important particulars, are distinctly indicated.

In the preface, the author thus conveys an idea of the objects contemplated in the compilation of the volume. "The Pocket Botanical Dictionary has been prepared solely as an instant resource and standard of consultation; and for this purpose will be found invaluable to the professors and lovers of horticulture in all its branches and of every grade. Within its columns is compressed all the most important information relative to admired plants, which its small size and avowed design would admit." With this in his pocket, the possessor or cultivator of plants may perambulate his own garden, visit those of his friends, or public establishments, and attend floricultural exhibitions, in the full assurance that if any particular object engage his attention, he may at once derive every fact of interest respecting both it and its congeners which is yet known in this country, and form an idea of the facility or difficulty, and consequent expense attending its conservation." What is here promised is fully performed, and as the popular names of all plants are given in their proper places in the Dictionary, every production of the garden can thus be botanically studied with ease. Thus, for instance, looking for some account of Heaths, we are referred to Erica, and under that head we find the following luminous and practical information, which we extract, as a good illustration of what may be expected from the volume.

"Erica, *Linn.* The *Erica* of Pliny, which is derived from *erico* or *ereico*, to break; some of the species are supposed to have the quality of breaking stone in the bladder. *Linn.* 8, Or. 1, Nat. Or. *Ericaceæ*. This is a genus comprising a great number of very beautiful and interesting plants, but not so much cultivated as they ought to be, on account of the supposed difficulty in managing and propagating them; but the greatest difficulty lies in getting proper soil for them, without which they will not thrive. Sweet says, the free-growing kinds thrive best in good black peat, and like largish pots to grow in. The dwarf and hard-wooded kinds must have a very sandy peat, and smaller pots, well drained with potsherds, over which a few bits of rough turfy peat should be placed; they also require less water than the free-growing kinds, as they grow chiefly at the Cape, on the tops and sides of mountains, and in the crevices of rocks, and such like situations, chiefly in very sandy soil, and but little of it; they all require a good deal of air, and must not be crowded too thick together. Too much fire heat in winter will hurt them as much as anything, as they only require to be kept from frost; most of the kinds might be preserved through the winter in frames: the only difficulty is to keep the damp from them. Cuttings of most species strike readily, by taking off the very tender tops of the shoots, and planting them in sand, under glasses. The strong growing kinds require the cuttings to be rather larger than the others, and some of the stunted growing kinds should be kept in the stove a little while when they begin to grow, to draw them to a sufficient length of young wood, or cuttings cannot be procured; as soon as rooted, they should be potted off singly into small pots, and placed in a close frame, and hardened by degrees. The hardy sorts require to be grown in the same kind of soil; cuttings planted in sand, under a glass, will root freely: they may also be increased by layers."

A list of all the sorts known is then given, with the following particulars annexed. First, the colour of the flowers; then the month of flowering; next, their habitude, whether as concerns the temperature they receive, their duration, or general nature; next, their native climate; and lastly, the year of their introduction into Britain. Such being the useful character of this volume, we feel we are doing service to our friends in bringing it this week under their notice; and we can promise them that with this companion their gardens will possess many extra attractions. *H. B.*

A TABLE showing, according to the returns, the date of appearance of the Potato disease, and the supposed amount of loss in all parts of the United Kingdom, beginning with the Southern and ending with the Northern; those districts to which w. is prefixed are on the West Coast.

District.	First appearance.	Average Loss, according to the returns.
s. Channel Islnds	May 24 to July 24	Early crops ⅓; late ¾.
w.Scilly	May 15	Very large.
w.Cornwall	June to July 15	Two-thirds.
w.Devon	June 14 to July 15	Two-thirds.
Dorset	June 15 to July 30	Three-fourths.
Isle of Wight	July 8	Two-thirds.
Hants	June 10 to July 12	Three-fourths.
Sussex	*June 12 to Aug. 15	Four-fifths.
Somerset	June 28 to July 15	One-half.
Wilts	June 30 to July 14	Two-thirds.
Surrey	June 30 to July 28	Three-fourths.
Kent	June 15 to July 27	Three-fourths.
Gloucester	July 1 to 31	Two-thirds.
Berks	July 1 to Aug. 1	Three-fourths.
Middlesex	July 15 to Aug. 7	One-half.
Oxford	July 1 to 15	Three-fifths.
Bucks	July 15 to Aug. 1	Three-fifths.
Herts	July 1	Two-fifths.
Essex	July 1 to Dec. 1	One-half.
Glamorgan	June 28 to Aug. 1	One-half.
Monmouth	July	One-half.
w.Pembroke	July	One-half.
w.Cork	July 14	Three-fourths.
w.Kerry	June to July	Two-thirds.
Waterford	July 11 to 15	One-half.
w.Carmarthen	July 26	Two-thirds.
Brecknock		Two-thirds.
Wexford	July	One-half.
Kilkenny	July 26 to Aug. 4	One-half.
Tipperary	July 20	Two-thirds.
Limerick	Ditto	Two-thirds.
w.Cardigan	July 1	Very much.
Radnor		
Hereford	July 1 to 31	One-half.
Worcester	June 20 to Aug.	Two-thirds.
Warwick	June 6 to July 30	Two-thirds.
Northampton	June 15 to Aug.	Two-thirds.
Bedford	July 15 to Aug. 1	One-half.
Huntingdon	July	One-half.
Cambridge	July to Aug.	One-third.
Suffolk	July 1 to 20	Two-thirds.
Norfolk	June 15 to Aug. 1	One-half.
Rutland	July 20	One-third.
Leicester	July 30	One-third.
Stafford	July 1 to Aug. 3	One-third.
Salop	June 30 to Aug. 1	One-half.
* Montgomery	July	One-third.
w.Merioneth	Aug. to Sept.	One-half.
Wicklow	July	One-half.
Carlow	July 15	One half.
Kildare	June	One-half.
Queen's County	July to Aug.	One-half.
w.Clare	July 25	Two-thirds.
w.Caernarvon	July	One-half.
w.Anglesea	July	Very much.
Dublin	July 14 to 20	Two-thirds.
King's County	July 15	Three-fifths.
w.Galway	June 20 to July 15	Two-thirds.
Denbigh	July	Earlies little; lates four-fifths.
Flint	July	One-half.
Cheshire	July 15 to 31	One-half.
Derby	July 1 to Aug. 1	One-half.
Notts	July to Sept. 22	One-third.
Lincoln	June 20 to Aug. 15	One half.
w.Lancashire	June to Aug. 1	One-third.
Meath	July 4 to 14	Three-fourths.
Louth	July	Two-thirds.
Westmeath	July 6	Three-fourths.
Longford	July	Two-thirds.
Roscommon	July 14	Three-fourths.
Yorkshire	July 1 to Aug. 21	One-half ? ?
Isle of Man	Aug. 1	Light soils little; generally much.
Armagh	July 12	Two-thirds.
Monaghan		Two-thirds.
Cavan	July 20	Much.
Leitrim	July	Two-thirds.
w.Sligo	July 14 to Aug. 13	One-half.
w.Mayo	June 24 to Aug. 1	Two-thirds.
Down	July 26 to Aug.	One-half.
Fermanagh	Aug. 5 to 15	One-half.
w.Cumberland	August	One-fourth.
w.Westmoreland	July 20 to Aug. 31	One-fourth.
Durham	Sept. 1 to Oct. 1	In general few; wet lands ¼.
Northumberld.	Aug. 1 to 31	One-tenth.
Roxburghshire	July 16 to Aug. 1	One-sixth.
Antrim	July 26	Much.
Tyrone	July to Aug. 1	One-third.
Londonderry	July 12	One-third.
w.Donegal	July 15	One-third.
w.Wigtonshire	July to Aug.	One-fourth.
Kirkcudbright.	Aug. 15	One-fifth.
Dumfries	July 1	One-fourth.
w.Ayr	July 20 to Aug. 1	One-fourth.
w.Bute and Arran	June 30 to Aug.	One-fourth.
Lanark	Aug. 15 to 24	One-sixth.
Peebles	Aug. 15 to Sept. 1	One-fourth.
Selkirk	Sept. 20	Little.
Berwick	Aug. 1	One-sixth.
Haddington	June to Sept. 4	One-sixth.
Edinburgh	July 1 to Aug. 1	One-seventh.
w.Renfrew	July 30 to Aug. 15	One-third.
w.Islay	July 13	One-third.
w.Dumbarton	Aug. 20	One-third.
w.Argyle	July 28	One-half.
Stirling		One-fourth.
Linlithgow	Sept. 18	One-fourth.
Fife	Aug. 15 to Sept. 18	One-fifth.
Kinross		
Clackmannan		Gravels little; rich heavy ½.
Angus	Aug. 30	One-fourth.
Perth	July 30 to Sept. 1	One-fourth.
w.Mull		
Kincardine	July 15	One-fourth.
Aberdeen	July 15 to Aug. 15	One-fourth.
Banff	Aug. 10	Very little or nothing.
Moray or Elgin	Aug. 10 to 13	Little or nothing.
Nairn		
w.Inverness	July 20 to Aug. 1	Scarcely any.
w.Sky		
w.Isle of Lewis	Aug. 1	One-fourth.
w.Ross-shire	Aug. 9 to 14	One-sixth.
Cromarty		Fields little; in gardens much.
w.Sutherland	Later than South	One third.
Caithness		New moss land quite escaped. Little in poor soils planted thin.
Orkneys & Shetland.		Hill sides little; damp low grounds much.

* Mr. A. Hay, gardener to R. S. Straatfield, Esq., The Rocks, Uckfield, observed the disease on the 25th April, on Ash-leaf Kidneys, growing on a very warm sandy border, but it did not appear on the crop of February planting, until June, and made very little progress till the 10th July.

Home Correspondence.

Disbudding and Removing Vine Shoots.—Your correspondent "‖" after noticing the fact of young Vine shoots "becoming obscured" from over luxuriance, says, "He is inclined to suppose that this over-luxuriant condition was induced by favourable circumstances, and that the supply of materials was chiefly derived from the border by means of the roots." Now this may be a plausible conclusion to draw, but how does he account for the fact of several pairs of young Vines of the same age, planted at the same time, in the same border, the strongest Vine of each pair being cut down in the usual way, and the weaker one disbudded from a good eye at the base to the extremity—and the latter in every instance producing the strongest shoot at the time of breaking? Here the plants were upon a perfect equality, so far as "favourable circumstances" were concerned, except that the strongest plant was decapitated, and its weaker neighbour was treated to that stored-up nourishment which, in the former case, was thrown away. In such a case I think it is quite as reasonable to infer that the extra vigour was attributable to extra supply of organised matter, as to attempt to account for it by supposed "favourable circumstances" which in my case had no existence. I fully agree with "‖" that "a bud well started is a circumstance of great importance, but except in the case of the wound in the cut down Vine being made so close as to injure the bud, I cannot believe that a shoot would be stronger from the base of an inert disbudded Vine, supposing it supplied no organised matter, than it would be in the proximity of a wound such as that resulting from the cutting back a shoot in the usual way. I am quite convinced that too frequently in pruning plants of all kinds we cut, for the sake of neatness, nearer to the terminal bud than is advantageous; and in the case of Roses, Peaches, and other plants, it will frequently be seen that the second bud upon a shoot will break stronger than the terminal one. If we cut close to a bud, no doubt some of the vessels connected with it are removed; but if we cut an inch or so above, say in the middle of the internode, no injury will be sustained. Again "‖" says, "Supposing a Vine-shoot of last year's growth is shortened to 10 feet in length and disbudded, leaving only an eye at the top, whilst another shoot of equal strength is cut back to a bud within 1 foot of its base; in the disbudded rod, the bud at top is connected with 10 feet of shoot, and may appropriate the organised matter contained in that length. Will it, then, grow ten times stronger than the bud near the base of the shoot cut back to one foot? Or, making allowance for greater substance in the 1 foot of the lower part of the shoot, shall we only expect the shoot left at the top, at the 10 feet rod, to grow with five times the vigour, and at the same time conclude that the practice of cutting back, in order to obtain strong shoots, is wrong!' Let me state that the strongest buds are formed at the extremities of the branches, and that they will perform all the first offices of growth stronger than a Vine cut down to 1 foot, and, circumstances being equal, will continue stronger through the season. No gardener, be he practical or philosophical, I should imagine, ever

cut a vigorous young Vine down with the expectation that it would break stronger from a weak bud at the base than from a strong eye at the upper extremity, more especially if that strong eye was the only one upon the shoot to break. In such a case, if only one bud or outlet was left for the sap, I should not be surprised to see the shoot forced clean off, as I have more than once seen such things happen with vigorous young Vines when the full flow of the sap has been suddenly forced in one direction only. Vines and other plants are cut down to certain heights for convenience, and for the purpose of getting a vigorous shoot from a certain position; but it does not follow as a natural consequence, that as strong or stronger shoots could not be procured from buds more vertically situated. Where are the strongest buds formed? From whence do we get the finest foliage and the largest bunches of Grapes? Why, from the most vertical buds; and from these same buds we should also get the strongest shoots, if circumstances rendered it convenient; therefore the argument of cutting back to gain strength, so far as mere strength is concerned, falls to the ground. "I have never," he next remarks, "observed that one shoot or branch of a tree was disposed to feed upon the organised matter which another had fairly appropriated." Very true; because vegetable robbers, having once appropriated the supplies, like other robbers, have little sympathy with their weaker brethren, and though it may be equally true that "they do not feed directly upon the latter," yet having at the outset of their growth appropriated an undue share of the stored-up or organised matter, they continue to feed upon that which by an equitable division of the supplies ought to be shared by their weaker and less fortunate neighbours. We need no stronger proof of this than the fact that if one of these freebooters is removed or even checked by stopping or pinching, the weaker neighbours immediately gain strength; or what would be the use of stopping? thus proving that the strong shoot is not an independent member, living solely by its own exertions, but that in truth it forms part of a community which it contrives to rob by its superior strength and position. The doctrine of a branch "thriving only by its own exertions, and drawing its nourishment from the roots which the elaborations of its own foliage have been the means of producing," can only be supported on the supposition that every bud or branchlet of a tree is an independent member thriving only by its own exertions, and living only for its own selfish purposes. If such a system of vegetable individuality existed; why, if we destroyed half the roots of a healthy plant, and left the others undisturbed, those shoots only which are connected with the destroyed roots should indicate their destruction, while the other shoots should proceed in their own undisturbed course. But do we find this to be the case? or rather do we not, on the contrary, find that if the roots of a plant are damaged ever so slightly, the whole system of the plant is similarly affected, thus proving that a tree is a community of individuals, all striving for the same object, but some less fortunate than their neighbours in securing an equal share of the food which is provided for them. If each branch was an individual member, thriving only by its own exertions, what would be the use of disbudding or stopping, for the purpose of equalising the distribution of the sap? the roots connected with the removed buds would be destroyed, and hence nothing would be gained. But so far from this being the case, do we not, by pruning in the first instance, and timely disbudding in the second, so contrive to husband the strength as to secure a pretty equal distribution of the energies of the plants, and so secure healthy and vigorous development in every part. In conclusion, I may remark that I believe the Vine and every other plant possesses within itself a sufficiency of stored up organisable matter to enable it to perform all the first offices of development and growth without the assistance of the roots at all; or how is it that Vines, the roots of which have been destroyed by field mice, or purposely removed, should perform the first offices of vegetation, and the young shoots continue to grow to the length of several inches before the absence of the usual supplies is indicated! and how do such plants as Poplars, Alders, Elms, Limes, &c., which have been felled for 12 or 18 months, produce young shoots, if the first offices of growth are not to a great extent independent of the roots? When, therefore, we have proof positive of the existence of this organised matter, why not make use of it? moreover, when, as I have proved to my own satisfaction, extra strength can be gained thereby? *W. P. A.*

Snowdrops.—Having had some Snowdrops placed in an ornamental flower-tin some time since, I kept the tin near the window of an airy room, in which there was a fire kept burning all day, and I had the Snowdrops moderately watered every other day; they went on very well till the buds formed, when instead of the flowers coming to perfection, they became quite flat, as though they had been pinched together. I then placed them out in the air on the window all a little every day, but with no effect, for the buds all died off. The leaves remain fresh and green. I enclose two buds in different stages, and should be glad if you could inform me how I am to avoid this calamity in future. *M.* [We never before saw Snowdrops in this state. Perhaps some correspondent can explain this case.]

Bee flowers.—A "Cottager" would, I think, find that a hedge of Gorse would thrive by the sea, and be useful to his bees. I live close to the sea, and during the last few splendid days my bees have been very busy gathering pollen on the Gorse which clothes the cliffs, and is exposed to the full power of the prevailing winds, within a few yards of the salt water. As to other spring bee flowers, I have seen my bees very active among the Laurustinus collecting pollen, and on some fine patches of Heaths in flower. I have abundance of Crocuses, which, however, they have not attacked. The honey of this district, where there is plenty of Gorse and Heath, is very indifferent in flavour. παραθαλάσσιος, *Exmouth.*

Raspberries.—The mode (Fig. 1) of training these has been kindly forwarded to us by a correspondent.

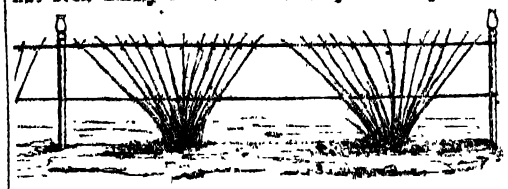

Fig. 1.

The uprights between every two or three plants are iron, and the horizontal lines, to which the canes are attached, tar-rope. The following woodcuts, which we borrow from p. 836 of our volume for 1842, represent a much better mode of training Raspberries. The

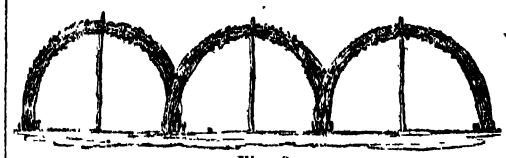

Fig. 2.

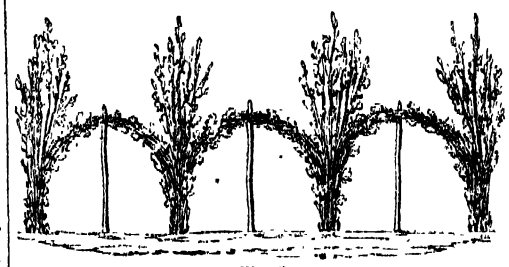

Fig. 3.

plants are supposed to be placed in rows 4 feet apart, and about the same distance from one another in the row. The number of shoots on each is regulated during the growing season, no more being allowed to remain than the plant is capable of supporting. In most cases 6 or 8 shoots will be sufficient. Where this method is practised, a row of Raspberries in autumn will have something of the appearance represented in fig. 3; the arched portion, tied to the stake in the centre, being the canes which bore fruit last year, and which must be cut down to the bottom, and be replaced by the upright shoots of last summer, trained in a similar manner to those represented in fig. 2.

"*Has a Clergyman the power to part with any of his Glebe?*"—"Cambro-Briton" cannot mean to ask whether a clergyman can alienate glebe property, sell it for his own, and impoverish the living. He means to ask, as we gather from the explanatory part of his letter, whether any clergyman can let for a considerable period any part of his glebe, or exchange a part for some other land. I have had occasion to make many inquiries on this subject, and I believe that a bit of glebe land may be exchanged for some other land, and certainly that a lease may be given by a clergyman like any other life-holder of land for a determinate number of years. The farrangement is easily caried out, under the joint signature of the patron of the living, the bishop of the diocese, and the incumbent. Directions for this arrangement are given in the Act for furthering the Leases of Church Lands. The act costs 1*s.*, and a lawyer acquainted with conveyancing would soon make up the lease. With respect to the other question whether glebe land can be exchanged and passed away from the living, for some more convenient plot suitable to all parties, it is more difficult to determine. But as the same process must be gone through in this case as in lease making, I can see no difficulty. Many parcels of glebe are of inferior land, and be it known, it is neither for the present incumbent's benefit nor is it his duty to expend on his glebe money that must be lost in case of his death, as no law can oblige his successor to pay one farthing towards improvements of which the outgoing incumbent has all the paying, the incoming all the receiving. I have a farm of 76 acres, part of my glebe, so far from home that I must pass through seven parishes to reach it. Now I would gladly exchange that land for half the quantity in Ockham. I can never visit it, except once or twice a year; and I have already expended on it three years' rent, without the likelihood of getting my own money back again. In fact there are few properties in more deplorable condition than glebe lands; and I confess to you, that when I see in public prints accounts of improvements at moderate expence, which expence I dare not venture upon, the impression is that we parsons must keep always behind the age in the condition of our farming income. I heard of a fund for improving farms, which the government lend for [illegible] larger per centage than usual [illegible] condition of a [illegible] best principal and interest may soon be paid up together), but on inquiry I was told that this money was lent only on large pieces of land. My 76 acres were looked upon with contempt, and I reflected that I had no power to bind my successor to pay his share if I expended 200*l.* on a glebe that I may hold for only a short period, and whose improvement might never benefit me or mine. *William Thomson, Rector of Ockham, Surrey.*

Low Temperature for Begonias.—I have a Begonia manicata which, after being flowered in a stove, was removed to the conservatory, taking, however, the precaution to place it in a temperature between the two extremes of the former and latter place for a few days before introducing it to the conservatory. It has been for three weeks in the conservatory, and I find that it retains its bloom with more firmness, and that it is better coloured than that of plants in higher temperatures. I have also Euphorbia jacquiniflora in the same house with Heaths, Epacrises, and other greenhouse plants, intermixed with which it has a pretty effect. The temperature of the conservatory is not allowed to rise more than 2° above that of the open air, until the quicksilver falls below 40°. Many of our stove plants retain their flowers much longer in a low temperature than in a warm one, provided they are kept from draughts or cutting winds. *A Young Gardener, Thorpe, Perrow.*

Ice.—Your columns have during the winter contained some good papers on this subject, especially that by my friend Mr. Beaton. There yet seems to be one thing that has been overlooked, and which I consider to be essential to the keeping of ice in whatever structure it is packed, and that is, its purity. If the water from which ice is collected is at all mixed with earthy or vegetable matter, it assuredly hastens its melting. I am aware that in some situations it is difficult to obtain it pure. From ponds muddled by the trampling of cattle or other causes, or which are stagnant, covered with Limna, or the common Potomogeton, or blown full of lately fallen foliage, &c., pure ice cannot be expected, and consequently it will not keep; besides, it is very objectionable to see pieces of such stuff surrounding the breakfast butter at table. So much for purity; now for stowage. I altogether repudiate the old deep-well system, both on account of its inutility and expensiveness. For many years past I have made an ice pile or stack out of doors, without any preparation but a shallow scooped-out hole, I pile it up to a blunt cone and merely cover it over with old thatch or similar material. The plan was at first attempted merely to supplement the ice-house (one of the old school) and the result has been, though made with so little care, that the ice generally lasts till about the middle of September, and I am quite persuaded, were it "done up" a little it would keep ice all the year. Your correspondent P. Mackenzie controverted my statement where I said that I had seen the snow remain in the chasms of the Ochil Hills till near Midsummer; may I refer him to Mr. Beaton's paper on ice keeping? *Quercus.*

Swindlers.—Having seen a paragraph in your paper of last week, relating to some goods detained by the Society for the Protection of Trade, addressed to a J. Handford of near Manchester, I beg to state that early this year a person with a similar name sent a large order for seeds to a well known firm without any reference or remittance. This firm were not asleep, and declined sending the goods until cash or a respectable reference was forwarded. By return of post came an answer saying their reference was Henry, Telby, Melson, and Co., Merchants, of Liverpool, to whom accordingly application was made, but no answer was returned. The goods were not supplied, and to a letter informing —— of the non success of the application to the reference at Liverpool, no reply was given, and so the firm concluded it was a swindling concern. If all other tradesmen were to pursue the same policy this would soon be stopped, and obligations are due to you for exposing these species of robberies. If you like to give publicity to these facts you are welcome, but perhaps names had better not be mentioned. *J. Lewin, Sudbury.*

Concreting Borders.—I beg to thank your correspondent for drawing my attention to an accidental omission in my article on "Concreting Vine Borders." Immediately before the words "the border derives its supply of moisture from below by capillary attraction," these words, "where only the upper surface is concreted," should be inserted. If your correspondent will do me the favour to read the passage with this addition, he will see that the meaning is clear and correct, and that it will exactly apply to all Vine borders, except very wet ones. These exceptions I plainly and sufficiently treated of in the succeeding paragraph, and more particularly with regard to my own case, in which, though the water is shut out of the border both above and below, I find that, unless of more than ordinary width, it receives an ample supply of moisture laterally from the damp ground beyond the edge of the concrete. The amount of solar heat received by the border is greater than your correspondent supposes. Judging from observation, the concrete forms an excellent conductor, and by substituting fine ashes or charcoal dust, for a portion of the gravel in making the concrete, a black surface, the best possible absorber of heat, is produced. The power of retaining the heat will principally depend on the proportion of sand contained in the mass of which the border is composed, and the quantity of rubble, &c., which is mixed with it. My [illegible] instances a provision for supplying the border with water [illegible] necessary, but with me such requirement has not occurred. With regard to the

admission of atmospheric air, has your correspondent taken into account the immense pressure of the atmosphere at the surface of the earth? this being equal to 15 lbs. on the square inch, gives air the power of insinuating itself into the smallest cavities. That a sufficient quantity does gain access to the border is proved by experience. In answer to the question, "Are there any roots in the centre of the border?" I reply, that the roots are in a fine healthy state, distributed equally throughout the border, ramifying in all directions, and adhering to the under concrete as well as to the upper. As to the roots being "found so beautifully netted immediately below the concrete," your correspondent assures us—1st, that the same thing would have occurred beneath stones or tiles; 2d, that it is doubtless owing to the air being purer and warmer there than in any other part of the border; and 3d, that it is also owing to the conversion of a portion of the hydrate of lime into carbonate, thereby rendering it soluble in carbonic acid. We may presume that he intended to signify that the result was partly owing to reason 2d, and partly to reason 3d; and in assertion 1st he must have meant that partly the same thing would have occurred; for, if this is not the meaning, he must mean that a portion of the stones or tiles would be converted into carbonate of lime, which is very unlikely; or else that in the instance of the concrete, two sufficient powers produced only one result, a thing quite as unlikely, unless the action of one of the agents was nullified. In reason 2d he considers that the air is purest immediately beneath the concrete, but I think it will be generally admitted that the air will enter and diffuse itself through the border with greater facility, by means of the air drains, than by passing through the concrete. In regard to the stones or tiles, it is a matter including a little doubt whether the pureness of the air beneath them would be the cause of the roots ramifying so beautifully under them. If a stone or tile is laid near the roots of a tree, the latter will soon form a net-work under it, showing how much they delight in such circumstances. The heat of the sun is conducted through the stone to its under surface, where it meets the ascending moisture, which, but for this impediment, would have been carried off in vapour, and along with it a considerable portion of heat. These two, heat and moisture, added to the shade afforded by the stone, constitute just the state of things in which roots delight. Your correspondent further inquires whether the borders are to be exempted from the benefits derived from deeply stirring the soil. The roots of the Vine will not bear to be disturbed; on the contrary, considerable pains should be taken to induce them to fill a given space with their ramifications, and particularly to encourage their approach to the surface as much as possible; by keeping the roots within a moderate space you have them under greater control, and are enabled, with greater facility, to protect them from cold or rain, to feed them with rich water or top-dressing, or to apply fermenting materials in the case of forcing. I wish it to be distinctly understood that I have only used the concrete covering for Vine borders, nor do I find it necessary here to apply it to anything else. Gardeners in general are aware that it is difficult to explain all their operations on scientific principles, although they know that they are correct in practice; this in some degree is the case with my concrete. I had to try numerous experiments in order to discover a method of bringing my Vines into a creditable condition, and this was effected chiefly by means of the concrete. May I add for your correspondent's information, that I am not out of humour with him for attempting to pick a hole in my coating of concrete, for the very laudable purpose of letting the wind and rain through it, as his remarks have led me to make the information more complete in certain points which were before omitted. *G. F.*

Mouse-trap.—Having received several enquiries respecting the mode of constructing my mouse-trap, I purpose to leave one at the office of the *Gardeners' Chronicle* on Wednesday next. My servant, last evening, placed two of these bottle traps in my coach-house, from which he had, during the day, removed a box of garden seeds, which I found sadly destroyed by these little vermin; this morning he has brought me, with much astonishment (as he was rather incredulous as to the efficacy of my scheme), the traps containing ten mice, six in one and four in the other. The traps were baited with dry Barley. *W. Law, Welford.*

Societies.

HORTICULTURAL, *Feb.* 20.—The Duke of NORTHUMBERLAND, Vice-President, in the chair. Among the subjects of exhibition, perhaps the greatest novelty was a scapeless Primrose, in a pot, covered with beautiful orange-eyed purple flowers of permanent character. This was exhibited by C. J. Darbishire, Esq., who found it growing on grassy land, which had recently been cleared of brushwood, in the neighbourhood of Kawak, a quarantine station on the Asiatic side of the Bosphorus, near the mouth of the Black Sea. When found it was blossoming, and the plant was out of bloom, and Mr. Darbishire considered it to be only a common yellow Primrose until it blossomed in the following spring. It was stated that he had found it to be perfectly hardy, standing our winters well out of doors; but that, as it had a disposition to bloom early, if the roots were taken into the house in the latter end of the year, it formed a beautiful and useful ornament to the conservatory during a dark and dull season. It was mentioned that its rich and delicate colour is only displayed to advantage, however, under bright sunshine, and that, when grown freely, its foliage is very large and robust; that it is a profuse bloomer, and that it possesses a slight but delicious fragrance. It was stated to be not different from *P. altaica* of the Russian botanists; it was awarded a Knightian Medal.—J. Allnutt, Esq., of Clapham, sent a fine specimen, some 10 feet high, of Camellia rosea sasanqua, and in addition to its appearance as a plant it presented another feature of interest. It is well known that when large masses of soil like those in which Camellias are grown get dry it is difficult to water them all through, on account of the water passing off speedily by the sides of the pots. To prevent this, Mr. Allnutt sinks (slightly) into the surface of the ball, some 2 or 3 inches from the side of the pot or tub a hoop of zinc or some such metal, which compels the water to pass down through the mass of soil instead of escaping by its side. It was stated that he practises this plan with all his large specimens, and with advantage not only to the plant, but with regard to saving time and labour. A Banksian Medal was awarded for the Camellia.—Mr. Ayres, of Brooklands Nursery, Blackheath, received a Certificate of Merit for Boronia triphylla, one of the handsomest of early blooming greenhouse plants. It was a nice specimen, about 2 feet high; it was stated to be only a plant of 2 years' growth from a 3-inch pot; to have been grown from February to October in each year in a strong moist stove heat, and to have been wintered in an intermediate house. It was potted in Wimbledon peat, sand, and potsherds, and appeared to have enjoyed the treatment it had received.—Messrs. Veitch sent a specimen of *Æschynanthus speciosus*, and a small plant without leaves of Fuchsia macrantha, covered with bloom. The Fuchsia was sent to show that it is not a shy bloomer, as had been stated by some. It had been wintered under a cool greenhouse stage, and was stated to dislike heat.—Mr. Dobson, gr. to Mr. Beck, of Isleworth, contributed a nice collection of Orchids, for which a Certificate was awarded. It comprised the purple variety of Dendrobium pulchellum, Cyrtochilum maculatum, Oncidium lacerum, and Odontoglossum pulchellum.—Mr. Conway, of Earl's Court Nursery, Brompton road, sent cut specimens of a scarlet Pelargonium, called Conway's Royalist, which he had proved to be suitable for forcing.—The Hon. W. Fox Strangways, sent a collection of cut specimens of plants in flower in the open ground at Abbotsbury, as examples of the mildness of the climate of the south of Dorsetshire. It consisted of three sorts of Indian Rhododendron, which had received no protection whatever; three of Camellia, but not sent as examples of the climate; the tree Heath (Erica arborea); which is reported to quite scent the air of the south of Europe with its fragrance; two of the more tender Hellebores (H. argutifolius and olympicus); the Italian Laurestinus; a beautiful Florence Tulip (T. Raddiana); a red variety of Saxifraga ligulata, and some spring bulbs. Among the latter was the large flowered Snowdrop (Galanthus plicatus). This was not sent as an instance of mildness of climate, but to exhibit its superiority in size over the common Snowdrop. It is quite as hardy as the latter, much larger, and, therefore, more desirable. These were all from the open garden, in which it was mentioned that many other things were also in flower.—Mr. Grey, Beaufront, Northumberland, sent a specimen of Chinese Primrose, which, together with several others, had been flowered in the open ground at Beaufront. They were stated to have stood the winter without protection, although on the 3d of January the thermometer had fallen to 14° Fahrenheit, and the ponds were covered with ice from 3 to 4 inches in thickness. The plants turned out were seedlings in the autumn of 1847, and, after contributing to the gaiety of the conservatory in the spring of 1848, they were transferred to the open border in May, where they bloomed beautifully through the summer and autumn, and it was stated that they are now again unfolding their blossoms.—Mr. Silver, gr. to the Rev. H. Pole, of Maidenhead, exhibited cut specimens in flower of Weigela rosea and Deutzia scabra.—Of Fruit, Mr. Hamp, gr. to J. Thorne, Esq., of South Lambeth, sent a very fine bunch, perfectly ripe, of either Musa chinensis or Cavendishii, but, from its pale colour, it was thought to be the Chinese variety. A Banksian Medal was awarded it.—Mr. Henderson, gr. to Sir George Beaumont, Bart., sent a well cultivated Antigua Pine-apple, for which a Certificate of Merit was awarded. It weighed 5 lbs. 6 oz. Other Pine-apples consisted of two small-crowned Enville, from Mr. Taylor, gr. to J. Coster, Esq. of Streatham. These weighed respectively 3 lbs. 13 oz. and 4 lbs. 4 oz.—Of Grapes, Mr. Butcher, gr. to W. Leaf, Esq., received a Certificate of Merit for three well ripened bunches of Muscat of Alexandria, of last year's growth, in good condition.—Mr. Mills, of Gunnersbury, sent a brace of the Browston Hybrid Cucumber. One was the produce of a cutting struck in September last; the other of a plant raised from seed sown at the same time. They were stated to have been grown in a pit heated by dung linings.—Mr. Mitchell, of Enfield, sent samples of his Royal Albert Rhubarb, and two sorts of Sealkale were contributed by Messrs. Vilmorin, of Paris. English gardeners have not hitherto distinguished varieties of this vegetable; but it appears that the French have, and that the different kinds possess very different properties. Of the two sorts sent, one was the common Violet-painted Sealkale; the other was nearly white, and was stated to be 10 days earlier than the former, and less bitter.—Of miscellaneous subjects, Mr. Yexley, of Merton, sent specimens of material for protecting fruit-tree blossoms from early frosts; Mr. Dietrichsen, of Oxford street, one of his patent continuous-streamed garden engines; and Mr. Montgomry, of the Saw-mills, Brentford, various forms of rafters, sash-bars, &c., made well, and at a cheap rate, by a contrivance for the purpose which he has attached to his saw-mill. For further information respecting these rafters and their prices, see p. 69 of the current year's volume.—From the Garden of the Society came various plants, among which were two species of Cape Heath, Oncidium Cebolleta, which, when well grown, is one of the prettiest of the brown and yellow-flowered kinds; a fine spike, but rather past its best, from the large Lælia superbiens, which has again flowered in the Garden; Acacia celastrifolia, a new species in the way of the Myrtle-leaved Acacia; three Epacrises; Cytisus filipes and racemosa; Illicium floridanum; a beautifully blossomed Henfreya scandens, which proves to be a valuable spring flowering climber; *Æschynanthus pulcher*, and Echeveria obtusa, the latter a useful greenhouse plant during the winter and spring months. From the same establishment also came a collection of plants which had been grown under rough plate glass, and of which some account will be found in another column of to day's Paper. Cuttings of Werder's Early Heart Cherry—a black variety, of German origin, rich, and much earlier than the May Duke—were supplied from the Garden, together with scions of the following Pears, viz, Beurré d'Amanlis, a large obovate Pear, which ripens in September; it is superior to the Brown Beurré in quality, and so much hardier that it bears well as a standard, whereas the Brown Beurré will not succeed as such. Eyewood, one of Mr. Knight's valuable hardy Pears; it ripens in October; fruit of it from a standard is as large as that of a Gansel's Bergamot, and is rich and excellent. March Bergamot, also raised by the late Mr. Knight. The fruit of this is about the size of that of an autumn Bergamot, which it resembles in shape. It will keep till March or even later. Mr. Knight stated that it would be found very valuable in cold and unfavourable situations, in which the French and Belgian varieties would not succeed. The shoots of this, as well as those of the Eyewood, are very thorny when the trees are young; but these are replaced by fruit-spurs when the trees become older.

After the ordinary meeting, the Society resolved itself into a special general meeting, which had been previously summoned by post, according to the Bye-laws, for the purpose of electing a new member of Council, in the room of the Earl of Auckland, deceased. His Grace, the chairman, announced that the Council had recommended as a fit and proper successor the Right Hon. Lord Ashburton; this nomination having been supported by Mr. Hutton and Dr. Daniel, the ballot took place. At its close, his Grace named, as scrutineers, P. Pole, Esq., C. Devon, Esq, and Mr. C. Loddiges, who reported that the Right Hon. Lord Ashburton had been elected unanimously.

Reviews.

Expedition into Central Australia. By Capt. Charles Sturt, F.L.S. 2 vols. 8vo. Boone.

WE have not succeeded in discovering in these volumes anything which it would be useful to quote in illustration of the climate of Australia, as regards vegetation; nor should we have noticed them at all had it not been on account of some remarks upon plants discovered by Capt. Sturt, and described in the Appendix by Dr. Brown.

This learned botanist calculates that the additions made to our knowledge of the plants of Australia by the many travellers who have examined the country, do not amount in all to more than between 2000 and 3000 beyond what were known to himself in 1814; and he adds that "the whole number of Australian plants at present known does not exceed, but rather falls short of 7000 species." This statement may be quite true, but it does slender justice to the discoveries of the Australian travellers, to whom we owe the greater part of what is known of Australian vegetation. To the public it is of no interest that in 1814 Dr. Brown was acquainted with 4200 species. All that were not published might as well have remained undiscovered as have lain buried in the recesses of his cabinets. Now we believe that the number of species described by him up to 1814 did not exceed 2500, of which many had been previously published by his predecessors. His *Prodromus Floræ N. Hollandiæ* can scarcely contain more than 2300 species. Therefore, assuming the number of Australian species to be 7500, the public is indebted to Dr. Brown for the knowledge of about a third, the remaining two-thirds having been discovered by others, and made public without the assistance of Dr. Brown. Justice to the dead and the absent—to such men as Baxter, Drummond, Preiss, Frazer, the two Cunninghams, Gunn, Sir Thomas Mitchell, and others requires us to say this; and we cannot allow their invaluable discoveries to be smothered in the dust of any gentleman's unpublished and therefore unknown researches.

With regard to the mere botany of the Appendix to Capt. Sturt's volumes, we have of course to state that it is of much systematical interest, as everything is which proceeds from the pen of its learned author; but we do not find it quite beyond the reach of criticism. For instance, we are unable to appreciate the reasons for giving the name of *phyllodineæ* to a new Cassia, seeing that other Cassias are also phyllodineous. We are equally unable to

understand why the genus Delabechea should be summarily swamped in Brachychiton. According to Dr. Brown himself, the genus Brachychiton is known by having the radicle of the embryo next the hilum; that is its *essential character*. But in Delabechea the radicle of the embryo is at the end of the seed most remote from the hilum. It therefore follows that Delabechea is distinct from Brachychiton, unless indeed the latter has not the structure which it has been represented to possess, in which case it may be expunged as a spurious genus, but cannot affect the stability of Delabechea.

In another place we find the Jasminum Mitchellii reduced to J. lineare, of which it is regarded as "hardly a variety." Until botanists can agree upon some character by which the word species is to be defined, such a point as this is not susceptible of an argument; but we may be permitted to observe that if J. Mitchellii is really a *false* species, which we do not think, some of those described as new by Dr. Brown in the Appendix before us must also be struck out, as for example his Swainsona grandiflora and Jasminum micranthum.

A new edition of *Paxton's Botanical Dictionary* has just been issued, with "a Supplement containing all the new plants since its appearance." The character of this beautifully printed volume is so well known that it is only necessary for us to state that the Supplement occupies 72 pages, or nearly a quarter as much as the original work.

Adrien de Jussieu's Elements of Botany have been translated by Mr. Wilson. The work is one of much value, and gives a clear explanation of the views of modern French Botanists. It is, however, ill adapted to the purposes of English students, who can rarely spare the time required to master its details; and must chiefly be regarded as an excellent work of reference, of the same nature as the organography and vegetable physiology of De Candolle. The want of an index will however render it difficult of use except in the hands of a botanist of some experience.

Calendar of Operations.

(For the ensuing week.)

FORCING DEPARTMENT.

In making new Vine borders for young Vines pay particular attention to securing a good drainage. Let the soil be moderately light and uniformly rich, but let no vile carrion or anything so filthy find its way into the border in an undecomposed state; it is impossible to distribute it in such a manner as to equalise its power over the whole border, and if left in masses its effects are prejudicial. Look closely after the Vines and Peaches, to see that no insects are devouring the foliage; the former are liable to be attacked by a small species of beetle, which commits its depredations by night, at which time it must be carefully sought for. Care must also be taken to prevent thrips establishing themselves, by taking immediate measures to destroy them as soon as they are observed. The Peaches and Strawberries are very liable to be attacked by the green *fly; fumigating*, if well done, will be the most convenient method of destroying both these and the thrips. If you have any pot plants growing in the forcing houses, watch them very jealously—in nine cases out of ten they bring mischief along with them. It is very necessary to nip all these plagues in the bud, before the infection has spread to any considerable extent, as by so doing you will effect your object and prevent the serious disappointment consequent upon the unchecked ravages of insects. Thinning the early forced Grapes will now require regular attention; it should commence as soon as they are fairly set, by judiciously removing all the berries that can with certainty be spared, and those that are left for future consideration should stand in such order that the removal of a berry at any time shall relieve the surrounding ones without disfiguring the bunch. The final regulation of the bunch need not take place till the berries are more than half swelled, but no sound reason exists why the first thinning should be postponed, as is frequently the case, until the berries have attained the size of large Peas, sharing equally in the nourishment which ought to have been appropriated to the sole use of the permanent berries. The operation should be performed with a pair of clean, sharp, long-pointed scissors, and the whole of the footstalk should be removed along with the berry, taking care, however, not to injure the skin of the branch from which it is cut off. These snags, when left, are a very fertile source of mould, &c., when the fruit is ripe. It is necessary to keep the atmosphere somewhat dry about Strawberries while they are flowering; it will, therefore, be better to keep them in the forcing pit until their fruit is set, after which they may be removed to the shelves of the forcing house to mature their berries. During this latter period, they will be very much benefited by the application of liquid manure.

KITCHEN GARDEN.

As soon as the ground is sufficiently dry to allow of the surface being pulverised, the main crop of Onions should be sown; the piece of ground selected for this crop should be well drained, and sufficiently rich to prevent the bulbs being small and strong flavoured; but at the same time the opposite extreme of over rich soil must be avoided, or the produce will be watery and thick-necked. Early sowing of this vegetable is essential, in order to get the bulbs matured and housed before the short, sunless days of October. Leeks cannot be grown too large, for which reason they can scarcely be sown too early; the seed should be sown immediately in a glass frame facing the south, or if this cannot be spared, it must be sown upon a warm border. A small crop of Carrots for early use may now be sown, but I generally find the main crop do better when sown in April, or even in May, as they do not suffer nearly so much from the maggot which too commonly spoils the early sown crops, and although the bulbs of late sown ones are not quite so large, their good quality will generally make them more profitable. An early crop of Stone Turnips should now be sown, and Asparagus seeds on properly prepared beds. New beds of Jerusalem and Globe Artichokes, Seakale, Asparagus, and Rhubarb should be made, and the old beds should be dressed up, by forking in the winter mulching and adding a top dressing of manure where necessary. Regular sowings of spring salads should be made in frames and on warm borders, and the Lettuces of former sowings should be transplanted. No time should be lost in preparing the ground and planting all the Potatoes, both of early and late varieties. The returns which have been so carefully prepared, show that exemption from disease may be most confidently expected by planting early, in open airy situations, in dry well drained ground, and without manure; surrounding the sets with burned clay, charcoal dust, or charred refuse of any kind, seems to have an excellent effect in preserving the tubers.

HARDY FRUIT GARDEN.

The unseasonably fine weather with which we have been visited has caused vegetable life to make greater progress than we would desire it to do so early in the year; as many of our plants and trees are unfolding buds which will be much too tender to endure the severe spring frosts which we may very naturally expect between this time and the end of April. To guard against the effects of these spring visitors, it will be necessary to afford artificial protection to the blossom of our choicer fruit trees, not on the walls only, but on those in the open ground also. This will be more particularly required in damp low situations, where the slightest frosts do considerable damage. As a matter of course gardeners will apply their stock of canvas and netting as far as it will go, but as very few have a sufficient quantity to protect all their trees, they will find the fan-shaped points of Spruce or Yew branches an excellent substitute. Our trees which have been covered in this manner nearly two months have been considerably retarded by the shade afforded thereby, and are much more likely to escape spring frosts than those which have been unseasonably excited by the mild weather. The moderate sized espalier and pyramidal Pear trees, which have a sufficient quantity of flower buds to make it worth while, may be protected by rearing a few small poles over them, tent fashion, and neatly covering them with branches of evergreens; so disposed, they form an excellent shelter, and have rather a pleasing and ornamental appearance.

State of the Weather near London for the week ending Feb. 22, 1849, as observed at the Horticultural Gardens, Chiswick.

Feb.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday .. 16	24	30.521	30.461	45	24	34.0	W.	.00
Satur. . 17	21	30.552	30.487	52	28	40.0	S.W.	.00
Sunday . 18	25	30.450	30.396	52	35	43.5	S.W.	.00
Monday 19	23	30.182	30.007	50	38	44.0	S.W.	.00
Tues 20	27	29.947	29.680	53	33	42.5	S.W.	.28
Wed . 21	28	29.994	29.786	61	42	48.5	W.	.05
Thurs . 22	29	29.828	29.693	52	35	43.5	W.	.01
Average		30.214	30.071	50.5	33.4	42.0		.36

Feb. 16—Foggy, hazy, clear at night, frosty.
— 17—Frosty, exceedingly fine; clear.
— 18—Hazy, overcast throughout.
— 19—Overcast; fine; partially overcast at night.
— 20—Slightly overcast; rain; overcast.
— 21—Fine, cloudy and fine; slight rain.
— 22—Fine, light clouds with brisk wind and showers; clear.
Mean temperature of the week 8 deg. above the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending March 3, 1849.

Feb. and March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 25	48.1	33.6	40.8	13	0.28 in.	1	4	3	—	5	6	8	1
Mon. 26	47.6	34.9	41.2	14	0.48	1	3	4	1	4	2	6	2
Tues 27	47.9	36.7	41.8	12	0.40	1	4	3	1	4	8	3	1
Wed. 28	49.0	35.6	42.3	9	0.34	—	5	4	—	2	4	3	5
Thurs. 1	47.7	35.4	41.4	10	0.23	—	1	3	—	6	5	4	1
Friday 2	49.1	[illegible]	43.9	9	0.62	3	2	3	—	2	7	5	1
Satur. 3	49.5	36.1	42.5	11	0.40	2	3	2	1	2	6	5	2

The highest temperature during the above period occurred on the 27th 1846—therm. 62 deg.; and the lowest on 1st and 3d March, 1847—therm. 24 deg.

Notices to Correspondents.

Agricultural Congress of Belgium.—We are indebted to two Belgian correspondents for the communication of a mass of papers relating to this subject, and as soon as we can digest them we propose to avail ourselves of the information they contain.

Back Numbers: 1s. each will be given for Nos. 38, 1845; 26, 28, and 30, 1847; and 43, 1848.

Books: *W Father*. Loudon's edition of Repton's "Landscape Gardening," and Mackintosh's "Hothouse Companion." There is no very good book on forcing. The Grape may be had of the principal nurserymen. We never recommend one person more than another.—*W S G*. Mr. Gordon's paper in the last Number of the "Journal of the Horticultural Society."‡—*New Sub*. Cuthill's "Treatise on the Potato." See his Advertisement in another column.‡

Borders: *G C O*. To crop fruit-tree borders with anything, except the very slightest summer things, is objectionable. They ought to be uncropped. If the crops must be there, then the closer to the wall the better, because at that part of the border will be found the least active and fewest roots. In fact a row of Strawberry plants (not a Strawberry bed) at the foot of a wall, does no harm. We cannot advise you to use your loam now. You should wait till October: at any rate this is the worst time to disturb the roots of your trees, which must inevitably be injured just now, in the county of Kent, by anything which moves them, unless the operation is conducted with more care than we ever saw employed.

Brown Bread: *Pembroke*. If you will apply to the makers you will obtain all the information you seek respecting steel mills, without troubling Miles.

Campanula Pyramidalis: *E W*. It likes good rich loam, but will succeed very well in common garden soil. It needs no heat, being perfectly hardy. If in a pot, it should have plenty of water during the growing season.‡

Cinerarias: *Minimus*. Your seedling is large and showy, but deficient in form. If its habit be good, it is, however, worth preserving, on account of its colour.

Ferns: *Pteris* says that, amid all the Advertisements to be found in our columns, no mention is made of individuals who supply Ferns. He hopes this hint will not be without its effect.

Forced Flowers: *M*. All common flowers may be forced. If you have failed, it has arisen from errors of management, such as forcing too rapidly, or having insufficient light and air. We suspect that the former has been your mistake, since Gesneras and Achimenes have succeeded best. All forcing, and especially that of hardy plants, should be very gradual and gentle.

Gardeners' Chronicle: *X Y Z*. We are sorry that we cannot oblige you: but to do so would be an infringement of the Stamp Act. An advertisement is your only method.

Garden Valuation: *F M*. If your garden produce was valued by a competent surveyor, he would award you one year's produce, so much per acre for manure, the value of fruit trees, and a per centage for yearly holding, calculated on the value of produce for two years. This is supposing you are only a yearly tenant; but if you have a lease, you would be entitled over and above to the beneficial interest arising therefrom; and whatever expenses you have incurred in improvements, you are also entitled to. This principle of valuing garden ground is admitted by all railroad companies near London. If you are in a difficulty, we will recommend you a *professional* adviser.

Grafting Vines: *A Subscriber*. You may perform the operation just as you would in the case of Apples or Pears, provided you attend to the following precautions, which the tendency of the Vine to bleed renders necessary:—The wood on which you fit the graft may be one or more years old. Let the buds push into leaf, then graft, and allow the bud opposite the graft to grow till the buds of the scion begin to swell, then stop the other above the first joint, and check it entirely as soon as the scion pushes into leaf.||

Greenhouses: *John Hayes*. It is doubtful whether you can heat a span-roofed house any cheaper, per cubic yard, than a lean-to. If there is a difference, it may be expected to be the other way. Paxton's Magazine.—*Cincinnati*. Your questions should have been addressed to a garden architect who is paid for his trouble, not to a newspaper, especially considering that your letter was sent in the form of a tax for foreign postage. It is almost impossible for those who are unacquainted with the United States to give you advice of practical value, except in a general way. We should imagine that the same reason which leads you to place your Camellia house on the north ought to transfer there the greenhouse. If you glaze with rough plate glass, you will avoid the inconvenience of scorching and burning, especially if you provide ample means of ventilation in hot weather; but we do not see any provision for that, which is, nevertheless, all important. Grow your plants in tubs, not in the free soil. As your winters are severe, and the houses large, we cannot recommend you to trust to Polmaise heating for the whole range. There is a limit to the power of all things, and Polmaise, excellent as it is for places to which its strength is equal, has never been tried on a very large scale, and probably would not be found adapted to it.

Hops: *W J E*. The seed is perfectly good, but you deceive yourself if you believe that it has been produced in the absence of the male. In the course of the summer look around you, and you will find male Hops at least in the hedgerows, or plantations, or gardens in the neighbourhood.

Incivility: *W B*. We shall take the liberty of preserving the two letters with which you have favoured us; and those to whom they may be shown, will, we doubt not, be as much astonished at them as we were, considering the holy office which the writer fills. It strikes us that the principle of "retaliation" is not precisely that to which a clergyman should appeal; and that those who oppose it deserve his thanks, not his vituperation.

Kalmias: *Erica*. Your American garden, under the conditions you mention, is probably too dry for Kalmias, which is the cause of their shrivelling up and dying off.‡

Moss Roses: *J M*. Next week.‡

Names of Plants: *Musci*. We cannot undertake to name Cryptogamic plants, which have no connection with gardening.‡

Podocarpus: *G S H*. Your specimen is under examination.

Potatoes: *J C, Bridgwater*. We shall next week examine the result of manures. In the meanwhile consult the tables published by us on the 20th January. It is clear that all common manures are dangerous, and that ashes are the best application. In the meanwhile plant instantly. You are a month too late as it is.

Pruning the Quince: *Olpinetto*. Prune only with the view of balancing the head, and doing away with very irregular cross branches.||

Rockwork: *A Sub*. We will treat your question in a leading article next week.

Roses: *B R*. Genuine Peruvian guano, applied in wet weather, is an excellent manure for Roses. We presume that Boula is a corruption of Boule, a bowl.

Sea Serpents: *W D F*. Thanks; but we think that the public is weary of the question. The serpent being given up, it matters little whether the object seen was a seal, or a cachelot, or a false keel.

Stocks: *A S W*. The Germans name both sorts. You had better apply to Messrs. Platz. See their advertisement at p. 50 of the current year's volume.‡

Thunbergias: *J D*. There is nothing remarkable in your Thunbergia being in bloom now.‡

Ventilation: *Delta*. Your present plan is bad enough. The alteration is an improvement, but a long way off perfection. You should provide a system of underground air passages, which would at all times throw fresh air upon the heating apparatus, so as to warm it before it is diffused in the house. We have formerly given sketches of these contrivances, which work well. See p. 651 of our volume for 1847.

Vines: *Inquirer*. The Sweetwater Grapes are frequently bad setters. You would better substitute, on the open wall, the Royal Muscadine and the Nice Black Cluster.||

Misc: *Amateur*. From what you state, we apprehend that your lawn wants draining. The earlier you sow your Grass seeds now the better; and the same remark applies to planting your Asparagus. We know nothing more respecting Mr. Coles' Celery than that some very fine specimens of it were exhibited some two months ago at a meeting of the Horticultural Society.‡—*T A W*. Sow Couve Tronchuda in May. It possesses considerable merit as an autumn vegetable. It requires protection from severe frosts. There are no roots of Arracacha on sale in England at present.‡—*Sub*. We are not acquainted with the maker of the cloth, a sample of which you have sent us‡—*Anon*. Laburnum is a Cytisus. There is no such plant as Crytomeria; the name is Cryptomeria, which seems to be omitted in Mr. Paxton's Dictionary. —*F A P*. Poison or traps or shot are the only cures for wood-pigeons; if you will nurse game, you cannot avoid the expense, of which the nuisance of wood-pigeons is a part. Stephanotis should be grown in peat and loam, in a large pot in a stove; it will flower more abundantly as the pot becomes filled with roots. Give it plenty of light. Stop the main shoot, but not the laterals. What you call sand is a mixture of shells, rubbish, dust, and grains of sand; a bad material, totally unlike the fine silver or siliceous sand which is what gardeners want. A better substitute would be river sand, washed well, and freed from large pebbles by sifting. The lime in your sand is poisonous to Heaths, and your gardener is right. The proportions of a brick pit are unimportant: 3 feet high in front, and wide enough for 6-foot sashes, is a convenient size.

BURBIDGE AND HEALY'S NEW BOILER.—The above is a modification of their Boiler (before published), modelled expressly for the large Conservatory, Chiswick Gardens, where it is now at work. From the observations B. and H. have been able to make, they are warranted in stating it to be the "Ne plus ultra" for warming large plant structures. As a proof, one charge of fuel has been kept burning for 48 hours without any addition, and one boiler of the size used is equal to warm 1500 feet of 4-inch pipe. They are also extensively put up at the Royal Botanic Gardens, Kew. Smaller boilers upon the same plan.

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BURBIDGE AND HEALY, 130, Fleet-street, respectfully call attention to their method of warming Orchidea Houses. They have had the honour of warming the Orchidea Houses at the undermentioned places:

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick, additions to the House.
Also the Orchidea Houses of the following distinguished growers of this interesting class of plants.
The Bishop of Winchester, Farnham Castle.
J. Lyons, Esq., Ladiston.
J. Warner, Esq, Hoddesdon.
Messrs. Henderson, Pine-apple Place.
J. Schroder, Esq., Stratford.
R. Hanbury, Esq., Poles, near Ware.
W. Webb, Esq, Clapham.

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Full particulars and prices forwarded on application.

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And by their Agents,
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To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats, and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

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CORN AND GRASS MANURE, . . per ton	£9	10	0
CLOVER MANURE . . . . . ,,	8	0	0
TURNIP MANURE . . . . . ,,	7	0	0
SUPERPHOSPHATE OF LIME . . . ,,	7	0	0
SULPHURIC ACID AND COPROLITES ,,	5	0	0

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AGRICULTURAL AND SCIENTIFIC TRAINING COLLEGE, HODDESDON, HERTS.

TWO VACANT SCHOLARSHIPS on the FOUNDATION, will be FILLED UP on Monday, March 26th, at this School. All particulars relative thereto, will be furnished on application to the Head Master, either personally, or by letter.

The Agricultural Gazette.
SATURDAY, FEBRUARY 24, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS

Tuesday, Feb. 27—Agricultural Society of England.
Thursday, March 1—Agricultural Imp. Society of Ireland.
Tuesday, — 6—Agricultural Society of England.
Wednesday, — 7—Highland and Agricultural Society.
Thursday, — 8—Agricultural Imp. Society of Ireland.

Farmers' Clubs.—Feb. 26: Botley.—March 1: Ottery St. Mary.—March 3: Newcastle, Northampton.—March 5: London, Great Oakley.—March 6: Framlingham, Ardleigh, South Devon.

We have now to detail the modes by which Lord George Hill has effected so material an alteration in the condition of those degraded and lawless people, who were of such ill repute that strangers visiting a fair in the heart of their district have been known to obtain an escort of the coast guard, to protect them lest they should be beaten, or *kilt* at least, under the misapprehension of their being excisemen, informers, or tithe collectors!

The new proprietor commenced by establishing himself and his agent on the property at Gweedore, in order to have his contemplated operations carried on under their personal superintendence.

To remove the real or pretended necessity for illicit distillation, a large corn store was built at the port of Bunbeg, where the tide water is sufficiently deep for vessels of 200 tons burthen, and nearly the market price of grain at Letterkenny (a town 26 miles distant), was paid there by persons appointed for the purpose. There was difficulty in getting the storehouse erected, as there were no masons or carpenters in that locality capable of executing the necessary work, and "much manœuvring was requisite to get those who were brought for the purpose to remain." The wild aspect of the country, the want of the comforts and necessaries of life (neither baker nor butcher being within a day's journey of them), were so discouraging that many of those tradesmen frequently *deserted*. However the storehouse arose on the quay in no little dignity. A wheelwright was sent to this new settlement to make carts and barrows, "as there were only* two carts—no wheelbarrows on the estate," and in a short time iron and timber were sold at the store. And so great became the demand, not only for the materials for making implements, &c., but even for luxuries, that a regular shop was established, in which 300*l.* worth of tea, sugar, tobacco, and other excisеable articles was sold in one year†; and the sales increased in the two first years in much more than a geometrical ratio. The increase of business required a corresponding increase of shopmen to wait upon customers, and the shop was enlarged to double its original size, and goods of almost all useful sorts, besides a variety of building materials, may now be obtained on cheap terms by the natives, who, a few years ago, had in many instances neither seen nor heard of articles which they now consider essential to their daily wants. The first step was to abolish the rundale system, that ruinous tenure in common which had precluded the practicability of consolidating the scraps of unenclosed land which individuals occupied, and extinguished the strongest motives for exertion and economical management. Notice to quit was accordingly served in every case, but as it was fully understood that this was not a "note of preparation" for the clearance system, but a necessary legal preliminary towards a rearrangement of the tenants without dispossessing any of them, and the locating of each tenant on his own farm, no agrarian opposition was offered. It was explained and guaranteed that each tenant should have a just share of what had been a possession in common, and that no one should be a loser by the proposed changes.

Lord George Hill, though a stranger to the people of that locality, and therefore without the *prestige* of hereditary associations to predispose them in his favour, became popular when they were made acquainted with his character, and heard him speak *Irish* to them; and nobly has he fulfilled his promise not to send them adrift from the land of their fathers. The tenants were allowed to choose a committee of themselves, to negociate with his lordship, and accompany the agent and surveyor while they were measuring a farm or a townland, and, after sufficient time for examining into the new admeasurements, they were established in the occupation of their respective divisions by lot, or amicable arrangement. Holdings over an area of 20,000 acres were thus re-distributed, in the course of three years, notwithstanding all the senseless objections which were urged to the new plan. The removal of the houses and household goods was one of the easiest affairs of all. This was not effected in the American fashion, by lifting up a house of wood or brick, and rolling it away on wheels to a new site. The villages of the Gweedore district were taken to the fields (where they were to stand, wide apart not meeting again, *vis-à-vis*, like couples in a country dance after temporary interchanges of position), piecemeal, upon the owners' backs, not to the tune of "There's nae luck about the house," but of "Paddy whack," or some other melodious air, which a fiddler merrily played, while "men, women, and children alternately danced and worked while daylight lasted, often prolonging the dance to dawn of day, and with little other entertainment than that which the fiddler (or two) afforded. But nothing would tempt them to make fences (on some 10 acres to which it was desirable that some tenants should go from overcrowded parts), though they were offered to be well paid for doing so, and it was only by employing a fearless wanderer that the ditching could be attempted at all." There were some skirmishes on the occasion, but the '*ditches*' and '*trenches*' were carried very speedily by his lordship's adherents, without the effusion of blood or any casualties. The divisions were peaceably made and fences raised, and an almost immediate result was, that the evils of the rundale system became so apparent to the people, who had been so long subjected to it, that many tenants came from the parts of the property where no divisions had been yet made, and pressed to have their land divided in the same way, pleading that "they had as good a right to have farms cut out for them as those who already enjoyed the advantage." Wherever arable land was taken from any occupier, he was paid for it, by his landlord, the full value of tenant's right, estimated by two neighbours; and where mountain land was taken away from any occupier, care was taken that sufficient grazing ground for his cattle should be supplied to him.

All these innovations may appear simple enough to an English landlord, who can divide his farms as he pleases, where no leases are in question, but in Ireland it is quite another affair. Even in Donegal, where the fiendish spirit which has pervaded other counties has not prevailed, there were intimations

* Mr. M'Kye's list contained but *one*; the second was probably his Lordship's *private* property. † In 1845.

that plainly indicated the danger of interfering with old practices, unless in the benevolent and generous manner pursued by Lord GEORGE HILL; for we are informed that in some cases "bullies, associated with a strong faction, had usurped possession of land." In one instance, a tenant having complained to his landlord (about 30 years since) that his neighbour was unjustly keeping part of his land from him, for which he was paying rent, the landlord accordingly came to the ground in order to inquire into and arrange the matter, when the ruffian actually took him by the heels, dragged him over the land, and threatened to drown him in a bog-hole! The landlord begged his life, and when the ruffian let go his hold of him, went away and never returned. The dispute had not been settled until Lord GEORGE HILL acquired the property and decided the affair.

We have not to record, in the present case, a series of land reclamations effected by labourers employed directly for the landlord. Lord GEORGE HILL seems to have acted on the principle pursued by Colonel CONOLLY, viz., that of affording to the tenantry the capacity of helping themselves, starting them in the right direction, and aiding their efforts. Thus premiums were proposed for draining, trenching, fencing, growing green crops, rearing improved cattle, &c.; and a variety of cottage premiums was proposed by his lordship, and also by the Irish Peasantry Improvement Society of London. And though "not a single individual competed for the premiums the first year, the people thinking that it was only an attempt to humbug them, being convinced that no gentleman would be *so great a fool* as to give his money merely to benefit others," in the second year of his lordship's operations (1840), 36 competitors started for the premiums. In 1842 there were 84 candidates; in 1843, 250; and in the following year nearly as many. In several instances the premiums amounted to much more than the annual amount of rent paid by the successful candidates, and yet the largest sum paid in premiums in any single year was under 70*l.* The results of the competitions (and general encouragement) were, that reclaimed bog was to be seen producing Oats, Potatoes, and some Turnips, where barrenness had prevailed before; that decent habitations on separate holdings have been established instead of disgusting villages, "neat and comfortable cottages attracting the eye by their well thatched roofs, and whitewashed walls giving an aspect of life, health, and cheerfulness, the interior realising the expectations raised by their exterior appearance." We must take leave for the present of Lord GEORGE HILL, wishing him the success he deserves, and hoping to have further occasion of recording the progress of his improvements.

THE AGRICULTURAL CONDITION OF ENGLAND IN 1685.

"IN the year 1685 the value of the produce of the soil far exceeded the value of all the other fruits of human industry. Yet agriculture was in what would now be considered as a very rude and imperfect state. The arable land and pasture land were not supposed by the best political arithmeticians of that age to amount to much more than half the area of the kingdom. The remainder was believed to consist of moor, forest, and fen. These computations are strongly confirmed by the road-books and maps of the 17th century. From those books and maps it is clear that many routes which now pass through an endless succession of orchards, hay-fields, and Bean fields, then ran through nothing but heath, swamp, and warren. In the drawings of English landscapes made in that age for the Grand Duke Cosmo, scarce a hedgerow is to be seen, and numerous tracts, now rich with cultivation, appear as bare as Salisbury Plain. At Enfield, hardly out of the smoke of the capital, was a region of 25 miles in circumference, which contained only three houses and scarcely any inclosed fields. Deer, as free as in an American forest, wandered there by thousands. The fox, whose life is in many counties held almost as sacred as that of a human being, was considered as a mere nuisance. The wild bull with his white mane was still to be found wandering in a few of the southern forests. The badger made his dark and tortuous hole on the side of every hill where copse wood grew thick. The wild cats were frequently heard by night waiting round the lodges of the rangers of Whittlebury and Needwood. The yellow-breasted martin was still pursued in Cranbourne Chase for his fur, reputed inferior only to that of the sable. Fen eagles, measuring more than 9 feet between the extremities of the wings, preyed on fish along the coast of Norfolk. On all the Downs, from the British Channel to Yorkshire, huge bustards strayed in troops of 50 or 60, and were often hunted with greyhounds. The marshes of Cambridgeshire and Lincolnshire were covered during some months of every year by immense clouds of cranes. Since the excess the progress of cultivation has exterminated; of others the numbers are so much diminished that men crowd to gaze at a specimen as at a Bengal tiger, or a Polar bear.

"The progress of this great change can nowhere be more clearly traced than in the Statute Book. The number of inclosure acts passed since King George II. came to the throne (A.D. 1727) exceeds 4000. The area inclosed under the authority of those acts exceeds, on a moderate calculation, 10,000 square miles. How many square miles, which formerly lay waste, have during the same period been fenced and carefully tilled by the proprietors, without any application to the legislature, can only be conjectured; but it seems highly probable that a fourth part of England has been, in the course of little more than a century, turned from a wild into a garden. Even in those parts of the kingdom which at the end of the reign of Charles II. (1685) were the best cultivated, the farming, though greatly improved since the civil war, was not such as would now be thought skilful. To this day no effectual steps have been taken by public authority for the purpose of obtaining accurate accounts of the produce of the English soil. The historian must therefore follow, with some misgivings, the guidance of those writers on statistics whose reputation for diligence and fidelity stands highest. At present an average crop of Wheat, Rye, Barley, Oats, and Beans is supposed considerably to exceed 30,000,000 of quarters. The crop of Wheat would be thought poor if it did not exceed 12,000,000 of quarters. According to the computation made in the year 1696 by Gregory King, the whole quantity of Wheat, Rye, Barley, Oats, and Beans then annually grown in the kingdom was somewhat less than 10,000,000 of quarters. The Wheat, which was then cultivated only on the strongest clay, and consumed only by those who were in easy circumstances, he estimated at less than 2,000,000 of quarters. Charles Davenant, an acute and well informed, though most unprincipled and rancorous politician, differed from King as to some of the items of the account, but came to nearly the same general conclusions.

"The rotation of crops was very imperfectly understood. It was known, indeed, that some vegetables lately introduced into our island, particularly the Turnip, afforded excellent nutriment in winter to sheep and oxen; but it was not yet the custom to feed cattle in that manner. It was therefore by no means easy to keep them alive during the season when the Grass is scanty. They were killed in great numbers, and salted at the beginning of the cold weather; and during several months even the gentry tasted scarcely any fresh animal food except game and river fish, which were consequently much more important articles in housekeeping than at present.

"The sheep and ox of that time were diminutive when compared with the sheep and oxen which are now driven to our markets. Our native horses, though serviceable, were held in small esteem, and fetched low prices. They were valued one with another, by the ablest of those who computed the national wealth, at not more than 5*l.* each. Foreign breeds were greatly preferred."—Page 311.

The above is an extract from Mr. Macaulay's recent "History of England." It is but slightly abridged, and gives a lively picture of the state of agriculture and rural affairs among our ancestors nearly two centuries ago. It can hardly fail to interest your readers; and there are a few points in it upon which I wish to remark.

That the value of agricultural produce "far exceeded the value of all the other fruits of human industry" in 1685, is nothing surprising; for Mr. Macaulay says, (vol. i., p. 415) that "four-fifths of the common people were employed in agriculture." But at the present time only little more than one-fifth of the population is employed in agriculture; yet agricultural produce still maintains its marked superiority of value over manufactures, for we find from "Spackman's Statistical Tables for 1842" that the amount of manufactures

For Exportation in 1840 was	£ 47,257,760
For Home Markets	138,500,000
Mines and minerals	18,776,286
Total (Great Britain and Ireland)	£204,534,052

and the value of farm produce for that year was, as we find from the same authority, more than 300,000,000*l.* [This, however, is very questionable.]

Mr. Macaulay next states, that in 1685, half the land in England (that is, 16,166,200 acres) was cultivated as arable and pasture. The quantity now cultivated in England is (see Porter's "Progress of the Nation," vol. i., p. 177)

Arable land	10,282,800 acres.
Pasture	15,379,200 ,,
Total	25,662,000 acres.

showing an increase of 9,465,800 acres. Of these, 10,000 square miles, or 6,400,000 acres, have been inclosed by acts of Parliament; and the remainder (that is, 3,065,800 acres) must be about the quantity which has, "during the same period, been fenced and carefully tilled by the proprietors, without any application to the Legislature."

It would be interesting to know the number of persons employed in agriculture, and the number of farm-labourers in 1685, and to compare them with the numbers so employed at the present time. Perhaps we may approximate the truth by the following calculations. The whole population of England in 1685 amounted to 5,250,000 (Macaulay vol. i., p. 284); and of these

London contained	530,000
Bristol (next in size)	29,000
Norwich	28,500
York	12,000
12 next largest towns	65,000
(Macaulay vol. i., pp. 285—340)	606,000

So that probably the whole town population of England, with those few families in the country who did not engage in farming, hardly exceeded 1,200,000. For in those days the country gentleman "was, as compared with his posterity, a poor man, and was generally under the necessity of residing, with little interruption, on his estate. . . . His chief serious employment was the care of his property. He examined samples of grain, handled pigs, and on market days made bargains over a tankard with drovers and Hop-merchants. . . . The litter of a farm-yard gathered under the windows of his bedchamber, and the Cabbages and Gooseberry bushes grew close to his hall-door. . . . His wife and daughter were in tastes and acquirements below a housekeeper or still-room maid of the present day. They stitched and spun, brewed Gooseberry wine, cured Marigolds, and made the crust for the venison pasty."—Page 319.

The clergy also tilled the ground. "Not one living in 50 enabled the incumbent to bring up a family comfortably. Its children multiplied and grew, the household of the priest became more and more beggarly. Holes appeared more and more plainly in the thatch of his parsonage, and in his single cassock. Often it was only by toiling on his glebe, by feeding swine, and by loading dungcarts, that he could obtain daily bread. . . . . His children were brought up like the children of the neighbouring peasantry. His boys followed the plough, and his girls went out to service."—Page 330.

The yeomanry, "an eminently manly and true-hearted race," were "petty proprietors who cultivated their own fields, and enjoyed a modest competence. . . . . Not less than 160,000 proprietors who, with their families, must have made up more than a seventh of the whole population, derived their subsistence from little freehold estates. The average income of these small landowners was estimated at between 60*l.* and 70*l.* a year. It was computed that the number of persons who occupied their own land was greater than the number of those who farmed the land of others."—P. 334.

Since then nearly the whole rural population were engaged in farming (for there were few shops and artisans except in towns), we must be about right in reckoning the agriculturists and their families in 1685 at 4,000,000. And considering that the number of occupiers was very great, we cannot estimate the males (above 20 years of age) who really worked upon the land at more than 800,000, or one-fifth of the whole, although at the present time the same class amounts to nearly one-fourth; the agricultural population being in 1841 (in England) nearly 3,300,000, the farm labourers and gardeners (males above 20), 766,989. It would seem, therefore, that in 1685 there were 800,000 labourers upon rather more than 16 millions of acres, or 1 to 20 acres; while in 1841 there were 766,989 labourers to 25,632,000 acres, or 1 to every 33 or 34 acres. What more convincing proof could be adduced that an immense advance has been made in the breed and number of horses, and the improvement of implements? We must also observe that while in 1685 no less than 4 millions out of 5½ millions were employed in raising food, now 3,300,000 are able to grow food nearly sufficient for 15,000,000. And while in 1685 about 16 millions of acres only produced food enough for a population of 5,250,000, now 25,632,000 acres produce nearly enough for 15,000,000. In the former case 3 acres fed one person, in the latter 3 acres feed almost twice as many; proving that in the last 160 years the produce of the soil per acre has been nearly doubled, though doubtless much of the soil brought into cultivation during that time is very inferior to that which was first chosen by our ancestors when all the land was before them. That so much has been done during a space of time not exceeding the duration of two long lives, may well inspire the timid with confidence, and excite emulation in the enterprising mind.

In France, which contains 126,000,000 acres, 31,000,000 acres are under grain crops; the entire profits of cultivation on the 126,000,000 does not exceed 10*s.* an acre, while in England 32 millions of acres yield a rent of 28*s.* an acre besides a profit of 12*s.* to the farmer; in all 40*s.* per acre, or four times that of France (Alison xx., 51). In France 5 million families out of 7½ million are engaged in farming; in America there are 3,717,756 agricultural families, only 1,078,680 of all other classes. How superior is our agriculture to that of our ancestors, and to that of all the world at the present time!

An Essex Man.

ON THE SIZE OF FARMS.

THE application of capital to land having of late been a good deal canvassed, and having myself for some time past considered the subject with increasing attention, I am induced to offer a few remarks on the employment of capital and labour to the fullest extent of which it is capable in developing the power and resources of the soil. In doing so, it is not so much the consideration of the size of farms to which I would wish to draw attention, but those measures by which capital, intelligence, and labour combined, may best continue to a remunerating return. From many years intercourse with the agricultural body, opportunities at various times have been afforded me of bringing a few plain questions under the notice of farmers, from whom, I have generally obtained an admission that they are in the aggregate greatly deficient in the means to work their farms to the greatest advantage, or, in fact (as I tell them), that they have mistaken the true source of remuneration in adopting extent of land as their guide

rather than that of capital. This has been, and is now, more and more corroborated by what accidentally drops from the speakers themselves at those useful meetings, the farmers' clubs, now so general in many parts of the country. I have on these occasions asked tenants of 300 acres and upwards, whether they did not consider that in devoting the same labour and manure to a farm one-third less in extent, they would not obtain more net profit? and I have found many of them candid enough to admit it.

I have no doubt whatever that farms are in general much too large for the most effectual display of individual capital and attention; that if these items were more concentrated on smaller holdings, more net profit (for on this the point turns) would be obtained than on one three times the size. I do not mean that it should be inferred that each individual crop would be so much larger, but that by improvement in cultivation, the means and appliances would be furnished to grow with advantage four and five crops where two and three were grown before; that the half of these being green crops would provide the means for keeping much more stock, thence more manure, and thence more produce, and this, as regards the article of cattle food, to an extent of which we have little conception; for it must not be overlooked in high farming we not only obtain more produce, but earlier seasons, earlier maturity, and therefore more time to get in a succeeding crop. The land also is in a state of vigour, which enables it to commence its power on the seed without any delay; to which may be added (though last not least in consideration) a saving in the weather. I have practically proved these facts, and am more and more convinced, from my own observation and experience in this country and elsewhere, that the land will produce a larger average return than has hitherto been thought practicable; and I cannot but entertain the impression that until this end is accomplished, our arguments for protection from the foreign grower must be feeble, leaving an undefended position from the attacks of the free-trader; and as "coming events cast their shadows before them," unless the exertions that are now making in agricultural practice with science are crowned with success, which time, I believe, will confirm, I have no hesitation in saying, from my own knowledge of the corn trade, and capabilities of foreign countries, now annually enlarging by the extension of railways and interior steam navigation into every district of Europe, which hitherto could obtain no vent for their produce, that the position of those engaged in agriculture will become so serious and alarming as to force upon the Government a restoration of a certain amount of protecting duties. That the extinction of the Corn-laws is a great experiment upon the resources and energies of this country does not admit of a doubt. It therefore behoves every man, more particularly the round frock farmer of the old school, where they still exist, to rouse his energies, reduce his farm, and apply what capital he has left to one a third less in extent, which I undertake to engage, with the due and judicious appropriation of his means, would place him in a more easy and satisfactory position than he has experienced for some years past; in fact, without some step of this kind, the consequence in my opinion must be fatal. The question now is, what should be the capital necessary to obtain the end in view? My reply is, the quality of the land must be the guide. The better the soil the more capital; the more inferior it may be, the less will be required; but as this latter becomes improved under judicious management, the more it will annually occupy to advantage. For instance, on a farm of about 100 acres of superior land, I have found I could profitably occupy 2500*l.* or upwards, or say 25*l.* per acre; and on this soil, worth 40*s.* to 50*s.* per acre to rent, I have proved by a liberal dressing of manure, the possibility of readily obtaining, even in dry seasons, three crops in a year, or five in two years.

In 1847, a dry and burning summer, I mowed a bulky crop of winter Tares (sown the preceding October) in full bloom in the month of May, and as they were daily removed for soiling stock, I immediately commenced sowing spring Tares, turning in the Tare stubble of the former on one ploughing; this second crop reached maturity (being in full bloom) early in August, and as they were removed and applied for the same purpose as the preceding, Rape was sown for sheep feed, and was a fine and very heavy crop in October, being as high as the hurdles. In the spring of last year (1848), the same land was sown with Oats and broad Clover; but if it had been my order of farming, by the application of a slight dressing of artificial manure, or even without it, it would have produced another crop of Rape or stubble Turnips, which by being again fed off, would have been the means of retaining the land almost in the same vigour as at the commencement of the course. Experience has led me to consider the advantage of commencing a rotation with power. The winter Tares being highly manured, yielded a most productive return, and a good bottom of decayed vegetable matter to turn in. This was of benefit to the succeeding crop of Tares, and by feeding off the Rape I consider the land was sufficiently consolidated, in preparation for corn. I name this mode, among many others that might be adopted, to show what an immense head of stock, cattle and sheep, may be supported on a small farm, and thence the large return of manure. The summer of 1847 was, as must be well remembered, highly favourable for the cereal crops, and the produce as regards cattle food; yet the produce of both on this farm, was large. The return of my Wheat crops this year averaged not less than 7 qrs. per acre, omitting one field of about 8 acres, injured by the wireworm; and on a remarkably striking portion (3½ acres) of the whole, which I had the curiosity to have accurately tested, the yield was within a bushel or two of 8½ qrs. per acre (head and tail) and 175 trusses of straw, standing beautifully erect at the time of harvest, convincing me that could we depend upon continental summers we might almost defy the world. I always sow, broadcast, 2 and 2½ bushels to the acre.

Again, on land of inferior quality, although a tenant commences at a disadvantage, and yet if of the improving order he every year increases his stock, or in other words his manure machines in gradual progression, thereby producing, as they say in America, "the more muck the more money." The capital he will require will therefore progressively increase with his means of supporting stock; but with this also must extend his intellectual energies, observation, forethought, and attention. This, therefore, is another argument in favour of moderate holdings.

And now a few words on a subject on which the application of capital has of late years evinced itself with the greatest advantage, viz., in that of implements. On this head there is doubtless much to consider as to the real value and benefit to be derived, so as to avoid being taken in by what might prove merely a catch-penny for the too sanguine and unwary; there are, on the other hand, as practice has well established, many implements of so valuable and important a nature as almost to preclude the cultivation of some lands without their use.

The strong prejudices that have so long existed are no doubt fast upon the wane, among the more enlightened body of farmers, yet there still exists a considerable want of observation and calculation connected with the advantages to be derived from the use of implements that may facilitate the working of the soil, and benefit to be obtained under the head of interest in capital so invested. How often have I heard it observed respecting any particular implement recommended, "Oh! it is too expensive, we poor farmers cannot buy such things;" thereby unhesitatingly confessing their want of means for the efficient conduct of their business, wholly overlooking the large amount of interest their use would return. An implement of the cost of 15*l.* or 20*l.* in many instances repaying its cost in one year, by producing a crop and saving a season; and in an amount of 200*l.* or 300*l.*, what is the consideration of 5 per cent. upon this, or 10*l.* or 15*l.* per annum compared with the almost positive certainty of a return of perhaps 20 or 30 per cent. or more from their judicious application on a farm of from 100 to 500 acres and upwards; the subject is worth calculation, as many can testify. Before I conclude, I cannot forego the expression of my satisfaction at the rapidly increasing enquiry into the value and application of manure—that quality, combined with a certain amount of bulk, is fast superseding the cold, watery stuff composed of little more than rotten straw, and that in a sodden and unfermented state, that was considered a sufficient contribution to the soil in days gone by. A superior and more effective description of cattle food, in lieu of the expensive and unproductive custom of drawing Turnips for the fatting stall, will accomplish this, and thus leave that valuable *root* to be appropriated for sheep feeding on land, to which it is most applicable. *R. G.*

Home Correspondence.

Linseed.—Has Linseed-meal steeped in cold water the same effect as when boiled? What is the proportion of cold water to the meal? and the length of time necessary for it to be steeped? How long will it keep sweet? How much hay chaff? How much steeped Linseed-meal and Bean-meal will a fatting beast require each day? I have now had six bullocks in my loose boxes (which are lately completed) for the last month, they had been tied up in stalls for several weeks before, and I am glad to say that since they have been in the boxes, they certainly have done much better than when tied up, kept much cleaner, and my man tells me required little if any more straw for litter. I have hitherto been giving them oilcake, but seeing Mr. Warnes' letter about Linseed-meal steeped in cold water, wish to try it. You will therefore oblige me by answering the above questions. What measure does Mr. Warnes mean when he says "two or three handcupsful of the jelly, &c." How many gallons is a "pailful" supposed to contain. I wish your correspondents would make use of imperial measures and weights, not local ones, so that all might understand them. *S.* [We publish these questions to show of what comparatively little use an inexact statement is. Perhaps Mr. Warnes, or some other gentleman who has had experience of this matter, may supply the information: we have had none.]

Manure Tanks.—Some of your correspondents have not found tanks for the collection of their liquid manure worth their expense; I, on the other hand, find them very valuable. An exact knowledge of the conditions under which they are useful or otherwise, may enable your readers to form a judgment as to their utility in each particular case. I have two yards, the area of one of which is 4200 superficial feet, that of the other is 3375 feet. Round these yards I keep 69 beasts tied up in sheds, 12 horses in stables, and 12 beasts in the open yard. The 69 beasts have each 4 lbs. of oil-cake per day, with 64 lbs. of Swedish Turnips, and 32 lbs. of Mangold Wurzel, and as much hay as they like. The 12 beasts in the yard have 4 lbs. each of oil-cake, 40 lbs. of Mangold Wurzel and straw. The horses are fed with Clover and meadow hay, and a bushel of corn each per week. The daily consumption then is 1 ton 19 cwt. of Swedes, 3 tons 1 cwt. of Beet, 2 cwt. 100 lbs. of Linseed cake, 80 lbs. of corn, and hay. The buildings are all spouted. The sheds and stables all drain into the yard, so that the manure may be saturated with urine, and drains from the lowest part of the yard communicate with a tank from which the liquid is removed and spread as soon as it is full. The effect of the dressing, 2000 gals. per acre, is very visible upon my dairy pasture. I have compared the effect upon Clover of the liquid collected in the summer when the beasts are fed with green Clover or Italian Rye-grass, and 3 lbs. of Linseed cake, with that produced by a dressing of Peruvian guano, 1½ cwt. to the acre, and I found it necessary to give ½ cwt. more of guano to make it equal to the tank water. The guano was either sowed on a wet day or dissolved in water, and spread in the same manner as the tank water. A man and horse will spread 15 carts of 200 gals. each upon the average of the distance I take it (this dresses 1 acre 1 rood), per day, at an expense of 5*s.* per acre. The guano would cost 19*s.* per acre for the same result. This liquid would flow away from my yard and from thousands of others were it not so used. I do not feel competent to pronounce an opinion upon box-feeding, but if sheds are used and the manure thrown out into open yards, I think wherever the cattle are liberally kept the tank prevents great waste. *Charles Paget, Ruddington Grange.*

Drain Obstruction.—During the early part of May last I drained some fallow for Turnips, with 2 inch pipe tiles, 3 feet deep and 21 feet apart, one drain cutting through a considerable spring. The pipes were well laid in, and the water flowed through them rapidly. To my surprise, however, at the end of October I found the water boiling up to the surface about 21 feet from the head of the drain, and overflowing the land below; but, in consequence of the wet state of the weather, did not interfere with it until the end of November, when on having some of the tiles removed, I found them completely choked up with a fibrous root, matted together, and resembling coarse hemp, which would admit of being drawn out of the pipes for several feet in length. I then had the surface opened, so as to obtain a passage for the water, and am at the present time taking up the pipes to relay 3-inch tiles, one above the other, instead thereof, so as to prevent, if possible, a recurrence of the evil. The stoppage appears to have commenced at the spring, and to have been carried down the pipes for 50 or 60 yards by the water. The subsoil is a sandy clay, of which, with a pipe and its contents, I send you a sample, and shall feel obliged by your remarks on the subject in the *Gazette*, with advice as to the best mode of preventing the mischief in future. *Geo. Siddall, Morton, near Alfreton, Feb.* 10. [Your experience is by no means uncommon. A deep drain of collared pipes is the least likely to suffer.]

The Rural Poor.—The excellent remarks of "L." demand the thanks of your readers. "The law of unreasoning obedience with suffering as the alternative," is indeed too much amongst us, and no more painful reflection can occur to the humane and considerate employer, than the very limited influence he can exert to allay the discontent and improve the condition of the labourer. Blessed is the large farmer or intelligent clergyman who regulates the affairs of a parish containing 500 or 600 people, as to acquire the respect of the greater part of them by his charitable acts, friendly counsel, forbearance, and ability; and the community who possesses such a man ought to be truly thankful; his example operates upon the smaller farmers, who will be indebted to him for frequent help in time of need; he offers a standard of conduct which many a one of less note will be fain to copy; those in his employ feel proud of their master, and these men become among their fellows so many centres of reliance on the good faith and honesty of man and its appropriate reward. A sense of decency prevails, a restraint upon misconduct is imposed, the trusty workman has a firmer tread in the consciousness that his services are valued, the idle and the mischievous are in a minority, and feel ashamed. The places of worship are frequented, the school increases, the cottages are neat, the dwellers in them are tidy, and an air of comfort and busy life pervades the place; but how many accidents prevent this desirable consummation, the decay of families, by death or pecuniary losses, fresh comers, sectarianism, or indifference or non-residence of the priest, the neighbourhood of game preserves, numerous beer-shops, needy occupiers, and often the character of a portion of the inhabitants, as being austere, grasping, upstart, dissolute, or foolish, will determine the lot of many families dependent on their weekly wages for subsistence. It is astonishing how much good a clergyman is capable of accomplishing. A few years since, a large parish, not above 8 miles off, was completely disorganised, the church was neglected, robberies were frequent, and every man seemed to complain of his neighbour; they have now a good preacher who devotes himself to his duties, and great is his reward; the church is crowded, the people appear to be completely transformed, orderly in their habits, respectful in their behaviour, and mostly well employed. I know another village where the clergyman is not admired, but where the example and exhortations of the principal farmer have been of vast benefit, which is greatly felt in the smallness of the contribution required from this parish by the union for the maintenance of its poor, which is in general a good criterion of the character of the leading persons in any village. Some parishes have

several worthy and intelligent heads, others are managed, or rather mismanaged, by poor plodding men, who pay low wages to few people; the poor-rates are high, the labourers wretched in mind, body, and morals, their houses mere huts, fever frequent, rheumatism in winter, diarrhœa in the summer; sheep-stealing is heard of, incendiarism breaks out, and general distrust completes the misery which has been hatched in ignorance and forced by neglect. These remarks show what religion, benevolence, education, and energy may do, and have done, in villages; but how much more work there is to be done in towns! The individual control or influence ceases, or exercises all but an imperceptible effect. Can a clergyman, or a dissenting minister, or any well-disposed person reach the young blackguards with short pipes, whose language is made up of oaths, who hate labour and daylight, and whose prospects extend not beyond the union-house and the gaol. Is this class to be enlarged or diminished? That is the problem. Are the middle and upper classes to be awakened to a conviction of the necessity of increasing the facilities of education in a ratio commensurate with the increase in the number of the population? and can a scheme be devised to extend these facilities of education to that part of the middle class which has hitherto been contented with an imperfect share of education at a comparatively costly rate? All must bear a hand in the improvement, for what chance can a farmer now have with the foreigner, if his intelligence is inferior, his steading and his implements no better, and his capital inadequate, with higher wages of labour, and a far greater amount to pay of rent, rates, and taxes? The farmers must then bestir and inform themselves. Aye! even the present generation must be instant and doing, but the labourer must be improved also; the farmer cannot stir without him, any more than the manufacturer without his engineers and inventors; and who can tell the extent of loss to the agricultural interest from the partial application of those inventive powers, which have lain so long dormant in the working classes, and which would have been doubtless available to an immense extent if even a moderate share of cultivation had been generally bestowed on the farming labourer. This cultivation of the mind is the only antidote that can be applied to the state of apathy and vice into which so many of our rural population are plunged. It is also the only lever which will raise the agricultural interest in sustaining its pretensions to occupy the same rank with those of manufactures and commerce. *J. W., Peterborough.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House, in Hanover square, on Tuesday last, Feb. 20, present: Mr. Raymond Barker, in the chair; Mr. H. R. Raymond Barker; Dr. Calvert; Mr. Christian; Mr. Fuller, M.P.; Mr. Hincks; Mr. C. E. Overman; Professor Simonds; Mr. Slaney, M.P.; Mr. H. A. Smith; Mr. Reynolds Solly; Mr. Thos. Turner; Dr. Walker; and Professor Way. The following new members were elected:

Atkinson, J. B. W., Elmwood House, Leeds
Smith, Colonel John, Ellingham Hall, Bungay, Suffolk
Churchill, Henry, Barton House, Morchard-Bishop, Exeter
Rising, William, Somerton Hall, Great Yarmouth, Norfolk
Churton, John, Foregate-street, Chester.

The names of 12 candidates for election at the next meeting were then read.

Analysis of Plants.—Mr. Spooner, V. S, of Southampton, conveyed to the Council the expression of his satisfaction on learning that they had renewed the grant for the analysis of the ashes of plants. He thought the investigation, of which the results had been published from time to time in the journals of the Society, a very important one: but valuable as it was thus to obtain the mineral inorganic or fixed constituents of particular plants, as found in their ashes after combustion, there was one protean element not found in such residuum which every year's experience in the progress of chemical science proved more and more to be of the highest interest and importance in the economy of vegetable life and the products resulting from particular crops. The element to which he alluded was nitrogen; and he would suggest the extension of the Society's plan of analytical operations, in order that the amount of that organic element in the grain or plant before combustion should become a principal point of inquiry. He considered it to be now admitted on all hands, that a supply of nitrogenous manuring matter was essential to the production of a good or remunerating crop of Wheat; for although a certain amount of grain might be raised independently of such direct application of compounds containing nitrogen, the crop would in such case be too light to repay the outlay of cultivation. Mr. Spooner concluded his communication with the following remarks: "This being the case, why should an analytical enquiry be limited to the inorganic constituents of plants, when, by embracing one organic element, namely, nitrogen, we may obtain all that we require for analysis? For the fact of the other three organic constituents being supplied in the greatest abundance through the medium of the atmosphere, will, I imagine, render their examination by analysis altogether unnecessary; but it will be most interesting and important to ascertain the relative bearings and effects the supply of phosphoric acid and of nitrogen have over each other, and more particularly when the same enquiry will inform us the relative proportion of gluten possessed by various kinds of Wheat, or by Wheat from various soils, or variously manured."—Professor Way thought the observations of Mr. Spooner perfectly just. It would no doubt be highly interesting to possess an organic analysis of the different crops in relation to their mineral composition. But it was but right that it should be known that the terms of the grant precluded him from employing it for such a purpose. Mr. Spooner had correctly observed, that a knowledge of the amount of nitrogen in different plants was very necessary to the proper application of manures; and Professor Way thought that information would afford many important data, of an approximative character, in reference to the nutritive value of different kinds of food, a subject, he feared, on which at present we were comparatively uninstructed.—The Council then directed their thanks to be conveyed to Mr. Spooner for these suggestions, and his communication to be referred to the analysis committee.

Cultivation of Maize.—Mr. Keene, C. E., Member of the Royal Academy of Bordeaux, having resided many years in the Basque Provinces, and had his attention particularly directed, since the first failure of the Potato crop in England, to the cultivation of the dwarf Maize, or Indian corn of the Pyrenees, and to its introduction into this country, attended the Council for the purpose of laying before the Members various specimens of that plant and its seed, as well as of the American Indian corn, so long the subject of discussion by other parties on both sides of the Atlantic. —Mr. Keene stated that the peculiar kind of Maize, recommended by him for cultivation in England, and which he named "Forty-day Maize," was a hybrid, cultivated by himself for our climate, and so named because it begins to show its flower in about 40 days from the day of sowing. It is distinguishable from the ordinary sorts of Indian corn by the rapidity of its growth, and its capability of resisting great variations of temperature. The stalk bears but one cobb, and the whole plant is of dwarf proportions. Dwarf Maize is grown on the northern or cold side of the Pyrenees, and is also sometimes seen in the plains of the Landes after Rye, but this is not so true a sort as that of the mountainous districts, and the hybrids Mr. Keene produced by crossings from this latter. Seeing the continued failure of the Potato crop, he had, during the last two years, cultivated the seed with great care, specially for its introduction into England. Since his arrival in London, he had been informed by the President of the North Cornwall Agricultural Experimental Club that it had been grown experimentally with success in the last season, by one of the members of that Association, and Mr. Keene had reason to believe that the seed was obtained from him in the month of January last year. In reference to the question, whether the mid-day heat of a southern climate was not needful to the successful growth of the plants, he considered that the more equable temperature of the summer months of the south of England would be equally favourable, and that the plant would thrive more steadily than under the influence of the extreme range of heat and cold to which it was subject in the quarter from whence he brought it, where flooding rains in the summer months, and hailstorms frequently checked for days and weeks the advance of vegetation. It had been supposed that Maize would only ripen where the heat is sufficient to bring Grapes to maturity in the open vineyard. This was a mistake, though true of the Indian and American corn. Whoever had been to Bagnères, in the Pyrenees, would remember that vineyards scarcely extend beyond Tarbes, but that fine fields of Maize surround the town of Bagneres, which is about 1000 yards above the level of the sea. There are no vineyards, and Grapes attain but a poor maturity against a south wall. Even the Apple ripens less perfectly than in England. Now, the Forty-day Maize is a much quicker growing sort than that cultivated around Bagnères; it will gain a month upon it; that is to say, sown at the same period, it would be fit to gather a month earlier, and this precocity would bring it amply within the limits of our worst summers. He hoped that it would be tried in various districts of England, more particularly as there can in no case be any loss, for, as a green crop, it would amply repay all expenses. He explained to the Council that this was a very different sort from "Cobbett's Corn," or the American, which will not ripen in the districts where this Forty-day Maize was grown. One of the dry plants which he showed was, he said, from American Corn, sown in the same field on the same day as the Forty-day Maize; the American was 12 feet high, but bore at harvest time no ripe seed, whilst the other, being only half the height, bore its seed in full maturity. He exhibited a plant with the Haricot Bean turning round it, having been sown with it, and stated that the Forty-day Maize would always ripen earlier than the Bean. He said bread from pure Maize flour, without any admixture of Wheaten flour, was the staple food of a large population in the Basque provinces; and, in reference to its nutritive powers, he affirmed that it was by them preferred to Wheaten bread, as much more satisfying; partaking of the nature of both bread and vegetable, it could be better eaten without animal food than bread; and that the class of labourers unable to purchase choicer diet always preferred it to Wheaten bread, and it maintained them in great strength and vigour of body; but he further observed, that it could not be expected that the labouring classes of England would adopt readily for food such Maize as is imported from America—a large flat-grained sort, without sweetness, fit only for cattle food. He had, he said, sought in vain in the London market for even a moderately fair sample of Indian Corn flour; it is all stoved and high-dried to enable it to bear the voyage, and the "life" is taken out of it, rendering it almost insensible to the action of yeast, and so charred, as it were, by the drying process, that it remains gritty and hard, resisting every kind of cooking, more particularly baking. Maize corn grown in England, or unstoved corn of a right sort, imported but ground in England as wanted for use (for it lost its sweetness when it had been ground more than 15 or 20 days), would give a very different result, and be eagerly sought after when once known. The flour could not be imported in a proper state; if unstoved it sours, and is absolutely unwholesome; if stoved, it would be deprived both of the sweetness and softness of the natural fresh ground meal, and rendered nearly insensible to the action of any kind of leaven. With regard to the money value of Maize relatively to that of Wheat, he said it ruled in the market rather higher than half the price of the latter, or about the value of Barley, and that generally the crop obtained was more than double that of Wheat. He then described the process of the culture from the putting the seed into the ground to its gathering in, and said that the thinnings and cuttings paid for all the labour of its culture. He thought that if "Cobbett's corn" had for a time succeeded in any part of England, that success had been followed by failure from insufficient caution in keeping the true seed; for that no corn plant tended to degenerate so rapidly as this by the introduction of any strange sorts, and that the right seed once obtained, the greatest care should be taken to prevent any other whatever from being sown with it. He thus accounted for the repeated failures which kept up prejudice against its growth in England; Indian corn being sown indiscriminately, without any knowledge of its origin or quality, and some of which requires six months of the hottest climates of the world to ripen them. The knowledge of its culture, the right season for putting it into the ground, and the management during the growth, he affirmed to be most essential —of all which, those who continually sow it in England as experiments are ignorant; that these abortive experiments, repeated from year to year, prejudice unfairly the question. He had seen attempts to grow it on a small scale in England, and that by Americans, but the sorts sown gave out large branch suckers, or were sown and came up in tufts; they were remarkable, from the great height the plants attained, but the seed never ripened. Now the right sort very rarely throws out any suckers at the foot, and no two plants should be let grow together, for in such case neither will ripen. They should stand generally at about 9 inches asunder, and above all, be sown in the right season, in the month of May, for a few days earlier or later might prejudice the crop.

A very interesting discussion then ensued among the members present, on the various conditions connected with the growth of this variety of Maize, and the presumptive evidence of its successful culture in the southern districts of England.—Mr. Slaney, M.P., expressed his willingness to place a portion of his land in Shropshire at Mr. Keene's disposal for experimental purposes connected with the cultivation of the Forty-day Maize, and Prof. Way undertook to institute certain chemical inquiries into the composition of its grain.—The Council then returned Mr. Keene their thanks for the favour of his attendance, for the explanations he had kindly given to the Council, and for the presents he had made to the Society.

Drum head Cabbage.—Mr. Fuller, M.P., informed the Council that he had for the last two years grown the Drum-head Cabbage from seed obtained by him from Messrs. Thomas Gibbs and Co., the Seedsmen to the Society. His bailiff had last year a very fine crop of 40 tons per acre of this plant, which he thinks a very valuable one, and economical in its cultivation. He gives these Cabbages to the cows, calves, and ewes, as well as to the lambs of last year, and finds all do well on them. The land on which they were sown was very poor land, covered with heath and furze, but which, by well draining and subsoiling, had produced very excellent Turnips, Carrots, and the Drum-head Cabbages now referred to; while on a part of it last year was grown the finest crop of Peas in that part of Sussex, subsequently damaged however before carrying, by the wetness of the autumn.—The observations made by Mr. Fuller at the previous meeting, in reference to the state of his Potato crops, having been misapprehended, he took that opportunity of stating that in Sussex all his Potatoes had proved bad, as well as those raised from the seed obtained by Mr. Miles from Chili; also, that the Potatoes this year in frames in Anglesey and Carnarvonshire were now showing the disease.

Miscellaneous Communications.—Mr. Fulbrook, expressing his willingness to supply the communications on Prognostics of Weather requested by the Council. The Rev. Thomas Cator, suggestion that all stallions and mares being "roarers" should be disqualified for competing for the prizes offered by the Society for improving the breed of horses. The Rev. E. Sidney, offer to deliver a lecture before the members at the Norwich meeting, on some subject connected with practical agriculture. Mr. M'Gall, plan for the removal of the Turnip-fly by means of tarred cloth drawn over the field. Mr. Dyer, to correct his statement at the previous meeting "that he had employed 3 lbs. of blue vitriol to the sack" of corn to destroy smut; he found on reference to his memoranda, that for the last 13 years he had used with success 1 lb. of that substance to 3 bushels of grain. Mr. Blackhall, on steaming

bones at high pressure. Messrs. Youens and Robson, specimen of antiseptic powder for Potatoes.

The Council then adjourned to Tuesday next, the 27th of February.

HIGHLAND AND AGRICULTURAL, *Feb.* 7.—At this Monthly Meeting, Mr. Hall Maxwell, the Secretary, called the attention of the meeting to a mode of preparing bone manure, communicated by Mr. James Blackhall, Upper Grey-street, Edinburgh. Mr. Blackhall stated that bones of any size could be reduced into a soft mass by the agency of high pressure steam alone. A small boiler with a steaming vessel connected with it, capable of standing a pressure of 25 to 30 lbs. a square inch, was all that was required. If the vessel was filled with bones, and subjected to the action of steam above the level of the boiler (as they will not dissolve if covered with water), at 25 lbs. pressure for a few hours, they will become quite dissolved—thus saving all the expense of grinding and the sulphuric acid commonly used, which amounted to double the price of the rough bones. A ton of rough bones could be got for 3*l.*, while a ton of dry bone-dust cost from 6*l.* to 7*l.*, and a sufficient quantity of sulphuric acid to dissolve the dust would be other 4*l.*, or about 11*l.* in all for a ton of dissolved bones, which could, in Mr. Blackhall's opinion, be as well done for a few shillings above the prime cost of bones, making a saving of nearly 7*l.* on every ton used in the country. Mr. Blackhall thought that every farmer who had high pressure steam engines should immediately get a steaming vessel attached; this would cost about 7*l.* or 8*l.*, and would also be useful for other purposes. In the meantime they could try some bones suspended above water-mark in the boiler for a few hours. The Chairman then said that the first subject on the programme was an address on the relation of Science to Practice in Agriculture, by Dr. Anderson.

Dr. ANDERSON said, that in entering upon the duties of chemist to the Highland Society, he thought it desirable at an early period to call the attention of the members of the Society to the objects which ought to be held in view in the prosecution of researches in scientific agriculture, and the nature of the operations which they proposed to carry on in the laboratory. He need scarcely say that it was not his intention to occupy the meeting with anything they had as yet done in the laboratory; for, having been in operation for a single month only, the results hitherto obtained were neither of sufficient interest nor completeness to render them worthy of the attention of the Society. He trusted, however, that it would not on that account be supposed that they had been idle; on the contrary, during the month of January there had been performed between 20 and 30 analyses, which, considering all the sources of delay inseparable from the commencement of such an undertaking, might be considered as a fair amount of work; and now that they were in full operation, he hoped soon to be in a condition to lay before the Society the results of some investigations which were about to be taken up in the laboratory. In the meantime, he thought he might advantageously occupy the meeting for a few minutes with some observations on the relations of science to practical agriculture, the more especially, as he thought there still existed a certain amount of misapprehension in some minds as to their exact mutual bearings. In making this observation, he would beg that it might be understood as applying to a few persons only; for his connection with the Society had already enabled him to see how distinctly their bearings were appreciated by its members generally; but it was well even for them to keep before their eyes the errors and misapprehensions into which others had been led, so as to be always warned to avoid either the same, or any others, with which they might chance to come in contact. One of the most serious misapprehensions—serious both to agriculture and to chemistry—was the expectation of extravagantly rapid or extensive results from scientific agriculture. There were not wanting persons who imagined that chemistry was at once, and as by the wand of a magician, to spread fertility over our barren moors, and to raise abundant crops where nothing ever grew before. At first sight there might be some ground for such expectations, looking at the extraordinary effect which chemistry had produced upon some of the other arts, such, for instance, as bleaching, and the manufacture of soda, which the application of science had by one great stride raised from an extremely rude state to one at least of comparative perfection. A superficial consideration of such facts might lead to the expectation of a similarly rapid progress for agriculture; but it was important to remember that there was a material difference between such arts as the manufacture of soda, for instance, and the cultivation of the land. In the former case, the chemist had presented to him for solution a definite and circumscribed problem, involving the mutual relations of some two or three different substances; while, in the art of agriculture, he had to consider not one but many problems connected with the very highest and most abstruse departments of his science; and problems, too, which were to be tested by practice, amidst the influence of weather and climate, and many other disturbing causes. The extremely complicated nature of the problems thus submitted to the chemist might be conceived from the fact, that a plant contained some 16 different elements, the relations of which must be investigated in order to our arriving at definite ideas regarding the changes which are continually going on in its tissues. When, however, the mere number of the elements was taken into consideration, only a small portion of the question was stated; for these substances enter into union so as to form a set of compounds of the utmost degree of complexity, so that the single element of sulphur, which did not constitute above two or three parts in the thousand of the plants, occurred in not less than three entirely different states of combination, in each of which it is as essential to its growth as any of the elements which it contains in larger quantity. All these, of course, required to be supplied from without, in order that the plant may arrive at maturity. If even those which were commonly considered as the least essential were withheld, the plant languished and died. It was, therefore, of the utmost importance that they should be supplied to it; and not merely supplied, but provided in the state in which they were best adapted to support the life of the plant; and this was a great and important question, which had to a great extent grown out of the application of chemistry to agriculture. It was of comparatively little importance under the old system, when they were supplied to the crop in the state only of farm-yard manure, which, being composed in great part of vegetable substances, contained all the requisite substances, and yielded them to the new generation of plants in just the state best adapted to them. But the progress of agriculture had led to the employment of artificial manures, which opened up an entirely new question as to the state in which those substances ought to be applied; for it was easy to see that we might employ all the requisite substances, and in the requisite proportions, without presenting them in the condition adapted to the growth of the plant. A great deal of difference of opinion had existed both among chemists and agriculturists on these points. The general impression had been that the manure should be employed in the soluble state, so that it might be readily absorbed and assimilated by the roots of the plant, and, at first sight, this ought unquestionably to fulfil all that was practically acquired; but the advantages of the method were attended by a corresponding disadvantage, for the solubility which enabled the plant readily to absorb the manure, occasioned its being washed away by the rain, and lost. On this account a distinguished chemist had advocated an opposite method, and aimed at presenting the manure in a state in which it should dissolve with no more than the degree of rapidity necessary to afford a supply to the plant as it requires it, and this was probably theoretically the best method, but it was so only under theoretical circumstances. It would require a steady, in fact a theoretical climate, under which the plant should go on day after day at a uniform rate, so that it should never require, during any particular period, more food than was to be liberated by gradual solution during that time from the manure applied. In actual practice, however, a plant may continue to advance with uniformity for a certain time, but by and bye, a favourable change taking place in the weather, it might make a rapid start in advance, when, of course, it would require to take up a larger quantity of the elements than the manure was calculated to supply in the period, and its growth would be stinted in a manner which it would never recover from in the after part of the season. All things taken into consideration, he was of opinion that the best method would be to apply the manures in the most soluble condition, and in successive small portions, and he was confirmed in this opinion by the results of some very admirable experiments which had been recently made by a member of the Society, and which were shortly to be published in the Journal, where the best results had been obtained from the application of manures at several periods during the season. He would not, however, venture to assert this as a positive truth, but rather as a point worthy of the special attention of practical men. This led him to refer to a misapprehension which was, perhaps, still common among practical men, namely, that chemistry could give positive and definite answers to all agricultural questions, and that it was in the condition to tell them positively how they were to cultivate their lands, or why certain methods turned out unsuccessful. It might, indeed, in some instances do this, but certainly not in all. The condition of chemistry, a science still in a very imperfect state, did not admit of this, and the statements of chemists were to be considered less as absolute truths than as hypotheses to be tested by careful experiments. Chemists had not, perhaps, sufficiently distinctly stated to practical men the method in which they pursue their investigations; they did not make their experiments at random, but set out from some hypothesis, the accuracy of which was to be tested by experiment; and the reason why one man arrived at good results, and another at bad ones, was, because the former abandoned his hypothesis the instant experiment showed it to be untenable; the other adhered to it in spite of experimental results, and ended by twisting facts to suit his erroneous hypothesis. On the other hand, these hypotheses when put into the hands of the practical man, in order that they may be tested by experience, as he only can do, have been taken for truths, and when found to be erroneous, have been held up as illustrations of the fallacies of science. He would impress most strongly upon the Society, however, that scientific agriculture could never be advanced by thus placing science and practice in antagonism. It must be by the very opposite course—by their constant and active co-operation—that progress is to be made; and he thought that it was one of the important parts of his position as chemist to the Society, that he should have the opportunity of referring, on such matters, to skilful farmers, with whose assistance results might be obtained which never could be arrived at in the laboratory alone. He felt sure that there were many practical men who were able and willing to afford him such assistance, and, with their co-operation, he trusted that they might be able to do good service to agriculture. But he would most strongly impress them that there would be no rapid progress—that, the very nature of agriculture precluded, but they might, by continuous and steady labour, so advance their art, that after a series of years, looking back to the present time, they might be able to say, that good progress had been made, though, comparing one year with its immediate predecessor, it might be scarcely appreciable. In conclusion, he must say, that he entered upon the duties of his office with some anxiety. His office was an important one, and one on the successful operation of which much depended for agriculture. He felt also that, as in some measure the successor of Professor Johnston, who had done such good service for Scottish agriculture, and whose zeal and activity were too well known to the Highland Society to require any observation from him—he felt that much would be expected from him, and that it was no easy task to stand in the position which had been held by one of such eminence. He could assure the Society, however, that he would use his best endeavours to perform the duties of his office; and he trusted that, with the active co-operation of the members of the Society, he should be enabled to assist in advancing the art of agriculture in all those points in which science could assist it.

Professor Traill had every reason to congratulate the Society and the meeting in having secured the services of Dr. Anderson. He would not allude to the address which they had just heard, further than to express his concurrence in what had been stated by Dr. Anderson, and his approval of the principles laid down by him. He regarded as most important his appeal to the practical agriculturists of the country, and felt assured that he would receive from them any assistance which he might require.—Professor Low expressed his entire concurrence with the Chairman and Professor Traill in congratulating the Society, in having obtained the services of Dr. Anderson. He was well known in the scientific world, and the address he had just delivered must make a favourable impression on the practical farmers present.—The Chairman said he had no doubt the meeting would approve of his conveying to Dr. Anderson their thanks for his interesting and valuable address.

Calendar of Operations.

FEBRUARY.

BERWICKSHIRE MERSE FARM, *Feb.* 16.—Since last report we have finished storing Turnips and sowing Wheat. We have stored 1097 loads of Swedes, and sown 124 acres with Hunter's Wheat, part 2½ bushels per acre and part 3 bushels. We have begun this day to sow Beans on the Grass land; as the weather has been fine for some time past, it is in good condition. One man and a woman planting Turnips for seed, &c. *J. B.*

GALLOWAY FARM, *Feb.* 19.—Since last report we have carted home to the stack-yard the whole of the remainder of the Swedes. The weather proving very favourable, the Turnip land was last week all ploughed and sown with Wheat. The variety used was Hunter's Wheat, at the rate of 3 bushels per imperial acre, sown broadcast; 2 cwt. per acre of guano was harrowed in with the seed. We are now occupied with Bean sowing, which is performed in the following manner: the land, which was trenched-ploughed in autumn, from exposure to the weather, now breaks down before the drill plough, without any other previous operation; 6 drill ploughs, following each other, go a "bout" in the morning, making 12 drills; a drill barrow, which sows 3 drills, then enters, and at a "bout" finishes 6 drills. By this time the 6 ploughs have again drawn 6 drills, and on returning up the field, they cover the first 6 drills, now sown. They then draw off 6 new drills, and again cover 6 on their return, the drill barrow going at the same rate, and sowing at a "bout" 6 drills also. A space of 12 drills is left between the opening and covering, which gives plenty of room for the working of the barrow and the passing of the horses. The drills are 27 inches wide, and are made across the winter furrows. Part of the land was dunged on the stubble, but the part which was not dunged is dressed with 4 cwt. of guano, sown in the drills by hand, and covered in with the seed. 2½ bushels of Beans are sown per acre, and with this force we get over from 10 to 12 acres a day. An expeditious plan at this season is of the greatest consequence in taking advantage of a favourable seed time for Beans. The horses are receiving at present an extra feed of Oats. The fattening cattle continue to be fed with Swedes, and 6 lbs. of Bean-meal, Oats, and Linseed, mixed. They are all washed with soap and water once a fortnight, besides being daily well cleaned with a "dandy-brush." They relish their bath extremely, and take to their food after it with increased appetite and zest. But we do not anticipate such a profit as your Bedfordshire correspondent, whose cattle consuming not the half quantity of Turnips, and about the same amount of meal, are expected to leave him 10*s.* a week for their keep. At the end of the season his accounts will be very interesting, and if they realise his present anticipations, we earnestly hope he will publish his system for the benefit of his brother farmers. A plan which will increase the profit, and at the same time diminish the expense of feeding, cannot fail to be instructive. *J. C.*

Notices to Correspondents.

RURAL CHEMISTRY, 2d Edition, revised and enlarged; by Edward Solly, Esq., F.R.S., Experimental Chemist to the Horticultural Society of London, Honorary Member of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution. May be had at the office of this Paper, and of all booksellers. Price 4*s.* 6*d.*

BOOK-KEEPING: *Agricola and C D.* We know of no work that can be recommended. The numerous inquiries we receive ought to induce publishers to come forward on this subject.

FOOD FOR COWS. *A C.* Carrots and Parsnips and Cabbages are the best winter food for cows.

FOOD: *A Subscriber.* We should greatly prefer a ton of Oatmeal to one of oilcake.

HARES AND RABBITS: *F S.* A few Carrots alongside the Lucerne will save it.

LICE: *A Young Farmer.* Tobacco water, or the ammoniacal liquor from the gas works, will answer the purpose, but the latter is very offensive. *W. C. S.*

PIGS: *An Amateur.* Messrs. James, of Fish-street-hill, London, sell suitable weighing machines; and we have weighed pigs in a strap by Marriott's dial machines, but it is a noisy process.

POND; *C E W.* You must make a concrete which will set under water. The lias lime has this property, and, if you wish a perfectly true surface, this must be coated with Roman cement.

SLUGS: *G.* The frost must have killed it by this time surely. Salt may be sown at from 2 to 6 cwt. per acre, according as the land is clay or sand. Be sure the Wheat is killed before you plough it up.

SOOT: *T Starke.* It is measured here in a bushel just as corn is, and costs from 6*d.* to 7*d.* per bushel.

THRESHING MACHINES. *Anon.* It is only in the case of portable machines that a horse-wheel on the ground is used. Many of its forms are figured in Johnson and Shaw's Almanac.

TILE WORKS: *W W W.* We have information for our correspondent which must be transmitted privately. He will therefore oblige us by giving his address.

MISC.: *D M* should advertise; the cost will be 5*s.*

Markets.

COVENT GARDEN, FEB. 24.

The market continues to be tolerably well supplied with Vegetables and winter Fruit. Pine-apples are sufficient for the demand. Foreign Grapes are scarce. Pears consist of Beurré Rance and Easter Beurre. Apples are getting dearer. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, Carrots and Turnips are abundant and good; Cauliflowers and Broccoli sufficient for the demand. Asparagus, French Beans, Rhubarb, and Seakale are plentiful. Potatoes are rather on the rise. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Christmas Roses, Camellias, Gardenias, Cinerarias, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 6*s* to 9*s*	Almonds, per peck, 6*s*
Grapes, foreign, p. lb., 9*d* to 2*s*	— sweet, per lb., 2*s* to 3*s*
Apples, dessert, p. bsh., 6*s* to 12*s*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
— kitchen, p. bsh., 3*s* to 8*s*	— p. bush., 16*s* to 24*s*
Pears, per doz., 2*s* to 6*s*	Chestnuts, p. peck, 4*s* to 7*s*
— p. half sieve, 12*s* to 18*s*	Nuts, Bar., p. bush., 20*s* to 22*s*
Oranges, per doz., 1*s* to 2*s*	— Filb., p. 100 lbs., 60*s* to 100*s*
Lemons, per doz., 1*s* to 2*s*	— Cob, p. 100 lbs., 90*s* to 150*s*
— per 100, 10*s* to 18*s*	— Brazil, p. bsh., 12*s* to 16*s*

VEGETABLES.

Cabbages, p. doz., 3*d* to 1*s*	Spinach p. sieve, 1*s* 6*d* to 2*s*
— red, p. doz., 2*s* to 6*s*	— Turnip, do., 9*d* to 1*s* 6*d*
Savoys, per doz., 8*d* to 1*s*	Onions, p. bunch, 2*d* to 4*d*
Greens, p. doz. bunches, 1*s* 6*d* to 2*s* 6*d*	— p. bush, 1*s* 6*d* to 2*s* 6*d*
Cauliflowers, p. doz., 2*s* to 4*s* 6*d*	— Spanish, p. doz., 1*s* 6*d* to 4*s*
Broccoli, white, p. bun., 1*s* to 2*s*	— pickling, p. hf. sieve, 1*s* 6*d* to 3*s*
— brown, p. bun., 6*d* to 1*s* 3*d*	Shallots, per lb, 4*d* to 8*d*
Sorrel, p. hf. sieve, 1*s* to 1*s* 6*d*	Garlic, per lb., 4*d* to 8*d*
Potatoes, per ton, 60*s* to 180*s*	Artichokes, Jerusalem, *p. half sieve*, 9*d* to 1*s*
— per cwt., 5*s* to 9*s*	Lettuce, Cab., p. *sc.*, 4*d* to 6*d*
— per bush., 2*s* 6*d* to 5*s*	— Cos, do., 9*d* to 1*s*
Turnips, p. doz. bun., 1*s* to 2*s*	Endive, per score, 1*s* to 2*s* 6*d*
Red Beet, per doz., 6*d* to 1*s*	Mushrooms, p. pottle, 6*d* to 1*s*
Horse Radish, p. bdl., 1*s* to 6*s*	Small Salads, p. pun., 2*d* to 3*d*
Asparagus, p. 100, 2*s* to 8*s*	Fennel, per bunch, 2*d* to 3*d*
Seakale, p. punnet, 9*d* to 1*s* 6*d*	Savory, per bunch, 2*d* to 3*d*
Rhubarb, p. bundle, 6*d* to 1*s* 6*d*	Thyme, per bunch, 2*d* to 3*d*
French Beans, p. 100, 2*s* to 3*s*	Watercress, p. doz. bun., 6*d* to 9*d*
Cucumbers, each, 3*s* to 6*s*	Parsley, p. hf sieve, 1*s* 6*d* to 2*s*
Leeks, per doz., 6*d* to 1*s*	— Roots, p. bdle., 1*s* to 1*s* 6*d*
Celery, p. bundle, 6*d* to 1*s* 3*d*	Marjoram, per bunch, 2*d*
Radishes, p. doz. hands, 1*s* to 2*s*	Mint, green, per bunch, 4*d* to 8*d*
Carrots, p. doz. bun., 3*s* to 5*s*	

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Feb. 22.

Prime Meadow Hay	60*s* to 75*s*		Clover	60*s* to 92*s*	
Inferior ditto... ...	50	60	New Clover	—	—
Rowen	40	60	Straw	25	30
New Hay	—	—			

Trade very heavy. J. COOPER.

CUMBERLAND MARKET, Feb. 22.

Prime Meadow Hay	70*s* to 76*s*		Inferior	50*s* to 84*s*	
Inferior ditto	50	65	New Clover	—	—
New Hay	—	—	Straw	28	32
Old Clover	90	95		JOSHUA BAKER.	

WHITECHAPEL, Feb. 22.

Fine Old Hay ...	65*s* to 70*s*		New Clover	84*s* to 90*s*	
Inferior ditto ...	50	55	Inferior ditto... ...	55	65
New Hay	63	65	Straw	25	28
Old Clover	95	100			

POTATOES.—Southwark, Waterside, Feb. 19.

The Committee report that the arrivals during the past week have been liberal, particularly from the Continent, which has caused several sorts to be sold at less prices. The following are this day's quotations:—York Regents, 100s. to 130s.; Scotch, do., 100s. to 130s.; Scotch Cups, 90s. to 110s.; French Whites, 80s. to 105s.; Belgian do., 70s. to 90s.

SMITHFIELD, Monday, Feb. 19.

We have again a large number of Beasts, and of average good quality. Trade is exceedingly dull; for a very choice article 3s. 10d. is with difficulty and very rarely realised. The supply of Sheep is about the same as of late—not large, but quite equal to the demand. Prices are no better. The number of Calves is very small; consequently trade is brisk, and 5s. is readily obtained for the choicest kinds. From Holland and Germany we have 410 Beasts, 1,200 Sheep, and 31 Calves; from Spain, 66 Beasts; Norfolk and Suffolk, 2200; from Leicester, Lincoln, and Northampton, 200; and from Scotland, 600.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	6 to 3	8	
Best Short-horns	3	4 — 3	6	
2d quality Beasts	2	8 — 3	0	
Best Downs and Half-breds	4	4 — 4	8	
Ditto Shorn		.....		

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	4	0 to 4	4	
Ditto Shorn		.....		
Ewes & 2d quality	3	0 — 3	8	
Ditto Shorn		.....		
Lambs		.....		
Calves	4	0 — 5	0	
Pigs	4	0 — 5	0	

Beasts, 3832; Sheep and Lambs, 18,810; Calves, 92; Pigs, 220.

Friday Feb. 23.

This being the commencement of Lent, but very little meat is wanted. The supply both of Beasts and Sheep is beyond the demand. Of the former many remain unsold, as also some of the latter. The choicest Scots do not on the average reach 3s. 6d.; indeed, all kinds of Beasts may be quoted 2d. per 8 lbs. lower. Nearly the same reduction is submitted to for Sheep. Trade is very dull for Calves, and 4s. 10d. is an extreme price for the best kinds. Pigs are also rather lower. From Holland and Germany we have 80 Beasts, 240 Sheep, and 90 Calves; from France, 12 Beasts and 10 Calves; from Scotland, 500 Beasts; and 150 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	4 to 3	6	Best Long-wools	3	10 to 4	2
Best Short-horns	3	2 — 3	4	Ditto Shorn		.....	
2d quality Beasts	2	4 — 2	10	Ewes & 2d quality	2	10 — 3	6
Best Downs and Half-breds	4	4 — 4	6	Ditto Shorn		.....	
Ditto Shorn		.....		Lambs		.....	
				Calves	3	10 — 4	10
				Pigs	3	8 — 4	10

Beasts, 833; Sheep and Lambs, 2100; Calves, 206; Pigs, 200.

HOPS, Friday, Feb. 23.

Messrs. Pattenden and Smith report that the market continues firm at late prices, and fine Hops are very scarce.

MARK LANE, Friday, Feb. 23.

For many weeks past nearly all the market reports noted below have had a downward tendency; such reports are too frequently of little worth; still careful comparison of figures will make the value of Wheat very nearly the same now as at the commencement of the year; Barley and Oats, Rye and Peas, lower; Beans higher, Maize higher, Oil-cake the same; Flour, both English and foreign, lower. Again, those reports for the past week nearly all write grain lower. The supply here during the week has not been large of foreign grain and Flour; still without any probability of abatement of supply. English grain comes slowly to hand, condition, quality, and weight being generally much below the usual average. Cambridge, Norfolk, and Suffolk appear to have had more favourable harvest weather than some other counties within reach of London markets, their produce generally being superior to Essex, Kent, Middlesex, Surrey, Sussex, or Berks. The Eastern Counties Railway bring many fine parcels from the first-named counties, and also large quantities of Flour. The Wheat plants in many districts, though much missed and injured by slug, are looking very healthy. Spring seed goes on beautifully. Potato planting, and the various preparations for supplying the thousand wants of London, are all in favourable progress. Cattle of all kind are much more healthy, though Smithfield market is far from satisfactory. Those who have kept wool may perhaps obtain 20 per cent. more than it was worth at shearing time, and all the manufacturing districts are said to be in full operation. Such combinations of favourable circumstances may fairly lead us to hope the worst is past, or at least that we are now on the lowest ebb, and may reasonably expect improvement.—Fine Wheat brings from 50s. to 52s.; Barley, 32s. to 34s.; Oats, 22s. to 26s.; Rye, 26s. to 27s.; Flour, first price, Norfolk on board, 44s.; Malt, 56s. to 60s. English Oil-cake, 11*l.* per 1000.; Foreign, 6*l.* 10s. to 7*l.* 10s. per ton.

Liverpool, Friday, Feb. 23.—The Market this morning was dull throughout. We had very few country buyers, and the business effected in any article was on a very moderate scale.—The prices of Wheat, Oats, Flour, and Oatmeal, were considered to stand the same as quoted last Tuesday. Barley, Beans, and Peas were also unaltered in value. Indian Corn was the chief article in demand, but the prices were not so good as on Tuesday by 6d. to 1s. per qr.; 30s. per 480 lbs. was the top price of American round yellow Corn, and 28s. to 29s. for white and mixed.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Jan. 13	45s 4d	29s 11d	17s 8d	27s 9d	32s 2d	36s 0d
— 20	45 4	29 1	17 1	28 4	31 1	34 9
— 27	45 3	28 10	17 0	28 11	30 8	32 8
Feb. 3	45 1	28 10	16 11	28 5	30 3	32 6
— 10	45 11	29 3	17 3	27 2	30 11	33 0
— 17	47 0	29 8	17 2	26 9	29 9	34 4
Aggreg. Aver.	46 8	29 3	17 2	27 11	30 9	33 9
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Jan. 13.	Jan. 20.	Jan. 27.	Feb. 3.	Feb. 10.	Feb. 17.
47s 0d	...	...	...	...	...	
46 11						
46 4						
46 3						
46 1						
46 0						
45 11						
45 8						
45 4	...	...	...	...	...	...
45 3						
45 1						

PRICES CURRENT.	London. Feb. 12 qr.	London. Feb. 19 qr.	Liverpool. Feb. 13. 70 lbs.	Liverpool. Feb. 20. 70 lbs.	Wakefield. Feb. 9. qr.	Wakefield. Feb. 16 qr.	Boston. Feb. 14 qr.	Boston. Feb. 21 qr.	Birmingham. Feb. 15. 62 lbs.	Birmingham. Feb. 22. 62 lbs.
Wheat—										
New, red	42 to 44	42 to 44	6 4 6 10	6 3 6 9	45 to 50	44 to 48	38 to 45	38 to 45	5 9 6 6	5 9 6 6
„ white	46—50	46—50	6 9 7 6	6 9 7 4	46 - 53	44—50	40—49	40—48	6 2 6 9	6 2 6 8
Old, red	42—45	42—48	6 10 7 0	6 8 7 0	42—48	44—49	40—46	42—46	6 4 6 8	6 4 6 8
„ white	48—52	46 - 56	7 3 7 8	7 0 7 6	46—50	44—50	46—50	44 —49	6 0 6 10	6 0 6 9
Foreign	44—60	40—58	5 6 8 0	5 3 7 10	40—52	40—52	—	—	5 8 7 2	5 4 7 0
			480lbs.	480lbs.						
Rye—New	24 - 25	25—27	—	—	—	—	—	—	—	—
Old	25—27	—	—	—	—	—	—	—	—	—
Foreign meal	—	7*l.* 5s	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley—										
Grinding	22—25	22—26	—	—	22—25	22—25	26—28	26—28	23—27	23—27
Malting	26—32	26—28	31s—33s	31s—33s	27—32	27—31	30—32	30 - 32	29—33	29—33
Foreign	24—31	21—29	—	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White	21—24	18—24	2s 10d 3s 0d	2s 10d 3s 2d	—	—	17—25	20—25	18—30	18—30
Black	17—21	16—20	2 4 2 7	2 4 2 7	—	—	11—18	18—22	17—19	17—19
Foreign	16—23	16—23	2 4 2 6	2 4 2 6	—	—	—	—	17—19	17—18
			qr.	qr.						
Peas—Boilers	28—30	28—30	37s—	37s—	34—38	30—34	—	—	36—46	36—44
Grinding	21—26	25—28	31 —32s	30 —32s	33—35	30—32	—	—	12—14	12—13
Foreign	25—33	25—33	34 —36	34 —36	—	—	—	—	—	—
Beans—										
New, small	21—30	22—27	32 —35	32 —35	31—37	31—33	26—32	26—32	11—14	11—13
Longpods, &c.	26—32	26—32	—	—	—	—	—	—	—	—
Old	32—39	36—39	34 —36	34 —36	36—37	33—37	34—36	34—36	15—17	15—16
Foreign	21—36	22—36	25 —33	24 —33	28—31	28—31	—	—	11—14	11—14
Clover Seed—										
Red, per cwt.	30—42	30—42	—	—	—	—	—	—	—	—
White „	30—44	30—44	—	—	—	—	—	—	—	—
Linseed—Feed	36—40	36—40	43 —44	42 —43	32—40	32—40	—	—	—	—
Linseed Cakes										
British	11*l.* 5s	11*l.* 5s	9*l.*	8*l.*—8*l.* 5s	—	—	—	—	—	—
Foreign	7*l.* 5s	6*l.*—8*l.*	—	—	—	—	—	—	—	—
									190lbs.	190lbs.
Indian Corn	25—30	24—28	—	28s—31s	—	—	—	—	13—14 6	13—14
Flour—	35—44	—	—	—	—	—	—	—	—	—
Weekly Averages and Imports.	Aver. Feb. 20	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Impts.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.		qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT	48 1	25315	—	12698	—	11884	43 2	2785	49 0	1951
BARLEY	30 4	9744	—	1333	—	4431	—	—	31 0	216
OATS	18 7	13114	—	6511	—	551	13 10	1370	24 0	10
RYE	26 3	1825	—	—	—	—	—	—	—	—
BEANS	29 0	1077	—	7005	—	1271	28 6	423	41 0	20
PEAS	34 3	1722	—	40	—	561	—	—	—	—
SIGNED	KINGSFORD and LEY.		SEGAR and TUNNICLIFFE.		SANDARS and DUNNE.		THOMAS WRIGHT.		J. and C. STURGE.	

HIGHLAND AND AGRICULTURAL SOCIETY. CHEMICAL DEPARTMENT.

Notice is hereby given, that Dr. Anderson, the Society's Chemist, is prepared to attend to Communications from Members of the Society, on all subjects connected with its Chemical Department, and to institute Investigations and perform Analyses, &c., for them, on the terms authorised by the Society.

Dr. Anderson's Laboratory for the present is at No. 3, Surgeon-square, Edinburgh.—Feb. 24.

HARTLEY'S PATENT ROUGH PLATE GLASS for Conservatories, so strongly recommended, supplied Wholesale and Retail, at the Manufacturer's Prices, by James Phillips and Co., 116, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS and CO., 116, Bishopsgate-street Without, London, are supplying 24-ounce SHEET GLASS at prices varying from 1½d. to 2½d. per foot; 21-ounce, 2½d. to 5d., according to size. Also Patent Rough and Polished Plate, double crown. Small sheet squares, in 100 feet boxes, from 12s. 6d. per box.

A well selected stock of Milk Pans, Propagating Glasses, Cucumber Tubes, Cream Pots, &c., Glass Shades for Ornaments, Lamp Shades, Metal-stand Frames, Lactometers for trying the quality of milk, and every article usually sold by the Trade. Estimates and prices forwarded on application.

GLASS FOR CONSERVATORIES, &c.

HETLEY and CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

CUCUMBER and MELON BOXES and LIGHTS. — One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l.* 6s. Garden Lights of every description. Conservatories, Green and Hot-houses made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England.

James Watts, Hothouse Builder, Claremont-place, Old Kent-road, London.

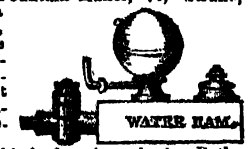
BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert. — ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, bernacle, brent, and laughing geese, shelldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pintoned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

GREENHOUSES AND HOTHOUSES MADE BY MACHINERY, for one-half the usual cost.—A Lean-to Greenhouse, 12 feet by 8 feet, two glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three times, delivered to any Railroad Station or Wharf in London, for 18*l.* 10s.; a do. do., 15 feet by 10 feet, 22*l.* 10s.; a do. do. 18 feet by 12 feet, 28*l.* 10s.; a do. do., 21 feet by 12 feet, 32*l.* 10s., including a plan for brickwork. 13-inch Lights, glazed with 16 oz. sheet glass, painted three times, 11½d. per foot; 9-inch do, 1s. per foot. Warranted best materials.—J. Lewis, Hothouse-works, Stamford-hill, Middlesex.

PORTLAND CEMENT.—Testimonials received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. White and Sons, Millbank-street, Westminster.

THE IMPROVED HYDRAULIC RAM, fixed by Freeman Roe, Fountain Maker, 70, Strand, London, can be worked by a small stream of half-an-inch, where a fall of 2 feet can be obtained. The same RAM, without the aid of a Tank or Cistern, arranged to throw a Jet of Water constituting a Fountain with the head of water beneath.



Engines for deep wells of all kinds, Douche and other Baths. Buildings heated by hot water. Water wheels to work small pumps, from 15*l.* Estimates given for the supply of towns, &c.

A newly-invented Portable Vapour Bath, all complete for 4*l.*

TRUE GIANT SAINTFOIN, per bush., £1 5s. 0d.
TRUE ITALIAN RYE-GRASS „ 0 7 0
TRUE PACEY'S PERENNIAL DITTO „ 0 6 6
COMMON RYE-GRASS (CLEAN) „ 0 5 0
BUCKWHEAT „ 0 3 6
WHITE MUSTARD „ 0 12 0
WHITE BELGIAN CARROT per lb. 0 1 6
LARGE RED ALTRINGHAM „ 0 1 6
LARGE HORN DITTO (FOR SHALLOW SOILS) „ 0 2 0
LARGE CATTLE PARSNIP „ 0 1 6
LUCERNE (NEW IMPORTED) „ 0 0 10
YELLOW GLOBE MANGOLD WURZEL „ 0 1 0
LONG RED DITTO, AND OTHERS „ 0 1 0
FINE BROAD RED CLOVER „ 0 0 6
PERENNIAL RED (FOR PASTURES) „ 0 0 10
WHITE DUTCH DITTO, FINE „ 0 0 7
ALSIKE HYBRID CLOVER, and all other Agricultural Seeds, at lowest market prices.

N.B. The above articles will be delivered free to London, Basingstoke, Gloucester, or Bristol, by Pickford's Railway Conveyance.—Orders to be addressed John Sutton and Sons, Reading Seed Warehouse, Reading, Berks.

EMIGRATION FACILITATED.—Those persons who expect their friends in AUSTRALIA to assist them in their OUTFIT might write to their friends there to pay the money into the hands of S. W. Silver and Co.'s Agents in Australia, or to their connections in the district, who would be named on application to S. W. Silver and Co. in London. The agent's acknowledgment would be received by S. W. Silver and Co. as cash at the exchange of the day, for the outfit. This proposal will be also communicated through the Colonial Journals. Emigrants' Outfitting-out warehouse at No. 4, Bishopsgate-street (opposite the London Tavern), where colonial information may be obtained, and small parcels received and forwarded to the colonies.

N.B.—Cadets to India, and Cabin Passengers generally to all parts of the globe (with experienced Female Managers in the Department for Ladies), fitted out as heretofore at 65 and 67, Cornhill, by S. W. Silver and Co., Outfitters, Clothiers for home use, and Contractors; and at 41, George-crescent, Liverpool.

Sales by Auction.

TO NOBLEMEN, GENTLEMEN, AND NURSERYMEN.

MR. J. C. STEVENS is favoured with instructions from Messrs. Lemmas to announce for Sale by Auction, on their premises, at Hackney, on TUESDAY, 27th, and WEDNESDAY, 28th February, at 12 for 1 o'clock, about ONE THOUSAND CAMELLIAS of extraordinary fine growth, mostly well set with flower-buds, and consisting of the favourite old, and some good new varieties from 2 to 12 feet high. Also some fine plants of LIMES in fruit, and of the new hardy Nepal RHODODENDRONS.—Catalogues are preparing, and may be obtained one week prior to the sale, of Messrs. LODDIGES, Hackney, and of Mr. J. C. STEVENS, 38, King-street, Covent-garden.—On View the day prior, and mornings of sale.

STREATHAM.

To Noblemen, Gentlemen, Nurserymen, Builders, and Public Companies engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are instructed to sell by Auction, on the premises, Streatham Nursery, on MONDAY, Feb. 26th, 1849, and following days, at 11 o'clock precisely, by order of the Assignees of Mr. R. Neal, a bankrupt, the whole of the valuable NURSERY STOCK, consisting of a large quantity of very fine Evergreens, Fruit and Forest Trees, Ornamental Trees, and Deciduous Shrubs, American Plants, &c., and at the same time the valuable Lease of the said premises, comprising 5 acres of Nursery Ground, held at 80*l.* per annum, for an unexpired term of about 64 years, which rental is reduced to 10*l.* per annum under a yearly agreement during the period the premises are occupied in their present state.—May be viewed prior to the sale. Catalogues may be had (6*d.* each) on the premises, of the principal Seedsmen, J. B. ROBERTS, Esq., Solicitor, Wandsworth; EDWARD EDWARDS, Esq., Official Assignee, 7, Frederick's-place, Old Jewry; and of the Auctioneers, American Nursery, Leytonstone, Essex.

DALSTON NURSERY.

To Noblemen, Gentlemen, Nurserymen, Builders, and Public Companies engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Smith to sell by Public Auction, on the Premises, Dalston, Middlesex, on MONDAY, March 5th, 1849, and the two following days, at 11 o'clock each day, in consequence of the land being required by the London and Birmingham West India Dock Junction Railway Company, the first portion of the valuable NURSERY STOCK, consisting of a large assortment of very fine Evergreens, Ornamental and Deciduous Shrubs, the finest description of Fruit-trees, and American Plants in great variety. From the adhesive nature of the soil, the plants will remove safely, and from their extraordinary sizes and magnificent growth, they well deserve the attention of Noblemen, Gentlemen, and the Trade; further comment is superfluous, the Stock being long well known as one of the finest, if not the best, in the Trade.—May be viewed prior to the Sale. Catalogues may be had, 1*s.* each (returnable to purchasers), on the premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone.

TO NOBLEMEN, GENTLEMEN, FLORISTS, AND OTHERS.

Consigned for absolute sale from Mons. A. Van Geert.

MESSRS. PROTHEROE AND MORRIS are instructed to submit to public competition by Auction, at the Mart, Bartholomew-lane, on FRIDAY, 9th March, 1849, at 12 o'clock, 200 choice Camellias, well set with flower-buds, 400 fine Bulbs Lilium lancifolium rubrum, 200 Gladiolus Gandavensis, 200 Rhododendron campanulatum (1 to 2 feet), 50 fine Peach Trees, 200 Standard Roses, comprising all the approved kinds, 100 Ghent Azaleas, 12 Taxodium sempervirens (4 to 6 ft.), 300 fresh seeds Ginkoo biloba. May be viewed the morning of Sale.—Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

HORNSEY.—TO GENTLEMEN, NURSERYMEN, FLORISTS, BUILDERS, AND OTHERS.

MR. C. FURBER will sell by Auction, on the Premises, opposite Hornsey Church, on MONDAY, Feb. 26, 1849, at 11 for 12 o'clock precisely the NURSERY STOCK of Mr. J. MITCHELL, comprising a large assortment of Evergreens, Laurels, Aucubas, Sweet Bays, green and variegated Box trees, Yews, &c. Fruit and Ornamental trees, a large collection of Deciduous Shrubs, Roses, Herbaceous Plants, and two Greenhouses, Forcing House and Pit, Garden Tools and Implements in trade; also the Household Furniture; together with the valuable Lease of the above Premises held for an unexpired term.—May be viewed. Catalogues had on the Premises; and at the Auction Offices in Warwick-court, Gray's-inn, London.

TO BE SOLD, WARRANTED SOUND, TWO FOUR-YEAR OLD SUFFOLK STALLIONS, the property of T. BEALE BROWNE, Esq.; both were shown at York. One, more than 17 hands high, is at the College, Cirencester. Price 150 Guineas. The other, nearly 17 hands high, is at Hampen Farm, near Andoversford, Cheltenham. Price 100 Guineas.

TO BE LET or SOLD, STREET ASTON HOUSE, in the county of Warwick, six miles north of Rugby. The house is completely furnished by the first London upholsterers, and is a most desirable residence for a gentleman's family of moderate size. There is a double Coach-house, and Stabling for six horses, walled and Flower Gardens, Conservatory, Hot and Greenhouses, and very complete Offices, with 17 acres of Grass Land.—For particulars apply to Messrs. BROOKS and GREEN, House Agents, Old Bond-street, London.

HILL, NEAR SOUTHAMPTON.—TO MARKET GARDENERS.

TO BE LET, all that excellent GARDEN, containing about 31 A. 1 R., situate at Hill, within half a mile of the town of Southampton, late in the occupation of Mr Wm. Squibb, Market Gardener, deceased. The property comprises Greenhouses, Forcing-houses, Pits, Framing Grounds, Barns, Stabling, Cart-houses, Sheds, and other conveniences fit for carrying on an extensive and lucrative business. A large portion of the Garden is occupied by trees in luxuriant growth and produce. The tenant's interest in the above to be taken at a valuation, one half of the amount of such valuation to be paid down, and the remainder by instalments, to be agreed upon. Possession can be given on the 25th of March next.—For further particulars, and for cards to view the property, apply to Mr. NEWMAN, Solicitor; or to Mr. WM. B. PAGE, Nurseryman, Southampton.

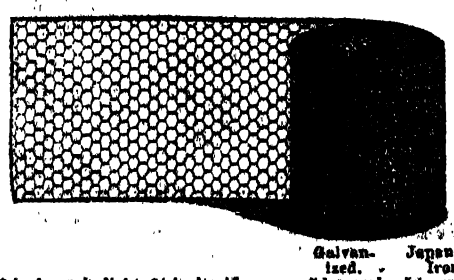
CUMBERLAND SEED POTATO.—The Best Regents, in quality, warranted free of disease, to be sold on application to J. SCOTT, or by letter.—Warehouse 17, Polygon-mews, Oxford-square, Edgeware-road, London.

THE GREAT CENTRAL CATTLE AND CHEESE FAIRS WILL BE HELD AT CREWE, in the following order:—The First Cattle Fair on the Last Thursday in April, 1849.—Cheese Fair on Friday, the day following. Second Cattle Fair on the Second Wednesday in September.—Cheese Fair on the day following. Third Cattle Fair on the Third Monday in November.—Cheese Fair on the day following. Fourth Cattle Fair on the Last Saturday in December. The arrangements for the year 1849 are that the First Cattle Fair shall be held on the Last Thursday in April, and Cheese Fair on the Day Following. [illegible] in the same order as stated for the [illegible] year. By order of the Committee,

[illegible] JOHN WILSON, Secretary.

The general arrangements will appear shortly.

GALVANIZED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.

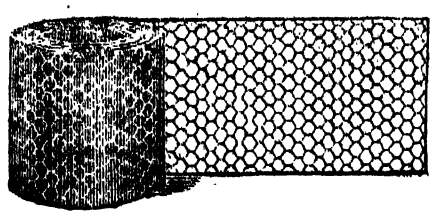


	Galvanized.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7*d.* per yd.	5*d.* per yd.
2-inch ,, strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ...	10 ,,	8 ,,
1½-inch ,, extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It has the appearance of silver, and maintains its lustre for many years, and is acknowledged to be the cheapest article ever brought into the market. It forms a cheap, light, and durable fence for the protection of Gardens and Shrubberies against the depredations of hares, rabbits, and cats; for Aviaries, Pheasantries, and to prevent poultry from straying, as well as for training creeping plants, it answers admirably.

Large quantities of the Netting always kept in Stock, samples of which can be forwarded (free of expense) to any part of the United Kingdom. Prices as follows:

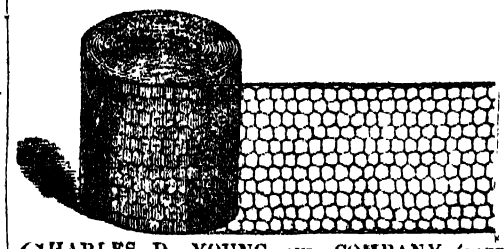
12 inches wide	3*d.* per yard		30 inches wide	7½*d.* per yard			
18 ,, ,,	4½*d.* ,, ,,		36 ,, ,,	9*d.* ,, ,,			
24 ,, ,,	6*d.* ,, ,,		48 ,, ,,	1*s.* ,, ,,			

Galvanised do. 1*d.* per foot extra.

Also Fenders, Fireguards, Fly-proof Dish Covers, Meat Safes, Wire Blinds, Garden bordering and arches, Flower Stands, and every description of Wire Work.

THOMAS HENRY FOX, 63, Snow-hill, London.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c., CASTLE-BUILDINGS, DERBY SQUARE, LIVERPOOL; 128, HIGH-STREET, EDINBURGH; and 82, ST. ENOCH SQUARE, GLASGOW, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3 15	0
Do. of 100 yards, 24 ins. wide	..	5 0	0
Do. of 100 yards, 30 ins. wide	..	6 5	0
Do. of 100 yards, 36 ins. wide	..	7 10	0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 2*s.* per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

AYRSHIRE COWS.

MESSRS. ROBSON AND SON, Greenford green, near Harrow, Middlesex, have for sale more than Forty Ayrshire Cows and Heifers, selected with the greatest attention to blood, symmetry, and colour. Some have calves at the foot, others will calve within a month, all within three months. A handsome young Bull. A pair of the Heifers, particularly suited for ornamental stock for pleasure grounds, or for a small pet dairy, being perfect in shape, of handsome colours, and about 40 inches high.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S-ROAD, CHELSEA.

EDENCH having erected Hothouses for Sale on his Premises, invites the attention of Gentlemen about to erect Hothouses to inspect his Patent Plans, when they at once will perceive the vast superiority of these Houses over any others hitherto erected, for strength, lightness, durability, handsome appearance, healthiness to plants of every description, the roofs being formed without wood, putty, or paint, with a smooth surface and only about 5-8ths of an inch of light taken up in any part.

AGRICULTURAL INSTRUCTION.—A Gentleman, a Norfolk Farmer, who has for many years received young men into his family for the above purpose, has now a vacancy.—For particulars, apply to A. B., care of Mr. Muskett, Bookseller, Norwich.

SMOKY CHIMNEYS AND VENTILATION.—DAY'S IMPROVED SIMPLEX WIND-GUARD is cheaper, more durable, and less unsightly than any other Chimney-pot. It continually ventilates the apartment, and is guaranteed to cure all chimneys smoking from wind. It may be seen and tested at W. JEAKES's, 51, Great Russell-street, Bloomsbury. Price, in Galvanised iron, 25*s.* Prospectuses forwarded on application. Licenses granted, and the trade supplied with the above, and also DAY's original Wind-guard, made of a more durable material. A Liberal discount allowed.

METCALFE'S ALKALINE TOOTH-POWDER will be found to be the best that has yet been produced; it contains no acids, nor anything that can injure the finest enamel; it thoroughly removes the tartar and all impurities, produces that beautiful white appearance so much to be desired, and its fragrant perfume tends to sweeten and purify the breath. M. and Co., from the many years they have been celebrated as Tooth-brush Makers, have had opportunities (that occur to few) of testing the relative merits of those powders that have been brought before the public. They have now succeeded in procuring the receipt from which the above Powder is prepared, and confidently recommend its universal adoption. Wholesale and retail at METCALFE, BINGLEY, & Co.'s, Brush-makers to H.R.H. Prince Albert, 2*s.* per box. Caution.—The genuine powder will have the Royal Arms, combined with those of H.R.H. Prince Albert, on the lid of the box, and the signature and address of the firm, thus: "METCALFE, BINGLEY, and Co., 130 R., Oxford-street, London."

PARR'S LIFE PILLS are acknowledged to be the best Medicine in the world. This Medicine has been before the British public only a few years, and perhaps in the annals of the world was never seen success equal to their progress; the virtues of this Medicine were at once acknowledged wherever tried, and recommendation followed recommendation; hundreds had soon to acknowledge that PARR'S LIFE PILLS had saved them, and were loud in their praise. The startling facts that were continually brought before the public at once removed any prejudice which some may have felt; the continual good which resulted from their use spread their fame far and wide, at this moment there is scarcely a country on the face of the globe which has not heard of their benefits, and have sought for supplies, whatever might be the cost of transmission. The United States, Canada, India, and even China, have had immense quantities shipped to their respective countries, with the same result as in England—universal good.

The sale of PARR'S LIFE PILLS amounts to upwards of 30,000 boxes weekly, more than all other patent medicines put together. This simple fact needs no further comment; it tells plainly that the Pills of Old Parr are the best medicine in the world.

BEWARE OF SPURIOUS IMITATIONS.—None are genuine unless the words "PARR'S LIFE PILLS" are in White Letters on a Red Ground, on the Government stamp, pasted round each box; also, the fac-simile of the signature of the proprietors, "T. ROBERTS and Co., Crane-court, Fleet-street, London," on the Directions.

Sold in boxes at 1*s.* 1½*d.*, 2*s.* 9*d.*, and family packets at 11*s.* each, by all respectable medicine vendors throughout the world. Full directions are given with each box.

GERMAN SPRING MATTRESSES, permanently elastic, very durable and cheap.

3 feet wide	£2	8	0	4 feet 6 in. wide ..	£3	3	0
3 feet 6 in. wide	2	13	0	5 feet ditto ...	3	10	0
4 feet ditto	2	18	0	5 feet 6 in. ditto.	3	18	0

One of these, with a French Mattress on it, is a most excellent and soft bed. HEAL and SON'S LIST of BEDDING, with full particulars of weight, size, and prices, of every description of Bedding, sent free by post.—HEAL and SON, Bedding-manufacturers, 196 (opposite the Chapel), Tottenham-court-road.

CREAM-LAID NOTE PAPER, five quires for 9*d.*; large size ditto, five quires for 1*s.*; cream-laid envelopes, 9*d.* per 100; ditto, self-sealing, 1*s.* per 100; black bordered ditto, 1*s.* per 100; good note paper, 7*s.* 6*d.* per ream; copy books, 2*s.* 6*d.* per dozen; sealing wax, 14 sticks for 1*s.*; card-plate engraved, 2*s.* 6*d.*; 100 cards printed, 2*s* 6*d.*; writing cases, 1*s.* to 10*l.* 10*s.*—At WILLIAM LOCKWOOD'S, 75, New Bond-street. Remittances for 20*s.* and upwards sent carriage free.

CHILBLAINS—MEASAM'S MEDICATED CREAM, the most effectual, safe, and speedy Remedy for Rheumatism, Lumbago, Burns, Scalds, Bruises, Sprains, Scurvy, Chilblains, Tic-doloreux, Erysipelas, Sore Throat, Ringworm, Stings, Gout, and every kind of Inflammation. For the Skin, Teeth, and Shaving it has no equal. Medical, naval, and military gentlemen will find it inestimable. Sold in pots, at 1*s.* 1½*d.* and 2*s.* 9*d.*, by all respectable druggists in town and country.—Manufactory, Lower Kennington-lane, Lambeth.

THE ONLY CURE FOR BRONCHITIS.—DR. BARRY'S SALINE and SOOTHING LOZENGES will be found invaluable to persons afflicted with diseases of the respiratory organs, such as bronchitis, influenza, asthma, difficulty of breathing, coughs, hoarseness, irritation of the throat, hooping cough, &c., and they are also most efficacious in promoting the healthy condition of the digestive organs.—May be had of Messrs. Barclay and Sons, 95, Farringdon-street; J. Lucas, 68, Cheapside; R. Johnston, 68, Cornhill; Prout, 229, Strand; Dietrichsen and Hannay, 63, Oxford-street; J. Sanger, 150, Oxford-street; C. Mullett, 21, Mecrgate-street; T. Perry, 308, High-street, Borough; W. Johnson, 254, High-street, Borough; J. Tye, 1, Lower Queen's-row, Pentonville; and of all Druggists and Medicine Vendors in town and country, at 1*s.* 1½*d.* per box; and at Dr. BARRY'S Depôt, 1, Mansfield-place, Newington-butts.

This day is published, price 7s., Illustrated with Ten Steel Engravings by the Author,

THE GREAT HOGGARTY DIAMOND.
By W. M. THACKERAY.
Author of "Pendennis," "Vanity Fair," &c.

"It is a tale which will be read with great interest, and which, if written by an ordinary man, would go not a little way to establish his reputation."—*Sunday Times.*

London: Bradbury and Evans, 11, Bouverie-street.

NEW WORK BY THE AUTHOR OF "VANITY FAIR."
On the 28th inst. will be published, price 1s. (to be completed in Twenty Numbers), No. V. of

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HIS FORTUNES AND MISFORTUNES, HIS FRIENDS AND HIS GREATEST ENEMY.
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With Illustrations on Steel and Wood by the Author.
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PAXTON'S BOTANICAL DICTIONARY, Comprising the Names, History, and Culture of all Plants known in Britain, with a full explanation of Technical Terms. Prepared as an instant resource and standard of consultation, and invaluable to all lovers of Horticulture in every branch.

*** For the convenience of persons possessing the First Edition, a SUPPLEMENT, containing all the New Plants since its appearance, is published, price 5s. in cloth.

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PART III.
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This will complete the ELEMENTS OF BOTANY, rendering that work a complete Manual of Botany for senior Students.

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By DOUGLAS JERROLD.
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Published this day, in fcp. 8vo, price 3s. cloth,

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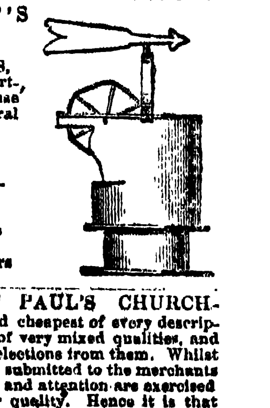

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No. 9.—1849.] SATURDAY, MARCH 3. [PRICE 6d.

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FOR PLANTING COVER, CARRIAGE DRIVES, &c.
RHODODENDRON PONTICUM, fine bushy plants, from 10s. 6d. to 21s. per 100.
BOX-LEAVED PRIVET (a new and very superior variety to the old Evergreen), 8s to 12s. 6d. per 100.
BERBERIS AQUIFOLIUM, bushy plants, 9 inches to 12, 70s. per 100.
" ditto, larger, 1 to 2 feet, 7s. to 10s. per 100.
" DULCIS, 1 to 1½ foot, 7s. to 10s. per 100.
" ARISTATA, 1 to 1½ foot, 21s. per 100.
This last is an excellent plant for these purposes, and requires only to be better known to be more extensively planted.
ENGLISH JUNIPERS, 1 to 2 feet, 7s. to 12s. 6d. per 100.
SWEET BRIARS, 8s. to 12s. 6d. per 100.
COMMON LAURELS, fine bushy plants, 10s. to 25s. per 100.
PORTUGAL LAURELS, 2 to 3 feet, 20s. per 100.
QUICK, very strong, transplanted, 8s. to 10s. per 1000.
FRUIT TREES.—Dwarf trained Apples, Pears, Cherries, Plums } Fine trees, 2s. 6d. to 3s. each.
Apricots, Peaches, Nectarines } Fine trees, 3s. 6d. each.

Goods delivered free to London and to the Slough Station on the Great Western Railway. The Knap Hill Nursery is within an hour's ride of London, being near the Woking Station, South Western Railway.

It is particularly requested that letters intended for this Establishment may be addressed, HOSEA WATERER, Knap Hill Nursery, near Woking, Surrey.

AZALEA INDICA ALBA MAGNA.—This fine Azalea has flowers of very large size, great substance, and excellent form, colour, fine white, with purple stripes and spots, of strong compact habit, and very free bloomer; was exhibited as a seedling at the Royal Botanic last May, and obtained the first prize. Plants, 15s. each; a few very strong, at 42s. each. Apply to J. and J. FRASER, Nurserymen, Leyton, Essex, who have also to offer fine collections of Hardy Belgian Azaleas, at 24s. to 30s. per dozen; Hardy Rhododendrons, including fine scarlet, white, and crimson varieties, at 42s. to 60s. per dozen; with a large assortment of other American Plants at moderate prices.—A post-office order is respectfully requested from unknown correspondents.

CAMELLIA—"BEAUTY SUPREME."

H. LANE AND SON, Great Berkhampstead, are now sending out plants from 21s. to 60s. each. It was awarded a medal by the Horticultural Society of London in April, 1846, and may be relied on as a splendid new variety, a most beautiful shape and colour, a pale waxy rose. See "Paxton's Magazine" of that month, page 71.

Catalogues may be had by sending a two-penny stamp.

THE NEW RED ASH-LEAF KIDNEY POTATOES.—This is decidedly the most farinaceous of all the early Potatoes, and during the two seasons it has been cultivated by Messrs. SUTTON not one of them has shown any appearance of disease. A few of the above are still for sale, price 3s per peck, as also some other excellent kinds at 2s 6d per peck, and all kinds of Kitchen Garden and Flower Seeds of home growth. True Reading Giant Asparagus Plants, 3s. per 100.

Address, JOHN SUTTON and SONS, Reading, Berks.

GENUINE SEEDS FOR MARCH SOWING.—A packet of 1500 selected POTATO SEEDS, with directions for sowing, &c., 1s.

	Per packet—s. d.
"BOA CONSTRICTOR" MELON, grows 6 feet in length	1 0
VEGETABLE and FLOWER SEEDS, any variety	0 6
Double LARKSPURS, 10 varieties, separate	1 0
Ditto Ditto Ditto mixed	0 6
Double BALSAMS, Camellia flowered	1 0
ZINNIA ELEGANS	0 6
SALPIGLOSSIS, fine mixed	0 6
STOCK, superfine Scarlet Giant	0 6

100 varieties of Annuals, 10s.; 50 ditto, 5s.; 25 do., 2s. 6d.
Treatise on Potato Culture, 6d.

All post free, on receipt of cash or postage stamps.

ABRAHAM HARDY and SON, Seed Growers, Maldon, Essex.

FINAL PLANTING OF THE RANUNCULUS.—As the final planting of our superb Collection is about to take place, we beg to recommend early orders from persons desirous to plant. Selections, in strong roots, at the following reasonable charges, and sent free by post, with printed directions for planting and treatment:

50 Spls. did seedling varieties, with names, 2l
25 Ditto ditto ditto, 1l. 2s. 6d.
50 Fine older varieties, 15s.; or 25 for 8s.
100 Finest mixture, 10s.; 100 fine border varieties, 5s.; or post free, 6s.

DOUBLE ANEMONES, finest mixture, 2s. per doz., or 12s. per lb.; fine, 1s. 3d. per doz., or 8s. per lb.

Anemones free by post, 3d. per dozen extra.

BASS and PROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

JOHN B. SMITH begs most respectfully to invite the attention of the Nobility, Gentry, and the Trade to his new and splendid collection of hardy yellow RHODODENDRONS, AZALEA INDICAS, CAMELLIAS, LILIUMS, &c., Catalogues of which may be had by enclosing a postage stamp.

Norbiton Nursery, Kingston, Surrey, March 3.

GENUINE SEEDS.

JAMES CHARTRES, SEEDSMAN, 71, King William-street, City, London, begs to inform his friends and the Public generally that SEEDS of all kinds can be procured at his establishment of finest quality and at moderate prices.

A Catalogue can be had on application.—March 3.

WILLIAM MASTERS, Exotic Nursery, Canterbury, having the largest stock and the greatest number of species and varieties of Hardy Trees, Flowering Shrubs, Evergreens, and American Plants, trained and Standard Peaches, Nectarines, &c, in the neighbourhood, begs to solicit commissions for them, which he is prepared to execute as cheaply as they can be supplied at any other establishment in the country.

EDWARD GEORGE HENDERSON, Wellington-road, St. John's wood, London, is now sending out

ACHIMENES PATENS MAJOR, at 3s. 6d.—A variety worthy of a place in every collection, the habit of the plant is good, and the flower a rich dark plum colour.
ACHIMENES CHIESBRICHTII, at 3s.—This is one of the most beautiful of the whole tribe, and quite distinct, the habit is close and compact, and it is a profuse bloomer. The length of flower 1¾ inch, a rich vermilion colour, and has a beautiful glossy appearance.
ACHIMENES KNIGHTII, white, profuse bloomer, dwarf habit, 3s. 6d. The above can be forwarded by post.
BROWALLIA JAMESONII, 5s.
PLUMBAGO LARPENTÆ, nice plants, in free growth, 3s. 6d.

E. G. H. also begs to offer the following at their annexed prices, when left to his selection, and which will be much to the advantage of the purchaser.

FANCY GERANIUMS, 12s., 18s., and 30s.
CINERARIAS, distinct in colours, 12s. and 18s. per dozen.
INDIAN AZALEAS, ditto, fine large plants, at 12s., 18s., and 30s. per dozen. The list will contain a description of more than 130 of the choicest varieties.
ERICAS, distinct varieties, 12s., 18s., and 30s per dozen.
EPACRISES, ditto, 12s. and 18s. per dozen.
GREENHOUSE PLANTS, and Ditto Climbers, 12s., 18s., and 30s. per dozen.
STOVE PLANTS and Stove Climbers, 18s., 30s., and 42s. per dozen.

The Trade supplied.

N.B. Catalogues for 1849 will be published on the 1st of March. No. 1 will contain a list of Stove and Greenhouse plants; 2, Ericas and Epacris; 3, Azaleas, Rhododendrons, and Camellias; 4, Cinerarias and Geraniums; 5, Select Miscellaneous plants; and in April, 6, Bedding plants.

SEYMOUR'S CELERY.

SEYMOUR'S WHITE CHAMPION CELERY is warranted a very first-rate sort, and now sending out for the first time by H. LANE and SON, Nurserymen, Great Berkhampstead, Herts.

Seymour's Celery, White Champion .. 2s 6d. per packet.
" " Red Matchless .. 1 6 do.
" " Superb White .. 0 6 do.

Post-office orders or postage stamps from unknown correspondents.

ORCHIDS.—Any person having a few good and flowering plants of ORCHIDS of the more showy kinds to dispose of may hear of a purchaser.—Direct to P. P., H. Kosmos, Spencer's Library, Holborn, near Chancery-lane.

ROBERT M. STARK, SEEDSMAN AND FLORIST, 1, Hope-street, Edinburgh, has the pleasure of intimating the completion of his STOCK OF SEEDS of all descriptions, and of approved quality, for the approaching season, for which he respectfully solicits early orders. He also begs to inform his friends that he has obtained a lease of a field at Edgehill Dean (on the Queensferry Road), which he is laying out as Nursery Ground, and where he will shortly be able to supply every article connected with that department of his business, more especially in the way of Ornamental Shrubs, Florist's Flowers, Greenhouse and Herbaceous Plants, &c.

Priced Catalogues of these may be had on application.

Edinburgh, March 3.

SUPERIOR GERMAN ASTERS, 20 varieties mixed, see *Gardeners' Chronicle*, September 23d, 1848, "ASTERS: *Hardy and Son*. Your Asters reached us in excellent condition; they are beautiful specimens of that showy flower." Large packets, 1s., or 12 postage stamps, post free.

ABRAHAM HARDY and SON, Seed Growers, Maldon, Essex.

GOOD TWO YEARS QUICK at 1s. per 1000.—A quantity of good and well-rooted 2 years QUICK to be sold as above, in consequence of the Advertiser not having room to transplant it. ENGLISH OAKS, 3 to 4 and 4 to 6 feet, SPRUCE FIRS, 2 to 3 feet; SCOTCH DO, 3 to 4 and 4 to 6 feet; BLACK ITALIAN POPLARS, 5 to 7 feet; PORTUGAL LAURELS, 2½ to 4 feet; with all kinds of Forest and Ornamental Trees, at very reduced prices, graduated according to the quantity taken. Terms, cash or reference

SUSAN WOOD, Nurseries, Huntingdon.

SAMUEL COCKING, SEN., SEEDSMEN, &c., Biggleswade, Bedfordshire, has great pleasure in informing his Friends and Agriculturists in general that he has an abundant supply of the Liverpool and every other description of TURNIP SEEDS, which he can strongly recommend; Yellow Globe MANGOLD WURZEL SEED, Red ditto, Gigantic Long Red ditto, and Long Yellow ditto; large White Belgian CARROT SEED, Red Altringham ditto, and Long Red Surrey ditto; CATTLE PARSNIP SEED, and also a large quantity of strong two years old QUICK, at 2s. per 1000.

GRIGOR'S AQUILEGIA GLANDULOSA.—The season for transplanting this beautiful COLUMBINE is nearly at a close, and orders are solicited before the middle of March. Strong flowering plants, free by post, at 2s. per dozen, or 2s. per pair. Seeds at 1s. per packet, or for stamps of that value. The mode of treatment will be supplied. Forest-tree Seedlings, Foreign Pines, &c., at the trade prices.

JOHN GRIGOR and Co., Nurseries, Forres, N.B.

MIXED GRASS SEEDS.

WILLIAM MASTERS respectfully solicits commissions for the above.

Prepared for permanent pasture per bushel—8s. to 10s.
" " alternate cropping " 6s.
" " lawns per lb—1s 6d.

Mangold Wurzel, 1s. per lb. Lucerne, &c. &c. Kitchen Garden Seeds of finest quality at moderate prices. Collections of Flower Seeds, in packets of 12, 2s. 6d., 25, 5s.

Exotic Nursery, Canterbury.

TRAINED FRUIT TREES.

HUGH LOW AND CO. have to offer as below, at moderate prices. The trees are of the finest quality, with fruit-bearing heads.

STANDARD TRAINED PEACHES.

Grosse Mignonne, Red Magdalen, Barrington, Teton de Venus, Millett's Mignonne, Early Purple, Late Admirable, and Belle Chevreuse.

STANDARD TRAINED NECTARINES.

Red Roman, Newington, Elruge, Murray, New Early Newington, Scarlet Newington, Claremont, Brugnon, Vermash, and Violet Hative.

STANDARD TRAINED PLUMS.

Green-gage, Violet Hative, Reine Claude, Washington, Goliah, La Royale, White Magnum Bonum, Red ditto, La Delicieuse, and Imperial Diadem.

STANDARD TRAINED CHERRIES.

Blackheart, May Duke, Elton, Waterloo, Bigarreau, Adam's Crown Heart.—Clapton Nursery, March 3.

FACTS BEYOND DOUBT, by Dr. PLATE, Secretary to the Syro-Egyptian Society in London, &c. &c., who has delivered a Lecture on the MUMMY PEA, which was found amongst others in a Vase presented to the British Museum by Sir Gardiner Wilkinson, the Egyptian traveller. A faithful translation has appeared in the "Gardener and Florist," &c., published by Lloyd, Salisbury-court, Fleet-street, in the February number. There is no doubt but GRIMSTONE'S Egyptian Pea will in a few years become the favourite Pea of all the world. It is dwarf, prolific, both early and late, and of exquisite taste for the table. Mr. WILLIAM GRIMSTONE, of the Herbary, Highgate, has taken the precaution only to sell this seed in boxes, at 5s., 10s., and 20s. each, inclosed in a Pamphlet containing the History, with many testimonials, of this wonder, secured by an outside wrapper, bearing a vignette, signed, and sealed with the arms of W. GRIMSTONE, Herbary, Highgate.

GRASS SEEDS FOR IMPROVING OLD PASTURES.—Many old Upland Pastures, Parks, and Meadows, are nearly destitute of Clovers and the nutritious sorts of Grasses, in which case Messrs. SUTTON are in the practice of furnishing such sorts as are wanting; if these Seeds are sown early in the season, the pastures being previously harrowed, and afterwards rolled, the improvement in the crop will be very considerable, and at a trifling expense. Mixed Clovers and fine Grasses for this purpose 2s. per gallon, the quantity required varying from 2 to 4 gallons per acre, according to the condition of the Pasture.

FINE GRASS LAWNS.—The great expense of cutting and carting turves from a distance may be avoided, and a superior turf produced in a few months, by sowing Messrs. SUTTON'S LAWN GRASS SEEDS, which consist solely of the finest and shortest growing kinds, perfectly free from moss and other weeds. Price 3s. 6d. per gallon, or 25s. per bushel. Also White Belgian Carrot, Mangold Wurzel, and Swede Seeds very true; priced Catalogues of which may be had on application.

Gentlemen desiring to lay down land to permanent Pasture, are requested to state the nature of the soil, and Seeds will be supplied at 32s. per acre, of such sorts as will ensure success.

Address, JOHN SUTTON and SONS, Reading Seed Warehouse, Reading, Berks.

*** Carriage free to any Station of the Great Western or South Hants Railways.

PLANTING SEASON.

A COLLECTION OF RARE AND HARDY ORNAMENTAL CONIFERÆ FOR 5l.

The following collection of CONIFERS is offered by YOUELL and Co., in very healthy plants in pots, for 5l., package included, and carriage paid to London or Hull.

Pinus Ayucahuite	Picea pinsapo
" Llaveana	" Webbiana
" australis	" pindrow
" excelsa	Cryptomeria japonica
" Montezuma	Cedrus Deodara, 3 fine plants
" insignis	Araucaria imbricata, 3 ditto
" Gerardiana	Cedrus Libani
" cembra	Cupressus torulosa
" cembroides	" Uhdeana
Abies Khutrow (true)	Juniperus Bedfordiana
" orientalis	" excelsa
Picea cephalonica	Taxodium sempervirens

CEDRUS DEODARA FROM SEED.

YOUELL and Co. beg to call attention to their fine and healthy stock of the above most elegant and hardy ornamental tree, and can supply fine bushy plants, in pots, 9 inches to 1 foot, at 12s. per dozen. Also, fine plants of a larger size in any quantity. Specimens of the wood from the Himalaya Mountains can be seen at the Nursery.

THE FINEST SHOW CARNATIONS, PICOTEES, AND PINKS.

YOUELL AND CO. are now executing orders from their celebrated collections of the above, comprising upwards of 700 of the finest varieties known, and is the most extensive and unique collection extant. The plants are very strong, healthy, and well rooted, and, if preferred, can be forwarded with safety per post, at the extra charge of 2s. per dozen pairs, the prices of which are as follows:

12 pairs of very fine show flowers, by name,			1l. 4s. and	£1	10 0
25	ditto	ditto	ditto 2l. 10s. and	3	0 0
12 pairs of newest and finest first class show flowers.				2	10 0
25	ditto	ditto	ditto	5	0 0

Fine mixed border Carnations, 12s. per dozen pairs.

PINKS.

Finest first class show varieties, 12s., 18s., and 24s per dozen pairs.

PANSIES.

Finest first class show varieties, 10s. and 18s. per dozen.

30 packets of newest and choicest Flower Seeds, per post free, for 5s. Tigridia conchiflora, fine flowering bulbs, 6s. per doz.

Catalogues of the above to be had on application.

GREAT YARMOUTH NURSERY.

CORNWELL'S VICTORIA RASPBERRIES.—G. C. can confidently recommend the above as superior to any sort ever offered. Prizes were awarded to them at the Hort. Society's Gardens, Royal Botanic Society's Gardens, and the Surrey Zoological Gardens, as being the best shown for size, colour, and flavour. The fruit in Covent Garden was sold at a higher price than any other. Strong canes to be had at E. CHARLWOOD'S, Covent Garden; W. and J. NOBLE'S, 152, Fleet-street; also of GEORGE CORNWELL, Market-Gardener, Barnet, Herts, at 1l. 10s. per 100, or 4s. per doz. The usual allowance to the trade.

THE "QUEEN" MELON.

EDWARD TILEY begs most respectfully to apprize the Nobility and Gentry that he has procured the whole of the stock of seed of the above superb Melon, from one of the most noted growers in the West of England. This Melon is allowed to be by competent judges, who have seen it, the earliest and finest flavour grown; it has proved itself by competition for the last three years to be the best yet known. It has been awarded three first prizes. It is a handsome shape, very thin skin, green flesh, and melting flavour, not liable to crack or lose its flavour when kept, as most others do: it weighs from 5 to 7 lbs.

This superb Melon is well adapted to small growers, being a very free setter, very productive, and requires less heat than any yet out. Sold in packets of 7 seeds, 2s. 6d.; with also the following varieties:

Bowood green flesh Melon (true)	...	6 seeds	1s. 0d.
Ispahan (true)	...	10 "	1 0
Terry prize (true)	...	10 "	1 0
Beechwood (true)	...	10 "	1 0
Cuthill's (true)	...	10 "	1 0
Emperor green flesh	...	10 "	1 0
Windsor prize	...	10 "	1 0
Egyptian green flesh	...	10 "	1 0

Two packets selected of the latter varieties will be included with a packet of the Queen Melon for 4s.

BROCCOLI.—The three best varieties in cultivation are the Walcheren, Wilcove, and the Tamworth, at 1s. each per packet.

Sold by EDWARD TILEY at his General Seed-shop, 16, Pulteney-bridge, Bath; the whole, or any part of the above, will be sent postage free. A remittance must accompany the order; or the amount in 1d. postage stamps.

ROSES.

HLANE AND SON can confidently recommend their MOSS ROSE "LANE11;" it is very brilliant, distinct, and beautiful. Standards and dwarfs, 7s. 6d. each.

The present season being very suitable, the following can be had. Dwarf Hybrid Perpetuals... 12s. to 18s. per dozen.

" Bourbons ... 12s. to 18s. "
" China ... 9s. to 18s. "
" Tea-scented ... 12s. to 18s. "

Strong Hybrid Perpetuals, established in large pots, for immediate forcing, 20s. per doz.

Nurseries, Great Berkhampstead, Herts.

SAVOY, "MARCELLIN."—The most delicate in flavour of its class, and will stand the severe winters of northern Germany. It should be sown from the 15th to the end of June, transplanted in July. It is highly recommended. Price, 3s. per oz., or 6d. per packet; can be forwarded per post on receipt of seven postage stamps. Also, every description of Vegetable and Flower Seeds at the lowest prices.

Agent for the New Enamelled Labels, and Bower's Improved Watering-pot.—DUNCAN HAIR, 109, St. Martin's-lane, Charing-cross, London. Catalogue of prices sent free.

SEED POTATOES.

CHARLES SHARPE, NURSERYMAN and SEEDSMAN, respectfully solicits the attention of the Nobility and Gentry to his POTATOES for Seed. The sorts are very early and productive, and have given general satisfaction to Potato growers in all parts of the Kingdom. They are offered at the following prices, packing included.

	Per bushel of 56 lbs.
Soden's Early Oxford Potatoes ...	... 8s. 0d.
Early Ash-leaved Kidneys ...	... 8 0
Early Round Frame	... 7 0
Early Cockneys	... 6 0
Early Manley	... 8 0
Fox's Seedling, fine for forcing ...	... 6 0
Second early sorts, for Winter and Spring use:	
American Native Potatoes ...	... 5 0
York Regents	... 5 0
Kentish Pink Kidneys	... 4 0
Forty-fold	... 4 0

Orders will be forwarded on the receipt of a Post-office Order, and great care will be taken to ensure their safe delivery. A liberal allowance made to the Trade.

CHARLES SHARPE, Seedsman, Wisbeach, Cambridgeshire.

DAHLIAS, 1849, raised by J. BUSHELL, Kennington-lane, London:—

DUCHESS—White, free bloomer, middle size, very easy growth. First class Certificates at Royal South London Floricultural, the London Floricultural, and other societies; favourably noticed in the various journals during the blooming season.—Plants in May, 10s. 6d. each.

LA REINE—White, free bloomer, middle size, will bear very strong growing, J. B.'s locality not open enough.—Plants in May, 7s. 6d. each.

J. B. has offered the following prizes to be competed for in 1849, which have been accepted by the societies:—3l. for the best three blooms of Duchess, 2l. for the second, and 1l. for the third best, at the Royal South London exhibition. 15s. for the best single bloom of Duchess, 10s. for the second, and 5s. for the third best. 10s. for the best single bloom of La Reine, 5s. for the second, at the London Floricultural exhibition.

OLD-ESTABLISHED NURSERY STOCK FOR SALE.

SUNBURY NURSERY, MIDDLESEX.

J. T. WILLMER, Senior, begs respectfully to announce that he has determined upon relinquishing the Nursery Business, which he has carried on as the above premises for the last 32 years; and in order to effect an immediate clearance of his Land, he has resolved to dispose of the whole of his extensive and valuable stock of EVERGREENS, SHRUBS, and FOREST TREES, at an immense reduction of price. The stock comprises Fanned Yews, 5 to 7 feet; Arbutus, 3 to 5 feet; Laurestinus, 3 to 4 feet; Aucuba, 2 to 4 feet; Phillyrea, 6 feet; Variegated Box, 3 to 5 feet; Variegated Hollies, 3 to 7 feet; Green do., 2 to 4 feet; Sweet Bay, 2 to 4 feet; Yucca gloriosa, strong; Pæony moutans; Alexandrian Laurel; Rhododendron hirsutum, ferrugineum, and ponticum; Spruce Fir, 4 to 6 feet; Weymouth Firs, 5 feet; Balm of Gilead do., 4 to 5 feet; Scotch and Larch, 6 to 8 feet; Common Laurel, 2 to 5 feet; Portugal do., 2 to 4 feet; 2 years Seedling Quick; 3-years do.; English Elm, Oak, Beech, Lime, Horse Chestnut, Birch, Syrings, Guelder Rose, 5 to 7 feet; new Scarlet and other Thorns; Standard Cherry Trees, of sorts, 7 feet in stem; Currants, in new varieties; large Lancashire Gooseberry, of sorts, &c. &c. As this is a genuine Sale, it is an opportunity offered to parties about to form or extend Plantations such as is seldom offered. Applications, personally or by letter, will meet with prompt attention. The Floricultural business will be continued as hitherto.

GERMAN SEEDS, IN COLLECTION.—

Asters, 24 splendid varieties	per collection—	4s. 0d.
Balsams, double Camellia-flowered, 12 beautiful varieties		3 0
Larkspurs, double, 12 splendid varieties ...		3 0
Poppies, double, singular colours, 12 beautiful varieties		3 0
Stocks, 20 splendid varieties ...		4 0
Zinnia elegans, 12 splendid varieties ...		3 0
Also, Tropæolum speciosum, new and very beautiful, per packet		2 0
Tropæolum Brickwordii, a new and very pretty variety, per packet		1 0

The above may be had of WILLIAM DENTEN, Seedsman and Florist, 82, Gracechurch-street, London, near the Spread Eagle.

GRASS SEEDS.

HR. SMITHE, Eastling, Faversham, Kent, informs the public that his mixtures of Grass Seeds, with a proportionate admixture of the Perennial Clovers, for laying land down to permanent pasture, are now ready at 8s. per bushel. Also to form Lawns and mend old Grass land, 1s. per lb. The seeds are collected under his immediate superintendence. A description of the soil, situation, &c., is requested; also a reference from unknown correspondents.

KITCHEN GARDEN SEEDS.—No. 1.—A complete collection, consisting of 20 quarts of the best kinds of PEAS, inclusive of Fairbeard's Champion of England, Early Surprize, British Queen, Burbidge's Eclipse, &c., and all other Seeds in proportion, of the newest and best sorts, sufficient for one year's cropping of a large garden, the choicest Melons and Cucumbers inclusive .. £3 8s 0d

No. 2.—Complete collection in smaller quantities, equally choice sorts 2 2 0
No. 3.—Ditto 1 1 0
No. 4.—Ditto. This is sufficient for a small garden 0 12 6

No extra charge for packing; carriage paid to London.

A General Catalogue may be had; also a List of each collection.

SELECT FLOWER SEEDS.

100 packets of the newest and best Annuals, &c. 15s. 0d.
50 " ditto ditto .. 8 0
25 " ditto ditto .. 4 0

A fine collection of imported Stocks, Zinnias, Asters, &c., named, 3d. per packet. Sent postage free.

A Descriptive Flower Seed Catalogue sent with each collection by enclosing two postage stamps.

WILLIAM JAMES EPPS, Maidstone, Kent.

SLATE WORKS, ISLEWORTH.—The following articles manufactured in Slate for Horticultural Purposes, by EDWARD BECK, may be seen in use at WORTON COTTAGE, upon application to the Gardener, Sundays excepted: Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot-water Tank Covers, Flower-beds for Balconies, Shelves fitted to hold Water for Orchidaceous Houses, &c.—Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	" Knives, various
Borders, various patterns	Hammers	" Saws
Botanical Boxes	Hand-glass Frames	" Scissors
Cases of Pruning Instruments	Hay Knives	" Shears [riety.
Chaff Engines	Hoes of every pattern	Rakes in great va-
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Daisy Rakes	Hotbed Handles	Scythes
Dibbles	Ladies' Set of Tools	Scythe Stones
Dock Spuds	Labels, various patterns, in zinc, porcelain, &c.	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
" Stands in Wires and Iron	Monographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanic Border and Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
" Loops	Mowing Machine	Trowels
" Rollers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extractors and Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse opening to the Monument, 46, King William-st., London-bridge.

ROSES.

A. PAUL AND SON have still a fine stock of all the most beautiful sorts of ROSES, which they will be happy to supply on the following advantageous terms—the selection of kinds being left to them.

Standards ..... 21s. to 30s. per dozen.
Dwarf Standards ..... 18s. ,,
Dwarfs ..... 9s. to 18s. ,,

Varieties selected by the purchasers at Catalogue prices. Catalogues forwarded free by post, on the receipt of two postage stamps.—Nurseries, Cheshunt, Herts.

MILFORD NURSERY, near GODALMING, 6 miles from the Guildford Station, South Western Railway.

WILLIAM YOUNG informs Gentlemen, Nurserymen, and others, that he has a fine stock of MAHONIA AQUIFOLIUM, or American Berberry, to dispose of, bedded plants, 9 inches to 1 foot, 20s. per 1000; if 10,000 taken, 15s. per 1000. Ditto, 1 to 2 feet, 25s. per 1000; if 10,000 taken, 20s. per 1000. They are well rooted, and are the best size for planting out. Also about 10,000 to 15,000, fine, straight, healthy, well-rooted English Oak, 6 to 8 ft., 40s. per 1000; do. 3 ft. to 5 ft., 30s. per 1000. Scotch Elms, 4 ft. to 5 ft., 25s per 1000. About 100,000 2 years bedded Larch Fir (fine), from 18 inches to 2 feet, and from 2 ft. to 4 ft., from 15s. to 20s. per 1000. And a million of strong bedded Quicks, of the most healthy description; samples with prices (which will be regulated according to the quantity taken) sent on application.—March 3.

ROSES.

EDWARD DENYER, NURSERYMAN, Loughborough-road, Brixton, near London, has much pleasure in informing his friends and patrons that he has still a fine stock of ROSES for sale; especially, E. D. is provided with a very large quantity of Roses in pots that will turn out for grouping in beds at any distant period. Standard Roses 20s. to 24s. per dozen, if left to E. D.; selection, Half Standard Roses, 12s. to 18s. per dozen, if left to E. D.; selection, Dwarf Roses, 6s. to 15s. per dozen, if left to E. D.; selection, Dwarf Roses, 33s. per 100; Roses in pots, 12s to 18s. per dozen; Herbaceous and Flower Roots in great variety, 4s. per 100; Evergreen Shrubs, from 1 foot to 10 feet; Dwarf Trained Peaches, Nectarines, and Apricots, 5s. each; Dwarf Trained Pears, Plums, and Cherries, 3s. 6d. each; Standard Fruit Trees in great variety, 1s. 6d. to 2s. 6d. each. The above are all in a fine Fruit bearing condition. Planting by contract, performed on the most approved plans. A Descriptive Catalogue of Trees, &c., will be sent on receipt of two postage stamps.

CAUTION.—E. D. respectfully informs his friends that he has no place of business in London, the only establishment he has is at Brixton.

SELECT HARDY HERBACEOUS PLANTS AND SUPERB DWARF ROSES.

WILLIAM MAY, F.H.S, begs to inform the admirers of the above that he has provided a large supply for the present season, which may be planted from this time to the middle of April with safety

100 Herbaceous Plants, in 50 sorts, 2 each, for 25s.
100 Ditto in 100 sorts, for ... 35s.
100 Select Roses ... in 50 sorts, 2 each, for 30s.
100 Ditto ... in 100 sorts, for ... 50s.

The Herbaceous Plants will be selected from a collection of upwards of 700 species and varieties, all showy, and the Roses from more than 400 varieties, the whole good sorts and good plants. W. M. has also a few dozens of his very select Double Hollyhocks, at 12s. per dozen.

The Hope Nurseries, Bedale, Yorkshire, March 3.

LARCH PLANTS, &c.

PETER BOOTH, NURSERYMAN, Falkirk, is selling off a very large stock of Transplanted LARCH plants, in sizes from 1 foot to 2½ feet Transplanted Scotch Firs, from 9 inches to 2 feet; transplanted Spruce Firs, 1 to 1½ foot. Strong Transplanted Thorn Quicks, and 2-year Seedling Pinus Austriaca, all very fine plants, and at further reduced very low prices.

EVERGREEN OAKS.

RENÉ LANGELIER, NURSERYMAN, &c, St. Helier, Jersey, begs to offer Several Thousands of the above, well worth the attention of the public; they are sure of success, having been transplanted several times, and are of fine growth. Many may at once be with safety planted where they are intended to grow. A vast quantity are also fit for potting; they will require to be only a few months in pots, having no pivot or tap roots. Price 50s. and 60s. per 1000. A reference or remittance required from unknown correspondents.

TO MELON GROWERS.

FLEMING'S NEW HYBRID PERSIAN having been awarded First Prizes at all the Chiswick Shows of the Horticultural Society of London last season, needs no further comment.

Fleming's New Hybrid Persian, per packet—2s. 6d.
,, Ispahan ,, ... 1 6
Seymour's Golden Perfection ,, ... 1 6

From unknown correspondents post-office orders or postage stamps can be sent to R. LANE & SON, Great Berkhampstead.

FIRST CLASS FUCHSIAS AND VERBENAS.

GEORGE SMITH begs to inform his friends in general that his DESCRIPTIVE CATALOGUE of the above is now ready, and comprises every novelty of the season.

G. S. can with confidence recommend his Seedling VERBENAS, they having taken numerous First Class Certificates. Also his Seedling FUCHSIA, LORD NELSON, has taken three First Class Certificates, and for exhibition will be found the gem of the season. For description, see Catalogue, which will be forwarded on the receipt of one postage stamp.

Tollington Nursery, Hornsey-road, Islington.

SEEDS.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE for 1849, sent free by post on application. We beg to offer the following in collections, including many choice new sorts.

VEGETABLE SEEDS.

	£	s.	d.
A complete Collection, including Thurston's Reliance, Dancroft Rival, Fairbeard's Surprise, British Queen, and other fine Peas, 20 quarts in all, and all other Vegetable Seeds, best and newest kinds, in proportion, for	3	3	0
The same Collection, in smaller quantities	2	2	0
Do. do. do.	1	5	0
A Collection suitable for a small garden	0	15	0

A list of the sorts furnished if required.

SELECT FLOWER SEEDS.

Free by post, with full directions for sowing, heights, colours, &c., viz.:—

	s.	d.
100 varieties best and newest Annuals	15	0
50 varieties for 8s. 6d., 30 for 5s. 6d., 20 for	4	0
20 varieties best dwarf kinds, in larger packets, suited for dilling beds on lawns, 7s. 6d., or 12 do.	5	0
20 varieties best Greenhouse Annuals, 7s. 6d., 12 for ...	5	0
20 varieties choice Greenhouse Perennials, 10s. 6d., 12 for	7	6
20 vars. choice hardy Biennials and Perennials, 7s. 6d., 12	5	0
36 varieties imported German Stocks	5	0
20 ditto ditto, 3s. 6d.; 12 for	2	6

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of 2l. and upwards articles presented extra. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the EXHIBITIONS OF FLOWERS AND FRUIT, in the Society's Garden, in the present season, will take place on the following days, viz.: SATURDAY, May 5; SATURDAY, June 9; and WEDNESDAY, July 11, and that TUESDAY, April 10, is the last day on which the usual privileged Tickets are issued to Fellows of the Society. 21, Regent-street.

UNEQUALLED CUCUMBER.

EDWARD TILEY begs to state it is worthy of remark that his unequalled CUCUMBER, the "VICTORY OF BATH" has surpassed all others of the hardy kinds of last season, and has been successfully grown by amateurs in the open air without frames, against a wall, or trained to trellis, it is a most productive bearer, bearing from 5 to 7 fruit on each joint; length, 18 to 24 inches. It has been highly approved by numerous growers for the last three years. Packets of 10 seeds, 2s. Sold at EDWARD TILEY'S general Seed Shop, 16, Pulteney Bridge, Bath. The above will be sent postage free, on the receipt of a Post-office order, or the amount in penny postage stamps.

The Gardeners' Chronicle.

SATURDAY, MARCH 3, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	March	5	Entomological	8 P.M.
			Chemical	8 P.M.
			Pathological	8 P.M.
			Medical	8 P.M.
			British Architects	8 P.M.
TUESDAY,	—	6	Horticultural	3 P.M.
			Linnean	8 P.M.
			Civil Engineers	8 P.M.
WEDNESDAY,	—	7	Society of Arts	8 P.M.
			Geological	8½ P.M.
			Royal Society of Literature	4 P.M.
THURSDAY,	—	8	Antiquarian	8 P.M.
			Royal	8½ P.M.
			Astronomical	8 P.M.
FRIDAY,	—	9	Philological	8 P.M.
			Royal Institution	8½ P.M.
SATURDAY,	—	10	Royal Botanic	3 P.M.
MONDAY,	—	12	Geographical	8½ P.M.
			Syro Egyptian	7½ P.M.
TUESDAY,	—	13	Medical and Chirurgical	8½ P.M.
			Zoological	9 P.M.
			Literary Fund (Anniversary)	2 P.M.
WEDNESDAY,	—	14	London Institution	7 P.M.
			Graphic	8 P.M.
			Pharmaceutical	9 P.M.
THURSDAY,	—	15	Statistical (Anniversary)	3 P.M.
SATURDAY,	—	17	Asiatic	3 P.M.

"ROCKWORK! Good Mr. EDITOR do tell me how to make Rockwork; I am so anxious to have rock plants, and a rockery, and all that—Ferns and Mosses, and Alpines." "Indeed, Madam, nothing is easier; provide 100 men, 50 horses, crabs, triangles, blocks, and stout ropes, go to the nearest moor, pick out stones of 5 or 6 tons each; hoist them, drag them, and deposit them in due order—you need not mind their chipping—and you will make a capital rockwork, provided you have Mr. PAXTON as your guide, and Derbyshire as your climate." "But, Mr. EDITOR, you mistake me. I am not ambitious. I do not wish to rival the high and mighty princes of the land; I only want what my neighbours call rockwork, properly done. I do not desire to spend anything: but I should particularly wish to gain all that is to be gained without money. Dear Mr. BOASEL is very good to me, but he cannot bear expense in his garden: and besides it would not be proper in him (though to be sure he might do it), to rival the gentry that buy his furs. What I want is good sensible rockwork. Poor Sir PHINEAS MULTIPLE used to say that after spending a hundred pounds upon his rockwork he only succeeded in obtaining a rubbish heap—covered with weeds in the spring, white stones in the summer, ant-hills in the autumn, dead sticks and leaves in the winter. I do not want that. A learned friend of my first husband used to describe rockwork as an imitation of Nature on a great scale, as an adaptation to gardening purposes of the grandest and wildest features of a rugged landscape, as the intermixture of the rarest and most graceful forms of vegetation with the rude fragments left of the primæval chaos. —I dare say that this was a very just and proper description of it, but that is not what I mean. I want a contrivance to keep plants out of the wet (for I live on the wet soapy London clay), to shade them from the sun, to broil them, to starve them, to bring them forward, to keep them back, to make them feel that the hand of knowledge is upon them. That is what I want; pray advise me."

This being a sensible, plain request can be easily answered. The only mistake on the part of our fair querist is the term she uses; she means brickwork not rockwork. Of the former we have some knowledge; in the latter little skill.

In order to construct a good brickwork, or (if fastidious ears prefer it) stonework, the mode of proceeding is this. Mark out an area which shall not be less than twice as broad as the contemplated height; if much broader so much the better. Place, in a rugged, continuous line, stones or bricks to the height of 9 inches or a foot; then fill the interspace with coarse soil, such as burnt clay, lumps of charcoal, pebbles, or the like; only keeping some fine, rich peat and loam next the outside. Having made the floor thus described, carry up another wall or face of brickwork, much more irregular than the last, and a foot within it, to the height of 12 or 18 inches; and again fill the interspace with good, loose, rich vegetable earth, plentifully mixed with loam. A third terrace (for these are terraces) may be carried up within the second till the work is finished by capping the whole with large, heavy masses of stone or brick, whose weight will keep everything in its place.

This is the formal way of proceeding; but the horizontal lines should be broken by large cross masses of stone, and the terraces themselves should be as rough and irregular as possible. The cross masses should point now to the south or north, now to the west, now to the east; some should be tall, others low. In short, taste of arrangement should here be carefully consulted; and the work, when done, will present a varied surface, a varied outline, and an infinitely varied series of aspects, which is what the rockwork maker wants.

Materials for this purpose may be found anywhere: the main consideration should be to have them massive enough. "Burrs," or large vitrified lumps to be had from brickfields, rough blocks of limestone, craggy fragments of granite, thick flags of paving-stone laid in courses, and similar materials, will form all the bolder outlines: the general run of the terraces will be made with smaller "burrs." Bricks, sandstone, limestone, are the best materials; granite, greenstone, porphyry, or any of the hard unstratified rocks, the worst—except flint, which is the worst of all.

By following this rule anybody may make a useful brickwork for cultivating rare plants, and for agreeably diversifying the surface of a flat garden, provided he exercise a little discretion in the planting it, upon which subject we shall have a word to say next week.

WHETHER there is any connection between MANURES and the POTATO DISEASE has been doubted; and it must be admitted that the conflicting statements that have been made on this subject could hardly fail to perplex the inquirer. *A* finds lime, as he thinks, a certain antidote; *B* uses lime and finds his crop worse than ever. Seaweed is pronounced by *C* to be a specific; but *D* announces that his Potatoes have all rotted where it was used. By many it has been asserted that guano is destructive to this plant, and some have gone so far as to imagine that it was the real cause of the disease; others maintain that their crops have been saved by it.

No doubt can exist as to the cause of these discordant statements. The circumstances under which the trials have been made have not been the same; and therefore the results have also been different. Or, as has commonly happened, effects have been ascribed to manures which have in truth belonged to other and unsuspected causes. Of this we have abundant evidence, independently of the returns before us; but it is so incomplete that we proceed to the examination of this question with much more hesitation than has been experienced in the previous part of the inquiry.

Lime appears from the returns to stand thus:

	Suffered much.	Suffered little or nothing.
England	13	25
Scotland	0	1
Ireland	0	5
Wales	0	1
	13	32

In Scotland, Ireland, and Wales, it seems to be seldom employed, and England only requires examination. It turns out that of the 13 bad English cases, *one* was a mixture of lime and hair, the consequence of which would have been a large extrication of ammonia, which is in itself a great evil as regards the Potato crop; in this instance two-thirds were lost. *Another* was gas lime. *Ten* were examples of late planting (April and May): the Rev. W. GALE, of Pylle, in Somerset, found that his crop suffered less when planted with lime, but much if planted in May with late sorts, although limed; Mr. MADDISON, of Wanden, in Northumberland, who used 120 bushels of clot (?) lime per acre, and lost one-third of his crop, planted the land in the end of April and beginning of May; a similar case is that of Mr. RINTOUL, of Hollington, in Sussex. The two remaining examples seem to be connected with damp or rich soil; Mr. HOLLIST, of Lodsworth, found one-fourth diseased in some allotment ground well limed in the autumn, and of a richer, more loamy, and moister character than the rest: this too was planted in April; and Mr. J. OLIVER, gardener, Combefield, in the county of Warwick, reports that his limed crop, "in old rich garden ground, with a wet subsoil, much confined with high trees and wails," was not worth taking up, although planted in January and February; here it is evident that neither lime nor early planting were able to secure the Potatoes against the combined effect of moisture and warmth. Upon the whole we may infer that NO DISADVANTAGE HAS BEEN FOUND TO BE CAUSED BY THE USE OF LIME; but

that we have no sufficient evidence of its advantage. That is to say, it is not ascertained that, when crops have escaped where lime has been used, it was because of the lime; it may have been because of other circumstances.

Guano presents more difficulty than lime, because of its varying quality. The reporters do not all say what guano they employed; and there is no certainty that, in some cases, they used this substance at all. Peruvian or Bolivian guano are the only kinds that ought to be used, especially for experimental purposes. According to the evidence, we find the facts to be these:

	Suffered much.	Suffered little.
England	21	21
Scotland	1	13
Ireland	1	2
Wales	1	—
	24	36

Here, again, the bad cases are chiefly English. Out of 21, 14 have been found so decidedly connected with late planting as to make it highly probable that the consequences of late planting, bad in themselves, are aggravated by the use of this highly azotised manure. It will be seen, however, that there are 36 good cases to 24 bad, and we do not find, upon searching through our columns for the last four years, that we have more than three bad cases against nine reported to be good. Whence we may infer that, UNDER ALL CIRCUMSTANCES, TWO CROPS MANURED WITH GUANO HAVE BEEN SAVED OUT OF THREE; that, IF APPLIED TO AUTUMN AND EARLY SPRING PLANTED CROPS, IT IS ADVANTAGEOUS; but that it is DANGEROUS IN LATE PLANTING. It is also to be observed that, when mixed with farm-yard manure, it does not seem to increase the bad effects of that application; for, out of 31 cases thus treated, the reporters mention 11 as being bad, leaving the proportions as before, 1 in 3.

As to *Farm-yard Manure* itself, the reports are, upon the whole, more unfavourable than in the case of any other manure. They stand thus:

	Suffered much.	Suffered little or nothing.
England	230	187
Scotland	20	125
Ireland	14	36
Wales	7	9
	271	357

But of the safer crops, 125 occurred in Scotland, where the disease committed little havoc, and even there the proportion of bad cases was 1 in 6. But if we take England, Ireland, and Wales, we find that the proportions are 251 to 232, which may be looked upon as equal in an inquiry of this sort. The evidence previously collected did not show this; on the contrary, the cases were about one-third bad to two-thirds good. The instances in which farm-yard manure seems to have done no harm were those of very early planting, or where it was old, and so much decayed as to have become little more than a *caput mortuum*; or where it was applied in very small quantities. There can be no doubt that, IF USED ABUNDANTLY, IN A VERY RANK CONDITION, AND ESPECIALLY IN THIS STATE TO LATE PLANTED CROPS, IT IS AN EXTREMELY DISADVANTAGEOUS APPLICATION.

Concerning other substances, the information received is very scanty and imperfect. *Ashes*—whatever may be meant by that expression—have been attended by the best success, the numbers standing thus:

	Suffered much.	Suffered little or nothing.
England	4	24
Scotland	0	2
Ireland	—	—
Wales	—	1
	4	27
Or when mixed with farm-yard manure:		
England	9	16
Scotland	2	7
Ireland	—	1
Wales	—	3
	15	54

From which we may perhaps infer that farm-yard manure, in some degree, interferes with the safety of "ashes" as an application. *Saline* manures do not seem to have been productive of injury, and perhaps are beneficial: but upon the whole we incline to the belief that it is wiser not to apply any manure to the Potato fields until this disease is much mitigated. The effect of leaving the land without manure appears to be this:

	Suffered much.	Suffered little or nothing.
England	32	96
Scotland	1	11
Ireland	1	7
Wales	1	2
	35	116

And we believe that of the cases of failure on unmanured land, the majority will be found to be connected with wetness, richness, years of high cultivation, or late planting. It is for Potato-growers to determine whether they will have a light crop and sound, or a heavy crop ravaged by an unknown amount of disease. The former seems to attend no manure, the latter to be the usual consequence of active manures, unless in dry lands planted very much more early than is customary. This at least is certain, that to plant late and manure heavily is destructive in all the warmer parts of the United Kingdom.

SOME papers in our hands prove conclusively that the industrious gentlemen who have been favouring gardeners and nurserymen with their orders from Manchester and Liverpool, are not so numerous as has been supposed; the same worthy person evidently bears many names and lives in many places. At one time he is Mr. W, living at "Elsmere Port, near Warrington, in Cheshire;" at another he is Mr. H., of Berkeley-street, *Strangeways*, Manchester; on other occasions he rejoices in the cognomen of JOHN ——. We suspect however that although he has a good many runs, the holes are pretty well stopped by this time. He dare not personally venture to the railway stations for his prey, but is now driven to written orders, upon one of which he obtained *Eight sacks of seeds*, delivered to "Mr. RODGER HALCOCK, High-street, Manchester." We are curious to know what simpleton supplied these eight sacks.

Dr. LINDLEY will be greatly obliged to those correspondents of the Horticultural Society who propose to contribute to the next Number of the "Journal of the Society," if they will favour him with their papers in the course of a few days.

COVERING VINE BORDERS WITH FERMENTING MATERIAL.

IT is the opinion of some that the practice of laying fermenting material on the borders of Vineries is of no service, from the idea that heat will not descend into the earth. We are perfectly aware that heated air has a natural tendency to ascend, because it is specifically lighter than the cold air by which it is surrounded; but it is no less true that heat will diffuse itself in every direction into whatever surrounding matter it may be in contact with, and to an extent depending on the conducting powers of that matter. The soil of a Vine border, if in a moderately dry state, is not a bad conductor of heat; of this, any one who has a Vine border covered with manure may satisfy himself, by burying a thermometer 18 inches deep in the soil so covered, and burying another in a border not covered. I have frequently made the experiment, and I am quite convinced about the truth of the matter. The amount of heat derived from a given quantity of manure is undoubtedly less than would be obtained if the manure could by some means be introduced beneath the border, as the heat which in the former instances escapes into the atmosphere would in the latter case pass into and be absorbed by the soil.

I wish those who disbelieve the utility of covering with hot litter would make the experiment, if it were merely with the determination of proving that their opinions are correct. Let them force a house early, cover half the length of border with manure, and leave the other half uncovered; the result will prove or disprove the necessity and utility of covering. The quantity of manure required for the purpose is inconsiderable, notwithstanding the loss of heat by evaporation and radiation, as the border retains the heat for a considerable time. It is essential, however, to have at command a sufficient supply to maintain the temperature when it is once established, as the Vines would be more injured by the check resulting from the decline of the heat than if they had never received the stimulus.

The border of a Vinery which I started in December was covered 15 inches deep; since that time it has been turned over three times, and a portion of fresh litter added twice; on the last occasion, however, when the heat of the dung had fallen to 60°, it was revived by turning the litter over, without the addition of any fresh material. This was about 10 days since, and notwithstanding the two last frosty nights, the heat of the dung is 80°, and that of the soil 70°, at 18 inches from the surface; this, however, is rather higher than is necessary—from 60° to 70° is sufficient. The above-mentioned border was covered with a mixture of dung and leaves, half and half, from which a more steady heat is produced than from dung alone. *G. Fleming, Trentham Hall.*

LECTURE ON ECONOMICAL COOKERY;

OR, THE METHODS OF PREPARING OUR FOOD WITH THE LEAST DEGREE OF WASTE.

By C. DAUBENY, M.D., F.R.S.

(*Continued from p.* 116.)

When we consider that a reduction of 20 or 30 lbs. in weight of an adult may be brought about within a short period, without injury and even with advantage to health, it would seem strange that a temporary deprivation of food should occasion death, if there were not other conspiring causes, besides the mere waste of the tissues, likely to occasion it. It is therefore conceivable, that a dietary containing just nutriment enough to maintain the stomach in a state of healthy action, as being at least of sufficient bulk to occasion the requisite degree of distention in its coats, and of that temperature which is at once most congenial to the performance of its functions, and best calculated to keep up the animal heat, should support for a time the system, even though inadequate to make good its waste, and hence, that if the food at our disposal should fall short of the amount necessary to supply the whole that is demanded for the permanent subsistence of the population, it may nevertheless stave off the miseries, and prevent the diseases incident upon famine, if administered as soup, or in some other form, in which increased bulk and a genial temperature are communicated to whatever nutriment it may chance to contain.

I have stated that, under proper management, the process of boiling need not be attended with any actual loss of nutritious matter. It must not, however, be inferred that, under any treatment, salted provisions are capable of supplying all that is wanted for recruiting the system. Salt beef or salt pork, if constituting the sole or principal food of man, induces diseases, of which sea-scurvy is the most general and the most formidable; nor do these arise from anything abstracted from the flesh during the process of boiling, but from the loss which had previously taken place of certain ingredients during, or in consequence of, the previous salting. Let us consider what happens when a piece of fresh meat is either overspread with a layer of dry salt or immersed in a strong brine. In either case not only does the salt penetrate the whole fibre of the flesh, but a corresponding exudation takes place of the juices contained within it, and the proof of this is, that in the case of a dry salt being used, the surface is very shortly covered with brine, arising from the solution of the saline matter in the juices of the flesh. This phenomenon is in fact a particular case of *endosmose*, as has been explained by Liebig in a late publication; and the consequence of this interchange of substance is that the salts of potass, which, as I have stated, predominate in fresh meat, are in this superseded by those of soda, derived from the salt with which it had been cured. Now it is pretty clear that such an alteration cannot take place without a loss of some of the nutritive qualities of the meat, for whether or not we choose to adopt those speculations which I have already thrown out as to the use of phosphate of potass in the muscular fibre of animals, we cannot refuse to admit, that the want of an ingredient so universal as this is, is likely to be attended with a derangement of health, and a deficiency in some part of what is necessary for nutrition. Hence a languor and debility of the system, a discharge of blood from the capillaries, and a general emaciation, notwithstanding the eager craving for food which characterises the disease, and hence the beneficial effects of fresh vegetables, which by supplying potass make up for the want of this alkali in the meat, which had constituted the principal nutriment of those affected. We might, therefore, be led to recommend phosphate of potass as a useful addition to salted meat, and also suggest, that a brine containing chloride of calcium and chloride of magnesium, such as that derived from sea water, would be preferable for curing meat to one of greater purity, because the phosphoric acid of the juices of the meat, instead of exuding, will unite with these earthy bases and form with them insoluble salts. Hence when vegetables rich in potass are eaten along with such meat, phosphate of potass is produced by the decomposition of the earthy phosphates present in the food.

The wholesomeness of *sauerkraut* may arise from the presence in it of lactic acid, which we have seen to act so important a part in digestion, and chloride of potassium, which is present in all fresh meat, is said to heighten the flavour of soups. May not the practice of seasoning meats which are rich or difficult of digestion with acids, as pork with apple sauce, be connected with the same principle?

So much then for the process of boiling, which when judiciously performed, is one of the most economical, as well as the most wholesome modes of preparing animal food. Stewing differs from it chiefly, inasmuch as the juices of the meat are entirely preserved by this process, though in a state of greater concentration, and consequently not in so digestible a condition as they are in a state of nature. As the object aimed at in stewing is to extract as completely as possible the juices of the meat, for which the process must be of considerable duration, it is advisable not to raise the temperature to the boiling point, which would dissipate the more volatile parts, as a heat considerably less than this is sufficient for dissolving all that water can extract.

In the processes of baking and roasting, the greater heat applied occasions in the flesh itself certain chemical changes, which are rather less favourable to easy digestion. Of the two, baking is the most economical; because in this process the juices are all prevented from escaping. But, for this very reason, food thus prepared becomes less adapted for weak digestions than that

which is roasted; because a portion of the fat, and of the other juices which have acquired an empyreumatic flavour by the process, is in the latter allowed to escape.

In broiling we have an illustration of the fact already stated, that the coagulation of albumen tends to confine within the substance of the meat the juices which would otherwise exude. The heat suddenly applied to the surface of the meat acts in this manner, and thus communicates a peculiar tenderness to it, owing to the confinement of the internal juices; it is therefore the form of cookery selected for the dietary of persons who are undergoing training.

With regard, however, to those culinary processes which are performed by the action of the open fire (whether it be roasting, broiling, or frying), the same remark is more or less applicable to them all, namely, that a considerable waste of nutritive matter is necessarily occasioned during the preparation of the meat. Hence, in a lecture of this kind, where economical cookery is the point under discussion, they may be passed over with this one observation, namely, that the small charcoal braziers, by which the processes of foreign cookery are conducted, produce a much smaller amount of waste than the large fires of an English kitchen, which burn and dissipate in vapour a considerable proportion of the juices of the meat.

(To be continued.)

ON THE CONDITIONS ESSENTIAL TO THE MOST PERFECT CULTIVATION.—No. II.

"Nature," writes an old author, "passeth nurture," and truly in reference to gardening operations, it is a just and excellent remark—a motto that should be inscribed over the door of every garden structure in the kingdom. Gardening in its greatest perfection must ever be based on natural laws. In proportion as we depart from them, so shall we be wide of the goal—perfection. As the physician, who has a correct knowledge of the medicines he uses, and of the constitution on which they are to be employed, has a greater chance of success in his labours than one who applies medicines with which he is little acquainted to a constitution of which he knows less; so the gardener, acquainted with the phenomena of vegetable development, and with the agents by which that development is induced and influenced, is more likely to succeed than another who treats a plant as an inert, inorganic mass, and applies the agents of development indiscriminately. For plant cultivation is a series of developments. Every plant has in itself the elements of a perfection,* on the nature of which, in the present advancing state of gardening, it would be hazardous to offer an opinion.

That any given plant may or may not be changed from its natural condition; or in other words, may be made to assume various degrees of development, is well attested. Witness, most of our garden vegetables and our fruits. It would seem that there is implanted in the various beings subservient to man the capabilities of great improvement, depending upon the exercise of his reason for their perfection, stamping him as a superior being, to whose wants all inferior objects are to contribute; in fact, placing him, in regard to the globe he inhabits, at the head of material things.

I have shown that vegetable development is influenced, in fact that it is completely dependent on, external influences, and that those influences, to be rightly applied, must not only be understood in their various relations, but must be completely under the control of the cultivator; and this brings me to the subject of garden architecture; and as I have based what I shall argue in subsequent papers on vegetable development on the recognition of a vital principle, it will be well for me, as I have established the argument, to treat of what I have to say on plant structures as preliminary matters; so that nothing shall interfere to divert the current of my observations. Garden structures devoted to the protection and growth of plants assume two characters, plant houses, and structures for the production of fruits. It is to the former only that I shall at present allude.

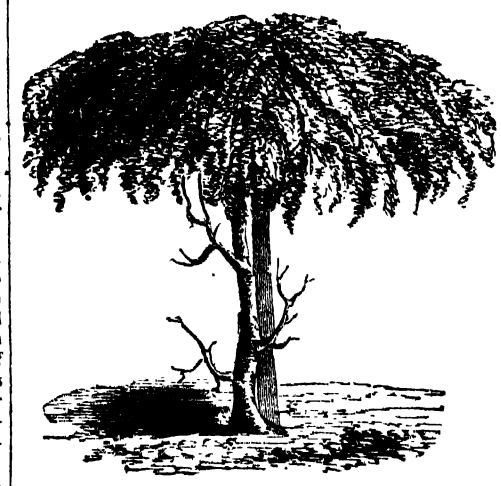
If a gardener—*i. e.*, one of our best gardeners—of the present day were asked to construct a building the least suitable for the production of good plants, I have no hesitation in saying that such a house would be a lean-to, combining, as such a structure does, much that is totally adverse to the perfect development of vegetable life. No plant can flourish, in the widest acceptation of the term, unless it has the full action of the atmosphere on all sides. Now, the best constructed lean-to does not give this. It merely stimulates one side of a plant at a time, leaving the others in a stagnated atmosphere, a diminished light, and all attendant evils. For my own part, I cannot conceive any advantages from the use of lean-to houses for the purposes of plant culture (it will be understood that I am not speaking of structures for early forcing). Certainly such a form does not economise space or material, and heat is quite a secondary consideration, if indeed such a form economises even that. It will be found, if I might presume to prophesy, that in proportion as we advance in horticultural science, so will the importance of positive heat as an agent decrease. We shall, I trust, in due time arrive at the knowledge of the relation existing between light, heat, and moisture, and then how absurd will the practice appear of uniting a high temperature with diminished light!

In turning our attention to the leading points in physical geography, we are sometimes perfectly astonished at facts in relation to vegetable life, and even temperature. In reading "Lyell's Principles of Geology," an admirable work, I met with many remarkable facts respecting the principles which influence climate, and I am confident that not a gardener in the kingdom but would reap incalculable benefits by perusing that work. I shall quote one instance of the power of plants to endure frost, and that even in flower, which we consider as tender. "Capt. King observed large shrubs of Fuchsia and Veronica, which in England are treated as tender plants, flourishing, and in full flower, in Terra del Fuego, with the temperature at 36°. He states also that humming birds were seen sipping the sweets of flowers after two or three days of constant rain, snow, and sleet, during which time the thermometer had been at the freezing point." Only fancy a bed of Fuchsias in our gardens in full bloom and the temperature freezing! If such is the natural constitution of this beautiful flower, we must have taken great pains to weaken it, and all our coddling has resulted in a retrograde rather than a forward direction. *G.*

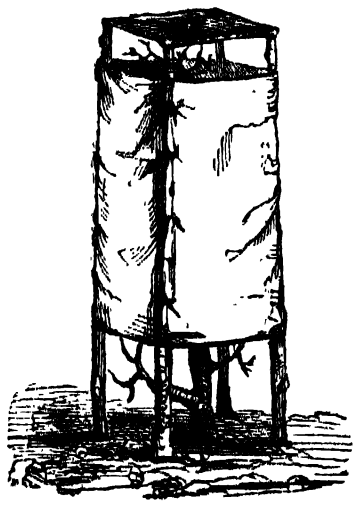
* That is, supposing such a plant to be a fully organised offspring from a perfectly developed parent. It is possible to produce a plant which does not contain the elements of perfect organisation, and the greatest skill bestowed upon such would scarcely produce a specimen above mediocrity.

FRUIT-TREE PROTECTORS.

The accompanying sketch will give some idea of my protection for pyramidal Pear trees. A stout stake, 6 or 8 inches round, must be well sharpened with a long point, and driven down close by the side of the stem, from 1 to 1½ foot, into the ground; if the point is sharp and slender, the roots will not receive any injury. The top of the stake should exceed the height of the tree about 2 inches; on this nail a piece of inch board 2 feet long and 9 or 10 inches wide, then procure some young flexible branches of Yew or Spruce Fir; nail them firmly on to the board, so that they form nearly a circle. If the side branches of the Yew or Fir are used, which are generally slightly curved, they will form an umbrella-shaped protector, which will preserve the blossoms from all ordinary spring frosts.



In exposed situations, subject to sharp cutting winds, the following protector may be used. Insert four stout stakes, from 3 to 4 inches in circumference, at equal distances from the tree, in a square, the tree for its centre, so that they do not touch the horizontal shoots; then take cheap, unbleached calico, which I think can be bought at 2*d.* per yard, or perhaps less. Commence at 18 inches from the foot of the tree, and bring it round the stakes, fastening it to them with iron tacks (short nails) to within 1 foot of the tops of the stakes. Then nail a piece of calico on to the top to each stake, so as to form a roof, this will be an effectual protection both to still and wind frosts; and the spaces at bottom and top of this calico fabric will admit of a free circulation of air, so as to keep the blossoms in a healthy state.



The annexed sketch represents my calico protector. An amendment has struck me, which is, to have the southern side to fasten with hooks and eyes, so that in fine, mild weather the tree may have the full benefit of the sun, and in frosty weather it can be closed; for I now recollect that when I used them two years since, the leaves and flowers were a little drawn, and this will to a certainty take place if bunches of evergreens are used for this sort of protector, as recommended in your Number of Saturday. I have not seen Mr. Yexley's material; if thin and of open texture, it will be better than calico. *Thomas Rivers, Sawbridgeworth.*

NOTES OF A TRAVELLER.—No. II.

Hong-Kong, *August*, 1848.—Since I left China in 1845, an interest in gardening and planting has sprung up which promises to lead to most beneficial results. At that time every one complained of the barren appearance of the island, and of the intense heat and glare of the sun. Officers in the army, and others who had been many years in the hotter parts of India, all agreed there was a fierceness and oppressiveness in the sun's rays here, which they had never experienced in any other part of the world. From 1843 to 1845 the mortality was very great; whole regiments were nearly swept away, and many of the Government officers and merchants shared the same fate. Various opinions were expressed regarding the cause which produced these great disasters; some said one thing and some another; but what was a most curious circumstance, almost all seemed to think that imperfect drainage had something to do with it, and a hue and cry was set up to have the island properly drained. But the island is a chain of mountains; there is very little flat ground any where upon it, and hence the water which flows from the sides of the hills gushes rapidly down towards the sea. Imperfect drainage, therefore, could have very little to do with its unhealthiness.

I have always thought, and I am still of the same opinion, that although various causes may operate to render Hong-Kong unhealthy, yet one of the principal is the absence of trees and the shade which they afford. In a communication which I had the honour to make to the Government here in 1844, I pointed out this circumstance, and strongly recommended them to preserve the wood then growing upon the island from the Chinese, who were in the habit of cutting it down annually, and at the same time to plant extensively, particularly on the sides of the roads and on the lower hills. I am happy to say that these recommendations have been carried out to a certain extent, although not so fully as I should like to see them. It is well known that a healthy vegetation, such as shrubs and trees, decomposes the carbonic acid of the atmosphere, and renders it fit for respiration; besides there is a softness and coolness about trees, particularly in a hot climate, which is always agreeable.

You will be glad to hear that the inhabitants generally are now taking up the matter with great spirit. Many of them have planted all the ground near their houses, and some have formed really very fine gardens. Green Bank, the property of Mr. Braine, is a most interesting place. Messrs. Jardine and Matheson, at East Point, have also laid out their property with good taste, and the trees and shrubs are growing as well as possible. Thus you see all is moving onward in the right direction. A botanical garden is talked of; the subject has been brought forward by the Asiatic Society here, and a committee has been appointed to investigate the matter. The committee has requested me to give advice regarding a proper site, which I have done with a great deal of pleasure. I trust if the matter is brought before the Government at home that it will be treated with that spirit of enlightened liberality which has made the royal garden at Kew one of the noblest in the world. *R F.*

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

Cats.—According to the laws of association, this monosyllabic word will be suggestive of various and very contrasted ideas and emotions, according as the four-footed animal of which it is the appellative shall be in favour or disgrace. I confess that a few weeks back a fine tortoise-shell specimen of the tribe had so managed to win my affections, that I had promised to have her stuffed and put in a glass case after death; and had even taken down the name of an artist in Red Lion-street, Holborn, in whose window there is now a stuffed cat, looking most sinistrously at a poor squirrel under her paw. Indeed, so far had foolish fondness carried me, that I began to think it would be better for pussy to die soon and enjoy the destined honour, while her skin is so sleek and her markings so well defined, than to wait till old age has stolen away a part of her beauty. But "a change has come o'er the spirit of my dream," and what was so lately my hobby is now my detestation, for a reason which all amateur gardeners will at once recognise.

I now wonder how I ever showed favour to a member of this hateful fraternity, fit only to tear each other's jackets in some uninhabited wilderness, and to wake the midnight echoes on mountain tops. Most certain do I feel that in Eden, that original and model of all gardens, a cat never dared to intrude its ominous whiskers, and that its present existence is to be reckoned among the miseries of the fall. As far as memory serves me, the Hebrew language has no name for the ill-omened brood, and the presumption therefore is, that among the ancient Jews the brutes were unknown. But I was going to prove that my hatred is well founded, rational, and praiseworthy, on account of divers injuries received, which I now allude to, to put my brother amateurs on their guard. In the early spring, a few years back, I had a frame under a sunny wall filled with plants and

seedlings in preparation for bedding out, and among these was a pan of some favourite exotics just putting forth their first leaves. Going to look at these one fine morning I found a cat curled up in this pan, like a hen in a nest, and completely filling it. It was vexatious enough, you will allow, to have flowers hatched or rather addled in this fashion, and in order to punish grimalkin I shut down the frame, and went to look for a stick. But the cat was too sharp for me, and in a moment she dashed through the glass, breaking no fewer than six panes in her exit. At another time some cats got into the house by some broken window in the basement, and kicked up a most awful din in a sitting room, the door of which had been left open. Before I could reach the scene of action with most murderous thoughts generating and fermenting in my brain, the caterwauling gave place to a sound of falling flower-pots and shattered glass, and I found that one cat had so frightened another that she had bolted through the window, throwing down and breaking to pieces four flower-pots, ruining the plants, and breaking a very large square of glass! If my hatred was not well founded, whenever did that passion become a man?

However, as I said before, being placable, I had forgiven these old offences, and taken a cat into favour; when all former bitter remembrances were revived by a recent outrage, worse than those already recorded. This fine weather had brought forward a bed of bulbs, Hyacinths, Tulips, &c., and I trimmed it up, raked it, and made it as soft and pulverised as it could be even in summer. That night I heard sounds inauspicious, far more so than the raven's croak or the hooting of the owl, and knew well what awaited me in the morning. But my worst fears were more than realised. It is a well known historical fact that ancient wrestlers strove together in sand, or on a place strewed with it, and it appears that cats have a predilection for that which is sandy and pulverised in their noisy conflicts. However that may be accounted for, so it is, and my beautiful bed was rolled upon, raked up, and disfigured in all directions. I have now given a plenipotentiary power to all boys and men on the premises, to lay wait for, stone, execrate, grin ferociously at, imprison, or kill all and several the cats (white, black, tortoiseshell, or tabby), which henceforth may be found on the grounds. Amateurs, take care. Let the experience of an unfortunate man teach you wisdom, and may you profit by my errors. Watch your frames, close your sitting-room doors at night, and place briars at night over your choice beds. *H. B.*

Home Correspondence.

Potato Onions.—Whence comes to us, and how was first introduced into cultivation, that valuable root, the Potato Onion? In some localities, there is a popular opinion that it is derived from the Spanish Onion, in this manner:—We all know that if very small Spanish Onions of the previous year are planted in spring, some will send up a flower-stem, others will increase and ripen without running to seed; replant these latter, it is said, and they will retain the non-flowering habit, and, dividing into offsets, will become Potato Onions. An experiment would decide the truth of the theory; perhaps in the negative. By some persons the Potato Onion is believed to have been introduced from Egypt, and that it is the identical variety which the old pyramid builders once reverenced or worshipped. But, in the usual course of things, a tendency in plants to become viviparous, and to propagate themselves by offsets or buds, instead of by seed, is apt to be induced by a cold and moist climate, not by a hot and dry one, like that of Africa. The early times of starting growth and maturity (the shortest and longest day, respectively, as easy dates to remember), reminding us of Siberian plants, would give probability to the suspicion of a more northern origin: it must hence be a most valuable acquisition to the inhabitants of such places as the Falkland Islands, or even some of our more remote Islands of Scotland, whose isolation prevents their readily obtaining English Onion seed, and whose seasons refuse to ripen it at home. No doubt there is many a schoolmaster, or factor, or minister, insulated in these ungenial spots, who would gratefully remember the day when a handful of Potato Onions was first brought to his retired little garden, on account of his poorer neighbours, as well as for the addition afforded to his own stock of home grown luxuries. The Potato Onion, I think, rarely or never flowers, whereas the Shallot, which is the Alliaceous plant most resembling it in its mode of increase, often does, and also ripens seed. One of the desiderata in gardening literature is a good and full natural history of the plants we have in cultivation, which should give a complete biography of each species, or established and recognised variety, recording its use and adoption by man, from the first known epoch. With some, the enquirer would have to pursue his researches through the twilight of dim antiquity, till he arrived at absolute darkness and uncertainty; of others, such as those derived from the New World, or native plants, the historian would be able to furnish a complete memoir up to the present time. A writer who had leisure to bestow sufficient labour upon the subject, could not fail of producing a volume or volumes that would be entertaining to the general reader, and a useful book of reference for the vegetable physiologists of a future generation. *D.*

To keep Rabbits from barking Trees.—I again give my testimony to the excellency of Mr. George Wells' receipt of soot mixed with old milk, or butter-milk, till it is the consistency of paint, and then painted on the trees with a whitewash brush. But for this, I could not grow either Pears or Apples, mine being an open garden, and surrounded by these pests. Neither hares nor rabbits will touch the trees in the most severe frosts of winter, if this is done at the commencement of frost; nor will they eat out the buds now, if the trees have another coating in spring. *W. D. Fox.*

On Exhibiting Seedling Flowers.—The efforts of some societies and censors throughout the country have accomplished much in guarding the annual purchasers of florist flowers from disappointment, and these efforts are furthermore made valuable by the widely spreading floral press, the very bane of evil doers; yet with all much still remains undone. In propounding my views of showing seedling florist flowers, I will first endeavour to prove that valueless certificates should be discontinued, experience having shown their effects to be contrary to the original intention, inasmuch that such strictness in awarding certificates may not have been enforced by Societies, as would have been the case had such awards entailed a charge on the funds of the Society. Without disparagement I may mention that this remark is, perhaps, more forcibly verified at provincial meetings than elsewhere, by their giving a character to perhaps a moderate production, whereas the contrary would have been the case if a cost had been involved, however trifling, say from 2*s.* 6*d.* to 10*s.* I would discourage the idea of charging an additional price for a certificate when awarded, as a bankrupt Society might quickly replenish its coffers under such a system. One flower only has yet been put to a proper test of character and quality, namely the Dahlia, and this severity rather than detracting from its value has been pronounced by dealers to have established it as the most valuable florist flower to propagate and cultivate, producing as it does a greater annual income and profit than Pinks, Pansies, Picotees, and Carnations, combined. I attribute this to the universal requirement of three, four, or six blooms, of each variety, at each exhibition, which produces confidence in what is seen, contributes largely to the gratification of visitors, and, above all, creates purchasers. By some six blooms of each variety were considered too many; the past season, when three and four were the prevailing numbers, has, however, "told its tale." For the future, let no less than six blooms be shown, and a consideration offered. Discontinue single blooms of the same year's seedling. This offering certificates for single blooms of the current year's seedlings has on more than one occasion led to dishonesty, or at least deception; and, by it, varieties are sent forth to the world as having received certificates, single blooms of which were obtained with difficulty from 6, 12, or 20 plants. I could mention instances in confirmation of this, but the practice is known and must at once be checked. Let growers of seedlings produce their single blooms with the prospect of a recommendation to "try again;" but offer no reward. This brings me to other florist flowers, and in no instance am I aware that more than one bloom is required throughout the whole range to test their quality and constancy. Cut flowers should not be let off thus easily, and much of the distaste for floriculture is in my opinion attributable to this very cause; for Pelargoniums, Auriculas, Polyanthuses, in fact all varieties where the plant is shown, a different version of my present remarks is certainly required. The value of every production is highly augmented when constancy is added to its other recommendations, and I fully believe the numbers sold of a proved constant flower to be tenfold those of a treacherous or doubtful one. By thus showing its constancy it will repay the dealer for his self denial in holding over the stock of every variety until there be sufficient to produce three, four, or six blooms of Pinks, Pansy, Picotee, or Carnations, as the case may be, and I argue it would be better to sell 50 of a variety at 2*s.* 6*d.* each the second season, than 50 at 5*s.* each the first season, as at present; it requires little calculation to prove the more profitable course; moreover floriculturists are benefited to the extent of the numbers sold at moderate prices over those at high prices. Does not our Post-office in its low rate of charge clearly demonstrate this fact; thousands now write to their friends who could not indulge in such a luxury at the old rates, then why should not hundreds purchase new varieties of flowers at low or moderate prices against the scores at the higher prices? Let blooms of any variety be produced in numbers, and purchasers will not be wanting, or, at any rate, their numbers will be much increased. The stronger the test is for seedlings the more plants must be grown, but the demand will be increased in the same ratio. Let me urge upon all societies, in arranging their forthcoming schedules, to take my advice. Compel exhibitors of cut blooms of seedling Verbenas, Pansies, Pinks, Picotees, Carnations, &c., to produce either three, four, or six blooms (rather six than three), of each variety, and, as before stated, offer a pecuniary reward; it will be the first step to a lasting benefit for floriculture generally. The subject might easily be more elaborately touched upon, but my object has been to point out those errors which, if persisted in, will prove the ruin of floriculture. *J. Edwards, Wade Cottage, Holloway, Feb.* 6.

Celery.—I obtain a quantity of rotten dung from an old Hop-bed, and place a one-light frame over it; in this frame I put 3 inches of rotten turf, chopped small, and then I sow my seed, never subjecting it to bottom-heat. I give air on all favourable occasions until the plants are pricked out, which is effected in the before-mentioned compost, placing them 6 inches apart. I sow in the last week of February, or first in March. In preparing the ridge or trench I remove the earth 2 feet wide and 18 inches deep. I then clear off all my winter Broccoli stalks, leaves, Cabbage, and all green refuse that I can collect, fill up my trench with them, and chop them well with a spade. I next lay on about a foot in depth of earth, and plant nearly level with the surface; I remove the plants from where they were pricked out, with all the turf and manure that will hang to their roots, and as soon as they are planted I give a good soaking of water. By these means I get beautiful Celery; the kind that I grow is Seymour's white, a dwarf solid kind. Red succeeds well under the same treatment. I plant 15 inches apart in the rows; the weight of each head varies from 4 lbs. to 6 lbs. I have grown Celery equally well on two-year-old cow-dung. *J. Grier, Lettrington Rectory, Yorkshire, Feb.* 13.

Glebe Lands.—Supposing, as I do, that the "Rector of Ockham, Surrey," is right in his opinion, that "no law can oblige a succeeding incumbent to pay one farthing towards improvements of which the outgoing incumbent has had all the paying, the incoming all the receiving," cannot he or any other of your correspondents suggest a remedy for this manifest wrong. I hold a small glebe on which I have been keeping more than double the quantity of stock kept by my predecessor, and have now got the land into a high state of cultivation, and in the course of the last five years have drained the whole. Is it not manifestly unjust that in case of my death my family will receive nothing for unexhausted improvements? And yet what else was I to have done? The land in its former state would not pay, and a heavy outlay was necessary to bring it into anything like good order. Would the patron have power to make any sort of agreement, previous to presenting an incumbent, that the successor should pay "according to the custom of the country" for any unexhausted manures or other improvements? I hope that we shall not be forced, in duty to our families, to adopt a miserable low state of farming, to the detriment of our labourers and the ruin of ourselves. *Rector.*

Primula allanea.—Permit me to acklowledge the prominence given to my flower in the *Gardeners' Chronicle*. Apart from its floral qualities, it possesses to me great interest, as reminding me of the long imprisonment which our party had to undergo under the quarantine regulations of the East, and which; from the fortunate circumstance of our selecting Kawak as our lazzaretto, proved to be the most agreeable portion of our journey. I mention this in order that if any of your friends contemplate a visit to Constantinople, and if they have it in their choice, as we had, to select their lazzaretto, they may be advised to choose Kawak. The locality is most romantic, and as we had permission to walk out in the environs every day, that portion of our time which we had looked forward to beforehand with dread, turned out in reality a most pleasant sojourn. *C. J. Darbishire, Rivington, near Bolton, Feb.* 26.

A Friendly Word to some Gardeners.—Will gardeners, and some very respectable ones, too, allow me to suggest through your columns that when they are writing to tradesmen it would be quite as well for them to state what their employers' intentions and wishes are, and not write as if they were principals. It is placing themselves in a false and ridiculous position, and I can easily imagine the footman or butler of a family on taking in a letter addressed to James Greenapron, Esq., Hastonbury House (or whatever the name may be), laughing in his sleeve, or openly, to his fellow-servant, at the tail he gets tacked on to his name from his not giving the tradesman who writes the letter his proper address as gardener to the establishment, or writing in a manner indicating his situation. Our house is largely engaged in supplying horticultural establishments all over the country, and we are constantly receiving letters from unknown correspondents, which commence in this style: "I am proposing to plant so and so. I am about to erect such and such buildings. I am in want of the following goods, &c;" and very often signed, "Yours faithfully." It completely bothers us to know who we are addressing in reply, whether master or man, and I am sure I am not acting offensively in publicly stating that a gardener never loses but gains in our estimation, and in that of all sensible persons, by carefully maintaining his true position, which is one of great respectability, and deserves to be well filled. *Amicus.*

Cultivation of the Fuchsia.—At a late meeting in the Study, Exotic Nursery, Chelsea, Mr. Mason read an essay on the cultivation of the Fuchsia. He advised the plants to be struck from cuttings by the latter end of January, either in 2½ inch pots, singly, or a quantity in 5-inch pots. The former method was preferred, as by it the plants were ready for shifting as soon as they were well rooted. The soil he considered best for the successful cultivation of the Fuchsia was two parts of good maiden loam in a decomposing state, one of peat or leaf-mould, and one of good rich manure, with a portion of silver sand, and a small quantity of bone dust. This latter was considered to be of the greatest advantage, its mechanical agency ranking with that of charcoal, and its manuring property being too well known to require comment. As soon as the young plants were sufficiently strong, and their roots had reached the sides of the pots, they were to be shifted into 5-inch pots, and moderately watered and plunged in frames, giving them a gentle bottom heat; air was to be given moderately on mild days, for a few hours in the middle of the day, but great care was advised to be taken at this

season not to admit too much, especially when the wind is keen; for in such cases the young leaves are apt to be so much injured as to retard the growth of the plants. The frames were to be covered up at night in proportion to the heat of the beds and the state of the weather, so as to maintain at least 60° Fahrenheit. By the end of April, if all had gone on well, the plants would require shifting, and this Mr. Mason considered ought to be the final shift for the season. He stated that the cultivator should be acquainted with the number of plants required; and the purposes for which they were intended, in order that he might be able to select the strong-growing kinds for such places where large plants would be required, and the more delicate varieties for the drawing-room, conservatory, &c. It was recommended that those intended to make large plants should be shifted into 9 or 11-inch pots, giving a moderate drainage of potsherds, and covering the latter with a little rough peat; the soil to be pressed very lightly with the hand, and with care, so as not to injure the roots. The plants when potted, it was said, should be removed to the greenhouse, and placed as near the glass as possible; the night temperature of the house to average from 55° to 60° Fahr, with a rise of 10° by day of solar heat. Plenty of air was to be given when the weather would permit; and while the plants were in a growing state, care was to be taken not to let them get too dry; for, if this happened, the ripening process would take place, the plant would be thrown into a flowering state before it had acquired sufficient size, and would ultimately be of little or no use. Syringing both morning and evening was considered to be of the greatest importance. In training, to insure a handsome plant, only the leading shoot was to be tied up, all the side branches being allowed to grow without stopping, except in cases where a strong shoot was taking more than due precedence of the others. As the plants advanced in size, it was advised that they should be thinned out, so as to admit all the light possible. Liquid manure was to be applied as soon as the plants began to bloom, provided they had filled the pots with roots; if the plants began to flower in a small state, the flowers were to be pinched off. Fumigating was recommended to be frequently performed, to keep down green-fly. It was stated that, by the end of June, the plants would have attained a good size, that they would exhibit a beautiful pyramid shape, and that they would be covered with flowers, provided the rules above laid down had been strictly observed. At this stage of their growth as much air as possible was to be given both night and day, and syringing withheld. The plants might then be removed to any situation required; and, with due attention to watering, it was said they would continue to bloom abundantly until the end of the season. *Wm. Jeffreys, Secretary.*

Slug Traps.—I venture to send you the following letter, which I have just received from my brother, whose residence is about a mile from this place, not with a view to communicate a contrivance with which you are unacquainted, but to show the great danger our gardeners will have to encounter if they are not admonished to adopt precautions in time against so destructive a pest, the vast numbers of which I attribute to the mildness and dampness of the winter. As far as my observation goes, this description of slug abounds as plentifully in our fields as in our gardens, for on receipt of my brother's letter I directed my man to spread two dozen slices of Turnips in a field where I have sown Parsnips and planted Potatoes, and the next morning he brought me 186 slugs, which had sheltered themselves under these traps. The letter is as follows:—"I send you a description of a snail which the gardener and farmer with us find so destructive to their crops, and also of the traps by which we have succeeded in diminishing their numbers. The snail, or as it is here called, the slug, is about the one-fifth of the size of the black snail. His back is of a darkish tinge, and his belly of a dirty white, or brownish. The traps consist of circular slices of white Turnip about ¼ an inch in thickness, and 3 or 4 inches in diameter. My experiments with these traps only began on Tuesday last. They were conducted by my servant, who brought me 4 or 5 largish Turnips (the larger the better), and cut them in slices as above mentioned, forming 41 slices or traps. Each slice or trap was placed at a distance from its neighbouring trap of about 15 feet. The traps were set on ground planted with Beans, though they are not so fond of this vegetable as of Peas, and more so of Kidney Beans. They have also a great liking for the early Cabbage; they have devoured mi. of this year. They have no objection to a lettuce, nor any to the early Turnips, as the farmers find to their cost; in short there are few vegetables they will not devour. They begin upon them, to wit, Turnips, &c., as soon as they appear above the ground. They will also attack the Potato under ground, but this oftener occurs in frosty weather, when they are more under the surface of the earth than upon it. I have mentioned that these traps were set for the first time in my garden on Tuesday last, and they are so inviting to this kind of snail, for shelter and food, that on Tuesday night, or early on Wednesday morning, there were 400 caught; on Thursday morning, in the same traps, there were 360; on Friday morning, 200; on Saturday morning, 200; and on Sunday morning only 50, in all 1210. I am inclined to think the few that were caught on Sunday morning not altogether owing to the numbers that had before been taken, but also to the night being frosty; they are not so much inclined to seek for food above the surface, and do not move far for it. When the slices or traps are raised, some of the snails are found adhering to the slice, sucking it with their mouths expanded like a leech. They make small holes in the sliced Turnips, not unlike what would be if a small scoop had been used. I omitted to say that the traps are put in my Strawberry beds, where many are destroyed—some satisfaction, when I think of the many of my finest ripened Strawberries they have sucked or scooped out, leaving only a part of the outside of the Strawberry. That it has been this description of snail who was the depredator, I offer this further proof. It is my practice to put cut Grass around each plant before the Strawberries begin to ripen, to prevent the heavy rains from splashing up the dirt upon the Strawberries, but when they are ripe, and particularly those that were the finest, I have found them with holes, and sometimes all the pulp sucked or scooped out, leaving, as I have said, only a part of the outside, and I have wrongly attributed it to the frog, for, on turning up the Grass around the Strawberry plant, I have almost always found a snail underneath it; add to this, upon finding some of the plants dead or in a sickly state, I have taken up such plants, and found under or amidst the roots one of these snails; hence the traps are set amongst the Strawberry beds, and thereby I have caught many." *Lindley Hall, Warwickshire.*

Mousetraps.—We have received from Mr. Wilderspin, gardener, Horseheath Lodge, near Linton, Cambridgeshire, an ingenious little box mousetrap, made of wire and wood. It is not, however, different from others we have seen, save that the spring for the faller is on the top instead of at the side. They are sold by Wm. King, of Horseheath, at 2*s.* each.

Shading Pine Stoves Unnecessary.—Your Leading Article of the 24th inst. speaks of the merits of Hartley's patent rough plate glass, stating at the same time that considerable saving might have been made had its qualities been known before. Permit me, as an old amateur Pine grower, to state why I think there is no occasion either to use Hartley's patent rough plate glass (less expensive glass answering), nor even to use any covering to shade Pines and some other tropical plants which I grow in the same stove, even in the hottest day in summer; and, in order more clearly to show this, I must observe that some years ago, being desirous of possessing some of the soil in which Pine-apples are grown in Antigua, I directed the master of the ship "Duke of Clarence," then bound to that island, to go into the plantations, and (of course with permission) to take up about 20 Pine plants, mould and all, with fruit on them, placing them in tubs, which he did, in addition to some very fine suckers without mould, and on their arrival in England I built a small house for the reception of the latter purposely, not liking to place them amongst my clean stock, on account of their having on them a great deal of white scale, common (I believe) to all plants imported. I watered them over head with the common syringe during the hottest period of the day in summer, shutting up the house and giving no air, and I never saw plants grow so well; the fact is, they were shaded by the vapour condensed on the under side of the glass, produced by solar heat. I may, therefore, be allowed to assert that no shading is necessary. I continue the practice now with equal success, both on the Hamiltonian and old bark system, in one house heated by hot water pipes. *John Stoveld, Stedham Hall Midhurst.* [There is a doubt whether we were justified in calling this kind of glass "Hartley's patent rough plate." We did so for the sake of saving our readers the trouble of fighting their way through the crowd of little glass dealers who are ready to swear that there is but one kind of rough plate, and that the dear kind. We believe that the glass to which attention has now been drawn was made so long ago as 1836, by Mr. West, of Eccleston.]

Rain.—Monthly depth of rain in inches and hundredths of an inch, together with the number of days on which rain fell at Beckington, Somerset, in the years 1845, 1846, 1847, 1848. Lat 51° 21 N., long. 2° 22 W. Height above the level of the sea, 265 feet.

	1845.		1846.		1847.		1848.	
	Days.	Inches.	Days.	Inches.	Days.	Inches	Days.	Inches.
January	7	1.46	16	4.5	11	1.76	11	1.14
February	5	0.20	9	1.35	13	1.61*a*	24	5.23*c*
March	5	0.52	18	2.17	11	2.48*b*	24	3.20*d*
April	7	1.56	21	3.57	19	1.93	21	3.84
May	15	1.16	12	2.54	13	1.69	5	1.20
June	15	2.30	9	0.63	11	1.98	20	4.59
July	18	2.96	11	2.24	4	1.18	17	3.85
August	13	3.01	14	1.21	11	1.25	27	4.51
September	14	4.22	11	2.13	11	2.17	16	4.28
October	9	1.16	23	6.48	17	5.98	19	4.89
November	12	3.34	14	2.40	14	1.92	20	1.42*e*
December	16	3.50	5	1.04	16	4.79	17	5.42
Total	135	25.28	166	32.29	151	28.74	219	43.16

a. Of this measurement the inch was dissolved snow.
b. Of this 0.34 was dissolved snow.
c. Of this 0.28 was dissolved snow.
d. Of this 0.48 was dissolved snow.
e. Of this 0.19 was dissolved snow.

The rain gauge is 30 feet from any tree or wall, its receiving surface 8 feet 4 inches above the ground, and 10 inches square. The rain enters through a pipe 2 feet 9 inches long, and about 1 inch bore, into an oblong barrel made of zinc, to which is affixed a glass tube and a graduated scale, with an index which registers the same as an upright barometer. *C. Blathwayt.*

Mildness of the Season.—The mildness of the season up to the 20th Feb. has been the means of exciting vegetation into action at a remarkably early period. At the time I write Gooseberries, Jargonelle Pears, and Plums are just beginning to show their blossoms. This is at least six or eight weeks too early, and should the present frosty weather give place to the mild weather we had during the latter end of January and February, the fruit blossoms must suffer seriously, being brought forward so far at this stormy season. Such days as the 24th January, temperature 57°, and 15th Feb., temperature 60°., must have enticed the embryo bud to expand. As it is, fruit buds must be greatly weakened. The fall of rain for the last two months has been under the average, and the mean temperature of the same 6¾° above the average. *A. Walker, Mayen House, Banffshire.*

Birds in Captivity.—The writer of the articles on Ornamental Poultry, which appeared in this Paper, is now collecting materials for a volume on birds, mainly in respect to their relations with man from the circumstances of captivity, neighbourhood, usefulness, supposed domesticability, &c. Any lady or gentleman who has kept any bird in confinement, and will take the trouble to put on paper what they have observed of its manners, and known of its history, and will kindly forward it, will essentially aid the object in view. Very many interesting facts and details in natural history are lost, because they are not thought worthy of being recorded by those who happen to be cognisant of them. Mr. Dixon is informed that many communications for him have been lost, or sent to the Dead Letter Office, in consequence of their having been mi directed to Keswick, Cumberland, instead of Keswick, near Norwich. This explanation will be a sufficient apology to the writers of those letters for the unintentional neglect of them. *E. S. Dixon, Cringleford Hall, Norwich*

Potatoes.—I have perused with much interest your observations and returns respecting early Potato planting, &c. I have no disposition to controvert them in general, or to be considered as opposed to them, when I say that I am not yet satisfied by any theory I have heard or read on the subject. As far as my experience goes, very early planting has not succeeded, by which I mean planting before February, not, again, has late planting, by which I mean after April. I look upon May as generally too late. I consider planting between January and May the best time, generally speaking, although I am aware that much variety of appropriate season must arise from much variety of locality, of soil, of climate, and of sorts, as also difference in seasons; and from not duly considering these varieties, or variations, arise, in my mind, the various contradictory opinions we so frequently meet with, and which are so hastily given. I shall not add to this confusion of opinions by tendering any of my own, further than by stating a few facts. As to the system which has been recommended by some as an infallible cure, viz., autumnal or early planting, many plots of ground planted in the October and November previous to the cold frosty winter of 1846-47, did not produce half a crop, "on account of the severity of the weather." In the spring of 1847, as soon as the departure of the frost allowed me, I planted Potatoes, in the second or third week in February, and first, second, and third week of March. Those planted the last came up first, and why? because the sets or whole Potatoes being placed in cold damp soil not yet warmed by the rays of the sun, were chilled and checked; whereas those planted later, being kept in a drier, warmer situation till planted, advanced their eye or shoot, and were not checked. In that year one of my garden men beat me by early Potatoes planted so late as the 15th of April. At the end of June, 1847, in passing through Salisbury, I first heard of the disease appearing, I examined the garden, and never witnessed so much havoc. Upon accurate examination I found the tally at the head of the plot marked thus: "Planted Oct 31st." Last year (1848), the reason given me in many places for the failure of the autumnal planting was, the "wetness of the season," many of the sets rotted in the ground—never appeared above. These observations perhaps may not apply to warm sandy soils, or warmer climate than mine. I apprehend, too, that in early planting manure holding moisture should be avoided. In general seasons I believe too much raw rank manure is used when the Potato is planted (in very dry seasons it may perhaps be beneficial in some respects); the Potato requires a certain thickness of soil, but my practice has been to enrich my plots for spring planting by November dressing, giving the manure time to amalgamate with the soil by digging it in, and laying the mould thus formed in ridges during the winter. We plant our latest sorts of Potatoes—the Red-nosed Kidney, for instance—in the month of April, because we found, generally speaking (before the disease appeared in this country) that the later they were planted and stored, the better they lasted, and continued longer eatable—to the June following. The time of the appearance of the disease for the last two or three years has affected the early or late sorts. Many of the early sorts have been eaten before the disease has appeared; when the disease appears it does not seem to make much distinction, except as to particular localities, &c., and perhaps to hardier, grosser, less valuable varieties. *J. D.*

Miscellaneous.

The late Charles Fox, Esq.—Our readers will learn with as much regret as ourselves, that the gentleman who has had, from the beginning of the *Gardeners' Chronicle*, the difficult duty of reporting upon the merits of the florists' flowers continually sent for examination, is no more. For many months he had been suffering from a disease of the heart, and at length expired on the 28th ult., at the house of his friend, Mr. Robison, of Leyton. Mr. Fox was not a cultivator of flowers, but he had a most correct eye, a highly cultivated taste, and a conscientiousness which nothing could influence. This gave his decisions a value in the eyes of the public which they would never have possessed under other circumstances. By profession he was an artist; his exquisite line engravings are well known to those who value the highest specimens of skill in that department, and by the lovers of fine English prints his loss will be scarcely less felt than by his personal friends. Alas! poor Fox! the dear, kind, good, noble-minded fellow, who never had an enemy.

Vixisti bene ac beatè.
——— amicis
Jucundus, pietate singulari.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

PLANTS in general are now about to commence their new growth, and with the gradually increasing light will

require a proportionate increase of heat and moisture. Encourage their healthy development by sufficient room, and by placing them as near as possible to the light. Admit sufficient air at all times to ensure a circulation, and as much more as the weather renders necessary, but carefully avoid cold currents during the growing season. In repotting, be guided more by the state of the roots than by the tops, as the latter, when exposed to a disproportionate heat, are liable to start into growth without the roots progressing in a corresponding ratio, and they are therefore not so well prepared to take advantage of the new soil as those whose roots are in motion; these last may be repotted with safety and propriety, and when the plants are passing through your hands for this purpose, let everything needful in the way of pruning or tying be done at once, that your work may progress in the most economical manner. A sowing should now be made of Thunbergias, Ipomœas, Balsams, Cockscombs, Globe Amaranths, and other stove annuals required for summer and autumn display; the two first should be sown in 3-inch pots, two seeds in each, from which they may be repotted without receiving any check; the whole should be plunged in a hotbed and shaded till they make their appearance above ground. Stove plants of which it is desirable to increase the stock, should be propagated as soon as they make shoots fit for the purpose; these taken off with a heel when 2 or 3 inches long, will strike with facility in a temperature resembling as much as possible that in which they have been grown; shading them, keeping them close, and likewise guarding against damp or excessive dryness, are the points which require attention. Make another sowing of Mignonette in boxes, to carry on the supply till that sown in the open air is fit for use. Fuchsias, Pelargoniums, and other soft-wooded greenhouse plants, whose flowers will not be required for the next two or three months, should be kept in a healthy growing state, by shifting them into larger pots as often as they require it. Use a rich compost for these shrubs, by which you will obtain fine healthy plants in moderate sized pots. Pay regular attention to stopping and training the shoots, as the creditable appearance of the plants depends more upon these matters than upon the colour or shape of the flower, although these last are by no means to be disregarded. Those plants which are required for present display should neither be stopped nor repotted, but nourished with occasional waterings of liquid manure after they have filled their pots with roots.

FLOWER GARDEN AND SHRUBBERIES.

Keep a sharp look out after herbaceous plants, which are now making their appearance above ground, and prevent the ravages of the snail family by a timely dressing of soot and lime sprinkled over the crowns of the plants; this will not only prevent their depredations on the surface, but will wash in with the rains, and preserve the bases of the young growths from their attacks also. If your beds are surrounded by Box edgings, which are notorious as a harbour for these plagues, it will be useful to lay a line of the above mixture all round the inside, in order to insulate the plants. It will also be useful to hoe and rake the beds, not only for neatness, but also in order to disturb the underground retreats of our slimy friends, and to enable the birds to make a meal of them. Dahlias, for general flower-garden decoration, should now be placed in a little heat; parted, and potted, as soon as they have made a few inches of growth. Marvel of Peru, Tigridias, Oxalis Deppei, Anomatheeas, and other half-hardy roots, should be brought forward, and particularly the beautiful Salvia patens. Biennials (as Wallflowers, Sweet-Williams, Scabiosa) should be brought from the nursery-beds and arranged in their summer quarters; beds of Pinks, Picotees, and Carnations should also be made; these things are invaluable for supplying flowers for glasses, bouquets, &c. Pay extra attention to the propagation of the more select bedding plants, preferring those which combine a compact habit and hardy constitution with a decided colour. Dwarf, compact, blue beds will be best furnished by the Lobelias, particularly the L. erinus grandiflora, than which a more beautiful plant for masses of a deep blue or violet colour does not exist, for a taller bed of pale blue the Ageratum mexicanum is not surpassed; and in damp situations, where many other things would prove a failure, nothing surpasses the late flowering Forget-me-not (Myosotis scorpioides). Verbenas will supply beds of all shades and colours except yellow and good blue, but the greater portion of the varieties in cultivation are too diffuse in habit to make compact effective beds. If about a dozen of the most distinct, free flowering, close growing sorts were selected they would be more satisfactory than growing so many straggling varieties. White is one of the most difficult colours to do satisfactorily; of flowering plants for this purpose Verbena Mount Blanc is one of the best; and next to this we may mention plants with variegated leaves, as Menzies's Geranium or the variegated Alyssum; the latter planted thickly answers the purpose very well, as the flowers and leaves are white.

FORCING DEPARTMENT

It is a very common occurrence for Vines to be overcropped, and though they appear not to feel the ill effects of such treatment during the season, it is an undoubted disadvantage in the long run. I wish to give timely caution, that this evil may be prevented, by reducing the bunches to a number consistent with the present and future strength of the plants. No spur should be allowed to produce more than one bunch, and about half the number of spurs should be allowed to mature the fruit this year, and the remaining half ought to be confined to making wood for the production of next year's crop. Encourage any weak spurs which are not to produce fruit this season, by allowing them to produce six or eight leaves before they are stopped; this practice will be particularly useful with Vines which are weakly from excessive cropping last year, or from other causes.

FLORISTS' FLOWERS.

AURICULA AND POLYANTHUS seed should now be sown, in flat pans or boxes. These should be filled one-third with broken material, to effect a perfect drainage; over this we place a small portion of moss, to prevent the soil running down amongst the drainage. The boxes should be filled, to within an inch of their rims, with fine leaf-mould and peat soil, equal quantities; if this has been exposed to the action of heat, by hanging over a fire in an iron cauldron, it will destroy insects and their eggs, a point of great importance. After filling the boxes as before stated, the surface should be pressed evenly, on which the seeds may be strewn, covering with the slightest possible quantity of the compost. The pans may then be placed in a cool frame and watered by dipping a brush in water and sprinkling the surface. The best crop of seedling Auriculas we ever raised was by covering the surface with very clean moss till the seed had germinated, and then withdrawing the protection gradually. Old plants for flowering may have more water, and young plants and offsets will be better for having the buds removed from their stems; by remaining on they weaken them, without any good purpose being answered. TULIPS.—The beds must be carefully gone over, and any foliage which is in the least cankered must be removed with a sharp knife. Should severe frosts occur, protect the beds by mats, &c., thrown over the hoops. PINKS AND PANSIES may be planted out in fine weather, covering with inverted garden pots during the night, or when the winds are cutting; this plan may be adopted till they are sufficiently hardened. CARNATIONS.—Get compost under cover, and diligently search it for insects, &c.

COTTAGERS' GARDEN.

Window plants will now require repotting, for which purpose rich soil must be used; as few cottagers have access to stacks of loam, peat, &c., these plants must be contented with the best substitutes that can be conveniently procured. For Geraniums and other plants of free growth, select some rich mellow garden soil, to which add a fourth part of leaf mould and half as much clean sand or road grit; as they advance in growth the Geraniums must be stopped at every third joint till the end of April, and the shoots neatly drawn outwards in order to form bushy plants. Fuchsias should be confined to one leading stem, which should be trained straight up; the side shoots shou'd be encouraged, by repotting the plants as soon as their roots reach the sides of the pots, occasionally stopping any side-shoot which may be outstripping its brethren. Pay particular attention at this season to keeping your plants perfectly clean. If your Potatoes are not all planted lose no time in doing so; any old thatch or old straw mixed up with charred refuse, will be found an excellent thing to lay above and below the sets. The Potatoes should be planted 1 foot apart, in rows 2 feet asunder. A row of early York Cabbages should be planted between every two rows of Potatoes; these will be out of the way before Midsummer, and therefore will not injure the main crop: it is a good and economical method to sow Beans in the Potato drills, planting one plump seed every three feet. A bed of Onions should now be sown as soon as the ground is sufficiently dry for the purpose. The Brown Globe, or White Spanish are useful varieties for general cultivation. Sow a small patch of Leeks, in a warm corner, to be afterwards transplanted. A few rows of Carrots may also be sown in deep soil for early use, and do not forget that useful vegetable the Parsnip.

State of the Weather near London, for the week ending March 1, 1849, as observed at the Horticultural Gardens, Chiswick.

Feb and March.	Moon's Age	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday 24	●	29.946	29.849	50	34	42.0	W.	.00
Satur 25	1	29.857	29.674	47	37	42.0	N.W.	.28
Sunday . 26	2	29.493	29.292	51	34	42..	N.W.	.32
Monday 26	3	29.853	29.644	47	32	34..	N.	.00
Tues. 27	4	30.034	29.978	40	30	40.0	E.	.00
Wed. . 28	5	29.924	29.751	50	31	40.8	S.W.	.84
Thurs . 1	6	30.02	29.42	49	39	44.0	N.W.	.00
Average		29.917	29.564	41	32	40.7		2.01

Feb. 23—Clear; fine, partially overcast.
— 24—Drizzly; rain, lightning in the evening; densely overcast
— 25—Hazy; stormy; thunder in afternoon; constant heavy rain.
— 26—Cloudy and fine; cloudy, sharp frost.
— 27—Frosty; cloudy and fine; clear; slight frost.
— 28—Rain: very boisterous, sleet and snow; overcast.
March 1 Cloudy, clear and windy, fine; clear; overcast.
Mean temperature of the week 1½ deg. below the average.

State of the Weather at Chiswick during the last 28 years, for the ensuing week, ending March 10, 1849.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 4	49.2	31.4	41.3	10	0.18 in.	2	2	—	3	2	4	4	1
Mon 5	48.0	32.0	40.1	7	0.20	1	3	—	4	4	3	2	1
Tues 6	47.3	32.8	40.0	9	0.2.	1	2	2	1	2	2	3	5
Wed. 7	48.3	32.6	40.7	9	0.10	3	4	3	1	1	4	3	2
Thurs. 8	49.2	34.1	41.8	8	0.17	3	2	1	—	1	5	3	4
Friday 9	50.7	33.1	41.9	8	0.17	2	2	1	2	2	7	2	2
Satur 10	51.0	34.1	42.5	10	0.09	2	4	—	3	3	4	3	2

The highest temperature during the above period occurred on the 9th in 29—therm. 68 deg., and the lowest on the 10 h, 1847—therm. 7 deg.

Notices to Correspondents.

AGAPANTHUS. *Sub* If you are desirous of having large and fine plants, do not divide them.‡

BACK NUMBER: Full price will be given for No. 42, 1848.

BEDDING OUT PLANTS: *Amateur Novice.* To the plants recommended for this purpose in our Calendar of to-day you might add the following:—General Tom Thumb Geranium, scarlet; Heliotrope; Phlox Drummondi, crimson; French Marigolds, yellow and brown; China Asters; German Stocks; Lobelia fulgens, scarlet; Salvia patens, blue; Calceolaria viscosissima, yellow; Petunias; and, for taller beds, Fuchsias; Double-blue Larkspur; and Dahlias. ‡

BEES: *H B S.* If your old stock does not swarm before the end of June, you had better force the bees from it into an empty hive, and take the produce. In order to accomplish that, in the evening place the stock over a fumigation box, or an inverted hive on the ground, containing smoke from a bit of puff ball in a perforated box with a handle, stuck in the bottom of the hive beyond the reach of the bees; tie a cloth round both hives where they join, in order to prevent the escape of the bees. They will soon fall down stupefied; turn up the hive, raise it a little on one side for air, give the bees time to ascend, and treat them like a fresh swarm. Take the contents from the stock; if the queen happens to be there, place her amongst the bees. But if your stock swarms at the proper time, do not disturb it until the end of the season, and then unite the bees to a weak hive. *W.*

BOOKS: *S Mn* Now is the time to begin Botany; commence with the common plants described in Lindley's "School Botany;" that will give you the foundation of all which has to follow.—*A W.* A pamphlet by the Society for the Diffusion of Useful Knowledge, on hardy trees and shrubs. Books of this class are written by incompetent persons because they do not sufficiently remunerate better men.

CAMELLIAS: *A H.* Your seedling named "Bruer" is a large and showy flower, bearing considerable resemblance to the Old Stripe. If it be any improvement on that variety, it is in size ‡

CLEMATIS MONTANA. *D M E.* We really cannot undertake the duty of acting as agents for this or any other seed. "N. S. H." is N. Hodson, Esq., Bury St. Edmund's.

CUCUMBERS: *P Z.* There is no reason why Melons and Cucumbers should not be grown in the same pit, under different lights, provided you will abandon the Cucumbers when the Melons begin to ripen.

EMIGRATION: *W Jenkins.* All sorts of fresh English seeds, of *good* quality, are acceptable at Adelaide. Mind that you keep them thoroughly ventilated during the voyage.

FLOUR MILLS: *Cornicuidd.* See p 101 of the current volume.

GRAFTING. *W C K.* Azaleas and Camellias are generally increased by grafting; it may be done now, using scions of last season's growth; but if you can wait till autumn you will be more likely to succeed with grafts of the present year's wood.†

MOSS ROSES: *J W.* It is possible to raise Moss Roses from cuttings; but the chances of success are small, except with such as Princess Adelaide and other hybrids.†

NAMES OF PLANTS: *Surreyensis.* Euphorbia jacquiniflora.—*W L.* 1, apparently a morsel of Euonymus fimbriatus; 2, Quercus Phellos; 3, Q. Cookii; 5, Q gramuntia; 6, Q sideroxylon. ¶—*E C G.* Carica Papaya, Papaw Tree.—*W C.* 1, Gongora bufonia; 2, Looks like a Phalus, but crushed to pieces, 3, Bletia atropurpurea; 4, Daphne collina; 5, Veltheimia glauca, 6, Indeterminable, not in flower.—*J W.* 1, Oncidium bicallosum; 2, O. Cavendishianum; 3, An Epidendrum, which cannot be named from single flowers, 4, Titeleia uniflora.

PANSIES: *Puel.* Next week. ‡

PAULOWNIA IMPERIALIS: *C C B.* Prune it now, but the less the better

PELARGONIUMS: *M D.* They are affected by the "spot," an evil believed to be caused by cold and damp †

PINE-APPLES: *A B.* If the black circle of which you speak is in the centre of the crowns of your fruit, then it probably arises from watering them overhead. The question is, however, so obscurely worded that we probably do not understand it.

PODOCARPUS: *G S H.* We have examined your Podocarpus, and find the globular bodies to consist externally of a thick cuticle formed of large cells with distinct walls, filled with a resinous yellow matter, or a white firm nucleus, the body of the globule being made up of white very loose cells, so as to appear at first mucedinous. They are not, we think, extraneous bodies, but of the nature of the tubercles on the roots of many leguminous plants; and if so, can have nothing to do with the death of the plant on which they are produced. Bodies of a similar structure occur, though sparingly, on the fibres of Yew, the cells of which abound in starch granules. *M. J. B.*

POTATOES: *A Clapham.* The Horbury seedling is unknown to us; most likely the nurseryman is right, if no greater difference can be found between them than productiveness.

REPOTTING: *P Z.* "Most gardening books recommend this operation to be performed without breaking or disturbing the ball of earth and roots. This method was also recommended in a recent number of your Paper, in the 'Notices to Correspondents,' whilst in Dr. Lindley's 'Theory of Horticulture,' p. 286, it is spoken of with strong reprobation. What conclusion is a beginner to draw from these opposite directions?" If this inquiry relates to Melons and Cucumbers, we reply that there is no analogy between the ball of earth in which their roots lie loosely, and the *hard matted* masses spoken of in the "Theory of Horticulture." The opinion given in that work is not, we apprehend, open to question.

RHODODENDRON: *No.* 77. One of the varieties of Nobleanum, a cross between R. caucasicum and R. arboreum.

RINGING *W.* This can only be done in the spring, when the sap is flowing and bark separating freely from the wood. You will ascertain the right time by trying the branches. Probably April.

ROUGH PLATE GLASS: *Z* Apply to any great glass dealer.—*J S L.* We should use it for all parts of the house; certainly for the ends. The roof is, however, the most important.

TAXODIUM: *F D.* T. sempervirens is a tall evergreen tree, rather too tender for the midland counties.

TOBACCO: *W C K.* Sow the Tobacco seed in pans now, and place them in a Cucumber or Melon frame. When the young plants are ready, prick them off into pots, and, finally, plant out into the open ground when all danger of frost is over. Any good garden soil will suit it, the richer the better. Allow only six leaves to grow on each plant, pinching off all the rest, as well as the flower stalks. To prepare the leaves for smoking, hang them up in an airy shed for a time to dry; then throw them in a heap to ferment; dry again, and the work is finished.‡

TRAPS: *A Reader* would thank some of our correspondents to recommend him a good sparrow trap.‡

TUBEROSES: *Gardener.* Full details of their management are given at p. 176 of our volume for 1848. ‡

VIOLETS: *J V.* Your Russian Violets may be divided and planted out as soon as they have done flowering. Runners make capital plants; remove them in May. A shady but not confined place is generally recommended for the Russian Violet, but we have seen it thrive and bloom admirably in an exposed situation. ‡

ZINC. *A B C.* Vessels should not be made of this metal, if water is to stand in them for the supply of any living thing, whether animal or vegetable; therefore certainly not fit for gold fish.

MISC: *L O G.* Of the three places you mention we should prefer the dung pit for raising Calceolaria seeds in. ‡—*Alpha.* If you have no peat, a mixture of leaf mould, sand, and a little loam, will suit your Rhododendrons. We are unable to say why your Laurustinus does not flower; from the low position of your locality, perhaps the wood does not ripen. In frosty weather we would advise you to remove your China and Tea-scented Roses in pots in-doors.‡—*Z Y.* We presume that the new mode of jointing pipes to which you allude is by means of Vulcanised India-rubber.

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The Agricultural Gazette.

SATURDAY, MARCH 3, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS

TUESDAY, March 6—Agricultural Society of England.
WEDNESDAY, — 7—Highland and Agricultural Society.
THURSDAY, — 8—Agricultural Imp. Society of Ireland
TUESDAY, — 13—Agricultural Society of England.
THURSDAY, — 15—Agricultural Imp. Society of Ireland.

OF the many subjects at present engaging the conversation, and still more the thoughts, of large classes in England, two may be named without much hesitation, as occupying prominent places, whatever the order in which others might follow. The moneyed and commercial class might name California and the Corn-trade: the landed and agricultural class might vary the answer by calling it the Corn-trade and California. Men express their thoughts more or less freely according to habit and temperament, but the interests and anxieties awakened by subjects of such increasing moment, and of such extensively ramifying consequence, are much more alike in every mind, than the modes, or degree, in which they are uttered.

But in fact to the Agricultural world the two subjects are not only individually interesting but of some relative importance. Corn selling on the American shore of the Pacific, no matter *where*, at ten dollars the bushel instead of one, and the same article selling in England at a loss to the importer, and below a productive profit to the home grower, are two subjects of reflective contrast that, arising from whatever different causes, can hardly be irrelevant to each other.

By some freak of natural law it seems destined that Hopes and Fears shall always travel in couples. While the holder of a Farm-Lease is puzzling his brains how the Rent, Rates, and Levies are to be met, with Wheat at 45*s.* a quarter, tales of wonder flying across the Atlantic, confirmed and reconfirmed by the identical vessels whose bulkier cargo afflicts the Corn-markets of London and Liverpool—reach him in the furthest recesses of his country home, telling of a land whose mineral products threaten to double the present ratio of value between a sack of Wheat and a sovereign. Exaggerated and conjectural as all the accounts have probably been, it is remarkable that not one *contradictory* report has arrived since the first announcement; but on the contrary every tale treading on the heel of its forerunner, has had a phantasmagoric increase of outline, till at last the announcement that the Government of the United States had received intelligence which it dared not publish, for the excitement it might occasion, launches the whole matter at once into the vaguely sublime regions of Imagination.

All that can be done, by a wise man, during an interval of distrust or uncertainty, is—not to reject the whole story as a fabrication—that is what a man does who wishes to *seem* wise—but to weigh to the best of his power the specific consequences upon his own position, that would eventuate if one half of one half of the tale should prove authentic. "Seeing is believing" is a good motto—for a horse or a cow looking out for a hay-stack; but "forewarned forearmed," is more suitable to an animal with mental as well as bodily eyes.

Grave and unimaginative men of business are seriously calculating the effect producible by a fall of one fourth, and even one half in the value of gold—upon the Funds, the Taxes, the value of Land, the value of Corn and of every other commodity producible by labour; upon Annuitants and on Creditors on the one hand, and upon Leaseholders and on Debtors on the other; for these two classes seem respectively to represent the extremes of its operation for good or evil. The Leaseholder at a Corn-rent would stand pretty much as he stood before, except in regard to his other articles of sale, as meat, wool, skins, &c. On the other hand the holder under a fixed money payment would be a free gainer of the whole difference of its reduced value. The Annuitant, again, would be a loser, in the same degree.

It is probable that in this country the distress occasioned by the change would bear no small proportion to the benefit: and a large portion of the community would be in that JANUS-like predicament commonly described as 'laughing on one side and crying on the other.' The owner for instance of entailed property, let on Leases, would find his position curiously twisted and complicated by the change. His Rents sunk to one half their value, while his fixed outgoings in the shape of Rentcharge Jointure or Mortgage would be reduced in a corresponding ratio: while the actual market value of his land, as *land*, would be infinitely greater than its actual selling value subject to existing leases, and double the purchase-money calculated on the Rental.

The holder of Railway or Canal *shares* would be unaffected by the change; while the Debenture holder would be a heavy loser. The whole community would be gainers in the payment of that proportion of taxation which yields the interest of the National-debt (rather more than half), while on that which goes to the current annual expenses of the nation the fall of money value would require to be made good.

But the price of Corn?—The mere increase of nominal price by a fall in the value of Gold, would of course work no change except through the altered relation of individuals, as above described. Two causes however have to be considered which it may be presumed would have a general and genuine operation for good. One is the immense stimulant to Trade and Commerce not so much by the present speculative adventures to a new country, as by the actual and effective demand—and recognised means of payment too—opened up by the multitudes from all quarters of the globe concentrating a vast population at an hitherto uncommercial and almost unvisited territory. It is true that neither the European, the American, nor the Islander of the Pacific, may require the necessaries of life, more in his new country than in the one he left; but the difference is that he can do in the one what he left the other because he could *not* do—namely, pay for them. Besides that wealth makes wants. An immense number of corn-laden ships have already proceeded from New York to the Sacramento River, and a considerable diversion of the traffic of the States in that direction may prove no unwelcome relief to the overloaded markets of the British ports.

The other reason is of a more indirect and gradual nature. It is the just complaint of the English Farmer that while the other requisites of life imported, whether wholly or in part from abroad, are paying revenue duties to the exchequer, he has been made the victim of a squabble, a life and death struggle, between two parties in the state who in their eagerness to immolate each other, had not time to consider that a country which pays 32 millions per annum in the shape of indirect taxes levied upon every commodity that labour can produce or consume, was not in a position to strip of all charge, any *one* article while every element in the cost of its production remained still clothed with that conventional advance in price occasioned by the universal contribution to the fiscal necessities of the state. Because a jumping system of duties, inoperative for its

intended purpose, unproductive to the Revenue, and destructive of all trade calculation, was utterly wrong, it did not follow that an entire prostration of one article to an isolated point below the fiscal standard thrown upon every other, was right. The "furious Frank and fiery Hun" who fought the hot battle of the Corn-Laws three years ago, fell into that common error which supposes that in a conflict of two, one must be right. A calmer and more statesmanlike consideration of the subject would have found time to reflect that *Prices intercommunicate*. That while on the one side, it is neither wise nor *honest* to tax the industry of one part of the community to gain an enhanced price upon the goods produced by the other, neither is it on the other side just to admit at your outports an insidious stream of produce exempt from that fiscal obligation which enters into the cost of its production at home, and into every relation of the producer with the industry of other classes. Transfused through the medium of enhanced price, each man's consumption of each article pays his contingent to the exchequer. Exempt *one* article from the general contract, and its producer must shut up shop; for the general contract still clinging to the *cost of production*, whilst subducted from its price, he is undersold immediately at the outport. This contract, and the consequence attending the breach of it in any one case, is the inseparable concomitant of *indirect* taxation. To any cause which promises even partial relief in this department of the revenue, the farmer may therefore look with single interest and attention. If the gold of California bear indeed any sort of countenance to the results predicted of it, its effect upon that taxation which is caused by Debt, will be to loosen in some degree the grasp of that iron pressure upon Industry which every philanthropist laments to see, and every wise statesman is anxious to relieve. *H.*

OUR INCREASING INABILITY TO RAISE FOOD ENOUGH FOR OUR POPULATION.

THE information the attached account * affords of the progressive increase that in the last 21 years has taken place in the quantities of foreign grain imported into Britain will be new to many of your readers. Whilst the supply of foreign Wheat and flour in the seven years ending 1834 amounted to only 7,401,217 qrs., in the next seven years it reached 10,319,564 qrs., and in the last seven years it has attained to 16,410,824 qrs. During the same periods the total imports of all foreign grain were increased from 11,634,055 qrs. to 15,875,792 qrs., and then to 34,469,539 qrs.; and even if we admit as much as 12 million quarters out of the last seven years' quantity to have been made necessary by the failures of Potatoes, still the imports will be seen to have progressively been septennially increasing as much as 50 per cent. The imports from Ireland into England are here included, except for the year 1848; although the returns for this year are not made up, they are understood to be considerably more than in 1847. I have not at hand the quantities of cattle and sheep that have been imported since their admission at low duties, but I know that the annual advance has been quite in the same ratio. On reference to the account, attention will be attracted to the large increase in the foreign supplies that has taken place in the last 21 years, and looking to the fact that in 1848 we imported and consumed about 7,000,000 quarters of foreign grain, besides, at least, 3,000,000 quarters left over from the imports of 1847, there can be no doubt that the consumption of corn in this country has latterly greatly outrun the production, and is progressively increasing to do so.

This rapid increase appears to me a consequence of the larger ratio in which our manufacturing or consuming population is growing beyond the agricultural or producing, and to involve serious considerations as to what this increasing occasion for foreign raised food may amount to, now that our population has outgrown our powers to feed it. The compound ratio at which foreign supplies of food have been advancing over the population appears capable of something like mathematical demonstration, thus: If we commence by considering a population of 40 millions to have formerly been feeding itself by raising annually 40 million quarters of grain, but since to have been yearly increasing 400,000 persons, at the same time that it has been advancing its production of food only 300,000 qrs., we shall see that whilst its population in the first seven years will have advanced 2,400,000 persons, the deficiency of grain will be 2,100,000 qrs.; in the next seven years, admitting a further addition of 2,800,000 persons to the population, and the deficiency of grain will be 7,000,000 qrs.; and in the third seven years, with a further addition of 2,800,000 persons, the septennial deficiency will have grown to 11,900,000 qrs.

To show that Britain has gotten into the position here supposed, I bring to notice the advance in our importations of foreign grain in the last 21 years. How necessary, then, it is that every encouragement should be given to increase our home supply of food, so as to check as much as possible this growing dependence on other countries. The still imperfect cultivation of England, and her large extent of unenclosed land that might readily be brought into cultivation, strangely contrast with a growing population and deficiency of food to feed it.

The desire of Government to encourage emigration, and thus to diminish our agricultural labourers (for it is from the agricultural classes principally that emigration takes place), appears rather an aggravation of the evil than a cure for it. Were new settlements opened at home, which might readily be effected by the more frequent enclosure of wastes and commons, accompanied by the creation of the necessary facilities for their improvement, such as roads, drainage, and other public works, the growth of grain and of employment in this country might be kept annually increasing in much nigher proportions to her increasing population.

For instance, the restoration of the New Forest to agriculture (we know much of it was under cultivation at the time of the conquest), would of itself do much to meet the supply we at present are importing, and at the same time give an encouragement to the increase of a class of the population, whose utility and morality makes it a most necessary and valuable one. Why should we have moors and wastes unoccupied when we are yearly calling for more and more food, and our poor-rates are annually growing more burdensome from the want of agricultural employment. *Hewitt Davis*, 3, *Frederick's place, Old Jewry, London, Feb.* 19.

Subjoined is a note of the quantities of British Wheat returned as sold in England for the last 13 weeks of each year since 1842, by which it will be seen that the returns of 1848 are the smallest, clearly showing the deficiency of the last crop, as, from all we can learn, threshing is quite as forward, if not more so, than usual.

*IMPORTATIONS OF FOREIGN GRAIN, FLOUR, AND MEAL

Into the United Kingdom since 1827; *also Imports from Ireland into Great Britain during the same period, reckoning Flour and Meal at* 392 *lbs. to the Quarter.*

YEAR.	WHEAT and FLOUR. Quarters.	Annual Average Price. s. d.	BARLEY AND BARLEY-MEAL. Quarters.	Annual Average Price. s. d.	OATS & OATMEAL. Quarters.	Annual Average Price. s. d.	RYE & RYE-MEAL. Quarters.	Annual Average Price s. d.	BEANS. Quarters	Annual Average Price. s. d.	PEAS. Quarters.	Annual Average Price s. d.	INDIAN CORN AND MEAL. Quarters.	TOTAL FOREIGN IMPORTS. Quarters.	Imports from Ireland into Gt. Britain. Quarters.	YEAR.
1828	758,395	60 5	168 672	32 10	166,423	22 0	29,562	34 2	73,870	38 4	52,928	40 6	19,649	1,268,999	2 826,590	1828
1829	1,725,781	66 3	305,798	32 6	548,649	22 9	67,392	34 10	46,487	36 8	40,412	36 8	27,022	2,761,541	2,307,244	1829
1830	1,663,285	64 3	132,210	32 7	513,191	24 5	44,784	35 10	16,909	36 1	34,572	30 2	1,081	2,406,280	2,215,521	1830
1831	2,209,970	66 4	369,632	38 0	622,216	25 4	93,006	40 0	22,315	39 10	59,567	41 11	59,232	3,535,868	2,429,182	1831
1832	469,902	58 8	101,810	33 1	31,847	20 5	4,646	34 7	27,914	35 1	20 198	37 0	1,582	657,895	2,990,767	1832
1833	297,565	52 11	85 221	27 6	23,334	18 5	3,370	32 11	22,859	33 2	15,899	30 5	7	448,246	2,747,441	1833
1834	173,321	46 2	88,562	29 0	175,026	20 11	10	32 9	47,756	35 3	67,880	39 4	227	555,782	2,792,658	1834
Total 7 Years	7,401,217	59 3	1,251,305	32 2	2,080,986	20 7	242,770	35 0	257,640	36 4	291,987	38 8	108,750	11,634,055	18,299,404	Total 7 Years
1835	66,905	39 4	67,790	29 11	113,188	22 0	....	30 4	34,380	36 11	24,216	36 6	1,808	308,293	2,679,488	1835
1836	211,743	48 6	88,485	32 10	131,466	23 1	6,626	33 4	93,056	39 1	78,299	38 4	1,005	635,679	2 958,272	1836
1837	550,942	55 10	87,791	30 4	418,885	29 1	30,711	34 9	105,607	38 7	111,261	37 6	4,026	1,318,224	3,030,293	1837
1838	1,371,957	64 7	2,293	31 5	55,543	22 5	1,781	35 1	64,358	36 8	29,848	37 2	4,048	1 529,733	3,471,302	1838
1839	2,875,605	70 8	579,406	39 6	670,513	25 11	153,673	42 0	109,810	41 3	140,012	41 2	9,565	4,538,583	2,243 151	1839
1840	2,432,765	66 4	625,437	36 5	546,263	25 8	3,332	37 0	129,418	43 5	158,486	42 5	22,021	3,917,722	2,327,782	1840
1841	2,770,647	64 4	264,654	32 10	130,268	22 5	15,600	36 9	253,689	59 10	148,564	40 4	4,137	3,627,559	2,855,525	1841
Total 7 Years	10,319,564	58 6	1,710,789	33 4	2,066,126	23 6	211,723	35 7	860,318	39 5	690,686	39 1	46,600	15,875,792	19,568,763	Total 7 Years
1842	3,045,422	57 5	75,550	27 6	315,037	19 3	14,512	33 0	126,591	32 8	95,239	32 11	35,866	3,704,217	2,588,234	1842
1843	1,064,942	50 2	179,280	29 5	85,918	18 3	4,972	30 7	47,984	29 1	48,308	31 1	517	1,431,816	2,721,400	1843
1844	1,381,977	51 3	1,021,987	33 7	303,280	20 7	26,591	33 11	154,582	34 6	169,178	33 5	37,119	3,034,714	2,460,860	1844
1845	1,141 937	50 9	366,354	31 8	591,830	22 6	435	32 6	184,661	32 0	83,940	38 6	50,389	2,427,075	2,902,800	1845
1846	2,344,142	54 9	374,787	32 0	792,529	23 8	1,845	35 0	258,047	39 0	212,618	39 0	743,465	4,724,431	1,625,000	1846
1847	4,458,499	69 5	775,896	43 11	1,723,346	28 7	293,220	49 0	442,719	50 1	187,245	51 5	4,029,587	11,881,462	853,633	1847
1848	2,973,885	50 6	676,317	31 6	932,184	20 6	70,149	30 5	480,715	36 9	187,454	39 1	1,645,120	7,205,824	....	1848
Total 7 Years	16,410,824	54 10	3,770,171	32 11	4 743,633	21 11	411,622	34 11	1,693,299	37 3	891,977	37 11	6,548,013	34,469,539	.....	Total 7 Years

Returns of British Wheat sold during the last Thirteen Weeks of each year since 1814	1842. Quarters.	1843. Quarters.	1844. Quarters.	1845. Quarters.	1846. Quarters.	1847. Quarters.	1848. Quarters.
	1,281,066	1,522,100	1,721,261	1,758,942	1,788,098	1,430,234	1,254,679

Home Correspondence.

Produce of Manure by a Feeding Ox.—In answer to a correspondent who objects to my datum on this subject in last volume, I beg to say that in treating of "cheap manuring" I did not mean to say what is the ordinary produce of an ox under usual management; but, of course, what it should be, economically treated: and that this rather exceeds 1 cwt. per day, is deduced, not from my own limited experience and enquiry only, but from an extensive variety of evidence; of which it will be sufficient to quote the most direct and simple, and which, being in print, can be referred to by everybody. 1. In two experiments on a cow with different food, without litter, and letting the urine run away, she gave 45 lbs. and 73 lbs. of solid dung (Brit. Husb., vol. i. p. 225), averaging 59 lbs. per day: and Sprengel and Morton both estimate the urine of a medium ox at 40 lbs. per day, which will soak one-thirds its weight of straw, and more of other litter (say 13 lbs.), making 53 lbs., which, added to 59 lbs. of dung, gives just 1 cwt. 2. In Flanders an ox produces yearly 10 loads of dung and 26 hogsheads of urine; above 500 lbs. per hogshead; and 26 × 500=13,000 lbs.; which, with one-third straw (=4333), will give 17,333 lbs., pretty nearly 8 tons; and 10 + 8=18 tons per annum (Flem. Husb., 59). 3. According to Morton (p. 169), a stall-fed ox produces 12 loads of dung and 1400 gallons of urine, =14,000 lbs.; which + ⅓=or 4666=18,666 lbs., almost 9 tons; and 12 + 9=21 tons per annum. 4. A feeding ox (Low, p. 632) will eat 1 ton of Turnips per week, and Turnips return 37½ per cent. their weight of stall dung (Johnston's Lectures, p. 823) =40 lbs. per cwt.; and 40 × 20=800 lbs. per week, or 114 lbs. per day; or the dung, &c., with litter, equal twice the weight of the food, in hay value (Burger, p. 103), which he takes at 100 lbs. for 300 lbs. of Turnips (p. 102), but most others at 500; if we take the mean, =400 lbs., then a ton of Turnips will =5 cwt. of hay, which × 2=10 cwt. of dung per week, or not much under 1½ cwt. per day. *J. Prideaux, Plymouth.*

Mice on Winter Beans.—In reply to "J. L. P. M.," who inquires how the depredations of mice on winter Beans at this season of the year are to be prevented, I would suggest a trial of the simple and inexpensive plan which proved so successful in checking the ravages of the field vole on the roots of the trees in the Dean and New Forests. The process and its results are thus detailed by Mr. Jesse, in the first series of his "Gleanings;"—"Holes were made about 20 yards asunder, in some of the Dean Forest plantations, being about 12 to each acre of ground. These holes were from 18 to 20 inches in depth, and 2 feet one way, by 1¼ the other; and they were made much wider at the bottom than at the top, being excavated or hollowed under, so that the animal, when once in, could not easily get out again. In these holes at least 30,000 mice were caught in the course of three or four months, &c." The holes need not be so large as those described above; their sides must be nicely smoothed, and, when no longer required, they are easily filled up. The captives should be sought for and destroyed every morning. I have, myself, successfully tested the efficacy of the pitfals in a garden infested with the long-tailed field mouse, and have no doubt of their proving valuable, not only in such cases as that of "J. L. P. M.," but also in stack-yards where the ricks are not protected by being elevated on vermin-proof stands. *A. It., Woodside Cottage, Elgin.*

Mr. Huxtable's Farm Accounts.—The notice taken of my letter of the 27th Dec. in the *Agricultural Gazette* of the 26th ult., disposes me to write a few words more upon the same subject, which I should probably not otherwise have done. It speaks of "a correspondent asking for the money result of Mr. Huxtable's experience, &c.," and then adds that the doing so "exhibits an entire inappreciation of the real value of testimony or evidence in respect of agricultural doctrines." Now Mr. Huxtable came forward and offered it us, and

having done so, and that in a manner not quite intelligible nor at all satisfactory, I ventured to point out to him the only mode in which I considered that he could have furnished it, so as to have afforded any valuable information to the public. But with whatever feeling of curiosity or interest I may confess myself to have turned to it, when it most unexpectedly appeared, I quite agree with the *Agricultural Gazette*, in wishing that "no balance sheet had been published at all," for I think that no loss to the public, and some gain to Mr. Huxtable would have been the consequence of such a "balance sheet" having been suppressed. I have not the advantage of residing in the same county with Mr. Huxtable, but I have seen something of his farms, and have heard much more. Various reports have been circulated relative to the great and almost incredible returns proceeding from the different plans which that gentleman has adopted, and when at last he volunteers so publicly to expose his "balance-sheet" in confirmation of them, it becomes matter of some interest, and in these days, I think, of great importance, that, however true of its kind, it should be so noticed and investigated as to put before the public the true inferences, and guard them against the false ones, that are capable of being drawn from it. Such an investigation the "balance-sheet" in question, confined to one farm for one year, is at present undergoing, as proved by a correspondence between Mr. Huxtable and others in the *Mark-lane Express*. The great public appreciation of Mr. Huxtable's position is as an agricultural experimentalist. As such, no one stands higher, and as such, he is conferring an incalculable benefit upon society at large; I doubt his ever reaching the same height as a practical farmer, with a good book to show. *An Occupier of Land, and Constant Reader.*

Ploughing Matches.—The annual ploughing match of the Agricultural Society of this neighbourhood took place last week, and as the arrangement of the stewards relative to the time allowed for the ploughmen to complete their task, appears to have given great dissatisfaction to some of the unsuccessful competitors, I venture to solicit your opinion upon the matter. The field selected and measured for the work by the stewards was flat or nearly so, and the soil a gravelly loam which had borne a crop of corn last autumn. The soil was perhaps not the best adapted for very neat work, but no other field could be obtained. The ground was dry, and the day calm, but rather foggy. The competitors, 13 in number, were required to plough two half ridges each. The length was 132 yards, and the slices were to be 9 inches broad and 5 inches deep. The quantity of land to be ploughed by each was therefore about one-seventh of an acre. The distance altogether, not including turning, 1¼ mile. The time allowed two hours. This would give 14 hours for an acre, and a speed of ¾ of a mile per hour. The men were informed previous to starting that those who did not complete their work by the end of two hours would be disqualified. Six finished within the time; seven did not. The first man to finish did his work 25 minutes under the time; the last man, 25 minutes over the time. Two men took 15 minutes each to cut the first slice of 132 yards. Under the circumstances, as above detailed, had the men sufficient time allowed them by the stewards? [Abundance.] If a man cannot plough well, and in a workmanlike manner, the seventh part of an acre of such soil in two hours, can he be considered a profitable servant? [He cannot.] If the horses were in fault, and unequal to such a task as ¾ of a mile an hour, are they such as should be kept by a farmer who has a rent to pay? And supposing that the work was satisfactory to the masters of the seven ploughs which were over time, was their performance (taken as a whole, and admitting the work to be well done), such as an Agricultural Society ought to reward, and hold up as a pattern to be imitated? *One of the Stewards.* [The stewards appear to have laid down rules very easy of performance.]

A Milk Register.—Observing in your Paper for Jan. 13, that one of your correspondents, "F. B. H.," asks for the form of a milk register, and that no one has yet been communicated, I beg to hand you a copy of mine, for two months (September and October), of last year, in case you should think it worth publishing; for his information, from which it will be seen that two sheets of common lined foolscap paper, each ruled on three pages only, will contain a complete register of the milk of two cows for one year. It was some time before I could hit upon any plan of registering the milk of my cows (I have but two) that was sufficiently simple to enable me to get it carried out regularly, but this I believe I have succeeded in doing at last without any difficulty, or causing any additional trouble worth speaking of. It is as follows: For measuring the milk, I calculated carefully the various depths that the milk would be in the pail, for every quart that it contained from 1 to 10 or 12, and then divided a piece of straight smooth stick accordingly, beginning at one end, with a loop of string at the other to hang it up by. The same thing could be done just as well by actual measurement, if one had an accurate quart or half-gallon measure to do it with, but it would not do to measure 2 or 3 gallons and then divide the space equally for so many quarts, because as the milk-pail increases in diameter from the bottom upwards, of course the spaces on the stick which represent the quarts gradually decrease, unless, which would perhaps be the best plan of all, the pail were to be made on purpose, with the sides quite parallel; they are seldom very far otherwise. This stick is taken out along with the pail when the cows are to be milked, and as soon as one is milked, the pail is set down upon any tolerably even ground, and the stick is then held upright in the middle of it, so that the bottom of the stick touches the bottom of the pail, and upon its being withdrawn indicates by the number of spaces wetted by the milk the number of quarts produced, and the same thing is done when the two cows have been milked. Then, for registering it, a slate is kept hung up in the dairy (as the stick should be when not in use), roughly ruled in a similar manner to the accompanying register, exclusive of the totals, which being on the spot, the person who milks does not forget to fill in at the time, and it is then copied off about once a month, and the slate ruled afresh. But for want of some sufficiently simple means of registering the results, I had divided the stick for two years before I could get any available use made of it, beyond occasionally trying the yield of milk myself with it. If you should consider this communication too long to be published entire, you can if you please publish the "Form of Milk Register" only, and that in an abridged shape. I have not thought it worth while to fill up more than a few lines in the latter; but as the returns that are shown might naturally strike any one as being very small, I may as well mention that the first cow, "Bossy" had been milked round since March 23, 1847, when she had her last calf, and calved only on the 12th of last month.

Copy of Milk Register, for two months.

Date.	Bossy.		Dewlap.		Total daily from		
1848. Sept.	M.	E.	M.	E.	Bossy.	Dewlap.	The 2 cows.
	qrts.	qrts.	qrts.	qrts.	quarts.	quarts.	quarts.
F. 1	—	—	—	—	—	—	—
S. 2	—	—	—	—	—	—	—
S. 3	—	—	—	—	—	—	—
M. 4	—	—	—	—	—	—	—
T. 26	—	—	—	—	—	—	—
W. 27	—	—	—	—	—	—	—
T. 28	2½	2	5	4	4½	9	13½
F. 29	2	2	4	3½	4	7½	11½
S. 30	2	2	4	3½	4	7½	11½
Total.	69½	60	141½	132	129½	273½	402¼
Average	2.31	2.00	4.71	4.40	4.31	9.11	13.41
Oct.							
S. 1	—	—	—	—	—	—	—
M. 2	—	—	—	—	—	—	—
W. 25	—	—	—	—	—	—	—
T. 26	—	—	—	—	—	—	—
F. 27	—	—	—	—	—	—	—
S. 28	1½	1	4½	3½	2½	8	10½
S. 29	1	1	4½	3	2	7½	9½
M. 30	1	1	4	3	2	7	9
T. 31	1	1	4	3	2	7	9
Total.	58	45	147½	113½	205½	158½	364
Average	1.87	1.45	4.76	3.66	3.32	8.42	11.74

G. W. M.

Farming Accounts.—To defend the existing race of farmers from the consequences of free trade, and to secure them the possession of at least as much capital as they can at present call their own, the first and most essential thing appears to be to prevail upon them if possible to keep correct accounts, without which no calculations can be relied on, no improvements even attempted with any degree of safety, and no advantage made available or be steadily maintained. The readers of the *Gazette* are not likely to be those who most require such a recommendation, but every reader will be acquainted with abundance of farmers who either cannot keep accounts or are contented with such an imperfect system as to be unable to determine what amount of profit his business has annually yielded, or how he stands at any given period in comparison with other times, how fluctuations of prices have affected him, and how far a successful crop or a happy purchase may have lightened the effects of an epidemic or the wireworm. Connected with this subject is the all important one of education, which may be mentioned in this place incidentally; not only is an extended plan of education wanted by the lower class of farmers for their private purposes of book-keeping, but also to qualify them for conducting such local public business as requires the services of farmers in remote or small villages; the one or two principal farmers have to share the offices of guardian of the poor, churchwarden, overseer, surveyor of the highways, juryman, tax gatherer, and I do not know what else, by virtue of which honours without emoluments he has the care (if he cannot write) of a great variety of books, and the collection of a quantity of rates and taxes, of which, by-the-bye, he or they pay the *pars maxima*. This is not all; for about once in every two or three weeks throughout the year he wastes a day at the next market town, either to be sworn in, or to pay in, to deliver a list, or visit the auditor, or attend a visitation, or an appeal day, or the sessions (petty or quarterly), as well as being required every week to attend the board. Now, if education was of a better quality and more liberal than it is, instead of there being only one or two men in a village for all these duties, the offices might be shared among at least half the inhabitants, which would diffuse a knowledge of business, and add to the self-respect and intrinsic value of those so employed, and be a great boon to the farmer. Well, we are agreed that the management of accounts should by all means be enjoined upon the farmer, as without them he is like a man groping in the dark, and will be sure to stumble over something, not knowing if it be wood or stone. He should put down every shilling spent, separating his house and personal expenses from those of the farm; this should be done daily, and afterwards posted into a ledger under the heads of rent, wages, corn, implements, stock, rates, or other ordinary outlay. On the contra or debtor side will appear his receipts of cash for corn or cattle sold, work done for hire, and the estimated value of such produce as may be reserved for consumption at home, &c. A third book should contain a detailed account of each crop, cost of tillage, manure, seeding, weeding, reaping, threshing, and quantity sold. Perhaps another might be kept for stock when produced or bought, particulars of feeding or breeding, and money realized. This writing might appear irksome at first, but the obvious benefits that would be speedily perceived to arise from a continuance of the plan would soon reconcile "Rough and Ready" to the task; what farmer is there that does not at one time or other find money scarce! To what is his embarrassment owing; has he bought too much guano! has he kept too many horses or too much company! He cannot tell unless he has put his expenditure on paper where the flaw is, or how to mend it; again, if there should be shortly introduced a liberal system of tenant right throughout the country, it will be evidently necessary that every farmer should minutely enter all particulars of the cost of drainage, buildings, oilcake, liming, and manures that may confer a claim for compensation by partaking of the nature of a permanent improvement. The least that any man can do who hopes to prosper is to keep a correct account of money expended, and a journal of the transactions of the farm, not merely with a view of controlling small expenses, but to be able to judge accurately whether he is justified in extending or contracting his operations; during the fever caused by the high prices during a past year, I knew a young man who kept no accounts, and who not only drained two large fields of about 20 acres each, inspired by the general outcry for improvement, but took as much additional land at a very high rent, and which (being not in a first-rate condition) he allotted a fine dressing of manure due to another part of his farm; the first breeze of depression has taken him by surprise, and told him in the plainest terms that his capital is not large enough for such comparatively small ventures, he cannot buy the stock he requires, or scarcely keep up a modicum of labour, and he has no data to unravel the cause of deficiency, or to point out where he may seek a way of escape: he is about to give up his high-priced land, he will overcrop the land he has drained; and, unless he devotes the whole of his time and attention to repair the evil, he will, I fear, be hurried to a still more fatal mismanagement. At the risk of being thought trifling, I will add, that a receipt should be taken for all money paid, to save anxiety and prevent disputes, and, as is customary in all great trading establishments, a memorandum should be written of the particulars of all bargains concluded, and all agreements made, of the slightest importance. *J. W., Peterborough, Jan.* 15.

Stall-feeding.—I have seen hundreds of beasts put up to fatten in curtains or closes or yards as they are severally termed in Scotland and England. But we have found by experience and experiment the stall-fed animal prospers and fatten thus best. It is usual in Scotland to have 10 or 12 beasts and even more running together in a yard with sheds; one or sometimes two of the lot are poor and inferior to the rest, and why? They are the unfortunate scape-goats of the herd, daily and hourly bullied by their companions in turn. Such too prevails in private families, where a son or daughter is said to be the fool of the family; and hence it has been facetiously remarked, "that families of note in ancient days hired a fool, now-a-days they breed one at home." But we will lay aside the fool of the herd, and go on the merits of our experience. Not only myself but a Berwickshire farmer of note have put up some beasts for experiment's sake, and our pocket's sake also, and the difference was surprising; in stalls they improved so much, that my friend wrote to me to express his pleasure at his success, and this is a man of high repute in Scotland. These cattle were bedded, not allowed to lie on bare boards as Mr. Huxtable's, and kept clean and dry; his floor was boarded—mine gravelled. The food I allowed was cut Swedes and hay, and during the last month two feeds of Oats per day; the increase of fat and weight during the time the animal was allowed corn was remarkable. Let anyone put up six pigs together, and see if four out of the number do not thrive at the expense of the rest. *Q. R. S., Huntu.*

Wages of Labourers.—In the mighty *Times*, some correspondents of note and fame have been abusing farmers for selling Wheat to their labourers, and asserting they sell them the worst or tailing Wheat, and term this as the "truck system." Now, this is by no means true. Many masters sell their labourers Wheat, but this is not compulsory, and many sell it to them for less than they get of the factor, sometimes for the same price, and instances I well know where they have it at 1*s.*, or 6*d.* less per bushel than market price. A labourer with a family finds this cheaper than going to the miller, who often sells him inferior flour, and too often when they send grist to mill so many pounds of flour are abstracted and as many pounds of bran substituted; for white Wheat, inferior red Wheat is sent home. But millers and bakers there are who will cheat both the poor and rich man, and this has been the case from time immemorial, long before Joseph came into Egypt. But the farmer does not cheat his labourer by selling him Wheat, nor are all his wages expended in the purchase of this food. Half a bushel

of good Wheat will maintain four of a family a week. The labourer will ask for Wheat of his master to avoid being robbed by the miller or baker. What would these writers say of Scotland, where their wages are paid out of the produce of the farm? Gold is not paid there every fortnight, it is not out of the purse but out of the granary he receives the reward of his labour. It is this custom that enables the Scotch landlord to receive a higher rent. Is the landlord then enriched at the expense of the poor man? is the question these men might ask and answer. But the tenant cannot be accused of defrauding the farm servant; nor can the English tenant be so accused. We know instances where a tenant's wife keeps a shop, and there the labourer is compelled to buy the butter, cheese, candles, pepper, &c., he may require for his family, and by so doing, his 9*s.* a week is not worth 6*s.* This no doubt is a monstrous robbery; but who can correct it? This is the truck system. *X. Y. Z., Hants.*

On the Use of Lime.—In a late Number there is an article on this subject, by W. H. Fisher. From his address I imagine he is not a practical agriculturist, but a chemical one only. And his opinion, as he himself says, is so contrary to the general practice, that I write this for the purpose of eliciting further information from some practical agricultural chemist. It is of the utmost importance to the farmers of this country, all using lime; for they greatly err if Mr. Fisher's view is right. As to burning the lime, that we are obliged to do here, for the purpose of reducing it to powder, having no carbonate of lime in the form of chalk; but the plan that Mr. Fisher condemns is universally followed as the best system; it is not adopted scientifically, but practically, and from experience is followed as the best course. The general plan here is to mix up the lime with part of an old hedge-bank, sufficient to make it fall into powder; and in a few days, when considered ready, and almost whilst warm, it is turned in the heap, and reduced to as fine a powder as possible. Now comes the difference of opinion; here it is universally spread on the land, or more commonly thrown on to the Potato haulm, for exposure to the sun and air. Our farmers do this from finding it the best practice; they have no knowledge that burnt lime attracts carbonic acid from the air, and becomes carbonate of lime. There is no doubt that lime treated in this way is a most valuable fertiliser; for, if spread upon Grass, it very soon changes the face of Nature, from poor brown herbage it becomes a luxuriant green sward. I have always understood that vegetables require a large quantity of carbonic acid for their growth, and have to obtain the greatest quantity from the air. Now the question is, whether by converting the quicklime into carbonate as soon as possible, that the plants may obtain it immediately, is not the best course of proceeding. There is no doubt that to kill insects in the ground, quicklime is very beneficial, also to dissolve vegetable matter; for the latter purpose we collect all the scutch and weeds together in a heap, and use them for the purpose of reducing the quicklime into powder. Sometimes these heaps take fire, and then become a caustic substance very valuable to an agriculturist, very powerful for destroying insects and dissolving vegetable matter, but destructive to ammoniacal manures, if they come into immediate contact. Now, I shall be obliged to any of your scientific, practical farmers to say whether it is better to spread quicklime upon the land for a considerable period, or to plough it in immediately. I can readily enter into the idea that to burn chalk, and then convert it again into carbonate of lime, is a waste of money, unless for the purpose of destroying insects, &c.—In my last, on Potato Culture, I was not sufficiently impressive on the importance of planting, for the general crop of Potato, a second early of some kind, to be fully grown by the time the disease has heretofore appeared, and the moment it does show itself, to pull the entire stem out of the ground, for in proportion as the stem remains on, so will the disease extend. If this plan is closely followed, we may have as many Potatoes as ever. My Kemps remain perfectly sound. *Farmer, Isle of Man.*

Allotments: Potatoes—I have observed that the early sorts have suffered least, particularly upon warm light soils, and that shade and wet aggravates the disease in a remarkable degree, or anything that stimulates to over-development of the tops, as close planting, rank manures, &c. This quite agrees with all the *Chronicle* has developed; therefore, to plant on the ridge, and give plenty of room between the rows, is what I am advising, say, at least 1 yard, and 18 inches in the rows; about 9680 sets per acre, which at an average of 2lbs. per root, would be near 10 tons per acre; and if an early sort taken up in July, the other crops I recommend to stand between them, viz, Mangold Wurzel, Parsnips, Carrots, and Beet, would not be forward enough to interfere with the Potatoes, or receive damage themselves. *E. Hulme.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House in Hanover square, on Tuesday last, the 27th of February. Present: Mr. RAYMOND BARKER, in the chair; Lord Camoys; Sir John V. B. Johnstone, Bart., M.P.; Mr. H. R. Raymond Barker; Dr. Calvert; Mr. F. Cherry; Mr. Christian; Mr. Dyer; Mr. Foley, M.P.; Mr. Fuller, M.P.; Colonel Hall, M.P.; Mr. Fisher Hobbs; Mr. Majendie; Mr. Marshall, M.P.; Mr. C. E. Overman; Mr. Parkyns; Prof. Simonds; Mr. Slaney, M.P.; Mr. Stansfield, M.P.; Mr. T. R. Tweed; and Professor Way.

The following new Members were elected:

Whitton, Corbett, Stafford
Tuck, T. G., Strumpshaw, Norwich
Chetwynd, William Henry, Longdon, Lichfield
George, George, Cringleford, Norwich
Morgan, John Brandon, Norwich
Blackburn, Capt. John Ireland, jun., Hale Hall, Warrington
Stevenson, Seth W., F.S.A., Norwich
Slade, A. F., Kennall, Chislehurst, Kent
Morgan, H., Norwich
Slade, Lieut. Edgar, R.N., Belmont, Chislehurst
Bascombe, Thomas, Dorchester, Dorset
Cooke, William, Risby, Bury St. Edmund's.

The names of five candidates for election at the next meeting were then read.

DRESS FOR DRAINERS.—The Marquis of Westminster communicated, in a letter to Mr. Pusey, M.P., a descriptive statement of the leathern dresses presented by his lordship to the Society, and used with so much advantage on his estates in Dorsetshire in protecting the labouring drainers from wet and injury in the prosecution of the deeper portion of their excavations.—The Council ordered their best thanks to be conveyed to the Marquis of Westminster for these communications (which they referred to the Journal Commmittee), as well as for an implement for placing pipes and tiles in drains and for adjusting their position, presented by his lordship at the same time to the Society.

IMPLEMENTS FOR SMALL FARMS.—Sir CHARLES LEMON, Bart., M.P., called the attention of the Council to the great advantages that small farmers, especially those living in remote and hilly districts, would derive from simple and economical implements adapted for the cultivation of their land. He alluded to this subject with the greater confidence from being so well acquainted with the desire of the Council to extend the operations of the Society in favour of every class of practical cultivators of the soil throughout the kingdom. He wished particularly to claim their consideration for a class far below the great experimenters to whom the country owes already so much, namely, for that of occupiers whose enclosures are small and on the sides of steep hills. For them, he thought, the large implements most suited for large flat fields are quite unavailing, as such small farmers could not purchase them, and would be unable to work them even if purchased. Sir Charles Lemon considered that it would be a great boon to the class in whose welfare he felt in common with the Society, so deep an interest, if the Society would, on the occasion of some of their country meetings, offer a premium for some implements of the kind to which he alluded, to be constructed on a small scale, and sold at a moderate price. He stated, as an instance of the implements required, that a small drill was much needed, applicable for corn or Turnips, and not having more than three, or, at the utmost, four rows, at a price not exceeding 10*l.* if for three rows or less, or 12*l* if for four rows. As the time for deciding on the Prize Sheet of the Society for 1849 had passed by, he was himself willing to contribute, in conjunction with other Members of the Society, towards a distinct prize for this purpose, to be awarded by the Judges at the Norwich Meeting, if it was thought desirable that a year should not be lost; but, at all events, he hoped the attention of the great implement makers would be directed to the subject, for it was only by them, and not by local manufacturers of small means, that the construction of the economical but effective implements of limited size was to be carried out with the greate t advantage to all parties.

LIQUID MANURE.—Mr. WHEBLE, of Bulmarsh court, Reading, informed the Council of the difficulty he had experienced in acquiring satisfactory information on the process by which the volatile alkali in liquids passing through iron pipes could be conveniently saturated with an acid without injury to such metal piping, and also on the question generally of strengthening liquid manures by chemical means. He had on his own farm four tanks, of 1200 gallons each, and another smaller one, into which the contents of the whole of the four or of any one of them could run, before distribution, through 3-inch pipes, by hose, on the land. Mr. Wheble had made many inquiries to ascertain the best ingredients for mixing up with the washing of the farm-yard or house, or (when that was used up) for making the best manure. His farm was a gravelly and sandy one; mostly Grass land, but a portion of it appropriated to Wheat, Italian Rye-grass, and Flax. He had power of water at command, and had the means of conveniently obtaining ammoniacal liquor. He had not been able to learn satisfactorily whether sulphate of ammonia, gypsum, bones dissolved in sulphuric acid, or any other particular chemical substance, would be most beneficial and economical in its application, or the proportions in which each should be used in his liquid manuring; and thinking it likely that the inquiry was of equal interest and importance to other members of the Society, he had not hesitated to state the difficulty he had thus experienced in his inquiries on the subject.—Lord Camoys favoured the Council with a description, from his own personal inspection, of the mechanical arrangement of Mr. Wheble's works on his farm; and Prof. Way and Mr. Stansfield, M.P., with their opinions on the application of artificial manures.—Mr. Fisher Hobbs had derived much information, on the subject referred to by Mr. Wheble, given by their lamented colleague, the late Rev. W. L. Rham, in his "Outlines of Flemish Husbandry," published by Mr. Knight.—Dr. Calvert described the plan he had found most advantageous in distributing liquid manure by means of a cask with openings at the bottom, filled rapidly from the tank by being placed in a road sunk below its level. Mr. Marshall, M.P., referred to the increase of strength acquired by re-pumping the liquid over the manure-heaps.

DISEASES IN STOCK.—Mr. BRANDRETH (High Sheriff for the county of Bedford), of Houghton House, near Dunstaple, favoured the Council with a statement of the mode he had successfully adopted in reference to his sheep affected with small-pox. In some cases where care has not been bestowed upon the flocks, in the union in which he resided, the loss had been great. When the eruption had not shown itself on the face of the sheep, the throat had been more affected, and the swallowing impeded, and the animal consequently could not take the degree of nourishment requisite to sustain its strength under the effects of so lowering a disease. In those cases in which care had been taken to keep the animals, on being attacked, moderately warm without subjecting them to close confinement or a heated atmosphere, it was found that they did pretty well. Gruel was administered to them and salt given them to lick, their noses being sponged three times a day with warm water, Sir William Burnett's Disinfecting Liquid being plentifully used about the premises. The affected sheep were separated from the rest of the flock. The disease had been brought into that part of the country by some foreign sheep. The current opinion among the farmers in Mr. Brandreth's neighbourhood was, that when care was taken of the sheep, it was best not to inoculate them.—The Chairman had the satisfaction of stating, that in his own neighbourhood, on the borders of Oxfordshire and Buckinghamshire, there was no small-pox at present among their flocks.—Mr. Fuller, M. P., made the same report in reference to the Southdown flocks of Sussex; his own sheep were never in better order.—Colonel Hall, M.P., regretted to state that in Cambridgeshire they were surrounded with it. Sixty of his ewes, out of 180 conveyed from West Sussex in new trucks, by railway, to a dry farm near Six-mile-bottom in that county, were attacked with the foot disease. A striking case had occurred, too, of the breaking out of the foot disease in oxen separated from each other by two yards, a large barn, and a high wall, one portion being tied up and the other kept loose; the animals tied up in the yards taking the disease on the other portion having been brought on the farm. He also referred to the case of foot disease taking place two years ago in two flocks, though separated from each other by a plantation and hedge. He dwelt strongly on the necessity that existed for greater caution being taken by the railway companies in preserving their trucks for the conveyance of live stock in a greater degree of cleanliness and freedom from taint, by every means in their power, both on account of the owners, as well as for their own interest; for, in consequence of the ravages in his flocks, a neighbour of his who occupied 800 acres of land had been obliged to reduce his flocks from 1100 to 300 head of stock. Orders had been given, he was aware, by the Government to the different railway companies on this point, but he well knew, as the commander of a regiment, that orders were of no use unless it was seen that they were carried into execution and obeyed; and the fact now strikingly was that the railway trucks were *not* attended to habitually as they ought to be.—Mr. C. E. Overman related instances of the occurrence of the foot disease by simply removing the sheep to the distance of a mile from one pasture to another, the exertion appearing to act as a predisposing cause of disease.—Mr. Fisher Hobbs could bear testimony to the accuracy with which the Government orders were attended to on the Eastern Counties line. With regard to the small-pox, he regretted to state that in Essex it had broken out in one district in consequence of the shallow manner in which the animals that had died of the disease had been buried in the ground. Their carcases had been torn up by dogs, and the pestilence again propagated to a great extent from that circumstance. Had the precaution taken by Mr. Hudson, of Castleacre, been adopted, of boiling down the carcases with sulphuric acid, or had quick lime been sprinkled over them in sufficient quantity, the resuscitation of the virus would, in all probability, have been prevented.—Sir John Johnstone, Bart., M.P., Mr. Foley, M.P., and Dr. Calvert, having made some observations on the manner in which the foot-rot was taken by sheep, and Mr. T. Turner on the distinction to be drawn between that local affection and indications of constitutional disturbance in the animal, Professor Simonds favoured the Council with his general views on the diseases to which reference had been made. He quite agreed with Mr. Turner that a clear distinction should always be drawn between a local disease and a more indication of constitutional derangement; as in the case particularly of the foot-rot in sheep and the vesicular disease in the feet of sheep and oxen: the former being a disease in the foot of the sheep, analogous to the one termed thrush in the foot of the horse, produced by common causes, and, in Professor Simonds's opinion, neither contagious nor infectious; the latter, or vesicular disease, arising from constitutional causes, the vesicules not only showing themselves in the feet, but in the mouth, and frequently on the teats of milch cows. He considered that animals were rendered susceptible of the vitiated atmosphere producing this disease, by being removed from one neighbourhood to another, or by their general management or system of feeding being suddenly altered. This, he thought, would account for the cattle of Colonel Hall becoming so soon affected, as the other animals on his farm had been recently purchased. As an epizootic or epidemic disease affected animals in consequence of a vitiated

state of atmosphere, exteuding over a considerable district of country at the same time, while an enzootic or endemic disease arose from causes confined to a particular locality; so, he remarked, the distinction must also be borne in mind between an infectious disease occasioned by poisonous exhalations emanating from an affected animal, and a contagious disease produced by actual contact of diseased matter. He had made numerous attempts to produce the foot-rot in the healthy foot of a sheep by inoculation with foot-rot matter, but, in reply to an enquiry of Mr. Marshall, M.P., it appeared that he had never in a single instance succeeded. Mr. Youatt, in his work on "Sheep," had detailed experiments made in France to prove the contagious nature of foot-rot, but Prof. Simonds considered those experiments to have been very unfairly made, and the result in one instance of what was regarded as foot-rot not to have been due to the virus but to the inflammatory action produced by the long-continued violence of treatment to which the animal was subjected, ulceration without specific virus having ensued. The Chairman stated that in his neighbourhood, the feet of sheep had sometimes become diseased from their having been driven in hot weather over sharp sandy roads; but the disease was of an ordinary character and soon left them, nothing of the nature of foot-rot being heard of among them. With regard to small-pox in sheep, Prof. Simonds feared it had already taken too deep a root in this country to be ever entirely eradicated; 1000 animals in a county continuing still to be carried off by it. In his progress throughout suspected districts, he had found the small-pox to prevail, more or less, in the counties of Norfolk, Suffolk, Essex, Middlesex, Kent, Surrey, Hampshire, Hertford, Cambridge, Northampton, and Wilts.—An interesting discussion then took place on the circumstances under which foot-rot generally occurred in sheep, and on the apparent presumption of its contagious nature; the parties contending for such contagion attributing the disease to the immediate contact of the feet of healthy sheep with virulent matter left on the ground by diseased sheep that had passed over it, while Prof. Simonds maintained that the disease had its origin in the same unfavourable circumstances (especially of cold, undrained, wet pastures) that had occasioned it in the former flock. All parties, however, agreeing in the facts of occurrence, but differing only in their attempts to explain them.

Numerous presents having been laid before the Council, and their thanks ordered to the respective donors for their attention in transmitting them, the Council adjourned to their Monthly Meeting on the 6th March.

Reviews.

How to Improve the Health of the Metropolis, and to Feed the People of Ireland. In a Letter addressed to the Most Noble the Marquis of Lansdowne. H. Silverlock, 3, Wardrobe terrace, Doctors' Commons.

THIS is a pamphlet, from the pen of General Briggs, on the Sanatory question, and its agricultural bearings. The facts on the one side are, that life is only about one-third as long in some parts of London as in others, the districts where it is most precarious being those which are imperfectly drained; that the Thames is a vast common sewer to the city, and, under the present mode of disposing of the drainage waters, is likely to become still more than it has been an accumulation of filth, and a source of disease; and the facts on the other side are, that there is land around London demanding cultivation, and that the manures washed out to sea, or evaporated into the air, would, if applied there, yield food instead of fevers. The difficulty is how, with profit, to convey this fertilising matter from the places where it is so mischievous to those where it would be so useful. The Sewage Manure Company propose to effect this by pipes, and distribute the matter in a liquid form by hose. The Manchester Liquid Manure Company take boat-loads of the sewage water along the canal, and distribute it in a similar manner. Other schemes have proposed the precipitation of the fœcal matter from these waters, and their conveyance by land carriage in a solid form. And it is one of these which the author of this pamphlet appears to recommend. The following is one of the authorities on which he relies for the efficacy of peat charcoal as a deodoriser, and fertilising absorbent, and it certainly appears abundantly satisfactory.

"Several parties interested in Sanatory Reform, including Lord Lyttelton and the Rev. C. Girdlestone, attended on Wednesday, October 18th, at the residence of Mr. H. Giles, Surgeon, of Stourbridge, to witness experiments with various deodorants, with a view to ascertain their relative efficiency. The fluids prepared by Messrs. Ellerman and by Sir W. Burnett, both pure and diluted with water, and also charcoal prepared from peat, on the plan patented by Mr. Jasper Rogers, and adopted by the Irish Amelioration Society, were successively applied each to three kinds of offensive refuse, that from a stable, that from a pigsty, and night-soil. On applying Messrs. Ellerman's fluid undiluted, there was a copious disengagement of a disagreeable sweetish smelling gas, in each instance, the natural smell of the substances being considerably abated; but all present thought the resulting odour not much less offensive than the original one. A similar result followed on experimenting with the same fluid (that of Messrs. Ellerman) diluted; but the resulting odour was not quite so pungent. With Sir W. Burnett's liquid a slight effervescence took place, and the offensive smell of the substances to which it was applied was undoubtedly lessened, both with the pure fluid and with the same diluted; still there was a great amount of the original smell remaining. But with the peat charcoal the result was perfectly satisfactory; it instantly and entirely neutralised and destroyed the whole of the offensive odour in each substance. It also deodorised the compound of manure and Ellerman's liquid, destroying with the like facility this pungent chemical smell, mixed with a fœtid odour. On re-examination the next morning, and again two days subsequent, by Mr. Giles, the substances to which Ellerman's fluid had been applied had lost a good deal of their mingled odour, but still were not inodorous. Those to which Sir W. Burnett's fluid had been applied, still retained some though less of their natural smell, whilst those mingled with the charcoal remained perfectly inodorous."

It is in connection with the supply of charcoal for this purpose that Ireland is interested; and the close of the pamphlet is devoted to a favourable notice of Mr. Jasper Rogers' Irish Amelioration Society, which has already been referred to in this Journal. The bogs of Ireland certainly might be made to supply an exhaustless supply of charcoal, for use either as fuel or as manure; and the gradual removal of the peat would have the additional advantage of exposing a surface of cultivable land. General Briggs has placed in a most striking light the singular contrasts which the whole of the sanatory subject presents; our interests, on the ground either of food or health, being so entirely opposed to the carelessness which allows things to remain as they are.

Remarks on Land Drainage. By John Duncan, Landsurveyor, and Inspector under the Drainage Act. Oliver and Boyd, Edinburgh.

THE cheapest pamphlet existing on its subject; and full of useful, sensible, and unpretending information. It is a collection of Mr. Duncan's Letters on Land Drainage, which appeared in our last year's volume.

Calendar of Operations.

FEBRUARY.

NORTH LINCOLNSHIRE FARM, *Feb.* 24.—With the exception of a slight shower or two these last few days, we have had remarkably dry weather for a considerable time. The land and roads are almost as dry as summer, which has been very favourable for getting on with farm work of all descriptions. Spring sowing has partially commenced upon the clay soils with Beans, and a few farms upon the Wolds have likewise made a beginning this week with Oats. It is earlier than most of us wish to commence, but the weather is so tempting, and it is very desirable to get a good seed-bed. The fine weather has likewise been taken advantage of for sowing spring Wheat, and I daresay a considerable portion has been put into the ground, probably more than usual. Spring Wheat is not cultivated to a very great extent in this part of Lincolnshire, nor do I think it is to that advantage as it is in the more northern counties. The fine open weather has contributed considerably to the extension of Turnips, consequently they are not so dear as they were, and probably may be found plentiful in the end, from the same cause Sheep have done remarkably well these two months past. *S*

STIRLINGSHIRE CARSE FARM, *Feb.* 24.—For these two weeks past we have been employed variously. We commenced to lift and store the remainder of the Turnip crop, and have sown Wheat on the land, which wrought in fine order, this being finished, we went on with Bean sowing, while the weather continued favourable, but for these few days past it has been both stormy and wet, and to-day we have had a considerable fall of snow. In last week's number there appeared something of a movement to offer a premium for a machine to cut drains in such a way, that without any manual labour tiles may be laid; and also for covering them in after they are laid. As I would wish to encourage every undertaking, with a view of assisting in carrying forward the improvements of our country, I would beg to state that I have no doubt such a machine may be constructed, and were it worked by steam it would be a great advantage. I may further mention, that my neighbour, a Mr. Alexander, has constructed a plough, drawn by horses, that cuts a drain from 2 to 3 feet deep, at two turnings, and quite ready for the tiles being laid, with the exception of a little clearing of the loose earth from the bottom of the drain; also, another plough for covering in the drain. I have had it several times at work on my farm, and my present object in writing is to state that if a drawing of it was required, with a view of expediting the one contemplated in England, it can readily be obtained. Several prizes, including a premium from the Highland Agricultural Society, have been awarded to Mr. A. for the operation of his plough. *W. F.*

SOMERSETSHIRE FARM, *Feb.* 26.—We have been engaged in ploughing for and finishing Wheat, sowing, ploughing for, and drilling Beans, 18 inches apart, cultivating, with the Uley cultivator, land for Flax, which has been lying rafted through winter, hauling Swedes for sheep and young cattle in straw yards, and rolling Grass lands. We shall be engaged in Bean sowing the most part of this week, weather permitting. *R. C.*

SUSSEX FARM, *Feb.* 19.—We have now finished sowing Beans and part of Peas in excellent order. We shall sow the remainder of the Peas this week, if the weather continues fine. Our ploughs are now at work for the Barley crop. The following is the system we adopt of feeding our stock Ewes, which are 300. We study to have some Rape for the early part of the winter; the ewes are turned on the Rape two or three hours each day, and put into the yard to receive a little hay at night. I find on an average they consume an acre per week. After the Rape is done, they are turned on the early sorts of Turnip. A fair average crop they consume about three quarters of an acre per week, and they are now folded on the Green-top Yellow Turnip, and receive an allowance of the young Clover, mixed with stubble, which we mowed after the harvest; they enjoy it very much; it is both food and litter; and they thrive well, and are in excellent order, as soon as they begin to lamb, which will be the 1st of March, they receive Swedes, of which we have a stock in store for them. I am glad to say the Swedes keep better this year than they have for two years past. *J. B.*

Notices to Correspondents.

ORNAMENTAL AND DOMESTIC POULTRY, by the Rev. E. S. Dixon, price 5*s.* 6*d.*, is now ready, and may be had at the Office of this Paper, and of all Booksellers.

ADDERS: *S. T. Bidwell.* We have it not.

ASHES: *W. B* will find them useful on his young Wheat, but he had better wait till spring has really come.

A FAILURE OF OATS: *J. Kennie.* Drainage and deeper cultivation is probably a remedy. Road scrapings and any mineral matter, such as marl, &c., which has been well exposed to the air for a long period, are a good addition.

CAPITAL: *T. Williams.* Neither "R. G." nor any one else can answer your question. It depends on the quality of land and the modes of cultivation which markets demand. 10*l.* to 15*l.* an acre on arable land, and 4*l.* to 8*l.* on pasture, is abundant capital.

COLLEGES AND FARMS. We are corrected by several correspondents as to the existence of agricultural schools with farms attached. There is one at Wickham Market, in Suffolk, and another called Queenwood College, near Stockbridge, in Hants. Both have large farms attached.

CORN MILLS: *Tuesday.* You had better apply to Dean, of Birmingham, or Parker, of the same town. Perhaps "Miles" may state more fully what you want.

DIPPING SHEEP: *Owen Glendower.* The operation is worth its cost; at least so most flock-masters will say.

DISPOSAL OF PRODUCE: *E S.* You will make more money by selling all your produce and buying manure than you can by consuming it and making manure. You need not grow Clover at all. You may raise your average acreable produce beyond 20 tons, and by purchasing the less bulky manures you may avoid a considerable expense in cartage.

DRAIN TILES: *A Sub.* Are waggons carrying drain tiles liable to tolls?

EGGS: *A Cottager.* We can suggest nothing unless it be that the eggs may be stolen. You should procure Mr. Dixon's work on poultry, which answers your question.

FACTS FROM GWERDORE: *Torbay.* It is out of print. Your bookseller will ascertain the publisher.

FEEDING CATTLE: *Anon.* Soak for a day and a half 2 lbs. of Linseed meal in seven times its bulk of water; throw it over a bushel of chaff; dust over that 4 lbs. of Bean-meal, and mix the whole well up. Divide in two parts and give one to the ox in the morning and the other at night. This, with 1 cwt. of Swedes daily, will be ample fare for an ox fattening to 7 cwt. Prepare the food day by day.—Oat-straw is the best for horses or cattle.

GAS WATER: *R S H* may soak sawdust or dung with it, and apply per acre so much of the compost as contains 200 or 300 gallons of it.

GOLD AND SILVER PHEASANTS: *T B.* Rain water collected in wooden troughs, and conducted by wooden spouts, cannot be injurious: leaden spouts may possibly spoil it.

GRASS: *A Subscriber.* Lawson recommends the following: Aira cæspitosa lutescens, 2 lbs.; Alopecurus pratensis, 2 lbs.; Anthoxanthum odoratum, ½ lb.; Avena flavescens, 1 lb.; Festuca duriuscula, 3 lbs.; F. heterophylla, 2 lbs.; F. pratensis, 2 lbs.; F. rubra, 1 lb.; Lolium italicum, 3 lbs; L. perenne, 5 lbs.; Phleum pratense, 1½ lb.; Poa nemoroza, 4 lbs.; P. trivialis, 2 lbs.; Lotus corniculatus, ½ lb.; L. major, ½ lb.; Trifollum pratense perenne, 3 lbs.; T. repens, 5 lbs.; 37½ lbs. in all—and Barley 1 bushel per acre. Apply to a respectable seedsman for these seeds, and he will tell you the prices.

GRASS LAND: *J Smith.* If we understand your question, our answer is that the succeeding crop will be the better for a year's rest and depasturage.

GREEN MANURE: *J Alexander.* Mustard, Rape, Vetches, Italian Rye grass—any succulent, rapidly growing plant will suit to plough in. It is rarely an economical process. The better way is to pass them through the bodies of animals and attain the double advantage of the mutton made and the manure brought to a more immediately active condition.

LIME AND SALT: *H F.* Lime will absorb nearly one-third its weight of water. Slake 80 bushels of lime with about 1 ton weight of water, in which 5 cwt. of salt has been dissolved, and lay the whole in a shed, in a thin layer, exposed to the air for a month. Thereafter, applying it upon 1 acre of land.

LINSEED: *Cantab.* We cannot give names. Why not apply to those who furnish our market reports? You are quite right in the matter of thin seeding.

LUCERNE. *A Sub.* Twelve pounds of seed per acre are to be sown about mid April, in shallow drills 14 inches apart, on a deeply, cleanly, richly tilled soil of the lighter sort.

MOLES: *J W L W.* Perhaps some one will say whether they should be extirpated. Certainly it is possible for them to multiply mischievously. If the land were ours we should trap them unmercifully, but not with perfect confidence that we were right.

MOLE PLOUGH: *W. P.* Excuse our asking if you have applied to the party you name first. Our mention of a name has all the effect of an advertisement.

PARSNIPS: *J Stokes.* The rusty and cankered roots are something of the same kind as the diseased Turnip referred to the other week as a case of Aubrey, and the cause is probably the same in each case.

POULTRY: *R B, Leicester.* The Spanish breed will probably suit you better than the Dorking. Messrs. Baker are good authorities. The Peshon and Turkey are the only birds requiring seclusion when laying or during incubation.

ROTATION: *Kington.* Hereafter.

RURAL POOR: *A Working Man.* We must not publish general denunciations of this kind without specifying the locality to which they refer.

SCHOOLS: *S Schofield.* Can any one say anything of the Agricultural Industrial School, somewhere near Leeds, that is conducted on the same plan as those of the late Mrs. Davies Gilbert, near Eastbourne, Sussex.

SULPHURIC ACID: *H.* Every 100 gallons of undiluted urine may be held to contain about 40 lbs. of carbonate of ammonia or its elements, and oil of vitriol enough to supply about 40 lbs. of sulphuric acid to it must be added to effect its thorough decomposition. That may be perhaps 60 lbs. of the oil of vitriol ordinarily sold. But the practical rule is to throw into the tank a quantity of it every week till it no longer causes effervescence; see p. 405, 1848.

Markets.

SMITHFIELD, MONDAY, Feb. 26.

We have a large number of Beasts, and trade very dull, our top quotations are with difficulty realised for the choicest kinds, and several remain unsold. Although the supply of Sheep is small, it is quite adequate to the demand, we cannot discern any advance in price. Trade is dull for Calves, good ones being scarce, they maintain late rates. From Holland and Germany we have 536 Beasts, 1070 Sheep, and 66 Calves; from Norfolk and Suffolk, 1900 Beasts; and from Scotland, 400.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	6	to 3	8
Best Short-horns	3	2	— 3	6
2d quality Beasts	2	6	— 2	10
Best Downs and Half-breds	4	4	— 4	6
Ditto Shorn				

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	4	0	to 4	2
Ditto Shorn				
Ewes & 2d quality	3	0	— 3	8
Ditto Shorn				
Lambs				
Calves			3	8—5 0
Pigs			3	8—4 10

Beasts, 3476; Sheep and Lambs, 17,870; Calves, 109, Pigs, 136.

FRIDAY March 2.

We have to-day a shorter supply of Beasts, and a bright morning; consequently trade is much more cheerful. Although it is difficult to obtain any quotable advance, yet a large attendance of buyers causes rather more money to be given in many instances. The number of Sheep is also small, and the best qualities are decidedly dearer; indeed, we may safely quote all kinds at 2d. per 8 lbs. advance. Good Calves are scarce; a very choice one makes nearly 5*s.* 4*d.* Trade is brisk for Pigs, at a small advance. From Holland and Germany we have 112 Beasts, 450 Sheep, and 11 Calves; from Spain, 60 Beasts and 4 Calves; from Scotland, 300 Beasts; and 112 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	6	to 3	8
Best Short-horns	3	4	— 3	6
2d quality Beasts	2	8	— 3	0
Best Downs and Half-breds	4	6	— 4	8
Ditto Shorn				

Best Long-wools	4	2	to 4	4
Ditto Shorn				
Ewes & 2d quality	3	4	— 4	0
Ditto Shorn				
Lambs				
Calves			4 0	— 5 2
Pigs			4 0	— 5 0

Beasts, 849; Sheep and Lambs, 1760; Calves, 112; Pigs, 200.

COVENT GARDEN, March 3.

The market continues to be tolerably well supplied with Vegetables and winter Fruit. Pine-apples are sufficient for the demand. Foreign Grapes are scarce and dearer. Pears are becoming scarce; they consist of Beurré Rance and Easter Beurré. Apples are getting dearer. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. A few Strawberries have made their appearance. Amongst vegetables, Carrots and Turnips are abundant; Cauliflowers and Broccoli sufficient for the demand. Asparagus, French Beans, Rhubarb, and Seakale are plentiful. Potatoes are rather on the rise. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Christmas Roses, Camellias, Gardenias, Tulips, Hyacinths, Cinerarias, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 9s
Grapes, foreign, p. lb., 1s to 2s
Apples, dessert, p. bsh., 6s to 12s
— kitchen, p. bsh., 3s to 5s
Pears, per doz., 2s to 6s
Oranges, per doz., 1s to 2s
Lemons, per doz., 1s to 2s
— per 100, 10s to 18s
Chestnuts, p. peck, 4s to 7s
Almonds, per peck, 6s
— sweet, per lb., 2s to 3s
Walnuts, p. 100, 1s 6d to 2s
— p. bush., 16s to 24s
Nuts, Bar, p. bush., 20s to 22s
— Filb., p. 100 lbs., 60s to 100s
— Cob, p. 100 lbs., 90s to 150s
— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 3d to 1s
— red, p. doz., 2s to 6s
Savoys, per doz., 3d to 1s
Greens, p. doz. bunches, 1s 6d to 2s 6d
Cauliflowers, p. doz., 2s to 4s 6d
Broccoli, white, p. bun., 1s to 2s
— brown, p. bun., 6d to 1s 3d
Sorrel, p. hf. sieve, 1s to 1s 6d
Potatoes, per ton, 60s to 180s
— per cwt., 5s to 9s
— per bush., 2s 6d to 5s
Turnips, p. doz. bun., 1s to 2s
Red Beet, per doz., 6d to 1s
Horse Radish, p. bdl., 1s to 6s
Asparagus, p. 100, 2s to 8s
Seakale, p. punnet, 9d to 1s 6d
Rhubarb, p. bundle, 6d to 1s 6d
French Beans, p. 100, 2s to 3s
Cucumbers, each, 3s to 6s
Leeks, per doz., 6d to 1s
Celery, p. bundle, 6d to 1s 9d
Radishes, p. doz. hands, 1s to 2s
Carrots, p. doz. bun., 3s to 5s
Spinach p. sieve, 1s 6d to 2s
— Turnip, do., 9d to 1s 6d
Onions, p. bunch, 2d to 4d
— p. bush., 1s 6d to 2s 6d
— Spanish, p. doz., 1s 6d to 4s
— pickling, p. hf. sieve, 1s 6d to 3s
Shallots, per lb., 4d to 8d
Garlic, per lb., 4d to 8d
Artichokes, Jerusalem, p. half sieve, 9d to 1s
Lettuce, Cab., p. sc., 4d to 6d
— Cos, do., 9d to 1s
Endive, per score, 1s to 2s 6d
Mushrooms, p. pottle, 6d to 1s
Small Salads, p. pun., 2d to 3d
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Watercress, p. doz. bun., 6d to 9d
Parsley, p. hf. seive, 1s 6d to 2s
— Roots, p. bdle., 1s to 1s 6d
Marjoram, per bunch, 2d
Mint, green, per bunch, 4d to 8d

HAY.—Per Load of 36 Trusses.

Smithfield, March 1.

Prime Meadow Hay	66s to 76s		Clover	60s to 92s	
Inferior ditto	50	60	New Clover	—	—
Rowen	40	60	Straw	25	30
New Hay	—	—			

J. Cooper.

Cumberland Market, March 1.

Prime Meadow Hay	70s to 76s		Inferior	50s to 80s	
Inferior ditto	50	63	New Clover	—	—
New Hay	—	—	Straw	28	32
Old Clover	90	95			

Joshua Baker.

Whitechapel, March 1.

Fine Old Hay	65s to 72s		New Clover	80s to 90s	
Inferior ditto	50	60	Inferior ditto	55	65
New Hay	68	68	Straw	24	28
Old Clover	92	100			

POTATOES.—Southwark, Waterside, Feb. 23.

The Committee report that our market is so well supplied, and trade so heavy, that a reduction has again been submitted to in every description of Potato on sale. The following are this day's quotations:—York Regents, 100s. to 140s.; Scotch, do., 100s. to 120s.; Scotch Cups, 90s. to 100s.; Whites, 70s. to 90s.; French Whites, 80s. to 100s.; Belgian do., 70s. to 90s.

MARK LANE.

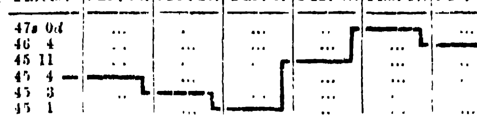
Monday, February 26.—There appears to be a trifling advance in the price of Wheat at Liverpool and Birmingham; with this exception the prices remain nearly the same as last week.—Here, this morning, the supply of Wheat from Essex, Kent, and Suffolk was again very small, and sold slowly at the prices of this day se'nnight. Foreign met a retail inquiry, and was generally disposed of at a reduction of 1s. per qr. —Barley of all descriptions must be written 1s. per qr. cheaper.—Beans are the turn in favour of the buyer —We observe no alteration in the value of Peas.—Oats are a heavy sale at 6d. per qr. decline.

Friday, March 2.—The arrivals of grain in London during the week have been moderate, with the exception of 20,750 qrs. of foreign Wheat, and having but a very small attendance of buyers, business in all articles was exceedingly flat, but we observe no alteration in the value of either, excepting white Peas, which must be written 3s. per qr. cheaper.

Liverpool, Friday, March 2.—We have had stormy weather since Tuesday, and only limited supplies. There is a small attendance at this day's market, and rather a slow trade, but extreme prices were made for both Wheat and Flour, and holders were very firm. No change in Oats, Oatmeal, Barley, Beans, or Peas. Indian Corn was in fair request at an advance of 6d. per qr.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Jan. 20	45s 4d	29s 1d	17s 1d	28s 4d	31s 1d	34s 9d
— 27	45 3	28 10	17 0	28 11	30 3	32 8
Feb. 3	45 1	28 10	16 11	28 5	30 3	32 6
— 10	45 11	29 3	17 3	27 2	30 11	33 0
— 17	47 0	29 8	17 2	26 9	29 9	34 4
— 24	46 4	29 8	17 5	27 8	30 10	32 11
Aggreg. Aver.	45 10	29 3	17 2	27 10	30 6	33 1
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.



PRICES CURRENT.	London. Feb. 19 qr.	London. Feb. 26 qr.	Liverpool. Feb. 20. 70 lbs.	Liverpool. Feb. 27. 70 lbs.	Wakefield. Feb. 9 qr.	Wakefield. Feb. 16 qr.	Boston. Feb. 21 qr.	Boston. Feb. 28 qr.	Birmingham. Feb. 22. 62 lbs.	Birmingham. March 1. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d	s. s.	s. s.	s. s.	s. s.	s. d. s. d	s. d. s. d.
New, red ...	42 to 44	40 to 41	6 3 6 9	6 4 6 10	45 to 50	44 to 48	38 to 45	38 to 45	5 9 6 6	5 9 6 6
„ white ...	46—50	46—48	6 9 7 4	6 10 7 6	46—53	41—50	40—48	40—47	6 2 6 9	6 2 6 10
Old, red ...	42—48	42—44	6 8 7 0	6 8 7 0	42—48	44—49	42—46	42—44	6 4 6 8	6 4 6 8
„ white ...	46—56	46—50	7 0 7 6	7 0 7 3	46—50	14—50	44—49	44—46	6 0 6 9	6 2 6 10
Foreign	40—58	40—58	5 3 7 10	—	40—52	40—52	—	—	5 4 7 2	5 4 7 0
			480 lbs.	480 lbs.						
Rye—New ...	25—27	25—27	—	—	—	—	—	—	—	—
Foreign meal	7l. 5s	7l. 5s	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	22—26	22—26	—	—	22—25	22—25	26—28	26—28	23—27	23—27
Malting	26—28	26—28	31s—33s	31s—33s	27—32	27—31	30—32	30—32	29—33	29—33
Foreign... ...	21—29	20—28	—	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	18—24	19—23	2s 10d 3s 2d	2s 10d 3s 2d	—	—	20—25	20—24	18—30	20—26
Black...	16—20	16—19	2 4 2 7	2 4 2 6	—	—	18—22	17—20	17—19	17—18
Foreign	16—23	15—23	2 4 2 6	2 4 2 6	—	—	—	—	17—18	17—19
			qr.	qr.						
Peas—Boilers	28—30	28—30	37s—	37s—	34—38	30—34	—	—	36—44	36—44
Grinding, .	25—28	27—29	30—32s	30—32s	33—35	30—32	—	—	12—13	29—32
Foreign ...	25—33	25—33	34—36	34—36	—	—	—	—	—	—
Beans—										
New, small ...	22—27	21—30	32—35	32—35	31—37	31—33	26—32	26—32	11—13	11—13
Longpods, &c....	26—32	26—32	—	—	—	—	—	—	—	—
Old	36—39	27—39	34—36	34—36	36—37	33—37	34—36	34—36	15—16	15—16
Foreign ...	22—36	22—36	24—33	28—30	28—31	28—31	—	—	11—14	11—14
Clover Seed—										
For. Red, p. cwt.	30—42	30—42	—	—	—	—	—	—	—	—
Do. White „	30—44	30—44	—	—	—	—	—	—	—	—
Linseed—For.	36—40	36—40	42—43	42—43	32—40	32—40	—	—	—	—
Linseed Cakes										
British ...	11l. 5s	10l. 5s	8l.—8l. 5s	8l.—8l. 5s	—	—	—	—	—	—
Foreign ...	6l. 8s	6l.—8l.	—	—	—	—	—	—	—	—
									190 lbs.	190 lbs.
Indian Corn	24—28	24—28	28—31	28s—29s	—	—	—	—	13—14	13—14
		p. sack						p. sack		per sack
Flour—	—	35—44	—	—	—	—	—	35—42	—	37—40

Weekly Averages and Imports.	London. Aver. Feb. 27	London. Impts.	Liverpool. Averages.	Liverpool. Imports.	Wakefield. Aver.	Wakefield. Impts	Boston. Aver.	Boston. Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.		qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	47 9	8405	47 0	1688	—	11884	42 11	2641	43 0	2000
BARLEY ...	29 6	851	29 3	99	—	4431	26 2	27	32 0	—
OATS... ...	18 0	1387	17 2	5789	—	551	14 8	1439	19 10	718
RYE	25 0	130	27 11	—	—	—	—	—	—	—
BEANS ...	29 8	300	—	5632	—	1271	29 5	404	32 0	2099
PEAS... ...	34 4	177	—	70	—	561	—	—	—	—
Signed	*Kingsford and Lay.*		*Segar and Tunnicliffe.*		*Sandars and Dunns.*		*Thomas Wright.*		*J. and C. Sturge.*	

TURNIP SEEDS, &c.

W. DRUMMOND & SONS, Agricultural Museum, Stirling, N.B., will furnish, free, on application, priced Lists of TURNIP and other AGRICULTURAL SEEDS.

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AGRICULTURAL SEEDS. — Purchasers can be supplied with very superior stocks of all sorts of Turnips, Mangolds, Carrots, Kohl Rabi, Parsnips, Cabbages, Clovers, Grass Seeds, &c., at very low prices. Quantities for cash treated as wholesale.—Duncan Hairs, 109, St. Martin's-lane, Charing-cross, London. Prices sent free.

AGRICULTURAL SEEDS.

THOMAS WHALLEY begs to state that his ANNUAL PRICED LIST OF AGRICULTURAL SEEDS is now ready, and will be sent free on application. Gentlemen requiring seeds for their tenantry supplied at wholesale prices.

T. W. has just published a New Descriptive Catalogue of Garden and Flower Seeds, which may also be had on application.

, Freight paid to any port in Scotland, Ireland, or Wales.

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SEEDS. — MEADOW AND PASTURE GRASS SEEDS, in mixtures suited to various soils, &c., at 32s. per acre, allowing 2 bushels and 12 lbs. to each acre. Directions for sowing and treatment will accompany the seeds. Mixed sorts for improving old Grass Lands, 1s. 3d. per lb. Fine sorts for forming Lawns, &c., 1s. 4d. per lb.

GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address George Gibbs and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c. &c., 26, Down-street, Piccadilly, London.

SEEDS.—CORNER OF HALF-MOON STREET.

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Priced Lists of Agricultural Seeds are always ready during the season, and may be had on application.

PORTLAND CEMENT.—Testimonials received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

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Mr. Clark presents his grateful thanks to the Nobility and Gentry for their liberal patronage of the above Establishment, during a period of thirty years, and begs to state that the repeal of the duty on Glass enables him to offer his METALLIC HOTHOUSES at a greatly reduced price. These Houses are glazed with British Sheet Glass, in panes of from 21 to 30 inches in length, and of such thickness as to preclude all danger of accidental breakage, whilst that which arises from the action of frost is effectually prevented by the peculiar mode of glazing adopted. As a sample of his Metallic Hothouses, in which all the most recent improvements are happily combined, Mr. Clark refers to the magnificent range erected by him in the new Royal Gardens at Windsor, admitted by competent judges to be the most complete of its kind in the world.

PATENT ALKALI COMPANY'S METALLIC PAINTS.—Colours: BLACK and PURPLE-BROWN.—These Paints (the products of a Patent process) possess extraordinary covering quality, and far surpass all other Paints in point of durability and economy, two coats being proved to be more than equal to three of any other description. From their chemical composition, they are pre-eminently adapted for covering Iron, Stuccoed, or Brick Buildings, and every kind of Woodwork. They have been exposed on Shipping to the action of Sea-water, and of the Sulphuretted Hydrogen so prevalent in Sea-ports and Tidal Harbours for more than three years, without change. The attention of the Shipping Interest is particularly directed to the Company's Patent Compound Metallic Black Paint (the only Metallic Black Paint of any value yet produced), which will be found a most valuable and effectual preservative when applied to Iron Steam-boats and Wooden Vessels. It also forms a beautiful covering for Stoves. No other Paint partakes in any degree of the properties which constitute the great value of these Metallic Paints. Numerous and most satisfactory testimonials have been forwarded to the Company's Office, copies of which may be had of the Secretary, or of the Agents.

Price, by the ton, 25l., delivered in London or Liverpool, exclusive of packages. To be obtained exclusively on application to the Secretary, Mr. J. A. West, at the Offices of the Company, 20, Fenchurch-street, London; or of any of the under-mentioned parties, who are the only Agents of the Company: Messrs. Evans Brothers, London; Messrs. Matthews and Leonard, Bristol; Messrs. Evans and Hodgson, Exeter; Messrs. Clarke and Fill, Yarmouth, Norfolk; Mr. D. Sandeman, Glasgow; Mr. G. Sandeman, Dundee; Mr. R. Newby, Bradford, Yorkshire; Mr. R. S. Farr, Edinburgh; Mr. W. Bailey, Wolverhampton; Messrs. Vint and Co., Newcastle-on-Tyne, and Sunderland; Mr. Robert Oxland, Plymouth; Mr. Joshua Fox, Tregedna, near Falmouth.

DR. NEWINGTON'S PATENT HAND-DIBBLES, with from 3 to 11 depositors, for Beans, Peas, Wheat, Barley, Oats, Mangold Wurzel, Carrots, Turnips, &c. Price, including 4 sets of cups, 10s. each depositor. The saving of the seed alone will in 7 days clear the cost of any one of these implements.

THE REGISTERED HAND-ROW-HOE AND CULTIVATOR.—With this a man can with ease hoe most effectually, and stir to the depth of from 3 to 5 inches, any land, however stiff, more than two acres a day, at a cost of 1s. per acre, thus clearing the value of the implement in 3 days' labour. Price 30s. A prospectus sent on applying to Dr. N., Knole Park, Tonbridge Wells.

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To Noblemen, Gentlemen, Nurserymen, Builders, and Public Companies engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Smith to sell by Public Auction, on the Premises, Dalston, Middlesex, on MONDAY, March 5th, 1849, and the two following days, at 11 o'clock each day, in consequence of the land being required by the London and Birmingham West India Dock Junction Railway Company, the first portion of the valuable NURSERY STOCK, consisting of a large assortment of very fine Evergreens, Ornamental and Deciduous Shrubs, the finest description of Fruit-trees, and American Plants in great variety. From the adhesive nature of the soil, the plants will remove safely, and from their extraordinary sizes and magnificent growth, they well deserve the attention of Noblemen, Gentlemen, and the Trade; further comment is superfluous, the Stock being long well known as one of the finest, if not the best, in the Trade.—May be viewed prior to the Sale. Catalogues may be had, 1s. each (returnable to purchasers), on the premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone.

TO NOBLEMEN, GENTLEMEN, FLORISTS, AND OTHERS.

Consigned for absolute sale from Mons. A. Van Geert.

MESSRS. PROTHEROE AND MORRIS are instructed to submit to public competition by Auction, at the Mart, Bartholomew-lane, on FRIDAY, 9th March, 1849, at 12 o'clock, 200 choice Camellias, well set with flower-buds, 400 fine Bulbs Lilium lancifolium rubrum, 200 Gladiolus Gandavensis, 200 Rhododendron campanulatum (1 to 2 feet), 50 fine Peach Trees, 200 Standard Roses, comprising all the approved kinds, 100 Ghent Azaleas, 12 Taxodium sempervirens 4 to 6 ft.), 300 fresh seeds Ginkoo biloba. May be viewed the morning of Sale.—Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

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TO BE LET, AN ORCHARD, of about 1¼ acre, with Hothouse, &c., situate near Ball's-pond Church, Islington. With or without 2 acres of Meadow-land, Cow-house, &c —Apply to Mr CHANNON, Baker, Newington-green, Middlesex

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TO BE LET, and entered upon immediately, if required, either as a whole, or in separate parcels, A FARM, containing 178 acres, all Arable, except about 24 acres of Meadow.—Apply to Mr. WILLIAM TURVILL, on the Premises; or to Mr. J. H. Fricker, Kingston; and to Messrs. Chapman, Webb, and Chapman, 3, Arundel-street, Strand, London.

FARM WANTED, to rent, from 50 to 100 acres of good Land, with Farmhouse and Premises, by a man of good property.—Address, stating rent and full particulars to P., No. 5, John's-place, Mayfield-road, Dalston near London.

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THE PATENT VULCANISED INDIA-RUBBER HOSE PIPES are made to stand Hot Liquor and Acids without injury—do not become hard or stiff in any temperature (but are always perfectly flexible), and as they require no application of oil or dressing, are particularly adapted for Fire-engines, Pumps, Gas, Beer-engines, Gardens, and all purposes where a perfectly flexible pipe is required Made all sizes from ¼-inch bore upwards, and of any length to order.

Vulcanised India-rubber Garden Hose, fitted with brass taps, copper branch, and roses complete, ready to be attached to Pumps, Water-butts, or Cisterns.—Sole Manufacturer, JAMES LYNE HANCOCK, Goswell-Mews, Goswell-road, London.

N.B. Vulcanized India-rubber Washers of all bizes for Joints of Hot-water and Steam Pipes, and Vulcanised sheet Rubber, any thickness, for all kinds of Joints, and other purposes.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, have the pleasure to hand their New List of Prices of SHEET GLASS for Cash.

HORTICULTURAL GLASS,

In Sheets of about 40 inches by 30, and packed in Cases of 200 feet. Cut to the size required, but not to exceed 40 inches long.

13 oz. to the foot ...	£2	1s.	0d.				
16	2	5	0	from	2½d.	to 3½d.	per foot.
21	3	2	6	.....	3	5	,,
26	4	0	6	.....	3¼	7½	,,
32	5	15	0	.....	4	10	,,

Case not charged. Boxes charged, but allowed for when returned.

SMALL SQUARES IN BOXES OF 100 FEET.

	Crown.	Sheet.
Squares under 6 by 4	10s. 6d.	£0 12s. 6d.
6 by 4 and under 7 by 5	14 0	0 16 6
7 by 5 ,, 8 by 6	15 0	0 18 6
8 by 6 ,, 10 by 8	16 0	1 0 6

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS in sizes not exceeding 5 feet superficial.

¼ thick ... per foot	1s. 0d.	½-inch per foot	2s. 0d.
⅜-inch ...	1 2	1 inch ...	3 0
½-inch ...	1 6		

PATENT ROUGH PLATE TILES.

¼ thick ... each	0s. 11d.	⅜-inch ... each	1s. 7d.
½-inch ...	1 3	¾-inch ...	2 0

SHEET GLASS TILES, AND SLATES.

	16-oz.	21-oz.	26-oz.	32-oz.
Tiles made of Sheet Glass ...	8d.	10d.	1s.	1s. 4d.
Slates, 20 ins. by 10 ...	10d.	1s.	1s. 4d.	1s. 8d.

Slates are kept in stock of the usual sizes, and made to any dimensions.

GLASS MILK-PANS, PROPAGATING AND BEE GLASSES, Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish-Globes, Plate and Window Glass of every description, Lamp Shades, and Lactometers for trying the quality of Milk, 4 tubes 7s. 6d.; 6 tubes, 10s. Self Registering Thermometers for Greenhouses.

HARTLEY'S PATENT ROUGH PLATE GLASS.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash, A reduction made on 1000 feet.

Sizes. Inches.						Per foot.	Per 100 feet.
	Under	6	by	4	at	1½d.	is £0 12 6
From 6 ,, 4	,,	7	,,	5	,,	2d.	,, 0 16 8
7 ,, 5	,,	8	,,	6	,,	2¼d.	,, 0 18 9
8 ,, 6	,,	10	,,	8	,,	2½d.	,, 1 0 10
10 ,, 8	,,	12	,,	9	,,	2¾d.	,, 1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. ,, 3¾d. ,, 5d. ,, ,,
26 oz. ,, 5¼d. ,, 7½d. ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—The readers of the *Gardeners' Chronicle* of Saturday, Feb. 24th, must have observed the high terms in which this Glass was spoken of by Dr. LINDLEY. We have therefore re-arranged our list of prices to correspond precisely with those of the Patentee, to which we would beg the attention of the Nobility, Clergymen, Gentry, and others.

In Crates of the sizes as manufactured ... ... 6d. per foot.

In Squares					
,, 8 by 6 and under	10	by	8	...	4½ ,,
,, 10 by 8 ,,	14	by	10	...	5 ,,
,, 14 by 10 ,,	1½	foot		...	5½ ,,
,, 1½ foot ,,	3	,,		...	6 ,,
,, 3 ,, ,,	4	,,		...	6½ ,,
,, 4 ,, ,,	5	,,		...	7 ,,
,, 5 ,, ,,	6	,,		...	7½ ,,
,, 6 ,, ,,	8	,,		...	8½ ,,
,, 8 ,, ,,	10	,,			10 ,,
Quarries					6 ,,

Averaging ⅛ of an inch thick, and about 26 oz. to the foot.

JAS. PHILLIPS & Co., 116, Bishopsgate-street Without, London.

HARTLEY'S PATENT ROLLED ROUGH PLATE GLASS, for Horticultural purposes.—It is now proved beyond a doubt that the above Glass is very far superior to any hitherto discovered for all kinds of Horticultural uses (see *Gardeners' Chron., Feb. 24th*, 1849, p. 115).

WILLIAM PATTEN AND Co., GLASS, LEAD, and COLOUR MERCHANTS, 20, Old Fish-street, Doctors' Commons, London, beg to inform the public that in consequence of the numerous orders they have executed in Ireland, Scotland, and the principal counties of England, they have entered into such arrangements with the Patentee as will enable them to supply the above Glass in any quantity, strictly at the Manufacturer's prices. W. P. and Co. have a large quantity of Crown Squares in Stock, in 100 feet boxes, from 1d. per foot.

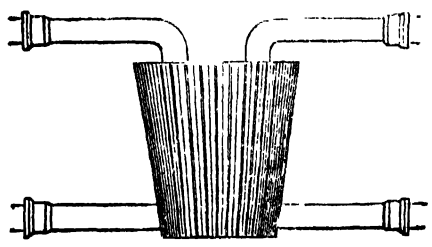
P.S. Sole Manufacturers of the Anti-Corrosion and Mineral Paint for all kinds of Out-houses, Park Fencing, Farm Buildings, &c.

FLOWER-POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford street, near Hyde-park.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in. will warm	50 ft. 4 in. pipe	... £1	15 0
12 in. do.	75 ft. 4 in. do. ...	... 2	5 0
14 in. do.	100 ft. 4 in. do. ...	... 2	15 0
16 in. do.	150 ft. 4 in. do. ...	... 3	10 0
18 in. do.	250 ft. 4 in. do. ...	... 4	10 0
21 in. do.	350 ft. 4 in. do. ...	... 5	10 0
24 in. do.	480 ft. 4 in. do. ...	... 7	0 0

NEW PATTERN BOILERS.

30 in. will warm	800 ft. 4 in. pipe	... 15	15 0
36 in. do.	1500 ft. 4 in. do. ...	... 25	0 0

All Boilers with double arms, up to 18 in., 5s. extra; to 24 in., 10s. extra; all above, the same price.

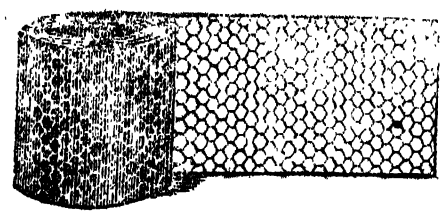
130, Fleet-street, London, March 3.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Duke of Devonshire's, Chatsworth Gardens.
Earl of Gainsborough's, Oakham, Rutlandshire.
Earl of Zetland's, Upleatham, Yorkshire.
Robert Hanbury, Esq., Poles, near Ware, Herts.
Mr. Glendinning's Nursery, Turnham-green.
And at least 500 other important places.

BURBIDGE and HEALY, 130, Fleet-street, London.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



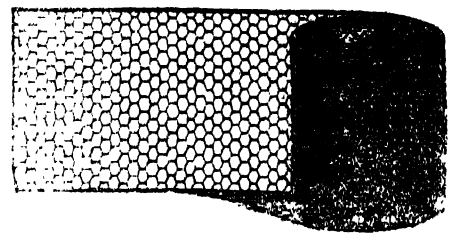
GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3d.	per yard	30 inches wide	7½d.	per yard
18 ,, ,,	4½d.	,, ,,	36 ,, ,,	9d.	,, ,,
24 ,, ,,	6d.	,, ,,	48 ,, ,,	1s.	,, ,,

Galvanised do. 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c; Window Blinds, 1s. 10d per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d each; Garden arches, 2s. each; Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 63, Snow-hill, London.

GALVANIZED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



	Galvanized	Japanned Iron
2-inch mesh, light, 24-inch wide	7d. per yd.	5d per yd.
2-inch ,, strong ,,	9 ,,	6½ ,,
2-inch ,, extra strong ,,	13 ,,	9 ,,
1½-inch ,, light ,,	8 ,,	6 ,,
1½-inch ,, strong ,,	10 ,,	8 ,,
1½-inch ,, extra strong ,,	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

BOWERS' NEW WATERING-POT.—An ingenious mechanical contrivance in watering choice plants to a nicety; avoiding the unclean slop, disfigurement of foliage, and too frequent loss of good plants, insuparable from the old method of watering. To be had in all sizes; those at 7s. 6d. and 10s. each are the most in use. London Agent, DUNCAN HAINS, Seed Merchant, 109, St. Martin's-lane; or apply to R. BOWERS, Godalming, Surrey.

LIQUID MANURE.

COODE'S IRRIGATOR will, by permission of the Directors, be EXHIBITED in operation on the grounds of the Metropolitan Sewage Manure Company's Works, at Stanley Bridge, Fulham, on WEDNESDAY, the 7th of March, at 12 o'clock. For cards of admission to view the Exhibition and the Company's Works, apply at the Company's Office, No. 7, Waterloo-place, Pall Mall.

EVERYTHING FOR THE WORK-TABLE, AT MECHI'S MANUFACTORY, 4, LEADENHALL STREET, LONDON. Ladies are respectfully invited to visit this emporium of elegancies, to select their scissors, thimbles, finger-guards, silk-winders, needles, pins, pincers, netting boxes and materials, and all other requisites for Ladies' Work. MECHI has the most splendid Stock in London, of Ladies' Work-Tables and Work Boxes, in Papier Maché and Fancy Woods; also a great variety of Ladies' Companions and Pocket Books, elegantly fitted up. Splendid Papier Maché Blotting and Writing Cases, Card Cases, Card Racks, Watch Stands, Playing-card Cases, Hand and Pole Screens, Inkstands, &c. Chessmen in ivory and bone, some superlatively beautiful.

HEAL AND SON'S LIST OF BEDDING, containing a full description of Weights, Sizes, and Prices, by which purchasers are enabled to judge the articles best suited to make a good set of Bedding, sent free by post, on application to their Factory, 196 (opposite the Chapel) Tottenham-court-road, London.

METCALFE AND Co 's NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose—1s. An improved Clothes Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes of improved graduated and powerful friction. Velvet Brushes which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Hollis-street.

CAUTION.—Beware of the words "From METCALFE'S" adopted by some houses.

FLORISTS TO HER MAJESTY, QUEEN VICTORIA, AND HIS MAJESTY, THE KING OF THE BELGIANS.

SELECT LIST OF CHOICE VEGETABLE AND FLOWER SEEDS,

GROWN AND SOLD BY

WILLIAM E. RENDLE & CO., Plymouth.

ESTABLISHED 1786.

Great attention is paid to the Seed Department of our Business, every sort being carefully proved before sent out. We grow some of the sorts ourselves, and procure the remainder from Seed Growers on whom we can place the fullest confidence for supplying true and genuine Articles. If, however, through any inadvertency, an error should at any time be made, we shall have much pleasure in sending three times the value in other Seed to compensate; and we make a general rule to take back all things that are not thoroughly approved of. And it is particularly desired that any deficiency in quantities, or inattention to orders, be at all times communicated to us. We can give reference to Gentlemen in almost every County in Great Britain and Ireland, who have procured Collections from us; and can produce UNSOLICITED *Testimonials of the highest character, if required.*

COLLECTIONS OF GARDEN SEEDS,

CONTAINING ALL THE CHOICEST SORTS, OFFERED AT THE FOLLOWING PRICES:

No. 1.—Complete Collection of 20 Quarts of Peas, and all other Seeds in proportion, for one year's supply ...	£2	10s.	0d.
No. 2.—Complete Collection in Smaller Quantities	1	10	0
No. 3.—Ditto ditto	1	0	0
No. 4.—Ditto ditto	0	12	6

THE GROWING QUALITIES OF EACH KIND OF SEED IS PROVED BEFORE SENT OUT.

The following will be the Sorts and Quantities furnished for a **No. I. COLLECTION,** *and contains a general assortment of all the best kinds of Vegetables known, which have been selected with scrupulous care and attention.*

PEAS—1 quart Rendle's first Early Green
2 ,, Early Prince Albert
4 ,, Early Warwick
2 ,, Woodford's Marrow
2 ,, Bedman's Imperial
1 ,, Flack's Dwarf Victory
2 ,, Blue Scimitar
4 ,, Blue Prussian
1 ,, Knight's Dwarf Marrow
1 pint Victoria Branching Marrow
1 ,, Bishop's Early Dwarf
BEANS, 4 qrts. Early White Long-pod
4 ,, Green Windsor
2 ,, Johnson's Wonderful
1 pint Scarlet Runners
1 ,, Dwarf French
BEET—½-oz. Rendle's Superb Crimson
½ oz. Whyte's Black Red
½-oz. Silver or Sea Kale
BORECOLE—¼-oz. Dwarf Curled
Packet Green Cabbaging
BRUSSELS SPROUTS—¼-oz. imported

BROCCOLI—¼-oz. Grange's Early Dwarf Cape
¼ ,, Early Purple Cape
Packet Adam's Superb White
Packet Legg's Late Dwarf White
,, True Walcheren
,, Chapple's Cream
,, Rendle's Improved Willcove
CABBAGE—half-oz. Shilling's British Queen
qr.-oz. Wheeler's Imperial
qr.-oz. Rendle's Early Admirable
half-oz. Early Cornish
qr.-oz. Large Paignton
half.-oz. Early Hope
qr.-oz. Red Dutch (pickling)
qr.-oz. Atkin's Early Matchless
SAVOY—half oz. Green Curled
Packet Catteil's Green Curled
CARROT—1 oz. Earliest Horn (for frames)
4 oz. Improved Altringham
2 oz. James's Green top
1 oz. White Belgian
CAULIFLOWER—qr.-oz. Large Asiatic

CELERY—Packet Seymour's Superb White
,, Large Manchester Red
,, Dewsbury Walnut-flavoured
CRESS—1 lb. Curled
CUCUMBER—Packet Rendle's Fine Ridge
,, Sion House
,, Fine Early Frame
DELAWARE GREENS—qr.-oz.
ENDIVE—qr. oz. Green Curled
LEEK—2 oz. Fine Large Broad-leaved Scotch
LETTUCE—qr.-oz. Green Coss
qr.-oz. Ady's Large Coss
qr.-oz. Bath Coss
hf.-oz. Drumhead Cabbage
qr.-oz. White ,,
qr.-oz. Ice ,,
qr.-oz. Maltese ,,
MUSTARD—1 lb. White
MELON—Packet Duncan's Green Flesh
Packet True Beechwood
ONION—6 oz. White Spanish
1 ,, Red Deptford

ONION—2-oz. James's Long Keeping
1 ,, Silver-skinned
1 ,, Tripoli
PARSLEY—4 oz. Rendle's Treble Garnishing
2 ,, Myatt's Treble Curled
PARSNIP—2 oz. Improved Guernsey
RADISH—4 oz. Wood's Earliest Frame
8 ,, Early Scarlet
4 ,, White and Red Turnip
SPINACH—1 lb. Round
½ lb. Prickly
TOMATOES—qr.-oz.
TURNIPS—4 oz. Rendle's Early 6 weeks Stone
4 ,, Early White Dutch
4 ,, White Stone
4 ,, Yellow Altringham
2 ,, Six Weeks Yellow
VEGETABLE MARROW—qr.-oz.
HERBS—Packet Sweet Basil
,, Sweet Marjoram
,, Summer Savory
,, Thyme

Complete Printed Lists of Nos. II., III., and IV. Collections can be forwarded by post on application.
If there should be any sorts that are not required in the above Collection, increased quantities of those most desired could be sent.

CHOICE VEGETABLES.

The following can be highly recommended as being very choice and valuable varieties, and will be FORWARDED FREE by Post, at **6d. per Packet, or Twenty Packets for 8s.**

BEET—Rendle's Superb Crimson (selected from roots of the richest colour)
Whyte's Black Red
BORECOLE—Green Cabbaging (valuable new variety)
BRUSSELS SPROUTS—True Imported
BROCCOLI—Legg's Late White
Adam's Superb White (a most excellent kind, ready in December and January)
Myatt's True Walcheren (saved by Mr. Myatt, the celebrated grower of Deptford)

BROCCOLI—Rendle's Improved Willcove (large late White variety—un[illegible])
CABBAGE—Rendle's Early Admirable (a most valuable Early Variety)
Warner's Incomparable (a very superior sort)
Shilling's British Queen
Atkin's Early Matchless
Barnes's New Early
Large Sprotboro' (an Immense variety)

CABBAGE—Enfield Market
Early Cornish (a valuable Early [illegible])
SAVOY—Catteil's Green Curled (superior to the common kind)
CARROT—Improved Altringham
James's True Green Top
CAULIFLOWER—Large Asiatic
CELERY—Seymour's Superb White
Large Manchester Red
Dewsbury Walnut-flavoured
COUVE TRONCHUDA—(Valuable new Vegetable)

ENDIVE—New Large Batavian Cabbage
LEEK—Large Broad-leaved Scotch
LETTUCE—True Drumhead Cabbage
,, Ady's Large Coss ,,
Ice Cabbage ,,
London Market ,,
ONION—True Spanish or Portugal
PARSLEY—Rendle's Treble Garnishing
Myatt's Extra Fine
PARSNIP—Improved Guernsey
TURNIP—Rendle's Six Weeks Stone
Early Snowball

ARNOTT'S "CHELTENHAM SURPRISE" CUCUMBER, 2s. 6d. per packet.

FLOWER SEEDS.

We have a very superior Stock of all the Newest Kinds, and as some of the Choicest Varieties are grown under our own inspection, we can warrant them to be quite new and correct to name.

SCALE OF PRICES SENT, POSTAGE FREE.

No. 1—100 Packets Choice Sorts, including all the best Hardy, Half-Hardy, and Greenhouse Annuals, Biennals, and Perennials ..	18s.	0d.
No. 2— 50 Ditto ditto ditto	10	0
No. 3— 25 Ditto ditto ditto ...	6	0
No. 4— 25 Packets Choice Named Imported German Stocks	7	0
No. 5— 12 Ditto ditto ditto	4	0
No. 6— 25 Packets Choice Named Imported German Asters	7	0
No. 7— 12 Ditto ditto ditto	4	0
No. 8— 10 Packets Choice Named Larkspurs	4	0
No. 9— 10 Ditto ditto Hollyhocks	4	0
No. 10— 20 Packets Choice Greenhouse Annuals	7	0
No. 11— 20 Packets Choice Greenhouse Perennials	10	0
No. 12— 20 Packets Choice Hardy Biennials and Perennials	7	0

*** ALL SENT POSTAGE FREE.

A useful Chart, giving the height, colour, and mode of raising the principal sorts of Flower Seeds, will be sent Gratis with each order.

No. I. COLLECTION OF FLOWER SEEDS.

Alonsoa incisa
Aster, fine mixed
Ageratum odoratum
Amaranthus tricolor
Anagallis, new blush
,, Phillipsii
Alyssum, sweet
Brachycome iberidifolia
Balsam, fine mixed
Bartonia aurea
Centaurea Americana
Chænostoma polyantha
Clarkia rosea, double
,, grandiflora
Clintonia pulchella
Coreopsis atrosanguinea
Convolvulus minor, new dark

Cuphea silenoides
Cacalia coccinea
Calendrinia grandiflora
Calliopsis picta
,, Drummondii
Campanula pyramidalis
Candytuft, new scarlet
,, Normandy
Catananche cærulea
Cockscomb
Collinsia bicolor
Collomia coccinea
Carthamus tinctorius
Clintonia elegans
Convolvulus major
Cuphea platycentra
Didiscus cæruleus

Delphinium, fine, mixed
Erysimum Perofskianum
Eschscholtzia crocea
Eutoca viscida
Elichrysum macranthum
Gilia nivalis; ditto tricolor
Godetia venosa
Heartsease, fine, mixed
Hollyhocks, ditto
Hibiscus Africanus
Hawkweed, new silver
Heliophila araboides
Ipomœa atroviolacea
,, grandiflora
Ipomopsis picta
Ice plant
Jacobæa, double

Kaulfussia amelloides
Lobelia ramosa
Lupinus Cruikshankii
Larkspur, fine German
Leptosiphon densiflora
,, androsaceus
Limnanthes Douglasii
Lupinus nanus
,, Hartwegii
Loasa aurantiaca
Lophospermum scandens
Malope grandiflora
Madia elegans
Mignonette
Martynia fragrans
Marygold, superb, French
,, African

Maurandya Barclayana
Mesembryanthemum tricolor
Nemophila striata
,, insignis
,, grandiflora alba
Nolana atriplicifolia
Œnothera rosea alba
Oxyura chrysanthemoides
Phlox Drummondii
Podolepsis gracilis alba
Papaver, fine mixed
Peas, sweet ,,
Pentstemon
Pink, Chinese
Platystemon Californicum
Portulacca Thellusonii
,, splendens

Primula sinensis
Polyanthus, fine mixed
Rhodanthe Manglesii
Schizanthus Grahamii
,, Hookerii
Schizopetalum Walkerii
Stocks, fine German
,, Victoria
,, White Pyramidal
Salpiglossis, mixed
Sultan, sweet
Sphænogyne speciosa
Thunbergia alata
Tropæolum canariense
Viscaria oculata
Xeranthemum lucidum
Zinnia coccinea

Complete printed Lists of Nos. II. and III. Collections can be forwarded by post on application.
If there should be any sorts in the above COLLECTION *not required, we shall have much pleasure in sending any other kinds that may be selected from our General Catalogue, which can be had on application Gratis.*

*** *All Orders above 2l. will be delivered, free of Carriage, by* MESSRS. PICKFORD and Co., *to any Station on the Great Western, Bristol, and Exeter, or South Devon Railways; or to any Town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers.*

The South Devon Railway is now open to Plymouth (Laira Green), and we now enjoy Railway communication to all parts of England and Scotland, and have made arrangements with Messrs. PICKFORD & Co. for the cheap delivery of our Goods to every Town in Great Britain. Any instance of Overcharge should be immediately communicated to us, as it is our interest to see that our Customers are charged at the lowest rates. Constant Steam communication from this Port to Cork, Dublin, Glasgow, Liverpool, London, Falmouth, and most of the principal Ports in the Kingdom.

COUNTING HOUSE, UNION ROAD. WILLIAM E. RENDLE AND CO., PLYMOUTH.

Printed by William Bradbury, of No. 6, York-place, Stoke Newington, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the county of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent Garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, March 8, [illegible].

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 10.—1849.] SATURDAY, MARCH 10. [PRICE 6d.

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GARDENERS' BENEVOLENT INSTITUTION.—Notice is hereby given of an ELECTION of TWO PENSIONERS on the Funds of this Charity. All Persons desirous of becoming Candidates will be required to send in their Testimonials and Certificates to the Committee on or before the 31st inst., after which time they will not be received.

By Order of the Committee.—E. R. CUTLER, Secretary.

97, Farringdon-street, London, March 10.

Printed Forms of Application may be had, on application to the Secretary.

SEYMOUR'S CELERY.

SEYMOUR'S WHITE CHAMPION CELERY is warranted a very first-rate sort, and now sending out for the first time by H. LANE and SON, Nurserymen, Great Berkhampstead, Herts.

Seymour's Celery, White Champion ... 2s. 6d. per packet.
" " Red Matchless ... 1 0 do.
" " Superb White ... 0 6 do.

Post-office orders or postage stamps from unknown correspondents

LARCH PLANTS, &c.

PETER BOOTH, NURSERYMAN, Falkirk, is selling off a very large stock of Transplanted LARCH plants, in sizes from 1 foot to 2½ feet. Transplanted Scotch Firs, from 9 inches to 2 feet; transplanted Spruce Firs, 1 to 1½ foot. Strong Transplanted Thorn Quicks, 2-year Seedling Pinus Austriaca, 2-year Seedling Scotch Firs, and 2 and 3-year Seedling Spruce Firs, all very fine plants, and at further reduced very low prices.

COLE'S SUPERB DWARF RED CELERY.—This splendid prize production, described in former advertisements, may still be obtained in sealed packets, with directions for cultivation, by enclosing 3s. 6d. to the subscriber, or to any respectable Seedsman in London or the country. The usual discount to the trade.

WILLIAM PORT AYRES, Brookland Nursery, and 4, Tranquil-place, Blackheath.—March 10.

ROSES.

A. PAUL AND SON have still a fine stock of all the most beautiful sorts of ROSES, which they will be happy to supply on the following advantageous terms—the selection of kinds being left to them.

Standards ..... 21s. to 30s. per dozen.
Dwarf Standards ..... 18s. "
Dwarfs..... 9s. to 18s. "

Varieties selected by the purchasers at Catalogue prices. Catalogues forwarded free by post, on the receipt of two postage stamps.—Nurseries, Cheshunt, Herts.

AIGBURTH SEEDLING STRAWBERRY, 25s. per 100.—25 strong plants of this fine St awberry (superior to British Queen, as to its hardy character and fruitfulness, and equal to it in flavour) may be had free by post for 8s. 6d., from JAMES TYRAN, Seedsman, 124, Park-road, Liverpool.

EVERGREENS.—If any person has a few Dwarf Evergreens, cut in odd forms and ball shapes, he may probably hear of a purchaser, upon writing particulars as to sizes, shapes, stating what sorts of Evergreens, with prices, to R. M., Post-office, Hunton-bridge, Watford, Herts.

ROSES FOR SALE, at Broom Houses, Fulham, near Parsons Green, and opposite the Wandsworth railway station. 80 rods of fine Roses, old stools, laid and fit to be bedded out in March. They are in the ground late in the occupation of Mr Perry, who has gone to Australia.—Apply to Mr. LEWIN, on the Premises.

Wanted, about 1000 turf sods for a Lawn.

NEW ZEALAND SEEDS.

MR. F. U. GLEDHILL, 20, Old Market-place, Halifax, Yorkshire, can supply packets each containing 50 different kinds of NEW ZEALAND FOREST, MYRTLE, and FLOWER SEEDS. Also Pine and Parasitical Seeds, collected by himself in that country. A packet will be sent free for 6s. 6d., either for a Post-office order or postage stamps.

SPLENDID NEW SEEDLING PANSIES, "ALBION," "AZORE," and "CANARY."

JOHN SCHOFIELD AND SON beg to offer the above fine SEEDLINGS for 10s. the set. To those who show the Pansy they will be indispensable. "Canary" is a yellow self, and without doubt the best of its class. For full description see their Catalogue. Also now ready, a fine healthy stock of the leading sorts of Pansies, Carnations, and Picotees. Terms for cash very low. Pansy seed, select, 2s. 6d. per packet.

*** Single plants of "Canary," 5s. each, sent free by post, with Catalogues on application.

Knowsthorpe, near Leeds, Yorkshire.

MIXED GRASS SEEDS.

WILLIAM MASTERS respectfully solicits commissions for the above.

Prepared for permanent pasture per bushel—8s. to 10s.
" " alternate cropping " 6s.
" " lawns ... per lb—1s. 6d.

Mangold Wurzel, 1s. per lb. Lucerne, &c. &c. Kitchen Garden Seeds of finest quality at moderate prices. Collections of Flower Seeds, in packets of 12, 3s. 6d.; 26, 5s.

Exotic Nursery, Canterbury.

Just published,

A PRICED CATALOGUE of PLANTS in the collection of CONRAD LODDIGES and SONS, NURSERYMEN, Hackney, which may be had upon application, enclosing six postage stamps.—Hackney, March 10.

TRAINED FRUIT TREES.

HUGH LOW AND CO. have to offer as below, at moderate prices. The trees are of the finest quality, with fruit-bearing heads.

STANDARD TRAINED PEACHES.

Grosse Mignonne, Red Magdalen, Barrington, Teton de Venus, Millett's Mignonne, Early Purple, Late Admirable, and Belle Chevreuse.

STANDARD TRAINED NECTARINES.

Red Roman, Newington, Elruge, Murray, New Early Newington, Scarlet Newington, Claremont, Brugnon, Vermash, and Violet Hative.

STANDARD TRAINED PLUMS.

Green-gage, Violet Hative, Reine Claude, Washington, Goliah, La Royale, White Magnum Bonum, Red ditto, La Delicieuse, and Imperial Diadem.

STANDARD TRAINED CHERRIES.

Blackheart, May Duke, Elton, Waterloo, Bigarreau, Adam's Crown Heart.—Clapton Nursery, March 10.

EVERGREEN OAKS.

RENÉ LANGELIER, NURSERYMAN, &c, St. Helier, Jersey, begs to offer Several Thousands of the above, well worth the attention of the public; they are sure of success, having been transplanted several times, and are of fine growth. Many may at once be with safety planted where they are intended to grow. A vast quantity are also fit for potting; they will require to be only a few months in pots, having no pivot or tap roots. Price 50s. and 60s. per 1000. A reference or remittance required from unknown correspondents.

CORNWELL'S VICTORIA RASPBERRIES.—G. C. can confidently recommend the above as superior to any sort ever offered. Prizes were awarded to them at the Hort. Society's Gardens, Royal Botanic Society's Gardens, and the Surrey Zoological Gardens, as being the best shown for size, colour, and flavour. The fruit in Covent Garden was sold at a higher price than any other. Strong canes to be had at E. CHARLWOOD'S, Covent Garden; W. and J. NOBLE'S, 152, Fleet-street; also of GEORGE CORNWELL, Market-Gardener, Barnet, Herts, at 1l 10s. per 100, or 4s. per doz. The usual allowance to the trade.

MESSRS. J. AND H BROWN are now sending out the under-mentioned SHRUBS and PLANTS, carefully packed, to any part of the United Kingdom or the Continent.

		s.	d.
25	New hardy Belgian Azaleas, on their own roots, with flower buds, one of a sort, by name	20	0
25	American Azaleas, ditto ditto ditto ..	15	0
25	Hardy flowering shrubs, one of a sort, by name ..	10	0
12	Rhododendrons, including scarlet, white, and rose, hardy varieties	12	0
	New hardy yellow Rhododendrons each 7s. 6d. to	10	6
6	Andromedas, of sorts, including floribunda, for ..	8	0
	Hardy Heaths, Kalmias, and Ledums, per dozen ..	8	0
6	Fine hardy Magnolias, one of a sort	10	0
50	Dwarf Roses, on their own roots, one of a sort, named	16	0
	Standard and half-standard Roses, per doz., 12s. and	15	0
	New crimson Moss and climbing Roses, per dozen ..	6	0
12	Tea Roses for greenhouse culture, one of a sort ..	9	0
	Glycine sinensis, extra fine plants, in pots 15 to 30 ft., ea.	3	6
	Cryptomeria japonica and 6 choice hardy Pinus for ..	10	0
12	Greenhouse Azaleas, one of a sort, blooming plants ..	25	0
12	Choice Camellias, by name, ditto, ditto	30	0
50	Choice flowering Greenhouse plants, one of a sort ..	45	0
24	Choice Ericas, one of a sort, by name	18	0
	Plumbago Larpentæ, good plants	3	6
6	Bulbs of the beautiful new Japan Lilies, one of a sort	12	0
	Double Italian Tuberose roots, per dozen	4	0
	Pæony roots, new double, white, pink, blush, and crimson, one of a sort, per dozen	9	0
25	Choice Herbaceous Border Plants, for	7	6
	Hardy Ferns, and other plants, for rockwork, per doz.	8	0
	Cinerarias and Calceolarias, strong plts, p. dz., 12s. &	18	0
	Fancy Geraniums, per dozen .. 12s. and	18	0
	Best Petunias and Verbenas, one of a sort, per dozen	6	0
	New scarlet and variegated Geraniums, Pentstemons, Salvias, Phloxes, Antirrhinums, Heliotropiums, Pansies, and Fuchsias, per dozen	6	0
	Strawberry plants, new sorts, per 100 3s. 6d. to	5	6
25	Papers of Choice Flower Seeds, 5s.; 50 Ditto, 10s; sent free by post. Also List of Greenhouse and Bedding plants, and seeds of all kinds.		

Albion Nursery, Stoke Newington, London, March 10.

DAHLIAS, 1849, raised by J. BUSHELL, Kennington-lane, London:—

DUCHESS—White, free bloomer, middle size, very easy growth. First class Certificates at Royal South London Floricultural, the London Floricultural, and other societies; favourably noticed in the various journals during the blooming season.—Plants in May, 10s 6d. each.

LA REINE—White, free bloomer, middle size, will bear very strong growing, J. B.'s locality not open enough.—Plants in May, 7s. 6d. each.

J. B. has offered the following prizes to be competed for in 1849, which have been accepted by the societies:—3l. for the best three blooms of Duchess, 2l. for the second, and 1l, for the third best, at the Royal South London exhibition. 15s. for the best single bloom of Duchess, 10s. for the second, and 5s. for the third best. 10s. for the best single bloom of La Reine, 5s. for the second, at the London Floricultural exhibition.

NEW PICOTEE, "THE GEM," 10s. 6d. per pair.

YOUELL AND CO. have much pleasure in offering the above to the notice of Amateurs as being the finest and most perfect red-edged PICOTEE yet raised. It has been successfully exhibited in the First Class winning stands at the Metropolitan Exhibitions of the past season, and is pronounced by the leading publications of the day as being a flower of the highest merits. The *Gardeners' Chronicle* speaks of it in the following terms:

"A first-rate flower; the petals are smooth on the edge, large, and well formed, of good substance, and diminishing gradually to the centre, forming a fine crown, without confusion, and whi e good."

Well-established plants, in pots, 10s. 6d. per pair; or, if preferred, per post, free. The usual discount to the trade, when three or more pairs are taken.

THE FINEST SHOW CARNATIONS, PICOTEES, AND PINKS.

YOUELL AND CO. are now executing orders from their celebrated collection of the above, comprising several thousand pairs of the finest varieties known, and is the most extensive and unique collection extant. The plants are very strong, healthy, and well rooted, and, if preferred, can be forwarded with safety per post, at the extra charge of 2s. per dozen pairs, the prices of which are as follows:

		£	s.	d.
12	pairs of very fine show flowers, by name, 1l. 4s. and	1	10	0
25	ditto ditto ditto 2l. 10s. and	3	0	0
12	pairs of newest and finest first class show flowers...	2	10	0
25	ditto ditto ditto ditto ...	5	0	0

Fine mixed border Carnations, 12s. per dozen pairs.

PINKS.

Finest first class flowers, 12s., 18s., and 24s. per dozen pairs.

Tigridia conchiflora, a beautiful hardy bulbous plant, producing large yellow flowers spotted with crimson, 6s. per dozen.

PANSIES.

Finest first class varieties, well-established, in small pots, or per post free, 10s. to 18s. per dozen.

Catalogues to be had on application.

30 packets of newest and choicest Flower Seeds, per post free, for 6s.—GREAT YARMOUTH NURSERY.

GAINES begs to inform Amateurs and Nurserymen he will send out next week the NEW SEEDLING CALCEOLARIAS raised by Mr. Kingborn and himself; also his NEW SEEDLING FANCY PELARGONIUMS that obtained several prizes at the exhibitions near London in 1848. A Descriptive List of the above can be had by applying at the Nursery, Surrey-lane, Battersea.

FIRST-CLASS GERANIUMS, FUCHSIAS, VERBENAS, &c.

HENRY WALTON begs to inform his numerous friends and the public, that his Descriptive Catalogue of the above is now ready, containing all the novelties of the season. It may be had on application by enclosing one postage stamp; the Fuchsias are strong and healthy, and comprise the leading varieties of last spring, and are now ready to send out, from 8s. 6d. to 12s. per dozen.

Edge-end, Marsden, near Burnley, Lancashire.—March 10.

GRASS SEEDS.

SUTTON AND SONS having for upwards of 30 years been engaged in collecting GRASS SEEDS, and laying down land to Permanent Pasture, can supply Seeds, properly assorted to suit any of the various soils of Great Britain, so as to insure a good Pasture, at a very moderate expense, viz.:

	£	s.	d.
THE VERY BEST SORTS OF GRASSES AND CLOVERS FOR PERMANENT PASTURE, mixed expressly for the soil, per acre	1	12	0
GOOD PRODUCTIVE PERMANENT GRASSES, where the appearance is not an object, per acre ...	1	5	0
TRUE ITALIAN RYE-GRASS, per bushel	0	6	6
GIANT SAINTFOIN, per bushel	1	5	0
FINEST LAWN GRASS SEEDS, consisting solely of the finest and shortest growing kinds, per bushel 25s., or gallon	0	3	6
SUTTON'S RENOVATING MIXTURE of Perennial Clovers and fine Grasses, for improving old Pastures (6 to 8 lbs. per acre required), per lb.	0	1	0

Fresh Lucerne, per lb., 10d.; French Furze, do., 1s.; White Belgian Carrot, Large Cattle Parsnips, Yellow Globe and other Mangold Wurzels, Kohl Rabi, Drumhead and other Cabbages, at the lowest market prices.

*** Goods delivered free to London, Bristol, or Basingstoke.

JOHN SUTTON and SONS, Reading, Berks.

SEEDS.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE for 1849, sent free by post on application. We beg to offer the following in collections, including many choice new sorts.

VEGETABLE SEEDS.

	£	s.	d.
A complete Collection, including Thurston's Reliance, Dancroft Rival, Fairbeard's Surprise, British Queen, and other fine Peas, 20 quarts in all, and all other Vegetable Seeds, best and newest kinds, in proportion, for	3	3	0
The same Collection, in smaller quantities	2	2	0
Do. do. do.	1	5	0
A Collection suitable for a small garden	0	15	0

A list of the sorts furnished if required.

SELECT FLOWER SEEDS.

Free by post, with full directions for sowing, heights, colours, &c., viz.:—

	s.	d.
100 varieties best and newest Annuals	15	0
50 varieties for 8s. 6d., 30 for 5s. 6d, 20 for	4	0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7s. 6d., or 12 do.	5	0
20 varieties best Greenhouse Annuals, 7s. 6d., 12 for ...	5	0
20 varieties choice Greenhouse Perennials, 10s. 6d., 12 for	7	6
20 vars. choice hardy Biennials and Perennials, 7s. 6d., 12	5	0
36 varieties imported German Stocks	5	0
20 ditto ditto, 3s. 6d; 12 for	2	6

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of 2l. and upwards articles presented extra. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

STRONG ONE-YEAR SEEDLING OAKS.

JAMES MELDRUM, having an immense stock of the above strong seedlings, is determined to offer them on the lowest possible terms. Prices will be furnished on application.—Peat Lane Nursery, Kendal, March 10.

TO MELON GROWERS.

FLEMING'S NEW HYBRID PERSIAN having been awarded First Prizes at all the Chiswick Shows of the Horticultural Society of London last season, needs no further comment.

Fleming's New Hybrid Persian,	per packet—	2s. 6d.
,, Ispahan	,,	.. 1 6
Seymour's Golden Perfection	,,	.. 1 6

From unknown correspondents post-office orders or postage stamps can be sent to H. LANE & SON, Great Berkhampstead.

WILLIAM MASTERS, Exotic Nursery, Canterbury, having the largest stock and the greatest number of species and varieties of Hardy Trees, Flowering Shrubs, Evergreens, and American Plants, trained and maiden Peaches, Nectarines, &c., in the neighbourhood, begs to solicit commissions for them, which he is prepared to execute as cheaply as they can be supplied at any other establishment in the country.

EDWARD GEORGE HENDERSON, Wellington-road, St. John's-wood, London, is now sending out

ACHIMENES PATENS MAJOR, at 3s. 6d.—A variety worthy of a place in every collection; the habit of the plant is good, and the flower a rich dark plum colour.

ACHIMENES GHIESBRICHTII, at 5s.—This is one of the most beautiful of the whole tribe, and quite distinct; the habit is close and compact, and it is a profuse bloomer. The length of flower 1½ inch, a rich vermillion colour, and has a beautiful glossy appearance.

ACHIMENES KNIGHTII, white, profuse bloomer, dwarf habit, 3s. 6d. The above can be forwarded by post.

BROWALLIA JAMESONII, 5s.

PLUMBAGO LARPENTÆ, nice plants, in free growth, 3s. 6d.

E. G. H. also begs to offer the following at their annexed prices, when left to his selection, and which will be much to the advantage of the purchaser.

FANCY GERANIUMS, 12s., 18s., and 30s.

CINERARIAS, distinct in colours, 12s. and 18s. per dozen.

INDIAN AZALEAS, ditto, fine large plants, at 12s., 18s., and 30s. per dozen. The list will contain a description of more than 180 of the choicest varieties.

ERICAS, distinct varieties, 12s., 18s., and 30s. per dozen.

EPACRISES, ditto, 12s. and 18s. per dozen.

GREENHOUSE PLANTS, and Ditto Climbers, 12s., 18s., and 30s. per dozen.

STOVE PLANTS and Stove Climbers, 18s., 30s., and 42s. per dozen.

The Trade supplied.

N.B. Catalogues for 1849 will be published on the 1st of March. No. 1 will contain a list of Stove and Greenhouse plants; 2, Ericas and Epacris; 3, Azaleas, Rhododendrons, and Camellias; 4, Cinerarias and Geraniums; 5, Select Miscellaneous plants; and in April, 6, Bedding plants.

AMERICAN NURSERY, BAGSHOT, SURREY.

Near the Farnborough Station, on the South-Western Railway

JOHN WATERER begs to state that he is prepared to execute orders for the following Splendid Hardy RHODODENDRONS. Good strong bushy plants, the colours of which consist of clear and spotted Whites, Scarlet, deep Rose, Dark Purple, Rose-edged, &c., from 30s. to 42s. per dozen.

Album elegans	Nealii	Lyonese
,, speciosum	Pellucidum	Victoria regina
Atrorubrum purpureum	Perspicuum	Multimaculatum
	Pictum	Guttatum
Catawbiense bicolor	Purpureum elegans	Hyacinthæflorum
,, flora pleno	Caelestinum	Formosum
,, splendens	Bellonum	Glenuyanum
Campanulatum	Roseum elegans	Gloriosum
Candeutissimum	,, album	Macranthum
Cyaneum	Leopardi	Marginatum
Delicatissimum	Variabile	Maculatum novum
Eburneum	Splendidum	Mirandum
Everestianum	Russellianum	Maculosum
Nivalcum		

Standard Rhododendrons, 7s. 6d., 15s., and 21s. each and upwards.

AZALEAS, good mixed sorts, 18s. to 21s. per dozen. The very best kinds in cultivation, 24s. to 30s. per dozen.

KALMIA LATIFOLIA, handsome bushy plants, 1 to 1½ foot, 5l. per 100. Larger ditto, 1s. 6d. to 2s. 6d. each. Fine specimens for lawns, 10s. 6d. to 63s. each.

HARDY HEATHS of the very best varieties, 50s. per 100.

To the above, J. W. invites particular attention, and being the largest grower of American plants, has induced him to offer them at the low prices quoted. Also the following, for GAME PRESERVES.

RHODODENDRON PONTICUM, the very best evergreen for cover, being free from attacks of hares and rabbits, bushy healthy plants, 10s. 6d. per 100. Larger ditto, 15s. to 21s. p. 100.

BERBERIS AQUIFOLIUM, bushy, 50s. per 1000. Larger ditto, 60s. per 1000.

COMMON LAURELS, good bushy stuff, 10s. per 100. Larger 15s. to 20s. per 100.

PRIVET, EVERGREEN, 8s. to 12s. 6d. per 100.

CEDARS OF LEBANON, 3 to 5 feet, very bushy and handsome, very suitable for avenues, 3s. 6d. to 5s., and 7s. 6d. each.

IRISH YEW, very handsome and close grown plants, from 3 to 8 feet, 3s. 6d. each, and upwards.

STANDARD WEEPING LARCH, 6 to 9 feet stems, with very handsome pendulous heads, 5s. to 10s. 6d. each.

SPRUCE, SILVER, and WEYMOUTH FIRS, 6 to 12 feet.

TULIP TREES, Weeping and Purple Beech, very large, and all in a fit state for removal.

FOREST TREES of all kinds, suitable for Copse and other planting.

Planting to any extent done by contract. Catalogues forwarded on application.

OLD-ESTABLISHED NURSERY STOCK FOR SALE.
SUNBURY NURSERY, MIDDLESEX.

J. T. WILLMER, Senior, begs respectfully to announce that he has determined upon relinquishing the Nursery Business, which he has carried on at the above premises for the last 32 years; and in order to effect an immediate clearance of his Land, he has resolved to dispose of the whole of his extensive and valuable stock of EVERGREENS, SHRUBS, and FOREST TREES, at an immense reduction of price. The stock comprises Fanned Yews, 5 to 7 feet; Arbutus, 3 to 5 feet; Laurestinus, 3 to 4 feet; Aucuba, 2 to 4 feet; Phillyrea, 6 feet; Variegated Box, 3 to 5 feet; Variegated Hollies, 3 to 7 feet; Green do., 2 to 4 feet; Sweet Bay, 2 to 4 feet; Yucca gloriosa, strong; Pæony moutans; Alexandrian Laurel; Rhododendron hirsutum, ferrugineum, and ponticum; Spruce Fir, 4 to 6 feet; Weymouth Firs, 5 feet; Balm of Gilead do., 4 to 5 feet; Scotch and Larch, 6 to 8 feet; Common Laurel, 2 to 5 feet; Portugal do., 2 to 4 feet; 2 years Seedling Quick; 3-years do.; English Elm, Oak, Beech, Lime, Horse Chestnut, Birch, Syringa, Gueldre Rose, 5 to 7 feet; new Scarlet and other Thorns; Standard Cherry Trees, of sorts, 7 feet in stem; Currants, in new varieties; large Lancashire Gooseberry, of sorts, &c. &c. As this is a genuine Sale, it is an opportunity offered to parties about to form or extend Plantations such as is seldom offered. Applications, personally or by letter, will meet with prompt attention. The Floricultural business will be continued as hitherto.

HUGH LOW AND CO. have to offer very fine strong roots of Grayson's GIANT ASPARAGUS, 2 to 3 years old, at 2s. 6d. to 3s. 6d. per 100.—Clapton Nursery, Mar. 10.

TRUE DRUMHEADS FOR CATTLE, at T. WELLAND'S, Wheeler-street, near Godalming, Surrey, at 4s. 6d. per 1000, crates included. Cauliflowers, 3s. 6d. per 100.

SAVOY, "MARCELLIN."—The most delicate in flavour of its class, and will stand the severe winters of northern Germany. It should be sown from the 15th to the end of June, transplanted in July. It is highly recommended. Price, 3s. per oz., or 6d. per packet; can be forwarded per post on receipt of seven postage stamps. Also, every description of Vegetable and Flower Seeds at the lowest prices.

Agent for the New Enamelled Labels, and Bower's Improved Watering-pot.—DUNCAN HAMS, 108, St. Martin's-lane, Charing-cross, London. Catalogue of prices sent free.

JOHN B. SMITH begs most respectfully to invite the attention of the Nobility, Gentry, and the Trade to his new and splendid collection of hardy yellow RHODODENDRONS, AZALEA INDICAS, CAMELLIAS, LILIUMS, &c., Catalogues of which may be had by enclosing a postage stamp.
Norbiton Nursery, Kingston, Surrey, March 10.

HART AND NICKLIN, FLORISTS, Guildford, Surrey, beg to offer the public the undernamed plants.

PANSIES.

FIREBRAND, a seedling of 1847, most brilliant colours, in the way of Silverlock's Prince of Wales, price 2s. 6d.

The following unique collection for 20s.:—Attraction, Aurora, Bell, Berryer, Blooming Girl, Brutus, Climax, Commander, Great Britain, Hector, King of Holland, Mary Jane, Nonsuch, Matilda, Prince of Orange, Queen of Whites, Rainbow, Satirist, Supreme, Titian (Turner), and Zabdi.

And good named varieties, 6s per doz.

GERANIUMS.

Ariel, Forget-me-not (Lyne), Aurora, Competitor, Hebe's Lip, Isabella, Arabella, Rosy Circle, Orion, Desdemona, Marc Antony, and Master, for 20s. Warranted strong plants.

BENJAMIN R. CANT feels much pleasure in introducing the undermentioned to the notice of his agricultural friends and supporters. He can with confidence recommend the Seeds, as he has used the greatest care in his selection of the best stocks, the growth of which has been under his immediate notice.

		s.	d.
LONG WHITE BELGIAN CARROT ..	per lb.	1	0
LONG RED ALTRINGHAM DITTO ...	,,	1	0
MANGOLD WURZEL .	,,	1	0
LARGE YELLOW GLOBE DITTO .	,,	1	0
LARGE RED DITTO ..	,,	1	0
SKIRVING'S IMPROVED SWEDE TURNIP	,,	1	0
FINE HOLLOW-CROWN PARSNIP .	,,	1	6
LARGE CATTLE CABBAGE .	,,	2	6
STRONG THREE YEARS TRANSPLANTED WHITETHORN QUICK, per 1000. ...	,,	8	0
DITTO DITTO BLACKTHORN DITTO ..	,,	8	0

N.B. Every description of Vegetable and Flower Seeds, Flowering and Evergreen Shrubs, Fruit, and Forest Trees. A few cwt. of Long White Belgian Carrot Seed, at 3l. 15s. per cwt.
St. John's-street, Nursery, Colchester.

MESSRS. JACKSON AND CO., NURSERYMEN and SEED MERCHANTS, beg to offer the following, of the very finest quality, at reduced prices.

		s.	d.
12 Indian Azaleas, of the most beautiful varieties, large plants ..		12	0
12 Ericas, large plants,	do. do.	18	0
12 Epacris,	do. do.	18	0
1 ,, Albertii, new, brilliant scarlet ...		21	0
12 Stove Plants, rare and showy, large plants .		30	0
12 Greenhouse Plants,	do. do.	18	0
100 Fine proved Hollyhocks .		25	0
100 Dwarf Roses, in 50 named fine sorts ...		20	0
100 Do. in 100 fine prize sorts, named		40	0
25 Standard Roses, in 25 splendid prize sorts .		40	0
100 Species and varieties ornamental, flowering, and Evergreen Shrubs, correctly named		40	0
12 Very beautiful varieties Ghent Azaleas, on their own roots, strong bushy plants, 2 feet high .		24	0
25 Rhododendrons, the handsomest in cultivation, fine large and well grown plants ...		84	0

Fine true Altringham Carrot Seed, own growing, 2s. 6d. per lb., 30s per stone.

An extensive and fine stock of trained Fruit trees, at unusually low prices. A Catalogue forwarded on application. All goods delivered free of expence on the railway, and a reference or remittance is respectfully solicited from unknown correspondents. The Nurseries, Bedale, Yorkshire.

AGRICULTURAL SEEDS.

BASS AND BROWN beg to offer the following, all of the finest quality of growth and stocks. Priced Lists of Agricultural Seeds forwarded by post on application. Carriage free to London.

CARROT, Large White Belgian; do., Long Green-top Red Altringham. CATTLE PARSNIP.

MANGOLD WURZEL, Yellow and Red Globe; do., Long Red and Yellow.

WHITE SILESIAN SUGAR BEET.

SKIRVING'S, and PURPLE-TOP, and other SWEDES; also, SCOTCH, TANKARDS, DALE'S HYBRID, and all other descriptions of TURNIPS, true to their kinds.

LARGE CATTLE DRUMHEAD CABBAGE

PACEY and ITALIAN RYE-GRASSES.

And every other description of Agricultural Seeds at the lowest prices.

We also wish to recommend our selection of GRASSES mixed for Permanent Pastures, and adapted to different descriptions of soils. Having for many years devoted considerable attention to the selection and supply of these Grasses, we are enabled to offer them with a confidence of their giving satisfaction. Price 10s. per bushel, including a proportion of the heavier varieties separate, of Clover and other Grasses; 3 bushels recommended per acre. Also, fine mixed Dwarf Lawn Grasses, 1s. 3d. per lb

Prices to the Trade on application.

Seed Establishment, Sudbury, Suffolk.

SAMUEL COCKING, SEN., SEEDSMEN, &c., Biggleswade, Bedfordshire, has great pleasure in informing his Friends and Agriculturists in general that he has an abundant supply of the Liverpool and every other description of TURNIP SEEDS, which he can strongly recommend; Yellow Globe MANGOLD WURZEL SEED, Red ditto, Gigantic Long Red ditto, and Long Yellow ditto; large White Belgian CARROT SEED, Red Altringham ditto, and Long Red Surrey ditto; CATTLE PARSNIP SEED, and also a large quantity of strong two years old QUICK, at 2s. per 1000.

MITCHELL'S ROYAL ALBERT RHUBARB, so highly recommended by the faculty, and so justly praised by epicures.—W. M. is now sending large quantities of the above most wholesome and delicious vegetable to Covent Garden market, from the open ground, which for its extraordinary earliness, richness of flavour, magnificence of colour, and large size, surpasses by far everything of the kind ever introduced to the public. Roots of the above most excellent variety may be planted to the beginning of April. Strong one-year planted roots, 2s. 6d. each. Post-office orders to be made payable to WILLIAM MITCHELL, Enfield Highway, Middlesex.

GOOD TWO YEARS QUICK at 1s. per 1000.—A quantity of good and well-rooted 2 years QUICK to be sold as above, in consequence of the Advertiser not having room to transplant it. ENGLISH OAKS, 3 to 4 and 4 to 6 feet; SPRUCE FIRS, 2 to 3 feet; SCOTCH DO., 3 to 4 and 4 to 6 feet; BLACK ITALIAN POPLARS, 5 to 7 feet; PORTUGAL LAURELS, 2½ to 4 feet; with all kinds of Forest and Ornamental Trees, at very reduced prices, graduated according to the quantity taken. Terms, cash or reference.

SUSAN WOOD, Nurseries, Huntingdon.

FINAL PLANTING OF THE RANUNCULUS.—As the final planting of our superb Collection is about to take place, we beg to recommend early orders from persons desirous to plant. Selections, in strong roots, at the following reasonable charges, and sent free by post, with printed directions for planting and treatment:

50 Splendid seedling varieties, with names, 2s.
25 Ditto ditto ditto, 1l. 2s. 6d.
50 Fine older varieties, 15s.; or 25 for 8s.
100 Finest mixture, 10s.; 100 fine border varieties, 5s.; or post free, 6s.

DOUBLE ANEMONES, finest mixture, 2s. per doz., or 12s. per lb.; fine, 1s. 3d. per doz., or 8s. per lb.

Anemones free by post, 3d. per dozen extra.

BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

UNEQUALLED CUCUMBER.

EDWARD TILEY begs to state it is worthy of remark that his unequalled CUCUMBER, the "VICTORY OF BATH" has surpassed all others of the hardy kinds of last season, and has been successfully grown by amateurs in the open air without frames, against a wall, or trained to trellis, it is a most productive bearer, bearing from 5 to 7 fruit on each joint; length, 18 to 24 inches. It has been highly approved by numerous growers for the last three years. Packets of 10 seeds, 2s. Sold at EDWARD TILEY'S general Seed Shop, 16, Pulteney Bridge, Bath. The above will be sent postage free, on the receipt of a Post-office order, or the amount in penny postage stamps.

GENUINE SEEDS FOR MARCH SOWING.—A packet of 4000 selected POTATO SEEDS, with directions for sowing, &c., 1s. Per packet—s. d.

"BOA CONSTRICTOR" MELON, grows 6 ft. in length	1 0
VEGETABLE and FLOWER SEEDS, any variety ..	0 6
Double LARKSPURS, 10 varieties, separate	1 0
Ditto Ditto Ditto mixed	0 6
Double BALSAMS, Camellia-flowered	1 0
ZINNIA ELEGANS	0 6
SALPIGLOSSIS, fine mixed	0 6
STOCK, superfine Scarlet Giant	0 6

100 varieties of Annuals, 10s.; 50 ditto, 5s.; 25 do., 2s. 6d.
Treatise on Potato Culture, 6d.
All post free, on receipt of cash or postage stamps.
ABRAHAM HARDY and SON, Seed Growers, Maldon, Essex.

SUPERIOR GERMAN ASTERS, 20 varieties mixed, see *Gardeners' Chronicle*, September 23d, 1848. "ASTERS: *Hardy and Son*. Your Asters reached us in excellent condition; they are beautiful specimens of that showy flower." Large packets, 1s., or 12 postage stamps, post free.

ABRAHAM HARDY and SON, Seed Growers, Maldon, Essex.

SEED POTATOES.

CHARLES SHARPE, NURSERYMAN and SEEDSMAN, respectfully solicits the attention of the Nobility and Gentry to his POTATOES for Seed. The sorts are very early and productive, and have given general satisfaction to Potato growers in all parts of the Kingdom. They are offered at the following prices, packing included. Per bushel of 56 lbs.

Soden's Early Oxford Potatoes	8s. 0d.
Early Ash-leaved Kidneys	8 0
Early Round Frame . .	7 0
Early Cockneys	6 0
Early Manley	6 0
Fox's Seedling, fine for forcing	6 0
Second early sorts, for Winter and Spring use.	
American Native Potatoes . ..	5 0
York Regents	5 0
Kentish Pink Kidneys	4 0
Forty-fold . .	4 0

Orders will be forwarded on the receipt of a Post-office Order, and great care will be taken to ensure their safe delivery. A liberal allowance made to the Trade.

CHARLES SHARPE, Seedsman, Wisbeach, Cambridgeshire.

MILTON'S BEE-HIVES.—These Hives are made in every variety, for the purpose of taking the honey without killing the bees. They are composed of various materials, to suit all climates, and may be relied upon for practical use. Their simplicity of construction and easy management ensure success.

BEE GLASSES of all sizes, and every article connected with the Apiary supplied. A Sheet of Illustrations of Bee Hives, &c., 1s. The "Practical Bee Keeper," by JOHN MILTON, 4s. 6d.
10, Great Marylebone-street, Wimpole-street, London.

SILKWORMS AND WHITE MULBERRY PLANTS.—To meet the growing taste for cultivating British Silk, the advertiser has on sale a most healthy stock at the following low prices:

Plants, per 100—1 year, 10s.; 2 years, 15s.; and 3 years, 25s.

Silkworms' Eggs of the best kind, 1s. 6d. per 1000. Orders punctually executed, inclosing a post-office order, addressed to GEORGE BALCHIN, Gardener, Spring-place, Godalming, Surrey.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averruncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	,, Knives, various
Borders, various patterns	Hammers	,, Saws
Botanical Boxes	Hand-glass Frames	,, Scissors
Cases of Pruning Instruments	Hay Knives	,, Shears [riety.
Chaff Engines	Hoes of every pattern	Rakes in great va-
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Daisy Rakes	Hotbed Handles	Scythes
Dibbles	Ladies' Set of Tools	Scythe Stones
Dock Spuds	Labels, various patterns, in zinc, porcelain, &c.	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
,, Stands in Wire and Iron	Monographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanic Bordersand Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
,, Loops	Mowing Machine	Trowels
,, Rollers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extracters and Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

EVERGREENS.—Fine young healthy Evergreens for immediate sale.

	per 1000
10,000 Laurels, 2 to 3 feet	30s.
10,000 Ditto 1 to 1½ foot	20
10,000 Evergreen Oaks, 2 years	30
5,000 Laurustinus, 1 to 1½ foot	50
	per 100
3,000 Tree Box, 3 to 4 ft.	21s.
6,000 Ditto 2 to 2½ ft.	16
4,000 Ditto 1 to 1½ ft.	12
1,000 Aucuba japonica, 9 inches	12
1,000 Cedar of Lebanon, seedling	12s.
200 Arbutus, 2 to 3 feet	30
200 Bays, 1½ to 2 feet	40
500 Ditto, 9 to 12 inches	16
200 Pole Roses	21
500 Ribes sanguineum	12
300 Honeysuckles	16
2,000 Gooseberries and Currants	16
1,000 Tree Violets	16

The above are well-rooted, healthy, young stock, and will be delivered free to London. Apply to Mr. KERNAN, Seedsman, Great Russell-street, Covent-garden, London.

JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester, respectfully informs the readers of this Paper, that he has a large stock of fine Show varieties of CARNATIONS, PICOTEES, and PINKS; and this being the best season for planting out, he respectfully offers them as below.

Carnations and Picotees, fine show varieties, 25 pairs, 20s.
Fine Show Pinks, 25 pairs ... 8s.
Package, &c., included.

Auriculas, Alpines, Polyanthuses, &c. Catalogues had on prepaid application. Post-office orders to be made payable at Manchester.

NEPENTHES DISTILLATORIA.

JAMES DICKSON AND SONS, NURSERYMEN, SEEDSMEN, and FLORISTS, (Sole growers from Seed), beg to direct the attention of the Trade to their splendid collection of the above plant. Orders to any extent will be executed punctually if sent within six weeks from this date.

Strong healthy plants at the undernoted prices.

10 plants	£5 5 0
20 "	7 10 0
50 "	12 10 0

N.B. Any person well acquainted with the general superintendence and cropping of a Nursery may hear of a good situation by applying to the above firm. Unexceptionable testimonials will be required.

32, South Hanover-street, Edinburgh, March 10.

THOM'S SEEDLING STRAWBERRY.

ROBERT THOM, MARKET GARDENER, is now sending out his STRAWBERRY, as formerly advertised in this Paper of August 26, in which a description will be found.

In consequence of the too prevalent practice of recommending articles of the kind that are of no real value, R. T. was induced to submit his beds when in fruit to the inspection of competent and respectable parties, whose testimony is given as under.

"We having seen THOM'S Seedling Strawberry when in full bearing, feel pleasure in corroborating the description formerly given of it, and in bearing our testimony to its worth as a distinct new Strawberry, and one of the best under cultivation.

"THOMAS MILNE, Nurseryman, Sunnyside
"THOMAS DARLING, Gardener, Hoodhill
"GEORGE CARDNO, of Smith and Cardno's, Seedsmen, Aberdeen
"WILLIAM GALLOW, Gardener, Scotstown
"JAMES ALEXANDER, of Dickson and Son's, Edinburgh."

"Thom's Seedling Strawberry.—We must not omit noticing a basket of Seedling Strawberries, which, through informality, were not entered for competition. They were raised by Mr. ROBERT THOM, Gardener, Cornhill, and, judging from the quality of the specimens, are well deserving the attention of the grower of this delicious fruit. The colour is rich, and the flavour very fine."—*Aberdeenshire Horticultural Society.*

"Thom's Seedling Strawberry.—At a show of the Hortus Club on Wednesday, there was presented for exhibition a basket of Seedling Strawberries, grown by Mr. THOM, at Cornhill Gardens. They are a pretty looking variety, of good size, well shaped, and reported to be a remarkably good bearer; their flavour is delicate and fine, and they are very suitable for preserving. The Seedling, we understand, has been highly approved by eminent practical judges."—*Aberdeen Journal.*

As R. T. has only a limited stock of fine strong runners to dispose of, early orders are requested, which will be executed in rotation, at 1l. 1s. per 100; 25 plants sent post free for 7s. 6d. The usual discount allowed to the Trade.

Agents:—Messrs. Smith and Cardno, Seedsmen, and Messrs. Benjamin Reid and Co., Seedsmen, Aberdeen, Messrs. Dickson and Sons, Inverleith Nursery, Edinburgh; Messrs. Hurst and M'Mullen, Seedsmen, Leadenhall-street, London, Mr. George Chivas, Seedsman, 108, Eastgate-street, Chester.

Orders addressed to R. THOM, Cornhill, Aberdeen, will be punctually attended to.—Cornhill Gardens, Aberdeen, Mar. 10.

TRUE GIANT SAINTFOIN.

SUTTON AND SONS have now for sale a few bushels of this valuable Seed, at 25s. per bushel. Orders to be addressed JOHN SUTTON and SONS, Reading, Berks.

Extract from the Reading Mercury of March 3, 1849.—"THE GIANT SAINTFOIN: An experiment was made by the Messrs. SUTTONS, last season, which proved its superiority over the common Saintfoin, in a remarkable degree. The present appearance of the two kinds, as they may be seen growing together in the same plot of land, is most convincing as to the superiority of the new variety, and farmers and others interested in this important article would do well to avail themselves of the advantages of a visit to Messrs. SUTTON'S sample grounds at this season, where many other kinds of Grasses in the early stages of their growth, all distinctly labelled, give some valuable indications of the various properties they respectively possess."

THE "QUEEN" MELON.

EDWARD TILEY begs most respectfully to apprize the Nobility and Gentry that he has procured the whole of the stock of seed of the above superb Melon, from one of the most noted growers in the West of England. This Melon is allowed to be by competent judges, who have seen it, the earliest and finest flavour grown; it has proved itself by competition for the last three years to be the best yet known. It has been awarded three first prizes. It is a handsome shape, very thin skin, green flesh, and melting flavour, not liable to crack or lose its flavour when kept, as most others do: it weighs from 5 to 7 lbs.

This superb Melon is well adapted to small growers, being a very free setter, very productive, and requires less heat than any yet out. Sold in packets of 7 seeds, 2s. 6d.; with also the following varieties:

Bowood green flesh Melon (true)	...	6 seeds	1s. 0d.
Ispahan (true)	...	10 "	1 0
Terry prize (true)	...	10 "	1 0
Beechwood (true)	...	10 "	1 0
Cuthill's (true)	...	10 "	1 0
Emperor green flesh	...	10 "	1 0
Windsor prize	...	10 "	1 0
Egyptian green flesh	...	10 "	1 0

Two packets selected of the latter varieties will be included with a packet of the Queen Melon for 4s.

BROCCOLI.—The three best varieties in cultivation are the Walcheren, Willcove, and the Tamworth, at 1s. each per packet.

Sold by EDWARD TILEY at his General Seed-shop, 16, Pulteney-bridge, Bath; the whole, or any part of the above, will be sent postage free. A remittance must accompany the order; or the amount in 1d. postage stamps.

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the EXHIBITIONS OF FLOWERS AND FRUIT, in the Society's Garden, in the present season, will take place on the following days, viz.: SATURDAY, May 5; SATURDAY, June 9; and WEDNESDAY, July 11; and that TUESDAY, April 10, is the last day on which the usual privileged Tickets are issued to Fellows of the Society. 21, Regent-street.

UNIVERSITY COLLEGE, LONDON.—ELEMENTARY COURSE OF BOTANY.

PROFESSOR LINDLEY will commence a Course of Lectures on BOTANY, to a Junior Class, on TUESDAY, March 20, at 8 o'clock, A.M. Subject: The Distinctions between the Principal National Classes and Orders of Plants belonging to the Flora of Europe.

The Course is adapted to persons commencing the Study of Botany. Fee, 2l. The Course to the Senior Class will commence on the 1st of May.

ROBERT E. GRANT, M.D., Dean of Faculty of Medicine.
THOMAS H. KEY, A.M., Dean of Faculty of Arts.
CHARLES C. ATKINSON, Secretary to the Council.
March 10, 1849.

JOSLING'S ST. ALBAN'S GRAPE.—Fine 2 years-old plants of the above, carriage paid to London, 10s. 6d each, usual allowance to the trade. A remittance must accompany the order.—ROBERT JOSLING, Seedsman, St. Alban's.

NEW AND SPLENDID SEEDLING ANTIRRHINUMS.

J. FOWLE'S CATALOGUE of his choice collection of ANTIRRHINUMS, which were admired by all who saw them at the Metropolitan Exhibitions of last season, is now ready; it contains Fuchsias, Fancy Geraniums, Verbenas, Petunias, Herbaceous Plants, &c., and may be had on application.

J. F. will have ready to send out the first week in April, his four seedling Antirrhinums, Woolesii, 7s. 6d. each; Queen Victoria, 7s. 6d.; Prince Albert, 5s.; and Defiance, 5s.

Holland Nursery, Holland-street, Brixton-road, Kennington, Surrey.—March 10.

NEW RED CONVOLVULUS MAJOR.—Packets of this beautiful climbing annual may be obtained by post, by enclosing 13 postage stamps for each packet to WILLMOTT and CHAUNDY, Seed and Nurserymen, Lewisham, Kent.

YELLOW GLOBE MANGOLD WURZEL, 80s per cwt.

Improved Long Red Ditto	...	per cwt—80s.
Cattle PARSNIP		" 65s.
White Belgian CARROT		" 90s.

*** For Cash.

The above may be depended on, being all grown by the most respectable agriculturists in Kent. References will be given on application; also a General Catalogue of Seeds.

WM. JAS EPPS, Seedsman, Maidstone, Kent.

The Gardeners' Chronicle.

SATURDAY, MARCH 10, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	March	12	Medical	8 P.M.
			Geographical	half-p. 8 P.M.
			Syro-Egyptian	7½ P.M.
TUESDAY,	—	13	Civil Engineers	8 P.M.
			Medical and Chirurgical	8½ P.M.
			Zoological	9 P.M.
WEDNESDAY,	—	14	Literary Fund (Anniversary)	3 P.M.
			London Institution	7 P.M.
			Society of Arts	8 P.M.
			Graphic	8 P.M.
			Pharmaceutical	9 P.M.
THURSDAY,	—	15	Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	—	16	Royal Institution	8½ P.M.
SATURDAY,	—	17	Asiatic	2 P.M.
MONDAY,	—	19	Chemical	8 P.M.
			Pathological	8 P.M.
			British Architects	8 P.M.
			Statistical	8 P.M.
TUESDAY,	—	20	Horticultural	8 P.M.
			Linnean	8 P.M.
WEDNESDAY,	—	21	Geological	8½ P.M.
THURSDAY,	—	22	Royal Society of Literature	4 P.M.
			Numismatic	7 P.M.
FRIDAY,	—	23	Philological	8 P.M.
SATURDAY,	—	24	Royal Botanic	8½ P.M.

IN planting ROCKWORK, the gardener should well consider what his final object is. If he merely wishes for a convenient spot in which to grow little delicate species, he will take care to admit no bushes or plants of large growth; but if, as must usually be the case, general effect is also desired, then bushes are indispensable.

As regards delicate species, the main thing to observe is, that they shall be placed close to a stone or brick, in such a way as to be shaded by it from at least the noonday sun; it is true that the branches and leaves may soon grow beyond the shadow, but that is unimportant so long as the roots are moist. Wherever plants are so excitable as to push very early in the spring, the north side of the whole mass of rockwork should be selected for them, unless they are as hardy as Primroses and Violets. When a particular kind of soil is required, it should be provided by enclosing a space with bricks, hidden below the surface; by this means plants requiring peat, loam, clay, chalk, &c., may be made to flourish side by side. If little marsh plants are also desired, a proper place may be made for them on the north side of the general mass by sinking a hollow, puddling it, filling it with bog-earth, and shading it by superincumbent masonry. In this way charming little things, like Parnassia, Anagallis tenella, Menyanthes, Drosera, Pinguicula, and Samolus may be grown within a few yards of the fragrant herbage from Dover cliffs.

As to the plants to be thus employed, it is useless to give a list of them, because, after all, the power of cultivating particular plants will depend on climate. Rockwork plants will thrive in all their wild luxuriance in Worcestershire, Hereford, and the west, which no art can keep in beauty in Middlesex and Kent. The only way of proceeding is to try experiments, to consult the intelligent nurserymen of the neighbourhood, and to observe what thrives in their care. Every dealer can furnish a list of plants suitable for rockwork, and give instructions which possess local value.

In managing the plants after they are selected, the main object is to prevent their overrunning each other; for in rockwork, as well as in other associations, the strong are terribly inclined to bear down the weak. No prettier spring things can be found for rockwork than Aubrietia, Arabis alpina, and some of the Alyssums; nor any summer occupants more useful than some of the broad-leaved Sedums, and the Ivy-leaved Toad-Flax; but they are encroaching neighbours, unless coerced incessantly. They are examples on a small scale of that curious vegetation which, in some of the West India islands, is called "the Scotchman hugging the Creole," and of which some noble specimens are to be found in the Museum in Kew Gardens.

If bushes are to be added to rockwork, this point demands still more attention, for they soon encumber the place with their roots and light-impeding foliage. When the rockwork is on a small scale, their presence is inadmissible: but if it is at all extensive, as it should be to look well, then there is no dispensing with them, and, well managed, they produce a charming effect. The points to observe are, that they should be placed near the upper level of the rockwork, so as to increase its apparent height; that if small they should occupy angles; that if trailing they should be placed on the lowest terrace; and that, if straight, they should be associated with perpendicular lines of stonework, to which they will give additional effect. It is also desirable that they should be for the most part evergreens.

As bushes for rockwork are far less unmanageable than herbaceous plants, it may be useful to mention, as capital species for various purposes, all the smaller Indian Cotoneasters and Berberries, Savins, Pyracanthas, Cunninghamias, Cytisus, double Furze if well pruned, Cistuses, Helianthemums, French (not German) Tamarisks, Clanbrazil Firs, tree Paeonies, Yuccas, Cypresses, Deodars and Araucarias to be thrown away when too large, Laurustinuses, Mahonias, &c, and, in short, any neat-looking plant which is either naturally small or capable of being kept small by the pruning knife. The disposition and selection of species is so much a matter of mere taste, that there is no apparent advantage in dwelling further upon it.

One other rule will complete the rapid sketch which has thus been thrown off. The smaller rockwork is, the worse it looks, and the more difficult to keep in health, and *vice versa*. The steeper it is, the less is it suited to the growth of delicate plants, and *vice versa*. Thus, supposing that any reason should exist for making it 10 feet high, it would be better to make it 40 feet wide than 20, and better still to make the width still greater; and we believe that a more charming flower garden could not be contrived than one occupying an acre or two of ground, roughly planted upon these principles, with winding walks carried among low irregular terraces, broken in every direction by masses of stones and bricks. The objection to it would be its expense.

WHOEVER will take the trouble to turn to the "Magazine of Natural History," vol. ii., p. 135, or vol. vi., p. 22, will find representations of a rabbit's mouth, from which project long curved teeth, somewhat resembling tusks. When a gamekeeper, who had found one of the specimens there represented, brought it to his master, he declared he had stumbled on a cross between a rabbit and an elephant! He most probably had some doubts of the accuracy of his theory. Had an elephant been a somewhat smaller animal, or a rabbit only somewhat larger, he would have fancied that his theory was not so very absurd. That an elephant belongs to one natural family, and a rabbit to another, would not have been considered by him a very violent objection. And why should it? some persons may be inclined to ask us. Have we not heard of hybrids between the species of different families of plants just as little related to each other as the Pachyderms and the Rodents? If the more general principles of physiology be applicable to both of the organised kingdoms of Nature, why should we be so over scrupulous about admitting the possibility of a hybrid being produced between a Pachyderm and a Rodent? But is it true that two species of plants, that belong to very distinct families, are capable of hybridising? We hear of a most respectable and intelligent farmer who declares that he has raised a cross between a Swedish Turnip and a Dandelion. We hear of another most respectable and intelligent seedsman, who insists upon his having obtained a hybrid between a Turnip and a Lettuce. Here, then, we have two unimpeachable witnesses to the possibility of a cross originating between two families so little allied as Cruciferæ and Compositæ plants! But, if so, why not between a Dandelion and an Oak? Because, as one of the above witnesses believes, the root of the

Dandelion is eatable, but not so that of the Oak! Might we not suggest, also, that, since the Dandelion is to the Oak (in size) as the rabbit to the elephant, that this reason may have something to do with the improbability of our ever rearing Dandy-Oaks, however we may be expecting to improve our sheep by feeding them on Dandy-Turnips? We are in no degree impugning the respectability or the intelligence of the two parties who fancy they have produced these compound Crucifers, but we say it is their business to produce their strong reasons, and to exhibit their proofs.

When we shall be shown these marvellous hybrids, we may then (improbably) see some good reason for calling on physiologists to modify the conclusions at which they have arrived, or else we may (not impossibly) show sufficient cause to satisfy our friends that their Dandy-petlings are not at all what they have been considering them to be. A merely practical acquaintance with any description of art, or even a merely popular knowledge of any department of science, does not seem to be sufficient to impress the minds of those who have never studied science itself, with a due sense of the improbability of many theories which are now afloat, even where a confidence in science is professed; but it often falters in those who are not acquainted with the nature of the proofs on which important scientific principles have been established.

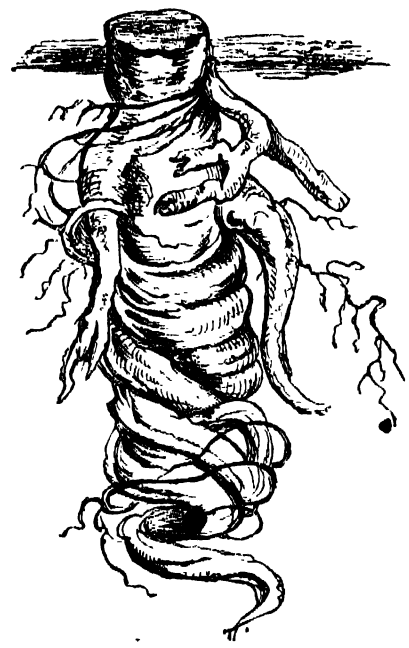
At present, we assert, there is no good and sufficient reason for believing that hybrids can be produced between any two species of vegetables or of animals which are not very nearly allied to each other. We are not wishing to dogmatise to the extent of declaring that such things must necessarily be esteemed to be impossible, but we cannot admit that we ought to pay the least credit to them, until something beyond the mere opinions of practical men can be produced in their favour. We have sometimes been misunderstood as to the extent to which we have been willing to admit the possibility of certain most improbable facts turning out to be true. With every disposition to discredit and disbelieve them, we dare not say the mysteries of Nature have been so fully unravelled, that we may so flatly deny these improbabilities as some persons are disposed to do: all we admit is, that those who make such assertions should be invited to repeat their observations until there can be no doubt left upon either party as to the truth or fallacy of the conclusions at which they had arrived. When a host of creditable witnesses declared they had seen Oats changed to Rye, we reinvited them to a more cautious mode of experimenting, in order that the probable absurdity of such a conclusion might either be made sufficiently palpable to all, or else its probable absurdity should be so convincingly disproved that we might legitimately introduce a new and marvellous fact among the well established dogmas of natural science. That there is a growing inclination to admit the claims of science may be freely admitted, but we are very much inclined to doubt whether there is anything like a corresponding improvement in the public appreciation of what the claims of science really mean.

Two or three weeks ago the *Athenæum* informed us of a correspondent having taken the trouble to visit the Hebrides, in order to collect the reminiscences of a few fishermen concerning the supposed sea serpent, or unusual monster of some sort, that had been thrown upon their shores a few years ago, and to which allusion was made by Prof. OWEN in his well known letter. Surely a correct appreciation of the powers which science confers would have spared a longer journey than to the Museum in Lincoln's-inn-fields, where some of the vertebræ of the animal in question are deposited, and where the inquirer might have been shown the description of evidence upon which such vertebræ could be identified. It would be accounted a venial error in one who is unacquainted with geology, to fancy a ball of iron pyrites might be a petrified lemon, but it showed very little confidence in science for a farmer to hold a dispute upon the possibility of his being right in having formed such a conjecture. However innocent the error (not an uncommon one), that rolled masses of clay on some of our shores harden insensibly into rolled pebbles, any one who should persist in such a theory after he had been told that one of his post-pantocene pebbles contained a fossil shell of the secondary strata, would hardly be considered as having any just appreciation of what sort of questions science may be expected to determine without admitting of any appeal from her decisions.

Whilst we are striving to awaken some persons to an improved appreciation of those powers which science possesses for deciding a host of cases where popular errors are opposed to truth, we must not neglect a caution to those who seem to be more disposed than we have ever professed ourselves to be, to consider some questions sufficiently decided, because we have asserted them to be extremely improbable. We have been told by those who are already satisfied, to say nothing more about vipers, and we have received additional examples of carefully collected testimony of the same sort as that we have already furnished. One witness has even seen the tails of the young vipers sticking out of the mother's mouth as she carried off her delicious cargo; but as we have ourselves often seen the forked tongues of all our native snakes protruding and vibrating in a manner which might readily be mistaken for the disappearing tail of viperlet, we shall keep the other evidence to ourselves, and merely express a hope that another season may not be suffered to pass away without at least half a dozen viper-stuffed vipers being sent to Surgeons' Hall for the purpose of enabling Prof. OWEN to demonstrate the truth or the falsity of the popular opinion. We are quite ready to reverse the standard set up by "O. P. Q." at p. 829, in submission to the cause of truth, and to invite every one who has felt a little cross at the rudeness of our scepticism, or the impertinence of our critiques, to confess that science will in future stand higher in their estimation from having taught them to know the difference between the sort of evidence in which "seeing is not believing," and a proof that shows when "seeing is believing." *J. S. H.*

EVIL ARISING FROM CRAMPING THE ROOTS OF TREES WHEN YOUNG.

THE accompanying sketch represents the root of a Pine (P. Laricio), which, prior to its being planted out, was kept several years beyond the period of its fitness for that purpose, and then carelessly inserted into the ground without disturbing the tortuous coil of roots formed within the pot it occupied.



ROOT OF PINUS LARICIO.

With the advantage of a favourable situation, excellent soil, and ample time for recovery (it occupied the position from whence I removed it, about 10 years) the tree never flourished, the old roots have evidently increased but could not unfold, and could therefore but inadequately fulfil their functions; several roots have sprung from the stem above the coil of roots, which possibly would have assisted the tree, but when cramped in youth trees of this family seldom entirely recover, and I have no doubt, like many of the early Araucaria imbricata, which so far suffered from injudicious nursing, that they still retain a dwarf and stunted character, this instance would have imperfectly given the character of its kind, had I allowed it to remain.

As a very large proportion of the young stock of this interesting tribe are nursed in pots, it has occurred to me that this instance is worth offering, to prove the evils of keeping such plants an undue time in pots, and of not taking the precaution to disturb the ball of such plants when turned out.

As the branches of a tree, if bent or twisted out of their natural inclination for a season, will afterwards retain the manner thus given them; so it appears that roots turned in like manner, for a similar period, are incapable of regaining their proper and natural direction. Hence the obvious necessity of distributing the roots of plants when removed from pots, in order that ultimately the tree may be in every sense, supported. It would even be preferable to sever with a knife a mass of matted and intersected roots, than to plant out in such a state. *W. Ingram, Hatfield, February* 23.

PURPLE EGG-PLANT.

Le Gros Melongène, la Grosse Aubergine, l'Esturgeon Végétale, or Vegetable Sturgeon.

FROM an article by Professor MORREN, "Journal d' Horticulture de Gand," December, 1847, it appears that the Aubergine was scarcely known by any one when exhibited at Brussels in that year. It is certainly better known in England; nevertheless a few extracts from the above work may prove interesting.

"In 1847 an exhibition was formed at Brussels, of Belgian agricultural and horticultural productions. The exhibition was patronised by the royal family, and instituted under the auspices of the Minister of the Interior. Among the more remarkable vegetables there was one which attracted the attention of all the visitors of the exhibition. The Belgic sedentary had never seen it; the Belgic tourist, with his knowledge of Paris, pretended to recognise it; the Belgian traveller, from abroad, knew it as a vegetable of the south, a plant of tropical Africa, a Asiatic production. This vegetable-fruit was however grown in the garden of M. Rampelberg.

"We have termed it a vegetable fruit. In fact, it is a fruit by its nature, a vegetable by its use. Linnæus named the plant Solanum Melongena; but he considered one of its varieties to be a species, to which he gave the name of Solanum insanum, supposing it to possess bad qualities, a circumstance which may be justly disputed.

"The fruits of the Grosse Aubergine, the results of the culture of the honourable secretary of the Linnean Society, were pyriform, measuring 7 inches in length, and 4½ in diameter at the widest part; the skin was smooth, of a fine deep violet; flesh white, with the peculiar odour of the Solanums.

"Vegetables really new are rare. In general new re-introductions are taken for new comers. Such is the case with the Aubergine de l'Escluse, and Dodoëns knew the plant. In the time of the latter, they cultivated more especially the Aubergines of the size of Apples, and of a purple colour. Pierre Belon has described them as Egyptian productions, and, referring to the botany of Greece, the commentators of the 16th century pretended to have seen in the Aubergines the Malinathalla of Theophrastus."

"The Spaniards named them Mélongènes; the Tuscans designated them by the name of Petranciaci, and sometimes Melanzana; the Germans, Melankan and Dollopfel. Dodoëns remarks that the relations of Belgium with Spain had led to the adoption of the names of Verangènes, and of Pommes d'Amour, although the latter is a confusion with that applied to the Tomato. In Provence, at the present day, the Aubergines are called Meringeanes; and in Languedoc they are known under the name of Viedase. In other parts of France the term Aubergine, formerly written Obergine, is generally used.

"Belon has given the receipt according to which the Aubergines are cooked in Egypt, 'Belloni singularium,' libri ii. It consists in roasting them under the ashes; or boiling them gently in water. But Hermolaüs Barbarus states that the civilised Egyptians eat them prepared like Mushrooms, that is to say cooked, fried in fine olive oil, seasoned with salt and pepper, with toasted bread. In Provence they cut the Aubergine in two, longitudinally, taking out the seed and spongy substance surrounding them. They then place the two halves on the gridiron with the cut part upwards. During the time they are roasting, the flesh is soaked with fine oil, or fresh butter, successively applied, but only a little at a time, adding a sufficiency of pepper and salt. Some augment the flavour by Parsley, Anis, or such aromatic herbs; others extend an anchovy or a pilchard in the intermediate spaces. But the great difficulty in this mode of preparation is to avoid the flavour of smoke. In order to obviate this inconvenience, some contrive to cook them between two plates, or in a baking-pan, with the above seasonings.

The usual modes of cooking the Aubergines at Paris need not be detailed. At Brussels the author of the article had them simply peeled, cut in slices and fried like fish, and he confesses he was astonished at the close resemblance which they had to the flavour of a sturgeon prepared in the same manner. He adds, "One of our friends, by birth a Frenchman, *homme d' esprit et de table*, two virtues which frequently accompany each other, has favoured us with a mode of preparing the Aubergines which he declares is superior to any other. They are peeled, placed in a frying pan, lozenge-like incisions are made on their upper sides, or in other words they are scored across and across; these incisions are filled with fine Provence oil; then they are sprinkled with salt, pepper, nutmeg, and grated bread. When half-cooked a little aromatic vinegar is poured over them: finally they are garnished with fried Parsley or Chervil. According to our friend, the Aubergines prepared in this manner are equal to the finest fish of the Mediterranean; and he is of opinion that they might even pass for fish." In catholic countries where, on fast days, fish cannot be supplied for all tables, especially in provinces remote from the coast, a dish produced by the garden and forming a substitute for fish, as regards both flavour and nutritive effect, is certainly not to be despised. The analogy above pointed out will not surprise those who "are acquainted with the Pulmonaria maritima or vegetable oyster, the leaves of which have been made to resemble so very much the flavour of oysters as not to be distinguishable from the latter." ||

LECTURE ON ECONOMICAL COOKERY;

OR, THE METHODS OF PREPARING OUR FOOD WITH THE LEAST DEGREE OF WASTE.

By C. DAUBENY, M D., F.R.S.

(Continued from p. 133.)

ANOTHER branch of the art of cookery relates to the use of *condiments*, substances which, without containing anything capable of nourishing the system, assist the ste-

much in digesting those articles to which they are added. Salt has usually been regarded in this light, but if the views taken in the former part of this lecture be correct, it would seem to discharge other functions still more essential to the animal economy. Nevertheless the aromatic class of condiments, such for instance as the Pepper and Ginger which are the growth of tropical regions, and the Mustard, Horseradish, Onions, and Garlic which occur in more temperate zones, seem to have an office assigned to them by Nature, of no small importance to man even in the most simple condition of society, and of still more moment to him in that artificial state which is induced by civilisation. We have seen how much the amount of nutriment requisite is dependent upon the nature of the climate. In tropical countries the consumption of materials for the production of animal heat is reduced to its minimum, and the languor occasioned by the influence of a high temperature in diminishing physical and mental exertion, renders the waste of the tissues much less considerable. These circumstances cause the demand for both classes of aliment to be less than is the case with the inhabitants of colder regions of the globe. The Muscovite delights in a diet of which rancid animal oils constitute a principal ingredient, and is capable of consuming, without inconvenience, an extraordinary amount of animal food; whilst the fruits on which the natives of the south prefer to feed, do not in the fresh state contain more than 12 per cent. of carbon, and substances rich in proteine compounds are eaten but sparingly. But this very circumstance renders the use of condiments more called for in hot climates than in cold ones, for as the capacity of the human stomach is nearly the same in all parts of the world, and as a certain distention of its coats seems essential to the due performance of the function of digestion, it follows that the bulk of matter introduced into it ought, under all circumstances, to be nearly the same. Hence the native of the tropics has to extract from a larger amount of woody fibre, and other indigestible matter, the small per centage of gum, sugar, starch, and vegetable albumen diffused through its mass, and for this, of course, a longer continued exertion of the digestive organs is requisite, than would be the case where the *ingesta* are almost all capable of assimilation. Thus whilst the Greenlander digests his meal of whale's blubber without the aid of condiments, the Italian and Spaniard find the use of Garlic grateful by the assistance it affords in enabling them to assimilate the crude vegetables upon which they live, and the inhabitant of the tropics adopts still stronger stimulants in the form of Pimento or Capsicum as seasonings to his food. Even cattle appear to derive, from the acrid and bitter juices of the plants that grow amongst the herbage, the power of digesting their usual food, dying if debarred altogether from the former; and it is in this way probably that some of the common species of Ranunculus prove so grateful to them.

Hence a moderate use of condiments seems advisable, even with reference to the economy of our meals, both by enabling the food to be more fully digested, and thereby to go farther, and likewise by diminishing the craving for alcoholic stimulants, the use of which, unlike that of the aromatic kind, is not limited to the duration of the repast to which they are designed to be subsidiary, and are, therefore, more liable to be taken in excess.

The preparation for the table of vegetables is a more simple process than that of animal matters. Those containing starch, such as the Potato, are rendered more digestible by boiling, in consequence of the chemical change induced in them by the access of hot water. It is a well known fact that if raw starch be mixed with boiling water, it forms with it a thick paste, arising, according to Payen, from the rupture and disintegration of the cells of which it consists. By continued boiling under the influence of the azotised matter, or diastase, present in the tuber, the starch is gradually converted into sugar, and the same effect is produced by simply heating or roasting the Potato. Hence cooking this vegetable renders it more digestible, not only mechanically, by causing it to absorb water, but also chemically, by converting the insoluble starch into soluble gum or sugar. For the same reason toasted bread is more digestible and pleasant, from the production of a small amount of sugar during its exposure to the fire. We may also obtain another hint from the researches of modern chemists. Payen informs us that starch is not found in the epidermis, or in the tissues immediately subjacent, but that nitrogenised matters principally reside in these parts of the tuber. Hence a loss of the most nutritious portion of the vegetable is incurred by the common practice of peeling off the rind and parts underneath before the boiling commences It should also be remembered that cold water dissolves, whilst boiling coagulates, albumen. If Potatoes, therefore, are thrown into cold water and gradually heated, much of their nitrogenised principles will be extracted before the water reaches ebullition, whilst if it be made to boil before they are introduced, the coagulation will cause these matters to be retained within the tissue of the vegetable.

(To be continued.)

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

The Culture of Roses.—Two things are necessary to secure success in the Rose garden; there must be a judicious selection of sorts, and the mode of cultivation must be adopted which will best develope their beauties Unless these two requisites are combined, labour and money will be thrown away, and disappointment ensue, either from case being expended on inferior or uncertain varieties, or really superior kinds being badly grown. Every amateur who is anxious to do justice to his own efforts in the cultivation of flowers, should acquire as much knowledge as possible of the habits of each, and of the results of the experience of the best growers. It is to a want of correct information to regulate our practice that so many failures are to be attributed. If these could be corrected in a day, they would not be so annoying as they are, but in most instances a season is lost, and a year must roll round before we can show that we have corrected our errors and profited by disappointment.

As Roses become greater favourites every year, their culture is a matter of importance in the estimation of gardeners, and we intend to devote two or three papers to some general considerations on this subject. It is one too extensive to be fully treated in the limited space allotted to us, and we wish our friends would at once provide themselves with a certain guide to this interesting branch of horticulture. A work has already been advertised and noticed in the *Chronicle*, which may be recommended with confidence to all amateurs, whether their gardens are large or small; we mean "The Rose Garden by William Paul" of the Cheshunt Nurseries, a book attractive enough for the drawing-room, yet sufficiently practical to make it a fit companion for the actual workman. The whole subject is treated with a grace which becomes it, and the Greek motto in the title—"*Sappho loves the Rose, and crowns it always with some encomium, comparing the fair among the virgins to it*"—does not raise expectation without gratifying it. Mr. Paul writes with an evident love of his theme, and has collected from ancient and modern sources much interesting information. The book is adorned with 15 portraits of Roses, executed in a very superior style, besides numerous wood engravings illustrative of the botany, pruning, and arrangement of the flower in beds, &c. The nature of the contents may be gathered from the synopsis exhibited in the title. "Division I., embracing the history of the Rose, the formation of the Rosarium, and a detailed account of the various practices adopted in the successful cultivation of this popular flower, illustrated with numerous engravings on wood. Division II., containing an arrangement in natural groups of the most esteemed varieties of Roses recognised and cultivated in the various Rose gardens, English and foreign, with full descriptions and remarks on their origin and mode of culture."

While this work can be safely recommended as a guide to the purchaser of Roses, and the construction of Rose-gardens, our more special object is to bear our testimony to the explicitness of its directions in every branch of culture, from the preparation of the soil to the higher art of raising new varieties by hybridising. Every subject is fully treated, so that a beginner will find all the instruction he needs. This is a great excellence in any practical work. and is often wanting, from a presumption being entertained of the reader having already made some advances in the art or science treated of. The chapter on pruning is especially explicit, both from the plainness of the directions and the illustrative engravings. Any amateur who will procure Paul's "Rose Garden" will make his course clear for the successful cultivation of this beautiful flower, and will soon save all that it costs him in the certainty of his operations, to say nothing of the satisfaction arising from doing things well. It is very pleasing to find a practical man cultivating the literary tastes exhibited in this book, and making his stores of experience bear so efficiently on the instruction of others. However quackery, or more politely, empiricism, may yet haunt other professions, we are pleased to think it is leaving the domain of Flora, whose attendants make no mystery of their art, but willingly communicate its principles to others.

If any of our readers intend planting Roses this season (and it may still be done with safety), the drainage of their soil should be attended to in the first instance, without which no manure, and no skilful management in other respects, can succeed. This may be done by digging out the bed intended to be filled to the depth of 2 or 3 feet, and putting a layer of stones at the bottom, of 6 or 8 inches. In returning the soil, let it be well mixed with rotted stable manure, and the plants introduced after this careful treatment will be sure to flourish. *H. B.*

HARDY AND ORNAMENTAL SPRING-FLOWERING SHRUBS.

(Continued from p. 116.)

Andromeda floribunda.—This is an exceedingly neat, compact, dwarf, evergreen shrub, for the peat border. It grows from 1 to 4 feet high, and produces abundance of white bell-shaped flowers, resembling the "Lily of the Valley" in miniature; they rise conspicuously above the dark-green Myrtle-like foliage.

Ribes sanguineum superbum.—A variety far superior to the species. Its numerous pendent racemes of richly crimson-tinted blossoms, are produced in March and April. It thrives in the commonest dry soils, but prefers a limestone substratum. A valuable ornament in front of larger shrubs.

Weigela rosea.—Perhaps the most valuable addition to hardy shrubs since the introduction of Ribes sanguineum. It forms a neat middle-sized deciduous bush, with a Syringa or Deutzia-like habit, and produces a profusion of richly shaded rose and white, funnel-shaped flowers. Its adaptation to ordinary soils and treatment will, ere long, place it in the foremost rank of ornamental plants in flower-garden shrubberies.

Forsythia viridissima.—A neat, erect, branching deciduous shrub, from 3 to 7 feet high, of a robust Privet-like growth, with dark-green serrated leaves and long branch-like racemes of rich yellow Jasmine-like flowers, diffusing a pleasing balsamic odour. This and the last are two of the most valuable importations from China by the Horticultural Society.

Prunus cerasifera.—A hardy tree from 5 to 20 feet high, of neat smooth branching habit, ultimately ramifying into innumerable twig-like branchlets, which produce a sheet of snow-white blossom in March. This is one of the most ornamental early flowering trees; it is well adapted for background effect in broad shrubberies. In the outground plantations of park scenery, when in bloom, it has also a highly picturesque effect.

Deutzia staminea.—A small dwarf deciduous shrub, from 1 to 3 feet high; its ovate lanceolate leaves are surfaced with a whitish grey nap; it produces dense clusters of fragrant white Syringa-like flowers in May. Ordinary soils suit it.

Berberis aquifolium.—One of the most ornamental of dwarf evergreen shrubs, having glossy dark green leaves surmounted by large spikes of bright yellow flowers in March and April. It loves a deep loamy soil, but has the finest effect in a tolerably deep peat bed. In shallow soils it should be planted on an east or west aspect, or in such a position as to be screened from bright sunlight It forms admirable cover for game, and its numerous clusters of fruit, surfaced with a rich violet plum-like bloom in autumn, produce a very pretty effect. *William Wood, Fishergate Nurseries, York.*

Home Correspondence.

Charcoal a Disinfector of Manure.—In reference to the subject of General Briggs's pamphlet, reviewed at page 141, I would mention the following circumstance: Last autumn I put into a wine bottle a few spoonsful of guano, brought from the coast of Patagonia, and filled it up with water, intending afterwards to dilute the liquid contents and use it for plants in pots. A few days ago, finding about two-thirds of the contents remaining in the bottle, I drew the cork, when a most insufferable stench was emitted. I was at the time engaged in breaking up some common charcoal, to mix with some earth for potting plants in, when the thought struck me that to pound some and put into the bottle with the guano, might improve the charcoal and make it more useful in the purpose for which I intended it. I accordingly bruised about as much as would have filled a half-pint, and added it to the liquid and guano, thus filling up the bottle. A few days afterwards, wishing to use some of this preparation, I uncorked the bottle, when, to my surprise, not the slightest smell was to be discovered, even with the nose close to the opening of the bottle. Several persons who had on the first opening cried out against the offensive contents of the bottle, now, by my desire, tried it, and could find no offensive, or indeed scarcely any, scent whatever. In reference to the guano, which was given to me by the captain who discovered the bed from which it was taken, I would mention that he, at the same time, gave me nearly a small phial full of crystallized ammonia (having something the appearance of dirty white sugar-candy; it had a strong smell, resembling in some degree that of sal volatile), and he said that it was found deep in the guano bed, in layers of several inches thick; adding that the effect of the guano digging upon the sailors was such, that they required and insisted upon double allowance of provisions. *J. T.*

Raspberries. — Your correspondent is altogether wrong in recommending the arched method of training the Raspberry plant. According to the representation in the *Gardeners' Chronicle*, there are five or six canes tied into a close bundle; now, as these canes will emit in summer at least 50 fruit-bearing shoots in a length of 5 feet, how is it possible for the fruit to be properly exposed to the sun and air, upon which exposure its flavour so materially depends. Then the faggots of young shoots which must necessarily be retained in order to furnish the requisite number of bearing canes for the following year, will materially intercept the light and increase the thickness and confusion. The other method represented is by far the best, when executed in a proper manner, but the figure in the *Chronicle* is only calculated to mislead. In that, 12 or 13 bearing canes are retained on one plant, whereas three or four are quite enough for the strongest stool to carry, if good fruit is desired, and even that number *is* too many unless the ground is very good. In our poor soil I find that plants standing 1 foot apart in 5 feet rows, and leaving one, or occasionally two canes on each plant, is preferable to planting at greater distances, and allowing three or four canes to each root. An essential point is to cut away the weak shoots in summer, leaving a few more of the strongest than will be required for the next year's fruiting, and at the same time tying these loosely to the supporting wires or ends, to prevent their being broken off at the root. At the winter pruning the canes ought not to be left too close; 1 foot apart, and from 4 to 4½ feet in length, is not too much. *J. B. Whiting.*

Storing Potatoes.—Though this is not the time of year to put it in practice, yet it is the time to see the evil effects of other plans, and therefore I mention it now. I believe I got the idea from some one of your correspondents some years since. When you get up the Potatoes in autumn, instead of putting them in hogs or pies as they are called, mark out in a level place ground 3 feet wide, level it about 2 or 3 inches above the surface; spread your Potatoes upon it one layer thick; then put 2 inches of soil, then a layer of Po-

tatoes; the soil, and so on gradually coming up to a ridge. At first a very slight quantity of soil will do; but before winter sets in, they require a covering of 6 inches, and some fern or litter over all in frost. This plan seems tedious, but is in reality done as quickly as hogging, or very nearly so. It keeps the Potatoes excellent to eat, preserves them from rot better than any plan; and for seed, nothing can beat it. I have been planting the last fortnight, and the seed taken out of these earth hogs is just as when it first came out of the ground in autumn, the eyes just showing, and the skin fresh, healthy, and bright. My gardener had a great prejudice against this plan at first, but now, after three years' practice, says there is nothing like it. I believe it does much to invigorate the Potato plant, as there is no vital force lost in pushing sprouts. I am aware that gardeners often keep their early Kidney seed in outhouses, &c. upon this plan, but this cannot be done with a large quantity for field culture, added to which I find the Potatoes keep much better both for eating and seed than when spread in a cellar, or granary floor, or packed in barrels. *W. D. Fox, Delamere Rectory.* [This was a recommendation by the editor, who has no great respect for horticultural *prejudices*.]

Brown Bread.—When in the country, an eyewitness observed a baker, when making brown bread, to mix flour and the fine bran pollard, as it is called in some counties. Would not this method of mixing do as well as grinding? if so, it would save the poor man the expense of a machine; and those who find it difficult to procure good brown flour, could always obtain fine flour as well as pollard. The coarser bran, which some think objectionable, might also be omitted, and pollard used only. Perhaps some of your correspondents acquainted with the subject would be kind enough to state what would be the proportion of pollard and flour, supposing good Wheat were ground, for the purpose of making brown flour; of course every one might then mix to their own necessities. *C. H., Stoke Newington.*—I have observed that some of your correspondents seem to find a difficulty in obtaining meal wherewith to make this bread, and fancy that by getting a hand mill they can grind their own corn to advantage, and thus supply their wants. In London possibly there may be some difficulty in getting it from the baker at a reasonable price, owing to its being an article not in general demand, but even there it may be obtained from the miller, and in the the country there is no difficulty whatever. There too the miller will grind for any person his own corn at 4*d.* the bushel, and if flour be wanted, will dress it for as much more. This I should say is quite as cheap, taking all things into consideration, as it can be done for by a hand mill. In many (I believe in most places), the miller has special days for grinding in this way, technically called "bug" days; at least it is in Norfolk. The steel-mill business, like most home manufactures, will, on trial, be found a delusion. I use meal for brown bread regularly in my house, and shall be happy to put any of your correspondents in the way of getting it. *P., Camberwell.*—In relation to bread made from the whole grain, which I believe to be the most wholesome and nutritious, I would inform the public that each family which possesses a coffee-mill, may make an excellent loaf, by grinding sufficient Wheat in it. To satisfy the enquiries of a little boy about the process of bread-making I set him to do this, and had a loaf made which greatly pleased the whole family. *Epreuve.*

The Hamiltonian System of Pine-growing.—It is stated at page 87, that Mr. Willmot's principal objection to this system is because of the unavoidable necessity of maintaining the same degree of moisture or dryness to a plant ripening its fruit, swelling its fruit, and in flower. I perfectly concur in this objection. I consider that it is both unnatural and injurious to keep up a moist atmosphere when the fruit is approaching maturity, and especially for winter Pines. I have practised Mr. Hamilton's system for several years, and successfully, having cut a fruit of Black Jamaica, 4 lbs. 8 oz., from a sucker in nine months after the first fruit was matured. At the same time other suckers were growing, and showing fruit on the same stool. I do not, however, approve of Mr. Hamilton's plan of having fruit in various stages of growth in the same temperature; my practice and system have overcome this unavoidable necessity. I successfully ripened 200 Pines during last July and August, and from suckers growing on the old stools. I have at the present time nearly 400 fruit started and coming into bloom with the utmost regularity. *John Tay, Oatlands, Feb. 27.*

The Representation of a Monstrosity of the Common Turnip which accompanies this, was reduced from a Turnip the natural size, found at East Shalford Farm, near Guildford. It had been thrown, amongst others, to the sheep, and they had eaten away a portion of it, leaving the cavity and bunch of leaves within exposed. The length of the root was 14 inches, and the diameter 7½ inches; externally exactly similar to others of the same species, but, from an over rapid development, a cavity was formed from the crown to about the centre; this was enlarged from decay; the upper portion of the cavity was lined with epidermic, similar to the exterior covering of the tuber; from the top depended a tuft of true leaves, which, when first observed, were curled up and etiolated, but, during the time the first drawing was being made (a space of about four hours), they expanded, and the colour became much darker. May not some explanation of this anomaly be hazarded, like the following? If we examine the root or axis of a Turnip, we find, surrounding the tuft of green leaves at the top, a series of concentric furrows, formed by the insertion of leaves which successively have decayed and dropped off. In these furrows are often found small protuberances, which are rudimentary leaf-buds. If a section be thinly cut off the crown, these rudimentary leaf-buds can be traced as small reniform green spots, extending to the depth of about ¼ of an inch, and throwing down into the mass of cellular tissue forming the tuberous root, two or three or more fibres, like small rootlets. My impression is, that by the formation of the cavity, these fibres had room to expand, and that these rootlets of the leaf-buds, which, in the normal state of the Turnip, grow and lose themselves in the mass of cellular tissue, have developed downwards into true leaves, in the same manner as the roots of a Pelargonium, if suspended in the air, will protrude through the hole in the bottom of the flower-pot, and be converted into a branch bearing leaves, from having accidentally space, light, and air in which to develop; and the general tendency in any change of vegetable structure being to become a leaf, would render it probable. *M. E. A., Jan.* 31. [We are rather inclined to believe that some unobserved obstacle must have been present to prevent the development of the leaves outwards, and that then, the crown being thin, because of the cavity, the leaves turned downwards and filled it. The case is, perhaps, analogous to the formation of young Potatoes *within* old Potatoes, when the latter are accidentally left in a dry place, where, the state of the air being unfavourable to the development of the buds externally, they force themselves backwards and inwards, as if in the direction of the source of food.]

Garden for Doubtfully Hardy Plants.—Would it not be interesting to suggest, by means of your journal, the formation of a small garden in the most favoured spot as to climate in the kingdom, for the cultivation of plants which are doubtfully hardy, and for those exclusively? An acre would be quite sufficient. *A. Z.*

Chenopodium Quinoa.—Perhaps it may interest you to know that I have tried this, and found that pounded it makes a very good pudding, only it has a rather smoky flavour, which many persons would not like; culinary art however might overcome that objection. But another is that it is very long in ripening, and requires more hot weather than the last summer afforded. Earlier planting may perhaps dispose of that objection; but another is, that high winds are very apt to break it down, from its growing so tall, with a heavy head of seed. *L. Vernon Harcourt.*

Glebe Lands.—"Rector" might have charged on his glebe, in the hands of his successor, the costs of his drainage, provided he did not live to enjoy the fruits of it for the number of years which the Legislature has said shall be holden a sufficient remuneration for his outlay. (See the statutes 8 and 9 Vict., cap. 56; 9 and 10 Vict., cap. 101; and 10 and 11 Vict., caps. 11 and 38.) And even if he has missed of this opportunity of insuring a sufficient return, yet if he shall live long enough to receive back, in the increased fertility of his glebe, the principal which he has expended, together with interest and some profit, he will have reason to be thankful, but will have no reason to wish he could burden his successor. If a Gracious Being has been bountiful to him, ought he to seek to monopolise all the mercies? ought he not rather to rejoice if he shall have become the means of extending the like bounty to future ministers of the Gospel? *W. P. T.*—I beg to refer "Rector," and also the "Rector of Ockham," to the account of the powers possessed by the Land Drainage and Inclosure Company, described in the *Agricultural Gazette* of the 2d and 9th of last September, pp. 593 and 609. The object contemplated in the act of incorporation, granted to this company in the last session, was to obviate just those hardships, and to remove those obstacles to improvement, of which your correspondents justly complain. By employing this company, with the sanction of the Inclosure Commissioners, (by which process the rights of the patron and the next incumbent are secured, and the due performance of the works is guaranteed), not only ecclesiastical property, but all landed property in which the proprietor has only a life interest, may be prudently improved by drainage and other works. Such works, executed on their own glebes, now afford the only prospect to the clergy of increasing their incomes since the commutation of tithes, which has fixed them irrespectively of the improvement executed on the other properties in their parishes. It may be necessary to add, that the company's operations are not confined to large properties, and that the "Rector of Ockham" need not fear that his farm of 76 acres would be looked upon by them "with contempt," though less advantageous both to the contractors and to himself than if their operations were to be applied to a larger tract. *T. T.*

Sparrow Traps.—Sparrows will not go into any wire trap, but they will go very readily all the year round into the common brick trap made of four smooth bricks. The best way for destroying sparrows is to feed them in the month of June upon a long bench with raised sides to prevent the food from falling off. The bench should be placed in such a situation that it affords a hiding place for a person to shoot the sparrows when they are in a sufficient number upon it. The writer has practised this plan for many years, and in consequence, his red and white Currants will hang upon the trees as long as required for use. The objection to brick traps is, that a robin is occasionally killed by the falling of the brick, though the trap generally catches the bird uninjured. The brick traps should be fed, so as to let the birds go in and out as they please, and very frequently, in order to give them confidence. *A. A. Whittington, Oswestry.*

Portugal Laurel Disease.—With regard to Laurels turning silvery and dying, I may mention my experience. Some of our old Laurels lately assumed this appearance, and looked very unhealthy. It struck me there was more wood than the old roots had vigour to support; so I set about cutting in most vigorously, not taking off the heads entirely, but thinning out large branches freely, which, if done judiciously, does not disfigure your shrubberies. Fresh shoots succeed, and by degrees the plants are renewed, but a succession of young plants should be prepared. Laurels turn grey at their top knots as well as human beings. *Lancastrian.*

Rain which fell near Plymouth, as measured by Howard's rain-guage during the year 1848.

At Goodamoor.	Inches	At Ham.	Inches.
January	3.47	January	2.64
February	9.72	February	7.76
March	4.92	March	5.04
April	5.51	April	4.85
May	1.65	May	1.52
June	6.96	June	6.06
July	6.90	July	3.81
August	5.98	August	7.00
September	4.82	September	3.07
October	7.08	October	4.20
November	5.26	November	5.04
December	7.38	December	7.25
Total ...	69.71	Total ...	57.76

Rain at Goodamoor in 1847, 56.56; Ham, 45.86. The distance of Ham from Goodamoor is about eight miles, and the elevation of Goodamoor over Ham some 600 feet. *Henry H., Treby, Plympton, Devonshire.*

Ferns.—Are any of your readers disposed to make an exchange of some Ferns? I have Polypodium Dryopteris and Phegopteris, Aspidium Thelypteris and spinulosum, Cystopteris fragilis, Asplenium marinum and Ruta-muraria, Pteris crispa, Scolopendrium Ceterach, and Osmunda regalis, any of which I should be happy to exchange for any of the following species: Polypodium calcareum, Cystopteris montana, Aspidium Lonchitis, Adiantum Capillus-Veneris, Woodsia Ilvensis

or alpina, Asplenium alternifolium or septentrionale, Hymenophyllum tunbridgense or Wilsoni. Address *Miss E. Webley Parry, Trevorgan, near Cardigan.*

Societies.

Horticultural, *March* 6.—W. W. Salmon, Esq., in the chair. Mr. George Paul, of Cheshunt, and Mr. Turner, of Slough, were elected Fellows. Among subjects of exhibition, Mr. Mylam, gr. to S. Rucker, Esq., of Wandsworth, sent Galeandra Devoniana, a pretty trumpet-flowered terrestrial Orchid from Demerara, and a nicely-flowered specimen of Phalænopsis amabilis. A Banksian medal was awarded for the latter.—From Messrs. Jackson, of Kingston, came Odontoglossum stellatum, a small white-lipped species, pretty enough, but ineffective except in masses.—Messrs. Henderson, of Pine-apple-place, sent Mormodes buccinator, so named on account of its trumpet-shaped lip; a small specimen of Portlandia grandiflora, one of our old-fashioned stove plants, which has for some time been lost sight of, but which is now beginning to command attention; and a fine specimen of Bilbergia zebrina, a Pine-apple-like plant, having two large gracefully drooping flower-spikes, whose gaiety consists more in the long pink floral leaves with which they were clothed, than in the flowers themselves, which possess but little beauty. A Certificate of Merit was awarded for the latter.—A nice specimen of Dielytra spectabilis, to which a Banksian medal was awarded, was produced by Messrs. Knight and Perry. This, which is one of the handsomest of Fumeworts, was sent to the Horticultural Society from the north of China by Mr. Fortune. It is believed to be hardy, but this point has not been conclusively settled, for it is very difficult to increase, and as yet plants of it have been too scarce to allow of their being made the subjects of experiment. The plant in question had been slightly forced, and therefore its long racemes of pink flowers were not so deeply coloured as they should have been had it been grown more slowly and in bright light.—Six unnamed seedling Cinerarias were exhibited by Mr. Lee, of Hammersmith; and Mr. Henderson, of Wellington Nursery, St. John's Wood, sent other three seedlings of the same useful genus. The latter were Magnifica, white, disc blue, and petals delicately edged with the same colour; Amelia, in the way of Beauty of Newington; and Delicata, a cupped flower, white belted with violet, small, but striking. A Certificate of Merit was awarded the latter.—Messrs. Lane, of Great Berkhamstead, sent a bright rose-coloured seedling Pelargonium, named Woodlands, which was stated to force well. It appeared to be a good trusser.—Mr. Wilmot, of Isleworth, sent a dish of Black Hamburgh Grapes—well coloured, and otherwise fine specimens for the season—from his Vines, grown in the remarkable manner mentioned at p. 39; and along with them a sample of the foliage, of which an impression was exhibited at the former meeting. A Knightian Medal was awarded.—Mr. Charlwood, of Covent Garden, produced two fruit of what were called Vegetable Marrows from St. Michael's; they were, however, not Vegetable Marrows at all; but pale coloured, obovate, wrinkled, Citron-like fruit of Sechium edule or Choco. It was stated that plants of it had been tried in the Horticultural Society's Garden some years ago, and proved too tender for our climate. Whatever its edible qualities may be, therefore, it will at least require protection.—The Garden of the Society supplied plants of Cyrtochilum maculatum, three species of Oncidium, a fine specimen of Epidendrum aurantiacum, Boronia anemonefolia, two varieties of Epacris, and Inga pulcherrima, a small tree richly ornamented with deep crimson or rather scarlet tassel-like flowers; this latter, though proverbially a shy flowering plant, has been found to blossom well in the garden, the essential point of success consisting in encouraging the plant to make wood early, in order that it may be well ripened before winter. The same collection also contributed two species of Franciscea, Cytisus racemosus and canariensis, a pan of Achimenes picta, Amaryllis Millerii, a pretty pale variety streaked with red; Diosma capitata, a fine bush of Erica concolor, two species of Acacia, Azalea Smithii, a small prettily-blossomed plant of Henfreya scandens, of which, it will be recollected, a large specimen was exhibited at the meeting on the 20th ult., showing that it flowers equally well in a small state as in a larger form; and finally, a plant of Thea Assamica, or Assam Tea, a robust-growing large-leaved species, as unlike the green Tea as the latter is that of the North of China, which is of an inferior kind. Cuttings of the following Pears were distributed: Shobden Court, a middle-sized obovate fruit, of a yellowish russet colour, and rich sugary flavour; ripe in January and February. Knight's Monarch; this is ripe in December, January, and February. In the various parts of the country where it has been tried it has invariably proved excellent. Broom Park, a remarkably sugary Pear, middle sized, roundish, with a flavour partaking of those of the Melon and Pine Apple. It is ripe in December and January. Comte de Lamy, middle sized, roundish, sugary, and rich. It is ripe in October. The tree has an upright habit of growth, and bears abundantly. The above are all hardy, excellent in quality, and are better from standards or dwarfs than from walls.

Linnean, *Feb.* 6.—E. Forster, Esq., in the chair. The Rev. J. Yates presented to the Society a model made by Mr. Smith of the fruit of Encephalartos Caffer, a species of Cycad, which has lately fruited in the collection at Chatsworth. The model of the entire cone was accompanied with the models of detached scales. Mr. Yates also exhibited specimens of the leaves and fruits of various other species of Cycads, and also drawings of many others, and made some remarks on the interest possessed by this order in relation to extinct floras. Dr. Schaum presented to the Society a specimen of the Polyphemus Goliathus, from the collection of M. Gory. This specimen was regarded with much interest as one that was originally in the Fabrician collection of insects, now in the possession of the Society, but which had been lost. An engraved portrait of the late Dr. M'Culloch was presented to the Society by Mrs. M'Culloch. Mr. Adam White read the first part of a Memoir on the Animals of the Assyrian Monuments, discovered by Dr. Layard, and now in the British Museum.

Feb. 20.—G. Newport, Esq., in the chair. W. S. Dallas, Esq., and D. W. Nash, Esq., were elected Fellows; W. Gardner, Esq., of Dundee, was elected an Associate. Mr. Adam White continued his Memoir on the Animals of the Assyrian Monuments. In the first part of the memoir he drew attention to representations of the fallow deer, goat, and sheep, which were most pictorially represented; also to a vulture. He exhibited casts from the armlet and sword-scabbard of one of the kings, which were decorated with animals. In the second memoir he alluded to the sculpture of lions on these monuments, and also to some remains of extinct animals found in the stones from which the monuments were formed. Mr. White also exhibited a fragment of a botanical diary, kept by the late Mr. James Niven, at the Cape of Good Hope, during his travels there for Mr. Hibbert and the Empress Josephine. This diary had an interest, as confirming the source of many of the Cape Heaths, especially those in the collection of the Linnean Society. The genus Nivenia was named after the writer of this diary. It consisted of dried plants, with accompanying descriptions of their structure, &c.

Entomological, *March* 5.—G. R. Waterhouse, Esq., President, in the chair. W. Spence, Esq, the late President, presented to the Society 500 copies of his Anniversary Address, delivered on the 22d January. A collection of 500 European species of minute Lepidoptera, in a most beautiful state of preservation, and carefully named (which had been bought by subscription among the members, at Vienna, and intended for the Society's collection), was on the table. Mr. Westwood communicated an account received from W. Atkinson, Esq., F.L.S., &c., relative to the destruction of the corks in wine bottles, whereby great damage is often produced, by a small white caterpillar with a yellow head, which had been regarded as that of a small beetle (Cryptophagus cellaris), but which Mr. J. F. Stephens had reared to the perfect state, and which proved to be a small moth (Oinobia V-flava). Mr. Westwood also gave an account of a minute and remarkable insect found in hothouses on Peach trees, at this season of the year, inclosed in a white cottony web, which he regarded as the pupa of the male of some remarkable species of Aphidæ. Mr. White mentioned the growth of a fungus from the scutellum of a Curculio, which having thrust its rostrum into some substance had been unable to withdraw it, and had there died. He also exhibited a species of Acanthophorus, a genus of longicorn beetles, from South Africa, the right-hand antenna of which was monstrously furcate. Also an apparently new species of Cerapterus from Port Natal. He also read descriptions of three new exotic species of Cetonidæ, and exhibited drawings of two new genera of water beetles (Dyticidæ), from New Zealand and West Australia. Mr. Westwood read descriptions of two new Australian species of Carenum, and of four new species of Prophanes, a new genus of Australian Coleoptera, belonging to the family Helopidæ. Mr. F. Bond exhibited a box of Coleoptera, containing a new species of Cerapterus and other very rare insects from the banks of the Mundarra river, 400 miles north of Sidney, New Holland; and Mr. S Stevens exhibited a new British moth from Ashburton, Devonshire, which appeared to be the Phycita obductella of Fischer.

Reviews.

Enumeratio Physcearum in maribus Scandinaviæ crescentium. J. C. Areschoug Sectio prior Fucaceas continens. 4to, pp. 162, tab. Upsal, 1848.

The interest of this volume, which contains some nice figures and good descriptions of Algæ, is by no means confined to the systematic portion, though that is remarkable as containing views respecting the value of the organs of fructification exactly opposite to those of Agardh. The tetraspores are considered as gonidia, while the bodies in the so called capsules are regarded as the real spores, as being produced by a more complete metamorphosis than the tetraspores. We do not coincide in this opinion, but the observations on the subject will be read with pleasure, though we could have wished that the complex Wallrothio-Kützingian phraseology had been avoided, for it requires some patience to read perseveringly where the external membrane of a cell is termed Perischizogonidium or Periclogonidium, &c.

Apart, however, from systematic matter, there are some very valuable observations on the distribution of Algæ in waters of different degrees of saltness. No locality differs more in this respect than the several portions of the Baltic, and the subject is treated with great clearness. The memoir is an extract from the 13th volume of the "Transactions of the Royal Society of Upsal." We do not know whether it is to be bought separately.

Marshall's Index Ready Reckoner is a thin pamphlet, of the greatest use to all who have the payment of wages, for it enables the reader to ascertain at a glance the exact sum which may be due to a labourer at any wages below 5*s.* a day, for any broken time between a quarter of a day and 30 days. Thus, suppose that a man has been employed for 27¾ days at 3*s.* 2*d.* a day, Mr. Marshall's tables tell you instantly, without any need of calculation, that the money due to him is 4*l.* 7*s.* 10½*d.* We have seldom seen a more really useful book.

A cheap edition of *Humboldt's Cosmos*, formerly noticed by us, has been issued by Messrs. Longmans and Mr. Murray in two thick volumes, 12mo. This is a great thing for the cheap literature of the country; they are exact reprints of the authorised translation by Col. Sabine, and are admirably printed, on excellent paper. Half-a-crown a volume for such a book is an unheard-of price.

Garden Memoranda.

Ealing-park, *March* 7.—It may be interesting to know that the Amherstia nobilis at this establishment is showing a profusion of bloom-buds, some of the bunches more than a foot long. The plant was received by Mrs. Lawrence on the 10th of July, 1847; it was then 18 inches high, and had 11 leaves. It is now 9½ feet high, 39 feet in circumference, and 12 feet through, and bears 700 and odd leaves. We have also much pleasure in being able to state that at present nothing can be more flourishing or fine than the whole of the plants at Ealing-park.

Miscellaneous.

Potato Disease.—As the time has now arrived when farmers begin to plant their Potatoes, and as every one is anxious about the safety of his crop, it may be useful to communicate the following plan, which I have adopted for three years, and with perfect success—so successful that I have never had a diseased Potato. In the first place, let the seed be cut from end to end, rather than cross ways, that some of the eyes of the rose may be in every plant. In the second place, the drill should be made a full yard wide, so that ample space may be alloted for working them up in the way they ought to be. In the third place, as soon as the Potatoes are formed at the shaw, let the shaws be all bent to one side, and let them be furrowed up very high on one side, so that the drill presents the appearance of the ridge of a house, and the shaws grow out at its side; and, when the shaws are in this position, the rain is not conducted to the root, but is discharged in the bottom of the furrow. The process of bending the shaws in the way described, will cost about 1*d.* per fall. Last year I experimented on alternate drills, and the result was, that those drills that were not treated in this way but left to the old course, were all diseased; whereas the drills that were prepared according to the plan I would earnestly recommend, were entirely sound—not one diseased Potato amongst them. This plan is simple—all can put it in practice—and by following it, they will not, I hope, have to lament either a deficiency of crop or quality. *David Martin, Muirhead Liff*, in *Dundee Courier, Feb.* 28.

Messrs. Loddiges' Sale.—Three hundred and seventy-eight lots of Camellias, the greater portion of them plants of large size, and a few lots of Rhododendrons and Andromeda floribunda were brought to the hammer last week by Mr. Stevens, in Messrs. Loddiges' nursery, Hackney. The highest price realised on the occasion was 19*l.* 8*s.* 6*d.* for Camellia incarnata, a magnificent tree 15 feet high; Speciosa, 9 feet high, fetched 19*l.*; Althæflora, 10 feet, 14*l.*; Chandlerii, 12 feet, a magnificent tree, 14*l.*; Myrtifolia, 12 feet, 12*l.*; Rossii, 10 feet, 9*l.* 10*s.*; double white, 5 feet, 9*l.* 15*s.*; Eximia, 12 feet, 9*l.*; and Corallina, 8 feet, 9*l.* 15*s.*; the other lots fetched from 2*l.* to 8*l.* each. Rhododendron Nilagiricum fetched 2*l.* 17*s.* 6*d*; R. Barbatum, 1*l.* 12*s.*; and plants of R. robustum, from 1*l.* 18*s.* to 2*l.* 2*s.* A specimen of R. arboreum, 8 feet high, fetched 4*l.* 15*s.*; and handsome plants of Andromeda floribunda, 17*s.* each.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Orchids.—An increase of heat and moisture will now be required for the majority of this family: watch them carefully, and as they show signs of growth place them in situations, which are best calculated to produce a healthy development. Particular caution will be requisite, in order to prevent moisture from lodging in or about the young growths, as they are very liable to rot during their early stage. It is no less necessary to guard against slugs and woodlice; the former eat the young shoots and flower stems, and must be sought for by candlelight, or entrapped with slices of Carrots; the woodlice destroy the young points of the roots, and thereby prevent the plant from securing itself in its position, than which scarcely anything can more effectually prevent its healthy progress; these enemies may be entrapped by half Turnips scooped out, or by placing a little hay between two soakers; these traps should be examined every morning, and the victims tumbled into a pot of hot water. Admit air with caution, and particularly avoid cold currents amongst the

plants which have commenced growth; close early, and take advantage of the sun heat on fine days to allow you to give the plants a gentle syringing. Avoid a high night temperature; 63° to 66° is ample for the growing plants. Where there is but one house for the general cultivation of Orchids, all those which have not yet commenced their growth should be stationed in a dry, moderately cool stove till their turn comes. The greater part of the Dendrobiums, the Vanda family, and some others, will be all the better for being removed to a higher temperature than that of the general house, which will contain the Oncidiums, Lycastes, Cattleyas, Lælias, &c., these should be ranged from the warm to the cool end of the house, according to the natural habitats of the several kinds. Get the shading in order that it may be ready whenever the fine clear sunlight renders it necessary; we must not forget that many of the species are natives of dense forests, into which the rays of the sun never penetrate; these should be stationed in the back rows, so that they can be shaded by themselves when it is not necessary to shade those from more exposed localities. GENERAL STOVES.—The fine, clear weather, with which we are now favoured, renders a somewhat closer atmosphere, and shading during the middle of the day, necessary to newly-potted plants; but the shading should be used as little as possible, merely to prevent flagging. Heat and moisture, both to roots and leaves, may be applied with greater liberality, but be careful not to use much coal in obtaining this additional heat; unless you can obtain your principal supply from the sun, you had better wait a little longer.

FORCING DEPARTMENT.

PINERIES.—Where Pines are still grown on the pot system, shift such plants as require it into larger pots, using three-fourths peat for the youngest plants, and increasing the proportion of loam as the plants advance towards the fruiting state. If the bottom-heat is supplied by fermenting material, it will require to be frequently examined, in order to see that the heat does not decline, and thereby check the plants while in an active growing state. Equal caution will be necessary to prevent an excessive or burning heat, which will materially injure the roots, and very probably throw the plants into fruit, whether they are wanted or not. The object should be to maintain in all cases a steady bottom-heat of from 75° to 80°. Excepting in frosty or windy weather, and for an hour or two on fine afternoons, when the pits are closed and syringed, a little air at the back should be left on night and day. VINERIES.—Examine the state of the inside borders as regards moisture, and water them with tepid manure-water if they require it; in ascertaining this do not be satisfied with the appearance of the surface, which is kept moist by syringing, but examine the soil 10 or 12 inches lower down. If the border has become rather dry, the impulse given by this watering will be immediately visible in the vigorous and rapid expansion of shoots and leaves. PEACHES.—In disbudding Peach trees it is desirable to retain as many of the side or even foreright shoots as will fill with leaves any parts of the tree which would otherwise be bare; all the young shoots so retained, with the exception of those required for laying in, should be stopped above the third leaf as in spurring. By this means the appearance of the trees will be improved, and a supply of fruit-bearing spurs secured, where there would otherwise be nothing but naked wood; and if at any time it be found necessary, they will be available for the production of young wood to fill up where weakened branches have been removed. Constant attention must be paid to tying in the young shoots nearly parallel with those they proceed from, as much of the beauty of fan-trained fruit trees depends on early attention to this matter. FIGS.—Let the amount of air to Figs in progress be gradually increased, using the syringe in fine weather to keep the red spider down, but it is necessary to avoid excessive use of this instrument, as too much moisture frequently causes the swelling fruit to turn black and fall off; maintain an equable moderate state of moisture about the roots, as the same misfortune not unfrequently results from extremes of drought and moisture. Stop the young growths at the fourth or fifth eye, by breaking, not cutting, the points out, as they do not, if broken, bleed so much, and generally produce two shoots instead of one.

KITCHEN GARDEN.

Peas in boxes which have been raised in a slight heat should be placed under a warm wall, in order to inure them to the open air preparatory to planting them out towards the end of the month. CUCUMBERS.—Attend to stopping and training, and by all means avoid crowding the shoots. Let the leaves have sufficient room for healthy development, and the result will not only be finer and more abundant fruit, but it will be less difficult to keep insects from establishing them-elves; furnish the pits and frames with a few toads, to keep woodlice in check. Maintain the plants in a healthy state by top dressings of rich soil, consisting of loam, dung, and peat, if it can be obtained of good quality, or in default of this use about one-fourth leaf-mould. Prepare beds and plants for succession, according to the particular requirements of the establishment. Seeds of perennial crops, as Asparagus and Seakale, may now be sown, and new beds of these, or others of the like kind, as Rhubarb, Artichokes, Horseradish, should now be made, if not already done.

FLOWER GARDEN.

The pruning of Roses may now be proceeded with, and, if the operation be judiciously done, it will have considerable influence over the period and duration of their flowering. In performing this operation, a distinction must be made between those families whose strong growths form wood, and those which produce flowers more freely on the strong than on the weak shoots. The latter consist principally of autumn flowering kinds, as Bourbons, Noisettes, Chinese and Tea-scented Roses. From these all very weak wood, which is not likely to flower, should be cut away, and the stronger shoots shortened or thinned out, more with reference to the present and future shape of the plant than anything else; for this reason the shortening should be proportioned to the strength of the shoots, reducing the weak wood to a few buds, to induce a stronger growth during the ensuing season, following the opposite practice with the strong shoots, and removing the very gross ones altogether. The summer blooming kinds do not flower on the strong shoots, for which reason the production of exuberant wood should be as much as possible prevented. If it is not convenient to leave the strongest shoots of the very luxuriant kinds unpruned, it will be better to remove them entirely, pruning moderately the shoots of medium growth, and leaving the small shoots of these kinds uncut. The less exuberant sorts may be pruned a little harder, and the weaker growing varieties harder still. A good deal will depend on the artificial habit of the plant to be pruned; if it be trained to a wall or against a pillar many useful shoots may be retained, which would be objectionable in a standard, on account of appearance; but, in both cases, it should be a particular object to keep the flowering wood as near home as possible. By this time, many buds towards the points of the shoots have commenced growth; and if early flowers are an object, a portion of these should be retained for that purpose, and the rest of the shoots shortened to succeed them. True climbing Roses, or Ramblers, should not be pruned till the flowering season is over; this section includes Banksians, Ayrshires, Evergreens, &c.; and the Sweetbriar and Scotch Rose family will come under the same rule.

FLORISTS' FLOWERS.

CARNATIONS AND PICOTEES.—In consequence of the open weather, these plants will require rather more water, and the lights of the frames may now be kept off day and night; we are advocates for early potting, and where our advice has been followed, the amateur will have a nice dry heap of compost under cover, which has been carefully passed through the hand several times so as to be completely clear of wireworms and other noxious insects. With this compost he may commence potting off directly, placing at the bottom of the pots plenty of drainage, which should be covered with moss to prevent the soil running down; the pot may be filled level full, and by taking hold of it on each side and giving it a sharp rap on the ground, the soil will settle down about ¾ of an inch; the young plant or plants which have been kept in small pots during the winter may then be carefully removed and planted, taking the precaution to fasten the soil round the stem, and avoiding as much as possible the lodging of any dirt in the axils of the leaves; a gentle watering, to settle the soil, should then be given, after which the pots should be placed in a sheltered situation.—AURICULAS AND POLYANTHUSES.—Occasional doses of weak liquid manure made with sheep dung will be highly serviceable. Cover Tulips from frost; top-dress Pink beds, and put in Dahlia cuttings as they require it.

State of the Weather near London, for the week ending March 8, 1849, as observed at the Horticultural Gardens, Chiswick.

March.		Moon's Age	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain
Friday	2	☽	30.2[illegible]	30.126	51	34	42.5	S.W.	.00
Satur.	3	8	30.461	30.466	54	41	47.0	S.W.	.00
Sunday.	4	9	30.459	30.147	58	21	39.5	S.W.	.00
Monday	5	10	30.40[illegible]	30.437	54	26	40.0	S.W	.00
Tues.	6	11	30.318	30.280	55	41	48.0	S.W.	.00
Wed.	7	12	30.0[illegible]2	29.879	54	38	46.0	W	.06
Thurs.	8	13	29.918	29.810	49	23	36.0	N.W.	.07
Average			30.[illegible]	30.195	53.4	32.0	42.7		0.03

March 2—Fine; cloudy, clear at night.
— 3 Overcast throughout.
— 4—Clear; cloudy and fine; very clear; sharp frost.
— 5—Frosty; fine, cloudy.
— 6—Frosty; fine, overcast at night.
— 7—Cloudy and windy, boisterous, with rain at night.
— 8—Fine, cloudy, some hail showers frosty
Mean temperature of the week 1 deg. above the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending March 17, 1849.

March.		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No of Years in which it Rained.	Greatest Quantity of Rain.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
							Prevailing Winds.							
Sunday	11	50.8	34.2	42.5	10	0.20 in.	1	2	1	4	3	9	2	1
Mon.	12	51.1	34.4	42.7	11	0.72	3	2	2	3	1	7	4	1
Tues	13	56.1	36.0	45.5	11	0.30	-	2	3	3	1	5	6	3
Wed.	14	50.0	36.0	43.0	9	0.38	—	3	3	—	4	7	4	2
Thurs.	15	51.7	38.0	41.6	13	0.49	2	5	2	—	3	6	5	1
Friday	16	53.2	3[illegible].0	41.1	9	0.25	—	4	4	—	4	7	3	1
[illegible]	17	[illegible]	[illegible]	[illegible]	6	0.36	2	3	2	—	3	5	5	3

The highest temperature during the above period occurred on the 12th 1841, and 15th, 1828—therm 67 deg. and the lowest on the 13th, 1845—therm. 13 deg.

Notices to Correspondents.

APRICOT TREES: *J H M.* Your trees being only four years old can be scarcely in a bearing state. Their not bearing is to be ascribed to their youth rather than to the circumstance of the walls being built of flints. Protect the blossoms, and afford sufficient moisture to the roots in summer.‖

AVENUES: *J B.* Limes are best, next Elms, last scarlet and yellow Horse Chestnuts, which are unfit for the purpose, if you intend Pavias by this name. Common Horse Chestnuts, when *old*, make a fine avenue, but they are ugly for many years.

BEES: *Elizabeth.* Remove your hive by drawing a small cord or wire between it and the floor, in order to sever the combs from those below. Then extract the combs from the receptacles, and place the hive upon them, having previously adopted the slides, as you suggest. Keep in mind that although the plan you follow has a fine name, still it is only the old one of nadiring or ekeing, as practised by cottagers. Therefore close the slides until the bees require more room; but if they are short of pasturage, you had better adopt the storifying plan, which is a safer way of obtaining honey. *W.*

BOOKS: *W R P.* Begin with Dr. Lindley's "School Botany;" if he masters that, and it is very easy, then he may proceed as much further as may be wished. The Botany of the Society for the Diffusion of Useful Knowledge is worth having.—*Fair Play.* It is a case in which we cannot interfere. A custom which is so general as to be almost universal may be easily supposed to arise out of some necessity.

BOX EDGINGS: *W C Z.* They may be clipped at any season, but it is generally done either in March or end of June.‡

CONSERVATORIES: *A Subscriber.* Repton's "Landscape Gardening" will perhaps assist you, but you ought to have the advice of a garden architect. If you wish it, and will forward your address, we will recommend a fit person, on whom you can fully rely.

COPING OF GARDEN WALLS: *R S U.* A coping projecting 2 inches is necessary for the protection of the wall itself; and brackets should be fixed for a temporary coping of boards; these should be at least 9 inches wide. They should be put up before the blossoms appear, and removed when the danger of frost is over.‖

COUVE TRONCHUDA, OR PORTUGAL CABBAGE: *T A W.* It may be sown now, and treated exactly like other Cabbages. The white ribs make a dish somewhat resembling Seakale, and the heart boils very tender.‖

DRYING PLANTS: *A W.* All you can do is to press them between leaves of paper, and change the papers as often as they become damp. When species have a tendency to cast their leaves, that may be prevented by dipping the specimens in a weak solution of corrosive sublimate for half an hour. Their colours cannot be permanently preserved. See Lindley's "Elements of Botany," 4th edition.‡

FANCY DAHLIAS: *Alpha.* A list of these will be found at p. 804 of our volume for 1848.‡

HEATING: *C M H.* There is not at present any separate work on Polmaise heating. We believe such a book is in preparation.—*William.* Your pipes are the reverse of right; the end farthest from the boiler should be highest, and be furnished with an open air-tube, through which air can be expelled, but long enough to prevent the water overflowing.

INSECTS: *L O G.* The small white objects from the Peach trees are the cocoons of a minute insect which appears to be a singular species of aphis, but the specimens were crushed. We will therefore be obliged to you for others, as we should be glad to study their economy. They will probably leave their cocoons in a few weeks, and may then be destroyed by tobacco water. *W.*—*Anon.* The small insects on the bits of bone are a species of acarus, which feeds on decaying animal matter, and will not injure your plants. *W.*

LAURELS: *Constant Reader.* Prune them in April.‡

LAWNS: *Sub.* It is well known that if soot be applied to lawns in autumn or spring, it greatly improves the sward.‡

PEARS: *S F W.* The following varieties may be planted against a south-east wall:—Marie Louise, Passe Colmar, Glout Morceau, Thompson's, and Knight's Monarch.‖

PELARGONIUMS: *Tyro.* They "draw" because they are kept too hot and close, and too far from the glass.‡

POTATOES: *J S.* We possess no evidence in favour of potash as a manure; nor can we perceive anything in the returns before us which indicates its value. Will you favour us with some proof that it has the value you assign to it. We cannot order experiments to be tried without some reasonable proof that they are likely to be attended with advantage.

NAMES OF PLANTS: *A J L.* Asplenium trichomanes (Linn.), common on walls, &c. *S.*—*G Eyles.* A beautiful variety of Oncidium hastatum.—*L V.* 1, Pinus Cembra; 2, P. hispanica; 3, Abies morinda; 4, Pinus patula.¶—*Sub.* 1, Xylophylla latifolia; 2, Vaccinium Myrtillus.—*Constant Reader.* Salisburia adiantifolia.

RAISING ANNUALS IN TURVES: *G A.* See p. 438 of vol. for 1848.

RHODODENDRONS: *B B.* We have no idea what the reason can be that your layers do not flower. Rhododendrons are usually increased by layers, which flower readily.‡

RINGING: *W.* Yes; but the wood must be wounded, and the bark imperfectly removed, unless the bark "runs." The cases of excentrical pith are well known. The inarched specimen we should like to see.

ROSES: *Brennus.* B is right. Standard, and indeed all budded or grafted Roses, should be removed once in four or five years. If a part is removed every year, the beauty of the collection will not be greatly marred, and a full reward will be reaped the second and third years after removal.‡

ROUGH PLATE GLASS: *W A.* We have no time to waste upon the quibbling of persons who do not know what they talk about.

SHREDS: *G O L.* The nearest tailor can supply you with materials, and you can easily cut them into shreds yourself.‡

SNAILS: *Clericus.* We should not choose to use gas-lime in a confined place. It is a deleterious substance even in the open air, unless old and purified. You had better trap your snails with slices of Potatoes, Turnips, &c.; or try to get rid of them with lime water when they are feeding.

SWINDLERS: We have two more cases before us of attempts, happily abortive, to swindle nurserymen out of their property. The letters bear different signatures and come from different places; but they all proceed from the same individual. Can none of the Protection Societies catch him? One is dated Liverpool, March 3, and orders 500 fruit trees of Messrs. Low and Co., of London; and the other dated Warrington, March 2, orders of Mr. Murray, Nurseryman, Leeds, 10,000 Whitethorn and 490 fruit trees—convenient articles to hawk about the country, and sell for what they will fetch.

THORNS: *J D.* It is probable that you will only get common Hawthorn (Cratægus oxyacantha), from seeds of your weeping Thorn.‡

TRANSPLANTING: *A Warrener.* We can only repeat that for all trees the month of March is the worst, and October or November the best; we prefer the latter. Mr. Glendinning leans to even September.

VERBENAS: *C P.* When your Verbenas are planted out they will grow out of the blight with which they are now affected.‡

VINES FOR A CONSERVATORY OR GREENHOUSE: *S O.* Black Hamburgh, Royal Muscadine, Black Prince, White Sweetwater, Josling's St. Alban's, and Black Frontignan. It is not necessary to take the Vines out of a greenhouse in winter.‖

WEEDS: *A Country Citizen* will find the virtues and uses of weeds stated in such books as Withering's "Botany," Smith's "English Flora," or any of the foreign works on Materia Medica. If he reads Latin he can consult with advantage Haller's "Historia Plantarum."

WINDOW TAX: *A A* would be obliged to any of our readers to inform him whether if he puts up a greenhouse in the front of his house window he would be liable to pay extra window tax.

MISC.: *G T F.* We know of no such fruit as the Damascus Sloe. The Damascene or Damson may be what is meant.—*R S H.* You will find good practical instructions relative to the pruning and management of fruit trees in the "Guide to the Orchard and Kitchen Garden;" and likewise in the two last volumes of the *Chronicle.*‖—*Sub.* Are not the balls of the plants you mention, whose leaves curl up, too dry? Are you sure that they are properly moistened all through in watering? Does not the water merely pass off by the sides of the pots without entering the balls? That, together with too much heat, would cause leaves to curl up.‡—*A Learner.* All Acacias have pinnate leaves when they are young; but many species become phyllodineous with age; A. hastulata is one of these.

⁂ As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those correspondents, the insertion of whose contributions is still delayed.

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The Agricultural Gazette.

SATURDAY, MARCH 10, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, March 13—Agricultural Society of England.
THURSDAY, — 15—Agricultural Imp. Society of Ireland.
TUESDAY, — 20—Agricultural Society of England.
THURSDAY, — 22—Agricultural Imp. Society of Ireland.
FARMERS' CLUB.—March 12: Claydon.

We now shall proceed to another remarkable instance of land reclamation, with which we can connect more of pecuniary details, as well as those of practical operations in the field. The case which we are going to adduce is that of Mr. HAMILTON, of St. Ernan's, in the portion of western Donegal called the Glenties, where he has had difficulties (in some respects greater than those with which the other proprietor has grappled) of an appalling nature to contend with.

Mr. HAMILTON succeeded to his estate under circumstances not uncommon in Ireland at the period when he attained his majority—about, we imagine, 30 years ago. His immediate progenitors had spent enormous sums in contesting the representation of the county in Parliament, instead of emulously striving to improve their estates. The present proprietor set himself earnestly to work to repair the negligences and faults of his ancestors, and to relieve himself if he could from the accumulated evils which had fallen upon his property. Instead of leading a useless life of fashion in the high class society to which he had hereditary claims of admission, and leaving his property no better than he found it, he determined to devote all the freshness and animation of his youth—the energies of his matured manhood—to the amelioration of lands, and the more interesting and noble purpose of civilising and instructing the multitudes of human beings who swarm there. He possesses property in Glenties, which is probably the most desperately circumstanced union (under the Poor Act) in Ireland. It contains between 43,000 and 44,000 inhabitants, yet its yearly valuation of rental is only 16,330*l*. Of this union the whole electoral division of Fintown belongs to Mr. HAMILTON.

This property, which is inland, in the midst of mountains, has no advantage of market communication, being 15 miles from the nearest market town, and 8 or 9 miles even from the meanest village This unpromising tract consists of about 8000 acres of moory and boggy valleys amongst mountains, with spots partially and rudely cultivated, but cursed when Mr. HAMILTON inherited it by the obstacles presented under the rundale system, so that 20 tenants have had their respective patches of Potatoes or Oats in a field of 2 or 3 acres, where the soil was very fertile. Such a perplexing system prevented the improvement of any part of the estate so circumstanced, because not only were all holdings confused together, but as the allotments for any year were not permanently divided, any man who was venturous enough to improve his portion during that year derived only a fractional part of the benefit. Thus had the stupidity of former proprietors bound their tenantry in fetters which precluded all chances of improvement, by giving to every idle partner in a common lease the right of seizing upon a full share of the portion of land improved by his industrious co-partner. A strange and absurd system which (as may appear in the sequel of our observations) has had its operation among the landlords too, who have introduced and applied to *their own body* the vicious principle which pervades it when they have been associated in the management of unions rated for local purposes.

Mr. HAMILTON appears to have suffered extreme injustice from the results of the false principle which makes the landlords responsible in common for the negligences, delinquencies, or incapacities of the individuals of their number possessing any given union—such as the vast one of Glenties. That is an intolerable system which affords no advantages or relief to the patriotic resident landlord who expends all his means in supporting his own tenantry, and saddles him with a full share of what ought to be exclusively the moral and pecuniary burdens and responsibilities of his neighbouring landlords. This is, in short, the *rundale* system in *high* life. About 12 years ago Mr. HAMILTON resolved to break up this practice as far as the old leases were out, which was the case on the greater part of the property.

The people at first vehemently opposed Mr. HAMILTON in his plan of altering it, but by a combination of steady perseverance and kindness, in which an excellent agent aided him, his object was attained. Every man's cottage was on his own farm, and the fields of every man's holding lay together; and the whole population were at length so convinced of these advantages, that they passed a vote of thanks at a general meeting of the tenants, to the agent and surveyor who had executed the task. In one year, shortly afterwards, above 100 acres were reclaimed by the tenantry from the heather and bog, with the stimulus of six or eight prizes offered for the best reclamation. This work was going on with spirit when the Potato failure brought desolation to the occupiers. Only 150 holdings out of 160 were valued at above 4*l.* a-year, so that under the law almost the whole poor-rate for that tract fell upon the landlord, and a multitude of tenants and their families who held those farms (often large in extent, but small in production) looked to him for support.

This particular property in reality belongs to the son of Mr. HAMILTON, who with his father's devotedness and zeal chose as *a profession* the improvement of this estate, and purchased the *tenant right* of a tenant, who kept a little mountain inn, which he converted into an abode for himself in 1845, and where he has been effecting much of those improvements which we are noticing. Mr. HAMILTON applied to the Board of Works for 1800*l.* upon the security of the property under the *old* Drainage Act, for the employment of the people and the profitable improvement of the lands. They sent one of their engineers, an excellent judge of land and its capabilities, who went over the whole property of Mr. HAMILTON in the Donegal and Glenties Unions, amounting to about 20,000 acres, of which but little more than one tenth was in any sort of cultivation, and of which one-half is capable of more or less improvement, while *every acre of the cultivated part required draining and subsoiling.* The engineer recommended, in a detailed report, an advance of 46,000*l.* upon the property, as certain to make ample returns, and the chiefs of the departments approved a loan of 34,000*l.* The specifications and maps were made out, Mr. HAMILTON was bound to complete the works, and he and his son prepared for the execution of them.

They were fully aware that improving by drainage and deepening the soil of the little holdings of the majority of the tenants would be unproductive, because the occupiers had neither the skill nor means to follow up the improvements, and cultivate the improved land, so as to make it repay the heavy expense which would be requisite to render it quite fertile (by an average outlay of about 10*l.* per impe-

rial acre). Mr. Hamilton, therefore, determined to raise a large sum of money to acquire *possession* of a considerable quantity of land, and to remunerate the tenants, according to *custom*, for the *tenant right*; one of his objects being to raise a number of them from the condition of little miserable tenants to that of regularly employed labourers. They conceived, however, at first, that this would be a step in the descending scale. He, therefore, gave facilities to one-seventh of those in the union of Donegal to emigrate; in Glenties he bought up the tenancy of a considerable number of leases and farms, and in both unions commenced field operations, with an efficient staff to act under him in the several detached properties, in eight divisions altogether, of 8000, 3000, and 2000 acres, down to 60 acres in one locality. Seven of the divisions lay in three adjoining parishes around the town of Donegal, and at various distances, from 1 to 10 miles, from his residence at St Ernan, and the eighth at Fintown. Mr. Hamilton, in anticipation of the expected produce of the improved lands, had to provide farm-buildings, machinery, live stock, &c., no trivial consideration for a landlord on the west coast of Ireland in 1846, who had, it may be presumed, at best, no hoards laid by. If this gentleman had not felt it a duty to do his best, and steadily entertained the assurance that the giver of every good gift and support of all who trust in him, would guide and enable him to proceed in his work, he must have let his hands hang down in despair.

BOX-FEEDING.

In my letter of Feb. 3d, at page 76, I asked the readers of the *Agricultural Gazette* to re-peruse some of my former articles on what is called box feeding; and as Mr. Warnes, the inventor and advocate of this system, has lately generously and gratuitously published the receipt for the compounding of the precious article, which I, ignorant of its virtues, called a hodge-podge, but which he has named a "compound," I deem it to be only equal justice that the same favour be solicited for him. The receipt, with the rules for the using of it, it appears, was first given to the world at large in the *Norfolk Chronicle*, and from that journal an abridgment was made and published in the *Agricultural Gazette* of Jan. 27th. I might, therefore, refer the curious readers of the *Gazette* to that number; but, as all of them may not have one to turn to, in justice to Mr. Warnes, I will condense his receipt and rules for their accommodation, and I pledge my honour and word to use the greatest care and accuracy that all be correctly done. But with the transcriptions I will, as far as my erudition will enable me, give a glossary, for the better understanding of them. Mr. Warnes, writing in Norfolk, uses terms peculiar to that and the neighbouring counties, which of course are enigmas to thousands of the readers of the *Agricultural Gazette* who reside in other parts of the world. For example, in giving directions for the dispensing of the all-precious "jelly" or "gelatine" (for it bears either name), Mr. Warnes writes, "the proportion up to this date (*i. e.* to June) has been one pailful of Linseed-meal to 8 of water." The question then is asked by those residing not so far east, What measure is a pailful? My glossary answers, a pail is a provincial term signifying a vessel containing 3 gallons. Mr. Warnes also uses the term handcups and cups, but of what capacity these measures are, none but the initiated into the mysteries of box-feeding, I believe, can exactly explain. I have heard of many men being in their cups, but I had not the curiosity to inquire of what size the cups were. But a learned disciple of Mr. Warnes informs me, that handcups hold each three pints; but a maker of them also informs me that one always holds a quart only, unless it be ordered larger. I will therefore, for my glossary, write, a handcup and a cup are measures of capacity holding not more than 3 nor less than 2 pints each.

Thus I am enabled to give the exact quantities of water and Linseed-meal for the compounding of the precious jelly, alias gelatine, namely, 8 pails, or 24 gallons, of the pure element, and 3 gallons, or 1 pail, of the Linseed-meal. For the measuring of this out, of course we must use the quart cup. Thus far, therefore, all is clear; but next comes the mystery of all mysteries, into which I am not able even to glance. What is an "&c."? Can any wise man of the East inform me? I cannot even guess at it; but of course it is clearly understood by the initiated. But why does Mr. Warnes so much delight in tantalising? If he profess to make known his receipt for the making of his "compound," why not write it in terms which a plain man, like myself, may understand? What, I repeat to him or to any of his thousand disciples, what is an "&c."? for without an answer to this question, the receipt is nearly worthless; but still, as I have undertaken to transcribe it, here it is in the best form I can give it.

How to make Mr. Warnes's fattening compound, as given in his own words: "The method of making the cold compound with which the bullocks are fed," writes he, "is precisely the same as that described for hot, in my book, viz., half of a large tub conveniently placed, and 1 bushel of Pea-straw, 1 '&c.,' 'or hay,' and 1 of Turnip-tops cut into chaff," is put in, *i. e.* into the half tub. "Then 2 or 3 handcupsful of the jelly are poured upon it, and stirred up with a 3-pronged fork."

"Another bushel of the Turnip-tops, 'chaff,' and another '&c.,' is next added, and two or three cups of the gelatine as before; all of which are then expeditiously stirred and worked together with the fork and the rammer." "It is then pressed down as firmly as the nature of the mixture will allow; and this completes the first layer." "Similar quantities of the Turnip-tops, 'chaff,' and the '&c.,'" he continueth, "are thrown into the tub, the jelly thrown upon it, and so on till the copper or vessel in which the gelatine was formed is emptied." Such is this receipt as given to the world in the learned author's own words! Gentle reader, now let you and me look into that "conveniently placed" half tub, and turn over with the three-pronged fork its curious fattening contents. It now contains 24 gallons of pure water, 3 gallons of Linseed-meal, 24 bushels of Pea-straw, 24 bushels of hay, 24 "&c.s," and 24 bushels of Turnip-tops. On this fattening compound the inventor informs us he kept his beasts until June, when to the whole mass, as a fresh half tub-full was being compounded, he directed that "2 pints of Barley or Pea-meal should be added by degrees." By this precious addition, he adds, "the present cost of 1*s.* 6*d.* a head per week will be increased to 2*s.* 6*d.*; and in adhering to these regulations," he adds again, "I have never failed to obtain ample remuneration for grazing, independent of the box-manure which is beyond all price." For grazing! and so, after all, this is a description of grazing! But then comes the practical result of this novel grazing, and, although the reader may have already been amply satisfied, he must permit me to lay it before him. Mr. Warnes some time in 1847 bought six Dutch heifers, he informs us, at 8*l.* 10*s.* each, or for 51*l.* These he lowered into his boxes and fed them with the precious compound; but one, as it was natural she would, died, and had they been mine I should have considered myself very lucky if the other five had not followed her example; in June 1848, he sold four out of the five for 19*l.* each, or for 76*l.*, and Dec. 16, 1848, he had one left, which having been fed on "Linseed, Grass, Pulse, and grain to an unlimited quantity," was worth 29*l.*, but three weeks before that date she was worth 30*l.*, as he refused that sum for her; and thus the longer time the favourite was grazed in her dung-box the less valuable she became. Practically, therefore, thus stands the account of the six Dutch heifers:

In 1847 bought in 6 heifers at 8*l.* 10*s.* each	.. ..	..£51
June, 1848, sold out 4 of them for 19*l.* each £76	Sold for ..	.. 105
Dec. 16, 1848, 1 was worth .. 29		
Bought for	..	.. 51
Difference	..	..£54

(One heifer died, but what expense she was at does not appear.)

Thus, the six Dutch heifers cost 51*l.*, and were sold for 105*l.* or were worth that sum and no more. I should very much like for some cattle-feeder on this novel system, to explain wherein lay the profit; to me it is quite evident, that there was a loss of many pounds upon the Dutch heifers. But let us hear what Mr. Warnes himself says on this subject. "I have published," he writes, "many similar returns to the above, and know from experience that the quickest generally prove the most profitable." To this I also firmly agree, and I add, that had Mr. Warnes bought his six Dutch heifers on one day for 51*l.*, and sold them the next for 41*l.*, he would have lost less by them than he did; so true it is, that on his novel system, "the quickest returns prove always the most profitable." And as a further illustration of this fact, he continues to inform us, but from his practice of course, that some idea may be formed of the loss—mark the word "loss!" gentle reader—of fattening cattle for Christmas shows and prizes at 10*s.*, 15*s.*, or 20*s.* a week!! upon his system, I repeat, for it is impossible for Mr. Warnes to write with any degree of certainty of any other plan than of his own, and that that is a fearfully losing one his own statements clearly demonstrate. But if anyone still remains sceptical on this point, let it be remembered, that one beast out of six died under his treatment, and that from Midsummer last until Christmas, although he kept his favourite heifer upon "Linseed, Grass, Pulse, and grain, and gave her an unlimited quantity," she increased in weight in her box only 16 stone, and in value only 6*l.* 12*s.*, scarcely money enough to pay for the attendance upon her. Well, therefore, may Mr. Warnes advise others to sell as quickly after they purchase as possible, as it is the only means to escape from ruin if they are box-feeders. *Geo. Wilkins.*

(To be continued.)

CHRONICLES OF A CLAY FARM.—No. II.

If there is a class of mind in the world which has a native antipathy to improvement, there is another, and much more really mischievous, which seems ever destined to caricature it. As every animal, however noxious, and seemingly useless, has its appointed prey, so do the natural enemies of all scientific advancement in their own part, trade, or calling, whatever that may be, find a never failing source of triumph and enjoyment in cracking the bones of blundering Enthusiasts who dog the path of progressive Truth, like distorting shadows, throwing her calm profile against walls, trees, and passing objects, in every variety of burlesqued and ridiculous outline. It has puzzled philosophers of but moderate patience and observation, to reflect upon this fact: forgetting, or never having noticed, the gentle-handed tolerance which marks the parent-discipline of Nature, over her inter-squabbling and mutually-intolerant children, they wonder she interferes so seldom, and with such mild half-measures, to rescue her beleaguered sons if not from the foes in front, at least from the fools behind that go bleating about, exaggerating every account, like street-newsmongers; dressed in the livery of science like a monkey in regimentals, and understanding and appreciating the language they talk at second-hand, as much as the organ-grinder does the opera-tune that his winch works threadbare.

A good solid impenetrable advocate of old-fashioned ignorance, falling foul of one of these light gentry, snaps him up at a mouthful; and no harm done neither: but the mischief lies in the Corollary—'So much for your *Science!*'

Agriculture has had enough of this, and something to spare. Counterfeits of every sort and shape have crowded at the heels of every improvement, every invention, every good suggestion, every new manure; till Art and Science are well-nigh ashamed of the sound of their own names, and are fain to wear smock-frocks for an incognito. The plague that has reached its height in the present decade, was beginning its infective process in the last, of our nineteenth century. It knocked that gentle knock at the door that ended a former chapter of our chronicle; and it was ushered in, (as what plague is not?) in the most pleasing and attractive form imaginable.

A very young-looking little personage, very smartly dressed, having sat himself down, and got pretty well at ease in the course of a preliminary announcement that he had ridden over thus early in consequence of a visit to Messrs. Penn and Debbitt on the previous day, without giving occasion of much reply, proceeded to deliver himself of a little harangue of which the world at large having already been delayed the benefit for some ten or fifteen years, must now content itself with that sort of abstract which a schoolboy writes on Thursday night of last Sunday's Sermon to be shewn up early on Friday morning.

It appeared—from this discourse—that Agriculture was a most interesting hart—but quite in its *infancy*—quite entirely so. The farmers were a very ignorant class, and knew nothing whatever about it—nothing what-hever. The land did not produce enough by arf—not a *quarter* what it hought to du. Summer fallowing was a shocking waste of time and expense: a pair of horses were enough to plough the stiffest land—to any depth. Every ploughing should be 10 inches deep and *the same in breadth*. Farm-yard manure was good for nothing. Go-anner was the thing; and the four-course system, which no landlord ought to allow his tenants to adopt hany other. Six feet deep and 40 yards wide was decidedly the proper depth and distance for drains, and if the clay was well stamped down upon the drain this would drain the wettest land hamply and effeecthally. But no '*agriculturist*' could be expected to lay out his capital in these improvements without a Lease—19 years at least, as they have in Scotland. With a demand of which—after many other useful hints about game, &c., the lecturer concluded his remarks; offering to exemplify them in his own little person upon this identical little 'Clay Farm.'

The stupid old chronicler meanwhile—(the wearer of the shooting jacket before-mentioned) during this eloquent outpouring, seemed somehow to have got into the clouds. During the first half of it, he had never taken eyes or ears off the speaker; when at length he did, it was only to put his hand and handkerchief over the former, so that they were quite buried, though once or twice a very keen observer, not himself oratorically engaged, might have just perceived a very slight spasm or convulsion of the figure, and a sudden redness of the temples over the edge of the kerchief; but the momentary cough, or sneeze, or whatever it was that ailed or choked him, passed quite away;—and when the address was over that had been charming so long and wisely, he looked slowly up, like a person whose thoughts had been wandering far away, and must be recalled like a lot of stray heifers, before he could put the question—

"Have you farmed extensively Mr. ——"

"No, Sir; not exactly—at least—not myself as yet; but I've seen a good deal of agriculture; that is, I've been over some of the most celebrated agricultural establishments, that of Mr. Speedwell in Netherlandshire—the Rev. Mr. Forceschalk's Farm on the Highdowns: I've been over Lord Burytile's Drainage-works in South Dampshire, with his Lordship's Steward; and I am familiar with Mr. McScuffler's great concern in Inthemess shire, N.B.—I know Mr. McScuffler very well. By the way I presume, Sir, you allow a tenant to *take hout?*

"I beg your pardon!"

"You would allow me, I say to take out—a' I'm not much of a sportsman myself, but if a friend should come—"

"A certificate—oh! I understand:——You've seen the Scotch farming then? did you study long with Mr. Mc Scuffler!"

"Oh! no: it wasn't to study: I often go and stay with him: ah! that *is* farming! He hasn't an acre of grassland: not a bit except the grass-plot before his door, and he says he shouldn't keep that except to wipe his shoes on."

"Ah! well: We are rather proud of our dairy pastures though, here. Are you married Mr. ——? Excuse my—"

"Not yet Sir, but I'm going to be. It is on that account I mean to take a farm. I've a thousand pounds of my own; and *She*—that is—her aunt who died lately left her a thousand pounds; rather more I believe—so we shall have plenty to begin upon. Mr. McScuffler

has promised to send me a Scotch plough and four capital horses, Clevelands I think he calls them; *such* steppers; you'd be astonished to see the rate they go over the ground."

"Are *her* family connected with—with *Agriculture*—is her father a—"

"A Farmer! oh! no. He was in trade: but he is dead: she was living with her aunt till lately."

A few moment's pause ensued: the free youthful expression of self confidence on the face of the speaker contrasting curiously with the somewhat puzzled and half-painful thoughtfulness expressed by the other party to this brisk dialogue. This expression however suddenly changed—and the wearer getting up and going to the book case, pulled out, as if in reference to the discussion just pending—a thick quarto volume; and having blown a little cloud of dust from it into the fireplace and rapping it together once or twice, apparently to complete the purgation, he walked up and quietly laid it down, open, before his visitor.

"Would you oblige me by reading one page to me?"

The other stared—"Read this! why gracious me, sir! I can't! Why, it's Greek or Latin or something!"

"Three lines will do."

"I can't, sir, really! I couldn't read a word of it if you'd give me the world!"

"One single line."

"I can't *indeed!* I never learnt a word o' this stuff."

"An agricultural Author too! His name is Theophrastus. It's all about Wheat, Beans—Egyptian Beans too—the same you buy at Mark Lane kiln-dried, and all sorts of other plants and vegetables. Surely you can read it!"

"Not if all I have in the world depended on it! I never learnt the alphabet!"

"Thank you, my young friend—that's an honest answer. Now observe: you are going to pledge all you have in the world, and all that Somebody *else* has too—that you can *farm*; and you've never learnt the alphabet of that! The task you see before you in that book and think so difficult is but the acquirement of a year or two; the other is the labour—of a life—of many lives—and not learnt yet. I'm not joking, believe me. I speak seriously: I've burnt daylight and candlelight—a fair share, over both. *Why* do you think—why does everybody think—that he can farm without having learnt how; that agriculture (if you like that word best) is an exception to *every* other human labour or pursuit, a contradiction to all Natural Law, and will bring a livelihood without study, cost or apprenticeship: that to be able to gabble over the pet jargon about the ignorance of our forefathers—"

The old Chronicler was warming up—and beginning to lurch about in his chair like a Grain-laden Dutchman just clearing out of harbour;—but a look of something in the other's face just happened to catch his eye—a look that somehow or other can break down—and go right *through* a barred and bolted door better than artillery and powder-bags—a look that trips up anger and makes it fall flat on its face—that melts arguments into a jelly—a sort of look between simplicity and penitence—a slight quiver about the mouth like that of a child convicted in a first fault—

The steam was turned off in an instant—the safety valve had opened of its own accord: that precious valve that the Great Author has placed in the inner heart of man, no matter how many rough coats are wrapped over it—

"Come, come! We'll make a bargain after all. An early visit deserves to do business. You're still young—very young. Take a word of advice from an old head. Go to your friend Mr. McScuffler—ask him to take you for two or three years:—it's soon gone. Work away for dear life at *his* farm, and make him tell you all he knows. Fancy that it is *your* money instead of his that buys every ton of manure he expends. Put off your wedding a little bit: *she'll* be constant if you are: and come to me three years hence; I was as young as you once; and when you're as old as me you won't repent my advice. I'll look out something by that time that will suit you better than this."

There was a shaking of hands. A promise on both sides: The door closed: and the momentary flush of warmth fell away from a pair of old cheeks like a red oak-leaf from a bare bough in November as the letters 'marked 1 to 14' were slowly taken up one by one, and glanced at with the leaden eye of habitude. *Talpa.*

Home Correspondence.

Thin-Seeding.—The advocates of thin-seeding for Wheat generally lay great stress on the fact that the plant will tiller out, when thin sown, so as to cover the vacant spaces of ground. There is no doubt that this will be the case to a great extent, but it is, I think, certain that the plant is weakened by sending out so many stalks, and the grain rendered very uneven in ripening. I saw an instance of this last autumn, in a field where the Wheat was thin, but very favourably situated in other respects, being a good soil, drained and unshaded. The preceding crop was Cabbage, manured, in drills. The Wheat was very thin in the early part of the season, but tillered greatly, and looked very well in summer; however it was most uneven in ripening, some spots being ready to cut 10 days before others close beside them. I think this can only be accounted for by the plants sending out so many extra stalks. Do the thin-seeders recommend sowing thinly, later in the season than the end of September or beginning of October? It is not likely that the sparing plan, with respect to seed, will ever be much practised in this country, experience being against it. *T. Bub, Ireland.*

Facts on Feeding.—Do you not think it would be advisable to collect some information respecting the feeding of animals? Nothing is more common than to hear farmers say, feeding does not pay, fattening does not pay, &c.; and thus feeding and fattening are neglected as a science. Now, if farmers have gained any information of a truly scientific kind, it has been in respect of the theory of feeding and fattening. Now, do you not think that if you were to set about collecting some facts respecting the best and most economical use, *e. g.*, of Linseed, it would be highly beneficial to all farmers? The proper use of Linseed, in conjunction with other produce, seems to be the right direction in which we should make inquiries, *e. g.*, its application, in conjunction with straw and roots for young stock; in what proportion, &c., its application, in conjunction with roots and corn, for fattening, &c.; its fitness for rearing. Again, what combination of Linseed with other produce is best fitted for different kinds of animals, *e. g.*, sheep, pigs, horses, &c. If you would send out a tabular scheme, to be filled up by practical men, much good would be effected, and much discussion ensue of an attractive and inductive nature. It is by an induction of facts that true knowledge can be obtained; why should not farmers unite for so good a purpose in so good a cause? Philosophers have given us the theory of feeding; the application of the principle rests with ourselves. If you would sound the bugle, the intellect of the agricultural world would arouse and send in to you a goodly array of facts on feeding. *G. S. W.*

Analysis of several sorts of Wheat.—At a recent meeting of the Academy of Sciences of Paris, M. Eugene Péligot read a paper on the analysis of Wheat. The paper contained results of various analyses, especially of those varieties most commonly met with. 1. White Flanders Wheat, the produce of 1841 at Vienne (Isère). 2. Hardy White Scotch Wheat, cultivated at Verrieres since 1839; the produce of 1843. 3. Very soft and very white Wheat, the produce of 1842. 4. Mixed Wheat from Russian Poland. 5. Very soft Wheat, sown in March, 1842. 6. Wheat of a somewhat glazed appearance, produced in 1840 in the Department of the Loire Inferieure. 7. Ditto, the produce of 1844, at Verrieres. 8. Ditto, the produce of 1844. 9. Ditto, from the environs of Avignon. 10. Very hard Wheat, the grains very long, originally from Western Africa, cultivated at Verrieres in 1844. 11. Wheat from Hacca, in Hungary, the produce of 1845. 12. Egyptian Wheat of small red grain, of unequal size, and horny. 13. Spanish Wheat, the ordinary Wheat of the Paris market, a mixture of white and hard Wheat. 14. Ditto, very hard Wheat (Tangarock). M. Péligot took the greatest care in ascertaining the proportion of each of the elementary principles of which the respective samples were composed, but acknowledges that the exact analysis of all alimentary substances so complex as that of Wheat is surrounded with so many difficulties, both from the number and the nature of its constituent principles, that the results obtained must be considered rather as approximative than definitive. These difficulties principally arise from the inadequacy of the analytical processes, with which we are at present acquainted, in effecting the complete separation of those substances which organic chemistry designates as neutral substances. The following table contains a *resumé* of the result obtained by M. Péligot:

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
Water	14.6	13.6	14.6	15.2	13.2	13.9	14.5	14.2	13.6	13.2	14.5	13.5	15.2	14.8
Fatty Matters	1.0	1.1	1.3	1.5	1.2	1.0	1.0	1.2	1.1	1.5	1.1	1.1	1.8	1.9
Nitrogenous Matters, insoluble in water	8.3	10.5	8.1	12.7	10.0	8.7	13.8	16.7	14.4	19.8	11.8	19.1	8.9	12.2
Albumen	2.4	2.0	1.8	1.6	1.7	1.9	1.8	1.4	1.6	1.7	1.6	1.5	1.8	1.4
Soluble Matters	9.2	10.5	8.1	6.3	6.8	7.8	7.2	5.9	6.4	6.8	5.4	6.0	7.3	7.9
Non-nitrogenous Matters (dextrine, starch, &c.)	62.7	60.8	66.1	61.3	67.1	66.7	59.8	59.7	59.8	55.1	55.6	58.8	63.6	57.9
Skin, &c.	1.8	1.5					1.5		1.4					2.3
Salts				1.4			1.9	1.9	1.7	1.9			1.4	1.6
[*E. H. Durden.*]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Irish Waste Land Improvement.—It is not improved farming that Ireland so much wants, it is extended farming. Nothing can be more deplorable than the condition of the landlords, overwhelmed with taxation, the rates often reaching nearly the amount of rental; without adequate means to improve their estates; without inducement to engage in any large undertaking for working off pauperism, the benefit accruing from it being lost in their too extended electoral divisions. If the condition of the landlords is thus deserving commiseration, what is that of the poor cottier? Forced into the workhouse, his small holding rendering him unable to maintain himself upon it, he is surrounded by the dying and the dead, the mortality in those houses being excessive, from their over-crowded state and the diseases brought on by improper diet, with no chance of his working his way out by remunerative employment, no hope of returning to his cabin, which had probably been rased to the ground the instant he had quitted it, he drags on an idle and wretched existence, indignant at the past, reckless of the future. Is no attempt then to be made to rescue these people from all the bad habits they are acquiring, to make them useful subjects, to apply their capacities to the welfare of the state? Let us consider for a moment what took place in the Union of Chorlton-cum-Medlock, adjoining to Manchester, containing a population of about 80,000 souls. Here a piece of moss land was taken about four miles distant. The able-bodied were set to work there at reduced wages. It thus became their interest to look out for other work. The workhouse was nearly empty, except with infirm and aged; and a fair return was obtained for the land so improved. It would be needless here to mention the numerous cases of successful moss cultivation, but as your correspondent has stated that these are only to be met with in the highly populous manufacturing districts, one particular case may be adduced. About 16 years ago Mr. Wilson France succeeded to an estate, consisting, besides other land, of about 1000 acres of moss land. This was quite in a wild state, covered with Heath, the receptacle of moor game and wild fowl. There was a depth of rich black moss soil varying from 20 to 30 feet, underneath which was a solid bed of clay and marl. The first operation was not only to lay it dry, but to make a large cut, which was to serve as an arterial outlet for the mass of water condensed in this spongy collection of vegetable matter. A good gravel road was then constructed, which led in one direction to Lancaster, about 10 miles distant; in the opposite direction was Preston, about 14 miles distant; these two being the principal market towns for the disposal of produce. At a right angle from the road different oblong enclosures were made with open ditches, these being sunk deeper according as the soil settled or became more solid. The size of the enclosures varied to suit different kinds of occupants. After the land had been properly drained, the first process was to have it well clayed, to give it strength and consistency. A large pit was sunk in a convenient situation. The cast off rails of the Grand Junction Railway happened to be purchased at a low rate. With these the whole extent, at first brought into cultivation, was covered with clay at a moderate rate, at the expense of the proprietor, and then the allotments were let off to families who carried on the further improvements. Nearly the whole of this moss of 2000 acres is now improved, and brings in a return of about 10 per cent. for the outlay made. The Wheat upon the fresh-clayed land is good, the Oats in general very superior, and the soil particularly favourable for green crops of every description. It is remarkable that, while the Potatoes have failed on land adjoining, those on the moss have been quite free from disease. Land of this kind has been known, in small plots, to let at the rate of 8*l.* the statute acre for Potatoes. The moss land itself lets higher than the old enclosed land adjoining. Here there is an instance of the value of moss land, independent of its situation in a wealthy neighbourhood, and it is particularly applicable to Ireland at the present time. There is no material building on the moss, except a wooden one, erected more for temporary convenience than permanent use. It happens that there is a village, Eccleston, about two miles distant, where all the occupiers reside. These go from thence every day to their constant toil, taking pieces of moss land according to the strength of their families and their means of managing it. They chiefly keep only one horse apiece, and join with each other in the proper working of the land. They are neither, in a general way, known to be behindhand with the rent, nor to seek aid from the poor-rate. If an individual, without any extraordinary resources at his command, but by a judicious expenditure, by directing his whole mind and thoughts to it, and by carrying out his planting with unwearied perseverance, can effect such wonders, does it not seem strange that the Government should never have taken any pains to ascertain how far such a measure were practicable in Ireland? Should not a commission of practical men, conversant with matters of this kind, be appointed to examine most particularly the working of this successful moss cultivation? Three years ago a million of money was named by the Government for the improvement of the waste lands in Ireland. No reason was assigned for this being abandoned, but it was generally understood that it arose from some compulsory powers being intended to be introduced into the bill, to which the landlords would not consent. Government can have no right, either on the grounds of reason or justice, to do more in a case of this kind than what they do in that of a road, a railway, or a canal. They have a right to take possession of such portions of land as are necessary for carrying out a general plan, and without which any scheme for the good of the whole community must inevitably fall through. If, however, the only objection to making a trial of the measure be the difficulty of procuring land, some expedient should be resorted to for raising money for the purpose. Humanity recommends it; self-interest calls for it; policy demands it; justice requires it. *Law. Rawstorne, Penwortham, Preston.*

Tillage.—Amongst the different operations of husbandry, one of the most important is tillage; yet, as an art, it is little considered—in the strict and enlarged sense of the word, it is little understood, and, throughout the country at large, is still less practised. In the generations of olden times the usual custom of seeding was to turn over a *light* furrow, to scatter at random a large quantity of seeds (this quantity being supposed to make up for the defects of tillage), and then to cover

the seed with a feeble harrowing. Common sense, more knowledge, larger experience, has, happily, in a general way, superseded this barbarous system. The discoveries of a Smith, the Essays of the Royal Agricultural Journal, the labours of a Mechi, a Hewitt Davis, and other improvers of distinguished note, have shown that, to bring into stimulative activity the full powers of a soil, that soil must be first fully and deeply worked; that to give ample scope and room enough for the roots of plants to extend themselves to their utmost capacity, such soil must be comminuted into the smallest parts; but, most of all, that these two great processes cannot be effectually carried out unless the same soil be previously laid sufficiently dry; that this dryness can only be obtained by thorough draining; and that this draining is not only essential for bringing the soil into a fit state for being more easily worked, but by carrying off stagnant and superfluous water, a warm temperature is introduced into the heart of the soil instead of a cold one, and thus the growth and maturity of plants are accelerated. So much for the theory of tillage. As to the practice, let us see how far it has been carried out. It is stated in the "New Husbandry," p. 134, "it is now more than a century ago since Jethro Tull, the father of the drill husbandry, introduced his invaluable system into this country, yet it is a lamentable fact, how, in many parts, little, if any, advancement has been made in it, and the old practice is still adhered to of having dirty land, and that ill worked." Again, in page 139, Mr. Evelyn is quoted; who tells us, that: "Take of the most barren earth you can find, pulverise it well, and expose it abroad for a year, incessantly agitated (that is, stirred often), it will become so fertile as to receive an exotic plant from the furthest Indies, and to cause all vegetables to prosper in the most exalted degree, and to bear their fruit as kindly with us as in their natural climates." Here are the advantages of stirring the land set forth in the strongest light. And what effect did Mr. Tull produce by this stirring of the land? Merely this; that he grew on the same land in succession for 12 years, excellent crops of Wheat without an atom of manure. He says ("New Husbandry," p. 135), "that the field which the last year had the eleventh crop of Wheat, has now the twelfth on it, very likely to be a good one." He further says that "he kept a team of horses for the use of a tile-kiln, which helps me at present for dung for about 10 acres yearly; but if I put them off, as I intend, I shall not raise dung for above 3 acres; yet I propose to have six score acres of Wheat every year, as I have at this time, 100 of them being drilled on the stubble of my last year's Wheat crop; but if I had only dung for 3 acres, I could then have no more than 3 acres of Wheat in a year by the old husbandry. Well it is for me that dung is not necessary in the 'new husbandry.'" Before considering the tillage part, it may be well to remark, in passing, that this practice is diametrically opposed to the theory of Liebig, Professor Low, Stephens, and various others, who assert that the roots of particular plants draw their nourishment from particular particles of soil, and that other particles of soil are of little value to them. This theory Mr. Tull combated in a long controversy with a Dr. Woodward, and by his own practice proved its fallacy. Without entering into this part of the question, it will be generally admitted, that not only may the introduction of a green crop in a proper rotation be serviceable in adapting particular particles of soil to particular plants, but in contributing to the proper pulverisation and cleaning of the land. This, however, cannot of itself be so effective as to exclude the further use of the drill system, as invented and practised by Mr. Tull, and by which he did such wonders. The use of the drill system is twofold: 1st, by depositing the seed to a certain depth and with greater regularity, each seed has a better chance of vegetating, and the plant from it, having a given space, is more likely to gain strength and fulness of ear; 2d, by the stirring of the soil betwixt the rows, looseness and friability of mould is obtained, by which all the smaller fibres of plants can luxuriate and extend with more ease. Mr. M'Arthur, on the roots of plants, states ("New Husbandry," p. 55) "that he has traced the roots of Clover (the latter less than six months' growth) to the depth of 3 feet; and the roots of Turnips, those which grew straight down, 2 feet, the lateral ones 4 feet from their bulbs; and that he has found Turnip roots or main fibres, in a favourable soil, grow half an inch daily, from the time sown, for three or four months. Drills 3 feet wide, and 10 inches between the plants will be sufficient space. This will produce 30 to 60 tons to the acre; but 100 tons at least is the smallest quantity which all should endeavour to raise." If such can be the effects of tillage on a bulbous root, what may it not also be on a white crop? It has been too much the custom, it is still too much the custom, to suppose that a green crop cures all ills, that a foul broadcast medley may then ensue. But why is not a corn crop to be kept just as clean, the soil to be made as friable, the same depth of pulverisation to be going on as in a green crop. A slovenly practice, a contracted expediency, the absence of proper implements, must be the cause, the only cause, for such a contingency. Any one who has inspected Mr. Davis's Spring-park Farm would find that, although he has not grown Wheat on the same land for 12 years running, like Mr. Tull, and although he has not raised his five crops without manure, yet much less of this is used there than is common in most farming, the dunged crop only coming round once in five years. Here to a certain degree deep and effective tillage is made to supply the place of manure. There is no excuse in the present day for the tillage system not being properly carried out, the facilities for it being so great, from the new and ingenious implements which have been invented, so much superior to the rude one invented by Mr. Tull, the idea of which he took from the barrel of an organ. Mr. Garrett's drill, of which a description is given in the "New Husbandry," p 174, is a most effective implement; it will deposit the seed at any distance required in such a quantity as is wanted. His expanding horse-hoe is adapted to the machine, and will cut the soil and the weeds under the surface, with the rows at different distances. I have sown this last year, with the drills 14 inches apart, and some 9 inches, the quantity of seed being 1½ bushel in part, and the other intended to be 1 bushel, but which appears too thick, and requires being thinned. Mr. Davis inspected some Wheat which had been transplanted, and was grown from 1 peck of seed, estimated from 30 to 40 quarters per acre. He began, himself, by having one of Mr. Garrett's horse-hoes, and he has now got five. But there is another implement very highly spoken of, invented by Dr. Newington, which is said to dibble the seed with still greater regularity than the drill, may be managed by one person by hand, and costs only about 5*l.* instead of the 50*l.* which is the price of Mr. Garrett's, and 16*l.* for his horse-hoe. Of this very promising implement, I cannot speak from my own knowledge, but I hope to do so another year, and to have one myself. A man, it is said, may dibble with it half an acre a day at a proper distance. I will now conclude this dissertation with the wish that some one more learned, more conversant with the matter, more extensively practical than myself, will take up the too long neglected subject of tillage, and will enforce it in such convincing terms as will bring it into more general practice. *Law. Rawstorne, Penwortham, Preston.*

Foreign Correspondence.

KIPPENHOFF, LUXEMBOURG.—Being a constant reader of your *Agricultural Gazette* and having seen so much valuable information given by means of it, I shall be infinitely obliged to you, or any of your correspondents who would be kind enough to give any information upon the following subject. Is there no means of making hay so as to prevent the fermentation which takes place when put in stacks? In Switzerland they estimate that the hay loses at least a third of its nutritive value by the process of fermentation. The following experiments were made upon cows:—Thirteen cows were put up, and each got daily 36 lbs. of newly-made hay, and gave, one with the other, 25 lbs. of milk; the same got afterwards, and during 15 days, 36 lbs. of old hay of the preceding year, from the same meadow. They gave, after the fifth day, 20 lbs. of milk; after 10 days, 14 lbs.; and the last two days, only 12 lbs. The same cows were again put upon new hay, and gave, after the fifth day, 18 lbs.; after the tenth day, 22 lbs; and after the fifteenth, gave again 25 lbs. This experiment shows clearly that the hay during the process of fermentation loses a great deal of its nutritive value, and if there were means of preventing the fermentation, it would be of great service. *Octave Perin d'Augny, Kippenhoff, près de Diekirch, Grand Duché de Luxembourg.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A MONTHLY COUNCIL was held at the Society's House in Hanover square, on Tuesday last, the 6th of March. The following Members of Council and Governors were present:—The Earl of CHICHESTER, President, in the Chair; Hon. Capt. Dudley Pelham, R. N; Sir Charles Lemon, Bart., M.P; Sir John V. B. Johnstone, Bart., M.P; Sir Robert Price, Bart., M.P., Sir Josiah John Guest, Bart., M.P.; Mr. Raymond Barker; Mr. S. Bennett; Mr. Bosanquet; Mr. Brandreth; Mr. Burke; Colonel Challoner; Mr. Garrett; Mr. Brandreth Gibbs; Mr. Fisher Hobbs; Mr. Hudson, (Castleacre); Mr. Jonas; Mr. Milward; Mr. Pusey, M.P.; Mr. Shaw (London); Mr. Shaw (Northampton); Mr. Villiers Shelley; Mr. Slaney, M.P.; Mr. Stansfield, M.P.; Mr. Stokes; Mr. Thompson; Mr. T. Turner; and Mr. Jonas Webb.

The following new Members were elected:

Harris, Joseph, Graysouthern, Cockermouth, Cumberland
Massey, William, Watton, Norfolk
Weld, Joseph, Lulworth Castle, Dorset
Woods, Henry, Merton, Thetford, Norfolk
Green, Joseph B., Marlow, Ludlow, Hereford.

The names of 14 candidates for election at the next meeting were then read.

FINANCES.—Colonel CHALLONER, chairman of the Finance Committee, presented the monthly report on the accounts of the Society; from which it appeared that on the last day of the month of February just ended, the current cash balance in the hands of the bankers of the Society was 1943*l.* The chairman explained to the Council that this balance included the subscription of 1000*l.* presented to the Society through the authorities of Norwich, as well as 224*l.* received on account of arrears of subscription due from members to the Society, and 719*l.* received as compositions for life.

PRIZE ESSAYS.—Mr. PUSEY, M.P., chairman of the Journal Committee, reported that 103 Essays and Reports, accompanied by 113 drawings and plans, had been received in competition for the prizes of this year offered by the Society in the department of Essays and Reports. The Council referred the adjudication of these Essays and Reports to the Journal Committee.—Mr. Pusey congratulated the Society upon the interest evidently so generally felt throughout the country on the subjects proposed by the Council for these prizes, in every class of which there was more or less of competition.

AGRICULTURAL CHEMISTRY.—Mr. PUSEY also presented, as Chairman of the Chemical Committee, the report of that committee, which was received by the Council, and ordered to be printed for the information of their members, previously to its being discussed at the next monthly Council.

VICE-PRESIDENT.—Agreeably with the notice given by the Duke of Richmond at the previous monthly meeting of the Council, it was moved by Mr. Pusey, M.P., and seconded by Mr. Stansfield, M.P., and carried unanimously, that Mr. Thomas Raymond Barker, of Hambleden, Buckinghamshire, should be elected one of the Vice-Presidents of the Society, to fill the vacancy occasioned by the decease of the Earl Talbot. The President expressed the satisfaction he felt at this result of the election, and the pleasure it would have given him, had he not occupied the chair, to have been himself the mover of the resolution to which the Council had then so unanimously agreed.—Mr. Raymond Barker returned thanks for the high honour conferred upon him by the Council, and expressed to them his entire devotion to the interests and welfare of the Society, whose prosperity he had always had sincerely at heart, and to whose continued advancement in usefulness it would ever be his pride to contribute by every humble endeavour in his power.

DRAINING PLOUGHS.—The offer of Mr. Slaney, M.P., to renew his prizes for ploughs to lessen the labour of cutting-out and filling-in drains, was unanimously accepted by the Council.

MODELS, &C., FOR EXHIBITION.—The Council unanimously accepted the offer made to them by the Directors of the Royal Polytechnic Institution, to exhibit the models, &c., belonging to the Society in a room set apart in that Institution for the public exhibition of agricultural objects.

The Council then adjourned to their next weekly meeting on the 13th of March.

Farmers' Clubs.

LONDON, *March 5*: *What is the most efficient, beneficial, and economical mode of providing manure for a farm?*—Mr. LAWRENCE, of Cirencester, introduced this subject, and in the course of his remarks made the following statement on the subject of box feeding:

The plan recommended and adopted by Mr. Warnes, of Trimingham, appeared to me, theoretically, to fulfil all the requisite conditions as respected manure, and with the greatest economy; but as respected the health and condition of the animals, the system was so opposed to all preconceived opinions, that I could not entertain it without careful personal observation and inquiries. I went into Norfolk for the purpose, and inspected Mr. Warnes's boxes, and subsequently the farm homesteads of three other gentlemen who had fitted up their stalls on the same plan, and I made enquiries of those who had the charge of the cattle. The experience of all these parties was most unequivocal in favour of this system, and my personal observation satisfied me that there was no foundation for the prejudices I had conceived. The animals I saw, indeed, told their own story. I converted all my own stalls into boxes, 2 feet deep, and of an area equivalent to 9 feet square; and from my own experience and observation, in other cases in which this dimension has been executed, I would caution any one against boxes of a larger size. These are filled in from 12 to 13 weeks, when they turn out 7 cart loads each of manure fit to go at once upon the land, containing all which has passed through the animals undiluted and unfermented, and consequently comprising every inorganic element, as well as those the decomposition of which is to furnish the organic materials of vegetation and nutrition. When the boxes require to be emptied at a period at which it would be ineligible to cart the dung to the land, we lightly plough a sufficient space on a convenient headland, which will usually be found deeper in soil than the rest of the field, from accumulations in the course of years from turning the teams, to receive any little fluid which may ooze out from the heap. This is formed 5 feet in thickness, and of a certain length and breadth to enable us to calculate, when settled, the quantity in cart-loads. We mix rough salt with the dung as the heap is formed, and when completed we dilute sulphuric acid with about eight times its weight of water, and apply this over the surface, and then cover it immediately with from 6 to 9 inches of earth. No turning is necessary previously to use on land. I should observe that all the litter is cut in from 4 to 6-inch lengths by the chaff machine, when the engine is at work for threshing, bruising Linseed, &c., a very important feature in this system as respects economy in litter—facility of emptying the boxes (which could hardly be accomplished if long straw were used without the aid of a hay knife, as it is so firmly trod), the ready absorption of the fluids, and the fitness of the manure for immediate application to the land without any turning. This manure comes from the boxes in the most satisfactory state; it is moistened throughout without being wet; not a drop of fluid falls from the carts which convey it away. I have seen very strong opinions urged against this system. I know they cannot proceed from those who have tried it, or seen it tried in well drained homesteads, from which no spring or surface water can enter the boxes. The statements to which I refer are in every particular exactly the reverse of my own experience, an observation which has been repeatedly made by others on recent inspection of my animals. The experience of one year, during which I turned into the market 33 fat bullocks, determined me on converting my stables into cottages for those who had charge of the teams, and on building eight boxes for my horses. These were made 9 feet square and 1 foot deep only, because I anticipated the treading would not be so complete as with cattle, which are always in the boxes, and also because the excrement of horses, by nature more readily disposed to fermentation, would by the free admission of air more readily enter into decomposition. That this does in fact occur to some extent I have ascertained when these boxes have been emptied; but this is in a very slight degree perceptible to the senses on the surface, which is perfectly cool when the boxes are full. I am by no means sure that this premature fermentation is not occasioned by the want of depth and consequent solidity of the contents, and I propose putting a pair of horses into the cattle boxes to determine this point. These boxes are almost free from the effluvia of ordinary stables, and the blacksmith reports the horses' feet in excellent order. They are emptied every month, and each contains about four cart-loads of manure. This additional experience induced me to erect 14 sties, 8 feet by 6, to contain two fatting pigs each, the whole under cover. I find the animals thrive very

fast, and seem thoroughly comfortable, but so long as they are in an active state, some of them indulge their inveterate habit of turning over every surface they can get their noses into with facility; this is the only untoward feature of the system as respects them. When they get lazy, and abandon this practice, their dwellings are infinitely more sweet than those on the ordinary plan. There is no manure visible on my homestead, none exposed to dilution or atmospheric influence, none which requires any manipulation in turning. I regret that I am not prepared to give any comparative analyses of manure so made, and of that treated in the ordinary mode; but I believe these will shortly be made at the Agricultural College. Since the 16th of October last, we have hauled out 400 loads of manure thus made, which I feel confident will turn out equivalent to 600 made under ordinary exposure. So far as we can judge from external appearances, from the energy and playfulness of the animals at feeding time approaches, the appetite with which they empty their mangers, their tranquil siesta during the intervals of feeding, the supple and soft touch of the skin, and early maturity, we may reasonably infer a state of enjoyment. That the system is in no respect prejudicial to health may be equally inferred from the same symptoms; but the most unquestionable evidence on this point is, that my boxes were completed the end of October, 1847, since which they have contained 63 head of cattle for fatting, of all ages, with only one mishap. That was in the case of a fine cow, supposed to be barren, which proved in calf when just fit for the butcher after high feeding. She dropped her calf in the night, and was found in the morning, out of her box, in an excited and furious state. Rapid inflammation supervened, and she died in 24 hours. Not having found any manure on my farm when I took possession of it at Lady-day, I had no alternative but to purchase all that was requisite for the crops of that year, rotten dung, guano, nitrate of soda, muriate of ammonia, soot, &c., cost me upwards of 200l. upon a farm of 270 acres, of which 206 are under tillage. I shall this year make 800 loads of very rich manure between the 1st of September and the 1st of June, which will give me 16 loads per acre for every root crop. I shall only have to purchase a small quantity of bones and sulphuric acid to drill with the Turnips to give them an early start. This preparation and feeding off half the roots on the land will, it is believed, in conjunction with deep tillage (we always follow the common plough with a subsoil plough for the root crop), amply supply the elements required for the three succeeding crops of Barley, seeds, and Wheat, which, so far as my observation has gone, is not the case with any artificial manures, useful as they unquestionably are in particular cases. I venture to submit, for the reasons assigned, that the system I have described is an efficient and beneficial mode of providing manure for a farm; my brief experience has been insufficient to enable me to form any opinion in reference to its comparative economy.

Review.

On the Agriculture of Suffolk. By William and Hugh Raynbird. Longman and Co.

This is really a capital book; interesting and useful; possessing valuable contents, well arranged and agreeably written. Agriculture owes much to Suffolk, through Arthur Young, a Suffolk man; and independently of the local interest which the pages of Messrs. Raynbird will excite, there is a national or even wider value belonging to them which the memoirs given of men such as he will confer. But we are far from estimating the general value of an agricultural work by the generality or abstractness of its contents: the more definite, local, and particular they are, the better. We had a great deal rather have the detailed history of a single farm—circumstances being stated—than a whole system of agriculture couched in general terms. And so we estimate far more highly the effect which a wide perusal of the Suffolk report with all its details and particulars will exert on agriculture, than that which a good work on farming generally would have. The Messrs. Raynbird have distinguished themselves highly as agricultural essayists; they have lately won the Highland Society's premiums, as well as those of the Agricultural Society of England: and the estimation in which their judges have held their contributions to our agriculture, will, we are sure, be widely shared in the present instance by many of our readers.

Miscellaneous.

Carrots as Food for Horses.—Having had so many horses of all sorts under my care, I have used Carrots in large quantities; and they are with me prime favourites, either for horses in or out of work, the only difference being as to the quantity given and the time of year. Towards spring, when horses have been many months highly fed on corn, they are extremely serviceable, indeed necessary; in winter I used them very sparingly. They used to be given to race-horses in far greater quantities than they are now, having the character of being good for the wind; but I suspect the only merit they can claim in this respect is, that they keep the body cool and properly open, by which hey conduce greatly to health and condition, and consequently to clearness of wind. About the same thing may be said of their claims to producing a fine coat: whatever conduces to health does so, consequently Carrots do. To any one who has been in a racing stable, or in any well-conducted one, it may seem almost useless to say that Carrots should be sliced in pretty long slices; but I have seen them given by those calling themselves grooms cut crossways; this is really dangerous, as horses are extremely fond of them, and, if at all greedy, would be apt to bolt pieces of them whole, which would be quite likely to cause some of them to stick in the throat. Some persons give Carrots with the corn, thinking it tempts horses to eat their Oats, if of delicate appetite: so they might if perfectly minced, otherwise they will pick them all out, and then the groom may eat the Oats if he pleases, for depend on it the horses would not; but if we were to make minced meat of them, I should still consider it a very bad plan to give them with Oats; for should the horse get accustomed to such a mixture, he would afterwards refuse his corn without it: for this reason I always gave them as separate food; and, if bought at a proper season of the year, by the ton, in the country they are by no means an expensive one, though they become extremely so when a London coachman can persuade his employer that they are necessary for his horses, buys them by the bunch, consumes two of those in his own family, and, if he is delicate as to conscience, gives the third to his horses; if not, they, of course, all go the same way. Carrots, if kept in a dry place in sand, will keep a long time, or in sand they will keep out of doors, if covered with straw, and then banked up with earth; *The Pocket and the Stud, by H. Hiseover.*

Calendar of Operations.

FEBRUARY AND MARCH.

Fen Farm, *March* 1.—The past month must have been the driest and pleasantest February on record; everybody busy cleaning land and sowing spring corn. We began to plant Potatoes, but, finding too many Dandelion and Buttercup roots, thought another ploughing and scuffling requisite; we completed half an acre, however, manuring with soot, the sort, American Natives, cost of seed, 8s. per sack. Barley seeding done. Chevalier produces a better sample than the American and other coarse sorts, yields a less quantity, but heavier to weigh, and realises a better price. Oats sown, the Scotch or Short Small. Poland Oats do not meet so ready a sale; the best sort for yield and quality are the Friesland, care only being required to cut them soon enough, from the liability to heavy loss by shaking. Crows troublesome; scaring expensive for small fields; a man with a gun will keep the birds off a 40-acre field; a little boy or girl will hardly persevere enough to keep 4 acres clear, and if not playing half the time with other children, will be half starved. Lambing season partially began; every shepherd on the alert, and looking over the flock with a watchful eye three or four times a day; the foot-rot or halt very prevalent last autumn, and made great havoc where not duly attended to; the scab also did great mischief: some shepherds have a knack of curing this troublesome pest without difficulty, but where there is a deficiency of judgment, honesty, or diligence, the flock is seriously injured. If the first application of remedies [What is the remedy?] is not successful, the disease gains such ground that strong measures become necessary, and, unless the greatest care is exercised, the constitution of the animal is weakened, and it often dies. It was predicted that the wet season of last year would produce the rot, but we hear nothing of it now; the fat sheep come to market in a good state, and, compared with other food, make a tolerably fair price. Store sheep are not offered here yet, excepting at sales, and they are then reported to bring full rates. Store beasts are also too dear, with the present prospect of their value when fed. *J. W., Peterborough.*

Lammermuir Sheep Farm, *Feb.* 24.—The prospects of farmers generally, and of sheep farmers in particular, are favourable for the year or otherwise, according to the state of the weather during the spring months. At this season, hill pastures, being deadened by frosts and bleached with rain, are at their worst, just when the additional demands made on the ewes, which are now heavy with lamb, would require a supply of more nourishing food. Quiet fresh weather compensates greatly for the want of better food, and in this respect the present month has been unequalled for many years. True, we have had extraordinary high winds, and these of frequent occurrence and long duration, but they have been mild and (in our district at least) dry, and consequently attended with little inconvenience, as far as our sheep are concerned. "The Moss," or Hare's-tail Cotton-grass, has been in perfection, and on all grounds where this valuable plant abounds, the sheep are in nearly as good condition as they were three months ago. There is much, however, between the cup and the lip. Yesterday was fine, the ground actually showing symptoms of spring; and our summer visitors, the plovers and curlews, making their appearance, when this day opened with three inches of snow on the ground, and the appearance of severe frosts. Such of the Turnips as had escaped the effects of January's frosts have been stored for the use of the Cheviot ewes during March and April, while the refuse are nearly consumed by the leanest of the Cheviot hogs and gimmers, and other odds and ends, which, considering the damaged nature of their food, have improved in condition greatly beyond our expectation. The remainder of the Cheviot gimmers were put on Turnips on the 22d, and will continue to receive about one cart-load to 100 sheep, until the lambing has fairly commenced. The old ewes will begin to receive a few about the middle of March. Whenever the ground is sufficiently dry the shepherds will begin to burn the heather. Ploughing is in a forward state, and other 10 days will complete the spring furrow. We had intended to begin Oat sowing next week, though there seems little prospect of it now. The young cattle are getting Oat straw, meadow hay, and a few Turnips. The cows continue to be fed principally on meadow hay, those that have calved receiving in addition about 2 lbs. of crushed Linseed, scalded, and mixed with Oat-chaff. They are milked three times a day, and the calves are allowed from two to three quarts of the new warm milk each time. Even though the quantity of milk given to each calf should be less than that stated above, we prefer giving it in an unadulterated state, and Linseed, sago, or other supplementary food by itself. In addition to the milk, we are giving our calves cut Turnips and Clover hay *ad libitum*, on which they are thriving to a wish. *A Lammermuir Farmer*

West Somerset Farm.—The extent of this farm is 640 acres, of which 360 are arable, and the remainder pasture of very inferior quality. The soil of the upper portion of the farm consists of thin stone brash, whilst the lower part is deeper, being a heavy loam with a clay subsoil, and difficult to work in unfavourable weather. On the stone brash land we grow Saintfoin, which answers very well, particularly if fed with sheep instead of being mown. As our corn crops chiefly depend on sheep husbandry, we keep a wether flock, consisting of 1000 through the summer and 600 through the winter. They are bought as tegs in the spring at the Wiltshire fairs, and are kept round to four-tooths; they live through the summer principally on artificials on land in preparation for Wheat, and through the winter on Turnips and Saintfoin chaff, which food they have done badly on this winter, owing to the land being so wet. The portion we graze have an allowance of oilcake or corn; the remainder are sold in high condition at the fall of the year. We find oxen very useful; they work in harness (an improvement over the old system of yokes), generally four in a plough; they are purchased at two years old, worked two years, and then grazed. Those in the stalls, of which we have now 22 (principally Herefords), consume each per day 6 lbs. of oil cake, ¾ cwt. of cut Mangold Wurzel, ¼ peck of meal, with about 9 pecks of inferior hay chaff steamed. There are besides 20 steers and eight dairy cows; the former living on straw chaff and ½ cwt. of Mangold a day. We also keep 14 horses; these are never turned to Grass. We estimate their keep at 10s. a week, which includes 1s. for the expense of cutting and steaming the chaff. Each horse is allowed per week 1½ bushel of Oats, ½ bushel of split Beans (which is taken off through the summer months), with ¼ cwt. of bran, moistened and mixed with as much steamed straw chaff as they will eat. No charge is made for straw, as we consider the quantity and quality of the manure very far exceeds the value of it. We do not know what it is to have an unhealthy horse, and this treatment keeps them in capital condition. The consumption of chaff being very great on the farm, it is cut by one of Cornes's engines, worked by a pony 13 hands high. Our Wheat field consists of 105 acres, the drilling of which we have just completed; that which is up looks remarkably healthy; our quantity of seed is 8 pecks an acre before Christmas and 9 pecks after, as thin sowing does not answer on this land. We have 38 acres of winter Beans (on stubble), looking well, and are now busy in preparing 50 acres of land for Oats, as we find the growth of Barley unkind on our soils. The Wheat crop of last year is of a very inferior quality, and the yield very deficient; much of it is unsaleable, and this we give to the grazing stock without any prospect of return, as, with the present price of beef, stall-feeding must be a most unprofitable business this season. Our labourers have been employed this winter in draining a portion of the heavy land, where we use pipes, putting the drains 20 feet apart and 3½ deep; the cost is 6*d.* a rope. On the stone brash we use stones; this work is much more laborious and expensive, costing from 1*s.* 4*d.* to 1*s.* 8*d.* a rope. *H. E.*

Notices to Correspondents.

Artificial Hatching: *A Family Man* says—Can any one of your correspondents state, from experience, what are the merits of Cantelo's hydro-incubator, or any other method of artificial hatching. I do not mean whether the magnificent promises of the inventor are capable of being realised, but whether any such process can be profitably applied to the hatching of say eight or nine broods in the course of the year; and what is the expense of producing 100 chickens in this way compared with the usual natural method. Also, whether it is possible to rear chickens so hatched and send them to market weighing 2½ lbs. a piece at a cost of 8*d.* or 10*d.* I think some process might be devised by which families (like my own, for instance), who would find an immense supply of eggs rather wasteful and troublesome than otherwise, might supply themselves at a cheap rate with 50 or 60 couple of fowls in the course of the year. Eggs are now in this neighbourhood 14 or 15 a shilling, and well fed fowls 3*s.* to 3*s.* 6*d.* a couple. And on rabbits: Can any of your readers state what their experience is about rabbits as a branch of domestic economy. Is it profitable or not to rear them?

Bones and Acid and Salt: *C F.* The resulting compounds will be superphosphate of lime and gypsum and salt. You had better, therefore, prepare—say 3 cwt. of the superphosphate per acre, and apply it, and then sow broadcast as much salt per acre as you require; say 2 or 3 cwt. per acre in addition.

Boxes: *A Novice.* The shed 13 feet 16 inches wide should have a trough along its back, and it should then be divided lengthwise into about 7½ or 8 feet widths for boxes. You may sink the floor about 18 inches; no drain is needed: the straw will absorb all the liquid with perfect facility. For air and light leave the point of the shed open, if its aspect be south; if not, build a straw rick in front of it, 3 yards off. The division should be 5 feet high from the floor, and may be made of wooden paling.

Brewing: *A Family Man.* Will any one state their experience of brewing from say one-third malt and two-thirds Barley.

Buckwheat: *Mr. Price* would oblige by stating the quantity of Buckwheat consumed by the two pigs which increased 58 lbs. in 14 days.

Butter: *S H R.* 684 quarts of milk weekly should yield about 60 lbs. of butter a week. The number of cows yielding this quantity depends upon their size and quality.

Dwarf Maize: *J Spencer.* Do not know. But you might ascertain in a pamphlet lately published, "Facts for Farmers," Longmans.

Farm 200 acres Arable and 100 Pasture: *A Z.* You know the nature of the rotation greatly affects the labour of a farm. For instance, a farm of which two-fifths is laid down to Grass every year does not require so many horses as one, one-eighth of which only is Grass. Taking our own experience as guide, you will want on a light soil for the above farm, 3 pairs of horses and an odd horse, 3 ploughs, 3 pair of heavy harrows, 2 pair of Grass seed harrows, 3 horse hoes, 2 cultivators or Finlayson's grubbers, 1 heavy and 1 light roller 6 carts with harvest bodies, the Uley Linseed bruiser, sowing machines, Hornsby's cake crusher, 2 or 3 Turnip cutters, and you may probably feed 40 head of cattle, and 250 or 300 sheep per annum.

Green Manure: *Spade Farmer.* Sow Italian Rye-grass among the Beans with the last hoeing in April that they receive. You need add no manure with it if the Beans grow well.

Invention by a Farmer: *A Hertfordshire Farmer.* Your note was immediately put in type, and has not been published before merely owing to a great press of matter on hand.

Irish Society. *Geo Hornby.* You neither do us nor yourself justice in consenting to be guided by our "Yes" or "No." If your object be philanthropic we should say "Yes" decidedly; if commercial, we give no opinion.

Pigeons. *W G.* The "Boy's Own Book" contains a chapter.

Soil: *I J Newton.* Try superphosphate of lime. Your soil seems to be a stiff clay, or we should say try bone-dust. Burning the soil would probably be a great improvement.

Markets.

COVENT GARDEN, March 10.

Notwithstanding the changeable weather we have just experienced, the market continues to be well supplied with Vegetables and winter Fruit. Pine-apples are sufficient for the demand. Grapes are, however, scarce and dearer. Pears are becoming scarce; they consist of Beurré Rance and Easter Beurré. Apples are getting dearer. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst vegetables, Carrots and Turnips are abundant; Cauliflowers and Broccoli sufficient for the demand. Asparagus is dearer; French Beans, Rhubarb, and Seakale are plentiful. Potatoes remain stationary. Lettuces and other saladiug are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Christmas Roses, Camellias, Gardenias, Tulips, Hyacinths, Cinerarias, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 9s	Almonds, per peck, 6s
Grapes, foreign, p. lb., 1s to 2s	— sweet, per lb., 2s to 3s
Apples, dessert, p. bsh ,6s to 12s	Walnuts, p. 100, 1s 6d to 2s
— kitchen, p. bsh., 3s to 5s	— p bush., 16s to 24s
Pears, per doz., 2s to 6s	Nuts, Bar., p bush., 20s to 22s
Oranges, per doz., 1s to 2s	— Filb., p. 100 lbs., 60s to 100s
Lemons, per doz , 1s to 2s	— Cob, p. 100 lbs., 90s to 150s
— per 100, 10s to 18s	— Brazil, p. bsh., 12s to 16s
Chestnuts, p. peck, 4s to 7s	

VEGETABLES.

Cabbages, p. doz., 3d to 1s	Spinach p. sieve, 1s 6d to 2s
— red, p doz., 2s to 6s	Onions, p. bunch, 2d to 4d
Savoys, per doz., 3d to 1s	— p. bush , 1s 6d to 2s 6d
Greens, p. doz. bunches, 1s 6d to 2s 6d	— Spanish, p. doz., 1s 6d to 4s
	— pickling, p. hf. sieve, 1s 6d to 3s
Cauliflowers, p. doz., 2s to 4s 6d	
Broccoli, white, p. bun., 1s to 2s	Shallots, per lb , 4d to 8d
— brown, p. bun., 6d to 1s 3d	Garlic, per lb., 4d to 8d
Sorrel, p. hf. sieve, 9d to 1s	Artichokes, Jerusalem, p. half sieve, 9d to 1s
Potatoes, per ton, 60s to 180s	
— per cwt., 5s to 9s	Lettuce, Cab , p. sc., 4d to 9d
— per bush., 2s 6d to 5s	— Cos, do., 9d to 1s
Turnips, p. doz. bun., 1s to 2s	Endive, per score, 1s to 2s 6d
Red Beet, per doz., 6d to 1s	Mushrooms, p. pottle, 6d to 1
Horse Radish, p. bdl., 1s to 6s	Small Salads, p. pun., 2d to 3d
Asparagus, p. 100, 2s 6d to 12s	Fennel, per bunch, 2d to 3d
Seakale, p. punnet, 9d to 1s 6d	Savory, per bunch, 2d to 3d
Rhubarb, p. bundle, 6d to 1s 6d	Thyme, per bunch, 2d to 3d
French Beans, p.100, 3s to 4s6d	Watercress, p.doz.bun., 6d to 9d
Cucumbers, each, 1s 6d to 6s	Parsley, p. hf. seive, 1s 6d to 2s
Leeks, per doz., 6d to 1s	— Roots, p. bdle., 1s to 1s 6d
Celery, p. bundle, 6d to 1s 3d	Marjoram, per bunch, 2d
Radishes, p. six hands, 2d to 1s	Mint, green, per bunch, 4d to 8d
Carrots, p. doz. bun., 3s to 5s	

SMITHFIELD, Monday, March 5.

The number of Beasts to-day is considerably smaller than of late; the dead markets being clearer, there was an increased demand; consequently prices have advanced fully 2d. per 8 lbs. Owing to the small supply of the Sheep, Friday's advance is well supported, but trade is not so brisk as was expected. A few shorn Sheep of very choice quality made from 3s. 8d. to 4s. Also a few very good Lambs about 7s. Calves sell slowly at lower average rates. From Germany and Holland there are 279 Beasts, 880 Sheep, and 117 Calves; from Spain, 80 Beasts; from Norfolk and Suffolk, 2080; and from Scotland, 400.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	8 to 3	10	
Best Short-horns	3	4 — 3	8	
2d quality Beasts	2	8 — 3	2	
Best Downs and Half-breds	4	6 — 4	8	
Ditto Shorn				
Best Long-wools	4	2 to 4	4	
Ditto Shorn				
Ewes & 2d quality	3	4 — 4	0	
Ditto Shorn				
Lambs				
Calves		3 10 — 5	0	
Pigs		4 0 — 4	10	

Beasts, 3237; Sheep and Lambs, 15,620; Calves, 178; Pigs, 170.

Friday March 9.

There is a fair average number of Beasts to-day; the weather being favourable causes a cheerful trade, but Monday's quotations are not exceeded. We have nearly twice as many Sheep as on Friday last; there is difficulty in maintaining Monday's rates, especially for Ewes and middling quality. The supply of Calves is short; late prices are cheerfully given. Trade is brisk for Pigs at a trifling advance. From Holland and Germany we have 120 Beasts, 500 Sheep, and 44 Calves; from Scotland, 200 Beasts, and 168 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	8 to 3	10	
Best Short-horns	3	4 — 3	6	
2d quality Beasts	2	6 — 3	2	
Best Downs and Half-breds	4	6 — 4	8	
Ditto Shorn				
Best Long-wools	4	2 to 4	4	
Ditto Shorn				
Ewes & 2d quality	3	4 — 4	0	
Ditto Shorn				
Lambs				
Calves		4 0 — 5	0	
Pigs		4 0 — 5	0	

Beasts, 902; Sheep and Lambs, 3380; Calves, 179; Pigs, 210.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, March 8.

Prime Meadow Hay	68s to 75s	Clover	60s to 95s
Inferior ditto	50 63	New Clover	— —
Rowen	40 60	Straw	26 30
New Hay	— —		J. Cooper.

The supply short.

CUMBERLAND MARKET, March 8.

Prime Meadow Hay	70s to 76s	Inferior	50s to 80s
Inferior ditto	50 63	New Clover	— —
New Hay	— —	Straw	28 32
Old Clover	88 92		Joshua Baker.

WHITECHAPEL March 8.

Fine Old Hay	68s to 72s	New Clover	84s to 90s
Inferior ditto	50 55	Inferior ditto	60 65
New Hay	63 68	Straw	26 30
Old Clover	95 100		

POTATOES.—Southwark, Waterside, March 5.

The Committee report that the arrivals during the past week have been rather extensive, particularly Yorkshire Regents, which are meeting a very heavy sale, and although we have not much reduction in price to report, our market is very dull for all sorts. The following are this day's quotations. York Regents, 100s. to 140s.; Scotch, do., 100s. to 120s.; Scotch Cups, 90s. to 100s.; Whites, 70s. to 80s.; French Whites, 80s. to 85s., Belgian do., 70s. to 90s.

HOPS, Friday, March 9.

Messrs. Pattenden and Smith report that the market continues the same.

MARK LANE.

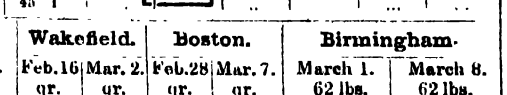
Monday, March 5.—Although the supply of English Wheat by land carriage samples this morning was small, great difficulty was experienced in the disposal, and a decline of 1s. to 2s. per qr. was necessary to effect sales, excepting upon the finest parcels. Foreign met but a retail inquiry, which was chiefly confined to inferior qualities, and must be written 1s. per qr. cheaper.—Fine Barley maintains its former value, but all other descriptions are 1s. per qr. lower.—We reduce our quotations 1s. per qr. for Beans and Grey Peas, and 3s. to 4s. per qr. for White Peas.—Oats are a slow sale, and granaried samples the turn cheaper.

Friday, March 9.—The attendance at market this morning was very small, and, millers showing a general disinclination to purchase, sales of Wheat were quite in retail, at a decline of 1s. per qr. on the rates of Monday for foreign. English remains nominally unaltered.—Barley, Beans, and Peas are a slow sale at our quotations; Oats the turn cheaper.—Prices on the Continent have undergone little alteration; in the Baltic business is dull, and buyers have perhaps a slight advantage over our last quotations. In Belgium the former rates are well supported, and in France we observe no difference.

Liverpool, Friday, March 9.—We have had moderate arrivals since Tuesday. At this day's market we had a small attendance and a dull trade, Wheat in some cases was sold 1d. per bushel cheaper. Flour declined 6d. per barrel, and was more freely offered. Oats and Oatmeal were also rather lower, and the same may be said of Barley, Beans, and Peas. Indian Corn was in limited request at about Tuesday's rates.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Jan. 27 ..	45s 3d	28s10d	17s 0d	28s11d	30s 3d	32s 8d
Feb. 3 ..	45 1	28 10	16 11	28 5	30 3	32 6
— 10	45 11	29 3	17 3	27 2	30 11	33 0
— 17	47 0	29 8	17 2	26 9	29 9	34 4
— 24 ..	46 4	29 8	17 5	27 8	30 10	32 11
Mar. 3	45 6	29 1	19 7	26 11	30 2	32 11
Aggreg. Aver.	45 10	29 3	17 2	27 8	30 5	33 1
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.



Prices Current.	London.		Liverpool.		Wakefield.		Boston.		Birmingham.	
	Feb. 26	Mar. 5.	Feb. 27.	March 6.	Feb. 16	Mar. 2.	Feb. 28	Mar. 7.	March 1.	March 8.
	qr.	qr.	70 lbs.	70 lbs.	qr.	qr.	qr.	qr.	62 lbs.	62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d	s. d. s. d.
New, red ...	40 to 41	38 to 40	6 4 6 10	6 4 6 10	44 to 48	45 to 48	38 to 45	36 to 44	5 9 6 6	5 9 6 6
„ white ...	46—48	46—48	6 10 7 6	6 10 7 6	46 50	46—50	40—47	38 47	6 2 6 10	6 2 6 8
Old, red ...	42—44	40—43	6 8 7 0	6 8 7 0	44 49	45—47	42—44	42—44	6 4 6 8	6 2 6 7
„ white ...	46—50	46—50	7 0 7 8	6 4 6 10	44—50	52—	44—46	44—46	6 2 6 10	6 1 6 9
Foreign	40 - 58	10—52	—	—	40 - 52	40 - 44	—	—	5 4 7 0	6 0 7 0
			480 lbs.	480 lbs.						
Rye—New ...	25—27	25—27	—	—	—	—	—	—	—	—
Foreign meal	7l. 5s	7l. 5s	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	22—26	22—26	—	—	22 - 25	22—25	26—28	26—28	23—27	23—27
Malting... ...	26—28	26— 28	31s—33s	31s—32s	27 - 32	27 - 30	30—32	30—32	29—33	29—33
Foreign... ...	20— 28	20— 28	—	—	24 -26	24—26	—	—	—	—
					6 bush.	6 bush.				
Malt—Home	—	—	—	—	39 42	39—40	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	19—23	19—24	2s10d 3s 2d	2s10d 3s 1d	—	—	20—24	20—24	20—26	18—30
Black...	16—19	16—21	2 4 2 6	2 4 2 6		—	17—20	—	17—18	17—19
Foreign	15—23	15—23	2 4 2 6	2 4 2 6	-	-	—	—	17—19	—
			qr.	qr.						
Peas—Boilers	28—30	24— 27	37s—	36s—	30—34	30 - 32	—	—	36—44	36—44
Grinding...	27—29	28— 30	30 —32s	30 —32s	30 —32	- -	—	—	12—13	12—13
Foreign ...	25—33	24—27	34 —36	33 —35	—	—	—	—	—	—
Beans—										
New, small ...	21—30	20 - 30	32 —35	32 - 35	31 - 33	31—33	26—32	26—32	11—13	10—13
Longpods, &c....	26— 32	26— 32	—	—	- -	—	—	—	—	—
Old	27—39	27—39	34 —36	34 —36	33—37	36—37	34—36	34—36	15—16	15—16
Foreign ...	22—36	23—36	28 —30	31 —33	28 - 31	28—31	—	—	11—14	10—13
Clover Seed—										
For. Red, p. cwt.	30—42	—	—	—	—	—	—	—	—	—
Do. White „	30—44	—	—	—	—	—	—	—	—	—
Linseed—Feed	—	—	42 —43	40 —42	32—40	32—40	—	—	—	—
Foreign ...	36—40	36—40	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	10l. 5s	10l. 5s	8l.—8l. 5s	7l. 15s—8l.	—	—	—	—	—	—
Foreign ...	6l. 8s	6l.—8l.	—	—	-	—	—	—	—	—
Indian Corn—	24—28	24—28	28 —31	28s—29s	—	—	—	—	190 lbs.	190 lbs.
	p. sack	p. sack		280 lbs.					13—14	13—14
Flour—	35—44	35—44	—	34—36	—	—	p. sack 35—42	p. sack 35—42	per sack. 37— 40	per sack 37—40

Weekly Averages and Imports.	Aver. Mar. 6.	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	47 2	24189	46 4	4937	46 6	9294	43 6	2995	48 2	1804
BARLEY ...	29 11	1606	29 8	12.9	31 9	3466	26 2	95	30 0	941
OATS... ...	17 5	2472	17 5	5629	18 0	1603	14 2	846	19 1½	3849
RYE	—	—	27 8	—	—	—	—	—	—	—
BEANS ...	37 1	82	30—10	5962	30 7	898	28 9	429	36 0	—
PEAS... ...	33 7	34	32—11	20	—	495	—	—	—	513

Signed { KINGSFORD and LAY. | SEGAR and TOUNGLIFFE. | SANDARS and DUNNS. | THOMAS WRIGHT. | J. and C. STURGE.

GRASS SEEDS.

H. R. SMITHE, Eastling, Faversham, Kent, informs the public that his mixtures of Grass Seeds, with a proportionate admixture of the Perennial Clovers, for laying land down to permanent pasture, are now ready at 8s. per bushel. Also to form Lawns and mend old Grass land, 1s. per lb. The seeds are collected under his immediate superintendence. A description of the soil, situation, &c., is requested; also a reference from unknown correspondents.

SEEDS.—MEADOW AND PASTURE GRASS SEEDS, in mixtures suited to various soils, &c., at 32s. per acre, allowing 2 bushels and 12 lbs. to each acre. Directions for sowing and treatment will accompany the seeds. Mixed sorts for improving old Grass Lands, 1s. 3d. per lb. Fine sorts for forming Lawns, &c., 1s. 4d. per lb.

GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address George Gibbs and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c. &c., 26, Down-street, Piccadilly, London.

KITCHEN GARDEN SEEDS.—

No. 1.—A complete collection, consisting of 20 quarts of the best kinds of PEAS, inclusive of Fairbeard's Champion of England, Early Surprize, British Queen, Burbidge's Eclipse, &c., and all other Seeds in proportion, of the newest and best sorts, sufficient for one year's cropping of a large garden, the choicest Melons and Cucumbers inclusive .. £3 3s 0d

No. 2.—Complete collection in smaller quantities, equally choice sorts 2 2 0

No. 3.—Ditto 1 1 0

No. 4.—Ditto. This is sufficient for a small garden 0 12 6

No extra charge for packing; carriage paid to London.

A General Catalogue may be had; also a List of each collection.

SELECT FLOWER SEEDS.

100 packets of the newest and best Annuals, &c. 15s. 0d.
50 „ ditto ditto ditto .. 8 0
25 „ ditto ditto ditto .. 4 0

A fine collection of imported Stocks, Zinnias, Asters, &c., named, 3d. per packet. Sent postage free.

A Descriptive Flower Seed Catalogue sent with each collection by enclosing two postage stamps.

William James Epps, Maidstone, Kent.

CUCUMBER AND MELON BOXES AND LIGHTS. — One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 6s. Garden Lights of every description. Conservatories, Green and Hot-houses made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England.

James Watts, Hothouse Builder, Claremont-place, Old Kent-road, London.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—The readers of the *Gardeners' Chronicle* of Saturday, Feb. 24th, must have observed the high terms in which this Glass was spoken of by Dr. Lindley. We have therefore re-arranged our list of prices to correspond precisely with those of the Patentee, to which we would beg the attention of the Nobility, Clergymen, Gentry, and others.

In Crates of the sizes as manufactured	.. ..	6d.	per foot.
In Squares	under 8 by 6	4	„
„ 8 by 6 and under	10 by 8	4½	„
„ 10 by 8 „	14 by 10	5	„
„ 14 by 10 „	14½ foot	5½	„
„ 14½ foot „	3 „	6	„
„ 3 „ „	4 „	6½	„
„ 4 „ „	5 „	7	„
„ 5 „ „	6 „	7½	„
„ 6 „ „	8 „	8½	„
„ 8 „ „	10 „	10	„
	Quarries	6	„

Averaging ⅛ of an inch thick, and about 26 oz. to the foot.

Jas Phillips & Co., 116, Bishopsgate-street Without, London.

HARTLEY'S PATENT ROLLED ROUGH PLATE GLASS, for Horticultural purposes.—It is now proved beyond a doubt that the above Glass is very far superior to any hitherto discovered for all kinds of Horticultural uses. (See *Gardeners' Chron., Feb. 24th*, 1849, p. 115.)

WILLIAM PATTEN and Co., Glass, Lead, and Colour Merchants, 20, Old Fish-street, Doctors' Commons, London, beg to inform the public that in consequence of the numerous orders they have executed in Ireland, Scotland, and the principal counties of England, they have entered into such arrangements with the Patentee as will enable them to supply the above Glass in any quantity, strictly at the Manufacturer's prices. W. P. and Co. have a large quantity of Crown Squares in Stock, in 100 feet boxes, from 1d. per foot.

P.S. Sole Manufacturers of the Anti-Corrosion and Mineral Paint for all kinds of Out-houses, Park Fencing, Farm Buildings, &c.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS and CO., 116, Bishopsgate-street Without, London, are supplying 16-ounce SHEET GLASS at prices varying from 1½d. to 3½d. per foot; 21-ounce, 2½d to 5d., according to size. Also Patent Rough and Polished Plate, double crown. Small sheet squares, in 100 feet boxes, from 12s. 6d. per box.

A well selected stock of Milk Pans, Propagating Glasses, Cucumber Tubes, Cream Pots, &c., Glass Shades for Ornaments, Lamp Shades, Metal-stand Frames, Lactometers for trying the quality of milk, and every article usually sold by the trade. Estimates and prices forwarded on application.

GLASS FOR CONSERVATORIES, &c.

HETLEY and CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, bernacle, brent, and laughing geese, sheildrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

FLOWER-POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford-street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford-street, near Hyde-park.

Sales by Auction.

TO NOBLEMEN, GENTLEMEN, FLORISTS, & OTHERS.

MESSRS. PROTHEROE AND MORRIS respectfully announce they will offer for sale, at the Auction Mart, Bartholomew-lane, on WEDNESDAY, March 14, a choice collection of CARNATIONS and PICOTEES, a selected assortment of Standard and Dwarf Roses, Lancashire Gooseberries, Auriculas, Dahlias, &c.—May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, FLORISTS, & OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, at the Mart, Bartholomew-lane, on FRIDAY, March 16, 200 Standard and Dwarf ROSES, consisting of Hybrids, Perpetuals, Bourbons, Noisettes, &c.; American Plants, comprising Hybrid Rhododendrons, Kalmias, Magnolias, Andromedas, &c.; 100 Double Camellias well set with bloom-buds, Dahlias, Fuchsias, Verbenas, Lilium lancifolium, &c.—May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO SEEDSMEN, NURSERYMEN, MARKET GARDENERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, on MONDAY, March 19, a large quantity of GARDEN and AGRICULTURAL SEEDS, used in the Trade. The stock will consist of about 2 tons of Onion Seed, Cauliflower, Lettuce, Turnip, Grass Seeds, &c.; also a most excellent stock of Flower Seeds of all kinds. The Lease of the Shop, with all the Fixtures, will be sold at the same time, if not disposed of by private contract.—Catalogues will be ready in a few days, and may be had at the usual places. Further particulars will be duly advertised.

TO NURSERYMEN, FLORISTS, BUILDERS, AND OTHERS. UNDER DISTRAINT FOR RENT.

MESSRS. DAVIS AND VIGERS will sell by Auction, at Grosvenor Park, Grosvenor-street, Camberwell, on MONDAY, March 19, 1849, at 12 for 1 o'clock, an entire NURSERY STOCK, comprising 120 Peach, Nectarine, and Apricot Trees; 86 Cherry, Apple, and Pear Trees; 8 Mulberry Trees, 625 yards of Box-edging, 325 yards of Privet fencing, 278 Standard Apple, Pear, and Plum Trees; 600 Laurels, 600 Dog Roses, and various bulbs, roots, and plants in pots. Also the Forcing Frames, Implements, &c. To be viewed the Saturday before and morning of sale, and Catalogues had on the premises, and of the Auctioneers, 3, Frederick's-place, Old Jewry, London.

SUNBURY, MIDDLESEX.

TO BE LET, and entered upon immediately, if required, either as a whole, or in separate parcels, A FARM, containing 173 acres, all Arable, except about 24 acres of Meadow.—Apply to Mr. WILLIAM TURVILL, on the Premises; or to Mr. J. H. Fricker, Kingston; and to Messrs. Chapman, Webb, and Chapman, 3, Arundel-street, Strand, London.

FRUIT TREES, TULIP BEDS, &c.—GARDEN NETTING, for preserving fruit-trees from frost, blight, and birds, or as a fence for fowls, pigeons, tulip and seed beds, can be had in quantity from JOHN KING FARLOW'S Fishing Rod, Tackle, and Net Manufactory, 5, Crooked-lane, London-bridge, at 3d. per yard, two yards wide, or 1½d. the square yard. The above is the only netting, being tanned, that will stand exposure to the weather. Forwarded, same day, on receipt of a Post-office order.

PERUVIAN AND BOLIVIAN GUANO ON SALE,
BY THE ONLY IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WILLIAM JOSEPH MYERS AND CO., LIVERPOOL;
And by their Agents,
GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
COTESWORTH, POWELL, AND PRYOR, LONDON.

To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

SUPERPHOSPHATE OF LIME, the best Manure for Turnips and all Root Crops, when Manufactured from the Genuine Materials.

JOHN HUNT respectfully informs his Agricultural Friends that he has always a stock of this valuable MANURE ready for delivery, which he confidently recommends as being the best for producing Turnips, Potatoes, and all Root Crops, and will bring the plant much earlier to hoe. The Reports of the Royal Agricultural Society and other scientific men, will most satisfactorily attest its value in this respect. As a defiance against the fly, this Manure, from being more rapid in its effects than any other, brings up the plant vigorously, throwing it at once into rough leaf, and thus defies the ravages of this destructive insect, while the crops per acre, at a cost of not more than 21s., far exceeds, under ordinary circumstances, that produced by any other means. I have a large number of letters from many Farmers, who have used this Manure for the last four years with great success. It is necessary to caution Agriculturists that there is an inferior article in the market, manufactured from *Coprolite* instead of Bone and Guano, not because the quality is superior, but the price is the inducement, Coprolite being 80s. per ton, and Bone 85s. per ton. But it must be observed that Coprolite was not in the market when Superphosphate of Lime was first introduced; the ingredients which composed that article in those days were Bone, Guano, Animal Charcoal, and Vitriol, which brought this Manure into such great repute. But the character of Superphosphate of Lime must fall, and its previous reputation will be lost, if Farmers allow themselves to be deceived by this rubbish. It may be easily detected by its gravity, which is very dense, and has a cement-like appearance, when made from the Coprolite stone. I advise all consumers and dealers in this article to visit the Works and judge for themselves, and beware of those who have chemical secrets and other subterfuges; there should be no such excuses where the genuine articles are employed.

Farmers can be supplied with all the ingredients for making Superphosphate of Lime who have the convenience for so doing. Guano, Nitrate of Soda, Sulphuric Acid, and Bone Manure supplied at the lowest market prices.

Agents are wanted for the sale of Superphosphate of Lime and other Manures, where none are at present appointed.

Bone Mills and Manure Works, High-st., Lambeth, London.

THE IMPROVED HYDRAULIC RAM, fixed by FREEMAN ROE, Fountain Maker, 70, Strand, London, can be worked by a small stream of half-an-inch, where a fall of 2 feet can be obtained. The same RAM, without the aid of a Tank or Cistern, arranged to throw a Jet of Water constituting a Fountain with the head of water beneath.

Engines for deep wells of all kinds, Douche and other Baths, Buildings heated by hot water. Water wheels to work small pumps, from 18l. Estimates given for the supply of towns, &c.

A newly-invented Portable Vapour Bath, all complete for 4l.

GREEN AND HOTHOUSES made by machinery for one-half their usual cost. A Lean-to Greenhouse, 12 feet by 8 feet, two glass ends, one door, and 3 feet of glass in front, glazed with 16 oz. sheet glass, of a large size, and painted three times, delivered to any wharf or railway station in London for 15l. 10s., including a plan for brickwork; a do. do., 15 feet by 10 feet, 22l. 10s.; a do. do., 18 feet by 12 feet, 28l. 10s.; a do. do., 21 feet by 12 feet, 32l. 10s. 1½-inch Greenhouse Lights, glazed 16 oz. sheet glass, painted three times, 11½d. per foot; 2-inch do. do., 1s. Warranted best materials.—J. LEWIS, Hothouse Works, Stamford-hill, Middlesex.

GRASS SEEDS.
CORNER OF HALF-MOON-STREET, PICCADILLY.

THOMAS GIBBS AND CO., the SEEDSMEN TO THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND, beg to inform their Agricultural friends that they have now finished cleaning their bulks of the different kinds of Grass Seeds, which are now ready for delivery. T. G. and Co. beg to call particular attention to the following, viz.

MIXTURES OF SELECTED NATURAL GRASSES for laying down land to permanent MEADOWS and PASTURES, with a proper admixture of the permanent Clovers, properly apportioned, to suit the nature of the different soils and the purposes for which they are intended.

RENOVATING MIXTURES for improving old Grass land

FINE MIXTURES for forming garden lawns and Grass plots.

Also, Italian Rye Grass, and all other kinds of Grass seeds and Clovers.

CARROTS.
Large White Belgian Carrot,
Large field Altringham Red Carrot.
MANGOLD WURZEL.
Yellow or Orange Globe,
Long Red,
Red Globe, and Long Yellow.
TURNIPS.
Purple and Green-top Swedes,
Skirving's and Laing's Swedes,
Gibbs's Green and Red-top Yellow Hybrid,
Green, White, and Red Globe,
Green, White, and Red Tankards.
CABBAGES.
Large Drumhead Cattle Cabbage,
One thousand-headed Cattle Cabbage,
Kohl Rabi, Purple and Green kinds.
PARSNIP.
Large Cattle Parsnip.

Clovers, Sainfoin, Furze or Gorse, White Mustard, Rape, and all kinds of Agricultural, Kitchen Garden, and Flower Seeds.

THOMAS GIBBS and Co., the Seedsmen to the Royal Agricultural Society of England, corner of Half-moon-street, Piccadilly, London.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 400 and 500) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a copy of the testimonials, will be sent on application to WALTER CARSON, 15, Tokenhouse Yard, back of the Bank of England.—No Agents.—All orders are particularly requested to be sent direct.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—GEORGE NEIGHBOUR and SON, 127, High Holborn, London.

"Nutt on Bees" (6th edition), now published.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S-ROAD, CHELSEA.

EDENCH having erected Hothouses for Sale on his Premises, invites the attention of Gentlemen about to erect Hothouses to inspect his Patent Plans, when they at once will perceive the vast superiority of these Houses over any others hitherto erected, for strength, lightness, durability, handsome appearance, healthiness to plants of every description, the roofs of one principle being formed without wood, putty, or paint, with a smooth surface and only about 5-8ths of an inch of light taken up in any part.

THE Lightest, Cheapest, and most Efficient Roofing Material is CROGGON'S PATENT IMPROVED ASPHALTE FELT. A House, 40 feet by 24 feet in the clear, may be erected complete, for 17l. 17s. 10d. Price of the Felt, one penny per square foot, in rolls 32 inches wide. Samples and details may be had by post. A Large stock always on hand, to ensure punctuality.—CROGGON and Co., 2, Ingram-court, Fenchurch-street, London.

WIRE-WORK, HOT WATER APPARATUS, GREENHOUSES, &c.

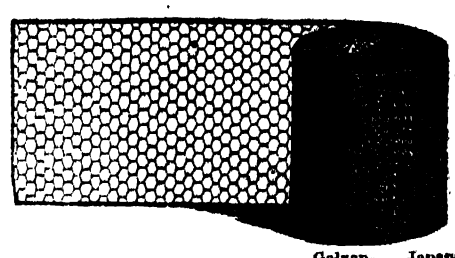
ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS on improved and economical principles.

Parties waited on in Town and Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

SMOKY CHIMNEYS AND VENTILATION.—DAY'S IMPROVED SIMPLEX WIND-GUARD is cheaper, more durable, and less unsightly than any other Chimney-pot. It continually ventilates the apartment, and is guaranteed to cure all chimneys smoking from wind. It may be seen and tested at W. JEAKES's, 51, Great Russell-street, Bloomsbury. Price, in Galvanised Iron, 25s. Prospectuses forwarded on application. Licenses granted, and the trade supplied with the above, and also Day's original Wind-guard, made of a more durable material. A liberal discount allowed.

GALVANIZED WIRE GAME NETTING.—7d. per yard, 2 feet wide.

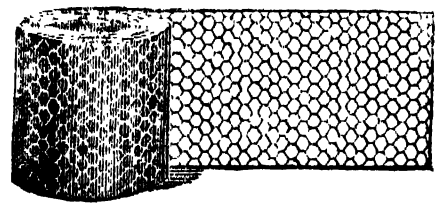


	Galvanized.	Japanned Iron.
2-inch mesh, light, 24-inch wide	7d. per yd.	5d. per yd.
2-inch ,, strong ,,	9 ,,	6½ ,,
2-inch ,, extra strong ,,	12 ,,	9 ,,
1½-inch ,, light ,,	8 ,,	6 ,,
1½-inch ,, strong ,,	10 ,,	8 ,,
1½-inch ,, extra strong ,,	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3d. per yard	30 inches wide	7½d. per yard
18 ,, ,,	4½d. ,, ,,	36 ,, ,,	9d. ,, ,,
24 ,, ,,	6d. ,, ,,	48 ,, ,,	1s. ,, ,,

Galvanised do. 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d each; Garden arches, 20s. each; Flower Stands, from 3s. 9d. each, Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 63, Snow-hill, London.

EMIGRATION TO AUSTRALIA.—Notice is hereby given that the Van Diemen's Land Agricultural Company are now able to sell their FREEHOLD LANDS in any quantity, and that every purchaser of not less than 80 acres, will be entitled to a free passage to the colony. The peculiar advantages enjoyed by settlers on the Company's lands, are fully detailed in a printed Prospectus, which may be obtained at the Company's Offices, 6, Great Winchester-street, London.

PARR'S LIFE PILLS are acknowledged to be the best Medicine in the world. This Medicine has been before the British public only a few years, and perhaps in the annals of the world was never seen success equal to their progress; the virtues of this Medicine were at once acknowledged wherever tried, and recommendation followed recommendation, hundreds had soon to acknowledge that PARR'S LIFE PILLS had saved them, and were loud in their praise. The startling facts that were continually brought before the public at once removed any prejudice which some may have felt; the continual good which resulted from their use spread their fame far and wide, at this moment there is scarcely a country on the face of the globe which has not heard of their benefits, and have sought for supplies, whatever might be the cost of transmission. The United States, Canada, India, and even China, have had immense quantities shipped to their respective countries, with the same result as in England—universal good.

The sale of PARR'S LIFE PILLS amounts to upwards of 30,000 boxes weekly, more than all other patent medicines put together. This simple fact needs no further comment; it tells plainly that the Pills of Old Parr are the best medicine in the world.

BEWARE OF SPURIOUS IMITATIONS.—None are genuine unless the words "PARR'S LIFE PILLS" are in White Letters on a Red Ground, on the Government stamp, pasted round each box; also, the fac-simile of the signature of the proprietors, "T. ROBERTS and Co., Crane-court, Fleet-street, London," on the Directions.

Sold in boxes at 1s. 1½d., 2s. 9d., and family packets at 11s. each, by all respectable medicine vendors throughout the world. Full directions are given with each box.

METCALFE'S ALKALINE TOOTH-POWDER will be found to be the best that has yet been produced; it contains no acids, nor anything that can injure the finest enamel; it thoroughly removes the tartar and all impurities, produces that beautiful white appearance so much to be desired, and its fragrant perfume tends to sweeten and purify the breath. M. and Co., from the many years they have been celebrated as Tooth-brush Makers, have had opportunities (that occur to few) of testing the relative merits of those powders that have been brought before the public. They have now succeeded in procuring the receipt from which the above Powder is prepared, and confidently recommend its universal adoption. Wholesale and retail at METCALFE, BINGLEY, & Co.'s, Brush-makers to H.R.H. Prince Albert, 2s. per box. Caution.—The genuine powder will have the Royal Arms, combined with those of H.R.H. Prince Albert, on the lid of the box, and the signature and address of the firm, thus: "METCALFE, BINGLEY, and Co., 130 B., Oxford-street, London."

WHITE BELGIAN CARROT ...	per lb.	1s.	3d.
LARGE YELLOW BELGIAN DO.	,,	1	6
LONG RED ALTRINGHAM DO.	,,	1	3
LONG ORANGE DO.	,,	1	0
SHORT ORANGE DO.	,,	1	3
FINE LONG RED MANGOLD WURZEL	,,	1	0
YELLOW AND RED GLOBE DO.	,,	1	0
RENDLE'S IMPERIAL SWEDE TURNIP	,,	1	0
SKIRVING'S PURPLE TOP DO.	,,	1	0
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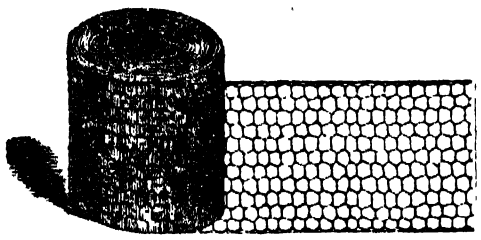

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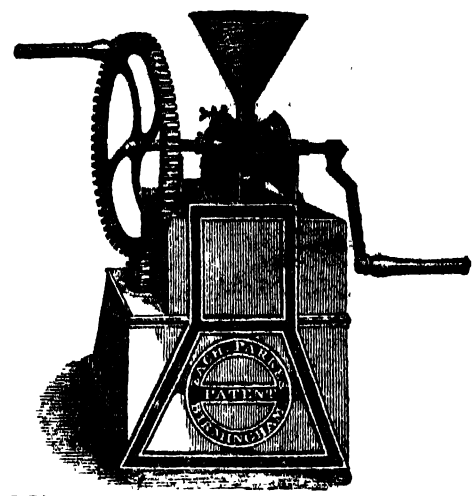

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AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 11.—1849.] SATURDAY, MARCH 17. [PRICE 6d.

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FUCHSIAS, New and First-rate. — Twelve of the following newest and very best show varieties for 12s., fine strong plants, free by post, securely packed Albano, Beauté Supreme, Beauty of Chelmsford, Brilliant, Lord Royal, Crimson King, Dr. Smith, Diamond, Esteem, Eulalie, Enchantress, Mayle's Jenny Lind, Tiley's Lady Buxton, Mont Blanc, Ne plus ultra, Una, &c. Snowdrop (Keyne's), true, a splendid new variety, 5s. each, or, included with the above, 15s. per dozen. Verbenas, newest and best varieties, 6s per dozen. The above can be sent to any part on receipt of a Post-office order, payable at Richmond. A Descriptive Catalogue of Fuchsias, Verbenas, Greenhouse, and Bedding Plants can be had on application to WM. RUMLEY, Florist, Gilling, Richmond, Yorkshire.

GENUINE SEEDS.

CLARKE AND CO., SEEDSMEN, 36, High-street, Borough, beg respectfully to inform their customers and the Public that they have a choice and Genuine Stock of every description of VEGETABLE AND FLOWER SEEDS. Their Prices are very moderate, and they will be happy to forward their Catalogue upon application They beg to submit the following Choice Flower Seeds, true, new, and good.

12 Large packets of Best Hardy Annuals		2s.	0d.
18 Ditto	ditto	ditto	3 0
30 Ditto	ditto	ditto	5 0
35 Ditto	ditto	ditto	10 0

Now that railway carriage is so reasonable, parties will find it an advantage to order the above collections in preference to giving orders for Flower Seeds to be sent through the post, as purchasers do not get their value, in consequence of expense of postage.

GENUINE SEEDS FOR MARCH SOWING.—A packet of 4000 selected POTATO SEEDS, with directions for sowing, &c., 1s. Per packet—s. d.

"BOA CONSTRICTOR" MELON, grows 6 ft. in length	1 0
VEGETABLE and FLOWER SEEDS, any variety	0 6
Double LARKSPURS, 10 varieties, separate	1 0
Ditto Ditto Ditto mixed	0 6
Double BALSAMS, Camellia-flowered	1 0
ZINNIA ELEGANS	0 6
SALPIGLOSSIS, fine mixed	0 6
STOCK, superfine Scarlet Giant	0 6

100 varieties of Annuals, 10s.; 50 ditto, 5s.; 25 do., 2s. 6d.
Treatise on Potato Culture, 6d.
All post free, on receipt of cash or postage stamps.
ABRAHAM HARDY and SON, Seed Growers, Maldon, Essex.

HOLLYHOCKS.—Gentlemen wishing to get a collection of the best distinct varieties of the above Flower for blooming this summer, can be supplied by W. CAKEBREAD, of Weston, near Towcester, Northamptonshire. Plants, 1l. 10s. per hundred. Also packets containing 120 seeds, warranted to produce double flowers, of the following varieties, viz., white, yellow, orange and red, delicate rose, fine pink, and red each colour separate, 5s. per packet.

JAPAN CEDAR OR CRYPTOMERIA JAPONICA SEEDLINGS.

MESSRS. STANDISH AND NOBLE, NURSERYMEN, Bagshot, beg respectfully to call the attention of Landed Proprietors and others to their fine and large Stock of the above useful and ornamental Tree, which they can supply at the following prices: 3s. 6d. per plant, 36s. per doz., or 12l. 10s. per 100.

JASMINUM NUDIFLORUM, a perfectly hardy, neat, dwarf-growing shrub, flowering most profusely in the open air, either with or without the protection of a wall. Undoubtedly this is one of the most beautiful winter-flowering plants of recent introduction. A plant in the Gardens of the London Horticultural Society was literally covered with its bright yellow flowers in December last. Strong plants, 2s. 6d. each.

WEIGELA ROSEA.—The beauties of this plant will ere long place it in the foremost rank of ornamental plants in flower-garden shrubberies. Strong plants, 1s. to 2s. 6d. each.

FORSYTHIA VIRIDISSIMA.—This hardy shrub, like the last, requires only to be known to be appreciated Mr. Fortune tells us that in China it is one of the most beautiful plants he has seen, forming a bush 10 or 12 feet in height, and covered with its rich golden flowers. Strong plants, 1s. to 2s. 6d. each.

PLATYCODON GRANDIFLORUM ALBUM, a beautiful Campanulaceous plant, also from China. 2s. 6d each.

AZALEA INDICA, "GLORY OF SUNNING-HILL," a large double pink, the flower much resembling Nerium splendens; obtained a prize at the London Horticultural Society's Exhibition in May last. Plants, 10s. 6d. each. Also a collection of fine sorts, from 1s. to 5s. each.

CALCEOLARIA ACME, white ground, with deep plum-coloured spots, good habit and fine form, 7s. 6d. each. Also seedlings from the best kinds, at 8s. per doz.

The following fine MELONS, two and three year old seed, at 1s per packet Hampton-Court Green-flesh, Ispahan, Cutnill's Scarlet-flesh, Imogene, Bag-hot Green-flesh, and Beechwood.

BECKFIELD COS LETTUCE, the best in cultivation, 1s. and 2s. packets.

In addition to the above, Messrs. STANDISH and NOBLE have a large and select stock of RHODODENDRONS and other AMERICAN PLANTS, with a general collection of Hardy Plants, Shrubs and Trees, Seeds, &c., Catalogues of which can be forwarded on application.—March 17.

NEW VERBENAS.

WM. JAMES EPPS has much pleasure in offering the following VERBENAS, which he can with confidence recommend as being a great acquisition to this class of flowers.

ECLIPSE.—A profuse bloomer, compact habit, and its markings constant. See drawing and description in "The Florist," of January last, and also in the *Gardeners' Chronicle* of June 20, in answer to W. J. E., Verbena, No 20. "A very pretty variegated variety; ground colour delicate pink, with a broad, well-defined stripe of rose-colour in the centre of each division of the corolla. This is a distinct and a very pretty variety, and appears to be constant," &c. &c. Price 2s

LIPSII.—A brilliant, deep rich red, with very large bold trusses and profuse bloom, the habit dwarf and compact, and very superior for bedding. See description in the *Gardeners' Chronicle*, June 10, Verbena, W. J. E., No 18; and also in "The Florist," No. IX., in answer to J. Ep. Strong plants by the last week in April. 3s 6d.

The usual discount to the Trade when three of each are taken. A remittance from unknown correspondents.

All the newest and best kinds of Verbenas, 4s. to 12s. per doz. Agents in London, Messrs. Hurst and M'Mullen, Leadenhall-street. A descriptive Catalogue of Pelargoniums, Dahlias, Pansies, Fuchsias, Verbenas, &c., may be had on enclosing two postage stamps.—Maidstone, March 17

GRASS SEEDS.

SUTTON AND SONS having for upwards of 30 years been engaged in collecting GRASS SEEDS, and laying down land to Permanent Pasture, can supply Seeds, properly assorted to suit any of the various soils of Great Britain, so as to insure a good Pasture, at a very moderate expense, viz.

	£	s.	d.
THE VERY BEST SORTS OF GRASSES AND CLOVERS FOR PERMANENT PASTURE, mixed expressly for the soil, per acre	1	12	
GOOD PRODUCTIVE PERMANENT GRASSES, where the appearance is not an object, per acre	1	5	0
TRUE ITALIAN RYE-GRASS, per bushel	0	6	6
GIANT SAINTFOIN, per bushel	1	5	0
FINEST LAWN GRASS SEEDS, consisting solely of the finest and shortest growing kinds, per bushel 25s., or gallon	0	3	6
SUTTON'S RENOVATING MIXTURE of Perennial Clovers and fine Grasses, for improving old Pastures (6 to 8 lbs. per acre required), per lb.	0	1	0

Fresh Lucerne, per lb., 10d.; French Furze, do., 1s. White Belgian Carrot, Large Cattle Parsnips, Yellow Globe and other Mangold Wurzels, Kohl Rabi, Drumhead and other Cabbages, at the lowest market prices.

*** Goods delivered free to London, Bristol, or Basingstoke.
JOHN SUTTON and SONS, Reading, Berks.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—GEORGE NEIGHBOUR and SON, 127, High Holborn, London.

"Nutt on Bees" (6th edition), now published.

MILK PANS, PROPAGATING GLASSES, &c.

JAMES PHILLIPS AND CO. beg to hand their prices, as follows:

GLASS MILK PANS.

12 inches diameter, each	2s.	6d	20 inches diameter, each	4s.	0d
14	,,	,,	,,	2	6	22	,,	,,	,,	4	6
16	,,	,,	,,	3	0	24	,,	,,	,,	5	0
18	,,	,,	,,	3	6						

PROPAGATING GLASSES					BEE GLASSES.				
2 inches diameter, each	0s.	2d	4 inches diameter, each	0s.	5d
3	,,	,,	,,	0	3	5	,,	,,	,,	0	7
4	,,	,,	,,	0	4	6	,,	,,	,,	0	10
5	,,	,,	,,	0	6	7	,,	,,	,,	1	1
6	,,	,,	,,	0	8	8	,,	,,	,,	1	4
7	,,	,,	,,	0	11	9	,,	,,	,,	1	8
8	,,	,,	,,	1	2	10	,,	,,	,,	2	0
9	,,	,,	,,	1	6	11	,,	,,	,,	2	8
10	,,	,,	,,	1	10	12	,,	,,	,,	3	6
11	,,	,,	,,	2	4						
12	,,	,,	,,	3	0						

CUCUMBER TUBES.			METAL HAND LIGHTS.				
24 inches long	2s.	0d	12 inch	3s	0d	Glazed	6s.	0d
22		1	10	14	,,	3	6	,,	7	0
20		1	8	16	,,	4	0	,,	8	0
18		1	6	18	,,	4	6	,,	9	0
16		1	4	20	,,	5	0	,,	10	0
14		1	2	24	,,	6	0	,,	12	0
12		1	0	To open at top, 1s. each extra.						

Made to any length.

For SHEET GLASS, see Advertisement.

Address, 116, Bishopsgate-street Without

GLASS.

E. AND W. H. JACKSON are supplying SHEET, ROUGH, PLATE, and CROWN GLASS for Horticultural purposes, at very reduced prices.

BRITISH AND PATENT PLATE of superior manufacture, for Glazing dwelling-houses, for which purpose these articles are now superseding all inferior Glass.

ORNAMENTAL GLASS of the newest designs for the decoration of Conservatories, &c.

E. and W. H. J. also supply PATENT OPTICAL FLINT GLASS, Thin Glass Slides and Cells for Microscopic purposes, French Shades, Propagating Glasses, &c.

Estimates, Lists of Prices, and every information forwarded on application at their Warehouse, 315, Oxford-street, London.

HARTLEY'S PATENT ROLLED ROUGH PLATE GLASS, for Horticultural purposes.—It is now proved beyond a doubt that the above Glass is very far superior to any hitherto discovered for all kinds of Horticultural uses. (See *Gardeners' Chron., Feb. 24th*, 1849, p. 115.)

WILLIAM PATTEN AND Co., GLASS, LEAD, and COLOUR MERCHANTS, 20, Old Fish-street, Doctors' Commons, London, beg to inform the public that in consequence of the numerous orders they have executed in Ireland, Scotland, and the principal counties of England, they have entered into such arrangements with the Patentee as will enable them to supply the above Glass in any quantity, strictly at the Manufacturer's prices. W. P. and Co have a large quantity of Crown Squares in Stock, in 100 feet boxes, from 1d. per foot.

P.S. Sole Manufacturers of the Anti-Corrosion and Mineral Paint for all kinds of Out-houses, Park Fencing, Farm Buildings, &c.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 30, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

FLOWER-POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford-street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford-street, near Hyde-park.

SLATE WORKS, ISLEWORTH.—The following articles manufactured in Slate for Horticultural Purposes, by EDWARD BECK, may be seen in use at WORTON COTTAGE, upon application to the Gardener, Sundays excepted. Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot-water Tank Covers, Flower beds for Balconies, Shelves fitted to hold Water for Orchidaceous Houses, & Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

MILTON'S BEE-HIVES.—These Hives are made in every variety, for the purpose of taking the honey without killing the bees. They are composed of various materials, to suit all climates, and may be relied upon for practical use. Their simplicity of construction and easy management ensure success.

BEE GLASSES of all sizes, and every article connected with the Apiary supplied. A Sheet of Illustrations of Bee Hives, &c., 1s. The "Practical Bee keeper," by JOHN MILTON, 4s. 6d.

10, Great Marylebone-street, Wimpole-street, London.

SILKWORMS AND WHITE MULBERRY PLANTS.—To meet the growing taste for cultivating British Silk, the advertiser has on sale a most healthy stock at the following low prices:

Plants, per 100—1 year, 10s.; 2 years 15s., and 3 years, 25s.

Silkworms' Eggs of the best kind, 1s. 6d. per 1000. Orders punctually executed, inclosing a post-office order, addressed to GEORGE BALCHIN, Gardener, Spring-place, Godalming, Surrey.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 76, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers which are now so well known, scarcely require description but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority, or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

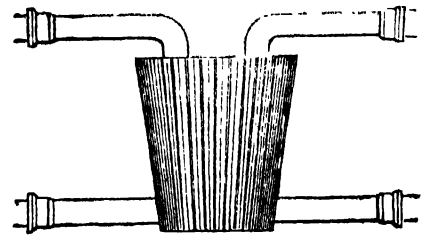
COCHIN CHINA FOWLS, and Eggs, may be had by applying by letter, postpaid, to W. O., care of Mr. Woodcock, Brand street, Greenwich.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S-ROAD, CHELSEA.

EDENCH having erected Hothouses for Sale on his Premises, invites the attention of Gentlemen about to erect Hothouses to inspect his Patent Plans, when they at once will perceive the vast superiority of these Houses over any others hitherto erected, for strength, lightness, durability, handsome appearance, healthiness to plants of every description, the roofs of one principle being formed without wood, putty, or paint, with a smooth surface and only about 5-8ths of an inch of light taken up in any part.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in. will warm	50 ft. 4 in. pipe	...	£1	15 0
12 in. do.	75 ft. 4 in. do. ...	...	2	5 0
14 in. do.	100 ft. 4 in. do. ...	...	2	15 0
16 in. do.	150 ft. 4 in. do. . .	...	3	10 0
18 in. do.	250 ft 4 in. do. ...	...	4	10 0
21 in. do.	350 ft. 4 in. do. .	.	5	10 0
24 in. do.	450 ft. 4 in. do. .	...	7	0 0
NEW PATTERN BOILERS.				
30 in. will warm	800 ft. 4 in. pipe	. .	15	15 0
36 in. do.	1500 ft. 4 in. do. ...	...	25	0 0

All Boilers with double arms, up to 18 in., 5s. extra; to 24 in., 10s extra, all above, the same price.

130, Fleet street, London, March 17.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick, particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Duke of Devonshire's, Chatsworth Gardens.
Earl of Gainsborough's, Oakham, Rutlandshire.
Earl of Zetland's, Upleatham, Yorkshire.
Robert Hanbury, Esq., Poles, near Ware, Herts.
Mr. Glendinning's Nursery, Turnham-green.
And at least 500 other important places.
BURBIDGE and HEALY, 130, Fleet-street, London.

GUANO AND OTHER MANURES.

PERUVIAN GUANO, of the finest quality, direct from import warehouse.
NITRATES SODA AND POTASH
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SULPHURIC ACID AND COPROLITE.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of

MABEL POTHERGILL, 201 A, Upper Thames-street, London.

A Treatise on Guano, Superphosphate of Lime, &c., will be forwarded on receipt of 8 postage stamps. Free to purchasers of Guano, &c.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronized and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Duke of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry; and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is Half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide

PRICE ONE PENNY PER SQUARE FOOT

*** Samples, with Directions for its Use, and Testimonials of 8 or 10 years' experience with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

PARTNERSHIP.—Wanted, by a respectable Firm, many years established in the Nursery, Bulb, and seed business, at Haarlem, in Holland, extensively connected with the home and foreign trade, A PARTNER, who is well qualified to take an active part in the business, and who can furnish not less than 1000*l.*—Address, post-paid, to A., care of Mr G. Rahn, 52, Mark-lane, London.

IMPROVED FLOWER STICKS.—THESE FLOWER STICKS are of a circular form, thereby avoiding angles and sharp edges, which are liable to cut and injure the plants. They may be had stained brown or green to suit the various plants.—To be had of all respectable Nurserymen and Seedsmen, and dealers in Garden Implements. Manufactured and sold Wholesale, at H. MORRELL'S, 149, Fleet-street, London.

N.B. Samples to be seen at the Office of this Paper.

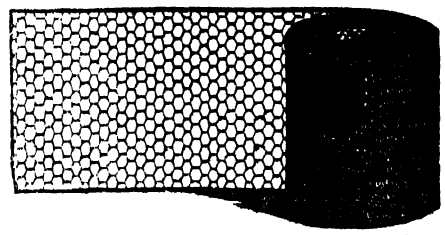
DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuit, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averruncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	,, Knives, various
Borders, various patterns	Hammers	,, Saws
Botanical Boxes	Hand-glass Frames	,, Scissors
Cases of Pruning Instruments	Hay Knives	,, Shears [riety.
Chaff Engines	Hoes of every pattern	Rakes in great va-
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Daisy Rakes	Hotbed Handles	Scythes
Dibbles	Ladies' Set of Tools	Scythe Stones
Dock Spuds	Labels, various patterns, in zinc, porcelain, &c.	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
,, Stands in Wires and Iron	Menographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanic Borders and Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
,, Loops	Mowing Machine	Trowels
,, Rollers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extractors and Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

HEAL AND SON'S LIST OF BEDDING, containing a full description of Weights, Sizes, and Prices, by which purchasers are enabled to judge the articles best suited to make a good set of Bedding, sent free by post, on application to their Factory, 196 (opposite the Chapel) Tottenham-court-road, London.

GALVANIZED WIRE GAME NETTING.—7d. per yard, 2 feet wide.

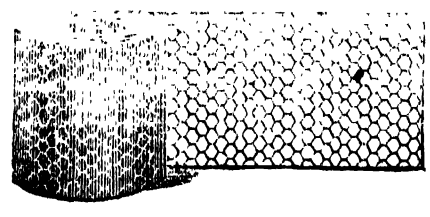


	Galvanized.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d. per yd.
2-inch ,, strong ,, ..	9 ,,	6½ ,,
2-inch ,, extra strong ,, ..	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ..	10 ,,	8 ,,
1½-inch ,, extra strong ,,	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a course mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 1s, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3d. per yard	30 inches wide	7½d. per yard
18 ,, ,,	4½d. ,, ,,	36 ,, ,,	9d. ,, ,,
24 ,, ,,	6d. ,, ,,	48 ,, ,,	1s. ,, ,,

Galvanised do. 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden arches, 20s. each; Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 63, Snow-hill, London.

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the EXHIBITIONS OF FLOWERS AND FRUIT, in the Society's Garden, in the present season, will take place on the following days, viz.: SATURDAY, May 5; SATURDAY, June 9; and WEDNESDAY, July 11; and that TUESDAY, April 10, is the last day on which the usual privileged Tickets are issued to Fellows of the Society. 21, Regent-street.

LARCH PLANTS, &c.

PETER BOOTH, NURSERYMAN, Falkirk, is selling off a very large stock of Transplanted LARCH plants, in sizes from 1 foot to 2½ feet. Transplanted Scotch Firs, from 9 inches to 2 feet; transplanted Spruce Firs, 1 to 1½ foot. Strong Transplanted Thorn Quicks, 2-year Seedling Pinus Austriaca, 2-year Seedling Scotch Firs, and 2 and 3-year Seedling Spruce Firs, all very fine plants, and at further reduced very low prices.

AIGBURTH SEEDLING STRAWBERRY, 25s. per 100.—25 strong plants of this fine Strawberry (superior to British Queen, as to its hardy character and fruitfulness, and equal to it in flavour) may be had free by post for 8s. 6d., from JAMES TYMAN, Seedsman, 124, Park-road, Liverpool.

NEW ZEALAND SEEDS.

MR. F. U. GLEDHILL, 20, Old Market-place, Halifax, Yorkshire, can supply packets each containing 50 different kinds of NEW ZEALAND FOREST, MYRTLE, and FLOWER SEEDS. Also Pine and Parasitical Seeds, collected by himself in that country. A packet will be sent free for 6s. 6d., either for a Post-office order or postage stamps.

SUPERIOR GERMAN ASTERS, 20 varieties mixed, see *Gardeners' Chronicle*, September 23d, 1848. "ASTERS: *Hardy and Son.* Your Asters reached us in excellent condition; they are beautiful specimens of that showy flower." Large packets, 1s., or 12 postage stamps, post free.
ABRAHAM HARDY and SON, Seed Growers, Maldon, Essex.

ROSES FOR SALE, at Broom Houses, Fulham, near Parsons Green, and opposite the Wandsworth railway station. 80 rods of fine Roses, old stools, laid and fit to be bedded out in March. They are in the ground late in the occupation of Mr. Perry, who has gone to Australia.—Apply to Mr. LEWIN, on the Premises.
Wanted, about 1000 turf sods for a Lawn.

HUGH LOW AND CO. have to offer very fine strong roots of Grayson's GIANT ASPARAGUS, 2 to 3 years old, at 2s. 6d. to 3s. 6d. per 100.—Clapton Nursery, Mar. 17.

SEED POTATOES.

CHARLES SHARPE, NURSERYMAN and SEEDSMAN, respectfully solicits the attention of the Nobility and Gentry to his POTATOES for Seed. The sorts are very early and productive, and have given general satisfaction to Potato growers in all parts of the Kingdom. They are offered at the following prices, packing included.

	Per bushel of 56 lbs.
	s. d.
Soden's Early Oxford Potatoes	8 0
Early Ash-leaved Kidneys	8 0
Early Round Frame	7 0
Early Cockneys	6 0
Early Manley	6 0
Fox's Seedling, fine for forcing	6 0
Second early sorts, for Winter and Spring use:	
American Native Potatoes	5 0
York Regents	5 0
Kentish Pink Kidneys	4 0
Forty-fold	4 0

Orders will be forwarded on the receipt of a Post-office Order, and great care will be taken to ensure their safe delivery.
A liberal allowance made to the Trade.
CHARLES SHARPE, Seedsman, Wisbeach, Cambridgeshire.

OLD-ESTABLISHED NURSERY STOCK FOR SALE.
SUNBURY NURSERY, MIDDLESEX.

J. T. WILLMER, Senior, begs respectfully to announce that he has determined upon relinquishing the Nursery Business, which he has carried on at the above premises for the last 32 years; and in order to effect an immediate clearance of his Land, he has resolved to dispose of the whole of his extensive and valuable stock of EVERGREENS, SHRUBS, and FOREST TREES, at an immense reduction of price. The stock comprises Fanned Yews, 5 to 7 feet; Arbutus, 3 to 5 feet, Laurestinus, 3 to 4 feet; Aucuba, 2 to 4 feet, Phillyrea, 6 feet; Variegated Box, 3 to 5 feet; Variegated Hollies, 3 to 7 feet; Green do., 2 to 4 feet; Sweet Bay, 2 to 4 feet; Yucca gloriosa, strong; Pæony moutans; Alexandrian Laurel; Rhododendron hirsutum, ferrugineum, and ponticum; Spruce Fir, 4 to 6 feet; Weymouth Firs, 5 feet; Balm of Gilead do., 4 to 5 feet; Scotch and Larch, 6 to 8 feet; Common Laurel, 2 to 5 feet; Portugal do., 2 to 4 feet; 2-years Seedling Quick; 3-years do.; English Elm, Oak, Beech, Lime, Horse Chestnut, Birch, Syringa, Gueldre Rose, 5 to 7 feet; new Scarlet and other Thorns; Standard Cherry Trees, of sorts, 7 feet in stem; Currants, in new varieties; large Lancashire Gooseberry, of sorts, &c. &c. As this is a genuine Sale, it is an opportunity offered to parties about to form or extend Plantations such as is seldom offered. Applications, personally or by letter, will meet with prompt attention. The Floricultural business will be continued as hitherto.

The Gardeners' Chronicle.
SATURDAY, MARCH 17, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	March	19	Chemical	7 P.M.
			Pathological	8 P.M.
			Medical	8 P.M.
			Statistical	8 P.M.
			British Architects	8 P.M.
TUESDAY,	—	20	Horticultural	3 P.M.
			Linnean	8 P.M.
			Civil Engineers	8 P.M.
WEDNESDAY,	—	21	Society of Arts	8 P.M.
			Geological	8½P.M.
THURSDAY,	—	22	Royal Society of Literature	4 P.M.
			Numismatic	7 P.M.
			Antiquarian	8 P.M.
			Royal	8½P.M.
FRIDAY,	—	23	Philological	8 P.M.
			Royal Institution	8½P.M.
SATURDAY,	—	24	Royal Botanic	3½P.M.
MONDAY,	—	26	Geographical	8½P.M.
TUESDAY,	—	27	Medical and Chirurgical	8½P.M.
			Zoological	9 P.M.
WEDNESDAY,	—	28	Microscopical	8 P.M.
			Ethnological	8 P.M.

SUCH of our readers as are interested about VINE GROWING cannot have failed to observe the remarkable statements lately made at the meetings of the Horticultural Society, concerning certain Vines in the garden of Mr. WILMOT, of Isleworth. For full particulars of these statements we refer to our previous columns; the general facts are these. In July 1846, Mr. WILMOT planted in the footpath, at the back of some Pine pits, a number of young Black Hamburgh Vines, and introduced them into the houses by knocking a brick out of the back wall next the ground. These Vines, planted in a footpath, made of materials to walk upon, on the *north side* of a Pine stove, grew the first year 20 feet long. On the 16th of January of the present year a leaf from one of them, measuring 21 inches the one way, and 18 inches the other, was exhibited to the Horticultural Society, and on the 6th of March a dish of ripe Grapes from a part of these Vines obtained a Silver Knightian Medal. The bunches were small, as all Mr. WILMOT's are, heavy bunches of Grapes not answering the purpose of growers for market; but they were well swelled, covered with bloom, and perfectly well coloured.

When the Vines were planted, holes were made in the footpath with a pickaxe, and about a couple of quarts of soil in which Pine-apples had been grown was added to each hole, the crocks having been first sifted out. This was done for the purpose of forming a bed in which the young roots might lie, the soil of the footpath being too rough and coarse for them.

As to the footpath itself, in order that there might be no mistake upon that point, we have examined it, and we can state that the soil of which it is composed becomes, when dry, as hard as the high road. This is owing to the presence of a large quantity of red brick earth, of which Mr. WILMOT's market garden naturally consisted; with this is mixed a large quantity of pounded clinkers from the stoke-holes where coke or coal are burnt, some loam, and a quantity of the ordinary well tilled soil of the garden. Next the walk where the Vines grow, whose leaves have been just described, there is, within 4 feet, the trench of a MACADAM pit filled with long litter, for heating a Pine bed. The other footpath, where similar Vines are growing, is a mere space lying between two Pine houses. In both cases these borders or footpaths are, as has been already stated, on the north side of the wall of the Pine house, and can receive no direct heat from the sun, even in summer.

To what cause, then, may we assign this extraordinary growth, so wholly unexpected by everybody! It cannot be to the marvellous richness of soil, that is evident. It cannot be to high temperature; for although the footpath in one case was on the edge of a trench for dung, yet Mr. WILMOT states that that trench was not worked till long after the Vines had made their first growth.

But although a very high temperature of the soil can hardly be taken as the cause, we are by no means sure that temperature may not have something to do with this unusual growth. The Vines were planted in July; and in gardens so much worked, and so much inclosed, and so traversed by hothouses in all directions as Mr. WILMOT's is, the heat of the soil may have been higher than is imagined, even although the sun could not directly shine upon it. But there was another cause in operation. The Pine-houses in question should rather be called pits; for they are sunk from 2 to 3 feet below the level of the soil; being almost constantly heated by hot water pipes, the warm air of the pit must communicate some part of its heat to the surrounding soil—to what extent we have no means of ascertaining.

The soil too is by no means poor; the path in which grew the Vines with large leaves must be greatly enriched with the soakage from the MACADAM pits; and although it becomes as hard as a brick, it is not, therefore, compact; on the contrary, the fragments of clinkers maintain its porosity effectually, and permit a ready passage to any heat that may be communicated to it.

These observations are intentionally limited to the first year's growth; that of a later period can hardly be made the subject of speculation; for it is impossible to say where the roots of the Vines in question may now be. We saw healthy roots in a pathway, near which no Vines could be found growing. In whatever way the point is regarded it is highly curious and instructive; and one on which we should much like to have the opinion of *experienced* Vine growers. We can hardly think that the soil possessed any peculiar element of fertility, beyond what we have pointed out; but to assist those who wish to consider the matter, we add to the present observations the following translation of a paper lately read to the Academy of Sciences of PARIS, by M. PERSOZ.

"The new process which I propose for cultivating the Vine, inasmuch as it enables us to make use of half of the land for growing nutritive plants, may at first sight appear to differ completely from the plans now adopted in Vineyards. Such, however, is not the case, and, as those who have studied the various methods pursued in different countries will see, several of the recommendations here made have been already followed in practice; I acknowledge this the more readily, as it enables me to appeal, as a proof of their usefulness, to results obtained by long experience. In one respect, my plan differs from every other; for I propose that all the Vine stocks in a certain space of ground should be brought together in a trench where, by one chemical action, the wood, and by another the fruit, may be induced to form. This I propose in consequence of having, by direct experiment, satisfied myself that, of the manures which are fit for the culture of the Vine, some serve exclusively for the increase of cells, *i. e.*, of wood, and that others cause the development of the flower bud (fruit or Grape); and the actions of these substances, instead of both going on at the same time, ought to be successive. By the application of these principles, the growth of the wood can be stopped at pleasure, whilst, by the ordinary methods, the same effect can only be produced by artificial and empirical means.

"When it is wished that wood should be developed, the Vines must be placed in a trench and covered with 3 or 4 inches of earth, with which have been mixed, for every square yard of the surface of the trench, 8 lbs. of pulverised bone, 4 lbs. of pieces of skin, leather, horns, tanners' refuse, &c., and 1½ lb. of gypsum.

"When the wood is sufficiently formed, which will be in a year or two, according to circumstances, the roots must be supplied with salts of potash, in order that the fruit may be produced. For this purpose it is necessary to spread over the trench, at a distance of 3 or 4 inches from the buried wood, for every square yard of surface, 5½ lbs. of a mixture formed of 8 lbs. of silicate of potash, and 2¾ lbs. of double phosphate of potash and lime. The trench is then to be filled up, and the roots have as much potash as they will want for a long time. To prevent, however, the exhaustion of the potash, it is as well to spread every year at the foot of the stools a certain quantity of the marc of Grapes; this marc containing 2.5 per cent. of carbonate of potash, will restore annually a large proportion of the potash which may have disappeared from the trench.

"Hitherto the success of a vintage depended, *ceteris paribus*, in a great measure on the influence of the atmosphere. Thus, suppose a Vine stock required 10 parts of potash to be enabled to bear fruit, if the action of heat and rain on the stones and earth in a state of decomposition could only furnish 5, the vintage would be bad. This danger will be avoided by the above system of culture, in which the Vine must always have suitable food; but it is not to be forgotten that, although I promise the Grape growers who shall follow the above plan an abundance of produce, I can by no means insure the quality of that produce, for quality must always depend on the temperature."

THERE is one point still to examine by the returns which have been obtained respecting the POTATO DISEASE; and that is SALT. If we could admit the inferences which some sanguine persons have drawn as to the effect of this agent, there would be no need of further enquiry; for they assure us that it is a *panacea*. Even within the last few days a correspondent in Surrey writes thus:

"An intelligent jobbing gardener in this locality, whom I occasionally employ, informs me that he has found the following plan of culture to completely prevent the disease: Previous to digging the ground, he strews the surface over with common salt, at the rate of about a gallon to the rod, and immediately after planting he again strews the ground with a like quantity of salt. By this method he has quite preserved his crops from disease, while those of his neighbours, not salted, growing in the same field, and only separated from his ground about 3 feet, were completely destroyed."

In the absence of any useful information we are called upon once more to credit the efficacy of salt; the writer is silent concerning everything except the way of applying salt, and he no doubt regards all other information as superfluous. Ever since the year 1845 similar opinions have been entertained, and yet the application of the agent has made such small progress in three years, that out of 1000 returns only 13 writers speak of salt having been applied at all, and of these but four employed it separately from other agents. Hence the inference would be that the experience of 1846 and 1847 had not been attended by advantages sufficient to lead growers to use it in 1848.

So far as the few experiments recorded in our own columns indicate anything, they show this—that in 1845 two cases were mentioned of little or no loss, and two other cases of great loss; in 1846 two cases of little or no loss, and no instance of considerable loss; in 1847 no example of great loss, and three instances of escape; and in 1848, one instance of failure, and two of gain. The experiments tried for the express purpose of testing the quality of salt, indicated little advantage in its application; in those of Mr. THOMPSON, in the Horticultural Garden in 1847, the per centage of diseased Potatoes in the salted ground was 3.86, 6.44, 7.50; but in some instances in the same set of experiments,

where *nothing* was used, the per centage was only 8.50, 8.30, 6 65, 5.74, too near an approach to the results from salt to warrant an inference in its favour; yet 1847 was a very dry year when the effects of salt might have been expected to be most advantageous.

The statements in our returns relating to salt, and without any other substance, are these:

Mr. M. CARTWRIGHT, of Haugham, in Lincolnshire, used 5 cwt. of common salt per acre on light sandy soil, three weeks before planting time; planted 4th May; the crop had very few diseased. The haulm was pulled about the 7th August.—The Earl of LEICESTER, at Holkham, in Norfolk, used 1 ton of salt per acre on light sandy land; planted from the beginning of March to the end of April; the crop of early varieties was sound.—On the other hand, Mr. LAPPS, of Passenham, in Northamptonshire, found that the clay soils manured with salt suffered much, and Mr. MARKHAM reports that the Hon. R. H. CLIVE'S early Potatoes, planted at Hewell, near Bromsgrove, in November, with the ground well dressed with salt, were three-fourths diseased; while the same sorts planted in March and dug in July were very good; this we believe was heavy land.

Here then we have two good cases on light land and two bad cases on heavy land, from which we cannot infer that salt proved advantageous; for it is well known that the light sandy soils of all the midland counties suffered very little, although not salted. Let us next look to the effect of adding salt to other substances.

1. *Salted Manure.*—Sir CHARLES WAKE, Bart., of Courteen Hall, in Northamptonshire, states that his Potatoes planted upon deep rich soil with salted manure were partially injured, but they seem to have been more diseased in other cases. This return is however very imperfect.—Mr. J. SMITH, gardener to R. NORRIS, Esq., of Eccles, in the county of Lancaster, used 20 tons of manure and 3 tons of salt per acre, lost nearly all his good varieties; but a coarse kind, called the "Farmers'" escaped with a loss of 5 per cent. under the same circumstances.

2. *Salted Stable Dung and Lime.*—Mr. W. JACKSON, Nurseryman, Aiskew, Yorkshire, had a crop on light sandy soil, top-dressed, prior to planting, with a preparation of lime and salt. Planted and manured with stable dung in the third week of May. This suffered very little.—Mr. T. BELTON, the gardener at Nostell Priory, in the same county, states that light hazel loam on one part of the field, and strong heavy loam on the other, were manured with 12 loads of rotten dung, top-dressed with 4 tons lime and 5 cwt. salt per acre, all put on in May previous to planting time; planted second week in May; lost on light land one-sixth, on the stiff land half.

3. *Salt and Decayed Roots of Couch-grass.*—Mr. T. DARLING, Bailiff, Cannock, in Staffordshire, says that no land escaped except at Haywood-park, manured with salt and decayed roots of Couch-grass; there the crop was good, and may be said to have been free of disease. Nature of soil not stated in this case.

4. *Salt, Nitrate of Soda, Sulphate of Magnesia, and Guano.*—Mr. J. C. MORTON, of Cromhall, Gloucestershire, reports that a crop was planted in March on a siliceous sandy soil, manured with 1 cwt. each of salt, nitrate of soda, sulph. of magnesia, and guano, mixed, and sown on the young plants as they appeared in April. The crop when dug was one-third diseased, and afterwards became entirely rotten.

5. *Salt and Soot.*—Mr. J CUTHILL, Florist, Camberwell, used 30 cwt. of salt and 30 bushels of soot per acre on light sandy land, planted in February. The crop entirely escaped.

6. *Salt, Soot, and Charcoal.*—Mr. C. JEFFERY, farmer, Antony, states that Mr. PEEL, at Trenant Park, planted his Potatoes in October, manured with salt, soot, and charcoal, and had an excellent crop, without one single diseased Potato.

7. *Salt, Soot, Charcoal, Wood-ashes, and Gas-tar.*—The Bishop of CARLISLE reports from Cumberland that no disease appeared in October planted Potatoes, when the furrows at the time of planting were dusted with a mixture of soot, salt, charcoal, wood-ashes, and gas-tar.

We cannot discern in these statements anything in favour of salt, or which shows that it even mitigated the disease, whether employed alone or with other substances. In all we have 13 cases; five of these resulted in great loss, of the remainder, four occurred on light land, two were connected with autumn planting, and two are imperfectly reported It is therefore clear that the existing evidence is not such as to justify the conclusion that salt has any power to mitigate the disease.

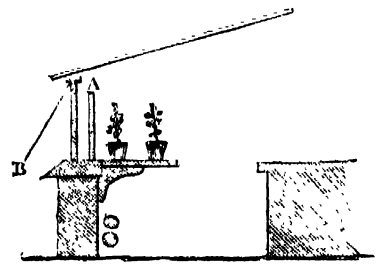
Nor does sea-weed indicate a better effect Of the few returns in our possession, every one is against its employment.

ON THE CONDITIONS ESSENTIAL TO THE MOST PERFECT CULTIVATION.—No. III.

In the construction of a plant house, the two primary objects to be kept in view are that a due allowance of light and air shall be supplied to the inmates. That these elements, or rather I should write agents, are of the greatest importance in plant cultivation is an acknowledged axiom, and I need not here stop to discuss it. But the mode of applying them admits of much modification, and it is to that I shall now more particularly allude.

When I say plant house, I mean a structure capable of affording every facility to vegetable development; one by which we are enabled to employ the natural stimulants to vegetable life in the most liberal manner, and in contradistinction to a structure built for the purpose of stowing away the greatest quantity of miscellaneous plants, in which no regard can possibly be had to anything approaching mediocrity. This gives me an opportunity of saying a few words upon a subject in which most gardeners have an interest; and I hope that those for whom they are intended will see the propriety of them. I allude to the practice, so prevalent with ladies and gentlemen having but limited plant accommodation, of constantly inundating their gardener with packets of tropical seeds, nine-tenths of which can be of no possible use to them. Because they imagine it yields pleasure to the recipients, friends in India or the colonies transmit heaps of seeds without any reference to their probable utility. From tropical forests, timber trees that would appropriate a dozen hothouses; creepers without limits to their rambling propensities; shrubs of no beauty, and herbs of no interest to any but a botanist, make up the bulk of all such transmissions. But they must be all sown, and every attention must be given them, and the space of really worthy plants is obliged to be appropriated to rubbish, the destiny of which, with all a gardener's anxiety and trouble (alas! how unworthily bestowed) is the dunghill. Permit me, ladies and gentlemen, to urge upon you great discrimination before you insist upon packets of seeds from abroad having a great share of attention. If they come from a comparatively unexplored country, and you have reason to think something new may be the result, the case is of course widely different.

The form of structure I should employ is a span-roofed one, with the sides glazed equally, and I would have the roof as flat as possible, and if it were glazed with British white glass, I would place it that each corner of the building should indicate a cardinal point. But I have great faith in the theory of the rough plate glass noticed. I would give—no matter what—to be able to disperse the rays of light on its entrance through the roofs of several houses under my charge, glazed with white glass, 16 oz. to the foot. In plant cultivation light is all in all, every agent must be subservient to it, and in proportion as we can augment light, so may we increase heat.



A, a fixed sash, 6 inches from the moveable one. The line B, the moveable sash open.

Various writers have endeavoured to insinuate that there is no difficulty in the management of structures glazed with white sheet glass. I only wish every one who has so written had the management of a small stove I could name, during the equinoctial gales of March, when accompanied with a bright sun, or in the fitful gleams of April. I think I have arrived at a correct conclusion as to the cause of the rapid rise of temperature in such houses, even when well aerated. I shall have something to say upon this matter at some future day. Every gardener is aware how difficult it is to give air in weather such as I have above described. We are obliged to halt between two evils—scorching by the sun, or burning by the cutting, drying winds. Now, I see no objection in admitting cold air into a plant house, provided you can do so without bringing it into direct contact with the leaves of the plants. I may be wrong in my conclusions, but I believe that an uniform temperature for any length of time being applied to plants has the effect of inducing what in ourselves we should term lassitude, and consequently a continuation would deteriorate the constitution of the plant and mar the best efforts of the cultivator. In speaking of an uniform temperature I am not alluding to night temperature; that such should be very much below what we employ in the day is, I believe, universally acknowledged. In reference to this subject, I may mention that last autumn a plant of Zygopetalum Mackayi and one of Begonia fuchsioides were placed in a conservatory attached to dwelling rooms. The former had many racemes of blossom, but hardly one expanded; the latter was in full bloom. The Zygopetalum is still beautiful, the Begonia has a new crop of its beautiful, nay elegant blossoms, and this too where the temperature has often been 40°. Those who have not the most charming of plants, Begonia fuchsioides, should lose no time in getting it. But of the variation of temperature: It appears to me that it is one of the designs in the operations of Nature that the temperature should be constantly changing, and this without destroying the mean temperature. The effect of the influence of the sun's rays is to produce this almost every minute. Who that has strolled out in the open country on a sultry day in June, but has felt the grateful change of a cool atmosphere passing over him; and if grateful to us, why should it not be to plants. For my own part I do not see (I say it with great deference), the necessity, nay the utility of heating the air before introducing it into plant structures, for I conceive that the variation of temperature has something of beneficial influence on plants; and causes we are apt to attribute to the want of fresh air arises often, I believe, from a lack of variation in temperature. It will be readily seen that these two effects may be easily confounded in their appearance as arising from the same cause, when such may not be the case. For the admission of external air, without risking the welfare of plants, I would have a fixed window inside a moveable one, as in the accompanying sketch. From such an arrangement no direct cold wind could touch the plants until after it had been modified in temperature by mixing with the hottest air in the interior, viz., that at the roof of the house. *G.*

LECTURE ON ECONOMICAL COOKERY;

OR, THE METHODS OF PREPARING OUR FOOD WITH THE LEAST DEGREE OF WASTE.

By C. DAUBENY, M.D., F.R.S.

(*Concluded from p.* 149.)

ANOTHER branch of the art of cookery, considered in its widest sense, as the art of rendering articles of provision digestible, is the baking of bread. The object here aimed at is to render our farinaceous food more wholesome than it would be in its natural crude condition. In a rude state of society indeed the farina of the Oak or of the Chestnut was used without any other preparation than that of a slight heat, just as that of the bread-fruit is by the inhabitants of the South Sea Islands at present. In a state somewhat more advanced, the flour mixed with water was baked into biscuits or cakes without the addition of any ferment, as is done in Scotland and the north of England with Oatmeal; yet the use of leaven was known in Egypt at the time of Moses, as may be inferred from the prohibition against the use of unleavened bread by the Israelites during the Passover, and probably soon followed the introduction of Wheat as a material of food, as it vastly improves the wholesomeness of Wheat flour, by rendering it light and porous, and therefore more digestible. Nevertheless a very considerable loss is experienced in the process of baking, as will be evident when we consider, that the rise or sponginess of bread is owing to the extrication of carbonic acid during that process of fermentation, which the action of the ferment upon the starch and sugar tends to excite. The result of this is the production of a certain amount of alcohol and carbonic acid, both of which are wasted in baking, although by a peculiar method adopted in one manufactory the former has been collected and saved, at an expense, however, it is feared, greater than the saving resulting. At any rate, the loss of weight occasioned by the ordinary process of fermentation is no less, according to M. Dumas, than 17.6 per cent. of the whole, and certainly, according to the lowest calculation, amounts to as much as 10 per cent. Now a method has lately been proposed, by which the necessity for employing yeast is altogether superseded, and the whole of this waste of nutritious matter prevented. This consists in mixing with the flour just so much muriatic acid, and so much carbonate of soda, as will together constitute the amount of muriate of soda or common salt usually introduced into bread to give it flavour, care being taken that no excess of either ingredient should remain after the two are mixed. The expense, it is true, of the muriatic acid and of the soda employed may be somewhat greater than that of the common salt which it takes the place of, and of the yeast otherwise consumed; but when it is recollected that the soda costs only 3*d.* and the acid 2*d.* per pound, and that a pound of each of these ingredients will be sufficient to season 96 lbs. of flour, it will be seen that there must still be a very considerable saving effected by its use. Bread, too, made in this manner, is more digestible and less prone to generate acid; for fermented bread, from a portion of leaven it still retains, is apt to communicate a similar action to the food in contact with it, and thus to renew the fermentation when taken into the stomach; hence, giving rise to flatulence, acidity, and other uneasy symptoms. In all these respects, then, bread made without leaven deserves the preference, nor is it less advantageous from the saving of labour consequent upon its adoption, inasmuch as the flour requires less kneading, and may be converted into bread in the short space of two hours; and as the materials are not perishable, it is valuable in any situation where yeast or other ferment may not be within reach, as at sea or in remote places in the country.

With respect to its flavour, tastes of course will differ, but what I partook of at the house of a friend, who was in the habit of making it, seemed to me more palatable than what I usually obtain manufactured in the ordinary way.

One important caution, however, requires to be given to those who propose to employ the above materials as a substitute for yeast; namely, that of being well assured, either by their own examination, or by careful inquiry of a vendor on whom they can place full reliance, that the muriatic acid used is entirely free from arsenic.

The mode of manufacturing this substance is by the action of sulphuric acid upon common salt; now, sulphuric acid is obtained by the combustion of sulphur, and our supply of the latter is derived at present from two sources; namely, the sulphur mines of Sicily, and the copper pyrites of this country. The former is entirely free from arsenic, and may, therefore, be safely employed in the production of sulphuric acid, but the

latter always contains more or less of it, and should, therefore, be carefully avoided for all purposes of the kind, as it imparts it to the acid products generated by its combustion, and from thence to all those chemical products which may be manufactured through the instrumentality of the latter. Owing to this circumstance, the friend to whom I have just alluded has, within the last few weeks, found the whole of his family and household seriously disordered from the use of unfermented bread made by his cook under his own directions, and, as I understand, succeeded in tracing the unwholesome properties which the bread had for the first time acquired, to the presence of a minute quantity of arsenic in the last batch of acid which he had purchased for the purpose. This indeed is a serious objection to its use in private families, but on the large scale, as in workhouses or hospitals, it would be worth the while of the chemist who supplied the article to take such precautions, as would render the presence of arsenic almost nearly impossible.

Another source of waste in baking has been noticed in my former lecture, as arising from the prejudice against the use of coarse or brown bread entertained in this country, which goes to such a length as to cause the quality to be appreciated by its whiteness more than by any other consideration. To produce this whiteness a portion of alum, an unwholesome ingredient, is frequently introduced, and the bran being altogether separated, the flour is diminished in weight as much as 18 per cent. Were this all, it might be said that the bran was only transferred from the food of man to that of horses and cattle; but it so happens that some of the materials necessary to build up the system are thereby removed, or the bran contains more phosphates in proportion to its weight than the flour, and these are essential to the solid parts of our frame more particularly. An extreme instance of this mistake occurs in the practice of many mothers in higher life, who, under the idea of giving their infants a more refined and delicate food, substitute arrow-root or sago for pap, unconscious that in the two former there is nothing but starch, which may contribute indeed to the formation of fat, but in no degree supply the materials for bone or muscle. Now, one advantage in the use of unfermented bread would be, that whilst the carbonate of soda employed rendered the presence of alum impossible, by decomposing it, it would also prevent the possibility of obtaining bread of the same degree of whiteness, and thereby reconcile the public to the use of a larger proportion of bran than they have hitherto been inclined to tolerate.

Meal bread, or bread containing a portion of bran, will be found in general to agree best with persons who have sluggish bowels, and to be more nutritious to all, whilst its adoption, coupled with that of the abandonment of ferment, might effect a saving of 25 per cent., or enable the present supply of corn to feed a population one-fourth greater than it will do at present.

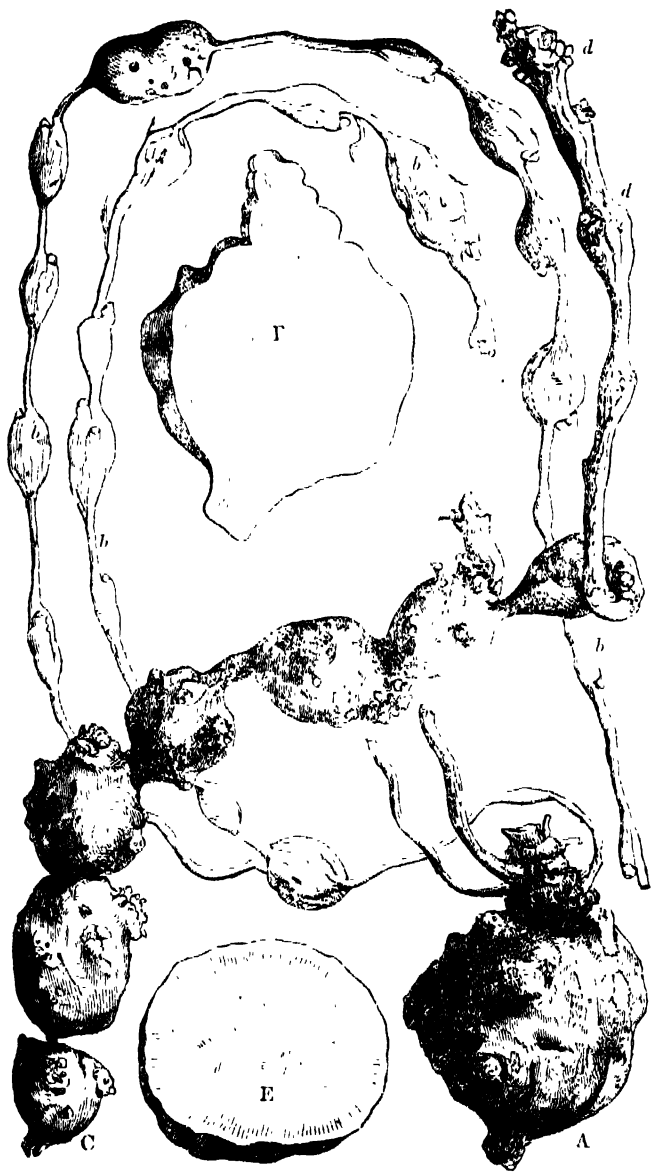
Such, then, are the suggestions which the existing state of our chemical knowledge entitles us to throw out with respect to the important practical end of economising our means of subsistence, an object which may be justly regarded as subsidiary to that of providing them. On many points, indeed, we are still much in want of further information, for whilst the best authorities are divided on certain important questions connected with the subject under discussion, such, for instance, as the power of the animal body to absorb and assimilate nitrogen, and consequently to produce albumen out of non-nitrogenised principles; its capacity of secreting fat from sugar or gum; and even as to whether the principle which determines the formation of animal products is a chemical or a vital one: on other points they all admit themselves to be in the dark, as, for instance, respecting the use of that new substance, *kreatine*, which is present in the flesh of all the higher animals; the relation which it bears to the other substance, *kreatinine*, which Liebig has lately detected; and likewise respecting that of several other distinct principles, which the same great chemist states to have been observed by himself in flesh, but not to have been fully investigated. One thing, however, amidst all the doubt and difference of opinion which still hangs over this interesting subject, may at least be confidently predicted, namely, that as each ingredient in the flesh of animals must be supposed to fulfil some purpose essential to themselves; so, seeing that the analogy between man and the lower parts of the creation in his material structure is in all points complete, we cannot expect that the waste in our own system will be fully repaired, unless we are careful to preserve in their integrity all those principles which animal flesh naturally contains, whilst submitting it to those processes of cooking, by which we design to render it more digestible.

APIOS TUBEROSA.

In consequence of the serious results that have been occasioned by the Potato disease, attention has from time to time been drawn to other plants, in the hope that some or one of them might be found capable of supplying, to a certain extent at least, the place hitherto filled by the Potato. At present, however, it must be owned that nothing has been found which, taking everything into consideration, is capable of superseding that vegetable.

The plant to which I would now direct attention appears to me to be in many respects preferable to any yet tried. The American accounts that have been published concerning the Apios tuberosa are not of much value; they amount to the following. The tubers are eaten by the North American Indians; when cooked they (the tubers) taste very like Artichokes. The Indians eat them more especially in the winter time. The young seeds may be eaten instead of Peas.

M. Trécul, who is at this moment in North America for the express purpose of obtaining plants with nutritious roots, in a letter to me wrote as follows:—



Tubers of Apios tuberosa. A, an old tuber, with a double string of young ones, *b*, *b*; C, a string of tubers 2 years old, *d*, *d*, the upper and woody part of the string from which the stems arise; E, a cross section of an old tuber; F, a longitudinal section of the same.

"I found at Neosho a plant of which I have great hopes I met with it before in Missouri. Here it is more abundant. It is Apios tuberosa D.C. Although the tubers are still growing, I have found several half as large as a man's fist; they are developed in the summer and autumn, and give in the following year fruit-bearing stems. These tubers, called by the Osages *taux*, are floury, like the Potato, and a little sweeter; they do not ripen before the end of autumn."

The Apios has a curious underground vegetation; its roots are the size of a quill pen, cylindrical, running horizontally under the soil, but close to its surface, and are often two meters long, and sometimes much longer than that. Here and there the roots swell insensibly; the swellings gradually become spindle-shaped, grow larger, become filled with starch, and form true tubers. The swellings are sometimes close together, so as to form a sort of chaplet. Sometimes they are very unequal and at other times tolerably equal in size.

Their surface is at first pretty smooth and even, of a very pale brown colour, but by degrees they send out fibres which are often placed in longitudinal series parallel to the axis of the root. These fibres drop off and leave on the surface of the tubers little unequal projecting scars. Independently of these, there are also on the surface of the tubers small white hemispherical tumours, about the size of a pin's head, and which are so many eyes or buds capable of growing into aerial stems. When the tubers are ripe they are irregularly ovoid; the largest seldom exceed in size a hen's egg. Part of their surface is even, the other is rough and irregularly tubercled. These inequalities are owing either to the development of aerial stems or of radical fibres. The epidermis covering the tubercles is brownish grey and slightly cracked in a longitudinal direction. In the inside they are of a pure white colour, and when cut or broken, a white milky sap oozes out, especially from a quantity of very small vascular bundles disposed in a circle at the circumference, and which principally consist of irregularly dotted vessels. The sap is quickly condensed, and becomes thick, glutinous, and sticky, like glue. The mass of the tuber is fleshy, firm, and resisting, and is composed of irregular cellular tissue, full of grains of starch. The latter are of unequal size, the largest are of the same shape and size as the grains of Potato starch. The tubers, when raw, are sweet, and not at all bitter or sharp. They resemble both in substance and in taste raw Chestnuts. When steamed and cut, the tubers of the Apios are very like those of the Potato; they are floury, particularly when completely ripe and not too old, for the tubers may be kept in the earth for several years without being destroyed. Their taste is sweet and agreeable, very like that of the Potato, but rather sweeter and with a little of the savour of Artichoke, which is by no means unpleasant.

I have myself cultivated several plants of Apios tuberosa. Amongst them was one that grew for four years in a very poor soil; it was left almost entirely to itself; it was not cultivated, it was not watered. On pulling it up the other day, I obtained more than 100 tubers of different sizes, being equivalent to more than a decalitre. It seems to me to be quite certain that the same plant placed in a good light soil, well worked and properly manured, which its long roots could penetrate with ease, would give in one year more tubers, and those better filled and of a larger size. I do not think that the tubers of the Apios would be as large as those of the Potato, but there is no reason why the tubers of the plant in question should not be improved by cultivation, and at the same time that they increase in size their taste and nutritive qualities should not improve also.

All that I can say is, that in their present state, which is very little removed from that in which they are placed by Nature, the tubers of the Apios appear to me to be those which as yet approach the most to the Potato, both in chemical composition and in taste. The following analyses have been furnished by M. Payen:

	Potato.	Apios tuberosa.
Dry substances ...	25.6	42 4
Water	74.4	57.6
	100.0	100.0
Azotised matters	1.7	4 5
Fatty matters	0.1	0 8
Starch, Dextrine, Sugar, and similar substances, pectic acid, pectine, &c.	21.2	33,55
Cellulose (including the skin)	1.5	1 3
Mineral substances . .	1.1	2 25
Water	74 4	57.6
	100.0	100.00

Thus we see that, compared with Potatoes, the tubers of the Apios contain more than double the quantity of azotised matter, eight times as much fatty substance, and altogether more than one and a half times as much solid matter (organic and vegetable). The quantity of saccharine and other soluble matters is at least three times greater in the tubers of the Apios than in those of the Potato.

The cultivation of this plant may be attended with some difficulty in consequence of its manner of growth. Its long, slender, twining stems, and its equally long running roots are unfavourable to its being cultivated on a large scale. The plan I would propose, if its cultivation on a large scale should be attempted, would be to plant the Apios in lines alternating with lines of early Maize. The stems of the latter plants, which grow much more quickly than those of the Apios, would serve as props, around which the long weak branches of the latter would twine. Both, if cut before autumn, would make very good food for cattle. Another plan, which has been tried with success by M. de. Thury, would be that pursued in many Hop grounds, viz: to plant in tufts, for each of which a certain number of small poles are placed to keep up the straggling branches.

One of the great advantages afforded by the culture of this plant is the possibility of getting the tubers without pulling up the principal stock, from which the long roots with their tubers annually spring. *A. Richard, in Comptes Rendus, tome* xxviii., *No. 7.*

[In the Journal of the Horticultural Society will be found an account, with which M. Richard does not appear to have been acquainted, together with the cut which is here reproduced.]

Home Correspondence.

Vines and Carrion.—Your Calendar writer says, "Put no vile carrion in a Vine border." I entered

my situation in the end of last summer, in time to take a most excellent crop of Grapes from a Vine which is at the back of a stable, in a south-east aspect. They were nearly ripe, and considering the cloudy and wet season we had, were extraordinarily fine for out-door Grapes. About a month since I directed the men to turn the ground up constituting the border for the said Vine. Upon inquiry I found that there had been a favourite horse buried there two years ago; he had been quartered and put to this Vine, an application which has answered very well, for I never saw such a mass of roots as were running hither and thither through the bones, for the flesh was nearly consumed. Some of the roots were as thick as the thumb. Now, I imagine that you will think with me that they must have entered the raw flesh. *Edward, Cheltenham.* [Indeed we think no such thing.]

On Glass Burning.—In support of the evidence already adduced, both by myself and others, as to the unfitness of sheet glass for horticultural purposes, I beg to add the following fact. It is calculated to prove that the bad effects inseparable from the use of this kind of glass are not left for a summer's sun to demonstrate. So early as February 15, burning was observed to have taken place on the foliage of several plants. It occurred again on the 16th and 23d, when its effects were more decided. The passage of the concentrated rays, from one lens, as they moved eastward across the foliage of a branch of Begonia fuchsoides, which I enclose, is clearly shown by the line of burnt spots. The early appearance of the mischief this year, compared with the time of its occurrence last summer, through the medium of the same roof, is of itself a sufficient argument against the possibility of counteracting its effects by the variation of a few degrees in the angle of the roof. I learn, with satisfaction, that a substitute for sheet glass is likely to be found in rough plate, and I hope soon to see all plant structures glazed with it. Some will, no doubt, still strive to maintain the superiority of sheet glass to every other kind, especially some dealers in glass; indeed I have lately heard, from undoubted authority, that some of those gentlemen are now engaged in cajoling their customers into the belief that all the published evidence condemnatory of sheet glass is a fabricated excuse for bad gardening. When respectable men descend to such means for the sale of their goods, honesty itself may say to them good bye. Those worthies, for the purpose of giving a colour to their insinuations, have printed and circulated amongst their agents, retailers, and glaziers, Mr. Paxton's letter on the subject, which appeared in your columns last year. But I would beg to mention that in some cases the very absence of burning arises solely from bad gardening. I will just give an instance where sheet glass has been extensively used; all the glass used there is of the same quality as our own, procured from the same London firm, the houses put up by the same builder, and yet little or no burning takes place. How is this? The gardener there (a rule of thumb one) chooses to pursue a course diametrically opposed to good gardening. Instead of giving his Vines and plants the benefit of the solar rays, he scrupulously excludes every ray of sunshine, even so early as the beginning of February, by means of blinds. The disastrous results of such management was last year clearly manifested in his Vines. I saw them in the spring, and, for young Vines, they showed a decent crop of Grapes; and again in the autumn, when they presented a deplorable aspect—not one Grape came to maturity, and all through the abuse of the blinds, the use of which under ordinary circumstances is very doubtful. The result, instead of being (as one would naturally expect) a lesson for the future, only makes him value the blinds the more, and to throw the failure on some unexplainable cause. He is still going on as formerly, subverting the order of Nature's laws, and giving proof of the great advantages derivable from the use of sheet glass. *Beta, Feb.* 26.

Hybrid Heaths.—In reading Mr. Story's interesting paper on raising Cape Heaths from seed in the "Florist," it struck me that there could be no impracticability in crossing the splendid species of South Africa with the hardy natives that adorn our heaths and shrubberies. I need not say that a successful result would be most interesting, and the additional beauty that would be thus introduced to our beds and borders, would more than compensate for the trouble which such an attempt would cause. With Epacrises, a similar attempt should be made, for there is a species which is perfectly hardy—Epacris heteronema—and which in itself, though its blossoms are small, is very ornamental, as it almost resembles a hillock of snow when in bloom. Hybrids from this and other larger flowering species could surely be raised easily, which would possess a constitution sufficiently vigorous to endure our climate. That much may be done by hybridization is manifested in our American beds, which now possess a race of hardy Rhododendrons, with flowers scarcely inferior to the rich crimson of the Nepaul species. On this subject I would further observe that perhaps more might be accomplished in raising seedling Azaleas; for surely there can be no obstacle to a union between the hardy American species, or the finer sorts raised at Ghent, and some of the finest Indian varieties, which would yield a progeny, whose beauty it is not too much to say would cast a shadow on all their bright congeners that now deck our gardens. *A Devonian.*

Taxodium sempervirens.—I have observed that frequent enquiry has of late been made in regard to the hardiness of this magnificent tree, the "giant," of the mountain forests of Santa Cruz. The following particulars therefore of a specimen which has stood here during the last two winters uninjured, may not be altogether uninteresting, more especially as the situation on which it is growing is one of considerable exposure, on nearly the highest cultivated mountain land in the county. In the latter part of July, 1847, a plant 9 inches in height was transferred from a 3-inch pot, with the usual care in disentangling the roots, and planted on a previously prepared piece of ground, composed of rough turfy material, with an admixture of a small portion of sand and peat earth. The plant grew 2 inches during that season; last year it made a shoot 2 feet 9 inches in length up to the first of September, at which time it was growing rapidly, and would undoubtedly have elongated several more inches, had not an accident deprived it of the power of its leader. This shoot has on it 18 side branches, varying in length from 19 inches to 5 inches. The general appearance of the tree is of an upright and loosely irregular pyramidical form, much less compact in appearance than Cryptomeria japonica, which is growing in its immediate vicinity. Both are apparently equally hardy, having stood the last two winters without any protection whatever. *James Duncan, Basing Park, March* 8.

Rockwork.—I have read with interest your remarks upon rockwork, and I hope that your readers will avail themselves of your useful lesson, and that the eye will not in future be offended with the unsightly masses which are too frequently seen, wholly unfit for growing any plant except weeds, or those which thrive without any cultivation whatever. I may remark that many of the Lilies will thrive admirably at the lower part of rockwork, if the soil is properly made for them. They all require shade at the roots, and the bulbs being placed on the north side of a stone sufficiently high to prevent the intense heat of the sun acting upon the roots and lower part of the stem, the flower-stems rise above and show themselves to great advantage. Yucca shows itself better on rockwork than in any other part of the garden. My London garden does not admit of trying many experiments, but I have no doubt that rockwork made for the purpose would be the best way of growing many of the hardier Cape bulbs, which might be so planted as to have the protection in winter and the spring of glass fitted to such compartments as required it. Fuchsias and many other plants of similar habits are admirably suited for the same purpose. There is one objection to rockwork which requires notice, viz., the shelter it affords for snails and slugs, for which in a few years it generally becomes a breeding place for the whole garden. I generally use ammoniacal liquor from the gas works early in the spring, with which I water the whole, particularly about the rocky part of it. The liquor must be diluted according to its strength after that, as the season gets on and the plants grow. Lime water late in the evening is sufficient to keep the enemy in check, and a few shells or pieces of stone so placed as to enable them to creep under will amply repay the trouble of examining them in the morning. *B.*

Fruit Tree Protectors.—I shall be glad to know whether Mr. Rivers applies his methods of protection to dwarf-standards, or even to all his pyramidal trees, amounting to some hundreds, as it appears to me an expensive mode, and that fruit might be bought in the markets at a cheaper cost than the stakes and material could be provided for. *A. A.* [The above having been sent to Mr. Rivers, he has kindly furnished the following reply. "The umbrella-shaped protector, with branches of evergreens, is the most eligible for dwarf-standard fruit trees. I only protect such of my pyramidal Pear trees with calico as are of choice sorts, and on which I wish to ensure a crop; the expense is not heavy, 8 or 10 yards of thin unbleached calico at five farthings per yard, and four stakes at 1*d.* each. I have some thousands of Pear trees cultivated for supplying Covent Garden with their fruit; these are left to the mercies of the seasons."]

Brown Bread.—From what I have observed under the heads of "Brown Bread," "Steel Mills," &c., during the last two or three weeks, I am disposed to think that a few more remarks on the subject may not be unacceptable. In the first place, I recommend Mr. Parkes to mention in his next advertisement at what price his mill for grinding and dressing can be had; and, further, he will do well to name some establishment in London, where such a mill may be seen and examined. For my own part, however, I am perfectly satisfied with his common grinding mill. The improved one is, I dare say, a good thing; but I have not proved it. The mill I have used for several years is perfectly similar in appearance to the common coffee mill used by most grocers, and is fixed to a post. It has a large fly-wheel and two handles, one of which is fixed to a spoke of the fly-wheel. One man can turn my mill; but I admit it then gives him rather hard work, and to grind a peck of Wheat would occupy full half an hour; whereas by putting a boy to my second handle, I am enabled to grind that quantity in from a quarter of an hour to 20 minutes, and the labour is nothing. Now, with regard to the meal, I recommend it to be used without taking away the coarse bran, provided bread made of the meal be found to agree with the stomachs of the family. Formerly it was so used in my house, but some of our stomachs have deteriorated, and will not now bear the bran; so I pass my meal through a coarse sieve, by rubbing with the hand, and this part of the process occupies from five to ten minutes for a peck of Wheat. Your correspondent, "P.," of Camberwell, is, I doubt not, either a baker or a miller; but he need not fear steel mills and home grinding, since comparatively few persons will take the trouble of the miller upon themselves: indeed I would not advise the use of a steel mill when a servant must be entrusted with its management. In conclusion, I can assure "P.," of Camberwell, that steel mills are not a "delusion," and that I have had one constantly at work, for the supply of my family, during 8 or 9 years. I can, moreover, assure him it is no "delusion," that our brown bread is not only excellent in quality, but also far more economical than the baker's insipid white bread. Any one desirous of having a steel mill should apply to Parkes, or any other good maker, and obtain a list of prices. When a mill is sent, it should be accompanied by directions how to fix and manage it. I may add, that the steel mills become blunted after long use, but are easily rendered as good as at first. Mine has not yet undergone the process of sharpening, nor will it be required for some time to come. Parkes's mill, at 2*l.* 10*s.*, does very well for a small family. I had almost forgotten to ask "C. H." whether he ever compared brown bread made of Wheat-meal with the miserable stuff produced by mixing middlings or pollard and white flour, as is a common practice in London? I think that on a former occasion I recommended a 5th or 6th part of Rye with Wheat as a great improvement to the flavour of brown bread. *Miles, Croydon.*

Cucumbers.—A grocer in Garstang has for years obtained abundant crops of Cucumbers by the following plan. In the beginning of May he makes his bed of pig manure, about 3 feet wide and 4 feet square. He then fills a raisin box with earth, inserts it in the middle of the bed and sows his seed therein; he next places a hand glass over the box, which is about 21 inches long, 10 inches broad, and 6 inches deep, and lets it remain till the plants commence running; he then removes it and thins out the plants, leaving four to each box. Those plants make short shoots and produce abundant crops, owing I suppose to the roots being confined in the box. *M. Saul, Garstang, March* 11.

Sir Thomas Brown on Vipers.—That the young vipers force their way through the bowels of their dam, or that the female viper bites off the head of the male, in revenge whereof the young ones eat through the belly of the female, is a very ancient tradition, entertained in the hieroglyphics of the Egyptians, affirmed by Herodotus, Nicander, Pliny, Plutarch, Ælian, Jerome, Basil, Isidore, and seems countenanced by Aristotle and his scholar Theophrastus. Notwithstanding which authorities, transcribed relations and conjectures, upon enquiry we find the same repugnant unto experience and reason; for it overthrows the careful course and parental provision of Nature, whereby the young ones newly excluded are sustained by the dam, and protected until they grow up to a sufficiency for themselves; all which is perverted in this, for the young ones supposed to break through the belly of the dam will, upon any fright, for protection run into it; for then the old one receives them in at her mouth, which way, the fright being past, they will return again, which is a peculiar way of refuge; and although it seems strange, is avowed by frequent experience and undeniable testimony. As for the experiment, although we have thrice attempted it, it has not well succeeded. *From your humble servant to command and an old correspondent, the learned Sir Thomas Brown, Kt., Doctor of Physick, late of Norwich.*

Franciscea Hopeana is a well-known and very ornamental winter flowering stove plant. It likes rich, peaty loam, with a little sand, and plenty of drainage; after it has made its new wood moisture should be partially withdrawn, and the plant allowed to rest. It should be brought into action, when required, by heat and copious waterings. If the roots are much pot bound, the plant should be repotted. *A Young Gardener, Thorpe Perrow.*

Societies.

CALEDONIAN HORTICULTURAL, *March* 1.—W. Crawford, Esq., in the chair. The display of spring flowers was extensive, and creditable to the exhibitors; while, from the fineness of the weather, and the attraction of the new "Winter Garden," the attendance, not only of members and gardeners, but of ladies, was much larger than usual. For the six finest varieties of Camellia, a 1st prize was awarded to Mr. Stewart, gr. to Professor Dunbar, the kinds being Reine de Fleurs, imbricata, decus italicum, amabilis, Mrs. Fetters, and albiflora plena; a 2d premium was voted to Mr. Cossar, gr. to Lady Hay; and a 3d to Mr. Foulis, gr. to J. Tytler, Esq. For the two best Epacrises, a 1st prize was assigned to Mr. White, gr. to Mrs. Haig, for impressa and impressa alba; and a 2d premium to Mr. Sleigh, gr. to the Lord Advocate, for Wilmoriana and coruscans (the latter being the best grown specimens, but not sufficiently in flower). For the two finest Cinerarias, a 1st prize was awarded to Mr. Young, gr. to T. Oliver, Esq., whose kinds were Countess of Zetland and noblesse; and a 2d premium to Mr. White, for Nosegay and Satellite. For the two finest spring-flowering Cape Heaths, the Silver Medal was awarded to Mr. White, who exhibited large and well-flowered specimens of hiemalis and Lamberti rosea. For the best hybrid Rhododendron, in pot or tub, a 1st prize was awarded to Mr. Sleigh, for a large plant of alta-clerense, a scarlet variety; and a 2d premium to Mr. Burns, gr. to G. C. Scott, Esq., for a white variety, named Cunningham's hybrid. For

the six finest Hyacinths in pots, &c., the prize was awarded to Mr. Young, whose kinds were Grande Vidette, Prince Albert, Jeannette, Themistocles, Mars, and Baron Van Thule. For the best dessert Pears, the premium was assigned to Mr. Baxter, gr. to Sir J. Gibson Craig, Bart., for well preserved specimens of Easter Beurré and Ne plus Meuris. For the heaviest six stalks of forced Rhubarb, a 1st prize was awarded to Mr. Henderson, gr. to C. K. Sievewright, Esq.; and a 2d to Mr. Goodall, gr. to the Marquis of Lothian, both samples being Victoria Rhubarb. Various articles were sent for exhibition only. In particular, a collection of rare and beautiful plants from Mrs. Haig, including Dendrobium Pierardi, a fine plant grown in a pot, and covered with flowers; D. nobile and cerutescens, also in flower; Spiranthes argentea; the curious Anœctochilus setaceus and latimaculata; with several well-flowered Moss Roses, rare at this season. For these productions the thanks of the Society were voted, and an honorary award made to Mr. White, Mrs. Haig's gardener. Honorary awards were also made to Mr. Cossar, for a flowering plant of Arum orientale; to Messrs. Dickson and Co., of the Leith Walk Nurseries, for a hamper of well bloomed Hyacinths in pots; to Messrs. Dickson and Sons, Inverleith Nurseries, for a fine display of Hyacinths and greenhouse plants; to Mr. Carstairs, for Hyacinths, a beautiful plant of Rhododendron campanulatum, and Prince Albert Rhubarb, grown beneath the stage of a greenhouse; to Mr. Kelly, for curious North American plants, including Sarracenia purpurea, Goodyera pubescens, Lycopodium dendroideum and lucidulum; also a large suspended sponge covered with exotic Ferns and Epiphytes. Votes of thanks were passed to S. Hay, Esq., for hybrid Rhododendrons; to Mr. R. M. Stark, for a collection of Mosses grown under a glass shade, mostly in fruit; to Mr. Sleigh, for Oranges, Epacris hyacinthiflora, &c.; to Mr. Burn, for cut flowers of Rhododendrons; to Mr. Gibb, for Camellia flowers; to Mr. Baxter, for Pears, the produce of root-pruned trees, with a communication on the subject. Mr. Macintosh, of Dalkeith Park, exhibited the impression of a Vine leaf grown by Mr. Wilmot, of Isleworth. Several communications were read to the meeting; in particular, an account of the mode of cultivation followed in producing the admirable specimens of Pelargonium which gained the first prize in 1848, by Mr. Cossar, gr., Kingsmeadows; list of hardy shrubs grown at Rozelle, with remarks, by Mr. Locke; notice regarding the cultivation of the Intermediate Stock, by Mr. Gordon, Silverknows; on the culture of Leek bulbs, by Mr. Weir, surgeon, Galashiels; and on a moveable flue cover, with a model, by Mr. Cathie, Airthrie Castle.

Reviews.

Hints on Cottage Architecture. By Henry Weaver, Architect and Estate Agent. Imperial 4to. Pope, Budge-row.

Model Cottage for Agricultural Labourers. By Thomas Chambers Hine, Architect. Royal 4to. Dean and Son.

Perhaps at no period in the history of this or any other country has the sanitary condition of the humbler classes of society occupied so prominent a place in legislative discussion, or taken so deep a hold on the minds of those who, by position, influence, and property, are the true guardians of this class of our fellow-beings, as it is doing at present. The time is evidently not far distant when the great landed proprietors will discover that it is not less their interest than their duty to see that their labourers are provided with healthy, convenient, and decent habitations. The laws of humanity and justice, and a regard to their own personal health, at least imply this. If our alehouses are crowded during the hours of relaxation — if sedition and all the crimes which afflict and disorganise the social system prevail, which is unhappily but too true —surely, one of the first steps which wisdom and true philanthropy would suggest, and which duty and interest command, is to remove the inducements which tend to such pernicious associations. The holders of the soil have here a great and a good work before them; they have power, through other and nobler means than the sword or the musket, to disarm the disaffected, to mitigate crime, and to create around them a great moral and physical safeguard. This is obviously to be best effected by endeavouring as far as possible to improve the condition of the labourer, and one of the first steps to this end is to provide for him a comfortable home. This, therefore, gives to the works before us a more than usual interest.

Mr. Weaver's work will be most useful in the locality for which his cottages are designed; the latter exhibit a great improvement upon the average dwellings which labourers now occupy in his district. We could have wished that his details had been more elaborate, so as to have enabled country gentlemen, with the assistance of their agents, to have carried out his designs without the aid of an architect; for many gentlemen, even of large means, are deterred from attempting any improvement in cottage building, when to accomplish this the services of a professional man are deemed requisite. This may be, and undoubtedly is, a mistake, where extensive operations of this kind are intended; for a gentleman can no more be his own architect than he can be his own gardener, although he may possess all the works ever written upon the art. Still it cannot be denied that the greater proportion of cottages which have been built, and are still being built, are conducted upon no settled plan, and often with entire ignorance of, or disregard to, the comforts and conveniences which are necessary to the health and morality of the great mass of society. It is possible, however, that cottages will continue to be built without the supervision of an architect, and one of the first steps to correct the evils above alluded to would be a cheap work, combining a variety of designs suitable to different localities, and that would instruct and aid those individuals to whose care this kind of architecture is most generally confided. Mr. Weaver's work will, in some measure, meet this desideratum. His elevations, although not exemplifying much variety or artistic display, are, notwithstanding, chaste and pleasing. His group, plate No. 8, is unobjectionable, and we quite agree in his recommendation of not building too great a number of cottages in one group. It is objectionable for the maintenance of health and cleanliness, and it is also opposed to picturesque beauty. A country village is much more expressive to the mind when composed of a variety of detached dwellings, than when arranged in continuous lines connected to one another, and assuming the form of streets. Plate 9 is a subject worthy of the study of all landed proprietors. A portion of the plate exhibits one of the many thousands of ugly barn-like buildings which we are accustomed to see when travelling in the rural districts, destitute alike of effect and of internal accommodation. This plate must convince any one what a trifling outlay can produce, and we trust that the lesson it teaches will not be lost upon those whom this work professes to instruct.

Mr. Hine's model cottage is one of considerable merit. When we inspected the exhibitions of plans of labourers' cottages at the Society of Arts, we were decidedly impressed in favour of this one on the whole, and it appears that the Society awarded it their highest premium. Instead of pigsty, dusthole, cesspool, &c., being attached to the model cottage as is generally the case with other cottages, every current of air continually diffusing putrid effluvium through the dwelling, Mr. Hine has very properly kept them separate, proposing to erect them in the back garden of the cottage, and at such a distance as to prevent offensive odours from affecting the health of the cottagers. Mr. Hine's very elaborate working drawings, together with his diffuse and explicit specification, will enable the merest tyro in the art of building to erect a cottage similar to the one represented, whose accommodation upon the whole is tolerably ample and convenient.

The mode in which he professes to warm the living-room, and at the same time ventilate it, is similar to that adopted in many hothouses, but we doubt whether his heating power is sufficient, even under ordinary circumstances. In very cold weather the fireplace is to be resorted to. On the whole we strongly recommend the model cottage to the notice of those who have the influence to ameliorate the lot of the humble cotter. *R. G.*

Garden Memoranda.

Horticultural Society's Garden, Turnham-green. —The Orchids in this establishment are now beginning to start vigorously into growth; many are showing flower, and some are in full blossom. Among the latter may be mentioned the large mass of Phalænopsis amabilis, sent to the Society from Manilla by Mr. Fortune. This is at present, as indeed it has been all winter, displaying multitudes of chaste white blossoms. By partially pruning back the flower-spike when the flowers at its point have faded, new spikes are thrown out from the portion that remains, and these coming into beauty, as they do before the gaiety of the parent spike has passed away, a constant succession of flowers is kept up by this fine Orchid nearly the whole year through. In the same house was a remarkably fine plant of Burlingtonia rigida bearing seven flower-spikes, one of which was in bloom. This is one of those plants which few manage successfully, but whose beauty when well grown amply repays all the patience and care which may have been bestowed on it. Dendrobium Pierardi was likewise in blossom, as was also D. cucullatum, a species in the same way, but larger, and therefore more desirable. D. nobile was displaying its beautiful blossoms, which, although not inferior to, are much shorter lasted than those of D. Wallichii. Among other plants was a fine mass attached to a block of Arpophyllum giganteum, a beautiful Orchid, which we do not remember to have seen exhibited except on one occasion from the nursery of Messrs. Rollisson. Masses of Aerides quinquevulnera, and other species of this interesting genus, were in admirable health. The Oncidiums were mostly showing flower; some of the flower-spikes of O. altissimum measured from 8 to 10 feet in length; O. sphacelatum and others were a mass of flower stems. The beautiful orange-blossomed Epidendrum aurantiacum, which has been shown so often in Regent-street, was still in flower, and promised to continue in beauty for some time to come. Though somewhat difficult to cultivate, it appears, from the specimen in question, that this fine Orchid may be made to yield successfully to skill and perseverance rightly applied. The whole collection exhibited the best possible health, the foliage being of the deepest green. The latter, indeed, was remarkable, a circumstance which Mr. Gordon ascribes to his supplying ammonia occasionally to the atmosphere of the house. Having first wetted a bit of pure carbonate of ammonia, about the size of a Bean, he rubs it on the hot-water pipes, waves his hand backwards and forwards once or twice, to disperse the fumes, and the work is done. Besides adding to their green colour, he is of opinion that this important manuring principle otherwise acts beneficially on the plants. It must, however, be used with caution, or it may do more harm than good. Mr. Gordon applies it in the evening just before the house is steamed. In the greenhouse, next the Orchid house, Kennedya Marryattæ, one of the most useful of climbers, was flowering finely on the rafters, and a plant of Forsythia viridissima was in blossom on the shelves. The ever-flowering Echeveria retusa was likewise in bloom here, and associated with it were various distinct looking Californian Echeverias, introduced by Mr. Hartweg, which have not yet flowered. In the curvilinear stove, Sinningia guttata and a variegated leaved variety of Gloxinia maculata were in flower; as were also the purple comb-like Porphyrocoma lanceolata, Franciscea Hopeana, and the large flowered F. latifolia. These latter are two of the most useful of all winter-flowering stove shrubs. A small specimen of the white flowered Eranthemum was likewise in blossom, together with plants of Henfreya scandens, raised from cuttings last autumn. The Deadly Upas tree, of Java (Antiaris toxicaria), thrives well here; it was but a small plant when received a year or two ago, and now it is some 8 or 9 feet high. In the small conservatory, erected by Messrs. Hartley, was a finely flowered plant of Spiræa prunifolia flore pleno. When exhibited in true character, as it was in the present instance, this proves to be a really valuable plant, its snowy blossoms having a cheerful effect at this season. Associated with it were Mr. Fortune's double flowered Chinese Peaches, the red and the white. They are very handsome; the buds of the red sort when young are almost scarlet, and the large blossoms of the white variety are no less ornamental. They will prove valuable additions to our shrubberies. The little greenhouse in front of this house was gay, as it always is, with Cinerarias, Christmas Roses, Lachenalias, Nemophila maculata; the pale blue sweet scented Hyacinth of Cabool, which proves to be the same as the Cashmere Hyacinth, and various Cyclamens purchased at the sale of the late Dean of Manchester. Many of the latter have not yet flowered, but it is anticipated that something new and good will result from them. Before leaving this house it should be added that it is one whose form offers much convenience to the amateur of small means. It is span-roofed, about 26 feet square, having a path down the middle, and is heated by hot water in a single row of 4-inch pipe from a small Exeter drum boiler, which, after some years' trial, has been found to do its work very efficiently. The side of the roof is 14 feet 9 inches deep, the upper sashes fixed, and 8 feet in length; the under ones moveable, 6 feet 9 inches in length, and 3 feet 6 inches in breadth. On each side of the path are placed the plants, and behind them there are ample means of wintering the bedding out stock of summer. In the large conservatory huge plants of Brugmansia cornuta, whose white flowers smell like Sweet Peas, and of B. sanguinea, were in bloom. Also various Acacias and Camellias; among the latter we noticed Mr. Low's C. miniata in fine condition; Messrs. Loddiges' C. aulica was reported to have flowered in good character, but was unfortunately past when we saw it. The large plants of Cestrum aurantiacum, than which a more valuable conservatory plant could hardly be named, were closely pruned in, one just now, the other a week or two earlier; by this plan they are made to come into bloom in succession. The true Habrothamnus fasciculatus was flowering finely here, and a beautiful thing it is; but Cestrum roseum, a dingy red-flowered plant, having in many cases been sold for it, it has unfortunately fallen somewhat into disrepute; H. elegans, though less brilliant, is also a desirable species. Among climbers, Tecoma australis, and its more beautiful associate T. jasminoides, were in blossom. In the open grounds, the Peach trees planted under Mr. Rivers's protected trellises were in bloom, as were also those on the walls. The latter are protected from spring frosts by temporary wooden copings, 9 inches broad, fastened under the stone coping to brackets fixed in the wall. This is found to afford sufficient protection, but in order to break the sweep of the proverbially cold winds of March along the wall, hedges of Arbor-vitæ, about 60 yards apart, have been planted across the border, at right angles with the wall.

Miscellaneous.

Method of detecting the Flour of Indian Corn in that of Wheat, by M. Mauviel la Grange, in Journ. de Chem. iv., p. 339.—The sample is sifted, and 2 grms. of the finest flour mixed in a test-tube with 4 grms. of nitric acid, and well stirred with a glass rod. After this add 60 grms. of water, and then 2 grms. of carbonate of potash dissolved in 8 grms. water. When no Indian corn is present, as soon as the carbonic acid has escaped only yellowish flakes separate; but when any Indian corn is present, some orange yellow particles subside, which are easily detected. In this way an admixture of from 4 to 5 per cent. of Indian corn with wheaten flour may be detected. *Chemical Gazette.*

Calendar of Operations.

(For the ensuing week.)

FORCING DEPARTMENT

Vineries.—As the succession and late Vines will soon be in motion, and as the ground is still cold, it will be of great advantage, where the roots are wholly outside, to lay some leaves and stable litter over the borders, to the depth of 15 or 18 inches. This will yield a mild and genial warmth to the roots, and its good effects will be apparent upon the future growth; by keeping at the same time a very mild and humid temperature within

the house the roots will get in advance of the tops, and the Vines will consequently break with extra vigour. Care must be taken to prevent the tender skin of the young berries from receiving injury, which will show itself in that disagreeable looking thing called rust; for this reason avoid a scalding steam from the evaporating pans, which is highly injurious to both leaves and fruit, and let the precaution be always taken of giving air before the sun's rays touch the house in the morning. One of the offices performed by syringing is cleansing the young leaves; and this should suggest the propriety of using perfectly clean water for the operation. After the first general thinning syringing should be dispensed with; the requisite amount of moisture should be obtained by evaporation. The syringing, if persisted in, will destroy the bloom on which so much of the beauty of the fruit depends. MELONS.—Attend to the training of the plants as they advance, and keep the shoots sufficiently thin to enable every leaf to develope itself; maintain a moist atmosphere, or the red spider will soon make its appearance. Take care to admit air, however small a quantity, before the sun's rays fall on the house in the morning, in order to dry up the moisture which will have accumulated about the leaves during the night; and to prevent their being scorched, close early in the afternoon, moisten the house and the plants with the syringe; and if the command of heat is good, give a little air before dusk, to remain on all night.

FLOWER GARDEN.

CHEAP FLOWER GARDENING.—Those who do not possess a sufficient extent of glass frames for the propagation of Verbenas, Calceolarias, and other half hardy bedding plants, may make a splendid display by filling some of the beds with masses of the more durable annuals sown in the places in which they are to remain. It is not to be expected that the duration of these will be equal to the plants for which they are substitutes, but with a proper exercise of taste in arranging them, the result will be much more satisfactory than many suppose. For white beds use Clarkia pulchella alba, Nemophila atomaria, or White Virginian Stock; for pink or rose colour, Clarkia p. rosea, Saponaria calabrica, or Rose Virginian Stock; few things make a more splendid yellow or orange bed than Eschscholtzia, and for a dwarf very compact bed of the same colour the common Mimulus moschatus is well adapted, if the situation is not too shady; for blue beds Nemophila insignis, Lupinus nanus, the late blue Forget-me-not, or the beautiful but rather scarce Centaurea depressa; for dwarf scarlet beds Verbenas or Geraniums are indispensable, but a taller bed may be made of Pentstemon gentianoides; the different varieties of Antirrhinum majus are also very useful, particularly the dwarf double white variety, the taller kinds may easily be made dwarfer by pegging them down; for a purple bed, nothing surpasses the purple branching Larkspur, if raised from seed on a warm border, planted out 8 inches apart, and pegged down twice during the growing season. The rest of the annuals in the above list may be sown at once in their places, and thinned out to proper distances. The Musk and Forget-me-not are hardy perennial plants, as are also the Antirrhinums and Pentstemons. The time for sowing annuals must be regulated by the period at which the greatest display will be most useful; and as this will generally vary from the middle of July to the middle of September, the seeds should be sown from the beginning of April to the end of June. The little Chænostoma polyantha makes a very pretty dwarf bed; it should be sown immediately in a warm frame, pricked out into boxes as soon as it is up, and planted out at the usual time; the young plants will require stopping, in order to induce a bushy habit. Lobelia erinus grandiflora, mentioned in a former Calendar, is known in the seed shops as L. e. compacta grandiflora. This, and all the other varieties of L. erinus or L. gracilis, although called greenhouse plants in catalogues, are excellently adapted for flower garden decoration; they may be propagated now either by seeds or cuttings, and with proper attention to potting, or transplanting them into frames as they require it, will be ready for bedding out by the middle of May. They will commence flowering immediately, and unless the ground is very poor, will continue till the end of September. The value of Plumbago Larpentæ, as a bedding plant, has not yet been satisfactorily proved; it is doubtful if it will commence flowering sufficiently early to be really useful, unless in very favourable situations. All dressed turf should now be well swept, rolled, and, if necessary, mown; it is a disadvantage both in regard to present appearance and after keeping to allow Grass to grow too long before it is first cut. Where there is a large extent of open lawn to be kept in first-rate order, we can confidently recommend the horse mowing machine, by which the Grass can be cut, once in a fortnight, at much less cost than it could be done once a month by hand. For firm ground the largest advertised size will be found the most economical, but for softer ground the medium sized machine is preferable, as the latter may be worked with a lighter horse, and consequently with less damage to the turf. It is worth while to observe, that not more than a fortnight should elapse between the different cuttings, or the work will be more difficult to do, and unsightly when done.

FLORISTS' FLOWERS.

CARNATIONS AND PICOTEES.—We are great advocates for early potting, and from the mild season which we have hitherto experienced, the layers (if they have been properly attended to) ought to be in first-rate condition for putting out, let the weather be as it may for the future. We would advise the soil once more to be turned over, and hand picked; the capture of one wire-worm will repay all the trouble. In putting the layers into large pots, it will be necessary to drain well with broken potsherds, covering these with about an inch of moss; this prevents the soil from running amongst the drainage, and at the same time is of great service in a dry summer. Seedlings of last year, which have been planted out on beds, should be looked over, and the surface soil stirred. POLYANTHUSES. — Seedlings are blooming fast. Pull up all that are deficient in lacing or have discoloured centres. Pin-eyed flowers also are of no use to show; but we have reserved several pin-eyed ones, whose ground colour is distinct and novel, and whose other general properties are good. We do this for the sake of seed, because we believe that these will bring "thrum-eyed" flowers, and we trust to obtain some variation in colour, in order to obviate the great sameness which many people complain of in this interesting spring flower.

HARDY FRUIT GARDEN.

Figs and Vines on the walls should be uncovered and trained; it will be necessary however to cover with ever-greens, or let down a canvas in front of the walls during night, especially in cold localities. As the Apricots on flued walls are coming into bloom, it will be well to go over them, to see that the winter covering of Yew or Spruce does not hang so thickly in any place as totally to obstruct the sun's rays. A little labour will be well expended in going over the Apples, Pears, &c., in the orchard, washing them with clarified lime and soot water, in order to destroy lichens and mosses; it will also be serviceable in the destruction of insects which may be lurking about the branches; and as some of these depredators will soon begin to creep out of their shells, this will be as good a time as any for the operation.

COTTAGERS' GARDEN.

Sow upon a warm border a small patch of Savoys, Red and Sugar-loaf Cabbages, Cauliflowers, Borecoles and Brussels Sprouts. Make a sowing of Early Turnips, and successional sowings of Spinach, Peas, Beans, Lettuces, &c. Sow also the main crop of Onions and Parsnips, if not already done, and get all your spare ground dug and made tidy, in order that it may be ready for future crops. If your hedges require clipping let it be done before the new growth is commenced. Patches of herbs should be examined and top-dressed with a little good soil. The surface of the ground should be forked amongst fruit bushes, Strawberries, or any crops which have been planted some time. Attend to earthing up and staking Peas, and employ the children in walking round the garden on mild mornings to pick up snails, which will be creeping about.

State of the Weather near London, for the week ending March 15, 1849, as observed at the Horticultural Gardens, Chiswick

March.	Moon's Age	Barometer. Max	Barometer. Min	Thermometer. Max	Thermometer. Min.	Thermometer. Mean	Wind.	Rain
Friday 9	[illegible]	29.949	29.917	43	29	36.0	N.W.	.01
Satur 10	15	30.412	30.276	43	21	34.5	N	.00
Sunday 11	16	30.424	30.271	46	36	41.0	W	.00
Monday 12	17	30.161	30.125	56	43	49.5	N	.00
Tues. 13	18	30.302	30.040	69	38	47.5	S.W.	.00
Wed 14	19	30.308	30.268	60	40	45.0	S.W.	.00
Thurs 15	20	30.312	30.292	63	45	49.0	N.W.	.00
Average		30.270	30.149	50.0	36.1	43.0		0.01

March 9—Clear and frosty; very fine; snow showers, frosty.
— 10—Sharp frost, clear, masses of low white clouds, overcast.
— 11—Overcast throughout.
— 12—Overcast, with cold N. wind.
— 13—Fine; overcast.
— 14—Overcast, cold dusky haze, densely overcast.
— 15—Uniformly overcast throughout.

Mean temperature of the week equal to the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending March 24, 1849.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No of Years in which it Rained	Greatest Quantity of Rain.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 18	56.6	33.9	45.3	4	0.06 in	3	[illegible]	—	1	2	5	2	2
Mon 19	51.7	34.2	42.9	5	0.15	1	3	8	—	2	7	5	2
Tues 20	51.7	35.1	43.4	10	0.36	1	1	3	—		10	2	6
Wed. 21	51.9	34.9	44.4	11	0.21	4	1	1	2	3	4	0	2
Thurs 22	51.2	36.5	43.8	10	0.26	3	1	2	1	8	6	3	1
Friday 23	50.8	35.2	43.0	11	0.60	3	2	2	1	4	6	3	1
Satur. 24	[illegible]	31.4	[illegible]	7	0.11	2	4	2	—	4	2	1	5

The highest temperature during the above period occurred on the 19th and 20th, 1846—therm. 69 deg., and the lowest on the 20th, 1846—therm. 20 deg.

Notices to Correspondents.

ACHIMENES: *G B N*. To the sorts you now have, add picta, venusta, longiflora, multiflora, Skinneri, hirsuta, and coccinea.‡

BOOKS: *Leicester*. Macintosh's "Greenhouse, Hothouse, and Stove."

COUVE TRONCHUDA, OR PORTUGAL CABBAGE: *J A R*. See p. 152 of the current volume.‡

DUBLIN HORTICULTURAL SOCIETIES: *H A*. Much obliged for the information; it would not be for the public advantage that we should take these questions up again for the present. We wait the course of events, and the result of arrangements in progress. As to the Royal Horticultural Society and the little bit of *national feeling* upon which they are trying to float, we can only say that what they are now doing is consistent with what they have done before. The Horticultural Improvement Society we have always regarded as one struggling to carry out good objects, but unable to do so; and we have felt called upon to make, for defects in its management, an allowance to which its inefficient rival had no claim; but we must confess that its schedule for 1849 is an unusual document. A council consisting of none but officers, the lowest of whom is a vice-president, a bye-law providing beforehand for a compromise with creditors, and a demand for groups of Verbenas in the month of April, are very odd things.

GARDENING IN THE SOUTH OF FRANCE: *E P J*. Stay at home. You will only repent once of having gone on such an errand, and that will last till you get back. We can only assist you with this piece of advice.

GREENHOUSE ANNUALS: *M A*. Brachycome iberidifolia, Lobelia ramosa, Portulaca Thellusoni, Rhodanthe Manglesii, Schizanthus retusus, and Viscaria oculata.‡

GUANO: *Saturday*. Use 2 cwt., applied broadcast, after or before wet weather. Use only Bolivian or Peruvian. When sowing it mix it with twice its bulk of dry earth.

INSECTS: *K T*. The American Hessian fly is a minute two-winged insect, closely allied to the English Wheat midge (See *Gardeners' Chronicle*, 1847, p. 604). There is an excellent paper on it by Dr. Asa Fitch, in the "Transactions of the New York State Agricultural Society." We should think the plan of using a midge sieve during the winnowing of the corn would be the most advantageous plan of destroying it. *W*.

IPOMŒA LEARII: *A G*. Plant it out in the border, if you have one, of your warm greenhouse; or a large pot or box will suit it. As to soil, it likes a mixture of peat, loam, and leaf-mould, with a sprinkling of sand in it.‡

LOBELIAS: *C W L*. Your queries are answered in this week's Calendar.‡

MELILOTUS LEUCANTHA: *E D S*. It is a biennial; sow it now or in the beginning of April, on a deep, rich, and dry loamy soil, in drills about 18 inches in width, and the plants should be thinned to 9 or 10 inches apart. If some plants of it are cut down to within 2 inches of the ground, when about 2 feet in height, they will bloom later in the summer, and a succession of flowers may be had from June to November. What is the "Gentianella tree?" Apples next week.‡

NAMES OF PLANTS: *T J W*. Asplenium Adiantum-nigrum (var). This is one of the forms that breaks down the distinctions between A. Adiantum-nigrum and A. lanceolatum, as species. *S.—G B N*. Cyclamen coum.¶—*J W*. The scarlet Amaryllis is a variety of A. Johnsoni; the pale one is probably A. ambigua.¶—*J T P*. The garden names of Corræas have no greater permanence than those of Dahlias and Verbenas, and should not be included in a botanical catalogue. The best is Corræa speciosa, a real species; Corræa pulchella is a nice one.—*R Gallier*. The flower is very much spoiled; it looks like Dendrobium aureum.—*W J*. Physolobium carinatum.—*P B*. Epidendrum tripterum, we believe; it is almost impossible to determine these little things without leaves and bulbs.—*T*. We cannot undertake to name plants on the instant.

PANSIES: *Puck*. Yellow: Youell's Marchioness of Lothian, White: Cook's White Sergeant. Purple: Scotcher's Lucy Neal.‡

PEAS: *Legumen*. Some no doubt, but not a great deal.

PITS: *P A*. There is no objection to your plan, but you must not run a flue through the pit in the manner you propose, or it will dry up and scorch the roots of the plants. If you can command plenty of stable dung, the better way would be to set your pit on brick pillars 2½ or 3 feet high, in order that you might be able to introduce dung all through, below the bottom, which should consist of strong stakes laid crossways, and resting on a ledge in front and back. Let your compartments in front and back, for the linings, be 2½ feet wide, and closed in by shutters. The dung should be thrown into a heap to sweeten for 8 or 10 days before it is used, or the rank steam from it will kill your plants.‡

POTATOES: *R G*. Do not plant Potatoes at all in stiff wet land; if you do, and we have a wet summer, you will lose them, be the sort what it may. If you are resolved upon a hopeless experiment, use Irish Cups.—*K B*. Put soot into the trenches in which you plant, and mix it with the soil; 20 bushels per acre, if you can spare it, will not be too much. Soot does not appear to do any harm unless it is mixed with lime, in which case it is dangerous. You should read Cuthill's pamphlet on the Potato, in connection with this subject. Any nurseryman will furnish the seeds of the Aubergine—the Oyster Plant is, we believe, not in the trade. We are unable to furnish you with "P.'s" address.‡

RHODODENDRONS, &c.: *Sheffieldiensis*. Next week.

RINGING: *Scrutator*. As soon as your vigorous but unfruitful Pear-trees have fairly broken into leaf, you may then cut a narrow strip of bark from around the stem.‖

ROUGH PLATE GLASS: *U E K*. No doubt it is possible to ruin anything; and we can readily believe that you have hit upon a way of spoiling this. We can only say that we have now before us a roof of it, fixed in one of the most sooty parts of London three years ago, and it is still as clean as it was the first day of its being used.

SAND: *F A P*. The sample consists largely of fragments of shells; it is therefore not well suited to plants which dislike lime. It will not do for Heaths. You had better order your London nurseryman to send you a few bushels of silver-sand. We have never yet heard of a good trap for wood pigeons; a common spring rat-trap has been recommended. Inga likes peat and loam; but its management is of more consequence than its soil. Grow it fast, and when it has done growing keep it as dry as its nature will bear, and exposed to the full sun of autumn, then force it in November. The Papiere is the Papaw, an unattractive tree, of very little interest in this country.

SWINDLERS: *F Masters*. The writer from Warwick-street, Liverpool, and Head-street, St. James's, Liverpool, is the very man.

VERBENAS: *B A*. Comte de Paris, deep lilac, and Barkeri, scarlet.¶

VINES: *G J B*. By the Muscat of Fontainbleau was probably meant the Chasselas de Fontainbleau; it is the same as the Royal Muscadine. It ought to do well in the border you have prepared, only take care that it does not become too dry in summer.‖

WARM CONSERVATORY CLIMBERS: *G B N*. Stephanotis floribunda, Tecoma jasminoides, Ipomœa Learii, Schubertia graveolens, Mandevilla suaveolens, Clerodendron splendens, Beaumontia grandiflora, Bignonia venusta, Hoyas, Henfreya scandens, and Passion-flowers. These will all succeed in your conservatory, whose winter temperature is 60°.‡

MISC.: *Inquirer*. We are much obliged, and will apply to you should any of the numbers be required. Perhaps you will, in the mean time, forward your address to the office.—*A W*. Prepare your dung bed for cuttings exactly as you would for Cucumbers. When the heat becomes low, it may be kept up by linings. It will be most convenient to strike your cuttings in pots, which should be plunged in old tan, coal ashes, or similar material, laid over the dung. Shade your cuttings from sunlight, and little air will be required. Dahlias and Lobelias will strike freely in your dung frame. Harden them off when well rooted, and plant them out when all danger of frost is over. In planting Asparagus, trench 3 feet deep, manure well, and plant 9 inches asunder in rows a foot apart. There is but one sort of Asparagus.—*A Young Gardener*. If you wash the inside of your pit well with lime, we imagine that you may afterwards plant your Melons without fear of red spider. Strawberries often go "blind," because of over luxuriance or too much forcing before the flowers are set.‡—*Absolom*. The plants you mention will be quite safe in a temperature of from 40° to 50°. They should have plenty of air on all favourable occasions.‡—*Blue Bonnet*. You might try them in a favourable situation, but we fear Taxodium sempervirens is too tender for the climate of Forfarshire.‡—*E E*. Any respectable nurseryman can supply you if he chooses.‡—*Constant Sub*. We know of no treatise on the subject. You will succeed if you follow the advice we have given you.‡—*A Z*. It is the dermal plate of a Ray fish, probably of the Raia Batis. It may have got into the garden from tertiary deposits, or even by recent manure, as these fish are very common on our coasts.

SEEDLING FLOWERS.

CINERARIAS: *A M*. Your seedling resembles "King" in colour; centre white, with petals tipped with bright violet. It is very pretty, but too much like many now in cultivation.*—*J H*. A very fine blue, but the flowers are too small and thin.*

ERRATUM.—In No. 9, March 3, page 136, col. *c*, line 3 from top for "bunches," read "branches."

WHITE BELGIAN CARROT ...	per lb.	1s.	3d.
LARGE YELLOW BELGIAN DO. ...	,,	1	6
LONG RED ALTRINGHAM DO. ...	,,	1	3
LONG ORANGE DO.	,,	1	0
SHORT ORANGE DO.	,,	1	8
FINE LONG RED MANGOLD WURZEL	,,	1	0
YELLOW AND RED GLOBE DO. ...	,,	1	0
RENDLE'S IMPERIAL SWEDE TURNIP ...	,,	1	0
SKIRVING'S PURPLE-TOP DO. ...	,,	1	0
LAING'S, MATSON'S, & ASHCROFT'S DO.	,,	1	0
PURPLE & GREEN-TOP SCOTCH YELLOW DO.	,,	0	10
DALE'S HYBRID DO.	,,	0	10
WHITE, RED, AND GREEN ROUND DO.	,,	0	6
WHITE, RED, AND GREEN GLOBE DO...	,,	0	6
WHITE, RED, AND GREEN NORFOLK DO.	,,	0	6
BEST RED AND WHITE CLOVER ...	,,	0	5
FINE TREFOIL	,,	0	2
LARGE GUERNSEY CATTLE PARSNIP	,,	1	3
LARGE DRUMHEAD CABBAGE ...	,,	1	6
FINE ITALIAN RYE-GRASS	per bushel	8	0
COMMON RYE-GRASS	,,	3	0
PACEY'S PERENNIAL RYE-GRASS ...	,,	6	0

With all other Agricultural Seeds at the lowest market prices.

Our Agricultural Seed List is now ready, and we shall be happy to send a copy to any one who may wish to obtain it.

Apply to WILLIAM E. RENDLE and Co.,
SEED MERCHANTS, Plymouth.

The South Devon Railway is now open to Plymouth (Laira Green), and we now enjoy Railway communication to all parts of England and Scotland, and have made arrangements with Messrs. PICKFORD and Co. *for the cheap delivery of our Goods to every Town in Great Britain. Any instance of overcharge should be immediately communicated to us, as it is our interest to see that our customers are charged at the lowest rates Constant Steam Communication from this Port to Cork, Dublin, Glasgow, Liverpool, London, Falmouth, and most of the principal Ports in the Kingdom.*

☞ All Orders above 2*l.* will be delivered, free of Carriage, by Messrs. PICKFORD and Co., to any Station on the Great Western, Bristol, and Exeter, or South Devon Railways; or to any Town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers.

GRASS SEEDS.

CORNER OF HALF-MOON-STREET, PICCADILLY.

THOMAS GIBBS AND CO., the SEEDSMEN TO THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND, beg to inform their Agricultural friends that they have now finished cleaning their bulks of the different kinds of Grass Seeds, which are now ready for delivery. T. G. and Co. beg to call particular attention to the following, viz.

MIXTURES OF SELECTED NATURAL GRASSES for laying down land to permanent MEADOWS and PASTURES, with a proper admixture of the permanent Clovers, properly apportioned, to suit the nature of the different soils and the purposes for which they are intended.

RENOVATING MIXTURES for improving old Grass land.

FINE MIXTURES for forming garden lawns and Grass plots. Also, Italian Rye Grass, and all other kinds of Grass seeds and Clovers.

CARROTS.
Large White Belgian Carrot,
Large field Altringham Red Carrot.
MANGOLD WURZEL.
Yellow or Orange Globe,
Long Red,
Red Globe, and Long Yellow.
TURNIPS.
Purple and Green-top Swedes,
Skirving's and Laing's Swedes,
Gibbs's Green and Red-top Yellow Hybrid,
Green, White, and Red Globe,
Green, White, and Red Tankards.
CABBAGES.
Large Drumhead Cattle Cabbage,
One thousand-headed Cattle Cabbage,
Kohl Rabi, Purple and Green kinds.
PARSNIP.
Large Cattle Parsnip.

Clovers, Saintfoin, Furze or Gorse, White Mustard, Rape, and all kinds of Agricultural, Kitchen Garden, and Flower Seeds.

THOMAS GIBBS and Co., the Seedsmen to the Royal Agricultural Society of England, corner of Half-moon-street, Piccadilly, London.

AGRICULTURAL SEEDS.

BASS AND BROWN beg to offer the following, all of the finest quality of growth and stocks Priced Lists of Agricultural Seeds forwarded by post on application. Carriage free to London.

CARROT, Large White Belgian; do., Long Green-top Red Altringham. CATTLE PARSNIP.

MANGOLD WURZEL, Yellow and Red Globe; do., Long Red and Yellow.

WHITE SILESIAN SUGAR BEET.

SKIRVING'S, and PURPLE-TOP, and other SWEDES; also, SCOTCH, TANKARDS, DALE'S HYBRID, and all other descriptions of TURNIPS, true to their kinds.

LARGE CATTLE DRUMHEAD CABBAGE.

PACEY and ITALIAN RYE-GRASSES.

And every other description of Agricultural Seeds at the lowest prices.

We also wish to recommend our selection of GRASSES mixed for Permanent Pastures, and adapted to different descriptions of soils. Having for many years devoted considerable attention to the selection and supply of these Grasses, we are enabled to offer them with a confidence of their giving satisfaction. Price 10*s.* per bushel, including a proportion of the heavier varieties separate, of Clover and other Grasses; 3 bushels recommended per acre. Also, fine mixed Dwarf Lawn Grasses, 1*s.* 3*d.* per lb.

Prices to the Trade on application.

Seed Establishment, Sudbury, Suffolk.

PATENT FLEXIBLE INDIA RUBBER PIPES AND TUBING FOR RAILWAY COMPANIES, BREWERS, DISTILLERS, FIRE-ENGINES, GAS COMPANIES, GARDENING AND AGRICULTURAL PURPOSES, &c.

THE PATENT VULCANISED INDIA-RUBBER HOSE PIPES are made to stand Hot Liquor and Acids without injury—do not become hard or stiff in any temperature (but are always perfectly flexible), and as they require no application of oil or dressing, are particularly adapted for Fire-engines, Pumps, Gas, Beer-engines, Gardens, and all purposes where a perfectly flexible pipe is required. Made all sizes from ¼-inch bore upwards, and of any length to order.

Vulcanised India-rubber Garden Hose, fitted with brass taps, copper branch, and roses complete, ready to be attached to Pumps, Water-butts, or Cisterns.—Sole Manufacturer, JAMES LYNE HANCOCK, Goswell-Mews, Goswell-road, London.

N.B. Vulcanised India-rubber Washers of all sizes for Joints of Hot-water and Steam Pipes, and Vulcanised sheet Rubber, any thickness, for all kinds of Joints, and other purposes.

TURNIP SEEDS, &c.

W. DRUMMOND & SONS, Agricultural Museum, Stirling, N.B., will furnish, free, on application, priced Lists of TURNIP and other AGRICULTURAL SEEDS.

N.B. All parcels of Seeds above 2*l.* value (with the exception of Grain and Vetches), delivered free of carriage in London, Liverpool, Hull, Newcastle, and many other parts to which there is a direct communication.

AGRICULTURAL SEEDS.

THOMAS WHALLEY begs to state that his ANNUAL PRICED LIST OF AGRICULTURAL SEEDS is now ready, and will be sent free on application. Gentlemen requiring seeds for their tenantry supplied at wholesale prices.

T. W. has just published a New Descriptive Catalogue of Garden and Flower Seeds, which may also be had on application.

*** Freight paid to any port in Scotland, Ireland, or Wales.

12, St. George's Crescent, Liverpool.

SEEDS.—MEADOW AND PASTURE GRASS SEEDS, in mixtures suited to various soils, &c., at 32*s.* per acre, allowing 2 bushels and 12 lbs. to each acre. Directions for sowing and treatment will accompany the seeds. Mixed sorts for improving old Grass Lands, 1*s.* 3*d.* per lb. Fine sorts for forming Lawns, &c., 1*s.* 4*d.* per lb.

GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address GEORGE GIBBS and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c &c., 26, Down-street, Piccadilly, London.

GUANO CHEAPER THAN EVER.

POTTER'S GUANO is now 7*l.* per ton, and of superior quality, owing to recent chemical discoveries, and an improved mode of manufacture. An experience of eight years has shown it to be fully equal to the best Peruvian Guano, and 25 per cent. cheaper. See testimonials. If a quantity is taken a specific arrangement may be made.

GYPSUM (Great Reduction in Price), is offered at 15*s.* per ton, at the works, loose, or in bags if required. It has been analysed by an eminent chemist, and pronounced pure.—W. H. POTTER, 28, Clapham road Place, Kennington.

WHEAT SOWING.

THE LONDON MANURE COMPANY beg to offer as under.

LONDON MANURE COMPANY'S CORN MANURE.
,, ,, ,, URATE. [LIME.
,, ,, ,, SUPER-PHOSPHATE OF

Peruvian Guano, direct from Importers' Stores—Fishery and Agricultural Salt—Gypsum for Clover—Soda Ash for destroying wireworm, and every other Artificial Manure.

The London Manure Company would call particular attention to their Corn Manure and Urate, the former containing a large amount of Ammonia, Phosphates, and Silicates, all so essential for corn crops, while the Urate is richer in Phosphates and other mineral substances required for roots.

Full particulars and prices forwarded on application.

EDWARD PURSER, Secretary, 40, Bridge-street, Blackfriars.

PERUVIAN AND BOLIVIAN GUANO ON SALE,
BY THE ONLY IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WILLIAM JOSEPH MYERS AND CO., LIVERPOOL;
And by their Agents,
GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
COTESWORTH, POWELL, AND FRYOR, LONDON.

To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:

CORN AND GRASS MANURE,	per ton	£9	10	0
CLOVER MANURE ...	,,	8	0	0
TURNIP MANURE ...	,,	7	0	0
SUPERPHOSPHATE OF LIME ...	,,	7	0	0
SULPHURIC ACID AND COPROLITES	,,	5	0	0

N.B.—PERUVIAN GUANO, from selected cargoes (in Dock), 9*l.* 10*s.* per ton. SULPHATE OF AMMONIA, &c Office, 63, King William-street, City, London.

The Agricultural Gazette.

SATURDAY, MARCH 17, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY,	March 20—	Agricultural Society of England.
THURSDAY,	— 22—	Agricultural Imp. Society of Ireland.
TUESDAY,	— 27—	Agricultural Society of England.
THURSDAY,	— 29—	Agricultural Imp. Society of Ireland.

THE financial difficulties which have pressed upon the union of Glenties have been extreme. The whole union's expenditure for the half year ending 29th September, 1848, was at the rate of about 12*s.* 4*d.* per 20*s.* valuation; but even this was not the extreme of rating. As Glenties is low in the scale of the general misery of Ireland, so are Mullough and Rulland in the misery of Glenties, and so would Fintown have been, but for the individual exertions of Mr. HAMILTON, who employed all its people. While thousands in the other parts of the union were deserting their ordinary occupations, and consuming in idleness the fruits of other mens' industry, hundreds were doubling and trebling their industrious means, adding largely to the consumable produce of the land, and improving in skill, in knowledge, and in physical strength. Yet there was an expenditure of 2*s.* 6*d.* in the 20*s.* in the electoral division of Fintown, principally for the *staff*, the union charges; if there had not been large *gratuitous* relief given to the union, this local rate would have been unnecessary, because the Messrs. HAMILTON would have supported their infirm poor, for their own sakes, and for the poor people's sakes also, at a much lesser cost. And, perhaps, nowhere has the baneful result of giving entirely gratuitous aid in a union at large been more sensibly felt than in Fintown, because that system afforded no advantage to the landlord who boldly dared to maintain his own poor out of the poor-house, and at the same time hold out advantages to the indolent or apathetic proprietor, and the lazy or imposing poor elsewhere. We must illustrate this by facts.

The divisions in Glenties union in which there was no individual exertion to employ and maintain the people, received aid in the last year to the amount, in some instances, of *forty shillings* in the *twenty shillings* of valuation, which rate of aid Fintown would have received if the proprietor had done nothing to stimulate its own energies. In short, the practice of giving gratuitous aid, which it was thought advisable to adopt generally under the emergencies of the country, fell very heavily on Mr. HAMILTON, and any other true patriots like him, whose efforts, if followed, encouraged and rewarded by the Government, as they deserve to have been, would have led to the preservation of thousands of human lives, the reclamation of thousands of acres, and the production of tens of thousands of pounds sterling worth of food. Fintown, however, though in Glenties union, is *now* nearly free from rates and from pauperism, and the operations of improvement and cultivation are as successful as the circumstances of the estate have permitted. But, if Mr. HAMILTON and his amiable and indefatigable son had been joined in *rundale* with other proprietors around them, the exertions of the former gentlemen would have been almost fruitless to themselves, because, in such case, they would have been taxed for the support of the paupers of all the rest of the electoral division, and if the property in question had been say one-sixth of a large electorate, it would have been liable to a rate of probably not less than 20*s.* in the pound, *even after all that has been done upon it.* This is not merely an hypothetical case. Many individuals (for instance, on Mr. GRAHAM'S estate at Clifden, in Galway) have been obliged to abandon their agricultural operations, and leave their labourers to swell the pauper list, in consequence of the infliction of poor rates upon them for adjoining properties, over which they had no control.

It has certainly been a great hardship that the operation of the law has been to deprive generous and enterprising landlords of the benefits of their exertions, in order to feed the unemployed paupers upon other properties. The legislature has so contrived it, that landlords who have not a certain extent of land together shall hold their property in *rundale*. Thus Mr. HAMILTON is associated in different electoral divisions with other proprietors, and though his property is as heavily peopled as theirs, and though he employs all his own poor and a considerable number of theirs, and though he may have no paupers, he must pay as much as the slothful landlords with whom he may be joined, men who show no symptoms of activity, except in the art of manufacturing paupers. With the heavy incumbrances with which an improver like Mr. H. saddles himself, there is, however, no realisation of profit to be expected on the aggregate operations for a long series of years, and if a 2*s.* 6*d.* or 3*s.* rate should be charged on his improvements in aid of his negligent neighbours, the pressure on him would be intolerable.

In one division, that of Mountcharles, Mr. H. has a small property among large ones, for which, though it has not contributed one pauper to the poor-house, and though he has expended in labour three years' valuation (much more than three years' value in these days), within the last year he has had two rates inflicted on him, one for 3*s.* in the 20*s.*, the other for 7*s.* 6*d.* in the 20*s.* But the climax of absurdity and inequity is, that he is liable to increased rates, according to the improved value of his lands! Liable in law, but not practically as yet, because, to their honour be it told, his neighbours have been too considerate to insist upon their legal right to lighten their rates by increasing his; and Mr. HAMILTON'S generous mind feels this generosity and equitable consideration far more deeply than the mere pecuniary saving pleases him. And, besides all his other difficulties, a tremendous one arose from the delays of money advances and the non-fulfilment of agreements on the part of the authorities in connection with the Government. First, there were delays of payments, which it was of paramount importance, in the spring and summer of 1847, to receive regularly for the support of the multitude of labourers with which Mr. HAMILTON has surrounded himself. With the written engagement of the proper authorities to let him have monthly payments, he was kept month after month without money, through delays in the Treasury department, not in that of the Board of Works. He had raised the means of carrying on his laudable and exemplary operations on the faith of that engagement, and was obliged, in consequence, to divert to the purposes of permanent (but remote) improvements the sums which he had designed for the culture and cropping of the lands he had already improved, leaving them waste! He could not lease his greater works, because he had his staff under pay, and all his preparations arranged for them. He renewed the bills upon which he had made advances, and at length, having received very strong

assurances that the Government payments would be made at a specific time, he made no other preparation for the payment of the bills, two of which, for 1000*l.* each, were duly protested (to the great advantage of his credit and the comfort of his mind), in consequence of the failure of punctuality on the part of the Treasury. It had been intimated to him that an advance of 4000*l.* had been approved by the Lords of the Treasury to begin with; he worked on upon this intimation, and was then informed that he was to receive a much smaller sum than that which had been granted, and that for the rest of what he had expended, he must wait until all his works should be changed from under the act under which he had applied and received the orders to work, and until they should be brought under the *new* land improvement act. By an unforeseen communication *from* the Treasury, the advance of 34,000*l.*, on which he had calculated, was cut down to 13,400*l.*, after he had made all his arrangements with the Board, and as regarded his estates, for the greater sum. He had no alternative between prompt submission and an utter break up of his whole property. And even with his submission, and urging all the speed he could, he was obliged to sell his stall-feeding cattle in their lean condition, and let much of his Turnips rot in consequence, in order to raise money to pay his labourers from week to week. Since that period, however, he has had no greater delays, or disappointments than are, perhaps, unavoidable in the management of the affairs of private individuals by a public board.

In the Donegal union, Mr. HAMILTON has carried on works of improvement on 11 different farms, varying in extent from 350 to 25 acres of arable land, besides extensive bogs and moors, of which portions are reclaimed, and others are in course of reclamation. Of these, 600 acres have been thorough drained and subsoiled, and the crops have fully answered Mr. HAMILTON'S expectations. In favourable situations, from 7*l.* to 11*l.* was expended in the draining and subsoiling moor, gravelling (or claying) bog, liming and burning a portion for ashes, and supplying a little guano to start the seed. The crops of Turnips have repaid the expense, and this has been done on land not previously worth 1*s.* an acre. It is an interesting fact, too, that on farms which this spirited improver had taken at a valuation from some tenants, he derived better and more abundant crops from clay land valued at from 3*s.* to 7*s.* an acre, which he had thorough drained and subsoiled, than from other land which had been valued at 40*s* an acre. Such improved land, after an average expenditure of 10*l.* for the operations just stated, and for fencing, road making, and proportion of general farm-yard expenses, is now worth 40*s.* an acre; but it must be added that this land is within a mile of a market, half a mile of the sea-shore, and on a low level. Near the same spot there were last year, in one field of 34 acres, 6 acres of Potatoes and 28 of Turnips, where previously there had been 6 acres of fences, and an unproductive clay soil which the poor tenants would never have improved. It cost the proprietor in this and other cases the sacrifice of six years' rent to get such waste land into his hands.

It is not a little extraordinary that the peasantry objected violently to work by contract or job, a mode of employment coveted in other parts of Ireland where industry prevails; and this indisposition of the Donegal labourers to task-work, plainly indicates an instinctive laziness of character. They preferred the usual wages of 10*d.* a-day in summer and 8*d.* in winter. But Mr. HAMILTON wished to give them a beneficial stimulus to exertion in spite of themselves, and to spare his bailiffs the time and loss which would have attended on their constant superintendence over gangs of indolent men, all emulously contesting which should do the least work in any given time. These labourers—even the tenants of Mr. H.,—turned out several times, but by perseverance he contrived to keep from 400 to 1500 continually at work for above two years, at contract bargains for almost every kind of agricultural operation, by which system he saved at least 20 per cent., while the industrious workmen gained *more* than the same ratio above their former wages.

The drainage has been chiefly executed with stones, which are plentiful there; and Mr. HAMILTON thought it inexpedient to expend capital on the buildings and machinery which a tile manufactory would require, though he brought an English manufacturer to make preliminary arrangements for the manufacture, which he afterwards declined to establish.

After draining, the whole area has been subsoiled with the spade from 16 to 24 inches deep, and finding horse-work injurious to the loose ground, and very laborious to horses, Mr. HAMILTON employed trained men to dig the land, at from 6*s.* to 10*s.* an acre,* 9 inches deep; and he finds spade labour so economical and productive under the circumstances of his soil, and the redundancy of his people, that he is introducing it even in those agricultural operations in which it might seem to be inexpedient and even impracticable. His conviction is that there is as much to be done for agriculture as for any manufactures by mechanical powers, and that the farmer will yet find his profit in his increased knowledge of simple mechanical contrivances for working the soil. The costs of the operations, both in permanent improvement and present cultivation, have diminished considerably on their properties since Mr. H. and his son have been able to give time and attention to the details of work. For the first 18 months from December 1846, Mr. H. sen. was occupied in trying to extract the promised advances from the Government offices, in order to keep faith with the bankers who had supplied him with large sums of money; and besides this agitating and abstracting employment of his mind, he had unceasing cares, in his capacity of chairman of district, finance, and other committees.

The improvement in the moral and physical condition of Mr. HAMILTON'S labourers has been very marked; they hold up their heads like men, in days when the habit of depending upon gratuitous aid elsewhere has given a consciousness of degradation and a debased look and demeanour to so many of the Irish people. Mr. HAMILTON has found out that it is cheaper to keep people, old or young, out of pauperism than to support them in it, and he would have profited greatly by his expenditure if it had not been for the Poor-laws.

The benevolent and judicious plans pursued by Lord GEORGE HILL and Mr. HAMILTON are practical illustrations of the following sentiments which we find in a pamphlet of MARTIN DOYLE "on the Labouring Classes in Ireland." "While I fully admit that landlords in multiplied instances have strong grounds for endeavouring to free themselves from worthless and improvident tenants, and many temptations to consolidate farms for the creation of an orderly and industrious class in their stead, I would deprecate the practice of evicting tens of the old tenants to make way for one new, unless the former forfeited all just claim to protection by crime and violation of social order, paid no rent, and did not improve their holdings after the means had been fairly placed within their reach; for how does the case stand in respect to the proprietor of any estate? He either possesses it by inheritance or purchase; if by inheritance he is morally bound to bear the consequences which have followed from the carelessness, the mismanagement, or the policy of those who have transmitted the estate to him. It is a general law of the Almighty that children should suffer for the faults of their parents; the inheritor then should apply remedial measures to the social ills with which he finds himself surrounded on his property, with tenderness and a due consideration of the causes which have engendered the diseases of which he complains: and the *purchaser* should remember that he bought with full notice of living incumbrances in the shape of human beings."

We shall close our lengthy remarks with the expression of our hope that every encouragement from the State will be given to the really enterprizing proprietors of Ireland, in order to place them in a position to carry on their works profitably to themselves and to the United Kingdom.

THE East India Company have deposited, for a short time, at the Gardens of the Zoological Society, in the Regent's-park, a flock of THIBETAN SHEEP and Lambs, from the mountain district of Ladak, which we believe have been imported with the view of introducing this fine-woolled variety in the Highland counties of Scotland and Wales. MOORCROFT, who first noticed these sheep, gives also a favourable account of the quality of their flesh. Whatever may be the result of the proposed experiment, the animals in question cannot fail to be interesting to agriculturists and breeders.

PHOSPHATE OF LIME IN THE CHALK FORMATIONS.

THE following extract (which we think will interest our readers) is from a communication in the Quarterly Journal of the Geological Society of London, "On the Position in the Cretaceous Series of Beds containing Phosphate of Lime." By R. A. C. Austen, Esq., B.A., F.G.S.:

"After reading Mr. Paine's paper in the *Agricultural Gazette* of Feb. 19, 1848, I visited the various spots in my own neighbourhood where the middle cretaceous beds are exposed, and found the order and relative thickness in all the same. *The phosphate nodules are abundant in the upper green sand*, but they are generally small in the top beds; below come the fire-stone or malm-rock bands, 20 to 25 feet thick, and beneath these again other beds of bright green earth, of which one portion is argillaceous: this lower green band is the gault. *The concretions of phosphate of lime* are not so uniformly spread through the thickness of this mass as in the upper green sand, *but occur in two seams*, one in the argillaceous portion, the other lower, and only a little within the limits of this division of the series. These two beds of phosphate nodules, as well as a seam of pyrites, which in open sections produces a brown band in the gault deposit, are remarkably persistent.

"Although this order of the beds is constant for 20 miles along the course of the North Downs, it by no means follows that the discovery of phosphate beds will invariably reward those who may explore for them along the foot of that escarpment. In this respect all published geological maps will mislead, as they give a most incorrect representation of the course of the subordinate members of the middle cretaceous group. Research is already very strongly recommended in various quarters, but this will often be attended with a fruitless expenditure, unless it is accompanied with a clear understanding of the accidents which affect the relative positions of the various strata along this range. All published sections too are equally delusive.

"When seen from some distance within the Wealden area, the upper line of the North Down range seems to rise to a nearly uniform level; but when the beds which compose these hills are more closely inspected, it will be found that whilst the dip of the whole mass is to the north, the amount of dip varies continually from the horizontal nearly to the vertical—that beds of very different parts of the series are brought up to the crest of the escarpment—and that the range in reality presents a series of long undulations. With such a structure, the extent of the series exhibited in any one section will depend on the amount of inclination, being most where the dip is most rapid. But in addition to this, a fault, and one which in some places is of very considerable amount, runs along the base of the chalk escarpment; the lower green sand beds, which occupy the south side of the gault, also undulate, but the two sets of undulations do not correspond; that is to say, they have not their greatest curves opposite one another. The reverse indeed is very frequently the case, the greatest amount of disturbance on one side facing a small amount on the other, and thus it happens that in some places the beds of upper green sand and gault are exposed, and in others carried down below the surface; so that if laid down on a map they would be represented only at intervals along the base of the escarpment, as north of Gomshall, beneath Newland's Corner, near Guildford, at Puttenham and Seale; but it would require a map on a very much larger scale than that of the Ordnance to enable one to lay down these minute and complicated details.

"All these several places present old pits from which the marly green earth has been taken in former times, doubtless for the purpose of amending the land; yet the period in some instances must be remote, as these pits are often occupied by large timber trees.

"After having ascertained the positions of the several seams of phosphate nodules at the above-named localities, I visited those from which Mr. Paine is now raising this material in the neighbourhood of Farnham. The sections here are not so instructive, owing to the horizontality of the strata and the great accumulation of clayey gravel which covers the surface; the cretaceous beds have not in this part of the Wealden denudation that regular northern inclination which is given them in Dr. Fitton's section, and over the whole expansion of the middle group of beds from Farnham to Peterafield there is a series of undulations of which the axes shift round from N. and S. to E. and W., producing ridges having gentle opposite dips.

"The component beds of the cretaceous series in the vicinity of Farnham differ only in one instance from the series exhibited near Guildford, and which I described in 'Geol. Proc.,' vol. iv.; the exception is presented in the strata exposed in the great quarry on the road from Farnham to Crondall. Dr. Fitton notices it as a 'cream-coloured sub-calcareous sandstone,' which well describes its appearance, but the calcareous portion hardly amounts to two per cent.; the great mass of it is friable, passing occasionally into cherty sandstones; these sandstones rest on the gault, which along the lower part of the valley forms the subsoil of the rich Hop-ground west of Farnham; and they are clearly seen in the road section to be succeeded by a band of bright green sand. This mass of sandstone is the equivalent of the fire-stone to the eastward, and the malm-rock to the west, but differs from them in the absence of lime, and represents merely the course of a current, which at that particular period, between the gault and upper greensand, drifted arenaceous and rather coarse materials along this particular line in the cretaceous ocean; the course of this current seems to have been somewhat north and south. From this point on the Crondall road, I had the advantage of being conducted by Mr. Paine to every one of the pits from which he has procured the phosphate of lime. In the road-side quarry the uppermost bed is denuded, but it is seen in a quarry in a cultivated field close by, and is remarkable from containing large nodules of pure white carbonate of lime. This bed is surmounted by a stratum of green earth from 2 to 3 feet thick, which has one subordinate line of nodules of phosphate. Crossing the valley, the same stratum of upper green sand is seen capping the whole of the ridge, over which Mr. Paine

* It is now executed at 6*s.* 8*d.* per acre, though at the commencement it cost from 25*s.* to 35*s.* per acre. The men earn at the present rate from 13*d.* to 20*d.* per day.

has opened numerous small pits, in the spoil from which the small hard, dark-coloured nodules of phosphate are very abundant. Mixed with these are numerous fossils — amorphozoa, bivalve shells; the Monomyariæ are perfect; the Dimyariæ occur only as internal casts; these all consist of phosphate of lime. *These beds are the uppermost* of the upper green sand series, and may be followed till they pass beneath the lower white chalk. Across a small valley Mr. Paine is removing the capping of green sand and marl, to get at the building stone beneath, and which capping contains the large irregular concretions of phosphate described in his letter; here also fossil remains are abundant, but the whole mass is sufficiently rich to be worth removal. The gault is seen coming out from beneath the beds of sandstone on the south side of this ridge, resting on a mass of the upper ferruginous beds of the lower greensand, the latter forming a slight prominence along the road to Winchester. No beds are worked for phosphate along this line of gault: the various spots at which Mr. Paine has obtained this material belongs to the upper green sand, to which part of the series he correctly refers it. He says, 'The exact geological position of this stratum is the lower part of the lower chalk,' and although he has not worked any of the beds of the gault, he states that the analysis of the fossils which were thrown out in draining this retentive stratum, according to the report of Prof. Way, afforded from 80 to 90 per cent. of phosphate of lime.

"The portion of Mr. Paine's communication to the *Agricultural Gazette* which most surprised me, was that wherein he states that he had discovered a bed rich in phosphate of lime in the *lower* green sand; and we accordingly next proceeded to view the spots at which it was obtained; the first of these is in the crown of a hill or ridge above the village of Wrecklesham, the second at rather a lower level across the valley of the Bourne stream.

"The first of these is worked in the mass of gault which Dr. Fitton represents in his section, pl. 10, on the south of the valley of the Wey: the phosphate nodules occur in two bands, one, and by far the richest, near the bottom of the mass, the other higher up, but both within the dark green sands which constitute the lower portion of the gault: the gault clays occur at the summit of the ridge. The valley of the Bourne stream cuts deep into the beds of lower green sand; other inequalities of surface follow this in the line of section; but the gault, decreasing in thickness, is found on the intervening summits beneath the thick capping of tertiary clays and gravels. The cherty sandstone which occurs so abundantly on parts of Farnham Common, is the remains, *in situ*, of destroyed strata of firestone which once rested on this gault. Fossils are abundant in the beds worked above Wrecklesham, and these refer them to the gault.

"The *true* position of the gault on the south of the river Wey is not given in Dr. Fitton's section, owing to the scale of the sections, which horizontally are one inch, and vertically upwards of 4 inches to the mile. The thickness of the several groups is in consequence greatly exaggerated; and in this manner there is not space for these undulations of the beds from beneath the tertiary strata of Beacon-hill to the river Wey. The river Wey along this part of its course runs along an anticlinal valley, a disturbance which has been overlooked by those who have described the accidents of the Wealden district. The beds of lower green sand, which on the north side of the stream dip northwards, are found on the other side to dip south; proceeding in this direction they gradually become more horizontal, so that where the gault beds set on above Wrecklesham, the southerly inclination is only slight, and it is from this cause that they are carried on much further than is represented in Dr. Fitton's section.

"The beds productive of phosphate of lime in the neighbourhood of Farnham are, as everywhere else, confined to the upper greensand and gault; two seams in each of these divisions are richer than the rest, and present nodules almost exclusively composed of it; but the whole of these two masses afford phosphoric acid, and only in less degree than the nodules. It everywhere co-exists with green earth, though this mineral, when worked out from the rest of the mass, as is easily done, does not appear to afford a trace of it.

"Phosphoric acid occurs in the waters of many mineral springs, but only in the minutest quantities; in combination it is equally scarce, the metalliferous and earthy phosphates belonging certainly to the rarer minerals, so that we cannot suppose the beds in question to have resulted from the destruction of strata containing them. Animal structures alone seem to contain it in any abundance, and this circumstance has obviously prompted the suggestion which has already appeared in several quarters, that these nodules are coprolitic. Dr. Buckland has shown that these fossil bodies consist largely of this earthy phosphate. It has been urged against this, that these nodules have not the convoluted forms so marked in the coprolites of the lias and in the Inli of the chalk; this however is of no importance. When these upper green sand and gault nodules are rubbed down, so as to show a section, they constantly present a concentric arrangement, as do agates and like bodies where cavities have been filled by infiltration. In the instances of the bivalve shells and ammonites which are now solid casts consisting of phosphate of lime, we know that these forms must have first been inclosed in the sand, that next the proper shelly matter was removed, and in process of time its place occupied by the earthy phosphate.

"Though the nodules now under consideration have an internal structure which forbids our supposing them to be coprolites, yet they have the oblong forms of such bodies, and I am disposed to think that the phosphoric acid which these beds contain was originally of animal origin (coprolitic matter), at times with the external form preserved, as in the nodules, but for the most part broken up and mingled with the sand and ooze.

"The beds which contain this calcareous phosphate have since their deposition been placed under conditions which must have promoted great internal chemical changes. The vast deposits of the chalk and whole tertiary series have been accumulated above them; they must have gone down to great depths, and have been subjected for a long lapse of time to an elevated temperature. Under one set of conditions the substance of the coprolitic bodies, or that of the shells, sponges, and wood, may have been removed, and the phosphoric acid may have become generally diffused throughout the mass; whilst under other conditions the vacant moulds left by these extraneous bodies may have been filled by the infiltration of the phosphate of lime. The coprolitic bodies are now casts, as are all the other remains; and when we consider the very peculiar character of the substance in question, the presence of these mere external forms seem almost sufficient to warrant the conclusion that the phosphoric acid in these beds was originally of animal origin."

LANDLORD AND TENANT.

As the attention of your readers has been of late frequently called to the very important subject of leases, and the relative position of landlord and tenant in general, with the view of diffusing information and procuring for a subject which, if it does not lie at the root of an improved system of cultivation, on a higher standard than formerly, for high national purposes, is most surely inseparably connected with it, and must move as it moves, the full consideration which it deserves. I venture to make a suggestion, and to ask your opinion, or that of any of your readers competent to give one upon it, with any counter suggestions which may render the principle involved more efficacious than that which I now submit for insertion in your columns.

I have witnessed for more than a dozen years great exertions on the part of some gentlemen, both landowners, agents, and farmers, through which the face of a considerable tract of the northern division of the county of Lancaster has been completely changed. Peat has been converted into good mixed husbandry land; cold clay soils, formerly much abused by the plough, yet capable of producing spontaneously abundance of natural Grasses, especially white Clover, clothed with their native verdure, by a judicious restoration of fertility to those exhausted soils, by the application of a thrifty instead of a spendthrift method of husbandry. I have seen within that period no less than I believe a dozen pipe tile manufactories, established within a circle as many miles across. Improvement which began in the lowlands slightly raised above the level of the sea, admirably adapted for high cultivation, when once the necessary spirit, knowledge, and capital were found for overcoming the natural obstacles existing in the form of bogs, low levels, and a peculiar geological formation, has since crept upwards to the hills which bound this division of the county on the east, and has spread itself in a greater or less degree over the whole of the district alluded to. Yet, notwithstanding, this improvement, it must be admitted, has been effected in a great majority of instances by the landowners and their agents, whilst the tenants have done but little. Speaking of the latter, as a class, they may be said to be wanting considerably in the three ingredients requisite for sustained improvement; they move very timidly, even on those estates where their eyes have become familiar with the greatest improvement. They put off good examples with excuses, founded truly on poverty of purse, but still on poverty of spirit also. The annual payment of 5 per cent. interest on the capital spent for them in draining by their landlord, under the best superintendence their neighbourhoods can afford, deters many (though happily far fewer than a few years since) from having their lands drained. A feeling still lingers that the landlord should drain his own property, and give the tenant all the benefit; that if the former wishes to see bones used on the Grass lands, he should provide them at his sole expense. From these circumstances the conclusion might be drawn that the tenant, as generally found in this district, that is farming about 70 to 80 statute acres on the average, is a hindrance rather than a help in the march of improved cultivation. Difficult indeed it is to deal with many, but I am far from wishing to disparage a class of men who, if they do not greatly assist, they are, on the other hand, indispensable in the present constitution of society; and my object in addressing you is the hope I entertain that some suggestions may be efficacious to infuse that spirit, by assisting with capital, so as to enable us, one with another, to apply the knowledge with which our atmosphere abounds, and which, like the ammonia that escapes from an ill managed dungheap, flies upwards, enriching no one, but making the man who might have possessed it poor indeed in comparison with what he might have been with better use of his wits.

At present our custom is for the landlord to find the capital for draining, and for the tenant to pay 5 per cent. interest on the outlay. Beyond this, excepting the occasional working of a field, and the purchase of seeds for permanent pasture, and allowances for manure, which in some cases has not been applied to the land, nothing is done. But of late more inquiry and discussion have sprung up amongst the farmers, assisted very much by the useful and cheap agricultural publications of the day, and very ingenious arguments are resorted to by those who cannot yet see their own interest in the landlords' offers. In this symptom of agricultural animation I venture to say that signs of a clearer apprehension of the necessity and desirableness of improving lands are visible; and as I think that the improvement of our forms of agreement should not tarry behind the movements of that class whose advantages are limited in comparison with those enjoyed by the better educated, I am of opinion that the native form of lease should be improved and extended as far as possible, so as to answer the purpose for which it is intended. I should wish to see a more business-like appreciation of the contract subsisting between landlord and tenant, which can only be effected by the pains and intercourse originating with the former, and supported in all patience and condescension, by the active exertions of the agents, and by encouraging and helping forward any tenants who have courage enough to advance. I should wish also that in our covenants the landlord was as willing to be bound as he is desirous to bind; that the agreement might be indeed a contract, not merely a catalogue of penalties. That to meet the wants of such a state of society as is here, the general framework of the agreement should be such as to admit of its being varied in its application in particulars. That it should be liberal in its general complexion; well expressed in simple language, so as to induce the possessor thereof to refer to it and read it frequently with pleasure; well arranged, so that the items may be at a glance referable to distinct heads, short and pithy, not overburdened with petty privileges retained by the landlord; adapted to modern customs, and not tenacious of ancient rights, which have lapsed into disuetude. To meet all cases, whilst I proposed to advance money for draining, at 5 per cent., I would allow and encourage all tenants who preferred finding the principal themselves, in order to avoid any payment of interest (the feeling of some), to execute for themselves, either the whole or any part. Their labour should be valued, and I would purchase from them their work by ten equal annual instalments of 10*l.* per cent. each. The land's increase, I hold, would pay the interest to the tenant; and none should be required on these terms. I would also insert a clause relative to bones, which have been proved to be of the highest value as a top dressing for Grass land in this county, binding the landlord to allow 25 per cent. the first year on the cost of the bones bought and *bonâ fide* used on the farm as manure by the tenant. The allowances in both cases to be deducted from the rent, and certificates to be produced showing that the draining has been done to the satisfaction of the landlord and his agents, and that the bones have been applied, and that on land either previously drained, or which, in the opinion of two competent judges, did not require draining (of which in N. Lancashire there is not much). Now, Sir, being anxious to introduce two clauses into all new agreements on the property with which I am connected, which shall carry out the principle involved in the above remarks, I should feel obliged for any suggestions which may enable me to apply them to the greatest advantage, as I feel sure that the general application of some such provisions as those sketched out above would prove of great utility to the whole of this important district. *N. L. L.*

ROYAL AGRICULTURAL COLLEGE.

List of Prizemen at General Sessional Examination, Christmas, 1848:

AGRICULTURE: 1st, J. W. Howdon; 2d, J. P. Pitts.
CHEMISTRY: 1st, C. Lethbridge; 2d, J. W. Howdon.
NATURAL HISTORY: 1st, R. Holland; 2d, T. W. Mayo.
VETERINARY PRACTICE: 1st, G. Nicholls; 2d, J. W. Howdon.
MATHEMATICS, &c.: 1st, R. Holland; 2d, V. Rice.
SURVEYING AND ENGINEERING: 1st, ——; 2d, ——.
John Wilson, Principal.

Home Correspondence.

Chemistry in its relation to Agriculture. — Of all sciences chemistry is that which has the nearest relation to agriculture, and lends to it the greatest aid. It is a science, that points out to us means by which we may add to the fertility of the ground through the medium of foreign substances applied to it; but, in the case of chemistry, as in that of all other sciences, a certain degree of caution is necessary in carrying into practice the rules laid down by the theorist, when in his laboratory. Chemistry enables us at once to test the real value of any given substance, without the uncertainty and loss of time attendant on a trial; and when it is considered how much time must have been lost, how unsatisfactory the result must repeatedly have been, when no such knowledge existed to certify the progress of discovery, the value of this science may in some measure be estimated. It is certain that the principles on which vegetables are nourished depend altogether upon chemistry; and agriculture, in its modern and improved state, has led with considerable precision to a knowledge of those laws of vegetation by which we are enabled to ameliorate the land, and to increase the quantity as well as improve the quality of its productions. The farmer who applies a peculiar species of manure, which has been found beneficial to his ground, being himself

ignorant of chemistry, only follows the practice of his predecessors or neighbours; but while he sneers at the theorist who would direct his attention to the studies of the first principles of his art, both he and those whom he follows were probably originally indebted for that practice to the observations of men of science. No one who is at all conversant with the subject of manure can be ignorant that, notwithstanding the management of intelligent husbandmen, a great want of knowledge prevails among the common run of farmers regarding the best modes of its preparation and application. I think if we were to pay a little more attention to the nature and properties of manure before we apply it to the soil, we may in that way sometimes reap great benefit. I think these things ought to be more seriously considered, not only for the benefit we may ourselves derive from it, but also the community. I know not that more cogent arguments for the union of chemistry *with agriculture* can be adduced than already exist in the stimulus all parties possess for advancing their individual interests; but of this we may feel assured, that as the end and object of all knowledge in connection with this subject is to increase the produce of the earth, so those who will not avail themselves of the assistance chemistry affords will be left behind in the struggle which is going on; and further, those who do rely on the science for an elucidation of the hitherto mysterious operations of Nature, will not only derive a direct and immediate benefit from the application of chemistry to agriculture, but they will also proceed with less difficulty from being assured that the laws of Nature are uniform in their operations, and that a certain cause will always induce a certain result. Without a fair trial being given to the opinions of the one or the power of the other, the hints thrown out by the scientific are often overpowered and put down by that concentrated mass of influence and prejudice through which the light of science can rarely penetrate. Every year shows us more and more clearly that we must find a surer way of obtaining good crops than our forefathers; we have the foreign grower to contend with and must now look to science, not leave it to the next generation of farmers for the aid which practice alone cannot afford us. I do not mean to say a farmer must be a professed chemist and master of analysis; on the contrary, I think it would be useless for him to trouble himself with the 62 elementary or simple bodies which the numberless forms of matter, of which the crust of the globe is composed, are capable of being resolved into; but it is necessary every farmer should have a certain amount of information on scientific subjects, more especially with those that point out to him the composition of the various plants he cultivates, and of the manures he carries on his land. Liebig says, in his excellent work on Chemistry in its Application to Agriculture and Physiology, "Now that the conditions which render the soil productive and capable of affording support to plants are ascertained, it cannot well be denied, that from chemistry alone further progress in agriculture is to be expected." *G. S., a Young Farmer.*

Barley and Carrots.—In your "Notices to Correspondents" on Jan. 6, you say that Barley and Carrots are never grown together. Perhaps it may interest you, and "E. M. A," to find that there are exceptions to this rule, and that the practice has been attended with success. In a field of moderately good mixed soil, which had been farmed high, and deeply tilled for several years, Barley was sown broadcast early in the spring of 1847. The Barley came up well, but it appeared after a while that the plant was likely to prove a thin one; Carrot seed was then dibbled amongst it, and made such slow progress that at harvest the tops of the Carrot plants made very little show, and were not high enough to be injured by the scythe or by those employed in harvesting the Barley. The ground, as soon as clear, was well hoed; and the crop of Carrots (white Belgian) amounted to about 5 or 6 loads, (nearly 200 bushels) per acre. Of course they were small, although not dug till very late in the autumn; but the crop amply repaid the little expense and trouble bestowed upon it. The Barley also, the finest I ever saw, turned out better as to quantity than was expected. Certainly it was not injured by the Carrots. *An Essex Man.*

Rural Poor.—In the original letter of "S. S.," who complains of the moral condition of the population in his neighbourhood, mention is made of the minister's receiving about 700*l.* a year, and his non-residence. This fact is taken no notice of in the letters of his assailants and apologists, for things as they are. Now what could be the condition of a person's garden if the man hired to cultivate it absented himself, and spent perhaps a tenth part of the wages he received in payment of a substitute? *Another S.*

Draining in East Lothian, Depth and frequency of Drains.—The width of 27 inches has been long adopted as the standard distance between the drills of all green crops, including the Bean plant; common sense suggested that the ridges be 18 feet in width, giving 8 drills to each ridge. Furrow draining was tried in every alternate furrow (36 feet), and was found to be wholly ineffectual with any depth of drain; common observation quickly suggested to put a drain in every furrow (18 feet), and this distance is found to be quite equal to the extracting powers of a well executed drain on any soil. The depth of drain first used in the early days of draining was 18 to 21 inches, then the standard rose to 24 to 27; experiment showed that 36 and 42 inches were highly commendable on a deep and stiffish loam. It has been proved that 24 inches were superior to 36 inches on a sandy soil, on a retentive bottom, and now the depth of 27 to 30 inches is adopted as the standard depth in all common cases. This simple statement speaks volumes in answer to the claims of deep and wide draining against the frequent system, with a medium depth; and the subsoils of East Lothian are more permeable than the clays of South Britain. Hence it militates against wide draining, which is only useful in showing the necessity of speedily putting a drain into the wide intervals. *J. D.*

St. Marylebone Bank for Savings, 76, Welbeck-street, 9th February, 1849.—I beg leave to lay before you a short notice of the annual meeting of this bank, accompanied with some particulars of its accounts; and I would beg the favour of your giving publicity to that notice.

STATE OF THE ACCOUNTS ON NOVEMBER 20, 1848.
From November 21, 1847, to November 20, 1848.

	RECEIPTS.	£.	s.	d.	
From 1,995	first deposits	18,115	11	5	
75	reopened accounts				
13,641	additional deposits	68,511	6	4	
15,711	deposits, in all (including interest)				£86,626 17 9
	PAYMENTS.				
To 6,085	depositors, in part	73,116	14	6	
1,170	do. in full (includ. interest)	23,491	1	2	
7,255	repayments, in all				96,607 15 8
Decrease					9,980 17 11
	or,				
Due to 13,019	depositors, on Nov. 20, 1848 (deduct)				292,426 10 8
18,119	do. on Nov. 20, 1847 (from)				302,407 8 7
900	depositors—Increase.				
	Money—Decrease				£9,980 17 11

GENERAL STATEMENT, from July 5, 1830, to Nov. 20, 1848.

	RECEIPTS.	£.	s.	d.	
From 40,666	first deposits	456,698	16	3	
996	reopened accounts				
194,028	additional deposits	1,012,673	7	2	
235,687	deposits, in all (including interest)				£1,469,372 3 5
	PAYMENTS.				
To 65,712	depositors, in part	718 305	2	8	
22,640	do. in full (includ. int.)	428,640	10	1	
88,352	repayments, in all				1,176,945 12 9
Due to 19,019 depositors,	in the hands of Government	291,386	3	3	
	do. of Sir S. Scott, Bt., Treasurer	1,040	7	5	292,426 10 8

The Balance due to Depositors on November 20, 1848, was thus composed, viz.,

Due to ..	14,455 depositors, whose respective balance did not exceed 20*l.*	45,578	1	9	
2,740	do. do. do. 50*l.*	85,126	6	5	
1,224	do. do. do. 100*l.*	87,013	1	3	
367	do. do. do. 150*l.*	41,365	0	6	
159	do do. do. 200*l.*	26,261	18	10	
3	do. do. exceeded 200*l.*	604	0	4	
18,954	depositors	287,248	9	1	
54	charitable societies	3,655	16	7	
11	friendly societies ..	1,522	5	0	
Nov. 20, 1848.	19,019 open accounts, upon which is due (deduct)	292,426	10	8	
Nov. 20, 1847.	18,119 do do. (from)	302,407	8	7	
	900 open accounts—Increase.				
	Money—Decrease ..	£9,980	17	11	

The interest credited to depositors, during the year ended November 20, 1848, amounted to 7272*l.* 12*s.* 1*d.*; of which 213*l.* 8*s.* 8*d.* was to depositors giving notice in full; and 705*l.* 3*s.* 5*d.* among 19,019 depositors, whose accounts remained open on that day. There was but one account on which the interest amounted to 10*l.*; and only 36 accounts on which it even exceeded 5*l.* The average amount of interest on 1170 accounts which have been closed, and upon 19,019 accounts remaining open—together 20,189 accounts—is 7*s.* 2¼*d.* upon each account. The average amount due to each account, including interest, on Nov. 20, 1848, was 15*l.* 7*s.* 6*d.*; but taking only the accounts of individuals, without those opened for charitable and friendly societies, the average amount due to each depositor will be 15*l.* 3*s.* 1*d.* *Douglass Finney, Secretary and Actuary, St. Marylebone Bank for Savings, 76, Welbeck-street, Jan.* 1849.

Box-feeding.—Having been applied to by the editor of the *Lewes Express*, at the instance of one of his readers, for some comparative information on the results of experimental feeding of beasts in boxes on Mr. Warnes, of Trimingham's, system, and upon his compound, whether cooked by boiling or mixed by a soaking process, subsequently to his recommendation of boiled compound on trial, advocated by Mr. Warnes, and recommended to myself and other persons who have carried his plans into effect, I have desired the editor to forward for your perusal a copy of the first *Express*, wherein he may put his desire into execution, of obviating the necessity of further inquiries by referring to my reply as given in his paper. In mentioning the foregoing subject, I avail myself of the opportunity (as a strict observer of Mr. Warnes's kind advice) of referring to the observations of a correspondent of yours, the Rev. Mr. Wilkins, dated the 11th November last, leading your agricultural readers to the erroneous impression that in Mr. Warnes's "well constructed boxes" the fatting beasts moved and lay in a mass of wet muck, in a state of discomfort, inhaling and breathing a foetid and unwholesome atmosphere, with other similar observations calculated to bring Mr. Warnes's system into unmerited disrepute, all of which the practical experience of above five years, on a large scale, enables me, I hope without presumption, to assure you are not correct. First, as to their lying in a mass of wet muck. Such discomfort exists not in boxes properly constructed, being preventive of any water rising from the foundation or floor through the brick sides of the boxes; and as respects the bed on which they rest, it is so hard, by treading underneath the requisite application of clean straw, that no ammonia or ill smells escape or prevail; so far otherwise, that ladies who have entered the passage, at the head of the boxes, with apprehensions, have invariably observed upon the purity of the atmosphere—a remark which has been general with many critical intelligent examiners into the system and arrangements for feeding and watering the animals, and which in point of cleanliness are preferable to any stock kept in yards, of which also I have several in the winter season, my number of 21 boxes not sufficing for the accommodation of the whole of my fatting cattle. Of the advantages of the system I am confident, namely, the animals are kept very quiet and unable to injure each other, as is sometimes the case in yards, especially if beasts are not tied up; and if they are tied up they are less secure from bruises than in boxes, and get cramped for want of exercise, as may be seen when they are loosened to drink from a watering pond adjoining their yard; whereas in the boxes they move about at pleasure, beneficially to their health, the whole range of boxes being sufficiently ventilated and lighted from the roof, and likewise by small glazed windows in the feeding passage. Of the quality of the manure when removed from the boxes I cannot speak too favourably, being more valuable than that of any made in the yards, and which, when not immediately required on the land, is worked into mixens in readiness when wanted, instead of being piled up to sweat and create a stench in the middle of a yard, open to bad weather, as is too often observable, and whereby much of the strength is washed out; and if partly saved in tanks, it is not so secured without additional expense and deterioration by rain water, as I am well aware. Last, and not least, the animals prove so satisfactory, and are generally such good cutters, that they have preference with butchers and their customers, who find the meat more tender and more juicy than that of most other beasts differently fattened; and, accordingly, I find no difficulty of immediate sale as soon as a beast is ripe and fit to kill. Further, that according to experience I find 13 weeks the average period for fattening the stock in boxes, and as the practice prevails in summer as well as winter, three sets of beasts pass through the boxes annually. In conclusion, I was favoured recently by Col. Challoner, the chairman of the finance committee of the Agricultural Society, examining my box-feeding establishment, with my bailiff and the feeder (being too unwell myself to be present); and he was pleased afterwards to express to me his approbation in a manner fully satisfying the statement I am making to you; with the desire of setting Mr. Wilkins and other objectors right as to the judicious treatment of animals according to the principle laid down by Mr. Warnes, with a disinterestedness and a devotion to British agricultural advantage, by encouraging the preference of home grown over foreign produce, to the benefit of the labourer as well as his employer, by which perseverance in a patriotic cause Mr. Warnes merits the applause and gratitude of his fellow subjects, and of the agricultural classes in particular. I have only to add that, to Mr. Wilkins, or to all who feel doubts on this subject, every opportunity for investigation on the spot would be given on application to my bailiff, Mr. John Laker, Knapp Castle Farm, near Horsham. *Charles Merrik Burrell, Knapp Castle, near Horsham, March 7.*

Warnes' Boxes.—I was almost deterred from building some of these by the conflicting accounts in your Paper. I have now, however, given them a fair trial, and am delighted with them. I have milch cows, feeding cattle, calves, and horses in them, and find the animals so very comfortable, dry, and clean, that if I could afford it, I would put all my stock in them. I particularly recommend them for calves and young stock. I find Alderney calves kept altogether in a box are finer animals at two years old than they used to be at three. They never have any disease, and come in to calve with me at from 22 to 24 months old. There is a great advantage in these boxes which I have not seen noticed, viz., that you may put any kind of rubbish, so that it be dry, into them, and all turns to manure. Nothing, however, is so good as straw. As to their being wet, I cannot understand how they become so, unless water gets in from above or below. *W. D. Fox.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House in Hanover Square, on Tuesday last, the 13th of March: present, The Hon. R. H. CLIVE, M.P., in the Chair; Sir J. P. Boileau, Bart., Mr. B. Almack, Mr. Raymond Barker, Mr. H. Blanshard, Mr. Brandreth, Mr. W. Burroughes, Dr. Calvert, Mr. Foley, M.P., Mr. Fuller, M.P., Mr. Brandreth Gibbs, Mr. T. C. Hinckes, Mr. Kinder, Mr. C. E. Overman, Prof. Simonds, Mr. Slaney, M.P., Mr. H. A. Smith, Mr. R. Trench, Mr. T. Turner, Mr. T. R. Tweed, Dr. Walker, Prof. Way, and Mr. H. Wilson.

Captain George Waterton, of Grove House, Hunslet, near Leeds, was elected a Governor, and the following gentlemen Members of the Society.

Gooch, Edward Sherlock, M.P., Ashman, Beccles, Suffolk
Merriman, Thomas Baverstock, Marlborough
Cook, Charles, Litcham, Norfolk
Henshall, Edward, Huddersfield
Jecks, Charles, Thorpe, Norwich
Bush, John Whittaker, Fairwood, Westbury, Wilts
Browne, George Lathom, 3, Brick-court, Temple
Martin, William, Bixley Hall, Norwich
Haywood, Henry, Mocoas, Hereford
Murrell, Thomas R., Potter-Heigham, Ludham, Norwich

Burton, Thomas, Langley Grange, Loddon, Norfolk
Rippingall, Rev. Stephen Frost, Langham, Holt, Norfolk
Pemberton, William Hamilton, Holt, Norfolk

The names of six candidates for election at the next Meeting were then read.

The following communications were received, and the usual thanks of the Council ordered for them :

1. From Lord Camoys, a specimen of the improved syphon, invented by his lordship, and employed with so much success in his dairies at Stonor, in drawing off the milk from beneath the surface of the cream, and thus effecting a complete separation of the two liquids by the simplest means and the least possible trouble.

2. From Captain Richardson, a further communication on the stoppage of drains by fibrous vegetable matter filling up the interior of the pipe or tile.

3. From Mr. Keene, a statement of the results obtained by French chemists in the analysis of the Forty-day Maize.

4. From Mr. Radford, a communication on the question whether moles were or were not injurious to cultivated lands.

5. From Captain Waterton, a specimen of his alkaline powder, with a statement of its value in the feeding of cattle, and especially in the fattening of pigs.

6. From Mr. Fuller, M.P., a notice of the "Flat Pole Paignton" variety of Drumhead Cabbage, cultivated with great success, for household purposes as well as for feeding cattle, by Sir Charles Burrell, Bart., M.P., and Mr. Law Hodges, M.P., these Cabbages in some instances weighing no less than 51 lbs.

7. From Mr. H. Blanshard, a report on the effects resulting, on a portion of his property near the coast, from the destruction of the worms occasioned by an irruption of the sea ; the land not reached by the sea remaining in the same state of fertility as formerly, while that portion of it overflowed by the waves, and in which, by ample evidence, a great destruction of worms had taken place, has been deprived of the porosity previously given to it by the operations of the worms, and remains a sodden, impervious, and sterile piece of land.

The Council then adjourned to Tuesday next, the 20th of March.

Farmers' Clubs.

NEWCASTLE, *November* : Mr. GLOVER commenced the discussion *On the Storing of Turnips.*

The reasons that exist for storing Turnips are :—1. The necessity of having a supply for winter use. 2. After they have reached their full growth they unnecessarily exhaust the land , therefore they should not be allowed to remain in the ground. 3. The advantage of removing them from the land before the season arrives when they cannot be removed without injuring the land. "Dry weather," says Stephens, "should be chosen for the pulling of Turnips, not only for the sake of cleanliness to the Turnips, but for the sake of the land, which should be cut up and poached by cart wheels and horses' feet as little as possible. The ruts form ready receptacles for water, and are not soon emptied. No doubt thorough-draining assists to make land proof against such a condition ; but clay will always have a tendency to retain water on its surface, and soil everything that touches it, when wetted by recent rains , and deep loam will still be penetrated by horses' hoofs, and rise in large masses with wheels immediately after rain. No Turnips should, therefore, be led from the fields consisting of these sorts of soil, however well drained, immediately after or during a severe rain , nor should they be pulled at all until the ground has again become consolidated." A very common practice is to employ one or two carts an afternoon's yoking, to bring in as many Turnips as will serve the cattle for two or three days at most ; and these are brought in with the tops on, after much time has been spent in the field in waiting for the pulling of the Turnips. This slovenly mode of providing provender for cattle should be abandoned. It should be considered a work of the first importance in winter to provide cattle with Turnips in the very best condition, independent of the vicissitudes of the weather ; and this can only be obtained by storing a considerable quantity of them in good weather, to be used when the weather changes to a worse state. In storing, choose a piece of ground for the site of the store convenient of access to carts, near the farmstead. The mode pursued at the farm on which I resided was exceedingly simple, and we had our Turnips fresh from the store in the month of May. We formed a heap, about 10 or 12 feet wide and 5 feet high, and merely covered it with straw 4 to 6 inches thick, above the Turnips, for thatch, which we fastened down with straw ropes, or a spading of earth taken out of the side, and placed upon the ends of the ropes, to keep them down. The straw is not intended to keep out either rain or air, for both are requisite to keep the Turnip fresh, but to protect them from frost, which causes rottenness ; and from drought, which shrivels Turnips. To avoid frost, the ends, and not the sides of the store should be presented to the north, from whence frost may be expected to come. When we required the Turnips they were taken from the store : the straw on the south side was removed, and, after the requisite quantity had been taken out, it was replaced over the store. Some farmers place their Turnips in the stack-yard , which is not advisable, for there is not sufficient room, in the beginning of winter, for the turning of carts. A plan recommended by a well-known agriculturist, is to place two rows of hurdles upon a piece of ground, parallel to one another, and 9 feet apart. The interval between these is filled with roots, the carts bringing them from the field being backed betwen them, and tilted up at the proper place The roots are piled up above the hurdles, in a ridged or roof-like form, and are afterwards covered with straw, roughly drawn out as a thatch, which is kept in its place by the weight of long poles resting upon it. At intervals of 2 or 3 yards faggots are placed in the centre of the heap, inclining backwards, and reaching from the ground to the roof. These act somewhat as chimneys, and facilitate a due ventilation of the heaps, thus hindering any tendency to heating or putrefaction in the roots. When one heap is completed, another is built within a foot of it, the passage left being intended as a channel both for the egress of the water which drops from the thatch, and for the circulation of air. No security against frost, at the sides of contiguous heaps, is required, further than that which is afforded by the interlacing of the bushy eaves of their respective roofs. When, however, a series of heaps has thus accumulated, a rough dead hedge should be constructed around them ; and the space between it and the hurdles, which may be 12 or 18 inches, should be loosely filled up with stone. Other plans for preserving Turnips have been devised and tried, such as being pulled and freed from their roots and leaves, and carting them to a piece of well-worked dry soil near the steading, and there depositing them in rows, so close as nearly to touch each other in the bottom of a shallow furrow, the plough covering one row as another furrow is opened. Another mode, pursued by Blaikie, of Hulkham and others, is to cart the Turnips from the field where they grow, to a piece of dry pasture land near the steading, when the tap roots are cut off, and the bulbs are placed in an upright position, as close together as they can stand. Both these plans will keep Turnips fresh ; and an area of an acre will, by these methods, contain the growth of 4 or 5 acres of the field in which they had grown ; but Turnips are not so secure from frost in those positions as in a store ; and after the trouble of lifting and carrying them has been incurred, it would be as easy to take them to a proper store at once. Objectionable as these plans are, compared to triangular stores, or those made with parallel rows of hurdles, they are better than storing Turnips in houses, where they never fail to sprout on the top, and become rotten at the bottom of the store.—Mr. STEPHENSON said there were two modes which he had practised to a considerable extent. The one was to cut off the roots, and place the Turnips close together. He had stored 10 acres of Turnips, in this way, on an acre of ground ; and they kept perfectly sound to the latter end of May. The second plan was to cut off the roots and tops, and carry the Turnips away immediately, and have them built up in long ridges, about 5 feet in width and height, with a few bottles of straw along the side to prevent them from spreading out. They should not be placed against a wall—particularly a north wall : if any, it should be a south wall. This mode answered remarkably well. One year he had 200 fothers [What is a fother ?] piled up in his stack-yard, 12 feet high, and covered up ; and they all kept sound. It was about the middle of December, however, before they were got off, and they were in full perfection. Mr. Stephenson added, in allusion to what had fallen from the Secretary, that it was all very well to talk of getting Turnips off the land in fine weather ; but there was a poor chance of such weather just now, and the farmer must get them off as well as he could.

Miscellaneous.

The Agricultural Chemistry Association of Scotland has now ceased to exist. On Wednesday, the 10th Jan., it "met to meet no more." It has signed its own death warrant ; and, like a soldier full of years and honours, has retired from the field, leaving others to carry on the contest.—Peace to its manes ! It has left its tract indelible in the agricultural history of the country, and, like the fabled phœnix, has departed only to make room for a successor of wider influence and more permanent constitution. We allude, of course, to the chemical department under the management of the Highland and Agricultural Society. *Scottish Farmer.*

Calendar of Operations.

MARCH

BEDFORDSHIRE FARM, *March 6.*—Our horses have of late been engaged with the Barley sowing, carting manure, &c. About two-thirds of the intended breadth for Barley is now sown , and the seed used has averaged 3 bushels per acre , the varieties, American and long-eared Nottingham, changed from one kind of soil to another. The horse labour in prospective will be ploughing for and finishing Barley and Oat sowing, cultivating the Turnip fallows, and carting sundries. We cover the dunghills with gas-lime in the state of carbonate, mix tar with mould for top-dressing Grass-land, and mix ammonia water with the liquid manure in tanks, which is also applied to Grass-land as a manure. Our chief crop of Potatoes will be planted this week , the land is of a light description, but has not received any dung this season , a top dressing of soot and salt, otherwise guano, will be applied when the Potatoes are above ground. Coal and wood ashes, at the rate of 40 bushels per acre, will be immediately applied to the young seeds. The manual labour of the farm has lately consisted of rooting up old hedges, and substituting new ones ; planting Beans, threshing and dressing Corn ; transplanting Turnips for seed, &c. Prospectively, the labour will be planting Potatoes, spreading ashes, taking in and threshing Corn, hoeing Wheat and Peas, and performing sundry odd jobs, in addition to attendance upon stock, &c. The young Wheat generally looks well around us, and field operations are in a prosperous and forward state. One of your Calendar correspondents misunderstood me in my last report, when he inferred that I stated, "our fatting beasts would pay 10s. a-week each for keep." I only stated, "that we had received 10s per week for beasts taken in to feed." Since then two more heifers have been put into stalls on similar terms, and this, as before remarked, goes far to show the advantages of feeding on prepared food. I by no means wish to assert that all our own beasts have paid, or will pay, 10s. per week each for keep This would be mere speculation, unless the precise value of the animals were known at the time of putting up to fat , and what the price of meat would be prospectively. *R. F.*

BERWICKSHIRE MERSE FARM, *March 9.*—Since last report we have been employed ploughing Grass-land and Turnip-land for Oats ; threshing Beans for the market and Oats for seed. We intended sowing Oats this week, but the frost having set in we can neither plough nor sow. We are leading dung to the land for Turnips, and leasing Thorns for mending fences and making sheep-cots for the ewes lambing , cutting and mending fences, &c. *J. B.*

STIRLINGSHIRE CARSE FARM, *March 10.*—Since last report we have been engaged sowing Beans, and threshing Beans and Oats for seed , also in threshing Barley, Oats, and Beans, and dressing the same for the Stirlingshire Annual Grain Show. Part of this week we have also been driving away hay and bringing manure from Stirling. *J. A.*

SOUTH HAMPSHIRE FARM, *March 10.*—Since our last report the weather has been highly favourable for agricultural operations in general ; indeed the month of February was unusually fine and dry, without frost. The sowing of Lent grain, planting of Beans and Peas, and sowing of spring Wheat, has in consequence been continued with little interruption to the present time, and the farm work may be said to be in a very forward state. The Wheat sown in January and the early part of February has come up with great regularity, and looks strong and healthy, but the autumn-sown Wheat in this part of the county looks very badly, more particularly that sown upon lea-ground, it being too thin in plant, and also carrying a very sickly appearance. Upon some farms considerable breadths have been ploughed and resown, the plant being entirely destroyed. The horse labour has been chiefly performed upon the land since our last report, by carting manure to the field, and planting Potatoes, which was finished during the month of February ; also in ploughing land where Turnips have been fed off, intended for Barley. We have not yet sown either Oats or Barley. Some of the horses have been continually employed in carting ricks of Wheat and Barley to the barn, and working at the threshing machine, threshing Wheat, Barley, and Oats, which work we shall continue for 10 or 12 days to come. They have been carting manure upon land where Turnips have been fed off, which we are planting under furrow, with early Mazagan Beans and small Maple Peas mixed, about 2 bushels of Beans and 2 pecks of Peas per acre are dropped along the landside of the furrow, and ploughed in 18 inches apart ; in this way we find they will come up very regular, with plenty of space for working the horse-hoe between the rows. The advantage of this double culture of Beans and Peas is, we find there is less risk in the crop, for it often happens that when the Beans are blighted the Peas will give a crop, and *vice versa* ; and when the season is favourable for both, a great produce will be obtained. Our labourers have been employed draining in peaty soil 10 feet in depth ; we find that in draining peat land, the tiles should always be placed below the strata of peat when a sufficient outfall can be obtained, as the tiles are not so liable to fill with the red iron deposit always found more or less in this soil. The men have also been engaged in levelling land recently grubbed out of copse, attending threshing-machine, winnowing Wheat, &c. ; spreading manure on the Potato and Bean land. Odd horses are kept continually employed in removing hurdles in advance of the sheep, carting Swedes for the cows, pigs, &c., carting ashes to the tanks for absorbing urine from the stables, &c., carting ashes and placing at the bottom of farm-yard, where the manure has been removed, and intended to be replaced by the manure as fast as brought from the stables, pig-sties, &c. Our shepherds are also fully employed by attending the ewes and lambs, and fatting sheep. The weather being fine, the ewes and lambs have done well for some time past, and fortunately do not suffer from the foot lameness so much as in some past seasons. We have not sold above 50 Somerset lambs, the demand being but limited , some of our Southdown lambs will be ready for market by Easter. The Turnip crop seems likely to hold out well for the stock, in this part of the county ; the weather having been so fine during the past two months, has caused the Turnips to be consumed with great economy. *J. B.*

SUSSEX FARM, *March 12.*—Last week we sowed part of Barley and spring Tares ; this week we shall be engaged in ploughing for and sowing Barley, Oats, and spring Tares for the sheep. We have also got our land limed, dunged, and ploughed for the Potatoes and Carrots. This land, two years ago, grew nothing but Rushes and Sedge Grass. With draining and subsoil ploughing it is now dry, and works well. We have nearly lost all our old stock of Potatoes with the disease of last year, but we have bought several sacks of the early sorts in London, such as the Early Shaw ; they are sound, good Potatoes, and if fine we shall commence to plant to-morrow. We have now erected a machine to bruise corn for our horses and pigs, and crush Linseed for the bullocks ; and having bought a pair of small sized secondhand culling-stones, which formerly had been used for breaking malt, we have erected them in the corner of the barn, a proper height to allow the bruised corn to run into a sack. They are worked by water power, off the main spindle, that drives the circular saws and the threshing machine ; but it can be worked with or apart from these. This is one of the most useful mills we have erected ; it is also very simple, and I have no doubt but will be profitable. *J. B.*

Notices to Correspondents.

PAXTON'S COTTAGER'S CALENDAR. The reprint is now ready, price 3*d.* each copy Parties wishing to have copies for distribution among their tenantry, can be supplied at the rate of 25 copies for 5*s.*

DUCKS (*C. C. M.*). Young ducklings had better not be cooped, but should be confined to a dry warm yard for some days at least, lest the mothers should drag them out too early on the wet sward, before the dews have been absorbed by the sun's rays. Wet, damp, and cold are always fatal to young poultry chicks of all sorts, producing either 'couring or the cramp, when, becoming very weakly, if they do not die at once, they are liable to be trodden under foot by the mother, particularly if cooped. In warm dry weather they may take to the water at any time without detriment. In the artificial state, ducklings require, like turkey chicks, to be assisted by a few crams of Barley meal or pollard two or three times a day. In Ireland they mix boiled Nettles with their food, upon which both thrive admirably. Soaked bread or too much wet food is injurious. "Remains of boiled Potato" should be dry and free from salted gravy and the like from the table. Duck eggs set under a hen is more convenient, and the young ones are not so liable to be trodden down, but it is painful to witness the anxiety and trepidation of the poor foster mother when the little ones take to the water.

KOHL RABI *Blue Bonnet.* Sow early in April for transplantation in May.

NEW WORK ON AGRICULTURE : *Carlton and others.* We must excuse a delay which is unavoidable.

PIGEONS *A Constant Reader.* The word poultry hardly includes them, and the plan of Mr. Dixon's work certainly did not embrace them. The subject is hardly *varied* enough for us , but we should not object to an occasional article, and many of our readers would be glad of instruction upon it , no one is better qualified as instructer than yourself, taught by experience.

RURAL CHEMISTRY, 2d Edition, revised and enlarged ; by Edward Solly, Esq , F.R.S., Experimental Chemist to the Horticultural Society of London, Honorary Member of the Royal Agricultural Society, and Lecturer on Chemistry at the Royal Institution. May be had at the office of this Paper, and of all booksellers. Price 4*s.* 6*d.*

SAWDUST : *Const Sub.* It is best used after being well soaked, and often turned and soaked again with liquid manure.

SEEDS : *J. M.* 6lbs. of common red Clover, 3lbs of white Dutch, and 3lbs. of yellow Trefoil per acre, with 2 bushels of Italian Rye-grass. Sow when the ground is damp, early in April.

TOLLS . *J. A.* Can any one say if carts carrying culm to burn lime for agricultural purposes are liable to tolls ?

TO PREVENT THE BLACK LEG : Keep the calf well, giving a little linseed meal or oil-cake daily. Avoid sudden changes of food or exposure to frost. *W. C. S.*

*** Communications reaching town after Wednesday cannot be answered the same week.

Markets.

SMITHFIELD, MONDAY, March 12.

We have a large supply of Beasts, with mild weather, which causes a dull trade, and late rates for the choicest are with difficulty maintained. Several remain unsold. There are considerably more Sheep to-day than we have had for some time past. The demand is very limited, and prices have *fallen* 2*d.* per 8 lbs. Calves meet with a slow sale at Friday's quotations. From Germany and Holland there are 259 Beasts 900 Sheep, and 77 Calves ; from Norfolk and Suffolk, 2590 Beasts ; and from Scotland, 200.

Per st. of 8 lbs.—	s	d		s	d
Best Scots, Herefords, &c.	3	8	to	3	10
Best Short-horns	3	4	—	3	8
2d quality Beasts	2	8	—	3	2
Best Downs and Half-breds	4	4	—	4	6
Ditto Shorn					

Per st. of 8 lbs.—	s	d		s	d
Best Long-wools	4	0	to	4	2
Ditto Shorn					
Ewes & 2d quality	3	0	—	3	10
Ditto Shorn					
Lambs					
Calves	4	0	—	5	0
Pigs	3	8	—	4	10

Beasts, 3650 ; Sheep and Lambs, 21,140 . Calves, 138 ; Pigs, 180.

FRIDAY March 16.

The supply of Beasts is much smaller ; trade is, however, exceedingly slow, and it is difficult to obtain Monday's quotations. The number of Sheep is by no means large, but the demand is so exceedingly limited that Monday's prices are extreme quotations for to-day. We have a few more Lambs , trade is rather worse, especially for big ones. Calves are in good supply ; sales are dull at about late rates. From Holland and Germany we have 125 Beasts, 330 Sheep, and 82 Calves ; from Scotland, 240 Beasts ; and 156 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	8	to	3	10
Best Short-horns	3	4	—	3	6
2d quality Beasts	2	8	—	3	0
Best Downs and Half-breds	4	4	—	4	6
Ditto Shorn					

Best Long-wools	4	0	to	4	2
Ditto Shorn					
Ewes & 2d quality	3	0	—	3	8
Ditto Shorn					
Lambs					
Calves	3	10	—	4	10
Pigs	3	8	—	4	10

Beasts, 712 ; Sheep and Lambs, 7910 ; Calves, 221 ; Pigs, 220.

COVENT GARDEN, March 17.

The market continues to be well supplied with Vegetables and Fruit. Pine-apples are sufficient for the demand. A few hothouse Grapes have made their appearance. Pears are becoming scarce; they consist of Beurre Rance and Easter Beurre. Apples are getting dearer. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst vegetables, Carrots and Turnips are abundant. Cauliflowers and Broccoli sufficient for the demand. Asparagus is dearer; French Beans, Rhubarb, and Seakale are plentiful. Potatoes remain stationary. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Christmas Roses, Camellias, Gardenias, Tulips, Hyacinths, Cinerarias, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 9s
Grapes, foreign, p. lb., 1s6d to 3s
Apples, dessert, p. bsh., 6s to 12s
— kitchen, p. bsh., 3s to 5s
Pears, per doz., 2s to 6s
Oranges, per doz., 1s to 2s
Lemons, per doz, 1s to 2s
— per 100, 10s to 18s
Chestnuts, p. peck, 4s to 7s
Almonds, per peck, 6s
— sweet, per lb., 2s to 3s
Walnuts, p. 100, 1s 6d to 2s
— p. bush., 16s to 24s
Nuts, Bar., p. bush., 20s to 22s
— Filb., p. 100 lbs., 60s to 100s
— Cob, p. 100 lbs., 90s to 150s
— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 3d to 1s
— red, p. doz., 2s to 6s
Savoys, per doz., 3d to 1s
Greens, p. doz. bunches, 1s 6d to 2s 6d
Cauliflowers, p. doz., 2s to 4s 6d
Broccoli, white, p. bun., 1s to 2s
— brown, p. bun., 6d to 1s 3d
Sorrel, p. hf. sieve, 9d to 1s
Potatoes, per ton, 60s to 180s
— per cwt., 5s to 9s
— per bush., 2s 6d to 5s
Turnips, p. doz. bun., 1s to 2s
Red Beet, per doz., 6d to 1s
Horse Radish, p. bdl., 1s to 6s
Asparagus, p. 100, 2s 6d to 12s
Seakale, p. punnet, 9d to 1s 6d
Rhubarb, p. bundle, 6d to 1s 6d
French Beans, p. 100, 4s to 4s6d
Cucumbers, each, 1s 6d to 6s
Leeks, per doz, 6d to 1s
Celery, p. bundle, 6d to 1s 3d
Radishes, p. six hands, 9d to 1s
Carrots, p. doz. bun., 3s to 5s
Spinach p. sieve, 1s 6d to 2s
Onions, p. bunch, 2d to 4d
— p. bush., 1s 6d to 2s 6d
— Spanish, p. doz., 1s 6d to 4s
— pickling, p. bf. sieve, 1s 6d to 3s
Shallots, per lb., 4d to 8d
Garlic, per lb, 4d to 8d
Artichokes, Jerusalem, p. half sieve, 9d to 1s
Lettuce, Cab., p. sc., 4d to 9d
— Cos, do., 9d to 1s
Endive, per score, 1s to 2s 6d
Mushrooms, p. pottle, 6d to 1
Small Salads, p. pun., 2d to 3d
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Watercress, p. doz. bun., 6d to 9d
Parsley, p. hf. sieve, 1s 6d to 2s
— Roots, p. bdle., 1s to 1s 6d
Marjoram, per bunch, 2d
Mint, green, per bunch, 4d to 8d

HAY.—Per Load of 36 Trusses.

Smithfield, March 15.

Prime Meadow Hay	70s to 76s		Clover	60s to 92s	
Inferior ditto	50	65	New Clover	—	—
Rowen	40	60	Straw	27	30
New Hay	—	—	J. Cooper.		

The trade better for Meadow Hay. Clover a very dull sale.

Cumberland Market, March 15.

Prime Meadow Hay	75s to 82s		Inferior	50s to 84s	
Inferior ditto	50	65	New Clover	—	—
New Hay	—	—	Straw	28	33
Old Clover	88	92	Joshua Baker.		

Whitechapel, March 15.

Fine Old Hay	68s to 72s		New Clover	80s to 96s	
Inferior ditto	55	60	Inferior ditto	60	70
New Hay	65	68	Straw	26	30
Old Clover	95	100			

POTATOES.—Southwark, Waterside, March 12.

The Committee report that since our last week's report we have had many fresh arrivals from Yorkshire and the Continent, which has given us a most abundant supply, and caused our market to have a downward tendency. The following are this day's quotations:—York Regents, 100s. to 120s.; Scotch, do., 90s. to 110s.; Scotch Cups, 90s. to 110s.; Whites, 70s. to 80s., French Whites, 80s. to 95s.; Belgian do., 70s. to 90s.

HOPS, Friday, March 16.

Messrs. Pattenden and Smith report that the market continues the same.

MARK LANE.

Monday, March 12.—We have again to report a very small supply of English Wheat by land carriage samples from the neighbouring counties, which, nevertheless could not be disposed of until a decline of 1s. to 2s. per qr. upon the prices of this day se'nnight was submitted to. Foreign met a retail inquiry, but must be noted 1s. per qr. cheaper.—Barley is a slow sale at our quotations.—Beans and white Peas are unaltered in value; Grey the turn lower.—The Oat trade is heavy, inferior and granaried qualities are 6d. per qr. cheaper.

Friday, March 16.—The arrivals of foreign Wheat reported since Monday consist of 10,190 qrs.; those of all other grain have been moderate. The attendance at market this morning was small, and where sales were effected rather lower prices were submitted to for foreign Wheat. Spring corn remains without alteration.

Liverpool, Friday, March 16.—There was no animation in the trade this morning, and though some descriptions of Wheat were not lower than the forced sales of Tuesday, the general runs declined 2d. per bushel. Flour was again freely offered, and must be noted 6d. to 1s. per barrel cheaper. Oats and Oatmeal were very dull at about same prices. Indian Corn continues in moderately fair request, but Yellow was bought on rather easier terms.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Feb. 3	45s 1d	28s 10d	16s 11d	28s 5d	30s 8d	32s 6d
— 10	45 11	29 3	17 3	27 2	30 11	33 0
— 17	47 0	29 8	17 2	26 9	29 9	34 4
— 24	46 4	29 8	17 5	27 8	30 10	32 11
Mar. 3	45 6	29 1	19 7	26 11	30 2	32 11
— 10	45 1	29 0	16 11	26 11	30 1	33 1
Aggreg. Aver.	45 10	29 3	17 2	27 4	30 4	33 1
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Feb. 3.	Feb. 10.	Feb. 17.	Feb. 24.	Mar. 3	Mar. 10.
47s 0d	...	.	.	.	...	...
46 4	..	...	...	.	...	...
45 11	.	.	...	...	...	..
45 6		...	..	.	.	..
45 1	.	..		.	...	
45 1	—					

GLASS FOR CONSERVATORIES.

James Phillips and Co., 116, Bishopsgate-street Without, have the pleasure to hand their New List of Prices of SHEET GLASS for Cash.

HORTICULTURAL GLASS,

In Sheets of about 40 inches by 30, and packed in Cases of 200 feet. Cut to the size required, but not to exceed 40 inches long.

13 oz. to the foot	£2	1s.	0d.				
16	2	5	0	from	2½d.	to	3½d. per foot.
21	3	2	6		3	..	5 ,,
26	4	9	6		3½	..	7½ ,,
32	5	15	0		4	..	10 ,,

Case not charged. Boxes charged, but allowed for when returned.

SMALL SQUARES IN BOXES OF 100 FEET.

	Crown.	Sheet.
Squares under 6 by 4	10s. 6d.	£0 12s. 6d.
6 by 4 and under 7 by 5	14 0	0 16 6
7 by 5 ,, 8 by 6	15 0	0 18 6
8 by 6 ,, 10 by 8	16 0	1 0 6

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS in sizes not exceeding 5 feet superficial.

¼ thick ... per foot	1s. 0d.	¾-inch per foot	2s. 0d.
⅜-inch	1 2	1 inch	3 0
½-inch	1 6		

PATENT ROUGH PLATE TILES.

¼ thick ....each	0s. 11d.	¾-inch ....each	1s. 7d.
½-inch	1 3	¾-inch	2 0

SHEET GLASS TILES, AND SLATES.

	16-oz.	21-oz.	26-oz.	32-oz.
Tiles made of Sheet Glass	8d.	10d.	1s.	1s. 4d.
Slates, 20 ins. by 10	10d.	1s.	1s. 4d.	1s. 8d.

Slates are kept in stock of the usual sizes, and made to any dimensions.

GLASS MILK-PANS, PROPAGATING and BEE GLASSES, Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, Lamp Shades, and Lactometers for trying the quality of Milk, 4 tubes 7s. 6d.; 6 tubes, 10s. Self Registering Thermometers for Greenhouses.

HARTLEY'S PATENT ROUGH PLATE GLASS.

Important to Farmers, Graziers, Gardeners, Land Proprietors, and others. This excellent Treatise, entitled "THE FARMERS' FRIEND AND COMPANION," showing how to Farm to meet the times, and save Money.

THE NEW PATENT MANURE, a substitute for Foreign Manures, may be Manufactured without a License by every Farmer for 1l. per acre, being equal to 10 loads of manure. The preparation is most simple and cheap, and suitable for all seasons, soils, and crops. Also showing how to Fatten every description of Stock and Poultry at one-third the expense now adopted; the best and cheapest method of Draining, &c., &c. This valuable Treatise on Farming and Grazing, registered and entered at Stationers' Hall, contains a collection of 150 of the most valuable Receipts ever discovered in Agriculture for Profit, &c., with full directions for use, by the late celebrated agriculturist, Mr. Ellman, and others, and patronised and highly recommended by H.R.H. Prince Albert, at Windsor Farm, the Royal Agricultural Society of England, their Graces the Dukes of Richmond, Portland, and Bedford, &c., and will be forwarded without fail by return of post, free, to any part of the country, by enclosing 1s. or 13 Postage Stamps, addressed P. P., to Messrs. Taylor and Co., 49, Exeter-street, Lisson-grove, London. Mind the address.

SUPERPHOSPHATE OF LIME, the best Manure for Turnips and all Root Crops, when Manufactured from the Genuine Materials.

JOHN HUNT respectfully informs his Agricultural Friends that he has always a stock of this valuable MANURE ready for delivery, which he confidently recommends as being the best for producing Turnips, Potatoes, and all Root Crops, and will bring the plant much earlier to hoe. The Reports of the Royal Agricultural Society, and other scientific men, will most satisfactorily attest its value in this respect. As a defiance against the fly, this Manure, from being more rapid in its effects than any other, brings up the plant vigorously, throwing it at once into rough leaf, and thus defies the ravages of this destructive insect, while the crops per acre, at a cost of not more than 21s., far exceeds, under ordinary circumstances, that produced by any other means. I have a large number of letters from many Farmers, who have used this Manure for the last four years with great success. It is necessary to caution Agriculturists that there is an inferior article in the market, manufactured from *Coprolite* instead of Bone and Guano, not because the quality is superior, but the price is the inducement, Coprolite being 30s. per ton, and Bone 55s. per ton. But it must be observed that Coprolite was not in the market when Superphosphate of Lime was first introduced; the ingredients which composed that article in those days were Bone, Guano, Animal Charcoal, and Vitriol, which brought this Manure into such great repute. But the character of Superphosphate of Lime must fall, and its previous reputation will be lost, if Farmers allow themselves to be deceived by this rubbish. It may be easily detected by its gravity, which is very dense, and has a cement-like appearance, when made from the Coprolite stone. I advise all consumers and dealers in this article to visit the Works and judge for themselves, and beware of those who have chemical secrets and other subterfuges, there should be no such excuses where the genuine articles are employed.

Farmers can be supplied with all the ingredients for making Superphosphate of Lime who have the convenience for so doing. Guano, Nitrate of Soda, Sulphuric Acid, and Bone Manure supplied at the lowest market prices.

Agents are wanted for the sale of Superphosphate of Lime and other Manures, where none are at present appointed.

Bone Mills and Manure Works, High-st., Lambeth, London.

PORTLAND CEMENT.—Testimonials received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. White and Sons, Milbank-street, Westminster.

EMIGRATION FACILITATED.—Those persons who expect their friends in AUSTRALIA to assist them in their OUTFIT might write to their friends there to pay the money into the hands of S. W. Silver and Co.'s Agents in Australia, or to their connections in the district, who would be named on application to S. W. Silver and Co. in London. The agent's acknowledgment would be received by S. W. Silver and Co. as cash at the exchange of the day, for the outfit. This proposal will be also communicated through the Colonial Journals. Emigrants' fitting-out warehouse at No. 4, Bishopsgate-street (opposite the London Tavern), where colonial information may be obtained, and small parcels received and forwarded to the colonies.

N.B.—Cadets to India, and Cabin Passengers generally to all parts of the globe (with experienced Female Managers in the Department for Ladies), fitted out as heretofore at 68 and 67, Cornhill, by S. W. Silver and Co., Outfitters, Clothiers for home use, and Contractors; and at St. George's-crescent, Liverpool.

PRICES CURRENT.	London. Mar. 5.	London. Mar. 12	Liverpool. March 6	Liverpool. March 13.	Wakefield. Mar. 2.	Wakefield. Mar. 9.	Boston. Mar. 7.	Boston. Mar. 14	Birmingham. March 8.	Birmingham. March 15.
	qr.	qr.	70 lbs.	70 lbs.	qr.	qr.	qr.	qr.	62 lbs.	62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	38 to 40	38 to 40	6 4 6 10	6 2 6 8	45 to 48	44 to 48	36 to 41	36 to 44	5 9 6 6	5 9 6 4
„ white ...	46—48	44—47	6 10 7 6	6 8 7 3	46 -50	45 52	38—47	40—46	6 2 6 8	6 1 6 7
Old, red ...	40—43	40—43	6 8 7 0	6 6 6 9	45 -47	44 -46	42 44	—	6 2 6 7	6 0 6 6
„ white ...	46—50	46—50	6 4 6 10	6 9 7 6	52 -	51 -	44 - 46	- -	6 1 6 9	6 0 6 3
Foreign ...	40—52	40—57	—	—	40—44	—	—	—	6 0 7 0	6 0 7 0
			480 lbs.	480 lbs.						
Rye—New ...	25—27	20— 22	—	—	—	—	—	—	—	—
Foreign meal	7l. 5s	7l. 5s	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	22—26	22— 26	—	—	22 - 25	22 - 25	26—28	26 28	23—27	23—27
Malting ...	26—28	26 28	31s—32s	30s—32s	27 -30	27 - 31	30—32	30 32	29—33	29—33
Foreign ...	20—28	20—28	—	—	21 26	24—26	—	-	—	—
					6 bush.	6 bush.				
Malt—Home	—	—	-	—	39 40	39 -4[illegible]	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	19—24	20 21	28s 0d	3s 1d	28s 8d	3s 0d	—	—	20—21	20—24	18—30	18—30
Black...	16 21	16 20	2 4 2 6	—	-	-	—	—	—	—	17—19	17—18
Foreign	15- 23	15 22	2 4 2 6	2 3 2 7	- -	- -	—	—	—	—	—	—
			qr.	qr.								
Peas—Boilers	24 27	24- 27	36s	35s—	30—32	30 -34	—	—	—	—	36—44	36—44
*Grinding...	28- 30	28 30	50 - 32s	29 —31s	—	—	—	—	—	—	12—13	12—13
Foreign ...	24 27	24 32	33 - 35	32 —34			—	—	—	—	—	—
Beans—												
New, small ...	20- 30	20 -30	32 - 35	31 34	31 33	30—32	26—32	26—32	10—13	10—13
Longpods, &c. ..	26 - 32	26— 32	—	—	—	—	—	—	—	—	—	—
Old ...	27—39	27—39	34 —36	33 —35	36—37	35—36	34—36	31—36	15—16	15—16
Foreign ...	22—36	22—36	31 —33	30 —32	28—31	27—30	—	—	10—13	10—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	36—40	36—40	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	10l. 5s	10l. 5s	7l. 15s—8l.	7l. 15s—8l.	—	—	—	—	—	—
Foreign ...	6l.—8l.	6l.—8l.	—	—	—	—	—	—	—	—
									196 lbs.	196 lbs.
Indian Corn—	24—28	24- 28	28 —29	27s—28s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	35—44	35—44	34—36	33—35	—	—	35—42	35—42	37—40	37—40

Weekly Averages and Imports.	Aver. Mar. 13	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	46 8	10190	45 6	8706	46 0	11398	42 8	3502	47 3¾	5171
BARLEY ...	30 7	5060	29 1	2700	30 1	3964	25 0	36	32 0	664
OATS ...	17 2	4610	19 7	2999	16 11	1787	13 8	1090	18 4¾	—
RYE	—	—	26 11	—	—	—	—	—	—	—
BEANS ..	25 7	—	30 2	2432	29 0	632	27 7	554	—	—
PEAS... ...	31 0	—	33 1	42	—	489	—	—	—	—
SIGNED {	KINGSFORD and LAY.		SEGAR and TUNNICLIFFE.		SANDARS and DUNNS.		THOMAS WRIGHT.		J. and C. STURGE.	

Sales by Auction.

TO PINE GROWERS.

MR. J. C. STEVENS is instructed to announce for sale by Auction, at his Great Room, 38, King-street, Covent-garden, on TUESDAY, 27th March, at 12 for 1 o'clock, in lots, about 600 PINE PLANTS, the property of a gentleman who is reducing his stock, comprising Providence, Envilles, Queens, and Otaheite, in fruiting Plants, Succession, and Suckers, all strong, clean, and healthy.—May be viewed the morning of sale, and Catalogues had.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to Public Competition by Auction, at the Mart, Bartholomew-lane, on THURSDAY, March 22, 1849, at 12 o'clock, a choice collection of CARNATIONS, PICOTEES, PINKS, HEARTSEASE, &c., STANDARD and DWARF ROSES, DAHLIAS, LILIUM LANCIFOLIUM, &c.—May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

THREE THOUSAND GREENHOUSE AND CHRYSANTHEMUM PLANTS to be sold on MONDAY, 26th of March, 1849, and following days, at Coton House, near Rugby, Warwickshire, in consequence of the Marchioness Dowager of Queensberry resigning the residence. Catalogues will be forwarded on receipt of two postage stamps.—Direct to A. GREGORY, Coton House, near Rugby, Warwickshire.

TO EMIGRANTS TO THE COLONIES.

FOR SALE, 23 Pure Merino RAMS from the flock of the late Mrs. DONIEN. They are in excellent condition, and fit for immediate shipment.—For price and particulars, and to view the sheep, inquire of Mr. W. LUNN, West Levant Farm, near Chichester.

TO BE LET ON LEASE, an IMPROVABLE FARM, near Bedford, comprising 450 acres of Arable Land and 75 acres of Grass, with two complete well placed modern Homesteads, a comfortable Family Residence, and Bailiff's Home. The principal Homestead and many of the fields adjoin the high road from Bedford to St. Neot's, from which places the distances are only five to seven miles. The rent, including tithe and rates, will be under 650*l.* per annum. The soil is adapted to Wheat, Beans, and Clover, and may be greatly ameliorated by draining, and there are no impediments to the cultivation in the shape of unnecessary hedges, timber, or game. The farm is capable of great improvement, and deserving attention, and to encourage the necessary outlay a long Lease will be granted.—For particulars, apply to Messrs. DAVIS and VIGERS, Land Agents, &c., 3, Frederick's-place, Old Jewry, London.

HILL NEAR SOUTHAMPTON.—TO MARKET GARDENERS.

TO BE LET ON LEASE, all that excellent MARKET GARDEN, containing about 31 A. 1 R., situate at Hill, within half a mile of the town of Southampton, late in the occupation of Mr. William Squibb, gardener, deceased. Possession can be given on the 25th day of March next. The Property comprises Greenhouses, Forcing Houses, Pits, Framing Grounds, Sheds, Barns, Stables, Carthouses, and other conveniences fit for the carrying on an extensive and lucrative business. A large portion of the Garden is occupied by trees in luxuriant growth and produce. The Tenant's interest in the above to be taken at a Valuation, one-half of the amount of the valuation to be paid down, and the remainder by instalments to be agreed upon.

For further particulars, and for cards to view the property, apply to Mr. NEWMAN, Solicitor, or to Mr. W. B. PAGE, Above Bar, Southampton.

TO AGRICULTURISTS, AMATEUR GARDENERS, FLORISTS, AND OTHERS.

CARBONISED ANIMAL MANURE.

HENRY COLES, No. 32, Cranbourn-street, Leicester-square, AGRICULTURAL and HORTICULTURAL SEEDSMAN, FLORIST, and GENERAL AGENT, begs particularly and confidently to recommend the above MANURE to be had solely of him), containing no metallic substance, and possessing very superior fertilising, invigorating, and retaining properties, applicable for every description of soil and crop, the quantity to be used being, in general, 4 to 5 cwt. per acre.

Price, for cash, 6*l.* per ton, for agricultural purposes, and also, prepared by a peculiar process, expressly for flowers, plants in pots, and gardens, in packages varying from 1*s.* to 1*l.* each.

N B.—Collections of all the newest varieties of AGRICULTURAL, GARDEN, and FLOWER SEEDS, the latter in sealed packets, at 3*s.*, 5*s.*, 7*s.* 6*d.*, 10*s*, and 20*s.*, with a descriptive label upon each head.

A variety of portable GLASS CASES, for Ferns and other plants, suitable for the drawing-room, sitting-room, or lobby.

PATENT ALKALI COMPANY'S METALLIC PAINTS.—COLOURS: BLACK AND PURPLE-BROWN.—These Paints (the products of a Patent process) possess extraordinary covering quality, and far surpass all other Paints in point of durability and economy, two coats being proved to be more than equal to three of any other description. From their chemical composition, they are pre-eminently adapted for covering Iron, Stuccoed, or Brick Buildings, and every kind of Woodwork. They have been exposed on Shipping to the action of Sea-water, and of the Sulphuretted Hydrogen so prevalent in Sea-ports and Tidal Harbours for more than three years, without change. The attention of the Shipping Interest is particularly directed to the Company's Patent Compound Metallic Black Paint (the only Metallic Black Paint of any value yet produced), which will be found a most valuable and effectual preservative when applied to Iron Steam-boats and Wooden Vessels. It also forms a beautiful covering for Stoves. No other Paint partakes in any degree of the properties which constitute the great value of these Metallic Paints. Numerous and most satisfactory testimonials have been forwarded to the Company's Office, copies of which may be had of the Secretary, or of the Agents.

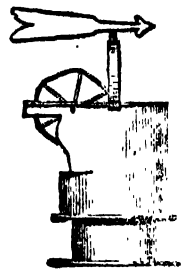
Price, by the ton, 25*l.*, delivered in London or Liverpool, exclusive of packages. To be obtained exclusively on application to the Secretary, Mr. J. A. WEST, at the Offices of the Company, 20, Fenchurch-street, London; or of any of the undermentioned parties, who are the only AGENTS of the Company: Messrs. Evans Brothers, London; Messrs. Matthews and Leonard, Bristol; Messrs. Evans and Hodgson, Exeter; Messrs. Clarke and Fill, Yarmouth, Norfolk; Mr. D. Sandeman, Glasgow; Mr. G. Sandeman, Dundee; Mr. R. Newby, Bradford, Yorkshire; Mr. R. S. Farr, Edinburgh; Mr. W. Bailey, Wolverhampton; Messrs. Vint and Co., Newcastle-on-Tyne, and Sunderland; Mr. Robert Oxland, Plymouth; Mr. Joshua Fox, Tregedna, near Falmouth.

LONDON PORTER, STOUT, and PALE ALES of the first quality.—C. COMPTON and CO. are now prepared to supply their country correspondents with the above in cask or bottle, free to a London station, for cash as under:—PORTER at 1*s.*, DOUBLE STOUT at 1*s.* 4*d.*, PALE TONIC ALE at 1*s.* 3*d.* per gallon, in 9, 18, or 36 gallon casks. In full measure bottles at 3*s.* per dozen. Casks and packages charged and allowed for when returned. Quantities of one gross and upwards delivered free within 100 miles of London, bottles and packing included, at 8*s.* per dozen. Post-office Orders payable at the Bloomsbury Office to EDMUND COMPTON, the Silver-street Vaults, Southampton-street, Bloomsbury-square.

FRUIT TREES, TULIP BEDS, &c.—GARDEN NETTING, for preserving fruit-trees from frost, blight, and birds, or as a fence for fowls, pigeons, tulip and seed beds, can be had in quantity from JOHN KING FARLOW'S Fishing Rod, Tackle, and Net Manufactory, 5, Crooked-lane, London-bridge, at 3*d.* per yard, two yards wide, or 1½*d.* the square yard. The above is the only netting, being tanned, that will stand exposure to the weather. Forwarded, same day, on receipt of a Post-office order.

CURE OF 14 YEARS' COUGH this Month, by Dr. LOCOCK'S PULMONIC WAFERS. "Nov. 5, 1848.—I, Thomas Carter, Egremont, Cheshire, had a cough for 14 years; nothing ever gave me relief until I commenced taking Dr. Locock's Pulmonic Wafers, three boxes of which have entirely cured me. Witness, Geo. H. Howell, Chemist, Dale-street, Liverpool."—Dr. LOCOCK'S Wafers give instant relief and a rapid cure of asthma, coughs, and all disorders of the breath and lungs. To singers and public speakers they are invaluable, for clearing and strengthening the voice, they have a most pleasant taste. Price 1*s.* 1½*d.*, 2*s.* 9*d.*, and 11*s.* per box. Agents—DA SILVA and Co., 1, Bride-lane, Fleet-street, London; sold by all medicine venders.

SIR HENRY HART'S CHIMNEY PUMP, FOR THE CURE OF SMOKY CHIMNEYS, and the constant ventilation of apartments. It has been in successful use at Greenwich Hospital for several months.



SOLE AGENTS,
BENHAM and SONS, 19, Wigmore-street, Cavendish-square,
AND
G. and J. DEANE, opening to the Monument, London-bridge.
A Liberal Discount to Ironmongers and Builders.

SMOKY CHIMNEYS AND VENTILATION.—DAY'S IMPROVED SIMPLEX WIND-GUARD is cheaper, more durable, and less unsightly than any other Chimney-pot. It continually ventilates the apartment, and is guaranteed to cure all chimneys smoking from wind. It may be seen and tested at W. JEAKES'S, 51, Great Russell-street, Bloomsbury. Price, in Galvanised Iron, 25*s* Prospectuses forwarded on application. Licenses granted, and the trade supplied with the above, and also Day's original Wind-guard, made of a more durable material. A Liberal discount allowed.

BEAUTIFUL TEETH.

ROWLAND'S ODONTO, or PEARL DENTIFRICE. A white Powder, compounded of the choicest and most *recherché* Ingredients of the Oriental Herbal, of inestimable value in preserving and beautifying the Teeth, strengthening the Gums, and in giving sweetness and perfume to the Breath. It extirpates all tartarous adhesions to the Teeth, and ensures a pearl-like whiteness to the enamelled surface. Its Anti-Septic and Anti-Scorbutic properties exercise a highly beneficial and salutary influence, they arrest the further progress of decay of the Teeth, induce a healthy action of the Gums, and cause them to assume the brightness and colour indicative of perfect soundness, while, by confirming their adhesion to the Teeth, they give unlimited enjoyment and fresh zest to appetite, by perpetuating effective and complete mastication. The Proprietors of this Dentifrice pledge themselves that its efficacy in preserving and embellishing the Teeth far surpasses anything of the kind ever yet offered to the public, and has, in consequence, obtained its selection by Her Majesty the Queen, the Court and Royal Family of Great Britain, and the Sovereigns and Nobility throughout Europe.—Price 2*s.* 9*d.* per box.

CAUTION.—To protect the public from fraud, the Hon. Commissioners have directed the Proprietors' Name and Address, thus—"A. ROWLAND and SON, 20, HATTON GARDEN," to be engraved on the Government Stamp, which is affixed on each box. Sold by the Proprietors and by Chemists and Perfumers.

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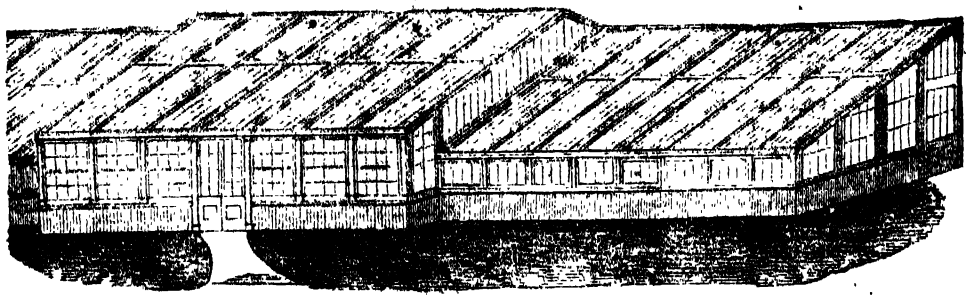

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ROYAL BOTANIC SOCIETY, REGENT'S PARK. The Fellows and Members are informed that, by an arrangement with Mr. H. Waterer, of Knap Hill; Messrs. John Waterer, Standish and Noble, and Baker, of Bagshot, and other Nurserymen, the Council will be enabled, in the course of the Season, to place in the Gardens of the Society an extensive Collection of AMERICAN PLANTS. This Collection will be open to the Fellows, Members, and their friends, as on all ordinary occasions; but that the Public may have an opportunity of viewing a display of Floriculture which the Council have reason to believe will be unprecedented, an EXHIBITION of these plants will take place on SATURDAY, May 26; and SATURDAY, June 2. Admission to the Gardens on either of those days to be obtained by the same ticket as that provided for the General Exhibition. Such ticket to admit one person, at the option of the holder, either on one of the above-mentioned days, or to one of the General Exhibitions.

The privilege of admitting Visitors, either by Fellows personally, or by written orders, will necessarily be suspended on the 26th of May and the 2d of June, as upon other extraordinary occasions.

By order of the Council, J. D. C. SOWERBY, Secretary.

ROYAL BOTANIC SOCIETY, REGENT'S PARK. The EXHIBITIONS OF PLANTS, FLOWERS, AND FRUIT, for competition this season, will be held on WEDNESDAYS, May 16th, June 20th, and July 4th.

The EXHIBITION of Plants in the AMERICAN GARDEN, will be open on SATURDAYS, May 26th, and June 2d, at 2 o'clock.

Tickets, each to admit one person, on any one of the above-mentioned five days, may be obtained at the Gardens by orders from Fellows of the Society. Price, on or before Saturday, May 5th, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each. Fellows may have packets of 30 tickets on or before May 5th, for 5l. 5s.

CAMELLIA—"BEAUTY SUPREME."

HLANE AND SON, Great Berkhampstead, are now sending out plants from 21s. to 63s. each. It was awarded a medal by the Horticultural Society of London in April, 1846, and may be relied on as a splendid new variety; a most beautiful shape and colour, a pale waxy rose. See "Paxton's Magazine" of that month, page 71.

Catalogues may be had by sending a two-penny stamp.

DALSTON NURSERY.

JOHN SMITH begs to announce, that in consequence of a Railway being about to pass directly through his Premises, he is prepared to sell Shrubs and Plants at reduced prices for ready money.—March 24.

J. HINE informs his friends and the Trade in general that his CATALOGUE of choice Geraniums, Fuchsias, Verbenas, Petunias, Cinerarias, Anturrhinums, &c., is now ready, and can be had on application.

Providence Nursery, Ramsgate.

SUPERIOR GERMAN ASTERS, 20 varieties mixed, see *Gardeners' Chronicle*, September 23d, 1848. "ASTERS: *Hardy and Son.* Your Asters reached us in excellent condition; they are beautiful specimens of that showy flower." Large packets, 1s., or 12 postage stamps, post free.

ABRAHAM HARDY and SON, Seed Growers, Maldon, Essex.

OLD-ESTABLISHED NURSERY STOCK FOR SALE. SUNBURY NURSERY, MIDDLESEX.

J. T. WILLMER, Senior, begs respectfully to announce that he has determined upon relinquishing the Nursery Business, which he has carried on at the above premises for the last 32 years; and in order to effect an immediate clearance of his Land, he has resolved to dispose of the whole of his extensive and valuable stock of EVERGREENS, SHRUBS, and FOREST TREES, at an immense reduction of price. The stock comprises Fanned Yews, 5 to 7 feet; Arbutus, 3 to 5 feet; Laurestinus, 3 to 4 feet; Aucuba, 2 to 4 feet; Phillyrea, 6 feet; Variegated Box, 3 to 5 feet; Variegated Hollies, 3 to 7 feet; Green do., 2 to 4 feet; Sweet Bay, 2 to 4 feet; Yucca gloriosa, strong; Pæony moutans; Alexandrian Laurel; Rhododendron hirsutum, ferrugineum, and ponticum; Spruce Fir, 4 to 6 feet; Weymouth Firs, 5 feet; Balm of Gilead do., 4 to 5 feet; Scotch and Larch, 6 to 8 feet; Common Laurel, 2 to 5 feet; Portugal do., 2 to 4 feet; 2 years Seedling Quick; 3-years do.; English Elm, Oak, Beech, Lime, Horse Chestnut, Birch, Syringa, Gueldre Rose, 5 to 7 feet; new Scarlet and other Thorns; Standard Cherry Trees, of sorts, 7 feet in stem; Currants, in new varieties; large Lancashire Gooseberry, of sorts, &c. &c. As this is a genuine Sale, it is an opportunity offered to parties about to form or extend Plantations such as is seldom offered. Applications, personally or by letter, will meet with prompt attention. The Floricultural business will be continued as hitherto.

GIANT ASPARAGUS ROOTS.—Fine Roots of the above may be had of FREDERICK WARNER, SEEDSMAN, 28, Cornhill, London, at 5s. per 100, with printed particulars for planting.

CAUTION.—Finding Circulars are going the round of my Connection under the head of WARNER and SON, of Cornhill and Brixton, I beg respectfully to state I have no connection with such a Firm, or has there been any House in Cornhill for the last 20 years but my own in the Seed Line. I am the only surviving Partner of the late Firm of WARNER, SEAMAN, and WARNER, of 28, Cornhill. I take the present opportunity to thank customers for all past favours, and to assure them every attention will be paid to their orders.—FREDERICK WARNER, 28, Cornhill; and 3, Lawrence Pountney-lane, Cannon-Street, London.—March 24, 1849.

AZALEA INDICA ALBA MAGNA.—This fine Azalea has flowers of very large size, great substance, and excellent form, colour fine white, with purple stripes and spots, of strong compact habit, and very free bloomer; was exhibited as a seedling at the Royal Botanic last May, and obtained the first prize. Plants, 10s. each; a few very strong, at 42s. each Apply to J. and J. FRASER, Nurserymen, Leyton, Essex, who have also to offer fine collections of Hardy Belgian Azaleas, at 24s. to 30s. per dozen; Hardy Rhododendrons, including fine scarlet, white, and crimson varieties, at 42s. to 60s. per dozen; with a large assortment of other American Plants at moderate prices.—A post-office order is respectfully requested from unknown correspondents.

FLOWER AND VEGETABLE SEEDS of every description.

PLANTS FOR BEDDING OUT; orders taken, to be delivered in May.

DAHLIAS, dry roots, at 6d., 8d. and 1s. each.

LILIUM LANCIFOLIUM ALBUM, 1s 6d. each.

Araucaria, Ficus elasticus, Aloes, Cacti, Cedrus Deodara, constantly on show.

LAWN GRASS, 1s. 6d. per lb.

MEADOWS: where it is wished to improve the crop of Hay, sow from 2 to 3 lbs. of white Dutch Clover with 1 gallon of Perennial Rye or Italian Rye-Grass; the cost will be about 2s 6d. to 3s per acre.

AGRICULTURAL SEEDS at the lowest prices.

DUNCAN HAIRS, Seedsman, 109, St. Martin's-lane, Charing-cross, London.

LARGE YELLOW BELGIAN AND HORN WHITE CARROT SEEDS.

J. RIVERS begs to inform his friends in consequence of the above superior varieties of FIELD CARROT having yielded a larger crop of seed than he expected, he is induced to offer it at the reduced price of 2s. 6d. per lb. for the Yellow, and 2s. per lb. for the Horn White, in quantities of not less than 2 lbs. Carriage paid to London.—Sawbridgeworth, Herts.

SEEDS.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE sent free by post on application. We beg to offer the following.

VEGETABLE SEEDS.

A complete collection of the best and newest sorts, in proportions, 25s., 42s., and 63s.

A collection for a small garden, of fine and esteemed sorts, for 15s. A list of the sorts furnished, if required.

SELECT FLOWER SEEDS.

Free by post, with full directions for sowing, heights, colours, &c., viz.:—

	s.	d.
100 varieties best and newest Annuals	15	0
50 varieties for 8s. 6d., 30 for 5s. 6d., 20 for	4	0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7s. 6d., or 12 do.	5	0
20 varieties best Greenhouse Annuals, 7s. 6d., 12 for	5	0
20 varieties choice Greenhouse Perennials, 10s. 6d., 12 for	7	6
20 vars. choice hardy Biennials and Perennials, 7s. 6d., 12	5	0
36 varieties imported German Stocks	5	0
20 ditto ditto, 3s 6d.; 12 for	2	6

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of 2l. and upwards articles presented extra. Post-office orders payable to BASS and BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

FINEST LAWN GRASS SEEDS.

SUTTON'S LAWN GRASS SEEDS, consisting solely of the short-growing, finest kinds, will be found to produce an excellent Lawn, free from weeds or coarse Grasses, quicker, and at much less expense, than by any other means. Price of Seeds, 3s. 6d. per gallon; or 25s. per bushel.

Messrs. SUTTON also supply PERENNIAL CLOVERS AND FINE GRASSES, mixed in proper proportions, for improving old pastures. Two to four gallons per acre will be found very effectual. Price, 2s. per gallon.

Also, PERENNIAL GRASS SEEDS for laying down land to Permanent Pasture, mixed to suit any soil, at 32s. per acre.

*** Carriage free to London, Bristol, or Basingstoke.

Address, JOHN SUTTON and SONS, Reading, Berks.

NEW DAHLIAS.

JOHN BELL, in offering the following new DAHLIAS, can confidently recommend them as being first rate; they were only exhibited at the Norfolk and Norwich Horticultural Show in September, 1848, and obtained the opinion of the Judges from London as possessing all the properties of first class flowers. Hermione and Negro were raised by the Rev. Charles Fellowes, Shottisham Rectory.

HERMIONE (FELLOWES).—Bright rosy-salmon, fine and well formed flower, good habit, very constant, and quite new in colour; height, 3 to 4 feet. Plants, 7s. 6d. each.

NEGRO (FELLOWES).—Very dark maroon; large full deep petal, flower well up in the centre, handsome form, and very constant; height 4 to 5 feet. Plants, 7s. 6d. each.

UNIQUE SUPERB (LOWICK).—Bright yellow, fine deep petal, well up in the centre, handsome formed flower, very constant; height, 3 to 4 feet. Plants, 10s 6d. each.

For description, see Gardeners and Land Stewards' Journal, September 9, 1848, under the word "Norfolk."

The usual discount on the above when three plants of each are ordered. Plants ready the first week in May.

Bracondale Horticultural Establishment, Norwich.

DAY'S "PRINCE OF WALES" CLOVE, AND CHOICE YELLOW PICOTEES.

HURST AND M'MULLEN beg to offer the above much admired varieties, and request the favour of early orders, as the stock of each is limited.

6, Leadenhall-street, London, March 24.

BLACKTHORN.—Any person having some strong well-rooted plants of the above may hear of a purchaser by sending word of price, size, and quantity, by letter, to J. J., at the Office of this Paper.

AIGBURTH SEEDLING STRAWBERRY, 25s. per 100.—25 strong plants of this fine Strawberry (superior to British Queen, as to its hardy character and fruitfulness, and equal to it in flavour) may be had free by post for 8s. 6d., from JAMES TYNAN, Seedsman, 124, Park-road, Liverpool.

J. COLE, NURSERYMAN and FLORIST, Rugby, Warwickshire, begs most respectfully to inform the Nobility and Gentry that he has ready for sending out the undermentioned plants:

ROBINSON'S "DEFIANCE" VERBENA, finest scarlet known, 9s per dozen, fine strong plants.

Other varieties, such as Avalanche, Boule de Feu, Beauty Supreme, Emma, Queen of England, Array, Louis Philippe, Fair Rosamond, &c., at 4s per dozen.

HELIOTROPIUM VOLTAIRIANUM, fine blue, 6s. per dozen. Smaller, 4s. per doz. [3s 6d. per dozen.

HELIOTROPIUM PERUVIANUM, 4s. per dozen. Smaller, TROMPIE DE LIEGE, 1s. each.

CUPHEA PLATYCENTRA, 4s per dozen.

" STRIGILLOSA SANGUINEA, 6s. per dozen.

GERANIUMS, blooming plants and good varieties, 9s. to 12s. per dozen.

FUCHSIAS, new and distinct, very strong, 9s. to 12s. per doz.

PHLOXES, fine collection, 6s. to 9s. per dozen.

DELPHINIUM BARLOWII, 2s. per dozen.

POTENTILLA MACNABIANA, splendid scarlet, 1s. each.

PANSIES, fine collection, by name, 6s to 9s. per dozen.

J. C.'s Catalogue of General Bedding Plants, Dahlias, Hardy Perennial Plants, &c., will be ready early in April.—March 24.

HARDY AMERICAN ORCHIDACEOUS PLANTS, &c.

WILLIAM MAY, F.H.S., having received a large importation of the above interesting and beautiful plants, in the different genera Cypripedium, Orchis, Platanthera, Habenaria, Triphora, Pogonia, Neottia, Malaxis, Goodyera, Microstylis, Corallorhiza, Cymbidium, Trillium, Erythronium, and Euonymus sarmentosus, Lists, with prices specifying the various species, will be furnished on application.

Hope Nurseries, near Bedale, Yorkshire, March 24.

SHEPHERD'S NEW SEEDLING PETUNIA, "THE VACATION."—This splendid flower will be ready to send out early in May. The colour is a fine purple, with the corolla standing out bold and firm; it is remarkable for its fragrance and compact habit. The Editor of the *Gardeners' Chronicle* says of it, "Your seedling is a flower of good form and rich colour; if of dwarf habit and a profuse bloomer, it will be an excellent border variety." Price 2s 6d. each, or 10s. the half-dozen plants.—Orders addressed to Mr. SHEPHERD, Post-office, Hemel Hempsted.

CHOICE SEEDLING PETUNIAS.

BASS AND BROWN have this season to offer the following beautiful and first rate varieties, which were submitted to the Editor of the *Gardeners' Chronicle*, and favourably noticed in that Journal of September 2d; also by the Editor of the "Florist," for which, see the Number dated October. They have been selected from a large quantity of other seedlings, and can be recommended with a confidence of their being approved. They will be ready to send out the first week in April, and can be forwarded by post if desired.

BRILLIANT.—An extra bright purple-crimson flower, of good size and fine shape; described by the Editor of the "Florist" as a "deep rich crimson, with dark tube, fine in colour." Also described by the Editor of the *Gardeners' Chronicle*, as "a deep rich crimson, with purple centre, and a good flower"	5s	0d
BEAUTY OF SUFFOLK.—A fine large light flower, with dark plum-coloured throat, and deeply veined; described by the Editor of the *Gardeners' Chronicle* as a "light grey, richly-veined with purple, large and distinct." Also by the Editor of the "Florist," as a "pinky grey, with rosy purple veins; a very pretty variety	5	0
RENOWN.—A rich crimson flower, very large, and good form. The Editor of the *Gardeners' Chronicle* describes it as a "crimson, with a tinge of blue; with a good contrast to No. 1 (Brilliant) and No. 6 (Telegraph." Described by the Editor of the "Florist" as "a rich purple crimson, good."	5	0
TELEGRAPH.—A large rosy purple, with light throat, and well-formed flower. "Bright crimson, with veined tube; a good flower"—*Gardeners' Chronicle.*	5	0
SPOTTED BEAUTY.—A white ground colour, with very dark purple throat and veins, beautifully edged with pink; a small flower of dwarf habit, attractive. "Veined and mottled, pretty, but rather small."—*Gardeners' Chronicle*	5	0
HESPERUS.—A large light flower, with purple throat and corolla, spotted with purple on the edges. "French white, with dark tube and veins, and with a spot of purple crimson on each division of the corolla."—The "Florist."	3	6
NYMPH.—A pinky blush, beautifully spotted on the edges of the petals with bright pink; very showy and pretty flower. This flower bloomed late, and was not submitted for the opinion of the before-mentioned authorities	5	0

The Editor of the "Florist," in allusion to those submitted for his opinion, also remarks—"These are five varieties, rich in colour and veining."

The usual allowance to the trade by taking the set, or for three plants of a sort.

Seed and Horticultural Establishment, Sudbury, Suffolk.

EXHIBITIONS AT THE GARDEN

OF THE

HORTICULTURAL SOCIETY OF LONDON,

FOR THE YEAR 1849.

THE EXHIBITIONS WILL TAKE PLACE ON THE FOLLOWING DAYS :—

SATURDAY, MAY 5 ; SATURDAY, JUNE 9; and WEDNESDAY, JULY 11.

SCHEDULE OF THE PRIZES.

FLOWERS.

Class I.—In which Nurserymen and Private Growers exhibit independently of each other.

A Pelargoniums ; in collections of 6 new and first-rate varieties, with perfectly distinct colours, cultivated with superior skill, in 8-inch pots SG—CE—LS

N.B. The collections in which the varieties are most distinct *will have the preference*.

B Pelargoniums, in collections of six varieties, in 11-inch pots. SG—CE—LS

N.B. Any plant that shall not have been actually grown in 11-inch pots will be disqualified.

C Roses, in pots ; in collections of 12 distinct varieties. GB—SG—CE

N.B. To be shown in May and June only. The Judges will disqualify any collection that shall be found to contain a plant which has been recently placed in the pot from the open ground.

D Yellow Roses, best six varieties. SK—SB—C

N.B. To be shown in July only, and really to be yellow; pale cream colours are inadmissible.

E Cape Heaths; in collections of 15 entirely distinct varieties. GK—GB—SG

N.B. It is expected that the same plant shall not be exhibited on more than one occasion.

Class II.—In which all persons are admitted to equal competition.

F Cape Heaths ; in collections of 9 entirely distinct varieties. SG—CE—LS

N.B. No person will be allowed to show in more than one of the classes of Heaths.

G Cape Heaths, single specimens displaying very superior cultivation LS—SK—SB

N.B. No duplicate medals can be awarded in *F*, *F*, *G*.

H Calceolarias, in sixes, in 11-inch pots. LS—SK—SB

N.B. To be shown in June only.

I Carnations, in pans of 24 distinct varieties. SK—SB—C

K Picotees, in pans of 24 distinct varieties. SK—SB—C

L Pinks ; in pans of 24 distinct varieties. SB—C

N.B. Carnations, Picotees, and Pinks can be exhibited in July only. They must be shown in boxes of four sizes, of the following dimensions :—From centre to centre, 4½ ins. ; from centre to outside, 2½ do. ; depth at back, 7 ins. ; ditto front, 3½ do. The face to be painted light green. *No collections will be allowed to exhibit in which these conditions are not complied with.*

M Single specimens of very superior cultivation, excluding everything which can be shown singly in other letters, and plants not in flower. CE—LS—SK

N Stove or Greenhouse plants, in collections of 30 plants. GB—LG—GK

N.B. Calceolarias, Fuchsias, Orchids, and Pelargoniums are excluded. Not more than two duplicates can be shown

O Stove or Greenhouse plants, in collections of 15 plants. GK—GB—SG

N.B. No duplicate can be shown here.

P Stove or Greenhouse plants ; in collections of 6 plants. SG—CE—LS

N.B. No duplicate allowed here Exhibitors cannot show in more than one of the classes *N*, *O*, and *P*

Q Greenhouse Azaleas, in 12 distinct varieties. GB—SG—CE

R Greenhouse Azaleas, in six distinct varieties. SG—CE—LS

N.B. No one can show in both classes of Azaleas.

S Greenhouse Rhododendrons ; in six distinct varieties ; *in May only*. SG—CE—LS

T Collections of 6 New Hardy Evergreens grown in pots ; Conifers excluded CE—LS—SK

N.B. Nothing will be regarded as new which has been previously exhibited, or which has been in the nurseries more than three years.

U Conifers, of new or very rare species, in not less than the third year of their growth, in sixes. CE—LS—SK

N.B. *T* and *U* can only be shown at the exhibition in July.

V Exotic Orchids ; in collections of 20 species of superior cultivation. LG—GK GB

N.B. Exhibitors cannot show in more than one of the classes *V*, *W*, *X*, and *Y*.

W Exotic Orchids ; in collections of 10 species of superior cultivation. GK—GB—SG

X Exotic Orchids ; in collections of six species. SG—CE—LS

Y Exotic Orchids, single specimens displaying very superior cultivation. LS SK SB

N.B. No duplicate Medals can be here awarded.

Z Fuchsias ; single specimens ; *in July only*. LS—SK—SB

AA Pelargoniums ; in SIX DISTINCT SPECIES, exhibiting superior cultivation. SG—CE—LS

N.B. By the word species is meant the wild kinds imported from the Cape of Good Hope, or New Holland, tuberous species inclusive, and not garden cross-breds.

BB Fancy Pelargoniums ; in sixes. SG CE—LS

N.B. No duplicate Medals can be allowed here.

CC New Hybrid Pelargoniums. LS—SK—SB

N.B. This class is to include any varieties that do not belong to the Fancy or Florist's varieties.

DD Achimenes ; in collections of not fewer than six species, exhibiting superior cultivation. CE—LS—SK

EE Six distinct varieties of Tall Cacti in flower. GB—SG—CE

FF Roses of 50 varieties in loose bunches, each consisting of three trusses as they are gathered, so as to exhibit, as far as possible, the habit of the variety. CE—LS—SK

N.B. In July only. No one who exhibits in this letter can also compete in the following.

GG Roses, exhibited as in the letter *FF*, and in 25 varieties. LS—SK—SB (*Private growers only can exhibit here*).

N.B. In June and July only. If Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to compete

HH Æschynanths ; in collections of 6 species. CE—LS—SK

II Cape terrestrial Orchids, in not fewer than six species. LS—SK—SB

KK Statices ; in collections of six species. SG—CE—LS

LL Ferns, in collections of 10 species of very superior cultivation. LS—SK—SB

N.B. To be shown in July only.

MM New Hardy Hybrid Shrubs, exclusive of Roses, Rhododendrons, Azaleas, and the like. SG—CE—LS

N.B. It is certain that much may be effected by hybridizing plants in common cultivation, such as Lilacs, Honeysuckles, &c. &c.

NN Amaryllids, in sixes. SG—CE—LS

OO Newly introduced or extremely rare ornamental plants in flower. SG—CE—LS

N.B. These Medals will be awarded by the Society's Officers, and not by the usual Judges Exhibitors will particularly observe that none but new or rare plants can be exhibited under this letter. *Nothing will be regarded as new which has been exhibited in the Garden or Regent-street in a previous season*, nor garden seedlings, hybrids, nor domesticated varieties of any kind.

PP Miscellaneous subjects, exclusive of Ferns. SK—SB—C

N.B. Exhibitors under *P P* will not be thereby *entitled* to a pass ticket. Cockscombs, Heartsease, Hydrangeas, and bouquets, together with all plants for which separate prizes are offered as single specimens, are altogether excluded.

QQ Seedling Hybrid Pelargoniums, of entirely new crosses. SB—C

N.B. Every seedling must be shown singly, and marked with the name it is to bear. The same seedling cannot gain a prize more than once in the season. The plants must be shown in pots, and not in a cut state.

IN ADDITION to any Medals assigned to the classes *E*, *N*, and *V*, the SK, SB and C are offered for the collections in those classes which shall be best named by the Exhibitor.

N.B. The Society's Officers, who will make this award, will be guided in their judgment by a consideration not only of the correctness of the names, but of the accuracy of the spelling, and the neatness of the writing.

FRUIT.

No Prizes are offered for Fruit in May and June ; but if any is produced which shall appear to the Officers of the Society to be of extraordinarily fine quality, they are authorized to assign it medals at their discretion. No rules for exhibiting on these occasions are prescribed.

In *July* three prizes, of the respective value of Fifteen Pounds, Ten Pounds, and Five Pounds, are offered for the finest Exhibitions of Fruits, *delivered at the Garden or in Regent-street by noon on the previous day*. No rules are given for this Exhibition, which is left to the judgment of Exhibitors.

In addition, the following prizes are offered, for which Market Gardeners, or Growers, not Fruiterers, in the habit of supplying the Market, and Private Gardeners, exhibit independently of each other. Fruiterers are not allowed to exhibit at all. No duplicate awards can be made in any case whatever, except in **P**. No person can take more than one award in each letter, except **A, B, E, K, M, O, P.**

N.B. All Fruit must be sufficiently ripe for Market, WELL COLOURED, and PROPERLY NAMED by the Exhibitor, as far as practicable ; if the contrary, it will be disqualified.

A Uncommon Tropical Fruits. GB SG—CE

N.B No Medal higher than SG can be given for Musas or Guavas. Oranges &c. are excluded.

B Pine Apples, in single specimens :

1. Queens. LS—SK—SB.
2. Envilles, Cayennes, Sugarloaf or Trinidads, &c. LS—SK—SB
3. Black Jamaicas, Otaheites, &c. LS—SK—SB
4. Providences. LS—SK—SB

C Grapes in pots ; three specimens to be shown. CE—LS—SK

D Grapes, the heaviest single bunch of any kind. SK

E Grapes ; in three bunches for private growers, and six bunches for Market Gardeners :

1. Black Hamburgh, Black Prince, &c. LS—SK—SB
2. White Muscadines, Sweetwaters, &c. LS—SK—SB
3. Muscats. LS—SK—SB
4. Frontignans. LS—SK—SB
5. Other sorts, distinct from the foregoing. LS—SK—SB

F Peaches, in sixes. SK—SB—C

G Nectarines, in sixes. SK—SB—C

H Apricots, in sixes. SK SB—C

I Figs, in sixes. SB—C

K Cherries, in dishes of 1 lb. each :
1. Black. SB—C 2. White. SB—C

L Strawberries, in pots ; six pots to be shown. SK—SB—C

N.B. They must have grown in the pots.

M Strawberries, one dish each :
1. British Queen, &c. SB—C
2. Keens' Seedling, &c. SB—C

N Oranges, Citrons, &c., in pots ; no one to show more than one pot. LS—SK—SB

NB. This class of Fruits is excluded if gathered.

O Melons, one specimen each :
1. The heaviest. SK
2. The best flavoured. SK—SB—C

P Other kinds of fruit, exclusive of Apples and Pears of the previous year. SB—C

Visitors can be admitted only by Tickets, to be obtained by the personal or written orders of Fellows of the Society. Upon this subject the Council would observe, that the interests of the Society require Orders for Tickets to be filled up with the NAME and ADDRESS of the parties to whom they are given. The Council also express a hope that the Fellows of the Society will not give orders for Tickets to persons with whom they are unacquainted. N. B. *The presentation of the visiting card of a Fellow of the Society cannot be regarded as an authority to receive Tickets.*

All Fellows who shall apply, on or before Tuesday, the 10th of April, may obtain, at the rate of Three Shillings and Sixpence each, any number of Tickets not exceeding TWENTY-FOUR ; but no application for such tickets will be received after that day. *Fellows of the Society subscribing for tickets at this price will be allowed a clear week from the 10th of April, during which they may claim them.* AFTER THAT PERIOD ALL THE 3*s.* 6*d.* TICKETS SUBSCRIBED FOR, BUT NOT ISSUED, MAY BE CANCELLED.

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the EXHIBITIONS OF FLOWERS AND FRUIT, in the Society's Garden, in the present season, will take place on the following days, viz.: SATURDAY, MAY 5; SATURDAY, JUNE 9; and WEDNESDAY, July 11; and that TUESDAY, April 10, is the last day on which the usual privileged Tickets are issued to Fellows of the Society. 21, Regent-street.

JOSLING'S ST. ALBAN'S GRAPE.—Fine 2 years-old plants of the above, carriage paid to London, 10s. 6d. each, usual allowance to the trade. A remittance must accompany the order.—ROBERT JOSLING, Seedsman, St. Alban's.

COLE'S SUPERB DWARF RED CELERY.—This splendid prize production, described in former advertisements, may still be obtained in sealed packets, with directions for cultivation, by enclosing 3s. 6d. to the subscriber, or to any respectable Seedsman in London or the country. The usual discount to the trade.

WILLIAM PORT AYERS, Brooklands Nursery, and 4, Tranquil-place, Blackheath.—March 24.

GREAT IMPORTANCE TO MELON AND CUCUMBER GROWERS.

EDWARD TILEY begs most respectfully to inform the nobility and gentry that he has seeds of his unequalled "QUEEN" MELON, described in former advertisements in this paper; sold in packets, 7 seeds for 2s. 6d. Also his superb CUCUMBER "THE VICTORY OF BATH;" sold in packets, 10 seeds for 2s.; or one packet of each of the above for 4s. Sold at EDWARD TILEY'S General Seed-shop, 16, Pulteney-bridge, Bath. The above will be sent postage free on the receipt of a Post-office order or the amount in penny postage stamps.

NEW VERBENAS.

WM. JAMES EPPS has much pleasure in offering the following VERBENAS, which he can with confidence recommend as being a great acquisition to this class of flowers.

ECLIPSE.—A profuse bloomer, compact habit, and its markings constant. See drawing and description in "The Florist," of January last, and also in the *Gardeners' Chronicle* of June 20, in answer to W. J. E., Verbena, No. 20. "A very pretty variegated variety; ground colour delicate pink, with a broad, well-defined stripe of rose-colour in the centre of each division of the corolla. This is a distinct and a very pretty variety, and appears to be constant," &c. &c. Price 5s

EPPSII.—A brilliant, deep rich red, with very large bold trusses and profuse bloom; the habit dwarf and compact, and very superior for bedding. See description in the *Gardeners' Chronicle*, June 10, Verbena, W. J. E., No. 18; and also in "The Florist," No. IX., in answer to J. E. Strong plants by the last week in April. 3s. 6d.

The usual discount to the Trade when three of each are taken. A remittance from unknown correspondents.

All the newest and best kinds of Verbenas, 4s to 12s. per doz. Agents in London, Messrs. Hurst and M'Mullen, Leadenhall-street. A descriptive Catalogue of Pelargoniums, Dahlias, Pansies, Fuchsias, Verbenas, &c., may be had on enclosing two postage stamps.—Maidstone, March 24.

GENUINE SEEDS FOR MARCH SOWING.—A packet of 4000 selected POTATO SEEDS, with directions for sowing, &c., 1s. Per packet—s. d.

"BOA CONSTRICTOR" MELON, grows 6 ft. in length 1 0
VEGETABLE and FLOWER SEEDS, any variety ... 0 6
Double LARKSPURS, 10 varieties, separate ... 1 0
Ditto Ditto Ditto mixed 0 6
Double BALSAMS, Camellia-flowered 1 0
ZINNIA ELEGANS 0 6
SALPIGLOSSIS, fine mixed 0 6
STOCK, superfine Scarlet Giant 0 6

100 varieties of Annuals, 10s.; 50 ditto, 5s.; 25 do., 2s. 6d.
Treatise on Potato Culture, 6d.
All post free, on receipt of cash or postage stamps.
ABRAHAM HARDY and SON, Seed Growers, Maldon, Essex.

EDWARD GEORGE HENDERSON, Wellington-road, St. John's-wood, London, is now sending out
CALCEOLARIA SPECIES, a new shrubby distinct plant, growing to the height of 4 feet, and blooming in large spikes of yellow flowers, price 2s. 6d. and 3s. 6d. per plant, or 24s. and 30s. per dozen.
LYCOPODIUM UMBROSUM, 3s. 6d., a distinct and fine
PLUMBAGO LARPENTÆ, 3s. 6d. [variety.
FRANCISCEA CONFERTIFOLIA, 15s., a splendid variety.
SALVIA PATENS ALBA, 2s. 6d., fine and distinct.
BROWALLIA JAMESONI, 5s., orange and scarlet.
GARDENIA FORTUNI, 2s. 6d. Of all the Cape Jasmines, this is the largest and finest.
LOBELIA AZUREA GRANDIFLORA, 2s. 6d., fine.
Do., in variety, including the best scarlets, 9s. per dozen.
FUCHSIA SERRATIFOLIA MULTIFLORA, 2s. 6d. This fine variety is covered with bloom when only a few inches high.
Do., in variety, new and distinct, 12s. and 18s. per dozen.
FANCY GERANIUMS, good and distinct, 12s., 18s. and 30s. per dozen.
ACHIMENES GHIESBREGHTII, 5s., orange scarlet.
N.B. Catalogues can be had on application. The Trade supplied.

JAPAN CEDAR OR CRYPTOMERIA JAPONICA SEEDLINGS.

MESSRS. STANDISH AND NOBLE, NURSERYMEN, Bagshot, beg respectfully to call the attention of Landed Proprietors and others to their fine and large Stock of the above useful and ornamental Tree, which they can supply at the following prices: 3s. 6d. per plant, 30s. per doz., or 12l. 10s. per 100.

JASMINUM NUDIFLORUM, a perfectly hardy, neat, dwarf-growing shrub, flowering most profusely in the open air, either with or without the protection of a wall. Undoubtedly this is one of the most beautiful winter-flowering plants of recent introduction. A plant in the Gardens of the London Horticultural Society was literally covered with its bright yellow flowers in December last. Strong plants, 2s. 6d. each.

WEIGELA ROSEA.—The beauties of this plant will ere long place it in the foremost rank of ornamental plants in flower-garden shrubberies. Strong plants, 1s. to 2s. 6d each.

FORSYTHIA VIRIDISSIMA.—This hardy shrub, like the last, requires only to be known to be appreciated. Mr. Fortune tells us that in China it is one of the most beautiful plants he has seen, forming a bush 10 or 12 feet in height, and covered with its rich golden flowers. Strong plants, 1s. to 2s. 6d. each.

PLATYCODON GRANDIFLORUM ALBUM, a beautiful Campanulaceous plant, also from China. 2s 6d. each.

AZALEA INDICA, "GLORY OF SUNNING-HILL," a large double pink, the flower much resembling Nerium splendens; obtained a prize at the London Horticultural Society's Exhibition in May last. Plants, 10s. 6d. each. Also a collection of fine sorts, from 1s. to 5s. each.

CALCEOLARIA ACME, white ground, with deep plum-coloured spots, good habit and fine form. 7s. 6d. each. Also Seedlings from the best kinds, at 8s. per doz.

The following fine MELONS, two and three year old seed, at 1s. per packet: Hampton-court Green-flesh, Ispahan, Cuthill's Scarlet-flesh, Incomparable, Bagshot Green-flesh, and Beechwood.

HECKFIELD COS LETTUCE, the best in cultivation, 1s. and 2s. packets.

In addition to the above, Messrs. STANDISH and NOBLE have a large and select stock of RHODODENDRONS and other AMERICAN PLANTS, with a general collection of Hardy Plants, Shrubs and Trees, Seeds, &c., Catalogues of which can be forwarded on application.—March 24.

LARCH PLANTS, &c.

PETER BOOTH, NURSERYMAN, Falkirk, is selling off a very large stock of Transplanted LARCH plants, in sizes from 1 foot to 2½ feet. Transplanted Scotch Firs, from 9 inches to 2 feet; transplanted Spruce Firs, 1 to 1½ foot. Strong Transplanted Thorn Quicks, 2-year Seedling Pinus Austriaca, 2-year Seedling Scotch Firs, and 2 and 3-year Seedling Spruce Firs, all very fine plants, and at further reduced very low prices.

NOT TO BE REPEATED.—PRIZE FOR MELONS, &c.

WM. HAMILTON, SEED-MAN and FLORIST, will give for the best MELON sent to him, on Tuesday the 19th of June, a PRIZE of 1l. 10s., and for the second best, 15s.; the third, 10s.; to be judged by flavour. As also 10s. for the best brace of CUCUMBERS, and 10s. for the best bunches of the following 12 ANNUALS, which must be cut from the open border:—Nemophila insignis, Clarkia pulchella, Eschscholtzia californica, Malope grandiflora, Coreopsis tinctoria, Collinsia bicolor, Hibiscus africanus, Bartonia aurea, Lupinus Cruikshankii, Collomia coccinea, Phlox Drummondii, and Erysimum Perofskianum.

Competitors must deliver free of every expense at or before 12 o'clock on the above day, at 156, Cheapside, London, and leave the articles of show for exhibition. The prizes to be paid by Post-office order the following day.

Judges.—Messrs. GLENNY, CUTHILL, and HARRISON.

Names must be sent with the Melons and Cucumbers, and growers for sale will not be eligible.—Direct to WM. HAMILTON, Seedsman and Florist, 156, Cheapside, London.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON have just published their general CATALOGUE of Stove and Greenhouse Plants, Climbers, Ericas, and Geraniums, also Descriptive Lists of Camellias, Cinerarias, Fuchsias, Verbenas, Petunias, Chrysanthemums, and Plants adapted for Grouping, with a selection of New and Ornamental Shrubs, &c.; copies of which have been sent to all customers, and will be forwarded to other applicants, GRATIS, as usual.

W. W. and SON have a superb stock of all the finest Cinerarias in cultivation; the plants are strong and coming into bloom; they are offered as under:

12 superior varieties for 12s | 25 extra fine varieties for 24s
12 superb ditto, NEW ... 18s. | 50 superb ditto for ... 42s.

Additional plants presented to compensate for carriage.

The Gardeners' Chronicle.

SATURDAY, MARCH 24, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	March	26	Medical	8 P.M.
			Geographical	8½ P.M.
			Civil Engineers	8 P.M.
TUESDAY,	—	27	Medical and Chirurgical	8½ P.M.
			Zoological	9 P.M.
			Society of Arts	8 P.M.
WEDNESDAY,	—	28	Microscopical	8 P.M.
			Ethnological	8 P.M.
THURSDAY,	—	29	Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	—	30	Royal Institution	8½ P.M.
			Entomological	8 P.M.
MONDAY,	April	2	Chemical	8 P.M.
			Pathological	8 P.M.
TUESDAY,	—	3	Horticultural	1 P.M.
			Linnean	8 P.M.
WEDNESDAY,	—	4	Geological	8½ P.M.

WE understand that the Liverpool Guardian Society have made up their minds to prosecute the SWINDLERS who have been lately exercising their ingenuity upon nursery and seedsmen; two of the gang, MELSON and MOAT, have already been sentenced to transportation at the York Assizes, at the prosecution of the Leeds Guardian Society, in consequence of a communication made to their Secretary, in January last, by Mr. REAY, of the Liverpool Guardian Society; and it is to be hoped that their companions will experience the same fate. Particulars of the York trials will be found in another column.

In the meanwhile, until the industrious gentleman to whom we have before alluded shall have met with his deserts at the hand of the law, it may be useful to continue some account of his proceedings. We have before us the following letters: No. 1, dated March 14, from Head-street, St. James's, Liverpool, ordering of Mr HOGG, of Newcastle-on-Tyne, 20,000 strong Whitethorn, and 180 fruit trees. No. 2, same date, from Warwick-house Park, Liverpool, ordering of Messrs. DREYHORN and AITKENS, of Kilmarnock, 580 fruit trees; and we learn from Messrs. URQUHART and SONS, of Dundee, that they have had the honour to receive similar commands from a Mr. J. TINKER, of Dukingfield Hall, Cheshire, who is not known at that place.

Mr. BOWERS, of Busbridge, has also received an invitation to send 18*l.* worth of his watering-pots to one of the party, concerning the residence and search after whom we have the following amusing account:

"I have spent some time to-day (the place being a considerable distance from Church-street), in endeavouring to trace the party mentioned in your letter of yesterday, but with little success. Head-street is a dirty low neighbourhood, the houses being occupied by porters, washerwomen, sweeps, &c.; after a great many inquiries in that and Heath-street, which adjoins it, a woman told me that the postman has been there several times with letters for the same individual. I accordingly sallied off to the Post-office, where, after about half-a-dozen applications, I succeeded in meeting with the man who delivers letters in that district, from whom I learnt, that he has been unable to find HANDFORD, and that several letters addressed to him are now waiting to be claimed."

If tradesmen will but support the Guardian Societies in their attempts to put a stop to such practices, we shall soon cease to hear of them.

THE POTATO ENQUIRY is now almost exhausted, and we have little left to tell; for we see no advantage in recounting solitary cases of exemption from disease which may be owing to any other cause as well as to that assigned to them by their reporters. There can be no doubt that the extensive investigation which has been made into the *average* of *facts* supports entirely the view that was taken of the matter in the *Gardeners' Chronicle* of July 29, 1848, namely, that over luxuriance, *arising from whatever cause*, was highly favourable to the progress of disease, and *vice versâ*. A theory as to the reason of this might be offered, but for the present we must limit ourselves to practical details.

People are wedded to their favourite diet, and if they were not, it must be admitted that gambling in Potato cultivation has considerable attraction, considering what heavy stakes are swept up by the lucky winners. As for the Irish, they evidently act upon the principle that it matters little which way the result goes, for if they win they win, and if they lose JOHN BULL may pay. A correspondent from Monasterevan, writes under date of March 19.

"I have availed myself of every opportunity to inquire, and to see the last year's crop of Potatoes. Those grown on my land continue perfectly sound, mealy when boiled, and of very good flavour. The tubers are so sound that I have already planted 5 acres, Irish measure (8 a. 0 r. 3 p. English). Any sets I have examined are pushing out shoots as usual. The extent of Potatoes already planted in Ireland is greatly beyond what I have ever heard of being planted in the month of March; all farmers seem to act on the conviction that early sowings are most likely to succeed. The idea of the tuber being 'worn out,' and of its vitality being lost, has now hardly a disciple. That the crop was lost by atmospheric influence appears now the general belief; an opinion in which I concur. The damper the land the more rapidly the disease or rot evinced itself.

"I have observed that dry land, if drained or resting on a porous substratum, has produced the best Potatoes; whilst clayey, retentive soils were generally unsound, whether planted early or late. You may judge how sanguine is the hope, or, I may add, certainty, of a good crop from the great anxiety evinced to purchase land for a crop of Potatoes (the abused con-acre system), when 10*l.* 10*s.* are given freely for an acre (7840 yards) of manured land, the tenant furnishing seed and labour. ROBERT CASSIDY."

It is something to find that the Irish are beginning to see the truth of what they were told in November, 1845, and that early planting has at last found favour in their eyes. As to the mode of planting, Mr. CUTHILL recommends "the *ridge system*, thus ΛΛ and section. It gives double surface, double heat, double air, double protection against rain, double depth of mould, and good drainage, and it is altogether superior to the flat surface mode of growing Potatoes. The ridge system, in fact, is almost a preventive of disease, *especially if the tubers have been taken care of during* WINTER."

For our parts, we see nothing to object to in the Irish lazy-beds, provided the trenches between the beds are but deep enough to lay the land dry. There is also a plan of management, proposed by Mr. H. L. MEYER, which deserves to be made generally known. In a paper read to the Royal Agricultural Society, he made the following recommendation:

"I propose a method of protection, which, I think, may be equally effective against any one of the above mentioned causes of the disease, whether animal, vegetable, atmospheric, or electric. I propose to cover up the plant with the readiest material at hand,—namely, the soil it grows in. The manner in which this must be done is, by laying down the haulm, and covering it over with earth from the root to within a few inches of the extremity, leaving only the tips of the plant exposed to the benefits of light and air. A field, when thus treated, presents to view a succession of ridges of earth and valleys; the ridges contain the Potatoes and the stems of the plants earthed over, and in the valleys or furrows lie securely the tips of the foliage. Should the injurious blight occur while the field remains in this state, the tops of the plants are greatly sheltered from its influence by the ridges of earth they lie between. Nothing further will be required but to watch the field, and continue to cover up the haulms from time to time, so as to keep only the tips exposed. The process thus described should be immediately put in practice, instead of the usual method of 'earthing up,' and while the stems of the plant are still plant and manageable. This simple process will not require any outlay, and in point of labour only stands in the place of the usual method of earthing up. . . . The best way of putting this mode in practice is, by laying down the haulms with the hand, and afterwards covering them with the earth that lies between the rows. The earlier the plant can be attended to, as I have proposed, the less it is liable to receive the germ or inoculation of the infection; but owing to the present advanced state of the plant, it may be advisable to administer lime or some other purifying substance before covering the haulm. It is desirable to lay the stems down in a direction away from the east, as much towards the

south-west as possible, because it is from the east that blights of all descriptions appear to originate. The usual manner of planting Potatoes being in rows only sufficiently apart to allow room for the underground shoots and tubers to vegetate, it will be found necessary to lay the haulms of the plant down in a slanting or oblique direction, so as to let the exposed tops of the haulm reach only to the centre of the valley or furrow, thereby gaining the double advantage of room and protection."

This experiment was carefully tried in the Garden of the Horticultural Society in 1848, and with success; for although, as was to be expected, the amount of produce was diminished (not, however, to the extent of more than 3 cwt. per acre), the proportional quantity of sound Potatoes obtained was more than seven times that of the rows on each side. We regard this as an artificial method of curbing the luxuriance of the Potato, which it does very effectually: but whether that be so or not, it will be well to repeat the trial under varied circumstances, in order that its true value may be ascertained. The plan has this merit, that it seems incapable of doing any harm.

Another experiment was tried in the same establishment. Some haulm having become much decayed, by the 9th August, it was pulled up, and the ground was beaten and rolled as hard as possible. "Every alternate half-row was thus treated, the other half of each row being left for comparison. The rows ran north and south. The half of the first row at the south end was rolled, the north end of the next, the south end of the third, and so on alternately. The average sound produce was somewhat less in the rolled than in the unrolled portions; but the quantity *diseased was not half so great in the rolled portions* as it was in the unrolled."

We should like to hear what the effect would be of rolling Potato ground hard *at this time of year*, and leaving it to its chance. The crop could not be heavy, but it might be good.

POMOLOGICAL ARCHÆOLOGY.

As it is the duty of every one possessing information, however limited its extent may be, to communicate it for the benefit of his fellows, I take advantage of the opportunity afforded in your Journal, of making the following remarks. I have headed this article "Pomological Archæology," because it treats of the pomology of an age long prior to our own, and of which but little is now known.

It is much to be regretted that "Mayster Groshede, somtyme Bysshop of Lyncoln," "Barnaby Googe, esquire," "Leonarde Mascal," and those of our ancestors who had the ability and the opportunity of writing on rural affairs, did not devote their attention to what was immediately passing around them, instead of occupying their minds with translations from Cato, Columella, and Varro, and promoting the absurdities contained in these authors; the consequence of which is, that we are left in comparative ignorance of this part of our social history.

It has been said that the Apple was introduced to this country by the Normans at the time of the conquest. But it is just as likely, if it did not exist before, that it was introduced by the Romans. We know that the Cherry was, although Mr. Loudon states differently; for Pliny, in Lib. xv., cap. 25, says, "Cerasi ante victoriam Mithradaticam L. Luculli non fuere in Italia. Ad urbis annum DCLXXX. is primum vixit e Ponto: annisque CXX. trans Oceanum in Britanniam usque pervenere." Seeing, then, that they introduced the Cherry and the Vine, it is quite probable that they introduced the Apple also; for according to the same author, Apples were held in such estimation among them as not only to procure renown to those who propagated them, but also to these parts of the country whence they were brought (Lib. xv., cap. 14). He also mentions that in the suburbs of Rome, the fruit produced from the Apple-trees realised more to the owners than was formerly obtained from farming.

If, then, the Apple was so valued by the Romans, we have every reason to believe that this warlike people, who carried their luxuries wherever they extended their conquests, were just as likely to introduce it to our island as they did the Cherry and the Vine. Indeed we are informed by Tacitus that all fruit trees succeeded in Britain except the Vine, the Olive, and such others as require a warmer climate. But even supposing the Apple was not introduced by the Romans, there were other means by which it could have existed in this country prior to the Norman conquest. The monks, who ever ministered to their temporal as well as to their spiritual necessities, and some of them perhaps more to the one than the other, were in constant communication with the Continent, and particularly with Italy; and I think it quite probable that they too were the means of introducing it. But be that as it may, I cannot reconcile myself to believe that the Apple did not exist in Britain before the time above mentioned.

The subject to which I wish more particularly to direct attention now is, the nomenclature of some of our oldest Apples, whose names either convey no meaning at all, or have become so distorted as to lose all trace of the original form.

Juneatings.—These, of which the White Juneating is the type, are among our oldest varieties. The forms in which we find the name written by the old authors are Jeunetting, Ginetting, Genneting, Juneting, Juniting, and Jeniting; and it is not till towards the close of the last century that Abercrombie, who is the first author in whose writings we so find it, calls it Juneating. I have no doubt that this last form was adopted in order to convey what appeared to him to be the proper signification of the word June-eating, *i. e.*, ripe in June. Dr. Johnson writes it Gineting, and says it is a corruption of Janeton (Fr.), signifying Jane or Janet, having been so called from a person of that name. But notwithstanding this opinion of the great lexicographer, I am induced to think differently. All authors who have mentioned this variety—and some of them lived at a period when it is said the summers were hotter and more precocious than they are now—agree in fixing the period of its maturity at the end of July; so that I conceive Juneating has as little reference to the origin of the name as Julyflower has to Gilliflower, or Sparrowgrass to Asparagus.

In early times it was customary to make the festivals of the Church periods at which occurrences were to take place, or from which events were dated; and even at this day we find the country people appropriating some operation for St. Thomas's-day, and some other operation for St. Andrew's, Michaelmas, Allhallow-tide, or other holidays. So also it was usual in former times to name fruits from the day about which they arrived at maturity, such as the Margaret Apple from being ripe at St. Margaret's-day, the 20th of July; the Magdalene, or Maudlin, from St. Magdalene's-day, the 22d of July, and in "Curtius Hortorum" we find "A tempore maturitatis Joannina vocamus, quod circa divi Joannis Baptistæ nativitatem esui sint." J. Baptista Porta also says, "Est genus alterum, quod quia circa festum divi Joannis maturescit, vulgus Melo di San Giovanni dicitur." On the Continent, therefore, these early Apples were called Joannins, Gallice Jeannet; thus we have among the old French Pears Amiré Joannet, the Admired or Wonderful Little John, which Merlet informs us is so called because it is in maturity at John's-day. If then we add to Joannet the termination *ing* so common in our names of Apples, we have Joanneting, which, with a slight transformation, gives us Jennetting.

Pearmains.—These also are among our oldest English Apples, and of which I believe the Winter Pearmain is the type. In this I suspect I differ from the Horticultural Society's Catalogue of Fruits, where the "Old Pearmain" is made synonymous with the Herefordshire or Royal Pearmain; but still I am of opinion that the Winter Pearmain is the original. It is mentioned by Gerard, in his "Herbal," in the "Husbandman's Fruitfull Orchard," and by Ralph Austen, whilst I find no notice of the Royal Pearmain till the time of Rea (1665), of which he says, "It is much bigger and better tasted than the common kind."

It seems to have been long a matter of doubt as to the origin and signification of this word Pearmain. My attention was first attracted to its derivation by observing that Gerard writes it Pearmaine, and both in "The Husband-man's Fruitfull Orchard," and Coles's "Adam in Eden," it is written Peare-maine. The last syllable of the word being the same as I had observed Charlemagne written Charlemaine in works of those periods, suggested the idea that Pearmain was similar; and as Charlemagne is Carolus Magnus gallicised, so also Pyrus magnus, gallicised, gave Poire magne (the large Pear), which, slightly transformed, is Peare-maine or Pearmain. The name of the Pearmain is therefore in allusion to the shape of those Apples so called, being similar to that of a Pear.

Pippins.—This is derived from the French word *Pepin*, signifying a kernel or the seed of Apples, Pears, and Quinces. I am not prepared to say what variety is the type of this class, if, indeed, there is any one more than another, for I find the term applied by the early authors not only to the seed, but to seedling Apples generally. Thus we find Leonard Mascal, in 1572, instructing "Howe to dung your wylde trees come of Pepynes," and "when so ever ye do replante or change your Pepin trees from place to place, in so remouing often the stocks, the frute therof shal also change, but the frute which doth come of graffing doth alwayes kepe the forme and nature of the tree whereof he is taken: for as I have sayde, as often as the Pepin trees be removed to a better grounde the frute thereof be so much amended."

Queenings.—These, of which the Winter Queening is the type, are also among the oldest varieties cultivated in our orchards and gardens. Like those mentioned above, the name is of French origin, and is derived from *coin*, a corner, from the appearance of corners or angles on the sides of the fruit; hence also we have coins or quoins, the corner stones of a building. This seems to have been the sense in which our early Pomologists viewed it, because Rea, in his "Pomona," when speaking of the Winter Queening says, "it succeeds incomparably on the Paradise Apple, as the Calville and all other sorts of Queenings do," regarding the Calville also as a Queening because of the angularity of its shape.

It will be observed that the names of the fruits noticed above are derived from the French, but it does not follow that the fruits themselves were introduced from the Continent. We have no mention of any of these varieties by the early French writers; on the contrary, De Quintinye, in speaking of the Pearmain, calls it "La Drue Permein d'Angleterre," the dense English Pearmain, in allusion, I apprehend, to the firmness of its flesh.

When it is considered that French was for a long period the spoken language of the higher classes of this country, we need not wonder at our oldest fruits receiving French appellations; they rather confirm us in the belief that they existed in the country long before the period at which authors generally have fixed their introduction. It is on this account, therefore, that I believe the varieties I have here noticed, so far from being of foreign origin, are the original and rightful representatives of our early English pomology. *Robert Hogg, 4, Thurloe-square, Brompton.*

ON THE CONDITIONS ESSENTIAL TO THE MOST PERFECT CULTIVATION.—No. IV.

THERE is an old axiom, to which custom has given a liberal application, that would teach us that two methods only are available in performing an operation, viz, a right and a wrong. But this, like many other antiquated maxims to which we cling (at least in theory) with wonderful pertinacity, will be found in reality to be very limited in its practical applications. It would be an occupation by no means unworthy of talent to collect the current maxims which society still loves to cherish and to profess in theory, and to show how glaringly that same society numberless times in one short year violates the very axioms it professes to hold up as models of imitation. And perhaps it is wise that it does so. It may be one of those progressive movements over which we have no control—one of those anomalies observable in social as in individual progress, where the act is in advance of the thought.

I left our plant house aerated, it is true; and it may here, by way of progressing in a systematic method, be advisable to say something of artificial heat. No matter to what purpose a plant house may be appropriated, some kind of apparatus for the purpose of raising the temperature must be available. Unless in structures appropriated to Heaths, Geraniums, and thousands of other plants, to which, if a good practical system of external covering could be applied, the application of internal heat, except in extraordinary cases, might be dispensed with. How many such structures during the past winter would have never needed fires if an efficient (and that would have been slight) covering could have been applied.

Some few days since I had occasion, in fulfilling some received instructions, to call at a garden unfortunately going to ruin; from what cause it is not necessary to explain. Most of the plants had been disposed of in the autumn, but there yet remained, in what had formerly been a plant stove, some of the neglected denizens. Amongst them were Inga pulcherrima, Jasminum sambac, Columnea splendens, Franciscea uniflora, Begonia insignis, Burchellia capensis, and numerous others, not in the most luxuriant health, it may be conjectured; but when I say that during the past winter not one atom of firing has been used in expelling either frost or damp, the wonder is that they are alive at all. To the latter is due most of the injuries they have sustained, in some cases but trifling, and they only want the ordinary routine of attention to make the majority of them agreeable specimens.

For plant-houses in which artificial heat is only necessary on very limited occasions, it is a great folly to erect expensive heating apparatus; the simplest and best is a good flue for such a purpose. On the contrary, where tropical vegetation is to luxuriate, and where fires are almost constantly in request, there is nothing so available as hot water pipes, erected by good workmen on true principles. I have often seen the most provoking mistakes in connection with the setting of boilers, involving a great expense in pulling down and rebuilding, arising simply from the ignorance of the mason. In erecting such apparatus, employ the most efficient workmen if you cannot superintend it yourself.

Of Polmaise—poor belaboured, belauded, persecuted Polmaise—nothing can be more faultless than its theory; but an over-due zeal on the one part, and an ignorant prejudice on the other, and perhaps indifference for a third, has so mystified its true principles, and erected, as it were, a barrier about it, that men are content to forego its advantages rather than wade through the accumulated mass that would disclose to them, like the fabled toad,

"The precious jewel in its head."

When this shall have cleared away, and when the true simple principles upon which it is based shall be fully known, its application will no doubt become extensive; but for the present I do not feel justified in holding it up as a system invariable in its applications or faultless in its powers.

I conceive it to be no proof of superior intelligence or skill in the performance of any operation to accomplish the ends by difficult means, or expensive apparatus, when a more simple system and less complicated accessories will bring about an equally satisfactory termination. Thus, in heating plant structures, there are several means by which we may accomplish our design—each admirable in its way, but only applicable, economically speaking, in particular cases. Each and all may be right, and *vice versâ*. But it is for the cultivator, with a knowledge of all circumstances bearing upon his particular case, to decide upon the actual system he should adopt. The objects he intends carrying out must determine the means he should employ. He must carefully calculate the bearing, the connections

of the future upon the present, and apply his means accordingly.

In erecting heating apparatus, it is always better to err on the right side, and to allow for contingencies. Let, therefore, all such erections be upon the simplest principles, and let those principles be carried out with the greatest care. Let your power be more than efficient; nothing can be more provoking than, upon some extraordinary severe night, and such will be found to visit us at times, to find that your apparatus will not do its work. The effect of such for a few hours may frustrate your labours for months, and render nugatory the anxieties and hopes you had indulged in for a year. On the most propitious occasions a gardener's anxieties are scarcely compensated, and there are those who, by their conduct, show how lightly they estimate his services, who treat him as a Cockney does his job-horse, estimating his worth at so much per hour. *G.*

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

Transplanting Budded Roses.—It is well known to all Rose growers, that those varieties which are budded or grafted on briars are apt to degenerate unless removed every three or four years. In my own experience this has especially been the case with the hybrid perpetuals, many of which have become more sickly every year, and some have died off, although when planted they were vigorous and healthy. The causes of this are probably numerous, arising from the unnatural, or more properly, artificial, union of the stock and the graft, and the little attention generally paid to congeniality of habit when performing the operation. But as far as the evil admits of correction by transplanting, the cause appears to lie in the soil or the state of the root; and when taking up a large number last week, I particularly observed the condition of that organ, and its relation to the state of the tree. I found in most cases that the unhealthy subjects had very few root fibres, but in the place of them a mass of wood, often in a rotten state, fully accounting for disease in the tree. It was evident that in my case the briars had been improperly prepared in the first instance, old stools having been used, with no root fibres, and incapable of producing any. Where this was not the case, the rough mode of digging them from their native hedges had left fractures and wounds, accounting for a want of health. The mode of procuring briars, as often practised, thus becomes the source of injury to the budded head in future years, and cannot be too much reprehended. Men are engaged to get them at so much per 100, and they are hacked up in the roughest manner. To have briars in a proper state for grafting or budding, they should be grown for the purpose, that a young stem may proceed from a root of its own age, and not from one become venerable from 20 summers.

The cause now mentioned, and the necessity for a change of soil, render it desirable to remove budded Roses, and I will detail the plan I adopted myself, and am still pursuing. Choose your new situation as remote as convenient from the old one, and well dig the soil to the depth of 18 inches, incorporating with it a large portion of well rotted manure. I employed night-soil and ashes, which have been mixed for 12 months, but should have preferred the dung of an exhausted Cucumber bed; although I must mention that Mr. Paul recommends the former compost for light soils, in preference to the latter. The holes being ready, dig up the Rose-trees, taking care not to break the roots, which is very likely to happen if they are not well loosened with the fork. Prune the head close in, and cut away all dead parts about the juncture of the stock and the bud. Then prune the roots, leaving as much as possible of the young fibres; cut away all useless and decayed portions, and see that no rough wounds remain. As each tree is finished let it be put in its new situation, allowing the roots to be exposed to the air as little as possible. Arrange the fibres nicely on the surface of fine soil, and cover with the same; tread the whole firmly in, and give a good watering. This must be repeated occasionally in dry weather the first season, and with this care the trees will not suffer by removal. The pruning of the roots, and the new soil, will excite to the production of fresh fibres, and the results of your operations will appear in finer flowers and a more vigorous growth.

Although budded Roses suffer most by continuing too long in one locality, all kinds will be improved by occasional removal. Let a few be done every year, and the whole collection will be kept in high condition. The flowering will be retarded by the process, but this will be an advantage, by prolonging the blooming season. It should have been mentioned that, when examining the roots of the briars, all those parts of the buried stem which have thrown up suckers should be cut away, to prevent that nuisance in future. If you intend to bud Roses yourself, choose proper stocks, avoiding all those club-footed things which are so plentifully found in hedges. *H. B.*

Home Correspondence.

Protected Trellises.—With respect to the Peach and Nectarine trees grown on a sloping trellis near the ground and covered with glass, a description of which, by Mr. Rivers, you have inserted in the *Chronicle*, I should observe that I think the wood has ripened nearly as well as that on the wall, though the experiment had hardly a fair trial; the trees were planted late, and the glasses to ripen the wood were not put on sufficiently early, nor were the superfluous shoots cut out when the fruit was off, nor was the border so protected from continual rains as I had desired, and nearly a third more wood was trained in than was necessary. Gardeners some time or other will find out that it is worse than useless to cherish shoots all the summer for the amusement of cutting them out in winter. Planting the trees nearly horizontally has kept the wood short and bloom bearing, and it is in general evenly grown, and no gourmands. I observe, also, that there is on these trees what is not on the wall-trained Peaches, viz., a tendency to produce short bloom-spurs. I have not had any opportunity of seeing whether this is the habit of forced Peach trees. During the early spring the border was kept dry, and as the bloom-buds swelled a bed of leaves was put over the border, in order to give a little warmth to the ground, the soil and climate being cold and damp. One of the principal advantages I expect will be the protection of the bloom from the wet and the perpendicular frosts, and all chance of freezing the wet anthers will be avoided, and there is no trouble of woollen nets, Fir branches, coping, &c.; a few Fir branches have been stuck during the blossoming time in front, to prevent any violent draughts of cold winds, and as the back of the glass is about 5 feet 6 inches from the ground, just within the glass, this year some trained dwarf Cherries have been planted; these being planted upright will not be shaded by the Peach-trellis, which is only 2 feet from the ground, and this wall of trained trees will be a protection against the north winds, passing under the glass, not, however, impeding a free circulation of air. And if the Cherries succeed even as well as in the open air, being under the glass, a net hung at the back will be a sufficient protection against birds, an important matter in a country so full of woods as to make it very difficult to keep blackbirds under. I think it will be found that the training on a trellis does not require half the labour necessary in wall training, nailing, and unnailing, &c., and there will be more leaves on the tree grown on a trellis than on one trained against a wall, and the leaves will get more air and motion, and I think there will be more room for the fruit, and certainly the trellis is not so good a harbour as the crevices of the wall for the eggs of insects. In addition to the leaves put on the border the stems of the trees have been bound round with hay-bands to prevent the varying temperature checking the due rising of the sap—one, I believe, of the principal causes of the curl in the leaves of the Peach which so often happens in cold springs; even supposing that the crops are not better than those produced against a wall, still there will be something gained, as Peaches and Nectarines may, by means of these protected trellises, be grown in gardens where there are no walls; and nurserymen who have not walls sufficient for their young trees may bring forward bearing plants with well ripened wood at a small cost; and this will be a great advantage, as in general the trees sent out with long green wood have to be cut back and a year is lost. I think you might give some important hints on the preparation of properly trained trees with well ripened wood by nurserymen, which should replace these fine young trees with 5 feet branches, which are usually sent from a nursery, taken from an exposed trellis or paling, and not seldom having rather an ancient stock, having been cut back for a succession of years. *H. R. K.*

Gas Heating.—There is no reason why gas might not in many cases be advantageously employed for horticultural purposes, if proper precautions were used for carrying off the vapours arising from combustion, and which might readily be accomplished by any handy gas fitter. I had myself a small gas stove erected in a greenhouse attached to my house, when resident in town, which being nearly closed, as regards the inside of the greenhouse, was supplied with the necessary air from the outside, and the products of combustion carried off by a pipe through the roof. I much fear however that gas, though useful on a small scale, would scarcely do for a large establishment; at least I suspect the quantity of gas necessary, and the apparatus required, would render it much more expensive than the flue or hot water apparatus; besides there is always the risk of escapes of gas and consequent explosions. Messrs. Lawson of Edinburgh, make use of gas as a means of raising the necessary heat required in their apparatus for heating the vitality of seeds. Having received a present of some Cape bulbs, and being anxious to flower them, I bethought myself of making an artificial hotbed by means of water heated by gas. For this purpose I got an old deal packing box, into which I placed a false bottom made of spars, and fixed at a proper distance from the top. Above this was packed a quantity of damp moss, into which the pots containing the bulbs were plunged. On the outside of the box, and towards the lower part, was fixed a small kettle, a little larger than an ordinary shaving jug, below which a gas burner was placed for the purpose of heating the water. A tin tube was carried from the upper part of the kettle, into and round the box, and under the moss, and from thence again introduced into the lower part of the kettle, thus forming a regular hot water apparatus on the syphon principle. I found the heat thus obtained to be more than sufficient for my purpose, but of course this was easily regulated to suit circumstances. The only two matters which seem to require notice are, first, it is essential to keep the moss a little distance from the pipe, otherwise it is apt to adhere and thus prevent the free passage of the heat from the pipe; second, it is necessary to have a small tube with stopcock attached to the highest level of the pipe, for the purpose of supplying the waste of water, and letting off the air which sometimes accumulates, and stops the circulation of the water. This plan might be readily employed for windows and small greenhouses attached to town residences. *A Learner.*

Aigburth Strawberry.—In the autumn of 1845 the gardener of Henry Harrison, Esq., Aigburth, found a few seedling Strawberry plants near an old plant of Elton Pine, in the neighbourhood of which were the British Queen, Royal Scarlet, and some others. He planted the seedlings out that autumn, and one of them soon became remarkable on account of its robust growth. In the following season a few runners were planted out, in order to prove its merits, and these did so well that the gardener was induced to make a bed next autumn (1847). From this bed a quantity of fine fruit was gathered in 1848, and highly prized by Mr. Harrison, who has paid a good deal of attention to fruit growing. Some of the fruit was sent to the London Horticultural Society, and was favourably noticed by Mr. Thompson. Mr. Harrison handed the note which he had received from Mr. Thompson to his gardener, and told him that he might make what he could of the Strawberry for his own benefit, naming it the "Aigburth Seedling." The result was its being advertised in your paper in August last, and again this spring. *James Tynan*, 124, *Park-road, Liverpool.*

Weigela rosea.—Although this is perfectly hardy, it deserves notice as a pot plant for window or balcony gardening, and it also answers admirably for forcing. For the latter purpose, any time during February, March, or April, select strong plants in 3-inch pots, and shift them into 6 or 8-inch pots, using turfy loam, a little leaf-mould, and some sand. Let them be plunged in an open situation fully exposed to the sun. They will require some little summer-pruning, or rather pinching, in order to make them bushy. By autumn they will be nice dwarf plants, and may be removed to the forcing pit, cool part of the stove, or warm greenhouse, taking care not to prune them. Few plants present a more graceful appearance and require less care. *Frederick Rowe.*

Hint respecting the Culture of Araucaria imbricata.—There was planted in a park in the south of England, in the autumn of 1845, a number of good sized plants of Araucaria imbricata, in various soils and situations, all considered more or less good, with one exception. This latter plant was placed in what might be considered a disadvantageous site in all respects; when planted it was looked upon as certain not to do well, being in a low valley where fogs appear earliest and leave latest, and where the most powerful winds sweep along more destructively than in the exposed places, at the foot of a hill facing the north, and shaded by large trees during the whole winter season, and where 6 inches below the turf there is a hard bed of stones; yet this tree looks most luxuriantly, and has made growth in the proportion of 3 to 1 more than any of its contemporaries. There is no doubt that the sweeping winds, the bed of stones, and the entire absence of sun for several months, have all proved favourable to it. *J. H., Feb.* 28. [To be sure; you are quite right. Consider how and where it grows naturally.]

Scotch Foresters.—I wrote to your Paper last autumn, and pointed out the inferiority of Scotch to English farming in many particulars; and amongst the points that I enumerated was their ignorance of every detail belonging to the fatting of beasts; and I gave the same account as that which is given by your correspondent "Q. R. S., Hants." I was attacked by four or five writers, and my statements were denied. I replied by naming the farms in the Lothians, in Perthshire, and in other parts where I had seen the things denied; and my adversaries replied no more. Next to the howl of the Irish about the misgovernment of Ireland, there is no greater imposture palmed upon us than the assertion of the superiority of Scotch farming. A new branch of Scotch imposture is now springing up, which is the puffing of Scotch foresters! a country in which there is not a decent tree of any size, nor ever can be, from the climate. Why don't they send us up Scotch turtles and Pine-apples? I wish you had been with me at a sale of stock in East Lothian on a farm of a tenant of Lord Wemyss's, and seen their treatment of their Leicester sheep. The tenant nevertheless is a very good farmer for those parts. *N. A. D. P.*

Forcing Apricots in Pits.—I have from time to time heard wonders of the Dutch forcing in the gardens of Lord Hill, who has, I believe, the same gardener that the late Mr. Labouchere had at Highlands, and further, that he is especially celebrated for forcing Apricots in pits. Can any of your correspondents give us any account of this? *Dodman.*

Keeping Properties of Snow Exposed to Air.—"Quercus," in your Number for February 24, revives an old subject respecting snow remaining in chasms of the Ochil hills till near Midsummer, and refers me to Mr. Beaton's paper on ice-keeping. I study to read all Mr. Beaton's articles that appear in the *Chronicle*, and also those which come from "Quercus," with pleasure and, I trust, with profit. At the time his communication reached me, the bens and glens of the Ochil hills were covered with snow, but it is now gradually disappearing, except near the summit of Benclough, where the long strips called Lady Alva's Webs may remain for some time to come; but we will have a cold season if they are not all melted long before the dog-star rises and sets with the sun. The Ochil hills being about 24

miles in length and 12 in breadth, on an average, and in many places breaking almost sheer down in rocky cliffs into the plains, it is possible that where there are heavy falls of snow in winter, and the weather cold in spring, snow may remain in some places for a long time; but am I to suppose that by "Quercus" referring me to Mr. Beaton's article that it was on the Ochil hills that Mr B. "often basked in the sun on a wreath of snow 30 feet deep, in the dog days, with a fierce sun overhead." I would rather imagine it would be somewhere about where young Norval kept watch over his flock among the Grampian mountains. The Ochils may be broad enough and high enough to be considered large if there were no mountains near to compare them with, but when brought into comparison with their neighbours, there is as much difference between them as there is between a full grown Artichoke and an unexpanded one growing by its side. I have *often* travelled among the highest parts of the Ochils at various periods of the summer season, but I never happened to meet with snow in my wanderings; if I had, I might have been as much benefited by it as Tournefort was when he botanised on Mount Ararat. He says, "When we came to the heap of snow, we found more than we had need of, for the heap was about 30 paces in diameter. We, every one, eat more or less, as we had a mind, and, by agreement, resolved to go no further. This snow was about 4 feet thick, and being frozen hard, we took a great piece to fill our bottle. It cannot be imagined how much the eating of snow revives and fortifies; some time after we felt a glowing heat in our stomachs, like that in the hands after having held snow in them half or quarter of an hour; and, far from causing griping pains (as most imagine it must), it was very comfortable to our inward parts. We descended therefore from the snow with a wonderful vigour, much pleased that we had accomplished our design, and that we had now nothing further to do but to retire to the monastery." Now, I am sure "Quercus" would be doing a great service to the community if he would inform them where snow could be found at Midsummer on the Ochils. What a refreshing thing it would be to many a weary botanist, and also to many that come from all quarters to the Bridge of Allan to booze at the saline springs of Airthrey; and as one good turn deserves another, I will tell him where I found an Alpine plant on the Ochils that escaped the notice of a party of botanists with a professor at their head. The plant is set down in our British Floras as an inhabitant of the summits of the Highland mountains. Neither Dr. Graham, the late professor of botany, nor the late Mr. M'Nab, when they visited West Plean, seemed to be aware that it grew so near the Botanic Garden of Edinburgh, until I informed Mr. M'Nab of it *Peter Mackenzie, West Plean.*

Covering Vine Borders with Fermenting Material.—To force Vines, whose roots are in a border outside the house, in order to get very early Grapes, is a bad plan, and contrary to Nature. Where there is convenience, the best way is to grow a lot of pot Vines for early forcing. Good Grapes can be easily got from them any time in March, and when the crop is cut the Vines may be thrown away, always growing a fresh stock of young plants. If there is not convenience for pot Vines, and yet early Grapes are required, then the Vines should by all means be planted in a border inside the house. Even when the Vines are planted in the outside border, I would not use fermenting material for the purpose of imparting heat to the border, as, from long and careful attention to the subject, I am convinced that it does far more harm than good. My plan is to cover my borders early in autumn, whilst they still retain the warmth communicated to them by the sun and atmosphere, with some leaves, Fern, straw, or other light non-conducting material. I am perfectly sensible of what importance it is in early forcing to have the soil the roots are in of equal temperature with the atmosphere in which the branches are placed Fermenting material will warm a border to a great depth I have seen a thermometer stand 90° at a depth of 30 inches. To heat a border in this manner is, I consider, nearly as bad as leaving it entirely uncovered. In my own Vine borders (far from being dry and warm) which have been covered with a little leaves and straw, the thermometer has stood at 60° at a depth of 18 inches since Christmas, without varying more than 2° either way. This is not so high as I like it, but still I am convinced, from long experience, that it is far preferable to heating them by fermenting material. When I put my great coat on in cold weather, it is not with an idea that it will generate heat, it is with a view to prevent the warmth of my body from escaping, and protecting it from the injurious influences of sudden external changes. Now, when I cover my Vine borders, it is for a somewhat similar purpose. I wish to retain as much as possible of the heat imparted to them by the sun and air of the previous summer, and to protect them from the injurious influence of the sudden external changes to which they are exposed in our ever varying climate. I admit that the temperature of the border in which the roots are, not being equal to that of the atmosphere in which the leaves and branches are growing, is contrary to the law of Nature. Nevertheless, experience has satisfied me, that of two evils the least is that of merely protecting the borders from the influences of the atmosphere. *M'Saul, the gardener, Allerton-park.*

Trees for Avenues (see p. 152).—I would venture to suggest an addition to your list of trees for avenues, viz., the Quercus Cerris (Turkey Oak); and for pleasure-grounds, where cattle do not graze, Pinus Deodara. At the risk of imputation of Cockneyism, I must say that the finest architectural effect which I ever saw in an avenue was occasioned by a road in Burgundy, three miles long, lined by Lombardy Poplars of gigantic growth, from 10 to 12 feet in circumference perhaps, each with proportionate elevation, perhaps 100 feet or more. There is also, as an approach to Milan from the Simplon, an avenue of Tulip trees, of three miles or so, very splendid, planted by Napoleon. Their growth has been very quick, and they must be large trees by this time. Has any one had the courage to plant Lombardy Poplars? they would certainly look pretty for some years. *Viator.* [In the passage alluded to we merely answered a correspondent's question.]

Syrian Fruits.—Have any of the sweet-kernelled Peaches and Nectarines, which you mentioned last season as having been introduced by the Duke of Northumberland, been propagated for sale yet? I think you said that the Duke had determined that they should be sold for the benefit of some charity. *Dolman.* [Yes; the Stanwick Nectarine will be on sale one of these days. Its propagation is entrusted to Mr. Rivers, who has acted with great liberality in the matter.]

Rain, in inches, which fell at Leicester during 1848, on 197 rainy days:

	Inches.
January	1·12
February	4·87
March	3·64
April	2·51
May	·94
June	3·81
July	2·80
August	4·25
September	4·24
October	4·75
November	1·04
December	1·87
Total	31·84

Direction of Wind.	Days.
South-west	85
South	78
West	61
North	40
North-west	30
North-east	26
East	26
South-east	20
Total	366

The mean yearly temperature was 50°3, mean height of barometer was 29,716. *John Plant, Leicester.*

The Superstitions connected with Bees are many. I need hardly add that like all others they are absurd and unfounded. If the master of the house dies, it is said by the ignorant that the bees will die also, unless their owner's death is formally announced to them; and as they often die through neglect when the person who attended to them is no more, this doctrine is most firmly believed in. Others think it unlucky to sell bees, and therefore when they part with a swarm, they only bargain for so much of their produce in the next year as would amount to a fair price. (This practice is a very good one, for it enables many a poor man to keep bees who could not do so were he obliged to purchase bees to begin with.) Others again are afraid to sell them unless the purchase money is paid in gold; these last may have more motives than one for keeping up the old fable. In ancient times it was considered by the awe-stricken idolators as a "boding prodigy" if bees settled upon a temple, a tree devoted to the gods (Æneid, vii., 65), or even, according to Pliny (ix., 17 and 18), upon an ordinary house. Juvenal, indignant at the licentiousness and corruption prevailing in his times, exclaims,

"Here if one just, one holy man be found,
A present miracle! we shout around.
Not more dismayed should monstrous forms appear,
Or earthborn fish arrest the ploughing steer,
Or swarming bees, portending ills to Rome,
Hang clustering from a con-secrated dome."—*Satire* xiii., 99.

A writer in the "Quarterly Review" asserts that "such regard is still paid to them in many parts of the south of England, that no death or birth or marriage takes place in the family without its being communicated to the bees, whose hive is covered in the first case with a piece of black cloth, in the two latter with red. The 10th Aug. is considered their day of jubilee, and those who are seen working on that day are called quakers. Omens were wont to be taken from their swarming, and their settling on the mouths of Plato and Pindar was taken as a sure presage of their future eloquence and poetry." The Church of Rome, too, has the following passage in her Breviary:—"Peter Nolascus, born of a noble family at Recardi, near Carcasona, in France, excelled in eminent love towards his neighbour; the presage of whose virtue was, that while he, yet an infant, was crying in his cradle, a swarm of bees flew to him and constructed a honey comb in his right hand." This list of superstitions would not be complete if we omitted that the circumstance of a swarm clustering, before it is hived, upon a stake merely set in the ground, or upon the dead branch of a tree, is thought to be a sad omen indeed—an omen that one of the family will die within a year. *An Essex Man.*

Societies.

HORTICULTURAL, *March* 20.—Dr. JACKSON in the Chair. The Rev. W. B. L. Hawkins, M.A., and F. Ashley, Esq., were elected Fellows. On this occasion a great many subjects of exhibition were produced. From the garden of Mrs. Lawrence, of Ealing-park, came a nice collection of stove and greenhouse plants, consisting of Chorozema Lawrenceanum, Henfreya scandens, Erica Willmoreana, nitida, and triumphans, the latter a somewhat scarce Rosemary-leaved sort, with flowers resembling those of physodes, but larger; fine plants of Begonia nitida and coccinea; well cultivated bushes of Boronia pinnata and B. serrulata, Æschynanthus pulcher, Cyrtoceras reflexum, and Pimelea spectabilis. A Knightian Medal was awarded for these.—A collection of greenhouse plants was exhibited by Mr. Rivers, gr. to R. W. Eyles, Esq. Besides seven finely-flowered Azaleas, this group contained Weigela rosea, which is found to force well; two Correas, the New Holland Indigo tree (Indigofera australis), Tropæolum tricolorum, and a beautiful bush of the pretty Zichya inophylla. A Banksian Medal was awarded for these.—A similar award was also made to Mr. Bunney, of Stratford, for a handsome brown and yellow-flowered Oncidium, apparently new to gardens.—Mr. Iveson, gr. to the Duchess Dowager of Northumberland, at Syon, sent a Gaultheria from Santa Martha, distinct from but resembling Gaultheria Shallon; a hardy hybrid Rhododendron with large compact heads of handsome white flowers; Salvia gesneriflora, a brilliant scarlet-flowered Sage, apparently not different from the old S. cardinalis; a flower of the Sierra Leone Gardenia malleifera; and ripe pods of the Vanilla (V. planitolia), which is found to produce excellent fruit, provided the flowers are set. It was mentioned that this latter operation was necessary; for, owing to the peculiar structure of the flower, fertilisation cannot take place without artificial assistance. A Banksian Medal was awarded for the Vanilla fruit and the Rhododendron.—Messrs. Henderson, of Pine-apple place, received a Banksian Medal for an interesting collection of Hyacinths, which, beautiful as they were, however, were inferior to a similar collection exhibited from the same establishment last year. Of *blues* it comprised Emicus; Prince Van Saxe Weimar, double; L'Ami Cœur, Vulcan, Richard Cœur de Lion, Le plus Noir, Graaf Van Nassau, Tubal Cain, Charles Dickens, William the First. *Pale blue*, with lighter tubes, Laurens Koster, double; Grande Vidette (one of the best); A la Mode, double; Orondates; Passe tout; Prince Frederic, double. *White*, La Candeur, Madame Talleyrand, Virgo, States General, Helene, Victoria Regina, Grande Vidette (one of the best). *Red*, Van Speyke, L'Eclair, Appelius, Panorama, La Dame du Lac, Talma, Lord Wellington, Waterloo, double, Norma. *Black, or nearly so*, Prince Albert. *Plum-coloured*, L'Unique, a very desirable variety, on account of its colour, which is new to Hyacinths.—Messrs. Veitch sent Camellia Storyi, a red variety in the way of imbricata. It was exhibited some 12 months ago, when it received a medal, and was produced on this occasion more to show its constancy of character than its novelty; the same nurserymen also sent their hardy yellow-flowered Violet, from Patagonia, and a blush-coloured Dendrobium, with a yellow blotch in the lip, from Moulmein, for which a Certificate of Merit was awarded.—A similar award was also made to Messrs. Fairbairn, of Clapham, for a beautifully grown plant of the late Mr. M'Nab's variety of Erica aristata major.—Mr. Summerfield, gr. to J. S. Venn, Esq., produced a good specimen of the white Indian Azalea.—Mr. Fortune's Azalea obtusa, which certainly proves to be a distinct species, was exhibited by Mr. Henderson, of St. John's-wood, who also contributed collections of named and seedling Cinerarias.—A Cineraria named Mazeppa was shown by Mr. Gaines, of Battersea, and six seedlings of the same useful genus were produced by Mr. Townsend, of Notting hill.—Finally, Mr. Kendall, of Stoke Newington, sent a seedling Cineraria, named Sansparoil, white, broadly margined with sky-blue, a novel colour in this class of flowers.—Mr. Drummond, of Pontypool Park, showed a Ripley Queen Pine-apple, weighing 2 lbs. 12½ oz. It was stated to have been grown in turf, broken brick, and rough charcoal. Specimens of ripe Roseberry Strawberries were communicated by Mr. Dunsford, of Chingford-green, Essex; and Mr. Mitchell, of Enfield, sent a well-coloured sample of his Royal Albert Rhubarb, from an open field.—Mrs. Temple sent an exhibition of wax models of flowers.

From the Garden of the Society came a nice collection of plants; but as the greater part of them has been already noticed in our report of the Garden, published last week, we shall only add to that account the United States Orchis (Orchis spectabilis), a pretty dwarf-growing lilac and white flowered species, which is hardy or nearly so, and a very dwarf compact white-flowered Azalea from the north of China, differing from the common white Chinese Azalea not only in having but five stamens instead of 10, but also in other important particulars. It is apparently a profuse flowerer, and will prove an acquisition. [It is as well to add that some of the exhibitors on this, as well as other occasions, throw away the chance of a prize by not sending the plants *two clear hours* before the time of meeting, as the Society requires. It is the more necessary to mention this, because it is evident that the practice is gaining ground.]

CALEDONIAN HORTICULTURAL.—In last week's paper we gave an account of the prizes awarded to competitors at the general meeting of this Society, held on the 1st inst.; but we have still to record the presentation, on that occasion, of a salver and other pieces of plate to Mr. M'Nab, the former superintendent of the Experimental Garden at Edinburgh. The Chairman, Mr. Crawfurd, of Cartsburn, observed that the Society was deeply indebted to Mr. M'Nab for the improvements in the Garden, which had been chiefly accomplished by his taste and energy; to him they owed the noble hall in which they were now assembled, the two Camellia-houses, which had given so much satisfaction to many, and the "Winter Garden" structure, which was now exciting universal admiration; for this last Mr. M'Nab had not only furnished plans, but had, by his activity and perseverance, collected the requisite funds. The Council were so sensible of Mr. M'Nab's merits that they had unanimously resolved to recommend the presenting him with some pieces of plate, as a marked token of the Society's approbation; and he had now

the pleasure of putting into the hands of Mr. M'Nab personally the principal piece—a massive salver, ornamented with perspective views of the Hall and the Winter Garden, and containing the following inscription:—"Presented (along with other articles of Plate to the value of 50*l.*), by the Caledonian Horticultural Society to Mr. James M'Nab, Superintendent of the Royal Botanic Garden, as a mark of their sense of his eminent services to the Society, while Superintendent of their Garden, from 1836 to 1848. Jan. 20, 1849."—Mr. M'Nab, in a brief but feeling manner, expressed his gratitude, stating that, in anything he had done, he considered himself as having merely done what was his duty; thanking the members for the uniform kindness he had experienced, and assuring them that he would always feel anxious for the prosperity of the institution.

LINNEAN, *March 6th.*—R. BROWN, Esq., V P., in the chair. The fellows assembled this evening, when the chairman announced the death of Edward Forster, Esq., one of the Vice Presidents and Treasurer of the Society, and proposed the adjournment of the meeting as a mark of respect to the memory of the deceased, who was so well-known for his botanical knowledge, and his devotion to the interests of the Linnean Society.

March 20.—The Lord Bishop of NORWICH, President, in the Chair. Mr. Solly exhibited flowering plants of Anemone ranunculoides, from the neighbourhood of Abbot's Langley, Herts.—Dr. Pereira presented to the museum a specimen of the Elaphomyces granulatus.—J. Gadesden, Esq., and H. F. Richardson, Esq., were elected Fellows of the Society. P. H. Gosse, Esq., was elected an Associate. A drawing of a new species of Passiflora was exhibited.—Mr. Newport read the first portion of a memoir on "The anatomy and development compared with the special economy and instincts of certain Chalcididæ and Ichneumonidæ, with descriptions of a new genus and two species of bee parasites" The object of the author was to show that a perfect accordance exists between the special anatomy of insects and their economy. The parasitic Hymenoptera, in their larva state are some of the most imperfectly organised species, although in their imago state they are amongst the most perfect. Some of their larva are carnivorous, and feed on other insects, others only on the food of the species they infest. Although there is this difference in their economy, the general form of their digestive organs in the earlier periods of growth is very similar. During the period of feeding, the digestive apparatus is a closed sac, without anal outlet, so that no fœcal matter is passed until the larva is full grown, when an outlet and intestine are then formed by a column of cell masses, which connects the digestive organ with the tegument, and which is continuous with the cells that compose the walls of the sac, becoming perforated in its longitudinal axis; a corresponding opening being at the same time formed among the cells at the bottom of the stricture; after which fœces are passed, and the larva prepares for its change to a nymph. The reason for this late completion of the alimentary canal was shown to be to preserve the food of the insect from contamination. The casting of the tegument was also stated to take place in these larvæ as in other insects. Mr. Newport having witnessed its occurrence in the genus Paniscus. Certain peculiarities in the anatomy of two species of bee parasites were then pointed out in illustration of these views. One of these species constitutes a new genus of Chalcididæ, for which Mr. Newport proposes the name of Anthophorabia, with the following generic characters: "Female: Head broader than the thorax: antennæ six jointed, pilose, with the second, third, fourth, and fifth joints nearly equal, the sixth long, oval; thorax and abdomen of equal length; wings with a single median bifid nervure; tarsi five jointed. Male: Antennæ four jointed; basal-joint arched, greatly dilated and excavated on the under surface, second joint cylindrical, third large, globose, fourth elongated, oval; eyes stemmatous; wings abbreviated; length one line." From these peculiarities in the anatomy of the sexes of this species, which Mr. Newport found in all its stages in the nests of Anthophora at Richborough, in Kent, in the years 1841, '32, and '34, he drew the conclusion that impregnation takes place in the cell of the bee before the female quits it; an opinion which is strongly supported by the remarkable simplicity of the organs of vision in the male, which, being mere stemmata, are fitted only for near vision. The species he named Anthophorabia retusa. A yellow colour of the whole body characterises the male, and bronze-green the female. The second bee parasite of Anthophora was a species of Monodontomerus, to which, provisionally, the name of Nitidus was given, from the elegant and glistening appearance of the insect. The internal anatomy of the larva of this insect was described, in illustration of the mode in which the alimentary canal is completed; and from the general facts detailed, the conclusion was drawn, that the special anatomy of a species is an index to its natural history and economy. Carefully finished drawings of the sexes of Anthophorabia retusa and its larva, with details of its anatomy, were exhibited.

Reviews.

The Island of Sardinia, &c. By J. W. Tyndale, M.A. Three vols. 8vo. Bentley.

IT IS no business of ours to criticise Mr. Tyndale's antiquarian re-searches, or to express an opinion as to whether he has added much to our knowledge of the true import of the Noraghi of the Sardinians; an account of their forests would possess greater interest for us and our readers. This is indeed a matter of importance, because it is well known that the dockyard authorities here maintain Sardinian Oak to be the best that is now procurable in abundance for naval purposes. It is true that dockyard abuses have brought dockyard evidence into discredit; but that is only a better reason why we should be anxious for disinterested and independent authority concerning dockyard questions. If mysterious motives form an irresistible barrier to the employment in government ship-building of any timber except Oak, it becomes the more important that non-political lookers-on should try to determine what the facts are respecting Sardinian Oak, which the learned pronounce to be the only foreign Oak now fit for the construction of ships for her Majesty's navy.

We looked through Mr. Tyndale's three volumes in the full anticipation of finding some valuable information. But after perusing his pages from beginning to end, we are obliged to say that Mr. Tyndale gives us no information about the Sard forests worth extracting. He tells us that he saw in one place "immense pieces of timber lying about intended for exportation;" that the difference in quality and value between Sard and other Oak *may* be considerable; that from the want of roads and paths hundreds of young trees are destroyed to enable the contractors to draw out a single piece of timber; and that the Sardinian government, by its mismanagement, does not gain more than 2*s.* 8*d.* per tree clear profit. The forests of Monte Argentu are said to contain 75 millions of trees of one sort or another. In the neighbourhood of Ursulie and elsewhere, the number of timber trees is 12 millions, the majority of which is "Holm Oak;" and, finally, in the forests of San Leonardo and its neighbourhood, there are "upwards of 1,200,000 full grown trees, among which are 800,000 of the Quercia bianca (what is that?), the most esteemed of all the species, and which, by the tests made in French and other dockyards, where it was found to possess all the requisite properties for ship building, is considered equal to any in Europe."

This, we believe, is all that Mr. Tyndale says in his three volumes, upon one of the most important national questions to which he could have addressed himself during his visit to Sardinia. What a pity it is that gentlemen who will write books should never think of learning in the first instance how and what to observe!

Grundriss der Kryptogamen-Kunde, von Dr. G. W. Korber. Breslau, 1848. 8vo: pp. viii. and 204.

THERE has always been a certain class of botanists who have, in comparison, lightly esteemed those who devoted themselves to the investigation of Cryptogams, as though the meanest things which God has created did not contain in them enough of mystery to perplex the most acute and patient intellect. Nor is this class of despisers even yet quite extinct, though amongst all but mere collectors and systematists it is now very generally acknowledged that the solution of many questions of deepest interest in vegetable physiology is to be sought amongst those minute objects of the creation which, with the most wonderful accuracy, foreshadow the organs of which the mightiest giants of the forest are composed; for it is often possible to trace these insolated organs, if we may so call them, through all the stages of their development, and under very varied circumstances, when the difficulties which meet the observer in the investigation of the complex endogen or exogen are all but insurmountable. It is obvious, then, that independent of the intrinsic interest of the subject itself, some good introduction to the knowledge of Cryptogams would be a most acceptable boon to naturalists, but unfortunately no such work exists. Dr. Montagne's "Sketches in the History of Cuba" are admirable in their way, but from the very nature of the case will not completely satisfy the demands of the botanist. As sketches indeed they are almost perfect, and exhibit a thorough knowledge of Cryptogamic literature. The work before us is of a somewhat similar description, and contains, itself, a great deal that is valuable, while it indicates many sources of information which will be acceptable to the general botanist, but it is not the work of a man who has read up to Saturday night. Still there is much merit about it, and we are sure that it will prove useful to such botanists as are acquainted with the language in which it is written.

Miscellaneous.

Potatoes in India.—The Potatoes from Bombay, Darjeeling and Cherra Poonjee seed, were wonderfully fine and healthy, and to enable the public to form some idea of the state of perfection this grand and staple vegetable has been brought to in this district, it is here recorded that 40 Potatoes out of one garden weighed 20 lbs. The skin of all delicately white and fine, and every Potato free from knots. *Journal of the Agricultural and Horticultural Society of India, May*, 1848.

Mr. Feargus O'Connor's Land Scheme.—The 45 occupants of the Lowbands estate in Rednarley, Worcestershire, took possession in August 1847. The allottees were full of hope then—temporary discomforts were submitted to with cheerfulness in consideration of the bright hereafter that was before them. But they are not all there now. Six families at least have left. One of these has emigrated to America. Of the rest, some have disposed of their allotments to others, and some have turned the keys in their doors, intending perhaps to come back at a more convenient season or to dispose of their land when they can find a purchaser. Of those who are still on the land many are earning their living by following their ordinary callings, others by opening little shops, and the heads of some of the families have been away to their places of their birth, during the long winter season, and by application to their former trades have managed to get some support for themselves and their offspring. That they can ever support themselves simply by the cultivation of the soil, appears to be an idea which has very nearly died out from among them, and those who have no other resource are really in very great distress. None of them have as yet paid any rent—on the contrary they have in the first instance received the sums of money promised by the Company in aid, and many of them have had assistance repeatedly given them by O'Connor and his agents—without which they would have starved. No rent is to be paid for a year and a half longer, when the whole three years' rent will be due. They say indeed that they are not to pay any rent till conveyances of the land are given to them. The parties to whom we particularly allude have made no payments—the vicar has had from them no tithes—and the collector of taxes has in several instances been compelled to distrain upon their little stock of household goods for the poor and other rates of the parish, though these are by no means heavy. Some of them are looking forward with dismay to the expenditure of the stock of provisions which their houses at present contain—when that is gone they know not how they are to exist. It is seven miles from the Lowbands Estate to any market town, and the parties, most of them, say that they find great difficulty when they have, with toil and labour brought their produce to market, in disposing of it. They consume the greater part of the garden stuff in their own houses, and many of them live almost entirely upon the vegetables which they grow—they complain very bitterly of the high price of meat and fuel. Live stock there is scarcely any upon the estate—a pig or two, indeed, most of the occupants have possessed themselves of, and these, as they eat up the garbage of the gardens, prove tolerably profitable. Some poultry, too, we saw, but for the rest a couple of tethered sheep was all that we could descry upon the whole 170 acres. There are at present no fences between the allotments. Gorse hedges between the lots are just making their appearance above the ground. In the middle of the estate stands a well-built school house, but the people cannot afford to send their children to be taught. They either cannot spare them from their labour in the fields, or they cannot send with them the weekly threepence which was to form the schoolmaster's principal means of subsistence, and so the poor man, although quite competent to the situation, of good parts and abilities, must seek some other method of subsistence. Provision for their children's future advancement they can make none—all their anxiety and efforts are constrained to be turned towards feeding their hungry mouths from day to day. One man said that "so as he could get summut t' eat and clothes t' his back, he didna care, he wanted nowt to put by." At Snigsend matters are somewhat better, for here the locations were only entered upon in June last, and consequently the system has had very little trial at present. Yet even here some of the allottees have already taken their departure, finding themselves unfitted by their previous habits to the hard work necessary to the cultivation of the land, and altogether unable to make out of it a subsistence. One man, a weaver, from Manchester, and an excellent hand at his trade, came down with his family, and took possession of a four acre allotment. He found upon his ground some Barley sown, which he reaped and stacked. It remains there now; and after, in the furnishing of his house and other matters, he had expended 90*l.*, he has sold his occupancy to another person for 40*l.*, leaving the in-comer of course to pay the Company their charges, amounting to some 30*l.* more. He has gone back to his old situation, for his master was sorry to lose so good a hand, and told him that when he got sickened of the Paradise at Snigsend he should be glad again to receive him; and it has not taken long to bring him to his senses. Several of the allottees here have purchased the good-will of others in their shares, and the additional houses which they thus have at their disposal they let at rather high rates to agricultural labourers whom they employ to assist them in the preparation of the ground. Parties who have thus become possessed of six or eight acres, have some amount of capital, and a tolerable knowledge of agricultural pursuits, seem likely to procure a decent though homely living, and in a few years we do not doubt but that almost all the land will have passed into the hands of this description of persons. The miseries and distresses which many of the others will have to go through can only be conjectured. *Abridged from the Worcester Herald of Feb.* 10, 1849.

Climate of the Jullunder Doab.—This interesting country is a very great contrast to Bengal, being very dry, with a great scarcity of trees, the soil very sandy and light, but most prolific; all it requires is plenty of irrigation, which is easily procurable, the water being found anywhere on digging in the soft soil for about 12 or 14 feet. I have a very good garden, with two wells, and almost all day the water is being conducted by small aqueducts all over the garden. I have Apple, Quince, Pear, Plum, Mangoe, Peach, Strawberry, and Melon plants; they thrive well, as well as all the Orange tribe. At present almost all the English vegetables are over, except the Artichoke, which is in perfection; I can cut about 20 a day for about two months; the green Peas are just over. With regard to English flowers, they thrive here as well, if not better than in England,

Sweet Peas, double Stock, Eschscholtzias, Candytuft, Lupins, and innumerable other flowers growing most luxuriantly. I have also some fine Portulacas and Petunias, Sweet William and Pinks, and a variety of Roses and Fuchsias. This climate is delightful, the thermometer this morning (4th May) at sunrise was at 60°, and most beautifully clear and dry. *Capt. F. C. Burnett, in the Journal of the Agricultural and Horticultural Society of India.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

As vegetation is now commencing its summer progress in earnest, one of the most important points requiring attention is, to give all plants sufficient room to develope themselves, without crowding or being crowded by their neighbours. A collection of plants too large for the extent of glass, is the common evil of nearly all gardens; and, in consequence of this, they are crammed together during winter to preserve them from the frost. Injurious as this is to their health during the dull months, the injury is ten times greater when they commence their spring growth, and for this reason they *must* be placed at proper distances asunder without further delay, even if the operation should involve a reduction in the collection; for it is far more satisfactory to all parties concerned to have a few well grown specimens, than several times the number of lanky etiolated plants, not one of which will stand the scrutiny of individual examination. As the spring is so far advanced, a good deal may be done by removing many half-hardy or frame plants to favourable situations in the open air where they can be slightly protected in severe weather by mats, canvas, or other contrivances; this will make room for many of the hardier greenhouse plants in the frames, where they will be much improved by their close proximity to the glass. The forcing houses, also, as they gradually come into work, will afford room for plants which require a stove temperature. If a sufficient quantity of young stove plants has not yet been propagated, no time should be lost, as cuttings will root with greater facility now than a month or two hence; besides, the young plants will have the advantage of the whole season before them. Attend to the propagation of greenhouse plants, particularly of Fuchsias for autumn and Chrysanthemums for winter display. As Cinerarias go out of bloom, let them have a few weeks' partial repose to ripen their old foliage, and prepare to commence their new growth with increased vigour. Seeds of Cinerarias, Calceolarias, Petunias, Humeas, and other soft-wooded greenhouse plants, should now be sown in a gentle heat.

FORCING DEPARTMENT.

PINERIES.—Assist Pine-apples whose fruits are swelling, with clarified liquid manure; but give no water of any kind after they begin to change colour. The manure water should be made in a tank, and clarified by adding a portion of lime, or coarse charcoal; as soon as the liquid has become clear it should be drawn off into a second tank, the top of which should be nearly as low as the bottom of the other one. VINERIES.—Attend regularly to stopping and tying the shoots and thinning the berries. With regard to the size of the bunches, gardeners usually find those of a moderate size, averaging a little more than a pound in weight, more generally useful than larger ones, from the greater facility with which they may be set up in creditable order for the table. For this reason, the long, diffuse shoulders of very large shows should be removed; and the loss in the weight of individual bunches will be amply compensated for by the greater number of useful bunches, and the larger size of the berries. The tendrils of the Vine are a provision of Nature to enable it to cling to trees for support in its natural habitat, but they are of no service where artificial means are used for the purpose, and should in all cases be removed, as an unnecessary draft upon the energies of the plant. Stop all fruit bearing spurs at the first joint above the bunch, and all laterals above the first leaf. PEACH HOUSES.—Take care that the inside borders do not get too dry, but supply them with liquid manure as frequently as the state of the soil requires it, loosening the surface if necessary, that the water may be evenly distributed. Avoid over-excitement until the fruit is fairly stoned, after which a higher temperature may be safely indulged in, if the period at which the fruit will be most useful renders rapid progress necessary. After the stoning is over the fruit should be systematically thinned where it happens to be too thick. If fine fruit is desired, not more than one should be permitted to mature itself on any shoot unless it be of extraordinary vigour, and on weak shoots none; exceptions, however, must be made to these rules when there is a deficiency on other parts of the tree. CHERRIES AND APRICOTS.—Where the fruit is swelling maintain a night temperature of about 55°. Give abundance of air in fine weather, close at 80°, and syringe immediately with clean water. These fruits require to be forced very gradually, and a high night temperature should be particularly avoided.

KITCHEN GARDEN.

As appearances are so very important in everything connected with a gardening establishment, this fact should by no means be lost sight of in the management of this department, with which is inseparably connected a considerable quantity of work of such a nature as to give at times an unsettled and somewhat untidy appearance; and as the majority of gardening operations must be performed strictly in season, they do not leave the manager power to wait till his employer's family takes up its quarters elsewhere for a short period. Much, however, may be done towards keeping things at all times in creditable order, by a systematic arrangement of the work, and by stedfast adherence to one simple rule, viz., to do everything well which is taken in hand, and to finish it off in a neat, clean, workmanlike manner, before proceeding to another job. By adopting this system, the managing head will rest more self satisfied with the work as far as it has proceeded, and be therefore enabled to devote the greater energy to that which is still to be done. To exemplify this in practice, let the various quarters, as they receive their crops, be at once neatly finished off, by raking or forking the ground, straightening the edges of the paths, and cleaning and gravelling the principal alleys. After these the main walks in the immediate vicinity, which will be free from dirty traffic for some time to come, should be cleaned, slightly surfaced with new gravel, and rolled; and at the same time the edgings of the walks should receive any attention which they may require, either by replanting or thoroughly repairing them. It is well to make a general practice of replanting one half of the Thrift, and about one fifth of the Box edgings every season; if such a system be not pursued, the work in a few years will become so serious an undertaking, that things will not be set right again, without considerable difficulty, and neglect of other work, of which every year brings its own share. Cauliflowers which have been protected under handlights during winter, should be thinned out to proper distances, and earthed up with a top dressing of soil and rotten dung. The spare plants which were removed from the handlights, should be planted in good ground, 2 feet apart, to succeed the others; both lots should be encouraged by the application of manure water as soon as they begin to grow. Tomatoes and Capsicums should be sown in heat and potted off, three plants in a 4-inch pot, in a rich loamy soil, as soon as the young plants will bear handling.

FLORISTS' FLOWERS.

From the great number of shows about to take place throughout the kingdom during the coming season, it is evident that floriculture is progressing. What with our metropolitan exhibitions, joined to those at Manchester, York, and Derby, an impulse will be given which cannot help to be otherwise than highly beneficial: Tulips appear to be the great feature, we would therefore recommend our readers who grow these magnificent flowers to use every means and take every precaution which experience or advice would suggest. The beds must now be carefully hooped over, and covered with net of a very narrow mesh; if this is sufficiently high, the plants will not be drawn, but they will be effectually protected from hailstorms, which are so sadly ruinous to the florist's hopes. CARNATIONS AND PICOTEES.—Continue to pot off at every suitable opportunity: amateurs will find to their cost that it would have been better to have obtained their stock and wintered it, rather than purchase now. Though the season has been so mild, these plants, as well as Pinks, have suffered very much, and many of the better and scarcer varieties are hardly to be met with. RANUNCULUSES.—Some parties keep bulbs out for a late bloom—we would advise all, however, to be immediately planted; every day that they are now out, lessens the chance of a good bloom. DAHLIAS.—Pot off early-struck cuttings; put old roots to work in heat, and attend to those which are emitting shoots; these will readily root in sand in a gentle heat. AURICULAS.—Cover the frames carefully every night, and if there is an appearance of frost let them have two mats rather than one; preservation from frost just now is a *sine qua non* to ensure a good bloom. Occasional waterings with weak liquid manure made with sheep droppings will be highly beneficial.

FLOWER GARDEN.

Finish planting out biennials and perennials from reserve-garden, and dividing large patches of herbaceous plants. Plants of these kinds, including Hollyhocks, Delphiniums, &c., must be carefully guarded against the attacks of snails, by forming a ring of soot and lime round the plants, and scattering a little over the surface of the soil. The decaying remains of last year's stems should also be removed, and the soil neatly levelled round them, to destroy any lurking places which the enemy may have about the crowns of the plants.

State of the Weather near London, for the week ending March 22, 1849, as observed at the Horticultural Gardens, Chiswick.

March.	Moon's Age	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain
Friday 16	21	30.347	30.0[illegible]	57	28	42.[illegible]	N.E.	.00
Satur... 17	☾	30.305	30.201	59	30	44.5	N.	.00
Sunday . 18	23	30.[illegible]	30.0[illegible]	49	38	43.5	W.	.01
Monday 19	24	30.0[illegible]	30.02[illegible]	51	28	39.5	E.	.00
Tues. 20	25	30.242	30.108	46	27	36.5	E.	.00
Wed. . 21	26	30.300	30.241	53	29	39.5	S.W.	.00
Thurs.... 22	27	30.19[illegible]	30.086	42	38	40.5	E.	.00
Average		30.22[illegible]	30.11[illegible]	51.0	30.[illegible]	40.7		0.01

March 16—Uniformly overcast, frosty at night.
— 17—Foggy; fine; slight dry haze; clear.
— 18—Foggy, with heavy dew, slight rain; hazy, foggy and damp.
— 19—Foggy; overcast, frosty at night.
— 20—Dusky haze, overcast, clear and frosty.
— 21—Dry cold haze, overcast, clear and frosty at night.
— 22—Foggy, cold haze.
Mean temperature of the week 2½ deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending March 31, 1849.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 25	52.5	34.4	43.5	9	0.50 in.	2	4	5	—	3	1	6	3
Mon. 26	52.9	34.6	43.8	9	0.12	—	2	1	3	4	2	3	5
Tues 27	54.3	35.6	45.0	8	0.37	1	5	3	2	1	4	7	—
Wed. 28	53.9	34.4	44.2	10	0.[illegible]8	2	[illegible]	1	1	3	3	4	1
Thurs. 29	54.0	34.0	43.5	4	0.12	1	3	4	2	1	6	3	4
Friday 30	53.7	34.9	44.3	8	0.30	3	4	3	1	4	[illegible]	3	2
Satur. 31	[illegible]	[illegible]	[illegible]	9	0.28	2	6	2	[illegible]	3	2	4	2

The highest temperature during the above period occurred on the 27th 1830—therm. 75 deg., and the lowest on the 30th, 1847—therm. 20 deg.

ERRATA.—In last Number, page 168, read, highest 19th and 20th, 1836; lowest 20th, 1845—therm. 16 deg.

Notices to Correspondents.

APPLES: *E D S.* The following are good sorts of Apples for keeping: Dessert—Golden Harvey, Court Pendu-plat, Reinette du Canada, Boston Russet, Scarlet Nonpareil, and Old Nonpareil. For Kitchen use—Dumelow's Seedling, Rymer, Alfriston, Mère de Ménage, and Easter Pippin.‖

AURICULAS: *S & J D.* See page 780 of our last year's volume.‡

BEDDING PLANTS: *Fenella.* Fuchsia Riccartonii and Erysimum Perofskianum will possibly suit you.‡

BOOKS: *Y.* There is no cheap edition of Mr. Paul's "Rose Garden."‡—*A Z.* The following are classed according to the natural system: Babington's "Manual," Lindley's "Synopsis," Hooker's "British Flora."—*E M A.* Guy's "Spelling Book," or perhaps Johnson's will suit you better.‡

CUCUMBERS: *J C.* Next week.

EMIGRATION: *J A N.* The proper Mulberry for the silkworm is either Morus alba or M. multicaulis. You had better take both. We fear, however, that Australia will be too dry for these plants. New Zealand promises far better.

FUEL: *A P G.* The balls to which you allude are made by kneading fresh cow-dung from a cow-house with coal slack, using as much cow-dung as will hold the coal dust together. Boys soon learn to make these balls quite hard and round between the palms of the hands in quantity, in a short time, and at a cheap rate. When made, pile them up in a corner for use.‡

GARDEN POTS: *W C T.* There is nothing to be gained, that we know of, in scrubbing the *inside* as well as the *outside* of garden pots before potting or repotting plants in them. Gardeners think differently, but we never heard any good reason assigned.

GENTIANA: *E D S.* Mix your seeds with silver sand, and scatter them on the surface of a peat border under a bell-glass, in places where the plants will not be overshaded by trees.‡

GERANIUMS: *Novice.* Young plants struck last autumn, if stopped, will produce flowers from the laterals, but not so early by several weeks as they would from the unstopped leading shoots. The propriety of the practice, therefore, in your case, will depend upon the period at which you wish your plants to flower. If a strong bloom is required in the autumn from the fancy varieties, they should be kept growing yet for some time longer, and their flower-buds pinched out, in order to husband the resources of the plants till a later period.‡

GRASS SEEDS: *Sheffieldiensis.* The quantity required for your purpose will depend upon the quality of the seeds, and of the soil. As your object is immediate effect, sow the seeds thickly, say about an inch apart, or even closer. Use Poa pratensis and Crested Dog's-tail in equal quantities; adding a little Poa annua and white Clover.¶

GUANO: *Saturday.* Apply it broadcast, mixed with soil in the way we mentioned last week, to the Potatoes, just when they are coming through the ground.‡

HARDY AZALEAS: *Sheffieldiensis.* Eximia, scintillans, Goveniana, thyrsiflora, coccinea maxima, gloria mundi, mirabilis, aurantia maxima, triumphans, rubicunda, regina belgica, and nobilis.¶

HARDY RHODODENDRONS: *Sheffieldiensis.* Catawbiense and any of its different coloured varieties, azaleoides and fragrans, maximum roseum and album; the gold striped, white and deep purple varieties of ponticum; caucasicum and any of its hardy early-flowering varieties; campanulatum, and dauricum atrovirens.¶

IVY: *Amateur.* Now is as good a time as any for pruning in your Ivy bush. We are not acquainted with the name of the maker of the cloth you sent.‡

KIDNEY BEANS: *T T T.* We cannot say what ails the leaves, except that they have been very badly managed, either by want of light, or air, or by too much dryness, or by anything rather than what they should have had.

MICROSCOPES: *A Subscriber.* We presume that a "Coddington" is what you mean. We should not be justified in publicly recommending makers of microscopes any more than dealers in other articles.

NAMES OF PLANTS: *A Salop Subscriber.* 1, Evergreen Oak; 2, Arbor Vitæ; 3, the Juniper; 4, Sweet Gale; 5, Phillyrea media; 6, a Tamarisk; 7, Lonicera alpigena; 9, the Spindle-tree; 10, a narrow leaved Holly; 12, Phillyrea obliqua; 13, Phillyrea angustifolia; 14, Cornelian Cherry; 15, Savin; 16, Butcher's Broom; 17, Savin; 18, Spurge Laurel; 19, Erica herbacea. And now will you permit us to observe that you would have saved yourself and us all this needless trouble if you had asked the names of these common things of the nearest gardener; for we do not imagine that a gardener exists who does not know such plants as well as the features of his own face.—*Adelaide.* Pimelea lanata.—*Beaumaris.* Cyclamen Coum. Some Berberry not determinable by such a fragment.—*G Maw.* At all times, and even with the best specimens, Aspidium spinulosum and A. dilatatum are difficult to determine as distinct species; nothing, therefore, can be done with the present incomplete morsel of a frond. Many thanks for the specimens, which were duly received. *S.*—A few Correspondents, whose plants are to-day unnoticed, are requested to exercise a little patience, and they shall receive answers next week.

PYRUS JAPONICA: *Sub.* It may be pruned as soon as it goes out of bloom.‡

RHUBARB: *J Eley.* We agree with you that your Rhubarb is the best we ever tasted. Its colour is equal to Mitchell's Prince Albert. You should propagate it for sale, especially if it be as early as you say.

TEA: *Laxton.* Green tea is produced from both T. viridis and T. Bohea, and so is black tea. The teas from the former are of better quality than from the latter. This was mentioned by us in a notice of Fortune's "Wanderings in China." Apios tuberosa must be inquired for in botanic gardens.

TURNIP MONSTER: *M E A.* We fear we have been misunderstood. We did not mean that the Turnip had been unable to form any leaves, but that at the time when the inner leaves were developed downwards, some obstacle then existed to their having been developed upwards.

WARD'S CASES: *D N.* See page 304 of our last year's volume.‡

MISC.: *J P and A W.* We should be happy to answer your enquiries if we could possibly discover your meaning. If your Banksian Roses did not flower it was because they had been pruned. Let them alone till the flowers have come, and then prune them, not sooner. This is the only point in your two letters which we can make out. The drainage enquiry is entirely incomprehensible.—*Old Sub.* Prune your Rhododendrons back just when they are beginning to grow.‡—*Murphy.* See page 420 of our last year's volume.‡—*Tisy.* The term "stopping" means pinching off the points of shoots by means of the finger and thumb.‡—*Inquirer.* Scarlet Rhododendrons can be grafted with success on the common sort. The same remark applies to Acacias.—*Diss.* The shrubs you mention should be hardy in Suffolk. We would recommend you to consult Mr. Rivers's Descriptive Catalogue of Hardy Trees and Shrubs.‡—*A C S.* Passiflora edulis will fruit in the situation you mention. Put it in a good sized pot, say a 15 or 18 inch one. It need not be shifted yearly; but when the soil becomes exhausted it should occasionally receive liquid manure. You cannot cultivate Moss usefully. Try it in a shady situation and keep it well watered during the summer. We should think you might collect as much as would answer your purpose in the nearest wood. Enquiries concerning the cost of plants should be addressed to nurserymen.‡—*A R C.* We presume that Histology signifies the study of the texture of plants, from *ἱστός*, canvas, or linen cloth. It is a term only in use among pedants.

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The Agricultural Gazette.

SATURDAY, MARCH 24, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, March 27.—Agricultural Society of England.
THURSDAY, „ 29.—Agricultural Imp. Society of Ireland.
THURSDAY, April 5.—Agricultural Society of England.
WEDNESDAY, „ 4.—Highland and Agricultural Society.
THURSDAY, „ 5.—Agricultural Imp. Society of Ireland.

FARMERS' CLUB.—March 30 Hadleigh April 2 London, Great Oakley, W. Hereford—April 3 South Devon, Framlingham—April 4. Furness—April 5. Otterybt. Mary.—April 7. Newcastle, Northampton.

THERE is a great deal which goes among the disciples of a certain school for blameworthy selfishness, which is mere obedience to the irreversible laws of our nature. Why should we condemn with disgust the conduct of those who give but 7*s.* or 8*s.* a week to the labourer? They give the full market value of the article they receive; if they did not, they could not procure it. It is, indeed, very probable that the intrinsic value of the labour obtained is farther exceeded in such a case by the remuneration it receives, than where wages are higher; for ill paid labour is far from economical. It will never be by urging on employers "THE DUTY OF PAYING HIGHER WAGES" that increased comfort among labourers will arise. The wages paid for labour—excepting as in particular instances, when "kept back by fraud"—involve no question of duty at all: they are a simple commercial result, dependent on the demand for, and the supply of, that of which they are thus the value. They are a subject for discussion by the political economist rather than the moralist: the latter no doubt finds appropriate subject matter in the relations of employers and employed—matter greatly affecting the well-being of the latter, and therefore of both—but he has no business with the question of wages. That involves no discussion of duty at all, it is not affected by those considerations which constitute the province of the moral philosopher

Our position here might easily be demonstrated *à priori*; but it will, perhaps, be more satisfactorily illustrated by reference to particular cases in which its opposite is plainly absurd. Take that of Ireland, for instance, in many districts of which the labouring population is so numerous, and agriculture so imperfect, that the amount of wages at only 8*d.* or 10*d.* a day, when added to the rent, almost entirely swallows up the gross produce of the land. Is the "duty" of paying higher wages likely to act there? Or do those infract a moral law, supposing it here to exist, whose utmost is exhausted in the effort to obey? Many of the western counties of England might be quoted in a similar way—where as large a share of the gross produce of the land is spent on poorly paid labourers* as is similarly devoted in other districts where wages are higher. Now, allowing for argument's sake that the moralist has any just pretension to interference in the matter at all, on what ground can he claim a larger proportion of his means for this purpose from one farmer than from another? There is no ground for such a demand; and thus his condemnation of the former for the poverty of his servants does in effect require the employment of a few, well paid, at the expense of the rest. Where labourers are more numerous than the existing state of cultivation requires, wages must be low, and an attempt to alter the case by urging considerations of duty, if they be influential at all, will do the mischief of starving some for the benefit of others.

* We do not say on poorly remunerated *labour*.

That the moralist may benefit the labourer, and the farmer too, is most true: he may legislate with useful effect on the relationship of *neighbour* which exists between man and man, whatever be their relative stations: but he has no voice in the determination of what is a mere question of commerce—the exchangeable value of labour. Any attempt by the higher classes directly to enforce its better remuneration—any scheme, for instance, which landowners may enforce, *requiring* occupiers to employ a certain number of men and pay them at a certain weekly rate, will fail of its intended end, but will not fail to recoil upon its authors by its infringement upon the fundamental idea of personal property.

The means do exist no doubt by which wages may be raised, and they ought to be known. The moralist, doubtless, possesses an *indirect* influence upon them by the educational machinery he would bring to bear upon the lower classes, and by the sympathy with them which he would inspire: but the only *direct* method that can be adopted is that which an improved agriculture suggests. Everything that increases the energy and intelligence and ability of cultivators must increase both the demand for labour and the fund out of which it is paid—must, therefore, increase the rate of its remuneration. Whether an increase thus obtained shall be permanent or not, depends, no doubt, in the long run, upon the *status* in morals and intelligence of the labourers themselves, and the elevation of this is thus no doubt essential to the process of general advancement; but for the material element in this progressive improvement, those men mainly are responsible on whom those circumstances depend to which the energy and ability of the tenantry are chiefly due. We have no hesitation in saying that our landowners have the prosperity of the labourer very much in their own hands; nor do we hesitate to assert that their object is not at all likely to be attained by any arbitrary attempt to enforce a higher rate of wages.

There is this difficulty connected with the piecemeal treatment of a subject, which alone is possible in our columns, that the general truth embracing all its various aspects can seldom be presented at any one time: and casual readers, influenced by a portion only of a serial discussion may thus be biassed in favour of one side only of the question. Those who have perused some of the previous articles in our Journal will not accuse us of a careless indifference to the condition of the labourer, or of an adherence exclusively to the *economical* truths which affect it. But the neighbourly sympathy which ought to exercise so powerful an influence over it will be all the more influential for being kept within its own province. It has no business to interfere in the adjustment of wages, which neither confer favour nor convey thanks, but are the simple expression of the market value of labour at the time. That it occupies a most important station, however, among the influences which bear upon our rural poor we readily admit: and the modes in which it may best be directed, will hereafter occupy our attention.

THE attention of a portion of our readers may be, with advantage, directed to an Advertisement that has appeared in our columns, of the BIRMINGHAM AND MIDLAND COUNTIES EXHIBITION of fat cattle, sheep, pigs, and poultry, to be held in December next, which promises to be extremely useful, as well as attractive and amusing. The limited class of objects to be shown in competition, in such a locality, amidst a network of railways, and with no lack of either pecuniary means or practical skill and experience in the neighbourhood, ensures a successful result; for if the people about Birmingham are wanting in honourable emulation to perfect their live stock—which is not likely—things can be, and doubtless will be sent from a distance, to show them what model specimens ought to be, and to keep them up to the mark. The Royal Agricultural Society cannot do otherwise, from its high position, than embrace a vast scope, which requires a powerful and not easily fatigued mind to investigate with advantage. Of this agricultural Kosmos the Birmingham Show professes to cultivate a limited portion, and, we doubt not, will do so in such an effectual manner as to set a good example to other towns and districts.

The Prize List is both liberal and comprehensive.

The animal *beau ideal* held forth is the constitutional and healthy well-being of the creatures. Silver medals are offered to the breeders of the best cattle and sheep, which is right, but not to those of super-excellent pigs and poultry; an omission which seems a little hard, if it is not unavoidable, since in no part of our domestic stock does the importance of good breeding at present more require to be insisted upon, and kept in mind, than in pigs and poultry, the latter especially. Something more than a beginning has already been made with pigs; poultry is just hoping to attract a little notice; and there is no reason why the breeding of these humbler, but still important classes of live stock, should not be openly taken up as a matter of gentlemanly interest by persons of fortune and intelligence. The Birmingham Poultry Show last year was thronged, and the next is likely to be even more interesting and attractive. Hitherto anything that would lay an egg, and be eatable in the state of roast or boiled, would do; and it is a great merit in the fowl genus that what had so little thought bestowed upon it should have turned out so well. But there is no harm in striving to have the best of the good, and at Birmingham there is likely to be every opportunity for fanciers to exercise their judgment in this department also. And as the Royal Agricultural Society, in the multiplicity of its avocations, is obliged to leave this later branch, or perhaps twig of rural economy unpatronised, it is probable that at Birmingham as good and as varied a collection of fowls will be assembled as would be exhibited for competition even in London. *D.*

ON LAND DRAINAGE.

It is now and then well to talk a little on this matter, to interchange our facts and ideas, and to admit and correct our errors. It is a subject one cannot easily forget, as agriculturists, with so smart a remembrancer as the storm of Feb. 28th. Since I published my pamphlet on draining, I have been watching for facts to prove where I am right and where wrong in my views. First as to whether we should have furrows and water furrows? North countrymen often say to me, "Why dress your land in corduroy?" whilst our Essex farmers would consider it an act of insanity to lay the land flat during winter. I confess, after draining the land, my inclinations sided with the flat-landers, but, to satisfy my mind, and avoid an extensive failure, I laid on the flat one acre in three fields; I am glad that I did so, for it convinced me that the practice of stetch and furrow on strong lands is correct, and that my predilections were wrong. I am not alluding to those absurd mounds which are to be seen in some of our midland counties, but to the stetches about 7 feet wide, perfectly flat on the surface, the furrow being narrow, and just the depth to which the land is ploughed. This furrow is neatly struck up or cleared out with a double-breasted plough, affording a free passage to the water when more falls in a given time than can filter to the drains.

I will give my reasons for changing my opinion, and wish it to be clearly understood that my remarks apply to very strong adhesive clays during the winter season, for that is the period of danger in such soils. It is important in heavy soils to have a friable seed-bed. I found that where I laid the land flat, the surface soil was much more difficult to work in the spring, and not nearly so friable as the rest of the field. The difference was strikingly obvious both in ploughing, drilling, harrowing, and hoeing. It was even observable two years afterwards, in ploughing a Clover lea, the furrow-slice turning up whole and shining in the flat acre, whilst on each side it crumbled and broke. In hoeing the Mangold Wurzel the same difference was perceptible, and the crop was not so good on the flat, either of corn or roots.

In very long lengths, with a considerable fall, the utility of water furrows intersecting the stetch furrows is obvious; they prevent that accumulation of water and accelerated velocity which would wash into the ditches enormous quantities of soil. I presume the serpentine form of the enormous mounds in our midland counties was given to delay and break the force of the current after very sudden and heavy rains.

Theoretically, one would say that in well-drained land the water should descend to the drains; but practically, it is found that dense tenacious soils have not the power to transmit water so quickly as it often falls from the clouds, especially where the fall is considerable, and the surface smooth, fine, or caked. In fact, in dry weather, when the surface was cracked and the incline great, I have seen a hasty thunder-storm rush over the cracks, the momentum of the water overcoming its gravity. In heavy clays there is a great tendency to contraction when dry, and expansion when wet. It is worth our while to consider whether the open furrows, by allowing room for expansion, do not facilitate that extra friability which is wanting on the flat, where the lateral expansion forces the particles of soil into close, dense masses. I may be wrong in thus accounting for the difference, but it appears to me that this and the longer retention of water act together in producing density. During very heavy rains, with grim satisfaction I sally forth, well coated and booted, to watch the operations of my various drains, to compare and ponder on their respective merits. I heave a sigh of pity and regret for those whose means are not equal to their inclinations to draining, whilst between sorrow and anger I reflect on the folly of those who, having means, cannot be brought to see or believe that water will really percolate through the densest clays. As the rushing torrents seem angrily to resent any impediment to their onward course, again I reflect upon the supineness and want of forethought in some farmers and bailiffs. The absurdity of crooked and winding ditches, the want of care to keep the Grass and Sedges cut in the ditches during dry weather, the omitting to remove all pieces of bushes and other obstructions before the rain does come. If you employ a hedger he is sure to leave you a legacy in the ditches; and of course your men get snugly under cover during a violent storm, although that is the very time a wise farmer will direct his or their attention to the possibility or probability of much damage by simple obstructions against water bars and corners.

But to return to the various modes of draining, it will be remembered that my first 60 or 70 miles of drains were cut 32 inches deep, filled 10 inches with stones, and then a circular pipe placed on the top of the stones to prevent any earth falling amongst them; these drains were only 12 feet apart, cut obliquely to the fall, having a leader to a certain number of drains. It is now six years since these drains were cut; every one of them runs perfectly after rains, with every prospect of continuing to do so for the next century. Still I considered that mode of draining too expensive and hardly deep enough; but I wish it to be distinctly understood (for there has been some misapprehension on the subject) that I never altered or changed those original drains. My next mode was with 1 inch pipes at intervals of 30 feet, 40 feet, and 50 feet, the depth averaging about 4 feet, being in fact 5 feet in the hill and 3 to 4 feet as the ground declined, each drain being its own leader to the open ditch. Three years' observation of these drains convinces me that in our very heavy tenacious clays 40 and 50 feet are rather too far apart, but the ground is very perfectly drained at 30 feet apart; we shall always err on the safe side by draining close. I think there is but little danger as to pipes becoming displaced in heavy soils if properly done. I had occasion to cut a cross drain intersecting the inch pipe drains that were laid three years ago, and was gratified to find them all as perfect a line of pipe as when first put in, not one of them having moved its position in the slightest degree. In fact, although we cut above and below them, they maintained their places and were not disturbed; they looked like a continuous pipe tightly wedged, and abutted against each other by the clay. Collars in this soil appeared quite unnecessary; of course the careful placement of the pipe is assumed.

Some six years ago a field of mine was drained 2 feet deep with pipes, but when I found the crops unsatisfactory, I re-drained it 6 feet deep at wide intervals, 100 feet apart or more, to take away the springs which I knew must be there, and which I found did not disturb the shallow drains; of course the deep drains took the top water as well as the spring water; but when rains were continuous and abundant, the top and bottom drains both acted and discharged abundantly. I mention this to prevent the removal of shallow drains. I compare land during heavy rains to a cask kept constantly filled with water; if there were four taps in the cask one above the other they would all run when there was enough to fill the casks, but when the supply diminished, the upper tap or drain would cease running first, and so on gradually till the lowest tap also ceased running. If water was only poured in as fast as the lowest tap would carry it, the three upper ones would not run at all; this is exactly what takes place in land. In winter, with much rain, two or three courses of drains one above the other would empty the land quicker than only one line of drain. This, however, is a question of cost and not of necessity, because although one drain may not take the water so quickly as two, still it does enough if it takes it away sufficiently quick to prevent stagnation, and preserve the friability of the seed bed. The power of soil, to transmit water to drains within given times, must vary with their porosity or permeability. *J. J. Mechi, Tiptree Hall, March* 13

AGRICULTURAL LITERATURE.

When we consider the occasion there is in farming for positive data to govern the farmer's proceedings, and the great extent of general experience which is constantly existing to supply the necessary information, is it not extraordinary, and is not the fact unaccountable, that nothing like unanimity prevails even as to what may be termed first principles in farming, but, on the contrary, opposing opinions should exist on most of the important points of good husbandry. The young agriculturist who would take lessons to govern his proceedings, only finds himself the more bewildered the wider he extends his enquiries. For instance, if we suppose him seeking advice as to what should be his steps to best grow Wheat, how conflicting will be the different directions he will receive. He will learn that he must be careful in selecting his seed, to duly prepare the land, to take this crop only in right course, to sow at a proper season, to deposit the seed in the best manner, to put only the necessary quantity of seed, &c., and he will be told an error in any of these particulars will endanger his crop. But alas! when he comes to details, and enquires for the best description of Wheat; how he is to prepare the ground; what crop it should follow; the best time to sow; the mode of sowing; the quantity of seed, &c.; he will be surprised to discover that on each of these questions widely varying answers will be given, and that as yet nothing approaching to certainty can be thus ascertained. What can be said of the state of agriculture when this much must be admitted of its practice? And what are the Agricultural Societies doing that they do not set them at rest? Above 70 years ago, an individual devoted the latter part of his life to a variety of experiments on the cultivation of grain, for the purpose of giving certainty to many such questions, and upon which one would think no doubt should now exist. I allude to Arthur Young and his "Course of Experimental Agriculture." The value of this work is very great, even at the present day, for nothing approaching to it has since been given to the public, and many of the questions his experiments gave replies to remain still open, merely because correct information has not been diffused.

My thoughts have been led into this channel by my disappointment as to much of the matter in the latter numbers of the Journal of the Royal Agricultural Society. I refer to this work with regret, for it is given to the public at great cost and with the best of intentions. Its object is the diffusion of useful information among farmers, but, I am sorry to say, I much question whether it is really carrying out the intentions of the Society. What appears in it will by many be taken as examples for their guidance. But is the matter of a character to make this desirable? Are the practices given such as should be followed? In the last number courses of cultivation are held up that few Agricultural leases will permit a tenant to adopt, and several articles have been lately admitted directly nullifying principles that former communications had lain down; for instance, the practice of growing two white crops in succession has generally been admitted to be so opposed to right principles as to be commonly forbidden, and yet the last Journal contains articles that hold up the practice of growing Wheat after Wheat, and cereal crops successively, as if such courses of cropping can be consistent with good farming. Among the valuable communications in an early number are Mr. Parkes's, on the temperature of soils as affected by drainage, and showing the superiority of deep over shallow drains in clay soils. The proceedings of the Society have set a high appreciation on these papers, and 4 feet draining of clay soils has become very general; and yet if the matter of the Journal be viewed as selected to enlighten farmers, the later communications, which are positive in favour of shallow drains, will lead to the supposition that Mr. Parkes's earlier views have been superseded by later experience. In like manner, the paring and burning of new land is instanced as an advisable preparation for growing grain; and yet Sir Humphrey Davy, 35 years ago, and Arthur Young still earlier, are generally supposed to have shown the mischief of thus dissipating the vegetable and animal remains in a soil and the permanent impoverishment this must occasion.

In speaking thus of a work on which so much money is expended, and such pains are bestowed, I would not damp the zeal of those whose efforts are so praiseworthy, but rather lead them to consider how much more good may be effected by the publication in a cheap form, for the use of small farmers, of an agricultural library by recognised authorities, on the plan of the farmers' series by the Society for the Diffusion of Useful Knowledge, and how desirable it is that some portion of the Society's fund should be so applied. There are gentlemen whose works have been before the public and shown them quite capable of the undertaking. I will instance Professor Low of Edinburgh; how can the Society better devote a part of their funds than to giving to farmers a cheap edition of his works in a form suited for general reading and the farmer's book-shelf? Arthur Young's Diary is at present almost the only farming book to be found there, and a very useful work it has been; but modern change calls either for a revised edition or a new work on the same plan. The price of the Journal is foolishly high; I say this, for if its publication be intended to benefit the farmers, as I suppose will be admitted, it is a serious error to charge a price that places it out of the reach of those who have most occasion to improve their practice. *Hewitt Davis, 3, Frederick's-place, Old Jewry, London, Jan.* 29.

BENEFIT CLUBS.

I have been much pleased lately to observe in the *Agricultural Gazette* discussions on the management of benefit clubs. Like the Rev. Professor Henslow, I myself am a director of one of these clubs, and some time since I was a director of two; I may be supposed, therefore, to have had some experience of their working. In some points I agree with the remarks of the learned Professor; but I am sorry to be obliged to observe that I disagree with him in others. I agree that benefit societies are "among the very happiest resources which the agricultural labourer possesses of helping himself, or else among the most discouraging of all the efforts which he is advised to make for this purpose." So far my opinions coincide with those of the learned Professor, but from attentive observations I am decidedly of opinion that the weekly pay of insuring members in sickness should not be more than their general weekly earnings. The weekly earnings of boys in this neighbourhood are from 3*s.* or 4*s.* to 6*s.* or 7*s*, and my firm conviction is, that such boys, when sick, ought never to receive more than these sums from a benefit club; and I am further of opinion, that no club can be safe which pays more. The ques-

tion with me is not whether a precautionary measure throws suspicion upon a whole class or not, but, if I become a director of one of these clubs, it is, how can I secure its good faith and permanent solvency? Life insurance companies exhibit, and most justly, the greatest suspicion towards the whole community; and, as far as my experience has gone, they subject every insuring gentleman to a much more suspicious examination than the directors of benefit clubs do the boys and others who enter their clubs. That there is very great deception and much imposition practised on clubs which are managed by gentlemen, daily experience proves; and if a boy receives 10*s.* a week in sickness who earns but 3*s.*, 4*s.*, or 5*s*, by hard labour, a strong inducement is held out to him to attempt every kind of subterfuge in order to get pay from the club, and too frequently he succeeds. Boys, likewise, are frequently out of work in the winter, and become in consequence a heavy burden on their parents, who therefore become equally interested in getting a weekly allowance from the club; and some time since I heard that a poor woman said she knew not what she and her family should do in the winter, unless she could get her boys on the club.

My own opinion is, that on account of the many impositions practised on clubs managed by honorary members, few of them are solvent. It is true all things appear very enticing and superficially in a state of satisfaction; but the question is, are the clubs solvent? If they are solvent, then the actuary's tables and calculations were erroneous; for it is well known that the amount of money paid for sicknesses each year in many clubs has greatly surpassed what it ought to have been. But for an illustration of this, let us suppose that a provident benefit club consists of 1000 members, and that the actuary calculated his tables that each insuring member should be on the sick list and receive pay from the club seven days only each year; at 10*s.* a week this would amount to 500*l.* a year. But instead of seven days' sickness and pay for each member, let us suppose that the amount in one such club was eight days and three-quarters, and that in another it reached ten days and a half, it is clear that the outgoings from the former of these would surpass the actuary's calculations by 125*l.*, or one-fourth more than it ought to have been; and in the latter case by 250*l.*, or one-half more than it ought to have been. Now, it is quite certain that many clubs under the management of honorary members are nearly or quite in the worse of these predicaments. But how, it may be asked, can this be, since the clubs are managed by learned and clever gentlemen? The answer is clear; and it is this—such clubs are called "the gentlemen's clubs," and therefore, and on this account solely, the insuring members exercise no watchfulness over each other; indeed they rather conceal practised impositions than give information of them, their language to each other being like this, "I will not injure you, neighbour, and do not you injure me." And, besides, the members of such clubs are often spread over a wide extent of country, and this gives another facility and inducement for fraud. For an example, in an obscure locality a member throws himself on the club, he may be ill, or he may not, but very frequently there is no watchful honorary member near to him, and his neighbours will not injure him, and so he gets his pay, right or wrong. I am writing this from actual experience, and as I do not consider my neighbourhood worse than many others, I conclude it is the same in many other places.

I strongly advise, therefore, that, as the permanent security and solvency of every club should be the chief things aimed at, too much suspicious caution can scarcely be used in the admission of members, and especially when clubs are "gentlemen's clubs," or when they are managed by gentlemen as honorary members of them. I advise particularly, therefore, that the pay in sickness should never exceed the general earnings, weekly, of each class of the insuring members, *i. e.* boys earning but 4*s.*, 5*s.*, or 6*s.* weekly, should not be allowed to insure for more; women also should be put under the same rule; I think, likewise, that I would not admit any portion of the honorary fund into the management of the club; but that it should be reserved for bonuses for the insuring members, as no club can be secure which relies upon such a precarious source; and, besides, the knowledge that such a fund exists acts as an inducement to frauds, since many members try to obtain all they can of it, and he is deemed the luckiest man who manages to handle the most. *Geo. Wilkins.*

Home Correspondence.

Box-feeding.—No one can possibly have perused the *Agricultural Gazette* of March 10, without being struck with the marked difference in every respect between two letters contained in it—the one from the pen of Mr. Lawrence, of Cirencester, and the other from Mr. Geo. Wilkins. The first, every man of business must allow, is a sensible, straight-forward, useful statement of his mode of keeping beasts, and, as he very justly prefaces his letter, the most economical mode of making manure, for which every farmer must feel obliged, even if he is not disposed to adopt the same plan. On the other hand, that of Mr. Wilkins is of no earthly use, and proves nothing but that he can write a satirical letter, and that Mr. Warnes is in some measure to blame, with many other writers on agriculture, for not having been sufficiently explicit in his statement of weights and measures, which information could have been obtained from Mr. Warnes in a direct manner by applying to him by letter, in which case the valuable columns of the *Gazette* would not have been wasted on a letter which only proves that Mr. Wilkins is decidedly prejudiced against box-feeding. Surely it requires no very great stretch of imagination for a farmer to say, I will give 4 lbs. of Linseed-meal per day to 10 beasts, in which case it is only necessary to boil it in just so much water as will scald 10 bushels of chaff, of whatsoever description he likes, into which Turnip tops or bulbs cut up can be mixed as the feeder thinks well. There is nothing novel in the articles mentioned. Each one of them is the every-day food of cattle, and when mixed as described, the avidity with which they eat it shows they like it, and the way they improve on it shows it suits them; besides which, in feeding young beasts, where Barley, Wheat, or straw-chaff is used, I have always found that, if given to them in its dry state, mixed with oilcake, Beans, or other corn, they will eat out the cake or corn and leave the chaff in the manger; the consequence of which is they are always in a dissatisfied state, and making a continual uproar for more food, in which case they are very little likely to make much improvement; but when it is scalded with the Linseed jelly, they eat the whole up clean and go to rest; besides which, when such a plan is pursued, the saving in hay (a very expensive article of food) is very considerable. There is no theory in this, nothing but simple practice, and certainly where the system has been tried it has succeeded. If Mr. Wilkins is determined to become the champion of injured bullocks, let me ask him has he never seen a lot of young beasts exposed to all the inclemency of the weather during four of the coldest months of the year in an open straw-yard, with no other lair than wet straw, and little else to eat but perhaps a few dirty Turnips; the hair on their backs and their general condition showing they would be much better under cover, where perhaps the youngest or the weakest of them is allowed to go when he has caught a cold or some other illness; and then, with the same food, will improve and go by the others in condition when he comes out in the spring? Has he never seen a bullock tied up by the neck for two or three months, obliged to lie in one position, and the state of his thighs evidently showing that he has no choice but to make his lair in his own excrements? Has he never seen a stream of rich liquid manure running out of the said straw-yard and bullock hovel, and finding its way into the nearest pond, where perhaps all the stock have to drink? If he never has, I have, and cannot but think that these are the abuses he should try to remedy; none of them exist in a properly constructed box, the bullock is under shelter, so that no rain drenches either him or his bed; he can go to lair where he chooses, which I have always observed is in the cleanest place (which the appearance of my beasts will prove, they being as clean as if in a grass pound), and he can change his position as suits his convenience; in fact his general appearance will show, what every one who has tried it is aware of, that warmth and comfort to a certain extent are equivalent to food. Should Mr. W. be inclined to indulge in ridicule, surely the man who buys oilcake or corn at a great expense for the purpose of making manure, and then allows it to be washed away by every rain that falls, must offer a better subject than the one who takes care that not one particle shall be lost, which it never can be from a box; but under any circumstances that man is a good citizen of the world who endeavours to find out a better course of proceeding with any business than has hitherto been adopted, and although the plan may not be perfection, he is entitled at least to the thanks of his fellow-creatures for making the attempt. The feeding of bullocks must generally be considered a necessary evil, and much credit is due to those persons who have endavoured to place the accomplishment of it on a more economical footing. The most charitable view that can be taken of Mr. Wilkins's letters and proceedings is, that he has never seen a properly constructed set of boxes or the Linseed properly mixed, and before he writes another letter to condemn those who have both good boxes and do use the Linseed in a proper manner, he had better accept one of the numerous invitations he has received and inspect them, and I feel confident he will then return and employ his talents in showing those who are now wrong in their plans how to improve them. At all events he will see that a bullock will thrive, which is the best evidence he is comfortable, in a well littered well ventilated box, 10 feet square, although he may have 3 feet of excellent manure under him, which Mr. W. will never know to be the case unless he is told, so little does its presence there incommode the animal. *A Farmer, March* 14.—I have read in your paper of March 10, Mr. Wilkins' droll and very amusing, but at the same time very unfair critique on Mr. Warnes's statement on feeding some Dutch heifers, also contained in your paper of 27th Jan. last. It is certainly much to be wished that Mr. Warnes's statement were more precise as to quantities of different sorts of food given to his cattle; for it must be allowed that pailsful and handcupsful are rather vague to indicate quantity, though it now appears they are provincial terms, and mean respectively three gallons and one quart. Mr. Warnes has repeatedly said that the great advantage of his mode of feeding consists in the great variety of articles which may be made the medium of conveying the Linseed, which is the real feeding article, into the animal's stomach, and sufficiently distending it; he does not exactly say so, but very likely he would say that sawdust (if containing nothing injurious), would, assisted by a sufficiency of Linseed, fatten an animal; the "&c." therefore after the words Peastraw evidently means chaff, cut straw, Grass, Turnip-tops, or what not; the better the addition the better the compound. It certainly would have been much more satisfactory if Mr. Warnes, instead of saying the keep of the heifers amounted to 1*s.* 6*d.* per week for the first six months and 2*s.* 6*d.* afterwards, had given the quantity of Linseed, corn, hay, and Turnips, per week consumed by them; but still his account is not so very vague as Mr. Wilkins tries to make it appear, when he says he should like to know where was the profit on feeding these heifers, bought some time in 1847, and adds, if Mr. Warnes had bought them one day for 51*l.*, and sold them the next for 41*l.*, there would have been less loss than he really sustained. This is most unfair; Mr. Warnes says expressly that he bought them just before Christmas, 1847, and sold 4th June, 1848, at 19*l.* each, when the fifth was worth the same money, thus leaving an increase of 10*l.* 10*s* per head for six months' feeding, at 2*s.* 3*d.* per week for Linseed. Now any cattle feeder would say that was very good payment for Turnips and hay (in addition to, or allowing for, the Linseed), even if given *ad libitum*. As for the loss of one of the lot of six, which Mr. Wilkins seems to consider (no one can tell why), a lucky escape, as more of them might have been expected to have died, it is neither more than less than might happen under any mode of treatment, and could have been insured against for about 6*d.* or 7*d.* in the pound premium. But Mr. Wilkins has taken a prejudice against box and compound feeding, of which it is evident he understands little or nothing; and though at the outset he pledges his honour and word to be most accurate in his statements, it is evident he has not redeemed that pledge, for he broadly asserts that Mr. Warnes must have lost much by the lot, and that he kept them for much more than a year, although Mr. Warnes plainly states that he kept four only for six months, increasing 10*l.* 10*s.*, and one as an experiment for one year, which increased 20*l.* 10*s.*, and from which he rightly inferred that the quickest return is the most profitable. This is obvious, although the animal increased in value 10*l* in the last six months, and not 6*l.* 12*s*, as Mr. Wilkins states; though how he came at the figures no one can tell, certainly not from Mr. Warnes's statement. It is really a pity to see a gentleman of Mr. Wilkins's talents and station descend to make such pitiful misrepresentations in order to put down a system certainly intended, and I believe calculated, to benefit the farmers of England; and as for the humanity to which Mr. Wilkins lays claim, it is all a farce, as any one may see who visits any well-conducted box feeding establishment. *Inquirer.*—Among the correspondents of the *Agricultural Gazette*, none have been so voluminous as Mr. Wilkins; and I was glad to see in a late letter, after so many discursive communications upon the subject of box-feeding, a definite proposition for discussion. In his last, however, he seems to have abandoned his argument on this point to make a ludicrous attack upon Mr. Warnes, &c. Passing over this last communication as more suitable for a philological than an agricultural Journal, let me just allude to what he in a former letter undertook to prove: he asserts that what is called box-feeding of cattle is the placing them in an unnatural position, is not the cheapest method of making them fat, nor is it the most economical method of making pabula for plants. As regards the first particular, I confess I am not anxious to dispute it—the question with the farmer is not so much whether he be following Nature as whether he be making money. The farmer wants to make an animal fat, which is an unnatural state: what does it matter if he resort to unnatural means to attain that condition. What I have seen of box-feeding enables me to say that it is the most economical of existing systems; and if Mr. W. says it is not, let him give us the details of a better. I can only say, as regards the economical part of the subject, that I have been on a farm where 60 bullocks have been fatting throughout the autumn and winter—that they have all, with the exception of one animal, been perfectly healthy, and that they have been grazing remarkably well. Judging from the absorption of the liquid manure, from the ammonia being preserved, and the dung undiluted with rain water, as is the case with manure made in boxes, I should have no hesitation in saying that as, in other cases, the manure does not possess these advantages, this is the best method of making *pabula* for plants. Let me advise Mr. Wilkins, if he has any superior method of cattle feeding, to out with it at once, and not subject people to the weekly annoyance of reading in the *Agricultural Gazette* articles on "Box-feeding" containing nothing of any *practical* utility. *J. Simpson.*

Progress of Agriculture.—On propounding the question—"What is to become of the population of England in 1859 if the resources of the country cannot feed them in 1849," a little repetition may be deemed excusable in pointing out the visible neglect in the cultivation of the soil, and in suggesting remedies to meet the wants of the island. There is more charity and wisdom in grappling boldly with threatening danger and difficulties which may fall upon the shoulders of those who come after us, than by attempting to ward them off, temporarily, from ourselves, to return with double force on the rising generation. It is in vain to bluster about the wealth of the country, the advantages of our insular position, the extent of our colonies, and the frothy noise against alarmists; none of these soft sayings will have any effect "on the bird of the air," or deter him from raising his humble voice in warning.

"None are so blind as those that won't see," "none so deaf as those that won't hear." There is no wish to annoy either high or low; good-natured remarks are courted as a means of promoting discussion on a subject of vital importance to the welfare of mankind, and those whose bile may be disturbed By reading the compositions of "Falcon," he can only suppose they must conscientiously feel themselves deserving of a grain of quiet advice. The difference between land cultivated by an intelligent and industrious agriculturist, and the acres farmed by the negligent and idle, is so palpable, a common observer may easily distinguish the line of division between the two holdings. Let any person take a stroll into the country, keeping within a circuit of five miles of his own dwelling, and mark as he proceeds the method of husbandry prevailing. He walks to the public road through his neat and dry orchard; pacing onward for a mile or so, he turns into a pasturage covered with rushes, and the turf bursting with water at every footstep; crossing the first stile brings him into an arable field sown with Wheat, looking yellow and stunted, the furrows containing a superabundance of moisture, and the footway scarcely passable. Little change occurs in the appearance of the land for some distance, excepting an additional supply of weed, in great variety and luxuriance, the ill kept hedgerows and ditches choked up with rubbish. Our friend still advancing in the hope of extricating himself from "the slough of despair," after some further toil, perceives an improvement in the aspect of affairs, the sward becomes elastic, close cropped, and green, the plough land is free from Thistles, Docks, &c., the corn plant grows strongly, showing foliage, dark, healthy and vigorous, old water courses cleaned out, fences properly trimmed, and an air of comfort and independance about the farm indicating a superior system of management. Pondering as he goes, he marvels how so great a dissimilarity should exist, where the tenants have equal advantages in point of soil, rent, and facilities of drainage. Our friend is acquainted with both farmers, and calls to mind the pursuits of each, to aid him in elucidating the mystery. F. has two riding horses for his own use, is a regular attendant in the hunting field, and is known by the name of "the Squire." His family dress gaily, thump on a broken-winded piano, and drive to church in a one-horse vehicle. F. is always complaining of the hard times, and the difficulty of facing his landlord on the rent day. G., his neighbour, is mounted on a good useful hack, is occasionally seen at particular meets when the fox hounds draw a favourite cover, but is much oftener at market and fairs, or superintending the work on his farm; his wife and daughters are always respectably dressed, without the affectation of finery, using their own legs on the Sabbath to take them to church, and are fully employed during the week in looking after the house, and regulating what belongs to their department with the strictest economy, appear happy and contented, never hearing their father complain, who is able from his savings to meet cheerfully the losses incident to bad seasons, which seldom do him much harm, the superior tillage of his land compensating for casualties. By the time our rambler has finished his peregrinations, he arrives at the following conclusions. That F. is above his work, too fond of pleasure, tainted with a certain amount of vanity, and led away by the *éclat* of riding a bit of blood close up to the dogs, forgetting he is going too fast in the same direction. This imaginary excursion may be verified by almost any one living in the country, and will prove what has often been asserted, that extensive tracts are sadly neglected, which might be converted into fruitful fields by the expenditure of labour, now vegetating in idleness, and consuming food without producing any. As the calm contemplation of danger, and the determination to oppose it with fortitude, evinces more courage than the wild rush on the foe in the fever of excitement, so there seems to be more common sense in boldly acknowledging approaching calamity, and using every means which we possess of averting it, rather than living blindly on in the hope that some chance may turn the tide in our favour. Man is doomed to "earn his bread by the sweat of his brow," and in England he is willing to do so, if he has the opportunity; it is melancholy to travel over such breadths of hill and dale, half manned, and consequently but half cropped. The returns of the importation of food from foreign countries should open the eyes of all interested in the productions of the land, as it shows the deficiency of our own supplies, and the enormous quantity of Wheat which might be brought into the market and sold at a fair profit. There is one point which it is difficult to impress upon the minds of agriculturists, viz., the greater the amount of labour diffused through a parish, the lower will be the poor's rate. An able bodied man supported by the rates is a double burthen; he not only eats his bread in idleness, but his surplus strength, which ought indirectly to provide for the aged and sick, is lost; so much capital thrown away. *Falcon.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House, in Hanover-square, on Tuesday last, the 20th March: present, the Earl of YARBOROUGH, Vice-President, in the chair; Sir John P. Boileau, Bart.; Mr. Raymond Barker, Mr. S. Bennett, Mr. H. Blanshard, Mr. Bramston M.P.; Mr. Brandreth, Mr. French Burke, Capt. Caldwell, Dr. Calvert, Mr. Druce, Mr. Fuller, M.P.; Mr. Brandreth Gibbs, Mr. T. C. Hinckes, Mr. Fisher Hobbs, Mr. E. Hussey, Mr. Kinder, Mr. Majendie, Mr. W. Miles, M.P.; Mr. C. E. Overman, Mr. Apsley Pellatt, Mr. W. Roddam, Prof. Sewell, Mr. Shaw (London), Mr. Slaney, M.P.; Mr. H. A. Smith, Mr. Stansfield, M.P.; Mr. Hampden Turner, Mr. Thomas Turner, Prof. Way, and Mr. Henry Wilson.

The following new members were elected:

Thomas, John Ayre, Ditchet, Rose-Ash, Witheridge, Devon
Gregg, James, Ledbury, Herefordshire
Massey, Alfred, Market-Downham, Norfolk
Stables, Walter, Crossland Hall, Huddersfield, Yorkshire
Cooper, William, Barmingham Park Farm, Ixworth, Suffolk
Marks, Richard, Quainton, Aylesbury, Bucks.

The names of six candidates for election at the next meeting were then read.

The following communications were received:

1. A letter from the Rev. R. A. Roberts, in reference to the hydraulic power of underground field-drains, enforced in a work on that subject, dedicated by him to the Society, and recently published, of which he transmitted a copy to the Council.

2. A letter and plan from Mr. Henry Clayton, illustrating what he considered essential improvements, just completed in his double-action tile and pipe machine; by which, with reduced power, he stated that he had obtained increased facility and extension for the manufacture, in one and the same machine, of pipes and tiles of every kind and size; and that he had consequently effected by such productive means, a further reduction in the cost of manufacture.

3. A letter from Mr. W. C. Spooner, on the extension of small-pox in sheep, and his proposed plan for arresting the progress of that malady. On the motion of Mr. Fisher Hobbs, seconded by Mr. Shaw, that communication was referred to the veterinary committee, with a request that they would report on the subject to the Council, at their next monthly meeting on the 3d of April.

PRESENTS.—Plans of farm-buildings from Mr. Witney; and a copy of Mr H. Weaver's work on cottage architecture, presented by Mr. Shaw on the part of the author. A paper by the Earl of Lovelace on Harbours of Refuge, read before the Institution of Civil Engineers. A Report of the Poor-law Commissioners, from Mr. Nicholls; and a Paper on the Agricultural Value of Sewer and other Drainage Waters, from Mr. Cuthbert Johnson, one of the Metropolitan Commissioners of Sewers. Transactions of the Yorkshire Agricultural Society, and Mr. Spence's address to the Entomological Society. The Rural Encyclopædia, from Messrs. Fullarton; the Farmers' Magazine, from the Proprietors; a Treatise on Pleuro-Pneumonia, from Mr. H. Douglas, of Cockermouth; and the Ombrological Almanack from Dr Calvert. Mr. Slaney, M.P., having favoured the Council with some interesting remarks on the mode of ventilating cottages by means of a simple arrangement by which the external air was introduced at the back of fire-places; the Council ordered their thanks for the various communications then made to them, and adjourned to Tuesday next, the 27th of March.

HIGHLAND AND AGRICULTURAL, *March* 7.—Mr. Hall Maxwell, the Secretary, alluded to Mr. Blackhall's method of reducing bones for manure. Mr. Slight had made several experiments, with the view of ascertaining the effect of steam, and there were on the table samples of bones which had been subjected by him to the action of a current of steam of 35 lbs. pressure to the square inch. They still retained their original external form, but so softened, that even the harder and more solid bones could be broken by the pressure of the hand. Mr. Slight was therefore of opinion that the mere process of steaming was not sufficient to bring bones into a state fit for application as manure, but that a supplementary one of pounding or bruising was necessary. With that view he had put some of the steamed bones through a Linseed cake breaking machine, which reduced them to a state somewhat coarser than common bone-dust. He then passed them through a hand corn-bruiser, and, lastly, through a sieve, which brought them to the condition of the specimen before the meeting, greatly finer than any ordinary bone-dust. Mr. Slight was of opinion that the additional process of pulverising might cost from 3*s.* to 5*s.* a ton. Mr. Slight said that Mr. Blackhall's proposed boiler was liable to many practical objections. As a combination of steam generator and receiver, or steaming vessel, its only advantage lay in the saving of two or three pounds in the outfit, which would be more than counterbalanced by the disadvantages attending its adoption. When there is a steam-engine working at high pressure, the connecting its boiler with a separate steaming vessel is simple and inexpensive. Where there is no steam-engine, he felt assured that the economical course was to adopt separate vessels for generating and for steaming.—Dr. Anderson said the examination of specimens of the steamed bones had led him to a conclusion similar to that which Mr. Slight had come to, namely, that a further process of crushing would be required, which, however, it was manifest, from the softened state of the bones, must be comparatively inexpensive. Several communications had, since last month, been published on the question of the economy of the process, the point of which was, that Mr. Blackhall had greatly underrated the price of bones, and overrated the cost of crushing. It appeared that the bone-crusher had not more than 12*s.* per ton to cover the expense of crushing and obtain his profit.

SUBSOIL PLOUGHING.—The Chairman said that Mr. Dickson, of Saughton Mains, would favour the meeting with some remarks on Reid's two-horse subsoil plough, as improved by Mr. Slight.

Mr. DICKSON said it was not necessary to enter into the merits of the practice of subsoil ploughing, that being already sufficiently well established, and all who had carefully observed the depth to which the minute roots of both grain and green crops penetrate, where the soil is suitable for their reception, would at once admit the propriety of deepening the soil to the greatest practicable extent; but it might be interesting to notice very shortly some steps of its progress. In most of the so-called improvements on the subsoil plough, the penetrating members were so greatly reduced in bulk that their effects on the subsoil became more like those of the mole plough, forming a more detached small channel speedily to be reclosed—than like those originally invented by Mr. Smith, whose effects were the severing, breaking up, and actually moving all the subsoil above a given depth, but without bringing it to the surface. Amongst the late improvements of this kind, Reid's subsoil plough held, perhaps, the highest character amongst English farmers, and had also been favourably received in Scotland; but while that implement possessed the advantage of being worked by two horses, it was encumbered to some extent with the same kind of inefficiency complained of in all others of light construction—want of sufficient power to stir the subsoil. Mr. Reid, in the construction of this plough, overcame a difficulty that had been found to attend all those new forms of subsoil plough where a short share only, and no lengthened sole, had been used. In his plough the length of sole was under 8 inches. He gave it therefore four wheels, running in pairs in the furrow before the share, thereby giving it great steadiness and facility in working. Reid's ploughs were made of wood except the share wheels, and other mountings, which were of iron. Mr. Slight, in 1847, had his attention directed to Reid's plough, with a view to manufacture it entirely in iron, and to depart also from the two cast-iron points employed in Reid's implements. On trial of the first one that was made, which was furnished with a flat share, he became more decidedly sensible of the inefficiency of all such forms of the share, whether flat or approaching to cylindrical, as in the case of Reid's. In order to remove these defects, his next step was to add two upright spurs or cutters to the back part of the share, and distant about 4 inches on each side of its stem. This alteration produced a sensible improvement in the action of the implement on the subsoil; the latter was now not only cut horizontally from its subjacent, but was cut in three lines vertically. A partial raising of the subsoil, thus broken up, was also effected, while its partial admixture with the true soil produced that effect which there was good reason for believing to be the proper and legitimate object of the operation. Notwithstanding this last successful addition to the share, Mr. Slight, from further experience, yet observed a particular defect in it. Stones were liable to be caught and retained between the spurs and the stem of the share, in consequence of the three members being all placed abreast, and when such a circumstance did occur, the implement became heavier to draw, and at the same time much less effective, as it then carried a mass of accumulated earth before it. The remedy for this became at once obvious—the two spurs were carried backward until their front edges came rather behind the back edge of the stem. By this arrangement of parts, when a stone was caught by the spur, if small, the plough passed easily through the opening, and if large, it was thrown off laterally. It was thus also freed from the risk of choking, by hard portions of subsoil being retained by the spurs, there being nothing left by which it could be retained. Another important result was also observable from this arrangement of the spurs, they seemed to effect the raising such a medium portion of the subsoil to mix with that above it as is just desirable, without being overdone. The implement was drawn by two horses, penetrating to the depth of 6 inches below the bottom of the common plough furrow, and with that depth the draught was the same as in the common plough, taking a furrow of 9 inches deep. In this respect, however, there would be variations arising from the quality of the soil and subsoil. Upwards of a dozen of these ploughs had been put in operation, and had all worked with the most satisfactory results. Amongst those who had adopted it might be mentioned the Marquis of Tweeddale—a high authority in deep ploughing. He first got one of the form just described, but the Marquis, ever ready where mechanical subjects were under consideration, suggested a change suited to adapt the plough to his own views and practice of subsoil and deep ploughing—being a more extended amalgamation of the soil and subsoil than was generally adopted or desired, and under which practice he had been eminently successful in profitably improving poor clay land. With this object in view, he ordered a second plough from Mr. Slight, fitted, in place of the two spurs, with a square plate or mould board of 2 feet 7 inches broad, springing from the heel of the share. This plate, if taken across, lies horizontally, but slightly concave in that direction above, while in the longitudinal direction it slopes upwards to a height of about 13 inches above the sole. The implement was furnished also with a coulter, set for cutting the land side of the furrow. Thus equipped, the plough carries up a portion of the subsoil as high even as the surface of the field, and while it does so, a like portion of the upper soil falls down past the edge of the sloping plate and occupies the place vacated by the thrown up subsoil. The plough performs this process very satisfactorily, and still with two horses. On a very recent trial of Mr. Slight's improvement, on a field of his (Mr. Dickson's) own farm, a comparison was made between it and a Smith's plough of rather a light construction. The common ploughs were taking furrows of from 9 to 10 inches in depth, and the subsoil ploughs going 6 inches deeper. The draught of each was measured by a dynamometer; the indications given by the common ploughs at the above depths, were from 6½ to 7 cwt. for the two horses; that of the new subsoil plough was between 6½ and 7 cwt. for the two; while the Smith's plough required four horses. Of the actual draught of the latter there was some uncertainty. The instrument was graduated only to 10 cwt., but in the trial the index was carried round to 12, and the actual draught must have been above even that. It went so far, indeed, as to derange the action of the instrument. Judging from the way in which the horses worked, it appeared that the four horses were exerting double the force of the pair in the new plough, while the work performed by the pair seemed in every respect as well done. Indeed, several farmers of great practical experience, who saw the work done, preferred that done by the pair of horses. The field operated upon contained 10½ imperial acres—the soil a clay loam of medium quality, with a retentive subsoil; it was drained in autumn with pipes, the drains being 3½ feet deep and 16 feet apart; the ploughing was done across the line of the drain. The whole of the field, except one half acre which was left undone for experiment, was ploughed and subsoil ploughed, eight days with two pair of horses, and one day with five pair (that being the day the Deanston plough was worked); the daily extent of ploughing was, therefore, one imperial acre per day. The expense thus of subsoil ploughing in a sufficiently effective manner, by the introduction of this improved implement, may be considered as being reduced one-half, say 10*s.* per imperial acre. It had, besides, the advantages of being worked with far more ease than the old implement, and of involving less loss of time, when brought into contact with large stones; instead of requiring to be drawn back and relieved, it was thrown up and passed over the stones, which were afterwards removed. This great efficiency, by means of two horses, increased the sphere of usefulness of the plough, because the process of subsoiling could now be economically performed on small farms, where the old heavy plough could only be used at the inconvenience and expense of procuring additional horse power to that regularly employed on the farm. His object in bringing this subject before the

meeting was a desire to give publicity to what he considered a great improvement in a very important implement. The efficient manner in which the work was done, and at so little expense, compared with any former subsoiling he had ever executed, seemed so desirable a result, as to be worth communicating to this meeting.—Mr. Finnie, of Swanston, said he did not rise to dispute the alleged beneficial effects of deep cultivation. On the contrary, he considered the stirring of the soil to the greatest possible depth one of the essential requisites in order to insure success in farming—but in practice, how should this be done with the most profit? On certain soils, such as those where moorpan required to be broken up, and also where it might be injurious, from the scantiness of the soil, to turn up with the ordinary plough too great a proportion of the subsoil, subsoil ploughing was of the utmost importance; but, on the other hand, where there was a depth of active soil, say from 9 to 10 inches, he from his own experience, would say that more benefit would result from making the ordinary plough go an extra depth; and, by putting in three horses, when the fallow break was turned over before winter, this could be easily accomplished. In no case, he would say, could subsoil ploughing do harm; but, the question was, are there not soils where it would be more advantageous to adopt another method of cultivation? His object, therefore, in offering these remarks was to direct attention to the fact, that, on many soils, it would be more profitable to the farmer to substitute for subsoiling the greatest possible depth it was practicable to turn over the fallow break with the ordinary plough, and whatever extra labour he could afford to expend with his horses let it practicably be in that way. He (Mr. F.) had subsoiled extensively on his own farm, but since he had followed the practice of extra deep ploughing (even turning up a good deal of the subsoil, though not of the best), his crops of grain and Grass fully satisfied him—what, in his case, was most remunerative. Deep ploughing, he would say, was the exception and not the rule; and many, he was sorry to say, could expatiate upon the advantages of subsoiling, while their servants were allowed to fallow down their land, with a depth of furrow, by the ordinary plough, which was a perfect apology for the manner in which that important work should be performed. Lime and other manure invariably sink into the land, and, by thorough ploughing, it was again brought to the surface; this certainly was of some importance.

Injudicious Feeding of Horses.—Professor Dick said he had been induced to come forward to offer a few remarks on the consequences arising from injudicious feeding of horses, which, if made known, might be prevented, and much disease avoided.

He brought forward the subject now, because at this season agriculturists were anxious to get on with their work, and they therefore kept their horses longer in the yoke, and after the fatigues of the day allowed them, perhaps, an extra pailful of boiled food. The horse was, by nature, always feeding. His stomach was small, and able only to contain small quantities at a time, and if it was gorged, disease was at once induced. He observed a gentleman now in the room who had in one year lost about a dozen of horses from these causes. The horses were allowed to be indulged by the servants with an extra pailful—the stomach was not enabled to act—digestion was suspended—and death was frequently produced in a few hours; if not, some other disease, such as acute founder, ensued. Now, all this might be prevented by very slight attention to the practice of feeding. If horses were allowed to stop and feed twice a-day, instead of being worked six hours, and then allowed only one, or at most two, hours in the forenoon to feed—or were the day divided into three portions—the digestive process would go on more readily. Even if no more time were allowed, the division of his feeds would be more in accordance with his nature, but when he is fatigued by long-continued fasting and hard work, the powers become exhausted, and the natural processes do not go on with the same readiness, and rest and time are required. When a person is on a journey, and pressed for time, he frequently gives his horse some oatmeal and water instead of corn—forgetful that digestion must have time to be re-established and set agoing, otherwise disease is likely to arise in another form, and the stomach is often burst by the generation of gas from suspended digestion. But the greatest harm is done by over-feeding immediately after the day's work is over. After working hard all day, and returning to the stable in the evening hungry and fatigued, the horse is indulged with a full allowance, which is placed before him at once; he overloads his stomach, and indigestion takes place. All this occurs soon after the men have left the stable, and, unless the noise he makes is heard by chance, he is often found dead in the morning. After the day's work is over, instead of a pailful (which is the ordinary allowance) being given on their returning from their work, he would recommend only a quantity sufficient to take off the edge of the appetite, and in an hour and a half afterwards the rest of the feed. He would strongly recommend this plan to be adopted at all times, but especially at this season. A gentleman in the room to whom he had recommended this plan, who had previously lost many horses from indigestion and its consequences, has for several years subsequently scarcely lost any, and these only when, from some accidental cause, the proper precautions had not been taken. There was another circumstance which he wished to bring before the meeting. He would call attention to the practice of giving horses food of an improper description. In the neighbourhood of mills, husks were sold at a small price, and were mixed and boiled up as food for horses; this was always dangerous, and was the common cause of an accumulation of dust balls in the stomach and intestines. He called the attention of the meeting to specimens which he laid on the table. These balls were often found in large quantities. He exhibited four balls of large size taken by him from the same horse, and he had seen half a dozen as large as those on the table taken from one horse, which must have been formed in about six weeks, as the horse had never tasted the kind of food until within that period. This disease was most common in Scotland. In England, especially in the chalk districts, another form of concretion was found; there, instead of the dust, or as some call them dung-balls, calcareous concretions are found, specimens of which were shown. The progress of the disease was sometimes slow, at others very rapid—fresh coatings grew with fresh applications of the same food, and ultimately the passage through the intestines was generally stopped, causing inflammation and death; in other cases the balls remain stationary in size and situation, if the kind of feeding is withheld. He suggested the propriety of doing away with such food—it might be used for years without bad effects; but some accidental cause might produce a nucleus for the formation of a dust-ball from the fine particles of Barley or Oats. Another circumstance which he found to be attended with much evil, was giving roots, such as Turnips, Carrots, and Potatoes, without being washed. Some thought these roots should not be cleaned at all—they believed that earth promoted digestion. Horses no doubt were sometimes fond of it; instinct taught them to eat earth when acidity existed in the stomach. They might, however, take too much; and though a remedy for a disease to a certain extent, it was not to be given when the disease did not exist. He had seen 1 cwt. of earth taken out of a horse which had been destroyed by it. He would therefore recommend that all roots when given to animals should be washed. Among the various effects arising from overgorging of the stomach, he would particularly notice one which frequently follows it—that is acute founder, the ultimate effects of which fall principally on the feet, and produce very destructive effects upon them. When a horse has to a certain degree escaped some of the immediate consequences of indigestion and gorging of the stomach, it frequently is found that he is affected with this disease. The sympathy which exists between the stomach and skin is generally known, and appears in a great measure to direct the course of this disease; as a consequence of the derangement of the digestive process, a degree of sympathetic fever is induced, a certain amount of increased irritability of the skin is produced, to the extent, in some extreme cases, of a tendency to throwing off the hair, even of the mane and tail, and as the hoofs are of an analagous nature, are similarly affected, but in consequence of their forming a close envelope of the sensitive and highly vascular foot, a reaction takes place from the hoof confining and compressing it, and being acted on by the laws of inorganic matter, evaporation is produced, which leads to contraction, and consequently increases the disease until the combined and violent action may lead to a detachment of the hoofs, as shown by the preparations, or a descent of the sensitive foot through the hoof takes place. Various other causes tend to produce this disease, and some of them are combined, but it was not his intention, nor was there time, to enter on these. In the early stages the disease might be mitigated, if not altogether removed, but inflammation succeeded rapidly if not checked, and for this purpose he recommended copious blood-letting as the chief remedy. The shoes must be taken off, the sole thinned—even until the blood may ooze through the horn—the crust cut down, and the foot enveloped in soft poultices. The horse from stiffness and pain will, if not attended to often stand for days; but he should by all means be induced to lie down—and this may be done by lifting one forefoot, holding it awhile, and then, when he inclines towards you, pulling him over; he should thus be kept quiet, paying attention to changing his position, to prevent him chafing himself, opening the bowels gently, and giving moderate doses of cooling medicine. With care, cases have occurred when even all the four hoofs have come off, the horse has so completely recovered as to have been sold sound and without any trace of the disease being to be found.

Reviews.

Practical Instruction in the Art of making Capons. E. Dipple, Holywell-street, Strand.

This is a little pamphlet which will help to remove the unaccountable ignorance which exists on a subject intimately connected with the profitable management of poultry. An introductory chapter is given on the general treatment of fowls; and the work is sufficiently illustrated with wood engravings.

Stephens' Book of the Farm. Second Edition. Blackwood, Edinburgh.

We ought before this to have noticed the re-appearance of this valuable work. The second part of its republication has now appeared. The matter has been re-arranged in a somewhat cheaper form. It forms, as a whole, one of the completest works on agriculture of which literature can boast.

Davies' Rotary Engine: an Experimental Inquiry By William Dredge, C E. J. Williams and Co., 141, Strand.

Having had some acquaintance with this engine when it was first brought out, we are the better able to acquiesce in the praise which Mr. Dredge accords to it. The principle is admirable; the advantages it possesses over the common engines, in the less room required, the economy in first cost, and the ability, which in common with all rotary engines, it possesses, of communicating rotary motion directly, are sufficient to justify its general adoption, especially for agricultural purposes The only thing required is mechanical skill in its manufacture. It was the absence of this that made us prefer a noncondensing steam engine of the common construction for our farm-buildings 8 or 10 years ago; but we believe that since that period great improvements have been made in it, and greater skill brought to bear on the merely mechanical operation of constructing its parts, and putting them together.

Calendar of Operations.

MARCH.

Dorset Farm, *March* 12.—Since last report we have had very favourable weather, and work has been got through in a better manner, and with greater speed than we have been accustomed to for some time back. The ground, which has been very wet for a long time, has dried gradually, and is now in very good working order. We have now nearly finished sowing spring Wheat, which has succeeded a double crop of Mangold Wurzel and Peas. We sow about 9½ pecks per acre, drilled 7 inches apart, using a drill 4½ feet wide, which requires two horses, and goes over, on an average, 6 acres a day; when not sowing manure rather more. We have got in about 130 acres of our Barley, which we drill in the same manner, using about 3 bushels per acre; this may be called thick sowing, and wasting of seed, but we find a better sample of corn and fewer weeds with this quantity than with less. We had part of our Potatoes planted about three weeks ago; and we plant large Potatoes cut into sets of two or three pieces, but still a good size. I believe that a large chip is more likely to produce a strong root than a small one, and although it is recommended by some to plant small Potatoes whole, yet these always grow up too bushy and slender, and have not the benefit of air so well as large stalks more openly planted, and will not acquire such a degree of strength to enable them to resist any sudden change of weather; and as the eyes of Potatoes are proportionate to their size, I think it is but reasonable to suppose that the largest eyes will throw up the strongest stalk, stronger than would be produced from a small Potato, though all its eyes were cut out but one, which would prevent it from coming up in a bushy form. Although no remedy has been found for the disease of the Potato, and even the disease itself has not been understood, yet it is evident that the more vigorous we get the plant the better able it will be to resist any blight; and there is one grand mistake which we have long persisted in, of allowing the Potatoes to chimp long before they were planted, and thus letting them waste their strength to no purpose. It is certainly best to put them in the ground early, so that they may exert their first strength to good account; they are also often planted in lines too close together; the drills should not be less than from 27 to 30 inches apart, and they may be 8 or 9 inches in them, they will then have more access to the air than if they are planted 12 inches apart, in drills of 20 inches, while an acre will contain the same number of plants. The wide drills will admit of working and earthing-up between them, and every Potato grower knows how much better they are for a little fresh earth. We have had spare hands gathering stones off the pastures, these we lay on the roads; they cost us about 6d. per yard in packing, or 3d. per 8 bushels, heaped measure; they are nearly as cheap as gravel, and far more durable. The autumn-sown Wheat looks generally well, and Grass is becoming plentiful, especially in water meadows, which have had nothing to prevent them from growing during the greater part of the winter. Our sheep are doing very well, we have still a few to lamb; they are feeding chiefly on Turnips, Mangold Wurzel, and a little Grass, but they will soon be nearly dependent on the Grass. We shall be employed for some time sowing Barley and Oats, and then getting the land intended for roots prepared. *G. S.*

Stirlingshire Carse Farm, *March* 17.—The weather during the past week has been very suitable for out-door labour, and in consequence we have been variously employed. We have finished the sowing of Beans with a capitalfilth; Oats we have begun to sow. We have had several labourers during the week opening up tunnels which had been filled up with sand and tree roots; these tunnels convey the drain and surface water through sea banks, and always require to be kept very clean. We have also had the drain-plough, which was noticed in a former report, in operation on the farm, the first cut of which was 16 inches deep; it wrought admirably and was drawn by 14 horses. We have had slaters repairing some of the roofs which had been damaged by the recent high winds. *W. F.*

Sussex Farm, *March* 19.—We have now finished sowing 30 acres of Oats, and in a few days we shall sow 12 acres more. Sowing Clover seeds, rolling Oats, Tares, Clover, Grass, harrowing Wheat, and threshing Oats. At the end of the week we shall cart dung for the Mangold Wurzel crop. Our ewes are now lambing very fast, and we have a fair proportion of twins; the lambs in general come very strong this year, the ewes being in good condition. Our working horses receive per week each 14 bushel of bruised Oats, 1 peck of Peas, and 30 lbs. of Carrots, and a full allowance of hay and straw chaff. *J. B.*

Notices to Correspondents.

Boxes: *Novice.* For "point" read "front," The paling should be 5 feet off the bottom of the box.

Buckwheat: *Inquirer* Drill in rows a foot apart 1 bshl. per acre in mid-May, on any clean sandy soil.

Farm of 70 Acres of Light Land: *Anon.* Supposing you adopt the 4 course or 5-course rotation, one pair of horses will suffice, and you will have work for other two men, besides such piece-work as hoeing and harvesting the crops.

Farm Capital: *Anon* 1500*l.*, probably more, if you needed to drain it also. At the same time much of this large sum is needed to purchase the stock required to eat the produce of high farming. If you could let your Turnips to dealers or butchers for consumption by their stock a less sum would suffice. Further, next week.

Mr. Lawrence's Box-feeding: *Queen Glendower.* The pig-sties were formed 15 inches deep, mainly in reference to the possible flow of water from a neighbouring pool nearly at that level, and also because it was an experiment as regarded pigs.

Osiers: *A. Bruce.* See page 46 The Osier does not particularly like a "marshy" spot. It likes a deep sandy soil with a moist subsoil.

Peat Charcoal: *A Subscriber.* A pamphlet was published last year by an Irish engineer: but its methods are too much on the large scale to suit you. There is an Essay in the 7th vol. of the Royal Agricultural Society's "Journal," which will be useful. The profits of the plan depend on your means of sale, with which we are unacquainted.

Poultry: *A Family Man* will find the calculations he asks for, in Mr. Dixon's work on "Ornamental Poultry."

To Fix Ammonia: *W. B.* If you can char your sawdust before using it to absorb the liquid manure, that would fix the ammonia sufficiently. Ordinary farm manure may be believed to contain about 14 lbs. of ammonia in a ton, which will need about ¾ of a cwt. of the ordinary crushed gypsum to furnish acid enough to saturate it.

Wheat: *J. N.* It is generally impossible to name a variety by a sample of the grain. You cannot often recognise a breed of poultry by its egg. The Wheat is a large-berried sort; exhibiting some coarseness, which is, however, excusable, if, as is probable, it was taken from a plant of luxuriant growth.

Mi-c: *Inquirer.* What is "Sheep's Parsley?"

Errata. At page 155, Mar. 10, col. c, two lines below the table, for "moss of 2000 acres," read "moss of 1000 acres." And at page 156, col. *b*, line 19 from top, for "30 to 40 quarters," per acre.

Markets.

COVENT GARDEN, March 24.

The market continues to be well supplied with Vegetables and Fruit. Pine-apples are sufficient for the demand; A few hothouse Grapes have made their appearance. Pears are very scarce; and Apples are dear. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst vegetables, Carrots and Turnips are abundant; Cauliflowers and Broccoli sufficient for the demand. Asparagus is dearer; French Beans, Rhubarb, and Seakale are plentiful. Potatoes remain stationary. New Potatoes begin to make their appearance. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Christmas Roses, Camellias, Gardenias, Tulips, Hyacinths, Cinerarias, Tropæolums, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 9s	Almonds, per peck, 6s
Grapes, foreign, p.lb., 1s6d to 3s	— sweet, per lb., 2s to 3s
Strawberries, per oz., 1s to 3s	Walnuts, p. 100, 1s 6d to 2s
Apples, dessert, p. bsh., 6s to 12s	— p. bush., 16s to 24s
— kitchen, p. bsh., 4s to 8s	Nuts, Bar., p. bush., 20s to 22s
Oranges, per doz., 1s to 2s	— Filb., p. 100 lbs., 60s to 100s
Lemons, per doz., 1s to 2s	— Cob, p. 100 lbs., 90s to 150s
— per 100, 10s to 18s	— Brazil, p. bsh., 12s to 16s
Chestnuts, p. peck, 4s to 7s	

VEGETABLES.

Cabbages, p. doz., 3d to 1s	Spinach p. sieve, 1s 3d to 1s 6d
— red, p. doz., 2s to 6s	Onions, p. bunch, 2d to 4d
Savoys, per doz., 3d to 1s	— p. bush., 1s 6d to 3s
Greens, p. doz. bunches, 1s 6d to 4s	— Spanish, p. doz., 1s 6d to 4s
Cauliflowers, p. doz., 2s to 4s	— pickling, p. hf. sieve, 1s 6d to 3s
Broccoli, white, p. bun., 1s to 2s	Shallots, per lb., 4d to 8d
— brown, p. bun., 6d to 1s 8d	Garlic, per lb., 4d to 8d
Sorrel, p. hf. sieve, 9d to 1s	Artichokes, Jerusalem, p. half sieve, 9d to 1s
Potatoes, per ton, 60s to 180s	Lettuce, Cab., p. sc., 4d to 9d
— per cwt., 5s to 9s	— Cos, do., 9d to 1s 6d
— per bush., 2s 6d to 5s	Endive, per score, 1s to 2s 6d
Turnips, p. doz. bun., 1s to 2s	Mushrooms, p. pottle, 6d to 1s
Red Beet, per doz., 6d to 1s	Small Salads, p. pun., 2d to 3d.
Horse Radish, p. bdl., 1s to 6s	Fennel, per bunch, 2d to 3d
Asparagus, p. 100, 2s 6d to 9s	Savory, per bunch, 2d to 3d
Seakale, p. punnet, 9d to 2s	Thyme, per bunch, 2d to 3d.
Rhubarb, p. bundle, 6d to 1s 6d	Watercress, p. doz. bun., 6d to 9d
French Beans, p. 100, 2s6d to 4s	Parsley, p. hf. sieve, 2s to 4s
Cucumbers, each, 1s 6d to 4s	— Roots, p. bdle., 1s to 1s 6d
Leeks, per doz., 6d to 1s	Marjoram, per bunch, 2d
Celery, p. bundle, 6d to 1s 3d	Mint, green, per bunch, 4d to 8d
Radishes, p. 12 hands, 1s to 1s6d	
Carrots, p. doz. bun., 3s to 5s	

HAY.—Per Load of 36 Trusses.

Smithfield, March 22.

Prime Meadow Hay	72s	to 80s	Clover	60s to 95s.
Inferior ditto... ...	55	65	New Clover	— —
Rowen	48	60	Straw	27 32
New Hay	—	—		J. Cooper.

Cumberland Market, March 22.

Prime Meadow Hay	78s	to 84s	Inferior	50s to 56s
Inferior ditto.	50	65	New Clover	— —
New Hay	—	—	Straw	28 33
Old Clover	88	94		Joshua Baker.

SMITHFIELD, MONDAY, March 19.

We have a very large supply of Beasts, and the demand continues small; consequently prices are lower. A few choice selling Scots may have made 3s. 8d., but so rarely that we cannot quote so high. There are also more Sheep; trade is exceedingly dull. Many big Half-breds make but little over 4s., and 4s. 6d. is the extreme quotation for choice Downs. Lambs are rather lower; they make from 6s. to 6s. 8d. Trade is heavy for Calves and Pigs, at rather lower rates. From Germany and Holland there are 270 Beasts, 710 Sheep, and 56 Calves; from Norfolk and Suffolk, 2400 Beasts; and from Scotland, 200.

Per st. of 8 lbs.—	s d s d	Per st. of 8 lbs.—	s d s d
Best Scots, Herefords, &c. ...	3 4 to 3 6	Best Long-wools .	3 10 to 4 2
Best Short-horns	3 0 — 3 4	Ditto Shorn ...	......
2d quality Beasts	2 4 — 2 10	Ewes & 2d quality	3 2 — 3 8
Best Downs and Half-breds ...	4 2 — 4 6	Ditto Shorn ..	.....
Ditto Shorn .	.....	Lambs	......
		Calves	3 8 — 4 10
		Pigs	3 8 — 4 8

Beasts, 3722; Sheep and Lambs, 22,240; Calves, 114; Pigs, 260.

FRIDAY March 23.

The supply of Beasts to-day is very moderate, but trade continues in a very sluggish state. Although the weather is good it is difficult to obtain an advance; however, 3s. 8d. is in more instances given for a choice Scot, and 3s. 6d. for a very selling Short Horn. The number of Sheep is large for the time of year, but chiefly consists of those left from Monday and foreigners. The demand is very limited; Monday's quotations represent the small amount of business transacted, and many remain unsold. There is very little Lamb wanted, owing to the cold weather; 6s. 8d. is an extreme price. Calves are rather lower. From Holland and Germany we have 87 Beasts, 430 Sheep, and 66 Calves; from Scotland, 200 Beasts; and 150 Milch Cows from the home counties.

	s d s d		s d s d
Best Scots, Herefords, &c.	3 4 to 3 8	Best Long-wools .	3 10 to 4 2
Best Short-horns	3 2 — 3 6	Ditto Shorn ...	...
2d quality Beasts	2 6 — 3 0	Ewes & 2d quality	3 2 — 3 8
Best Downs and Half-breds ...	4 2 — 4 6	Ditto Shorn ..	...
Ditto Shorn ..	....	Lambs	...
		Calves	3 8 — 4 8
		Pigs . ..	3 8 — 4 8

Beasts, 652; Sheep and Lambs, 4040; Calves, 195; Pigs, 250.

POTATOES.—SOUTHWARK, WATERSIDE, March 19.

The Committee report that the continental arrivals continue to be liberal, which, with our home supply, is equal to our our wants. The following are this day's quotations:—York Regents, 100s. to 130s.; Scotch, do., 90s. to 110s.; Scotch Cups, 100s. to 110s.; Whites, 70s. to 80s.; French Whites, 80s. to 95s.; Belgian do., 80s. to 90s.

HOPS, FRIDAY, March 23.

Messrs. PATTENDEN and SMITH report that the market continues very firm for all good Hops. The official statements just published as to Malt and Hops show an increase in the quantity of Malt made up to October 10th last of 567,007 qrs., as compared with 1847, and a reduction of 3095 acres of Hops in cultivation up to 1st August last, which, with extensive grubbing still going on, must ultimately have a very beneficial effect on the Hop market.

MARK LANE.

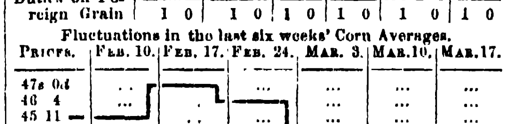
MONDAY, MARCH 19.—The supply of English Wheat by land carriage samples this morning being small, factors were enabled to effect a clearance on nearly the same terms as Monday last. Foreign met a retail inquiry at about late rates.—Barley, with the exception of the finest English malting, must be written 1s. per qr. cheaper.—Beans, white, Peas, and Oats are a dull sale, and barely support our quotations: Grey Peas are 1s. per qr. cheaper.—The top price of Flour is reduced 2s. per sack.

FRIDAY, MARCH 23.—Owing to the continued large arrivals of foreign Wheat since the 9th inst. prices have declined fully 2s. per qr. in this market, which has been pretty generally followed throughout the kingdom. Consumers continue to purchase cautiously, and solely for their immediate requirements. Spring corn has been neglected, buyers having the advantage, excepting for Maize, which, during the week has been in increased request for Ireland, at a slight improvement. Galatz is inquired after at 32s., Ibraila 30s. to 31s., other sorts in proportion. Flour has been much neglected, and the town millers have been compelled to reduce the top price 2s. per sack, a similar reduction having been submitted to on French and other descriptions. The arrivals of foreign Wheat and Barley since Monday have been considerable, the former amounting to 31,440 qrs., and the latter to 9520 qrs. This morning's market was badly attended, and sales of all descriptions of grain confined to retail purchasers, on about Monday's terms.—At New York, on the 7th, quotations of Flour and grain were too high to admit of exportation to this kingdom, and prices there and in New Orleans were much the same as on the leaving of the mail of the 20th.

LIVERPOOL, FRIDAY, MARCH 23.—To-day's Market was pretty well attended by country dealers, and there was a good business in Wheat at fully Tuesday's rates. Flour was also in request at the same price, but business was checked by holders generally requiring an advance of 6d. per barrel. No change in Oats or Oatmeal, and the demand limited. Barley and Peas without alteration. Beans rather dearer. Indian Corn was in fair request, and Yellow was again 6d. per qr. higher.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Feb. 10	45s 11d	29s 8d	17s 3d	27s 2d	30s 11d	33s 0d
— 17	47 0	29 8	17 2	26 9	29 9	34 4
— 24	46 4	29 8	17 5	27 8	30 10	32 11
Mar. 3 .. .	45 6	29 1	19 7	26 11	30 2	32 11
— 10	45 1	29 0	16 11	26 11	30 1	33 1
— 17	45 4	29 2	17 0	23 9	30 11	30 8
Aggreg. Aver.	45 10	29 4	17 2	26 6	30 5	32 10
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.



PRICES CURRENT.	London. Mar 12	London. Mar 19	Liverpool. March 13	Liverpool. March 26.	Wakefield. Mar. 9.	Wakefield. Mar 16	Boston. Mar 14	Boston. Mar 21	Birmingham. March 15.	Birmingham. March 22.
	qr.	qr.	70 lbs.	70 lbs.	qr.	qr.	qr.	qr.	62 lbs.	62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d	s. d. s. d	s. s.	s. s.	s. s.	s. s.	s. d. s. d	s. d. s. d.
New, red ...	38 to40	38 to40	6 2 6 8	6 2 6 7	44 to48	44 to46	36 to44	36 to44	5 9 6 4	5 9 6 4
„ white ...	44—47	44—47	6 8 7 3	6 8 7 3	45—52	45—48	40—46	40—46	6 1 6 7	6 2 6 8
Old, red ..	40—43	40—43	6 6 6 9	6 6 6 8	44- 46	44 46	—	—	6 0 6 6	6 0 6 6
„ white ...	46- 50	46- 50	6 9 7 6	6 9 7 6	51	-50	—	—	6 0 6 8	6 1 6 8
Foreign	40—57	38—56	—	6 2 7 3	—	33—51	—	—	6 0 7 0	5 4 7 0
			480 lbs.	480 lbs.						
Rye—New ...	20 22	24- 26	—	—	—	—	—	—	—	—
Foreign meal	7l. 5s	7l. 5s	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	22—26	22- 25	—	—	22 - 25	22 - 25	26—28	26—28	23—27	23—27
Malting... ...	26—28	25 -28	30s—32s	30s—32s	27- 31	27 31	30—32	30 -32	29—33	29—33
Foreign... ...	20—28	20—28	—	—	21—28	22 - 28	—	—	—	—
					6 bush.	6 bush				
Malt—Home	—	---	—	—	39—42	—	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	20—24	20—24	2s 8d 3s 0d	2s 8d 3s 0d	—	—	20—24	20—24	18—30	18—30
Black...	16—20	17—21	—	2 3 2 6	—	—	—	—	17—18	17—18
Foreign	15—22	15—22	2 3 2 5	2 3 2 5	—	—	—	—	—	—
			qr.	qr.						
Peas—Boilers	24—27	24—27	35s—	35s—	30—34	30—34	—	—	36—44	36—44
Grinding.,.	28—30	27—29	29 —31s	29 —31s	—	—	—	—	12—13	12—13
Foreign ...	24—32	24—32	32 —34	32 —34	—	—	—	—	—	—
Beans—										
New, small ...	20—30	20 - 30	31 —34	31 -34	30 - 32	30—32	26—32	26—32	10—13	11—13
Longpods, &c....	26—32	26—32	—	—	—	—	—	—	—	—
Old	27—39	27—39	33 —35	33 —35	35—36	35—36	34—36	34—36	15—16	15—16
Foreign ...	22—36	22—36	30 —32	30 —32	27- 30	27—30	—	-	10—13	10—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ..	36—40	36—40	—	—	—	—	—	—	—	—
LinseedCakes										
British ...	10l. 5s	10l. 5s	7l. 15s—8l	7l. 15s—8l.	—	—	—	—	—	—
Foreign ...	6l.—8l.	6l.—8l.	—	—	—	—	—	—	—	—
									196 lbs.	196 lbs.
Indian Corn—	24—28	24—28	27 —28	27s—30s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	35—44	35—42	34—35	33—35	—	—	35—42	35—47	37—40	37—40

Weekly Averages and Imports.	Aver. Mar 20	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	44 8	31440	45 1	11787	46 2	8903	42 5	2701	—	—
BARLEY ...	28 2	9520	29 0	629	30 3	2729	—	—	23 6	—
OATS... ...	18 2	10050	16 11	5194	18 9	2825	12 10	1383	17 9	—
RYE	27 0	—	26 11	—	—	—	—	—	—	—
BEANS ...	26 9	—	30 1	3574	32 2	1301	27 4	273	—	—
PEAS... ...	30 11	—	38 1	26	27 8	59	—	—	—	—
SIGNED {	*KINGSFORD and LAY.*		*SEGAR and TUNNICLIFFE.*		*SANDARS and DUNNS.*		*THOMAS WRIGHT.*		*J. and C. STURGE.*	

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FRENCH GORSE, OR FURZE.—Fine New Imported Seed, 1s. per lb. Also Fresh Imported LUCERNE, 10d per lb. True ITALIAN RYE-GRASS, 6s. 6d. per bushel. White Belgian and other Carrots, Yellow Globe and other Mangold Wurzels, Skirving's Liverpool and other Swede Turnips, Giant Saintfoin, and all other Agricultural Seeds, at the lowest market prices.

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YELLOW GLOBE MANGOLD WURZEL, 80s. per cwt.

Improved Long Red Ditto ... per cwt. 80s.
Cattle PARSNIP .. .. „ 65s.
White Belgian CARROT .. ... „ 90s.

*** For Cash.

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SEEDS. — MEADOW AND PASTURE GRASS SEEDS, in mixtures suited to various soils, &c., at 32s. per acre, allowing 2 bushels and 12 lbs. to each acre. Directions for sowing and treatment will accompany the seeds. Mixed sorts for improving old Grass Lands, 1s. 3d. per lb. Fine sorts for forming Lawns, &c., 1s. 4d. per lb.

GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address GEORGE GIBBS and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c. &c., 26, Down-street, Piccadilly, London.

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		s. d.
MANGOLD WURZEL, fine long red	per lb.—	0s 9d
„ „ Yellow Globe and Red Globe	„ ...	0 9
„ „ Long Yellow	„ ...	1 0
WHITE SILESIAN SUGAR BEET	„ ..	1 0
CARROT, large White Belgian .	„ ..	1 0
„ large green-top red Altringham .	„	1 0
LARGE CATTLE PARSNIP ..	„ ..	1 3
TURNIP, Swedes, fine purple-top ..	„ .	1 0
„ „ Skirving's ..	„ ..	1 0
„ Norfolk White, Green, and Red round .	„	0 6
„ Skirving's Improved Purple-top Scotch	„ ...	0 10
„ Fine Green-top Yellow Scotch .	„ ...	0 10
„ Dale's Hybrid .	„ .	0 10
„ Yellow Tankard or Scotch Pudding	„	0 10

And all other Turnips at the lowest prices.

LARGE DRUMHEAD CATTLE CABBAGE...	„ ...	2 6
FINE LUCERNE	„	0 10

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THE FINEST MIXED LAWN GRASSES, 5s. per peck, or per lb. ..	...	1 3
Fine Pacey Rye Grass, per bushel	..	5 0
True Italian Rye Grass, per bushel	...	5 6

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S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

Sales by Auction.

TO PINE GROWERS.

MR. J. C. STEVENS is instructed to announce for sale by Auction, at his Great Room, 38, King-street, Covent-garden, on TUESDAY, 27th March, at 12 for 1 o'clock, in lots, about 600 PINE PLANTS, the property of a gentleman who is reducing his stock, comprising Providence, Montserrats, Enville, Queens, and Otaheite, in-fruiting Plants, Succession, and Suckers, all strong, clean, and healthy.—May be viewed the morning of sale, and Catalogues had.

ORCHIDS, &c., JUST RECEIVED PER "AVON" FROM CHAGRE.

MR. J. C. STEVENS begs to announce for Sale by Auction, at his Great Room, 38, King-street, Covent-garden, on TUESDAY, April 3, at 11 for 12 o'clock precisely, the collection of ORCHIDS made by Mr. Warszewicz on his journey from Costa Rica to Panama, through the State of Veragua, South America, a district never before traversed by any European. Dried specimens of a great proportion, and many drawings, have been received, and will be exhibited at the Sale, amongst which are several quite new and very fine species. Catalogues are preparing, and further particulars will be given in the next Number of the *Chronicle*.

THREE THOUSAND GREENHOUSE AND CHRYSANTHEMUM PLANTS to be sold on MONDAY, 26th of March, 1849, and following days, at Coton House, near Rugby, Warwickshire, in consequence of the Marchioness Dowager of Queensberry resigning the residence. Catalogues will be forwarded on receipt of two postage stamps.—Direct to A. GREGORY, Coton House, near Rugby, Warwickshire.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—GEORGE NEIGHBOUR and SON, 127, High Holborn, London.

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MILTON'S BEE-HIVES.—These Hives are made in every variety, for the purpose of taking the honey without killing the bees. They are composed of various materials, to suit all climates, and may be relied upon for practical use. Their simplicity of construction and easy management insure success.

BEE GLASSES of all sizes, and every article connected with the Apiary supplied. A Sheet of Illustrations of Bee Hives, &c., 1s. The "Practical Bee Keeper," by JOHN MILTON, 4s. 6d.

10, Great Marylebone-street, Wimpole-street, London.

IMPROVED FLOWER STICKS—THESE FLOWER STICKS are of a circular form, thereby avoiding angles and sharp edges, which are liable to cut and injure the plants. They may be had stained brown or green to suit the various plants.—To be had of all respectable Nurserymen and Seedsmen, and dealers in Garden Implements. Manufactured and sold Wholesale, at H. MORRELL'S, 149, Fleet-street, London.

N.B. Samples to be seen at the Office of this Paper.

FLOWER-POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford street, near Hyde-park

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, pernacle, brent, and laughing geese, sheldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch street.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, London, are supplying 16-ounce SHEET GLASS at prices varying from 1½d. to 3½d. per foot, 21-ounce, 2½d. to 5d., according to size. Also Patent Rough and Polished Plate, double crown. Small sheet squares, in 100 feet boxes, from 12s. 6d. per box.

A well selected stock of Milk Pans, Propagating Glasses, Cucumber Tubes, Cream Pots, &c., Glass Shades for Ornaments, Lamp Shades, Metal-stand Frames, Lactometers for trying the quality of milk, and every article usually sold by the trade. Estimates and prices forwarded on application.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—The readers of the *Gardeners' Chronicle* of Saturday, Feb. 24th, must have observed the high terms in which this Glass was spoken of by Dr. LINDLEY. We have therefore re-arranged our list of prices to correspond precisely with those of the Patentee, to which we would beg the attention of the Nobility, Clergymen, Gentry, and others.

In Crates of the sizes as manufactured ..						6d. per foot.
In Squares			under 8 by 6	...	..	4 ,,
,, 8 by 6	and	under 10 by 8		...	..	4½ ,,
,, 10 by 8	,,	14 by 10		...	..	5 ,,
,, 14 by 10	,,	1½ foot		...	...	5½ ,,
,, 1½ foot	,,	3 ,,		...	...	6 ,,
,, 3 ,,	,,	4 ,,		...	..	6½ ,,
,, 4 ,,	,,	5 ,,		...	...	7 ,,
,, 5 ,,	,,	6 ,,		...	...	7½ ,,
,, 6 ,,	,,	8 ,,		...	...	8½ ,,
,, 8 ,,	,,	10 ,,		...		...10 ,,
		Quarries		...	...	6 ,,

Averaging ½ of an inch thick, and about 26 oz. to the foot.

JAS. PHILLIPS & Co., 116, Bishopsgate-street Without, London.

HARTLEY'S PATENT ROLLED ROUGH PLATE GLASS, for Horticultural purposes.—It is now proved beyond a doubt that the above Glass is very far superior to any hitherto discovered for all kinds of Horticultural uses. (See *Gardeners' Chron., Feb. 24th*, 1849, p. 115.)

WILLIAM PATTEN AND Co., GLASS, LEAD, and COLOUR MERCHANTS, 20, Old Fish-street, Doctors' Commons, London, beg to inform the public that in consequence of the numerous orders they have executed in Ireland, Scotland, and the principal counties of England, they have entered into such arrangements with the Patentee as will enable them to supply the above Glass in any quantity, strictly at the Manufacturer's prices. W. P. and Co. have a large quantity of Crown Squares in Stock, in 100 feet boxes, from 1d. per foot.

P.S. Sole Manufacturers of the Anti-Corrosion and Mineral Paint for all kinds of Out-houses, Park Fencing, Farm Buildings, &c.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 31, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

GLASS.

E. AND W. H. JACKSON are supplying SHEET, ROUGH, PLATE, and CROWN GLASS for Horticultural purposes, at very reduced prices. BRITISH AND PATENT PLATE of superior manufacture, for Glazing dwelling-houses, for which purpose these articles are now superseding all inferior Glass. ORNAMENTAL GLASS of the newest designs for the decoration of Conservatories, &c. E. and W. H. J. also supply PATENT OPTICAL FLINT GLASS, Thin Glass Slides and Cells for Microscopic purposes, French Shades, Propagating Glasses, &c. Estimates, Lists of Prices, and every information forwarded on application at their Warehouse, 315, Oxford-street, London.

GLASS.

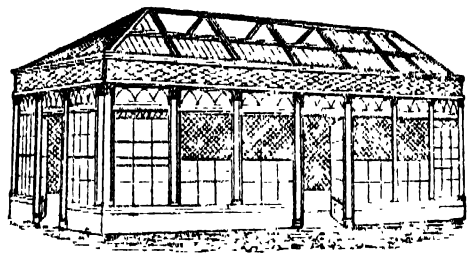
THOMAS MILLINGTON, 87, Bishopsgate-street Without, London (same side as Eastern Counties Railway Terminus). BRITISH PLATE GLASS, nearly ¼ inch thick, in sizes under 1 foot superficial, 1s. 2d. per foot; this is the best article for Greenhouses and Garden Frames of every description, as nothing can break it an ordinary way. Horticultural Glass, in cases of 200 feet, No. 16 oz., 40s.; No. 21 oz., 60s.; No. 26 oz., 87s. 6d.; No. 32 oz., 112s. each, case included.

Cut Squares, in 100 feet boxes.				Crown.		No. 16 Horticultural.	
Sizes under 6 ins. by 4 ins. ..				10s. 6d.	...	12s 6d.	per box.
6 by 4	,, 7	by 5	..	12 6	..	15 0	,,
7 by 5	,, 8	by 6	..	14 6	.	17 6	,,
8 by 6	,, 10	by 8	..	15 6	...	20 0	,,

Squares above 10 by 8, in Crown or Horticultural, 2½d. to 3d. per foot, according to size and quantity. Patent Rough Plate Tiles, ¼ in., 10d.; ¼ in., 1s. 3d. each; do Slates ¼ and ¼ in. thick. Patent Rough Plate Glass for Skylights, Warehouses, and Floors, ¼ in. thick, 6d.; ¼ in., 1s.; ⅜ in. 1s 2d.; ½ in., 1s 6d.; ¾ in., 2s.; 1 in., 3s. per foot, in sizes under 5 feet superficial. Lactometers, for testing the quality of milk, 4 tubes, 7s. 6d.; 6 tubes, 10s., complete. Glass Milk-pans, Pastry Slabs, Rolling-pins, and Moss Dishes for Bulbous Plants. Propagating and Bee Glasses. Fish Globes. Gas and Lamp Glasses of every description. Linseed Oil Putty, 8s., White Lead, 26s. per cwt. Linseed Oil, Turpentine, Paints, Colours, Varnishes, Brushes, and Tools in every variety.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.



J. WEEKS AND Co., King's road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

CUCUMBER AND MELON BOXES AND LIGHTS.—One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 6s. Garden Lights of every description. Conservatories, Green and Hot-houses made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England.

JAMES WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

GUANO CHEAPER THAN EVER.

POTTER'S GUANO is now 7l. per ton, and of superior quality, owing to recent chemical discoveries, and an improved mode of manufacture. An experience of eight years has shown it to be fully equal to the best Peruvian Guano, and 25 per cent. cheaper. See testimonials. If a quantity is taken a specific arrangement may be made.

GYPSUM (Great Reduction in Price), is offered at 15s. per ton, at the works, loose, or in bags if required. It has been analysed by an eminent chemist, and pronounced pure.—W. H. POTTER, 28, Clapham-road Place, Kennington.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:

CORN AND GRASS MANURE,	per ton	£9	10 0
CLOVER MANURE . .	,,	8	0 0
TURNIP MANURE	,,	7	0 0
SUPERPHOSPHATE OF LIME ...	,,	7	0 0
SULPHURIC ACID AND COPROLITES	,,	5	0 0

N.B.—PERUVIAN GUANO, from selected cargoes (in Dock), 9l. 10s. per ton. SULPHATE OF AMMONIA, &c.

Office, 69, King William-street, City, London.

TO ORCHIDEA GROWERS.

BURBIDGE AND HEALY, 130, Fleet-street, respectfully call attention to their method of warming Orchidea Houses. They have had the honour of warming the Orchidea Houses at the undermentioned places:

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick, additions to the House.
Also the Orchidea Houses of the following distinguished growers of this interesting class of plants.
The Bishop of Winchester, Farnham Castle.
J. Lyons, Esq., Ladiston.
J. Warner, Esq., Hoddesdon.
Messrs. Henderson, Pine-apple Place.
J. Schroder, Esq., Stratford.
R. Hanbury, Esq., Poles, near Ware.
W. Webb, Esq., Clapham.

BURBIDGE AND HEALY'S NEW BOILER.—The above is a modification of their Boiler (before published), modelled expressly for the large Conservatory, Chiswick Gardens, where it is now at work. From the observations H. and H. have been able to make, they are warranted in stating it to be the "Ne plus ultra" for warming large plant structures. As a proof, one charge of fuel has been kept burning for 48 hours without any addition, and one boiler of the size used is equal to warm 1500 feet of 4 inch pipe. They are also extensively put up at the Royal Botanic Gardens, Kew. Smaller boilers upon the same plan.

BURBIDGE and HEALY, 130, Fleet-street, London.

PATENT ALKALI COMPANY'S METALLIC PAINTS.—COLOURS: BLACK AND PURPLE-BROWN.—These Paints (the products of a Patent process) possess extraordinary covering quality, and far surpass all other Paints in point of durability and economy, two coats being proved to be more than equal to three of any other description. From their chemical composition, they are pre-eminently adapted for covering Iron, Stuccoed, or Brick Buildings, and every kind of Woodwork. They have been exposed on Shipping to the action of Sea-water, and of the Sulphuretted Hydrogen so prevalent in Sea ports and Tidal Harbours for more than three years, without change. The attention of the Shipping Interest is particularly directed to the Company's Patent Compound Metallic Black Paint (the only Metallic Black Paint of any value yet produced), which will be found a most valuable and effectual preservative when applied to Iron Steam-boats and Wooden Vessels. It also forms a beautiful covering for Stoves. No other Paint partakes in any degree of the properties which constitute the great value of these Metallic Paints. Numerous and most satisfactory testimonials have been forwarded to the Company's Office, copies of which may be had of the Secretary, or of the Agents.

Price, by the ton, 25l., delivered in London or Liverpool, exclusive of packages. To be obtained exclusively on application to the Secretary, Mr. J. A. WEST, at the Offices of the Company, 20, Fenchurch-street, London; or of any of the undermentioned parties, who are the only AGENTS of the Company: Messrs. Evans Brothers, London; Messrs. Matthews and Leonard, Bristol; Messrs. Evans and Hodgson, Exeter, Messrs. Clarke and Fell, Yarmouth, Norfolk; Mr. D. Sandeman, Glasgow; Mr. G. Sandeman, Dundee; Mr. R. Newby Bradford, Yorkshire, Mr. R. S. Farr, Edinburgh; Mr. W. Bailey, Wolverhampton; Messrs. Vint and Co., Newcastle-on-Tyne, and Sunderland, Mr. Robert Oxland, Plymouth; Mr Joshua Fox, Tregedna near Falmouth

PORTLAND CEMENT.—Testimonials received from all quarriers prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes such as building and lining of Reservoirs, Cisterns, Baths, Fish ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Milbank-street, Westminster.

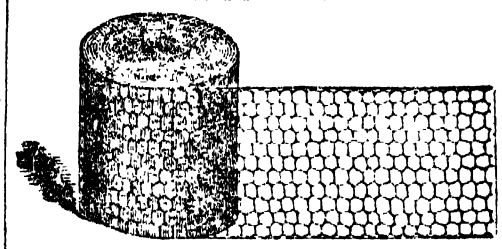
WIRE-WORK, HOT-WATER APPARATUS, GREENHOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS on improved and economical principles.

Parties waited on in Town and Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases or Domestic Greenhouses.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c., CASTLE BUILDINGS, DERBY SQUARE, LIVERPOOL; 128, HIGH-STREET, EDINBURGH; and 32, ST. ENOCH SQUARE, GLASGOW, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire scut for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin, and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9d.; 24 ins., 1s.; 30 ins., 1s. 3d.; and 36 ins., 1s. 6d. per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3	15 0
Do. of 100 yards, 24 ins. wide	.. ..	5	0 0
Do. of 100 yards, 30 ins. wide	.. ..	6	5 0
Do. of 100 yards, 36 ins. wide	.. ..	7	10 0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s. is equal to 2½ yards of another article in the market, the same width, at 9d. per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

NEW SEEDLING CALCEOLARIAS AND PANSIES.

HENRY MAJOR, Knosthorpe, near Leeds, begs to announce that he purposes sending out, the first week in April, his set of 10 beautiful New Seedling Shrubby CALCEOLARIAS at 2l. the set; also his 5 beautiful New Seedling PANSIES at 1l. the set. For opinions upon both Calceolarias and Pansies, see *Gardeners' Chronicle*, May 27th; Gardener and Farmer's Journal, June 24th, Aug 26th, Sept. 2d and 16th.

A Descriptive List of the above may be had on prepaid application. Select Calceolaria and Pansy Seed 2s. 6d. per packet.

GREENHOUSES MADE BY MACHINERY.—A Span-roof Greenhouse to be Sold, for 20l. 20 ft. by 9 ft., Glazed all round, 8 ft. 6 in high, with improved double Ventilating Ridge, fitted complete, only requires 2 ft. of Brickwork. Two-light Boxes, 7 ft. 3 in. by 5 ft. 6 in., 2l. 18s.; One-light ditto, 5 ft. 6 in. by 3 ft 8 in., 1l. 9s.; a Four-light Pit, 6 ft. by 13 ft. 9 in., 4l. 8s.; all Glazed with Sheet Glass, of a large size. Delivered to the Railway Stations in London, free. To be seen at J. Lewis's Machine Hothouse Works, Stamford-hill, Middlesex.

NEW DAHLIAS, VERBENAS, &c.

CHARLES TURNER has the following novelties to offer this spring. The Dahlias have been prominently before the public; and it will only be necessary to remark that the new flowers (and which are entirely in C. TURNER's possession), have gained 27 first-class Certificates during the past season, in addition to the sweepstakes of 20l. The prize of 10l. given at the Royal South London Show, for the best six Dahlias sent out by the exhibitor, having been awarded to C. TURNER, speaks well for those C. T. has been in the habit of offering to the public.

DAHLIAS.	Per plant.—s.	d.
BEAUTY (TURNER), white, edged and tipped with deep crimson, very attractive	10	6
BEAUTY OF HASTINGS (BARNHAM), white, tipped with rosy crimson or cherry, very double, and finely formed centre, being compact and close, fine habit, constant, and very desirable for exhibition; has obtained three first-class Certificates. Figured in the "Florist" for February	10	6
DREADNOUGHT (COLLISON), crimson maroon, petals of fine substance and form, and are well arranged, constant, and noble habit. First-class Certificates at Salisbury and South London Shows	10	6
DR. FRANKLIN (MILLER), shaded carmine, new and distinct in colour, fine form, the flowers standing well above the foliage; it has been awarded three first-class Certificates	10	6
EARL OF CLARENDON (TURNER), bright scarlet orange, smooth well arranged petals, requires abundance of water, fine shape	7	6
GRENADIER (TURNER), deep ruby crimson, very full deep flower, and constant, noble, majestic habit. It has been successful at the following open shows, having gained first-class Certificates at each. Devizes, Royal South London, Oxford, Wycombe, Slough, North London, and Camberwell	10	6
HECTOR (TURNER) dark maroon	7	6
MR. SELDON (TURNER), rosy purple, shaded with lilac, which has a novel and pleasing effect, form of petal and flower very good, and finely arranged centre, being compact and well elevated, flowers full and large, very constant, as will be seen by the following awards: 1st class Certificate at Gravesend, 1st prize, 5 guineas, as the best Seedling of the day, at Salisbury; 1st class Certificate, ditto; ditto Devizes; ditto Oxford, 1st prize as the best Seedling, 1847, Teddington; 1st class Certificate at Wycombe; ditto Slough; ditto Royal South London; ditto North London. Fine habit	10	6
MISS PROCKTER (PROCKTER), blush, with pink shade, petal finely formed, and of unusual substance; a little uncertain	10	6
MISS JANE (HOWARD), fancy flower, purple, with white tip, full and high centre; first-class Certificates at Royal South London and North London Shows	10	6
RUBENS (TURNER), orange, full size, very constant. First class prize at Oxford	7	6
PRIAM (COLLISON), bright rich crimson, fine form, medium size	7	6
PRINCESS LOUISA (FELLOWS), shaded salmon, large, full, and fine, very constant	10	6
VICTORY (PROCKTER), dull red, good shape	7	6
VIOLET PERFECTION (PROCKTER), rich violet purple, fine form and compact centre	10	6
WINDSOR CASTLE (TURNER), dark crimson, shaded, fine form, uncertain	10	6

Strong Healthy Plants will be ready early in May.

VERBENAS.

C. T. has been fortunate in securing the finest productions of 1848, and feels confident that Wyness's "Princess Alice" will be a greater favourite next season than Robinson's "Defiance" has during the past, and refers those who had not an opportunity of seeing it, to a correctly coloured representation in the "Florist" for January. Young's "Royal Purple" is also figured in the same Number.

	Per plant.—s.	d.
BRILLIANT (YOUNG), rich bright scarlet, a fine variety for bedding, being a very free bloomer, and excellent habit	5	0
MORNING STAR (WYNESS), bright rosy purple, white eye, attractive and showy	3	6
PRINCESS ALICE (WYNESS), white, deep cherry centre, large and fine form, one of the best raised. It excited universal admiration at the Surrey Show, where it took a first-class Certificate. The *Gardeners' Chronicle* speaks of it thus: "A new and very pretty seedling Verbena, named Princess Alice, was exhibited by the raiser, Mr. Wyness, gr. to her Majesty at Buckingham Palace, and received a Certificate. The truss is large, and the individual flowers well formed; it is white, with a rosy spot in each division of the corolla, distinct and very pretty"	5	0
ROSEA (GREY), fine shape, rose	3	6
ROYAL PURPLE (YOUNG), deep purple, fine large flower, good habit, good shape, and fine grower. It is particularly adapted for bedding, and is much deeper in colour than any other of its class	5	0

Plants ready by the 20th April, with a fine general collection.

MISCELLANEOUS PLANTS, &c.

ARAUCARIA IMBRICATA, 3s. 6d to 21s.
" EXCELSA, 21s. to 10l. 10s.
AZALEAS, in variety. ANEMONE JAPONICA, 6s. per doz
CARNATIONS. Selections left to C. TURNER, 1l. 4s. and 1l. 10s per dozen pairs, plants of which are now ready.
CEDRUS DEODARA, 1s. 6d. to 20s.
CHRYSANTHEMUMS, the best kinds, in great variety.
CINERARIAS, seedlings and named varieties.
CRYPTOMERIA JAPONICA, from 3s. 6d. to 5l. 5s.
GERANIUMS, consisting of fine varieties raised by Beck, Foster, Hoyle, &c. GLOXINIAS, the newest and best kinds.
HERBACEOUS PLANTS. LILIUMS of sorts.
PLUMBAGO LARPENTÆ, 1s. to 2s. 6d.
PICOTEES. Selections left to C. TURNER, 1l. 4s. and 1l. 10s per dozen pairs, plants of which are now ready.
PINKS. Selections left to C. TURNER, 9s., 12s., and 20s. per dozen pairs. (per dozen.
PANSIES. Selections left to C. TURNER, 6s., 12s., and 20s.

A fine collection of Flower and Vegetable Seeds, including Imported Stocks and Asters. A Descriptive Catalogue may be had on application. Post-office Orders made payable at Slough. References required from unknown correspondents.

Royal Nursery, Slough, Bucks.

FACTS BEYOND DOUBT, by Dr. PLATE, Secretary to the Syro-Egyptian Society in London, &c. &c., who has delivered a Lecture on the MUMMY PEA, which was found amongst others in a Vase presented to the British Museum by Sir Gardiner Wilkinson, the Egyptian traveller. A faithful translation has appeared in the "Gardener and Florist," &c., published by Lloyd, Salisbury-court, Fleet-street, in the February number. There is no doubt but GRIMSTONE'S Egyptian Pea will in a few years become the favourite Pea of all the world. It is dwarf, prolific, both early and late, and of exquisite taste for the table. Mr. WILLIAM GRIMSTONE, of the Herbary, Highgate, has taken the precaution only to sell this seed in boxes, at 5s., 10s., and 20s. each, inclosed in a Pamphlet containing the History, with many Testimonials, of this wonder, secured by an outside wrapper, bearing a vignette, signed, and sealed with the arms of W. GRIMSTONE, Herbary, Highgate.

HORTICULTURAL IMPROVEMENTS.

RICHARD READ, Instrument Maker (by special appointment) to her Majesty, begs to inform Amateur and Practical Gardeners, and the public, that he has taken out a NEW PATENT for improvements in the Valves of his Engines, Machines, and Syringes, which are now so simple in construction and perfect in their action, that he will warrant them to keep in repair during the term of the Patent. May be worked with two thirds the labour of any other instrument of the same power.—Manufactured only by the Patentee, 35, Regent Circus, Piccadilly, where they may be seen and proved.

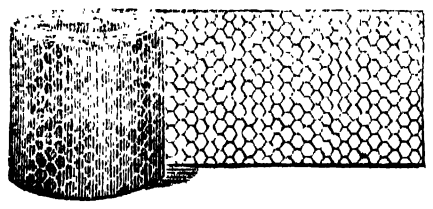
GALVANIZED WIRE GAME NETTING.—7d. per yard, 2 feet wide.

	Galvanized.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d. per yd
2-inch " strong " ...	9 "	6½ "
2-inch " extra strong " ...	12 "	9 "
1½-inch " light " ...	8 "	6 "
1½-inch " strong " ...	10 "	8 "
1½-inch " extra strong " ...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



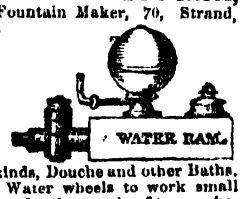
GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide 3d. per yard		30 inches wide 7½d. per yard	
18 " " 4½d. " "		36 " " 9d. " "	
24 " " 6d. " "		48 " " 1s. " "	

Galvanised do. 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d each; Garden arches, 20s. each; Flower Stands, from 3s 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 63, Snow-hill, London.

THE IMPROVED HYDRAULIC RAM, fixed by FREEMAN ROE, Fountain Maker, 70, Strand, London, can be worked by a small stream of half-an-inch where a fall of 2 feet can be obtained. The same RAM, without the aid of a Tank or Cistern, arranged to throw a Jet of Water constituting a Fountain with the head of water beneath.



Engines for deep wells of all kinds, Douche and other Baths, Buildings heated by hot water. Water wheels to work small pumps, from 15l. Estimates given for the supply of towns, &c.

A newly invented Portable Vapour Bath, all complete for 4l.

PATENT FLEXIBLE INDIA RUBBER PIPES AND TUBING FOR RAILWAY COMPANIES, BREWERS, DISTILLERS, FIRE ENGINES, GAS COMPANIES, GARDENING AND AGRICULTURAL PURPOSES, &c.

THE PATENT VULCANISED INDIA-RUBBER HOSE PIPES are made to stand Hot Liquor and Acids without injury—do not become hard or stiff in any temperature (but are always perfectly flexible), and as they require no application of oil or dressing, are particularly adapted for Fire-engines, Pumps, Gas, Beer-engines, Gardens, and all purposes where a perfectly flexible pipe is required. Made all sizes from ¼-inch bore upwards, and of any length to order.

Vulcanised India-rubber Garden Hose, fitted with brass taps, copper branch, and roses complete, ready to be attached to Pumps, Water-butts, or Cisterns.—Sole Manufacturer, JAMES LYNE HANCOCK, Goswell-Mews, Goswell-road, London.

N.B. Vulcanised India-rubber Washers of all sizes for Joints of Hot-water and Steam Pipes, and Vulcanised sheet Rubber, any thickness, for all kinds of Joints, and other purposes.

MR. E. AUG. VON DORP, 30, Great St. Helen's, London, Agent of the first German gardener at Erfurt, begs to inform the Wholesale Seedsmen that he keeps a stock of the best GERMAN STOCKS, ASTERS, &c., SEEDS (warranted), and that any order given to him will be promptly executed at moderate price, either from his stock here, or direct from the house itself.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S-ROAD, CHELSEA.

EDENCH having erected Hothouses for Sale on his Premises, invites the attention of Gentlemen about to erect Hothouses to inspect his Patent Plans, when they at once will perceive the vast superiority of these Houses over any others hitherto erected, for strength, lightness, durability, handsome appearance, healthiness to plants of every description, the roofs of one principle being formed without wood, putty, or paint, with a smooth surface and only about 5-8ths of an inch of light taken up in any part.

MITCHELL'S MINERAL BLACK PAINT.—This antiseptic Paint is intended for Park Fencing, and for all Farming Purposes; it is particularly adapted, by its prevention of dry rot in timber and repellence of damp, for Barns, Stables, Outhouses, Weather Boarding, Hop Poles; also for Carts, Waggons, &c., particularly the wheels, and for Iron Hurdles, Iron Railings, and all Wood or Iron Work in exposed situations. For Brick Walls it is highly serviceable as a preventive of damp, and also for Walls intended for Fruit Trees, as, besides preserving the Wall, it increases the heat in all situations exposed to the sun, and prevents the harbouring of insects. It is also an excellent covering for Canvas for Cart Tilts, Roofing, &c.—Sold in casks containing from 1 cwt. to any quantity, at 17s. 6d. per cwt., quite ready for use.—Apply to JAMES PHILLIPS and Co., Agents for the above, 116, Bishopsgate-street Without.

FRUIT TREES, TULIP BEDS, &c.—GARDEN NETTING, for preserving fruit-trees from frost, blight, and birds, or as a fence for fowls, pigeons, tulip and seed beds, can be had in quantity from JOHN KING FARLOW'S, Fishing Rod, Tackle, and Net Manufactory, 5, Crooked-lane, London-bridge, at 3d per yard, two yards wide, or 1½d. the square yard. The above is the only netting, being tanned, that will stand exposure to the weather. Forwarded, same day, on receipt of a Post-office order.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 400 and 500) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a copy of the testimonials, will be sent on application to WALTER CARSON, 15, Tokenhouse Yard, back of the Bank of England.—No Agents.—All orders are particularly requested to be sent direct.

SUPERPHOSPHATE OF LIME, the best Manure for Turnips and all Root Crops, when Manufactured from the Genuine Materials.

JOHN HUNT respectfully informs his Agricultural Friends that he has always a stock of this valuable MANURE ready for delivery, which he confidently recommends as being the best for producing Turnips, Potatoes, and all Root Crops, and will bring the plant much earlier to hoe. The Reports of the Royal Agricultural Society, and other scientific men, will most satisfactorily attest its value in this respect. As a defiance against the fly, this Manure, from being more rapid in its effects than any other, brings up the plant vigorously, throwing it at once into rough leaf, and thus defies the ravages of this destructive insect, while the crops per acre, at a cost of not more than 21s., far exceeds, under ordinary circumstances, that produced by any other means. I have a large number of letters from many Farmers, who have used this Manure for the last four years with great success. It is necessary to caution Agriculturists that there is an inferior article in the market, manufactured from *Coprolite* instead of Bone and Guano, not because the quality is superior, but the price is the inducement, Coprolite being 30s. per ton, and Bone 85s. per ton. But it must be observed that Coprolite was not in the market when Superphosphate of Lime was first introduced; the ingredients which composed that article in those days were Bone, Guano, Animal Charcoal, and Vitriol, which brought this Manure into such great repute. But the character of Superphosphate of Lime must fall, and its previous reputation will be lost, if Farmers allow themselves to be deceived by this rubbish. It may be easily detected by its gravity, which is very dense, and has a cement-like appearance, when made from the Coprolite stone. I advise all consumers and dealers in this article to visit the Works and judge for themselves, and beware of those who have chemical secrets and other subterfuges; there should be no such excuses where the genuine articles are employed.

Farmers can be supplied with all the ingredients for making Superphosphate of Lime who have the convenience for so doing. Guano, Nitrate of Soda, Sulphuric Acid, and Bone Manure supplied at the lowest market prices.

Agents are wanted for the sale of Superphosphate of Lime and other Manures, where none are at present appointed.

Bone Mills and Manure Works, High-st., Lambeth, London.

MECHI'S ELEGANCIES FOR PRESENTS AND USE.—The greatest variety for Ladies and Gentlemen at MECHI'S MANUFACTORY and Emporium of Elegance, 4, Leadenhall-street, London, where may be suited the economist and luxurious. Bagatelle-tables, 3l. 10s. to 15l.; writing-desks, 8s. to 20l.; dressing cases, 15s. to 10l.; work-boxes, 5s. to 30l.; leather writing cases, 10s. to 7l.; ditto, with dressing case, 4l. to 25l.; tea chests, 7s. 6d. to 8l.; envelope cases, 6s. to 7l.; inkstands, in wood, bronze, and papier maché, 6s. to 7l.; papier maché work tables, 6l. 10s. to 25l.; tea trays, 10s. to 94l. the set; work and cake baskets, 10s. to 4l.; card racks, 16s. to 3l.; hand screens, 10s to 4l. 10s.; pole screens, 2l. 5s. to 4l. 10s.; netting-boxes, card-boxes, ladies' companions in pearl, shell, papier maché and leather, ladies' scent cases and toilet bottles, ladies' card cases, chess boards and men, elegant papier maché chess tables, gold and silver pencil cases in every variety, good tooth brushes 6d. each, cases of plated and silver dessert knives and forks, Sheffield plate, splendid table cutlery, warranted razors and strops 3s. 6d. each, sporting knives, and every description of fancy cutlery. With a variety of other articles, of which catalogues may be had gratis. As MECHI manufactures extensively on his own premises, the quality of every article is warranted.

Printed by WILLIAM BRADBURY, of No 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of White-friars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—SATURDAY, MARCH 24, 1849.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 13.—1849.] SATURDAY, MARCH 31. [PRICE 6*d*.

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ROYAL BOTANIC SOCIETY, REGENT'S PARK. The Fellows and Members are informed that, by an arrangement with Mr. H. Waterer, of Knap Hill; Messrs. John Waterer, Standish and Noble, and Baker, of Bagshot, and other Nurserymen, the Council will be enabled, in the course of the Season, to place in the Gardens of the Society an extensive Collection of AMERICAN PLANTS. This Collection will be open to the Fellows, Members, and their friends, as on all ordinary occasions; but that the Public may have an opportunity of viewing a display of Floriculture which the Council have reason to believe will be unprecedented, an Exhibition of these Plants will take place on Saturday, May 26, and Saturday June 2 Admission to the Gardens on either of those days to be obtained by the same ticket as that provided for the General Exhibitions. Such ticket to admit one person, at the option of the holder, either on one of the above-mentioned days, or to one of the General Exhibitions.

The privilege of admitting Visitors, either by Fellows personally, or by written orders, will necessarily be suspended on the 26th of May and the 2d of June, as upon other extraordinary occasions.

By order of the Council, J. D. C. SOWERBY, Secretary.

ROYAL BOTANIC SOCIETY, Regent's-park.—The EXHIBITIONS OF PLANTS, FLOWERS, and FRUIT, for competition this season, will be held on WEDNESDAYS, May 16th, June 20th, and July 4th.

The Exhibition of Plants in the AMERICAN GARDEN, will be open on SATURDAYS, May 26th, and June 2d, at 2 o'clock. Tickets, each to admit one person, on any one of the above-mentioned five days, may be obtained at the Gardens by orders from Fellows of the Society. Price, on or before May 5th, 4*s*.; after that day, 5*s*.; or on the days of Exhibition, 7*s*. 6*d*. each. Fellows may have packets of 30 tickets until May the 5th, for 5*l*. 5*s*.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY, under the patronage of her Most Gracious Majesty the QUEEN.—The FIRST EXHIBITION for the season will take place at the HORNS TAVERN, Kennington, on WEDNESDAY, April 18th, 1849. Open to all Exhibitors. Prizes will be awarded for the following productions, viz.:—Miscellaneous Plants, Auriculas, Heartsease, Cinerarias, and Polyanthuses; in addition to which the Royal Adelaide Cup, presented by her Majesty the Queen Dowager, will be given for the best collection of Miscellaneous Plants. Mr. John Oakey's Band is engaged for the occasion. Admission to non-members from 1 till 6 o'clock at 1*s*. each. List of Prizes and the Rules of the Society may be obtained from JOHN TAYLOR NEVILLE, Secretary, Ebenezer House, Peckham.

Subscriptions, 20*s*. per annum, entitling each member to the privilege of attending all Flower Shows, Lectures, and Meetings of the Society; of exhibiting Flowers, Fruit, and Plants, their own growth, in competition for Prizes, without any charge for entry; and also to have two free admissions for friends at each Flower Show, Lecture, or Meeting.

GERANIUMS, LILIUM LANCIFOLIUM, AND NEW PLANTS. HENRY GROOM, Clapham-rise, near London, by Appointment FLORIST TO HER MAJESTY THE QUEEN, and to His MAJESTY THE KING OF SAXONY, begs to inform the Nobility, Gentry, and Amateurs, that his CATALOGUE for this Spring is ready, and will be forwarded by post on application.

GIANT ASPARAGUS ROOTS.—Fine Roots of the above may be had of FREDERICK WARNER, SEEDSMAN, 28, Cornhill, London, at 5*s*. per 100, with printed particulars for planting.

CAMELLIA—"BEAUTY SUPREME."

H. LANE AND SON, Great Berkhampstead, are now sending out plants from 21*s*. to 60*s*. each. It was awarded a medal by the Horticultural Society of London in April, 1846, and may be relied on as a splendid new variety; a most beautiful shape and colour, a pale waxy rose. See "Paxton's Magazine" of that month, page 71.

Catalogues may be had by sending a two-penny stamp.

HART AND NICKLIN, FLORISTS, Guildford, Surrey, beg to offer the public the undernamed plants.

PANSIES.

FIREBRAND, a seedling of 1847, most brilliant colours, in the way of Silverlock's Prince of Wales, price 2*s*. 6*d*.

The following unique collection for 20*s*.:—Attraction, Aurora, Bell, Berryer, Blooming Girl, Brutus, Climax, Commander, Great Britain, Hector, King of Holland, Mary Jane, Nonsuch, Matilda, Prince of Orange, Queen of Whites, Rainbow, Satirist, Supreme, Titian (Turner), and Zabdi.

And good named varieties, 4*s*. per doz.

GERANIUMS.

Ariel, Forget-me-not (Lyne), Aurora, Competitor, Hebe's Lip, Isabella, Araballa, Rosy Circle, Orion, Desdemona, Mary Antony, and Mustee, for 20*s*. Warranted strong plants.

THE FINEST SHOW CARNATIONS, PICOTEES, PINKS, PANSIES, FUCHSIAS, VERBENAS, CINERARIAS, AND GLOXINIAS.

VOUELL AND Co. are now executing orders for the above, in strong healthy plants, at the following prices. Also their superb new Red-edged Picotee, "The Gem," at 10*s*. 6*d*. per pair.

CARNATIONS AND PICOTEES. £ *s*. *d*.
12 pairs of very fine show flowers, by name, 1*l*. 4*s*. and 1 10 0
25 ditto ditto ditto 2*l* 10*s*. and 3 0 0
12 pairs of newest and finest first class show flowers . 2 10 0
25 ditto ditto ditto ditto .. 5 0 0

Fine mixed border Carnations, 12*s*. per dozen pairs.

PINKS.—Finest first class show varieties, 12*s*. and 18*s*. per dozen pairs.

PANSIES.—Finest first class show flowers, 10*s*. and 18*s*. per dozen.

FUCHSIAS.—The newest and most beautiful varieties out, 9*s*., 12*s*., and 18*s*. per dozen.

VERBENAS.—The most select and beautiful of last season, 6*s*. to 9*s*. per dozen.

CINERARIAS.—Fine flowering plants of the best show varieties, 9*s*. to 18*s*. per dozen.

GLOXINIAS.—A most splendid collection of new varieties, including Teuchlerii, Griffithii, &c., 12*s*., 18*s*., and 24*s*. per doz.

FLOWER SEEDS.—30 packets of new and choice kinds, per post, free, for 6*s*.—Great Yarmouth Nursery.

AMERICAN TREE AND SHRUB SEEDS.

G. CHARLWOOD, SEEDSMAN, &c., 14, Tavistock-row, Covent-garden, London, has recently received, and has now on sale, his usual importation, of which priced Catalogues may be had, free by post, or on application.

G. C. takes the opportunity of calling attention to his extensive collection of Flower Seeds, containing all that is new, beautiful, or valuable; also Horticultural and Agricultural, including Grass Seeds for Lawns and Meadows, Mangold Wurzels in all varieties; Turnip Seed, the most approved sorts; Belgian Carrot, White and Yellow, White and Red Altringham; Lucerne, Millet, and all other articles.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE, for 1849, of new and choice Geraniums, Fuchsias, Dahlias, Petunias, Verbenas, Chrysanthemums, Greenhouse and Bedding Plants, may be had free by post on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

SUPERIOR GERMAN ASTERS, 20 varieties mixed, see *Gardeners' Chronicle*, September 23d, 1848. "ASTERS: *Hardy and Son*. Your Asters reached us in excellent condition; they are beautiful specimens of that showy flower." Large packets, 1*s*., or 12 postage stamps, post free.

ABRAHAM HARDY and SON, Seed Growers, Maldon, Essex.

AYRES'S "GEM OF THE SCARLETS" PELARGONIUM.—This splendid Pelargonium, the only seedling which obtained a prize last season at the Metropolitan Exhibitions, and which was awarded a Certificate of Merit at the Meeting of the Royal Botanic Society in the Regent's-park, in July, 1848, is now being sent out in strong plants by the subscriber. It has been favourably noticed, both in the *Gardeners' Chronicle*, and also in the "Gardeners and Farmers' Journal," and having been ordered by every Nurseryman and Gardener who has seen it, may fairly be pronounced the gem of the season. In habit it is the counterpart of the Globe compactum (with strongly-marked horse-shoe foliage), producing with great freedom large trusses of pure brilliant scarlet flowers, of excellent form, each flower having a large white spot in the centre

*** It is confidently anticipated that when well known the demand for it will be as great as for General Tom Thumb.

Strong plants, 5*s*. each, or 6*s*. free by post, with one over in every two taken by the Trade. Orders from unknown correspondents will not be attended to, unless accompanied by a post-office order, made payable at Greenwich to WILLIAM PORT AYRES, Brooklands Nursery, and 4, Tranquil-place, Blackheath.

DAHLIAS, pot roots, choice sorts, named, in great variety, 6*d* each, or 5*s*. per dozen. per paper—*s*. *d*.
BALSAM, very double, saved from a superb collection . 0 6
DAHLIA SEED, saved from the best varieties of Show and Fancy Flowers 1 0
GERANIUM, from choice Show Flowers . 1 0
PINK, saved by a celebrated Florist, from named Show Flowers 1 0
PICOTEE, from a superb collection 1 0
PANSY, saved by Thomson and other eminent growers 0 6

25 varieties of choice showy Hardy Annuals, selected so as to ensure a great variety of colour and succession of flowering.

The above may be had of WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch-street, London (near the Spread Eagle)

CATALOGUE OF PLANTS, WITH PRICES, FOR THIS SPRING.

THOMAS JACKSON AND SON respectfully inform their Patrons and the Public that their Catalogue of choice Orchidaceous, Stove, Greenhouse, and Herbaceous Plants, Ornamental Shrubs, Trees, Roses, &c. &c., is now ready, and may be obtained on application, gratis; or by post, by forwarding two postage stamps.

T. J. and Son invite the attention of parties furnishing Conservatories, Greenhouses, &c., to the following low prices of Plants in Collections—the selection of kinds (all good) being left to themselves.

50	Choice free-flowering Stove Plants	£5	0*s*. 0*d*
100	Do. do. Greenhouse Plants, exclusive of Ericas	7	10 0
50	Do. do. do. do.	3	15 0
100	Do. Cape Ericas	5	0 0
100	Do. do., containing most of the new sorts	10	0 0
50	Do. Camellias	6	5 0
12	Do. Epacris	0	18 0
20	Do. Azalea indica	1	10 0

T. J. and Son having had a heavy crop of their improved ASH-LEAVED KIDNEY POTATOES, still have by them some good sound sets, without any appearance of disease, at 15*s*. per bushel; discount to the trade.—A remittance or satisfactory reference is requested from unknown correspondents.—All parcels delivered free of carriage in London.

Nurseries, Kingston, Surrey, March 31.

NEW DAHLIAS, VERBENAS, &c.

CHARLES TURNER has the following novelties to offer this spring. The Dahlias have been prominently before the public; and it will only be necessary to remark that the new flowers (and which are entirely in C. TURNER'S possession), have gained 27 first-class Certificates during the past season, in addition to the sweepstakes of 20*l*. The prize of 10*l*. given at the Royal South London Show, for the best six Dahlias sent out by the exhibitor, having been awarded to C. TURNER, speaks well for those C. T. has been in the habit of offering to the public.

DAHLIAS. Per plant.—*s*. *d*.
BEAUTY (TURNER), white, edged and tipped with deep crimson, very attractive 10 6
BEAUTY OF HASTINGS (BARHAM), white, tipped with rosy crimson or cherry, very double, and finely formed centre, being compact and close, fine habit, constant, and very desirable for exhibition; has obtained three first-class Certificates. Figured in the "Florist" for February 10 6
DREADNOUGHT (COLLISON), crimson maroon, petals of fine substance and form, and are well arranged, constant, and noble habit. First class Certificates at Salisbury and South London Shows . . . 10 6
DR. FRANKLIN (MILLER), shaded carmine, new and distinct in colour, fine form, the flowers standing well above the foliage; it has been awarded three first-class Certificates 10 6
EARL OF CLARENDON (TURNER), bright scarlet orange, smooth well arranged petals, requires abundance of water, fine shape 7 6
GRENADIER (TURNER), deep ruby crimson, very full deep flower, and constant, noble, majestic habit. It has been successful at the following open shows, having gained first-class Certificates at each: Devizes, Royal South London, Oxford, Wycombe, Slough, North London, and Camberwell 10 6
HECTOR (TURNER), dark maroon 7 6
MR. SELDON (TURNER), rosy purple, shaded with lilac, which has a novel and pleasing effect, form of petal and flower very good, and finely arranged centre, being compact and well elevated, flowers full and large, very constant, as will be seen by the following awards. 1st class Certificate at Grave-end, 1st prize, 5 guineas, as the best Seedling of the day, at Salisbury, 1st class Certificate, ditto, ditto Devizes; ditto Oxford; 1st prize as the best Seedling, 1847, Teddington, 1st class Certificate at Wycombe, ditto Slough, ditto Royal South London; ditto North London. Fine habit . . 10 6
MISS PROCKTER (PROCKTER), blush, with pink shade, petal finely formed, and of unusual substance; a little uncertain 10 6
MISS JANE (HOWARD), fancy flower, purple, with white tip, full and high centre; first class Certificates at Royal South London and North London Shows . . . 10 6
RUBENS (TURNER), orange, full size, very constant. First class prize at Oxford 7 6
PRIAM (COLLISON), bright rich crimson, fine form, medium size 7 6
PRINCESS LOUISA (FELLOWS), shaded salmon, large, full, and fine, very constant 10 6
VICTORY (PROCKTER), dull red, good shape . . . 7 6
VIOLET PERFECTION (PROCKTER), rich violet purple, fine form and compact centre 10 6
WINDSOR CASTLE (TURNER), dark crimson, shaded, fine form, uncertain 10 6

Strong Healthy Plants will be ready early in May.

VERBENAS.

C. T. has been fortunate in securing the finest productions of 1848, and feels confident that Wyness's "Princess Alice" will be a greater favourite next season than Robinson's "Defiance" has during the past; and refers those who had not an opportunity of seeing it, to a correctly coloured representation in the "Florist" for January. Young's "Royal Purple" is also figured in the same Number. Per plant.—*s*. *d*.
BRILLIANT (YOUNG), rich bright scarlet, a fine variety for bedding, a very free bloomer, and excellent habit 5 0
MORNING STAR (WYNESS), bright rosy purple, white eye, attractive and showy 3 6
PRINCESS ALICE (WYNESS), white, deep cherry centre, large and fine form, one of the best raised. It excited universal admiration at the Surrey Show, where it took a first-class Certificate. The *Gardeners' Chronicle* speaks of it thus: "A new and very pretty seedling Verbena, named Princess Alice, was exhibited by the raiser, Mr. Wyness, gr. to her Majesty at Buckingham Palace, and received a Certificate. The truss is large, and the individual flowers well formed; it is white, with a rosy spot in each division of the corolla, distinct and very pretty." 5 0
ROSEA (GREY), fine shape, rose 3 6
ROYAL PURPLE (YOUNG), deep purple, fine large flower, good habit, good shape, and fine grower. It is particularly adapted for bedding, and is much deeper in colour than any other of its class 5 0

Plants ready by the 20th April, with a fine general collection.

MISCELLANEOUS PLANTS, &c.

ARAUCARIA IMBRICATA, 3*s*. 6*d* to 21*s*.
" EXCELSA, 21*s*. to 10*l*. 10*s*.
AZALEAS, in variety. ANEMONE JAPONICA, 6*s*. per doz.
CARNATIONS. Selections left to C. TURNER, 1*l*. 4*s*. and 1*l*. 10*s* per dozen pairs, plants of which are now ready.
CEDRUS DEODARA, 1*s*. 6*d*. to 20*s*.
CHRYSANTHEMUMS, the best kinds, in great variety.
CINERARIAS, seedlings and named varieties.
CRYPTOMERIA JAPONICA, from 3*s*. 6*d*. to 5*l*. 5*s*.
GERANIUMS, consisting of fine varieties raised by Beck, Foster, Hoyle, &c. GLOXINIAS, the newest and best kinds.
HERBACEOUS PLANTS. LILIUMS of sorts.
PLUMBAGO LARPENTÆ, 1*s*. to 2*s*. 6*d*
PICOTEES Selections left to C. TURNER, 1*l*. 4*s*. and 1*l*. 10*s* per dozen pairs, plants of which are now ready.
PINKS. Selections left to C. TURNER, 9*s*., 12*s*., and 20*s*. per dozen pairs. (per dozen.
PANSIES. Selections left to C. TURNER, 6*s*., 12*s*., and 20*s*.

A fine collection of Flower and Vegetable Seeds, including Imported Stocks and Asters A Descriptive Catalogue may be had on application. Post-office Orders made payable at Slough. References required from unknown correspondents.

Royal Nursery, Slough, Bucks.

EVERGREENS.—Fine young healthy Evergreens for immediate sale.

	per 1000
10,000 Laurels, 2 to 3 feet	30s
10,000 Ditto 1 to 1½ feet	20
10,000 Evergreen Oaks, 2 years	20
5,000 Laurustinus, 1 to 1½ foot	50
	per 100
3,000 Tree Box, 3 to 4 ft.	21s
6,000 Ditto 2 to 2½ ft.	15
4,000 Ditto 1 to 1½ ft.	12
1,000 Aucuba Japonica, 9 inches	12

	per 100
1,000 Cedar of Lebanon, seedling	12s.
200 Arbutus, 2 to 3 feet	50
200 Bays, 1½ to 2 feet	40
500 Ditto, 9 to 12 inches	16
200 Tree Roses	21
500 Ribes sanguineum	32
500 Honeysuckles	16
2,000 Gooseberries and Currants	16
1,000 Tree Violets	16

The above are well-rooted, healthy, young stock, and will be delivered free to London. Apply to Mr. KENNAN, Seedsman, Great Russell-street, Covent garden, London

JHINE informs his friends and the Trade in general that his CATALOGUE of choice Geraniums, Fuchsias, Verbenas, Petunias, Cinerarias, Antirrhinums, &c., is now ready, and can be had on application.
Providence Nursery, Ramsgate.

KNAP-HILL NURSERY, NEAR WOKING, SURREY.
TO GENTLEMEN ENGAGED IN PLANTING.

HOSEA WATERER offers the following very desirable plants.

CEDRUS DEODARA, fine plants from seed, 3 to 4 feet high, 84s. per doz.
" " from 5 to 10 feet, 1 to 7 guineas each.
(These are magnificent plants.)
ARAUCARIA IMBRICATA, handsome plants, from 2½ to 3 feet 42s. each. A few very fine plants, from 3 to 6 feet, 3 to 10 guineas.
CRYPTOMERIA JAPONICA, from seed, 5 to 7 ft., 4 to 5 guineas
" 1½ foot, 84s. per doz
TAXODIUM SEMPERVIRENS, good stout plants, 2 feet, 84s.
" " 4 to 6 feet, 1 to 3 guineas each.
PINUS DOUGLASII, from seed, 1½ to 2 feet, 15s. each.
" " 3 to 6 feet, 21s. to 63s.
" MENZIESII, 3 to 5 feet, 42s. to 84s per doz.
" INSIGNIS, 1½ to 2 feet, 7s. 6d. each.
" " a few very fine plants, from 5 to 7 feet, 2 to 5 guineas.
" CEMBRA, 5 to 7 feet, 10s. to 15s. each.
" " large and very handsome plants, 10 to 12 feet, 42s. each
" CANADENSIS, or Hemlock Spruce, 4 to 5 feet, 21s. per dozen.
" " larger, 7 to 10 feet, 30s. to 60s. per dozen.
" EXCELSA, 3 to 6 feet, 3s 6d. to 10s. 6d. each.
" FRAZERI, 3 to 5 feet, 30s. to 42s. per dozen.
" MORINDA, or Smithiana, 2 to 4 ft., 2s. 6d. to 5s. each.
" WEBBIANA, 2 to 4 feet, 10s. 6d. to 42s. each.
" PINSAPO
" CEPHALONICA
" LAMBERTIANA
" HARTWEGII
" DOUGLASII
" MACROCARPA

A few of the largest and most handsome plants in the trade. Prices will be given on application.

IRISH YEWS, 6 to 9 feet, 7s. 6d to 15s. each.
*** It often happens Irish Yews are injured or rendered unsightly from their tendency to divide in windy or showery weather. The plants here offered are grown from one stem only, similar to those at Elvaston, which are the finest in the kingdom.
CEDARS OF LEBANON, 2 to 2½ feet, very bushy and handsome, 30s per dozen.
" " 5 to 9 feet, 10s. 6d to 42s. each.
(These are splendid plants.)
JUNIPERUS REPANDUS, 4 to 6 feet, 7s 6d to 10s 6d each,
" " 8 to 10 feet, very handsome plants, 21s. to 42s each.
" CHINENSIS, 4 to 5 feet, 7s. 6d. to 10s. 6d. each.
" " large handsome plants, 6 to 8 feet, 21s. to 31s 6d. each.
" IRISH UPRIGHT, 4 to 6 feet, 3s. 6d to 10s. 6d.
" " 7 to 9 feet, 15s. to 21s.
*** These two last-named Junipers ought to be planted by every one who has any place approaching a lawn.
THUJA WAREANA (the best variety of Siberian Arbor Vitæ), fine plants, 5 to 7 feet, 5s. to 7s. 6d. each.

The above are all growing in the open ground, are healthy and handsome specimens; they have never been in pots, and consequently are more desirable.

HOSEA WATERER would also invite attention to his stock of large Spruce Firs, from 7 to 15 feet high; large Red Cedars, Phillyreas, green and variegated Hollies, Common Yews, 4 to 7 feet, fine Standard Weeping Limes, Weeping and Purple Beech, Standard Magnolias, Tulip Trees, &c., all of which are in a capital state for removing and will be sold reasonably.

The Collection of AMERICAN PLANTS at the KNAP HILL NURSERY is well known as being the most extensive in this country; witness the beautiful Exhibition in the King's-road, Chelsea, every spring.

RHODODENDRONS, best hardy kinds, 30s. to 60s. per dozen
" fine hardy scarlets, large plants, 60s. per dozen.
AZALEAS, best varieties, from 18s. to 42s
KALMIA LATIFOLIA, from 18s. to 84s., for large plants, and upwards.
HARDY HEATHS, a first-rate collection of about 25 of the most beautiful and distinct kinds, good plants, at 63s. p. 100.
*** Hardy Heaths are not planted so generally as they deserve. Nothing can be more interesting and beautiful; and flowering as they for the most part do in the autumn, renders them still more valuable.

FOR PLANTING COVER, CARRIAGE DRIVES, &c.
RHODODENDRON PONTICUM, fine bushy plants, from 10s. 6d. to 21s. per 100.
BOX-LEAVED PRIVET (a new and very superior variety to the old Evergreen), 8s. to 12s. 6d. per 100.
BERBERIS AQUIFOLIUM, bushy plants, 9 inches to 12, 50s. per 1000.
" ditto, larger, 1½ to 2 feet, 7s. to 10s. per 100.
" DULCIS 1 to 1½ foot, 7s. to 10s. per 100.
" ARISTATA, 1 to 1½ foot, 21s. per 100.
" This last is an excellent plant for these purposes, and requires only to be better known to be more extensively planted.
ENGLISH JUNIPERS, 1 to 2 feet, 7s to 12s. 6d. per 100.
SWEET BRIARS, 8s. to 12s. 6d. per 100.
COMMON LAURELS, fine bushy plants, 10s. to 25s. per 100.
PORTUGAL LAURELS, 2 to 3 feet, 30s. per 100.
QUICK, very strong, transplanted, 8s. to 10s. per 1000.
FRUIT TREES.—Dwarf trained Apples
" Pears
" Cherries
" Plums
" Apricots
" Peaches
" Nectarines

Fine trees, 2s. 6d. to 3s each.
Fine trees, 5s. 6d. each.

Goods delivered free to London and to the Slough Station on the Great Western Railway. The Knap Hill Nursery is within an hour's ride of London, being near the Woking Station, South Western Railway.

It is particularly requested that letters intended for this Establishment may be addressed, HOSEA WATERER, Knap Hill Nursery, near Woking, Surrey.

BLACKTHORN.—Any one having either a small or large quantity of the above, may send word, by letter, age, price, and size, to JOHN JEYES, Nurseryman, Northampton.

GREAT IMPORTANCE TO MELON AND CUCUMBER GROWERS.

EDWARD TILEY begs most respectfully to inform the nobility and gentry that he has seeds of his unequalled "QUEEN" MELON, described in former advertisements in this paper; sold in packets, 7 seeds for 2s. 6d.. Also his superb CUCUMBER "THE VICTORY OF BATH;" sold in packets, 10 seeds for 2s.; or one packet of each of the above for 4s. Sold at EDWARD TILEY'S General Seed-shop, 16, Pulteney-bridge, Bath. The above will be sent postage free on the receipt of a Post-office order or the amount in penny postage stamps.

HOLLYHOCK SEED.

W. CAKEBREAD respectfully calls the attention of the Nobility and Gentry to his fine HOLLYHOCK SEED, consisting of the following varieties, viz., White, Yellow, Orange, and Red; delicate Rose, fine Red, and Pink. Packets of 120, 5s each, colour kept separate.

W. C. feels justified in assuring purchasers that all the plants raised from the first five varieties will produce fine double flowers, as he has sown fellow seed for years, and never knew one come single. The pink produces a variety of colours, as pink, carmine, scarlet, and deep crimson; sometimes a few semi-double, but generally the most splendid double flowers ever raised.—Weston, near Towcester, Northamptonshire.

NEW DAHLIAS.

JOHN BELL, in offering the following new DAHLIAS, can confidently recommend them as being first rate; they were only exhibited at the Norfolk and Norwich Horticultural Show in September, 1848, and obtained the opinion of the Judges from London as possessing all the properties of first class flowers. Hermione and Negro were raised by the Rev. Charles Fellowes Shottisham Rectory.

HERMIONE (FELLOWES).—Bright rosy salmon, fine and well formed flower, good habit, very constant, and quite new in colour; height, 3 to 4 feet. Plants, 7s. 6d. each.

NEGRO (FELLOWES).—Very dark maroon; large full deep petal, flower well up in the centre, handsome form, and very constant; height 4 to 5 feet. Plants, 7s. 6d. each.

UNIQUE SUPERB (LOVICK).—Bright yellow, fine deep petal, well up in the centre, handsome formed flower, very constant; height, 3 to 4 feet. Plants, 10s 6d. each.

For description, see Gardeners and Land Stewards' Journal, September 9, 1848, under the word "Norfolk."

The usual discount on the above when three plants of each are ordered. Plants ready the first week in May.

Bracondale Horticultural Establishment, Norwich.

SCARLET PELARGONIUMS.—CONWAY'S Royalist.—In "Notices to Correspondents," *Gardeners' Chronicle*, Oct. 14, 1848, may be seen a description of the above, viz., "SCARLET GERANIUM *P. C.* Your seedling is a most brilliant scarlet: trusses large, being about 4 inches in diameter, and forming more than half a globe. On the trusses sent, there were about 36 fully expanded flowers, and 20 buds to open. The individual flowers are not quite so compact as some of the older varieties; but in general appearance it is showy, brilliant, and attractive, and appears to be a free bloomer." Strong plants, 5s each. The usual discount to the trade when three are taken.

	s.	d.
CONWAY'S Rosy Morn—rosy pink, dwarf, and a free bloomer	2	6
CONWAY'S Symmetry—deep salmon colour, habit of Tom Thumb, distinct and pretty	2	6
CONWAY'S Brompton Hero—one of the best dwarf varieties for bedding	1	0
MITCHELL'S Tom Thumb's Master—a very splendid variety	2	6
MITCHELL'S Tam O'Shanter—a fine bold trusser, in the way of Shrubland, but larger	2	6
MITCHELL'S Ibrahim Pacha—a splendid variety, strong habit, and fine truss	1	6
IVERY'S Scarlet—much admired for its fine stocky habit and deeply marked horse-shoe leaf	1	6
Phenomenon—a splendid dwarf free-blooming variety, for beds	1	6
Tom Thumb 1s. 0d	Pink Nosegay	1	0
Punch 1 6	Compactum	1	0
Judy 1 6	Mrs. Mayler	1	0
Lucia Rosea 1 0			

Out of a collection of upwards of 30 named varieties, the above are chosen as the most distinct and desirable. The set of 18 may be had for 21s., basket included.

VERBENAS.	s.	d.
Emperor of China—deep rich crimson, good habit	1	6
Heloïse—rich purple, fine shape and habit	1	0
Lenormand—bright red, very dark eye, extra fine	1	6
Gem of the West—rose colour, extra	1	0
Valentine de Saveuse—blue purple, dark centre; one of the best in its class	1	6
Marchioness of Ailsa—pink, extra	1	0
Picta, shaded crimson	1	6
Empress of Scarlets—very brilliant, free bloomer, and close grower	1	0
Vulcan Superb—bright crimson, dark eye, very fine	1	6
Junon—deep lilac, very good	1	6
Excelsa Superb—fine rosy purple	1	6
Clotilde—rose, striped, attractive	1	6
White Perfection—the best white	1	0
Lady Frankland Russell—rich rosy purple, fine striking variety for a bed	1	6
Scarlet Defiance—splendid scarlet	1	6
Madame Beatrice—fine striped	1	6
Souvenir—rosy blush, centre carmine, good habit	1	6
Anacreon—blood red, centre maroon, good close habit	1	0
Captivation—rose or lake, yellow eye, very good	1	0
St. Margaret—crimson, violet eye, very splendid flower	1	0
Countess of Newburgh—purple lake, fine close habit	1	0
Emperor of Scarlets	1	0
Desirable—rosy purple, fine shape	1	0
Madam Delu—red amaranth	1	0

Out of a collection of 50 named varieties, native and foreign, grown and proved on our own ground last season, the above 24 have been selected as being distinct and really good. The set are now respectfully offered for 20s., or a dozen out of the set, choice of purchaser, 12s. The best older varieties, 6s. p. doz.

CALCEOLARIAS.	Per doz.—s.	s.
Amplexicaulis—Imported variety, a bed of which was exhibited at the Royal Gardens, Kew, for the first time, last season, and elicited universal admiration	12	to 18
Kentish Hero—This is a splendid bedding out variety, and for which there is a great demand	12	—
Visosissima and Kayll	6	9
Aurantia multiflora	6	—

The above are all strong autumn-struck plants.

TROPÆOLUM SPECIOSUM.—This is a most beautiful and attractive hardy creeper; the colour of the flower being a bright scarlet, which is produced in abundance, and thrown out prominently above the foliage. It is well worthy a conspicuous situation in every flower garden. 2s. 6d. each.

Cuphea platycentra	4s. 0d.	per doz.
" strigulosa sanguinea	6 0	"
Heliotropium Voltairianum	6 0	"
" Triumph de Liege	9 0	"

PHILIP CONWAY, Earl's-court Nursery, Old Brompton-road.

A MEETING OF GARDENERS, FLORISTS, AND AMATEURS OF SURREY AND KENT, will be held at the Fishmongers' Arms Tavern, near the Elephant and Castle, on TUESDAY next, at 6 o'clock (for 7 precisely), to form a branch of the "Society for the encouragement of Floriculture and Horticulture." Subscription, 1s. per annum, entitling the member to show any number of new productions without entrance fees. JAMES PILE, Secretary.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON have just published their general CATALOGUE of Stove and Greenhouse Plants, Climbers, Ericas, and Geraniums; also Descriptive Lists of Camellias, Cinerarias, Fuchsias, Verbenas, Petunias, Chrysanthemums, and Plants adapted for Grouping, with a selection of New and Ornamental Shrubs, &c.; copies of which have been sent to all customers, and will be forwarded to other applicants, GRATIS, as usual.

W. W. and SON have a superb stock of all the finest Cinerarias in cultivation; the plants are strong and coming into bloom; they are offered as under:

12 superior varieties for 12s. | 25 extra fine varieties for 24s.
12 superb ditto, NEW 18s. | 50 superb ditto for... ... 42s.
Additional plants presented to compensate for carriage.

GENUINE SEEDS FOR PRESENT SOWING—A packet of 4000 selected POTATO SEEDS, with directions for sowing, &c., 1s.

	Per packet—s.	d.
"BOA CONSTRICTOR" MELON, grows 6 ft. in length	1	0
VEGETABLE and FLOWER SEEDS, any variety	0	6
Double LARKSPURS, 10 varieties, separate	1	0
Ditto Ditto Ditto mixed	0	6
Double BALSAMS, Camellia-flowered	1	0
ZINNIA ELEGANS	0	6
SALPIGLOSSIS, fine mixed	0	6
STOCK, superfine Scarlet Giant	0	6

100 varieties of Annuals, 10s.; 50 ditto, 5s.; 25 do., 2s. 6d.
Treatise on Potato Culture, 6d.
All post free, on receipt of cash or postage stamps.
ABRAHAM HARDY and SON, Seed Growers, Maldon, Essex.

CANSDELL'S NEW AMERICAN SACCHARINE PUMPKINS, superior to Swedes or Mangold Wursel in fattening properties, for Cattle, Sheep, and Pigs.—Patronised by HIS ROYAL HIGHNESS PRINCE ALBERT, by whose royal command Mr. CANSDELL, last year, grew upwards of 20 tons per acre, at the Flemish Farm, Windsor, and in several parts of Essex and Suffolk, without waste of tops or tails, or injury to the succeeding crop, for which it is considered to be as good a preparation as a clean fallow, price 1s. per packet. Also his new American Custard Plant, or the Menomonee Squash, a delicious vegetable raised for the first time in this country in the Royal Gardens, Frogmore, and for the growth of which Mr. CANSDELL received a communication expressing her Majesty's royal approbation. Price 1s. per packet. Six new and choice varieties of American Melons, grown last year in great perfection at the Queen's Gardens, and are sufficiently hardy to mature in ordinary seasons in the open air, if planted in a sheltered situation, price 6d. each.

BENJAMIN R. CANT having made arrangements with Mr. CANSDELL, begs to offer the above new and choice Seeds, which he will be happy to forward, post free, on application.
N.B. Printed directions upon each packet.
St. John's-street Nursery, Colchester.

JAPAN CEDAR OR CRYPTOMERIA JAPONICA SEEDLINGS.

MESSRS. STANDISH AND NOBLE, NURSERYMEN, Bagshot, beg respectfully to call the attention of Landed Proprietors and others to their fine and large Stock of the above useful and ornamental Tree, which they can supply at the following prices: 3s. 6d per plant, 25s. per doz., or 12l. 10s. per 100.

JASMINUM NUDIFLORUM, a perfectly hardy, neat, dwarf-growing shrub, flowering most profusely in the open air, either with or without the protection of a wall. Undoubtedly this is one of the most beautiful winter-flowering plants of recent introduction. A plant in the Gardens of the London Horticultural Society was literally covered with its bright yellow flowers in December last. Strong plants, 2s 6d. each.

WEIGELA ROSEA. The beauties of this plant will ere long place it in the foremost rank of ornamental plants in flower-garden shrubberies. Strong plants, 1s. to 2s. 6d. each.

FORSYTHIA VIRIDISSIMA.—This hardy shrub, like the last, requires only to be known to be appreciated. Mr. Fortune tells us that in China it is one of the most beautiful plants he has seen, forming a bush 10 or 12 feet in height, and covered with its rich golden flowers. Strong plants, 1s. to 2s. 6d. each.

PLATYCODON GRANDIFLORUM ALBUM, a beautiful Campanulaceous plant, also from China. 2s 6d. each.

AZALEA INDICA, "GLORY OF SUNNING-HILL," a large double pink, the flower much resembling Nerium splendens; obtained a prize at the London Horticultural Society's Exhibition in May last. Plants, 10s. 6d. each. Also a collection of fine sorts, from 1s. to 5s each.

CALCEOLARIA "ACME," white ground, with deep plum-coloured spots, good habit and fine form. 7s. 6d. each. Also Seedlings from the best kinds, at 8s. per doz.

The following fine MELONS, two and three year old seed, at 1s. per packet: Hampton-court Green-flesh, Ispahan, Cuthill's Scarlet-flesh, Imogene, Bagshot Green-flesh, and Beechwood.

HECKFIELD COS LETTUCE, the best in cultivation, 1s. and 2s. packets.

In addition to the above, Messrs. STANDISH and NOBLE have a large and select stock of RHODODENDRONS and other AMERICAN PLANTS, with a general collection of Hardy Plants, Shrubs and Trees, Seeds, &c., Catalogues of which can be forwarded on application.—March 31.

NEW VERBENAS.

WM. JAMES ETT[illegible]s much pleasure in offering the following VERBE[illegible]S, which he can with confidence recommend as being a great acquisition to this class of flowers.

ECLIPSE.—A profuse blooiner, compact habit, and its markings constant. See drawing and description in "The Florist," of January last, and also in the *Gardeners' Chronicle* of June 20, in answer to W. J. E., Verbena, No. 20. "A very pretty variegated variety; ground colour delicate pink, with a broad, well-defined stripe of rose-colour in the centre of each division of the corolla. This is a distinct and a very pretty variety, and appears to be constant," &c. &c. Price 5s.

EPPSII.—A brilliant, deep rich red, with very large bold trusses and profuse blooming habit dwarf and compact, and very superior for bedding. See description in the *Gardeners' Chronicle*, June 10, Verbena, W. J. E., No. 18; and also in "The Florist," No. IX., in answer to J. E. Strong plants by the last week in April. 3s. 6d.

The usual discount to the Trade when three of each are taken. A remittance from unknown correspondents.

All the newest and best kinds of Verbenas, 4s. to 12s. per doz. Agents in London, Messrs. Hurst and M'Mullen, Leadenhall-street. A descriptive Catalogue of Pelargoniums, Dahlias, Pansies, Fuchsias, Verbenas, &c., may be had on enclosing two postage stamps.—Maidstone, March 31.

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the EXHIBITIONS OF FLOWERS AND FRUIT, in the Society's Garden, in the present season, will take place on the following days, viz.: SATURDAY, May 5; SATURDAY, June 9; and WEDNESDAY, July 11; and that TUESDAY, April 10, is the last day on which the usual privileged Tickets are issued to Fellows of the Society. 21, Regent-street.

CHOICE SEEDLING PETUNIAS.

BASS AND BROWN have this season to offer the following beautiful and first-rate varieties, which were submitted to the Editor of the *Gardeners' Chronicle*, and favourably noticed in that Journal of September 2d: also by the Editor of the "Florist," for which, see the Number dated October. They have been selected from a large quantity of other seedlings, and can be recommended with a confidence of their being approved. They will be ready to send out the first week in April, and can be forwarded by post if desired.

BRILLIANT.—An extra bright purple-crimson flower, of good size and fine shape; described by the Editor of the "Florist" as a "deep rich crimson, with dark tube, fine in colour." Also described by the Editor of the *Gardeners' Chronicle*, as "a deep rich crimson, with purple centre, and a good flower" ... 5s 0d

BEAUTY OF SUFFOLK.—A fine large light flower, with dark plum-coloured throat, and deeply veined; described by the Editor of the *Gardeners' Chronicle* as a "light grey, richly-veined with purple, large and distinct." Also by the Editor of the "Florist," as a "pinky grey, with rosy purple veins; a very pretty variety ... 5 0

RENOWN.—A rich crimson flower, very large, and good form The Editor of the *Gardeners' Chronicle* describes it as a "crimson, with a tinge of blue; with a good contrast to No. 1 (Brilliant) and No. 6 (Telegraph." Described by the Editor of the "Florist" as "a rich purple crimson, good." ... 5 0

TELEGRAPH.—A large rosy purple, with light throat, and well-formed flower. "Bright crimson, with veined tube; a good flower."—*Gardeners' Chronicle*. 5 0

SPOTTED BEAUTY.—A white ground colour, with very dark purple throat and veins, beautifully edged with pink; a small flower of dwarf habit, attractive. "Veined and mottled, pretty, but rather small."—*Gardeners' Chronicle* ... 5 0

HESPERUS.—A large light flower, with purple throat and corolla, spotted with purple on the edges. "French white, with dark tube and veins, and with a spot of purple crimson on each division of the corolla."—The "Florist." 3 6

NYMPH.—A pinky blush, beautifully spotted on the edges of the petals with bright pink; very showy and pretty flower. This flower bloomed late, and was not submitted for the opinion of the before-mentioned authorities ... 5 0

The Editor of the "Florist," in allusion to those submitted for his opinion, also remarks—"These are fine varieties, rich in colour and veining."

The usual allowance to the trade by taking the set, or for three plants of a sort.

Seed and Horticultural Establishment, Sudbury, Suffolk.

FLOWER AND VEGETABLE SEEDS of every description.

PLANTS FOR BEDDING OUT; orders taken, to be delivered in May.

DAHLIAS, dry roots, at 6d., 8d., and 1s. each.

LILIUM LANCIFOLIUM ALBUM, 1s. 6d. each.

Araucaria, Ficus elasticus, Aloes, Cacti, Cedrus Deodara, constantly on show.

LAWN GRASS, 1s. 6d. per lb.

MEADOWS where it is wished to improve the crop of Hay, sow from 2 to 3lbs. of white Dutch Clover with 1 gallon of Perennial Rye or Italian Rye-Grass; the cost will be about 2s 6d. to 3s. per acre.

AGRICULTURAL SEEDS at the lowest prices.

DUNCAN HAIRS, Seedsman, 109, St. Martin's-lane, Charing-cross, London.

NEW SEEDLING CALCEOLARIAS AND PANSIES.

HENRY MAJOR, Knosthorpe, near Leeds, begs to announce that he purposes sending out, the first week in April, his set of 10 beautiful New Seedling Shrubby CALCEOLARIAS at 2l. the set; also his 5 beautiful New Seedling PANSIES at 1l. the set. For opinions upon both Calceolarias and Pansies, see *Gardeners' Chronicle*, May 27th; Gardener and Farmer's Journal, June 21th, Aug. 26th, Sept. 2d and 16th.

A Descriptive List of the above may be had on prepaid application. Select Calceolaria and Pansy Seed 2s. 6d per packet.

CAUTION.—Finding Circulars are going the round of my Connection under the head of WARNER and SON, of Cornhill and Brixton, I beg respectfully to state I have no connection with such a Firm, or has there been any House in Cornhill for the last 20 years but my own in the Seed Line. I am the only surviving Partner of the late Firm of WARNER, SEAMAN, and WARNER, of 28, Cornhill, I take the present opportunity to thank customers for all past favours, and to assure them every attention will be paid to their orders.—FREDERICK WARNER, 28, Cornhill; and 3, Lawrence Pountney-lane, Cannon-Street, London.—March 31, 1849.

LARGE YELLOW BELGIAN AND HORN WHITE CARROT SEEDS.

J. RIVERS begs to inform his friends in consequence of the above superior varieties of FIELD CARROT having yielded a larger crop of seed than he expected, he is induced to offer it at the reduced price of 2s. 6d. per lb. for the Yellow, and 2s. per lb. for the Horn White, in quantities of not less than 2 lbs. Carriage paid to London.—Sawbridgeworth, Herts.

The Gardeners' Chronicle.

SATURDAY, MARCH 31, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	April	2	Entomological	8 P.M.
			Chemical	8 P.M.
			Pathological	8 P.M.
			Medical	8 P.M.
TUESDAY,	—	3	Horticultural	8 P.M.
			Linnean	8 P.M.
			Civil Engineers	8 P.M.
WEDNESDAY,	—	4	Society of Arts (Anniversary)	7 P.M.
			Geological	8 P.M.
THURSDAY,	—	5	Zoological	3 P.M.
TUESDAY,	—	10	Syro Egyptian	7 P.M.
			Medical and Chirurgical	8 P.M.
WEDNESDAY,	—	11	Literary Fund	3 P.M.
			London Institution	7 P.M.
			Graphic	8 P.M.
			Pharmaceutical	9 P.M.
FRIDAY,	—	13	Astronomical	8 P.M.
			Botanical	8 P.M.
SATURDAY,	—	14	Royal Botanic	3 P.M.

COUNTRY SHOW.—April 9: Liverpool Horticultural.

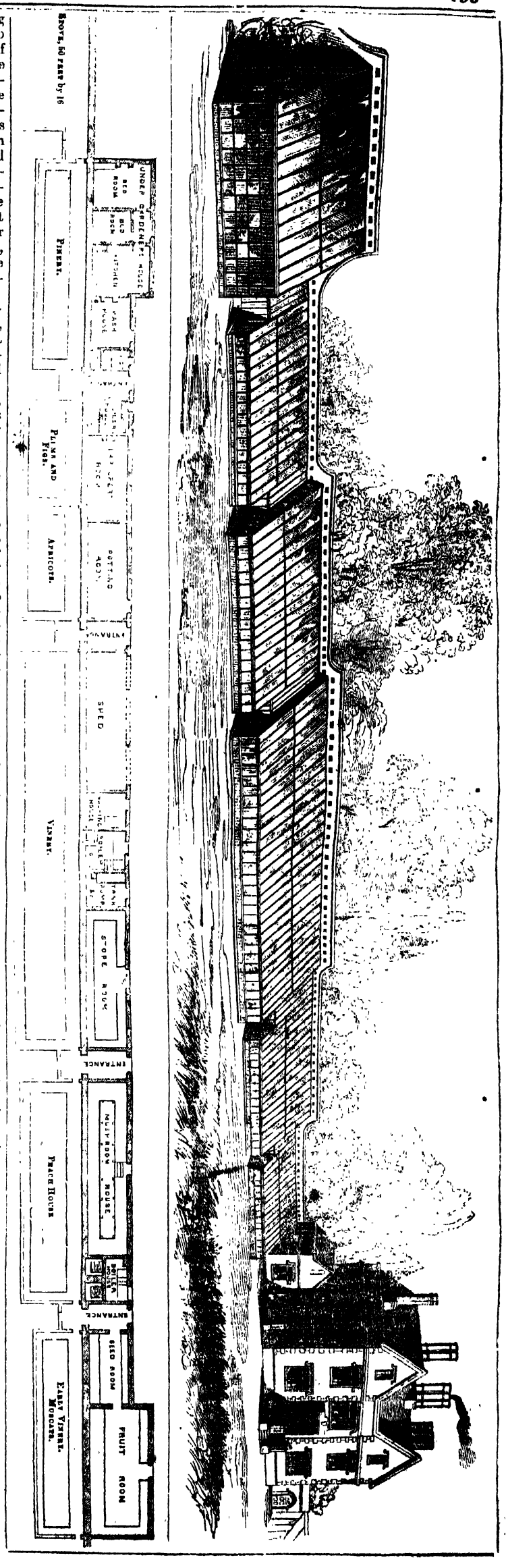
THE HISTORY OF THE ROYAL GARDEN AT FROGMORE is one that may now be told without impropriety, since Parliamentary papers have raised the veil which has hitherto been drawn before it.

In the month of January, 1838, the CHANCELLOR of the EXCHEQUER having appointed a Committee to inquire into the state of the Royal Gardens, the Committee directed certain inspectors to examine carefully the state and condition of the establishments at Kensington, Hampton Court, Kew, Windsor, and Buckingham Palace, to report the result of the inquiry, and to propose such alterations as might appear likely to render the gardens more efficient, in case they should be found in need of improvement.

The inspectors recommended, among other things, that the old worn-out Forcing Garden and Orchard at Kensington should be broken up, and sold or let for building purposes, and that with the funds thus obtained an entirely new Kitchen Garden at Windsor should be constructed in lieu of the ancient and unproductive establishments at Cumberland Lodge, King's Lodge, Cranbourne, Maestricht, and Frogmore These places were in part the remains of gardens which had once belonged to houses that had long disappeared, and they were situated at so considerable a distance from each other that the Royal Gardener could only inspect them by spending half the day on horseback. Frogmore was a low, damp, ill-drained, naked area of rather more than 3 acres, without a single forcing-house, and with dwarf ruinous walls; Maestricht was a swamp; Cranbourne a worn-out place of 4 acres, with an ancient Vinery; Cumberland Lodge little better, but it included nearly 12 acres, with a good many old forcing-houses; and the King's Lodge was a lonely shrubbery, having a sort of passage conservatory attached. And this was all that the resources of British Governments had been able to provide for the chief residence of the Sovereign.

Not one of these old places would have satisfied the wants of an opulent merchant, and the annual cost of their repairs amounted to very considerable sums, charged in the accounts of the Woods and Forests.

It was thought by the inspectors that such distant places were a dead weight upon the Royal purse, especially considering the worn-out condition in which every one was seen to be. They found them unproductive; they believed them to be incurable; they advised their abolition, with the exception of one Vinery at Cumberland Lodge, which deserved to be preserved, because of a fine old Vine there, which was almost a rival of the well-known Vine at Hampton Court; and they strongly recommended the formation of a new, more efficient, and certainly more economical garden, for the service



of the Sovereign. The advice was taken, and the present Garden at Frogmore is the result.

The outlay in forming this garden appears from a late Parliamentary return to have been as follows:

	£	s.	d.
Ground works	1,000	0	0
Workmen's sheds	93	9	3
Boundary walls and other general works	9,332	6	11
For oak-pale fence to inclose the west and south-west sides	587	0	0
Works in erection of the gardener's house, shed and stables; building Pine-pits, forcing-houses, &c.	17,906	16	8
Metallic hot and greenhouses	8,921	16	9
Hot-water apparatus for heating the Vineries, Peach and Cherry-houses, Pine-stoves, Fruit and Seed-rooms ...	3,908	13	3
Building a tank on the East Terrace, Windsor Castle, and other works connected with the supply of water ...	1,745	5	3
Asparagus-beds, and trainers for fruit trees	347	12	1
Plans and superintendence	1,118	19	11
	£41,962	6	1

The annual value of the old Kensington Garden ground is stated to be 3058*l.* 15*s.* 5*d.* There has also been a sum of 3122*l.* 17*s.* 2*d.* received for old materials and other resources, reducing the cost of the Frogmore Garden to 41,539*l.* 8*s.* 11*d.* It appears, however, that the Commissioners of Woods and Forests have expended 24,089*l.* 7*s.* 9*d.* in sewerage, road-making, and other items, in order to render the old Kensington Garden ground worth 3058*l.* 15*s.* 5*d.* per annum; and that sum must therefore be added to the cost of Frogmore, if the capital representing the annual value of the Kensington ground is taken to have defrayed it wholly or in part. The account then standing thus:

Annual value of Kensington 3058*l.* 15*s.* 5*d.*, representing, at 20 years' purchase, a capital of	£61,160	0	0
Cost of Kensington improvements...	£24,089	7	9
Cost of Frogmore Garden	41,539	8	11
	£65,628	16	8

In this manner has been provided for the service of her Majesty one of the most perfect, perhaps the most perfect, garden in Europe, of its kind; combining a certain beauty of appearance and some provision for decoration, with the most admirable arrangements for the great object of its institution, namely the supply of the Royal tables with the finest fruits and vegetables which skill can produce.

To-day we can only afford space for a sketch of half the elevation and corresponding ground plan of the principal range of hothouses; hereafter we shall endeavour to supply a short account of the details of the establishment.

A FRESH and rather considerable consignment of ORCHIDS has been just received from Mr. WARCZEWICZ, and will come to the hammer. Mr. SKINNER, who has the kindness to arrange the plants for sale, for the sake of the collector, who is a German collector living by his enterprise and activity, has placed before us the correspondence, drawings, and preserved plants belonging to this consignment, from which we gather the following particulars.

The plants have been collected during a very difficult and dangerous journey on foot, with Indians, from Chiapa to Panama, by the mountain line. In this journey Mr. WARCZEWICZ traversed the states of Chiapa, Vera Paz, Guatemala, and Veragua, the latter having been scarcely ever visited before by a botanical collector. The results have been highly interesting. There are dried specimens, or flowers in spirits, and drawings of the following plants. The rare and curious Cypripedium caudatum; a Cypripedium called longifolium, with numerous pale yellow flowers on a stem, certainly new, unless it be C. palmifolium, which is not in gardens; a singular genus, to be called Warscewitschia, apparently new, with drooping racemes of yellow and green flowers, the size of Catasetum roseo-album; a remarkable new Mormodes with large dark purple flowers; a Stanhopea in the way of Devoniensis, but with yellow flowers. There are, moreover, drawings without good dried specimens of the following. A Cattleya much like Skinneri; a very curious and fine Brassavola, with huge yellow and white flowers, and long drooping leaves, like those of Scuticaria Steelii; a Trichopilia, deep red, with thin flat stems 4 or 5 inches long, and a lip nearly as long, and another species or two which should be extremely handsome; a new Chysis, with large streaked flowers; a Lacæna or Acineta, with long pendulous strings of fragrant yellow flowers spotted with red; a Catasetum, with deep reddish brown speckled flowers, apparently very distinct; a Lycaste, with the bulbs of L. cruenta, but with larger flowers, of which the sepals are represented as deep reddish brown, and the petals and lip rose coloured.

These are all in beautiful condition, and will add some valuable species to our already rich collections. For ourselves we incline to attach the most importance to the Brassavola, Trichopilia, and Lacæna.

WE can find no more space at present for notes upon SWINDLERS; but must beg our readers to take care of their pockets, each for himself; and to forward to us the doubtful letters which they may receive. Our warning about the Dukinfield-hall gentleman was just in time. Some capital orders had been received from him the very day on which our notice reached his intended victims.

May we ask who and what Mr. HENREY BROWNHILL is, of Hampson-street, Manchester, who wants 40,000 Whitethorn, and who refers to MOSES WARING, Esq., Railway Contractor, Farnworth, near Bolton.

DAPHNE ODORA.

THE great anxiety manifested now-a-days for the possession of plants that are called new, is I fear producing in many instances the effect of pushing aside some of our old plants, with which very many of the new ones are not to be compared. Without affecting to despise novelties, or to be indifferent to subjects of the most recent introduction, I am anxious to call attention to some old and valuable, but comparatively neglected plants.

One of this description I believe is the Daphne odora, whose claims on our notice in point of usefulness are perhaps second to none. Flowering at a time when flowers are so much wanted to enliven our conservatories, or for decorating the drawing-room, renders a good stock of it a great acquisition. I am aware that many plants might easily be enumerated, with whose gaudy appearance this is not to be set in competition; but among all the winter flowering plants with which I am acquainted, I could not point out another that would more amply repay the labours of the cultivator. And yet if you go into any place where the introduction of new plants is much attended to, the chances are you do not see it at all; and if you do, instead of it occupying the prominent place it deserves, you will generally find it pushed into some out of the way corner of the greenhouse, as if it were an object totally unworthy of our care or attention. In such situations its appearance is just what might be expected from such unkind treatment—a few sickly looking leaves on the top of long straggling branches, and looking altogether as if it would say, "Give me air or I shall die." But under the influence of more generous treatment how different its aspect—round bushy plants, with branches covered with foliage of a healthy dark green, and exhibiting fine trusses of highly fragrant flowers during the most dreary part of the year, from the end of October till the middle of February; and, be it remembered, without any forcing, except the protection afforded by a cool greenhouse.

To those who would encourage the cultivation of this fine old plant, I would (in the absence of anything better), recommend the following simple mode of management, as having succeeded tolerably well at this place. As soon as the plants have done flowering, remove them to a cold pit, Vinery not at work, greenhouse, or any other structure, where they can be placed in such a manner that they shall not be shaded or crowded by taller plants. In general those which have been standing in the drawing-room will have suffered in some degree from the dry close atmosphere; more especially if they have been allowed to remain there for any length of time after having done flowering, because at that time they commence growing, and the young shoots, from want of light and air, will be drawn up weak and long jointed. This ought to be prevented by removing them before all the flowers have quite fallen off.

If the plants were properly attended to the previous summer, and the points of the shoots pinched out where the plant wanted filling up, it is not advisable at this period to resort to pruning or cutting back; as young shoots spring in abundance immediately below where the flowers were produced, and always flower much better than shoots out of older wood. But in special cases, when plants have from neglect been allowed to run up with naked stems, cutting them down to within 6 inches of the pot is perhaps the best way of reclaiming them. As this Daphne does not make very large roots, it has therefore the very desirable property of being capable of thriving in pots comparatively small, for the size of the plant. Yet it is necessary about the end of March or beginning of April to ascertain if any of them require shifting, which, if properly executed, will be quite sufficient till the next spring. Old plants, however, which it is not desirable to increase much in size, will do well for two, and sometimes three years without shifting. The soil I have found to suit them best is a mixture of light turfy loam, sandy peat, and well decomposed leaf-mould, in about equal quantities, together with what is indispensable to success under any circumstances—a thorough drainage, to ensure a free passage for the escape of superfluous water.

After having been shifted and arranged, it will be better to keep them for a short time a little closer than usual, till the roots begin to lay hold of the fresh soil; and most particularly to guard against over-watering, till the roots have found their way to the sides of the pots, otherwise the soil will become sodden, and the roots perish in consequence. As a general rule at this stage, no more water ought to be given than just sufficient to keep the plants from flagging. They will nevertheless be very much assisted by being gently syringed mornings and evenings. About the end of May or beginning of June the plants which were shifted in the spring may be supposed to be again well established in their pots, and growing freely; if so, occasional waterings of weak liquid manure will very much encourage a healthy action, and enable them to form large trusses of flowers in autumn. But to old plants, with their pots pretty full of roots, liquid manure may be applied with advantage from the time they commence growing. Or what answers a very good purpose is, a good mulching of half decomposed cow or sheep's dung, through which all the water applied to the plants must pass, and consequently carrying with it a certain portion of the fertilising properties of the dung to the roots; and by preventing evaporation in some degree, will so much encourage the roots nearest the surface, that the dung at the end of a few weeks will generally be found matted by them.

A practice prevails with some gardeners of placing their Daphnes out of doors, with other greenhouse plants, during summer. But unless the means be at hand of protecting them from the direct rays of the sun on the hottest days of summer, and heavy drenching rains in autumn, no advantage will be gained by adopting such a course; as they will be found to succeed much better in a pit, where shading can be easily applied when necessary, taking the lights off in the evening to give the plants the benefit of the night dews, and putting them on again in the morning, before the sun gets too powerful; admitting plenty of air during the day, to make the plants stiff and short jointed.

If in hot, dry weather, red spider should make its appearance upon the leaves, let them be well syringed with clean water, applied with considerable force, early in the afternoon; shutting them up close for the night, to keep a moist atmosphere about them; repeating the operation for several days in succession, and that pest will soon disappear.

By a little attention in summer, their flowering season may be very much prolonged. This is to be effected by setting aside some plants, and giving them only a partial supply of water for about six weeks, which will check rapid growth, promote the ripening process, and act on them in some measure as a season of rest. Then induce them, by giving copious waterings of weak liquid manure, to make another growth in autumn, thereby causing their flowering points to be formed at a much later period than they otherwise would have been. Plants treated in this way will not commence flowering generally till some time in January, instead of the usual season, November.

The Daphne odora is easily propagated by cuttings in February, planted in sandy peat, and placed in a gentle bottom heat, with a close, humid atmosphere. The cuttings I have found to make the best plants are the tops of last year's shoots, which have flowered during the winter; allowing that portion where the truss of flowers had dropt from to remain on the top of the cutting, which, from the number of buds formed close together around that place, will generally break from three to six young shoots; thereby laying the foundation of a fine, handsome, bushy plant. Good plants may also be obtained by grafting on the Spurge Laurel (Daphne Laureola), and placing them, till a union takes place, in a similar situation to that recommended for cuttings.

If any remark I have made in this paper be the means, in the most remote degree, of drawing the attention of those who have the convenience at command of doing justice to this neglected plant, my object will be fully accomplished. Planted out in the border of a conservatory, Orangery, or Camellia house it would be quite at home, and be an object of considerable interest during the whole winter; and prove invaluable to those who require nosegays at that dull season. *A. D., Dale Park, Arundel.*

NOTES OF A TRAVELLER.—No. III.

HONG KONG, AUG. 1848.—GREEN BANK, THE RESIDENCE OF C. BRAINE, ESQ.—This garden is situated on the sloping sides of a valley near the bottom of one of the numerous ravines which are seen on the sides of the Hong Kong hills. It is near the centre of the new town of Victoria, and is one of the greatest ornaments which the place possesses. Viewed from the public roads which have been made along the hill sides on the upper side of this garden, it is a most beautiful spot, and looks like an oasis in the desert. On one side nothing is seen but rugged mountains and barren hills, but here the eye rests upon a rich and luxuriant vegetation, which, under any circumstances, would be considered beautiful, but under the present its beauty is greatly enhanced by the contrast.

Every one interested in Chinese plants has heard of the garden of the late Mr. Beale at Macao, a friend of Mr. Reeves, and like him an ardent botanical collector. As nearly the whole of the English residents left Macao and went to Hong Kong when that island was ceded to England, all the plants in Mr. Beale's garden which could be moved with safety were also brought over in 1845, and planted in the garden at Green Bank. I had the pleasure of assisting to remove them to their new quarters, and although the operation was performed during the dry season, yet by taking them carefully up and soaking their roots well with water when replanting,

according to the excellent plan of Mr. M'Nab, of Edinburgh, the greater part of them have succeeded most admirably. Under the fostering hand of Mr. Braine, who is fond of plants, and a good botanist, and who is continually adding to his collection, we may expect this garden to be to Hong Kong what Mr. Beale's was to Macao in former days.

On entering the garden at its north or lower side, there is a wide chunamed walk leading in a winding manner up the side of the hill, in the direction of the house. On each side of this walk are arranged the trees and shrubs indigenous to the country, as well as many of the fruits, all of which are growing most luxuriantly. Ficus nitida, the Chinese Banyan, is growing on the right hand side, and promises soon to form a beautiful tree. This is one of the most valuable trees for ornamental purposes which one meets with in the south of China. It grows rapidly with but little care, its foliage is of a glossy green colour, and it soon affords an agreeable shade from the fierce rays of the sun, which renders it peculiarly valuable in a place like Hong Kong. The India-rubber tree (Ficus elastica), also succeeds well in the same part of the garden, but it grows much slower than the species just noticed. On the other side of the main walk I observed several specimens of the Indian "neme" tree (Melia Azedarach), which grows with great vigour, but is rather liable to have its branches broken by high winds, owing to the brittle nature of the wood. This defect renders it of less value than it otherwise would be, particularly to a place so liable to high winds and typhoons as Hong Kong is. This same Melia seems to be found all round the world in tropical and temperate latitudes; I believe it exists in South America, and I have seen it in Gibraltar, Malta, Egypt, Aden, Ceylon, the Straits, and in the south and north of China, at least as far north as the 31st degree of north latitude. Amongst other plants worthy of notice in this part of the garden are the Chinese Cinnamon, the pretty Aglaia odorata, and Murraya exotica, both of which are very sweet scented, and much cultivated by the Chinese. Two specimens of the Cocoa-nut Palm imported from the Straits are promising well. Other fruits, such as the Loquat (Eriobotrya japonica), the Chinese Gooseberry (Averrhoa Carambola), the Wangpoe (Cookia punctata), and the Longan and Lichee, are all succeeding as well as could be expected, considering the short time they have been planted. The Pinus sinensis, which is met with on the sides of every barren hill, both in the south and north of China, and which is generally badly used by the natives, who lop off its under branches for fuel, is here growing as it ought to do. The Chinese have been prevented, not without some difficulty, from cutting off the under branches, and the tree now shows itself in its natural beauty. It does not seem to grow large, but in a young state, with its fine green foliage reaching to the ground, it is not unhandsome.

As the main walk approaches the terrace on which the house stands it turns to the right, and leads the visitor up between two rows of beautiful yellow Bamboos. This species of Bamboo is a very striking one, and well worthy of some attention in England; the stems are straight, of a fine yellow colour, and beautifully striped with green, as if it had been done by the hand of a first-rate artist. I sent a plant of it to the Horticultural Society in 1844, and it will doubtless flourish well in an ordinary stove, where its beauty will well repay any care which may be spent upon it.

At the bottom of the bank, which slopes from the terrace on which the house stands, there is a long narrow Bamboo avenue, which is called the "Orchid Walk." This always affords a cool retreat, even at mid-day, as the rays of the sun can only partially reach it, and then they are cooled by the dense foliage. Here are cultivated many of the Chinese Orchids and other plants which require shade. Amongst them I observed Phaius grandifolius, Cymbidium sinense and aloifolium, Aerides odoratum, Vanda multiflora and teretifolia, Renanthera coccinea, Fernandezia ensifolia, Arundina sinensis, Habenaria Susannæ, a species of Cypripedium, and Spathoglottis Fortuni. There are also some other plants, such as Chirita sinensis, the "Man-neen-chung," a dwarf species of Lycopodium, highly prized by the Chinese, and various other things which, taken altogether, render this shaded "Orchid Walk" of much interest to those who are interested in Chinese botany.

Above the "Orchid Walk" is a green sloping bank, on which are growing some fine specimens of Bamboos, Poinciana pulcherrima, Myrtles, Gardenias, Oleanders (which thrive admirably in China), Croton variegatum and pictum, Magnolia fuscata, Olea fragrans, Dracæna ferrea, and Buddlea Lindleyana. The latter was brought down from Chusan by me in 1844, and is now common in several gardens on the island, where it thrives well, and is almost always in bloom, although the flower-spikes are not so fine as they are in a colder climate. A large collection of plants in pots are arranged on each side of the broad terrace in front of the mansion. These consist of Camellias, Azaleas, Roses, and such plants as are seen in the Fa-tee gardens at Canton; many of them are growing in pots which are prettily painted in the Chinese style, and placed upon porcelain stands.

At the end of the house, on the north side, Mr. Braine has laid out a pretty flower-garden in the English style; the plants are arranged in groups, and singly, and surrounded with a green sward, which gives the whole a refreshing and pleasing appearance to the eye. This part of the garden contains, amongst other things, many choice and rare plants from the north-eastern parts of the empire, all of which were sent home to the Horticultural Society a year or two ago, and which have been published in the Journal of the Society and in our English botanical periodicals. I noticed amongst them a number of my old discoveries in the north, such as Anemone japonica, Forsythia viridissima, Daphne Fortuni, Edgeworthia chrysantha Viburnum plicatum and macrocephalum, Cryptomeria japonica, &c. It is a curious circumstance, that notwithstanding the love which the Chinese have for flowers, the English have the credit of introducing these plants to the southern parts of the country. I have little doubt that now many of them will soon be cultivated in the southern nurseries, and exposed for sale.

I must not conclude this notice of Mr. Braine's garden without an allusion to his novel conservatory. Glass or hothouses, you are aware, would be rather superfluous in the south of China, particularly in Hong Kong, where it is hot enough I can assure you without anything of the kind. Cool houses, or structures for shading from the sun and keeping off the dashing rain, are much more requisite, and it is one of these Mr. Braine has constructed. It is placed at the end of a pretty terrace, a little below the level of the upper flower-garden. Plants which are newly potted, or others which it is desired to keep a long time in bloom, are placed here, and mats are used for covering the roof, and can be drawn on or off at pleasure. It evidently answers the purpose for which it was designed.

When it is remembered that Hong Kong six years ago was but a barren island, with only a few huts upon it, inhabited by pirates or poor fishermen, it is surprising that so soon a large town should rise upon the shores of the bay, containing many houses like palaces, and gardens, too, such as this, which enliven and beautify the whole, and add greatly to the recreation, comfort, and health of the inhabitants. *R. F.*

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

Potato Planting.—Notwithstanding all that has been said of the advantages of autumn or early spring planting of the Potato, it will be found that in 99 cases out of 100 the main crops are still out of the ground, or have only recently been set. The proprietors of small gardens, especially, have deferred this work, on account of their space being occupied by Turnips, Broccoli, &c.; and in thousands of instances the planting of Potatoes has yet to be done. I confess this is the case with myself, with the exception of the early Kidneys, which I got in early in February, and having had considerable experience with this important vegetable, I will simply relate the steps I take in my own garden to insure, as far as I can, a satisfactory produce. In connection with the following remarks, the numbers of the *Chronicle* should be consulted, which have recently, in Leading Articles, exhibited the results of extensive inquiries on the subject.

The first thing to be done is to get good seed, and to obtain it as far as possible from the scene of action. In my neighbourhood all Potatoes are related more or less remotely; and in order to be free from the injurious consequences of this "in and in" system, I have procured some sacks of York Regents from a dealer in London, on whom I can rely, that all the advantages of a change may be made sure. These I shall plant in sets, having at least two eyes in each, in rows a yard apart, and distant from each other 9 inches in the row. The general principle that every plant should have room to grow, without depriving its neighbour of sun and air, is especially applicable to the Potato, whose tubers can only be brought to perfection by a full quantity of those natural agencies. Should the disease break out again, it cannot have a more congenial sphere for its ravages than a plot of Potatoes with weak and elongated stems produced by over crowding. The rows should be a good distance apart for another reason, namely, to allow of earthing up. If it is excess of moisture which is so fatal to the tuber at the later period of its growth, earthing up will in some measure counteract the evil. The plan recommended in last week's *Chronicle* of covering the advancing stems with mould, which seems to have sound reasoning for its basis, can only be adopted with advantage by planting at considerable distances.

Numerous experiments have proved that the soil for Potatoes should not contain rich and exciting manures; but anything which acts mechanically, by keeping it light and open, cannot be too highly recommended. I have been carefully collecting all the soot and ashes the premises will yield; also brick rubbish, and the bottoms of wood cellars and faggot heaps. I should like a quantity of old thatch if it were available, and then all these materials mixed together would form an unexceptionable compost. Those parts of the garden will of course be chosen which grew other crops last year. The fork is the only tool necessary except in sandy soils. To work with a spade, except for the purpose of excavating or digging holes, is most barbarous. Everything should be done to render the soil as light as is practicable, and a spade cannot accomplish this end at all like the fork.

If the gardener has not at command the materials recommended as compost, he had better do without any than employ stable dung, however rotten it may be. A *poor soil* is far more favourable for the growth of sound Potatoes than a rich one, and it is pretty certain that we owe the disease to the habit of using stimulating manures. There should now be no delay in planting, as the danger to the crop increases with every week of postponement. Plant really good tubers in the way we have pointed out, and you will have done all that you can to get a remunerating crop. *H. B.*

Home Correspondence.

Scotch Farmers and Foresters.—Your correspondent "N. A. D. P." seems to derive great satisfaction from having put to silence some who attempted to oppose his assertions regarding "the inferiority of Scotch to English husbandry." "Having named," he says, "certain farms in the Lothians and Perthshire, in proof of the alleged inferiority, his adversaries replied no more." It may not have occurred to your correspondent that there are other reasons, besides those arising from defeat, which induce men of mild dispositions to withdraw from altercation, and none more likely than the desire to avoid entering the lists with prejudiced and ignorant opponents. I do not happen to have seen your correspondent's letters, or to know to what specimens of bad farming he referred. I never lived in Scotland, or had practice in Scotch agriculture, but I have had frequent opportunities of comparing the management of land and stock in the several counties of Scotland and England, and have been accustomed to consider the farming which I have seen in the Lothians, Roxburgh, and Berwickshire, equal at least to that of any number of counties of the same extent in England. Yielding, however, to the superior judgment of "N. A. D. P.," and admitting the correctness of his assertion as to "the inferiority of Scotch to English farming," I take the liberty to suggest to him, that he would confer a great favour upon us English agriculturists—that he would let us into a secret well worth knowing—by informing us how these inferior managers in Scotland happen to be able to pay 3*l.*, 4*l.*, and 5*l.*, per statute acre for land which would not bring more than half that rent, for mere farming purposes, in any part of England. He will likely tell us that they escape more lightly in the amount of rates and cesses. Be it so; still that will not make up for half the difference that exists in the article of rent, throwing the disadvantages of their vilified climate, and distance from English markets, entirely out of the scale. Not, satisfied, however, with the boast of superior agriculture in England, this writer has found another point of pre-eminence, from which to feed the pride of Englishmen, and cast contempt on our shivering neighbours of the north. "A new branch," he says, "of Scotch imposture is now springing up, which is the puffing of Scotch foresters! a country in which there is not a tree of any decent size, nor ever can be, from the climate. Why don't they send us Scotch turtles and Pine-apples?" Now really there is something rather cruel in this taunt, for our ignorant countrymen north of the Tweed, should any of them chance to see it, must imagine that turtles are the every-day produce of England; that they are crawling about for any one to pick up; and hence, not only the proverbial sleekness of our aldermen, but the absence of all poverty and destitution in our parishes. As to Pine-apples, the Scotch must know that a large proportion of the most eminent gardeners in England have received their education and training in Scotland, and that Pine-apples and Grapes, not depending on climate, but on skill and culture, are produced in as great perfection in the one part of our island as in the other. As to the want of "decency" in the size of their trees, they might perhaps congratulate themselves that their country is not so much injured by hedgerow timber, as is the case with many parts of England, but might venture an opinion that a look at the trees of Aucrum, Dunkeld, Blair Athol, Blair Drummond, Hamilton, and many other places, might disabuse "N. A. D. P." of his prejudices, and cure him of some of his ignorance. *Fair Play, March* 27.—I imagine that you have introduced the observations on "Scotch Foresters," at p. 181, in order to provoke discussion. I, for one, had not before heard of the "new branch of Scotch imposture," alluded to by "N. A. D. P.;" it certainly astonished me to find your correspondent stating that "not a decent tree of any size was to be found in Scotland, nor ever can be, from the climate." I had not the pleasure of reading his strictures on Scotch farming, but if he had the boldness to make statements like these on that branch of rural economy, it is likely that few persons would be found to take the trouble to controvert them. I should very much like to see a discussion raised on the subject of "climate;" if you can induce your correspondents to pay more attention to this, as a means of successful cultivation, it would be most important—a Scotchman suits any climate! that's the rub! *Agronome, March* 28. [We hope Mr. "N. A. D. P." is satisfied. His letter was printed as an example of English wrongheadedness, which we think is now sufficiently exposed. "N. A. D. P." will learn in time, that ignorant people are to be found in all countries, and that there is no lack of them even in his own county.]

Curious Arrangement of the Seeds in an Orange.—A gentleman of Helston, Cornwall, on opening an Orange the other day, found 30 seeds all attached together, and very much resembling a bunch of Grapes. The Orange was of ordinary size, but all the seeds were much beyond an average. The most singular part of this *lusus naturæ* is, that the bunch was suspended by a stem growing from the side of the Orange. *H. C. Mills, Helston, Jan.* 31. [What a pity that this curious case should not be explained in exact terms, so as to be available for purposes of science.]

Hardy Heaths, &c.—"A Devonian's" observations on the possibility of raising some new varieties of hardy Heaths, by crossing the European species with the

natives of the Cape, are well worthy of attention. I trust some of our gardeners who have been so successful in hybridizing with respect to other genera, may be induced to make the attempt. In localities where peat abounds, there can be no greater ornament than the hardy Heaths, one or other of which is constantly in flower from the beginning of March to the end of October, and any addition to the number would be hailed as one of the greatest acquisitions that could be obtained for our gardens. With regard to Epacrises, I have never seen E. heteronema tried in the open air, but I know that several of the species will bear several degrees of frost, and with a slight protection they would probably be uninjured. If "a Devonian" would kindly mention any other plants of Australia or Van Dieman's Land, as for instance any of the Eucalypti, Acacias, Dracophyllums, &c., which he may have found to be hardy, he would confer a great obligation on lovers of hardy shrubs. *A Lancastrian.*

Tree Pæony.—I have a Tree Pæony, on my lawn, which has now on it (near opening) about 200 blossoms. It is nearly 30 feet round, and has not had any protection for years; it was almost as large some years since, but the frost cut it down, and left only the stool, which is now about as large as a man's thigh. Is this anything beyond the common size? *J. C., March* 24. [It is a a very fine specimen.]

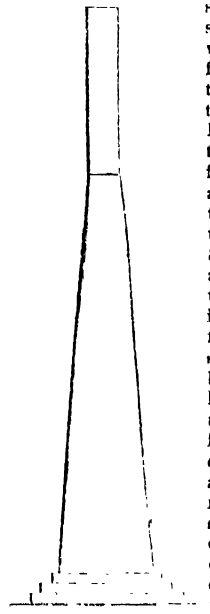
Protected Trellises.—We send you leaves of the Tea Rose, Comte de Paris, as specimens of luxuriant vegetation in a house built on Mr. Rivers's plan with Mr. Montgomery's rafters. All the varieties of Rose in this house, show a healthiness of growth which is quite confirmatory of your views respecting low night temperature. We should have said that no artificial heat has been applied to this house; the plants in another house, built on the old plan and heated with a flue, bear no comparison with those in the house above alluded to. *H. Curtis and Co., Moorend, near Bristol.* [The leaves sent were unusually large, especially at this season, and exhibited the best of health.]

The Ripening of Winter Pears.—I think it is a very just observation of Mr Errington (Part I. of vol. iv, of the Journal of the Horticultural Society), that "the proper ripening of Pears in the room is a matter of great importance, and about which we have all much to learn;" and that, if he were to build a fruit-room for himself, he "would have a door at the further end, leading into a Pear closet, in which he would have a slight amount of artificial warmth at command;" and that "the Pears should all be on moveable trays, and these trays, when required for use, should be removed a week or so previously (without disturbing the Pears) to the warm room. A temperature of 60° or 5° would perhaps be sufficient." Now, I suspect that the French take more pains, and know more about ripening their Pears after they are picked, than we do; and it would be well to make some inquiries on this subject. Did Mr. Thompson learn anything during his journey to Paris last year? I think the London dealers have got to keep their Pears better and later than formerly; but, being a collector, I have throughout this past winter bought samples of nearly all the best kinds in Covent Garden, and, although they were finer fruit than my own, and looked better, I owe I was frequently disappointed by the flavour, and they seemed in most cases to have lost their freshness as well as taste. Have your correspondents any knowledge of what is done to keep and mature winter Pears by the London dealer? There is one point in Mr. Errington's paper about which I have doubt. He proposes to ripen his fruit at the time he wants it, by applying the heat. Is the fruit so likely to ripen after it has been long gathered; or would it not be best to ripen it as fast as the application of heat is necessary, as soon as it is picked? I have no experience of the two modes; perhaps your readers have. I like Mr. Errington's plan of a warm closet in his fruit-room; but those who have not that convenience may, I should think, easily supply the deficiency, by putting up a closet of the size of the Pear trays in a cool part of a plant or Pine stove. *Dodman.*

Literary Piracy of Floricultural Publications.—This vice has reached a point that is become intolerable, and it ought to be more than censured; it ought to be stopped entirely. Reproof is as useless to these compilers as a poultice to the hide of a rhinoceros. As a glaring instance, look at the last number of Harrison's "Floricultural Cabinet." Of "Notes on New or Rare Plants," which are either extracted or compiled, there are two pages. From the *Gardeners Chronicle* there are 3½ pages; from Gardner's "Travels in Brazil," four pages; from "The Florist" a third of a page, and nearly the same amount from the "Cottage Gardener," a total amount of 10 pages of other writers' property appropriated by the proprietor of that work. I have taken the "Floricultural Cabinet" for years, and have written more than once to the editor, complaining that a reader, like myself, of the *Chronicle*, and similar works, have reason to be dissatisfied with such conduct, but it was never attended to, so I pen these few lines, hoping his eye may meet them in your columns, when next he may be levying his contributions upon them. I have no objection to pay the price for half the matter, but I dislike sanctioning this species of literary robbery as much as I should dislike buying a 1 lb. loaf when I knew 1 lb. of it was made of stolen materials. Mr. Johnson wants looking up also; a friend of mine used his list of nurserymen and seedsmen, in his Gardening Almanack of this year, to forward his trade circulars; but before he had got far into it he had a number of his letters returned; but this is a small fault compared with his piracies. *Fair Play.* [The Court of Chancery offers an immediate and final remedy for these malpractices, which belong to the class of offences for which some swindlers have been just transported, and for which others will, no doubt, travel the same road. The legal offence is different, but the moral offence is the same.]

The Constitution of Plants altered by Cross Breeding, &c.—No doubt we have (as "G." asserts) weakened the constitution of the Fuchsia in our attempts to advance its beauty; but I do not see how it could have been otherwise, for to me it appears certain that if we are not content with the natural forms and general character with which Nature has provided flowers, we must of necessity be content with bestowing more care on the plants furnished us by means of hybridisation. Every body knows that our field Violet (Viola tricolor), is hardy enough; but if we want the same flower as improved by florists we must seek for it in some warm place in the garden, and even under the shelter of glass, and will receive directions to preserve it from excesses of temperature. Now, is this weakness to be attributed to bad management in our system of raising varieties of superior quality; or is it not a natural consequence dependent upon the change that has taken place in the development of its system. I make no doubt that species of the Fuchsia would luxuriate in this country provided the thermometer never fell lower than the point specified by "G." (other things being equal), but not varieties; for the latter are more susceptible of injury. And if, as "G" justly remarks, there is implanted in the various beings subservient to man the capabilities of great improvement, I hold that in every such case the ingenuity of man must be directed to keep in check the enemies that such improvement has engendered. This remark stands good both in the animal and vegetable kingdom; all our domesticated animals require more care to keep them from disease than the same kinds do wandering in their native wilds. I quite agree with "G." in considering high temperature with diminished light injurious to plants. *E. Sanders, Egham Lodge, March* 17.

Garden Walls.—About 12 years since, I had occasion to build a quantity of garden-wall, which I constructed, as an experiment, in a somewhat unusual manner. I was prevented by circumstances from again seeing the wall till the present month, when I found that it had stood very well; and I learned from the gardener that he thought the form was favourable to the trees. The annexed sketch is a section of the wall which stands on two or three courses of brick foundation, and then commencing with a thickness of 18 or 22 inches, tapers up to 9 inches, at which it continues parallel for about 3 feet. The taper portion consists of two facings of 4-inch brick work, having frequent headers, to bond the face bricks into the interior, which is formed of concrete, a mixture of coarse gravel, stones, sand, and lime. Where these materials are accessible, the construction is cheaper than the ordinary mode of building; it is clearly stronger; the absence of piers is an advantage; and if the gardener's opinion be correct, the plan is perhaps worth notice. *A. A.*



Protecting Wall Fruit Trees. To ward off spring frosts, my plan is to place boards on the top of the walls, from the 1st of February to the 1st of May, allowing them to hang over more or less, according to the height of the wall. One inch projection for every 10 inches in height of wall is the proper proportion. I placed a projecting roof of 3 inches over a new wall 5 feet high, and next morning I found that the upper half of the wall was protected, while the lower half was injured by the frost. Side screens and blinds in front failed, when the kind of coping mentioned above succeeded. *F. W. F. W., Bristol.*

Rain.—The following statement may be relied on as being correct:

	1845. inches.	1846. inches.	1847. inches.	1848. inches.
January	2 54	3.92	1.75	2 10
February	2.02	1.68	1 85	4.21
March	0 89	2.57	1.01	3.12
April	1 52	2 06	1.04	3.29
May	3 21	1 84	2 10	0 22
June	1.12	1 01	1.51	4 25
July	2.19	1.79	0.77	3 10
August	2 54	4.48	1 37	4 53
September	2.64	3 06	1.32	2.10
October	2 41	6.31	2 37	4.51
November	3.43	2.12	1 57	1 65
December	2.90	1.80	3 88	3.73
	27.20	32.64	20.38	37.20

It is, perhaps, worthy of mention, that this place is within 250 yards of the sea, and that this part of Sussex is very level, being about 10 miles from the Downs. *James Graham, Steward and Gardener, Bersted Lodge, Bognor, Feb.* 12.

Pomological Archæology.—In connection with the article on this subject, in your last number (March 24), the following extract from a note-book kept at this place by one of my ancestors, in the years from 1580 to 1584, may be interesting to some of your readers:—"The names of Apelles which I had their graffes from Brentmarch, from one Mr. Pace. *Item*, the Appell out of Essex; Lethercott, or Russet Apell; Loundon Peppen; Kew Goneling, or the Croke; Glass Appell or Pearmeane; Redd Stear; Nemes Appell, or Grenlinge; Bellabone; Appell out of Dorsettsher; Domine quo vadis. Pace's Pear. The Kinge's Puffen Figge." *W. C. Trevelyan, Nettlecombe, Taunton.*

Societies.

Botanical of London, *March* 2.—The Treasurer in the chair. A paper was read from Mr. A. Henfrey containing some remarks on the "discrimination of species." While estimating highly the value of minute inquiry into the conditions presented by plants, the author could not overlook the inconveniences that arise from hastily giving a specific value to peculiar forms. All the deductions of philosophical botany depend upon the fixity of species, as the science of numbers does on the definite nature of units. If we admit transitions, we can only define a species as a particular abstract form, more or less completely realised in nature, under peculiar conditions which we do not yet understand; but if, as is usually the case, we admit the fixity of species, we are bound to exercise sufficient care in our observations, to avoid raising accidental variations to this rank. In reference to Mr. Jordan's views it was observed, that he also regards the species as an absolute and not abstract form, but on this ground calls every tolerably constant variety a species. Mr. H. considered that an important point was overlooked as to the nature of varieties. He regarded them all as abnormal conditions depending upon the morphological and physiological relations of the different organs. Accordingly he would take that as the true example of a species in the Phanerogamia, in which the seeds (the highest product) were most perfectly and abundantly produced in a generally healthy condition of the whole plant, and from such examples alone, where any doubt existed, should specific characters be drawn. In cultivation, a most important test in doubtful cases, the plants ought to be exposed to many different kinds of condition, otherwise a variety or abnormal form might be continued for a time by the very same influences which first produced it, while the varied conditions would afford the best means of judging of the relative constancy of characters afforded by the different organs of the plant.

Reviews.

Three Practical Suggestions for the Colonisation of Ireland. By Wm. Bridges. Baillière. Pamphlet, 16 pp.

Duodecimo, or the Scribbler's Progress, an Autobiography. 12mo. Newby. 325 pp.

"It is impossible that Ireland can go on in this way." Such are the words of every second man who opens his mouth upon the subject. The unanimity is delightful; but, alas! with this phrase it ends. One gentleman would confer upon Lord Clarendon the authority of an autocrat; another would let the peasantry and landlords fight their battle out without interference, in the hope that at last nothing would remain of either party; a third would clear the country of its labourers; a fourth would break up the whole surface of the land into small holdings, and introduce French *morcellement*; a fifth suggests turning the bogs into charcoal, and selling it to the Londoners for the purpose of purification. Mr. Bridges suggests a national mortgage, for which land-scrip bearing interest is to be issued, after the manner of the Americans, to capitalists, landlords, and public companies. The author of the "Duodecimo," a strange book, but containing some good sense, proposes home colonies; and recent circumstances invest his views with importance.

His proposal is to found in Ireland an Agricultural college on the model of Sandhurst, "For the education of the sons of the nobility and gentry, from the age of 17 to (say) 22, on a sufficiently large scale to allow of its answering the several purposes of—a school of instruction in scientific and practical farming; a source of pecuniary profit, so that it may be self-supported; a place of security and defence, not only for its inmates, but for such as would settle in its neighbourhood, and look upon it as a city of refuge in case of threatened disturbance; and as a focus from which civilisation and knowledge of the art, which of all others they want most, may radiate among a wild people in a very much shorter space of time than it would take to accomplish so desirable an object any other way." ——

"Taking, then, Sandhurst for our model, the next step is to show that our proposed college shall pay its own expenses, and that the education to be there obtained shall be not only good, useful, and thoroughly gentlemanly, but, moreover, exceedingly cheap. This can only be effected by numbers; and we would therefore propose that the establishment should consist of 500 pupils—a very manageable number, and one that would secure the efficient carrying out of the financial, as well as of the other objects of the institution. We are prepared to show that for 60*l.* a year, a gentleman's son, if he has 499 comrades, may be boarded, lodged, and well-educated, and that the profits derived from the board and lodging will not only provide the education, but leave a handsome balance for purposes to be presently discussed." ——

"Suppose, then, an estate of 1000 acres of improvable land to be rented in a spot to be fixed on, suitable

buildings, erected, and 500 students introduced — a course of lectures on agricultural chemistry established, another on surveying, draining, &c., and a practical bailiff engaged to manage the farm concerns—in what an incredibly short space of time would a spot in the the wildest parts of the West of Ireland assume an aspect of high cultivation; and the wilder the better for our combined purposes—

'Place us amidst O'Rourks, O'Tooles,
The royal, ragged sons of Tara,
Or climes wherein Dick Martin rules,
Beyond the wilds of Connemara.'—T. MOORE.

"We say the wilder the better; the more uncultured the land, and the people, the more the need of spreading manure and civilisation. And this brings us to another 'feature' in our scheme, on which, as Lord Castlereagh phrased it, a great deal undoubtedly 'hinges!' the perfect security, namely, which such an establishment as we contemplate would enjoy itself, and afford to its neighbours, in the very wildest parts of Ireland; while its inmates, instead of living in solitary banishment, would have within their own walls every advantage of refined civilisation. The precincts of the college, including the necessary homestead, stack and cattle-yards, &c., being surrounded by a wall, or earth works, which might be garnished with a few light swivels, or field-pieces, would be proof against any incendiary attempts, and neither White boys nor Peep-o'-day boys, Ribbonmen nor Rockites, would dream of molesting a fortalice bristling with 500 bayonets. A modified infusion of the Sandhurst military discipline into such a garrison would be necessary, and an occasional drill, by a serjeant from the nearest infantry quarters, with the use of the fatigue jacket, or some other plain, serviceable uniform, would give an appearance and bearing to our agricultural *eleves*, which would cause them and theirs to be respected by the most cordial haters of the Saxon."

In this manner it is expected that heads of home colonies may be speedily formed, and that such colonies so commanded would speedily attract English capital, that thus the leverage required to raise Ireland its actual "slough of despond" will be gained. cannot say we entertain such an expectation, but the as far as it goes, is excellent, and may aid other asures with good effect.

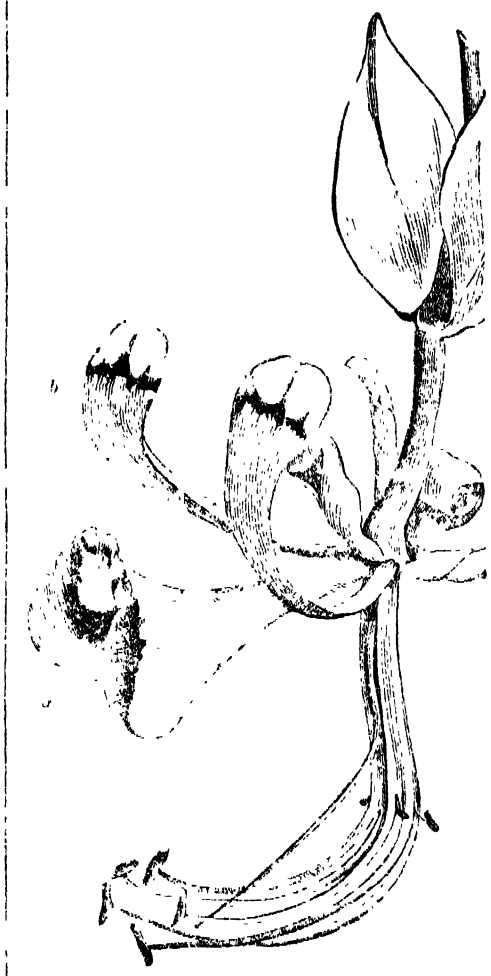
For ourselves we can entertain no doubt that the ly plan from which any solid advantage will be erived is to replant the distressed districts, with due egard to vested rights, in some such way as was pointed out lately in the House of Commons by Sir Robert Peel, "Transferring the land from its present to entirely new proprietors, with new feelings and new spirits, who would have the capital, the ability, and the energy to cultivate the soil properly. This indispensable change of property should not be effected by means of individual barter, but through the instrumentality of a commission, which might be appointed by Government, who could get possession of the property, and then arrange the distribution of it."

We do not believe that there exists in the way of this measure any difficulty which a great statesman could not overcome: and it appears to be quite possible that the whole measure might be worked out, with the aid of Parliament, to the immense advantage of Ireland and the Irish, without costing the Imperial Treasury a shilling.

Garden Memoranda.

EALING PARK: AMHERSTIA NOBILIS. To Mrs. Lawrence belongs the merit of first flowering this fine Leguminous plant in this country. Three bunches (one of which has been presented to the Queen) of the most beautiful flowers have already been cut off it, three more are coming forward, and there is every reason to believe that others will soon make their appearance. This floricultural achievement has been brought about by Mrs. Lawrence in a very short period of time, as the following brief history of the plant will show. When received at Ealing Park in July, 1847, it was only 18 inches high, with 11 leaves on it. In the beginning of September, 1848, such was the rapidity with which it had grown, that it measured 6 feet 7 inches high from the pot, about 10 feet through, and was profusely clothed with luxuriant foliage exhibiting the best of health. Many of the young leaves measured then 2 feet 4 inches long, with leaflets 11 inches in length Up to September last it had only been twice shifted. It then occupied a slate tub 2 feet deep, and about 3 feet wide. It soon became too large for the house it was growing in, and, in order to give it room, a compartment was formed for it in the large Orchid house, and at the same time the tub in which it was planted was enlarged. The latter was placed on low brick pillars, in order to secure for it perfect drainage. To assist the bottom-heat a bed of tan was formed round the tub; and a hot-water pipe, over which are placed zinc evaporating troughs, runs round the tan. The ground temperature has thus been kept up to between 80° and 90°, and the top heat 75° to 80°, and even to 100° and 110° with sun heat. While growing fast it received plenty of moisture, but lately it has been kept somewhat drier. Such is the treatment this truly fine tropical tree has received at Ealing Park; and the results have been all that well directed skill could have desired. Under such circumstances, indeed, failure could hardly have occurred; for on examination it will be found that they as nearly as possible correspond with the conditions under which it grows naturally in the East Indian province of Martaban.

Dr. Wallich says, "The first notice I had of the existence of this magnificent tree, was at Rangoon, in August, 1826, when Mr. Crawfurd favoured me with some dried unopened flowers, together with the following account taken from a statement of his visit to the province of Martaban: 'At Kogun, on the Saluen river, is a garden belonging to a neighbouring monastery. The only plant in it which struck me as remarkable was a tree about 20 feet high abounding in long and pendulous panicles of rich Geranium-coloured blossoms, and long and elegant lance-shaped leaves. It is too beautiful an object to be passed unobserved even by the uninitiated in botany. Handfuls of the flowers were found as offerings in the cave before the image of Buddha.'" In his report of a journey on the river Saluen, undertaken in March 1827, Dr. Wallich again says: "In about an hour I came to a decayed kioum (a sort of monastery), close to the large town of Kogun, distant about 27 miles from the town of Martaban. I had been prepared to find a tree growing here, an account of which had been communicated me long ago by Mr. Crawfurd, nor was I disappointed. There were two individuals of this tree here; the largest, about 40 feet high, with a girth (at 3 feet above the base) of 6 feet, stood close to the cave; the other was smaller, and overhung an old square reservoir of water lined with bricks and stones. They were profusely ornamented with pendulous racemes of large vermilion-coloured blossoms, forming superb objects, unequalled in the Flora of the East Indies. I call this tree Amherstia nobilis. The Burmese name is Thoka. Neither the people here nor at Martaban could give me any



distinct account of its native place of growth, but there is little doubt that it belongs to the forests of this province. The ground was strewed even at a distance with its blossoms, which are carried daily as offerings to the images in the adjoining caves." Such is Dr. Wallich's account of this tree, of which he sent layers to the Botanic Garden of Calcutta. The specimen in Mrs. Lawrence's garden is now 9¼ feet in height, 39 feet in circumference, 12 feet through, and has on it, it is said, 700 and odd leaves. The latter hang down, together with the shoots, to which they are attached in a most graceful manner. The flowers are individually large, as will be seen by the annexed woodcut, rosy pink, with the vexillum (*a*) and two wings (*b*) tipped with yellow; and scentless. They are borne in loose pendulous bunches beneath the profuse and elegant foliage.

The soil in which it has succeeded so well is Epping loam mixed with crocks, sand, and Wimbledon peat (the fibry part), to the extent of about one-third its bulk. As in all climates, with few exceptions, plants have a period of growth and rest, these conditions have been imitated in the artificial culture of the Amherstia. While it is growing it likes plenty of heat and moisture. This, indeed, will be readily conceived when it is remembered that it comes from the warm province of Martaban, near the gulf of that name, where the annual fall of rain is perhaps 5 or 6 times that of London, whose yearly average depth is about 24 inches.

With regard to other plants at Ealing Park, which are all in excellent condition, we have only room to mention one, namely, a Pimelea spectabilis, than which a finer specimen has perhaps never been seen in Europe. It measures 25 feet in circumference, 6 feet in height, and about 8 feet through, and almost every shoot over this large surface bears a flower bud, of which there is about 3000, and some of these are beginning to expand. It is, however, placed in the "retarding house," and it is hoped it may be kept back for the May exhibition at Chiswick. It is but right to mention that the credit of bringing this plant into its present excellent condition is, we believe, due to Mr. May, who has the care of the stove and greenhouse plants at Ealing Park. The Orchids, under the management of Mr. Smith, in general look well, and are now beginning to start into growth.

Miscellaneous.

Sale of Pine Plants.—About 500 Pine plants were brought to the hammer the other day by Mr. Stevens, and realised the following prices; 9 lots of 6 plants of fruiting Providences, from 15s. to 18s. each lot; 25 similar lots of Montserrats, from 11s. to 18s each; 11 succession Queen plants, 12s.; 6 lots of 11 plants of succession Montserrats, from 9s. to 15s. each; 15 sucession Enville, 13s.; 10 similar Otaheites, 18s.; suckers of all the above sorts, 20 in each lot, from 10s. to 16s., and in one instance 1*l.* per lot.

The Jesuits in California.—The following record of the first attempts at gardening and cultivating the ground in California, as a first means of introducing the blessings of civilisation, may perhaps be interesting at the present moment. "A learned Jesuit monk, Eusebio Kuhn, is said to have been the first who discovered that California was a peninsula. In 1683 the Jesuits had formed establishments in Old California, and for the first time it was made known that the country which had until then been considered an El Dorado, rich in all precious metals and diamonds, was arid, stony, and without water or earth fit for vegetation; that where there is a spring of water, it is to be found amongst the bare rocks, and where there is earth there is no water. A few spots were found by these industrious men uniting these advantages, and there they founded their first missions. But the general hatred with which the Jesuits were regarded, excited suspicion against them, and it was generally supposed that their accounts were false, and that they were privately becoming possessed of much treasure. A *visitador* (surveyor) was sent to examine into the truth, and though he could discover no traces of gold or silver, he was astonished by the industry and zeal with which they had cultivated the barren and treeless waste. In a few years they had built 16 villages, and when they were expelled in 1767 the Dominican friars of Mexico took their place. Until these missions were established, and in every part of the peninsula which is not included in the territory of the missions, the savages were the most degraded specimens of humanity existing. More degraded than the beasts of the field, they lay all day long upon their faces on the arid sand, basking in the heat; they abhorred all species of clothing, and their only religion was a secret horror that caused them to tremble at the idea of three divinities, belonging to three different tribes, and which divinities were themselves supposed to feel a mortal hatred, and to wage perpetual war against each other. Undeterred by the miserable condition both of human and of vegetable nature, these missionaries cultivated the ground, established colonies, made important astronomical observations, and devoted themselves to science, to agriculture, and to the amelioration of the condition of these wretched savages. In New California, the missions were under the charge of 36 Franciscan friars, under whom the most extraordinary progress in civilisation took place, since, in little more than 30 years, upwards of 33,000 Indians were baptised, and 8000 marriages had taken place. The soil being fertile, and the climate more benign than the other California, in 18 missions established there, they cultivated corn, Wheat, Maize, &c., and introduced vegetables and fruit trees from Spain, amongst those the Vine and the Olive, from which excellent wine and oil were made, all through that part of the country. Amongst the monks destined to these missions, were those of San Fernando. There, banished from the world, deprived of all the advantages of civilisation, they devoted themselves to the task of taming the wild Indians, introduced marriage amongst them, taught them to cultivate the ground, together with some of the most simple arts; assisted their wants, reproved their sins, and transplanted the beneficial doctrines of Christianity amongst them, using no arms but the influence which religion and kindness, united with extreme patience, had over their stubborn natures; and making what Humboldt, in speaking of the Jesuit missions, calls 'a pacific conquest' of the country. It frequently happened that marketable goods and even provisions had to be sent by sea to those missionaries who lived in the most savage and uncultivated parts of the peninsula; and a curious anecdote on this subject is related. It happened that some one sent to the monks, amongst other things, a case of fine Malaga raisins; and one of the monks, whose name I forget, sowed a number of the dried seeds. In process of time they sprouted up, became Vines, and produced fine Grapes, from which the best wine in California was made." *Life in Mexico, by Madam C. de la B.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

ATTEND to the potting of Heaths and other hard-wooded greenhouse plants as they require it; this operation may be performed with propriety at any

season when the roots are making progress, without unnatural excitement; but especially when the plants are commencing their new growth, which, with respect to the generality of hard-wooded plants, takes place immediately after their season of flowering. Before potting, take care that the old ball is sufficiently moist, for if it is potted in a dry state, it will be impossible afterwards to moisten it without souring and saturating the new soil. As soon as any plant has done flowering, its future shape should be adjusted by removing a portion of the old flowering stems, and unless seeds are an object they should never be allowed to ripen on any plant. Let the various climbers, both in pots and borders, have due attention with regard to training, and permit no more shoots to remain than the allotted space will allow to perfect themselves. Plants, in conservatory borders (whether climbers or otherwise), which have been planted in former years, should have as much of the old, exhausted soil removed as can be done without materially injuring the roots, and the space filled up again with fresh compost; and, at the same time, any desirable alteration in their arrangement should be made. By scrutinising your stock you will detect many plants which you will feel convinced would do you more credit if they were planted out than they will if confined in pots; in making a selection for this purpose, those sorts should be chosen which are remarkable either for the beauty of their flowers, or for continuing in bloom for a considerable period, or are particularly attractive and ornamental in their habit or foliage. Let the main portion of the soil for these plants consist of roughly-chopped turves of loam or peat, with an admixture of richer materials, according to their special requirements; but, for the sake of neatness, the surface should be covered with finer soil.

FORCING DEPARTMENT.

As thrips have of late years become troublesome upon Vines, &c., a few hints as to the method of destroying them may not be out of place in a Calendar, as the season is at hand in which they may cause great injury and annoyance, if not effectually kept under or destroyed. After trying various methods, I find that fumigation with tobacco, after the plan here laid down, is most effectual. If the infested plants are growing in pots, and of a moderate size, we place them together in a common plant pit; but when the Vines on the rafters are attacked, any other plants which are infested are removed to the same house. A quiet evening is selected for the operation, when the leaves of the plants are quite dry, the house is covered, if convenient, and fumigated with pure tobacco; during the whole of the next day it is kept close, and shaded if the sun comes out, to prevent the necessity of giving air; by thus retaining the fumes of the tobacco within the house, the insects, which were merely sickened by the previous evening's smoking, are prevented from reviving, which they would certainly do if fresh air was admitted into the house; but to make sure of destroying them the house is again fumigated on the second evening. On the second morning the plants are syringed and receive air as usual, but if the weather is very hot they must be attentively watched. I feel satisfied that this will destroy all the insects in existence at the time, but it will be necessary to repeat the process three times with an interval of eight or ten days between each fumigation, to destroy those which proceed from the eggs laid by the old insects. A board should be fixed over the top of the smoking-pot, about 6 inches above the rim, in order to diffuse the smoke; as it is liable to injure the leaves, if it comes directly in contact with them in a hot volume from the pot.

FLOWER GARDEN AND SHRUBBERY.

If the soil of any of the beds or clumps for masses require renewing or enriching by the addition of animal or vegetable manure, it should be immediately done, that they may be ready to receive plants or seeds. Where the same, or nearly the same, plants are grown for a number of years successively in any of the beds, it is advisable once in four or five years to remove a large portion of the old soil, and to fill them up again with new material; this practice, however, for some plants, as scarlet Pelargoniums, for instance, would be rather injurious, for they generally grow more luxuriantly than is desirable, even in the poorest soil. Many mass plants, however, particularly annuals, take more from the soil than can be supplied to it in a moderate annual top-dressing; and where we find a certain kind of plant exactly suited to a particular situation, we do not change it every year, but prefer changing the soil. Perhaps no kind of flower garden is more generally interesting than one of mixed herbaceous plants, if they are tastefully arranged as regards height and habit of growth, colour, and season of flowering; and it is owing to a want of attention to these particulars that flower gardening of this description is so little in repute; the beds are too generally planted with little regard to system at first, and gaps which occur afterwards are supplied with little better taste. As the arrangement of the plants cannot be rectified during the season of growth, the best method of proceeding is to name them carefully as they come into flower, and to make memoranda of their height, colour, season, and other peculiarities of habit; with the assistance of this information, any cultivator may make a collection of herbaceous plants both beautiful and interesting.

FLORISTS' FLOWERS.

CARNATIONS AND PICOTEES.—These flowers must be potted off directly, in the pots in which they are to bloom. Independent of extreme care being taken in clearing the soil of noxious insects, a strict examination of the plant will be indispensable: it often happens, that though a layer may be established, and have made considerable growth, and is to all appearance healthy, yet, on removing it into the large pot, the point of severance will be found diseased; it will then be proper to cut away every part that is in the least affected, as on this in a great measure depends the success of the future bloom. We are glad to find that open shows for this very favourite flower are established in various parts of the country, and we are sure that no florists' flower is more worthy of extensive patronage. AURICULAS.—Seedlings of last year will now bloom. Amateurs should carefully select those which have form and marking, a fair proportion of ground, as well as marginal colour. We shall be happy to render them every assistance in their selection, if specimens are duly forwarded. Blooming plants must be carefully covered every night, and fully exposed on all fine days. TULIPS.—Dress or remove the surface soil of the beds, and cut off all cankered foliage.

COTTAGERS' GARDENS.

WINDOW PLANTS.—These will now require an increased supply of water, but do not on any account allow it to stand in the soakers; it is impossible that the plants can be healthy if the soil is made to hold water like a sponge; at the same time avoid the practice of dribbling a little on the ball every day: wait until the soil actually requires it, and then give sufficient water to moisten the whole. As the plants fill their pots with roots, they should be moved into larger ones, unless the increased size of both pot and plant would be inconvenient; if they are already large enough, and present display more desirable than it would be when flowers are more abundant out of doors, they had better not be shifted again till the flowering is over, and they may be assisted, if necessary, with liquid manure while the blossoms are expanding. In potting always secure a good drainage by a plentiful use of large crocks in the bottoms of the pots, and let the surface of the soil be at least half an inch below the rim; these two provisions will make it less troublesome to give the plants a sufficient supply of water, and will prevent any stagnation about their roots. Constant attention will be necessary at this season, to preserve the plants from the ravages of insects; sponging them with clean soft water will be the cheapest and most effectual plan, particularly for plants in rooms, as it will clean away any dirt or dust which may have settled upon their leaves, as well as remove the insects. A few Balsam seeds may now be sown. Balsams are very showy, and they are easily cultivated; they should be potted off in small pots as soon as they will bear handling, and repotted in moderately rich soil as they require it.

State of the Weather near London, for the week ending March 29, 1849, as observed at the Horticultural Gardens, Chiswick.

March		Moon's Age	Barometer Max.	Barometer Min.	Thermometer Max.	Thermometer Min.	Thermometer Mean	Wind	Rain.
Friday	23	25	30.047	29.979	44	30	37.0	N.E.	.00
Satur	24	●	29.986	29.95[illegible]	41	27	35.5	N.	.00
Sunday	25	0	30.014	29.907	40	33	36.5	N.E.	.01
Monday	26	1	29.896	29.862	43	32	37.5	N.E.	.00
Tues.	27	[illegible]	29.870	29.8[illegible]	41	31	36.0	S.W.	.11
Wed.	28	3	29.899	29.830	45	38	41.5	S.E.	.00
Thurs	29	4	29.836	29.811	51	29	40.0	E.	.11
Average			29.931	29.861	44.5	31.8	38.2		0.29

March 23—Overcast, cold haze, densely overcast, frosty.
— 24—Overcast and cold, sunshine at intervals; clear and frosty.
— 25—Slight snow, cloudy and cold; overcast.
— 26—Cloudy, densely overcast at night.
— 27—Overcast, dry haze; densely overcast; rain.
— 28—Drizzly and foggy, overcast.
— 29—Hazy; rain; clear at night; slight frost.
Mean temperature of the week 5½ deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending April 7, 1849.

April		[illegible]	[illegible]	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain	Prevailing Winds.							
							[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sunday	1	54.7	35.0	44.9	15	0.75 in.	6	[illegible]	3	2	[illegible]	4	1	4
Mon.	2	56.2	35.9	46.1	10	1.15	4	[illegible]	3	1	2	6	2	[illegible]
Tues.	3	[illegible]	35.5	4[illegible]	1	0.07	3	[illegible]	2	1	1	4	[illegible]	3
Wed.	4	56.0	31.7	43.4	9	0.46	5	[illegible]	2	1	5	5	2	3
Thurs	5	56.2	37.1	46.8	11	0.66	–	3	3	1	2	4	8	2
Friday	6	56.0	37.4	46.7	9	0.50	3	[illegible]	2	–	1	[illegible]	1	–
Satur	7	56.8	37.0	46.9	17	0.40	2	[illegible]	5	[illegible]	11	7	4	–

The highest temperature during the above period occurred on the 3d, 1848—therm. 78 deg., and the lowest on the 1st, 1845—therm. 16 deg.

Notices to Correspondents.

TO OUR CORRESPONDENTS.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

BACK NUMBERS OF THE GARDENERS' CHRONICLE.—The publisher begs to say that any of the following back Numbers may be had. Any subscriber who will forward postage stamps equivalent to as many numbers as are required, will have them sent free by post. A few copies of the volume for 1847 are still on hand, price 30s. each, also the volume for 1848, price 30s. 6d. each. The volumes of former years are out of print.

1841—1, 8, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 34, 45, 46, 47, 48, 51.

1842—1, 6, 8, 11, 12, 16, 17, 18, 20, 22, 31, 32, 34, 39, 41, 42, 45, 49, 50, 51, 52, 53.

1843—15, 16, 17, 18, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38, 40, 41, 42, 43, 48.

1844—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 34, 35, 37, 38, 39, 40, 41, 42, 43, 44, 45, 48, 49, 51, 52.

1845—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 17, 18, 19, 20, 21, 23, 25, 27, 28, 31, 33, 39, 40, 41, 44, 45, 49, 50, 51, 52.

1846—4, 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22, 23, 26, 39, 42, 43, 48, 51.

1847—1, 2, 3, 4, 5, 8, 10, 11, 13, 14, 15, 19, 21, 22, 23, 27, 32, 35, 36, 37, 41, 42, 43, 44, 46, 47, 48, 51, 52.

1848—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 44, 45, 51, 52, 53.

BEES: *Tez.* Without knowing the condition of your bees in autumn, we cannot say with certainty what caused them to die during winter, leaving honey behind them. They might have been affected by damp, which does not escape from bees through wooden hives so well as through straw ones; and the extra covering on the boxes might only add to the evil. Bees, however, sometimes die in straw hives also. In such cases the stocks seem to have been rendered weak by swarming late in the previous season; the coldness of the weather might also have prevented the colonies from rearing a sufficient supply of young bees to succeed those gradually dying off. That would account for so few dead bees being found in tenantless hives having a portion of store. Except your situation is damp, you had better not remove your hives to winter quarters, but give them extra shelter. *W.—Emptor.* Some recommend physicking bees with a little salt or urine in their food, but pure honey is the only medicine, in fact the "Balm of Gilead," both for famine and disease. The best substitute for honey to feed with is 2 lbs. of lump or fine sugar boiled a few minutes in about half a pint of beer. *W.*

CUCUMBERS: *J C.* Your failure is to be attributed to dampness and over richness of soil. The latter requires very little water during dull weather, such as we have experienced of late.‡

CUSTARD APPLE: *Clericus.* In its natural habitat this tree grows upwards of 20 feet high, and to be grown in anything like perfection in this country, it will require at least as much room as a large Orange tree, or, in other words, a house sufficiently lofty to hold a plant from 10 to 15 feet in height. It will succeed better planted out in a warmed border than in pots, but the roots should be kept within a limited space, in order to induce fertility. The soil should consist of turfy loam of a sandy texture, rough peat, and leaf-mould. It should be wintered in a temperature of about 55° at night, and as soon as the plant shows signs of vegetation in spring, the amount of heat and moisture should be gradually increased till the temperature reaches from 65° to 70° at night, and from 75° to 90° by day, about the beginning of July. During the growing season the humidity of the atmosphere should be proportioned to the amount of heat, and the roots should be liberally supplied with water. From the middle of July air should be more freely admitted, and the heat and moisture gradually reduced, in order to ripen the wood and induce the formation of flower-buds. During the winter months the plants must be kept cool, and they should be sparingly supplied with water. Your plants will require several years' cultivation before they will arrive at a fruit-bearing age.‡

FIRS: *G G.* Fell them in midwinter, or at the very end of autumn. Your newsman is right. The No. is out of print.‡

GEOLOGICAL SOCIETY: *Sub.* Apply to the Secretary.

INK FOR ZINC LABELS: *J P and A W.* See p. 818 of our volume for 1848.‡

NAMES OF PLANTS: *Inquirer.* Anemone apennina.—*Marcelly.* 1, Arabis alpina; 2, Double red Hepatica; 3, Single blue ditto; 4, Erophila vulgaris; 5, Cardamine hirsuta.—*T C.* We see nothing new in your Eranthemum strictum. If there be a difference, you should have sent a piece of the other for comparison.—*P H W.* Chrysosplenium oppositifolium.—*H B.* Æcidium Pini has attacked your Laricio; we have no idea why, or how you can get rid of it.—*J W.* 1, Canna, perhaps coccinea; but it is impossible to name it with certainty without seeing the plant and knowing something of its habits; if tuberous, it is not coccinea; 2, Epidendrum virens; 3, one of the many varieties of Oncidium (Cyrtochilum) maculatum.—*A K.* Rodriguezia secunda; Monochilus regium from Ceylon, not Borneo.—*Hinda.* A kind of Lichen, called Evernia jubata.—*Interested Inquirer.* Lunaria rediviva or Honesty.—*M J.* Berberis dulcis.—*G Berry.* Catasetum semiapertum.

ORCHARD DRAINING: *Somerset.* We have seen very beneficial results from draining an orchard 3 feet deep with pipes, the drains being 24 feet apart. Fill the drain above the pipes with anything but good soil, and by so doing the roots will not be enticed down to cause a stoppage.||

PACKING FLOWERS: *H L H.* Wrap them in damp brown paper, and send them in a tin box.‡

PAXTON'S COTTAGER'S CALENDAR. Parties wishing to have copies for distribution among their tenantry, can be supplied at the rate of 25 copies for 5s., or 3d. each copy.

PEACHES: *Sub.* With a border in "good heart," as yours is, we would advise you to use no manure water at all; but, if you do apply it, it should be after the fruit is fairly stoned.‡

PEAR TREES: *O S.* Your trees intended to be trained *en Quenouille,* but neglected till the branches became too strong for bending down without breaking, may yet be recovered. Some of the half-broken branches will heal, and generally fresh shoots will push below the breakage; these you can train, whilst flexible, in the way they should go.||

PELARGONIUMS AND GERANIUMS: *Sub.* A Geranium has regular flowers and 10 perfect stamens. A Pelargonium has irregular flowers and seven perfect stamens, &c.

POTATOES: *Sub.* We have no reason to suppose that guano and salt will be advantageous to Potatoes. Our advice is not to use manure at all.

RHUBARB: *J S.* Huddersfield.

THE "TREE ROSE."—The price has been reduced to 3s. 6d.; the book can be sent free by post for that sum.

VINES IN FRAMES: *C S.* By introducing into a frame your Vines at present growing against a wall, you can certainly obtain ripe fruit. Fermenting materials will be best employed as linings; and these may be gradually allowed to decline, if the season prove so hot as to render artificial heat unnecessary.||

VIOLETS: *J P and A W.* The Double Russian is sweetest, and on that account most suitable for bouquets.‡

YUCCA: *Lady M.* It is probable that it grows too fast to flower well. By placing it on rockwork, in any poor soil, and facing the south, it will receive the full benefit of the sun, and the dryness of the place will prevent its overgrowing itself. There is no advantage in cutting off the old stems, unless they are unsightly, in which case they are better away. Do not be alarmed if some of the lower leaves should die after the Yucca is transplanted; that will probably happen. The plants, if carefully taken up, and the roots disposed skilfully beneath or at the side of the masonry, will move well enough now.

MISC.: *M E R.* Wash the grease spot *carefully* with weak caustic soda and a soft sponge. With patience you will remove it.—*E M N.* Old coins have nothing to do with gardening. Apply to the nearest silversmith.—*J W.* Probably the Early Manley.||

SEEDLING FLOWERS.

CAMELLIAS: *H Lane and Son.* Your seedling, "Beauty Supreme," is bright rose, beautifully veined; petals broad, round, and of a thick waxy texture. Judging from the flower sent, it is as good in shape, and rather larger, than the old Double White, when well grown. It is certainly a first-rate variety.*

CINERARIAS: *G A B.* White, tipped with crimson, thin and small, and like many others now grown.*—*B B.* No. 1, deep rose, starry and thin; 2, purple, washy and thin; 3, a good self-colour, rosy purple, but thin and bad eye; 4, a fine large purple, with good petals, the best; 5, deep blue, thin and starry; 6, a neat little white, tipped with pink, but small and like many others; 7, large, rosy lilac, with good broad petals, one of the best, provided the petals came more regular; 8, blue, with broad petals, but thin and washy.*

POLYANTHUSES: *J B K Z.* Small, but a pretty flower; dark, with a fine yellow edging.*—*G A B.* No. 1, a good dark flower, but the edging is too slightly marked; 2, rather small, and the eye is bad, edging tolerably good; 3, small, and eye bad, ground colour near the bottom bad; 4, a good flower, very like No. 1, the best of your seedlings.*

VERBENAS: *W J Epps.* "Eclipse" is a very pretty two-coloured kind, but out of character at this season. Send flowers in August, when they will exhibit their true colours.*

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

NORWICH MEETING, 1849.

PRINCIPAL DAY OF THE SHOW, THURSDAY, JULY 19.

IMPLEMENT AND LIVE-STOCK PRIZES.

THE PRIZES are open to General Competition. Members have the privilege of a Free Entry, and Non-subscribers are allowed to compete, on the payment of 5s. on each Certificate.

I.—IMPLEMENT PRIZES.

Forms of Certificate to be procured on application to the Secretary, 12, Hanover-square, London. All Certificates for the entry of Implements, &c., will be required to state the total number of articles entered to be shown by each Exhibitor, and the space required for their exhibition; and must be returned, filled up, to the Secretary, on or before the FIRST OF MAY, 1849; the Council having decided, that in no case whatever shall any such Certificate for Implements be received after that date.

NOTE.—The Prize-Sheets containing the full enunciation of the terms of these Prizes, and the conditions under which the competition for them will take place, may be had on application to the Secretary of the Society, 12, Hanover-square, London.

Heavy-land Plough	£5	0	0
Light land Plough	5	0	0
Plough for general purposes	5	0	0
Paring plough	5	0	0
Subsoil Pulverizer	5	0	0
Drill for general purposes	15	0	0
Corn Drill	10	0	0
Turnip Drill (on the flat)	10	0	0
Turnip Drill (on the ridge)	10	0	0
Drop Drill (seed and manure)	10	0	0
Manure distributor (best adapted for distributing broadcast any kind of compost or hand-tillage, when in a moist state, and which is capable of adjustment for the delivery of any quantity, from 2 to 20 bushels per acre)	5	0	0
Portable Steam Engine	50	0	0
Second best ditto	25	0	0
Portable Threshing-machine	25	0	0
Corn-dressing machine	10	0	0
Meal-grinding mill	10	0	0
Linseed and Corn Crusher	5	0	0
Chaff-cutter	10	0	0
Turnip-cutter	5	0	0
Cake-breaker	5	0	0
One-horse Cart	10	0	0
Harvest Cart	10	0	0
Waggon	10	0	0
Drain-tile machine	20	0	0
Draining tools	3	0	0
Heavy Harrow	5	0	0
Light Harrow	5	0	0
Norwegian Harrow	5	0	0
Scarifier	10	0	0
Cultivator, or Grubber	10	0	0
Horse-hoe (on the flat)	10	0	0
Horse hoe (on the ridge)	5	0	0
Horse-rake	5	0	0
Horse Seed-dibbler	10	0	0
Hand Dibbler	3	0	0
Barrow Hand-drill (to work with cups)	7	0	0
Liquid Manure Distributor	5	0	0
Hay-making Machine	5	0	0
Gorse-bruiser	5	0	0
Steaming Apparatus	5	0	0
Silver Medals for miscellaneous awards and essential improvements, estimated at	20	0	0

DRAINING PLOUGHS.

At a Monthly Council of the Society, held on the 6th of March, 1849, the offer of ROBERT ADLIONBY SLANEY, Esq., M.P., to place the following Two Prizes at the disposal of the Society, for adjudication at the Norwich Meeting, was unanimously accepted, viz.—

I. For the best Drain Plough, to cut out at one, two, and three cuts, to the greatest depth, with not more than four horses, so as to prepare a drain so far for deeper cutting	10	0	0
II. For the best Plough, to fill in the soil cast out of drains, with not more than four horses (two and two abreast), and not to exceed 6d. in cost	10	0	0

II.—LIVE-STOCK PRIZES.

Forms of Certificate to be obtained on application to the Secretary, 12, Hanover-square, London. All Certificates for the Entry of Implements, and the space required for their exhibition in the Show Yard, must be returned, filled up, to the Secretary, on or before the FIRST OF MAY, and all other Certificates by the FIRST OF JUNE, the Council having decided that, in no case whatever, shall any Certificate be received after those dates respectively. In the application for Certificates for Live Stock, the Character and Age of the Animals to be exhibited should be stated, in order that the proper Forms of Certificate may be sent.

SHORT-HORNED CATTLE.

Bull, calved previously to the 1st of January, 1847	£40	0	0
Second-best ditto ditto	20	0	0
Bull, calved since the 1st of January, 1847, more than one year old	20	0	0
Second-best ditto ditto	10	0	0
Cow in milk, or in calf*	20	0	0
Second-best ditto ditto*	10	0	0
In-calf Heifer, not exceeding three years old	20	0	0
Second-best ditto ditto	10	0	0
Yearling Heifer	10	0	0
Second-best ditto	5	0	0

HEREFORD CATTLE.

Bull calved previously to the 1st of January, 1847	40	0	0
Second-best ditto ditto	20	0	0
Bull calved since the 1st of January, 1847, more than one year old	20	0	0
Second-best ditto ditto	10	0	0
Cow in milk, or in calf*	20	0	0
Second-best ditto ditto*	10	0	0
In-calf Heifer, not exceeding three years old	20	0	0
Second best ditto ditto	10	0	0
Yearling Heifer	10	0	0
Second-best ditto	5	0	0

DEVON CATTLE.

Bull, calved previously to the 1st of January, 1847	40	0	0
Second-best ditto ditto	20	0	0
Bull, calved since the 1st of January, 1847, more than one year old	20	0	0
Second-best ditto ditto	10	0	0
Cow in milk, or in calf*	20	0	0
Second-best ditto ditto*	10	0	0
In-calf Heifer, not exceeding three years old	20	0	0
Second-best ditto ditto	10	0	0
Yearling Heifer	10	0	0
Second-best ditto	5	0	0

CATTLE OF ANY BREED.

(Not qualified to compete as Short-horns, Herefords, or Devons; Cross-bred animals being excluded.)

Bull, calved previously to January 1, 1847	20	0	0
Second-best ditto ditto	10	0	0

*** If the cow be in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.**

Bull, calved since Jan. 1, 1847, more than a year old	£10	0	0
Cow in milk, or in calf*	10	0	0
Second-best ditto ditto*	5	0	0
In-calf Heifer, not exceeding three years old	10	0	0
Yearling Heifer	5	0	0
Cow for dairy purposes	10	0	0
Second-best ditto	5	0	0

HORSES.

Stallion for Agricultural purposes, of any age	30	0	0
Second-best ditto ditto	15	0	0
Stallion for Agricultural purposes, two years old	20	0	0
Second-best ditto ditto	10	0	0
Stallion for Dray purposes	20	0	0
Roadster	15	0	0
Mare and Foal, for Agricultural purposes	20	0	0
Second-best ditto ditto	10	0	0
Two-years-old Filly	15	0	0
Second-best ditto	5	0	0

LEICESTER SHEEP.

Shearling Ram	30	0	0
Second-best	15	0	0
Ram of any other age	30	0	0
Second best ditto	15	0	0
Pen of Five Shearling Ewes of the same flock	20	0	0
Second-best ditto ditto	10	0	0

SOUTHDOWN SHEEP.

Shearling Ram	30	0	0
Second-best	15	0	0
Ram of any other age	30	0	0
Second best ditto	15	0	0
Pen of Five Shearling Ewes of the same flock	20	0	0
Second-best ditto	10	0	0

LONG-WOOLLED SHEEP.

(Not qualified to compete as Leicesters.)

Shearling Ram	30	0	0
Second-best	15	0	0
Ram of any other age	30	0	0
Second-best ditto	15	0	0
Pen of Five Shearling Ewes of the same flock	20	0	0
Second-best ditto ditto	10	0	0

PIGS

Boar of large breed	15	0	0
Second-best ditto	5	0	0
Boar of small breed	15	0	0
Second-best ditto	5	0	0
Breeding Sow of large breed	10	0	0
Breeding Sow of small breed	10	0	0
Pen of Three Breeding Sows of a large breed†	10	0	0
Pen of Three Breeding Sows of a small breed†	10	0	0

† Of the same litter, above four and under eight months old.

*** There will be no Sale by Auction in the Show-yard.

By order of the Council,
JAMES HUDSON, Secretary.

London, March 6th, 1849.

The Agricultural Gazette.

SATURDAY, MARCH 31, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, April 3—Agricultural Society of England.
WEDNESDAY, — 4 Highland and Agricultural Society
THURSDAY, — 5—Agricultural Imp. Society of Ireland.
TUESDAY, — 10 Agricultural Society of England
THURSDAY, — 12 Agricultural Imp. Society of Ireland.

FARMERS' CLUB.—April 2 London, Great Oakley, West Hereford.—April 4 South Devon, Framlingham. April 4 Turners' April 6 Otterey St Mary April 7 Newcastle, Northampton, York April 9 Clayden.—April 11 Needham Market, April 11 Halesworth.—April 14 Peterborough.

MR. C. PEARSON, M.P., wishes to introduce a system of PRISON DISCIPLINE founded upon INDUSTRIAL LABOUR. Crime would probably be reduced by it, and, certainly, the enormous outlay required for the construction of prison palaces upon the cellular system would be avoided; while the prisoners would be enabled to diet and clothe their guards and themselves by the produce of their labour. His project proposes the formation of two cheap prisons with 1000 acres of land to each, under two distinct sets of circumstances, for the purpose of testing their relative powers of surplus production, after the primary conditions of each establishment shall have been complied with, namely, the raising on each 1000 acres respectively, an amount of bread, meat, Oatmeal, and Potatoes, sufficient for the sustenance of 1000 prisoners and 100 officers.

The one, it is proposed to establish upon 1000 acres of land in Hampshire; and the other within a few miles of London, Liverpool, Manchester, or other populous city, where, by the application of a greater quantity of manure, a greater amount of labour may be profitably employed (after supplying the prisoners with requisite food) in raising market-garden produce, which would bring a considerable cash return. In the Essex Forests, within 10 miles of London, there are many thousand acres of land suitable for these purposes, which, like the New Forest, are unproductive in the hands of the Crown. At Wanstead, also, there are 1500 acres of waste land which do not produce a rent of 2s. 6d. per acre, although they immediately adjoin to land of the same quality, which, by the labour of man, has been well drained and cultivated, and was recently sold at upwards of 100*l.* per acre.

Now it is not to the subject of prison discipline that we are about to direct the attention of our readers, though in this, beside its importance in the eyes of every humane and intelligent man, they are immediately interested through the county expenditure, swollen as it is by mismanagement in this very particular. It is impossible not to suppose that habits of agricultural industry enforced during imprisonment must strengthen resolutions against crime on release, and so ultimately lessen the cost of crime to our ratepayers by diminishing its amount; but it is to the details of a scheme by which Mr. PEARSON'S views may be developed that we must now confine our remarks.

Mr. PEARSON has issued a circular to the members of the London Farmers' Club, from which, indeed, we have extracted the above enunciation of his plan, and in it he asks for information on "the productive powers of 1000 acres of land, when subjected to the highest possible cultivation, by means of the manure from an establishment of 1100 persons, combined with an amount of active vigorous labour, equal in quantity (if capable of being profitably employed) to the powers of 500 ordinary agricultural labourers working 10 hours a day, with a power, at the same time, of expanding or contracting the daily supply of labour (as far as the whole number of prisoners will admit) and as the exigencies of farming operations and the state of the season may require—having reference, however, to the importance of spreading the labour of the 500 over the surface of the whole year so far as it can be conveniently done." In order to simplify the question upon which information is desired, he observes that the *maximum* of produce yearly required for the use of the establishment, is 930 quarters of Wheat, 16,900 stones of meat, 700 tons of Potatoes, and 360 quarters of Oats.

Let us, therefore, suppose the case of 1000 acres of originally waste land, first improved by drainage and otherwise, to be cultivated on a rotation able to meet these wants. The above quantity of Wheat would be yielded by 260, and the above quantity of Oats by about 72 acres; the whole grain required thus occupying 332 acres, or about one-third of the farm. The following rotation would, it is believed, nearly answer the requirements of produce, though not those of labour, even considering the spiritless character which, in the case of prisoners, it is likely to exhibit.* The rotation is one of six years:

1. 166 acres of Wheat: stubble dug and sown with Rye.
2. 166 acres of Rye consumed by cattle in houses, and sheep on the land: followed by common and Swedish Turnips.
3. 166 acres of Mangold Wurzel.
4. 94 acres of Wheat, and 72 acres of Oats: stubbles dug and sown with winter Tares.
5. 166 acres of Tares consumed by cattle in houses, and sheep on the land: followed by Rape and Kohl Rabi transplanted.
6. 166 acres of Carrots and Parsnips.

We have not alluded to Potatoes, as they are too hazardous a crop for extensive cultivation.

1. Now, as regards the produce of the land thus laid out: The Wheat and Oats needed are provided by the extent sown, assuming it to yield 3¼ quarters per acre of Wheat, and 5 quarters per acre of Oats—no improbability. And the following will probably be the yield of green food.

	Tons.
166 acres of Rye at 10 tons per acre	1660
" " Turnips at 20	3320
" " Mangold Wurzel at 24 tons	3984
" " Tares at 10 tons per acre	1660
" " Rape and Kohl Rabi at 16 tons	2656
" " Carrots and Parsnips at 16 tons	2656
Total green crops	15,936

Now deducting from this amount 936 tons of Parsnips and Carrots, as the equivalent of 700 tons of Potatoes needed for the use of the establishment, we have here a gross produce of 15,000 tons of vegetable food to convert into meat. The experience of one winter some years ago, with a considerable flock of sheep folded over 30 acres of common and Swedish Turnips, led to the inference that 1 lb. of meat is made during the consumption of every 150 lbs. of green food. If this be generally true, then 15,000 tons of green food should produce 100 tons of meat: this is equal to 16,000 stones, nearly the amount that Mr. PEARSON requires. There will be no surplus, it would thus appear, after the wants of the establishment shall have been satisfied: we have put the produce as high as even spade labour will bring it, and we have put the produce of meat from vegetable food quite as high as an average experience will justify. At the same time it is proper to add that a rotation of the kind supposed, under spade cultivation, will improve the land, and a less extent will by and bye supply all the grain that is needed, so that ultimately more acres, each of greater productiveness, will be available for the growth of green crops: and a surplus, which is extremely unlikely at first, may thus be realised at last.

2. We now come to the subject of the labour which 1000 acres thus cultivated will require. We shall find that 500 men will not obtain full employment on so small an extent, unless, indeed, it be supposed that the day's labour of a prisoner is of very much smaller value than that of a free man. This, however, matters little, as a more thorough and repeated cultivation may be insisted upon, not so much to increase the produce of the land as to provide the employment that is required; or, what would be a better solution of the difficulty, a larger enclosure may be made, so as to create a surplus

*** It might be well, for the larger production of labour, to cultivate some of the more laborious crops, such as Flax, which would also furnish in-door labour suitable for wet weather.**

produce, at the same time that ample labour is provided.

An acre for Wheat will need to be dug in September and October (14 days of a man), to be dibbled or hoed in during October and November (4 days), to be hoed, in April or May (2 days), to be reaped and harvested in August and September (6 days), and to be threshed and cleaned in winter time (7 days): in all, there is the labour of 33 days of a man to every acre. An acre for Rye must be dug in September (14 days), sown in September (4 days), and mown in May and June (2 days): in all, 20 days. An acre of Swedish Turnips after Rye must be dug deeply in May and June (24 days), sown in June (2 days), singled in July (4 days), hacked and dug between the rows in July and August (14 days), and pulled and pitted in October and November (6 days): in all, the labour of 1 acre of Swedes will amount to 50 days of a man. An acre of Mangold Wurzel will also need the labour of a man for 50 days. An acre of Oats involves much the same labour as one of Wheat—one of Tares as one of Rye—one of Rape and Kohl Rabi as one of Swedes (rather less)—one of Carrots and Parsnips as one of Mangold Wurzel (rather more): so that the labour of the year will be as follows:

Labour of One Man.		Days
166 acres of	Wheat at 33 days	5478
" "	Rye at 20 days	3320
" "	Turnips at 50 days	8300
" "	Mangold Wurzel at 50 days	8300
" "	Wheat and Oats at 33 days	5178
" "	Tares at 20 days	3320
" "	Rape, &c. at 50 days	8300
" "	Carrots and Parsnips at 50 days	8300
Total labour of crops		50,796
Add for the management of meat-making stock, say		3000
And labour in the way of double trenching the land during winter, before Mangold Wurzel and Carrots, say		6204
Total labour required		60,000

If we suppose that the working days of a year are 240, then the labour provided by the farm of 1000 acres will employ 250 men throughout the year, and it will need double the extent to give an amount of labour equal to the employment of 500 men—at which Mr. PEARSON appears to value the force of his 1000 prisoners. We have not gone into the distribution of the labour throughout the year, but we have no doubt that the management of these crops might be arranged so as to equalise the work, or at all events render it in proportion to the daylight and available work time during the different months, respectively.

We make no apology for occupying our leading section with the details: certainly there will be no need of one if they should induce, as we hope they will, a discussion in these columns of Mr. PEARSON'S plans, as to their agricultural bearings; and the worthlessness which is notoriously chargeable on estimates in agriculture will, we hope, only the more successfully provoke, for Mr. PEARSON'S information, a discussion of the one we have given above.

FORTY-DAY MAIZE.

IN your Paper of the 24th of last month, I read the particulars of a communication from Mr. Keene to the Royal Agricultural Society, in which he describes a new sort of Indian corn. Mr. Keene is reported as saying that "the peculiar kind of Maize recommended by him, and which he named 'Forty-day Maize,' was a hybrid, cultivated by himself for our climate: a very different sort from 'Cobbett's Corn,' or the American, which will not ripen in the districts where this Forty-day Maize was grown." In his pamphlet, "Facts for Farmers," Mr. Keene remarks that "this new sort must not be confounded with what comes from America, and which Cobbett in vain attempted to cultivate in England" (p. 23): "Cobbett, who was ambitious to give his own name to this corn, was unsuccessful in his efforts to introduce its culture into England." (P. 5.)

We must all agree with Mr. Keene, that "it is a public duty (with those who can do it) to introduce a good solid food which will give strength and health at no greater cost than what the poor are at present reduced to feed on;" and if that gentleman have actually originated such an article of cultivation, the reward of having his name associated with the production is much less than he will merit. But though Mr. Keene asserts that "he speaks practically," he shows that he has not throughout been a practical observer. Had he been so, he would have done more justice to those who, with less pretensions to novelty than himself, have gone before him in the good field of "public duty."

If Mr. Keene have ever seen the "Cobbett Corn," he must, as a practical man, have seen that it is not of American, nor of Turkey growth, and that it is of too dwarf a species to have come from Italy or even from the south of France. The "Treatise on Cobbett Corn," written by the introducer of it here, would have shown him (par. 27) that, while no invention was claimed by the writer, the corn written about was a product of the north of France.

As to the name, "Forty-day Corn," a mere name is not often of importance. But it is so, rather, in the present case, because, it happens that this name is nothing but a literal translation of a name long ago given to one species of the plant by the French, namely, *Maïs Quarantain*. If you look into a work entitled *Plantes de la France*, by M. Jaume St. Hilaire, you will find a description of a dwarf kind of Maize, there called *Maïs Quarantain*, or Forty-day Maize, and those who know what "Cobbett Corn" really is, will perceive that the latter sort and M. St. Hilaire's description precisely correspond. M. Noisette's *Manuel Complet au Jardinier* gives the same description. This last mentioned writer says, "the plant has been thus called *Quarantain*, because, as is said, you may sow and harvest in the space of 40 days, which enables you to grow it in pretty cold climates." (On l'a ainsi nommé parce que, dit-on, on le sème et récolte en *quarante jours*; ce qui permet de le cultiver dans des climats assez froids.—Vol 3, p. 64.) In the French Gardening book, "*Bon Jardinier, Almanach*," edition for 1825, you may find not only this Forty-day, but another and still dwarfer kind spoken of, called *Maïs à Poulet*, or chicken corn; this latter being recommended as more early and more hardy than the Forty-day species. (Cette race, due à M. Lelieur, diffère de la précédente, en ce qu'elle est plus petite et encore plus précoce, &c.; p. 203.)

I now have some ears of the *Maïs à Poulet*, grown at Kensington about 16 years ago. The Transactions of the Paris Horticultural Society, so far back as 1829, if not earlier, manifest the great attention paid by the French to the cultivation of Dwarf Maize in the neighbourhood of Paris, and show how far this cultivation must have extended northward, since the time of Mr. Arthur Young, seeing that the line drawn by him cuts off the growing of Maize at nearly 50 leagues south from Le Mans. In a report of a session of the Paris Society, in November, 1829, for the distribution of prizes to growers of Maize, offered by M. Bossange, the names of the Duchess de Berry and the Marchioness de Nicolaï appear on the list of cultivators, the former lady being presented with a gold medal, and the latter obtaining the second prize. The same paper states that this plant had been grown "with the greatest success" in the environs of Paris; while Mr. Keene's "intercalation" of crops (*récolte intercalaire*) is also mentioned as being then in full practice; as, indeed, everybody may know who has seen anything of that part of France.

But now, as to the success or failure of "Cobbett Corn" in this country hitherto. It is true that this corn was not generally approved of, so long as the Potato was considered to be "the poor man's blessing" But on the occasion of the Irish famine, and the root being denounced in Parliament as degrading, the nobler plant raised its head into fashion, and its cultivation was looked to with a new spirit. I last autumn saw a quantity of corn at the shop of Mr Page, Seedsman, at Southampton, of the growth of 1847. It had all the appearance of being genuine "Cobbett Corn," or *Quarantain*. It had been grown by Mr. Page, and was sold for that kind. It was just as well ripened as any Indian corn I ever saw in America or elsewhere. In the season of 1847 this sort came to perfection, as I was informed, in Norfolk; also, as I believe from the specimens produced, at Chelsea. Mr. O'Reilly, of Belltrasna, county Meath, Ireland, assured me that he grew it there in perfection in the same season, from seed which I had sent him. And I can answer for the fact in three other instances, all in 1847, viz., with corn grown by Captain Ffarington, of Woodvale, West Cowes; by Mr. John Fielden, at Skeynes, in Kent; and by Mr. Jesse Pym, tenant to Lord Eastnor, at Reigate, in Surrey. I understand that Lord Chichester has had crops of it in Sussex, during a series of years, and I now have a quantity of his lordship's growing, obtained from a gentleman from whom I had my information. This is of the crop, I think, of 1847; the ears are perfectly ripened. Mr. O'Reilly tells me that his sowing of last summer, 1848, failed, from the extreme wetness and chilliness of the season in Ireland; but I saw the same corn, together with a new American kind, on Capt. Ffarington's land in September last, and both of them had then arrived at their full size, though in very bad weather, and required nothing but hardening. Mr. Pym, above-mentioned, has succeeded, in 1848, having after the rate of 64 bushels to the acre. Mr. Keene speaks of 48 bushels.

Mr. Keene's reason for the name, "Forty-day," is much more probable than that assigned by the Frenchman. Mr. Keene tells the farmers that his corn in the Pyrenees came in 140 days from the time of sowing. The *Maïs à Poulet* has been grown at Fulham, by Mr. Thomas Poynter, now gardener to Mr. Grimshaw, of Manchester, in less than 120 days from planting to maturity. *James P. Cobbett.*

HISTORY OF AGRICULTURE.

IN perusing the Leading Article in the *Gazette* of the 27th January, signed "H.," I was much struck with the paucity of the names of farmers among the list of those given as the discoverers and inventors in our art, and I was also struck with the circumstance that even the names mentioned were not in any way associated with those hitherto regarded, in Scotland at least, as the great improvers in the practice of agriculture. Bakewell, Collins, the Culleys, and others, I had understood to have been the men to whom we were indebted for our unrivalled cattle and sheep, and to the Meikles and the Smalls for our threshing and winnowing machines, and ploughs. Several of the names mentioned are worthy of lasting remembrance. Jethro Tull is, of all the early writers on agriculture, the one who is believed to have brought the most original mind to the study of the art, and to have attained the honour of inventing the drill and horse-hoe, for his theoretical views as to the useless nature of all sorts of manure, and the all powerful efficacy of stirring the soil, never could be practically carried out; and although his allowance of seed was not so infinitesimally small as that of the present race of thin seeders, yet even then the practice fell into oblivion from its want of accordance with the requirements of nature. "H." seems to be of opinion that the history of agriculture is little known. In this I entirely agree with him, and several months ago the pages of the *Gazette* showed a most convincing proof of this, when Mr. Hewitt Davis, of whom I would speak with all respect, came out with the straightforward acknowledgment that the thin seeding and drilling that he had been so stoutly advocating had been long ago practised by the said Jethro Tull. Now it appears to me it may be said of agriculture with more propriety than of any other subject, that "there is nothing new under the sun," for even Jethro Tull had been preceded in his invention of a drill machine by Locatelli in 1663, of which a description was given by Evelyn in 1669 to the Royal Society, and the Italians claim the honour for another countryman of theirs about the year 1500 (See Beckman's "History of Inventions"); and the using the plough as a horse-hoe is mentioned by the Roman authors, with whom Tull was thoroughly acquainted, as he devotes a large portion of his work to a discussion on the bad points of the Virgilian husbandry. I have no wish to detract from the value of the legacy left by Tull, for he was indeed a light in the midst of darkness; and to the stores of knowledge he had gathered from the Greek and Roman writers, added the fruits of observation in extensive travel through the most enlightened countries in Europe.

Far be it from me to find fault with the determined and energetic enthusiasts of the present day. In the multitude of the schemes, ideas, and fancies acted on and practically tested, it is to be naturally expected that some may turn out improvements on the older methods, and though the progress hitherto made may not be encouraging, save in the knowing of what is to be avoided, it would be well that my brother farmers, in place of wasting their energies in fault finding, would be on the alert to learn from them whatever less ons their experience has afforded, that can be usefully followed. Any one who has tried the smallest experiment in practice must be aware of the great amount of time, attention, and ceaseless care necessary to fulfil the conditions requisite for its due performance, and very often the result is a failure. Time therefore is the great exposer of all humbugs, and is sure to sift out the truth; but somehow or other the present time is always most thought of, and very often the services of the people living in former times are but little regarded. But great as undoubtedly are the advantages which the practice of husbandry has derived from the application of the skill of the mechanic to the construction of machinery, yet, it must be confessed that few or none of the modern introductions that have done so much for increasing the food of man are altogether new. We are rather of opinion that many at the present day, like Mr. Hewitt Davis, imagine that they are practising and following new inventions, while history shows that from the cooking of food for cattle to the last nostrum for the prevention of the Turnip-fly, these subjects had been practised and cared for some 2000 years ago, and that the basis of modern culture rests on the discoveries of the Greeks and Romans, and these nations very probably derived part of their knowledge from the

> "Kings, the awful fathers of mankind."
> Who, disdaining little delicacies, seized
> "The plough, and greatly independent lived."

But, sure enough, the husbandry of the ancients, as described by Adam Dickson, of Whittingham, East Lothian, and published some 60 years ago, proves that the sharp-sighted, clear headed Greeks and Romans appropriated the great leading facts of agriculture, just as their poets seized on the most beautiful imagery of nature; and, as was to be expected, ours, the most important of all the useful arts, was subsidised and made to add to the completeness of their descriptions of rural life.

Although the important facts forming the groundwork of our present system were well known in those days, yet I by no means desire it to be understood that their entire system was as complete as that of the Lothians, of Norfolk, or of Lincoln; for as to the Lothian system, with which I am best acquainted, it is the concentration, as it were, of all that has been found valuable in remote past or in recent times, that constitutes its principal excellence; and much of it has, I have no doubt, been derived from Greece and Rome: the occupants of the religious houses, spread over the land, possessed the only glimmerings of knowledge that existed; their tenants were safer, and with lower rents than those of the warlike barons, and the classics were unknown to some of the orders residing in them.

As the work of Dr. Dickson may not be patent to all of your readers, you may allow me space to glance at a few of the facts and maxims there detailed, referring to that work alone, without mentioning the authors from which he quotes.

The Roman authors speak of 50 Greek writers on the subject,* most of whose works have been lost, and there

* It is true Columella speaks of 40, and Varro of 50, but such numbers are not to be understood literally. They are both writers whomust be read "*cum grano salis.*"—ED. *A. G.*

now remains but part of the writings of six Romans. Men are recommended to plant in their youth and build when about middle life, and the edifice was not to be larger than two years' rent of the farm would pay for, and away from marshes, highways, or military roads. Landlords are told not to turn out tenants bred on the land, and to be more rigorous in demanding good cultivation than rent, and never to let their land to one residing in a town. Bailiffs were never to trade on their own account, nor to pretend to know what they did not know; labourers were appointed to the different works according to their strength, size, and genius; the regulations concerning their food, clothing, and amount of work required, seem to be most minute. A great deal of labour was bestowed on their land, but when the expense exceeded the profit, which it appeared to do when men having made money in other affairs bought land and farmed it for ostentation, as was frequently the case, it meets with their general reprobation, and instances are given where the families of such people have been left bankrupt. Land was distinguished by its situation and qualities. Champaign land, not exactly on a level, was reckoned the best; next, hilly and gently rising grounds; lastly, high, rugged, and mountainous.

Soils they divided into rich and poor, stiff and light, wet and dry. The best soil for corn "was free and firm, dry and moist, light and heavy, with the bottom of the same nature as the top;" although apparently contradictory, what more truly comprehensive definition of what at the present day is reckoned the best. The differences of soils were most carefully noted by them, their rules for distinguishing these were most exact. The various plants naturally produced on each description were minutely specified, and even the vigour, strength, and habit of growth had to be looked at. They said the best soil was also blackish in colour, of a pleasant smell, a glutinous nature when wet, easily crumbling when dry, imbibing water readily, retaining a proper quantity, and parting freely with the superfluity. From the best land mists exhaled when it was fresh turned-up, and crows, rooks, &c., followed in search of worms, &c., and when at rest, it carried a thick Grassy turf; this kind carried all sorts of crops well. The crops cultivated by them included most of those grown at the present day, and many others that seem to have been lost. These were carefully adapted to the particular soils best suited for them, Wheat being recommended to be sown on rich stiffish ground, as well as Beans; Barley on light, free, rich, shallow, or hilly ground, and corn generally on fields that were rich, strong, and in good heart, without trees; Turnips, Radish, Millet, and Panic on such soils, if moist, and this apparently from the dry nature of the Italian climate.

There appear to have been three sorts of Wheat in cultivation—Triticum, which was reckoned the finest, and on which the greatest care was bestowed, the land being generally fallowed for it, and the cleanest, driest, and richest selected; the seed time was from 1st October to December, and about 2 bushels the quantity sown per imperial acre; but as it was turned into rows by being ploughed in, so as to allow of hoeing, we find that even Jethro Tull but followed the plan practised 1600 years before him. We find, too, that the amount of labour given to each acre amounts to about eight days' work of the ploughman, two of the harrower, four of the hoer, when first hoed, and two when hoed a second time, two of the weeder, and three of the reaper; these separate sums are rather above the real amount, which will be by calculation 19 days' work per acre. The produce in the time of Varro was from 10 to 15 after 1, but later it was not so much. Here, then, we have the soil first fallowed by repeated ploughings, and the crop twice hoed in its progress to maturity, and also once weeded; what then is new in the drill system now recommended, save the machines by which the labour is performed? The other two sorts of corn, Siligo and Far, seem to have been coarser, and adapted for the damper and worse conditioned soil, and were sometimes sown in spring.

Barley was sown in September, and afforded pasture or green food for stock during winter, and if saved from the beginning of March carried a crop of grain; about double the quantity of seed was sown to that of Wheat, the weather was desired to be showery at the time; the land to have carried a crop that season, very well dunged and twice ploughed. It was also sown in spring, and received half the work that the Triticum did.

Lupinum pisum, Phaseolus, Faba, Lens, &c., are mentioned as being cultivated for cattle food, and for ploughing into the ground in a green state for manure. The seeds of the Faba or Bean, after steeping in nitre and ammonia, or urine and water, are directed to be sown in spring or autumn, in rows on strong rich land that had been manured, to have the first hoeing when the third leaf appears, and two thereafter, but not to be weeded, as the crop grew strong enough to keep down the weeds, if it succeeded; this crop was supposed to better the land. Oats were not much cultivated. Their instructions as to sowing seed were most minute, and founded on the fact that without care all kinds degenerate. The largest plumpest grains were chosen from the best formed rows, and this after harvest time, when the best selection could be made.

That the Turnip was one of the roots raised seems perfectly obvious; one kind is mentioned as stretching out flat and broad, another kind growing round like a ball, and an instance is mentioned of their being 40 lbs. in weight each; they delighted in a free open soil in rather a moist and low situation, and the land required to be well pulverised by frequent ploughing and harrowings, and to be liberally dunged, as it was the better prepared for the following crop of corn. The modern practice of singling out with the hoe, does not seem to have been followed, but directions are given for pulling up the plants where too thick, that the others might grow stronger. The Turnip-fly also existed 2000 years ago, and Columella directs that soot be mixed with the seed the day before sowing, and watered in order to prevent its ravages. In Gaul the cattle were fed on this root.

Flax was reckoned a scourging crop, but it was produced fine in quality, and the conditions required for its successful cultivation seem to be almost as carefully given as those of Mr. Warnes. The management of meadows had arrived at a position equal with the cultivated lands, and the grazing of cattle was a profitable occupation; and although we do not hear of those huge over-fed animals that ostentatious folks have reared and fed to become laughing-stocks to the lean and lank literateurs of the day, yet the luxurious Romans had their prototype in the fatted doves, thrushes, blackbirds, and peafowls, which sold for enormous prices, some farms producing 5000 of them in a year. In the management of their oxen the utmost solicitude was manifested, and many pages are occupied with their directions in this department. How to choose them, the breaking in, feeding, breeding, matching, and buying. Cattle bred on the ground were preferred, and it was specially recommended never to transfer them from low rich grounds to hilly situations. The boiling and steeping of the food was also practised, and it even appears that bruising Beans had been tried.

In their schemes of management they were guided by "experience and imitation," and in the instruction to farmers they are requested to imitate the ancients and also to make experiments themselves, not directed by chance but reason. It was advised that the new trials ought to be made on rich land. The crops that succeeded each other on the best land were Barley, Millet, Radish, and Barley again, one of them dunged; Beans and Wheat in constant succession on the stiffer soils. In soils not so good, Wheat, Beans, and Pulse seemed the order of sowing. On poorer soils a fallow every third year, followed with Wheat and Beans, and also fallow and a grain crop alternately.

Their management of manure seems to have been carefully regulated. Sensible of the great value of all decaying vegetable or animal products, every sort of straw was collected and put under their sheep and cattle, besides weeds, leaves, cuttings of briars, and rakings of highways, and the amount that sheep, cattle, and men ought annually to produce was carefully calculated. The different sorts of dung were kept separate; that of fowls, pigeons, thrushes, blackbirds, &c, from the aviaries was applied as a top dressing, and also ashes of various sorts. Urine when long kept was held in high esteem, especially for fruit trees. Nightsoil, mixed with the sweepings, came next to the dung of birds. They seem to have been far more particular in the management of their dunghills than most farmers at the present day, for the place is recommended to be hollowed out, paved, and divided into two parts for the old and new. The dung, as soon as made, being carried thither and covered up with straw or hurdles made of twigs, to prevent the evaporation of moisture, and carefully retained for about one year, and turned over, so that the seeds of all weeds might be destroyed. The dung was laid on the land previous to the autumnal seed time, and also during winter; for what was sown in spring the quantity seems to vary from 16 to 22 tons per imperial acre, and the spreading was performed most regularly, and the plough at once turned it in. It was recommended to lay on the dung when the weather was dry, and rather to dung moderately and often, than lay on much at a time, and less on the plain than on the hill. Sea-weed was also collected and used. The mixing of various kinds of soil was also practised, as light with heavy, and *vice versa*, rich with poor—whatever had contrary qualities in fact. Sheep appear to have been folded on land for the purpose of manuring. Branches, twigs, and trees, were also burned and used as manure. The use of lime and marl, of various sorts, was known in these ancient times, and mention is made of the land being dug once in five years as deep as the rain penetrated, so that the soil was renewed.

Draining was not unknown; the greatest attention was paid to have surface drains and water furrows all cleared out; covered and open drains were both used, of the dimensions of 4 feet deep, 1½ feet wide in bottom, and laid in the bottom with stones or willow rods contrariwise with the sides of a good slope. The covered ones were to be 3 feet deep, half filled with small stones or gravel, and to the top with earth thrown out in the casting of them, with two stones at the ends as cheeks, to prevent injury to the mouths; when stones were not accessible twigs were to be twisted into a rope, pressed into the bottom, and covered up with leaves; and, lastly, earth.

It would appear that enclosures were sometimes made, as it was recommended, where stones were common, to gather them and make a wall around the field, and four kinds of fences are mentioned—first, the dead hedge; second, thorns planted; third, the ditch and earth wall; fourth, the stone wall, which was accounted the best. The implements in use were numerous, but their construction certainly inferior to that of the best kinds used in this country at present. The plough, the crates, somewhat like the harrow, hoes, the scythe, and sickle. Hay was directed to be cut with the scythe (the land being previously cleared of stones), when the stalk begins to lose the flowers. Such are a few of the maxims of the ancients, and the amount of knowledge of the art they possessed would form a most interesting subject for inquiry at the present day. Chemistry, vegetable physiology, and natural science bearing on agriculture generally, being then unknown, the progress effected in our own day since these sciences have been developed could be usefully contrasted, the onward course of improvement hastened, and the requirements of the age fulfilled: for it is perfectly obvious that without the earnest cultivation of natural knowledge, and its application to practical use, the material wealth and future prosperity of those following agriculture must diminish. *J. M., Ratho.*

THE PROSPECTS OF FARMING.—No. IV.

Although there are few who are unacquainted with Æsop's fable of "Hercules and the Carter," the applicability of its moral to the present position of landowners and farmers petitioning Parliament is an excuse for here relating it.

"A carter, driving his cart along a miry lane, had the wheels stuck so fast in the clay, the horses were unable to draw them out. On this the carter fell on his knees, and prayed lustily to Hercules to come and help him. Whereon the god, looking down from a cloud, bid him not to lie there, but to get up and whip his horses, and clap his shoulder to the wheel, for in this way only could he expect to obtain his assistance."

The situation of the agriculturists of the present day may be said to be very much that of the carter. Their farms are the cart, free trade is their difficulty, and Parliament their divinity; but that they may not be depending for relief from where they cannot get it, I would have them see that the legislative relief that has just been vainly sought, if gained, would have done no more for them than to ease them of charges equivalent only to a reduction in rent of about 1*s.* or 2*s.* an acre, at a time when the return of all the rent they pay would not enable them to continue the cultivation of their farms, if their profits are to be dependent on the maintenance of anything like past prices, and free trade is to permanently reduce the value of all they produce a fifth. Landowners and farmers may see, from the little their friends in Parliament could propose for them, they have little to expect, but from their own better exertions. They will find they will have to look to the improvements their practice and farms are capable of, to enable them to raise their produce at lesser expense; for in this way only, it is clear, can the cultivation of their land be maintained.

The cost of corn is the expenditure in growing it, in relation to the quantity produced. It may be reduced by the introduction of better implements, that shall lessen the labour, and by improvements of the soil, or its cultivation, that shall increase its fertility. Colonel Rawstorne has shown, in his "New Husbandry," that much has lately been doing in both these ways to benefit the farmer; any means that shall effect a saving in the cost of production amounting to 1*s.* a quarter, or increase the produce a sack an acre, will do more for the farmer than any legislative relief contemplated by Mr. Disraeli. In future, landlords will find it necessary to see that their farms are in the condition to be made the most of. The cultivation must not be impeded by unnecessary trees and hedges, nor the produce diminished by the ravages of game. The proper buildings and yards to keep the stock necessary to the maintenance of the fertility of the land must be provided, and their situation and arrangement selected so as to combine economy and convenience. And tenants will have to avail themselves of those new lights that a more scientific age is giving birth to; they must seek the aid that better implements and machinery can afford them, and the reduction of cost that a higher fertility of the soil effects. Under free trade, it will be ruin to farm with a view to the prices of the last seven years (Wheat, 54*s.* 10*d.*; Barley, 32*s.* 11*d.*; Oats, 21*s.* 11*d.*; Rye, 34*s.* 11*d.*; Beans, 37*s.* 3*d.*; Peas, 37*s.* 11*d*); they have already become as a tale that is told. But we shall have lower wages, cheaper necessaries, and smaller expenses, and, with better cultivation and improved condition of our farms, we may expect to meet the reduction; at any rate this is all we have to look to to do so, and therefore let us make the most of them.

It is now five years since I wrote, with a view to coming lower prices, the first edition of my work, "The Resources Farmers Possess to meet the Reduced Prices of their Produce." On reference to it I am made aware that the progress of agriculture since then has already advanced beyond the improvements of that day, but my motto remains good, and with that I will close this article; for what better can a farmer's friend select? "I would have farmers look to the means which modern science affords, both for lessening their expenses and increasing their returns; for in both these ways may they be enabled to lessen the cost of growing corn." *Hewitt Davis, 3, Frederick's-place, Old Jewry, London.*

THE PHOSPHATIC BEDS OF THE LOWER CHALK.

The insertion, in a late number of the *Agricultural Gazette*, of Mr. Austen's geological paper descriptive of the position in which the beds containing the phosphate of lime are found in the chalk formation, gives me an opportunity of recurring to the subject, and of communicating such additional information as I have been able to obtain since the publication of Mr. Way's

and my paper in the "Royal Agricultural Journal." Mr. Austen's communication to the Geological Society was read last March, and, of course, before the appearance of our report. I have merely to observe, with regard to Mr. Austen's paper, that it gives a very correct geological description of the cretaceous series of this part of the country, and as such I have no doubt that it will be esteemed by your readers. My own object has been somewhat different, being chiefly to turn the discoveries of the geologist and chemist to good practical account, and therefore to give my letters on the subject a decidedly agricultural bearing.

In the first place, however, I am anxious to correct an error into which I led Mr. Austen with regard to the per centage of phosphates in the gault fossils. It arose from my own miscalculation, and not from Prof. Way's report to me. The richest of these fossils contain from 60 to 70 per cent., and not 80 to 90, as I, in the early part of last year, erroneously informed Mr. Austen.

The only point on which I at all differ from Mr. Austen is with regard to the correct geological position of what I have termed the "junction fossil beds," between the gault and the lower green sand. When I had the pleasure of Mr. Austen's company over this district last year, I believe that I had not extensively worked these beds, and therefore he had not a good opportunity of viewing their place of deposit. It is true that these fossils are frequently abundant in the lowest part of the gault stratum, where the clay is intermixed with grains of green sand. There is a striking example of this in some cut-croppings of the "junction beds" in the Holt Forest, which I inspected a few months ago. The sand below and in immediate contact with the black gault is of a deep red colour; there are no fossils in this sand, but they lie in a thick concrete mass upon it, and form a distinct line of demarcation between the two strata. The phosphate nodules here are unusually large, weighing several pounds each. On the other hand, I have dug many tons of these fossils in the yellow sand, from seams which lie from 3 to 8 or 9 feet deep in the sand, the fossils and phosphate nodules being obtained by sifting. A few days ago I met with a corroboration of the same fact in a field about a mile from the place where we had been previously digging for the fossils. This field is situated on the junction of the gault and lower green sand, but on the opposite side of the hill to the former place; in the process of draining we found the phosphates at the bottom of the clay, as we expected. I then had a pit sunk 6 feet deep in the yellow sand below the clay, where we discovered a layer of fossils in a position similar to those in our old pits. It is difficult to determine whence these fossils were originally derived; the greater portion of them are now decomposed, and in their present condition are merely a mixture of phosphate of lime and sand, forming nodules in appearance like lumps of mortar.* I think, however, that it is pretty evident that these fossils are not the debris of the gault, since we find, in all instances, that the gault is lying above them in the condition in which it was primarily deposited as fine mud in the ocean; and therefore the fossil phosphates must have been deposited upon the upper members of the lower green sand, before the formation of the gault. And as the phosphate beds have been found at every out-cropping of these two strata which has yet been examined, there are good grounds for inferring that they existed everywhere in this geological position at that period. It is possible that they may have been exposed to atmospherical influence for a short time, which would account for their partial decomposition. Fossil wood is found amongst these phosphates in considerable quantity, and in most instances it has been perforated by marine insects; the wood is usually encrusted with phosphate of lime and particles of sand. It may be here mentioned, as a curious circumstance, that this wood, when freed from its encrusting matter, is as highly charged with phosphoric acid as any animal specimens that I have found, whether it be the hard wood from the Isle of Wight, or the soft pieces which crumble between one's fingers, which are common here.

Amongst the fossil phosphates of the true gault, oblong spheroidal masses are often found, which certainly seem to be of coprolitic origin. It is manifest that these masses could not have derived their present form from any littoral action of the sea, inasmuch as the nature of the gault clay forbids the supposition; and therefore they must have remained pretty much *in statu quo* ever since they were dropped in the soft gault mud. I procured several of these specimens from Mr. Huxtable's, in Dorsetshire, and also from the back of the Isle of Wight. These coprolitic-looking nodules, when tested for phosphoric acid, are found to be as rich as the casts of ammonites, &c., derived from the same beds.

Having in the first instance prominently called the attention of agriculturists to this peculiar source of earthy phosphates, I may fairly be asked whether I myself have derived any practical benefit from this new supply. Before replying to this question, I may repeat that my object in making this substitute for bones more widely known, was specially to solicit the attention of farmers and landlords to the examination of their soils in their own several localities, by availing themselves of the assistance which chemistry so truthfully affords. I hoped, and I still hope, that a body of facts will be ascertained in relation to the analysis of soils, which will eventually prove of immense service to the farmer. This hope, however, will not be realised without the co-operation of many fellow-labourers in this department of agricultural science. But the means of attaining this desideratum now exists, through the instrumentality of the English Agricultural Chemical Association, and I cannot allow the opportunity to pass without again urging upon all who take a hearty interest in the progress of agriculture to become members of this Association. It calls up feelings of reproach and shame in the minds of us Southrons, when we reflect how far we are behind our Scotch neighbours in this respect. But, to return from this digression, and in answer to the above question, I may state that during the past winter I have dug about 25 tons of fossils and nodules from the lower green sand beds at Wrecklesham. These (including the expense of cartage to my homestead and of re-sifting when they become dry), cost me at the rate of 15*s.* per ton of clean fossils; the grinding them into powder will cost me about 5*s.* more—making a total of 20*s.* per ton when fit for use. Professor Way's analysis of a similar lot last year gave 20 80 per cent. of phosphoric acid, being equal to 42 48 of bone-earth phosphate. I need scarcely remark, after this statement, that the discovery has proved valuable to me. I have also carted, at odd times, from these pits, several hundred tons of the lowest part of the gault, in which there are fossils pretty thickly interspersed; this has been put upon a sandy gravelly field, now in preparation for Swedes. I observe that the greater part of the fossils have crumbled to pieces during their exposure upon the surface of the land; and I infer, therefore, that it is not necessary to reduce them to a very fine powder, for the alternations of the weather, and the carbonic acid of the soil and air, seem to be sufficiently powerful agents in rendering them fit food for plants.

Upon my other farm, on the upper green sand stratum at Dippen Hall, I opened a new pit in the green marl, of which I have dug large quantities in the course of the winter. Here I found the green marl within a foot of the surface, its thickness of deposit varying from 2 to 6 feet. I placed the greater part of this marl, at the rate of 50 to 60 tons per acre, upon an adjoining field, the upper subsoil of which consists of a hard tertiary gravel; this field I have just subsoiled in readiness for Swedes. On the supposition that the marl contained only 5 per cent. of phosphates (it really contains much more), this would give a dressing of 3 tons of phosphate of lime per acre. I have dug altogether from this pit about 1000 tons, at the expense of simply filling the carts. In digging this marl for the field, we reserved the fossiliferous portions (generally found lying at the bottom of the green marl), which were put as usual into old guano bags and conveyed to the farm sheds: of this sort we have probably procured 60 to 70 tons, the phosphatic value of which is equal to 20 per cent. The fossils from this pit differ in one respect from those we have obtained previously from other pits in the same stratum, inasmuch as they are quite soft and in a state of decomposition, whereas all that we had hitherto dug required a powerful mill to grind them. I can account for this difference chiefly on the fact that the present surface of this field has been subjected to more geological changes; it is now nearly conformable with the subjacent strata. At the period of the denudation of our Wealden valley, the overlying chalk, &c., must have been swept off down to the green marl, when the denuding process was crusted; subsequently this field was covered up with tertiary drift gravel (for we find occasionally cracks or small chasms in the green marl filled up with this red gravel), after which a second denuding operation occurred, when the land was left in its present condition. During these alternations of depression and elevation beneath the ocean, these fossiliferous beds were exposed perhaps to atmospherical influence as well as to sea-water, which, judging from analogous causes now in action would occasion the decomposition of the fossils.

The use to which I apply this fossiliferous portion of the marl is principally to mix it with sulphate of ammonia, or with the most ammoniacal guano which I can procure. I also employ considerable quantities in making a kind of artificial guano compost; for, having small tanks in my stables, &c., for the purpose of collecting the pure urine, we put into those tanks, from time to time, a mixture of dry ashes, phosphoric marl, and gypsum in sufficient quantity to absorb all the liquid. The compost we intend to drill with our Swedes, &c.

If the supply of phosphates from the above sources should ever fail me, there is another inexhaustible resource to fall back upon in the dirty grey marl which always lies above the green band. This stratum is frequently from 20 to 50 feet in thickness, from which our forefathers obtained their chief supplies of marl. I have reason to believe that the chemical properties of this stratum are remarkably uniform throughout the lower chalk range. That which Professor Way analysed for me contained 1.82 per cent. of phosphoric acid, which is equal to 3 75 of bone-earth.

I will not, however, trespass upon the patience of your readers any longer, for I think I have adduced sufficient evidence to show that all who have property lying at the foot of the chalk hills may obtain, at very little expense, an abundant supply of phosphates. But before I close this letter, I should state that I have often been asked if I have derived satisfactory results in my crops of last year; I unhesitatingly answer in the affirmative; for I might safely challenge any farm in the kingdom to excel my crop of Swedes, and they were rather best where I applied a mixture of the fossil marl and sulphate of ammonia. I obtained equally successful results upon Barley and Hops. (An account of these experiments has already appeared in a former number of the *Agricultural Gazette*). Experience has long taught me always to employ ammonia in conjunction with mineral manures; I therefore did not try any of the phosphates as a sole dressing. Some of my neighbouring friends did apply them exclusively, and the result I understand was a failure, but those of my friends who followed my example, in combining the two manures, obtained crops of Swedes as good as my own, and far better than those of their neighbours. *J. Manwaring Paine.*

Home Correspondence.

The Cultivation of Field Carrot.—As the cultivation of the Altringham or white Belgian for cattle has become a subject of much greater importance since the Potato can no longer be depended upon as a winter esculent, it may be interesting to some of your readers to describe an improved manner of culture adopted by myself and some of my neighbours, as an improvement upon the old broadcast system generally followed upon the light land districts of Essex; which merely consists of ploughing deep and sowing the seed broadcast, which costs to thin and clean, 4*d.* to 4½*d.* per square rod, or nearly 3*l.* per acre for the hoeing only; this, with the other attendant expenses, often prevents many farmers from engaging in it. But the mode of ridge culture that I have adopted, will not cost more than a fourth of that sum; the manner in which I proceed, is to plough up a clean Wheat or Barley stubble early in autumn; if convenient is to be preferred to the spring, but I have succeeded quite as well with the crop by breaking up the stubble in dry weather in March with two strong horses, followed by two others with a strong horse-hoe, with one share precisely the shape of the common plough-share, but any shape will do equally well if not too large for the furrow, or even a common plough with the breast taken off will make a good shift. With this double ploughing we can break up the land to the depth of 10 inches or even a foot; after which the land remains until it has some dry weather or a frost or two upon it, when it is again ploughed with two light horses upon the ridge of 22 inches, harrowed once and a light roller drawn over it; this is all the preparation they require. I drill or dibble two rows at 8 inches apart upon the top of the ridges, this distance gives a distance of 12 inches for working the horse-hoe, with which we commence as soon as the lines of Carrots are seen, and before Midsummer pulverize the intervals to the depth of 1 foot. The dibbling is done with an iron dibble, nearly flat at the bottom, with a diameter of about 2 inches, or a wooden stake will do equally well, the object being merely to bury the seed not more than ½ or ¾ of an inch deep, and cover the seed with a light roller. The time of sowing is the month of April, upon an average of seasons, as the Carrots do not run to seed stalks so much by being sown at this time, and they escape the depredations of the slug. Moreover, the Carrot seems by October to have quite finished its growth; by this means of culture I can get them singled out by women and children for 6*s.* per acre, and the entire hoeing throughout the season will only cost 1*l.* per acre. I find the white Carrot thus managed is a more certain crop than the Swede, and I am convinced if they are clamped moderately dry and secured from drip in the damp they will keep as long, and that stock will decidedly do better on them, and the milk I find is of a superior flavour, and the cows give more of it, and keep themselves in better condition than on the Swede. I have grown 15 tons per acre on a Barley stubble without any manure, and 20 tons by sowing 3 cwt. of Peruvian guano in the month of May, in wet weather, when the plants were hoed out. What land will give this produce of Swedes with this light culture? *An Essex Farmer.*

Invention by a Farmer.—I observed in your leading article of Saturday, Jan. 27, a statement that you would consider it an everlasting favour if any one would name to you a single known and used agricultural invention, introduction, or implement, that owes its origin to a farmer. I feel assured, therefore, you will be glad to hear that in the county of Hertford, where I reside, a most useful implement has recently been invented and brought into use by a practical agriculturist, Mr. S. Woollatt, of Aston Bury, near Stevenage. It is a horse hoe, of a very excellent kind, as I can safely assert from my own personal experience, and it is getting into very general use throughout the county, and the inventor has had it registered. I hope you will find a space in your valuable journal for the insertion of this letter. I think you will be glad to rectify an error into which you have inadvertently fallen. Farmers certainly are not remarkable for invention, and it seems therefore hard to deny them what little credit they may deserve in that respect. *A Hertfordshire Farmer. Feb.* 5. [We publish this letter not merely to rectify our own error, but that of our correspondent, who seems to think, in the passage he alludes to, our object was to prove farmers to be a dull-witted race. No such thing: our object was to remind them that *all* arts, and agriculture among them, owed their progress for the most part to unprofessional men, and that, therefore, they should look with anything rather than ungracious aspect on the doings of amateurs.]

On Killing Pigs.—In reference to some remarks made a few weeks since on a less cruel method of killing pigs, and which I was very pleased to see, I would inform the inquirer that the plan he recommends is very simple and easy of practice. The plan is this; the operator, having provided himself with an axe or a

hammer, having a handle from 2 to 3 feet long; on the one side of this instrument, instead of the broad flat head, there is to be a kind of spike about 2 or 3 inches long, and from ½ to ¾ of an inch in diameter. With this instrument in his hand the operator is to enter the sty, and on examining every hog's head he will find a curl in the hair. That curl is directly over the brain. He is then with a sharp blow to strike the spike into the brain through the centre of the curl in the hair, which is very easily done, and the hog will be dead, without a struggle, death having been so instantaneous. He then is to take out his knife and open the aorta, and let out the blood, which will be readily done, and the work is finished. In this manner a score pigs may be killed in nearly as few minutes. Some inquiry has also been made into the best mode of preserving bacon, so as to keep it from becoming rusty or rusty. This, also, is equally as simple; and the method is this. Lay the fresh flesh on boards, or on a long table, cover it all over well with salt, and let the salt run off, and which it will do with the water which the salt has the property of drawing out of the flesh. At first much water will flow, but by degrees this will diminish, and when no more can be brought out of the meat the work will be done. The preserved meat should then be hung up to dry in a proper place and it will not rust, but keep sweet and good for a long time. *Geo. Wilkins.*

Farm Profits.—I was surprised to find Mr. Huxtable falling into the delusion common amongst farmers, respecting the rate of interest on capital employed in agriculture. The interest on capital in every country is that which is paid by the Government, and neither less nor more, let the capital be employed how it may. If a man has 10,000*l.* in the public funds, it brings him in 300*l.* per annum. If another has 10,000*l.* in a brewery, the interest is the same; and if he makes more than 300*l.* per. annum, that is the wages which he earns by his skill and labour. So, if a farmer has 5000*l.* in a farm, all he makes above the interest which the public funds would pay him, is due to him as wages for his skill and labour. If he were to turn brewer or goldsmith, or cotton-spinner, he would lose instead of gaining, because he has no skill in such matters, and his labour would be thrown away. The only way now of benefiting the agricultural interest, is by reducing the national debt, that is, by lowering the interest on money, and so enabling both landowners and farmers to procure capital at low interest, in order to employ it productively on the cultivation of the soils. *N. A. D. P.*

The Plymouth Monster Ox, fed by Mr. Elliott, at Llandulph, chiefly on Grass and hay (for he would eat no grain and but little roots), stood 6 feet 3 inches high, ridge of the back; live weight 27¾ cwt.=3108 lbs.; dead, 2014 lbs.; and is said to have lost ½ cwt. during the time of exhibition, which would make his live weight, from the farm, 3164 lbs. Have we anything on record above this? *J. Prideaux.*

Irish Agriculture.—Having had an opportunity in the summer of 1846 of visiting the south of Ireland, and in September, 1848, of visiting the north, where I had an opportunity of noticing their system of farming, I may assert that Ireland is 50 years behind England and Scotland. They value Potatoes and Grass land too much. It is a very common thing to see the hay in cock in the month of September (the first cut), and I will leave any one to judge what kind of order it is in after so many weeks on the ground, and when removed the Grass is quite dead under the cock for some yards in several places. I saw cattle grazing amongst the cocks. If they would break up the one-half of the old Grass land and keep it under the plough and spade, and grow Oats, Wheat, Peas, Beans, Turnips, Mangold Wurzel, Swedish Turnips, Carrots, Parsnips, Barley, Clover, Rye-grass, Rape, Cabbage, &c., they would then discover which was the most profitable part of farming; less Grass land and more arable would be the means of employing the poor labourers, it would bring more money to the farmer's pocket, more rent to the landlords, and more manure to the land. Keep more stock and improve the different breeds, deep drain a portion every year with 2-inch pipe tiles, lay a little Furze over the pipes before the drain is covered in, or any kind of brushwood; the former appears to be plentiful in many parts of Ireland, it makes a better drain. The land is of first-rate quality, equal to any in England. I noticed some very nice crops of Oats and Turnips on some land that had been drained, of the poorer quality. Thousands of acres of high poor land might be planted with Scotch and Larch Fir, which would grow up in a few years, and would be very useful for agricultural buildings and cottages. Larch Fir is invaluable where peeled in the proper season from May to September. *James Graham, Steward and Gardener to Mrs. Smith, Bersted Lodge, Bognor, Sussex.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House, in Hanover-square, on Tuesday last, the 27th of March: Present, Mr. RAYMOND BARKER, Vice-President, in the chair, Mr. Blanshard, Mr. Bosanquet, Mr. French Burke, Colonel Challoner, Mr. F. Cherry, Mr. Brandreth Gibbs, Mr. Hinckes, Mr. Fisher Hobbs, Mr. Kinder, Mr. C. E. Overman, Prof. Sewell, Prof. Simonds, Mr. T. Turner, Dr. Walker, and Mr. W. B. Webster.

The following new members were elected:

Richardson, Thomas, Brandenburg House, Chatteris, Camb.
Domvile, C. Compton W., 5, Grosvenor-square, London
Campbell, Rev. Charles, Weasenham, Rougham, Norfolk
Hewer, George, Ley Gore, Northleach, Gloucestershire
Chambers, Thomas, jun., Colkirk, Fakenham, Norfolk
Lloyd, Edw. Harvey, Acton Hall, Oswestry, Salop.

The names of three candidates for election at the next meeting were then read.

PRIZE ESSAYS.—Mr. PUSEY, M.P., chairman of the Journal Committee, transmitted to the Council the following decisions of the Judges of Essays:

I. The Society's prize of 50*l.* for the best Report on the Farming of South Wales, awarded to CLARE SEWELL READ, of Kilpaison, near Pembroke.

II. The Society's prize of 20*l.* for the best Report on the Breeds of Sheep best suited to different localities respectively, with reference to soil, climate, elevation, and mode of farming, awarded to THOMAS ROWLANDSON, of Greek-street, Liverpool.

III. The Society's prize of 15*l.* for the best Essay on the Top-dressing of Soil with Mineral Substances, awarded to THOMAS ROWLANDSON, of Greek-street, Liverpool.

Colonel CHALLONER expressed the satisfaction he felt at witnessing the admirable working of the Society's system of prizes for Essays on the different topics of practical agriculture, not only in the sterling prize Essays produced by such system, but in the attendant result of secondary Essays of great merit, and the circumstance of that general attention and consideration those topics received by the emulation and excitement of competition.—Mr. French Burke hoped that some means would be adopted to confer a mark of the Society's approbation on those secondary Essays to which Col. Challoner had alluded, as they often contained details of great interest on particular points of enquiry.

The Belgian Secretary of Legation presented a copy of the report of proceedings at the great agricultural meeting held at Brussels last year; and M. Wyatt Edgell, papers connected with the management of mares after having foaled:—which were received with thanks.

The Council then adjourned to the 3d of April.

Calendar of Operations.

MARCH.

BEDFORDSHIRE FARM, *March* 27.—The late fine weather has been remarkably favourable for field operations. Ploughing and sowing are well advanced. The principal part of our Barley crop has been sown some time. Early sown corn is generally best at harvest. Our horses are now busy preparing the fallows for green crops. We usually reverse the winter furrow in spring at the first ploughing. The land can be effectually stirred by this method, and horsedesh is more economised than by cross ploughing. Our winter Wheats have been harrowed, and almost all hoed, and are generally looking well. Beans and early sown Barley have also been harrowed to advantage. Our Grass seeds have been dressed with ashes, the stones picked off, and afterwards rolled. Permanent pastures should also be generally rolled and harrowed. Harrowing has frequently a very good effect, especially where "fog" exists. All fields intended for mowing should now be, if they have not already been, shut up from stock. Our horse labour, prospectively, will be chiefly confined to the cultivation of the fallows and carting sundries. We shall drill Carrots next week, after Turnips, which succeeded White Peas last summer. The Grass seeds we sow with the corn crops consist of the following kinds and proportions: 12 lbs. of red, and 6 lbs of white Clover per acre, to stand one year, for mowing; 8 lbs. of white, 2 lbs. of Cow-grass, 2 lbs. of Trefoil, and 1½ bushel of Rye-grass per acre, to stand for two years; the first year's crop for mowing, and the second for grazing. We use about the same quantity of Italian Rye-grass per acre as of the best common kind. Grass seeds cannot easily be sown too thick; 20 lbs. an acre is much better than 10 or 12. Mr. Wilkins would no doubt recommend less. The Giant Saintfoin we tried last year did not succeed well; at all events the best of it is as yet under ground, like the Prodigal Son's rich ancestors. We gave the Saintfoin a fair trial. It was sown on good land, without any other crop. It was also sown with both Oats and Barley, but in each case the result has been nil, or next to a failure. Our sheep are still pretty much confined to Turnips as their principal food, and the cattle have also a full supply. We have all the Mangold Wurzel crop in hand as yet, for use when the Turnips are consumed. Turnips are best off the land after this time, where Barley is intended to succeed. Cattle for summer grazing are much benefited by a few hours' run a day in the pastures, with dry food at night, before being turned out entirely. Small-pox has not attacked any sheep around here as yet, and pleuro-pneumonia is of rare occurrence. Some complaints cannot be avoided, but good food, comfortable lodgings, and regular feeding, without sudden change, do much to prevent disease in general. *R. V.*

Notices to Correspondents.

AGRICULTURAL EDUCATION: *Caledonia.* He had better learn the art before the science. That is, he should make the practical details his main study at first; but he will not master them thoroughly without an acquaintance with their theory, and theory and practice may very well be studied and acquired together.

ANALYSIS: *Clevedon.* No; we cannot undertake the work. You should apply to the Agricultural Chemistry Association, of which the Rev. Mr. Huxtable, Sutton Waldron, Blandford, Dorset, is Hon. Secretary.

BARLEY AND CARROTS: *A M A.* They are never grown together. In Belgium they grow Flax and Carrots together; but no English farmer is likely to copy the practice

BOOKS: *G Baxter.* Johnston's "Agricultural Chemistry" and "Geology," Liebig's "Chemistry of Agriculture" and "Organic Chemistry," Low's "Elements of Practical Agriculture," Stephens's "Book of the Farm," Low's "Management of Landed Property," and Loudon's "Encyclopædia of Gardening."

BONES: *John Morton.* Mr. Pusey's plan of laying bones in heaps with damp ashes or sand for a month or so, has been perfectly successful, as a method of reducing them to powder.

BOX-FEEDING: *Sir Chas. Burrell* requests us to mention that a mistake has arisen with the editor of the *Lewes Express* in copying his communication on this subject, the town of East Grinstead being named instead of West Grinstead; parishes 30 miles distant from each other, a blunder which might prove very inconvenient to any one expecting to find any box-feeding establishment at East Grinstead.

GIANT SAINTFOIN: *B K.* Sow 2½ bushels of seed per acre across the drills of Wheat or Barley in April, with the drill-machine, and bush-harrow it in.

GREEN CROPS: *A D C.* Sow white Carrots, if you have a sale for them. You may perhaps obtain a crop of 20 tons per acre, and they are, in many Districts, worth about 25*s.* a ton on the land.

GUANO: *G E, Fife.* You are quite right; it is bad policy to apply lime too near in point of time to guano or any other ammoniacal manure.—*Inquirer.* 2½ cwt. of guano, at 28*s.*, being what will dress an acre of pasture, will 10 bushels of Oats given to ewes kept on the pasture in the winter (say 2 lbs. per head per diem) equally improve the pasture for the following summer? We do not think it will.—*X Y Z.* We advise you to have nothing to do with any except Bolivian or Peruvian guano—genuine.

HAND DIBBLE: *Emptor.* Messrs. Wedlake and Thompson, Hornchurch, Essex, are the makers. It can probably be seen near Frant, in Kent.

LAND AGENT: *H T.* Probably Low on the "Management of Landed Property" will suit you.

LIME: *Gentleman Farmer.* It should not be applied at the same time with any manure which will ferment and give off ammonia. You had better apply the one in autumn and the other in spring.

MANURES: *T. Peall.* Sow 3 cwt. per acre of guano, and 2 cwt. per acre of superphosphate, and 6 cwt. per acre of rape-dust—they will grow anything under ordinary circumstances. Sow about 3 bushels of Italian Rye-grass for a crop to dig in.

MOSS LAND. *M Saul.* Woodcuts are expensive.

PAINT: *R R* would be much obliged for any one's experience of the relative value of spelter or anti-corrosive paint for rough out-door shedding work and iron.

PIGS AND THEIR TAILS: *An Amateur.* Pigs with little hair on their bodies are most liable to lose their tails, showing a weakness of the tegumental structure. It may be prevented by crossing with a more hairy breed. The writer has a black sow, principally of the Berkshire breed, whose first litter, by a boar very similar to herself, nearly all lost their tails. Since then she has had two litters by a white Yorkshire boar, not one of which has been deprived of this ornamental appendage. *W. C. S.*

SHEEP PARSLEY: *Inquirer.* Most probably the greater portion of the seed would die; the better plan would be to mix it with vegetable compost, and spread during wet weather.

SINGLE-ROW SEED AND MANURE DRILL: *Young Farmer.* You should apply to some machine maker. Ask Messrs. Drummond, of Stirling, N.B., if you are in Scotland; or Ransome's, Ipswich; Garrett, of Saxmundham, Norfolk; or any of the many machine makers in the English Agricultural Society's Prize Lists, if you are in England.

SOLLY'S RURAL CHEMISTRY is published at the Office of this Paper, and may be had of any bookseller. Price 4*s.* 6*d.*

SUFFOLK FAIRS: *Correspondent.* Woolpit September fair will answer your purpose. Bury fair (Oct. 2), is also a good one.

SUNDRIES: *Emptor.* About paint, see our advertising columns. For concrete use the following mixture: Broken flints, to ½ inch gauge, 6 bushels; powdered chalk, or slaked and sifted lime, 1 bushel, road dirt (washed or powdered) and sifted stone or clean sharp sand, 1 bushel; coal-gas-tar, 6 gallons. Level the floor carefully, according to the purpose for which it is required. Have a board 4 feet square of slabs, with ledges 9 inches high on two opposite sides, and ledges 3 inches high on the other opposite sides. Throw down on this board 2 bushels of stone, and mix with them gradually 2 gallons of tar, till every stone is wetted, and then sift over it and mix with it one-third of a bushel of lime, and the like of sand. This mixing is done with spades, by a man and a boy turning it over and over till it forms a stiff black concrete, which is immediately spread 3 inches thick evenly over the levelled space, and lime and sand sifted over it. Proceed till your space is covered, or a day's work done; as soon as it will bear it, which, if thoroughly mixed, is immediately, roll it with a heavy iron roller, sifting sand and lime after the roller, as tar oozes up from the consolidation of the stones. It does not harden so as to be used in less than a week, nor completely for a month; but it is then as hard as glass, impenetrable by liquid, by horse or pig, or by rats. Until quite hard it should be frequently rolled—the more the better will it be.—Barley chaff is probably the ground awns, &c., which are cleaned off the grain. Any farmer can let you have some. The measurement of a cask is impossible with absolute accuracy; the approximate methods are given in great detail, according to the particular form of the vessel, in Hey's "Gager."—Has any one any experience of gutta percha cart harness?

THIBETAN SHEEP: *A four-years' Sub.* They are not for sale. They are now for inspection, and will ultimately be presented by the East India Company to H.R.H. Prince Albert and some other of the noble patrons of agriculture.

TUSSAC GRASS. *W B H I.* says, "I have about a dozen and a half roots of Tussac Grass, raised from one root. They are now shooting forth fine heads of bloom. I fear I am too high (1000 feet) for them to ripen. Should it be allowed to seed, or is dividing the roots and planting them out in rows, or scattered over a small field, a proper treatment?"

WHEAT AND OATS: *A B.* Hoe early in April; if deep'y, so much the better.

*** Communications reaching town after Wednesday, cannot be answered before the following week.

Markets.

SMITHFIELD, MONDAY, March 26.

The number of Beasts is rather smaller, but there is less wanted. The favourable weather enables us to maintain the quotations of Friday for best descriptions, but several second-rate remain unsold. The supply of Sheep is not quite so large, and there is a pretty good attendance of buyers; trade is consequently more cheerful, but we cannot quote higher. There are very few Calves on offer, and these not first-rate; prices remain about the same. From Germany and Holland there are 189 Beasts, 660 Sheep, and 24 Calves; from Norfolk and Suffolk, 2400 Beasts; and from Scotland, 250.

Per st. of 8 lbs.—	s	d	s	d	Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	6 to 3	8		Best Long-wools	3	10 to 4	2	
Best Short-horns	3	4 — 3	6		Ditto Shorn	...	.....		
2d quality Beasts	2	8 — 3	2		Ewes & 2d quality	3	2 — 3	8	
Best Downs and					Ditto Shorn	.	....		
Half-breds	4	4 — 4	6		Lambs	. .	.....		
Ditto Shorn	...	.....			Calves	... ...	3	6 — 4	8
					Pigs	. ... .	3	8 — 4	10

Beasts, 3426; Sheep and Lambs, 20,950; Calves, 75; Pigs, 240.

FRIDAY March 30.

The supply of Beasts to-day is large and the demand less, owing to the glutted state of the dead markets; 3*s.* 8*d.* is only obtained for the choicest Scots. Several remain unsold. Although the number of Sheep is not excessive, they cannot all be sold, and less money is taken for those that are disposed of. There is an unusually short attendance of buyers. Good Calves are scarce, and are sold at an advance of 4*d.* per 8 lbs. Lambs are rather lower. Good ones sell at 6*s.* 6*d.* From Holland and Germany we have 171 Beasts, 160 Sheep, and 60 Calves; from Scotland, 300 Beasts; and 143 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	6 to 3	8		Best Long-wools	3	10 to 4	2	
Best Short-horns	3	2 — 3	4		Ditto Shorn	...	.....		
2d quality Beasts	2	6 — 3	0		Ewes & 2d quality	3	4 — 3	8	
Best Downs and					Ditto Shorn	...	.....		
Half-breds	4	2 — 4	6		Lambs	... ...	...	...	
Ditto Shorn	...	. ..			Calves	... ...	4	0 — 5	0
					Pigs	... ...	3	8 — 4	8

Beasts, 890; Sheep and Lambs, 4350; Calves, 192; Pigs, 260.

HOPS, FRIDAY, March 30.

Messrs. PATTENDEN and SMITH report that the market is improving for all fine coloured Hops; inferior ones remain dull.

COVENT GARDEN, MARCH 31.

The market continues to be well supplied with Vegetables and Fruit. Pine-apples are sufficient for the demand. A few hothouse Grapes have made their appearance. Pears are very scarce; and Apples are dear. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst vegetables, Carrots and Turnips are abundant; Cauliflowers and Broccoli sufficient for the demand. Asparagus is dearer; French Beans, Rhubarb, and Seakale are plentiful. Potatoes remain stationary. New Potatoes begin to make their appearance. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Christmas Roses, Camellias, Gardenias, Tulips, Hyacinths, Cinerarias, Tropæolums, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 9s
Grapes, foreign, p. lb., 1s6d to 3s
Strawberries, per oz., 1s to 8s
Apples, dessert, p. bsh., 6s to 12s
— kitchen, p. bsh., 4s to 8s
Oranges, per doz., 1s to 2s
Lemons, per doz., 1s to 2s
— per 100, 10s to 18s
Chestnuts, p. peck, 4s to 7s
Almonds, per peck, 6s
— sweet, per lb., 2s to 3s
Walnuts, p. 100, 1s 6d to 2s
— p. bush., 16s to 24s
Nuts, Bar., p. bush., 20s to 22s
— Filb., p. 100 lbs., 60s to 160s
— Cob, p. 100 lbs., 90s to 150s
— Brasil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 3d to 1s
— red, p. doz., 2s to 6s
Savoys, per doz., 3d to 1s
Greens, p. doz. bunches, 1s 6d to 4s
Cauliflowers, p. doz., 2s to 4s
Broccoli, white, p. bun., 1s to 2s
— brown, p. bun., 6d to 1s 3d
Sorrel, p. hf. sieve, 9d to 1s
Potatoes, per ton, 60s to 200s
— per cwt., 5s to 10s
— per bush., 2s 6d to 6s
Turnips, p. doz. bun., 1s to 2s
Red Beet, per doz., 6d to 1s
Horse Radish, p. bdl., 1s to 6s
Asparagus, p. 100, 2s 6d to 9s
Seakale, p. punnet, 9d to 2s
Rhubarb, p. bundle, 6d to 1s 6d
French Beans, p. 100, 2s6d to 4s
Cucumbers, each, 1s 6d to 4s
Leeks, per doz., 6d to 1s
Celery, p. bundle, 6d to 1s 3d
Radishes, p. 12 hands, 1s to 1s6d
Carrots, p. doz. bun., 3s to 5s
Spinach p. sieve, 1s 3d to 1s 6d
Onions, p. bunch, 2d to 4d
— p. bush., 1s 6d to 3s
— Spanish, p. doz., 1s 6d to 4s
— pickling, p. hf. sieve, 1s 6d to 3s
Shallots, per lb., 4d to 8d
Garlic, per lb., 4d to 8d
Artichokes, Jerusalem, p. half sieve, 9d to 1s
Lettuce, Cab., p. sc., 4d to 9d
— Cos, do., 9d to 1s 6d
Endive, per score, 1s to 2s 6d
Mushrooms, p. pottle, 6d to
Small Salads, p. pun., 2d to 3d
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Watercress, p. doz. bun., 6d to 9
Parsley, p. hf. scive, 2s to 4s
— Roots, p. bdle., 1s to 1s6d
Marjoram, per bunch, 2d
Mint, green, per bunch, 4d to

HAY.—Per Load of 36 Trusses.

SMITHFIELD, March 29.

Prime Meadow Hay	70s	to 76s	Clover	60s	to 95s
Inferior ditto	54	65	New Clover	—	—
Rowen	40	60	Straw	27	30
New Hay	—	—		J. COOPER.	

CUMBERLAND MARKET, March 29.

Prime Meadow Hay	75s	to 80s	Inferior	50s	to 80
Inferior ditto	50	65	New Clover	—	—
New Hay	—	—	Straw	28	33
Old Clover	90	95		JOSHUA BAKER.	

WHITECHAPEL, March 29.

Fine Old Hay	68s	to 72s	New Clover	80s	to 88s
Inferior ditto	50	60	Inferior ditto	50	60
New Hay	65	68	Straw	26	30
Old Clover	90	100			

POTATOES.—SOUTHWARK, WATERSIDE, March 26.

The Committee report that our market continues to be well supplied. From the cold weather last week, Potatoes are meeting rather a ready sale, at the following prices:—Yorkshire Regents, 110s. to 140s.; Scotch, do., 100s. to 110s.; Scotch Cups, 110s. to 120s.; Whites, 80s. to 90s.; French Whites, 80s. to 100s.; Belgian do., 80s. to 90s.; Dutch, 80s. to 100s.

MARK LANE.

MONDAY, MARCH 26.—The supply of English Wheat by land carriage samples this morning was again remarkably small, and disposed of at our quotations of this day se'nnight; notwithstanding the immense arrivals of foreign, holders were not disposed to submit to any further reduction, and a moderate retail business to country buyers was transacted on late terms.—Barley, Beans, and White Peas support their former value, but Grey and Maple must be written 1s. to 2s. per qr. lower.—In consequence of the large arrivals of foreign Oats the trade is heavy, at a decline of 6d. per qr. upon ordinary qualities.

FRIDAY, MARCH 30.—We have been shortly supplied with English corn since Monday, but the arrivals of foreign, as will be seen at foot, exceed 100,000 qrs. We observe no alteration in the value of English Wheat, but as there is a large quantity of foreign pressing ex ship, where sales have been effected a decline of 1s. per qr. was generally acceded to—the same will apply to Barley and Oats.—Beans and Peas remain unaltered from Monday.

LIVERPOOL, FRIDAY, MARCH 30.—The wind has been easterly, but several cargoes of foreign Wheat have arrived since Tuesday. There was no animation in the trade to-day, but we had rather a poor attendance of dealers. Both Wheat and Flour were bought on easier terms. Oats went very slowly, and there was only a small demand for Oatmeal at previous rates. No change in Barley, Beans, or Peas. Indian Corn was in moderate request, but closed rather heavy, and without improvement on Tuesday's prices.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Feb. 17	47s 0d	29s 8d	17s 2d	26s 9d	29s 9d	34s 4d
— 24	46 4	29 8	17 5	27 8	30 10	32 11
Mar. 3	45 6	29 1	19 7	26 11	30 2	32 11
— 10	45 1	29 0	16 11	26 11	30 1	33 1
— 17	45 4	29 2	17 0	23 9	30 11	30 8
— 24	44 9	28 10	17 1	26 4	28 9	31 6
Aggreg. Aver.	45 8	29 3	17 4	26 5	30 1	32 7
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	FEB. 17.	FEB. 24.	MAR. 3	MAR. 10.	MAR. 17.	MAR. 24.
47s 0d	—					
46 4						
45 6						
45 4						
45 1						
44 9						

YELLOW GLOBE MANGOLD WURZEL, 70s. per cwt.
Improved Long Red Ditto ... ... per cwt—70s.
Cattle PARSNIP ... ... ,, 60s.
White Belgian CARROT ... ... ,, 80s.
*** For Cash.
The above may be depended on, being all grown by the most respectable agriculturists in Kent. References will be given on application; also a General Catalogue of Seeds.
WM. JAS. EPPS, Seedsman, Maidstone, Kent.

			s.	d.
WHITE BELGIAN CARROT ...	per lb.	1	6	
LARGE YELLOW BELGIAN DO. ...	,,	1	6	
LONG RED ALTRINGHAM DO. ...	,,	1	3	
LONG ORANGE DO.	,,	1	0	
SHORT ORANGE DO.	,,	1	3	
FINE LONG RED MANGOLD WURZEL ...	,,	1	0	
YELLOW AND RED GLOBE DO.	,,	1	0	
RENDLE'S IMPERIAL SWEDE TURNIP ...	,,	1	0	
SKIRVING'S PURPLE TOP DO. ...	,,	1	0	
LAING'S, MATSON'S, & ASHCROFT'S DO.	,,	1	0	
PURPLE & GREEN-TOP SCOTCH YELLOW DO.	,,	0	10	
DALE'S HYBRID DO.	,,	0	10	
WHITE, RED, AND GREEN ROUND DO. ...	,,	0	6	
WHITE, RED, AND GREEN GLOBE DO. ...	,,	0	6	
WHITE, RED, AND GREEN NORFOLK DO.	,,	0	6	
BEST RED AND WHITE CLOVER	,,	0	5	
FINE TREFOIL	,,	0	2	
LARGE GUERNSEY CATTLE PARSNIP ...	,,	1	3	
LARGE DRUMHEAD CABBAGE	,,	1	6	
FINE ITALIAN RYE-GRASS	per bushel	8	0	
COMMON RYE-GRASS	,,	3	0	
PACEY'S PERENNIAL RYE-GRASS ...	,,	6	0	

With all other Agricultural Seeds at the lowest market prices.
Our Agricultural Seed List is now ready, and we shall be happy to send a copy to any one who may wish to obtain it.
Apply to WILLIAM E. RENDLE and Co.,
SEED MERCHANTS, Plymouth.
The South Devon Railway is now open to Plymouth (Laira Green), and we now enjoy Railway communication to all parts of England and Scotland, and have made arrangements with Messrs. PICKFORD and Co. *for the cheap delivery of our Goods to every Town in Great Britain. Any instance of overcharge should be immediately communicated to us, as it is our interest to see that our customers are charged at the lowest rates. Constant Steam Communication from this Port to Cork, Dublin, Glasgow, Liverpool, London, Falmouth, and most of the principal Ports in the Kingdom.*
☞ All Orders above 2*l.* will be delivered, free of Carriage, by Messrs. PICKFORD and Co., to any Station on the Great Western, Bristol, and Exeter, or South Devon Railways; or to any Town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers.

GRASS SEEDS.
CORNER OF HALF-MOON-STREET, PICCADILLY.
THOMAS GIBBS AND CO., the SEEDSMEN TO THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND, beg to inform their Agricultural friends that they have now finished cleaning their bulks of the different kinds of Grass Seeds, which are now ready for delivery. T. G. and Co. beg to call particular attention to the following, viz.
MIXTURES OF SELECTED NATURAL GRASSES for laying down land to permanent MEADOWS and PASTURES, with a proper admixture of the permanent Clovers, properly apportioned, to suit the nature of the different soils and the purposes for which they are intended.
RENOVATING MIXTURES for improving old Grass land.
FINE MIXTURES for forming garden lawns and Grass plots.
Also, Italian Rye Grass, and all other kinds of Grass seeds and Clovers.

CARROTS.
Large White Belgian Carrot,
Large field Altringham Red Carrot.
MANGOLD WURZEL.
Yellow or Orange Globe,
Long Red,
Red Globe, and Long Yellow.
TURNIPS.
Purple and Green-top Swedes,
Skirving's and Laing's Swedes,
Gibbs's Green and Red-top Yellow Hybrid,
Green, White, and Red Globe,
Green, White, and Red Tankards.
CABBAGES.
Large Drumhead Cattle Cabbage,
One thousand-headed Cattle Cabbage,
Kohl Rabi, Purple and Green kinds.
PARSNIP.
Large Cattle Parsnip.
Clovers, Sainfoin, Furze or Gorse, White Mustard, Raps, and all kinds of Agricultural, Kitchen Garden, and Flower Seeds.
THOMAS GIBBS and Co., the Seedsmen to the Royal Agricultural Society of England, corner of Half-moon-street, Piccadilly, London.

AGRICULTURAL SEEDS (delivered carriage-free to London, or any Station on the Eastern Counties or Eastern Union Lines), all of the finest quality for growth and stock.

			s.	d.
MANGOLD WURZEL, fine long red ...	per lb.	0	9	
,, ,, Yellow Globe and Red Globe	,,	0	9	
,, ,, Long Yellow	,,	1	0	
WHITE SILESIAN SUGAR BEET ...	,,	1	0	
CARROT, large White Belgian ...	,,	1	0	
,, large green-top red Altringham ...	,,	1	0	
LARGE CATTLE PARSNIP	,,	1	3	
TURNIP, Swedes, fine purple-top	,,	1	0	
,, ,, Skirving's ...	,,	1	0	
,, Norfolk White, Green, and Red round ...	,,	0	6	
,, Skirving's Improved Purple-top Scotch	,,	0	10	
,, Fine Green-top Yellow Scotch ...	,,	0	10	
,, Dale's Hybrid	,,	0	10	
,, Yellow Tankard or Scotch Pudding ...	,,	0	10	
And all other Turnips at the lowest prices.				
LARGE DRUMHEAD CATTLE CABBAGE ...	,,	2	6	
FINE LUCERNE	,,	0	10	

GRASSES.
The best selected varieties, mixed for Permanent Pastures, suited to different descriptions of soils. Having for many years devoted considerable attention to the selection and supply of these Grasses, we are enabled to offer them with a confidence of their giving entire satisfaction. Price, per bushel, with the addition of a proportion of Clover and heavy Grasses, 10*s.*; or 30*s.* per acre of 3 bushels and 8 lbs.
THE FINEST MIXED LAWN GRASSES, 5*s.* per peck, or per lb. 1 3
Fine Pacey Rye Grass, per bushel 5 0
True Italian Rye Grass, per bushel 5 6
All other Agricultural Seeds at the lowest prices. Our Agricultural Seed List will be forwarded on application. Also prices to the trade.
BASS and BROWN, Seed Establishment, Sudbury, Suffolk.

PRICES CURRENT.

	London. Mar 19	London. Mar 26	Liverpool. March 20	Liverpool. March 27.	Wakefield. Mar 16	Wakefield. Mar 23	Boston. Mar 21	Boston. Mar 28	Birmingham. March 22.	Birmingham. March 29.
	qr.	qr.	70 lbs.	70 lbs.	qr.	qr.	qr.	qr.	62 lbs.	62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	38 to40	38 to40	6 2 6 7	6 2 6 7	44 to46	43 to48	36 to44	36 to45	5 9 6 4	5 9 6 4
„ white ...	44—47	44—47	6 8 7 3	6 9 7 3	45—48	41—51	40—46	40—47	6 2 6 8	6 2 6 8
Old, red ...	40—43	40—43	6 6 6 8	6 6 6 8	44—46	42—44	—	—	6 0 6 6	6 0 6 6
„ white ...	46—50	46—50	6 9 7 6	6 10 7 6	—50	—50	—	—	6 1 6 8	6 1 6 8
Foreign ...	38—56	38—56	6 2 7 3	6 0 7 8	33—51	42—51	—	—	5 4 7 0	5 4 7 0
			480 lbs.	480 lbs.						
Rye—New ...	24—26	24—26	—	—	—	—	—	—	—	—
Foreign meal	7*l.* 5s	7*l.* 5s	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	22—25	22—25	—	—	22—25	21—22	26—28	26—28	23—27	23—27
Malting	25—28	25—28	30s—32s	30s—32s	27—31	27—31	30—32	30—32	29—33	29—33
Foreign	20—28	20—27	—	—	22—28	22—27	—	—	—	—
					6 bush.	6 bush.				
Malt—Home	—	—	—	—	—	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White ...	20—24	19—24	2s 8d 3s 0d	2s 8d 3s 0d	—	—	20—24	20—24	18—30	18—30
Black ...	17—21	16—21	2 3 2 6	2 3 2 6	—	—	—	—	17—18	17—19
Foreign	15—22	14—20	2 3 2 5	2 3 2 5	—	—	—	—	—	—
			qr.	qr.						
Peas—Boilers	24—27	24—27	35s—	35s—	30—34	28—32	—	—	36—44	36—44
									196 lbs.	196 lbs.
Grinding ...	27—29	26—28	29 —31s	29 —30s	—	—	—	—	12—13	12—13
Foreign ...	24—32	24—32	32 —34	32 —34	—	—	—	—	—	—
Beans—										
New, small ...	20—30	20—30	31 —34	30 —33	30—32	29—30	26—32	26—32	11—13	11—13
Longpods, &c....	26—32	26—32	—	—	—	—	—	—	—	—
Old	27—39	27—39	33 —35	32 —34	35—36	35—36	34—36	34—36	15—16	15—16
Foreign ...	22—36	22—36	30 —32	23 —32	27—30	25—27	—	—	10—13	10—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	36—40	36—40	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	10*l.* 5s	9*l.* 8s	7*l.* 15s—8*l.*	7*l.* 15s—8*l.*	—	—	—	—	—	—
Foreign ...	6*l.*—8*l.*	6*l.*—9*l.*	—	—	—	—	—	—	—	—
Indian Corn—	24—28	24—28	27 —30	27s—31s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	35—42	35—42	33—35	33—35	—	—	35—47	35—42	37—40	37—40

Weekly Averages and Imports.	Aver. Mar 27		Impts.	Averages.		Imports.	Aver.		Impts.	Aver.		Impts.	Gloucester. Averages.		Gloucester. Imports.
	s.	d.	qrs.	s.	d.	qrs.	s.	d.	qrs.	s.	d.	qrs.	s.	d.	qrs.
WHEAT ...	44	6	19510	45	4	11998	45	6	7177	42	8	2593	46	7½	2498
BARLEY ...	29	7	19860	29	2	532	30	10	3754	26	0	4	30	0	—
OATS... ...	15	8	66640	17	0	2388	19	6	1215	13	2	917	17	8	—
RYE	23	7	—	23	9	—	—		—	—		—	—		—
BEANS ...	25	7	—	30	11	1497	30	8	1202	27	5	410	—		545
PEAS... ...	32	9	—	30	8	12	32	0	164	—		—	—		—

SIGNED { KINGSFORD and LAY. | SEGAR and TUNNICLIFFE. | SANDARS and DUNNS. | THOMAS WRIGHT. | J. and C. STURGE.

Sales by Auction.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to Public Competition, at the Auction Mart, Bartholomew Lane, on WEDNESDAY, April 4, 1849, at 12 o'clock, a very choice Collection of CARNATIONS, PICOTEES, PINKS, &c.; a selected assortment of Standard and Dwarf ROSES, DAHLIAS, VERBENAS, FUCHSIAS, &c.; the property of Mr. WILLMER, of Sunbury.—May be viewed the morning of Sale. Catalogues to be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND AMATEURS.

MESSRS. PROTHEROE AND MORRIS are instructed to offer to Public Competition by Auction, on the Premises, Wood-street, Woolwich, on MONDAY, April 9th, 1849, at 12 o'clock (by order of G. Collier, Esq., leaving the premises), a choice assortment of GREENHOUSE PLANTS, consisting of fine specimen Geraniums, Ericas, Azalea indica, Camellias, Leschenaultias, Pimeleas, Epacris, Chorozemas, Achimenes, Crassulas, Calceolarias, Cinerarias, Lilium lancifolium, Carnations, Picotees, &c. Three capital 2-light boxes, garden roller, cast iron hand-lights, vases, slate troughs, &c.—May be viewed on the Saturday prior to the Sale. Catalogues had on the Premises, of the principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone, Essex.

ORCHIDS JUST ARRVED, PER "AVON," FROM CHAGRE, IN EXCELLENT CONDITION.

MR. J. C. STEVENS begs to announce for sale by Auction, at his Great Room, 38, King-street, Covent-garden, on TUESDAY next, 3d April, at 11 for 12 o'clock precisely, the COLLECTION OF ORCHIDS made by Mr. Warsewicz, on his journey from Costa Rica to Panama, through the state of Veragua, South America, a district never before traversed by any European. Amongst the most remarkable may be mentioned several plants of Warsewitschia, a new genus, Lind.; Cypripedium caudatum, C. longifolium, several very beautiful new Trichopilias, a new Cyonoches, Utricularia parasitica and bulbifera, a new pink-spotted Lycaste, and several other novelties. Dried specimens and drawings have been received, and will be exhibited at the sale.—May be viewed on Monday and morning of sale, and Catalogues had. N.B. It being the day of the meeting in Regent-street, the sale will commence at 12 o'clock precisely.

PHALÆNOPSIS GRANDIFLORA.

MR. J. C. STEVENS begs to notify that he has received instructions from Messrs. Hugh Low and Co., to include in his Sale of TUESDAY next, 40 PLANTS OF PHALÆNOPSIS GRANDIFLORA, which they have just received by last Mail from Borneo direct, in excellent condition.

38, King-street, Covent-garden, London, March 31.

TO GRAPE GROWERS, NURSERYMEN, FLORISTS, AND OTHERS.

TO BE SOLD OR LET, with immediate possession, AN ESTABLISHED BUSINESS in the above line, situate in one of the best localities for such a purpose in the town of Brighton; laying fully open to the south, and completely sheltered from the north and west. The whole of the premises are walled in, and comprise a series of 12 Forcing and Succession Graperies, Peach, Stove, Propagating and Plant houses, besides Pits, &c.; covered by upwards of 10,000 feet of glass. The whole of the external and sectional walls are clothed with full-bearing Fruit Trees of the finest sorts; and water from the Company's main is laid on to various fish pools and ornamental tanks, conveniently placed for the use of every part of the premises. If sold, a large portion of the purchase money may remain on Mortgage, if required.—Apply to Mr. PARSONS, Auctioneer and Estate Agent, 30, Marine Parade, Brighton.

FARMS TO LET.

MESSRS REID AND BEVAN beg to call the attention of Agriculturists seeking Farms to their immediate and Michaelmas Entry List, of good Stock, Corn, and Dairy Farms, in all parts of the country—the full particulars of which may be obtained by enclosing six postage stamps to their offices, 38, Red Lion-square, London.

TO PLANTERS AND NURSERYMEN.—From 50,000 to 300,000 LARCHES, extremely well grown, from 2½ feet to upwards of 3 feet, which have been shifted this spring, to secure a limited growth, and which are yet scarcely showing bud, may be bought for immediate delivery at the Castle Railway Station at Lancaster, the land being likely to be wanted for the projected railways at Lancaster.—Letters addressed to JOHN KIDD, the Manager at the Leighton Nursery Grounds, Lancaster, will be immediately attended to.

Lancaster, March 31.

TURNIP SEEDS, &c.

W. DRUMMOND & SONS, Agricultural Museum, Stirling, N.B., will furnish, free, on application, priced Lists of TURNIP and other AGRICULTURAL SEEDS.

N.B. All parcels of Seeds above 2l. value (with the exception of Grain and Vetches), delivered free of carriage in London, Liverpool, Hull, Newcastle, and many other parts to which there is a direct communication.

AGRICULTURAL SEEDS.

THOMAS WHALLEY begs to state that his ANNUAL PRICED LIST OF AGRICULTURAL SEEDS is now ready, and will be sent free on application. Gentlemen requiring seeds for their tenantry supplied at wholesale prices.

T. W. has just published a New Descriptive Catalogue of Garden and Flower Seeds, which may also be had on application.

*** Freight paid to any port in Scotland, Ireland, or Wales.

12, St. George's Crescent, Liverpool.

SEEDS.—MEADOW AND PASTURE GRASS SEEDS, in mixtures suited to various soils, &c., at 32s. per acre, allowing 2 bushels and 12 lbs. to each acre. Directions for sowing and treatment will accompany the seeds. Mixed sorts for improving old Grass Lands, 1s. 3d. per lb. Fine sorts for forming Lawns, &c., 1s. 6d. per lb.

GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address GEORGE GIBBS and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c. &c., 26, Down-street, Piccadilly, London.

SLATE WORKS, ISLEWORTH.—The following articles manufactured in Slate for Horticultural Purposes, by EDWARD BAUK, may be seen in use at WORTON COTTAGE, upon application to the Gardener, Sundays excepted: Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot-water Tank Covers, Flower-beds for Balconies, Shelves fitted to hold Water for Orchidaceous Houses, &c.—Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

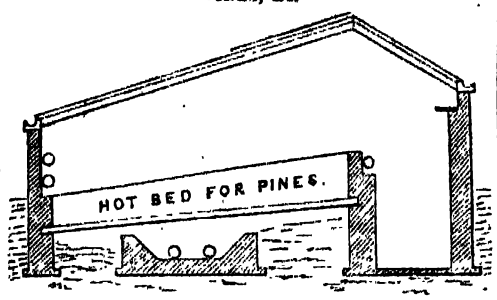
FLOWER-POTS AND GARDEN SEATS.

JOHN MORTLOCK, 25a, Oxford-street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

25a, Oxford-street, near Hyde-park.

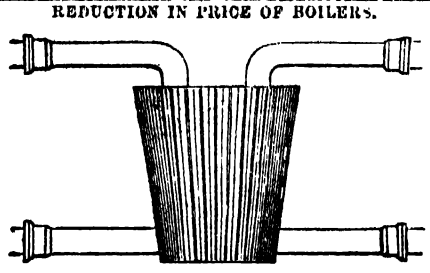
HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in.	will warm	50 ft. 4 in. pipe	£1	15	0
12 in.	do.	75 ft. 4 in. do. ...	2	5	0
14 in.	do.	100 ft. 4 in. do. ...	2	15	0
16 in.	do.	150 ft. 4 in. do. ...	3	10	0
18 in.	do.	250 ft. 4 in. do.	4	10	0
21 in.	do.	350 ft. 4 in. do.	5	10	0
24 in.	do.	450 ft. 4 in. do. ...	7	0	0

NEW PATTERN BOILERS.

30 in.	will warm	800 ft. 4 in. pipe	15	15	0
36 in.	do.	1500 ft. 4 in. do. ...	25	0	0

All Boilers with double arms, up to 18 in., 5s. extra; to 24 in., 10s. extra; all above, the same price.

130, Fleet-street, London, March 31.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Duke of Devonshire's, Chatsworth Gardens.
Earl of Gainsborough's, Oakham, Rutlandshire.
Earl of Zetland's, Upleatham, Yorkshire.
Robert Hanbury, Esq., Poles, near Ware, Herts.
Mr. Glendinning's Nursery, Turnham-green.
And at least 500 other important places.

BURBIDGE and HEALY, 130, Fleet-street, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S-ROAD, CHELSEA.

EDENCH having erected Hothouses for Sale on his Premises, invites the attention of Gentlemen about to erect Hothouses to inspect his Patent Plans, when they at once will perceive the vast superiority of these Houses over any others hitherto erected, for strength, lightness, durability, handsome appearance, healthiness to plants of every description, the roofs of one principle being formed without wood, putty, or paint, with a smooth surface and only about 5-8ths of an inch of light taken up in any part.

IMPROVED FLOWER STICKS.—THESE FLOWER STICKS are of a circular form, thereby avoiding angles and sharp edges, which are liable to cut and injure the plants. They may be had stained brown or green to suit the various plants.—To be had of all respectable Nurserymen and Seedsmen, and dealers in Garden Implements. Manufactured and sold Wholesale, at H. MORRELL'S, 149, Fleet-street, London.

N.B. Samples to be seen at the Office of this Paper.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

GUANO CHEAPER THAN EVER.

POTTER'S GUANO is now 7l. per ton, and of superior quality, owing to recent chemical discoveries, and an improved mode of manufacture. An experience of eight years has shown it to be fully equal to the best Peruvian Guano, and 25 per cent. cheaper. See testimonials. If a quantity is taken a specific arrangement may be made.

GYPSUM (Great Reduction in Price), is offered at 15s. per ton, at the works, loose, or in bags if required. It has been analysed by an eminent chemist, and pronounced pure.—W. H. POTTER, 28, Clapham-road Place, Kennington.

PERUVIAN AND BOLIVIAN GUANO ON SALE

BY THE ONLY IMPORTERS,

ANTONY GIBBS AND SONS, LONDON;
WILLIAM JOSEPH MYERS AND CO., LIVERPOOL;
And by their Agents,
GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
COTESWORTH, POWELL, AND PRYOR, LONDON.

To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

GUANO AND OTHER MANURES.

PERUVIAN GUANO, of the finest quality, direct from Import warehouse.
NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SULPHURIC ACID AND COPROLITE.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of

MARK FOTHERGILL, 291A, Upper Thames-street, London.

A Treatise on Guano, Superphosphate of Lime, &c., will be forwarded on receipt of 8 postage stamps. Free to purchasers of Guano, &c.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:

CORN AND GRASS MANURE, ...	per ton	£9	10	0
CLOVER MANURE	,,	8	0	0
TURNIP MANURE	,,	7	0	0
SUPERPHOSPHATE OF LIME ...	,,	7	0	0
SULPHURIC ACID AND COPROLITES	,,	5	0	0

N B.—PERUVIAN GUANO, from selected cargoes (in Dock), 9l. 10s. per ton. SULPHATE OF AMMONIA, &c.

Office, 69, King William-street, City, London.

WHEAT SOWING.

THE LONDON MANURE COMPANY beg to offer as under,

LONDON MANURE COMPANY'S CORN MANURE.
,, ,, ,, URATE. (LIME.
,, ,, ,, SUPER-PHOSPHATE OF

Peruvian Guano, direct from Importers' Stores—Fishery and Agricultural Salt—Gypsum for Clover—Soda Ash for destroying wireworm, and every other Artificial Manure.

The London Manure Company would call particular attention to their Corn Manure and Urate, the former containing a large amount of Ammonia, Phosphates, and Silicates, all so essential for corn crops, while the Urate is richer in Phosphates and other mineral substances required for roots.

Full particulars and prices forwarded on application.

EDWARD PURSER, Secretary, 40, Bridge-street, Blackfriars.

THE Lightest, Cheapest, and most Efficient Roofing Material is CROGGON'S PATENT IMPROVED ASPHALTE FELT. A House, 40 feet by 24 feet in the clear, may be erected complete, for 17l. 17s. 10d. Price of the Felt, one penny per square foot, in rolls 32 inches wide. Samples and details may be had by post. A Large stock always on hand, to ensure punctuality.—CROGGON and Co., 2, Ingram-court, Fenchurch-street, London.

DR. NEWINGTON'S PATENT HAND LEVER DIBBLES, on wheels, for depositing every kind of seed and manure at defined intervals, uniform depths, and straight lines. Also the PATENT HAND DIBBLES, containing from three to nine Depositors each. Any one of these implements will purchase itself in seven days by the sowing of seed alone. The PATENT HAND DROP DRILL for seed and manure. The REGISTER HAND HOE and CULTIVATOR, with which a man can hoe effectually, and stir to the depth of from 3 to 5 inches, on any land, however stiff, two acres a day.—A Prospectus, with testimonials, will be sent on applying to Dr. NEWINGTON, Knowle Park, Frant, near Tunbridge Wells, Kent.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Sheddings, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is the Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry; and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

GLASS FOR CONSERVATORIES, &c.

JAMES PHILLIPS AND CO. [illegible] of SHEET GLASS [illegible].

HORTICULTURAL GLASS.

In Sheets of about 20 inches by 30, and packed in Cases. Cut to the size required, but not to exceed 40 inches long.

16 oz. to the foot ...	2l. 5s. 0d.	from 1½d. to 3½d. per foot.	
21 ...	3 0 0	2 ... 5	„
26 ...	4 7 6	2½ ... 7½	„
32 ...	6 12 0	4 ... 10	„

Foreign Sheet, 16 ounces, 40s. per case of 200 feet.

SMALL SQUARES, IN BOXES OF 100 FEET.

	Crown.	Sheet.
Squares under 6 by 4 ...	10s. 6d.	£0 12s. 6d.
6 by 4 and under 7 by 5 ...	—	0 15 0
7 by 5 „ 8 by 6 ...	12 6	0 17 6
8 by 6 „ 10 by 8 ...	15 6	1 0 0

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS, in sizes not exceeding 5 feet superficial.

¼ thick ... per foot	1s. 9d.	⅝-inch ... per foot	2s. 0d.
⅜-inch	1 2	¾-inch	3 0
½-inch	1 6		

PATENT ROUGH PLATE TILES.

¼ thick ......each	0s. 11d.	⅜-inch ......each	1s. 7d.
½-inch	1 3	¾-inch	2 0

SHEET GLASS TILES AND SLATES.

	16-oz.	21-oz.	26-oz.	32-oz.
Tiles made of Sheet Glass ...	8d.	10d.	1s.	1s. 4d.
Slates, 20 ins. by 10 ...	10d.	1s.	1s. 4d.	1s. 8d.

Slates are kept in stock of the usual sizes, and made to any dimensions.

GLASS MILK-PANS, PROPAGATING AND BEE GLASSES, Fancy Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, Lamp Shades, and Lactometers for trying the quality of Milk, 4 tubes 7s. 6d.; 6 tubes, 10s. Self Registering Thermometers for Greenhouses.

HARTLEY'S PATENT ROUGH PLATE GLASS.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—The readers of the *Gardeners' Chronicle* of Saturday, Feb. 24th, must have observed the high terms in which this Glass was spoken of by Dr. Lindley. We have therefore re-arranged our list of prices to correspond precisely with those of the Patentee, to which we would beg the attention of the Nobility, Clergymen, Gentry, and others.

In Crates of the sizes as manufactured		... ... 6d.	per foot.
In Squares	under 8 by 6	 4	„
„ 8 by 6	and under 10 by 8	... ... 4½	„
„ 10 by 8	„ 14 by 10	 5	„
„ 14 by 10	„ 1½ foot	... ... 5½	„
„ 1½ foot	„ 3 „	 6	„
„ 3 „	„ 4 „	... ... 6½	„
„ 4 „	„ 5 „	 7	„
„ 5 „	„ 6 „	... ... 7½	„
„ 6 „	„ 8 „	... ... 8½	„
„ 8 „	„ 10 „	 10	„
Quarries	... ...	 8	„

Averaging ¼ of an inch thick, and about 26 oz. to the foot.
Jas. Phillips & Co., 116, Bishopsgate-street Without, London.

HARTLEY'S PATENT ROLLED ROUGH PLATE GLASS, for Horticultural purposes.—It is now proved beyond a doubt that the above Glass is very far superior to any hitherto discovered for all kinds of Horticultural uses. (See *Gardeners' Chron., Feb. 24th*, 1849, p. 115.)

WILLIAM PATTEN and Co., Glass, Lead, and Colour Merchants, 20, Old Fish-street, Doctors' Commons, London, beg to inform the public that in consequence of the numerous orders they have executed in Ireland, Scotland, and the principal counties of England, they have entered into such arrangements with the Patentee as will enable them to supply the above Glass in any quantity, strictly at the Manufacturer's prices. W. P. and Co. have a large quantity of Crown Squares in Stock, in 100 feet boxes, from 1d. per foot.

P.S. Sole Manufacturers of the Anti-Corrosion and Mineral Paint for all kinds of Out-houses, Park Fencing, Farm Buildings, &c.

GLASS.

E. and W. H. JACKSON are supplying SHEET, ROUGH PLATE, and CROWN GLASS for Horticultural purposes, at very reduced prices. BRITISH and PATENT PLATE of superior manufacture, for Glazing dwelling-houses, for which purpose these articles are now superseding all inferior Glass. ORNAMENTAL GLASS of the newest designs for the decoration of Conservatories, &c. E. and W. H. J. also supply PATENT OPTICAL FLINT GLASS, Thin Glass, Slides and Cells for Microscopic purposes, French Shades, Propagating Glasses, &c. Estimates, Lists of Prices, and every information forwarded on application at their Warehouse, 315, Oxford-street, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY and CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

BEE HIVES.

GEORGE NEIGHBOUR and SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—George Neighbour and Son, 127, High Holborn, London.

"Nutt on Bees" (6th edition), now published.

MILTON'S BEE-HIVES.—These Hives are made in every variety, for the purpose of taking the honey without killing the bees. They are composed of various materials, to suit all climates, and may be relied upon for practical use. Their simplicity of construction and easy management ensure success.

BEE GLASSES of all sizes, and every article connected with the Apiary supplied. A Sheet of Illustrations of Bee Hives, &c., 1s. The "Practical Bee Keeper," by John Milton, 2s. 6d. 10, Great Marylebone-street, Wimpole-street, London.

HEAL and SON'S LIST OF BEDDING, containing a full description of Weights, Sizes, and Prices, by which purchasers are enabled to judge the articles best suited to make a good set of Bedding, sent free by post, on application to their Factory, 196 (opposite the Chapel), Tottenham-court-road, London.

PORTLAND CEMENT.—[illegible] Manufacturers, J. B. White and Sons, Millbank-street, Westminster.

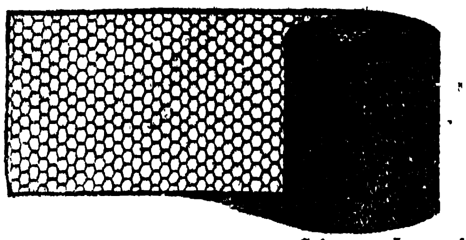
PATENT FLEXIBLE INDIA RUBBER PIPES AND TUBING FOR RAILWAY COMPANIES, BREWERS, DISTILLERS, FIRE-ENGINES, GAS COMPANIES, GARDENS AND AGRICULTURAL PURPOSES, &c.

THE PATENT VULCANISED INDIA-RUBBER HOSE PIPES are made to stand Hot Liquor and Acids without injury—do not become hard or stiff in any temperature (but are always perfectly flexible), and as they require no application of oil or dressing, are particularly adapted for Fire-engines, Pumps, Gas, Breweries, Gardens, and all purposes where a perfectly flexible pipe is required. Made all sizes from ⅛-inch bore upwards, and of any length to order.

Vulcanised India-rubber Garden Hose, fitted with brass taps, copper branch, and roses complete, ready to be attached to Pumps, Water-butts, or Cisterns.—Sole Manufacturer, James Lyne Hancock, Goswell-Mews, Goswell-road, London.

N.B. Vulcanized India-rubber Washers of all sizes for Joints of Hot-water and Steam Pipes, and Vulcanised sheet Rubber, any thickness, for all kinds of Joints, and other purposes.

GALVANIZED WIRE GAME NETTING.—7d. per yard, 2 feet wide.

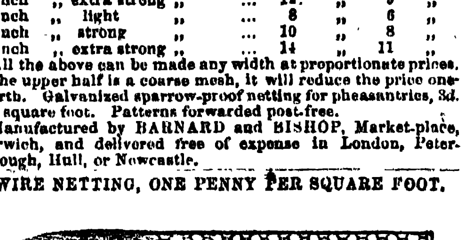


		Galvanized.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7d. per yd.	5d. per yd.
2-inch „ strong „	...	9 „	6½ „
2-inch „ extra strong „	...	12 „	9 „
1½-inch „ light „	...	8 „	6 „
1½-inch „ strong „	...	10 „	8 „
1½-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide 3d. per yard	30 inches wide 7½d. per yard	
18 „ „ 4½d. „ „	36 „ „ 9d. „ „	
24 „ „ 6d. „ „	48 „ „ 1s. „ „	

Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden arches, 20s. each; Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of Thomas Henry Fox, 63, Snow-hill, London.

SMOKY CHIMNEYS AND VENTILATION.—DAY'S IMPROVED SIMPLEX WIND-GUARD is cheaper, more durable, and less unsightly than any other Chimney-pot. It continually ventilates the apartment, and is guaranteed to cure all chimneys smoking from wind. It may be seen and tested at W. Jeakes's, 51, Great Russell-street, Bloomsbury. Price, in Galvanised iron, 25s. Prospectuses forwarded on application. Licenses granted, and the trade supplied with the above, and also Day's original Wind-guard, made of a more durable material. A Liberal discount allowed.

TO FLOCKMASTERS.—IMPORTANT DISCOVERY.

THOMAS BIGG, Chemist, &c., Leicester House, Great Dover-street, Borough, London, earnestly solicits the attention of Farmers and Breeders of Sheep to his valuable SPECIFIC OR LOTION FOR SCAB OR SHAB, which will be found a certain remedy for eradicating that loathsome and ruinous disorder. This excellent preparation contains no mercurial nor poisonous ingredient, and may be safely applied to all descriptions of sheep (even ewes in lamb), in any climate or country, and during all seasons of the year. Full directions for use, which are extremely simple, accompany the specific.

Prepared and sold only by him at his manufactory, as above, at 10s. per gallon (sufficient on an average for 40 sheep, according to the extent and virulence of the disease), package included, and carriage paid to any part of the kingdom, on receiving a post-office order for the same.

T. B. hopes to be favoured with a continuance of the much esteemed orders for his celebrated Sheep and Lamb Dipping Composition, for the Destruction of Tick, Lice, &c., the prevention of Fly striking, and the improvement of the Fleece, which he is gratified to find maintains its deserved reputation.

PATENT ALKALI COMPANY'S METALLIC PAINTS, [illegible].—These Paints (the products of a Patent process) possess extraordinary covering quality, and far surpass all other Paints in point of durability and economy, two coats being proved to be more than equal to three of any other description. From their chemical composition, they are pre-eminently adapted for covering Iron, Stucco, or Brick Buildings, and every kind of Woodwork. They have been exposed on Shipping to the action of Sea-water, and of the Sulphuretted Hydrogen so prevalent in Sea-ports and Tidal Harbours for more than three years, without change. The attention of the Shipping Interest is particularly directed to the Company's Patent Compound Metallic Black Paint (the only Metallic Black Paint of any [illegible] produced), which will be found a most valuable and effectual preservative when applied to Iron Steam-boats and Wooden Vessels. It also forms a beautiful covering for [illegible]. No other Paint partakes in any degree of the properties which constitute the great value of these Metallic Paints. Numerous and most satisfactory testimonials have been forwarded to the Company's Office, copies of which may be had of the Secretary, or of the Agents.

Price, by the ton, [illegible], delivered in London or Liverpool, exclusive of packages. To be obtained exclusively on application to the Secretary, Mr. J. A. West, at the Offices of the Company, 20, Fenchurch-street, London; or of any of the under-mentioned parties, who are the only Agents of the Company:— Messrs. Evans Brothers, London; Messrs. Matthews and Leonard, Bristol; Messrs. Evans and Hodgson, Exeter; Messrs. Clarke and Fill, Yarmouth, Norfolk; Mr. D. [illegible], Glasgow; Mr. G. Sandeman, Dundee; Mr. R. Newby, Bradford, Yorkshire; Mr. R. [illegible] Farr, Edinburgh; Mr. W. Bailey, Wolverhampton; Messrs. Vint and Co., Newcastle-on-Tyne, and Sunderland; Mr. Robert Oxland, Plymouth; Mr. Joshua [illegible], Tregedna, near Falmouth.

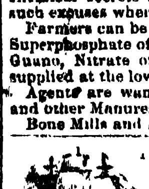
SUPERPHOSPHATE OF LIME, the best Manure for Turnips and all Root Crops, when Manufactured from the Genuine Materials.

JOHN HUNT respectfully informs his Agricultural Friends that he has always a stock of this valuable MANURE ready for delivery, which he confidently recommends as being the best for producing Turnips, Potatoes, and all Root Crops, and will bring the plant much earlier to hoe. The Reports of the Royal Agricultural Society, and other scientific men, will most satisfactorily attest its value in this respect. As a defiance against the fly, this Manure, from being more rapid in its effects than any other, brings up the plant vigorously, throwing it at once into rough leaf, and thus defies the ravages of this destructive insect, while the crops per acre, at a cost of not more than 21s., far exceeds, under ordinary circumstances, that produced by any other means. I have a large number of letters from many Farmers, who have used this Manure for the last four years with great success. It is necessary to caution Agriculturists that there is an inferior article in the market, manufactured from *Coprolite* instead of Bone and Guano, not because the quality is superior, but the price is the inducement, Coprolite being 30s. per ton, and Bone 85s. per ton. But it must be observed that Coprolite was not in the market when Superphosphate of Lime was first introduced; the ingredients which composed that article in those days were Bone, Guano, Animal Charcoal, and Vitriol, which brought this Manure into such great repute. But the character of Superphosphate of Lime must fall, and its previous reputation will be lost, if Farmers allow themselves to be deceived by this rubbish. It may be easily detected by its gravity, which is very dense, and has a cement-like appearance, when made from the Coprolite stone. I advise all consumers and dealers in this article to visit the Works and judge for themselves, and beware of those who have chemical secrets and other subterfuges; there should be no such excuses where the genuine articles are employed.

Farmers can be supplied with all the ingredients for making Superphosphate of Lime who have the convenience for so doing. Guano, Nitrate of Soda, Sulphuric Acid, and Bone Manure supplied at the lowest market prices.

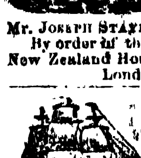
Agents are wanted for the sale of Superphosphate of Lime and other Manures, where none are at present appointed.

Bone Mills and Manure Works, High-st., Lambeth, London.



NEW ZEALAND COMPANY'S SHIP.—The first-class Passenger Ship CORNWALL, 580 tons, now lying in the [illegible] Docks, will be despatched for the Company's Settlements, from the port of London, on Monday the 16th of April next, and will carry an experienced Surgeon.—Apply at the New Zealand House; or to Mr. Joseph Stayner, Broker, 110, Fenchurch street.

By order of the Court, Thomas Cudbert Harington.
New Zealand House, 9, Broad-street Buildings,
London March 31, 1849.



NEW ZEALAND COMPANY, OTAGO.—The Court of Directors of the New Zealand Company hereby give notice, that a FURTHER BALLOT for priority of CHOICE of LAND in the Settlement of OTAGO will take place at New Zealand House on Friday, the 13th of April next, at 1 o'clock precisely, when Purchasers or their Agents are requested to attend.

The full sum of 120l. 10s. for each Property, consisting of 60¼ acres, must be paid either to the Commercial Bank of Scotland, in Scotland, or to Messrs. Smith, Payne, and Smiths, Bankers, in London, on the New Zealand Company's account, on or before Tuesday, the 10th of April next; and must be accompanied by an authority for receiving such payment under the signature of one of the Officers of the Otago Association.

Further particulars may be obtained at the New Zealand House, London; and at the Offices of the Otago Association, No. 27, South Hanover-street, Edinburgh, and No. 3, West Nile-street, Glasgow. By order of the Court,

Thomas Cudbert Harington.
New Zealand House, 9, Broad-street Buildings,
London, March 31, 1849.

METCALFE and Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose—1s. An improved Clothes Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes of improved graduated and powerful friction. Velvet Brushes which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at Metcalfe, Bingley, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

Caution.—Beware of the words "From Metcalfe's" adopted by some houses.

Printed by William Bradbury, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them, at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, March 31, 1849.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 14.—1849.] SATURDAY, APRIL 7. [PRICE 6d.

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ROYAL BOTANIC SOCIETY, REGENT'S PARK.

The Fellows and Members are informed that, by an arrangement with Mr. H. Waterer, of Knap Hill; Messrs. John Waterer, Standish and Noble, and Baker, of Bagshot, and other Nurserymen, the Council will be enabled, in the course of the Season, to place in the Gardens of the Society an extensive Collection of AMERICAN PLANTS. This Collection will be open to the Fellows, Members, and their friends, as on all ordinary occasions; but that the Public may have an opportunity of viewing a display of Floriculture which the Council have reason to believe will be unprecedented, an Exhibition of these Plants will take place on Saturday, May 26, and Saturday June 2. Admission to the Gardens on either of those days to be obtained by the same ticket as that provided for the General Exhibitions. Such ticket to admit one person, at the option of the holder, either on one of the above-mentioned days, or to one of the General Exhibitions.

The privilege of admitting Visitors, either by Fellows personally, or by written orders, will necessarily be suspended on the 26th of May and the 2d of June, as upon other extraordinary occasions.

By order of the Council, J. D. C. SOWERBY, Secretary.

ROYAL BOTANIC SOCIETY, Regent's-park.—

The EXHIBITIONS OF PLANTS, FLOWERS, and FRUIT, for competition this season, will be held on WEDNESDAYS, May 16th, June 20th, and July 4th.

The Exhibition of Plants in the AMERICAN GARDEN, will be open on SATURDAYS, May 26th, and June 2d, at 2 o'clock.

Tickets, each to admit one person, on any one of the above-mentioned five days, may be obtained at the Gardens by orders from Fellows of the Society. Price, on or before May 5th, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each. Fellows may have packets of 30 tickets until May the 5th, for 5l. 5s.

ROYAL HORTICULTURAL IMPROVEMENT SOCIETY OF IRELAND.

Patron, HIS ROYAL HIGHNESS PRINCE ALBERT, &c., &c.

This Society will hold their Spring Show of Fruits, Flowers, &c., in the Rotunda, on TUESDAY, April the 24th. From the great accession of New Exhibitors to this Society within the present year, comprising the principal plant growers of the vicinity of Dublin, the Exhibition on the 24th of April will infinitely surpass anything of the kind ever seen in Dublin hitherto. The plants will be so arranged upon the stages that the visitors may with facility examine each specimen. The stages will comprise upwards of 1300 superficial feet, and will be occupied by specimens of extraordinary beauty.

By order, J. C. HUMPHREYS, Hon. Sec.

SUPERIOR GERMAN ASTERS, 20 varieties

mixed, see *Gardeners' Chronicle*, September 23d, 1848. "ASTERS: *Hardy and Son.* Your Asters reached us in excellent condition; they are beautiful specimens of that showy flower." Large packets, 1s., or 12 postage stamps, post free.

ABRAHAM HARDY and SON, Seed Growers, Maldon, Essex.

NEW AND SPLENDID SEEDLING ANTIRRHINUMS.

J. FOWLE begs to state to the Nobility, Gentry, and others, that he has now ready to send out his FOUR SEEDLING ANTIRRHINUMS of 1848, which he can highly recommend, having received First-class Certificates for "Woolerii" and "Queen Victoria," which were so much admired by all who saw them at the Metropolitan Exhibitions, and has no hesitation in saying they will give general satisfaction. Woolerii, 7s. 6d.; Queen Victoria, 7s. 6d.; Prince Albert, 5s.; Defiance, 5s. J. F. can supply

12 other best varieties of 1848 for 18s.
12 ditto ditto 12s.
12 ditto ditto 9s.

Catalogues may be had on pre-paid application. Post-office orders made payable at Kennington-cross Post-office.

Holland Nursery, Holland-street, Brixton-road, Kennington, Surrey, April 7.

SUPERB NEW VERBENAS.

MESSRS. BARKER AND STEWART will have the pleasure to send out, on the 20th of April, the following beautiful new SEEDLING VERBENAS, six of which have obtained First-class Certificates from the London Floricultural Society. The collection of seven varieties will be charged 30s., and any separate kind may be had at 5s. per plant.

JUNIUS—colour a lively purple lake, with a rich velvety dark crimson centre.

EYEBRIGHT—colour a fiery rose, with a broad ray of deep carmine in the centre.

DUCHESS OF NORTHUMBERLAND—colour a beautiful peach, with a rose-pink centre, very large.

LORD OF THE ISLES—colour a distinct deep rose, a noble and exceedingly large flower.

MISS THOROLD—colour a beautiful pale lilac, a large bold trusser. BRIDE—a beautiful pearly white.

CARDINAL—colour a most dazzling scarlet, form and habit first-rate. N.B.—The usual discount to the Trade.

Meadrow Nursery, Godalming, Surrey.

A SEEDLING PELARGONIUM EXHIBITION

will be held on FRIDAY, JUNE the 15th, in UPTON PARK, midway between the Slough station on the Great Western Railway, and the Datchett station on the South Western and Windsor line, being but a short distance from either. Four Prizes will be awarded, viz.: the first, £5; second, £3 10s.; third, £2 10s., and the fourth, £1 10s.—to be paid in cash immediately after the award is made. Two years old seedlings, or those of greater age, but which have not been sent out, will alone be allowed to compete for the above prizes. Yearlings may be exhibited, but for them no prizes will be offered.

*** Observe that the time has been altered from the 8th, as first advertised, to the 15th of June.

The following regulations will be strictly observed; and it is earnestly requested that parties intending to exhibit will make themselves perfectly acquainted with them. Any one, whether a subscriber or not, may compete; and all may exhibit as many two-year-old seedlings as they please. An Exhibitor must be either the raiser of what he shows or the representative of the raiser; that is, no one may show part of his productions himself, and place a portion of his plants in the hands of another to exhibit. The plants must be upon the ground not later than 11 o'clock of the forenoon of the day appointed, and they must not be withdrawn until 6 o'clock in the evening. A place will be provided suitable for the preparation of the plants for exhibition. All their names must be withdrawn. A person unacquainted with Pelargoniums will receive them from the exhibitors at the door of the exhibition tent, and will place in each pot a numbered label, and arrange them on the stage. When all the plants are arranged, the exhibitors alone will be allowed to enter, and each will be supplied with a plain card. Free examination of their merits will then take place; and after a sufficient time has elapsed, and the exhibitors have declared their readiness to go to the ballot, they will each write upon the blank card the numbers of the plants which they consider should have the first, second, third, and fourth prizes, adding their signatures at the bottom. On leaving the tent these cards will be received in a box prepared for the purpose, and two persons shall then be selected to examine the cards and declare the numbers of the winning flowers, and the prizes shall be forthwith paid accordingly. Reporters will have tickets for their admission given them, immediately after the ballot has taken place, upon application to either

EDMUND FOSTER, Esq., Clewer Manor, Windsor; or
EDWARD BECK, Isleworth.

N.B. Mr. Bragg, Nurseryman, Slough; or Mr. Turner, Royal Nursery, of the same place, have kindly offered to receive and prepare for exhibition plants that may be sent to them for the purpose the day previous to the Show, by parties unable to attend the same.

Present Subscribers to the Prize Fund:

Edmund Foster, Esq.	£5 0 0	Mr. Bragg	£1 0 0
Mr. Hoyle	2 0 0	Mr. Black	1 0 0
Superintendent of "The Florist"	5 0 0	Mr. Turner	1 0 0
J. Riley, Esq., Huddersfield	1 0 0	Mr. Dobson	1 0 0
Mr. Edwards, Holloway	1 0 0	Mr. Cock	1 0 0
Mr. Staines	1 0 0	Mr. Parker	0 5 0
		Mr. Keep	0 5 0

Parties intending to contribute are requested to forward their names and the amount to any of the above named gentlemen.

FLOWER AND VEGETABLE SEEDS of every description.

PLANTS FOR BEDDING OUT; orders taken, to be delivered in May.

DAHLIAS, dry roots, at 6d., 8d., and 1s. each.

LILIUM LANCIFOLIUM ALBUM, 1s. 6d. each.

Araucaria, Ficus elasticus, Aloes, Cacti, Cedrus Deodara, constantly on show.

LAWN GRASS, 1s. 6d. per lb.

MEADOWS: where it is wished to improve the crop of Hay, sow from 2 to 3 lbs. of white Dutch Clover with 1 gallon of Perennial Rye or Italian Rye-Grass; the cost will be about 2s. 6d. to 3s. per acre.

AGRICULTURAL SEEDS at the lowest prices.

DUNCAN HAIRS, Seedsman, 109, St. Martin's-lane, Charing-cross, London.

HUGH LOW AND CO. can with the greatest confidence recommend the undernamed:

HELIOTROPIUM, "SOUVENIR DE LIEGE."—This fine new variety, now for the first time offered in this country, possesses the great advantage of flowering naturally very early, and also continuing in perfection for a much greater length of time than any of those previously introduced. The individual flowers, as also the truss, are very large and highly fragrant; colour pure violet with a yellowish tinge towards the centre. The habit of the plant is very dwarf and compact, and from the long continuance of its flowering, and other good qualities, it will undoubtedly prove a very desirable acquisition either for bedding or pot culture. Price 7s. 6d.

FUCHSIA, "THE RAJAH."—This is the finest of the dark varieties. Habit compact and good; corolla violet purple, beautifully cupped; sepals bright red, of waxy consistence, as much reflexed as a Turncap Lily. Price 10s. 6d.

FUCHSIA, "SPLENDIDA."—This is also a dark variety of great merit, and in particular remarkable for its very fine habit and profusion of flowers. Price 10s. 6d.

The Fuchsias named above were obtained from seeds by JOHN WILMORE, Esq., of Birmingham, and the acknowledged superiority of that gentleman in improving, by careful and scientific hybridisation, some of the finest genera of plants, will be a sufficient guarantee for the excellence of those now offered. Plants of the Heliotrope and the Fuchsias will be ready to send out in May. The usual discount to the Trade.

BORONIA TETRANDRA (B. microphylla of gardens).—A very fine new species. Habit compact; a most abundant bloomer, producing the flowers in the way of B. pinnata; will make an excellent specimen plant for exhibition. Strong plants, 7s. 6d.

In addition to the above, H. Low and Co will be able to supply all the novelties sent out by other growers, including the Continental Phloxes, Verbenas, and Chrysanthemums, now so much admired. Catalogues of which, containing also their General Collection, are in course of publication, and when ready will be forwarded, post free, on application.

Clapton Nursery, London, April 7.

DAHLIAS, pot roots, choice sorts, named, in great

variety, 6d. each, or 5s. per dozen.

	per paper—s.	d.
BALSAM, very double, saved from a superb collection	0	6
DAHLIA SEED, saved from the best varieties of Show and Fancy Flowers	1	0
GERANIUM, from choice Show Flowers	1	0
PINK, saved by a celebrated Florist, from named Show Flowers	1	0
PICOTEE, from a superb collection	1	0
PANSY, saved by Thomson and other eminent growers	0	6

25 varieties of choice showy Hardy Annuals, selected so as to ensure a great variety of colour and succession of flowering.

The above may be had of WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch-street, London (near the Spread Eagle).

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON have just published their general CATALOGUE of Stove and Greenhouse Plants, Climbers, Ericas, and Geraniums; also Descriptive Lists of Camellias, Cinerarias, Fuchsias, Verbenas, Petunias, Chrysanthemums, and Plants adapted for Grouping, with a selection of New and Ornamental Shrubs, &c.; copies of which have been sent to all customers, and will be forwarded to other applicants, GRATIS as usual.

W. W. and SON have a superb stock of all the finest Cinerarias in cultivation; the plants are strong and coming into bloom; they are offered as under:

12 superior varieties for 12s. | 25 extra fine varieties for 24s.
12 superb ditto, NEW .. 18s. | 50 superb ditto for .. .. 42s.

Additional plants presented to compensate for carriage.

BASS AND BROWN'S DESCRIPTIVE PRICED

CATALOGUE, for 1849, of new and choice Geraniums, Fuchsias, Dahlias, Petunias, Verbenas, Chrysanthemums, Greenhouse and Bedding Plants, may be had free by post on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

HARDY AMERICAN ORCHIDACEOUS PLANTS, &c.

WILLIAM MAY, F.H.S., having received a large importation of the above interesting and beautiful plants, in the different genera Cypripedium, Orchis, Platanthera, Habenaria, Triphora, Pogonia, Neottia, Malaxis, Goodyera, Microstylis, Corallorhiza, Cymbidium, Trillium, Erythronium, and Euonymus sarmentosus, Lists, with prices specifying the various species, will be furnished on application.

Hope Nurseries, near Bedale, Yorkshire, April 7.

ZOOLOGICAL GARDENS, REGENT'S PARK.

Orders are no longer necessary. Admittance, ONE SHILLING; On MONDAY, SIXPENCE.

SELECTED SEEDS.

WILLIAM MAY, F.H.S., begs to inform those Friends who have approved of Elletson's Superb April or Mammoth and Improved Wilcove BROCCOLIES, that he has this year, from the original growers, a small stock of each, which is very select, and may be sown during the present month, with some other choice varieties of Vegetable Seeds, as below.

Elletson's Mammoth or Superb April White BROCCOLI, per packet, 1s.; Improved Wilcove do., 1s.; Improved Walcheren do, 1s. Imperial Crimson or Ruby Dwarf BEET, 1s. Usher's Exquisite Curled PARSLEY, 1s. New flat-stemmed solid Red and White CELERY, 1s. The above W. M. has had the pleasure of submitting to the public for several years, with the greatest satisfaction.

He has also a small supply of the following: Very select HOLLYHOCK, all warranted from the very best double flowers, per packet, 2s. 6d. CINERARIA, from Henderson's last year's collection, 2s. 6d. PANSY, from very select varieties, 2s. 6d.; and ANTIRRHINUM, from best sorts, fine, 1s., all post free.

The Hope Nurseries, near Bedale, Yorkshire.

MESSRS. J. AND H. BROWN are now sending out

the under-mentioned SHRUBS and PLANTS, carefully packed, to any part of the United Kingdom or the Continent.

		s.	d.
25	New hardy Belgian Azaleas, on their own roots, with flower buds, one of a sort, by name	20	0
25	American Azaleas, ditto ditto ditto ..	15	0
25	Hardy flowering shrubs, one of a sort, by name ..	10	0
12	Rhododendrons, including scarlet, white, and rose, hardy varieties	12	0
	New hardy yellow Rhododendrons each 7s. 6d. to	10	6
6	Andromedas, of sorts, including floribunda, for ..	8	0
	Hardy Heaths, Kalmias, and Ledums, per dozen ..	8	0
6	Fine hardy Magnolias, one of a sort	10	0
50	Dwarf Roses, on their own roots, one of a sort, named	16	0
	Standard and half-standard Roses, per doz., 12s. and	15	0
	New crimson Moss and climbing Roses, per dozen ..	6	0
12	Tea Roses for greenhouse culture, one of a sort ..	9	0
	Dahlias, best show varieties, per dozen ... 9s. and	12	0
	Cryptomeria japonica and 6 choice hardy Pinus for ..	10	0
12	Greenhouse Azaleas, one of a sort, blooming plants ..	25	0
12	Choice Camellias, by name, ditto, ditto	30	0
50	Choice flowering Greenhouse plants, one of a sort ..	45	0
24	Choice Ericas, one of a sort, by name	18	0
	Plumbago Larpentæ, good plants	3	6
6	Bulbs of the beautiful new Japan Lilies, one of a sort	12	0
	Choice Carnations and Picotees, per dozen ..	12	0
	Peony roots, new double, white, pink, blush, and crimson, one of a sort, per dozen	9	0
25	Choice Herbaceous Border Plants, for	7	6
	Hardy Ferns, and other plants, for rockwork, per doz.	3	0
	Cinerarias and Calceolarias, strong plants, per dozen	12	0
	Fancy Geraniums, per dozen .. 12s. and	18	0
	Best Petunias and Verbenas, one of a sort, per dozen	6	0
	New scarlet and variegated Geraniums, Pentstemons, Salvias, Phloxes, Antirrhinums, Heliotropiums, Pansies, and Fuchsias, per dozen	6	0
	Strawberry plants, new sorts, per 100 3s. 6d. to	5	6

25 Papers of Choice Flower Seeds, 5s.; 50 Ditto, 10s; sent free by post. Also List of Greenhouse and Bedding plants, and seeds of all kinds.

Albion Nursery, Stoke Newington, London, April 7.

JOSLING'S ST. ALBAN'S GRAPE.—Fine 2 year-old plants of the above, carriage paid to London, 18s. 6d. each; usual allowance to the trade. A remittance must accompany the order.—ROBERT JOSLING, Seedsman, St. Alban's.

GENUINE SEEDS FOR PRESENT SOWING.—A packet of 4000 selected POTATO SEEDS, with directions for sowing, &c., 1s. Per packet—*s. d.*

"BOA CONSTRICTOR" MELON, grows 6 ft. in length	1	0
VEGETABLE and FLOWER SEEDS, any variety ...	0	6
Double LARKSPURS, 18 varieties, separate	1	0
Ditto Ditto Ditto mixed	0	6
Double BALSAMS, Camellia-flowered	1	0
ZINNIA ELEGANS	0	6
SALPIGLOSSIS, fine mixed	0	6
STOCK, superfine Scarlet Giant	0	6

100 varieties of Annuals, 10s.; 50 ditto, 5s.; 25 do., 2s. 6d.
Treatise on Potato Culture, 6d.
All post free, on receipt of cash or postage stamps.
ABRAHAM HARDY and SON, Seed Growers, Maldon, Essex.

NEW DAHLIAS, VERBENAS, &c.

CHARLES TURNER has the following novelties to offer this spring. The Dahlias have been prominently before the public; and it will only be necessary to remark that the new flowers (and which are entirely in C. TURNER's possession), have gained 27 first-class Certificates during the past season, in addition to the sweepstakes of 20l. The prize of 10l. given at the Royal South London Show, for the best six Dahlias sent out by the exhibitor, having been awarded to C. TURNER, speaks well for those C. T. has been in the habit of offering to the public.

DAHLIAS. Per plant.—*s. d.*

BEAUTY (TURNER), white, edged and tipped with deep crimson, very attractive 10 6
BEAUTY OF HASTINGS (BARNHAM), white, tipped with rosy crimson or cherry, very double, and finely formed centre, being compact and close, fine habit, constant, and very desirable for exhibition; has obtained three first-class Certificates. Figured in the "*Florist*" for February 10 6
DREADNOUGHT (COLLISON), crimson maroon, petals of fine substance and form, and are well arranged, constant, and noble habit. First-class Certificates at Salisbury and South London Shows 10 6
DR. FRANKLIN (MILLER), shaded carmine, new and distinct in colour, fine form, the flowers standing well above the foliage; it has been awarded three first-class Certificates 10 6
EARL OF CLARENDON (TURNER), bright scarlet orange, smooth well arranged petals, requires abundance of water, fine shape 7 6
GRENADIER (TURNER), deep ruby crimson, very full deep flower, and constant, noble, majestic habit. It has been successful at the following open shows, having gained first-class Certificates at each: Devizes, Royal South London, Oxford, Wycombe, Slough, North London, and Camberwell 10 6
HECTOR (TURNER), dark maroon 7 6
MR. SELDON (TURNER), rosy purple, shaded with lilac, which has a novel and pleasing effect; form of petals and flower very good, and finely arranged centre, being compact and well elevated, flowers full and large, very constant, as will be seen by the following awards: 1st class Certificate at Gravesend; 1st prize, 5 guineas, as the best Seedling of the day, at Salisbury; 1st class Certificate, ditto; ditto Devizes; ditto Oxford; 1st prize as the best Seedling, 1847, Teddington; 1st class Certificate at Wycombe; ditto Slough; ditto Royal South London; ditto North London. Fine habit ... 10 6
MISS PROCKTER (PROCKTER), blush, with pink shade, petal finely formed, and of unusual substance; a little uncertain 10 6
MISS SANE (HOWARD), fancy flower, purple, with white tip, full and high centre; first-class Certificates at Royal South London and North London Shows ... 10 6
RUBENS (TURNER), orange, full size, very constant. First class prize at Oxford 7 6
PRIAM (COLLISON), bright rich crimson, fine form, medium size 7 6
PRINCESS LOUISA (FELLOWS), shaded salmon, large, full, and fine, very constant 10 6
VICTORY (PROCKTER), dull red, good shape 7 6
VIOLET PERFECTION (PROCKTER), rich violet purple, fine form and compact centre 10 6
WINDSOR CASTLE (TURNER), dark crimson, shaded, fine form, uncertain 10 6

Strong Healthy Plants will be ready early in May.

VERBENAS.

C. T. has been fortunate in securing the finest productions of 1848, and feels confident that Wynese's "Princess Alice" will be a greater favourite next season than Robinson's "Defiance" has during the past; and refers those who had not an opportunity of seeing it, to a correctly coloured representation in the "Florist" for January. Young's "Royal Purple" is also figured in the same Number. Per plant.—*s. d.*

BRILLIANT (YOUNG), rich bright scarlet, a fine variety for bedding, a very free bloomer, and excellent habit 5 0
MORNING STAR (WYNESS), bright rosy purple, white eye, attractive and showy 3 6
PRINCESS ALICE (WYNESS), white, deep cherry centre, large and fine form, one of the best raised. It excited universal admiration at the Surrey Show, where it took a first-class Certificate. The *Gardeners' Chronicle* speaks of it thus: "A new and very pretty seedling Verbena, named Princess Alice, was exhibited by the raiser, Mr. Wyness, gr. to her Majesty at Buckingham Palace, and received a Certificate. The truss is large, and the individual flowers well formed; it is white, with a rosy spot in each division of the corolla, distinct and very pretty." 5 0
ROSEA (GREY), fine shape, rose 3 6
ROYAL PURPLE (YOUNG), deep purple, fine large flower, good habit, good shape, and fine grower. It is particularly adapted for bedding, and is much deeper in colour than any other of its class 5 0

Plants ready by the 20th April, with a fine general collection.

MISCELLANEOUS PLANTS, &c.

ARAUCARIA IMBRICATA, 3s. 6d. to 21s.
" EXCELSA, 21s. to 10l. 10s.
AZALEAS, in variety. ANEMONE JAPONICA, 6s. per doz.
CARNATIONS. Selections left to C. TURNER, 1l. 4s. and 1l. 10s. per dozen pairs, plants of which are now ready.
CEDRUS DEODARA, 1s. 6d. to 20s.
CHRYSANTHEMUMS, the best kinds, in great variety.
CINERARIAS, seedlings and named varieties.
CRYPTOMERIA JAPONICA, from 3s. 6d. to 5l. 5s.
GERANIUMS, consisting of fine varieties raised by Beck, Foster, Hogle, &c. GLOXINIAS, the newest and best kinds.
HERBACEOUS PLANTS. LILIUMS of sorts.
PLUMBAGO LARPENTÆ, 1s. to 2s. 6d.
PICOTEES. Selections left to C. TURNER, 1l. 4s. and 1l. 10s per dozen pairs, plants of which are now ready.
PINKS. Selections left to C. TURNER, 9s., 12s., and 20s. per dozen pairs. [per dozen.
PANSIES. Selections left to C. TURNER, 6s., 12s., and 20s.

A fine collection of Flower and Vegetable Seeds, including Imported Stocks and Asters. A Descriptive Catalogue may be had on application. Post-office Orders made payable at Slough. References required from unknown correspondents.
Royal Nursery, Slough, Bucks.

FIRST CLASS DAHLIAS.

JOHN KEYNES begs to submit the following list of First Class DAHLIAS, at reduced prices; comprising Lilac Standard, the best out in its colour; Purple Standard, likewise first-rate; Miss Chaplin, Sunset, and Victoria Regina. Parties ordering the four first-named varieties, will have Victoria Regina included without charge. All the most approved Flowers in cultivation, at proportionally moderate charges. Orders directed to JOHN KEYNES, Castle-street Nursery, Salisbury, will meet with immediate attention.

FANCY DAHLIAS.

JOHN KEYNES, of Salisbury, will be ready to send out the following splendid and most constant flowers of the season, in May, at 7s. 6d. each. Miss Blackmore, Rainbow, Miss Stevens, and Sunbeam, all of which have been accorded certificates at the principal exhibitions.

DAHLIA PRIZES.

JOHN KEYNES, of Salisbury, offers the following Prizes for the best Six Blooms shown from the nine Flowers advertised as above, at the Salisbury, London Floricultural, and South London Societies. First Prize, 2l.; 2d do., 30s.; 3d do., 1l.; 4th do., 15s.; 5th do., 10s. Open to Amateurs and Gentlemen's Gardeners. No entrance money.

YELLOW GLOBE MANGOLD WURZEL, 70s. per cwt.

Improved Long Red Ditto ... ... per cwt—70s.
Cattle PARSNIP ... ... ,, 60s.
White Belgian CARROT ... ... ,, 80s.

*** For Cash.

The above may be depended on, being all grown by the most respectable agriculturists in Kent. References will be given on application; also a General Catalogue of Seeds.
WM. JAS. EPPS, Seedsman, Maidstone, Kent.

TO SEEDSMEN AND OTHERS PURCHASING IN CONSIDERABLE QUANTITIES.

WHITE BELGIAN CARROT, LARGE RED ALTRINGHAM CARROT, LONG ORANGE CARROT, LARGE GUERNSEY PARSNIP, YELLOW GLOBE and other MANGOLD WURZELS of superior quality, being grown from transplanted roots.

JOHN SUTTON and SONS, Reading, Berkshire, being extensive growers of the above articles, will sell them at low prices, in quantities not less than 28 lbs. of either sort. Prices of these and other agricultural Seeds will be forwarded by post. References or Post-office orders required with orders from unknown correspondents.

IMPORTANT TO HOLLYHOCK GROWERS.

EDWARD TILEY begs respectfully to apprise the nobility, gentry, and others that he has been successful in procuring a quantity of the above seed, saved by a gentleman amateur, from one of the choicest collections in the world; the bloom is very symmetrical and handsome—the outer or guard petals do not extend more than half an inch beyond the centre, forming a perfect circle; it is free from indentation or curl, in any part; the centres are unique, and form that of half a globe, composed of innumerable smooth-edged petals, closely and neatly folding the one within the other. This is the true character of the flower the seed has been saved from by the grower of it. Growers wishing to get a good collection should not delay the present opportunity; the seed spoken of so highly has been thoroughly proved, and bring the major part of the plants equal to the collection the seed was saved from. Sold in packets 2s. 6d. each, or packets containing 200 seeds, 5s.; larger packets of 500 seeds, 10s. Parties purchasing the above may depend on having the finest double Hollyhocks yet grown.

E. T. has a choice Collection of SWEET-WILLIAM SEED to dispose of, saved from semi-double flowers of the finest colours, producing the greater part double; the varieties have been shown at the different exhibitions, and much admired, for the last two years. Sold in packets, 1s. 6d. each.

GERMAN ASTER SEED, unequalled for the superior quality of the flower, forming that of half a ball, beautifully quilled; above 20 distinct varieties, in packets, 1s. 6d. each.

ANTIRRHINUM SEED, all saved from fine striped and spotted varieties; 1s. per packet.

24 choice varieties of HARDY ANNUAL SEEDS, 3s. the packet; or a packet of each of the above, including a packet of the 24 Hardy Annuals, for 8s.

Improved Walcheren Cauliflower Broccoli, Wilcove do., Tamworth do., 1s. each per packet. These Broccolies have proved the best in cultivation.

The whole or any part of the above sent postage free, on the receipt of a post-office order, or the amount in penny postage stamps.—Sold by EDWARD TILEY, Seedsman and Florist, 16, Pulteney Bridge, Bath.

GRASS SEEDS.

SUTTON AND SONS having for upwards of 30 years been engaged in collecting GRASS SEEDS, and laying down land to Permanent Pasture, can supply Seeds, properly assorted to suit any of the various soils of Great Britain, so as to insure a good Pasture, AT A VERY MODERATE EXPENSE, viz.:

THE VERY BEST SORTS OF GRASSES AND CLOVERS FOR PERMANENT PASTURE, mixed expressly for the soil, per acre ...	1	12	0
GOOD PRODUCTIVE PERMANENT GRASSES, per acre	1	2	6
TRUE ITALIAN RYE-GRASS, per bushel ...	0	6	6
FINEST LAWN GRASS SEEDS, consisting solely of the finest and shortest growing kinds, per bushel 25s., or gallon	0	3	0
SUTTON'S RENOVATING MIXTURE for Perennial Clovers and fine Grasses, for improving old Pastures (5 to 8 lbs. per acre required), per lb.	0	1	0

Fresh Lucerne, per lb., 10d.; French Furze do., 1s.; White Belgian Carrot, Large Cattle Parsnips, Yellow Globe and other Mangold Wurzels, Kohl Rabi, Drumhead and other Cabbages, at the lowest market prices.

*** Goods delivered free to London, Bristol, or Basingstoke.
JOHN SUTTON and SONS, Reading, Berks.

SEEDS.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE sent free by post on application. We beg to offer the following.

VEGETABLE SEEDS.

A complete collection of the best and newest sorts, in proportions, 25s., 42s., and 63s.

A collection for a small garden, of fine and esteemed sorts, for 15s. A list of the sorts furnished, if required.

SELECT FLOWER SEEDS.

Free by post, with full directions for sowing, heights, colours, &c., viz.:—

	s.	*d.*
100 varieties best and newest Annuals	12	0
50 varieties for 8s. 6d., 20 for 5s. 6d., 26 for ...	4	0
20 varieties best dwarf kinds, in larger packets, suited for filling beds on lawns, 7s. 6d.; or 12 do.	5	0
20 varieties best Greenhouse Annuals, 7s. 6d., 12 for ...	5	0
20 varieties choice Greenhouse Perennials, 10s. 6d., 12 for	7	6
20 vars. choice hardy Biennials and Perennials, 7s. 6d., 12	5	0
36 varieties imported German Stocks	5	0
20 ditto ditto, 3s. 6d.; 12 for	2	6

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of 2l. and upwards articles presented extra. Post-office orders payable to Bass and Brown, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

CABBAGE PLANTS.—DRUMHEADS FOR CATTLE, fine, and warranted true, at T. WHILDEN'S, Wheeler street Gardens, Godalming, Surrey, at 4s. per 1000, carriage included.

CANSDELL'S NEW AMERICAN SACCHARINE PUMPKINS, superior to Swedes or Mangold Wurzel in fattening properties, for Cattle, Sheep, and Pigs.—Patronised by His ROYAL HIGHNESS PRINCE ALBERT, by whose royal command Mr. CANSDELL, last year, grew upwards of 20 tons per acre, at the FLEMISH FARM, WINDSOR, and in several parts of Essex and Suffolk, without waste of tops or tails, or injury to the succeeding crop, for which it is considered to be as good a preparation as a clean fallow. Price 1s. per packet.

Also his New AMERICAN CUSTARD PLANT, or the MENOMONEE SQUASH, a delicious vegetable, raised for the first time in this country in the ROYAL GARDENS, FROGMORE, and for the growth of which Mr. CANSDELL received a commendation expressing Her MAJESTY'S royal approbation. Price 1s. per packet.

SIX NEW AND CHOICE VARIETIES OF AMERICAN MELONS, grown last year in great perfection at the QUEEN'S GARDENS, and are sufficiently hardy to mature in ordinary seasons in the open air, if planted in a sheltered situation. Price 6d. each.

BENJAMIN R. CANT having made arrangements with Mr. CANSDELL, begs to offer the above new and choice Seeds, which he will be happy to forward, post free, on application.

N.B. Printed directions upon each packet.
ST. JOHN'S-STREET NURSERY, COLCHESTER.

JAPAN CEDAR OR CRYPTOMERIA JAPONICA SEEDLINGS.

MESSRS. STANDISH AND NOBLE, Nurserymen, Bagshot, beg respectfully to call the attention of Landed Proprietors and others to their fine and large Stock of the above useful and ornamental Tree, which they can supply at the following prices: 3s. 6d. per plant, 36s. per doz., or 12l. 10s. per 100.

JASMINUM NUDIFLORUM, a perfectly hardy, neat, dwarf-growing shrub, flowering most profusely in the open air, either with or without the protection of a wall. Undoubtedly this is one of the most beautiful winter-flowering plants of recent introduction. A plant in the Gardens of the London Horticultural Society was literally covered with its bright yellow flowers in December last. Strong plants, 2s. 6d. each.

WEIGELA ROSEA.—The beauties of this plant will ere long place it in the foremost rank of ornamental plants in flower-garden shrubberies. Strong plants, 1s. to 2s. 6d. each.

FORSYTHIA VIRIDISSIMA.—This hardy shrub, like the last, requires only to be known to be appreciated. Mr. Fortune tells us that in China it is one of the most beautiful plants he has seen, forming a bush 10 or 12 feet in height, and covered with its rich golden flowers. Strong plants, 1s. to 2s. 6d. each.

PLATYCODON GRANDIFLORUM ALBUM, a beautiful Campanulaceous plant, also from China. 2s. 6d. each.

AZALEA INDICA, "GLORY OF SUNNING-HILL," a large double pink, the flower much resembling Nerium splendens; obtained a prize at the London Horticultural Society's Exhibition in May last. Plants, 10s. 6d. each. Also a collection of fine sorts, from 1s. to 5s. each.

CALCEOLARIA "ACME," white ground, with deep plum-coloured spots, good habit and fine form. 7s. 6d. each. Also Seedlings from the best kinds, at 8s. per doz.

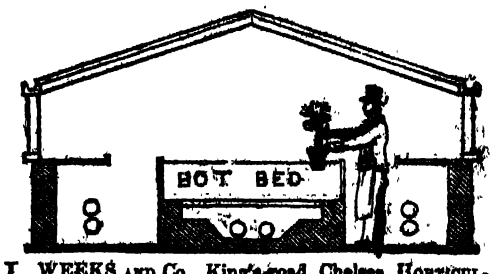
The following fine MELONS, two and three year old seed, at 1s. per packet: Hampton-court Green-flesh, Ispahan, Cuthill's Scarlet-flesh, Imogene, Bagshot Green-flesh, and Beechwood.

HECKFIELD COS LETTUCE, the best in cultivation, 1s. and 2s. packets.

In addition to the above, Messrs. STANDISH and NOBLE have a large and select stock of RHODODENDRONS and other AMERICAN PLANTS, with a general collection of Hardy Plants, Shrubs and Trees, Seeds, &c., Catalogues of which can be forwarded on application.—April 7.

FANCY PIGEONS.—For Sale, pairs of the best varieties, at per pair. Delivered at the Euston Station, London.—Apply to A. P., 24, Cannon-street-road, St. George's East, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

WASP CATCHERS.

UNDERWOOD, Cutler to Her MAJESTY, 58, Haymarket, London, begs to inform Amateurs, Gardeners, Nurserymen, and others, that he has manufactured a superior Entomological Tongs, from 6 to 12 inches, in square and oval shapes. It is well-known that every Wasp caught in the early part of the season, is the destruction of a whole nest. Also an improved Knife for cutting honey-comb from bee-hives. A large assortment of Improved Budding Knives, Pruners, Saws, &c.

CUCUMBER AND MELON BOXES AND LIGHTS. —One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; Lights Tarred and Lights from 3l. 5s. Garden Lights of every description. Conservatories, Green and Hot-houses made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England.

JAMES WARE, Hothouse Builder, Clarence-place, Old Kent-road, London.

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the EXHIBITIONS OF FLOWERS AND FRUIT, in the Society's Garden, in the present season, will take place on the following days, viz.: SATURDAY, May 5; SATURDAY, June 9; and WEDNESDAY, July 11; and that TUESDAY, April 10, is the last day on which the usual privileged Tickets are issued to Fellows of the Society. 21, Regent-street.

THE FINEST SHOW CARNATIONS, PICOTEES, PINKS, PANSIES, FUCHSIAS, VERBENAS, CINERARIAS, GLOXINIAS, &c.

YOUELL AND Co. are now executing orders for the above, in strong healthy plants, at the following prices. Also their superb new Red-edged Picotee, "The Gem," at 10s. 6d. per pair.

CARNATIONS AND PICOTEES.	£	s.	d.
12 pairs of very fine show flowers, by name, 1l. 4s. and	1	10	0
25 ditto ditto ditto 2l. 10s. and	3	0	0
12 pairs of newest and finest first class show flowers ...	2	10	0
25 ditto ditto ditto ditto ...	5	0	0

Fine mixed border Carnations, 12s. per dozen pairs.
PINKS.—Finest first class show varieties, 12s. and 18s. per dozen pairs.
PANSIES.—Finest first class show flowers, 10s. and 18s. per dozen.
FUCHSIAS.—The newest and most beautiful varieties out, 9s., 12s., and 18s. per dozen.
VERBENAS.—The most select and beautiful of last season, 6s. to 9s. per dozen.
CINERARIAS.—Fine flowering plants of the best show varieties, 9s. to 18s. per dozen.
GLOXINIAS.—A most splendid collection of new varieties, including Tussilagii, Griffithii, &c., 12s., 18s., and 24s. per doz.
ERICAS.—Fine bushy plants of the best free flowering sorts, 9s. per dozen.
FLOWER SEEDS.—30 packets of new and choice kinds, per post, free, for 6s.
Catalogues of the above, with an extensive variety of highly ornamental plants, will be forwarded by enclosing two postage stamps.—Great Yarmouth Nursery.

SEEDLING VERBENAS.—ECLIPSE, the most distinct and splendid Verbena yet raised. See drawing and description in the "Florist." Strong plants by the 25th inst., 5s.
EPPSII.—See description in former advertisements. 3s. 6d.
The above sent by post or otherwise. A descriptive Catalogue of Geraniums, Fuchsias, Verbenas, Dahlias, &c. may be had by enclosing a postage stamp.
WM. JAS. EPPS, Bower Nursery, Maidstone, Kent.

GERANIUMS, LILIUM LANCIFOLIUM, AND NEW PLANTS.
HENRY GROOM, Clapham-rise, near London, by Appointment FLORIST TO HIS MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to inform the Nobility, Gentry, and Amateurs, that his CATALOGUE for this Spring is ready, and will be forwarded by post on application.

SCARLET PELARGONIUMS.—In addition to those advertised last week, P. CONWAY is prepared to furnish strong plants of Ayres's Gem of the Scarlets at 5s. each, or, taken with his set of 16 distinct and desirable varieties, 25s., basket included.
Earl's Court Nursery, Old Brompton-road, April 7.

J. HINE informs his friends and the Trade in general that his CATALOGUE of choice Geraniums, Fuchsias, Verbenas, Petunias, Cinerarias, Antirrhinums, &c., is now ready, and can be had on application.
Providence Nursery, Ramsgate.

CATALOGUE OF PLANTS, WITH PRICES, FOR THIS SPRING.
THOMAS JACKSON AND SON respectfully inform their Patrons and the Public that their Catalogue of choice Orchidaceous, Stove, Greenhouse, and Herbaceous Plants, Ornamental Shrubs, Trees, Roses, &c. &c., is now ready, and may be obtained on application, gratis; or by post, by forwarding two postage stamps.
T. J. and Son invite the attention of parties furnishing Conservatories, Greenhouses, &c., to the following low prices of Plants in Collections—the selection of kinds (all good) being left to themselves.

		£	s.	d.
50	Choice free-flowering Stove Plants	5	0	0
100	Do. do. Greenhouse Plants, exclusive of Ericas	7	10	0
50	Do. do. do. do.	3	15	0
100	Do. Cape Ericas	5	0	0
100	Do. do., containing most of the new sorts ...	10	0	0
50	Do. Camellias	6	5	0
12	Do. Epacris	0	18	0
20	Do. Azalea indica	1	10	0

T. J. and Son having had a heavy crop of their improved ASH-LEAVED KIDNEY POTATOES, still have by them some good sound sets, without any appearance of disease, at 15s. per bushel; discount to the trade.—A remittance or satisfactory reference is requested from unknown correspondents.—All parcels delivered free of carriage in London.
Nurseries, Kingston, Surrey, April 7.

The Gardeners' Chronicle.
SATURDAY, APRIL 7, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	April	9	Medical	8 P.M.
TUESDAY,	—	10	Arts Egyptian	7½ P.M.
			Medical and Chirurgical	8½ P.M.
			Zoological	9 P.M.
			Literary Fund	3 P.M.
			London Institution	7 P.M.
WEDNESDAY,	—	11	Society of Arts	8 P.M.
			Graphic	8 P.M.
			Pharmaceutical	9 P.M.
FRIDAY,	—	13	Botanical	8 P.M.
			Astronomical	8 P.M.
SATURDAY,	—	14	Royal Botanic	3½ P.M.
			Obstetrical	8 P.M.
MONDAY,	—	16	Pathological	8 P.M.
			Statistical	8 P.M.
			British Architects	8 P.M.
			Horticultural	8 P.M.
TUESDAY,	—	17	Linnean	8 P.M.
			Civil Engineers	8 P.M.
WEDNESDAY,	—	18	Royal South London	1 P.M.
			Geological	8½ P.M.
			Antiquaries	8 P.M.
THURSDAY,	—	19	Royal	8½ P.M.
FRIDAY,	—	20	Royal Institution	3½ P.M.
SATURDAY,	—	21	Asiatic	2 P.M.

COUNTRY SHOW.—April 9: Liverpool Horticultural.

IF there is one subject which more than another demands investigation, for the sake of cultivators, independently of its intrinsic importance, it is the DISEASES OF PLANTS. Dr. THOMAS YOUNG is celebrated for having dared to assert in the face of the physicians of his day that their medical treatment was entirely empirical, and that science was wholly unknown in their practice, which rested upon no more solid foundation than so-called experience. The truth of this assertion was vehemently denied, and perhaps with reason; but it is at least certain that in the vegetable world its justice cannot be disputed; for we look in vain for a trace of scientific reasoning in the majority of the accounts, such as they are, of the maladies to which plants are subject.

That plants are liable to disease, like animals, is only too fatally proved by the present condition of Ireland, which has suffered more from the sickness of its favourite Potato than from all the fevers, cholera, or other pestilences that ever visited that island. The preposterous speculations upon this subject that we have all been wearied with, show conclusively that no just ideas respecting vegetable disease have yet been acquired. A supposes one thing, B another, C a third; and the only conclusion that men of sense can draw from their suppositions is that they are entirely ignorant of the subject on which they discourse so gravely.

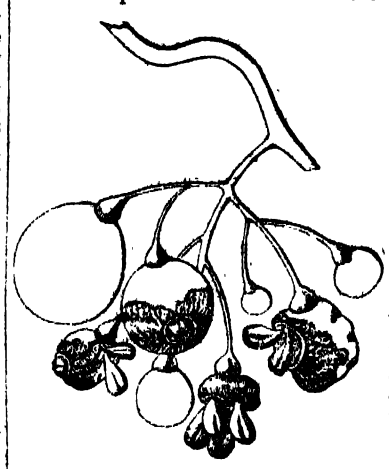
It is time that an end should be put if possible to this state of things, and that serious attempts should at length be made to lay the foundation of vegetable pathology as a distinct branch of vegetable physiology. There are no better observers than the English, when they know what to look for and how to examine it; no people have more ample or varied means of investigation; the richness of their soil, the dampness of their climate, the variety of objects which they cultivate, and the artificial vigour which it is their object to impart to everything under their control, furnish great facilities for instituting accurate inquiries into most of the forms of vegetable disease. With us, then, let a serious beginning be made to build up a scientific system of classifying and treating the maladies of plants. The gardeners in correspondence with this Journal, the most intelligent of their class in the three kingdoms, are the very men to furnish the materials: and we invite them to co-operate with us in good earnest in the attempt to work out a great national good.

What we wish them to do is not to send us every crude idea that may occur to them, nor all sorts of examples of the diseases they may meet with; this would be to overwhelm us with a farrago of incomprehensible and unusable materials. What they should do is to study the cases of disease immediately under their observation; to note down the symptoms as they advance; to endeavour to discover the cause by a careful comparison of healthy and unhealthy plants under the same circumstances; and then having done this to report what they have seen, accompanying their report with specimens of the disease in its various stages, which specimens should be preserved carefully from time to time as they occur.

In doing this a great advantage will be found in making very exact observations; in fact loose superficial observations are generally valueless. One certain fact is worth a load of conjectures. It is therefore not wished that long stories should be told about matters which can be condensed into a paragraph or two; but that what is set down should be clear, short, and to the purpose. How little this is thought of is abundantly shown by the aimless, inconclusive statements to be found in all horticultural and agricultural periodicals. Much of this would be avoided if we had but some tolerable classification of disease, even although it should be very imperfect. In order to contribute something towards obtaining this desirable object, we have determined to issue, in weekly portions, an entire translation of an Italian work on the Diseases of Plants, published at Venice, in 1807, by Count PHILIP RÉ. The book itself is hardly known in this country, and we believe has never excited much attention anywhere. Yet it is a fair beginning of a difficult subject, and the neglect with which it has been treated may be ascribed to its not having fallen into the hands of cultivators, who are alone able to estimate the utility of such an undertaking. The men of science who have seen it, themselves shrinking from a task beyond their strength, have allowed it to sink into oblivion. Had they only expended upon Count PHILIP RÉ's book one-hundredth part of the time which has been sacrificed to objects having no direct bearing upon the public service, they would have long since constructed with its assistance some pathological system which might be placed by the side of works like those of CULLEN and GOOD on the maladies of man.

If we are asked why we lay before the English public, *in extenso*, a work in which some of the views are not in accordance with modern discoveries, and others are of doubtful soundness, we reply, 1, that it is the best work within our knowledge upon a most important subject; 2, that a beginning of the settlement of such a branch of knowledge must be sought somewhere; 3, that the criticisms which Count RÉ may meet with are so much clear gain to the community, for in the absence of his book they would never have been elicited; and 4, that we do not feel justified in publishing mere extracts from a work which, to be justly appreciated, must be judged as a whole, and not with reference to some of its parts.

That great good must arise from directing attention to positive facts in connection with the diseases of plants will be seen from the following case. Gardeners have no worse enemy in their Vineries than what they call the rust, which causes the berries to lose their smoothness, and acquire a brown dead colour, ceasing to grow, and refusing to colour. The cause of the affection is to this day a subject of dispute; it has been thought by some to arise from the berries being handled when young, to the labourers having rubbed their hands against the bunches when thinning them, to cold borders, to not being set, hot nights, wet, dryness, or the fumes of sulphur; in short, every possible and impossible cause has been suggested as an explanation of a phenomenon, the true nature of which is not understood. Some months since, Mr. WHITING, the intelligent gardener at the Deepdene, sent us a bunch of rusty Grapes, of a portion of which the following cut is a representation. Some of the berries were



healthy, and others were half rusty; others were wholly so. All the rusty berries had burst, and were protruding their seeds; the others were in their natural state. The seeds were ripe and perfect, each containing the usual embryo, as we ascertained by careful examination. Now, here are certain facts, which establish conclusively what "rust" is. They prove that it is unconnected with any general disturbance of the functions of a Vine, but is a mere local affection—that it is confined to the skin of the berries—that its effect is to prevent that gradual growth of the skin which is necessary, in order to enable the berries to swell—that the resistance to extension by growth is so great that the seeds are compelled to force their way through the skin, there being no room for them provided in the usual way—and, finally, that the affection is so entirely local that it does not even reach bodies so nearly in contact as the seeds and the skin of the berry. These are the facts proved by Mr. WHITING's monster. The inference is plain. At an early period, while the berries were still young, their skin was so injured, that all growth on its part was stopped. About that no room exists for doubt. Then what injured them? Could fingering the berries do it? People say, Yes: but they produce no evidence that it is so. Let it be made the subject of experiment, as well as the notion that rust arises from a man's hair scratching over their surface. We will not say that we disbelieve the possibility of the effect in question being produced in such a manner: but we certainly disbelieve altogether that Grapes are generally made rusty by any such inadequate means. If it were so, how does it happen that they become rusty on open walls, where they receive no such delicate attentions as fingering and rubbing with greasy hair? It is more probable that this kind of rust is owing to streams of cold air, or very dry air, passing over Grapes when they are young and tender, destroying the vitality of the epidermis, and thus depriving that organ of all power of expansion, which, as we have shown, is the true cause of the evil consequences attending rust.

We shall endeavour to commence Count RÉ's book next week, after which it will be continued without interruption until it is finished.

THE ROYAL GARDEN AT FROGMORE will now be seen to be worthy of a great country, and not an inapt representation of the genius of England, where solidity and utility are much preferred to brilliancy and decoration. [illegible] houses are not to be regarded as examples of architectural skill; they are something far better. They are buildings admirably constructed for the purpose they have to serve; large and roomy, yet not too large; capitally put together, without regard to a pennywise economy; fitted with good mechanical contrivances to diminish needless labour; and heated in a manner not to be surpassed.

And there is no want of beauty in the place. The terrace walk, nearly 400 yards long, running in front of the irregular line of forcing houses, with a pretty cottage in the centre, partially fitted up for the reception of Her MAJESTY and the PRINCE, and bounded

on the south by a low parapet wall, decorated with vases, and supported by groups of flowers, is in itself a fine object. Its dimensions would, of themselves, produce a grand effect, even if all that surrounds it were in a state of less perfect keeping. But the interior of the Castle itself cannot be in more admirable order, or more scrupulously neat, than is everything that meets the eye at Frogmore. Those places where, from the nature of the processes employed in cultivation, perfect neatness is not possible, are out of sight, in the rear of the main buildings; and even those are in better order than half the flower gardens in the country.

It may be thought that a garden intended for growing Cabbages and other kitchen stuff can by no possibility be made an object of beauty. Frogmore shows the greatness of this mistake. Its admirable order, and the precision with which everything is placed, so as to gratify the eye by the display of the most exact symmetry under all circumstances, stand here in the place of gay flowers and intricate arrangements of colour. The fruit trees on the walls, some trained with horizontal arms, and others throwing out rays from a common centre, are examples of the most exact regularity; the Gooseberry bushes aid to mass a foreground, and the Cabbages are all dressed in line, like soldiers on parade. Indeed the effect produced by these arrangements is of somewhat the same nature as that which belongs to troops of the line under review; there may be little beauty in the dresses, viewed separately, and the men themselves may be individually ill-favoured; but the regularity of their formations, and the symmetry caused by their uniforms produce, as we all know, the most pleasurable sensations, even although there is not a movement in the masses to animate the scene.

It must however be admitted, that place Cabbages and Onions as you will they are only Cabbages and Onions after all. Much skill and taste have therefore been employed in setting them off to the best advantage, or in concealing them by more ornamental objects of their class. This has been done with the best effect, by surrounding all the quarters which are visible from the terrace walk with Apple and Pear trees, trained on iron frames. By this means the regularity which is inseparable from beauty is effectually secured; even in winter, when the branches are bare, a handsome frame surrounds the vegetable quarters; in the spring this frame becomes a border of white and red flowers, the charming effect of which will be felt by those who have ever wandered through the orchards of Normandy in April; in the summer it assumes the appearance of a green and well trimmed hedge; and in autumn it is a glowing enclosure of green and brown and yellow and purple, owing to the altered tints of the leaves and the glowing fruit that is ripening among them. The effect of the whole is heightened by long vistas, broken in the centre of the garden alone by the waters of a fountain.

In this way a truly royal garden has been most skilfully constructed, mainly for domestic purposes, but also to a great extent as one of decoration; and it may be worth the consideration of Her MAJESTY's subjects whether they, too, may not advantageously, though on a more humble scale, imitate so successful an example.

The commencement of this establishment was made by the present Duke of NORFOLK, then a high officer in Her MAJESTY's household, during the administration of Lord MELBOURNE; and all the original designs for the walls and houses were prepared before his Grace quitted office. No part of the work had, however, at that time, been executed, and it was reserved for the Earl of LIVERPOOL, when he became Lord Steward, to carry out the plans of his predecessor. The ground work was commenced about December, 1841, and the buildings in the following summer, under the very efficient superintendence of Mr. INGRAM, who has brought the establishment to its present high state of cultivation. Lord LIVERPOOL remained in office till the works were completed, and the country owes his lordship a debt of gratitude for the admirable manner in which every part of a very complicated operation was carried to a satisfactory conclusion. It is right to add that the heating apparatus was supplied by Messrs. BAILEYS, of Holborn, and that the beautiful metallic roofs, with the mechanical contrivances for moving them, were made and fixed by Mr. CLARK, of Birmingham.

The cost of this garden (about 40,000*l.*) may appear large to those who are not conversant with such matters. But in reality the expense is below what we should have supposed such a garden could be constructed for. It is to be remembered that it was an open field, without even a brick wall or a fence, or drainage; and that everything had to be constructed upon the best principles and in the most permanent manner. It must also be borne in mind that it replaces no fewer than eight royal gardens, namely, Kensington, Kew, Hampton Court, Cumberland-lodge, Cranbourne, the old Frogmore, Maestricht, and the King's Lodge. The country is burthened with no new charge for it, the cost being eventually defrayed by the Kensington land, as we pointed out last week. And, finally, the Sovereign is supplied amply with the finest produce which skill can procure, at a moderate cost, instead of having the worst supply in the kingdom at an expense perfectly enormous, so long as the wretched old gardens, now swept away, were relied upon.

SUMMER TREATMENT OF HARD-WOODED GREENHOUSE PLANTS.

EVERY one knows the danger of allowing any of the hard-wooded plants from Australia or the Cape to flag. Neglect them only for one day during a dry summer, and their tissue becomes contracted, the leaves and tender tips droop, and then the greatest care the gardener can bestow will not be sufficient to recover his favourites, whose roots are confined within the narrow compass of the potter's handiwork. Nature has not endowed plants with the power of locomotion, but by successional layers of organised matter the roots become elongated, and in pot cultivation soon reach their prison walls, and of course are there ill situated to withstand drought. But see similar plants in their native country, they there possess a luxuriance of growth and profusion of blossom that calls forth the admiration of every traveller.

The Heath is a plant which is well known to be very impatient of drought, but look at it as I have done on the mountains behind Cape Town, where heat and drought far exceeds anything of the kind in this country. Again, witness the vegetation of New South Wales, where the majority of our most lovely greenhouse plants is to be found. There I have seen the Banksias, the lovely Epacrises, Chorozemas, Boronias, Pultenæas, &c., flourish among rocks and thrive upon sandy plains exposed to the parching sun, and for a long period without a drop of rain; but their roots are there at liberty to pursue what course they please, and so they penetrate to a great depth, where they are kept cool and moist during the driest seasons. That king of the Australian forest, the noble Eucalyptus, whose size astonishes every traveller, occupies immense tracts of strong marl, broken only by an occasional gully, where I have seen the princely Palm, from 80 to 90 feet in height, and the most lovely Ferns the Cryptogamic botanist could desire. Again, round the margins of swamps I have delighted in the sight of the strong-growing Acacias, such as armata and dealbata, many of the Melaleucas, Eutaxias, and the humble Blandfordias. On such trees are numerous parasitical plants, not the least curious of which is the Acrostichum alcicorne, which is perfectly at home on the top of the Casuarina, appearing at a distance like some huge bird's nest. Planted there by the hand of Nature, and watered by the dews of heaven, it attains a size unequalled under artificial cultivation.

Looking round on the various forms of vegetation in distant countries, I thought their captive brethren were often harshly treated. For instance, how frequently do I see them taken from the greenhouse and placed behind some wall, hedge, or high trees during the summer months, thus depriving them of part of the sun's power at the very time when they ought to receive every ray of his light; for, it should be remembered, that the brightest of our summers cannot for a moment be compared with those of the countries of which these plants are natives, and where the majority of them stand fully exposed, ripening and hardening their systems to an extent which enables them at the approach of winter to withstand degrees of cold that would surprise many people. I have often thought that Nature's laws would be more perfectly fulfilled if on their removal from the greenhouse these plants were placed where they could receive the full benefit of the sun, while the pots might be plunged in sand or the common soil. By so doing the roots would be kept cool and moist; comparatively little water would be required, and the plants would acquire a solidity that would enable them to bid defiance to damp and mildew in winter, when they could also bear a few degrees of frost with impunity. *Alex. Burnett, Gardener, Roby Hall.* [Hear, hear!]

TEMPERATURE OF THE ATMOSPHERE AT ERZEROOM DURING TWO YEARS.

(From the private diary of Henry H. Calvert, Esq.)

Month.	Year.	Average temperature at 9 A.M. (Fahrenheit's thermometer.)	Extreme temperature of day and night, and date.				Year.	Average temperature at 9 A.M. (Fahrenheit's thermometer.)	Extreme temperature of day and night, and date.				Average temperature for the two years
January.	1837	16°.81	10th	— 4°	3d	+40°	1838	17°.81	6th	—20°	22d	+34°	17°.31
February	..	19 .08	16th	0	18th	+38	.	23 .37	22d	—10	17th	+42	21 .22
March	..	37 .41	2d	+14	23rd	+52	...	34 .06	18th	+15	6th	+48	35 .73
April	...	46 .83	10th	+41	11th	+62		47 .23	3d	+30	25th	+64	47 .03
May	1836	52 .22	15th	+34	28th	+72	1837	50 .00	9th	+36	7th	+66	51 .11
June	..	65 .83	5th	+43	25th	+80	.	65 .66	17th	+58	24th	+71	65 .74
July	..	69 .56	4th	+56	27th	+88	.	69 .04	3d	+56	25th	+77	69 .30
August		69 .12	30th	+62	21st	+86	..	65 .37	18th	+56	5th	+75	67 .25
September ..	...	55 .87	1st	+38	25th	+76	...	60 .65	20th	+44	8th	+69	58 .01
October	...	48 .19	28th	+35	11th	+66	.	45 .52	23d	+26	3d	+62	46 .85
November	...	33 .52	28th	+13	2d	+54	..	35 .32	18th	+24	1st	+53	34 .42
December . .		19 .00	16th	— 2	12th	+39		22 .07	30th	— 7	15th	+39	20 .98
		Average for the year.	Extremes for the year.					Average for the year.	Extremes for the year.				General average for the two years.
		44°.41	—4° 10th Jan.		+88° 27th July.			44°.75	—20° 6th Jan.		+77° 25th July.		44°.58

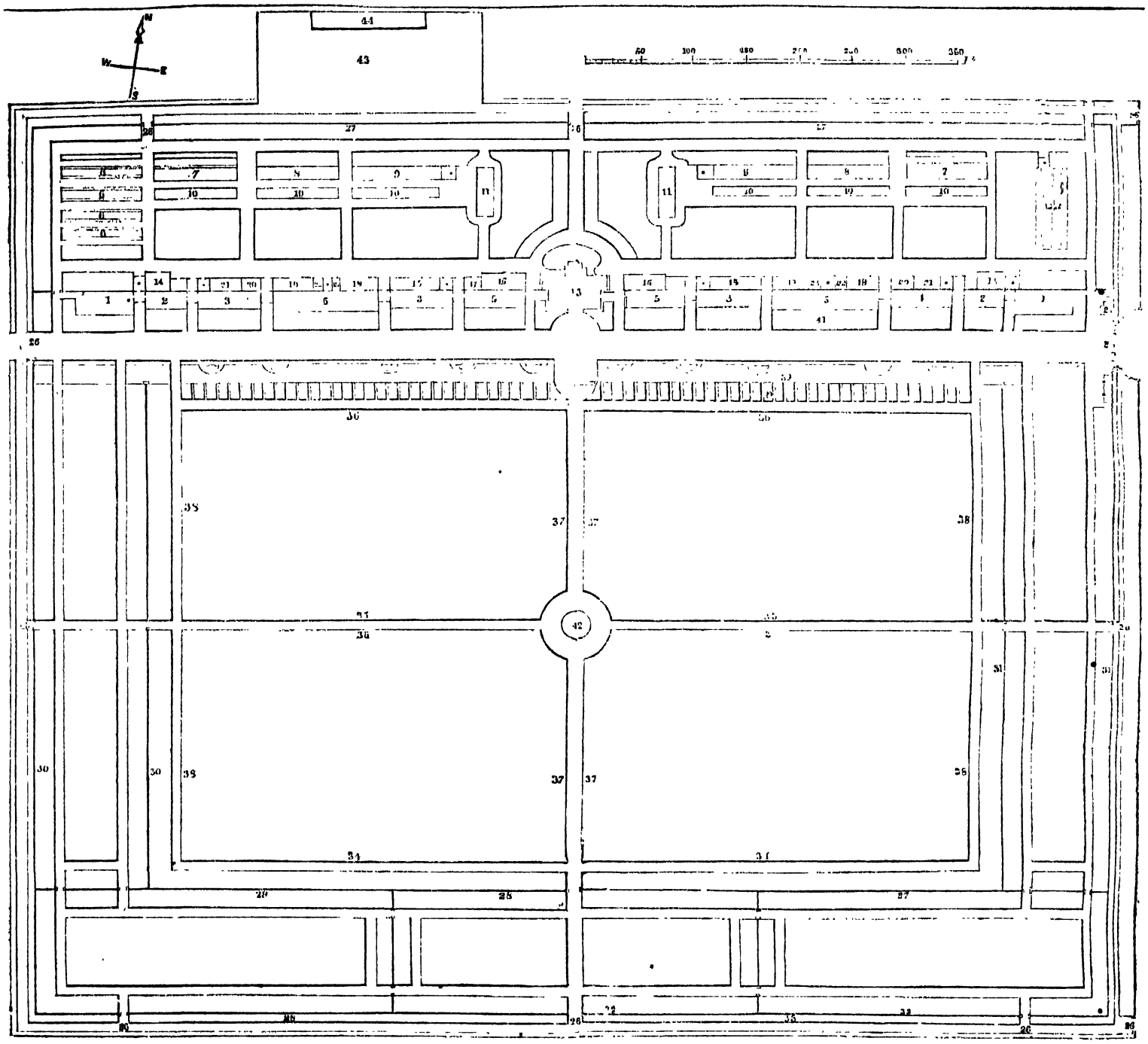
FROGMORE GARDENS.

ON entering the Royal Gardens at Frogmore, the visitor finds himself on a noble terrace walk 1132 feet long and 20 feet wide, with the fine range of metallic glass-houses, half of which is represented at p. 195, extending nearly the whole length of the walk on the right, and the main garden stretching out to the left. On the one side of this walk lie the hothouse borders, which are margined with a Grass verge 2½ ft. wide; and on the other is a 4 feet verge, running here and there in the form of small semicircles, containing flower beds, into an herbaceous border, whose southern side is the dwarf wall which bounds the terrace. Again, at the foot of this terrace wall, which is ornamented at either end and in the middle by large vases on square pedestals, is the series of rectilinear flower beds, marked 40 in the plan. It will thus be seen that an attempt has been made to render this portion of the garden in front of the hothouses as ornamental as possible; and how well the object has been attained, those who have had an opportunity of visiting this fine garden during July and August can bear witness.

The main body of the garden, it will be seen, is a large parallelogram, with walled-in slips all round it, and crossed by two principal walks, at whose intersections in the centre is a polished granite fountain, fashioned something after the manner of those in Trafalgar-square, but provided with various kinds of jets, and rising out of a circular basin 30 feet wide. In order that nothing might exist to intercept the view of the whole garden from the terrace walk before the houses, the fruit trees which margin the two compartments immediately in front of that walk, as well as those along the sides of the two centre walks, are trained down on an arched wire trellis, supported at the ends by cast-iron strainers. This trellis is 6 feet wide at the base, its greatest height being 4 feet. The trees are planted in the centre, carried up with clean stems to the top of the trellis, and then their branches are trained towards the ground. In this way they are found to thrive well and to bear abundantly.

But to return to the houses. A range similar to that represented in last week's Paper, at the page above referred to, lies on either side of the central lodge (13 on the plan), and with the leave of our readers we will enter at the west end, and mention how the several houses are occupied as we travel eastwards, first premising that all the houses are divided from each other by little corridors 7 feet square, whose corners form suitable receptacles for flowering plants. No. 1 is a large stove with a bed in the centre, chambered, and heated by hot water in open tanks, and having a passage all round it. The bed is filled with plants, among which Begonias were conspicuous, on account of the gaiety they keep up during the winter and spring months. Ipomœa Learii was stated to flower beautifully on the rafters in front, and the same remark applies to a large Bignonia venusta which was trained on the back wall. It is pruned here like a Vine, except that the young shoots are never stopped back. No. 2 is a fruiting Pine stove, filled with the most healthy plants, which cannot fail to produce fine fruit. They are planted in bottomless pots fixed in a bed of shingle, over which is spread about 6 inches of mould. The bed is heated by means of hot-water pipes passing through the shingle. No. 3 is an early Peach-house, in which the trees are trained up the front within 15 inches of the glass. They are bringing forward a good crop. No. 5, a house of Black Hamburgh Grapes just breaking. This second Vinery is 102 feet long, and has a very noble appearance. The Vines are trained up the rafters 17 inches from the glass and 4 feet apart; they all are pruned on the close spur system. Next this Vinery is the second early Peach-house, 50 feet long, and then comes a late Grapery, filled with Muscat of Alexandria and Cannon Hall and Tottenham Park Muscats. Passing the central lodge we enter an early Vinery, chiefly filled with Black Hamburghs, which are producing an excellent crop about half swelled; then comes the latest Peach-house and Vinery, the latter 102 feet long, and next them an Apricot and Plum house. The Apricots (Moorpark) were nearly half swelled, and a capital crop. The Plums consisted of Victoria, Washington, Greengage, and early Orleans. A Pine stove and greenhouse, exactly similar to the stove and Pinery at the west end, terminate this magnificent range of glass houses, than which nothing of the kind could possibly look lighter or neater, or be better adapted to the several purposes for which they have been erected.

They are all warmed by hot water, in 4-inch iron pipes, the upper ones with evaporating pans cast on them, and which are supplied with water by means of a perforated pipe which passes over them. The boilers (34 in all), as well as the other heating appendages, were supplied by the Messrs. Bailey, of Holborn. The houses themselves were put up by Mr. Clark, of Birmingham. The iron rafters are capped with wood, in order to prevent them from becoming too much heated by the sun. The sash bars are copper, and hollow, in order to obviate the breakage of glass by contraction and expansion; and so well have they answered, that during the five years the houses have been erected, not a single square has been broken from that cause. Winter ventilation is effected by opening the front lights, and by means of ventilators fixed in the back wall. A grating at the top of the back wall outside the house receives the cold air, which is admitted into the house through openings furnished with flaps or doors immediately under the top sashes. These flaps or ventilating doors in each house are all opened and shut at once by turning, with a handle or winch, a six-threaded engine-cut screw or worm a foot long, attached to machinery for the purpose. Simultaneous motion is also given to the lights in front, by means of brass toothed segments working on pinions keyed upon a wrought-iron horizontal shaft having a ratchet wheel and catch at the extremity of the house. Two revolutions of the handle or winch opens or closes, as required, the whole of the front lights of a house to their full extent. The greatest length of lights opened by these means is 50 feet, but double that length might be opened by the same contrivance if required. Besides the above means of ventilation, every alternate top light in the roof of the whole of the houses runs up and down on pulleys, the lights being let down and drawn up by means of a "quadrant wheel jack," one pull forward of whose handle brings the light up when let down to its fullest extent; while loosing the handles the reverse way lets the light down, and the ratchet wheel and catch with which it is furnished holds the lights secure at any place required, and when up. The ventilators are of course under the



REFERENCE TO THE ABOVE PLAN.

1 Stove and Greenhouse
2 Pine Stove
3 Peach-house
4 Apricot and Plum-house
5 Vinery
6 Succession Pine pit
7 Fruiting Pine pit
8 Cucumber pits, &c.
9 Store pits
10 Melon, French Beans, &c. pit
11 Cherry-house
12 Asparagus beds, forced by hot water
13 Dwelling-house
14 Foremen and Men's room
15 Mushroom house
16 Fruit room
17 Seed room
18 Store room
19 Open Sheds
20 Potting Sheds
21 Workmen's room
22 Washing Shed for Vegetables
23 Tool Shed
24 Porter's Lodge
25 Principal Entrance
26 Gates and Door-ways
27 Apricot Wall
28 Peach and Nectarine Wall
29 Cherry Wall
30 Plum Wall
31 Pear Wall
32 Currant and Gooseberry Wall
33 Fig, Mulberry, &c. Wall
34 Dwarf Plum, side of Walk
35 Dwarf Apple, ditto
36 } Pears on trellis, side of
37 } walk
38 Dwarf Cherries
39 Flower border and beds
40 Flower beds
41 Vine borders
42 Fountain
43 Compost and dung-yard
44 Stable, Cart-sheds, &c.
Boiler houses

fixed lights. The ropes are patent copper wire ones, and appear to answer perfectly. It will be seen that no expense has been spared to render the economical working of these houses complete. Strawberries are forced over the hot water pipes, and in the border between the pipes and the stone path are grown early Kidney Beans and Raspberries. The latter are removed from the open ground every autumn, forced, and, when done with, thrown away. They are stated to bear well.

Immediately behind the houses are the under gardener's lodgings, stoke-holes, Mushroom-houses, fruit-rooms, seed-rooms, sheds, and other conveniences suitable to a garden like Frogmore; and the long narrow slip of garden in front of these is what, in ordinary establishments, would be called the Melon ground, a place generally not over remarkable for tidiness, on account, perhaps, of the nature of the operations conducted in it requiring the presence of fermenting material. Since the introduction of hot water, however, this littery department has become much improved in most first class gardens. At Frogmore manure is almost entirely dispensed with, and the same neatness and order prevail here as in other parts of this fine garden. At the east end of this parallelogram is the Asparagus beds described at p. 836, 1847, and between them and the Cherry-house marked 11 on the plan are two ranges of low pits containing Melons, Pines planted out on leaf beds, Grapes in pots, and bedding out plants. The Cherry-house (11) is span-roofed, 10 feet 6 inches high, and 16 feet wide, the side lights—opening outwards by means of a horizontal rod and screw—being 4 feet high. It is about 17 yards long, with a stone passage up the middle, on either side of which the plants (in pots) are arranged. This being the early house, some of the fruit at the sunny end were beginning to colour. The house parallel with this, also marked 11 on the plan, is the late Cherry-house; and in this the plants were just going out of bloom. The double range of pits before mentioned, and similarly occupied, extends to the west side, where are situated the succession Pine pits. The boundary wall on the north side of this garden—the early Peach and Apricot wall—is shaded when required with canvas, which is rolled up and d[illegible] by means of pulleys; and in order to keep the canvas off the trees, spars 2 feet from the base of the wall, and 5 feet apart, fall on to the wall at the top, just under the coping. This wall produces immense quantities of excellent fruit, 60 dozen Apricots being removed from it last year in one day, and this Mr. Ingram attributes mainly to the practice of covering the trees in the spring. The whole, with the exception of the iron sockets, into which the upright spars are placed, is removed in winter, and by this means the material lasts for a long time.

We shall now draw attention to the way in which the garden is cropped. In commencing at the entrance gate, and walking round the slips, the first compartment we pass through is an Asparagus garden; the walls, which are everywhere 12 feet high, being covered with

Pear-trees. Pyramidal Pear trees, trained in the first instance to a hoop close to the ground, are planted at the head of this compartment, and also on the sides of the cross walks in the middle of it. These, though young trees, bear well, and have a graceful and neat appearance, in addition to which they take up but little room, an important consideration in a kitchen garden. The next compartment we enter is called the Apricot-garden, because its walls are covered with that description of fruit tree. The south border of this garden is occupied by Peas, and its centre by Ash-leaf Kidney Potatoes. The compartment following this is named the Peach-garden, for the same reason. The Peaches on the south wall here are all standards or riders, the lower branches being trained downwards to fill the wall On the north wall are different kinds of red and white Currants. The border is cropped with Peas, as before, and the centre with Cauliflowers. The Cherry-garden, whose centre and borders are cropped with Strawberries, succeeds this. The Strawberries—British Queen, Elton, Hautbois, Old Pine, &c., are planted 2 ft. asunder, in rows 3 feet apart. The Plum-garden occupies the west side. The centre of this was formerly Strawberries; but they are now giving place to vegetables. The main body of the garden is cropped with vegetables, except the upper halves of the compartments next the terrace-walk, which are planted with Gooseberries, Raspberries, and Currants, with a view to add to the neatness of that portion of the garden. In addition to the above, 8 acres of a Clover field on the south side of the garden have been trenched over during the winter, and converted into a vegetable garden. This became necessary in consequence of the abolition of the kitchen garden at Hampton Court.

By looking at the plan, it will be seen that there is an immense area of wall available for the production of fruit, and we are able to state that it is capitally covered with fan-trained trees exhibiting the best possible management. They were planted in the spring of 1843.

Among other conveniences of this extensive garden, it should be mentioned that it is everywhere well supplied with water. By attaching a leathern hose to a pipe, with which every compartment is supplied, the whole of that compartment can be watered without the operator ever moving out of his place. Every glass house, too, has its slate cistern, so that both in-doors and out there is no lack of this useful element.

NOTES OF A TRAVELLER.—No. IV.

CHINESE WINTER FLOWERS.—On visiting some of the flower-shops in Shanghae, in the middle of January, I was surprised to find a great many flowers which had been forced into bloom and were now exposed for sale. I was not aware, until I had this view, that the practice of forcing flowers was common in China. Many plants of Magnolia purpurea were in full flower, so were many kinds of double-blossomed Peaches, the pretty little Prunus sinensis alba, and a variety of Camellias. But that which struck me as most remarkable was the facility with which the Peony Moutan had been brought into full bloom. Several varieties of this plant were in full flower; and at this season of the year, when all out of doors was cold and dreary, they had a most lively effect. Their blooms were tied up, to keep them from expanding too rapidly. All these things had been brought from the celebrated city of Soo-chow-foo, the great emporium of Chinese fashion and luxury.

You will perhaps think that the Chinese have glass houses, hot-water pipes, Polmaise stoves, and all those fine things which assist gardeners and amateurs in Europe. Nothing of the kind; they do all these things in their houses and sheds, with common charcoal fires, and any quantity of straw to stop up the crevices in the doors and windows.

At this season of the year the "Kum quat" (Citrus japonica), which is extensively grown in pots, is literally covered with its small, oval, orange coloured fruit. This, with various other species of the Orange, are mixed with the forced flowers, and together produce an excellent effect. I think if the "Kum-quat" was better known at home it would be highly prized for decorative purposes during the winter months. It is much more hardy than any of its tribe; it produces its flowers and fruit in great abundance, and it would doubtless prove a plant of easy cultivation. To succeed with it, as well as the Chinese, however, one little fact should be kept in view, namely, that all the plants of the Orange tribe which fruit in a small state are grafted. *R. F.*

CULTURE OF VIOLETS.

IN compliance with your request that I should give you my method of growing Violets, I beg to state that I am a kitchen gardener and florist, and that I can seldom allow Violets to have the undivided occupation of any piece of ground. I plant them in April on a piece of land occupied with some other crop, such as Horn Carrots, Cos Lettuce, Radishes, &c.; but the best associate which I have found for them is the Tripoli Onion, between each row of which I plant Violets. The check which a crop of this kind gives the Violet, provided the Onions, &c., are not allowed to remain too long on the ground, benefits the Violet.

After the Onion crop is taken, I stir the ground between the Violets with a hoe, and scatter a little short dung or some kind of manure over them; this is, however, not a plan which I would recommend. For parties who have not a ready sale for such things, the most advisable plan of culture is, to divide the old roots in April, and plant them 6 inches asunder, in rows 12 inches apart. In your last year's Calendar, planting towards the end of summer is recommended; but I consider this practice to be quite wrong. Experience has taught me that they succeed best when planted every year. When I allow them to remain two years, I cut the foliage off them with a reaping hook two or three times during the summer, and greatly to their advantage.

My seedling, specimens of which I sent you, maintains its good properties; I found it in a row of seedling Russian Violets. *R. Shackell, Locksbrook Nursery, Upper Bristol Road.*

Home Correspondence.

Garden Walls.—The observations of "A. A.," on the erection of garden walls, are novel certainly, but I doubt whether walls so constructed are equal to those built perpendicularly. In the section there is no coping shown, therefore I presume that the wall has none. It must, I think, be tolerably evident, even although experience had not amply proved it, that walls so exposed are subject to material injury from atmospheric action when saturated with wet. Suppose, however, that a coping is placed on the wall, which is 9 inches or one brick thick, this coping, to protect the wall from drip, must be disproportionately broad; for if in right proportion, the drip must fall on the wall about half way down, which I imagine few gardeners would be likely to prefer. Neither do I apprehend they would generally approve of walls destitute of coping either on this plan of construction or any other. In such case they would be liable to get soaked with rain, and would necessarily be damp, and by no means congenial to the trees. Garden walls built with a cavity in the centre are greatly to be preferred, and are equally as strong as those built solid. I should like to see some improvement take place in the plan of fastening fruit trees to walls. Nails are an abomination in a garden, and should, in these days of horticultural progress, be abandoned. How common it is to see finely built brick walls in a short time completely defaced; in fact, looking as if they had been scourged with the small pox, and presenting a surface well calculated to receive the larvæ of insects and all kinds of vermin. This system of fastening, in my opinion, cannot be too strongly condemned. It is true, some may have a peculiar fancy for the tailor's rag-bag, and admire their trees freckled some with red coats and others with black coats, but I consider this anything but good taste, and few will be found now-a-days to defend the plan, although they continue to practise it. A new wall especially could be studded over with short cast iron studs, just projecting sufficiently from the face of it to allow a ligature to pass into the eye of the stud. These could be driven into the joint of every other course of bricks at 6 inches apart, and would afford permanent means of training the trees without in any way defacing the wall, thus doing away with the harbouring places of insects. I imagine that those who are practically acquainted with these matters will admit that a tree can be as rapidly and certainly more economically trained otherwise than by the use of nails and shreds. *R. Glendinning.*

Pomological Archæology.—I beg to mention that the word printed "Goneling," in the list of Apples given at p. 198, should evidently be "Grenlinge;" and the following word, "or," should be erased, for the "Croke" is intended for a different Apple. *W. C. Trevelyan, Nettlecombe, Taunton.*

Campanula carpatica.—This desirable herbaceous plant grows rapidly, and may be readily increased at this season by division; the slips should be planted 4 inches apart in a bed of rich compost, well drained. In borders plant in patches consisting of five plants each. The above mode of culture must be adopted annually, in order to ensure success. My plants quickly cover the bed in which they are planted, producing a mass of blue flowers during the latter part of the summer and the whole of the autumn months. Its height, when in flower, is from 1 foot to 18 inches. As seed-pods appear I remove them, in order to give strength to the plants, and to extend its season of blooming. If plants are not obtainable a little seed sown now in heat will produce flowering plants next autumn. There is also a white variety of this beautiful hardy plant. *John F. M'Elroy, Stamford Hill.*

Literary Piracy.—I quite agree with "Fair Play" that these pseudo editors should be taken to task, and none more than Mr. Johnson, whose "treatises" on horticultural matters are a mere "hash up" of other people's property. Whole pages, nay chapters, are pirated with bare-faced impunity. Mr. Johnson may occasionally venture an opinion, but then he only exposes his incapacity by exhibiting ignorance on subjects which he neither understands practically or theoretically. *R. G.*—Under the above title an anonymous correspondent, in your last week's Paper, classes the insertion in my "Gardeners' Almanack" for this year of the names of some nurserymen and seedsmen who happen to be either dead or bankrupt, "but," he adds, "this is a small fault compared with his piracies." These are hard words, but should have passed unnoticed if inserted without your own comment. I trouble you with this, therefore, emphatically to deny the charge. No man better than yourself knows the difference between a quotation and a piracy. Of the first, I have used many, but whenever I have made a quotation no writer has endeavoured more assiduously than myself to give the name of the authority with which I have sought to sustain my own opinions. I may have failed occasionally in this, but it always has been, and always will be, the course I endeavour to pursue. I so endeavour, because I consider the duty of a journalist is to seek for facts wherever they are to be found, and to communinicate them fairly to his readers, totally uninfluenced by any unworthy and petty jealousy of a rival. *G. W. Johnson.* [The general remarks which we added had no particular application; when priacy is really committed they are perfectly just. Whether a quotation is a piracy or not depends upon its length. Suppose a man quoted a whole volume, would not that be piracy?]

Francisca Hopeana.—This charming plant, introduced from Brazil in 1826, has been grown here for a series of years, and I have found it admirably adapted for the embellishment of sitting rooms during the months of winter and spring. Its flowers are large, powerfully fragrant, and attractive, changing from a deep rich purple hue to an almost snowy whiteness; and as this peculiar character is maintained for a lengthened period, its value for this description of decoration is considerably enhanced. It forms an excellent centre plant for round or octagon baskets, in which Chinese Primulas or Hyacinths are the principal objects employed, its pale green foliage relieving the dense masses of flowers such plants usually exhibit. Its cultivation here is an exceedingly simple matter, being grown in a very cool stove, in comparatively small pots, in a mixture of sandy peat and loam, the object in view being to obtain small compact plants, not to exceed 2 feet in height, in order that they may be readily transferable to vases or baskets, as circumstances may require. So soon as the plants have performed their functions of flowering, the shifting process is performed, using the knife freely alike to root and branches; all other attention is merely routine, save in the application of an occasional watering of liquid manure. *James Duncan, Basing-park, March* 21.

Rough Plate Glass.—In confirmation of the remarks you have made in favour of rough plate glass, and for the encouragement of those who are doubtful whether it will answer or not for general horticultural purposes, I wish to state that my employer had the roofs of a small stove and greenhouse glazed with it last autumn, and that the plants which are growing in them, although ill-grown specimens (not having had the attention of a gardener for some time), nevertheless look remarkably well, and are in a healthy growing state. The experience I have had with this kind of glass may not justify my recommending it, but I have a very favourable opinion of it, and I imagine that the more it is known the better it will be liked. I was doubtful whether it would be suitable for forcing, but on trying a quantity of Geraniums, Petunias, &c., under it, I feel confident it will answer this purpose equally as well as other glass, and with less trouble and expense, for, being so thick, less fire is required to keep up a suitable temperature. Less firing, no shading, and less general attention, together with the pleasure of having the plants longer in bloom, are advantages not to be overlooked, to say nothing of the satisfaction experienced in seeing plants of a beautiful dark green colour, and in the absence of the fear of having them scorched. The price we paid for our glass was, I believe, 6*d.* per square foot. *J. Marshall, gardener to Archibald Worthington, Esq, the Mount, Whitchurch, Salop.*

Rain at Mayen House, Banffshire, in 1848.—North latitude, 57° 32′ 30″; west longitude, 2° 42′ 5″.

	Inches.		Inches.
January	1.27	August	2.25
February	5.01	September	1.36
March	3.02	October	3.81
April	1.60	November	3.71
May	1.88	December	1.46
June	1.53		
July	1.84	Total	29.34

Depth in 1847, 34.50 inches. It will be seen that nearly as much rain and melted snow fell here during the months of February and March, as occurred during the next six months! *Alex. Walker, Feb.* 26.

My Note Book.—From experience I can say that for the present advancing state of horticulture every young gardener who would rise or maintain his position above the mere labourer, must have his eyes to observe and his judgment to discriminate continually at work, for a man, unless he is constantly and carefully observing for himself, will derive but little benefit from the instruction of others. I have been in the habit of noting everything I thought worthy of attention for more than five years, and I can send you a few extracts from my book, not for the value they may possess, so much as for the purpose of inducing young gardeners to think and act for themselves. The first entry in my book is dated August, 1843, and stands thus: "A number of fine young Peach trees, apparently in good health, commenced to drop their fruit before it attained its full size or flavour. Learned that the border was only 2 feet deep and concreted at bottom. Strawberries had been planted on the border for 4 or 5 years, and were then strong old plants. Believe that the Strawberries had robbed the Peaches. June, 1844: Entered a Vinery where the fruit was beginning to colour. To my surprise found the gardener picking off a great quantity of leaves, inquired his reason for so doing; he stated that the fruit ripened much sooner. Did not know much about the part leaves had to perform, but knew that Gooseberries, when deprived of their leaves by caterpillars, were never good for anything. March, 1845: A large old house containing Vines and Peaches, under my charge, had one of its ends blown right in by a gale of wind, the Peaches being in full flower, and the Vines having shot an inch or so. Thermometer in the open air, at the time midday, indicating 29°; immediately got some cords fastened

from the top rafter to strong pegs driven in the ground, but could scarcely muster sufficient mats to cover it with. The house was heated by a single old crazy flue, and could not raise the heat much at one end without having the flue red-hot at the other; knew that this would be certain destruction to the Peach flowers over it, and took a middle course. Next morning found the thermometer out of doors indicate 14° of frost, and the one at the cold end of the house 3°; notwithstanding this the Peaches set very well, and produced an abundant crop. The Vines seemed to stand still for a week, but at length started, and likewise produced a fair crop February, 1847: Examined some forced Seakale; considered light, heat, and moisture essential to healthy vegetation; the Seakale has been grown in the absence of light, therefore it is watery and colourless, except at the points. This colouring matter, therefore, must have been deposited before the plants were excluded from light; light, then, gives colour to vegetable matter, and in its presence the juices of plants are properly elaborated. As no plant will vegetate without a certain amount of heat, it appears therefore that heat excites and sustains the vital principle. Plants will not grow without moisture; bulbous and tuberous roots are seemingly an exception to this rule, but they have it laid up in the tuber or bulb. March, 1847: After a slight frost, observed the outer leaves of some young Lettuce plants to have a number of small globules of a clear fluid under the skin of the midrib of the leaf; concluded that the frost had ruptured the vessels of the leaf and released the fluids; could not find any appearance of the same on the younger leaves; perhaps their superior vitality had enabled them to resist the frost better than their more aged neighbours. March 4: Transplanting some young Peach trees; found some from a dry, hard, and rather poor part of the ground have much better roots than those planted at the same time in a deep rich border, although the latter had grown much faster. Can the roots of plants, like animals, get into lazy habits, when the means of supporting themselves are easily obtained? Perhaps the reason of overfed plants being so short-lived is, that few roots at first suffice for the wants of the plant, and by the time the soil in contact with these roots has become exhausted, the plant has become lethargic and unable to extend its roots." *J. W. S.*

Societies.

Horticultural, *April* 3.—W. W. Salmon, Esq., in the chair. The Rev. J. Heyworth, of Bristol, was elected a Fellow. Among the subjects produced on this occasion, that which possessed the most interest was an exhibition of cut flowers of Rhododendrons from the Duchess Dowager of Northumberland's garden at Sion. The attention of hybridists has hitherto been chiefly confined to the improvement of the colour of our hardy Rhododendrons, by crossing the Pontic and American Rhododendron with the red Indian arborescent kinds The effect of this has been, as everybody knows, a remarkable improvement in the red kinds of this class of shrubs. Our light-coloured, hardy Rhododendrons, however, have remained, until very lately, comparatively speaking, unaltered, although it would seem that the same opportunities of improvement exist in this case as in the other. At Sion, attention has been directed to the subject; and that the results have been eminently successful, the specimens exhibited proved. They had compact heads of flowers, as large as those of the red Tree Rhododendron, and of the most delicate pink colour imaginable. There were five sorts, three of which were named as follows: Clivianum, Syonense, and Percyanum; the other two were less remarkable. The two first named kinds were delicate pink, with the upper petals of each flower richly covered with deep crimson spots. Percyanum was somewhat smaller than its associates, and free from spots, but veined with deeper pink, and beautifully transparent. They have been obtained, it is believed, by crossing Catawbiense or the white Pontic Rhododendron with the white Indian arborescent kind. They were stated to be quite hardy, and to have been growing in the open border until the flower-buds were about to open, when they were lifted and flowered under glass. This practice, or that of covering the plants where they grow, so as to give shelter to the flowers, which are apt to be injured by the weather, was recommended in all cases where fine blooms are required. A Knightian Medal was awarded for these.—Mr. Craggs, gr. to Sir T. D. Acland, Bart., M.P., sent flowers raised from the seed of the Highclere Rhododendron altaclerense. These were inferior to that variety, and served to confirm the fact that when hybrids do seed, the seedlings raised from them are almost certain to return sooner or later to the state of their parents. — Messrs. Henderson, of Pine-apple-place, again exhibited a beautiful collection of the less expensive kinds of Hyacinths, whose names were as follow: (The double ones are marked with D, the single ones with S.) *Pink:* Prince of Wales, D; Monsieur de Taesch, S; Acteur, D; Comtesse de la Coste, D; Bouquet Royal, D; Perruque Royal, D; Triumph Blandina, D; Professor Lindley, D; Duchess de Parma, D; *White:* Minerva, D; La Vestale, D (one of the best whites); Ne Plus Ultra, D; Grande Blanche Imperiale, S; Don Gratuit, D; *Red:* Sans Souci, D; Mars, S; *Dark blue:* Alfred the Great, D; Quentin Durward, S; Bouquet Pourpre, D; *Pale blue:* Grand Sultan, D; Globe Terrestre, D; Oscar, S; Robinson, S; Bloxburgh, D; Parmenio, D; King of the Netherlands, D; Paartboots, D; Mignonette de Dryfhout, D; Comtesse de St. Proust, D; *Cream:* Groot Voorst, D; *Yellow:* Herman Sange, D. The same nurserymen also contributed a nice collection of stove and greenhouse plants, for which a Knightian Medal was awarded. They consisted of beautifully-grown specimens of Dillwynia tenuifolia, Boronia anemonefolia, Acacia diffusa, whose numerous long slender spikes of bright yellow flowers render it one of the best for pot culture; Eriostemon intermedium, a rather new and pretty variety; Bossiæa lenticularis, and Puya Alstensteinii, a stove plant nearly related to the Pine apple, and having spikes of pretty ivory-white flowers issuing from a mass of bright crimson floral leaves —Mr. Turner, of the Royal Nursery, Slough, sent a beautiful pan of Heartsease, for which a Certificate of Merit was awarded. It contained Thomson's Constellation, Hooper's Mary Jane, Nasmyth's Mrs. M. Hamilton, Hooper's Brutus, Bell's Lord John Russell and Duke of Norfolk, Turner's Charmer and Commodore, Bell's Climax, Turner's Miss Edwards, Bell's Aurora, Youell's Supreme, Turner's Surplice and Mrs. Beck, Oswold's Undine, Hooper's Attila, Thomson's Duchess of Rutland, Hooper's Wonderful, Turner's Caroline, Bell's Duchess of Norfolk, Backhouse's Dr. Wolff, Collison's Perseus, Hooper's Milo, Turner's Optimus.—Mr. Henderson, of the Wellington Nursery, St. John's-wood, sent a collection of Cinerarias, of which Cerito was acknowledged to be the best. A tray of Camellia blooms from plants growing in the open garden at Abbotsbury, in Dorsetshire, was exhibited by the Hon. W. F. Strangways. It was stated that until 10 years ago the Camellias at Abbotsbury were planted in the warmest and most sunny spots of the garden, in the natural soil, a rich red ferruginous loam, in which it was found that they never flowered, produced few and yellow leaves, dwindled away and died after a few years. From this circumstance it occurred to the gardener that it would be best to plant them in the shade, not of a wall, but of trees; in a black, nearly pure, peat soil, not too wet, in a low cool part of the garden, sloping to the north; and in this he was right, for it was mentioned that they succeeded perfectly in this situation. The Camellia, it was stated, flowers well under such circumstances; but, like the Rhododendron, the flowers require to be sheltered from wet and unfavourable weather.—Mr. Toy, of Oatlands Palace Gardens, sent a well swelled and beautifully coloured dish of Keens' Seedling Strawberries, for which a certificate was awarded. — Dancer's Early Frame and Manchester Hero Cucumbers were produced by Mr. Higgs, gr. to J. H. Barchard, Esq., of Putney Heath; and Mr. Goode, of South Audley-street, exhibited specimens of ornamental garden pots.—From the garden of the Society came various Cinerarias, the best of which was Cerito; three Azaleas; a like number of Orchids; Epacris paludosa; Bossiæa cordifolia; Dillwynia speciosa; Acacia decipiens; Eutaxia myrtifolia; a flower of the Guatemala Aristolochia Gigas, and a nicely flowered plant of Forsythia viridissima. Though hardy, it was mentioned that like Camellias and other plants of that kind which flower early, to be had in perfection it must be sheltered from the inclemency of the weather. The Society's Garden also contributed a plant of Begonia dichotoma, which had been grown under the rough plate glass. It exhibited the best possible health, its large glossy leaves being of the deepest green.

Microscopical, *March* 28.—G. Busk, Esq., President, in the chair. F. T. Hudson, Esq.; Gideon Mantell, L.L.D.; J. Noble, Esq.; and J. Matthewson, Esq., were elected Fellows. The President read a paper on a new species of Thaumantias, a genus of jelly-fishes, with remarks on its structure. The author stated that he had discovered unequivocal indications of the possession of striated muscular tissue in this creature, as well as several other species of Medusæ. He drew particular attention to a series of structures around the edge of the umbrella of these creatures, which had been described as organs of hearing, but which consisted of a central globular mass of a solid character, and which behaved under the influence of polarised light in exactly the same manner as the crystalline lens of the eye. The author hence concluded that this was an organ of vision. Dr. Lankester confirmed Mr. Busk's observations with regard to the striped character of the muscular tissue of these organs, and drew the attention of the Society to the necessity of investigating with greater care the nature of those organs in the Infusoria and Rotifera which had hitherto been regarded as eyes. Dr. Carpenter thought that whatever might be the ultimate decision with regard to other structures, that there could be little doubt that those described by Mr. Busk were organs of vision. Mr. Matthew Marshall exhibited some young trout that had just been hatched in a mill stream belonging to Mr. Gurney, upon the plan recommended by Mr. Boccius. Dr. Carpenter and Mr. Bowerbank described some of the points of structure in these infant fish, which could only be examined by the microscope, more particularly the circulation in the vitelline vesicle. Mr. Gurney described the process, by which he was in possession of several thousands of young fish, which in the course of a short time he should turn out into the stream, and thus he expected that where there was one fish before, he should have hundreds now. The great principle of Mr. Boccius's plan was the protecting the ova and fry of the fish at a period when they were exposed to so many enemies that they were sure to get destroyed.

Reviews.

The Handbook of New Zealand: consisting of the most recent information. Compiled for the use of intending Colonists. By a late Magistrate of the Colony, who resided there during four years. 12mo. Parker: pp. 492.

This book is indispensable to every body who may think of New Zealand. It contains ample and true information upon the country, its history, its institutions, its capabilities; and upon the subjects which ought to occupy the emigrant's attention. The 15th chapter is more especially important to him, as he will see by the following scraps of advice:

"It has not been uncommon for persons to engage in colonisation who were totally devoid of the slightest knowledge, not only of the country to which they were going, but of what is was necessary to take with them, and of what they would have to do on their arrival. For instance, among the early Wellington colonists, there were some who took their skates with them, and others who imagined they had discovered marble on seeing a vein of quartz. This is only to be equalled by the ignorance of that British Government which, during the war of 1812 with the United States, sent out water-tanks from England for the use of the frigates which were to sail on the fresh water lakes of Canada." * *

"*What to buy and take with you*—Clothes: As to those required for the voyage, the outfitters can always give good information; but a few hints may be acceptable. The length of the voyage is on an average 120 days; and as no water is allowed for washing clothes, it is necessary to provide a sufficient stock of linen for this time. By stowing away in canvas bags that which has been used, and occasionally airing it on deck in fine weather, much of it may be preserved for wearing on arrival, and subsequent use in the bush. Take rough, strong clothing for the voyage, and much of it will serve afterwards in the colony. Thin clothing is required for about one month of the passage, passed within the tropics; and thick warm clothing for rather more than a month of cold damp weather passed in the latitude of about 41° S., between the Cape of Good Hope and the end of the voyage. Both kinds are available in New Zealand afterwards. Have no fear of taking too much strong useful clothing; it will always fetch its value; finery only is superfluous. A suit or two of dress clothes lasts a long while in a colony. A good Scotch maud or plaid, and a Mackintosh sheet to spread under your blankets, prove useful on exploring parties. A Mackintosh air-bed, too, has been found useful. The Bishop of New Zealand once used one as a canoe, while on an expedition through the interior. (See 'Annals of the New Zealand Diocese,' p. 101.) Take plenty of broad-brimmed straw hats, cloth forage caps, with oilskin covers, and sailor's tarpaulin hats. You are sure to lose two or three on the voyage." * * "Take a good stock of Saddlery, Harness, Whips, Spurs, &c., as they can always be sold at a profit, if not wanted for use. The saddle should be fitted with holsters, saddle-bags, and rings before and behind, with straps to fit for fastening on blankets or a valise. A pack-saddle or two, and a set of colt breaking apparatus, will be found of use. Take both cart harness and gig harness." * *

"*Fire-arms and other weapons.*—Take a good double-barrelled fowling-piece, holster and pocket pistols, and a good rifle. The colonist is recommended to make himself acquainted with the recent invention of the cycloid ball (7½ to the lb.), which is thrown by the ordinary ordnance rifle to the distance of 600 yards with great accuracy, and, with less certainty, as far as 800, and even 1200 yards. Mr. Lancaster, of Bond-street, has recommended this invention for adoption in England, and will explain it to any person seeking information on the subject. It is almost needless to mention shot, lead, bullet-moulds, wadding, &c. Whatever powder you take should be at once handed over to the chief officer of the ship, for deposit in the magazine. Mark the parcels with your name. Take a sabre and an infantry sword, both of the last regulation. A very useful kind of sheath-knife, with belt attached, is made for exportation to the Spanish West Indies, by W. and S. Butcher, of Sheffield. It costs about 17*s.*, and serves many purposes, from that of a small bill-hook downwards. The colonist need hardly be told to provide himself with bill-hooks, pruning-knives, &c., of the best quality, fitted into belts for the waist. Excellent boar-spears are made at Paget's, Piccadilly. A few of these will be useful. Take also eel-spears and grains." * * *

"All seeds should be picked when fully ripe, and carefully kept dry during the voyage. Various means of doing this have been tried, such as soldering in tin cases, hermetically sealing, &c. But perhaps the best way of all is to wrap your seeds in separate bags of thick brown paper, and put all these bags together in a strong canvas sack, which must be so laid, in a dry place, as to be easily got at during the voyage; then you must choose fine dry sunny days, at intervals, on which the sack may be emptied out, and each paper bag carefully examined; if any have become at all damp, hang them up to the roof of the cabin, or other convenient place, until dry, and then restow them. The stern cabin in the poop is the best place for keeping your seed bag."

The recent extinction of all native claims in the southern island, and the strong, sensible, and steady government of Capt. Grey, have at length removed the last obstacles to that success which must attend the New Zealand emigrant if, in addition to what Mr.

Parker's book will remind him of, he carries out with him health, strength, industry, and intelligence.

Miscellaneous.

Sale of Orchids.—Mr. Warrzewicz's collection of Orchids, mentioned at p. 196, was brought to the hammer by Mr. Stevens on Tuesday last. Single plants realised the following prices: the Cypripedium called longifolium from 10*s.* to 1*l.* 7*s.*; a Lælia from 19*s.* to 1*l.* 1*s.*; an Oncidium from 3*s.* to 4*s.*; Trichopilia coccinea from 10*s.* to 3*l.* 5*s.*; a new Chysis from 1*l.* 10*s.* to 2*l.* 12*s.* 6*d.*; an Epidendrum with the habit of cinnabarinum, 2*l.* 4*s.*; a rose coloured Lycaste from 10*s.* to 2*l.* 4*s.*; Cycnoches ventricosum from 5*s.* to 1*l.*; a Cycnoches with the habit of Egertonianum from 18*s.* to 2*l.* 2*s.*; a new Mormodes from 14*s.* to 15*s.*; a new Stanhopea from 10*s.* to 1*l.* 3*s.*; a Cattleya like Skinneri from 1*l.* 18*s.* to 2*l.* 4*s.*; an apparently new genus to be called Warsewitschia from 10*s.* to 2*l.* 8*s.*; an Aspasia from 4*s.* to 10*s.* 6*d.*; a new Huntleya from 6*s.* to 10*s.*; Peristeria elata from 10*s.* to 14*s.*; the rare and curious Cypripedium caudatum from 1*l.* 9*s.* to 2*l.* 2*s.*; a scarce Maxillaria, 14*s.*; a new Odontoglossum from 17*s.* to 1*l.* 1*s.*; a Brassavola with huge yellow and white flowers from 2*l.* to 2*l.* 15*s.*; a new Lacæna or Acineta from 2*l.* to 2*l.* 12*s.* 6*d.* The total number of lots was 200. On the same day Mr. Stevens sold for Messrs. Low, of Clapton, 40 lots of Phalænopsis grandiflora just received from Borneo; they fetched from 1*l.* to 3*l.* 7*s.* 6*d.* per plant.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Heat and moisture may now be more liberally supplied to tropical plants. As the season advances, these agents should be gradually increased in proportion to the growing power of the sun's rays; but, in all cases, avoid a high night temperature, 60° is sufficient at this season for those plants which are growing most actively. The necessary night temperature must be principally obtained by closing early, and so retaining the heat derived from the sun; and when fires are required, they must not be so strong as to render it necessary to admit currents of cold air for the purpose of keeping the thermometer down. This latter agent must be used with greater caution than when the plants were in a dormant state, for the admission of a current of cold air during the development of the young growth will frequently give it a check, and so injure the tender foliage as to spoil the future appearance of the plant; a cold current of this description is very different from the moderate circulation of the air which is necessary in all plant structures. Give the necessary attention to Achimenes, Gloxinias, and other summer and autumn-flowering plants, according to the directions given in former Calendars. The latest succession of Achimenes to flower late in the autumn, should now be placed in heat. Some of those of former successions may be potted for hanging vases, for which the A. longiflora and cupreata are particularly adapted. Prefer pans or broad shallow pots for their general cultivation, and, as they require an abundant supply of moisture when they are in flower, let the drainage be as effectual as possible, that they may be freely watered without stagnating the soil. Let that useful summer and autumn flowering plant the Fuchsia have its due share of attention, by repotting them as they require it, in rich compost, and occasionally watering them with liquid manure. Much, however, of their beauty depends on the shape of the plant. Nearly all the varieties of the Fuchsia have a natural tendency to form pyramidal shaped bushes, and by a very little attention they may be guided into this very appropriate form; only one shoot should be allowed to take the lead; this one should be trained perfectly upright, and the side shoots regulated by stopping any exuberant ones which are outstripping their neighbours. Violets.—These are everybody's flower, and are therefore well worth a little attention to produce them in first-rate excellence. A frame of light rich compost, consisting of loam and leaf-mould should be prepared under the shade of a north wall, for their summer quarters, as in such a situation they may be preserved from the ravages of the red spider, from the attacks of which they will certainly suffer if exposed to the scorching sun during the hot months. In this frame the offsets from the old beds should be planted about 4 inches asunder, and kept close till they have begun to form new roots. The best varieties are the Neapolitan and the Tree Violet.

FORCING DEPARTMENT.

Pineries.—Keep up a high day temperature to swelling fruit and admit air freely, so that a circulation may be produced similar to the sea breeze of their native isles. If the latter be not attended to the plants will grow weakly, and have an unhealthy drawn-up appearance; and with regard to fruiting plants the crowns will increase in size instead of the fruit itself, which will be watery and deficient in flavour. Take advantage of every fine afternoon to syringe the pits, and close them for two or three hours before sunset. Remove all useless suckers, and destroy all gills, that the whole energy of the plant may be devoted to the perfecting of the fruit. Vineries.—Give a good heat to successional Vines which are just starting, particularly to Muscats which were ripened late last year, as the wood of such is not generally so well matured as that of the earlier forced Vines; and unless they are encouraged by a temperature rather higher than usual, until their blossoms are fairly set, the shows for fruit, though good to all appearance, not unfrequently prove abortive. A somewhat higher temperature is not only admissible but advantageous, through the whole routine of starting and forcing Vines at this season, than would be safe and prudent two months earlier. Attend punctually to the stopping and training of the shoots, and thinning of the berries on the Vines, in the earlier stages; maintain a moist atmosphere by evaporation where the berries are swelling, particularly in fine clear weather, but this must be moderated as soon as they begin to change colour, and air must be more freely given. Peaches.—Let all very vigorous growths be stopped as soon as they have made six or eight leaves; this is a much better plan than allowing them to make long willow-like shoots, to be removed by the knife at the end of the season. Avoid a high night temperature, or the fruit, though ripened considerably earlier, will be obtained at a serious sacrifice of size and flavour.

FLOWER GARDEN AND SHRUBBERY.

Bedding Plants.—Lose no time in potting off, or pricking out into frames or boxes, young cuttings as soon as they are sufficiently rooted, and seedlings as soon as they will bear handling. As the potted off plants become established they should be hardened, by gradually inuring them to the open air. The hardier kinds may be set upon a bed of coal ashes, or plunged in old tan, in the open air, and protected at night by hoops and mats. If the plants in small pots are plunged in old tan, ashes, or some other light material, much of the labour of watering will be saved, many deaths avoided, and the plants will altogether be in a better state when planting out season arrives. Patches of some of the more showy of the hardy annuals should now be sown in vacant places, which usually exist in the herbaceous beds, and in the edges of clumps and borders in the Shrubbery. Among the many kinds excellently adapted for this purpose we may mention the following:—Double Poppies of various colours, Lupins, Sunflowers, African and French Marigolds, Goodetias, Erysimum, Clarkia, Gilia, Collinsia, Silene, Eschscholtzia, Nemophila, Nolana, Kaulfussia, &c., not forgetting the old fashioned favourite Mignonette. A sufficient quantity of cuttings and seedlings of half-hardy climbers should now be potted for planting out in May; with such plants as Cobæas, Maurandyas, Lophospermums, Calampelis, Loasas, Tropæolum canariense, &c., many bare places on the walls and trellises may be covered and made ornamental, which would otherwise be unsightly blemishes on the general appearance of the place.

HARDY FRUIT GARDEN.

Continue to thin gradually the covering of Spruce and Yew branches on wall trees, where the fruit is set. This operation is the more necessary this year, as the leaves continue on the branches longer than usual, owing to a deficiency of sun during the few past weeks. Commence the disbudding of Peaches and Nectarines by removing a portion of the superfluous shoots now, and in a week or 10 days go over them again, and regulate them finally. After the blossoms are fairly set, advantage should be taken of a fine morning to wash the trees with the engine, for the purpose of removing decayed blossoms, and destroying the green fly. The superfluous shoots of Apricots should also be removed, and the remaining shoots carefully examined in search of the green caterpillar, which not only injures them, but also eats holes in the young fruit, and thereby causes them to gum and grow deformed, or fall off before they are stoned. Wherever these pests are observed, let them be destroyed by gently pressing the leaves in which they are lodged between the thumb and finger, after which the trees should be washed with clear water from the engine. After the fruit is set, more is to be feared from the ravages of the caterpillar than from either frosts or storms.

KITCHEN GARDEN.

Continue to make periodical sowings of Spinach once a fortnight; and Peas, Beans, and Turnips once in three weeks. Successional sowings of all salads should be made with strict regularity, and proper attention paid to preserving them from the ravages of birds and insects, as a deficient supply of these little necessaries is inexcusable after this month. If the crops of Onions, Leeks, Parsnips, Beet, Salsafy, Scorzonera, and Skirret are not yet sown, no time should be lost; and the latest period for sowing the main crop of Carrots is near at hand. A sowing of tall Kidney Beans may now be made in early localities; the early sowing of this useful vegetable not unfrequently gets cut off by late spring frosts; but when this happens the ground should be left undisturbed, as shoots will be produced from beneath the surface, which will produce a crop nearly as soon as the leaders would, if they had remained uninjured. The sooner stakes are put to rows of Peas after they are sown the better, as at this season of the year they afford a slight protection to the young plants as soon as they appear above ground. The remainder of autumn-sown Cabbages and Cauliflowers should now be transplanted.

State of the Weather near London, for the week ending April 5, 1849, as observed at the Horticultural Gardens, Chiswick.

March and April.	Moon's Age	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 30	5	29.483	29.240	52	39	40.5	S.W.	.14
Satur. . 31	6	29.607	29.580	59	34	46.5	S.	.30
Sunday . 1	7	29.524	29.448	55	40	47.5	S.W.	.12
Monday . 2	8	29.437	29.410	56	26	41.0	S.	.10
Tues. .. 3	9	29.634	29.524	58	26	42.0	S.W.	.00
Wed. .. 4	10	29.656	29.620	56	42	49.0	S.	.04
Thurs. .. 5	11	29.656	29.621	57	25	41.0	S.W.	.00
Average....		29.556	29.492	56.1	31.7	43.9		0.75

March 30—Rain; heavy showers; slight rain at night.
— 31—Clear; fine, with low white clouds; rain at night.
April 1—Rain; fine, showery.
— 2—Heavy clouds; fine in forenoon; densely clouded; rain; frosty.
— 3—Fine; cloudy throughout; frost at night.
— 4—Foggy; cloudy; rain.
— 5—Drizzly; densely clouded; clear and fine at night.
Mean temperature of the week 2 deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending April 14, 1849.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 8	56.8	36 1	46.0	8	0.30 in.	1	5	4	—	3	4	5	1
Mon 9	54.8	35.8	45.3	10	1.26	3	5	5	—	3	4	4	1
Tues 10	55.2	34.0	44.1	8	0.26	1	5	4	1	4	3	4	1
Wed. 11	55 2	35.2	45.7	12	0 61	2	4	2	1	3	7	2	2
Thurs. 12	55.4	38 0	46 7	16	0.56	—	6	3	—	2	8	1	4
Friday 13	56.1	36.0	46.0	9	0.12	3	4	1	1	1	4	6	—
Satur. 14	57.5	38.0	47.7	9	0.31	2	6	—	2	2	4	3	7

The highest temperature during the above period occurred on the 9th 1814—therm. 73 deg.; and the lowest on the 11th, 1843—therm. 22 deg.

Notices to Correspondents.

Bulbs: *Cymro.* Cape bulbs and Brasilian bulbs will not thrive in the same place. The former require a cool, well-aired greenhouse; the latter a stove. There is a great difference in the habits of the former; and what will suit one will not suit another. Most of them like pure loam.

Calceolarias: *T Steer.* Masterpiece, Attractor, Ophelia, Van Tromp, Holmesii, and Sir H. Smith.*

Camellias: *M B.* They may be transplanted with safety after they have done blooming. Two-thirds peat and one-third loam suits them best.‡

Carp and Tench: *A Subscriber* would be thankful for some information as to the best manner of feeding carp and tench. He has a pond in his garden 20 yards long, 8 yards wide, and 4 feet deep, which he intends to stock with these fish in quantity.

Flower Gardens: *Amateur.* We will give you a formal answer next week, in a leading article.

Glass: *A Gardener at Kew.* It is very proper that men should pay for all glass broken by them through carelessness; what is broken accidentally no one would make them responsible for. It is the practice to enforce this rule in the garden of the Horticultural Society, and it ought to be the rule every where. It teaches men to be careful, one of the first qualities expected in a gardener. We can give currency to no foreign harangues about imaginary rights and wrongs. The spirit of England is the spirit of justice to all parties, and it needs no appeals. Your letter is better suited to Paris and Berlin than to London.—*Anon.* We are sorry we cannot oblige you, but we cannot recommend dealers. All respectable glaziers can furnish it.—*G B N.* The sample sent is the patent rough plate.‡

Holly Hedges: *An Old Sub.* Plant them in a straight line, in a trench made for the purpose; and fill in two-thirds of the soil very loosely, then flood the trench with water, and then add the remaining third. Do not tread down. Do this in October. It may sometimes be done at Midsummer, but that season is unsafe. Disturb the balls of earth around the roots as little as possible. If the plants are bushy they may be 18 inches apart.

Horticultural Society: *A Constant Reader.* The next meeting is on April 16. Everything for the exhibition must be in the room three hours before the hour of meeting, which is 3 P.M. Address 21, Regent-street.

Insects: *Evans.* We assure you that the small black bodies on the leaves sent are not the eggs of insects. They appear to show a diseased state of the plant, resulting from improper management. We found one perfect, and 5 or 6 immature thrips. Syringing with water will, we fear, not be sufficient to dislodge these insects, as their feet are provided with a very effective clinging apparatus. Syringing with quassia, or tobacco water, might be effectual if often repeated, but the plants must be subsequently syringed with clear water. The object of the former operation is of course to make the plants unpleasant to the taste of the insects, and therefore to be effective the tobacco water must not be washed off too soon; but fumigation is the most effectual remedy, and experiments have proved that insects die very quickly in an atmosphere impregnated with the fumes arising from bruised Laurel leaves. If you can make your plant-houses sufficiently air-tight, this is the best remedy. *W.*

Kail Plants Transformed: *J G.* There seems to have been neglect somewhere. We will enquire about it. The letter was certainly received.

Lawns: *Hillside.* Apply to the machine makers. We really cannot recommend dealers.

Light Fuchsias: *H C.* The following will perhaps answer your purpose. Those marked with a * are the lightest:—*White Perfection, Delicata, *Cassandra, Delicatissima, Nymph, *Purity, *Leucantha, Acantha, Dr. Jephson, Napoleon, Venus Victrix, and Countess of Cornwallis.¶

Names of Plants: *G S.* Cytisus (or Genista) candicans. The Guimaraens Plum. The Mirabelle Plum has no resemblance to the Myrobalan. The fruit of Rubus Nutkanus possesses no merit that we know of.—*G M.* The Linaria is not Pelisseriana as you suspect; nor is it certain what it is. Seeds are indispensable if the species of this genus are to be determined accurately. It may be Mr. Babington's L. italica, or rather the doubtful L. sepium of Allman. Send *good* specimens hereafter with ripe *seed.*—*Gulielmus.* It is Grass seed, and appears to be Italian Rye-grass.—*W L S.* The common Tropæolum tricolorum.—*B F.* It is really impossible to name such shrivelled morsels. It looks like Vestia lycioides.—*W Young.* It is Ziehya villosa.—*A K.* It is not possible to name with certainty two or three flowers of Oncidiums; we presume 1 to be O. Suttoni, and 2 to be O. altissimum; of O. Phillippsianum we know nothing. 3, one of the varieties of Catasetum bicolor.—*G G.* The Eriopsis rutidobulbon of the "Botanical Magazine" is nothing whatever except E. biloba well grown.—*Ing.* Habrothamnus corymbosus, not H. fasciculatus.

Potatoes: *G H.* Pack your Potatoes when *quite ripe* in dry clay, rammed tight, and send them home in a stout wooden box in a perfectly dry part of the ship.

Rhubarb: *Spade Farmer.* Victoria Rhubarb will suit both purposes. You certainly will not obtain the different varieties true from seed.‡

Tree Rose. The price of this work is reduced to 3*s.* 6*d.* (post free), to be had at the Office of this Paper, or of any bookseller.

Misc: *B Ebbs.* Your Sycamore is a Horse-Chesnut! There are many varieties of this tree, differing in their period of flowering, as you may see in any park, Bushey for instance, where large numbers, are to be found. The same difference in leafing may be seen in every hedgerow planted with Whitethorn.—*A H.* Our correspondent who stated that he had found Epacris heteronema to be perfectly hardy with him writes from *Devonshire.* We do not know whether Muscari macrocarpum is still in cultivation or not, or where you can procure it.‡

SEEDLING FLOWERS.

Chinese Primroses: *J W.* The purple one is a fine large variety, but badly fringed. The white one is not uncommon.*

Cinerarias: *J W.* Your seedling is small, starry, and too much like many others already in cultivation.*—*R C.* Pretty but small; purple, with a white centre; texture good, but the flower is not full enough in the petals.*—*H J H.* Your seedlings are all thin; "B" alone is good in colour, they are all inferior to others now grown of the same colours.*

WHITE BELGIAN CARROT ...	per lb.	1s.3d.
LARGE YELLOW BELGIAN DO. ...	,,	1 6
LONG RED ALTRINGHAM DO. ...	,,	1 3
LONG ORANGE DO.	,,	1 0
SHORT ORANGE DO.	,,	1 3
FINE LONG RED MANGOLD WURZEL ..	,,	1 0
YELLOW AND RED GLOBE DO. ...	,,	1 0
RENDLE'S IMPERIAL SWEDE TURNIP ...	,,	1 0
SKIRVING'S PURPLE-TOP DO. ...	,,	1 0
LAING'S, MATSON'S, & ASHCROFT'S DO.	,,	1 0
PURPLE & GREEN-TOP SCOTCH YELLOW DO.	,,	0 10
DALE'S HYBRID DO.	,,	0 10
WHITE, RED, AND GREEN ROUND DO....	,,	0 6
WHITE, RED, AND GREEN GLOBE DO....	,,	0 6
WHITE, RED, AND GREEN NORFOLK DO.	,,	0 6
BEST RED AND WHITE CLOVER	,,	0 5
FINE TREFOIL	,,	0 2
LARGE GUERNSEY CATTLE PARSNIP ...	,,	1 3
LARGE DRUMHEAD CABBAGE	,,	1 6
FINE ITALIAN RYE-GRASS	per bushel	8 0
COMMON RYE-GRASS	,,	8 0
PACEY'S PERENNIAL RYE-GRASS ...	,,	6 0

With all other Agricultural Seeds at the lowest market prices.

Our Agricultural Seed List is now ready, and we shall be happy to send a copy to any one who may wish to obtain it.

Apply to WILLIAM E. RENDLE and Co.,
SEED MERCHANTS, Plymouth.

The South Devon Railway is now open to Plymouth (Laira Green), and we now enjoy Railway communication to all parts of England and Scotland, and have made arrangements with Messrs. PICKFORD and Co. *for the cheap delivery of our Goods to every Town in Great Britain. Any instance of overcharge should be immediately communicated to us, as it is our interest to see that our customers are charged at the lowest rates. Constant Steam Communication from this Port to Cork, Dublin, Glasgow, Liverpool, London, Falmouth, and most of the principal Ports in the Kingdom.*

☞ All Orders above 2*l.* will be delivered, free of Carriage, by Messrs. PICKFORD and Co., to any Station on the Great Western, Bristol, and Exeter, or South Devon Railways; or to any Town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers.

GRASS SEEDS.
CORNER OF HALF-MOON-STREET, PICCADILLY.

THOMAS GIBBS AND CO., the SEEDSMEN TO THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND, beg to inform their Agricultural friends that they have now finished cleaning their bulks of the different kinds of Grass Seeds, which are now ready for delivery. T. G. and Co. beg to call particular attention to the following, viz.

MIXTURES OF SELECTED NATURAL GRASSES for laying down land to permanent MEADOWS and PASTURES, with a proper admixture of the permanent Clovers, properly apportioned, to suit the nature of the different soils and the purposes for which they are intended.

RENOVATING MIXTURES for improving old Grass land.
FINE MIXTURES for forming garden lawns and Grass plots.
Also, Italian Rye Grass, and all other kinds of Grass seeds and Clovers.

CARROTS.
Large White Belgian Carrot,
Large field Altringham Red Carrot.
MANGOLD WURZEL.
Yellow or Orange Globe,
Long Red,
Red Globe, and Long Yellow.
TURNIPS.
Purple and Green-top Swedes,
Skirving's and Laing's Swedes,
Gibbs's Green and Red-top Yellow Hybrid,
Green, White, and Red Globe,
Green, White, and Red Tankards.
CABBAGES.
Large Drumhead Cattle Cabbage,
One thousand-headed Cattle Cabbage,
Kohl Rabi, Purple and Green kinds.
PARSNIP.
Large Cattle Parsnip.

Clovers, Saintfoin, Furze or Gorse, White Mustard, Rape, and all kinds of Agricultural, Kitchen Garden, and Flower Seeds.

THOMAS GIBBS and Co., the Seedsmen to the Royal Agricultural Society of England, corner of Half-moon-street, Piccadilly, London.

SEEDS.—MEADOW AND PASTURE GRASS SEEDS, in mixtures suited to various soils, &c., at 32*s.* per acre, allowing 2 bushels and 12 lbs. to each acre. Directions for sowing and treatment will accompany the seeds. Mixed sorts for improving old Grass Lands, 1*s.* 3*d.* per lb. Fine sorts for forming Lawns, &c., 1*s.* 4*d.* per lb.

GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address GEORGE GIBBS and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c. &c., 26, Down-street, Piccadilly, London.

AGRICULTURAL SEEDS (delivered carriage-free to London, or any Station on the Eastern Counties or Eastern Union Lines), all of the finest quality for growth and stock.

MANGOLD WURZEL, fine long red ...	per lb.	0s	9d
,, ,, Yellow Globe and Red Globe	,,	0	9
,, ,, Long Yellow	,,	1	0
WHITE SILESIAN SUGAR BEET .	,,	1	0
CARROT, large White Belgian ...	,,	1	0
,, large green-top red Altringham ...	,,	1	0
LARGE CATTLE PARSNIP	,,	1	3
TURNIP, Swedes, fine purple-top ...	,,	1	0
,, ,, Skirving's ...	,,	1	0
,, Norfolk White, Green, and Red round...	,,	0	8
,, Skirving's Improved Purple-top Scotch	,,	0	10
,, Fine Green-top Yellow Scotch . .	,,	0	10
,, Dale's Hybrid	,,	0	10
,, Yellow Tankard or Scotch Pudding ...	,,	0	10
And all other Turnips at the lowest prices.			
LARGE DRUMHEAD CATTLE CABBAGE...	,,	2	6
FINE LUCERNE	,,	0	10

GRASSES.

The best selected varieties, mixed for Permanent Pastures, suited to different descriptions of soils. Having for many years devoted considerable attention to the selection and supply of these Grasses, we are enabled to offer them with a confidence of their giving entire satisfaction. Price, per bushel, with the addition of a proportion of Clover and heavy Grasses, 10*s.*; or 30*s.* per acre of 3 bushels and 6 lbs.

THE FINEST MIXED LAWN GRASSES, 5*s.* per peck, or per lb.		1	3
Fine Pacey Rye Grass, per bushel		5	0
True Italian Rye Grass, per bushel		5	0

All other Agricultural Seeds at the lowest prices. Our Agricultural Seed List will be forwarded on application. Also prices to the trade.

BASS and BROWN, Seed Establishment, Sudbury, Suffolk.

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W. DRUMMOND & SONS, Agricultural Museum, Stirling, N.B., will furnish, free, on application, priced Lists of TURNIP and other AGRICULTURAL SEEDS.

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PERUVIAN AND BOLIVIAN GUANO ON SALE
BY THE ONLY IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WILLIAM JOSEPH MYERS AND CO., LIVERPOOL;
And by their Agents,
GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
COTESWORTH, POWELL, AND PRYOR, LONDON.

To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named Importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

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THE LONDON MANURE COMPANY beg to offer as under.

LONDON MANURE COMPANY'S CORN MANURE.
,, ,, ,, URATE. [LIME.
,, ,, ,, SUPER-PHOSPHATE OF

Peruvian Guano, direct from Importers' Stores—Fishery and Agricultural Salt—Gypsum for Clover—Soda Ash for destroying wireworm, and every other Artificial Manure.

The London Manure Company would call particular attention to their Corn Manure and Urate, the former containing a large amount of Ammonia, Phosphates, and Silicates, all so essential for corn crops, while the Urate is richer in Phosphates and other mineral substances required for roots.

Full particulars and prices forwarded on application.

EDWARD PURSER, Secretary, 40, Bridge-street, Blackfriars

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PERUVIAN GUANO, of the finest quality, direct from import warehouse.
NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SULPHURIC ACID AND COPROLITE.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of

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A Treatise on Guano, Superphosphate of Lime, &c., will be forwarded on receipt of 8 postage stamps. Free to purchasers of Guano, &c.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:

CORN AND GRASS MANURE, . .	per ton	£9	10 0
CLOVER MANURE	,,	8	0 0
TURNIP MANURE	,,	7	0 0
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The Agricultural Gazette.

SATURDAY, APRIL 7, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, April 10—Agricultural Society of England.
THURSDAY, — 12—Agricultural Imp. Society of Ireland.
TUESDAY, — 17—Agricultural Society of England.
THURSDAY, — 19—Agricultural Imp. Society of Ireland.

FARMERS' CLUB.—April 9: Claydon.—April 11. Needham Market.—April 13: Halesworth.—April 14. Peterborough.

EVERY subject—AGRICULTURE, among others—presents to the student two distinct aspects. It may be examined in its contemporaneous or in its successive character: the facts of any one moment regarding it may be collected and investigated, or the facts of successive moments may be collected and compared. It is in this way that all physical knowledge—all our acquaintance with what *is*—resolves itself into the two great divisions, natural history and natural philosophy; the one embracing all the circumstances of instant observation, and the other all the truths for whose development time is required; the former including the outward character of all objects external to a man's senses or his consciousness; the latter, the laws regulating everything which involves a change. At any one moment, if we refer only to the material world, all the qualities may be observed of form, smell, taste, weight, hardness, &c., which any object possesses, and these constitute its natural history; but by the time another moment has elapsed an entirely new set of facts has been exhibited—motion has taken place—the pendulum has oscillated—the stone has fallen—the earth itself has moved—the chemistry of Nature has been at work—the pulse has beat—life has existed; and the laws which have regulated all these processes make up the province of natural philosophy.

Now it is the peculiarity of every department of Nature which includes a succession of uniform changes, or a constant repetition of similar processes, that its natural philosophy may be deduced from its natural history without that need of observing the gradual development of its facts which obtains elsewhere. The law which regulates or describes these processes may be deduced as perfectly by one who sees them for an instant in all their stages exemplified in the many instances before him, as they can be by another who shall confine his observations to a single case, and watch the changes as they come and go with the lapse of time. The former is, indeed, in a better position than the latter for the attainment of the truth; for by averaging the many instances observed in every separate stage he obtains conclusions free from the bias of those circumstances by which each is peculiarly influenced—a bias which must mislead the man who confines his attention to one case throughout the period of its continuance.

The lessons of history—the rationale of life—the theory of those arts which in the vegetable and animal worlds are devoted to the propagation and support of life—may thus all be perfectly gathered from things as they *are*.—See how the necessarily contemporaneous observations of geological science have opened up a history whose periods defy computation: specimens have been chiselled from their beds on one day and placed side by side on one table, from which the conditions have been inferred that existed at periods ages apart.* And just so, the facts of Society, as it *now* exists in the various countries of the globe, if one may be supposed intelligent enough to connect them, will teach him all that History can; and the contemporaneous facts of life as it presents itself *now* in every stage and aspect, must tell him quite as much as long experience. We cannot, indeed, say that an instant sight of farming, however full it be, is enough, because in agriculture every case involves at least a twelvemonth's process; but we may say here, also, that the full statement of one year's proceedings in many localities will have all the value which the most lengthened experience in one could possess; indeed, that the former would be the better of the two—that the theory of agriculture could be better built out of the former—that it would better furnish the history of agricultural improvement and the causes of agricultural distress—that *the full statistics of the food manufacture of a sufficiently large district* would teach the best lessons towards both the improvement of its practice and the correction of its theory. that, in short, the natural history of the subject would thoroughly furnish the philosophy of it.

And having thus brought this illustration to its intended application, we might cease.—What an anomalous thing it appears to the intelligent observer that the means so competent to advance the art and improve the business of agriculture have been almost wholly neglected—that Government, who might be supposed so far interested as thus to aid what is confessedly the first interest in any nation, have abandoned the attempt to pass a measure for the collection of agricultural statistics!—But we have one word more to say: The failure of public measures does not crush private efforts; and by the kindness of our correspondents we are in possession of facts, both of a contemporaneous and successive character, connected with this subject, which we shall be glad to place before our readers. We have the history of a farm in one or two instances for many successive years, and we have the statements of many farms for one year; and the examination of the bearings of both upon the theory and practice of farming, will, we have little doubt, be deemed neither unmstructive nor uninteresting.

THE CONDITION OF IRELAND.

TO THE RIGHT HON. LORD JOHN RUSSELL.—MY LORD,—I am among those who have hope for Ireland. And this is my hope—that in two or three years those who survive the crisis, and are able to float through the surge, will see Ireland's condition wonderfully changed, and her pauperism nearly removed. There are two means by which this will be brought to pass.

1st. By the salvation of the poor from pauperism.

2d. By the destruction of the poor in pauperism.

Under Providence, there are three parties concerned in the manner in which this change shall be effected, by saving or by destroying. 1. The poor. 2. The rate-payers (including principally the proprietors of land). 3. The Government.

It lies with the Government to render it possible for the other two parties to avail themselves of their position and advantages. For the law, as at present constituted, renders it impossible in most cases. The comparative condition of Clare with Donegal (Counties), and of Fintown with the other electoral divisions in Glenties Union, proves that there are not insuperable physical difficulties in the way of saving the poor (by means which the rate-payers and the poorer classes in union may avail themselves of, unless there be artificial difficulties and hindrances made or continued by law). Clare has a much higher valuation in proportion to population than Donegal; yet Clare had 33 per cent. of her population receiving relief, while Donegal had only 4½ per cent. Fintown division has a population in proportion to valuation equal to the average of the

* "True,"—the reader may say—"but the specimens from which you draw the inferences, though *obtained* together are certainly not contemporaneous—any more, indeed, than coins or MSS. of various dates recovered all at once." Nevertheless, the illustration may stand, to show the far extending value of contemporaneous *observation*.

Glenties Union (the heaviest population of any union in Ireland); yet Fintown has, with a rate of 1*s.* in 20*s.*, cleared her expenses for the year: while, according to the returns, other divisions in the same union have consumed more than the amount of their whole year's valuation (in the year, and sometimes in the half-year!)

The prominent causes of this difference I have, in evidence before Parliamentary Committees, shown to be the unfair and impolitic manner in which those who exert themselves are made responsible, not only for the past, but future neglect or mismanagement of other persons' properties. Thus swamping every boat that tries to float in the poorer districts, without saving the rest; and encouraging neglect and continued mismanagement, as well as wholesale clearances, as those who enact these things can now throw their cost mainly upon their neighbours. Bad as things are, there is still hope—still time to save multitudes. Alas! multitudes are already sacrificed, many of whom I solemnly testify I (for one) could and would have saved, were it not for the absolute prohibition, the inextricable hindrances imposed upon me by the present law. I am a Donegal proprietor, and the proprietor of the whole electoral division of Fintown (the places to which I have alluded above). The result of the present law is, that having up to 10*s.* 6*d.* in the pound to pay for poor-rates (upon an imaginary valuation), while much of my improved land lies tenantless and idle on account of the dread of these rates, I am obliged to cease my works, and send my labourers with wives and children to perish—and they do perish. This is the case where I have only portions of electoral or rating divisions. And in Glenties, that most wretched union, where I had succeeded in saving my poor hitherto, the new plan of rate in aid will impose a rate of 2*s.* 6*d.* in the pound additional for the aid of those around me, who (with equal average advantages and disadvantages as my division) are consumed with pauperism.

A rate in aid! It is a rate in destruction of industry and of industrious persons, and in aid of the contrary, else I had never been an opposer of it. I do not say that the alterations in the Poor-law which I have suggested in evidence will save all the poor from pauperism; but I do say it would save many thousands, and that without impeding the operation of any other arrangements which might be found necessary. The chief part of my plan is to render effective those clauses of the existing poor law which empower a proprietor, with the Poor-law Commissioners' co operation, to render his property a separate rating division. This is quite ineffectual, as it now stands; and, if effectual, would be injurious in some respects, unless so guarded as to prevent the proprietor of a thinly-peopled property from availing himself of it, without having his share of the present (not future) pauperism charged upon him. The rendering effectual these clauses would enable the Poor-law to adapt itself to those localities where smaller areas of rating are necessary, without interfering with the rest of the country.

And as it requires the application and exertion of proprietors to obtain the advantage, it would hence come into operation where the proprietor is determined to relieve his property by improving the condition of the poor on it. This would be his only means of relieving himself; whereas now the only sure means is the destruction of the poor upon the property. And to this alternative, after years of successful exertion (only rendered abortive by the legal misapplication of the principle of Poor-laws) I shall now be reduced, if the present system continues, and not I only, but those also who are in similar circumstances. Awful as is the prospect—my only remaining resource will be to desert my property for a time; and as a naked fallow returns no actual profit, but is cleared of weeds by the operation of harrowing and exposure, so will the land I leave be perhaps quite unprofitable for a time. The Poor-law will do the harrowing, &c., and the weeds will perish—the paupers will be no more, and their pauperism will be gone with them! I know there are hearts hard enough to find satisfaction in this idea, and to express regret that it has been so long in being worked out. May God save us from such hardness!

I conceive it my duty, my Lord, to address you thus; and through the same means to lay this statement before the legislature and the public. I remain, your Lordship's obedient servant, *John Hamilton, of St. Ernan's, Donegal; 21, Queen-square, Bloomsbury, March* 28. [We beg to refer to pages 153 and 169 for a statement of Mr. Hamilton's successful efforts.]

BOX FEEDING.

When I undertook to expose this modern novelty of muck making and cattle boxing, I was aware that I was entering the den of the cockatrice; or that I should have to contend with an enemy as formidable as the one who had stolen the oxen from the herd of the invincible Hercules, and "traxerat aversos Cacus in antra feros."

"Cacus, Aventina timor atque infamia sylvæ,
Non leve finitimis hospitibusque malum.
Dira viro facies; vires pro corpore; corpus
Grande * * *
Occupat, Alcidæ, adductaque clava trinodis
Ille (Cacus) cadit, mixtosque vomit cum sanguine fumos,
Et lato moriens pectore plangit humum."

Thus fell the ox stealer, beating the ground with his own breast; or, Anglice, biting the dust. The first box-feeder of whom we have any record was one Augias or Augeas, who lived upwards of 3000 years since, and who is reported to have kept 3000 oxen in his filthy boxes, but which the above hero cleansed out by the turning of a river through them, and as far as we know, the poor beasts were kept clean for ever afterwards.

The first box-feeder of modern times, for there is nothing new under the sun, was Mr. Curwen, some years M P. for Cumberland, and he has been followed by Mr. Warnes, of Norfolk; but Mr. Curwen's boxes, which I inspected about 40 years since, were all above ground, and were kept as scrupulously clean as Mr. Warnes's and his disciples' are filthy. In fact, Curwen followed common sense and nature, but the others follow the example of old Augeas. The custom of keeping cattle clean commenced about 2750 years since, but as the accounts we have of this furnish matters of deep reflection and instruction also, I shall not injure the history of it by a notice necessarily too brief on the present occasion; but I observe, in passing, that I referred to it in a former number, when I asked the classical reader to turn to Pliny, it being then, as it also is now, my intention to make use of it more amply on another day.

With this exordium I turn to the subject more immediately under discussion at the present time. It is reported that a Duke of Argyle, when he commanded a regiment, always set up a clean post in his camp for the soldiers who had the itch to rub their backs against. In the like manner the modern box-feeders mitigate and relieve their torments by rubbing and scrubbing themselves against the Rev. Geo. Wilkins; but he takes this opportunity of informing them that they are entirely mistaken if they take him for a post; it is true he is not a Claviger, nor does he fight with *adducta clava trinodis*, but he has truth, nature, science, men of education, and men of wisdom all on his side; and although, gentle reader, *quotiens box-feeders proflant spirare Typhoea oredas*, they will quickly fall together, become a mere matter of history, a memento of the folly of the age, as the wise citizens of London are, who, as Hume informs us, some centuries past, when a fanatic had prophesied that London on a certain day would be swallowed up by an earthquake brought a cart-load of boxes of pills to preserve them from the impending ruin.

But since I last wrote on this subject five box-feeders have been scrubbing themselves very earnestly and furiously against me, whose sufferings I greatly regret; but I must, nevertheless, request them not to rub quite so hard, and to rub one at a time, and, above all, I ask gentlemen of education, if they must rub and cannot contain themselves without, to rub in better company, or by themselves alone. If Mr. Wilkins be wrong—if, I repeat, but merely for argument's sake, he be wrong—he is enabled to challenge all the box-feeders in England to procure a single professor of chemistry, a single veterinary surgeon of eminence, or a single physician, who is not wrong with him. Mr. Wilkins is unwilling to aim at others such paltry weapons as box-feeders aim at him; but he challenges them to produce the name of a single philosopher in Europe, renowned for his knowledge and science, who will come forward, and, in his own name, publicly advocate this novel system of treating cattle.

But what are the arguments made use of in defence of these dung-pits? A week or two since, Sir C. Burrell, a gentleman to whom I wish courteously to refer, writes that he has 21 such boxes, all full of cattle, and that he fattens the whole, on an average of each year, in 13 weeks! If that can be done in Sussex, I have friends elsewhere who feed to a much larger extent, and have done so for very many years, and who say such feats can be accomplished nowhere else. And then follows a Mr. Fox, who, like a Mr. Fowler in a former Number, tells us that he places any kind of rubbish in his boxes, and it all turns in them to manure! Nonsense! consult Liebig and Professor Johnston, or any other man of science, on these matters, and hear what he will tell you; small beer is not converted into ale by being put into stinking casks, he will say, and rubbish is but rubbish wherever it may be.

But next follows, in last week's Number, a man who signs himself "A Farmer," and who insinuates that Mr. Wilkins is blind. "Has he never seen a lot of young bullocks exposed to all the inclemency of the weather?" &c. "Has he never seen a stream of liquid manure running out of a straw-yard into the nearest pond?" "Has he never seen a bullock tied up by the neck?" These are the "Farmer's" interrogatories. And now for my reply; for the hundredth time, I repeat, I have a hundred times written with all the force I have been able against all those barbarities. The questions at issue are, as "A Farmer" ought to know, whether the box-feeders' "compound of cold water, Linseed, Turnip-tops, and chopped pea-straw," &c., is the best and cheapest food for fattening cattle; and whether keeping them perfectly clean in well-made and well-ventilated stalls, or other cattle-houses free from currents of air, be not better than keeping them for three months, or more, together on beds of their own excrements. These, I repeat, are the questions; and to help you to solve them, let me inform you that an ox voids upwards of 100 gallons, or 150 in some cases, of liquid excrement in a month, or from 1200 to 1500 gallons a year. You will find therefore that Sir C. Burrell had every three months, by his own showing, under his 21 beasts full 7500 gallons of urine, besides solid excrements, in his covered-over cattle boxes. This plan is to be defended, for it is the plan I am writing against. But in the wake of "A Farmer" there is another anonymous scribe. Gentlemen sometimes write anonymously, as "Talpa" and "Falcon" do, but I know they would cut off their right hands rather than attack private character under their disguises; like honourable men, had they to express a hint against an adversary, they would at once sign their real names to their papers. But "Inquirer" charges Mr. Wilkins with publishing a falsehood; he laments his perverted talents, also, and pities his "pitiful misrepresentations." Is that true, "Inquirer"? *Do* you pity me?

The charge against me is that I wrote that Mr. Warnes's heifer increased in value from June to December, 6*l.* 12*s.* "Inquirer" represents this as untrue, and writes that the heifer increased in value 10*l.*, or, that I may make no mistake, I give his own words. "The animal increased in value in the last six months 10*l.*, and not 6*l.* 12*s.*, as Mr. Wilkins states." Now be so kind as to turn to Mr. Warnes's own article, as published in page 59, from which I made the extract. The article is dated by Mr. Warnes, December 16, 1848. "The heifer is considered to weigh," he writes, "70 stones of 14 lbs. The weight of the heifer in June," he writes, "was estimated at 54 stones of 14 lbs.; now at 70." These are Mr. Warnes's own words. Now let us set a schoolboy to work: "Tom, subtract 54 from 70, and tell us the difference." "Sixteen, sir." "Now work this sum: What do 16 stones of beef come to at 8*s.* 3*d.* a stone?" Answer, 6*l.* 12*s.* Now let it be remembered, in order to give every advantage to the box-feeders, I took the larger of two prices given by Mr. Warnes, that is, 8*s.* 3*d.* a stone, his lesser being but 7*s.*; had I taken the latter, the sum would have been exactly 5*l.* 12*s.* instead of 6*l.* 12*s.* Now Mr. Box-feeder, on which side is the falsehood? on my side or on yours? and which of us deserves the "pity?" But a gentleman brings up the rear who signs himself "J. Simpson," he represents my articles as an annoyance to him; then, Mr. Simpson, why do you read them. Should you write every week, you will not annoy me, for I generally look at the foot of each article, and should I see "J. Simpson" there, I pass on to others, where I am sure to find valuable information, not having time or inclination to read everything I may meet with.

But I am urged again and again to visit the boxes. I reply, that I have visited several, and I cannot follow every will-o'-the-wisp into his dung-bog. But I must not forget to call gentlemen to remembrance, that I some time since published in the *Agricultural Gazette* accounts of visits to four homesteads where this abomination was in operation. The two former I never wish to refer to again, as I greatly respect the owners of them; in one of the latter I stated several beasts had suddenly died of diseased lungs; yesterday, the owner of the other, that is the 4th, called upon me and told me that three of his oxen had lately died of diseased lungs, and that he was thinking of insuring all the rest he had.

And now let me add, that for several weeks, knowing the subject was a most important one, and not liking to rely on my own judgment concerning it, I have been making most extensive inquiries; and I add, that the information I have received, and most kindly, from many gentlemen of eminence as men of science, as well as from feeders to a very great extent, and from butchers, is so extensive, and I may say so voluminous, that I know not how to lay before the readers of the *Agricultural Gazette* a part without injury to the whole. But the result shall be made known, if the editor will kindly publish it for me, however annoying it may be to the box-feeders. *George Wilkins.* [We must add, that we hope our correspondent will condense the facts he possesses as much as possible; the discussion has already been of undue length.]

THE RURAL POOR.

I hoped that after making the "*amende honorable*" anent missionary societies, and other subjects broached in my communication respecting the state of the rural poor in the midland counties, that all would have been forgiven and forgotten. But such, I am sorry to say, is not the case, for another knight-errant, under the signature of "L.," has couched his lance and run full tilt, in complaint of my Ishmaelitish spirit, saying that my views of morality are as low as those of some farmer who had been "victimised," and his stomach soured by large quantities of roasted Turnip seed. I find, on reading "L.'s" long epistle, that he has got my sayings strangely mixed up with "the barrack-room sentiments" and "forecastle philosophy" of men of war, although I never

"Set a squadron in the field,
Nor the division of a battle know
More than a spinster."

Assure him also that I am more used to the pruning-hook than the pen, and therefore hope that imperfections in diction or grammar will be taken in a charitable spirit. "L." says, "the tone used in reference to missionary enterprises and private benevolence indicate clearly the general views of these writers ('S. S.' and 'B. B.') on social topics; common enough after-dinner views in certain circles."—"What do such writers as these want to be at? Is the cat-o'-nine-tails to regenerate our peasants, and the discipline of the lash and black hole, now that they are well-nigh abolished from 'the services,' to be introduced into our hamlets and villages?" Now I will tell "L." what I want to be at. I want to see a better spirit of independence arise among the rural poor, not that cringing dependence on active benevolence and the workhouse! I want more thrift and self-denial, so as to afford a small portion of their earnings to educate their offspring. Instead of the cat-o'-nine-tails and the black hole, I want to see a good system of parochial education introduced into our hamlets and villages. I want the schoolmaster to take the place of the rural policeman.

I should not be the least afraid of being the master of the working man who penned the sensible letter in a late number of the *Gazette* on the social wants of his order; he clearly states the debasing tendency of the present state of things in the rural districts of happy England, and, to my thinking, would make a good and trustworthy servant. "L," in his allusion to the cultivation and "root pruning" of the social tree is again unfortunate, for he says, "your practical man would how off the whole at once, while the more experienced and thoughtful cultivator will try a little judicious dressing and pruning; not of the branches only, but of the roots also. Such cultivators as 'S. S.' and 'B. B.' will not see how necessary it is to go to the root of the matter in search of health for these branches of the social tree." Now, as the "social tree" seems to require the same sort of treatment as some of our finer sorts of fruit trees when planted on bad subsoils, I believe there are few cultivators able to grapple with the question with more success than myself, for I have been a root-pruner for many years, and never cut down or discarded a tree; if a bad sort or produce, I graft it with a better. I likewise find the nearer the roots are to the surface, the less likelier the branches are to canker or to want pruning. After all, I believe that our demoralising system of poor-laws is the bad subsoil that the social tree has to struggle in.

After denying the worthlessness and ingratitude of the poor, "L." says, "I must have had ten times the experience among labouring and poor men which any man whose life has been spent in the army and navy can have had, and I assert that the labouring man of England and Ireland, and above all of Scotland, is not the abject, debased, worthless wretch, described by 'S. S.' and 'B. B.'" Now, whatever "L.'s" position in life may be, I likewise can assert that my experience of the labouring classes both in England and Scotland will bear a comparison; for I have laboured as hard in one portion of my life as any man could have done, and mixed with the poor of every grade, sharing their sympathy and respect. If "L." had only perused and quoted my communication with candour, he must have seen that I did not describe all agricultural labourers as worthless and debased; I have no doubt but that the English peasant would, with the same advantages, become as moral and industrious as the Scottish, and the whole tendency of my remarks was, to arouse the wealthy classes to these advantages. I have had a long acquaintance with the labouring poor in some of the rural districts in Scotland, and have marked with pride the spirit of independence that once reigned amongst them. No involuntary poor-law was needed, for it was felt as a disgrace not to support an aged or infirm relative; and perish the poor-law that destroys or deadens that feeling. *B. B., Worksop.*

I think "S. S." tells some unpalatable truths about the poor that cannot be gainsaid or denied. It would be too long and complicated a story to trace all, or even a moiety of the causes that have operated to bring the rural labouring population to their present level in the scale of humanity. "S. S." says, "as a class they are no credit to our civil and religious institutions." This is an undoubted fact, dispute it who may; but after drawing a picture of the state of things, sad enough to contemplate, he adds, "the cleverest charlatans of the day tell us that education will remedy this state of things, forgetting that the ratio of crime is as great in the class that can read, as in the totally unlettered." Now I beg to remind him that the mere ability to read and write is not education, but only the means by which it is attained; but I must contend too that if education of a right stamp pervaded the mass of our rural population, there would, in all probability, be fewer hungry children, and adults too, to feed. The kind of education formerly (and I hope still) prevalent in Scotland, which tended to form such characters as Burns's Cotter exhibits, and which the "Scotch Farmer" alludes to in your columns, (Jan. 15,) is the thing most likely to tell upon our rural poor; but what then? those who are striving to impart it are denounced by many of our would-be "liberals" as bigots and fanatics, and by other parties as heretics and schismatics, and "enemies to the institutions of their country!" "S. S.," says "an unwise poor-law has aggravated poverty, by inviting to idleness and waste; and that rampant pauperism has been superinduced by a mischievous sympathy, which has exaggerated the rights of the poor and the duties of the rich." These are hard words, but they are too true. I attribute a vast amount of the prevalent evils to the principle of compulsory assessment, and consequent legal sustenance.

On the whole, from a somewhat protracted period of observation of the character, condition, and circumstances, of our rural labouring population, I feel a thorough conviction it results (generically) from two causes, namely, defective education or sheer ignorance, and compulsory sustenance; these acting and reacting on each other. There is no moral restraint on the indulgence of the natural animal propensities, and there being no stimulus or inducement to self-reliance, youthful and improvident marriages are contracted, numerous families follow, the parents of whom hardly ever entertained the idea that it was their duty to maintain them themselves; so that the country is peopled by a race degraded into a semi-mendicancy, and outnumbering the means of profitable employment. I could adduce some lamentable examples, of how such results are brought about, but forbear, and only remark further, that though I have mentioned two generic causes as the root of the evils we lament, there are many other collateral ones connected, that have aggravated the evil. I name, too the mal-administration of the old poor-law, and a morbid sort of mistaken and undiscriminating charity. These I only name, and assure you I write not this in a hard-hearted feeling for the poor, who, however degraded, vicious, or ignorant, are objects of the deepest compassion. Your correspondent, the "Scotch Farmer," justly attributes the superiority of the Scottish labourer of former days to his being imbued with the principles of the Holy Scriptures. I quite agree with him in this. *Quercus, Epsom.*

Home Correspondence.

Box-feeding.—A "Practical Farmer" says that he keeps his cattle dry and sweet in their boxes by adding 20 lbs. of straw every day. If that keeps the stock really dry and clean, I suspect that a considerable part of the liquid manure at least must escape into the earth or be evaporated. If the former, it is lost; if the latter, the eyes and lungs of the animals have the benefit of it. My reasons are these: Boussingault says that the solid excretions of a cow in 24 hours were 63 lbs. 7 oz. nearly, and the fluid excretions (exclusive of the milk), 8200 grammes, or 18 lbs. 5 oz. nearly. Now I humbly conceive, that if 63 lbs. 7 oz. of the solid, and 18 lbs. 5 oz., or somewhat more than 7 quarts of the fluid, were carefully mixed up with 20 lbs. of straw, the compound would be neither dry nor sweet. But perhaps I shall be told that no such mixture is ever made, nor intended to be made, but that alternate layers will be deposited. I am not disposed to deny that the layer of straw may possibly be laid on so thick in proportion to the layer of dung, that nothing offensive can be seen or smelt, but in that case I suspect that the contents of the box would not be much better than the pounded straw which I see occupying the open yards in this arable country, and I believe that it would be much better husbandry to put a greater proportion of the straw into the mouths of the cattle, accompanied with roots, and daily to remove the richer mixture, made with the dung and the less straw, into an appropriate place to receive it. So much depends on the proportion of the straw, that circumstances may render either practice preferable, as when there is a superfluity of straw, and little stock to eat it. On the other hand, I have no doubt that the discussions of the Rev. George Wilkins will have called the attention of many farmers to the state of their boxes, who had blindly adopted a precept without examination as to its effects, and that many will have discovered that, where they have plenty of roots and stock, and plenty of fattening materials, it will better answer their purpose to make richer manure and remove it from the beasts, and eat more straw. *Hantoniensis.*

Malt Duty Free as Food.—The subjoined is a proposal of a plan for allowing the use of malt duty free for feeding and fattening cattle. Many agriculturists will consider that advocating the present plan will injure the cause of total repeal, but so numerous, powerful, and influential are the parties interested in keeping up a sufficient revenue without any increase of the property tax, that there is no chance of obtaining that, at this present time; therefore, would it not be wise to endeavour to get that which to them would be nearly as advantageous for feeding and fattening purposes as the total repeal, which there is no hope of obtaining this session. Now, admitting that the total repeal cannot, or will not take place, what stronger reason can Government advance against the following plan, than that frauds may be committed in private and public brewing; but the article that would be substituted for Barley malt is too bulky to be used largely, without certainty of detection, as servants must be cognisant of its use; and can such a trifling reason stand in the way of a measure of such immense importance to the farmers and consumers of butchers' meat? At first sight it may appear that the growers of inferior or damaged Barley will still be unable to make use of their crop with advantage for feeding or fattening purposes; but not so; for 5 pecks of Oat malt, or 1 bushel of any leguminous or pulse malt, mixed with 3 or 4 bushels of coarsely ground or bruised Barley, with sufficient water, and kept at from 120° to 150° of heat, will convert the Barley in three or four hours' time to that state in which the wort and grains are in a mash-tub just previous to drawing off the wort when brewing, and with less trouble and expense, certainly not more, than is requisite in making the celebrated Linseed compound, as the mixture only requires to be kept at a heat between 120° and 150°, as a higher temperature, chemists tell us, would interfere with the sweetening process. Although the writer of this has not tried the effect of pulse malt in sweetening Barley in the mash tub, there can be no doubt whatever but the *diastase* of pulse malt will act on the starch of the Barley, the same as if Barley malt was made use of, and to the effect of that he can speak from experience, having tried it in brewing all the beer used on the farm for the last two years, in the proportion of 1 bushel of malt to 3½ of Barley, instead of 4 bushels of malt, with satisfaction to himself and the labourers too, who now get more than could be afforded them before. Therefore, if any quality of Barley was thus treated with Oat or pulse malt, and then given to cattle, mixed with cut chaff, it would make a most savoury and fattening mixture. As for the Oat or Pulse malt, that might be given to cattle, horses, or sheep, wet or dry, at the discretion of the feeder. In truth there would be as little danger of fraud by the use of the duty-free malt in brewing, as there is now of farmers making their own malt secretly; it is never done, the danger of detection is too great. *Plan, &c.*—1. To allow any kind of grain or corn, except Barley, to be made into malt for the use of cattle, duty free. 2. For the protection of the revenue, if considered necessary, such malt not to be made at any malt-house where Barley is malted. 3. To allow it to be made on any farm, or any place where there is a kiln, upon giving — hours' notice to the Excise before it is put upon the kiln, that they may survey the premises while the process is going on. 4. Under a heavy penalty, no malt except Barley malt, to be used for brewing beer, in public or private brewing, and the same penalty if made use of in any distillery. 5. A penalty for public brewers or distillers to have any other kind of malt, except Barley-malt, upon their premises. Such a measure would cause a large increase in the growth of pulse crops on those lands which are not adapted for the growth of Barley for malting purposes, thereby leaving that description of land in much better condition for more frequently growing Wheat. *A Tenant Farmer.*

Implements for Small Farmers.—In the *Gazette* of March 3d, I observed that, at a meeting of the Council of the Royal Agricultural Society, Sir C. Lemon, Bart., M.P., called attention to the propriety of offering suitable prizes for implements of a size smaller than those in general use; which, though of the greatest excellence in themselves, are yet too large and too costly for the occupiers of small holdings. As a small, though a freehold farmer, I am able to speak pointedly to the importance of this suggestion. All expensive improvements are out of the reach of the farmers of small means; and it is therefore only by the reduction of our agricultural inventions to their smallest competent scales, whether of size or price, that the majority of those engaged in husbandry can hope to share the advantages which at present belong too exclusively to wealth. And the class in question, being both numerous and deserving, is entitled to thus much consideration. Individually, I have had superior opportunities for the selection of the implements necessary upon my farm, and subsequently, trial ample enough to determine their practical value. Perhaps a statement of my experience in these respects may be of use to the "small farmer." I should say that any prices above those mentioned, at once stop the use of the most improved implements, except among the rich, and I am writing for the poor. I would not, however, be understood as insinuating any reflection upon machinists generally; I am only speaking to the wants of a particular class, and here I am a competent judge. 1. An iron plough, got up in a plain manner and fitted with wheels, from 3*l.* to 4*l.*, according to soil. In my own case I prefer Wilkie's and Finlayson's patterns to any of the varieties at present in fashion, slightly modified, however, to suit my particular circumstances. 2. Wilkie's parallel-movement scuffle, wrought-iron, 7-tined, 2 sets of tines, for 4 horses, 12*l.* Wilkie, Uddingston, Glasgow. 3. A 3-row bowl drill, variable to a sufficient extent, and within the power of one horse. A man, a boy, and horse, will do three acres a day with it; with change of horses, more. Two sets of bowls or cups, one for Wheat, Oats, Barley, the other for Beans and Peas. This excellent little machine is of the simplest possible, though of the most improved form, and not at all likely to get out of repair. Price, 5*l.* Hemming, Dunnington, 3 miles from Alcester, 7 miles from Evesham, Worcestershire. 4. A chaff-engine, in my own opinion superior to Cornes', as being equally efficient and far less elaborate. Price, 4*l.* 4*s.* Nutting, Smithfield, Birmingham. 5. For 1-horse harrows, Howard's, of Bedford. 6. A 2-horse harvest-cart, constructed by myself, somewhat on the model of the one figured in the 5th volume of the Prize Essays of the Highland and Agricultural Society of Scotland, year 1837, page 395. This I prefer to Hannam's admirable cart, as simpler, and, I think, much cheaper, his costing 16*l.* (!), mine from 10*l.* to 12*l.* new. Got up, however, at home, in the way common among small farmers, much less; with an old pair of wheels, bottom, sides, an ash pole slit down, &c., and well gas-tarred, 6*l.* or 8*l.* All these are of eminently simple make; they are very neat in appearance, most efficient in work, and reasonable enough in cost. Our agricultural mechanics generally, I think, exhibit too much of what we familiarly term knick-knackerie. I wish I could persuade them to study plain construction more than they have hitherto done, and to remember, that touching any implement, the only enquiry really necessary is, "What will it do and cost?" We cannot expect any great extension of sale for their many skilful inventions, unless by a reduction in their price; and we should do well to bear in mind that the price of a fashionable drill is, in thousands of instances, a half year's income. The changing times too will lessen the number of agricultural amateurs, and enforce upon the farming world an unwilling economy. And a saving is made nowhere so readily as in this direction; in times of pressure we make the old implements do, or at all events only to supply wear and tear—so that on every account lowness of charge seems desirable; and I am sure that in the long run the mechanic would find it his interest to abandon all mere novelties, and to construct the really necessary implements at a third and in some instances at a half less money than he at present charges. In conclusion, I shall believe that he can do this and yet live by his business; but to do it, he must take as his motto the simple but expressive words efficiency and sufficiency, and supply the result at the lowest possible cost price. I am, I should add, induced to make these few remarks,

not so much with a view to recommend any particular implement, as of noticing Sir C. Lemon's suggestion, the principle of which is so admirable, and attention to which would be productive of so much benefit. The addition to his statements of a lower scale of prices than he has mentioned, is all left me to do; and if I shall succeed in carrying thus much, I shall be well rewarded in the satisfaction that others, perhaps poorer than myself, may command those various appliances, the possession of which probably constitutes the main difference between them and myself. Meanwhile, I trust that this fugitive communication may answer its intention in directing notice to the existence of excellent machines at such low prices as those I have stated, and that in consequence, the whole question of size and price may be fully investigated to the manifest advantage of all occupied in the cultivation of the soil. *J. B., Worcestershire.*

Irish Waste Land Improvement.—Humanity, self-interest, policy, and justice, require that some enlarged and comprehensive measure should be passed without loss of time for the amelioration of the condition of the lower Irish. This measure can only be found in the improvement of their waste lands. Objections may be made, and great ones no doubt there are, to Government taking a prominent part in such a proceeding. Difficulties there may be, and these no small ones, in carrying it into execution; but it is no common case, the emergency is of no ordinary description—these objections, these difficulties should be encountered. There are always objections to Government becoming landed proprietors; prices are sure to rise in the market; abuses, over which there is no control, spring up in every direction, a larger share is created of what are usually denominated jobs. Besides this, the instant Government comes into the market, all the loose, idle characters, who are not disposed to gain a livelihood by industrious or honest means, press themselves into the crowd to obtain a portion of the Government money with little trouble to themselves: this injurious contingency was strikingly exhibited in the lavish expenditure that was going on the first year of the famine. People of all descriptions, whether able-bodied or infirm, with employment or indigent, left their several callings, deserted their homes, sought no other means of obtaining subsistence, except by being employed on useless works at the expense of the public. But let it be considered that this was a very sudden and difficult emergency, brought about by a failure quite unlooked for, against which no foresight could have provided, and for which the most that could be done was to ward off or diminish the starvation of thousands. It may well be supposed that the injurious effects arising from the distribution of this indiscriminate relief, and the supply of this extensive labour fund, may have deterred the Government from entering upon any undertaking which is likely to be productive of similar evils. Yet it may be not saying too much to allege that the cultivation of the waste lands may not only be put upon such a footing as to be free from the evils mentioned, but to promote good order and industry; and only to give adequate wages for work performed. A proof of this may be adduced in one of the Government measures themselves. Captain Cragie was appointed to superintend the Government works in the north of Scotland the year of the great famine. A labour test was established. The moment this was known, crowds flocked in to get a share of the Government money. The fisheries were abandoned, all other work was neglected, and the most lavish expenditure took place. The year following a destitution test was substituted for the other. This worked well. None were placed upon it but those who were reported to be actually destitute, and who could perform a good day's work: these were employed at moderate wages, and were found to maintain themselves and their families by their industry, and to perform good service. Now it is well known that the improvement of moss land offers advantages greater than any other, and at the same time free from the abuses which have already been named. Most of the preliminary works may be done by the piece, and where this is easy and practicable, there is no more danger in the Government or a company engaging in an undertaking of this kind than there is in any other spirited individual. Lord Cloncurry, who is well conversant with the subject, has rightly observed in one of his addresses to the public, that it is impossible that the bogs in Ireland can be improved to any extent by individuals. Here is a large mass of condensed matter, compounded of decayed vegetables and stagnant water, causing rottenness and sterility, extending perhaps for a space of 50 miles. How can any individual contend against such an antidote to fertility? An immense water-course might have in the first instance to be carried through the very bowels of the whole bog as an outlet for the accumulation of the watery ingredients into some adjoining brook or river. The powers to effect this could only be obtained by an act of Parliament. But what hinders the Government from undertaking this preliminary proceeding? The whole might be done by task-work; any practical man knows what price should be given, according to the wages going, for removing a cubic foot of earth. A destitution test might be established the same as in Scotland. Certain able-bodied paupers might be selected by the Boards of the different unions; these and these only might be employed. The formation of the different ditches for enclosures might be made in the same manner. After those preparatory proceedings had been completed, there cannot be a question but that companies might be formed who would carry on the ulterior plan of improvement. Or, if this were not the case, a certain quantity of moss land might be attached to each of the unions, when practicable; and the work might be carried on under the superintendence of a proper Board. One misfortune in matters of this kind has been the constitution of the Board of Works. A military engineer has been put at its head, who might have done well in blowing up the gates of Badajoz when required, but who might know nothing whatever of raising a crop of Turnips or any agricultural work. Under such management, any scheme of improvement must fail, not from any fault in the thing itself, but from the manner in which it is conducted. If Mr. Blacker was to have the management of an undertaking of this kind, or some such person as Mr. Reid, who went over to improve a bog of Mr. Featherstonehaugh, in Ireland, the result could not be for a moment doubtful. That failures have existed and will exist, no one will dispute. The celebrated Mr. Roscoe undertook to improve a large tract on Chat Moss, and was ruined by it. How was it likely to be otherwise? How could it be supposed that a book-worm seated amongst his Elzevirs at Liverpool, and dreaming of Lorenzo the magnificent, should produce any very magnificent performance in moss husbandry? He wrote well on the theory of moss formations; he practised ill in bringing these crude masses into anything like a profitable condition. If a single individual like Mr. W. Frome should have succeeded in a matter of this kind, why should not others with the same means, or a company, or Government? The pauper population in Ireland is reckoned at least from 2 to 3 millions—work is wanted for more than 500,000 persons—where is this to be met with? Will the petty measures now carrying on give it? Can the landlords so harassed and broken down with rates find it? The present land will not suffice; fresh land, and to a large extent, must be brought into play. That alone can be a parallel for existing ill; it is due to humanity; it is equally due to our own interests, to the prosperity and peace of Ireland, to our welfare as a great empire amongst the actions of the world. *Law Rawstorne, Penwortham, Preston.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A monthly Council was held at the Society's House, in Hanover-square, on Tuesday last, the 3d of April. The following members of Council and Governors were present: The Earl of Chichester, President, in the chair; Earl of Ducie; Hon. Captain Dudley Pelham, R.N.; Sir Thos. Dyke Acland, Bart., M.P.; Sir John V. B Johnstone, Bart., M.P., Sir Robert Price, Bart., M.P.; Mr. Raymond Barker, Mr. Barnett, Mr. Bennett, Mr. Blanshard, Mr. Bramston, M.P., Mr. Brandreth, Mr. Burke, Colonel Challoner, Mr. F. C. Cherry, Mr. Childers, M.P. Mr. Garratt, Mr. Brandreth Gibbs, Mr. Hamond, Mr. Fisher Hobbs, Mr. C. W. Hoskyns, Mr. Hudson (Castleacre), Mr. Kinder, Mr. Lawes, Mr. Milward, Mr. Pusey, M.P., Prof. Sewell, Mr. Shaw (Northampton), Mr. Villiers Shelley, Mr. Manners Sutton, Mr. Geo. Turner, Mr. T. Turner, Mr. T. Umbers, Mr. Jonas Webb, and Mr. Henry Wilson.

The following new members were elected:

Savory, John, Rudham Grange, Rougham, Norfork
Gleaves, William, Abbotsley, St. Neot's, Huntingdonshire
Dean, G.A., Stratford, Essex.

The names of 14 candidates for election at the next meeting were then read.

Finances.—Colonel Challoner, Chairman of the Finance Committee, presented the monthly Report on the accounts of the Society, from which it appeared that on the last day of the month just ended, the current cash-balance in the hands of the Society's bankers was 2050*l.* (including 1000*l.* as the subscription from Norwich, 281*l.* as the amount of arrears paid up, and 769*l.* as the amount of compositions for life)

Prize Essay.—Mr. Pusey, M.P., reported, on the part of the Journal Committee, the award of the Society's Prize of 50*l.*, for the best Report on the Farming of Lancashire, to William James Garnett, of Bleasdale Tower, near Garstang, in that county.

Agricultural Chemistry.—On the motion of Mr Pusey, M.P., the discussion on the Report of the Chemical Committee was resumed, and postponed to a special Council on the 30th instant.

Veterinary Committee.—Mr. Raymond Barker, Chairman, presented the Report of the Veterinary Committee, which was unanimously adopted.

Norwich Meeting.—Mr. Raymond Barker then presented the Report of the General Norwich Committee, which was also unanimously adopted. This report had reference to the advertisement of prizes, railway convey, lectures during the meeting, and plans of the show-yard and dinners.

Country Meeting of 1850. — Memorials for the holding of the Society's country meeting of 1850, were received from various places in the western district; and were referred to an inspection committee, consisting of Mr. Raymond Barker, Mr. Fisher Hobbs, Mr. Brandreth, Mr. Milward, Mr. Brandreth Gibbs, Mr. Kinder, and Mr. Shaw (London), with a request that they would report to the next monthly Council, on the respective accommodation afforded by each locality for the purposes of the meeting.

Honorary Member.—On the motion of Mr. Brandreth, seconded by Mr. Pusey, M.P., Professor Simonds, lecturer on Cattle Pathology in the Royal Veterinary College, was unanimously elected an honorary member of the Society. A specimen of soil from Colonel Challoner, inodorous manure from the Marquis of Devonshire, and an improved draining level from the Earl of Tyrconnel, were reserved for inspection and practical discussion at the next weekly meeting. The Council then adjourned over Easter to the 17th of April.

Farmers' Clubs.

Botley and South Hants, *March* 13: *Small-pox in Sheep.*—Mr. W. C. Spooner said—

The Variola ovina or small-pox in sheep is one of the most formidable and fatal diseases which has ever visited the flocks of this country. Though new to Britain, it has long been known on the Continent, where its ravages, at times, have been very extensive. Our freedom from it is due, perhaps, to our insular position, and the non-importation of sheep for a long course of years. It has, however, visited us in a severe form, and it has proved exceedingly fatal in a district not very far from Botley. Its first appearance in this country can be readily traced to certain Merino sheep imported in July, 1847, in several vessels, and sold at Smithfield, where they were first seen by the unfortunate buyers. One of these vessels, the Trident, came from a port on the coast of Denmark; and a few days afterwards the Mountaineer and the Princess Royal landed a quantity of sheep from Hamburgh. The greater number of these sheep were poor, and apparently adapted for stock sheep, for which purpose they were purchased in various lots by different agriculturists in various parts of the country. This appears to be the earliest introduction of the disease into any part of this country. The symptoms were a dull and moping appearance, dulness of eyes and swelling of eyelids, succeeded by reddish spots in the naked places. In a few days what was called the papular stage commenced; swellings resembling flea-bites appeared, varying in size from one-fourth to an inch in diameter; in mild cases, moderately red and circumscribed—in severe cases, of a purple hue, and sometimes running into each other. There are thus two kinds of the disease—the distinct and the confluent; the latter is always most severe. The disease appeared about 10 days after the animals were purchased. In an inoculated case it took from 10 to 11 days to show the papulæ; the same in a case of exposure; this papulation lasted till the 16th day; vesication to the 19th; suppuration (which, in a majority of cases did not take place in sheep), to the 22d day; and desiccation to the 28th. The disease was certainly both contagious and infectious. Its contagious character was shown by the facility by which it spread by inoculation, and its infectious nature by the fact that other sheep had been attacked in the immediate vicinity of the diseased ones; and also when, some little time afterwards, they had been placed in pens where the affected sheep had previously been put. What, then, it would be asked, was the nature of the disease? It was an animal poison that produced great fever and destroyed all the functions of the system. At present they could lay down no laws for its treatment. If a child were inoculated with the matter of this small-pox, as it is called, in sheep, it had this singularity—it produced a disorder exactly corresponding with the cow-pox. The trial had been made and duly recorded. He had seen letters from Lincolnshire and Norfolk, where the disease has been very fatal indeed: the mortality had been dreadful. The destruction in some cases had amounted to 95 per cent. The greater number of deaths occurred in the early stage of the disease, and when it was very rife in a flock the sheep died off without any external manifestations, as if they were poisoned. If they lived over this stage, they were still in great danger of dying in the third stage. The disease was greatly increased by exposure to wet. Mr. Spooner then read the diary of a gentleman (Mr. Codrington, of Kilmiston), whose flock had suffered severely from the disease. The upshot of the whole business in this case is given in the following table: State of flock, January 28th—

Of 115 natural cases	..	79 dead	36 saved.
Of 101 inoculated	...	10 dead	91 saved.
216		89	127

The diary concludes thus—"As the sheep pox has been hitherto so little known in this country, my neighbours have wished me to publish the foregoing remarks, as they may be of use to others should the disease show itself again in any other flock. Should this unfortunately be the case, I earnestly recommend that, should the strictest separation of the first few infected ones fail of stopping its fatal progress, no time should be lost in having recourse to the only known and most effectual remedy of immediately inoculating the whole flock, carefully selecting the mildest and healthiest cases for the collection of the lymph for so doing. In my case, from ignorance of the true nature of the disease, the infected animals were allowed to continue so long amongst the rest as to render unavailing the only remedy I could then hear of, viz., the strict separation of the infected ones, which plan I had found had succeeded with some flocks in the neighbourhood of Alton and likewise with that of Mr. Fielder, of Sparsholt, near Winchester. It should be observed also, that after the publication of Professor Simonds' lecture had made me no longer hesitate about inoculation, I was still unfortunate in losing a few precious days from the inability of Mr. Spooner (through illness) to attend. I really believe, had inoculation been resorted to in the early stage of the complaint amongst my flock, viz., about the 20th of November, 1848, I should not have lost a dozen sheep, as, at that time, there were several cases of a very mild character to have selected the lymph from, and the weather also would have been much more favourable for the sheep in going through the usual stages of the disease. I am thankful to be able to add, that owing to carefully consuming the carcases, wool and all, with sulphuric acid, the neighbouring flocks have all escaped contamination. It still, however, remains a mystery how the disease could first have got among st my flock, as they are all of my own breeding, and I have neither bought any fresh sheep or even hired a ram for nearly two years previously. I can only conjecture that (as my sheep were at my Hinton farm at the time) some gipsies, who constantly encamp in the lanes in Hinton parish, must have brought the disease, either in a sheepskin or part of a dead sheep to feed their dogs with, from the neighbourhood of Alton, where the complaint was then raging, and thrown the matter down at one of my gateways. At any rate, like other fevers, so unaccountably and easily can it be spread, that too much care cannot be taken in insisting on the total destruction of the entire carcase, in every case in which the disorder may show itself hereafter.—Oliver Calley Codrington." This (continued Mr. Spooner) was an important document, as it contained practical details of operations in the stock of one of our country gentlemen, to whose honour, be it spoken, that from the moment he perceived the disorder, he did not attempt to sell a single sheep from his farm. He deserved, too, the best thanks of every flockmaster for preventing his shepherds from going to other persons' flocks, as well as for the strictness with which his orders were carried out to keep the shepherds of other persons from visiting the sheep at Kilmiston, for exercising indeed the utmost caution and at the same time freely affording every information to other neighbouring agriculturists. The use of sulphuric acid, in dissolving the skins and carcases, he recommended as a cautionary measure, in order to prevent contagion. It was highly necessary that the carcases should be thus got out of the way at once, as, in the cases where they had been skinned and thrown into hedge bottoms, gipsies had taken the disordered meat from one district to another, as food for their dogs, and by this means had spread the disorder amongst other flocks. So at least it had been conjectured. Little can be done, as yet, by way of remedy. Under all circumstances it was not desirable to go to any great expense by way of treatment. There were no known cures.

They could do their best to assist Nature, and that was almost as much as they could do. Warmth and shelter, with free circulation, were desirable, with a good supply of water, in which febrifuge medicines might be introduced, and gruel and tonics. This was all that could be advised as a partial remedy. The preventive measures to be adopted by farmers were, turning the sheep, examination, and separation, destruction in a few cases, and inoculation. Government had already appointed inspectors at each port, and their chief use was to prevent the landing of diseased animals. He considered that preventive measures would be best effected by the aid of a Government insurance; but he had reason to believe that any such plan would be effectually resisted by the Board of Trade, from a disposition not to add to their present burdens. He proposed that an Act of Parliament should be passed, obliging all parties (under penalty for not doing so), to make known the existence, or supposed existence of small-pox amongst their sheep to the Board of Guardians for the district in which they reside. These were suggested remedies; rigid separation was another. At first the best plan appeared to be the destruction of the earlier cases, to prevent the spread of the disease; but there must be a limit to that. When the disease was fast spreading, the best course, he imagined, would be to select a mild case and practise inoculation from it. As, however, the meeting was limited in time, he would not, at that advanced hour, detain them longer, but at once propose these resolutions. 1. That it is the opinion of the present meeting that the small-pox in sheep is an infectious and contagious disease, new to this country, and brought into it by the importation of certain German sheep affected with the malady. 2. That when such a disease makes its appearance in a flock of sheep, if a few cases only are affected, it is prudent to destroy such sheep, in the hope that, with their destruction, the contagion may be stayed, carefully and daily examining the remainder, to ascertain whether the disease spreads. When, however, the disease extends beyond 20 cases, it is most desirable to inoculate the whole of the flock, taking the lymph from the most favourable cases, unless still milder matter can otherwise be obtained. In carrying out this object, it is very desirable, on the first outbreak of the disease, to inoculate a sheep, so that, if necessary, the matter may be obtained from the first remove. 3. That, though the plan adopted by Government in the appointment of inspectors at the various outports, to examine sheep and cattle coming from abroad, is very advisable, as being calculated to prevent the re-introduction of the disease, yet the pestilence having been introduced, and being now raging in many counties, to the great destruction of property of the flockmasters, it is the opinion of the present meeting that additional active and stringent measures should be adopted, with the view of staying the disease, and if possible getting rid of it altogether. 4. That it is the opinion of the present meeting that an Act of Parliament should be passed rendering it obligatory on all farmers to report to the Board of Guardians for the union in which they may reside, the existence or supposed existence of the small-pox amongst their sheep, and that any wilful concealment of such knowledge shall be punished by penalties. That on receiving this intimation the board shall immediately employ an inspector to examine the suspected flock, which, if found to be affected, shall immediately be subjected to the measures previously advised. 5. That, in addition to the most rigid means for preventing the disease spreading to other flocks, no sheep shall be allowed to be sold from such diseased flock for the space of 21 days after the inspector has reported the flock to be free from the disease, except in the case of fat sheep, which may be slaughtered on the farm.—Mr. J. Blundell seconded the adoption of the resolutions.—Mr. C. Fielder, of Sparshot, near Winchester, said, I propose an amendment to Mr. Spooner's resolutions. I consider inoculation as totally unnecessary, and now move my plan as an amendment to Mr. Spooner's, because I prefer eradication of the disease to the extension to the whole flock, although in an ameliorated form. On the 16th of August, 1847, I bought in Smithfield 118 Spanish sheep, brought them to my farm, and put them with 300 Down lambs. I at that time had another flock of 300 lambs, which the Spanish sheep were never with. In about a month my flock of Southdowns and Spanish sheep, together about 400, began to falter with a disease—a disease I had never heard of before in this country—as it turned out to be small-pox; the other flock of Southdowns of 300 not having taken it. Out of this diseased flock of 400, I lost by death about 75 out of 130 which were affected. When they were at worst, having at that time lost about 50, it occupied my thoughts day and night to find a remedy to stop its spreading through the whole of my flock, as at that time I had every reason to suppose that it would, never having heard of any remedy to adopt as a preventative. I did find a remedy, and it is so simple that any one can follow it; the expense is trifling. If 1000 sheep had the small-pox ever so bad, I could take away every diseased sheep, leaving nothing but sound healthy sheep together, at a cost not exceeding 3*l.* or 4*l.*—5*l.* would completely eradicate it out of any flock in this country. I had a pen made in my sheepfold at one end, one hurdle wide. I filled it with sheep, employed two men every morning to begin at one end of the pen, each taking quietly hold of a sheep, turning it gently up far enough for the man to look under the shoulder, where the skin looks white, and is free from wool. Repeat filling the pen a few times in the like manner, when the whole flock will be inspected and all diseased sheep removed to a distance. The disease is sure to show itself first on the inside of the shoulder and thigh, the skin looking red, or rather of a purple colour, with a rash, not pustules, on its first appearance. In that stage of the disease I am positive it is not at all infectious, as I will prove to you from facts, which are far preferable to theory. This, then, is my remedy—taking from a flock every diseased sheep before they become infectious to others, by which means the disease is completely stopped from extending to the rest of the flock. Inspection and separation for 21 days will completely eradicate it out of any flock, let it be ever so extensive. I therefore now offer it to the Club, in opposition to inoculation, vaccination, or any other remedy yet known. From the day I began to turn and inspect my diseased flock of about 400, I found a few fresh cases daily for about 10 days or a fortnight, and one or two cases between that time and the end of 20 days; after that I never found another in the whole flock, leaving me 270 sheep out of the 400 that never took the disease. I have another strong case of my own. Just before I had eradicated it out of my diseased flock, my shepherd told me one morning that one of my sheep of the other flock, consisting of 300 which had never been with the diseased ones, was unwell, and on his catching it it had the pustules full out on it, so that it must have had the disease for many days. I immediately had it removed, and followed the same plan of turning and inspecting this flock every morning, as I had done the other. In the course of a fortnight two more sheep were unwell with a rash out under the shoulders, not then pustules; after being removed a few days pustules formed all over them, showing the regular small-pox. Two out of the three which had it in this flock died; but by removing them in the early stage, when the appearance was like a rash only, I never found another in the whole 300. I fatted all the remainder. So fearful was I of selling one sheep that year that I kept the whole of my two flocks all the winter, rather than run the risk of spreading this dreadful disease through the country. This is a very strong case, showing that in its early stage the disease is not infectious, inspection and removal being far better than inoculation. Mr. Fielder then detailed some additional cases bearing on his view of the subject. Now, compare these cases with Mr. Spooner's remedy, inoculation. Take the flock of Mr. Codrington, of Dean House, in the parish of Kilmiston, and see how different the effect. Unfortunately, I think it was, Mr. C declined to act on my plan of turning, inspecting, and separation. I rode over to Kilmiston on purpose to recommend him to do so. I am perfectly aware why he did not follow my advice, as he at once told me, his ewes being very heavy in lamb, and the disease appearing at that time of so mild a nature, as he only lost one ewe out of 20 which had taken it. He considered the danger of turning and inspection equal or worse than letting them take their chance, Mr. Codrington supposing that of the two evils he had chosen the least. Besides, unfortunately for that gentleman, after he declined to follow my plan, the disease began to show itself in a different form, for instead of its continuing of so mild a sort, it became more virulent and fatal, as he lost more than half, I believe, of those which had it afterwards. When about half his flock had taken the disease, Mr. Spooner inoculated the whole of the remainder, being 161, out of which nine died, and I heard it spoken of that the loss was considered very moderate. Now, taking this as a favourable case, with the loss of nine per cent. it must be borne in mind that the 92 which recovered must have been made ill, it must have checked the growth of wool, loss of flesh, with a great risk of having a serious effect on the lambs, &c. I do therefore contend inoculation will not for one moment bear to come into competition with the course I recommend and have acted on.—Thomas Baker, Esq., surgeon, of Droxford, said—Mr. Fielder who at the outset led me, as doubtless he did others present, to expect some extraordinary agent to have been used in his flock for the removal of the malady, has certainly confirmed the adage—that a "preventative is *better than a cure*," and his method—not as he termed it—"cure," is the best preventative means to be adopted; but he did not, it appears, place any reliance in any, strictly speaking, curative measures for those already the seemingly death-stricken victims. Mr. Spooner has proposed measures founded on science and experience; but I cannot accord in his views for inoculation—and my reasons for not doing so are—that in the first place, I think it cruel to communicate a dangerous disease to any animal, in health, that, if let alone, might have escaped altogether from any attack of the disease; for it is certain, that the greater number of animals affected, even when inoculated, which is thought to produce a milder attack than when taken in the natural way, the greater will be the amount of poison generated in the atmosphere, and it follows that the greater the amount of poison an individual is exposed to, the greater will be the charge to enter his system, and thus the less chance of escape. I object to inoculation on other grounds; namely, that inoculation to such an amount as would be necessary in flocks of sheep—though only a few hundreds in a place, would so contaminate the atmosphere as to render it poisonous to the human species; and this is a point well deserving the consideration of the Government through the agency of the Board of Health. Now were I to be asked by any neighbour what course I would advise him to adopt, had he a flock of sheep that he feared would be affected by his neighbour's flock already affected, I should advise him to keep his sheep as far distant as practicable, and, if possible, to the windward of the diseased sheep, and as constantly as the wind shifted during the prevalence of the disease, to shift his sheep—and every day to watch attentively to see if any one seemed sick, and on finding one sick to examine it after the method of Mr. Fielder; and if found affected in the manner he and Mr. Spooner have described, turn him, and as many and as often as one may be found, away into some place (which I would call the hospital for diseased sheep). Now it is a fact, that in the human species small-pox presents itself under two distinct characters (which may be termed the hot and the cold). The hot or inflammatory character may be known in animals, in addition to Mr. Spooner's explanation of symptoms, by great heat of the skin, thirst, dry, hot tongue, and general restlessness: the cold or nervous character, by a cold skin, mouth and tongue with great debility, and dull listless state of the whole animal when he is attempted to be disturbed. It is of importance to pay special attention to these differences, as what would relieve the one would assuredly kill the other. I would advise the inflammatory to be treated by bleeding, and the nervous by tonics and cordials. I would not abandon, at the early period, a single case as hopeless, but would persevere though my hopes were few. Laxatives, too, would be desirable in the absence of diarrhœa, and chalk and opium where diarrhœa may be present. Another point I think of importance is, to shut off all intercommunication of the shepherd of a diseased flock from that of a healthy one, as the disease in question can, I think, be transmitted by the clothes—not by contact, but by enough of poisonous air adhering to the usually dirty, greasy frock of the shepherd to contaminate as much of the healthy air around the healthy sheep as would infect one or more, and thus be a source of renewed disease. I consider the disease infectious during the papular stage, and not only during that stage, but also during the flea-bite looking (where there is a small red dot, which, when numerous, gives the appearance of a rash) dots, previous to the papulæ, and vesicular and pustular or suppurative divisions of the eruptive stage, and I am further inclined to think, that under severe attacks it is infectious during the stage of incubation, where other circumstances are ready for it.—Mr. Appleby was disposed to side with Mr. Fielder in his suggestions. He thought it was much better to separate the sound from the unsound than inoculate and extend the disorder. By Mr. Spooner's plan there was a loss of nine per cent., whereas, in Mr. Fielder's case, there were only two, three, or four, at the farthest, out of 300.—Mr. Joseph Blundell, of Bursledon, said that the discussion of the evening would not fail to be useful. It was not so desirable to set up this or that resolution, in support of the orders, as to make up their minds, from all that was said, what to do to eradicate the disease. To many a visitation of the scourge would be utter ruin. He did not regard the opinions of Mr. Fielder and Mr. Spooner as opposed to each other.—Mr. Spooner replied. He was glad to find that the subject had earnestly engaged the attention of the farmers. This would amply repay him for the trouble of bringing it forward. In regard to the fear of contamination alluded to by Mr. Blundell, he might mention that they could use nothing better than Dr. Burney's solution of chloride of zinc. The sheep might be rubbed or dipped in it. Mr. Appleby objected to inoculation, on the ground that it was extending the disease; but, at the same time, did it not occur to him that the plan of removal was open to the same objection? Mr Fielder says that in the first stage of the disease there is no danger of infection: How does he know that? He would ask him if he thought there was infection to be dreaded when in the papular state? He had heard nothing to shake his opinion. The following was ultimately proposed as an amendment to Mr. Spooner's second resolution—"That if the disease can be prevented spreading by separating the diseased sheep from the healthy ones (in proof of the efficiency of which plan Mr. Fielder has stated several apparently well-authenticated cases), it is the opinion of this meeting that precautionary measures to prevent the spread of infection, is preferable to inoculating the healthy sheep of a flock."—The Chairman then read the original resolutions and the amendment, and on a show of hands, the numbers were—For the amendment, 15; against it, 5; majority, 10. *Abridged from the Hampshire Advertiser.*

Reviews.

The Rural Cyclopædia, or a General Dictionary of Agriculture, &c. &c. Edited by the Rev. John M. Wilson. A. Fullarton & Co., Edinburgh, London, and Dublin.

This library of farming, for so it is, still continues to increase by monthly additions. The 24th number is only in P, and whether the whole series is to be completed in 30 or three dozen parts, we cannot yet judge, neither, we have little doubt, can its editor. Bulky as the series will be, however, it will be a valuable publication; no one will deny that character to a work which embraces the contents, without much abridgment either, of so many distinct volumes on rural subjects.

Digest of Evidence taken before a Committee of the House of Commons, appointed to inquire into the Agricultural Customs of England and Wales in respect to Tenant Right. Compiled and arranged by William Shaw, Editor of the *Mark Lane Express*, &c. &c.; and Henry Corbet, Secretary to the London Farmers' Club, &c. J. Rogerson, 24, Norfolk-street, Strand, London.

The information which this committee elicited has thus been classified under the more important heads of the inquiry, so as to be attainable by the reader without the trouble of wading through an enormous "Blue book." Messrs. Shaw and Corbet deserve our thanks for the skilful manner in which they have executed their task; they have chosen a period during which great interest has been taken in the subject, for the publication of a work which must both gratify that feeling and increase its intensity.

Calendar of Operations.

MARCH AND APRIL.

Berwickshire Merse Farm, *March* 29.—Since last report we have been employed ploughing Turnip land for Barley, but the 28th was very wet, and we began to plough land for Turnips. We have been threshing Beans for the market, and Oats for the horses; leading thorns for fencing the pasture land, and Turnips for the sheep, three men at the fences, &c.; we are feeding the cattle with Bean-meal along with the Turnips. *J. B.*

Somersetshire Farm, *April* 2.—The weather having been very favourable for field work, we have 6 acres ready for sowing with Flax, but awaiting the arrival of foreign seed, as there is more dependence on a better quality of Flax from a change of seed; for, when sown two or three years, it is apt to run more to seed, with thin fibre, and less oily. Planting Potatoes, cross ploughing, harrowing, and rolling for Mangold Wurzel; hoeing Vetches and Wheat, cleaning young hedges, and repairing fences. Our Swedes being all consumed, we have begun feeding from the Mangold Wurzel store. *R. C.*

Sussex Farm, *April* 2.—With the fine weather of late the sowing of the Lent corn here in general is nearly completed. We have finished sowing Barley, Oats, and other sorts of corn in excellent order, and shall finish sowing seeds in a few days. We sow 1 bushel of Rye grass and 14 lbs. of Clover per acre. We have also sown a little Flax this year, to prove whether we can grow it to profit; the seed we intend for the fattening of bullocks. We have top-dressed part of our Wheat with guano; the fine showers of rain are much in its favour. We are now engaged carting lime and mould on to the land intended for Mangold Wurzel; ploughing and preparing the same; rolling and harrowing Wheat; putting the liquid from the tanks over the meadows for hay, and top-dressing the same with wood-ashes, &c. *J. B.*

Notices to Correspondents.

Flax: *Norfolk.* Do you mean to ask what quantity of the crop will provide Linseed enough for the stock, which, under the circumstances stated, you expect to keep? If so, we should answer, about 10 acres, which may provide 5 tons of the Linseed, equal to about 4 cwt. for each of, say, 200 days, that being sufficient for 30 head of cattle.

Incubation: *An Amateur* says he is able to command a damp heat varying from 80° to 100° or 110°. Will any correspondent say if such temperature will answer this purpose. He intends placing the eggs in baskets on trays covered over with dry moss.

Maize: *W Keene.* Your letter has been received, but too late for insertion this week.

Mangold Wurzel: *W E H.* Sow 4 cwt. of Peruvian guano per acre, broadcast, just before you give the land its last cultivation previous to sowing.

Prices: *A Reader.* We will enquire.

Sawdust: *J Brotherton.* You cannot do better than soak it with urine, and apply it as you propose. Some rapidly rotting horse-dung mixed up with it in alternate layers might accelerate the fermentation.

Soot: *Spade Farmer.* Sow it over the young plants as they come through. Drill 10 pecks of Barley per acre, in rows 10 inches apart.

To Farm for Occupation: *Kestrel.* You will need at least 200 acres if you are to make it repay the salary of your bailiff.

Ventilation. *Wotton under-Edge.* Inquiries have been made.

Markets.

SMITHFIELD, Monday, April 2.

The supply of Beasts is large and of excellent quality. The demand is still very small, and consequently prices are lower. Many remain unsold. There are a few more Sheep; trade is exceedingly dull. A large number cannot be sold, although lower prices are submitted to. Lamb is in good request at late rates. Trade is dull for Calves, at a reduction of about 2d. per 8 lbs. From Germany and Holland there are 304 Beasts, 710 Sheep, and 69 Calves; from Norfolk and Suffolk, 2350 Beasts; and from Scotland, 400.

Per st. of 8 lbs.—	s	d	s	d	Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	4	to 3	6	Best Long-wools	3	8	to 4	0
Best Short-horns	3	0	— 3	4	Ditto Shorn	3	2	— 3	6
2d quality Beasts	2	4	— 2	10	Ewes & 2d quality	3	0	— 3	8
Best Downs and Half-breds	4	0	— 4	4	Ditto Shorn	2	8	— 3	0
Ditto Shorn	3	6	— 3	8	Lambs	5	8	— 6	6
					Calves	3	8	— 4	10
					Pigs	3	8	— 4	8

Beasts, 3794; Sheep and Lambs, 23,820; Calves, 112; Pigs, 250.

Friday April 6.

We have, for the day, a large number of Beasts, and very few are wanted. Monday's quotations are generally realised, but the business done is small. The supply of Sheep consists chiefly of those left over from Monday, the demand is exceedingly limited, and late prices are with difficulty obtained. This being Good Friday, Lamb is the article principally in request. The supply is less than on former occasions; trade is brisk for choice qualities at fair prices. Good Calves are making fully 2d. per 8 lbs. more than on Monday. From Holland and Germany we have 94 Beasts, 10 Sheep, and 110 Calves; from Scotland, 200 Beasts; and 129 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	4	to 3	6	Best Long-wools	3	8	to 4	0
Best Short-horns	3	0	— 3	4	Ditto Shorn	3	2	— 3	6
2d quality Beasts	2	4	— 2	10	Ewes & 2d quality	3	0	— 3	8
Best Downs and Half-breds	4	0	— 4	4	Ditto Shorn	2	8	— 3	0
Ditto Shorn	3	6	— 3	8	Lambs	5	8	— 6	6
					Calves	4	0	— 5	0
					Pigs	3	8	— 4	8

Beasts, 824; Sheep and Lambs, 6050; Calves, 276; Pigs, 220.

Hops, Friday, April 4.

Messrs. Pattenden and Smith report that the market continues much the same.

COVENT GARDEN, April 7.

The market is well supplied with Vegetables and Fruit. Pine-apples are sufficient for the demand. Hothouse Grapes are more plentiful. Pears are very scarce; and Apples are dear. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst vegetables, Carrots and Turnips are abundant; Cauliflowers and Broccoli sufficient for the demand. Asparagus French Beans, Rhubarb, and Seakale are plentiful. Potatoes remain stationary. New Potatoes begin to make their appearance. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Gardenias, Tulips, Hyacinths, Cinerarias, Tropæolums, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 9s
Grapes, foreign, p.lb.,1s6d to 3s
Strawberries, per oz., 1s to 3s
Apples, dessert, p. bsh.,6s to 12s
— kitchen, p. bsh., 4s to 8s
Oranges, per doz., 1s to 2s
Lemons, per doz., 1s to 2s
— per 100, 10s to 18s
Chestnuts, p. peck, 4s to 7s
Almonds, per peck, 6s
— sweet, per lb., 2s to 3s
Walnuts, p. 100, 1s 6d to 2s
— p. bush., 16s to 24s
Nuts, Bar., p. bush., 20s to 22s
— Filb., p. 100 lbs.,60s to 100s
— Cob, p. 100 lbs., 90s to 150s
— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 3d to 1s
— red, p. doz., 2s to 6s
Savoys, per doz., 3d to 1s
Greens, p. doz. bunches, 1s 6d to 4s
Cauliflowers, p. doz., 2s to 4s
Broccoli, white, p. bun., 1s to 2s
— brown, p. bun., 6d to 1s 3d
Sorrel, p. hf. sieve, 9d to 1s
Potatoes, per ton, 60s to 200s
— per cwt., 5s to 10s
— per bush., 2s 6d to 6s
Turnips, p. doz. bun., 1s to 2s
Red Beet, per doz., 6d to 1s
Horse Radish, p. bdl., 1s to 6s
Asparagus, p. 100, 2s 6d to 9s
Seakale, p. punnet, 9d to 2s
Rhubarb, p. bundle, 6d to 1s 6d
French Beans, p.100, 2s6d to 4s
Cucumbers, each, 1s 6d to 4s
Leeks, per doz., 6d to 1s
Celery, p. bundle, 6d to 1s 3d
Radishes, p. 12 hands, 1s to1s6d
Carrots, p. doz. bun., 3s to 5s
Spinach p. sieve, 1s 3d to 1s 6d
Onions, p. bunch, 2d to 4d
— p. bush., 1s 6d to 3s
— Spanish, p. doz., 1s 6d to 4s
— pickling, p. hf. sieve, 1s 6d to 3s
Shallots, per lb , 4d to 8d
Garlic, per lb., 4d to 8d
Artichokes, Jerusalem, p. half sieve, 9d to 1s
Lettuce, Cab., p. sc., 4d to 9d
— Cos, do., 9d to 1s 6d
Endive, per scorr, 1s to 2s 6d
Mushrooms, p. pottle, 6d to
Small Salads, p. pun., 2d to 3d
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Watercress, p. doz. bun., 6d to 9
Parsley, p. hf. seive, 2s to 4s
— Roots, p. bdle., 1s to 1s6d
Marjoram, per bunch, 2d
Mint, green, per bunch, 4d to

HAY.—Per Load of 36 Trusses.

Smithfield, April 5.

Prime Meadow Hay	68s to 75s		Clover		60s to 95s
Inferior ditto	50 63		New Clover	— —	
Rowen	40 58		Straw	27 30	
New Hay	— —			J. Cooper.	

Cumberland Market, April 5.

Prime Meadow Hay	75s to 80s		Inferior		50s to 80
Inferior ditto	50 65		New Clover	— —	
New Hay	— —		Straw	28 33	
Old Clover	90 96		Joshua Baker.		

Whitechapel, April 5.

Fine Old Hay	68s to 72s		New Clover		80s to 90s
Inferior ditto	50 55		Inferior ditto	60 65	
New Hay	65 66		Straw	26 30	
Old Clover	92 100				

ENGLISH TIMBER AND BARK.—April 7.

	Round Timber. Per Load.	Plank. Per Foot Cube.	Inch Board. Per Foot Superf.
Oak	£8 10 0 to £8 10 0	3s. 6d. to 5s. 0d.	0s. 4½d. to 0s. 6d.
Ash	5 0 0 — 6 10 0	2 9 — 4 3	0 3 — 0 4
Elm	3 10 0 — 4 10 0	1 0 — 2 6	0 2 — 0 3½
Beech	2 10 0 — 3 10 0	1 9 — 2 6	0 2½ — 0 3½
Lime	3 10 0 — 4 0 0	2 0 — 2 6	0 3½ — 0 5

Oak Bark, per load of 45 cwt., 16l. to 18l. J. S.

POTATOES.—Southwark, Waterside, April 2.

The Committee report that our market during the last week has been barely supplied, as the prevailing easterly winds have prevented any fresh arrivals from the north, which has enabled salesmen to clear up some of the old shipments at the following quotations:—Yorkshire Regents, 120s. to 160s.; Scotch, do., 100s. to 110s.; Scotch Cups, 110s. to 120s.; Whites, 70s. to 90s.; French Whites, 90s. to 100s.; Belgian do., 80s. to 90s.; Dutch, 90s. to 110s.

MARK LANE.

Monday, April 2.—The supplies of English Wheat for this morning's market being again small, were cleared by the millers on the terms of this day se'nnight. Foreign met a fair demand at Friday's prices, being about 1s. per qr. below those of Monday last.—We observe no alteration in the value of English Barley. Foreign meets rather an improved sale.—Beans and Peas maintain our quotations.—Oats continue to find buyers at a reduction of 1s. per qr.

Wednesday, April 4.—The arrivals of foreign Wheat since Monday amount to 18,300 qrs.; with this exception the supplies of grain are moderate. Wheat meets a fair demand on the terms of that day, and we observe no alteration in the value of other articles.

Liverpool, Thursday, April 5.—Though the market to-day was held out of the usual course, we had a moderate demand for Wheat, chiefly for the country, at Tuesday's prices. There was only a small business in other articles, on much the same terms. A steady sale for Indian Corn, at previous rates.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Feb. 17	47s 0d	29s 8d	17s 2d	26s 9d	29s 9d	34s 4d
— 24	46 4	29 8	17 5	27 8	30 10	32 11
Mar. 3	45 6	29 1	19 7	26 11	30 2	32 11
— 10	45 1	29 0	16 11	26 11	30 1	33 1
— 17	45 4	29 2	17 0	23 9	30 11	30 8
— 24	44 9	28 10	17 1	26 4	28 9	31 6
Aggreg. Aver.	45 8	29 3	17 2	26 5	30 1	32 7
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Feb. 17.	Feb. 24.	Mar. 3	Mar. 10.	Mar. 17.	Mar. 24.
47s 0d						
46 4						
45 6						
45 4						
45 1						
44 9						

PRICES CURRENT.

	London. Mar 26	London. Apr. 2.	Liverpool. March 27.	Liverpool. April 3.	Wakefield. Mar 23	Wakefield. Mar 30	Boston. Mar 28	Boston. Apr. 4.	Birmingham. March 29.	Birmingham. April 5.
	qr.	qr.	70 lbs.	70 lbs.	qr.	qr.	qr.	qr.	62 lbs.	62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	38 to40	38 to40	6 2 6 7	6 2 6 6	43 to48	40 to48	36 to45	34 to44	5 9 6 4	5 9 6 4
„ white ...	44—47	44—47	6 9 7 3	6 8 7 2	41--51	43--51	40—47	38--47	6 2 6 8	6 2 6 8
Old, red ...	40—43	40—43	6 6 6 8	6 4 6 7	42—44	42--44	—	--	6 0 6 6	6 0 6 6
„ white ...	46—50	46—50	6 10 7 6	6 9 7 5	—50	--50	—	—	6 1 6 8	6 1 6 8
Foreign	38—56	36—56	6 0 7 8	5 10 7 9	42—51	39--45	—	--	5 4 7 0	5 4 7 0
			460 lbs.	barrel						
Rye—New ..	24—26	24—26	—	—	—	—	—	—	—	—
Foreign meal	7l. 5s	7l. 5s	—	13—14	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	22—25	21—24	—	—	21—22	21—22	26—28	24—26	23—27	23—27
Malting... ...	25—28	24—28	30s—32s	30s—32s	27—31	26—31	30—32	26--28	29—33	29—33
Foreign... ...	20—27	18—26	—	—	22—27	21—26	—	—	—	—
					6 bush.	6 bush.				
Malt—Home	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	19—24	20—24	2s 6d 3s 0d	2s 3d 3s 0d	—	—	20—24	14—18	18—30	18—30
Black...	16—21	16—21	2 3 2 6	2 2 2 5	—	—	—	—	17—16	17—18
Foreign	14—20	14—19	2 3 2 5	2 2 2 4	—	—	—	—	—	—
			qr.	qr.						
Peas—Boilers	24—27	24—27	35s—	35s—	28—32	28—32	—	—	36—44	36—40
									196 lbs.	196 lbs.
Grinding...	26—28	26—28	29 —30s	29 —30s	—	—	—	—	12—13	11—12
Foreign ...	24—32	24—32	32 —34	32 —36	—	—	—	—	—	—
Beans—										
New, small ...	20—30	20—30	30 —33	30 --33	29—30	29—30	26—32	24—30	11—13	11—13
Longpods, &c....	26—32	26—32	—	—	—	—	—	—	—	—
Old	27—39	27—39	32 —34	32 —34	35—36	35—36	34—36	34—36	15—16	14—16
Foreign ...	22—36	22—36	23 —32	23 --32	25—27	25—27	—	—	10—13	10—12
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign .	36—40	36—40	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9l. 8s	9l. 7s	7l. 15s—8l.	7l. 15s—8l.	—	—	—	—	—	—
Foreign ...	6l.—9l.	6l.—9l.	—	—	—	—	—	—	—	—
Indian Corn—	24—28	24—28	27s—31s	27s—31s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	35—42	35—42	33—35	23—36	—	—	35—42	35—42	37—40	37—40

Weekly Averages and Imports.	Aver. Mar 27	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	44 6	18300	44 9	35507	40 9	16525	43 0	8395	43 6¾	13281
BARLEY ...	29 7	5210	28 10	521	28 10	3854	24 4	58	—	17714
OATS... ...	15 8	10180	17 1	3834	17 1	420	12 11	753	18 7¼	—
RYE	28 7	—	26 4	—	26 0	—	—	—	—	—
BEANS ...	25 7	—	28 9	5357	28 9	4337	26 6	252	—	10
PEAS... ...	32 9	—	31 6	188	31 6	118	—	—	—	1016

Signed { *Kingsford and Lay.* | *Segar and Tunnicliffe.* | *Sandars and Dunns.* | *Thomas Wright.* | *J. and C. Sturge.*

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS and CO., 116, Bishopsgate-street Without, have the pleasure to hand their New List of Prices of SHEET GLASS for Cash.

HORTICULTURAL GLASS,

In Sheets of about 40 inches by 30, and packed in Cases of 200 feet. Cut to the size required, but not to exceed 40 inches long.

16 oz. to the foot ...	£2	5s.	0d.	from	2½d.	to	3¼d. per foot.
21 ...	3	0	0	...	3	...	5 „
26 ...	4	7	6	...	3½	...	7½ „
32 ...	5	12	0	...	4	...	10 „

Foreign Sheet, 16 ounces, 40s. per case of 200 feet.

SMALL SQUARES IN BOXES OF 100 FEET.

	Crown.	Sheet.
Squares under 6 by 4	10s. 6d.	£0 12s. 6d.
6 by 4 and under 7 by 5	—	0 15 0
7 by 5 „ 8 by 6	12 6	0 17 6
8 by 6 „ 10 by 8	15 6	1 0 6

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS, in sizes not exceeding 5 feet superficial.

¼ thick ... per foot	1s. 0d.	½-inch per foot	2s. 0d.
⅜-inch	1 2	1 inch	3 0
½-inch	1 6		

PATENT ROUGH PLATE TILES.

¼ thick ..... each	0s. 11d.	⅜-inch ..... each	1s. 7d.
½-inch	1 3	⅝-inch	2 0

SHEET GLASS TILES AND SLATES.

	16-oz.	21-oz.	26-oz.	32-oz.
Tiles made of Sheet Glass ...	8d.	10d.	1s.	1s 4d.
Slates, 20 ins. by 10		10d.	1s.	1s. 4d. 1s. 8d.

Slates are kept in stock of the usual sizes, and made to any dimensions.

GLASS MILK-PANS, PROPAGATING and BEE GLASSES, Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, Lamp Shades, and Lactometers for trying the quality of Milk, 4 tubes 7s. 6d.; 6 tubes, 10s. Self Registering Thermometers for Greenhouses.

HARTLEY'S PATENT ROUGH PLATE GLASS,

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—The readers of the *Gardeners' Chronicle* of Saturday, Feb. 24th, must have observed the high terms in which this Glass was spoken of by Dr. Lindley. We have therefore re-arranged our list of prices to correspond precisely with those of the Patentee, to which we would beg the attention of the Nobility, Clergymen, Gentry, and others.

In Crates of the sizes as manufactured ...	...	6d. per foot.			
In Squares	under 8 by 6	...	...	4	„
„ 8 by 6	and under 10 by 8	..	...	4½	„
„ 10 by 8	„	14 by 10	...	... 5	„
„ 14 by 10	„	1½ foot	..	... 5½	„
„ 1½ foot	„	3 „	...	... 6	„
„ 3 „	„	4 „	...	... 6½	„
„ 4 „	„	5 „	...	... 7	„
„ 5 „	„	6 „		... 7½	„
„ 6 „	„	8 „		... 8½	„
„ 8 „	„	10 „	..	...10	„
	Quarries	.. ...	..	6	„

Averaging ⅛ of an inch thick, and about 26 oz. to the foot.

Jas. Phillips & Co., 116, Bishopsgate-street Without, London.

HARTLEY'S PATENT ROLLED ROUGH PLATE GLASS, for Horticultural purposes.—It is now proved beyond a doubt that the above Glass is very far superior to any hitherto discovered for all kinds of Horticultural uses. (See *Gardeners' Chron., Feb. 24th*, 1849, p. 115.)

WILLIAM PATTEN and Co., Glass, Lead, and Colour Merchants, 20, Old Fish-street, Doctors' Commons, London, beg to inform the public that in consequence of the numerous orders they have executed in Ireland, Scotland, and the principal counties of England, they have entered into such arrangements with the Patentee as will enable them to supply the above Glass in any quantity, strictly at the Manufacturer's prices. W. P. and Co. have a large quantity of Crown Squares in Stock, in 100 feet boxes, from 1d. per foot.

P.S. Sole Manufacturers of the Anti-Corrosion and Mineral Paint for all kinds of Out-houses, Park Fencing, Farm Buildings, &c.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY and CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash, A reduction made on 1000 feet.

Sizes. Inches.					Inches.			Per foot.	Per 100 feet.
				Under	6	by	4	at 1½d.	is £0 12 6
From	6	„	4	„	7	„	5	„ 2d.	„ 0 16 8
	7	„	5	„	8	„	6	„ 2½d.	„ 0 18 9
	8	„	6	„	10	„	8	„ 2¾d.	„ 1 0 10
	10	„	8	„	12	„	9	„ 2¾d.	„ 1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 3½d. 5d. „ „ „
26 oz. „ 3½d. 7½d. „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to James Hetley and Co., 35, Soho-square, London.

GLASS.

E. and W. H. JACKSON are supplying SHEET, ROUGH PLATE, and CROWN GLASS for Horticultural purposes, at very reduced prices. BRITISH and PATENT PLATE of superior manufacture, for Glazing dwelling-houses, for which purpose these articles are now superseding all inferior Glass. ORNAMENTAL GLASS of the newest designs for the decoration of Conservatories, &c. E. and W. H. J. also supply PATENT OPTICAL FLINT GLASS, Thin Glass, Slides and Cells for Microscopic purposes, French Shades, Propagating Glasses, &c. Estimates, Lists of Prices, and every information forwarded on application at their Warehouse, 315, Oxford-street, London.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flowerpots, &c., in boxes, of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole agents in London, G. and J. Deane, Horticultural Implement Warehouse, 46, King William-street, London-bridge.

Sales by Auction.

TO GENTLEMEN, FLORISTS, AND AMATEURS.

MESSRS. PROTHEROE AND MORRIS are instructed to offer to Public Competition by Auction, on the Premises, Wood-street, Woolwich, on MONDAY, April 9th, 1849, at 12 o'clock (by order of G. Collier, Esq., leaving the premises), a choice assortment of GREENHOUSE PLANTS, consisting of fine specimen Geraniums, Ericas, Azalea indica, Camellias, Leschenaultias, Pimeleas, Epacris, Chorozemas, Achimenes, Crassulas, Calceolarias, Cinerarias, Lilium lancifolium, Carnations, Picotees, &c. Three cap'tal 2-light boxes, garden roller, cast iron hand-lights, vases, slate troughs, &c.—May be viewed on the Saturday prior to the Sale. Catalogues had on the Premises, of the principal Seedsmen, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to Public Competition, at the Auction Mart, Bartholomew Lane, on THURSDAY, April 12, 1849, at 12 o'clock, a first rate Collection of CARNATIONS, PICOTEES, and PINKS, comprising all the leading varieties (the property of Mr. Willmer, of Sunbury); also a splendid assortment of Dahlias, American Plants, Fuchsias, Verbenas, Heartsease, Peonies, and a variety of Plants in bloom.—May be viewed the Morning of Sale, and Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

GREEN ROAD, SOUTHSEA, about ¼ a mile from Portsmouth.

TO BE SOLD BY PRIVATE CONTRACT.—A Plot of FREEHOLD LAND, about 1½ acre, which has been upwards of 20 years in cultivation as a Nursery, with a Young Stock. Also a stock of large Fruit Trees, in full bearing, with Greenhouse 84 feet in length, two Melon Pits, &c., with supply of good water. It is situated in the healthiest part of Southsea. As the present proprietor is declining business, it will be sold a bargain, with or without the Nursery Stock. The ground is adapted for the nursery business, or for a Gentleman to build a Family Residence.—For particulars apply to Mr. J. NOBES, Nurseryman, &c., Green-road, Southsea, Hants.

TO BE LET, BARMING HOUSE, Kent, a capital Mansion and 10 acres of Garden, Orchard, and Meadow land, at Barming, near Maidstone, containing on the basement good cellar, dairy, larders, &c.; on the ground floor, entrance hall, morning-room, study, dining-room, 27 by 19 feet, servants' hall, housekeeper's room, butler's pantry, kitchen, and offices; on the first floor, drawing-room, 31 by 19 feet, ante-room, five chambers, dressing-room, and water-closets, with principal and back staircases thereto; on the upper floor, four chambers and nursery; four-stall stable, two coach-houses, &c., walled in garden, and large kitchen garden. This property offers to florists and those fond of horticulture an opportunity rarely to be met with, as it contains some fine shrubs, and the soil is peculiarly adapted to the cultivation of flowers. Two miles from the principal stations of Maidstone and Wateringbury, and 1 mile from the East Farleigh Station.—For particulars, apply to T. M. WHITEHEAD, Esq., Solicitor, 8, Duke-street, St. James, London; or to Mr. H. MORRIS, Land Agent, Maidstone, Kent.

GLASS.

THOMAS MILLINGTON, 87, Bishopsgate-street-without, London (same side as Eastern Counties Railway Terminus) BRITISH PLATE GLASS, nearly ¼ inch thick, in sizes under 1 foot superficial, 1s. 2d. per foot; this is the best article for Greenhouses and Garden Frames of every description, as nothing can break it in an ordinary way. Horticultural Glass, in cases of 200 feet, No. 16 oz., 40s.; No. 21 oz., 60s.; No. 26 oz., 87s. 6d.; No. 32 oz., 112s. each, case included.

Cut Squares, in 100 feet boxes.	Crown.	No. 16 Horticultural.
Sizes under 6 ins. by 4 ins.	10s. 6d.	12s. 6d. per box.
6 by 4 „ 7 by 5	12 6	15 0 „
7 by 5 „ 8 by 6	14 6	17 6 „
8 by 6 „ 10 by 8	15 6	20 0 „

Squares above 10 by 8, in Crown or Horticultural, 2½d. to 3d. per foot, according to size and quantity. Patent Rough Plate Tiles, ¾ in., 10d.; ¼ in., 1s. 3d. each; do. Slates, ¾ and ¼ inch thick. Patent Rough Plate Glass for Skylights, Warehouses, and Floors, ¾ in. thick, 6d.; ½ in., 1s.; ¾ in., 1s. 2d.; ½ in., 1s. 6d.; ¾ in., 2s.; 1 in., 3s. per foot, in sizes under 5 feet superficial. Lactometers, for testing the quality of milk, 4 tubes, 7s. 6d.; 6 tubes, 10s. complete. Glass Milk-pans, Pastry Slabs, Rolling Pins, and Moss Dishes for Bulbous Plants. Propagating and Bee Glasses. Fish Globes. Gas and Lamp Glasses of every description. Linseed Oil Putty, 8s.; White Lead, 26s. per cwt. Linseed Oil, Turpentine, Paints, Colours, Varnishes, Brushes, and Tools in every variety.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—GEORGE NEIGHBOUR and SON, 127, High Holborn, London.

"Nutt on Bees" (6th edition), now published.

MILTON'S BEE-HIVES.—These Hives are made in every variety, for the purpose of taking the honey without killing the bees. They are composed of various materials, to suit all climates, and may be relied upon for practical use. Their simplicity of construction and easy management ensure success.

BEE GLASSES of all sizes, and every article connected with the Apiary supplied. A Sheet of Illustrations of Bee Hives, &c., 1s. The "Practical Bee Keeper," by JOHN MILTON, 4s. 6d. 10, Great Marylebone-street, Wimpole-street, London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, bernacle, brent, and laughing geese, sheldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and duu divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

WIRE-WORK, HOT-WATER APPARATUS, GREENHOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS on improved and economical principles.

Parties waited on in Town and Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

SILKWORMS' EGGS.—Twelve dozen will be forwarded to any address upon receipt of 12 postage stamps, by JOSIAH JESSOP, the Aviaries, Cheltenham.

A large stock of Miniature GOLD FISH, perfect gems, and adapted for Globes.

GUANO CHEAPER THAN EVER.

POTTER'S GUANO is now 7l. per ton, and of superior quality, owing to recent chemical discoveries, and an improved mode of manufacture. An experience of eight years has shown it to be fully equal to the best Peruvian Guano, and 25 per cent. cheaper. See testimonials. If a quantity is taken a specific arrangement may be made.

GYPSUM (Great Reduction in Price), is offered at 15s. per ton, at the works, loose, or in bags if required. It has been analysed by an eminent chemist, and pronounced pure.—W. H. POTTER, 28, Clapham-road Place, Kennington.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

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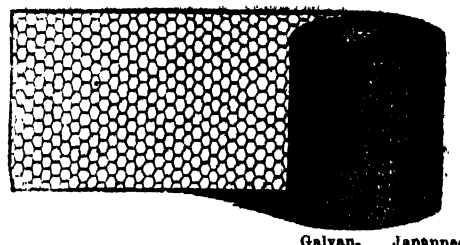

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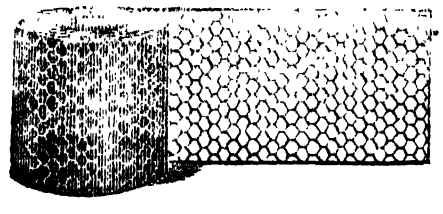

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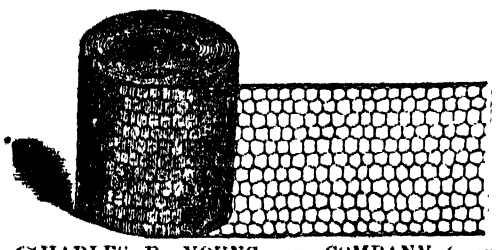

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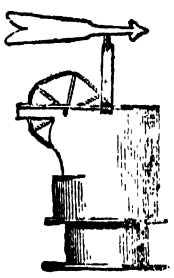

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Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Churchrow, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street in the Precinct of Whitefriars, in the City of London, and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent garden, in the said county, where all Advertisements and Communications are to be addressed to THE EDITOR.—SATURDAY, APRIL 7, 1849.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 15.—1849.] SATURDAY, APRIL 14. [PRICE 6*d*.

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ROYAL BOTANIC SOCIETY, REGENT'S PARK. The Fellows and Members are informed that, by an arrangement with Mr. H. Waterer, of Knap Hill; Messrs. John Waterer, Standish and Noble, and Baker, of Bagshot, and other Nurserymen, the Council will be enabled, in the course of the Season, to place in the Gardens of the Society an extensive Collection of AMERICAN PLANTS. This Collection will be open to the Fellows, Members, and their friends, as on all ordinary occasions; but that the Public may have an opportunity of viewing a display of Floriculture which the Council have reason to believe will be unprecedented, an Exhibition of these Plants will take place on Saturday, May 26, and Saturday June 2. Admission to the Gardens on either of those days to be obtained by the same ticket as that provided for the General Exhibitions. Such ticket to admit one person, at the option of the holder, either on one of the above mentioned days, or to one of the General Exhibitions.

The privilege of admitting Visitors, either by Fellows personally, or by written orders, will necessarily be suspended on the 26th of May and the 2d of June, as upon other extraordinary occasions.

By order of the Council, J. D. C. SOWERBY, Secretary.

ROYAL BOTANIC SOCIETY, Regent's-park.—The EXHIBITIONS OF PLANTS, FLOWERS, and FRUIT, for competition this season, will be held on WEDNESDAYS, May 16th, June 20th, and July 4th.

The Exhibition of Plants in the AMERICAN GARDEN, will be open on SATURDAYS, May 26th, and June 2d, at 2 o'clock.

Tickets, each to admit one person, on any one of the above-mentioned five days, may be obtained at the Gardens by orders from Fellows of the Society. Price, on or before May 5th, 4*s*.; after that day, 5*s*.; or on the days of Exhibition, 7*s*. 6*d*. each. Fellows may have packets of 30 tickets until May the 5th, for 5*l*. 5*s*.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY, under the patronage of her MOST GRACIOUS MAJESTY the QUEEN.—The FIRST EXHIBITION for the season will take place at the HORNS TAVERN, Kennington, on WEDNESDAY, April 18th, 1849. Open to all Exhibitors. Prizes will be awarded for the following productions, viz.:—Miscellaneous Plants, Auriculas, Heartsease, Cinerarias, and Polyanthuses; in addition to which the Royal Adelaide Cup, presented by her Majesty the Queen Dowager, will be given for the best collection of Miscellaneous Plants. Mr. John Oakey's Band is engaged for the occasion. Admission to non-members from 1 till 6 o'clock at 1*s* each. List of Prizes and the Rules of the Society may be obtained from JOHN TAYLOR NEVILLE, Secretary, Ebenezer House, Peckham.

Subscriptions, 20*s*. per annum, entitling each member to the privilege of attending all Flower Shows, Lectures, and Meetings of the Society; of exhibiting Flowers, Fruit, and Plants, their own growth, in competition for Prizes, without any charge for entry; and also to have two free admissions for friends at each Flower Show, Lecture, or Meeting.

THE EXHIBITION OF AMERICAN PLANTS AT OAKLEY SQUARE, KING'S ROAD, CHELSEA, WILL BE CONTINUED THIS YEAR, AS USUAL.

HOSEA WATERER, KNAP HILL NURSERY, WOKING, SURREY.

A GRAND HORTICULTURAL EXHIBITION, Open to all England, is fixed to take place on THURSDAY, May 31st, 1849, at the Jephson Gardens, Leamington, under the special patronage of the High Sheriff and many of the resident nobility and gentry of the county of Warwick, when Prizes will be awarded on the most liberal scale, for Stove and Greenhouse Plants, Geraniums, Azaleas, Rhododendrons, Pansies, and various miscellaneous productions; a Schedule of which may be obtained from OWEN WHITE, Esq., Honorary Secretary, Jephson Gardens, Leamington, and is advertised in "The Horticultural Magazine" for April and May.

Jephson Gardens, Leamington, April 14.

VIOLA LUTEA.—An imported species from Patagonia. This lovely little hardy, bright yellow VIOLET, was exhibited at Chiswick, in May, 1848, when it had the Banksian medal awarded, and was universally admired. Messrs. VEITCH and SON will have well established plants ready for delivery, on and after Monday, the 7th of May, at 5*s*. each, or six for 21*s*. to the trade.—Exeter, April 14.

FIRST-RATE FUCHSIAS AND VERBENAS.

THOMAS SORRELL, NURSERYMAN and FLORIST, Springfield and Chelmsford, respectfully informs the Trade and Gentlemen in general that it is his intention to let out his two FUCHSIAS "CARACTACUS" and "ISABEL," and VERBENAS "OCEAN MONARCH" and "SHYLOCK," which are pronounced to be unique in all properties. Descriptive Catalogue can be had on application as above.

THE FINEST SHOW CARNATIONS, PICOTEES, PINKS, PANSIES, FUCHSIAS, VERBENAS, CINERARIAS, GLOXINIAS, &c.

YOUELL AND Co. are now executing orders for the above, in strong healthy plants, at the following prices. Also their superb new Red-edged Picotee, "The Gem," at 10*s*. 6*d*. per pair.

CARNATIONS AND PICOTEES. £ *s*. *d*.

12 pairs of very fine show flowers, by name, 1*l*. 4*s*. and 1 10 0
25 ditto ditto ditto 2*l* 10*s*. and 3 0 0
12 pairs of newest and finest first class show flowers ... 2 10 0
25 ditto ditto ditto ditto ... 5 0 0

Fine mixed border Carnations, 12*s*. per dozen pairs.

PINKS.—Finest first class show varieties, 12*s*. and 18*s*. per dozen pairs.

PANSIES.—Finest first class show flowers, 10*s*. and 18*s*. per dozen.

FUCHSIAS.—The newest and most beautiful varieties out, 9*s*., 12*s*., and 18*s*. per dozen.

VERBENAS.—The most select and beautiful of last season, 6*s*. to 9*s*. per dozen.

CINERARIAS.—Fine flowering plants of the best show varieties, 9*s*. to 18*s*. per dozen.

GLOXINIAS.—A most splendid collection of new varieties, including Teuchleril, Griffithii, &c., 12*s*., 18*s*., and 24*s*. per doz.

ERICAS.—Fine bushy plants of the best free flowering sorts, 9*s*. per dozen.

FLOWER SEEDS.—30 packets of new and choice kinds, per post, free, for 6*s*.

Catalogues of the above, with an extensive variety of highly ornamental plants, will be forwarded by enclosing two postage stamps.—Great Yarmouth Nursery.

NEW SEEDLING DAHLIAS, to be sent out in May.—GAINES'S QUEEN DOWAGER, 10*s*. 6*d*; yellow ground, tipped with pure white, acknowledged to be the most distinct fancy Dahlia ever exhibited; it obtained a prize at Teddington.

GAINES'S Delicata, 10*s*. 6*d*. GAINES'S Goldfinch, superb, 10*s*. 6*d*. GAINES'S Elegantissima, 10*s*. 6*d*.

N. GAINES has a few good plants left of his new seedling Pelargoniums and Calceolarias, which he can recommend. A descriptive list can be had by applying at the Nursery, Surrey lane, Battersea.

SELECT PLANTS NOW SENDING OUT.

BASS AND BROWN are now sending out the following choice Selections. Their DESCRIPTIVE PRICED CATALOGUE may be had on application.

GERANIUMS. *s*. *d*.

25 Superb Show varieties, 21*s*.; 12 for ... 12 0
25 New and Superb ditto, 50*s*.; 12 for ... 30 0

Fine varieties, 6*s*. to 9*s*. per dozen.

*FUCHSIAS.

12 of the following superior new varieties of 1848, for 15*s*. (purchaser's selection 20*s*.): Smith's Ne plus ultra, Dr. Smith, and Esteem; Salter's Hercules and Pius IX.; Miellez' Flavescens, Prince de Lambelles, Roi de Rome, and Triumph; Knight's Heroine and Ibrahim Pacha; Turville's Beauty of Chelmsford and Fountain; Tiley's Jenny Lind, Barkway's Brilliant and Lady Buxton, Sheriff's Scarletina reflexa, Mayle's Enchantress.

25 fine varieties, 10*s*.; 25 superior vars. ... 17 6
12 fine vars., 5*s*.; 12 superior vars. ... 9 0
50 varieties, in very fine and choice assortments ... 35 0

*PETUNIAS.

12 superior new varieties of 1848 ... 15 0
12 fine varieties, 4*s*., 12 superior ditto ... 9 0

*VERBENAS.

12 of the following superior new varieties of 1848 for 12*s*. (purchaser's selection, 16*s*.), viz, Barker's Lady of the Lake and St Margaret; Smith's Captivation and Vixen, Salter's Harlequin, Ivery's Emperor of China; Robinson's Defiance; Edmunds' Edmundiana, Vulcan Superb, Perfection, White Giant, and Marquis of Douro; Gill's Duke of Norfolk, Petoil, Supreme, and Gillmanii; Barnes's Rosa, Knight's Beauty of Sussex and Arethusa, West's Rubra multiflora, Beadle's Diversity and Anacreon.

25 fine varieties, 8*s*.; 25 superior varieties 12 0
12 fine varieties, 4*s*.; 12 superior varieties 7 6

*CHRYSANTHEMUMS.

12 superb new varieties, as follows, for 15*s*., viz., Amadis, Diamant de Versailles, Etoile de Versailles, Gem of Versailles, Hector, Helvetius, La Reine d'Or, Madame Chauviere, Pharamond, Polar Star, Reine des Belges, and Thalia.

25 fine varieties, 10*s*. 6*d*.; 25 superior varieties ... 17 6
12 fine varieties, 6*s*.; 12 superior ditto ... 9 0

GREENHOUSE PLANTS.

50 fine and select species and varieties 50 0
25 ditto, 28*s*.; 12 ditto 15 0
12 extra choice and select 25 0
STOVE PLANTS, 12 fine and select varieties 18 0
*ACHIMENES, 12 fine and select varieties 7 6
" Six fine new varieties for 15*s*., viz., Fimbriata, floribunda elegans, Ghiesbrichtii, Knightii, Patens major, and venusta.
GLOXINIAS, 6 fine varieties 6 0
HARDY HERBACEOUS PLANTS, 100 fine and select showy varieties, including many new 50 0
50 Ditto ditto, 30*s*., 25 ditto ditto 17 6
ROCK PLANTS, 25 varieties, 12*s*.; 12 varieties ... 7 6
*PHLOX, 12 fine varieties 9 0
ANTIRRHINUMS, 12 fine vars., 6*s*.; 12 superior ditto 10 0
HARDY ORNAMENTAL CLIMBING PLANTS, 12 vars. 9 0
GREENHOUSE CLIMBING PLANTS, 12 select vars. ... 12 0
HARDY SHRUBS, 12 select varieties 12 0

Those marked thus * can be sent by post if desired, without extra charge. Goods sent carriage free to London; and for long carriage of goods of 40*s*. and upwards extra plants sent gratis. Particular attention is paid to secure packing, and strong packages provided for plants sent to long distances.—Post-office orders are payable either to Bass and Brown or to STEPHEN BROWN. Remittances requested from unknown correspondents.

Seed and Horticultural Establishment, Sudbury, Suffolk.

ROBERT WHIBLEY is now sending out the following first-class VERBENAS, &c.—Countess of Newburgh, Champion, Empress of Scarlets, St. Margaret, Robinson's Defiance, Mrs. Barker, Marchioness of Ailsa, Cœur de Lion, Magna, Lady of the Lake, Anacreon, Vampa, Imperatrice Josephine, Valentine de Saveuse, Gem of the West, Picta, Souvenir, Vulcan, Superb, Heloise, Atrosanguinea. Twelve of the above for 8*s*., or the set of 20 for 10*s*. They are particularly recommended, as being distinct and really good.

FUCHSIAS.—The following first-class varieties at 15*s*. per dozen; fine plants, which are really distinct and good. One in Ring, Rosalia, Star of the West, Duke of Cornwall, Passingham's Conqueror, Apollo, Comte de Beaulieu, Corallina, Brilliant, Lady Buxton, Duchess of Sutherland, Sir H. Pottinger, Una, Princess Helen, Purity, Beauty of St Leonard's, Jenny Lind, Dr Smith, Albano, Enchantress, Fountain, Esteem, Ne Plus Ultra, Beauty of Chelmsford, Beauty of Leeds, Scarletina reflexa, Hailstorm, Etoile de Versailles, Eximia, Mont Blanc, Colossus, Dreadnought, Beauty of Dalston, Elizabeth, Great Britain, Matchless. Other varieties, 10*s*. 6*d*. per dozen.

CALCEOLARIAS. per doz.

Kentish Hero.—This is a splendid bedding var. 12*s*. to 15*s*.
Amplexicaulis.—Imported var., first rate for bedding. 15*s*.
Albiflora.—White blooming in spikes ... ... 18*s*.
Viscosissima and Knyii ... ... 6*s*.

Scarlet PELARGONIUM, Conway's Royalist—this is a splendid variety; strong plants, 5*s*. each. Ivery's Scarlet, much admired for its fine foliage and habit, 2*s*. each.

Cuphea platycentra and strigulosa	per doz.	4*s*.	0*d*.	
Heliotropium Voltairianum	... ...	6	0	
" Triumph de Liege	... ...	9	0	
Plumbago Larpentæ	from 1*s*. 0*d*.	to 3*s*.	6*d*.	each.
Zauschneria Californica	" 1 6	" 2	6	"
Salvia oppositiflora	... ...	5	6	"
Pentstemon gentianoides (true) colour blue		1	6	"
" rosea		0	9	"

DAHLIAS.—Purchaser's selection, at 6*s*. per dozen.—Andromeda, Alice Hawthorn, Athlete, Antagonist, Applause, Admiral Stopford, Aurantia, Blondetta, Bathonia, Bermondsey Bee, Berryer, Beauty of Hants, Beeswing, Bianca, Bridesmaid, Cyclops, Cassandra, Cleopatra, Captain Warner, Drimotheus, Doctor Graham, Delicata, Essex Rosy Lilac, Empress of the Whites, Essex Primrose, Essex Triumph, Goldfinder, Gloria Mundi, Globe Crimson, Hampstead Rival, Heffer, Hero of Stonehenge, Hero of Madul, Jones Hanly, Lady St. Maur, Lewisham Rival, Lee's Bloomsbury, Louis Philippe, La Polka, Lady Stopford, Lord St. Maur, Lady Sale, Mrs. Stanley, Miss Abbott, Mrs. Shelley, Marchioness of Cornwallis, Mimosa, Madam Bavais, Melanie, Madame Chauviere, Madame, Nonpareil, Nicholas Nickleby, North Midland, Phenomenon, Princess Radziville, Purpurea alba, Perpetual Grand, Prince of Wales, Queen of Trumps, Queen of Sheba, Queen of Roses, Rose d'Amour, Rosy Lilac Rival Yellow, Rose Unique, Sir John Richardson, Scarlet Gem, Sir James Stewart Richardson, Shaded Lilac, Springfield Rival, Sir Robert Sale, Unique, Victoria, Village Maid, Victory of Sussex, Virgil, Windmill Queen. They are very distinct and good, and can be highly recommended.

CHRYSANTHEMUMS.—The following, for distinctness, freeness of bloom, colour, and habit, are not surpassed, at 6*s*. per dozen, or the set for 10*s*.—King of the Crimsons, Madam Poggi, Comte de Rantzou, Sphinx, Isolier, Campestroni, Phidias, Duc de Conigliana, Fleur de Marie, Vesta, Formosa, Lucida, Invincible, Temple of Solomon, Annie Salter, David, Argo, Queen of the Gipsies, Aristides, Louis-Philippe, Floribunda, Pilot, Queen, Marshal de Cirque, Duchess D'Aumale, Phyllis, Incomparable, Aridea.

CHOICE BEDDING PLANTS.

Geraniums in very great variety, for borders, extra fine plants, 8*s*. per dozen. The following at 4*s*. and 6*s*. per dozen, fine plants, Fuchsias, Scarlet Geraniums, Petunias, Verbenas, Calceolarias, Cuphea, Heliotropiums, Mimulas, Pentstemons, Salvias, Phloxes, Bouvardias, Senecio elegans, Ageratum, &c. My own selection, fine plants, 3*s*. 6*d*. per dozen. Basket and packing free, and plants extra to compensate the carriage. All orders executed in the rotation in which they are received. Post-office orders are required from unknown correspondents, payable at Kennington Cross. The stock consists of a great many thousand plants, of the finest growth, and purchasers are respectfully requested to pay a visit to the nursery. N.B. Gardens and Pleasure Grounds tastefully planted, and kept in order, by the day or year, on reasonable terms.—Chester Nursery near Wheler-place Kennington-road, London.

GRASS SEEDS.

SUTTON AND SONS having for upwards of 30 years been engaged in collecting GRASS SEEDS, and laying down land to Permanent Pasture, can supply Seeds, properly assorted to suit any of the various soils of Great Britain, so as to insure a good Pasture, AT A VERY MODERATE EXPENSE, viz.:

	£	*s*.	*d*.
THE VERY BEST SORTS OF GRASSES AND CLOVERS FOR PERMANENT PASTURE, mixed expressly for the soil, per acre	1	12	0
GOOD PERMANENT GRASSES AND CLOVERS, strongly recommended, per acre	1	2	6
TRUE ITALIAN RYE GRASS, per bushel	0	6	6
FINEST LAWN GRASS SEEDS, consisting solely of the finest and shortest growing kinds, per bushel 25*s*., or gallon	0	3	6
SUTTON'S RENOVATING MIXTURE of Perennial Clovers and fine Grasses, for improving old Pastures (6 to 8 lbs. per acre required), per lb.	0	1	0

Fresh Lucerne, per lb., 1*s*.; French Furze do., 1*s*.; White Belgian Carrot, Large Cattle Parsnips, Yellow Globe and other Mangold Wurzels, Kohl Rabi, Drumhead and other Cabbages, at the lowest market prices.

*** Goods delivered free to London, Bristol, or Basingstoke.

JOHN SUTTON and SONS Reading Berks.

WAFER CAGES.

UNDERWOOD, CUTLER TO HER MAJESTY, 56, Haymarket, London, begs to inform Amateurs, Gardeners, Nurserymen, and others, that he has manufactured a superior Entomological Trap from 6 to 12 in. high, in square and oval shapes. It is well known that every Wasp caught in the early part of the season, is the destruction of a whole nest. Also an improved Knife for cutting honey-comb from beehives. A large assortment of Improved Budding Knives, Pruners, Saws, &c.

PHLOX DE'RESSA.

EDWARD GEORGE HENDERSON, Wellington-road, St. John's-wood, London, will, on the *1st* of May, commence sending out the above desirable plant at *7s 6d* and *10s. 6d.* each, and he feels confident that every lover of floriculture, on seeing it in cultivation, will hail it as a great acquisition to the flower garden, and a novelty in so far as it will be the origin of an entirely new class for bedding. It is a hybrid between P. Drummondii and one of the best hardy herbaceous kinds, of a free, robust, and procumbent growth, not exceeding 1 foot in height, having fine dark green foliage, and producing (from May until October) large corymbs of bright rosy purple flowers. E. G. H. will at same time send out the following, viz.:

GAILLARDIA SPLENDIDISSIMA, at *10s. 6d* each.—This splendid variety surpasses in every point all other Gaillardias known. The general appearance of the plant when bedded out is extremely fine. In habit it is dwarf and compact, and blooms wonderfully free, throwing up masses of large flowers, the petals of which bear an equal proportion of deep golden yellow and rich crimson.

PETUNIA ELEGANTISSIMA, at *5s.* each.—A finely formed flower, of good substance, medium size, of a close and dwarf habit, rich in colour, of rosy purple ground, deeply veined, and has a dark throat.

SALVIA AZUREA COMPACTO, at *5s.* and *10s. 6d.* each.—A very pretty dwarf and free blooming variety, about 1 foot in height. The colour a beautiful azure blue, with clear white pencilling on the lower lip, and likely to prove one of the most useful bedding varieties.

EDWARD SPARY, FLORIST, SEEDSMAN, &c, Queen's Graperies, Park-street, Brighton, begs respectfully to inform his numerous friends that he has taken the above extensive Horticultural Establishment, and purchased of Mr Cheeseman his extensive and choice stock of GERANIUMS, FUCHSIAS, VERBENAS, CINERARIAS, VINES (in pots), &c., in addition to which E. S. has added his first rate collection of DAHLIAS, with a large stock of the most ornamental plants for bedding out, which will be ready to send out the first and second week in May. E. S. begs respectfully to solicit a share of patronage of the Nobility, Gentry, Clergy, and inhabitants of Brighton; and to those patrons in the Trade, who have favoured him with their commands in the Dahlia trade during his long residence near Hungerford, Berks, he begs to tender his grateful thanks, and respectfully solicits a continuance of their esteemed favours. Catalogues of Dahlias, &c., may be had on prepaid application.

N.B. E. S. regrets that, owing to the failure of the roots of Cook's "Flora" Dahlia, it cannot be sent out this season.

THOMAS BARNES (Successor to the late SAMUEL GIRLING), will commence sending out on the 30th of April, the following novelties, the whole of which he offers with the greatest confidence,

FUCHSIA, REV. F. W. FREEMAN (BARNES'S).—Blush, white tube and sepals, crimson scarlet, corolla large and fine, per plant, *7s. 6d*

VERBENA, BEAUTY OF STOWE (BARNES'S)—Pale blush, with bright pink centre, the pips well formed, and the truss large, fine; *5s.*

VERBENA, EXQUISITE (BARNES'S).—Silvery blush, new colour, and very distinct; *3s. 6d.*

VERBENA, QUEEN OF SUMMER.—Pale pink, with cherry centre, distinct, and fine, *5s.*

PETUNIA, BEAUTY OF RUSHBROOKE (BANKS'S).—Light ground beautifully veined with lilac purple, distinct; *5s. 6d*

PETUNIA, CERULESCENS (BARNES'S).—Blush ground, veined with blue, and blue throat, distinct and fine, *5s.*

PETUNIA, RESPLENDENT (BARNES'S).—Purple, shaded crimson, fine shape, *5s.*

PHLOX ALBA COMPACTA (BARNES'S).—Pure white, of fine shape and habit; *3s 6d.*

PHLOX ROSETTA (BARNES'S).—Lilac rose, fine form and habit, *3s. 6d.*

PHLOX, ROSE ELEGANS (BARNES'S).—Bright rose, of fine form; *5s. 6d.*

The above are mostly noticed in "Glenny's Almanack," and will be found acquisitions.

T. B. has also a healthy stock of all the leading sorts of Verbenas, Fuchsias, Petunias, Phloxes, &c. &c., descriptive Catalogues of which are ready and may be had on application, by enclosing two postage stamps. N.B T. B.'s splendid and unrivalled Seedling Dahlias will be ready early in May.

Dancroft Nurseries, Stowmarket, April 11.

STORY'S HYBRID FUCHSIAS—"ELEGANTISSIMA" AND "NEWTONIENSIS."

W. H. STORY, Esq., White Hill, Newton Bushell, Devon, having placed in the hands of Messrs. VEITCH and SON the Stock of the above beautiful and distinct varieties, they beg to inform the Public that they will be able to supply well established plants on and after Monday, the 7th of May. Woodcuts of them are given in the first number of "The Florist;" the larger flower being "NEWTONIENSIS," and the one most reflexed "ELEGANTISSIMA." The latter was exhibited at Regent's Park in June, and had a first-class certificate awarded.

The Editor of "The Florist," in describing them, says, "they are very distinct in colour, with no poverty of any kind about them, but much richness. The texture smooth and glossy on the surface, and, from their peculiar and elegant form, they show to the greatest advantage their compact and deep violet-coloured corollas, their sepals are a bright scarlet crimson, and altogether they are very desirable varieties."

"ELEGANTISSIMA," *10s. 6d.*, "NEWTONIENSIS," *10s. 6d*

Messrs. VEITCH and SON have also at the same time to offer Reben's "GEM OF THE WEST," *10s. 6d.* each, the stock of which they have purchased of the raiser, Mr. Reben, Gardener to W. Daubrey, Esq., Killion, Truro, and which they believe to be the best white Fuchsia in existence. The tube is long, pure white, without any roughness or coarseness so usual in white Fuchsias. Sepals symmetrical, smooth, and well reflexed, showing a beautiful, well formed, violet purple corolla. Habit and foliage unexceptionable. Messrs. VEITCH, considering the above three varieties to be unequalled by any in existence, confidently recommend them, believing they will give perfect satisfaction. The usual discount when three of each or either are taken.—Exeter, April 14.

N.B. From unknown correspondents a respectable reference, or the amount prepaid, will be required, without which plants cannot be sent.

GREENHOUSES AND HOTHOUSES, warranted best Materials. A Lean-to Greenhouse, 12 feet by 8 feet, two glass ends, one door, 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, painted three times, and delivered to any of the railroads or wharfs in London, *15l* 10s., a ditto, 15 feet by 10 feet, *22l.* 10s.; a ditto, 18 feet by 12 feet, *28l.* 10s.; a ditto, 21 feet by 12 feet, *32l.* 10s. Including a plan for brickwork. Two-inch Lights, glazed with 16 oz. sheet glass and painted, 1s. per foot, glazed with Hartley's patent rolled plate glass (requires no shading), 1s. 4d. per foot.—J. LEWIS, Machine Hothouse Works, Stamford-hill, Middlesex.

IMPROVED FLOWER STICKS—THESE FLOWER STICKS are of a circular form, thereby avoiding angles and sharp edges, which are liable to cut and injure the plants. They may be had stained brown or green to suit the various plants.—To be had of all respectable Nurserymen and Seedsmen, and dealers in Garden Implements Manufactured and sold Wholesale, at H. MORRELL'S, 149, Fleet-street, London.

N.B. Samples to be seen at the Office of this Paper.

SEEDLING PETUNIAS.

BASS AND BROWN are now sending out the following beautiful and first-rate varieties, descriptions and characters of which are given in the *Gardeners' Chronicle* of March 24th and 31st.

Brilliant	5s. 0d.	Spotted Beauty	5s. 0d.
Beauty of Suffolk	5 0	Hesperus	3 6
Renown	5 0	Nymph	5 0
Telegraph	5 0		

The usual allowance to the Trade by taking the set.

Seed and Horticultural Establishment, Sudbury, Suffolk.

T. TURVILL FLORIST, &c., Baddow-road, Chelmsford, begs most respectfully to return his sincere thanks to those friends who have favoured him with their kind and liberal support, and assures them that all future orders will meet with his strict attention. He now recommends to their notice the following List, including his unrivalled White Fuchsias, &c.

NEW DAHLIA.

C. TURNER.—Beautiful white, tip with bright purple round, well cupped, very high centre, good outline, and very constant.

T. TURVILL has no hesitation in saying this is the best Dahlia he ever raised; it was a seedling from Standard of Perfection; the fine habit and form, with high centre at all times. This flower has been seen by most of the first growers, and pronounced by them the best light flower they have seen. In 1847 and 1848 it took five first class certificates at the Metropolitan and other open shows; the early frost prevented it from being shown more last season.—Plants, *10s. 6d.*

NEW FUCHSIAS.

ELEGANCE.—Pure white tube and sepals, well expanded, showing the fine bright rosy vermillion corolla; it measures from 6 to 8 inches, including seed vessel to the tip of the pistil, and is allowed by all who have seen it to be the best white Fuchsia yet sent out; it has a most beautiful foliage, and very graceful habit. See the "Florist," for October, and the *Gardeners' Chronicle* for August 5, besides other floricultural works. —Plants in May, *10s. 6d.* each.

GEM.—Very white tube and sepals, with a bright violet purple corolla, the sepals extending horizontally, so that the corolla is well seen; a handsome variety, with full average size, free in flowering, and very graceful.—Plants in May, *10s. 6d.* each.

FIRE KING.—Light pink tube and sepals, well expanded, corolla of the brightest scarlet, fine, and vivid in colour, excellent habit, and good foliage.—Plants in May, *7s. 6d.* each.

SHYLOCK.—Large stout flower, with light pink tube and sepals, striped with rose, fine stout rosy crimson corolla, sepals short, colours clear and very handsome; a decided improvement on Beauty of Leeds.—Plants in May, *7s. 6d.* each.

These Fuchsias have been carefully selected from several thousand seedlings.

PETUNIAS.

PRINCESS ALICE.—Fine formed flower, peculiarly rich lilac colour, darkly veined with claret, and flamed and shaded with deep rose, with dark purple throat.—Plants, *3s. 6d* each.

PRINCE OF WALES.—Large bold flower, pale blush, beautifully shaded with purple, with black throat.—Plants, *3s. 6d.* each.

CONSERVATIVE.—Nearly blue, pretty, self; quite distinct, good outline.—Plants, *3s. 6d.* each.

T. T. can with confidence say they are quite distinct from any yet out, having purchased the stock of a successful grower of the Petunia. All orders from unknown correspondents must be accompanied with post-office orders, payable at Chelmsford.

FUCHSIA SPECTABILIS, OR, QUEEN OF FUCHSIAS.

MESSRS. VEITCH AND SON have much pleasure in offering this magnificent FUCHSIA to the public. It has only to be seen to be admired, being without doubt the most beautiful of all hitherto introduced species. Whether we look at the exceeding beauty of its blossoms habit, and foliage, or at the certainty of its becoming the parent of an altogether new race of Hybrid Fuchsias, there cannot be a doubt but that it completely outvies all other known species. It was exhibited at the Horticultural Society's Rooms, in Regent-street, on the 22d of April, 1848, and had the Large Silver Medal awarded It was also exhibited at Regent's-park in June, and had the First Prize for new and rare plants. A woodcut and description of it is given by Dr. LINDLEY in No. 20 of the *Gardeners' Chronicle* of last year. It is also figured in "Curtis's Botanical Magazine" and "The Florist" for June last, on reference to which further particulars and a full description can be obtained. Well-established plants will be ready for delivery on and after Monday, the 7th of May, at *21s.* each, with one over to the trade on every three taken. Orders will be executed strictly in the rotation received, and a list of such of the trade as have ordered it will appear in the next week's advertisement. From unknown correspondents a respectable reference, or the amount prepaid, will be required, without which plants cannot be sent.—Exeter, April 14, 1849.

N.B.—A beautiful coloured plate of the above can be had by inclosing 13 postage stamps.

FRENCH GORSE, OR FURZE.—Fine New Imported Seed, 1s. per lb. Also Fresh Imported LUCERNE, *10d.* per lb. True ITALIAN RYE-GRASS, *6s. 6d* per bushel.

White Belgian and other Carrots, Yellow Globe and other Mangold Wurzels, Skirving's Liverpool and other Swede Turnips, Giant Saintfoin, and all other Agricultural Seeds, at the lowest market prices. The above are confidently recommended by JOHN SUTTON and SONS, Reading, Berkshire.

*** CART are free to London, Bristol, or Basingstoke.

IMPORTANT TO HOLLYHOCK GROWERS.

EDWARD TILEY begs respectfully to apprise the nobility, gentry, and others that he has been successful in procuring a quantity of the above seed, saved by a gentleman amateur, from one of the choicest collections in the world; the bloom is very symmetrical and handsome—the outer or guard petals do not extend more than half an inch beyond the centre, forming a perfect circle; it is free from indentation or curl, in any part; the centres are unique, and form that of half a globe, composed of innumerable smooth-edged petals, closely and neatly folding the one within the other. This is the true character of the flower the seed has been saved from by the grower of it. Growers wishing to get a good collection should not delay the present opportunity; the seed spoken of so highly has been thoroughly proved, and bring the major part of the plants equal to the collection the seed was saved from. Sold in packets *2s. 6d.* each, or packets containing 200 seeds, *5s.*; larger packets of 500 seeds, 10s. Parties purchasing the above may depend on having the finest double Hollyhocks yet grown.

E. T. has a choice Collection of SWEET-WILLIAM SEED to dispose of, saved from semi-double flowers of the finest colours, producing the greater part double; the varieties have been shown at the different exhibitions, and much admired, for the last two years. Sold in packets, 1s. 6d. each.

GERMAN ASTER SEED, unequalled for the superior quality of the flower, forming that of half a ball, beautifully quilled; above 20 distinct varieties, in packets, 1s. 6d. each.

ANTIRRHINUM SEED, all saved from fine striped and spotted varieties; 1s per packet.

24 choice varieties of HARDY ANNUAL SEEDS, 3s. the packet, or a packet of each of the above, including a packet of the 24 Hardy Annuals, for 8s.

Improved Walcheren Cauliflower Broccoli, Wilcove do., Tamworth do., 1s each per packet. These Broccolies have proved the best in cultivation.

The whole or any part of the above sent postage free, on the receipt of a post-office order, or the amount in penny postage stamps.—Sold by EDWARD TILEY, Seedsman and Florist, 16, Pulteney Bridge, Bath.

HUGH LOW AND CO. can with the greatest confidence recommend the undermamed:

HELIOTROPIUM, "SOUVENIR DE LIEGE."—This fine new variety, now for the first time offered in this country, possesses the great advantage of flowering naturally very early, and also continuing in perfection for a much greater length of time than any of those previously introduced. The individual flowers, as also the truss, are very large and highly fragrant; colour pure violet with a yellowish tinge towards the centre. The habit of the plant is very dwarf and compact, and from the long continuance of its flowering, and other good qualities, it will undoubtedly prove a very desirable acquisition either for bedding or pot culture. Price *7s. 6d.*

FUCHSIA, "THE RAJAH."—This is the finest of the dark varieties. Habit compact and good; corolla violet purple, beautifully cupped; sepals bright red, of waxy consistence, as much reflexed as a Turnecap Lily. Price 10s. 6d.

FUCHSIA, "SPLENDIDA."—This is also a dark variety of great merit, and in particular remarkable for its very fine habit and profusion of flowers. Price 10s. 6d.

The Fuchsias named above were obtained from seeds by JOHN WILMORE, Esq., of Birmingham, and the acknowledged superiority of that gentleman in improving, by careful and scientific hybridisation, some of the finest genera of plants, will be a sufficient guarantee for the excellence of those now offered. Plants of the Heliotrope and the Fuchsias will be ready to send out in May. The usual discount to the Trade.

BORONIA TETRANDRA (B. microphylla of gardens).—A very fine new species. Habit compact; a most abundant bloomer, producing the flowers in the way of B. pinnata; will make an excellent specimen plant for exhibition. Strong plants, *7s 6d.*

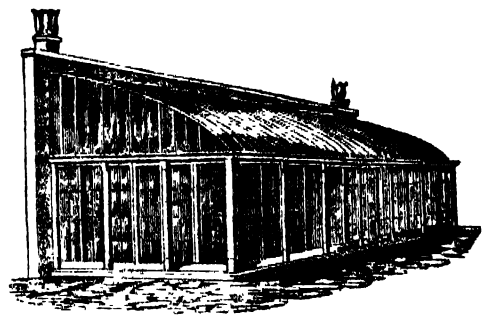
In addition to the above, H. Low and Co will be able to supply all the novelties sent out by other growers, including the Continental Phloxes, Verbenas, and Chrysanthemums, now so much admired, Catalogues of which, containing also their General Collection, are in course of publication, and when ready will be forwarded, post free, on application.

Clapton Nursery, London, April 14.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.

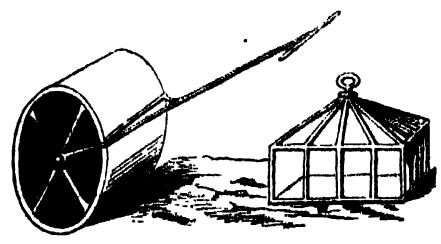
J. WEEKS AND CO., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

COTTAM & HALLEN, ENGINEERS, IRON FOUNDERS, &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON.



COTTAM and HALLEN having had experience in the erection of HOTHOUSES and CONSERVATORIES (made of Iron or of Iron and Wood combined), and from many improvements they have made during that time, can with confidence undertake to erect such buildings with economy and dispatch.

HOT WATER APPARATUS for heating the above and other buildings (of which they have constructed upwards of 3000), fixed at greatly reduced prices.



COTTAM and HALLEN have on show at their repository, No. 2, Winsley-street, Oxford-street, a great variety of the following articles, for GARDENS, &c., at Greatly REDUCED PRICES, viz.:

Garden Rollers,	Hand-glass frames,
Garden Engines,	Flower Stakes,
Garden Syringes,	Flower-bordering,
Watering Pots,	Flower Stands,
Garden Vases,	Garden Arches,
Mowing Machines,	Garden Chairs.

Every description of Work, both plain and Ornamental in wrought and cast iron, for Gardens, &c. &c.

HORTICULTURAL TOOLS and AGRICULTURAL IMPLEMENTS of all kinds.

STRONG IRON HURDLES, strained Wire Fencing, &c.

Show Rooms at the MANUFACTORY, 2, Winsley-street, and 76, Oxford-street, three doors West of the Princess's Theatre.

GERANIUMS, LILIUM LANCIFOLIUM, AND NEW PLANTS.

HENRY GROOM, Clapham-rise, near London, by Appointment Florist to Her Majesty the Queen, and to His Majesty the King of Saxony, begs to inform the Nobility, Gentry, and Amateurs, that his CATALOGUE for this Spring is ready, and will be forwarded by post on application.

J. HINE informs his friends and the Trade in general that his CATALOGUE of choice Geraniums, Fuchsias, Verbenas, Petunias, Cinerarias, Antirrhinums, &c., is now ready, and can be had on application.
Providence Nursery, Ramsgate.

SEEDLING VERBENAS.—Eclipse, the most distinct and splendid Verbena yet raised. See drawing and description in the "Florist." Strong plants by the 20th inst., 5s.
EPPSII.—See description in former advertisements. 3s. 6d.
The above sent by post or otherwise. A descriptive Catalogue of Geraniums, Fuchsias, Verbenas, Dahlias, &c. may be had by enclosing a postage stamp.
Wm. Jas. Epps, Bower Nursery, Maidstone, Kent.

NEW VERBENA, "BEAUTY OF HANDSWORTH."

HENRY POPE begs to inform his friends and the public generally that he intends sending out on the 1st of May, the above beautiful VERBENA, which has been seen by most of the principal growers, and greatly admired. Colour, a beautiful bright pink, with light eye; the truss of exquisite form and of good habit. Plants, 5s. each.
Gib Heath, near Birmingham.

FLOWER AND VEGETABLE SEEDS of every description.
PLANTS FOR BEDDING OUT, orders taken, to be delivered in May.
DAHLIAS, dry roots, at 6d., 8d., and 1s. each.
LILIUM LANCIFOLIUM ALBUM, 1s. 6d. each.
Araucaria, Ficus elasticus, Aloes, Cacti, Cedrus Deodara, constantly on show.
LAWN GRASS, 1s. 6d. per lb.
MEADOWS: where it is wished to improve the crop of Hay, sow from 2 to 3 lbs. of white Dutch Clover with 1 gallon of Perennial Rye or Italian Rye-Grass; the cost will be about 2s. 6d. to 3s. per acre.
AGRICULTURAL SEEDS at the lowest prices.
Duncan Hains, Seedsman, 109, St. Martin's-lane, Charing-cross, London.

SUPERB NEW VERBENAS.

MESSRS. BARKER and STEWART will have the pleasure to send out, on the 20th of April, the following beautiful new SEEDLING VERBENAS, six of which have obtained First-class Certificates from the London Floricultural Society. The collection of seven varieties will be charged 30s., and any separate kind may be had at 5s. per plant.
JUNIUS—colour a lively purple lake, with a rich velvety dark crimson centre.
EYEBRIGHT—colour a fiery rose, with a broad ray of deep carmine in the centre.
DUCHESS OF NORTHUMBERLAND—colour a beautiful peach, with a rose-pink centre, very large.
LORD OF THE ISLES—colour a distinct deep rose, a noble and exceedingly large flower.
MISS THOROLD—colour a beautiful pale lilac, a large bold trusser. BRIDE—a beautiful pearly white.
CARDINAL—colour a most dazzling scarlet, form and habit first-rate. N.B.—The usual discount to the Trade.
Meadrow Nursery, Godalming, Surrey.

CANSDELL'S NEW AMERICAN SACCHARINE PUMPKINS, superior to Swedes or Mangold Wurzel in fattening properties, for Cattle, Sheep, and Pigs.—Patronised by His Royal Highness Prince Albert, by whose royal command Mr. Cansdell, last year, grew upwards of 20 tons per acre, at the Flemish Farm, Windsor, and in several parts of Essex and Suffolk, without waste of tops or tails, or injury to the succeeding crop, for which it is considered to be as good a preparation as a clean fallow. Price 1s. per packet.
Also his New AMERICAN CUSTARD PLANT, or the MENOMONEE SQUASH, a delicious vegetable, raised for the first time in this country in the Royal Gardens, Frogmore, and for the growth of which Mr. Cansdell received a communication expressing Her Majesty's royal approbation. Price 1s. per packet.
SIX NEW AND CHOICE VARIETIES OF AMERICAN MELONS, grown last year in great perfection at the Queen's Gardens, and are sufficiently hardy to mature in ordinary seasons in the open air, if planted in a sheltered situation. Price 6d. each.
BENJAMIN R. CANT having made arrangements with Mr. Cansdell, begs to offer the above new and choice Seeds, which he will be happy to forward, post free, on application.
N.B. Printed directions upon each packet.
ST. JOHN'S-STREET NURSERY, COLCHESTER.

The Gardeners' Chronicle.
SATURDAY, APRIL 14, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Monday,	April	16	Chemical	8 P.M.
			Medical	8 P.M.
			Pathological	8 P.M.
			Statistical	8 P.M.
			British Architects	8 P.M.
Tuesday,	—	17	Horticultural	3 P.M.
			Linnean	8 P.M.
			Civil Engineers	8 P.M.
Wednesday,	—	18	Royal South London	1 P.M.
			Society of Arts	8 P.M.
			Geological	8½ P.M.
Thursday,	—	19	Antiquarian	8 P.M.
			Royal	8½ P.M.
Friday,	—	20	—Royal Institution	8½ P.M.
Saturday,	—	21	—Asiatic	2 P.M.
Monday,	—	23	—Geographical	8½ P.M.
Tuesday,	—	24	Syro Egyptian (Anniversary)	7½ P.M.
			Medical and Chirurgical	8½ P.M.
			Zoological	9 P.M.
Wednesday,	—	25	Microscopical	8 P.M.
			Ethnological	8 P.M.
Thursday,	—	26	London Institution (Anniver.)	12
			Royal Society of Literature (Ann.)	3 P.M.
			Numismatic	7 P.M.
Friday,	—	27	—Philological	8 P.M.
Saturday,	—	28	—Royal Botanic	3½ P.M.

Country Shows.—April 24: Handsworth and Lozells and Horticultural.

It may appear presumptuous to raise the question nowadays, as to what a flower garden should be decorated with. The favourites of our grandfathers are abandoned for a new and a gayer race. Dahlias, Pelargoniums, Pansies, Petunias, and Verbenas, have expelled Hollyhocks, China Asters, Stocks, Annuals, and "herbaceous plants;" the fashionable world prefers gaudy tints to varied forms; mere colour has driven away beauty; and who shall venture to doubt whether the fashionable world is right, or that the change in taste is permanent?

Nevertheless the lookers-on who speculate upon the vagaries of the changeable crowd sometimes inquire whether a red cloak is really so beautiful as an embroidered shawl; or a floor of coloured drugget in all respects as fit an ornament of a drawing-room as a carpet of a rich and varied pattern. To us they say, "How happens it that those who so much delight in rich brocades, gay tartans, and many-coloured muslins, are now content in their gardens with a few staring ill-blended colours; variety being the object in one, and bald uniformity in the other?" Our reply may be unexpected, but its justice will be acknowledged. "All that change arose out of bad gardening. A race of unskilful gardeners rendered hideous what should have been beautiful, and drove their employers to adopt the present style, which their successors have seldom thought of abandoning."

That a flower-garden containing a gay mixture of all manner of flowers, of all forms, colours, sizes, and appearances, will be more permanently interesting than one decorated, here with a yard of red Verbenas, there succeeded by a yard of white Verbenas, interrupted by a couple of yards of scarlet Pelargoniums, followed by a patch of white Petunias, will probably not be denied. But such plants are preferred in practice because nothing can be easier than to maintain the gaudy appearance which they produce, while to preserve the former in a state of beauty demands great skill, watchfulness, and forethought, and is far more expensive. A Verbena or a Pelargonium once planted, the work for the summer is at an end; the branches of such plants fall over the ground as they advance, a few pegs keep them in their places and there's an end—till the frost comes and converts the garden into a wilderness.

A flower-garden should be and can be always well stocked, let the season be what it may; not indeed at all times with flowers, but at least with what produces as pleasing an effect. There are Aconites, Christmas Roses, and Violet Grass for winter; Crocuses and their kindred species for the earliest spring; Hyacinths, Anemones, Wallflowers, and all sorts of early Alpine plants for the later spring; a countless host of species ready to decorate the summer and autumn; and as for the dead season of the year, when the flowers of autumn have all perished, and the first blooms of winter are still dormant, nothing is more easy than to occupy the ground with moveable evergreens of rich and painted foliage. Upon this plan all seasons have their peculiar features, and every month will bring a change—precisely what is wanted to render gardens the most agreeable. No rarities are needed for this, no tender strangers whose cost would buy the fee simple of the land they grow in, nothing demanding shelter and peculiar skill. On the contrary, the commonest and most old-fashioned plants are as good as the last novelty from the antipodes, and for many purposes better. Not that the present favourites would have to be excluded; on the contrary, their exquisite beauty and peculiar fitness for many of the purposes of embellishment will continue to render them indispensable in aid of other things. They must always form a conspicuous feature, because of their great intrinsic merit; but a feature only—a portion of the gay crowd, and not the crowd itself.

We were much struck some months since with the admirable effect obtainable in flower-gardens by reverting to the old way of managing them. In a remote place in the north of England, there existed last September one of the gayest of all gay gardens, crammed with endless varieties of form and colour, and yet there was not in it one plant for which the amateur would have given sixpence; Fuchsias, Hollyhocks, old-fashioned Dahlias, endless annuals, forgotten herbaceous plants, Antirrhinums, and Pelargoniums that were the favourites of our grandmothers, formed the larger part of the display, arranged in small box-edged beds, every one of which was a circle, or formed of the segments of circles. The plan was intricate enough till its principle was made out, and then it was seen that a rule and pair of compasses could do it all. Among the beds was a small quantity of ornamental vases; and the fault of the place, if fault there was, consisted in the insufficient number of these decorations; for vases, and other sculptured or quasi-sculptured objects are as necessary to a flower-garden as furniture to a drawing-room. The more of them the better the effect, provided they are selected with taste and arranged with skill.

"But how," says an eager correspondent, "am I to accomplish such an effect as this? What is the plan, and which the plants, and how are they to be put in, and where are they to be bought, and what is the size of A and of B and C. If you don't tell me all this I shall never succeed." Of this the writer may be assured, that if neither he nor his gardener can do without such instructions, there is no hope in their succeeding with them. Taste cannot be described on paper, nor will people agree as to what it consists in. The fitness of a given race of plants for a particular purpose depends on soil, climate, the means at the disposal of the inquirer, and a hundred other points which vary in every county. We must, therefore, beg to be excused from going into all the matters included in our correspondent's string of queries, and we venture to offer him some general advice in their stead.

The first point to be remembered in making a garden is, that ugliness is unknown among plants. Everything created is beautiful when in its most perfect state, but it may be rendered ugly by mismanagement or by unavoidable accidents. There is not a weed in our fields which is not at some time of its life beautiful in one way or other, if in the most perfect health. Those which have the gayest flowers may have the poorest foliage, while, on the other hand, the most exquisitely beautiful leaves may be, and generally are, associated with unattractive flowers. But a garden must be beautiful in every possible way, and the grand mistake which half the English commit consists in ransacking the world for mere gaudy flowers. How great an error is this the Pelargoniums abundantly prove, for scarlets, with the worst of all foliage, are exclusively employed in flower-gardens, while the charming foliage of Radula, quercifolium, graveolens, balsameum, and their allies, is entirely overlooked, except by those who stand above the crowd.

Beauty in plants is dependent upon skilful cultivation, and it is because good gardening is not thought of, that most of our old favourite annuals and herbaceous plants have fallen into neglect. Because they would remain alive without care, therefore they received none, their owners forgetting that what a plant would live upon is not precisely what it will thrive upon. Bad gardeners drew a ring in the ground with their forefingers, poured into the ring the contents of a little packet of brown paper marked Delphinium Ajacis, scratched the earth into the ring by the aid of a second finger, and called it sowing seeds. The plants sprang up, crowded each other to death, and what remained, a circle of poor, famished, jaundiced wretches, represented the noble family of Ajax. Had the plants been permitted to breathe and feed and spread their branches, and nourish their brilliant flowers, they would have proved themselves worthy of the mighty name they bore. This was the way with all annuals, and hence the cultivation of annuals has almost ceased in fashionable gardens. What should have been done was to treat each separate plant with the same care that would be bestowed upon a pet Geranium; not that it would have needed as much, but to have given it all the care it wanted; then, indeed, its beauties would have become manifest, and it would have maintained its rank securely in the history of horticulture. He who doubts this should take a plant of common Hemlock, put it in a garden, in rich soil, shelter it from winds, and give it ample room to expand; and he will find, probably to his great surprise, that it can scarcely be matched for admirable beauty. Beauty, then, is an affair of cultivation; and depends less upon a plant than on its master.

The season is not yet advanced enough to form an old-fashioned flower-garden; which is best done in the summer, so as to be ready for filling in the autumn and succeeding spring; but this is the very time to set about determining what to put into it when ready. Instead, therefore, of crowding our columns with long and useless lists of plants to be commended—which, after all, may not suit our inquirers' pockets, means, taste, or climate—we recommend the following course to be pursued. Go to the seedsmen and buy as many of their cheap packets of annuals as you can afford; go to the nurserymen for as many of their commonest herbaceous plants as it may suit your convenience to grow. Cultivate these skilfully during the summer; note all that you want to know about them—size, colour, season, duration, &c.; and then, when the season comes for stocking your garden, you will have ten times better information in your possession than all the advice in the world can supply you with. Above all things, you will have learned what best suits your means, wants, and taste.

Another week we will endeavour to add such other suggestions as may put the new adventurers in flower-gardening still more securely in the track that leads to ultimate success.

The epiphytal character of certain Indian Rhododendrons has been unexpectedly confirmed by the discoveries made in the Sikkim Himalaya, by Dr. Joseph Hooker, who has just published 11 species, mostly new, of which one, *R. Dalhousiæ*, the finest of all that have yet been seen, grows on trees. Thus

with four species from Borneo,* one from Java, and one from Sikkim, we have now no fewer than six epiphytes in a genus which, a few years since, was not known to contain one. This is not, perhaps, a very surprising thing, for after all the only difference between an epiphyte and a terrestrial plant is one of drainage; the former grows in soil, on the branches of trees, where no water can lodge, though much may fall, and the latter in soil which is liable to becoming water-logged. It would be a curious experiment to try how the common Indian Rhododendrons would succeed as epiphytes in damp greenhouses.

Dr. HOOKER, whose beautiful book on Indian Rhododendrons has led us to make this remark, describes the climate which they affect as being warm and damp, with mild winters. "A certain degree of winter-cold and perpetual humidity is necessary; but the summer heat is quite tropical where some of the genus prevail, and snow rarely falls, and never rests, on several of those peculiar to Sikkim." This will serve to guide the cultivator who may be inclined to try the experiment. We, however, anticipate that these epiphytes will grow better in earth, treated in the usual manner, than when struggling with the difficulties of an uneasy position on the bark of trees; for other epiphytes evidently prefer a more agreeable residence, and appear to confirm the justice of the opinion expressed by the late Dean HERBERT, that the natural habitats of plants do not necessarily prove that they prefer them; natural localities only show that plants will grow there, although others may not be able. In other words, he did not believe that a plant which shoots from an old wall does so because it prefers old walls, but because it is capable of existing in such places; therefore it would be healthier and better if placed upon the ground.

The book which has led us to this question is a most beautiful example of fine drawing and skilful colouring, and the letter-press furnished by its talented author possesses very high interest. Of the species of Rhododendron which he has found in his adventurous journey beyond the mountains of northern India, some are quite unrivalled in magnificence of appearance. *R. Dalhousiæ* has huge white flowers tinged with pink, each blossom forming a bell as much as 4½ inches long, and not less across the mouth; they are moreover sweet-scented! having the perfume of the Lemon. *R. Falconeri* has close heads of pure white flowers, and enormous leaves netted on the underside with coarse green veins on a brown ground. *R. argenteum* is only inferior to *Dalhousiæ* in its flowers, which are pure white, and seems to be far handsomer in its foliage, which is that of the broad-leaved Laurel, but much larger, and silvery white beneath; they are described as being from 6 inches to a foot long, and 3 to 5 inches broad, and when young to be enveloped "in large scales, so closely imbricated and so large as to resemble the cones of some species of Pine." What a brood-Rhododendron this would be! Of the others, which are less handsome, many are fine things, but not remarkable. *R. lanciſolium* seems to be nothing but *R. barbatum* without its beard, the latter being, as was remarked by a gentleman well acquainted with such subjects, to all appearance a "mossy" state of the former. *R. Campbellii* and *Wallichii* are also fine things, with deep rose-coloured flowers, but too much like the rose-coloured *R. arboreum*. The remainder are small mountain species in the way of *R. ferrugineum* and *hirsutum*.

Upon the whole, it is a marvellous lot of novelties to have been gathered out of one Indian province, and we recommend the district to the nurseryman. Whoever could bring home plenty of seeds of these things would require no better foundation of a little fortune.

As some of our readers may be desirous to possess a souvenir of the late Mr. Fox, we make no apology for mentioning in this place, what is announced by advertisement elsewhere, that his books, valuable prints, and other remains of an artist's *atélier*, will be sold by auction by Mr. SOTHEBY, on the 21st inst.

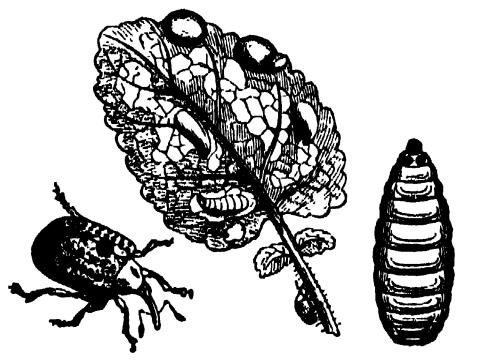
ENTOMOLOGY.

CIONUS SCROPHULARIÆ.

THE connection existing between the different members of certain groups of insects and those of different species of plants, has not hitherto been so much investigated as it deserves; for although it may, at first sight, appear absurd to derive any proof of the natural relationship of two species of plants, merely from the fact that two different but allied species of insects are known to derive their nourishment respectively from them, yet when we know that certain groups of insects confine their attacks to certain groups of plants, we may not perhaps find it so unavailing, or, at least, so uninteresting a speculation, to trace these relations further than has hitherto been done. The Botanist as well as the Entomologist are equally interested in the inquiry.

The following observations refer to an insect belonging to the genus Cionus, one of the great family of the weevil-beetles (Curculionidæ), the species of which, so far as hitherto described, confine their attacks to plants of the two genera Verbascum and Scrophularia. Now these two genera, in the Linnean system of botany, are wide apart, the first belonging to the class Pentandria, and the second to that of Didynamia; and no one would ever dream of their relationship from such an arrangement; but the insects of the genus before us long ago discovered the Natural System, and proved by the fact of their sometimes indiscriminately feeding on Mulleins and Figworts, that these plants were in truth closely allied together in Nature, and I have now to record the proof of the relationship of these genera with that of Celsia, having reared specimens of Cionus scrophulariæ from a plant of Celsia Arcturus placed on a flower-stand in my garden at Hammersmith, no other plant of Verbascum or Scrophularia being in the vicinity.

On the 24th July, 1848, I observed a great number of small slimy grubs on the upper surface of the leaves of this plant, which contented themselves with devouring the upper cuticle of the leaf. In their ordinary appearance, when covered with slime, these larvæ were of a greenish brown colour, and of the size (when full grown) of the three individuals represented feeding upon the leaf in the above woodcut. They are destitute of legs, but are nevertheless able to move along tolerably fast, using their jaws as fore legs to cling to the advanced position to which they have protruded the front of the body; after which they draw forwards the hind part, retaining their position by means of large fleshy tubercles on the under side of the abdominal segments of the body. The head is small, oblong, and black, and the first segment of the body is marked with two black spots; each of the following segments, as will be seen in the magnified figure on the right hand side of the woodcut, is furnished with a transverse fold which, as we shall presently see, is of very great importance in the economy of the animal; at this period the larvæ are of various sizes, from a pin's-head to that of full growth.



When full grown these larvæ enclose themselves in a globular semi-transparent case, the construction of which has attracted the notice of several of the best entomological observers, but its real nature has only recently been described by Pierre Huber in the 10th volume of the "Mémoires de la Société de Physique et d'Histoire Naturelle de Genève." 1843-4.

Réaumur, who had observed some of the larvæ feeding on the Mullein, burying themselves under the woollen covering of the leaves, observed that they "*filent*" a kind of cocoon of so close a texture that it appeared rather to be membranous than formed of threads spun one over another. He admits that he had not actually seen the insects in the act of spinning the threads from their mouths, but states that he had observed the spinneret (or apparatus in the mouth of caterpillars for spinning), and moreover that he was convinced that the cocoon did not consist of the cast skin of the caterpillar, as is the case in some species of insects. Geoffroy, on the other hand, thought that the cocoon was formed of the mucus with which the larvæ is generally covered.

By careful observation, Huber, however, ascertained that shortly before the larva attains its full growth it gradually loses its glutinous coating, which he is inclined to believe is absorbed by the pores of its skin. Having met with a situation suitable for undergoing its changes (which is generally on the leaf or stem of the plant), it entirely discharges the black fæcal matter with which the intestinal canal was filled. Soon after this a bluish white matter transudes through the skin, especially accumulating on the anterior part of the body and underside of the six fore segments, in such quantities that the insect at first sight appears as though the front of its body was inclosed in a bag. By various exertions and movements, which Huber describes in detail, and in which the folds of the dorsal portion of the different segments perform the chief part, the insect contrives to form this matter into a globular cocoon, which shortly afterwards hardens and dries, with the exception of a hole on each side, which it has subsequently the instinct to plaster up by applying portions of the same matter, which it draws with its jaws from a receptacle at the extremity of the body.

Having undergone the pupa state, when the period arrives in the autumn for assuming the perfect state, the insect breaks through its cocoon, making a circular slit on one side, as represented on the upper part of the leaf in our woodcut, and the beetle emerges in the shape of a small, nearly globose weevil, Cionus scrophulariæ, which is one of the most elegant of its tribe. The head and beak are black and horny, the thorax is cream-coloured, and the elytra are black, each with several rows of black, velvety, and pale buff spots, a large black dot on the suture a little below the scutellum, followed by a buff dot and another black dot near the tip of the suture, by which the elytra are united together when the wings are clothed. The insect is very common: its natural size is shown by the insect crawling up the lower part of the stem of the leaf. *J. O. W.*

ESSAY, THEORETICAL AND PRACTICAL, ON THE DISEASES OF PLANTS.

By COUNT PHILIPPO RE, Professor of Botany and Agriculture at the Royal University of Modena. [2d edition, Milan, 1817.]

INTRODUCTION.

A TREATISE which should present a systematic arrangement of all the diseases of plants, giving in detail the exact history of each, and adding the means of preventing or of curing them, would certainly be of the greatest utility to agriculture. Unfortunately, however, this cannot be accomplished till after the lapse of a long series of years; that is, until by the aid of accurate and long-continued observations, a complete knowledge shall have been attained of the physiological constitution of the elementary parts of plants, of all their various functions, and of the manner in which they are exercised in a state of health. Until this happy moment shall have arrived, it appears to me that all those who have at heart the safe and rapid advancement of the agrarian art, should carefully study the causes and symptoms of the diseases of vegetables, and search out such remedies as may be best applicable to the different cases.

This study is not a new one, it dates from the earliest times. Without referring to what Hesiod may have said on the subject in his large work on agriculture, which Pliny speaks of as having been lost, we know that the diseases of plants are treated of, and their principal causes adverted to, in the treatise "De Natura Pueri," lib. iv. de morbis, attributed to Hippocrates, and which, if not his, is at any rate of great antiquity. But Theophrastus is the most ancient of those authors whose writings are preserved to us, who treats in detail of the diseases which afflict trees, in the fourth book of his "History of Plants," speaking also of those which attack the Cerealia, in the end of his third book "De Causis Plantarum." He devotes nearly half of this work to the description of most of the ailments of vegetables, especially of those produced by meteoric influences; and he applies himself with great precision to the indications of all the remedies known to him. This writer may well be considered as the one who laid the foundation of vegetable pathology. Whoever has taken the pains to examine the two works, will probably agree with me in the opinion that Theophrastus must be placed at the head of writers on rural economy, although modern authors rarely cite him among the ancients whose works are preserved to us. He fully deserves the praises bestowed on him by Varro and Columella, who have borrowed many precepts from him.

Latin writers on agriculture have said but little on diseases of plants. At the most they have indicated certain means for preventing the devastations of insects, and have chiefly confined themselves to prescribing the rigid observance of certain rites for the propitiation of rural divinities, and especially of the goddess Rubigo. Pliny the elder alone, in Book xvii. of his Natural History, devotes the five last chapters to the diseases of trees and their remedies, and in Book xviii. speaks more in detail of those of the Cerealia. But in this portion of his work the Roman naturalist can only be considered as a translator of Theophrastus, as has been well observed by Budæus a Stapel and Jul. Cæs. Scaliger in their learned commentaries on the Greek writers. Those who are well versed in the Greek language may decide on the justness of the criticisms of these commentators, and of Salmasius on Pliny's interpretation of certain passages, where they maintain he has not rendered the true sense of the original. All subsequent writers on agriculture, till the beginning of the eighteenth century, did no more than transcribe the Latin translator, and therefore do not require any separate notice. One of the very few who may perhaps be singled out from the crowd is our J. Baptista Della Porta, who, in his work "Villæ," lib. xii. not only enters into details on the diseases of plants, but adds some observations of his own, yet constantly quoting Theophrastus and Pliny.

In 1705, the celebrated Tournefort, in the volume for that year of the "Mémoires de l'Académie Royale des Sciences," of Paris, recorded some general observations on the diseases of plants, which he ascribed to more philosophical and more simple causes than the theories which some persons had founded on the opinion of the ancients, that many of them proceeded from an internal fermentation. He, however, only speaks of trees, as also does Eysforth in his dissertation "De Morbis Plantarum," which, although written in accordance with the chemical theories of the time (1723) yet deserves a perusal.

About the middle of last century, after shaking off the yoke of that philosophy which admitted pre-conceived hypotheses as the bases of most reasonings, and preferring actual observation in the study of Nature, not a few turned their efforts towards the discovery of the true causes of the diseases of plants, and of the remedies which might be applied. In the acts of the most celebrated academies may be found many useful papers

* See the "Journal of the Horticultural Society," vol. iii., p. 81; and "HOOKER's Rhododendrons of Sikkim Himalaya," just published by REEVE.

on the subject. But the first, as far as I have been able to discover, who proposed a general system of pathology, was Adanson, in his classical work entitled "Familles des Plantes." He enumerates 23 species of disease, which he divides into two classes, according to whether they depend on internal or on external causes, eight species belonging to the former, 15 to the latter class. The author of the article "Maladies" in Rozier's "Cours Complet d'Agriculture," following in Adanson's footsteps, enumerates 19 species of disease owing to external causes, and 13 to internal. Both of them have taken pains, in relation to vegetable pathology, to show the analogy between animals and vegetables.

Mr. Plenck first published, a few years since, a short treatise on vegetable pathology, written in Latin, but which has been translated into French and Italian, and is the most complete which has hitherto appeared. Diseases are there divided into eight classes: 1, external injuries; 2, flux of juices; 3, debility; 4, cachexies; 5, putrefactions; 6, excrescences; 7, monstrosities; and 8, sterility. He concludes his treatise with an enumeration of the animals which injure plants. I own that I have learned much from this treatise, although I have thought it necessary in other instances to depart from the author's opinions. Lastly, Pollard, in the article "Arbre," of the "Nouveau Dictionnaire d'Histoire Naturelle" (an article which may be studied as a short but excellent compendium of all that relates to the natural history and cultivation of trees), has given the diseases of plants divided into two classes. These are founded on their degree of extension over the vegetable individual; that is, 1, local; 2, universal.

Great is the number of physiologists who have confined themselves to the illustration of particular genera, or species of disease, without following any pathological system. Amongst those who have attained celebrity for this most useful class of observations may be mentioned, among foreigners, Linnæus, Duhamel, Roger-Chabor, Thouin, Tillet, Tessier, Banks, &c.; and among our own (Italian) countrymen, Givanni, Fontana, Roffredi, Bayle-Barellé, Giovene, Moschettini, and others. The greater number of them occupied themselves specially with the diseases that affect grain. For further details the reader is referred to vol. i, part 3, of the "Bibliotheca Scriptorum Historiæ Naturalis" of George Rodolph Bochmer, where is an article enumerating the writers on the diseases of vegetables.

I had taken pains to examine the works of all the above-mentioned writers, and several others; but I did not feel satisfied with the methods adopted by the greater number of them in presenting their views. Some reflections and observations I had made appeared to throw some additional light on the subject; I therefore ventured to treat of it, laying under contribution the lights of all those great men who had preceded me. Founded on the facts which modern chemistry has brought to light, I have thought that something firmer might be established, as well as more precise, both as to the nature of the diseases themselves, and as to the genera and species into which they may be distributed. It has also appeared to me that, in a great number of cases, it is not difficult to assign some remedies which may be practically applied by the cultivator. I published therefore in 1805, in the "Memorie della Societa Italiana delle Scienze," an essay on Vegetable Nosology, which has been lately reproduced at Florence as a novelty, without my knowledge, by Tofani. I there undertook to reproduce the subject, at a future time, in a form more practically useful, that is, so as to indicate more precisely the characters of each disease, and to mention the corresponding remedies. I now redeem this pledge. I have made some changes in my essay. I have especially applied myself to what has appeared to me the most practically useful to agriculture, the main object which should be constantly kept in view by any one who undertakes to write on any question of rural economy.

I dedicate the present work, such as it may be, to lovers of agriculture; and here I may note my way of thinking on rural instruction. Contrive to instruct landowners, agents, farmers, bailiffs, in short all those who take any part in agricultural management. The labourer himself either does not know how to, or cannot, or will not devote himself to study. Notwithstanding all the eloquence displayed by modern philosophers in the endeavour to show the necessity of instruction in scientific agriculture, those who are destined by fate to irrigate the soil with the sweat of their brow, but little success has hitherto attended their efforts. The difficulty of finding capable instructors will always, in my opinion, prevent the fulfilment of the wishes of these authors. I have written, therefore, only for those who have already applied themselves to the study of agriculture. To them, perhaps, my essay may be of some use. This hope has induced me to hasten the period I had originally fixed for publication.

Considering that a great number of those who occupy themselves with agriculture, well versed in the practical part, are generally ignorant of all theory, I have thought it useful to preface the enumeration of diseases by a few preliminary notices necessary for the elucidation of many things I shall have to allude to. I have, however, as much as possible, avoided dwelling too much upon theories, especially those which are only founded on hypotheses, plausible as they may often be. Long experience has taught me that nothing disgusts more a certain, and indeed a very large class of lovers of agricultural books, than a superabundant luxury of long theoretical disquisitions, however seducing and well reasoned they may be. I shall, therefore, proceed to explain—

1. What must be understood by disease in a plant.
2. What are the causes of disease generally laid down by authors.
3. On the supposed analogies between animals and vegetables.
4. Basis upon which I have established the classification of vegetable diseases.
5. Classes into which I have divided them.

(To be continued.)

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

Treatment of Cactuses in Windows, and in the Open Air.—The plants commonly called by the name of Cactus belong to the natural order Cactaceæ, but are known among botanists and scientific gardeners by various appellations more or less distinctive of their generic peculiarities; as, for instance, the Epiphyllum, from a Greek word signifying upon a leaf, in allusion to the flowers growing upon the flat stems, commonly called leaves; and the Cereus, so called from the waxy and pliant nature of the shoots of some of the species; the Latin word cereus meaning waxy. Cactuses are very common in this country, on account of the rough treatment they will bear; for although they are natives of hot climates, as Brazil, Mexico, and Peru, and consequently are soon killed by frosts, yet in other respects they are sufficiently hardy to allow of their general cultivation. They are magnificent objects in the stoves and conservatories of the wealthy, where they startle by the contrast between their gorgeous flowers and wrinkled unsightly stems; they also help to set out many a cottage window, and they are usually found to some extent among the floral collections of the middle classes. Yet with this general disposition to cultivate them, few plants are less understood in those habits on which their successful flowering depends.

"I wish you would look at my Cactus," said a lady to the writer the other day; "it is a very fine plant, but it never flowers." On being introduced to this unproductive occupier of pot and window room, a fine piece of vegetation indeed presented itself; above a yard high, as green as Grass, and every flat stem as plump as a traditionary alderman. "Madam," said the writer, "you feed your plant too much, and in order to make it flower you must at certain times adopt the starving system." He informed her that he had one of the same kind, commonly called Cactus Jenkinsonii, not near so tall, and very inferior in *embonpoint* and general handsomeness, which yet bore above 100 flowers last season. The inquirer expressed her wonder at this, and received the following account of the method adopted to produce such a result; it is now submitted to those readers of the *Chronicle* who may wish to make fat and green Cactuses bring some tribute to their floral temple.

In the natural home of the Cactus, there is a moist and a dry season; during the former, vegetation receives a surprising impetus; during the latter it flags, and appears almost burnt up and destroyed. Cactuses may be seen shrivelled up through the heat of the sun and the dryness of the soil, but it is to this circumstance they owe their abundance of flower-buds. The wet or moist season returns, and pushes those buds into a glorious life. How different is this natural treatment from that adopted in windows and often in greenhouses! The plants are kept wet all the year round; they have no cessation in their growth, but they form no flowers. Let Nature be followed, and the desired result is sure. My Cactuses were put away in the autumn into a lumber room, and have had no water since until the middle of last March. They were then brought out covered with dust, cleaned, and gradually supplied with water. They are now as plump as can be wished, and are covered with flower-buds. They will be kept supplied with moisture until the flowering is over; then they will take their chance in a sunny part of the garden, against a south wall, until cold weather comes and consigns them again to the lumber room.

A light soil, composed of brick rubbish mixed with loam and leaf-mould is best for them, and need not be changed every year, if the top is removed and a fresh layer put on every spring. Large Cactuses cannot be grown well in windows, and my plan with them is to put them out of doors every day, where they will have all the sun, and to bring them into the sitting-room just as they are about to flower. The whole tribe is easily propagated. The cuttings should have the wound healed before being potted, and no water should be given for a month or six weeks afterwards. Such is my simple plan. *Experto crede. H. B.*

Home Correspondence.

Orchids for the Million.—Having an opportunity of seeing Mr. Bateman's grand work on Orchids, I was struck with some of his prefatory remarks, only written a few years ago, in which he prophesies that the difficulties and expense of growing Orchids will always keep them amongst the aristocracy of gardeners, leaving the growing of Carnations and Dahlias to the humble and the poor. I suspect that the time is not far distant when we shall have many of the more easily cultivated Orchids (Dendrobium nobile for instance) the Cypripediums &c. &c., going about in the baskets of the itinerant flower sellers in London, and as easily grown as Cactus speciossimus, &c. I am rather amused at the way in which Carnation growing is spoken of; I suspect even now that there are many who could make a decent show of Orchids, who would be very much puzzled to produce a good stand of Carnations. The fact is that there is even yet as much of empiricism in the growing of Orchids, as there used to be among the growers of Carnations, Auriculas, &c. I believe that we shall soon find keeping the more easily cultivated Orchids reasonably damp, and well exposed to light and air whilst growing, and giving them a good rest, will make this class as common as they are beautiful. The following is the extract to which I refer. "Speaking of the rarity of the tribe, and the difficulties and expense attending their cultivation, although they may have the effect of diminishing the number of their votaries, will at the same time tend to strengthen the devotion of such as have the courage to encounter and the means to overcome these formidable impediments. It is, indeed, probable that Orchidaceous culture will always continue in a comparatively few hands, and it will therefore be pursued with the same ardour in the upper walks of life that already, in a humbler sphere, attends the cultivation of many of the beautiful varieties of the Tulip, Auricula, and Carnation. Some perhaps there may be who, looking only at the greater facilities afforded by the latter, may be disposed to question the importance of the former in a social point of view; but while we admit the superior value of whatever is placed within the reach of the great mass of mankind, we must at the same time maintain that nothing ought to be condemned or disregarded merely because it can never be extensively diffused. Few will value what all may possess; so long, therefore, as each class has enjoyments suited to its circumstances and position, we are satisfied that the happiness of the community at large will be far more effectually promoted than if all were interested in the same objects, or occupied with the same pursuits." Now, mind, in giving this quotation, I in nowise mean to find any fault with Mr. Bateman, far from it; I am willing that his enterprise and liberality, in the introduction and cultivation of this beautiful tribe, should have all due honour. But we must have them for the million, and that perhaps he did not see. There are many other persons in other departments who have the same feeling. I know that there are many very respectable Academicians who always maintained (and some even now who still maintain) that the Fine Arts were essentially aristocratic, and that the opinion of the many was not to be cared for, and their patronage not sought. I suspect that there are numbers now who could tell a different tale, and at least the nation must feel otherwise, when the most patriotic donation of our, or any time, is a collection of modern pictures brought together and selected from the studios of living artists at a princely price by a respectable tradesman in this country. Coins were essentially an aristocratic department of collection, and yet the rarest and finest collection ever brought to the hammer in this country, was formed by a grocer in Oxford-street. *Dodman.*

Impressions of Leaves.—In a late number a correspondent inquires "by what means he may obtain skeleton leaves, retaining their beautiful network." Unless he wishes to preserve the tissue of the leaf itself, an impression may be taken by which every vein is perfectly delineated with little trouble, and answering every purpose of the leaf itself. Procure a small quantity of boiled Linseed oil, some very finely powdered lamp-black (if the impressions are required in black), or any other finely powdered colouring material, as vermilion, or indigo, according to taste, and mix these with the oil so as to cause it to assume the consistency of cream. Two flat leather balls about the size of the hand, will be required; these should be made of wash-leather and stuffed with wool. The balls are then slightly smeared with the ink, and rubbed one against the other, adding a little ink repeatedly, so as to obtain by friction a nice smooth surface on each ball, which is requisite at first in order to get them into good working order; then having the ball held in the left hand slightly moistened with the ink and well rubbed, lay the leaf of which you want an impression on it, give a smart blow with the ball held in the right hand so as to ink the leaf, then place the latter inside a sheet of note paper, lay on a sheet of blotting paper, press it down, and the result will be, with a little care and practice, an impression as perfect as the skeleton leaf itself, and after the first time with very little trouble. By placing the leaves inside the paper, impressions of both the under and upper surfaces are taken at once. *J. H., Feb* 28.

Joslin's St. Alban's Grape.—Have any of the purchasers of this Grape yet fruited it, so as to prove whether it be a distinct variety or not? I bought two or three plants of it, and it is my present impression that it is nothing more than the Chasselas Musqué or Wilmot's Muscat; at least my plants present no possible difference from that variety either in foliage or fruit. On referring to Mr. Thompson's report of it in the Journal of the Horticultural Society, I find that it agrees with that variety in every particular. No one can have a higher opinion of Mr. Thompson's pomological knowledge than myself, and it was solely on his recommendation that I became a purchaser; yet one would suppose that the Chasselas Musqué was a Grape common enough not to be mistaken for a new variety; its only fault is its liability to crack long before it becomes ripe; this has nearly thrown it out of cultivation. *John Spencer, Rowood, April* 3. [If you have got the true Joslin's St. Alban's you will observe that its leaves are more glossy on the under sides than those of the Chasselas Musqué. Mr. Joslin states that the Chasselas Musqué had not been grown at his place for upwards of

16 years; that it is an early Grape, whereas the St. Alban's is decidedly a late one. "The variety in question," he states, "came from seed of my own sowing, be what it may." Much has been said about this Grape. Some have doubted its being distinct from the White Frontignan, although the one has smooth leaves and the other has not. A few months will prove that it has not been over praised in the Journal of the Horticultural Society. It is showing fruit in the Royal Gardens at Frogmore; we have seen it at Mr. Bevan's, Cambridge House, Twickenham, about a week ago, and it appears to be an extraordinary bearer ||]

Fastening Fruit Trees to Walls.—The following method of fastening the shoots of fruit trees to walls, has been tried in one or two gardens in my neighbourhood; and has, after a few years' trial, been found to succeed remarkably well. Strong wires are stretched vertically along the face of the wall, about the distance of half an inch from it; and about 9 inches from each other, by means of iron stay nails; which are simply small flat pieces of iron, about 3 inches long, half an inch wide, and pointed at one end, so as to go in between the bricks; a small hole is drilled in the other to let the wire go through, or to fasten the ends to; these are required for about every 2 feet in height. The wire should be painted or, what I believe is better, galvanised. To these wires the branches can be tied in any direction; the stronger ones by Willow twigs, the smaller by strings of matting. *T. A.*

Slugs.—In a garden in my neighbourhood comprising about three parts of an acre, the gardener, after an interval of two nights and a day, caught 2820 slugs; this being the greatest number he had collected at one time he counted them. Every morning from 400 to 700 were killed. I think most people will agree that this is a securer plan than any protection of lime or other preventives can be. The method of catching them is very simple; a few Turnips are cut into thin slices and laid on the borders; every morning the gardener goes round with a pot with a little quick-lime in it, and into this he brushes the slugs from off the Turnip slices. Which would the gastronomic predilections of the rook and the other grub-eating tribes of birds prefer, the slugs or the young springing corn? I am inclined to believe, although I have no doubt farmers will laugh, that in damp and warm weather when the slugs begin to move, that these persecuted races do more good among the young crops than harm. Can it be that these pests, to drive away which whole troops of boys and girls are kept from school learning to do mischief, from the slackness of the employment, are real benefactors, consuming the destroyers of the crops? *T. A.*

Price of Bark.—The London and provincial papers state the price of bark this season to be 100 per cent. in advance. Should this be a fact, can any one furnish a reason for such an extraordinary rise, seeing that according to the same papers more oak timber will be felled this season than has hitherto been known to be cut down? *H. W., Colleyweston, April* 10.

Pea Sticks.—Having lately seen the hazel recommended as the best Pea-stick, in a periodical work on gardening, allow me to state what I have found to be the most durable wood for this purpose. I would recommend—1. Branches of the Yew tree; these last many years; 2. The Privet; and 3. The Lilac. I do not know of any tree or shrub which affords such durable Pea-sticks as these. Branches of other trees will only last one or two years, *i. e.*, of any with which I am acquainted—the Hazel among them. *C. A. A. Lloyd, Whittington, Oswestry.*

Warming Fruit-tree Borders.—Some time ago, when the tank system came up, and Mr. Rivers built long ranges of tank frames, he observed that the true way would be to have open borders for fruit trees warmed with tanks. As yet he has done nothing in this matter But we are all advancing in knowledge as to the necessity of a dry, warm soil, and of keeping the roots in harmony with the branches and bloom. Now, in a common exposed border, where the branches are nailed to a south wall, I take it, even in the best drained border, the roots are not so advanced as the branches. I feel convinced that, with the protecting glass trellis, open at the sides and back, so as to have a free current of air, and a border capable of being warmed (either by dung underneath, or warm water tanks), the best fruit will be produced, and at the least expense. I do not think that any Peach or Nectarine need grow higher than 9, or say 10, feet from the ground, and I think a border of six feet for the roots will be found sufficient, for it must be remembered that in a trained tree only half the branches exist, and at present it is scarcely possible so to manage trees as not to have to cut away a good deal of the branches which are grown. I find that the trellis, 9 feet broad, glazing, fixing, &c, can be put up for less than 5*s.* a foot run, and my object in writing is to enquire the opinions of your correspondents as to the best and cheapest mode of giving a slight heat to the border. I suspect that leaves and dung on the top will not be found to answer well. Mr. Fleming has a paper in the "Journal" of the Horticultural Society, on the plan of a Vinery for early forcing, where part of the border is built on arches, in which hot dung is introduced. This, however, involves a good deal of labour, and the command of a large quantity of manure, and a somewhat uncertain heat. Assuming that the range of protected trellis is, say 150 or 200 feet in length, I think if the borders were made over a small hot water tank, this in the end would answer best and be the cheapest. It is probable that some of your correspondents can say what is the most economical mode of erecting such a tank, or give reasons for not adopting it. *Dodman.*

Mr. Meyer's Plan of Growing the Potato, with a view to prevent the Disease.—Having seen, at p. 179, your favourable notice of my method of treating the Potato plant, and your observations upon the successful result of the trial made in the garden of the Horticultural Society in 1848, I am anxious to inform you of the result of my more recent observations, and to this end I extract from the appendix to my Treatise (Nov. 1847), the following paragraph. "I had six lots of Potatoes in different parts of my ground, and I laid down and covered some of each at various periods, for the sake of experiment, in the manner detailed in page 4 of my pamphlet, beginning with the first lot on the 10th of June, and following up this process in other parts of my ground until the end of July. Finally, one-half of all were thus treated, and the other half left to take their chance in the usual way. By the 8th of August the blight began to show itself in various parts of my garden, not only on the leaves, but also on the haulm, as well among the Potatoes treated in the usual manner, as on the exposed foliage of those that were laid down in my new method. Thus matters remained until the time when my earliest sorts were ripe. On digging them I found, among the rows treated in the common manner, that many tubers, principally of the largest size, were diseased to a great extent, in the proportion of half a bushel to the sack; whereas, among those which had been planted at the same time, and laid down according to my method, the blight had not extended to an individual tuber: subsequent diggings, as the plants ripened, produced the same result, except that as the season advanced a greater proportion of the tubers were diseased among the plants of the common treatment, to the extent of one-half of the crop, and more, while still not one of those treated in the manner recommended was touched in the tuber, and the produce was as ample, both in regard to size and number, proving perfectly the success of my method." * * * "In my pamphlet I recommend that the plants should be laid down early in June, but subsequent experience has proved to me that the laying down can be with safety deferred to a later period, as thereby no diminution of the crop is experienced, but as large a crop is obtained, both in regard to size and number as can be produced under any mode of culture whatever." I have stated that the laying down of the haulm may with propriety be deferred to a later period than at first proposed, and I beg leave now to remark that the proper time for commencing the operation is (provided the disease or blight does not show itself previously) either when the tubers have reached their full size, or the moment when there is any authentic account of the appearance of the disease in this country. Having tried the treatment proposed by me in several ways, in order to arrive at the most conclusive result, I am desirous of backing my proposition, as to when I have found the best moment for laying down the haulm, &c, by the results, namely; where the Potatoes had attained their full size, and the haulm begun to show symptoms of ripening, at the time of the appearance of the blight in 1848, those that were laid down ripened and remained perfectly sound, but those that were left unattended to produced hardly any sound tubers, and proved an entire loss. This happened in one and the same gound. Some later sorts that were laid down remained equally sound. Some rows that were touched by the blight in the haulm, and were attended to the same day, the following day remained equally sound Some others, that were left three or four days after the haulm was blighted, were, as a matter of course, only partly saved, as it stands to reason that my system does not profess to restore blighted tubers, but to prevent the disease from reaching the root. It is immaterial whether the haulm of the Potato becomes blighted or not, after having been laid down and properly covered up, since my process in either case protects the tubers. *H. L. Meyer, Chertsey, April* 3.

The Night-blowing Cereus.—This is an old and much neglected, but, when well grown, really beautiful stove plant. I, for one, must accuse myself of neglecting it for many years, and the only reason which I can assign for such neglect is having never seen it grown or flowered in perfection. It has a straggling appearance, but when strong and neatly trained to a wire frame or wooden trellis, it is not unsightly; its large white and yellow fragrant flowers are truly beautiful, and though an objection may be raised against their blowing in the night, every one who has seen them must admire them; the plant which flowered with me was a very old one, but notwithstanding its age it produced flowers measuring from 7 to 10 inches across, and I should think that young and vigorous plants would be much finer. I have had many hybrids from Cereus grandiflorus crossed with other varieties, but none very beautiful; they all produced large and straggling spider-like flowers, there being no good hybridising colour to mix with white and yellow. *J. L. Sweeting.* [The flower-buds, just about to expand, make a capital salad.]

The Surrey Market Gardens.—These are kept in the highest state; tender white Cos Lettuce is just beginning to grow; early Plums and Pears are in full blossom; Asparagus beds are being dressed and moulded up. This old plan of earthing I entirely disapprove of; its bad results may be seen every day in Covent-garden market, in the shape of blanched drumstick Asparagus, generally about 12 or 14 inches long, not more than 3 inches of which is eatable. The plan that I would adopt in growing this vegetable would be, as soon as the dead stems were cut down in autumn, to give it a good dressing of manure for the winter, with salt in spring, and to cover it over with mould, to prevent evaporation. The winter rain would carry all the strength of the manure down amongst the roots, and when the spring arrived, it might be raked off into the alleys, leaving only mould enough on the beds to protect the roots from the summer sun. We would then have green Asparagus eatable almost to the very root. From Richmond Hill the visitor commands an extensive view over a rich and varied landscape; but what would the latter be without its trees? The beautiful arrangement of these, together with the river which sweeps through them, constitutes the beauty of Richmond. Good Friday was so fine and so bright that I could distinctly, with the naked eye, see the flag waving in the breeze on the top of the highest turret of Windsor Castle; not the storm flag, but the largest and finest. In the valley several of the trees were fully leafed half way up, while on the other half the buds were not bursting. The views from Richmond towards London are nearly all destroyed by injudicious planting, to remedy which the only way now would be to form vistas at various places, or make a roadway through the centre of the clumps. Cockneys on gala days have, however, no wish to see London; on these days they love to leave the city, its cares and bustle, behind them. *James Cuthill, Camberwell.*

Varnishing Sheet Glass to prevent burning.—Permit me to suggest to such as are liable to have their plants burnt, from their houses being glazed with sheet glass, the probability of the evil being prevented by coating the inside of the glass with transparent varnish (such as a mixture of Canada balsam and oil of turpentine) put on rough, to imitate rough plate. After the glass is well cleaned and painted with a coat of the varnish by pecking it with a dry clean dusting brush just as it begins to dry, a fine roughened surface would be produced, sufficient, I think, to disperse the rays, which would otherwise be condensed into a focus; perhaps Whitney's composition might be a good varnish, I think it should be as transparent as possible. Whether successful or not, the plan is worth trying. *G. W. Hoyle, Reading.* [The idea is good; but Canada balsam will not carry it out. The varnish must be of some kind which dries quickly, and does not soften by solar heat.]

Keeping Properties of Snow exposed to Air.—On a former occasion, when I sent you my opinion of the inutility of deep pit "icehouses" (so called), for preserving ice, I then, by way of corroborating such an opinion, stated that I had seen snow lie in the chasms of the Ochil hills till near Midsummer, and took the liberty of referring to your correspondent Mr. P. Mackenzie, who lives in daily, not to say hourly, sight of these hills, whether he had not witnessed the same thing? Mr. M. did not say directly that my statement was false, but by a roundabout sort of hypercriticism tried to produce the impression that it could not be true. This I felt to be unfair, and subsequently called his attention to Mr. Beaton's statement of a similar kind to mine. In a late Number (page 181), Mr. Mackenzie says he never found snow on the Ochils, though he had traversed them at various periods of the summer, &c., and wishes to be informed whether I would have it understood that it was on these hills Mr. Beaton basked, &c. Then he jumps off to Tournefort and Mount Ararat, to tell us how that botanist was refreshed by the snow-water of that celebrated mount, and seems, in an indirect way, to lay me under some obligation to point out on what spot, or peak of the Ochils, botanical wanderers may find snow at Midsummer, &c. Now, with all deference to our friend, I think this is asking rather too much; and I may just beg to inform him, that I never was on the Ochils in my life, and that I have only seen them on two occasions for these last 40 years. The South Downs of Sussex are far more familiar to me now than the Ochils; nevertheless, I have as distinct a recollection as I have of the existence of yesterday, of seeing strips of snow lying in the chasms of the Ochils, full in the sun, and not on the heights or peaks, in the early part of June (not far from Midsummer), when the out-door workers on the plains, not a hundred miles from West Plean, were sweltering with heat. Now, it matters little to me whether Mr. Mackenzie believes this or not. The snow I allude to lay not far from Alva House, but whether it was designated her ladyship's webs or not I cannot say; the fact is, it had drifted from the heights to a great depth, consequently it retained its consistence for a long period. Such a circumstance may not happen in a generation, but is not to be invalidated by hypercriticism. *Quercus.* P.S. May I ask our friend how he gets on in growing Mushrooms in the recesses of the coal pits of Sauchie or Bannockburn.

Scotch Foresters.—It is useless to attempt to reason with such persons as "N. A. D. P."; at least if we may judge from his strictures on Scotch foresters, we may fairly conclude that his ideas are not very bright, when the only reason he adduces, why Scotch foresters are inferior to English ones is based on the difficulty of raising timber, with a Scotch climate. This indeed is certainly the most powerful argument that can be brought forward in their favour. The Johnsonian assertion, that there are no trees in Scotland, we thought no man would have ventured to reiterate. I beg to express my surprise that the unfounded prejudices of any anonymous party should find a place in the columns of the *Gardeners' Chronicle. George Edwards,*

Baldrnie. [We should have thought that you would have been much obliged to us for inserting them.]

Societies.

LINNEAN, *April* 3.—R. BROWN, Esq., in the Chair. R. Bentley, Esq., was elected a Fellow. The Rev. W. Smith, of Wareham, presented a series of specimens of microscopic Diatomaceæ and Desmidieæ. A paper was read from Mr. Arthur Henfrey *On the Origin of the Vegetable Ovule.*—This was an account of the development of the ovule of Orchis morio, from the epoch when the nucleus appears a cellular papilla upon the placenta to the commencement of cell-formation in the embryonal vesicle. The results at which the author had arrived correspond with those related by Amici, Mohl, and Müller, in opposition to Schleiden's views. Before the pollen-tube enters the foramen of the ovule, three minute cells (germinal vesicles) exist at the micropyle end of the embryo-sac. The pollen-tube passes down the micropyle canal and comes in contact with the outside of the membrane of the embryo-sac. Fertilisation is apparently affected by the passage of the pollinic fluid through the intervening membranes, viz., that of the pollen-tube itself, of the embryo-sac, and of the germinal vesicle which lies in the wall of the embryo-sac within. One (sometimes two) of the germinal vesicles then enlarge and become subdivided by septa into a number of cells; the cell at the upper end grows out through the micropyle canal into a confervoid filament which grows by the multiplication of its terminal cell by cross septa. The cells within the embryo-sac then develop into the embryo. The author stated that other observations he had made on the same subject in other plants are not yet sufficiently perfect, but so far as they go agree with the above. The peculiar cellular body, described and figured by Müller as projecting from the micropyle, is the funiculus, which is a direct continuation of the inner integument. Müller has figured it as having a rounded free extremity, but the author had observed it repeatedly attached to the placenta.—Mr. Smith read a short notice *On the Habits of Monodontomerus.* In the autumn of 1847 he was anxious to discover the larva of that well known parasite, Melecta punctata, in the cells of Anthophora retusa; for that purpose he visited a colony of the latter bee at Charlton, in Kent. Having procured there a number of larvæ and pupæ, from the circumstance of some of the former being of a deep orange colour, he was led to believe them to be the larvæ of Melecta, but in this he was disappointed; for these, as well as the pale coloured larvæ, in due time produced alike Anthophora retusa. The colour of the larva was presumed to be materially influenced by the nature of the food stored up by the parent bee. On placing the larvæ and pupæ in separate boxes, the author was surprised to see a small larva at the side of one of those of Anthophora; this small larva was about a line in length. On raising the bee pupæ, 12 others of the parasitic larvæ were discovered feeding upon the pupæ of the bee; this they continued to do for 10 or 12 days, by which time not a vestige remained. The parasitic larvæ being now full fed, remained in an inactive state for some weeks, when they became pupæ; in this state they only remained a few days, when they became perfect and active insects, thus proving that, like the majority of the class to which they belong, they are insectivorous in their habits, feeding on the pupæ of bees.—Mr. Newport stated that he felt himself called upon to make some remarks, as the paper now read referred to a paper of his own, which was still in course of reading, and as it seemed to imply a question of his priority to the discovery of the insect referred to. He had collected this insect in the larva state on the 12th of September, 1847, and had informed Mr. Smith at the time of the fact. Sometime afterwards, as he learned from Mr. Smith, who, being present, could correct him if in error, Mr. Smith also collected larvæ of this insect in the same locality. With regard to the kind of food of this larva, Mr. Newport was happy to find that further observations had been made; but he begged to say that what he had chiefly dwelt on in his paper was the circumstance of its being an external feeder, as proved by the hairs on its body, although he had also advocated the opinion that it fed on pollen; but as to whether this was the case or not he considered it mattered but little with reference to the anatomical facts he had described.

ENTOMOLOGICAL, *April* 2.—G. R. WATERHOUSE, Esq., President, in the chair. Donations of books from the Stettin Entomological Society, the Philosophical and Literary Society of Liverpool, &c., were announced, and an extensive and valuable series of insects from Adelaide, in South Australia, presented by Mr. Wilson, Corresp. M.E.S., including many new species of all orders. A series of British Noctuidæ was also presented by Mr. Stainton, and eight new members were elected. Mr. Westwood stated, with reference to the attacks of larvæ upon the corks of wine-bottles, that he had been informed since the last meeting that an extensive wine establishment at the west end of London had suffered damage to the amount of 5000*l.* during the last few years by these insects. Mr. Douglas brought for distribution among the members specimens of Ægialia globosa and Phylan gibbus, from the sea-coast of Lancashire. He also read notes on the occurrence of two new British Tortricidæ of great rarity. A living specimen of the buff-tip moth (Pygæra bucephala), taken at large, was exhibited by Mr. J. F. Stephens, others having been recently taken, the ordinary time of the appearance of the insect in the perfect state being the end of May. Specimens of Necrophorus humator, found dead in a beehive, were also exhibited. Mr. Stainton read a notice concerning the synonymy and specific identity of Melitæa Cinxia, which had been greatly confused by continental writers, owing to the short and insufficient description of Linnæus. By an examination of the Linnean cabinet of insects, still in the possession of the Linnean Society of London, Mr. S. had been enabled to clear up the doubts, and to prove that the Linnean species was identical with the insects so named by English Lepidopterists. Mr. Westwood read a paper containing descriptions of two remarkable exotic genera of Coleoptera, to which he gave the names of Erichsonia dentifrons and Cossyphodes Wollastonii, preceding his descriptions by some observations on the introduction and mal-appropriation of commemorative generic and specific names.

SOCIETY OF ARTS, *April* 11.—The Vice-President in the chair. The Secretary read a short paper by Baron de Suarcé on the Oxalis crenata, specimens of which were exhibited. The Oxalis crenata has been known to the scientific agriculturists of Europe for some years. It is a tubercle, the culture of which, however, upon a large scale has been little practised; this tubercle is stated by Baron de Suarcé (who has cultivated about 2½ acres of it upon his own estate in the south of France), to possess a larger degree of nutriment than most of the farinaceous plants which form the basis of human food in our climate. The total weight of the crop produced upon 2½ acres cultivated by him was 10 tons, from which 3 tons of flour were obtained. From the stems of the plant, which may be cut twice a year, and can be eaten as a salad or spinage, 90 gallons of a strong acid was obtained, which, when mixed with three times its bulk of water, was well adapted for drink. The acid, if fermented and brought to an equal degree of acidity with vinegar, is superior to the latter when used for curing or preserving meat, as it does not render it hard, or communicate to it a bad flavour. The flour obtained from the Oxalis crenata is superior to that obtained from the Potato, Maize, or Buckwheat, as it makes an excellent light bread when mixed in the proportion of one-fourth with corn flour; this is not the case with Potato, Maize, or Buckwheat flour. The Baron concluded his paper by expressing his willingness to assist in introducing into England the culture of a tubercle which seems destined to become a source of food for the lower classes, more precious, perhaps, than even the Potato. In reply to a series of questions, the Baron stated that the Oxalis crenata came originally from South America; that it is hardy, and unaffected by change of temperature, and grows readily in any soil, it being difficult when once introduced to eradicate it.—Dr. Ayres read a paper on the Importance of the Animal Refuse of Towns as a Manure, and the methods of rendering it available to agricultural purposes. The author commenced his paper by calling attention to the necessity of preserving the animal refuse of towns, and the importance which is attached to it in China and Flanders, in many departments of France, Tuscany, &c; and also to the various forms in which it is applied to the earth. Having alluded to the importance of this subject in connection with the improvement of the sanatory condition of towns, and the injurious effects upon the inhabitants of London in particular, by allowing the putrid matter to be carried into the Thames, there to be tossed upon the waves and left exposed upon the shores at each retrocession of the tide. He proceeded to consider the contents of the cesspools of London alone, which he has calculated cannot yield less than 46,500 tons of perfectly dry matter annually, a quantity, according to the analysis of Liebig, sufficient to fertilise at least a million acres of land, and the monetary value of which cannot be stated at less than 340,000*l.* Having next alluded to the plans which have hitherto been proposed for drying and rendering this great mass of matter portable and available for agricultural purposes, he proceeded to describe a plan which he has recently patented for effecting so desirable an object. My process (he observed) essentially depends on the fact that all the gaseous and volatile products of putrefaction are combustible, and are resolved into the ordinary products of combustion when carried over any incandescent surface, or over or through burning fuel, when mixed with atmospheric air. Thus ammonia is resolved into nitrogen and water, sulphuretted hydrogen into sulphurous acid and water, carburetted hydrogen into carbonic acid and water, phosphoretted hydrogen into phosphoric acid and water; the volatile organic matters associated with the gases are completely destroyed; carbonic acid alone passes through the fire unchanged. All these gases, with the exception of ammonia and carbonic acid, exist only in very small proportions in putrescent animal matter. It follows, from what has been stated, that all the volatile products of putrefaction are thus resolvable into the ordinary products of combustion which are well known to be innocuous. It suffices to conduct these gases and vapour through a fire to effect their entire decomposition and destruction The apparatus by which this process may be worked is susceptible of many modifications, but those to which he particularly desired to direct the attention of the Society consists in drying the animal refuse by the application of heat, either obtained from steam-pipes or otherwise, and at the same time destroying the volatile products of putrefaction by burning them. A lengthened discussion followed the reading of the paper, at the close of which the thanks of the meeting were presented to Dr. Ayres for his communication.

Reviews.

Description of Taylor's Amateurs' Bar-Hive, with Directions for its Use. Groombridge.

A SMALL pamphlet of 22 pages, published separately in the form of an appendix to the author's "Bee Keepers' Manual." It contains neat woodcut illustrations of the bar-hive whole, and of its component parts separately. The hive may be described as consisting of two boxes with bars at the top of each for the bees to attach their combs to. The honey is obtained by removing the upper box, as on the storifying plan. The utility of this hive is, however, questionable. In placing the bars our author seems to overlook the fact that all the combs at the top of a hive contain deep or honey cells, consequently the bars should be arranged accordingly, and the bees themselves should be left to form their shallow or brood cells at the proper places in the combs. Our opinion is that the bees would be more likely to commence on the floor of the upper story and work upwards than on the guide comb on the bars; in which case the interference would be attended with more trouble than Mr. Taylor appears to be aware of. We imagine that it would have been the better plan to have left the bees to execute their own designs, and when the box was full to have turned it up and cut out the combs.

As there is no difference in the separation between combs in bar hives and those in common ones, it follows that the "space of 2 inches at the extremity of the upper side of the bars as a passage for the bees" is useless. Indeed it must be so, for the insects enter amongst the combs at the floor of the hive, and not at the top. Hewish was perhaps the first to bring the Greek or bar-hive into notice in this country, and, like Mr. Taylor, advocated a periodical extraction of old brood combs. But that is impracticable with safety to the bees, even although the operation be performed "in fine weather early in spring, before the breeding time commences." The fact is, that the bee-keeper has little chance of hitting upon such a time with established stocks, and less certainty if the operation be attempted at the season the author speaks of, when "the vacancies thus made are soon filled up with new combs." At such a time bees would be rearing young very fast. But supposing that the operation was performed about the 1st of February, even then the bees would suffer by the loss of brood combs from the heart of the hive, which they would have occupied. The cavity, too, would render the hive cold, and perhaps the weather would not permit the bees to repair the damage before the 1st or middle of April, in which case it must take the colony half the season to recover itself. The safer way, therefore, is to leave doctoring the brood combs to the bees themselves.

We object to zinc feeding pans, and to the use of any sort of metal about hives, metals being much more easily acted upon, both by heat and cold, than wood or straw. This remark applies to Mr. Taylor's ventilators, in which we put little faith; and also to the "zinc shade," employed in the improved cottage hive to throw off wet. May we ask why not place the whole hive under proper shelter.

The "single bar-hive," a representation of which is given, is on the storifying plan, and is well constructed for fencing off the weather. *W.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

LET a supply of water, sufficient to prevent the plants from suffering, be administered to the roots of established plants; but great care will be necessary in watering newly potted plants, to prevent the fresh soil from becoming soddened and soured. As soon as any plants are discovered to be in this state, they should be taken out, repotted in sweet soil, and more carefully watered for the future. If this operation is to be of any service, it must be performed without delay, as the roots of plants are speedily injured and frequently destroyed if allowed to remain in contact with unwholesome soil. Thunbergias, Chlorœas, and other climbing stove annuals, should be transferred at once from 4-inch pots to those in which they are intended to flower, in order that they may at once be furnished with a suitable trellis; the soil for Thunbergias can scarcely be too rich. Ipomœas of the annual kinds should be grown on, without receiving any check, until their roots reach the sides of the pots in which they are to flower; and, during their growth, they should have some of the strongest shoots occasionally stopped, with a view to equalise the strength of the plants; abundance of light is necessary, to prevent etiolation, and when their growth is nearly completed, and the plants begin to produce flower-buds, the amount of air should be considerably increased, in order to prepare them for the cooler atmosphere of the conservatory. Ipomœa Learii, and I. ficifolia, are excellently adapted for the autumn decoration of the conservatory; for this purpose they should be potted in 10 or 12-inch pots grown in stove heat till the end of May, and then removed to cooler quarters; if the conservatory is not sufficiently supplied with wires, a temporary substitute may be made by stretching twine from the pots to the roof. These plants will flower more freely if they are kept in their pots than they will if planted in the soil; but there is, notwithstanding, some advantage gained by setting the pots on the surface of the soil and allowing the plants to root through, as they are thereby enabled to guard themselves against accidental drought, and the nutriment they derive by the same means contributes to maintain them in a healthy state to a later

period, without interfering with the profusion of their blooms.

FORCING DEPARTMENT.

Vineries.—Let the rods of Vines which are just starting be tied horizontally across the rafters, that the flow of sap may be equalised, and the whole of the buds induced to break regularly. Use the utmost vigilance to keep down insects, especially the red spider; this attention will be particularly required in houses where it is becoming necessary to maintain a drier atmosphere, on account of the ripening of the fruit. Where proper care has been taken to keep the enemy in check to this time, little difficulty will be experienced; but if this has been neglected, the gardener will stand a chance of seeing the leaves ripen as soon as the fruit, and of course he must expect only a limited supply of elaborated sap for the benefit of the future crop. Applying a wash of sulphur to the pipes is the best palliative. Figs.—Let these have a moist atmosphere, with as much light as possible, a liberal supply of air to the leaves, and an abundant supply of water to the roots; every alternate watering during the swelling of the fruit should be of liquid manure. Let the later successions be brought on gradually at first, in a temperature by night of from 50° to 55°. Melons.—In determining the quantity of fruit to be matured on each plant, exercise as much caution as you would in regulating a crop of Grapes; the proper medium of size, and perfection of flavour, depend upon the plants being neither over-stimulated nor over-cropped; and if the latter fault is committed, the chance of a second crop is injured. Admit air freely during warm sunshine, and maintain a moist atmosphere by means of evaporating pans, and by sprinkling the paths and soil with water. Strawberries.—Continue to take in successions for forcing; and by fumigation or syringing destroy all aphides which may be on those which are in progress; this demands particular attention, as these little pests suck the juices out of the fruit while in its young state, and of course they spoil its appearance and prevent its swelling. If flavour is a more important object than size do not use too much liquid manure; a watering with guano-water once a week during the swelling of the fruit will be sufficient.

FLOWER GARDEN AND SHRUBBERY.

It is a good plan to sow Convolvulus major, Tropæolum canariense and some other half-hardy climbing annuals in 4 inch pots, two to four seeds in each. If sown now and placed in a cool frame, they will be quite forward enough for planting out in May. Sunflowers may be treated in the same way, as they do not like transplanting; but in late localities it is desirable to get them in flower somewhat earlier than they would be if merely sown in the open ground. As soon as the Primroses and others of the Polyanthus family have done blooming they should be removed from the beds, of which they have lately been the ornament, that the ground may be prepared for the summer beauties. The plants which are taken up should be parted and planted in some nice loamy soil in the reserve garden, watered, and shaded with evergreen branches till their roots are re-established; in this situation they will prepare themselves for a repetition of their duties next spring. Those who do not possess a stock of these useful plants cannot commence at a better time. Seeds of biennials, as Hollyhocks, Dianthus, &c., should now be sown in the reserve garden, and also of perennials, especially of those kinds which flower the first season; the latter may be sown at once in suitable situations about the beds and clumps of herbaceous plants.

FLORISTS' FLOWERS.

Ranunculuses.—Seedlings should be kept from heavy rain; in fact, though fond of moisture, it will be advisable to keep the frame-light over them, giving them a sprinkling with a brush dipped in tepid water when they require it. Polyanthuses.—Now is a period of enjoyment to the amateur who has raised a quantity of seedlings. We have at this moment several hundreds blooming, and out of that quantity we have not more than half a dozen that we should wish to keep. True, we find fresh faces in abundance, but unfortunately there are so many drawbacks to our ideas of perfection, that we shall yet reduce even our small number. Some have the yellow centre different in colour from the lace or edging; others have the centre stained with a darker colour, in the way of the Cowslip; again, others are pin-eyed, or the pointal protruding into view instead of the anthers covering that organ; and some with beautiful lacing, correct eye, and good colour, are condemned because there is too great a distance between the segments of the corolla, making the flowers "starry" or (to use a word not found in Johnson's Dictionary, but sufficiently expressive among florists) "windmilly." In any of these cases the flower will not pass, and we allude to them hoping that they may be of service to our amateur friends. Auriculas.—These will now want more water and plenty of air; if this is not allowed, the trusses will be drawn up weak, and all the trouble previously bestowed will be comparatively useless. If manure-water is required, and it will be serviceable now, there is nothing like that made with sheep manure; its effects are very apparent. Dahlias.—Pot off cuttings as they root; place them in a moderate hot-bed till they again strike root; then remove into a cold frame, and harden off gradually. Some must be protected at all events. Cover at night protected is the least appearance of frost.

KITCHEN GARDEN.

think if the b... ave sown their Leeks in a frame (ac- tank, this in th... ter directions) with the intention of cheapest. It ... ould now get the ground ready for them. To produce this excellent vegetable in perfection, it should be grown as large and quickly as possible, as the flavour is thereby rendered much milder. The Leek is fond of moisture, and its roots have a natural tendency downwards, and derive the principal portion of their nourishment from a source below the reach of the scorching sun of summer. The ground for this crop should be double dug, 18 inches deep, and the manure laid into the bottom of the trench, which should be previously broken up with a fork. Of the planting we will speak in a future Number. From this time Lettuce should be sown where it is to remain, the drills should be drawn 10 or 12 inches apart, and a few seeds dropped in every 6 or 8 inches; these, as soon as they are fairly up, should be thinned to one plant. Transplanting Lettuces in summer is a very bad plan, as the tap-root gets broken in the operation, and the plants have therefore to depend for their support on the surface soil, which for this crop is too much exposed to the drying influence of sun and wind; the plants are more liable on this account to grow weakly and run to seed. Transplanting will only succeed in hot summers where the soil is rich and moist, as in a London market garden. Parsley should be sown in drills about 12 inches apart, dropping a few seeds in every 6 inches; as soon as the curl is distinguishable the best plant in each group should be selected and the rest removed; as those which are left advance in growth every alternate plant should be removed, and the ground forked between the alternate plants, to encourage their growth, and thereby prevent their running to seed. Soot is a suitable manure for this plant. The Broccoli is getting on sadly too fast with us, and where there is a large portion of the spring crop still unused, it will be well to select the later heads and lay them in under the shade of a north wall; and if the early Cauliflowers are encouraged by applications of liquid manure, there will be no interval between the last of the Broccoli.

COTTAGERS' GARDENS.

Sow Peas and Beans once in three weeks from this time; as soon as they are 3 inches above the ground, draw a little more earth up to the plants, and stake them as soon after as convenient. If economy is not less an object to you than to others, do not waste seeds by sowing them too thick; 3 or 4 inches is quite close enough for either Peas or Beans. An early sowing of Scarlet Runners may now be made; do not use stakes for this crop unless you can procure them very cheaply; if left to themselves, or with merely stopping those runners which are outstripping their neighbours, they will form a low hedge about 3 feet wide and 2½ feet high. The objectionable shade which this crop generally throws over its neighbours is, by this method, obviated. Spinach, Turnips, Lettuce, and other salads, should be sown periodically; a sowing of Parsley should also be made. Cauliflowers and Cabbages should be planted out, if not done already; and another sowing of these, with Walcheren Broccoli, Savoys, Brussels Sprouts, &c., should be made within the next fortnight; a sowing of Celery should be immediately made under a hand-light or on a warm border.

State of the Weather near London, for the week ending April 12, 1849, as observed at the Horticultural Gardens, Chiswick.

April.	Moon's Age	Barometer. Max	Barometer. Min	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain
Friday . 6	12	29.600	29.440	63	38	50.5	S.E	.00
Satur. . 7	0	29.514	29.440	55	31	41.5	S W.	.05
Sunday . 8	14	29.129	29.346	61	31	46.0	S W	.02
Monday 9	15	29.536	29.459	52	32	47.0	N E	00
Tues. .. 10	16	29.661	29.538	50	34	42.0	N E	.01
Wed. .. 11	17	29.800	29.691	47	25	36.0	N.E.	.00
Thurs .. 12	18	29.819	29.608	51	28	44.5	N.W.	.01
Average		29.624	29.501	54.1	31.5	44.3		0.12

April 6—Heavy dew, very fine; slightly clouded.
— 7—Fine, showery, hazy at night.
— 8 Hazy; showery, cloudy, hazy; slight frost.
— 9 Foggy, heavy clouds densely overcast.
— 10—Hazy; cloudy, densely overcast.
— 11—Cloudy and cold, clear at night, sharp frost.
— 12—Frosty, clear, uniformly overcast; cloudy.
Mean temperature of the week 2½ deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending April 21, 1849.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No of Years in which it Rained.	Greatest Quantity of Rain	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 15	58.1	39.4	48.8	13	0.47 in.	1	4	2	1	4	[illegible]	1	4
Mon 16	56.7	36.8	46.8	10	0.63	5	5	4	1	2	3	2	2
Tues 17	57.0	36.6	46.8	11	0.32	6	6	3	2	1	4	1	1
Wed. 18	57.1	37.7	47.4	6	0.49	3	5	2	1	3	2	4	3
Thurs. 19	58.6	36.0	47.3	4	0.06	[illegible]	5	2	1	1	8	5	—
Friday 20	59.6	36.9	48.2	10	0.49	1	6	3	-		6	5	2
Satur. 21	58.1	39.6	48.8	9	0.20	1	5	4	1	1	3	7	1

The highest temperature during the above period occurred on the 17th 1844—therm. 71 deg., and the lowest on the 16th, 1847—therm. 20 deg.

Notices to Correspondents.

Annuals: *Parterre.* As soon as your Zinnias and other annuals can be handled, prick them out into pots, filled with light rich soil; and if you have no frame, place them on your greenhouse shelf, near the glass, till all danger of frost is over, when they may be planted out. The Zinnias succeed best on a rich, light, warm border.‡

Ants: *Cornwall.* Pour turpentine into their runs, and stop up the openings, or push in some rags dipped in turpentine.

Arracacha: *Z Z.* See p. 491 of our Volume for 1848. It is not on sale in England at present, that we know of.‡

Back Numbers: One shilling each will be given for Nos. 3, 5, 10, 12, 21, and 38 for 1841; and full price for Nos. 42 and 45, 1845; 51, 1846; 40, 1847; and 31 and 49, 1848.

Books: *L W S.* We do not know what you mean by fossils; but whether you intend minerals or fossil plants or fossil animals, you will hardly be able to determine their names without a small library. Your best plan would be to study some public named collection the keeper of which could then point out to you the means of prosecuting your researches. The study of organic remains is one of the most difficult of all subjects. If you mean fossil plants, then you must procure *at least* Lindley and Hutton's "Fossil Flora," and Ad. Brongniart's "Histoire des Végétaux Fossiles," still incomplete.—*F N.* There is no such book as that about which you enquire.‡

Camellias: *M E A.* If you destroy roots, flowers will fall off. The autumn transplantation has done the mischief.—*Leyton.* All Camellias may be increased by cuttings, but for the finer kinds it is not a plan to be recommended. The best way is to inarch or graft them on young stocks of the single red. Inarch now; graft in autumn. For slugs, see Home Correspondence.‡

Conifers: *T G P.* The following are the native countries of those which are known; those omitted are unknown in science. P. Sinclairii, California; maritima de Corse, Corsica; occidentalis, Havannah. Juniperus Reevesiana, China; Hudsonica, Hudson's Bay. Taxus nucifera, China. Podocarpus Maki, Japan; coriacea, West Indies. The rest are merely names to sell plants by.

Conservatory: *A Sub.* Amidst a mere choice of difficulties we should select the kitchen garden wall so as to let it face west and south.

Galvanised Wire: *J H.* We would recommend it to be stretched on your wall horizontally.

Glass Burning: *H D.* No doubt coating sheet glass with some material to prevent burning would be advantageous; but the question is, what is the best material for the purpose? This is a matter now under experiment.‡

Guano: *J F, jun.* Be so good as send about half an ounce of the supposed salt, and further particulars. The facts, as you put them, are doubtful.

Hoya carnosa: *W R.* It is usual for it "to form flowers on the old stems of the former flowers."‡

Japan Lilies: *A Lady.* They are hardy, and may be left in the ground all winter, if you wish it. But, if you want them to flower early, we would advise you to winter them out of the ground, and to forward them in pots, under glass in spring, previously to planting them out.‡

Kail: *J G.* The letter has been found; the seeds had been previously sown. The former hardly required an answer, until the result of sowing the seed could be ascertained.

Mackintosh's Verges: *Ironmonger.* We do not know.

Manure Dealers: *A Land Surveyor* must permit us to decline offering any opinion as to the character of dealers in artificial manures. As to that he must judge and act for himself. We should not be justified in giving persons a character which might enable them to deceive the public, nor in withholding a character from those who might deserve one.

Names of Plants: *P N, Don* Oncidium sarcodes; the same plant as that exhibited at Regent-street a month ago by Mr. Bunney, of Stratford. It is nearer O. amictum than O. pubes, with which it agrees in nothing except habit.—*Marcelly.* Erophila vulgaris—Draba verna. 1, Reseda lutea; 2, Gentiana campestris; 3, Sherardia arvensis; 4, Reseda luteola; 5, Cnicus pratensis; 6, Lepidium campestre; 8, Pulmonaria latifolia.—*A Moore.* It is too bad to send us half an armful of the commonest plants, some out of leaf, and mostly out of flower, for their names, which can be ascertained from the first gardener's apprentice. We really must put an end to this unreasonable and most needless tax upon our time. 1, the Norway Maple; 2, Bird Cherry; 3, Ruscus racemosus; 4, Photinia glabra; 5, Genista candicans; 6, Euphorbia Lathyris; 7, Vaccinium amœnum? 8, Erica ciliaris; 9, Rhododendron dauricum? 10, Vaccinium ovatum; 13, common Heather; number lost, Ruscus aculeatus; 16, Heather again; 17, Phillyrea angustifolia; 18, Berberis aquifolium; 21, Amelanchier Botryapium; the rest not in flower, and hardly in leaf!!!—*A C.* Ruscus hypoglossum.

Peaches: *J Lowrey.* Peach blossoms rarely drop before expanding when the bearing shoots are sufficiently shortened. If you shorten these to 6 or 8 inches at the winter pruning, neither flowers nor fruit will drop; by so doing you likewise secure a good shoot from the base of each for succession.‖

Rhododendrons: *D O.* Prune them like Laurels, now is the right season.

Sheet Glass: *J and J D.* The plants are out of health, no doubt, but there is nothing to connect their condition with the action of sheet glass. They look as if they had been kept too damp and cold at one time and too dry at another.

Stocks: *E B.* Your question was overlooked; such inquiries can only be answered on the spot. All that we can say is, that the "shanking off" of your seedlings is probably owing to too much wet and too little light, heat, and fresh air. It may no doubt arise from other causes, but this is the most probable one. Shanking is caused by the accumulation of water among the young tissue. Such accumulation may arise from the presence of too much water in the soil, or from the inability of a plant to get rid of what it has received, which is always in excess. Bright light, warmth, and currents of air are the agents naturally employed in removing superfluous water.

Verbena Seed: *A Lady.* Sow it now in pans filled with light soil, and place them on a greenhouse shelf near the glass, or better in a close pit. When the young plants are large enough to be handled, prick them out into pots, and keep them under glass till all danger of frost is over. They may then be planted out, and treated like other Verbenas.‡

Vines: *A G N.* Your Grapes have had the growth of their skin stopped at a very early period. The disease would no doubt have become the rust itself had the berries hung long enough. The cause must be sought in the treatment; there is nothing in your letter to explain it. Some Grapes are more tender than others.—*X Y Z.* Not knowing all the circumstances under which your Vines have been forced, it is impossible to say what has been the cause of the shrinking and curling up of the flowering parts. Probably the buds have been expanded in a temperature too hot and moist, with insufficient ventilation.‖—*A H.* Are not rats, especially water-rats, your enemies? Hot dung, applied to the roots of Vines forced early, is decidedly very advantageous.

Misc.: *A B Z.* Your question would require an answer as long as this paper.* You had better consult the nearest nurseryman. Fill it with *common cheap* things for a beginning; after a little experience you will learn to know what will thrive with you.—*F C.* Lime the land where the slugs are beginning to be troublesome. Alaternus, Ivy, Holly, Yew, Laurels, Lilacs, Laburnums, &c., will all do very well in heavy land; you must drain it if anything better is expected to live in it.—*L J.* Is it quite reasonable to ask us to send into the Regent's Park for the purpose of answering a question which the secretary would have answered immediately? The blackest Hyacinth we are acquainted with is the Prince Albert.—*W D.* We have no knowledge of the individual in question.—*A Lady.* It is not the crimson Rhododendron at all, but some inferior rose-coloured variety.—*Cavanensis.* The evils you mention look like the effects of bad drainage. Graft Cratægus glabra on the common Whitethorn. Your Laurels may be pruned in with advantage now.‡—*Leyton and M H.* Frogmore is a private garden belonging to her Majesty.‡—*A B* You may prune in your Veronica with safety now. Aralia japonica is hardy; plant it in a sheltered but open place. Treat your Pancratium speciosum like an Amaryllis; ripe seeds of it may be made to germinate.‡

SEEDLING FLOWERS.

Cactuses: *J W.* A brilliant scarlet Cactus, with firm broad round petals. A great improvement in shape upon the older kinds.*

Chinese Primulas: *A M.* A fine large-flowered variety, somewhat novel in colour; its ragged edge is its worst fault.*

Verbenas: *W P Epps.* Our remarks on florists' flowers are made upon them as they are when received, and not with respect to what they were or what they may hereafter be.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

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GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address GEORGE GIBBS and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c. &c., 26, Down-street, Piccadilly, London.

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,, ,, Yellow Globe and Red Globe	,,	0	9
,, ,, Long Yellow	,,	1	0
WHITE SILESIAN SUGAR BEET	,,	1	0
CARROT, large White Belgian	,,	1	0
,, large green-top red Altringham	,,	1	0
LARGE CATTLE PARSNIP	,,	1	3
TURNIP, Swedes, fine purple-top	,,	1	0
,, ,, Skirving's	,,	1	0
,, Norfolk White, Green, and Red round	,,	0	6
,, Skirving's Improved Purple-top Scotch	,,	0	10
,, Fine Green-top Yellow Scotch	,,	0	10
,, Dale's Hybrid	,,	0	10
,, Yellow Tankard or Scotch Pudding	,,	0	10
And all other Turnips at the lowest prices.			
LARGE DRUMHEAD CATTLE CABBAGE	,,	2	6
FINE LUCERNE	,,	0	10

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The Agricultural Gazette.

SATURDAY, APRIL 14, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS

TUESDAY,	April 17—	Agricultural Society of England.
THURSDAY,	— 19—	Agricultural Imp. Society of Ireland.
TUESDAY,	— 24—	Agricultural Society of England.
THURSDAY,	— 26—	Agricultural Imp. Society of Ireland.

THE HIGHLAND AND AGRICULTURAL SOCIETY'S LIST OF MEMBERS, published in the last number of the Quarterly Journal of Agriculture, reveals a somewhat curious circumstance regarding the constitution of that Association, which will no doubt surprise many of our readers. Out of the 2658 members, or thereby, of which the Society is at present composed, there are only 220 whose names and addresses indicate that they are tenant-farmers, the large remainder being landed proprietors, their agents, merchants, and professional men. The proportion of farmers is thus but little more than 8 per cent. of the whole number. In most other Societies or Associations formed for the improvement of science, art, and commerce, the membership consists principally of scientific individuals, artists, and merchants respectively—those, in fact, who are professionally interested or actively engaged in any of these pursuits. Benevolent societies, on the other hand, owe their origin to the generous feelings and charitable sympathies of the affluent, while those for whose benefit they have been established are usually incapacitated for directing or controlling their operations. To which of these categories do what are called the *parent* societies of the United Kingdom belong? Do they foster agriculture through agencies external to it—by Government grants and the contributions of individuals not directly interested in its welfare; or is it by internal resources, by the great mass of the farming community, that its progress is sought to be effected? We shrink from the supposition that the tenant-farmers of Scotland regard the Highland Society as a benevolent association of *Lairds*, merchants, and professional men, and that they themselves are not called upon to contribute to its funds, or take an active part in its management and operations further than to walk passively in the path of improvement chalked out to them by their patrons; yet the fact obtrudes itself glaringly from every page of the published list to which we have alluded, that although a farming Society which has done good service to agriculture, not only in Scotland but in England, Ireland, and other lands, it is not a Society of farmers. This is the more to be wondered at if it be recollected that the first Agricultural Chemistry Association in Britain owed its origin—not to men of science—not even in any notable degree to landed proprietors; but, to their honour be it said, to a number of the tenant-farmers of Scotland. Why is it then that so few of them have hitherto sought to be enrolled as members of a Society whose objects and operations have always been so thoroughly practical in their tendency, and why even now, when the Highland Society has become both practical and scientific in its constitution, do the tenant-farmers still stand aloof, and leave its members to struggle as best they may with the growing demands of agriculture, and the onerous responsibility imposed upon the Society, to uphold and promote the cause of improvement in Scotland? That tenant-farmers are uninterested in the prosperity of the Highland and Agricultural Society is negatived by the fact that the proposed alteration of the Shows to triennial, instead of annual periods, as formerly, was generally regarded by the whole farming community with feelings of deep disappointment, and elicited a memorial to the directors from a large body of influential tenants in East Lothian, praying that the old plan of yearly exhibitions of live stock and implements might be continued. Had it not been for this petition the directors and the public might have very naturally inferred that such exhibitions had either lost their attractions or usefulness, and that the tenant-farmers of Scotland were willing to relinquish without regret what they were wont to regard as a yearly reunion of all that might be considered novel, useful, and suggestive in their profession. As it is, however, we are willing to believe that the memorial of the East Lothian farmers embodied the sense, and gave utterance to the feelings of their brethren throughout the other counties of Scotland. In compliance with this memorial the directors have intimated their intention of holding a Show at Glasgow in 1850—it being inconvenient now to hold one during the current year. So far all is as it should be, but the question recurs, What prospect is there that the Society will be able, however willing, to continue the Shows yearly afterwards? It has never been concealed by the directors that a want of funds was the cause of triennial Shows being proposed at all. Now, unless there be some mode of permanently and adequately increasing the income of the Society to meet the exigencies of an annual exhibition of live stock, the same difficulty as formerly must be continually recurring. The tenant-farmers of Scotland should not rest satisfied that their duty has been fully discharged because a small section of their body, however influential, has memorialised the directors to resume the old system of annual Shows. If we are right in stating that only 8 per cent. of the Society's members are composed of individuals practically engaged in farming, it is sufficiently obvious that not more than a proportional amount can be contributed by them to the fund derived from the members' yearly subscription. It can scarcely be compatible with the original design of the Highland Society, or any other similarly constituted, to exclude tenant-farmers from its membership, or even to throw the slightest obstacle in the way of any who wish for admission.

In the absence of correct data, we are unable to say how many farmers there are in Scotland, but

taking the arable land at five millions of acres, and the extent of individual occupancy at 250 acres, we obtain a total of 20,000 farmers. This is but a rough guess, but it is sufficient to show the disparity between the whole number of farmers, and that very small section of them who are members of the Highland Society. The comparison still further suggests the thought that were a third, or even a fourth of the farmers, to join the Society, what an accession of strength it would give, both as regards wealth and practical influence, an influence widely extended and everywhere active, because of the co-operation of a larger body of members. The admission of members to the Highland Society is decided by ballot, but certainly no respectable farmer who might wish to become a member by the ordinary mode of application need fear being *black-balled*. Another suggestion may not be without its uses: the annual subscription has hitherto, so far as we are aware, been 23*s.* 6*d.*, or for a life membership, 12 guineas, and these rates have been uniform, whether the individual were landlord or tenant. Probably some modification might be made in this respect, for it is somewhat incongruous that the tenant of a few hundred acres should be required to pay as much as a proprietor worth 5000*l.* or perhaps 10,000*l.* a year. Besides, for one farmer who could quite conveniently contribute the present subscription of 23*s.* 6*d.*, or 12 guineas for life, there are 10, or perhaps 20 others, to whom it would be burdensome, but who might very willingly be disposed to give one-half of one or other of these sums. The directors should not overlook the fact that out of 33 counties in Scotland, comprising 948 parishes, there are only some 220 farmers members of the Highland and Agricultural Society, and, as an accession from this source cannot but be desirable, some mode of effecting it should be adopted consistently with a proper regard for the respectability of the Society. Now that the services of an agricultural chemist have been secured, and that his labours have been commenced under the *prestige* of the highest professional recommendation, it would be suicidal in the directors to contemplate, unless as a most lamentable necessity, any retrograde movement, either in the scientific or practical department, and of such a nature would undoubtedly be the partial discontinuance of public exhibitions of stock and implements, and the lessening of those opportunities in which farmers from all quarters meet together for a common object, and separate with a fresh impulse to carry on improvements with greater and better directed zeal than before.

These remarks will not be misconstrued as in the smallest degree attaching blame to the Highland Society or its officers: they are made simply and earnestly to draw attention to an incongruity which could scarcely have been expected to exist in a country where the great majority of the tenant-farmers are well educated highly intelligent men, and precisely of such a stamp as might reasonably be supposed capable of giving practical efficiency to an agricultural society. *J.*

Many mysteries attend the operations of Nature, but there are none so unfathomable as the causes of disease. The nature and symptoms of many a malady has been accurately watched by men of science; much has been done in the way of treatment, but very generally attempts to discover their cause have failed. This, however, is not the case with all disorders; the sources of some have been traced and are well known: thus we may cite the ague and the typhus in the human subject—the former the offspring of marsh miasma, the latter that of the effluvia of sewers and cesspools. And so with reference to the rot in sheep, the grease in horses, &c.: but there are other complaints of which less is known; it is, for instance, doubtful of some whether they are spread by infection or not; this is true of the influenza in men and animals, and of pleuro-pneumonia in cattle. Then again there are diseases that are known to be propagated by contagion or infection, and yet must have been originally produced by other secret and mysterious agencies, which now cease to operate. Amongst these we may mention the measles, the small-pox in man, and hydrophobia in dogs.

Every morbid affection, indeed, has its peculiar laws, and requires to be attentively watched and studied. It certainly seems to be the fact that of late years there have appeared several new diseases, which have very materially added to the losses and difficulties of breeders and graziers, though it is probable that the ravages of other maladies, formerly very prevalent, have latterly been greatly mitigated. Amongst these new diseases which have thus sprung up, or been imported from other countries, we may mention the epidemic, as it has been termed, which affects both cattle and sheep, the pleuro-pneumonia, which has proved so dreadfully fatal to horned cattle; and our latest importation of this kind, THE SMALL-POX IN SHEEP, to which we are desirous of directing the particular attention of our readers. It cannot for a moment be disputed that this disease is a foreign importation. It has existed throughout the Continent of Europe for many years, and in France and Germany its ravages have been very great. Captain Carr mentions an instance in which it carried off the whole of the sheep in a village in his neighbourhood, and since its introduction into this country its mortality has been in some flocks 90 per cent., and in numerous cases has exceeded 50 per cent. The outbreak of the disease in this country can be readily traced in the first instances to two small cargoes of Merino sheep, one from Hamburgh, and the other from Tormingen, on the coast of Denmark. These sheep were sold at Smithfield in various lots to farmers in different parts of the country, and thus the disease became introduced amongst our native flocks. It is probable that other infected cargoes followed, not only into London, but also into some of the other ports on our eastern coast, for it is a fact that the ravages of the disease have been far greater in the eastern counties than elsewhere. The symptoms are very similar to those of the human subject, as near, indeed, as we can expect, in beings so different in habit and constitution, the chief points of difference being that, instead of the rounded vesicles exhibited in the case of man, we find them in sheep flat and much larger in proportion, and it is rarely the case in sheep that pustular secretion takes place, which is so common in man as to constitute a distinct stage of the disease.

There is a singular uniformity in the period that elapses between exposure to contagion and the appearance of the eruptions; whether an animal gets it by inoculation, or by simple exposure to diseased animals, this period is about 10 days. On examination at this time, the papular stage commences, that is, little swellings resembling flea-bites are found all over the body, but mostly on the parts free from wool. These papulæ are preceded one or two days by red spots on the site of the papulæ. In the course of six days, vesicles or bladders form on the papulæ, and contain a fluid at first clear, and afterwards becoming more opaque. In about six days more commences the stage of desiccation, that is, a scab forms, and the ulcers gradually heal by the end of a month. These are the stages of a case that ends in recovery; but when death takes place, it is either in the first or the third stage. In the former all the external symptoms are suppressed, and the animal soon dies; whilst in the third stage the animal perishes from exhaustion. The danger is greatest when the papulæ are of a dark purple hue, or, running into each other, become confluent. The disease is decidedly both infectious and contagious, so much so, indeed, that it might be possible to inoculate 1000 sheep from one having the disease well developed. Of course it is not till the vesicles form that the disease becomes contagious, but it is probably infectious previous to this. It is uncertain, indeed, when infection actually begins, but we are disposed to consider that there is danger as soon as any eruption takes place on the body, though unquestionably the danger is greatly increased afterwards.

There are several important practical questions which it is most desirable, for the interests of the farmer, should be solved.

1. What should be done on the first appearance of the disease?
2. How can its ravages be stayed?
3. Can it be got rid of altogether?

We decidedly object to the plan of inoculation simply as a means of prevention whilst a flock is free from the disease, as by this means we propagate an infectious disorder though in a mild form. When, however, a flock becomes affected, it becomes the owner to determine what course should be adopted. In several instances it has been found that by careful separation and daily examination of the whole flock, and the destruction of a few cases, the disease has been got rid of, and when we consider that the infection is generally introduced into a flock by means of a single or a few cases only, it is very probable that in many instances the disease may thus be stayed. At the same time there is reason to fear that when this plan has been partially adopted the remainder of the flock has been sold off, and thus the disease has still further spread. Indeed there cannot be a doubt that the disease has been kept up and perpetuated in this country by parties who have thus saved themselves from immediate loss at the expense of others, wilfully concealing the existence of the disease, destroying a few cases, and selling off the remainder as quickly as possible. This has been done within the knowledge of the writer. The plan we advise, after some experience and considerable reflection, is, as soon as the disease appears in a flock, to practise separation and examination as rigidly as possible, but, at the same time, to inoculate one or two sheep. Then, if we find that the disease extends in spite of our daily examinations, we shall have from these inoculated cases favourable lymph for the inoculation of the remainder. If some 12 to 20 cases of small-pox have really occurred, then, without any further delay, we advise inoculation to be practised on the remainder of the flock; for it should be borne in mind that the earlier cases are generally mild, and the disease increases enormously in virulence and fatality as it extends. The advantages in favour of this plan appear to be these: we may select the most favourable weather for the operation, and in the course of six weeks are free from further anxiety about the matter; the utmost care can be taken of the flock during the period, and the greatest vigilance exercised to prevent the spread of the disease to other flocks, a care and vigilance which it may be difficult to adopt through so long a period as the system of continual turning might demand. Besides which, it should be remembered that there are at least three ewes probably to one wether sheep, and these ewes being of course kept for breeding, it is of the utmost importance to select the earliest and most favourable time for receiving the disease, and not to run the risk of their getting the disease naturally just previous to lambing. It is quite a mistake to suppose that the risk of spreading the infection is increased by inoculation—in fact it is lessened, for the disease becomes milder, having a mortality ranging from 2 to 10 per cent. It is also circumscribed, and necessarily entails the utmost vigilance, and necessarily prevents the sale of sheep from the flock for a given period.

Such are some reasons in favour of inoculation when practised discreetly. We propose, in our next, to consider the best means of staying the pestilence, or getting rid of it altogether, merely observing here that if the ravages of this alarming malady are to be stayed, farmers must be prepared to exercise some self-denial, and to consent to the principle that individual interest should succumb to public good.

DISEASES OF POULTRY.

(*Continued from p.* 803, 1848.)

Division IV. Nervous Disorders.—1. *Croup.* This name, which I have given to this complaint, not at all unfrequent among fowls, by reason of the very peculiar cry which accompanies it, must not, nevertheless, be confounded with that incidental to human beings, notwithstanding the very great analogy between them. But whether this be one affecting the brain only I will not say, as it is generally accompanied with stomach affection, and sometimes liver complaint (to which fowls are very subject, and which derangement is one cause of shell-less eggs), irritation of the mucous membrane and lungs. In most cases the brain appears to be in a high state of excitement. But for the accompanying dismal cry which the patient utters, a very distinct characteristic, I should have included it within the symptoms of the next described complaint, the cure being the same. *Symptoms.*—These are quite analogous to the following mentioned complaint, which confirms our classification, with the addition of the peculiar, plaintive, whooping cry, as if in great distress. *Causes.*—Atmospherical changes; injudicious diet. *Cure.*—A few occasional doses of the mixture recommended for the subjoined complaint; I have seldom known it to fail.

2. *Megrims, Staggers, or Itys.*—This is evidently a species of epilepsy—"tipsy-fowl," as country folks well designate the sufferer under this very common disorder among poultry. Horses, dogs, and all animals are afflicted with these complaints in some shape or other. *Symptoms.*—Giddiness, with a stupid stare, unsteady, "tipsy" gait, running backwards, and bolting forwards, with panting, and difficulty of breathing. *Causes.*—The same as in the preceding and subsequent complaints in a great measure, with cramping up and contraction of the limbs and toes, when the bird is unable to stand, causing this complaint to be frequently mistaken for cramp and rheumatism. *Cure.*—Two or more doses of the mixture by Clater, I have found to be a specific, seldom failing of relief if administered in time. Two parts of castor oil, one part syrup of ginger, and one part syrup of white poppies; two or three teaspoonfuls once or twice a day, or every two days. The castor oil in the larger proportion compensates for the otherwise too astringent effects of the syrup of poppies, which acts also as a powerful sedative, and the ginger as a counter-stimulant. The patient should have the benefit of a coop near the fireside or in a warm room, or, if cramped in the limbs, assisted with food, &c., as before recommended in cramp and rheumatism.

3. *Apoplexy.*—This disorder is exceedingly common among captive domestic birds, and particularly among small birds in cages, which are often seen to drop suddenly from off their perches, seldom to move again. Of the several kinds, there appear to be two to which birds are liable. M. Flourens names "two degrees, one deep-seated, and the other superficial; the first is marked by a complete absence of all movement, the second by deficient muscular action and inability to use the limbs" He says, "both stages are curable." *Symptoms.*—These may be much the same as in the

two previously-named disorders. Often there are none; I have seen fowls in apparent perfect health drop down dead in an instant. *Causes.* — Confinement and want of exercise; repletion from overgorging them with too much stimulating diet and animal food. Our little caged prisoners are very liable to attacks, particularly in a room where a gas lamp is used. *Cure.*— When the symptoms of the first stage appear, the attack may be superseded by a few doses of the last named mixture, with moderate diet; the second by bleeding, either by opening a vein, *secundum artem*, or by placing a few leeches on the nape of the neck, if there should be time. In an extremity a rough mode of proceeding might be resorted to, by making a gash with a penknife under the eye, across the temple, when blood will flow instantly, if not too late, and the wound soon heals. This is preferable to the method recommended by M. Chomel, of disfiguring the fowl by severing one or more of the tips of the claws. In many cases, blood has been found upon the brain, also water, but frequently I have found the heart and adjacent arteries surcharged with coagulated blood.

4. *Paralysis.*— Cramp and rheumatism often terminate in paralysis, and prove fatal. Prevention is the only cure—warmth and shelter. *D. S. E.*

ERRATUM.—In No. 49, Dec. 2, 1848, p. 803, in last paragraph, *read* "W. B. Dickson," *for* "Dixon."

ON THE CONVEYANCE OF PHOSPHATE AND CARBONATE OF LIME IN THE ORGANS OF PLANTS,

AND ON THE INFLUENCE OF THESE SALTS IN GERMINATION AND VEGETATION. By J. L. LASSAIGNE.

THE influence of earthy phosphates on the development of the seeds of cereals has been established by numerous observations, and, according to Liebig, in the absence of these salts such plants cannot arrive at a state of maturity. Earthy phosphates in fact are found wherever cereals grow. The object of using animal muck as manure is to restore annually to the earth as much of the salts as has been taken from it in the shape of food for man and other animals, and which salts enter into the composition either of their fluids or of their tissues. This action of the phosphates accounts for the powerful effect which pulverised bones have on certain soils, and the great efficacy of bones as a manure has been clearly ascertained by experiment. The way in which soluble salts are introduced into plants is very easily explained; but it is by no means so easy to see how insoluble mineral principles, such as earthy phosphates, to which our attention will at present be confined, pass through vegetable tissues. Several explanations of this curious process have from time to time been published, and it was for the purpose of removing the doubts which existed on this subject that the following experiments were made.

Our first attempts were to discover—1, whether basic phosphate of lime, as it exists in the bones of animals, was soluble in water charged with carbonic acid; 2, the proportions in which it was soluble; 3, whether the solution had or had not any favourable effect on the germination and vegetation of cereals; 4, and lastly, whether in different parts of a developed plant, a certain quantity of this same phosphate could be found.

1st Experiment.—Subphosphate of lime is soluble in water saturated with carbonic acid, at the ordinary temperature and pressure. This proposition, which we deduced from direct experiment, had been before stated by M. Dumas some years ago. M. de Gasparin, in his excellent "Cours d'Agriculture," vol. i., pp. 107, 108, said that phosphate of lime passed into plants while dissolved in water charged with carbonic acid, without however giving any experimental proof of his assertion. It was while things were in this state, and not being at the time aware of the experiments made by Dumas on this subject, that we announced to the Academy, towards the end of 1846, that water saturated with carbonic acid at the temperature of 10° C., and at the ordinary pressure of the atmosphere, dissolved the basic phosphate of lime as it occurs in bones in the proportion of 75 to 100,000, or of 1 to 1333.

We found that this solution was decomposed by the action of heat, and that the basic salt was separated if the carbonic acid were saturated with potash or ammonia. We found too that the same salt was soluble, though in smaller quantities, in water charged with bicarbonate of lime.

This question being disposed of, some experiments were made with bones, both fresh and partly decomposed by having been buried for some time in the earth. It was found that the latter, when in pieces as large as hazel nuts, yielded, after being in contact with water saturated with one volume of carbonic acid for 8 or 10 hours, a certain quantity of their inorganic base, that is to say, a portion of their carbonate and phosphate of lime; when the bones were coarsely powdered, a larger proportion of their basic salts was dissolved in a solution of carbonic acid. By further experiments it was found that the proportion of the phosphate to the carbonate of lime thus dissolved was pretty nearly the same as that in which these substances occur in bones according to the analyses of Berzelius. The results of these experiments lead, then, to the conclusion that the calcareous salts, of which the bones of animals are to a great extent composed, can, after the bones have been decomposed in the soil, be partly dissolved by rain as it soaks into the ground, and that the quantity thus dissolved is proportionate to that of the carbonic acid in the rain.

2d Experiment.—We were led by the preceding facts to examine what effect this solution of phosphate and carbonate of lime in water charged with carbonic acid would have on germination and vegetation. For this purpose four grains of fine Wheat, of the harvest of 1846, were sown in two glass vessels, the capacity of each being 200 cubic centimetres, and each containing 250 grammes of siliceous sand, well purified by having been washed in muriatic acid. Each vessel had been watered, in order to moisten the sand, the one with water charged with its own volume of carbonic acid, the other with the same water holding in solution some phosphate and carbonate of lime, obtained from bones which had been partly decomposed by being buried in the ground. The two glass vessels were placed in a porcelain saucer, which was covered by a bell-glass of the capacity of 6 litres, so that they might be completely protected from any dust that might be floating in the air. This apparatus placed on a wooden stand could be brought near a window and exposed to the direct rays of the sun at pleasure. The air in which it was placed was kept as nearly as possible at a temperature of 10° to 12° centigrade. All the seeds in these two vessels germinated in less than two days; the plumule gradually developed as if it had been in the open air, and sent out two leaves of a beautiful green colour, which grew to a tolerable size in the above named conditions. The growth of the seeds in the sand, watered with a solution of the calcareous salts, was more rapid than that of the seeds watered with a solution of carbonic acid alone. The leaves of the first were in general larger, more veiny, and of a darker colour; but in 25 hours after germination the vegetation of the plant languished under these unusual conditions; the leaves turned yellow at their extremities, and this change in colour gradually extended to a part of the edge. At this time, the heights of the stems of the seeds watered with water saturated with carbonic acid, and with a solution of the calcareous salts of bones, were from 0.065 m. to 5.070 m., and from 0.080 m. to 0.100 m. respectively, that is to say, the height of the latter was the greatest by one-third.

The small plants arrived at this stage of development appearing to suffer, the experiment was stopped, and they were taken from the glass vessels, their roots were washed, in order to cleanse them of the sand which adhered to their surface, and the whole plant was dried in a steam bath. The stems of the plants watered with a solution of the calcareous salts weighed, after having been completely dried, 0 193 gr., whilst the others weighed only 0.153 gr.; thus the height of the stems and their weight, when dried, were different in the two conditions in which the plants were placed; the difference being in favour of those that germinated and were developed in the sand watered with a solution of the calcareous salts of bones. A third experiment, made under similar circumstances gave identical results.

The results obtained in the above experiments, while demonstrating the influence to be attributed to the calcareous salts which exist dissolved in water charged with carbonic acid, also explain the way in which certain manures, contained in the soil, act. Besides the gaseous and ammoniacal products which are disengaged by animal matter in a state of decomposition, the calcareous carbonates and phosphates contained in such matter in larger or smaller quantities, also play a no less important part in the assimilation of plants. Since, then, plants require, for their complete development, mineral compounds, it is necessary that they should take up, by absorption, a part of those calcareous salts which exist in the soil, or of those which enter into the composition of the organic matter of manure.

These facts help to clear up a point in vegetable physiology, namely, that certain neuter or basic calcareous salts, insoluble by themselves in pure water, can, when dissolved in water charged with carbonic acid, be carried into the organs and tissues of plants, be fixed there, and form a constituent part of those organs or tissues. Vegetable life, studied in its different relations, tends to demonstrate that truth which is confirmed every day by observation and experiment, viz., that different organised beings are in a state of dependence the one on the other, as all natural phenomena fully prove. *Comptes Rendus, Jan.* 15, 1849.

CHRONICLES OF A CLAY FARM.—No. III.

To people of that happily constituted mind in which the hope and the faith, in the moral progress of their own race, and the sanguine watching of its slow-creeping evidences, furnish a continual, albeit a slender, banquet,—whose patient and far-reaching charity may be truly said to "feed upon air, promise-crammed;" it must furnish an occasional, and not infrequent pang of something like despondency to witness how slightly, how remotely the best remarks of the best philosophers, the most practical advice of the most practical moralists, does actually reach, touch, affect, enter into, or flavour the reciprocal thoughts and actions of men in the working-day routine of 'business' life. Business is the word, business is the excuse, business is the conventional and factitious basis for a code of human action, as unlike and opposed to what is declared, and sincerely believed, to be conducive to true happiness in every other department of life, as Monday's conversation is sometimes unhappily at variance with the good feelings or good resolutions experienced at the close of Sunday's sermon.

It is as long ago as the days of Charles II. that in one of these same 'Sunday sermons' a remark was made which has not only travelled down safely to our own time, but enjoyed the more remarkable truth-stamp of instant activity in its own, in being carried away by two listeners, who the following day met each other half-way to shake hands and settle by a little mutual concession, some troubled subject that had long kept them wide apart. The remark was that "Selfishnesse seeketh but its own sunshine and is blynded, lookynge on the light; but wisdôme, like a true archer, turneth his back to the sunne, and letting the light fall upon the object taketh a steadier and surer aym: and thus should he who seeketh his own happinesse consider well the posture of his neighbour, and placing himself therein look back as it were upon himselfe; and most surely, after due habit (for the tryal is at first of difficult empryse), he shall find the whole matter between them such that he shall presently know wherein the due correction lyeth."

To those complicate relations of life in which there is at once *antagonism of interest* yet *mutuality of object*; to that relation (for present instance) implied by the words 'Landlord and Tenant,' how close, how admirably apposite seems the quaint rule laid down by the good old churchman! 'Place yourself in your neighbour's position,' he seems to say (though indeed his language needs no paraphrase), 'and look back upon yourself from *that point*:' the thing is difficult and there is little danger of your getting too perfect in the art of looking on your own interest with your neighbour's eyes. Let the Antagonism between your interest and his be for the time imaginary, the Mutuality real. So will you see your own *best* interest and happiness in truer light and leisure, by taking your neighbour's judgment into council with your own.

The too frequent practice is to do the exact reverse: to realise the antagonism, and make the mutuality a fiction and a humbug. What the effect is—first upon the soil, 2dly upon the laborer, and 3dly on the public wealth, wherever this mistaken system has been long in operation, let him say who has seen a country, a district, or even a single acre which has been the arena of pure unmitigated *selfishness*, on the part of its Owners and Occupiers, and all who come between the two. The signs are not easily mistakeable;—beggared land, beggared labourers, beggared parish-funds, and beggared public finances can be recognised afar. They reach every sense: the eye can see it, the ear can hear it, the nose can smell it, the hands can handle it. In time the perception reaches the *inner* senses: and the mind begins to understand that this corruption is the work of *mistaken selfishness*. The Laws of Nature and Society press gently and agreeably around man, till he offends them by long neglect, and the selfish notion that they can be starved and outraged, harmlessly. Then they come in force: and evince their presence and reality by pain, instead of pleasure. Then the great Problems of Society begin to work themselves out under high pressure.

In the early stages of the world they are simple enough. When every man tilled his own field, the duties of Landlord and Tenant needed small definition. But advancement complicates relations: presently the time comes when you begin to see one man cultivating the soil of another: and that not only *without wages*, but paying the owner for leave and license! Mouths have increased upon the land; but the land measures the same. Acres don't *grow*. New inclosure eases the pressure for awhile; and like the rising water mark of a flood, the *ploughline* steals up the mountain-side—higher—and higher yet,—it grates upon the bare rock—and stops. But what has happened meanwhile in the rich valley? Industry, skill, perseverance, prudence, self denial, far-sightedness,—all, some, or one of these qualities have made individuals—or their lucky heirs—owners of more than they can cultivate themselves. The last bit of moor or mountain-side was the measure of the extreme point at which cultivation would pay: that bit, hanging between earth and heaven, in more than one sense, was the balancing-point, the *test of cultivability*. It just pays for tillage; and nothing more. A man perchance may ask your leave to dig or plough it: but for that leave he offers you no return—no Reddendum—in modern English, no RENT.

Here then is the origin of that curious thing whose definition has sorely puzzled the Political Economists. And well may it have puzzled: for it is the basis of one of the most complicate and peculiar relations that has come to exist between man and man. Mutuality of object, antagonism of interest, upon the same ground, raise a demand upon each of the parties for one of the most difficult things that human nature can be asked for—*modified* self-interest. It is easy to say that Land may be let like a House, or a Wharf. So it may. So may a leaf or a flower be manufactured, or a horse carved in wood or stone. But they are unfortunately deficient in one element which is said to attain its most striking resemblance from human art when *the watch* is heard *ticking in the pocket of a dead soldier*.

In a word, brick and-mortar walls, lath-and-plaster partitions, oak floors, and marble chimney pieces, are dead things, the fitting subjects of a dead contract: but there is a *still life*, a rebounding vitality for good or ill in the Soil—the glorious handywork of a higher manufacture—that will not brook the dull sloth of sleeping partnership. Not organised itself it is yet the active source of organism. Its gifts come to man *duty-laden*. To take the one without the other is, in the long run, impossible. And curiously enough, the Earth is herself the first conscious witness of a breach of the duties she devolves on and between those who cultivate, or inherit, her gifts, as she was of the earliest wrong committed between man and his brother man. She speaks, with most miraculous organ; and tells you the character of

the cultivator, or the proprietor, or both, as plainly as your eyes may choose to read it.

Take a walk through an Allotment-ground. To an expert eye, does not each little oblong plot of land, with its varied produce, care, culture, and condition, tell its separate tale, as if the soil were the destined mirror of the hand and mind of man. Does it need the voice or finger of the showman to point out the characteristics of the several occupants? Here there is industry, there idleness; here again there is hard labour, without skill or knowledge; there you have experimental attempts, despising established practice over much, and ending in failure: here again is toil overtasked and struggling against want of means—the spade without the dung-fork—a vain and hopeless struggle; there plenty of manure-heaps, but wastefully and unevenly applied: here again is loss of time upon too close a minuteness and pettiness of culture, there too large and daring a system, which risks the whole space upon a single crop. Every variety and sub-variety of character is self-drawn and pictured on the soil, a *photographic portrait of the cultivator*. And so it is upon that *great Allotment-field*—could one but as easily look over it—the Farms spread, border-to-border, over the various geological systems of England, Scotland, and Ireland.

* * * *

To this same wide Field, with its many modes of tillage, its various kinds of produce, and equally varied character both of occupation, and of ownership, insensibly flew the thoughts of the puzzled reader of a certain budget of fourteen letters, and of another about the same in dimension, which the following post brought from the punctual Messrs. Penn and Debbitt.

Reflection might well be allowed to be more long-winded, and Imagination itself to be more fanciful than usual even with the Chronicler, when—arrived at the end of the last of these missives and the questions they contained, as varied as the Postmarks they bore,—he threw his eyes up at a many-coloured Geological Map of the United Kingdom, hanging close by, and pictured to himself the possibility, and the value, of just such a Map, with its strong colours under-shaded by the 'Agricultural customs' that further sub-divide its geological outlines. The curiously contrasted interrogatories supplied by the letters he had waded through—for questions are mostly fertile in self-disclosure—would almost have furnished rudely the outlines of such a Map. Perhaps, thought he, before the century is out, the dream of 1835, may become a useful reality. *Talpa.*

Home Correspondence.

The Hamburgh Breed (See No. 6, Feb. 10). Another characteristic is the comb, which is very small, consisting of two or three upright points, resembling the diamond-shaped eminences round King David's crown, and behind this a large pendant top knot, also a tuft of feathers or muff on the throat, derivable from a cross with the Russian breed; or, as some assert, there is no comb or muff at all. The wattles diminutive; the earlets greyish white or red tipped; the eyes golden or black; the beak short and caruneulated; feathers spangled or spotted with yellow or orange with black margins, or speckled on a black ground; wings and tail feathers barred with three or four tiers of black streaks; legs short and bluish, generally; body short and compact, much after the shape of the green linnet, said to be the test of beauty in fowls. There is also a breed with a few feathers down the legs, but whence derived remains to be ascertained. An appeal like the present, through the pages of your Journal, is a sure way to settle points at issue; another is—if the managers of poultry shows would in future publish in the programmes of every exhibition for prizes the distinctive characteristics of every breed to be contended for, including the finest capons and poulardes (hen capons), there would be no misunderstandings. What could be more easy or less troublesome? This breed, which was named by Bradley 100 years ago, is also called "pheasant," gold spangled Hamburgh, and being generally very bad setters, or not setting at all, they lay during nine and ten months in the year, until the middle of the moult, till the last old feather drops from the tail; they come, therefore, very properly under the designation of "everlasting layers," a very desirable peculiarity, which half-bred ones seldom possess. The gold spangled of this breed are also often called "pheasant;" but they are very tender and susceptible of catarrh. Of the following seven extracts from poultry books, scarcely any two agree in their description and distinctive character of this breed. Why is this? The only solution is, because unprincipled persons are in the habit of selling one breed for another, and others, wanting experience, confound one breed with another. 1. Moubray, 1830 and 1838, does not mention it by name, but merely says that "Poland fowls were chiefly imported from Holland." 2. Dickson, W. B., 1838. "A large breed, prevailing colour black, with iridescent green; comb and wattles, even of the hens, unusually large; the caps (earlets) under the ears bluish white, and large. (Query, Black Spanish?) A variety of the Paduan, in which the nourishment expended in that to form the crest, goes to enlarge the comb and wattles. (A mere theory.) The Spanish fowls lay large eggs." 3. Peter Boswell, 1840. "The Spanish, with the Hamburgh and Chittagong, is a very large fowl; all are more or less allied to the Polish family." 4. Richardson, 1847. "They have a very large top-knot, with very small comb and wattles. There are the speckled, and golden-spangled, and the silver. Those I am now describing gained the prize at the Royal Agricultural Improvement Society of Ireland." (These characteristics are therefore recognised by the Irish Society.) 5. Dickson, M. D.—R. W., 1847. "The Hamburgh breed, which, from the belly and thigh parts having a soft, black, velvety appearance, is not unfrequently termed Velvet Breeches." 6. Dixon, Rev. E. S., 1848, objecting to the description of Richardson, truly says, "It has been no easy task to reconcile the synonymes of this breed. Richardson gives the name of Hamburgh to the gold and silver Polands, a top-knotted variety; which is also erroneously called 'Spangled,' whereas the feathers in both varieties are marginated or laced with black or dark brown." He further says, "Dickson is right in asserting the breeds to be combed." (It appears to me, that if W. B. Dickson be right, above quoted, and Richardson wrong, the Hamburgh breed have no "crests" or top-knots But this I now find to be erroneous.) 7. Knight's "Farmer's Library," W. C. L. Martin, 1848. "The Spangled Hamburgh: In the spangled Poland of pure strain there is no comb; in the spangled Hamburgh there is a small comb, and behind this is a large full pendant top-knot; the wattles are small, and under the lower mandible on the throat is a full dark coloured tuft of feathers. The general colour is golden or orange yellow, each feather having a glossy dark brown or black tip (not white), particularly remarkable on the hackles of the cock and the wing coverts, and also on the darker feathers of the breast. The female is yellow or orange brown, the feathers in like manner being marginated with black. They are called gold spangled, but there is also a silver spangled. I have not yet compared Martin Doyle, Main, the "Penny Cyclopædia," "Farming for Ladies," the "Poultry Maid," the "Naturalist's Library," and the "Book of the Farm." *D. S. E.*

Irish Waste Land Improvement.—An attempt having been made in one of your former numbers to prove, from statistics quoted, that the Government measures for Ireland were totally inadequate to their object, I will now take upon myself to show that the reclamation of the waste lands would afford ample employment for all the hands out of work, is perfectly practicable, and free from the objections frequently alleged against it. One principal objection is, that it would cause an endless abuse, such as occurred in the works going forward at the time of the famine, and that the same evils would attend it as was the case in the workshops in Paris. But the two cases are by no means analogous. France is in a high state of civilisation, with free institutions, without any great number of hands having been out of work, with no very redundant population, and the employment found is only like the "*panem et circenses*" of the Romans, for the purpose of preventing the people rebelling against a new formed government. With Ireland the case is different. The people there are sunk to the very lowest depth of misery and degradation possible. Could it be believed, if we had it not from our own knowledge, that such an enormous number of persons should have perished by famine as was the case two years ago? Could it be believed that no steps should have been taken to prevent the recurrence of such a dreadful calamity, and that, at the present time, there is every prospect of the renewal of such a visitation as then afflicted that unhappy land? Doubtless it is that the Potato failure has greatly aggravated the impending evil; but it is to be recollected, that previous to this Ireland was, and had been for centuries, in a worse state than perhaps any other country in the known world; and all this proceeding from one great cause, the want of employment. Where there are some hundreds of thousands of paupers either lying idle or only employed in useless works, half famished, dependant on a poor rate which can ill support them, surely it becomes a wise, and what should be a paternal government to open new fields for labour, and by that means to apply the only effectual remedy that can avert such a dreadful state of things. The main question seems to be—Can the Government, with any chance of success, or without producing greater evils, engage in a hazardous and expensive undertaking, such as the reclamation of the waste lands is supposed to be? It cannot be expected that they should farm these lands themselves; but there cannot be the least doubt that they might perform the preliminary works, which would enable others, either individuals or companies, to engage in it, and which, by being all done by the piece, might be executed without risk; or they might attach tracts of moss land to the different workhouses. In considering this question, the method pursued by Captain Cragie on the Government works in Scotland, that of having a destitution test instead of a labour test, should be kept in view. If it answered in that case, why should it not answer in Ireland? In conformity with this, the following plan might be adopted. A board, consisting of five persons, one from each division of the kingdom, and a president, should hold their sittings in Dublin. These should be persons with a practical knowledge of agriculture in general, but particularly of that part of it which relates to the improvement of moss land. This board should make an inspection of the different bogs in the kingdom, and report which are best adapted for improvement. (It is believed that there is already a Government survey of this kind, made many years ago, costing more than 40,000*l.*) Main watercourses should first be made through the whole of these, and then the minor ones. When these are done, ditches and drains might be formed, to prepare the land for cultivation. There would be no difficulty in doing the whole of this by the piece, as the cost of moving a cubic yard of earth is well ascertained. The land would then be ready to be let off to individuals, or companies, or to be attached to the different workhouses, the same as in the Chorlton Union, near Manchester. The difficulty then ensues, how is this to be effected without bringing pauperism to a premium, and without causing the people to fly to this as a resource, rather than to rely on their own resources. But it is believed that this might be avoided by the guardians selecting different able-bodied paupers to be set to work by the piece rather below the common wages in the country. The guardians should not be allowed to have any interference whatever with the work in hand, otherwise it would be almost sure to fail from want of management. The whole concern should be entirely under the control and superintendance of an active and intelligent person, acting as bailiff, who should be appointed by the Board in Dublin and report to it at stated periods. The next consideration is, where is the money to come from for the purchase of the land and the subsequent works, as it is clear that the rights of property cannot be so far infringed as to give any compulsory powers beyond what is usual in cases of a similar kind, such as the making of water-courses, roads, &c. Although, if money could not be procured elsewhere, it might pay us doubly and trebly to lend, or even to give the money wanted, yet, if possible, it would be better that the money should come from Ireland. As that country is excepted from income and other taxes, a small income tax might be imposed upon it for the purpose. Any profit arising from it might be placed in a sort of Elizabethan fund for the aged and infirm. Unless this or some such plan be adopted, it is clear to demonstration that Ireland must remain the same miserable country it has so long been. The poor-law has consumed all the capital of the country; the landowners are impoverished from their rates being in many cases nearly equal to the amount of their rents, from their rents being ill-paid or not at all, and from many of their best tenants having left the country, carrying with them their effects. It is trusting to a broken reed to suppose that though a wealthy individual may be found here and there willing and able to lay out money in improvements, yet that, with a proprietary such as there is at present, any improvement can be going forward such as to meet the urgency of the case. To remove by emigration 500,000 paupers would be a hopeless task, and even if this could be done, how could the remainder be employed by broken down and disheartened proprietors? In such a dire emergency, Government must deviate from their general rule, and become the prime agents in a reformatory system, if they wish Ireland to be raised to a degree of prosperity, or even to the enjoyment of the common necessaries of life. *Law. Rawstorne, Penwortham, Preston.*

The Reading Friendly Society offers a striking contrast, both in its management and advantages, to many of the existing friendly societies. One important feature is, that the members themselves are the managers; the directors, in whom the general management is confided, being chosen annually out of the general body, with the addition of the honorary members, thus securing the efficiency of those for whose benefit the society is designed, while greater watchfulness over it is exercised. In the admission of members, the strictest scrutiny is undergone, so as to admit none but of good health and character, and resident in Reading, thus providing against deception being practised, and preventing the facility and inducement for fraud offered in the case where members are spread over a wide extent of country. The weekly pay of insuring members in sickness is not confined to the amount of their general weekly earnings, as in the case of societies not under immediate local management, and therefore liable to greater imposition. Its tables of rates are constructed on the safest principles by the Government actuary, and therefore afford the surest guarantee of the perfect stability and permanent solvency of the society. Its honorary fund defrays the expenses incident to the management of the society, so that the payments of the members are applied entirely for their benefit. Lastly, its meetings are held apart from a public-house. Among its advantages the following may be enumerated:—1. The assuring to persons of both sexes a weekly allowance in sickness, by the payment of a monthly contribution by the member. 2. Medical attendance and medicine whenever necessary, by a monthly payment of 5*d.* 3. A weekly pension, commencing at the age of 65, and continuing during the remainder of life. 4. A certain sum payable at death, by payment of a monthly contribution. 5. Apprenticeship, or other endowments, for securing either a premium or gift to a child, payable at any age between 14 and 21. *J. H.*

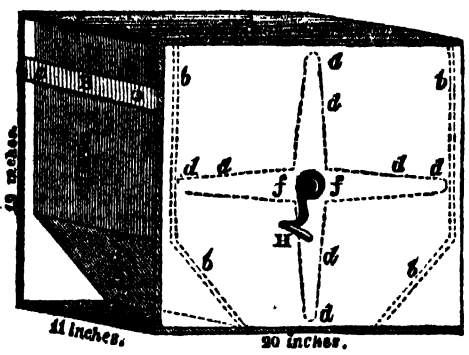
Grass Lands.—Now that the conversion of arable land to pasture is becoming so frequently necessary, a few practical hints may not be considered ill timed from one who has paid particular attention to the subject. The common practice of sowing only one kind of Grass, the Rye-grass, with Clover, is very defective; a considerable variety is necessary for the complete and permanent occupation of the ground, to the exclusion of the Couch and other Grass weeds; and these should be adapted to the nature of the soil; the Alopecurus pratensis, for example, of the greatest value in some few soils, would be thrown away upon others; the selection is best left to the careful seedsman. The land should be in good measure freed by fallowing from such root weeds as Thistles, Docks, and Couch-grass, which it is so difficult

or impossible to remove from pastures; annual weeds and such perennials as the field Sow Thistle (Sonchus arvensis), which will not long exist among Grass, may be safely left to shoot up, and then if desirable removed with the scythe. I consider the spring the most favourable season for sowing, the autumn sowings sometimes fail, especially on bleak lands; the spring sowing will furnish a strong plant the following year, a thicker plant will be obtained by sowing the Grass seeds alone without corn, if economy should require it, otherwise a few more seeds sown the following spring and trodden in with sheep, where the land is dry, will supply deficiencies. Care should be taken not to cover deep by harrowing, much seed is lost in this way; a roll and light bush harrow will supply covering enough, indeed, in a showery season it is best to leave the seed on the surface to be washed in. What is called a fine season is essential; repeated rollings in dry weather, when the plant is well up, are beneficial; it is hardly necessary to say the same of top-dressings of ashes, guano, or well-rotted manure. The question of haying or grazing young Grass seeds is still disputed; I am disposed to recommend the careful feeding with sheep or young stock, after the plant is well established. The study of the pasture Grasses, begun by the late Duke of Bedford, and carried on so perseveringly since, now points out the method of a rapid and easy conversion of lands when exhausted by repeated ploughings to profitable and permanent pasture; in which condition they may accumulate fresh stores of nourishment for cereal plants, should a change in our position, or an increased price, encourage or demand their cultivation. *Henry Roger Smithe, Eastling, Faversham.*

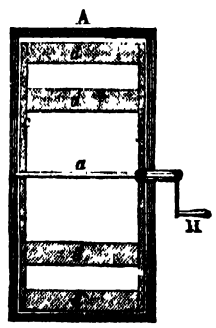
Paper Plants.—It has often occurred to me that, in the great and continually increasing demand of materials for the manufacture of paper, a large and valuable supply might be drawn from many of the weeds which good farmers are so anxious to eradicate; and that the manufacturers, when they found the value of such vegetable fibre for their manufacture, might give such a remunerating price for it, as would induce the bad farmer also to get rid of them; and that the poor might even gain something by collecting them along the road sides, and thus also check their dispersion over the neighbouring land. The weeds to which I would principally refer are the Nettle, Thistle, Dock, and Rag-wort, all of which have a very tough fibre, and would, I believe, be well adapted for such a purpose: to these might be added the roots of the Couch Grass, though they might perhaps be more profitably used (as on some parts of the Continent, where they are sold in the markets, when well washed) as a nutritious fodder for horses and cattle. *W. C. Trevelyan, Nettlecombe.*

On the Use of Lime.—It is not because the "Farmer, Isle of Man," in the *Gazette* of the 3d ult., requested any of your scientific practical farmers to give an opinion concerning the most advantageous method of applying lime to soils, that I now presume to offer mine. It is because having formed a theory deduced from experience and observation, I am curious to see and know whether it will be repudiated or accepted by those who have more practical experience and scientific knowledge than myself. Unfortunately I cannot lay my hand on the number in which Mr. Fisher's note appeared, and having quite forgotten what system he advocated, it is impossible for me to give an opinion as to its correctness or incorrectness. But certainly it seems a difficult matter to comprehend what the "Farmer" means when he speaks of "vegetables requiring carbonic acid," and enquires "whether by converting the quicklime into carbonate as soon as possible, that the plants may obtain it immediately, is not the best course of proceeding?" Surely he does not for a moment suppose that lime is applied for the purpose of yielding carbonic acid to plants. It must be evident to any one that as decarbonised lime has a strong affinity for that acid, it must tend, if applied in such a state, to lessen the supply of the acid to plants, until it has itself re-assumed the form of a carbonate; then, of course, its powers of chemical combination having been exhausted, it will no longer interfere with the carbonic acid that remains in earth or air, but before it will part with what it has appropriated it must be exposed to a red heat, and, this being an undoubted fact, how it can be supposed that it will yield the acid to plants, appears to me, to say the least, rather astonishing. But to the use of lime. 1. Why is lime applied to soil? 2. How does it act when applied? 3. What is the best method of applying it? 1. Lime is applied to soils for the purpose of rendering them more friable, and hence more easily wrought. It is applied also to kill slugs, wireworms, *et hoc genus omne*. But the one great purpose, to which all others are only subservient and tributary, is to increase the productive powers of the soil, and enable it to yield a larger return of crop to the farmer; and this it will do in all soils except those which, from their natural formation, already contain it in sufficient or superabundant quantity. It is therefore seldom applied disadvantageously in this country. I have met with farmers who were of opinion that they had injured, some one crop and some another, by the use of it, but never yet have I myself seen an instance of such injury. The failure in such cases may generally be traced to some other cause. If applied in too large quantity, a thing quite possible, certainly, it will undoubtedly do injury to the immediately succeeding crop, but its bad effects will soon be got over, and there is not the least danger of their being permanent. If the soil is very light indeed, then it may require some time, but it will recover, and bear all the stronger crops afterwards for its overdose. The next question to be considered will be, How does lime act when applied? *Aliquis.*

Churn.—I forward drawings and a description of a churn that is not generally known, in many localities at least, and which I can recommend as of practical



utility, especially for private families, where the quantity of cream is often small. It is called the Suffolk box churn, being used in that county in dairies where only one or two cows are kept. A churn of the dimensions given is capable of churning as much as three or four pints of butter, and as small a quantity as half-a-pint. (A Norfolk pint of butter ought to weigh 1¼ lb., *i. e*, 20 oz) Of course the scale can be enlarged by those who require it. Its great merit is that it is easily cleaned, and that it makes the butter "come" with more than usual ease and quickness. For the drawing I am indebted to a very intelligent tradesman, Mr. Hall, of Swardeston, Norfolk, who made the churn we now have in use from the model, which was brought here by the lady who at present acts as my housekeeper.



A is a moveable lid without hinges, having a raised moulding inside to fit the churn. *H* is the handle, moving the dashers, *d d*; the handle screws into the frame, *f f*, which carries the dashers, by means of the iron axle, *a*, as shown in the section. The whole dashing apparatus can thus be removed, and cleaned separately, and the boxes containing the cream, marked by the dotted lines *b b*, thoroughly scalded out. *F. S. Dixon.*

Calendar of Operations.

APRIL.

BERWICKSHIRE MERSE FARM, *April.*—Since last report we have been employed ploughing fallow land for Turnips; threshing and delivering Beans; threshing Barley for seed; carting dung for Turnips; five pair one day at the coals; three men repairing fences; one man and a woman feeding the cattle, they have a full allowance of sliced Turnips, and 6 lbs. of Bean-meal each; the weather has been wet since last report, so that we could not sow Barley. *J. B.*

GALLOWAY FARM, *April 9*—The weather has been very favourable for putting the spring crops into the ground. All is now sown here except Barley. Beans were got in six weeks earlier than last year. The sowing of Oats was speedily completed, and after that we last week sowed a few acres of April Wheat, applying 2 cwt. per acre of guano, which was harrowed in with the seed. Potato planting, of which there will be a considerable breadth this season, is on some farms already completed. We commenced in the first week in March on land which had been dunged on the stubble before winter, and having then nothing further to do than to drill up the lands, plant the Potatoes, sow 4 cwt. per acre of guano, and cover up the drills, the work was very lightly got over. Previously to harrowing down the Bean drills we have had them all "ploughed from" with the two-horse plough, wanting the mould-board. This admits of the plough going deeper than if it were done after the drills are harrowed down. Following the ploughs the harrows work with much more effect. Dry cold weather suits this operation well. We are preparing to sow Grass and Clover seeds among the growing Wheat. Part of the feeding cattle have been sent to market, but the returns are unsatisfactory. A comparative experiment of box and stall-feeding was made, the result of which may be mentioned. Six prime Galloway bullocks, in good condition, were equally divided in the beginning of October last, three of which were then tied up in stalls, the other three put in separate loose boxes. Two of each lot have been sold, one of each remaining still in the byre. They were sold by a salesman in Liverpool; the two stall-fed cattle for 81*l.*; the two box-fed, 36*l.* 10*s.* They received precisely the same food, and were sold on the same day. There was no perceptible difference in their appetites, the stall-fed cattle consuming as much food as the loose ones. A portion of the feeding byre was partitioned off for this experiment, so that the temperature under which they were all fed was alike, except what might have arisen from the heat of the dung under the loose fed cattle. The dung was cleaned out once a month from the boxes, which were kept well littered with straw; all the liquid was absorbed by the straw, and none of those offensive odours and circumstances described with such unnecessary strength of language by a reverend correspondent of yours, were at any time perceptible. The great advantage of the boxes seems to consist in their superiority for rotting and consuming straw, so that on farms where straw is very abundant box-feeding should be encouraged. But on dry land farms, where it is necessary to economise straw, the system of stall-feeding will probably be found the best. There is not much gained in economy of labour by the box-feeding, for though the dung has not to be removed daily, as with the stalled cattle, yet to do them justice the loose cattle require to be regularly cleaned and carried as well as the stalled ones, while the greater space occupied by the loose boxes, and consequently the greater distance necessarily traversed by the feeder, compensates for the extra labour of dunging. In regard to rapidity of feeding, this experiment is, so far as it goes, in favour of the stall-fed cattle. A very material point with regard to economy of capital in starting either system on a farm, is that two stalled cattle occupy no more space than one box-fed animal. That is to say that a building with a feeding passage in front, constructed for the accommodation of 50 cattle in boxes, would contain 100 tied up in stalls. This should not be overlooked by landlords who have much additional buildings to erect for tenants who are preparing to enter more extensively than formerly on the green crop system. *J. C.*

STIRLINGSHIRE CARSE FARM, *April* 7.—We have been for the last two weeks employed variously as the weather suited; we have had several labourers cutting levels, partly for which were put in a number of years ago where their levels were nearly choked up, and partly for new drains cut to a certain depth with what is called the top plough, and afterwards deepened a little with the spade; as in some instances it is thought as advisable to deepen the drain so far with the plough, and then finish it with the spade, as to put in the second plough. We have also been employed giving the land intended to be sown with Barley on the second furrow, as we generally give it three furrows, one in autumn and two in spring; it may perhaps be proper here to state that it is considered we would have as good Barley with a furrow in autumn and another in spring; but the Grass would not be near as good with one furrow in spring, and we for the most part sow all our Grass seeds with the Barley crop. The weather for the most of this week having been wet, we have been busily engaged preparing seed Barley, to answer a request I received last week for a pretty large quantity. *W. F.*

Notices to Correspondents.

BOX FEEDING: *Hibernicus.* It shall form the subject of a Leading Article soon.

CHAFF ENGINES: *An Essex Man* says: "Your correspondent, 'H. E, West Somerset Farm,' says (p. 157, *b*), 'the consumption of chaff being very great on the farm, it is cut by one of Cornes's engines, worked by a pony 13 hands high.' Would he be so kind as to say which of Cornes's chaff engines this is; how many bushels it will cut per hour; whether a boy to drive, and one man to feed the machine and clear away the chaff, is sufficient; what the engine costs; and whether it is very liable to get out of order or repair?

DIGGING: *G S R.* The digging alluded to was after a fallow crop well cultivated during its growth; and if the same estimate is put on the digging of Wheat stubble for Rye, it is because it need not be dug deeply. To dig ordinary land a good spit deep will cost generally 2*l* per acre.

DISEASE IN CATTLE: *D Mackie.* The disease amongst your cattle arises, no doubt, from indigestion, which affecting the brain, causes the violent symptoms described. Powerful purgatives, such as Croton oil, combined with linseed oil and given with stimulants, such as the carbonate of ammonia, should be given the affected animal. But better far is it to prevent than cure; and with this view we recommend you to give your young stock several times a week a mash, containing four parts bran and one part crushed Linseed, as a substitute for a portion of the straw. *W C S.*

GUANO: *A B.* It will be necessary to use ammoniacal manure, if you intend to have a good crop, whether it be wasteful or not, and you need not anticipate much mischief if the lime has been exposed in heaps all winter, provided you cover the manure well with the soil. It would probably have been better if the lime had been spread and ploughed in during autumn.

KOHL RABI: *R R.* Sow in a seed bed now, cultivate the land as for Swedish Turnips, and transplant in end of May. You may have a crop in November worth as much as one of Swedes.

ORNAMENTAL AND DOMESTIC POULTRY, by the Rev. E. S. Dixon, price 5*s.* 6*d.*, is now ready, and may be had at the Office of this Paper, and of all booksellers.

PRICES: *A Reader.* Can any one state, either by reference to his books or his experience in any other way, the prices of provisions of all sorts during the past 10 or 20 years; or can any one say where such information is to be obtained? We should be exceedingly obliged to any correspondent who will state what he knows of the subject.

PUMPS: *W L.* Probably the best pump for liquid manure containing muddy sediment is one of which we do not know the name or address, in which a screw propeller fixed in the tank is used to force the water up a pipe.

Markets.

COVENT GARDEN, APRIL 14.

The market is well supplied with Vegetables and Fruit, but trade is very dull. Pine-apples are sufficient for the demand. Hothouse Grapes are very good and more plentiful. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst vegetables, Carrots and Turnips are abundant; Cauliflowers and Broccoli sufficient for the demand. Asparagus French Beans, Rhubarb, and Seakale are plentiful. Potatoes remain stationary. New Potatoes begin to make their appearance. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Gardenias, Tulips, Hyacinths, Cinerarias, Tropæolums, Fuchsins, and Roses.

FRUITS.

Pine-apples, per lb., 6*s* to 9*s*	Chestnuts, p. peck, 4*s* to 7*s*
Grapes, hothouse, p. lb, 10*s* to 15*s*	Almonds, per peck, 6*s*
— foreign, p. lb., 1*s* 6*d* to 3*s*	— sweet, per lb., 2*s* to 3*s*
Strawberries, p. oz., 6*d* to 1*s* 6*d*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
Apples, dessert, p. bsh., 6*s* to 12*s*	— p. bush., 16*s* to 24*s*
— kitchen, p. bsh., 4*s* to 8*s*	Nuts, Bar, p. bush., 20*s* to 22*s*
Oranges, per doz., 1*s* to 2*s*	— Filb., p. 100 lbs., 60*s* to 100*s*
Lemons, per doz, 1*s* to 2*s*	— Cob, p. 100 lbs., 90*s* to 150*s*
— per 100, 10*s* to 18*s*	— Brazil, p. bsh., 12*s* to 16*s*

VEGETABLES.

Cabbages, p. doz., 3*d* to 1*s*	Spinach p. sieve, 1*s* 3*d* to 1*s* 6*d*
— red, p. doz., 2*s* to 6*s*	Onions, p. bunch, 2*d* to 4*d*
Savoys, per doz., 3*d* to 1*s*	— p. bush, 1*s* 6*d* to 3*s*
Greens, p. doz bunches, 1*s* 6*d* to 4*s*	— Spanish, p. doz., 1*s* 6*d* to 4*s*
Cauliflowers, p. doz., 2*s* to 4*s*	— pickling, p. hf. sieve, 1*s* 6*d* to 3*s*
Broccoli, white, p. bun., 1*s* to 2*s*	Shallots, per lb, 4*d* to 8*d*
— brown, p. bun., 6*d* to 1*s* 3*d*	Garlic, per lb., 4*d* to 8*d*
Sorrel, p hf. sieve, 9*d* to 1*s*	Artichokes, Jerusalem, p. half sieve, 9*d* to 1*s*
Potatoes, per ton, 60*s* to 200*s*	Lettuce, Cab., p. sc., 4*d*: d
— per cwt., 5*s* to 10*s*	— Cos, do., 9*d* to 1*s* 6*d*
— per bush., 2*s* 6*d* to 6*s*	Endive, per score, 1*s* to 2*s* 6*d*
Turnips, p. doz. bun., 1*s* to 2*s*	Mushrooms, p. pottle, 6*d* to
Red Beet, per dos., 6*d* to 1*s*	Small Salads, p. pun., 2*d* to 3*d*
Horse Radish, p. bdl., 1*s* to 6*s*	Fennel, per bunch, 2*d* to 3*d*
Asparagus, p. 100, 2*s* 6*d* to 9*s*	Savory, per bunch, 2*d* to 3*d*
Seakale, p. punnet, 9*d* to 2*s*	Thyme, per bunch, 2*d* to 3*d*
Rhubarb, p. bundle, 6*d* to 1*s* 6*d*	Watercress, p. doz. bun., 6*d* to 9
French Beans, p. 100, 2*s* 6*d*	Parsley, p. hf. seive, 2*s* to 4*s*
Cucumbers, each, 1*s* to 2*s* 6*d*	— Roots, p. bdle., 1*s* to 1*s* 6
Leeks, per doz., 6*d* to 1*s*	Marjoram, per bunch, 2*d*
Celery, p. bundle, 6*d* to 1*s* 3*d*	Mint, green, per bunch, 4*d* to
Radishes, p 12 hands, 6*d*	
Carrots, p. doz bun, 3*s* to 5*s*	

HOPS, FRIDAY, April 13.

Messrs. PATTENDEN and SMITH report that there has been more doing in Hops the last few days on speculation, at rather improved prices.

POTATOES.—SOUTHWARK, WATERSIDE, April 9.

The Committee report that the arrivals during the past week have been very limited coastwise. We continue to be well supplied with foreign Potatoes, which prevents prices in our market going up to any extent. The following are this day's quotations:—Yorkshire Regents, 130*s.* to 160*s.*; Scotch, do., 110*s.* to 120*s.*; Scotch Cups, 110*s.* to 120*s.*; Whites, 80*s.* to 90*s.*; French Whites, 90*s.* to 100*s.*, Belgian do., 80*s.* to 90*s.*; Dutch, 100*s.* to 110*s.*

SMITHFIELD, Monday, April 9.

The supply of Beasts is much decreased; it is, however, quite adequate to the demand. Although something very choice makes 8s. 8d., we cannot quote average prices higher than of late. The number of Sheep is also small, but this being Easter week very few are wanted; it is exceedingly difficult to maintain late quotations for the best kinds, and other descriptions are rather lower. Lamb is in demand, at fully Friday's prices. Trade is active for Calves, but prices are no higher. From Germany and Holland there are 302 Beasts, 120 Sheep, and 53 Calves; from Norfolk and Suffolk, 1900 Beasts; and from Scotland, 200.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	4 to 3	6	
Best Short-horns	3	0 — 3	4	
2d quality Beasts	2	6 — 2	10	
Best Downs and Half-breds	4	0 — 4	4	
Ditto Sheep	3	6 — 3	8	

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	3	8 to 4	0	
Ditto Sheep	3	0 — 3	4	
Ewes & 2d quality	3	2 — 3	8	
Ditto Sheep	2	6 — 3	0	
Lambs	5	8 — 6	8	
Calves	4	0 — 5	0	
Pigs	3	8 — 4	8	

Beasts, 2728; Sheep and Lambs, 18,370; Calves, 103; Pigs, 200.

Friday, April 13.

The number of Beasts is small and trade more cheerful, consequently prices are about 2d. per 8 lbs. higher than on Monday. The supply of Sheep is moderate; there is a more active enquiry, but we cannot quote higher rates. Although Lamb is not very plentiful it is making less money, owing to the cold weather. It is difficult to effect a clearance at a reduction of fully 4d. per 8 lbs. Good Calves maintain late quotations, but second-rate are rather lower. Trade is brisk for Pigs, at rather more money. From Holland and Germany we have 2 Beasts, 20 Sheep, and 64 Calves; from Scotland, 200 Beasts; and 132 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	6 to 3	8	
Best Short-horns	3	2 — 3	6	
2d quality Beasts	2	6 — 2	10	
Best Downs and Half-breds	4	0 — 4	4	
Ditto Sheep	3	6 — 3	8	

Best Long-wools	3	8 to 4	0	
Ditto Sheep	3	0 — 3	4	
Ewes & 2d quality	3	2 — 3	8	
Ditto Sheep	2	6 — 3	0	
Lambs	5	4 — 6	4	
Calves	3	8 — 5	0	
Pigs	4	0 — 5	0	

Beasts, 615; Sheep and Lambs, 5550, Calves, 254; Pigs, 240.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, April 12.

Prime Meadow Hay	70s to 78s	Clover	60s to 95s
Inferior ditto	54 65	New Clover	— —
Rowen	48 60	Straw	27 30
New Hay	— —		J. Cooper.

The supply short, but quite equal to the demand.

CUMBERLAND MARKET, April 12.

Prime Meadow Hay	75s to 80s	Interior	50s to 80s
Inferior ditto	50 65	New Clover	— —
New Hay	— —	Straw	28 33
Old Clover	90 96		Joshua Baker.

MARK LANE.

Monday, April 9.—The supply of English Wheat by land carriage samples this morning from the neighbouring counties was small, and met a free sale at the extreme rates of this day se'nnight. Foreign was also in improved demand, and in some instances commanded an advance of 1s. per qr.—English Barley fully maintained our quotations. Foreign must be written 6d. per qr. dearer.—English Beans and Peas are unaltered in value, but foreign White Peas continue to be inquired after at 1s. per qr. over the low sales that have been made of late.—The late arrivals of Oats having been sold to a great extent, the trade is firmer, and the turn in favour of the seller.

Friday, April 13.—At this morning's market there was very little English Wheat on offer, it consequently found a ready sale, as also foreign (of which the arrivals continue good), at an advance of 1s. to 2s. per qr. upon the prices of Monday last.—Fine Barley is inquired after on rather better terms.—Beans are unaltered in value.—White Peas are in demand at our extreme quotations; other sorts remain the same.—Notwithstanding a good supply of foreign Oats, there was an improved sale at 6d. to 1s. advance.—Indian Corn attracts notice, and is held for 1s. to 2s. per qr. more money.—From the 23d ult. to the 7th inst. the arrivals of foreign grain at the principal ports of the kingdom were very considerable, and caused a decline of 1s. to 2s. per qr. on corn of all kinds. Since the latter date, owing to the falling off in the supplies, confidence has returned to the trade, and a rise of 1s. to 2s. in the value of Wheat has been general, and sales both on the spot and f. o. b. larger than for some time past. In the Mediterranean and Black Sea, and also in America, prices continue too high to admit of purchases being made sufficiently low to leave a profit to importers at our present prices.

Liverpool, Friday, April 13.—We have had very small supplies since Tuesday, and a better feeling in all branches of the trade. At this day's market there was a good demand for Wheat at an advance of 1d. to 2d. per bushel, and Flour was in active request at an improvement of 1s. per barrel. We must quote Oatmeal 6d. per load, and Oats 3d. per bushel dearer, though the business was not extensive. Barley, Beans, and Peas each rather higher. There was a good sale for Indian Corn, and an advance of 1s. 6d. per qr. was realised.

Imperial Averages.	Wheat.	Barley	Oats.	Rye.	Beans.	Peas
Feb. 24	46s 4d	29s 8d	17s 5d	27s 8d	30s 10d	32s 11d
Mar. 3	45 6	29 1	19 7	26 11	30 2	32 11
— 10	45 1	29 0	16 11	26 11	30 1	33 1
— 17	45 4	29 2	17 0	23 9	30 11	30 8
— 24	44 0	28 10	17 1	26 4	28 9	31 6
April 7	44 5	28 9	16 9	26 5	28 1	29 6
Aggreg. Aver.	44 10	28 11	16 11	25 10	29 4	31 8
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Feb. 24.	Mar. 3	Mar. 10.	Mar. 17.	Mar. 24.	Apr. 7.
46s 4d	—	...	...	...	..	...
45 6	...	.	.	.	..	...
45 4	..	...	.	.	...	...
45 1	..	.	..	..	...	...
44 9	..	...	..	...	...	...
44 5	..	..	...	...	...	...

Prices Current.	London. Apr. 2. qr.	London. Apr. 9. qr.	Liverpool. April 3 70 lbs.	Liverpool. April 10. 70 lbs.	Wakefield. Mar 30 qr.	Wakefield. Apr. 6 qr.	Boston. Apr. 4. qr.	Boston. Apr. 11 qr.	Birmingham. April 5. 62 lbs.	Birmingham. April 12. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	38 to40	38 to40	6 2 6 6	6 3 6 8	40 to48	42 to46	34 to41	38 to45	5 9 6 4	5 10 6 4
„ white ...	44—47	44—47	6 8 7 2	6 10 7 4	43—51	42—47	38—47	40 48	6 2 6 8	6 2 6 8
Old, red ...	40—43	40—43	6 4 6 7	6 6 6 8	42—44	41—43	—		6 0 6 6	6 1 6 6
„ white ...	46—50	46—50	6 9 7 5	6 10 7 6	—50	— 49	—	..	6 1 6 8	6 1 6 9
Foreign	36—56	36—56	5 10 7 9	5 6 8 0	39—45	38—50	—	—	5 4 7 0	5 4 7 0
			480 lbs.	barrel						
Rye—New ...	24— 26	24—25	—	—	—	—	—	—	—	—
Foreign...	—	24 25	—	..	—	—	—	—	—	—
Foreign meal	7l. 5s	7l. 5s	13—14	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	21—24	21—24	—	—	21—22	21 - 22	21—26	24 26	23—27	23—27
Malting... ...	21—28	24—28	30s—32s	30s—32s	26—31	26—31	26—28	26—28	29—33	29—33
Foreign... ...	18—26	18—26	..	—	21—26	21—26	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	20—24	19—24	2s 3d 3s 0d	2s 3d 3s 0d	—	—	14—18	14—18	18—30	18—30
Black...	16—21	16—21	2 2 2 5	2 2 2 6	—	—	—	—	17—18	17—18
Foreign	14—19	14—19	2 2 2 4	2 2 2 4	—	—	—	—	—	—
			qr.	qr.						
Peas—Boilers	24—27	24—27	35s—	34s—	28—32	—	—	—	36—40	36—40
									196 lbs.	196 lbs.
Grinding ..	26—28	22—28	29 —30s	28 —30s	—	—	—	—	11—12	11—12
Foreign ...	24—32	24—32	32 —36	31 —33	—	—	—	—	—	—
Beans—										
New, small ...	20—30	20—30	30 —33	27 32	29—30	29—30	24—30	24—30	11—13	11—13
Longpods, &c....	26 —32	26 - 32	—	—	—	—	—	—	—	—
Old	27—39	27—39	32 —34	32 —34	35—36	35—36	34—36	34—36	14—16	14—16
Foreign ..	22—36	22—36	23 —32	30 —32	25—27	25—27	—	—	10—12	10—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	36—40	36—40	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9l. 7s	9l. 7s	7l. 15s—8l	7l. 15s—8l.	—	—	—	—	—	—
Foreign ...	6l.—9l.	6l.—9l	—	—	—	—	—	—	—	—
Indian Corn -	24—28	24—28	27s—31s	28s—31s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	35—42	35—42	33—36	32—36	—	—	35—42	32—38	37—40	33—40

Weekly Averages and Imports.	Aver. Apr. 10	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	45 10	12110	45 2	12483	44 8	3469	42 5	2082	46 8	10023
BARLEY ...	29 6	8550	29 1	2011	30 5	1008	25 6	20	—	—
OATS.. ...	19 11	23890	17 0	1480	19 0	589	12 7	845	17 9¾	—
RYE	24 0	—	26 0	—	—	—	—	—	—	—
BEANS ...	24 2	—	—	2237	27 9	251	27 8	756	—	—
PEAS... ...	29 11	—	—	268	—	—	—	—	—	—

Signed { KINGSFORD and LAY. | SEGAR and TUNNICLIFF. | SANDARS and DUNNS. | THOMAS WRIGHT. | J. and C. STURGE.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS and CO., 116, Bishopsgate-street Without, have the pleasure to hand their New List of Prices of SHEET GLASS for Cash.

HORTICULTURAL GLASS,

In Sheets of about 40 inches by 30, and packed in Cases of 200 feet. Cut to the size required, but not to exceed 40 inches long.

16 oz. to the foot ...	£2	5s. 0d.	from	2½d.	to 3½d. per foot.
21 ...	3	0 0	...	3	... 5 „
26 ...	4	7 6	...	3¾	... 7½ „
32 ...	5	12 0	...	4	... 10 „

Foreign Sheet, 16 ounces, 40s. per case of 200 feet.

SMALL SQUARES IN BOXES OF 100 FEET.

	Crown.	Sheet.
Squares under 6 by 4 ...	10s. 6d.	£0 12s. 6d.
6 by 4 and under 7 by 5 .	—	... 0 15 0
7 by 5 „ 8 by 6 ...	12 6	... 0 17 6
8 by 6 „ 10 by 8 ...	15 6	... 1 0 6

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS, in sizes not exceeding 5 feet superficial.

¼ thick ... per foot	1s. 0d.	½-inch per foot	2s. 0d.
⅜-inch ...	1 2	1 inch ...	3 0
½-inch ...	1 6		

PATENT ROUGH PLATE TILES.

¼ thick ... each	0s. 11d.	⅜-inch ... each	1s. 7d.
½-inch ...	1 3	½-inch ...	2 0

SHEET GLASS TILES AND SLATES.

	16-oz.	21-oz.	26-oz.	32-oz.
Tiles made of Sheet Glass ...	8d.	10d.	1s.	1s. 4d.
Slates, 20 ins. by 10	10d.	1s.	1s. 4d.	1s. 8d.

Slates are kept in stock of the usual sizes, and made to any dimensions.

GLASS MILK-PANS, PROPAGATING and BEE GLASSES, Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, Lamp Shades, and Lactometers for trying the quality of Milk, 4 tubes 7s. 6d.; 6 tubes, 10s. Self Registering Thermometers for Greenhouses.

HARTLEY'S PATENT ROUGH PLATE GLASS.

GLASS.

E. and W. H. JACKSON are supplying SHEET, ROUGH PLATE, and CROWN GLASS for Horticultural purposes, at very reduced prices. BRITISH AND PATENT PLATE of superior manufacture, for Glazing dwelling-houses, for which purpose these articles are now superseding all inferior Glass. ORNAMENTAL GLASS of the newest designs for the decoration of Conservatories, &c. E. and W. H. J. also supply PATENT OPTICAL FLINT GLASS, Thin Glass, Slides and Cells for Microscopic purposes, French Shades, Propagating Glasses, &c. Estimates, Lists of Prices, and every information forwarded on application at their Warehouse, 315, Oxford-street, London.

GLASS.

THOMAS MILLINGTON, 87, Bishopsgate-street-without, London (same side as Eastern Counties Railway Terminus). BRITISH PLATE GLASS, nearly ¼ inch thick, in sizes under 1 foot superficial, 1s. 2d. per foot; this is the best article for Greenhouses and Garden Frames of every description, as nothing can break it in an ordinary way. Horticultural Glass, in cases of 200 feet, No. 16 oz, 40s.; No. 21 oz., 60s.; No. 26 oz., 87s. 6d.; No. 32 oz., 112s. each, case included.

Cut Squares, in 100 feet boxes. Crown. No. 16 Horticultural.

Sizes under 6 ins. by 4 ins. ...	10s. 6d.	12s. 6d. per box.
6 by 4 „ 7 by 5 ..	12 6	... 15 0 „
7 by 5 „ 8 by 6 .	14 6	... 17 6 „
8 by 6 „ 10 by 8 ...	15 6	... 20 0 „

Squares above 10 by 8, in Crown or Horticultural, 2½d. to 5d. per foot, according to size and quantity. Patent Rough Plate Tiles, ¼ in., 10d.; ⅜ in., 1s. 3d each; do. Slates, ⅜ and ½ inch thick. Patent Rough Plate Glass for Skylights, Warehouses, and Floors, ¼ in. thick, 6d.; ⅜ in., 1s; ½ in., 1s 2d; ⅝ in., 1s 6d.; ¾ in., 2s.; 1 in., 3s. per foot, in sizes under 5 feet superficial. Lactometers, for testing the quality of milk, 4 tubes, 7s 6d.; 6 tubes, 10s. complete. Glass Milk pans, Pastry Slabs, Rolling Pins, and Moss Dishes for Bulbous Plants. Propagating and Bee Glasses. Fish Globes. Gas and Lamp Glasses of every description. Linseed Oil Putty, 8s.; White Lead, 26s per cwt. Linseed Oil, Turpentine, Paints, Colours, Varnishes, Brushes, and Tools in every variety.

GLASS FOR CONSERVATORIES, &c.

HETLEY and CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

SLATE WORKS, ISLEWORTH.—The following articles manufactured in Slate for Horticultural Purposes, by Edward Beck, may be seen in use at WORTON COTTAGE, upon application to the Gardener, Sundays excepted: Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot-water Tank Covers, Flower-beds for Balconies, Shelves fitted to hold Water for Orchidaceous Houses, &c.—Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

BEE HIVES.

GEORGE NEIGHBOUR and SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—George Neighbour and Son, 127, High Holborn, London.

"Nutt on Bees" (6th edition), now published.

MILTON'S BEE-HIVES.—These Hives are made in every variety, for the purpose of taking the honey without killing the bees. They are composed of various materials, to suit all climates, and may be relied upon for practical use. Their simplicity of construction and easy management ensure success.

BEE GLASSES of all sizes, and every article connected with the Apiary supplied. A Sheet of Illustrations of Bee Hives, &c., 1s. The "Practical Bee Keeper," by John Milton, 4s. 6d.

10, Great Marylebone-street, Wimpole-street, London.

FLOWER-POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford-street, near Hyde-park.

Sales by Auction.

ORCHIDS FROM VERAGUA, S. A.

MR. J. C. STEVENS begs to announce for Sale by Auction, at his Great Room, 38, King-street, Covent Garden, on TUESDAY, 24th April, at 12 for 1 o'clock, ANOTHER PORTION OF Mr. WARCZEWICZ'S COLLECTION OF ORCHIDS, &c.; comprising Trichopilias, Brassavolas, Cattleyas (several unknown and undescribed), a Lacæna, a most splendid Puya, three varieties of a very fine Scaleria, and some terrestrial Orchids, with the drawings and dried specimens exhibited.—May be viewed on Monday and morning of Sale and catalogues had.

ESTABLISHED ORCHIDS, the property of a Gentleman.

MR. J. C. STEVENS will include in his Sale on TUESDAY, 24th inst., (after the imported Plants as per previous advertisement), a small COLLECTION OF ORCHIDS which are very healthy, and comprises some of the favourite varieties of Ærides (including Crispum), Dendrobiums, Miltonias, Oncidiums, Odontoglossums, Cattleyas, &c.; many of which have flower spikes.—May be viewed on the morning of Sale and Catalogues had.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS PROTHEROE AND MORRIS will submit to public competition, by Auction, at the Mart, Bartholomew-lane, on THURSDAY, April 19, at 12 o'clock, a first-rate collection of CARNATIONS, PICOTEES, PINKS, choice HEARTSEASE, FUCHSIAS, VERBENAS, DAHLIAS, &c. —May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

VALUABLE COLLECTION OF ENGRAVINGS, MODERN PICTURES AND DRAWINGS, &c., of the late distinguished Engraver, CHARLES FOX, Esq.

MESSRS. S. LEIGH SOTHEBY AND CO., Auctioneers of Literary Property and Works Illustrative of the Fine Arts, will Sell by Auction, at their House, 3, Wellington-street, Strand, London, on SATURDAY, April 21, 1849, at 1 o'clock precisely, a small but select Collection of ENGRAVINGS, the property of the late distinguished Line Engraver, CHARLES FOX, Esq., consisting of Works of Modern English Artists, chiefly presentation proofs, including several after the productions of Wilkie and Landseer, in unpublished states of the Plates, Etchings by Rembrandt, and others after Vandyke, Sir Joshua Reynolds, &c. A few DRAWINGS, and PICTURES by Webster, R.A., Jas. Burnet, W. Carpenter, &c., &c., and some Miscellaneous BOOKS. To be viewed on the Friday previous.

FOR PUBLIC SALE, on WEDNESDAY, April 18, 1849, at 2 o'clock precisely, at the New Corn Exchange Tavern, Mark-lane, 500 Tons PERUVIAN GUANO, now landing at Butler's Wharf, imported by Messrs. ANTONY GIBBS and Sons. Catalogues and further particulars in due time, at No. 26, Commercial Sale Rooms, Mincing-lane.
J. A. RUCKER and BENCRAFT, Brokers.

TO BE LET, BARMING HOUSE, Kent, a capital Mansion and 10 acres of Garden, Orchard, and Meadow land, at Barming, near Maidstone, containing on the basement good cellar, dairy, larders, &c.; on the ground floor, entrance hall, morning-room, study, dining-room, 27 by 19 feet, servants' hall, housekeeper's room, butler's pantry, kitchen, and offices; on the first floor, drawing-room, 31 by 19 feet, ante-room, five chambers, dressing-room, and water-closets, with principal and back staircases thereto; on the upper floor, four chambers and nursery, four-stall stable, two coach-houses, &c., walled in garden, and large kitchen garden. This property offers to those at and fond of horticulture an opportunity rarely to be met with, as it contains some fine shrubs, and the soil is peculiarly adapted to the cultivation of flowers. Two miles from the principal stations of Maidstone and Wateringbury, and 1 mile from the East Farleigh Station.—For particulars, apply to T. M. WHITEHEAD, Esq., Solicitor, 8, Duke-street, St. James, London; or to Mr. H. MORRIS, Land Agent, Maidstone, Kent.

CARMARTHENSHIRE, SOUTH WALES.

TO BE LET, and entered upon at Michaelmas, 1849, the capital FARM of CASTLE LLOYD, in the parish of Langharne, comprising 570 acres, well adapted to the 4-course shift, capital new House, and most convenient Homestead. Rates and Tithes moderate. A Lease will be granted to a respectable tenant. Langharne is of easy access to several desirable shipping ports, and not far distant from the line of the South Wales Railway.—For particulars, and to treat, apply to Mr. HARVEY, Land-agent, Haverfordwest, Pembrokeshire.

LANDED PROPERTY.—Mr. EDWARD RYDE, Author of Ready Reckoners for Measuring and Valuing Land, Timber, Hay Stacks, &c., many years connected as Assistant and Partner with Mr. SANDERSON, of Sunbury, and subsequently for several years on his own account, as a Surveyor and Land Agent, respectfully announces that he will be happy to undertake the Sale by Auction of Landed Property, Timber, Farming Stock, and Agricultural Produce, for which he trusts the experience he has acquired renders him well qualified. He offers his services to noblemen and gentlemen possessing Landed Property, and undertakes to superintend Drainage and Repairs, to conduct Surveys and Valuations, to furnish Plans and Sections, collect Rents, and provide for the general management of Estates by yearly contract. Enclosure Valuations and Surveys made, tested, or examined.
14, Upper Belgrave-place, Eaton-square, London.

MESSRS. REID AND BEVAN beg to call the attention of Agriculturists seeking Farms to their immediate and Michaelmas Entry List, of good Stock, Corn, and Dairy Farms, in all parts of the country—the full particulars of which may be obtained by enclosing six postage stamps to their offices, 38, Red Lion-square, London.

PERUVIAN AND BOLIVIAN GUANO ON SALE
BY THE ONLY IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WILLIAM JOSEPH MYERS AND CO., LIVERPOOL;
And by their Agents,
GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
COTESWORTH, POWELL, AND PRYOR, LONDON.

To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

WHEAT SOWING.

THE LONDON MANURE COMPANY beg to offer as under.

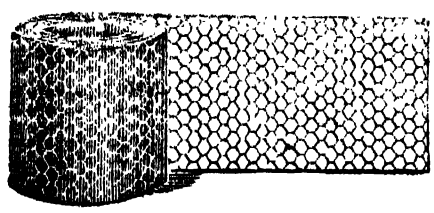
LONDON MANURE COMPANY'S CORN MANURE.
" " " URATE. (LIME.
" " " SUPER-PHOSPHATE OF

Peruvian Guano, direct from Importers' Stores—Fishery and Agricultural Salt—Gypsum for Clover—Soda Ash for destroying wireworm, and every other Artificial Manure.

The London Manure Company would call particular attention to their Corn Manure and Urate, the former containing a large amount of Ammonia, Phosphates, and Silicates, all so essential for corn crops, while the Urate is richer in Phosphates and other mineral substances required for roots.

Full particulars and prices forwarded on application.
EDWARD PURSER, Secretary, 40, Bridge-street, Blackfriars.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



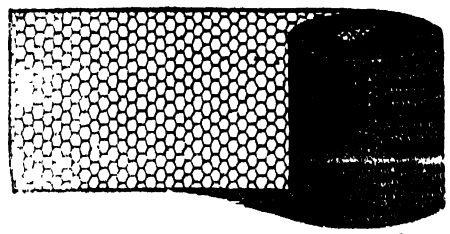
GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3d.	per yard		30 inches wide	7½d.	per yard	
18 "	4½d.	"	"	36 "	9d.	"	"
24 "	6d.	"	"	48 "	1s.	"	"

Galvanised d., 1d per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s 6d. per running yard; 1f galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d each; Garden arches, 20s. each; Flower Stands, from 3s. 9d each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wirework; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 63, Snow-hill, London.

GALVANIZED WIRE GAME NETTING.—7d. per yard, 2 feet wide,

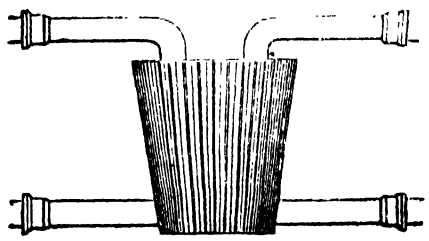


	Galvanized.	Japanned Iron.
2-inch mesh, light, 24-inch wide	7d. per yd.	5d. per yd
2-inch " strong "	9 "	6½ "
2-inch " extra strong "	12 "	9 "
1⅝-inch " light "	8 "	6 "
1⅝-inch " strong "	10 "	8 "
1⅝-inch " extra strong "	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in. will warm	50 ft. 4 in. pipe		£1	15	0
12 in. do.	75 ft. 4 in. do.		2	5	0
14 in. do.	100 ft. 4 in. do.		2	15	0
16 in. do.	150 ft. 4 in. do		3	10	0
18 in. do.	250 ft. 4 in. do.		4	10	0
21 in. do.	350 ft. 4 in. do.		5	10	0
24 in. do.	450 ft. 4 in. do.		7	0	0
NEW PATTERN BOILERS.					
30 in. will warm	800 ft. 4 in. pipe		15	15	0
36 in do.	1500 ft. 4 in. do.		25	0	0

All Boilers with double arms, up to 18 in., 5s. extra; to 24 in., 10s. extra; all above, the same price.
180, Fleet-street, London, March 31.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.
Horticultural Gardens Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Duke of Devonshire's, Chatsworth Gardens.
Earl of Gainsborough's, Oakham, Rutlandshire.
Earl of Zetland's, Upleatham, Yorkshire.
Robert Hanbury, Esq., Poles, near Ware, Herts.
Mr. Glendinning's Nursery, Turnham-green.
And at least 500 other important places.
BURBIDGE and HEALY, 180, Fleet-street, London.

PORTLAND CEMENT.—Testimonials received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S-ROAD, CHELSEA.

BENCH having erected three Patent Hothouses for sale on his premises (viz, one Span roof, 15 feet 6 inches wide and 28 feet long, 50l., 16 and 21-oz glass; one Span-roof, 13 feet wide and 28 feet long, 40l.; one Lean to, 16 feet 6 ins. wide and 25 feet long, 30l.), invites the attention of Gentlemen about to erect Hothouses to inspect his Patent Plans, when they at once will perceive the vast superiority of these Houses over any others hitherto erected, for strength, lightness, durability, handsome appearance, healthiness to plants of every description, the roofs of one principle being formed without wood, putty, or paint, with a smooth surface and only about 5-8ths of an inch of light taken up in any part.

SCHOOL FOR GENERAL AND SCIENTIFIC EDUCATION (especially with regard to Agriculture) Wickham Market, Suffolk. Under the immediate patronage of the Right Hon. Lord Rendlesham, M.P., conducted by Mr. G. DOWNES.

A Farm Laboratory, &c., attached to the School. For terms, apply to Mr. G. DOWNES, Wickham Market, Suffolk.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Sheddings, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronized and adopted by
HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,
And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S House, Hanover-square

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are
F. M'NEILL AND CO'S
Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flowerpots, &c., in boxes, of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole agents in London, G. and J. DEANE, Horticultural Implement Warehouse, 46, King William-street, London-bridge.

THE Lightest, Cheapest, and most Efficient Roofing Material is CROGGON'S PATENT IMPROVED ASPHALTE FELT. A House, 40 feet by 24 feet in the clear, may be erected complete, for 17l. 17s 10d. Price of the Felt, one penny per square foot, in rolls 32 inches wide Samples and details may be had by post. A large stock always on hand, to ensure punctuality. CROGGON and Co., 2, Ingram-court, Fenchurch-street, London.

SPANISH HENS—The Eggs from Mr. LEONARD BARBER'S Andalusian breed may now be had at 6s. a dozen, and can be packed and sent any distance without detriment to their hatching.—Direct, 5, Penton-street, Pentonville, London.
N.B. A Speckled Cock runs with the Hens this year.

EVERYTHING FOR THE WORK TABLE, AT MECHI'S Manufactory, 4, Leadenhall-street, London.—Ladies are respectfully invited to visit this Emporium of Elegancies, to select their scissors, thimbles, finger-guards, silk-winders, needles, pins, piercers, netting-boxes and materials, and all other requisites for ladies' work. MECHI has the most splendid stock in London, of ladies' work tables and work boxes, in papier maché and fancy woods; also a great variety of ladies' companions and pocket-books, elegantly fitted up. Splendid papier maché blotting and writing cases, card cases, card racks, watch stands, playing card cases, hand and pole screens, ink stands, &c. Chessmen in ivory and bone, some superlatively beautiful.

OPTICAL, MATHEMATICAL, AND PHILOSOPHICAL INSTRUMENTS.—ALFRED BROOKS (from Dollond's) begs respectfully to thank his Friends and the Public for the liberal patronage he has already received, and in soliciting their future favours and recommendation, feels confident in assuring them that, having had upwards of 20 years' experience in Dollond's, they may rely that all articles submitted by him shall be of the most perfect character, and at economical charges.
SPECTACLES, TELESCOPES, MICROSCOPES, OPERA and RACE GLASSES, SEXTANTS, QUADRANTS, COMPASSES, BAROMETERS, SURVEYING INSTRUMENTS, RULES, SCALES, &c., of every description.
41, Ludgate-street, St. Paul's.

CREAM-LAID NOTE PAPER, five quires for 9d.; large size ditto, five quires for 1s., cream-laid envelopes, 1d. per 100, ditto, self-sealing, 1s per 100; black bordered ditto, 1s. per 100, good note paper, 7s. 6d. per ream; copy books, 1s. per 100, good note paper, 7s. 6d. per ream; copy books, 2s. 6d. per dozen, sealing wax, 14 sticks for 1s.; card-plate engraved 2s 6d; 100 cards printed, 2s 6d.; writing cases, 1s. to 10l. 10s.—At WILLIAM LOCKWOOD'S, 75, New Bond-street. Remittances for 5s and upwards sent carriage free.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

NORWICH MEETING, 1849.

PRINCIPAL DAY OF THE SHOW, THURSDAY, JULY 19.

IMPLEMENT AND LIVE-STOCK PRIZES.—The PRIZES are open to General Competition. Members have the privilege of a Free Entry and Non-subscribers are allowed to compete, on the payment of 5s. on each Certificate.

I.—IMPLEMENT PRIZES.

Forms of Certificate to be procured on application to the Secretary, 12, Hanover-square, London. All Certificates for the entry of Implements, &c., will be required to state the total number of articles entered to be shown by each Exhibitor, and the space required for their exhibition; and must be returned, filled up, to the Secretary, on or before the FIRST OF MAY, 1849; the Council having decided, that in no case whatever shall any such Certificate for Implements be received after that date.

NOTE.—The Prize-Sheets containing the full enunciation of the terms of these Prizes, and the conditions under which the competition for them will take place, may be had on application to the Secretary of the Society, 12, Hanover-square, London.

Heavy-land Plough	£5	0	0
Light land Plough	5	0	0
Plough for general purposes	5	0	0
Paring plough	5	0	0
Subsoil Pulveriser	5	0	0
Drill for general purposes	15	0	0
Corn Drill	10	0	0
Turnip Drill (on the flat)	10	0	0
Turnip Drill (on the ridge)	10	0	0
Drop Drill (seed and manure)	10	0	0
Manure distributor (best adapted for distributing broadcast any kind of compost or hand-tillage, when in a moist state, and which is capable of adjustment for the delivery of any quantity, from 2 to 20 bushels per acre)	5	0	0
Portable Steam Engine	50	0	0
Second best ditto	25	0	0
Portable Threshing-machine	25	0	0
Corn-dressing machine	10	0	0
Meal-grinding mill	10	0	0
Linseed and Corn Crusher	5	0	0
Chaff-cutter	10	0	0
Turnip-cutter	5	0	0
Cake-breaker	5	0	0
One-horse Cart	10	0	0
Harvest Cart	10	0	0
Waggon	10	0	0
Drain-tile machine	20	0	0
Draining tools	3	0	0
Heavy Harrow	5	0	0
Light Harrow	5	0	0
Norwegian Harrow	5	0	0
Scarifier	10	0	0
Cultivator, or Grubber	10	0	0
Horse-hoe (on the flat)	10	0	0
Horse-hoe (on the ridge)	5	0	0
Horse-rake	5	0	0
Horse Seed-dibbler	10	0	0
Hand Dibbler	3	0	0
Barrow Hand-drill (to work with cups)	3	0	0
Liquid Manure Distributor	5	0	0
Hay-making Machine	5	0	0
Gorse-bruiser	5	0	0
Steaming Apparatus	5	0	0
Silver Medals for miscellaneous awards and essential improvements, estimated at	26	0	0

DRAINING PLOUGHS.

At a Monthly Council of the Society, held on the 6th of March, 1849, the offer of ROBERT AGLIONBY SLANEY, Esq., M.P., to place the following Two Prizes at the disposal of the Society, for adjudication at the Norwich Meeting, was unanimously accepted, viz.—

I. For the best Drain Plough, to cut out at one, two, and three cuts, to the greatest depth, with not more than four horses, so as to prepare a drain so far for deeper cutting	10	0	0
II. For the best Plough, to fill in the soil cast out of drains, with not more than four horses (two and two abreast), and not to exceed 5l. in cost	10	0	0

II.—LIVE-STOCK PRIZES.

Forms of Certificate to be obtained on application to the Secretary, 12, Hanover-square, London. All Certificates for the Entry of Implements, and the space required for their exhibition in the Show Yard, must be returned, filled up, to the Secretary, on or before the FIRST OF MAY, and all other Certificates by the FIRST OF JUNE; the Council having decided that, in no case whatever, shall any Certificate be received after those dates respectively. In the application for Certificates for Live Stock, the Character and Age of the Animals to be exhibited should be stated, in order that the proper Forms of Certificate may be sent.

SHORT-HORNED CATTLE.

Bull, calved previously to the 1st of January, 1847	£40	0	0
Second-best ditto ditto	20	0	0
Bull, calved since the 1st of January, 1847, more than one year old	20	0	0
Second-best ditto ditto	10	0	0
Cow in milk, or in calf*	20	0	0
Second best ditto ditto*	10	0	0
In-calf Heifer, not exceeding three years old	20	0	0
Second-best ditto ditto	10	0	0
Yearling Heifer	10	0	0
Second-best ditto	5	0	0

HEREFORD CATTLE.

Bull calved previously to the 1st of January, 1847	40	0	0
Second-best ditto ditto	20	0	0
Bull calved since the 1st of January, 1847, more than one year old	20	0	0
Second-best ditto ditto	10	0	0
Cow in milk, or in calf*	20	0	0
Second-best ditto ditto*	10	0	0
In calf Heifer, not exceeding three years old	20	0	0
Second best ditto ditto	10	0	0
Yearling Heifer	10	0	0
Second-best ditto	5	0	0

DEVON CATTLE.

Bull, calved previously to the 1st of January, 1847	40	0	0
Second-best ditto ditto	20	0	0
Bull, calved since the 1st of January, 1847, more than one year old	20	0	0
Second-best ditto ditto	10	0	0
Cow in milk, or in calf*	20	0	0
Second-best ditto ditto*	10	0	0
In-calf Heifer, not exceeding three years old	20	0	0
Second-best ditto ditto	10	0	0
Yearling Heifer	10	0	0
Second-best ditto	5	0	0

CATTLE OF ANY BREED.

(Not qualified to compete as Short-horns, Herefords, or Devons; Cross-bred animals being excluded.)

Bull, calved previously to January 1, 1847	20	0	0
Second-best ditto ditto	10	0	0
Bull, calved since Jan. 1, 1847, more than a year old	£10	0	0
Cow in milk, or in calf*	10	0	0
Second-best ditto ditto*	5	0	0
In-calf Heifer, not exceeding three years old	10	0	0
Yearling Heifer	5	0	0
Cow for dairy purposes	10	0	0
Second-best ditto	5	0	0

HORSES.

Stallion for Agricultural purposes, of any age	30	0	0
Second-best ditto ditto	15	0	0
Stallion for Agricultural purposes, two years old	20	0	0
Second-best ditto ditto	10	0	0
Stallion for Dray purposes	20	0	0
Roadster	15	0	0
Mare and Foal, for Agricultural purposes	20	0	0
Second-best ditto ditto	10	0	0
Two-years-old Filly	15	0	0
Second-best ditto	5	0	0

LEICESTER SHEEP.

Shearling Ram	30	0	0
Second-best	15	0	0
Ram of any other age	30	0	0
Second-best ditto	15	0	0
Pen of Five Shearling Ewes of the same flock	20	0	0
Second-best ditto ditto	10	0	0

SOUTHDOWN SHEEP.

Shearling Ram	30	0	0
Second-best	15	0	0
Ram of any other age	30	0	0
Second-best ditto	15	0	0
Pen of Five Shearling Ewes of the same flock	20	0	0
Second-best ditto ditto	10	0	0

LONG-WOOLLED SHEEP.

(Not qualified to compete as Leicesters.)

Shearling Ram	30	0	0
Second-best	15	0	0
Ram of any other age	30	0	0
Second-best ditto	15	0	0
Pen of Five Shearling Ewes of the same flock	20	0	0
Second-best ditto ditto	10	0	0

PIGS.

Boar of large breed	15	0	0
Second-best ditto	5	0	0
Boar of small breed	15	0	0
Second-best ditto	5	0	0
Breeding Sow of large breed	10	0	0
Breeding Sow of small breed	10	0	0
Pen of Three Breeding Sows of a large breed †	10	0	0
Pen of Three Breeding Sows of a small breed †	10	0	0

*** There will be no Sale by Auction in the Show-yard.

By order of the Council,

JAMES HUDSON, Secretary.

London, March 6th, 1849.

* If the cow be in calf, and not in milk, the prize will not be given until she is certified to have produced a live calf.

† Of the same litter, above four and under eight months old.

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 16.—1849.] SATURDAY, APRIL 21. [PRICE 6d.

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ROYAL BOTANIC SOCIETY, Regent's-park.—The EXHIBITIONS OF PLANTS, FLOWERS, and FRUIT, for competition this season, will be held on WEDNESDAYS, May 16th, June 20th, and July 4th.

The Exhibition of Plants in the AMERICAN GARDEN will be open on SATURDAYS, May 26th, and June 2d, at 2 o'clock.

Tickets, each to admit one person, on any one of the above-mentioned five days, may be obtained at the Gardens by orders from Fellows of the Society. Price, on or before May 5th, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each. Fellows may have packets of 30 tickets until May the 5th, for 5l. 5s.

THE EXHIBITION OF AMERICAN PLANTS AT OAKLEY SQUARE, KING'S ROAD, CHELSEA, WILL BE CONTINUED THIS YEAR, AS USUAL.

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GRAND HORTICULTURAL EXHIBITION, open to the United Kingdom, on the 18th and 19th July 1849, during the Show of the Royal Agricultural Society at Norwich. Upwards of Two Hundred Pounds will be offered as Prizes. The Profits to be divided with the Hospital and other Charitable Institutions in Norwich. The Schedule of Prizes, with rules and regulations may be had of C. S. GILMAN, Esq., Bethel-street, Norwich, Hon. Secretary of the Norfolk and Norwich Horticultural Society.

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LONGIFLORA MAJOR.—The flower is half as large again as the Longiflora, and of a deeper blue, the foliage quite green, and very superior, the under surface of the leaf being without that rusty appearance of Longiflora. It was exhibited with the above. They were presented to us by G. U. Skinner, Esq., and may be relied on as worthy to be in every collection, the flowers being large with small foliage.

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PLANTS FOR BEDDING OUT; orders taken, to be delivered in May.

DAHLIAS, dry roots, at 6d., 8d., and 1s. each.

LILIUM LANCIFOLIUM ALBUM, 1s. 6d. each.

Araucaria, Ficus elastica, Aloes, Cacti, Cedrus Deodara, constantly on show.

LAWN GRASS, 1s. 6d. per lb.

MEADOWS: where it is wished to improve the crop of Hay, sow from 2 to 3 lbs. of white Dutch Clover with 1 gallon of Perennial Rye or Italian Rye-Grass; the cost will be about 2s. 6d. to 3s. per acre.

AGRICULTURAL SEEDS at the lowest prices.

DUNCAN HAIRS, Seedsman, 109, St. Martin's-lane, Charing-cross, London.

EDWARD GEORGE HENDERSON, Wellington-road, St. John's Wood, London, will, on the 1st of May, commence sending out the following—

PHLOX DEPRESSA, at 7s. 6d. and 10s 6d. each.

GAILLARDIA SPLENDIDISSIMA, 10s. 6d.

PETUNIA ELEGANTISSIMA, 5s.; 6 plants supplied for 21s.

SALVIA AZUREA COMPACTA, 5s. and 10s 6d.

For description of the above, see last week's Paper, page 226.

FIRST CLASS DAHLIAS.

JOHN KEYNES begs to submit the following list of First Class DAHLIAS, at reduced prices: comprising Lilac Standard, the best out in its class; Purple Standard, likewise first-rate; Miss Chaplin, Sunset, and Victoria Regina. Parties ordering the four first-named varieties, will have Victoria Regina included without charge. All the most approved Flowers in cultivation, at proportionally moderate charges. Orders directed to JOHN KEYNES, Castle-street Nursery, Salisbury, will meet with immediate attention.

FANCY DAHLIAS.

JOHN KEYNES, of Salisbury, will be ready to send out the following splendid and most constant flowers of the season, in May, at 7s. 6d. each. Miss Blackmore, Rainbow, Miss Stevens, and Sunbeam, all of which have been accorded certificates at the principal exhibitions.

DAHLIA PRIZES.

JOHN KEYNES, of Salisbury, offers the following Prizes for the best Six Blooms shown from the nine Flowers advertised as above, at the Salisbury, London Floricultural, and South London Societies. First Prize, 2l; 2d do., 30s.; 3d do., 15s.; 4th do., 7s.; 5th do., 10s. Open to Amateurs and Gentlemen's Gardeners. No entrance money.

TOBACCO PAPER.—This is an excellent substitute for Tobacco, for the purpose of fumigating plants, &c., and at less than half the cost. By mixing a small quantity of Tobacco along with it, say ¼ Tobacco and ¾ Tobacco paper, it will answer the purpose quite as well as using all Tobacco, and by so doing, a very considerable saving will be effected. Tobacco paper of the best quality may be obtained for 1s. 6d. per lb. on application to J. CHESLIN WHEATER, Kingsholm Nursery, Gloucester.

SEEDLING VERBENAS, PETUNIAS, & ANTIRRHINUMS.

WM. IVERY has selected from his stock of superb SEEDLINGS the following varieties, and can with confidence recommend the undernamed:

VERBENA "ATTRACTION."—Rich light crimson, centre dense and distinct, eye perfect, bright yellow; 5s.

VERBENA "UNION JACK."—Rich purple crimson, with a yellow eye, and a blackish circle; very novel and neat for bedding; 3s. 6d.

PETUNIA "LA REINE."—Light peach colour, the throat very dark red, of great substance; 5s.

PETUNIA "MODEL."—Dark rich crimson, with black throat, of first-rate form; 5s.

ANTIRRHINUM "BRILLIANT."—Tube red, upper and lower lips bright crimson, extra broad flower and dwarf habit; received a certificate from South London Floricultural Society; 5s.

ANTIRRHINUM "OBERON."—A creamy ground, thickly studded and splashed with a bright carmine, the best flower of its class; 5s.

A general Catalogue, including all the novelties of the season, can be had on application.

Hanover Nursery, Peckham, near London, April 21.

C. TURNER is now prepared to execute orders for the following New and First-rate VERBENAS:

	Per plant.—s. d.
BRILLIANT (YOUNG)—rich bright scarlet, a fine variety for bedding, being a very free bloomer, and excellent habit	5 0
MORNING STAR (WYNESS) bright rosy purple, white eye, attractive and showy	3 6
PRINCESS ALICE (WYNESS)—white, deep cherry centre, large and fine form, one of the best raised. It excited universal admiration at the Surrey Show, where it took a first class Certificate. The *Gardeners' Chronicle* speaks of it thus "A new and very pretty seedling Verbena, named Princess Alice, was exhibited by the raiser, Mr. Wyness, gr. to HER MAJESTY at Buckingham Palace, and received a Certificate; the truss is large, and the individual flowers well formed; it is white with a rosy spot in each division of the corolla, distinct and very pretty."	5 0
ROSEA (GREY)—fine shape, rose	3 6
ROYAL PURPLE (YOUNG)—deep purple, fine large flower, good habit, good shape, and fine grower. It is particularly adapted for bedding, and is much deeper in colour than any other of its class	5 0

Royal Nursery, Slough, April 21.

GERANIUMS, FUCHSIAS, CINERARIAS, VERBENAS, CHRYSANTHEMUMS, IRIS GERMANICA, AND SELECT CHOICE PLANTS.

G. PARSONS, FLORIST and SEEDSMAN, by appointment, to Her Majesty, Western-road and Montpelier-road, Brighton, begs to inform the nobility and gentry that his spring Catalogue of the above is ready, and will be forwarded on application.

G. P. at the same time begs to offer Zauschneria californina, 12s per dozen; Calceolaria amplexicaulis, 9s. per dozen; Calceolaria "Kentish Hero," 9s. per dozen, Plumbago Larpentæ, 12s. per dozen; Verbena "Robinson's Defiance," the finest scarlet for bedding, 6s per dozen.

SEEDS.—MEADOW AND PASTURE GRASS SEEDS, in mixtures suited to various soils, &c., at 32s. per acre, allowing 2 bushels and 12 lbs. to each acre. Directions for sowing and treatment will accompany the seeds. Mixed sorts for improving old Grass Lands, 1s. 8d. per lb. Fine sorts for forming Lawns, &c., 1s. 4d. per lb.

GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address GEORGE GIBBS and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c. &c., 20, Down-street, Piccadilly, London.

SEEDS.

BASS AND BROWN'S DESCRIPTIVE PRICED CATALOGUE sent free by post on application. We beg to offer the following:

VEGETABLE SEEDS.

A complete collection of the best and newest sorts, in proportions 25s., 42s., and 63s.

A collection for a small garden, of fine and esteemed sorts, for 5s. A list of the sorts furnished if required.

SELECT FLOWER SEEDS.

Free by post, with full directions for sowing, heights, colours, &c., viz.:—

	s.	d.
100 varieties best and newest Annuals	15	0
50 varieties for 8s.; 25 for 5s. 6d.; 20 for	4	0
20 varieties best dwarf kinds in larger packets, suited for filling beds in lawns 7s. 6d.; or 12 do.	5	0
20 varieties best Greenhouse Annuals 7s. 6d., 12 for	5	6
2? varieties choice Greenhouse Perennials, 10s. 6d., 12 for	7	6
20 varieties choice hardy Biennials and Perennials, 7s. 6d., 12	5	0
36 varieties Imported German Stocks	5	0
20 ditto ditto 3s. 6d., 12 for	2	6

Remittances with orders are requested from unknown correspondents. Goods carriage free to London, and with all orders of £1 and upwards articles presented extra. Post-office orders payable to Bass and Brown, or to Stephen Brown, Seed and Horticultural Establishment, Sudbury, Suffolk.

TO PLANT EXHIBITORS.

FOR SALE, a Number of the finest SPECIMEN PLANTS in the Kingdom, of all sizes, in fine health, and very bushy, of Erica delecta, Massonii major, ampullacea of sorts, tricolors of sorts, propendens, gemmifera, gemmifera major, ferruginea, aristata, &c. Azalea variegata, double red, lateritia splendens, &c. Epacris grandiflora, miniata, pulchella, &c., Chorozemas of sorts, Eriostemon cuspidatum, scabra, and buxifolia, Leschenaultias, Pimelea Hendersonii, Aphelexis spectabile, grandiflora (true), Æschynanthus of sorts, Ixora, Ipomœas, Franciscea hydrangeæformis, Hoveana latifolia, acuminata, Clerodendrum splendens, Stephanotus, &c. The foregoing plants must be inspected to form an idea of their value and beauty. They are to be seen at Bower Nursery, Maidstone, which is within five minutes' walk of the Maidstone Railway Station. Trains leave London-bridge in going and afternoon, and arrive in Maidstone about two hours from time of starting.

HORTICULTURAL IMPROVEMENTS.

RICHARD READ, Instrument Maker (by special appointment to her Majesty), begs to inform Amateur and Practical Gardeners and the Public that he has taken out a NEW PATENT for improvement in the Valves of his Engines, Machines and Syringes, which are now so simple in construction, and perfect in their action, that he will warrant them to keep in repair during the term of the patent. May be worked with two-thirds the labour of any other instrument of the same power.—Manufactured only by the Patentee, 35, Regent-circus, Piccadilly, where they may be seen and proved.

SCARLET PELARGONIUMS.—

Conway's Royalist				each—5s.	0d.
Ayres's Gem of the Scarlets				5	0
Conway's Rosy Morn				2	6
Mitchell's Tam O'Shanter				2	6
Ivery's Scarlet				1	6
Conway's Symmetry				2	6
Mitchell's Tom Thumb's Master				2	6
Conway's Brompton Hero				1	0
Mitchell's Ibrahim Pacha				1	6
Phenomenon	1s.	6d.	Punch	1	6
Judy	1	6	Goliah	1	0
Mrs. Mayler	1	0	Tom Thumb	1	0
Pink Nosegay	1	0	Compactum	1	0

The first Twelve are respectfully offered for 21s., or the set of 17 for 25s. For description of each, see Advertisement in this Paper, March 31, page 194.

VERBENAS.

	s.	d.
Emperor of China—deep rich crimson, good habit	1	6
Heloise—rich purple, fine shape and habit	1	0
Lenormand—bright red, very dark eye, extra fine	1	6
Gem of the West—rose colour, extra	1	0
Valentine de Saveuse—blue purple, dark centre, one of the best in its class	1	6
Marchioness of Ailsa—pink, extra	1	0
Picta, shaded crimson	1	6
Empress of Scarlets—very brilliant, free bloomer, and close grower	1	0
Vulcan Superb—bright crimson, dark eye, very fine	1	6
Junon—deep lilac, very good	1	6
Excelsa Superb, fine rosy purple	1	6
Clotilde—rose, striped, attractive	1	6
White Perfection—the best white	1	0
Lady Frankland Russell—rich rosy purple, fine striking variety for a bed	1	0
Scarlet Defiance—splendid scarlet	1	6
Madame Beatrice—fine striped	1	6
Souvenir—rosy blush, centre carmine, good habit	1	6
Anacreon, blood red, centre maroon, good close habit	1	0
Captivation—rose or lake, yellow eye, very good	1	0
St. Margaret—crimson, violet eye, very splendid flower	1	0
Countess of Newburgh—purple lake, fine close habit	1	0
Empress of Scarlets	1	0
Desirable, rosy purple, fine shape	1	0
Madam Dahu—red amaranth	1	0

Out of a collection of 50 named varieties, native and foreign, grown and proved on our own ground last season, the above 24 have been selected as being distinct and really good. The set are now respectfully offered for 24s., or a dozen out of the set, choice of purchaser, 12s.

Emperor of China	Heloise
Valentine de Saveuse	Junon
Empress of Scarlets	Excelsa superb
Lady Frankland Russell	Robinson's Defiance
White Perfection	Captivation
Clotilde	Lenormand

These 12 [illegible] splendid varieties are offered at 9s. per dozen where a dozen of one sort are taken. Three dozen in three varieties, 24s.; six dozen, in six varieties, 45s. The plants are warranted strong and ready for turning out.

CALCEOLARIAS.	Per doz.—s.	d.
Amplexicaulis—imported variety, a bed of which was exhibited at the Royal Gardens, Kew, for the first time, last season, and elicited universal admiration	12 to 18	
Kentish Hero—This is a splendid bedding out variety, and for which there is a great demand	12	—
Viscosissima and Kayii	5	9
Aurantia multiflora	6	—

The above are all strong autumn struck plants.

TROPÆOLUM SPECIOSUM.—This is a most beautiful and attractive hardy creeper, the colour of the flower being a bright scarlet, which is produced in abundance, and thrown out prominently above the foliage. It is well worthy a conspicuous situation in every flower garden. 2s. 6d. each.

	s.	d.	
Cuphea platycentra	4	0	per doz.
" strigulosa sanguinea	6	0	"
Heliotropium Voltaireanum	6	0	"
" Triomphe de Liege (each 1s.)	9	0	"

Zauschneria Californica, 1s. 6d. each.
Lobelia erinus grandiflora, 6s. per dozen.
Philip Conway, Earl's-court Nursery, Old Brompton-road.

THE FINEST SHOW CARNATIONS, PICOTEES, PINKS, PANSIES, FUCHSIAS, VERBENAS, CINERARIAS, GLOXINIAS, &c.

YOUELL AND Co. are now executing orders for the above, in strong healthy plants, at the following prices. Also their superb new Red-edged Picotee, "The Gem," at 10s. 6d. per pair.

CARNATIONS AND PICOTEES	£	s	d
12 pairs of very fine show flowers, by name, 1l. 4s. and	1	10	0
25 ditto ditto ditto 2l. 10s. and	3	0	0
12 pairs of newest and finest first class show flowers	2	10	0
25 ditto ditto ditto	5	0	0

Fine mixed border Carnations, 12s. per dozen pairs.

PINKS.—Finest first class show varieties, 12s. and 18s. per dozen pairs.

PANSIES.—Finest first class show flowers, 10s. and 18s. per dozen.

FUCHSIAS.—The newest and most beautiful varieties out, 9s., 12s., and 18s. per dozen.

VERBENAS.—The most select and beautiful of last season, 6s. to 9s. per dozen.

CINERARIAS.—Fine flowering plants of the best show varieties, 9s. to 18s. per dozen.

CHRYSANTHEMUMS.—The most beautiful of the new and choice varieties, 9s. to 12s. per dozen, post free.

GLOXINIAS.—A most splendid collection of new varieties, including Teuchlerii, Griffinii, &c., 12s., 18s., and 21s. per doz.

ERICAS.—Fine bushy plants of the best free flowering sorts, 9s. per dozen.

FLOWER SEEDS.—30 packets of new and choice kinds, per post, free, for 6s.

Catalogues of the above, with an extensive variety of highly ornamental plants, will be forwarded by enclosing two postage stamps.—Great Yarmouth Nursery.

SELECTED SEEDS.

WILLIAM MAY, F.H.S., begs to inform those Friends who have approved of Elletson's Superb April or Mammoth and Improved Wilcove BROCCOLIES, that he has this year, from the original growers, a small stock of each, which is very select, and may be sown during the present month, with some other choice varieties of Vegetable Seeds, as below.

Elletson's Mammoth or Superb April White BROCCOLI, per packet, 1s.; Improved Wilcove do., 1s.; Improved Walcheren do., 1s.; Imperial Crimson or Baby Dwarf BEET, 1s.; Usher's Exquisite Curled PARSLEY, 1s.; New fine-stemmed solid Red and White CELERY, 1s. The above W. M. has had the pleasure of submitting to the public for several years, with the greatest satisfaction.

He has also a small supply of the following. Very select HOLLYHOCK, all warranted from the very best double flowers, per packet 2s. 6d.; CINERARIA from Henderson's last year's collection, 2s. 6d.; PANSY from very select varieties, 2s. 6d.; and ANTIRRHINUM, from best sorts, fine, 1s.; all post free.—The Hope Nurseries, near Bedale, Yorkshire.

AGRICULTURAL SEEDS.

ROBERT BAKER, of Writtle, having for upwards of 40 years devoted his time and attention to the growth and improvement of AGRICULTURAL ROOTS, and more especially MANGOLD WURZEL, which for quality he challenges competition, begs to acquaint his friends that he can now supply them with Seeds at the following reduced prices, warranted of the growth of 1848: Long Red Mangold Wurzel, 1s. per lb.; Red and Orange Globe ditto, 1s. 3d. per lb.; Improved Skirving's Swede, 10d. per pint. A remittance from unknown parties will be requisite.

TURNIP SEEDS, &c.

W. DRUMMOND & SONS, Agricultural Museum, Stirling, N.B., will furnish, free, on application, priced Lists of TURNIP and other AGRICULTURAL SEEDS.

N.B. All parcels of Seeds above 2l. value (with the exception of Grain and Vetches), delivered free of carriage in London, Liverpool, Hull, Newcastle, and many other parts to which there is a direct communication.

CUCUMBER AND MELON BOXES AND LIGHTS.—One hundred 1, 2, and 3 light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom. 2-light Boxes and Lights from 1l. 6s. Garden Lights of every description. Conservatories, Green and Hot-houses made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England.
James Watts, Hothouse Builder, Claremont-place, Old Kent-road, London.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bee Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—George Neighbour and Son, 127, High Holborn, London.

"Nutt on Bees" (6th edition) now published.

IMPROVED FLOWER STICKS.—THESE FLOWER STICKS are of a circular form, thereby avoiding angles and sharp edges which are liable to cut and injure the plants. They may be had stained brown or green to suit the various plants.—To be had of all respectable Nurserymen and Seedsmen, and dealers in Garden Implements. Manufactured and sold Wholesale, at H. Mossman's, 149, Fleet-street, London.

N.B. Samples to be seen at the Office of this Paper.

WASP CATCHERS.

UNDERWOOD, CUTLER TO HER MAJESTY, 56, Haymarket, London, begs to inform Amateurs, Gardeners, Nurserymen, and others, that he has manufactured a superior Entomological Tongs from 6 to 12 inches, in square and oval shapes. It is well-known that every Wasp caught in the early part of the season, is the destruction of a whole nest. Also an improved Knife for cutting honey-comb from bee-hives. A large assortment of Improved Budding Knives, Pruners, Saws, &c.

FOUNTAINS, VASES, STATUES, and every description of GARDEN ORNAMENTS manufactured in IMPERISHABLE STONE, and sold at considerably reduced prices by Vaughan and Co., 60, Stob's End, Borough, London. T. J. Cauldon, late of Coade's, Superintendent.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, bernacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs, and at 8, Half-moon-passage, Gracechurch-street.

MILK PANS, PROPAGATING GLASSES, &c.

JAMES PHILLIPS & CO. beg to hand their reduced prices, as follows:

GLASS MILK PANS.

	s.	d.		s.	d.
12 inches diameter, each	1	9	20 inches diameter, each	4	0
14 " " "	2	6	22 " " "	4	6
16 " " "	3	0	24 " " "	5	0
18 " " "	3	6			

PROPAGATING GLASSES.	s.	d.	BELL GLASSES.	s.	d.
2 inches diameter, each	0	2	4 inches diameter, each	0	5
3 " " "	0	3	5 " " "	0	7
4 " " "	0	4	6 " " "	0	10
5 " " "	0	6	7 " " "	1	1
6 " " "	0	8	8 " " "	1	4
7 " " "	0	10	9 " " "	1	8
8 " " "	1	0	10 " " "	2	0
9 " " "	1	2	11 " " "	2	6
10 " " "	1	4	12 " " "	3	0
11 " " "	1	6	Wasp Traps, 3s. 6d. per dozen.		
12 " " "	2	0			

CUCUMBER TUBES.	s.	d.	METAL HAND LIGHTS.	s.	d.		s.	d.
24 inches long	2	0	12 inch	3	0	Glazed	6	9
22 "	1	10	14 "	3	6	"	7	9
20 "	1	8	16 "	4	0	"	8	9
18 "	1	6	18 "	4	6	"	9	9
16 "	1	4	20 "	5	0	"	10	9
14 "	1	2	24 "	6	0	"	12	9
12 "	1	0	To open at top, 1s. each extra.					

Made to any length.
Address 116, Bishopsgate-street Without.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—The readers of the *Gardeners' Chronicle* of Saturday, Feb. 24th, must have observed the high terms in which this Glass was spoken of by Dr. Lindley. We have therefore re-arranged our list of prices to correspond precisely with those of the Patentee, to which we would beg the attention of the Nobility, Clergymen, Gentry, and others.

In Crates of the sizes as manufactured		6d.	per foot.
In squares	under 8 by 6	4	"
" 8 by 6 and under	10 by 8	4½	"
" 10 by 8 "	14 by 10	5	"
" 14 by 10 "	1½ foot	5½	"
" 1½ foot "	3 "	6	"
" 3 " "	4 "	6½	"
" 4 " "	5 "	7	"
" 5 " "	6 "	7½	"
" 6 " "	8 "	8½	"
" 8 " "	10 "	10	"
Quarries		6	"

Averaging ⅛ of an inch thick, and about 20 oz. to the foot.
Jas. Phillips & Co., 116, Bishopsgate-street Without, London.

GLASS.

E. AND W. H. JACKSON are supplying SHEET, ROUGH PLATE, and CROWN GLASS for Horticultural purposes, at very reduced prices. BRITISH AND PATENT PLATE of superior manufacture, for Glazing dwelling-houses, for which purpose these articles are now superseding all inferior Glass. ORNAMENTAL GLASS of the newest designs for the decoration of Conservatories, &c. E. and W. H. J. also supply PATENT OPTICAL FLINT GLASS, Thin Glass, Slides and Cells for Microscopic purposes, French Shades, Propagating Glasses, [illegible], Lists of Prices and every information forwarded on application at their Warehouse, 315, Oxford-street, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply [illegible] Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GLASS.

THOMAS MILLINGTON, 87, Bishopsgate-street-Without, London (same side as Eastern Counties Railway Terminus). BRITISH PLATE GLASS nearly ¼ inch thick, in sizes under 1 foot superficial 1s. 2d. per foot; this is the best article for Greenhouses and Garden Frames of every description, as nothing can break it in an ordinary way. Horticultural Glass, in cases of 200 feet, No. 16 oz. 40s.; No. 21 oz. 60s.; No. 26 oz. 87s. 6d.; No. 32 oz., 112s. each case included.

Cut Squares in 100 feet boxes		Crown	No. 1 Horticultural
Sizes under 6 ins.	by 4 ins.	10s. 6d.	12s. 6d. per box.
6 by 4 " 7	by 5	12 6	15 0 "
7 by 5 " 8	by 6	14 6	17 6 "
8 by 6 " 10	by 8	15 6	20 0 "

Squares above 10 by 8, in Crown or Horticultural 2½d. to 3d. per foot, according to size and quantity. Patent Rough Plate Tiles, ⅛ in. 10d.; ¼ in., 1s. 3d. each, do. Slates, ¼ and ½ inch thick. Patent Rough Plate Glass for Skylights, Warehouses, and Floors, ⅛ in. thick, 6d.; ¼ in., 1s.; ⅜ in., 1s. 2d.; ½ in., 1s. 6d.; ¾ in., 2s.; 1 in., 3s. per foot, in sizes under 5 feet superficial. Lactometers for testing the quality of milk, 4 tubes, 7s. 6d.; 6 tubes 10s. complete. Glass Milk pans, Pastry Slabs, Rolling Pins, and Moss Dishes for Bulbous Plants. Propagating and Bee Glasses. Fish Globes. Gas and Lamp Glasses of every description. Linseed Oil Putty, 8s.; White Lead, 28s. per cwt. Linseed Oil, Turpentine, Paints, Colours, Varnishes, Brushes, and Tools in every variety.

FLOWER-POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford-street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price for cash.
250, Oxford street, near Hyde-park.

FOR SALE, one of STEPHENSON'S CAST-IRON CONICAL BOILERS, with Cistern, Damper, Flue-door, Furnace-door, Bars, &c., all complete. It has not been in use more than 12 months, and is now heating upwards of 300 feet of 2 inch pipe. Price 6l. May be viewed on application to Mr. Yeldham, Fulham-road, Hammersmith, near London.

NETTING OF ALL SIZES FOR FRUIT TREES, &c., sold for ready money only, by KENWAY and Co., Bridport, Dorset.

1 foot wide, 2 inch mesh, to protect rows of Peas, strawberries, &c. from birds	4d. per yard run.
2 feet wide, 2-inch mesh, ditto	1½d. "
2 inch mesh, any size	2d. per sq. yard.
2½ inch mesh	1¾d. "
2¾ inch mesh	1½d. "

Waterproof Netting double the price of the above, and will last 20 years, with care.

Rabbit Nets set to line, 5 feet deep,		4d. per yard.	
Do	4 do	3d.	"
Sheep Nets,	5 do	4d.	"

The Nets to be Tanned as for exportation.
Fishing Nets of all kinds made to order.

SEEDLING VERBENAS.

BASS AND BROWN are now sending out the following beautiful and first-rate varieties descriptions and characters of which are given in the Gardeners' Chronicle of March 24th and 31st.

Brilliant	5s. 6d.	Spotted Beauty ...	5s. 6d.
Beauty of Suffolk ...	4 0	Reserve	3 6
Renown...	3 6	Nymph	5 0
Telegraph	5 0		

The usual allowance to the Trade by taking the set.
Seed and Horticultural Establishment, Sudbury, Suffolk.

NEW AND SUPERB SEEDLING DAHLIAS FOR 1849.

THOMAS BARNES (Successor to the late Mr. S. Gilling) offers, with the greatest confidence, the following Show and Fancy DAHLIAS, plants of which will be ready early in May.

SHOW FLOWERS.

BARNES'S QUEEN OF THE EAST.—Blush pink, new colour. "Too much cannot be said in praise of this flower; suffice to say, the petal, form, outline, and habit, are superior to any yet out, to which may be added, perfect constancy. First class Certificate, Royal Surrey; first seedling prize, Stowmarket; ditto, Ipswich; and in several first prize stands. Noticed in "Glenny's Almanack," "Harrison's Cabinet," also in the "Gardener," by Mr. Neville, in Oct. 7th and 14th. Height, 2 to 3 feet; plants, 10s. 6d. each.

BARNES'S FEARLESS.—Bright rose lilac, fine bold flower, form and outline superb, petal fine, centre prominent, very constant. First-class Certificate, Royal Surrey and Slough Open Show; first prizes at Stowmarket, Ipswich, and Bury; and in several first prize stands. Noticed in Glenny's "Almanack," Harrison's "Cabinet," and also by Mr. Neville, in the "Gardener" of October 14th.

BARNES'S MADONNA.—White, margined with rose; petal, form, and habit, first-rate; outline and centre fine, constant. This has not been shown, from their being only one blooming plant; a bloom was sent to Mr. Neville, and noticed by him in the "Gardener," of October 14, thus: "Your seedling, 550, is a flower of first-rate properties, petals short, beautifully arranged, cupped and close; centre superb, and most prominent, a grand acquisition in the light class." Height, 2 to 3 ft.; 10s. 6d.

BARNES'S CONFIDENCE.—Bright glossy crimson, shaded with black; petal, form, and habit excellent (scarce), noticed in the "Gardener," Oct. 14th. Height, 4 feet; 10s. 6d.

BARNES'S DAUNTLESS.—Bright clear yellow, pure without shading, centre good, outline perfect, large and constant. Noticed by Mr. Neville, Sept. 16th; recommended to be grown weak. Height, 4 feet, 7s. 6d.

BARNES'S MULBERRY.—Pink and mulberry mottled; quite new colours, centre prominent, outline good, and habit excellent. Height, 4 feet; 7s 6d.

FANCY FLOWERS.	Height, in feet.	Price. s. d.
BARNES'S KEEPSAKE.—White, edged with deep crimson, shape and outline perfect, habit superior to any Fancy Dahlia, constant, very attractive. First-class certificate, Slough Open Show. Noticed in Glenny's "Almanack" and Harrison's "Cabinet"	4	10 6
BARNES'S FORGET-ME-NOT.—Deep crimson or black, tipped with pure white, centre prominent, outline and habit fine, constant	4	7 6
BARNES'S DISCOUNT.—Black, with rosy-white tips, resembling the Empereur de Maroc, with petals more expanded and free, habit fine. Noticed by Mr. Neville in the "Florist" of Oct. 14	4	7 6
BARNES'S CONTRIBUTOR.—Lilac purple, tipped with pure white, shape and habit very fine, rather uncertain	3	5 0
BARNES'S HONEYMOON.—Rosy purple, tipped with pure white, cup petals, good centre and outline, habit fine, constant	3	5 0
BARNES'S CANDIDATE.—White, edged with black, good shape and habit, very constant, one root only	3	5 0

Catalogues with General Collections of the most approved DAHLIAS, FANCY DAHLIAS, FUCHSIAS, VERBENAS, PETUNIAS, PHLOXES, &c. &c., are ready, and may be had on application by enclosing two postage stamps.
Dancroft Nurseries, Stowmarket.

T. TURVILL, Florist, &c., Baddow-road, Chelmsford, begs most respectfully to return his sincere thanks to those friends who have favoured him with their kind and liberal support, and assures them that all future orders will meet with his strict attention. He now recommends to their notice the following List, including his unrivalled White Fuchsias, &c.

NEW DAHLIA.

C. TURNER.—Beautiful white, tip with bright purple round, well cupped, very high centre, good outline, and very constant.—T. TURVILL has no hesitation in saying this is the best Dahlia he ever raised; it was a seedling from Standard of Perfection; the fine habit and form, with high centre at all times. This flower has been seen by most of the first growers, and pronounced by them the best light flower they have seen. In 1847 and 1848 it took five first class certificates at the Metropolitan and other open shows; the early frost prevented it from being shown more last season.—Plants, 10s. 6d.

NEW FUCHSIAS.

ELEGANCE.—Pure white tube and sepals, well expanded, showing the fine bright rosy vermillion corolla; it measures from 6 to 8 inches, including seed vessel to the tip of the pistil, and is allowed by all who have seen it to be the best white Fuchsia yet sent out; it has a most beautiful foliage, and very graceful habit. See the "Florist," for October, and the *Gardeners' Chronicle* for August 6, besides other floricultural works.—Plants in May, 10s. 6d. each.

GEM.—Very white tube and sepals, with a bright violet purple corolla, the sepals extending horizontally, so that the corolla is well seen; a handsome variety, with full average size, free in flowering, and very graceful.—Plants in May, 10s. 6d. each.

FIRE KING.—Light pink tube and sepals, well expanded, corolla of the brightest scarlet, fine, and vivid in colour, excellent habit, and good foliage.—Plants in May, 7s. 6d. each.

SHYLOCK.—Large stout flower, with light pink tube and sepals, striped with rose, fine stout rosy crimson corolla, sepals short, colours clear and very handsome; a decided improvement on Beauty of Leeds.—Plants in May, 7s. 6d. each.

These Fuchsias have been carefully selected from several thousand seedlings.

PETUNIAS.

PRINCESS ALICE.—Fine formed flower, peculiarly rich lilac colour, darkly veined with claret, and flamed and shaded with deep rose, with dark purple throat.—Plants, 3s. 6d. each.

PRINCE OF WALES.—Large bold flower, pale blush, beautifully shaded with purple, with black throat.—Plants, 3s. 6d. each.

CONSERVATIVE.—Nearly blue, pretty, self; quite distinct, good outline.—Plants, 2s. 6d. each.

T. T. can with confidence say they are quite distinct from any yet out, having purchased the stock of a successful grower of the Petunia. All orders from unknown correspondents must be accompanied with post-office orders, payable at Chelmsford.

HORTICULTURAL SOCIETY, 21, Regent-street, April 21, 1849.

NOTICE IS HEREBY GIVEN, that the ANNIVERSARY MEETING of the Society, for the election of President, Council, and Officers for the year ensuing, and for receiving the Annual Report of the Auditors, will take place at the House of the Society, No. 21, Regent-street, on TUESDAY, the 1st of May next. The Chair will be taken precisely at One o'Clock. There will be no Exhibition of Flowers, &c., on this occasion.

HUGH LOW AND CO. can with the greatest confidence recommend the undernamed:

HELIOTROPIUM, "SOUVENIR DE LIEGE."—This fine new variety, now for the first time offered in this country, possesses the great advantage of flowering naturally very early, and also continuing in perfection for a much greater length of time than any of those previously introduced. The individual flowers, as also the truss, are very large and highly fragrant; colour pure violet with a yellowish tinge towards the centre. The habit of the plant is very dwarf and compact, and from the long continuance of its flowering, and other good qualities, it will undoubtedly prove a very desirable acquisition either for bedding or pot culture. Price 7s. 6d.

FUCHSIA, "THE RAJAH."—This is the finest of the dark varieties. Habit compact and good; corolla violet purple, beautifully cupped; sepals bright red, of waxy consistence, as much reflexed as a Turnear Lily. Price 10s. 6d.

FUCHSIA, "SPLENDIDA."—This is also a dark variety of great merit, and in particular remarkable for its very fine habit and profusion of flowers. Price 10s. 6d.

The Fuchsias named above were obtained from seeds by JOHN WILMORE, Esq., of Birmingham, and the acknowledged superiority of that gentleman in improving, by careful and scientific hybridisation, some of the finest genera of plants, will be a sufficient guarantee for the excellence of those now offered. Plants of the Heliotrope and the Fuchsias will be ready to send out in May. The usual discount to the Trade.

BORONIA TETRANDRA (B. microphylla of gardens).—A very fine new species. Habit compact; a most abundant bloomer, producing the flowers in the way of B pinnata; will make an excellent specimen plant for exhibition. Strong plants, 7s. 6d.

In addition to the above, H. Low and Co will be able to supply all the novelties sent out by other growers, including the Continental Phloxes, Verbenas, and Chrysanthemums, now so much admired, Catalogues of which, containing also their General Collection, are in course of publication, and when ready will be forwarded, post free, on application.
Clapton Nursery, London, April 21.

The Gardeners' Chronicle.

SATURDAY, APRIL 21, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	April	23	Antiquarian (Anniversary)	2 P.M.
			Medical	8 P.M.
			Geographical	8½ P.M.
TUESDAY,	—	24	Civil Engineers (Anniversary)	7½ P.M.
			Civil Engineers	8 P.M.
			Medical and Chirurgical	8½ P.M.
			Zoological	8 P.M.
WEDNESDAY,	—	25	Microscopical	8 P.M.
			Society of Arts	8 P.M.
			Ethnological	8 P.M.
			London Institution (Anniver.)	12
THURSDAY,	—	26	Royal Society of Literature (Anni.)	3 P.M.
			Numismatic	7 P.M.
			Royal	8½ P.M.
FRIDAY,	—	27	Philological	8 P.M.
			Royal Institution	8½ P.M.
SATURDAY,	—	28	Royal Botanic	8½ P.M.
MONDAY,	—	30	British Architects	8 P.M.
TUESDAY,	May	1	Horticultural (Anniversary)	1 P.M.
			Linnean	8 P.M.
WEDNESDAY,	—	2	Geological	8½ P.M.
FRIDAY,	—	4	Botanical	8 P.M.
SATURDAY,	—	5	Horticultural Gardens	1 P.M.

COUNTRY SHOWS.—April 24: Mandsworth and Lonsdale Horticultural. Tuesday, May 1: Manchester and South Lancashire Tulip.—Wednesday, May 2: Meath Horticultural.

We stop the press to announce, with great regret, the decease of Professor ENDLICHER, of Vienna, the most distinguished of modern Austrian botanists. The news has just reached us in a letter from that capital.

The introduction of a new hardy evergreen tree into this country is an event that is seldom noticed at first in the manner it deserves. This arises from our being in general imperfectly acquainted with the history of such plants; and the result is most unfortunate, for till experiment has decided whether such a plant is hardy or not, nobody knows what to think or do—the seedlings are neglected, put aside, or ruined by being cramped in pots, and at last, when their value is discovered, the race has become almost extinct, and the constitution of the survivors is, for the most part, ruined beyond recovery. This has most especially been the history of Conifers; and Cryptomeria is a striking example of the practice. Of this fine species thousands of seedlings were distributed by the Horticultural Society, and where are they now? The greater part have perished, because the public was unacquainted with the value of so beautiful an evergreen. There was no certainty that it was hardy, and now that experience has shown that our winters will no more touch it than they will a Spruce Fir, the old stock is gone and fresh supplies must be sought in China. It was the same with the Araucaria of Chili, with the Deodar, and with many others.

An acquisition of the highest interest, lately received by Mr. STANDISH, of the Bagshot Nursery, will undergo the same fate, unless the history of it, and the certainty of its being still more hardy than Cryptomeria, shall be pointed out, so as to leave no room for misapprehension. We allude to the FUNEBRAL CYPRESS.

This plant was first mentioned in Lord MACARTNEY'S Voyage as growing in a place called "the Vale of Tombs, near the tower of the thundering winds," in the province of Zhe-hol; which is a mountainous district, lying in latitude 41° 58′ N., in Chinese Tartary, and has a far more rigorous climate than is ever known in England. The plants found in this province consist of hardy northern forms, Oaks, Elms, Ashes, Willows, Pines, Elders, Sophora japonica, together with herbs of northern habits, calculated to bear severe frost, such as Asters, Paeonies, Solomon's Seal, Pinks, &c. In the foreground of the landscape representing "the Vale of Tombs" is a specimen of Funebral Cypress, much resembling a Weeping Willow; and the weeping tree so commonly represented in Chinese paper-hangings and porcelain is evidently the same species.

The seedlings in the Bagshot Nursery were raised from cones lately procured by Mr. FORTUNE, while at Shanghae, from a place 200 miles to the north of that port. We have also received a dried specimen of it, which enables us to say that it must be a plant of the greatest beauty. It may be best described as a tree like the Weeping Willow in growth, with the foliage of the Savin, but of a brighter green; it is, however, not a Juniper, as the Savin is, but a genuine Cypress. It has long been a subject of regret that the Italian Cypress cannot be made to endure our climate, and to decorate our burial-places: but we have now a finer tree, still better adapted for the purpose.

The gardener who would form a beautiful FLOWER-GARDEN, from neglected and unfashionable plants, must pursue a very different course from that which satisfied masters 50 years ago. The world has grown fastidious, and, knowing what gardening may be, expects every body to keep up to the possible standard. There is no doubt that a garden may be always gay, either with flowers or their equivalents; each season having something which it loves to call its own.

But it is seldom, indeed, that such a garden is seen. One reason is, the opinion that ground cannot be occupied by half-a-dozen crops at one and the same time. We admit the truth of the proposition; and if we were discussing an agricultural question, and making suggestions for covering land by the acre, the objection would be worthy of a sagacious disputant. But we are talking of gardens; and although farming is nothing more than gardening, yet gardens are by no means farms. Has it never occurred to those who think perpetual flowers impossible, that if half-a-dozen crops cannot be had at one and the same time on the same ground, yet that they may be made to succeed each other by some process that does not demand an unheard-of amount of ingenuity?

What we would suggest, in the absence of a better plan, is, that successive crops be provided partially in pots, the same principle being observed in furnishing a flower-garden as in embellishing a drawing-room. Suppose, for instance, the ground to be laid out, and permanently planted with perennials and such shrubs as are intended to remain immovable; the fixed foundation of the garden would thus be laid without further trouble than what consists in manuring, from time to time, those plants which exhaust the soil and suffer in consequence. And this may be done to a greater extent than is supposed. Primroses, for example, thrive best at the foot of trees or bushes, provided they get sunshine in the first six months of the year. So do Violets: and when the bloom of Primroses and Violets is gone their foliage has its beauty. All sorts of spring bulbs, Crocuses, Hyacinths, Dogstooth Violets, Jonquils, and the like, if placed with skill, require no removal; narrow lines look well, other things may stand between, and when their foliage is dead the neighbouring plants, if annuals, will do no harm; they may exhaust the ground, but periodical manuring will remedy that.

Winter, when flowers are chiefly gone, must be provided for by well-grown evergreens with variegated or otherwise beautiful foliage, kept in pots, to fill the ground, upon some fixed plan, as soon as the favourites of autumn are dead, or become hopelessly unhealthy. Plunged in the ground, and the tops of their pots covered with soil, no one can tell that the flower-garden is not their constant station; they may be removed by degrees in the spring, and when finally gone the whole scene is changed. Violets, white or blue, single or double, sweet or scentless, may be grown in the same pots, and will be always in the best place to welcome the vernal sun.

The rest of the year must be decorated by planting out in the usual way such plants as remain long in bloom, Pelargoniums, Fuchsias, Verbenas, Lobelias and the like, and otherwise by keeping an abundant stock of things of a more fugitive nature in pots, the one ready to succeed the other the moment that beauty fades. Annuals and biennials will form a large part of this supply; but to be of any value they must be thoroughly well cultivated. Each plant must have plenty of pot room, must be as well grown as the skill of the gardener will permit, and must be just ready to flower at the time when it is transferred to the borders. The skill to do this is small enough, and no more than every garden-labourer possesses, provided he is fortunate enough to possess a small stock of brains in addition to the

muscular force which he is sure to carry about with him. For ourselves we recommend single potting, rather than the common plan of putting three in a pot; the former costs a trifle more, but it is far better for the plants.

It must not however be forgotten, that if this little matter is to be cleverly arranged, the seeds of annuals should be sown every fortnight or three weeks, otherwise they will come into flower without a gradual succession, to secure which must be the great aim of the gardener.

The materials to effect this are not alarmingly expensive. A piece of spare ground, some guano, a few hundred flower pots, and some glazed pits, or moveable sashes, or a moderate supply of hand-glasses, will set a small man up; and great men will require nothing more than their garden always has.

We cannot undertake to give lists of plants fit for this purpose. As we said last week, to do so would answer no good end. We may, however, refer the curious to the early volumes of Mr. Maund's "Botanic Garden," and to Mrs. Loudon's books on annuals, &c., in which they will find a good deal of information.

Neither can we give ground plans; or, at least, we have no immediate intention of doing so. But to those ingenious persons who shall put their inventive faculties in action, we will venture to suggest this fixed principle, that all figures which are not regular, or which do not nearly approach a regular form, are to be avoided. Circles, ovals, polygons, stars, segments of circles and of ovals, or the lines which bound such figures, produce the best effect but as for the queer things to be found in tasteless gardens, the tadpoles, cheese-knives, slugs, leeches, zigzags, and wriggles, or attempts at architectural scrollwork, which cannot possibly be successful, they are all to be looked upon as flagrant examples of ingenuity misapplied.

Box edging is commonly used, with gravel walks between; but many prefer cutting out their figures on Grass. We have never seen so good an effect produced in that way as with gravel, or some hard substance, such as fluor spar, or broken limestone or sandstone, and if it were otherwise, we should be obliged to confess our preference for a garden in which one may have a reasonable chance of walking dryshod. Box edging is, however, objectionable, as, indeed, are all live edgings; tiles boldly moulded, or some contrivance of the sort, are much better in all cases, and less expensive eventually. They also look far neater, producing upon a flower border the same kind of effect as a frame upon a picture, provided always the material of which such an edging is made is not so thin as to produce the bald and poor appearance observable in the arabesque tracery in some ancient buildings, of which the Temple Church in London presents a familiar example.

ARBOURS.

[With the permission of the Editor, we borrow the following clever article, and its accompanying woodcut, from a late number of the "Florist," a periodical in praise of which too much can hardly be said.]

The pretty drawing of a rustic summer-house in the last number of "The Florist," and the invitation to those who may be inclined to offer suggestions on the subject, tempt me to make a few remarks upon this species of garden decoration, in which, as in other matters connected with horticulture, public taste has of late years made considerable advances. What absurdities, in the shape of castles, ruins, and grottoes, we can all of us remember! Revolving seats in which the stranger was tempted to place himself, and after a sufficient number of rapid revolutions, turned out, to amuse the lovers of a practical joke; old Dutch summer-houses placed on the garden-wall, without shade or shelter;—these, and such-like eccentricities, have passed away; but others have succeeded them; and the severe critic may still find ample exercise for his craft upon the various forms and fashions of seats—from her most gracious Majesty's splendid summer-house in Buckingham Palace garden, adorned by the magic creations of Eastlake and Maclise, to the old post-chaise body stuck at the end of a little smoky allotment in the floricultural region of Bethnal Green. Every lover of his garden, however, will have his harbour. How gaily the poet Cowper describes the small summer-house in which so many of his inimitable letters and charming poems were written! He says: "I write in a nook that I call my boudoir; it is a summer-house, not much bigger than a sedan chair, the door of which opens into the garden, that is now crowded with Pinks, Roses, Honeysuckles, and the window into my neighbour's orchard. It formerly served an apothecary, now dead, as a smoking-room; and under my feet is a trap-door, which once covered a hole in the ground where he kept his bottles. At present, however, it is dedicated to sublimer uses; having lined it with garden-mats, and furnished it with a table and two chairs, here I write all that I write in summer time, whether to my friends or to the public." Rustic seats, such as that drawn in the last Number of "The Florist," appear to be now the most popular form of the arbour; and I will therefore confine my remarks to their construction and situation, and to the plants best calculated to adorn them. It appears to me a great mistake to place the rustic seat in a damp, sunless corner of your garden—favourite haunt only of the snail and the toad. I like to see them in places not unvisited by the sun; for at no season of the year is an arbour more tempting than when it is rather too chilly to sit quite in the open air; in the hot days of summer we like moveable seats, and plant ourselves

> "Where'er the Oak's thick branches stretch
> A broader, browner shade,
> Where'er the rude and moss grown Beech
> O'er-canopies the glade;"

but never creep into those musty recesses to which I have alluded. Let the aspect of your seat, then, be south-east, south, or west, but by no means allow it to face the chilly north, or the biting north-east. As summer advances, your plants will make you a verdant and fragrant screen; but no flowers or flowering shrubs will enjoy themselves and dispense their odour in a corner facing the north. How pleasant it is, in May and June, to sit and listen to the blackcap and garden-warbler pouring forth their love chants; or after sunset, if your situation is a fortunate one, to the passionate song of the nightingale in a bush hard by!

Now as to the construction. To begin with the ground: let an edging of small pebbles extend about a foot beyond the eaves' drip; this protects your pillars and the inside of the arbour from the dirt splashed up in heavy rains from the gravel path which I presume leads to your seat. To ensure durability, have a stone curb or step the whole extent of the front, and into this let the upright support or pillars be morticed; these should be of the trunks of old Yew trees, if you can get them; but if not, the beautiful grey mossy stems of the Larch will answer the purpose. A good pavement may be made of large wood picked out of a baker's faggot-stack, cut into proper lengths, pointed, and then driven into the ground; by sorting these carefully as to size, a variety of patterns may be made on your floor. For the ornamental tracery between your arches, beware of the pretty peeled branches of Oak, so generally used, but so soon doomed to decay; nothing is more durable or picturesque than the mossy knotty branches of an old Apple tree, and probably you have one that will be the better for thinning. The seat may be of Hazel-rods, which produce a pretty light open effect; but if you prefer comfort to show, use a plain board, and cover it with matting. The back of your arbour should be boarded, and then covered with Ash or Oak bark, the latter of which may always be procured from the tanners; and you may exercise your taste and patience to any extent in the panelling; three split Hazel rods to divide the panels have a pretty effect. Let your pillars not exceed 7 feet in height, and thatch your roof with reeds, the flowery tops of which may be ornamentally disposed inside to form the ceiling.

Every man will follow his own taste in planting round his arbour. Milton describes our mother Eve's retreat as placed in the midst of

> "Inwoven shade,
> Laurel and Myrtle, and what higher grew
> Of firm and fragrant leaf; on either side
> Acanthus, and each odorous bushy shrub
> Fenc'd up the verdant wall; each beauteous flower,
> Iris all hues, Roses, and Jessamine,
> Rear'd high their flourish'd heads between, and wrought
> Mosaic: underfoot the Violet,
> Crocus, and Hyacinth, with rich inlay,
> Broider'd the ground."

By all means plant the Honeysuckle and Jasmine, and the Rosa rugæ, on which you may bud all your favourite Roses: of climbing plants, I would recommend the Cobæa, Maurandya, Eccremocarpus, Rhodochiton, and Clematis Sieboldii; and to provide for these, it will be well to leave a small bed with a considerable depth of rich mould at the base of each pillar, and at the corners of your arbour. I cannot do better for the general design than refer the readers of "The Florist" again to the beautiful woodcut in your last Number.

If you think the above loose remarks worthy of insertion, you will gratify *A Sedentary Man, March 8.*

DISEASES OF PLANTS.

(Continued from p. 229.)

§ 1. *What must be understood by Disease in a Plant.*—Plants are beings composed of elementary and compound organs. The first, of which we have but little knowledge, and which are supposed to consist of the simplest elements, form the second. These are divided into two classes. Some are nutritive, and at the same time, conservative; such are the root, the trunk, and the leaves. Others serve only for the propagation of the species; these are the flower and the fruit. By the help of all these organs are accomplished those important functions attributed by Nature to beings of the vegetable kingdom. Their state of health consists in the free, facile, and full exercise of all their functions. Whenever this is entirely, or in any degree impeded, they are in a state of disease.

Nature, besides the general laws she has imposed on the vital economy of all plants, has also laid down special ones, by which great diversity has been given to the form and number of their compound organs. Every alteration in their development, directly opposed to the prescribed laws, must be considered as a disease. The amateur looks with a complacent eye on the double flower of a Rose or a Pink, setting it down as one of the wonders of Nature. His feelings are disagreeable if, on examining the plants which adorn the landscape, he observes some of them deformed by cankers. He is perfectly indifferent if a Wallflower, for instance, presents itself, which, instead of four petals and six stamens, which it ought to have, has only three of the one or five of the other. But the naturalist, on the contrary, following the above-mentioned principles, considers as sick, although in different degrees, not only the plant bearing double flowers, but also that to which is wanting even the least of its organs. In the first case he sees that it cannot accomplish the main purpose for which Nature has destined it, for, deprived of the organs of generation, it cannot fulfil the great end of all organised beings, the reproduction of its species. If he admits the bad state of the cankered tree, he likewise considers as diseased the plant in which he does not find all the organs with which Nature had provided it, as well as the one in which their number is in excess; for, as I shall have occasion to show, these extraordinarily abundant productions generally make the plant itself suffer. The naturalist is confirmed in his opinion when he observes that in all these cases the plant can be brought back to the full exercise of all its functions, knowing that it is possible to make healthy individuals, provided with their normal number of duly formed organs, produce double flowers or cankered stems, become superabundantly rich or extremely deficient in their organs, or have them altered or distorted in form.

I am well aware that all writers have placed double flowers, as well as deficiencies or excesses in any parts of plants, in the class of monsters, according to the definition of Bonnet, who calls by that name any organised being in which the conformation, the position, or the number of its parts does not follow the ordinary rules. They assert that these monstrosities have their origin in the seed, which I do not deny is sometimes the case. They establish it as a general rule, on account of the close analogy they admit between animals and vegetables. With all respect to the opinions of others, it will presently be seen what are my own views as to this analogy; and considering that, as I have already observed, we have it in many cases in our power to make a healthy plant become artificially monstrous at pleasure, and again to bring it back to a normal state, I have determined to give monstrosities a place among diseases. At the most I would recognise as monstrous from the seed hybrids, that is to say, plants derived from the union of individuals of different species. But first I should like to know whether these plants might not be brought back to their primitive forms, so as not to show any trace of their cross breed. I will only here add, with the celebrated Ventenat, that the phenomenon of hybridism shows that the analogy with the animal kingdom is not so close as is pretended. The greater number of animal mules are deprived of the power of reproduction. Plants, on the contrary, are always fertile, though the offspring of the union of different species.*

(To be continued.)

HINTS TO FLORISTS.

Carnations.—As soon as is convenient, stir the surface soil of your pots. The late rains will have beaten it firmly down. Remove the old decayed foliage; keep clear from weeds. Pot at once, if any now remain in the store pots; stick the early or first potted plants,

* More recent observations, however, have now fully established the fact, that although vegetable hybrids, especially in a state of cultivation, or with artificial assistance, do occasionally produce perfect seeds, yet generally speaking in the wild state, at least, they are entirely or very nearly barren, and in other respects their analogy with animal hybrids has been confirmed. *Translator's Note.*

and secure others from winds with small twigs, until the stems shall have risen sufficiently high to be tied to sticks. Do not tie the plants in a bunch; this weakens the forming "Grass."

Dahlias.—Continue to propagate and pot off struck cuttings. Place the latter in a cold frame to harden, as soon as they have become sufficiently established after potting. Keep down green fly. Refer to your memorandums made last season, and order the varieties then approved of; the time is near when novelties will be on the move, so do not delay in giving the necessary instructions. A slight hotbed or spare corner of a Cucumber frame is very useful about the time new Dahlias are received; a few days here recovers them from the fatigues of their journey.

Pansies in Pots will have now yielded their first head of bloom. Clear the plants of all blooms and forward buds; fumigate with tobacco smoke, they are sure to require it, if the glasses have been much closed; repeat the operation the following day, then expose to the weather, unless it is unusually rough or severe. Take off side shoots, and place the cuttings in a shady situation; top-dress the beds.

Picotees.—See Carnations.

Pinks.—The late rains have much improved their general appearance; the improvement is most apparent where the top-dressing has been duly applied; destroy slugs, catching them first. Use small twigs to secure the plants against injury by winds; if any plants are throwing up many stems for bloom, reduce their number according to the nature of the variety to be operated upon; some will carry or perfect more flowers than others.

Tulips.—Be more watchful than ever to secure these against frost; keep the covering down on the weather side, should the winds prove boisterous. Carefully press the soil about their stems, placing any upright which by wind or other casualty may have been blown down. From the mottled and healthy appearance of the foliage, a good bloom is anticipated. Some of the large leaves will occasionally injure its tiny neighbour by overlapping it so as to exclude the necessary light and air; see to this, and prop the intruder out of the way with a twig; some of the tall foliage, such as that of Rosa blanca, may also require support. *E.*

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

A Bed of Roses.—Those amateurs who are desirous of increasing their stock of Roses, so as to have a good display of bloom this season, may do so by purchasing plants in pots; a form of cultivation now practised at all the nurseries, and presenting great facilities for the quick realisation of the pleasures derived from this beautiful flower. I have just made such an increase myself, and have finished planting a bed, from which I hope to gain much satisfaction. I shall give the particulars of my own procedure, so as to lead no one into fanciful experiments or needless expense.

Having a large Grass-plat, with no flower-beds to break its continuity, and being desirous of growing more varieties of the Rose, I determined to cut out a circular bed in the centre, about 9 feet in diameter. The circle was struck with a radius composed of a piece of cord, revolving on a central pin by means of a slip knot, or rather loop, the outline being marked by a sharp stick at the other extremity. This outline was then cut deeply with a sharp spade, and the turf was thinly pared away, leaving much of the fibrous rooty matter behind. My Grass is an old pasture, having a good substratum of hazel loam; if it had been recently laid down, with a poor hungry subsoil, I should have trenched the bed, and buried the turf, removing some of the poor mould and putting better in its place. But in my case this was not required, and the loam was deeply dug, a quantity of rotten frame manure being well mixed with it as the work proceeded. A bed was thus formed, elevated in the centre and gently declining to the edge, of the proper shape for receiving and displaying the plants.

These plants I procured from the Rose nursery of Mr. Francis, of Hertford, and they came in healthy condition; good strong plants, capable of rapidly bearing abundance of bloom. I will give their names, premising that the selection is a mere matter of taste, and may be indefinitely varied. These it was thought would make a pleasing collection at little expense. The descriptions are from Mr. Francis's catalogue. Austrian Briar, Persian Yellow. Hybrid Perpetuals:—Dr. Marx, rosy carmine; La Reine, brilliant rose-colour; Madame Laffay, dark rich rose; Aubernon, dark brilliant crimson; Duchess of Sutherland, large brilliant rose, mottled; William Jesse, crimson, tinged with lilac. Bourbon:—Leveson Gower, delicate carmine; Phœnix, bright rosy red; Queen, delicate creamy salmon; Pierre de St. Cyr, dark purplish-crimson; Bouquet de Flore, brilliant rose; Bossuet, splendid rich carmine. Hybrid Bourbon:—Coup d'Hébe, very large, bright pink. China:—Desfontaines, pure white; Eugene Hardy, pale creamy pink; Archduke Charles, rose; Triumphant, dark rosy crimson. Tea-scented China:—Devoniensis, delicate pale sulphur; Elise Sauvage, fine yellow, buff centre; Hardy, dark rosy pink; Belle Allemande, large blush; Josephine Malton, large creamy white. These are arranged both with reference to colour and habit; the strongest growing sorts being placed in the back ground, and the China and tea-scented nearer the edge. My object has been to produce a mass of bloom all over the bed, without injuriously crowding the plants; and about the number just specified will do this.

Having fixed upon the distances of the plants, I trod the soil a little in the spot where each was to be placed, to counteract the lightness produced by deep digging. A hole being made, the Roses were turned out of the pots carefully, and deposited in their places without the balls being disturbed, the soil being trodden firmly in around them. The bed being raked the work was done. Around the edge of the bed I placed cuttings, or divisions of the roots of double Violets, to form good plants by next spring. *H. B.*

SELECT SPRING-FLOWERING BEDDING PLANTS.

The following are well adapted for groups and bedding *en masse*. By judicious management they are capable of producing a distinct and striking effect.

Arabis grandiflora.—A dwarf, compact, hardy herbaceous perennial, of greyish aspect; it produces its white flowers clear above the leaves, from March until May.

Arabis alpina?—Very similar to the preceding, but readily distinguished from it by its purplish-tinted flower-stems.

Iberis sempervirens.—A dwarf, compact, decumbent, hardy white-flowered evergreen herbaceous plant, growing from 6 to 9 inches high. It flowers from the middle of April until the first or second week in June.

Iberis saxatilis.—Similar in habit and character to the preceding, but of smaller and neater growth, with an equal profusion of bloom.

Iberis corifolia.—The neatest and smallest species of the genus. It produces its numerous clusters of clear white blossoms from the third week in April until June. It is a comparatively scarce species.

Fritillaria meleagris alba, 12 inches high, with conspicuous white nodding bell-shaped flowers, 1½ inch in diameter; it forms an elegant group from the second or third week in April until the middle of May.

Crocus "Queen Victoria."—A neat dwarf medium-sized variety with a close ovate flower-cup of unsullied whiteness; it flowers from the last week in February until the middle of March.

Aubrietia deltoidea.—A dwarf compact hardy herbaceous perennial, from 4 to 6 inches high, of greyish aspect; it puts forth its lively purplish-blue flowers from the last week in March until June. It is very suitable for ornamental rockwork.

Doronicum columnare.—A yellow Chrysanthemum-like flower, probably the earliest of its colour. It is a dwarf compact hardy perennial herbaceous plant, 6 to 9 inches high; in bloom from the first week in March until May.

Alyssum saxatile.—An ornamental dwarf hardy yellow-flowered herbaceous plant, from 6 to 12 inches high, in blossom from the last week in April until the first week in June. Suitable for rockwork.

Early Scarlet Van Thol Tulip.—A neat rich crimson-scarlet variety, 9 inches high. It produces a brilliant effect in a small group or parterre from the last week in March until May. A great improvement upon the old red one.

Potteebaker (Early Tulip).—A neat rich dark crimson variety, rather taller than the last.

Couleur de Ponceau Tulip.—A handsome early variety, about 12 inches high, having white ground colour, heavily margined with rich rose. In beauty from the first week in April until May.

Linum flavum.—The only yellow-flowered plant of the season able to compete with Alyssum saxatile. It is a neat, dwarf, hardy evergreen, from 6 to 12 inches high. In flower from the second week in May until the middle of June.

Myosotis silvatica (Forget-me-Not).—A well known hardy biennial, producing a profusion of bright blue flowers with a yell wish eye, from the middle of April until June. Admirably adapted for groups.

Veronica teucrium patens (Nana)—An ornamental hardy perennial herbaceous plant, 12 inches high, with numerous spikes of rich marine-blue blossoms, which are produced from the last week in April until the last week in May.

Veronica caucasica?—A slender hardy herbaceous perennial, 9 to 12 inches high, producing semi erect densely-flowered spikes of light azure-blue blossoms from the latter end of April until the end of May. It forms a lively effect in a small group or parterre. *William Wood, Fishergate Nurseries, York.*

Home Correspondence.

Cheap Heating.—I beg to lay before your readers a statement of the inexpensive manner by which I am enabled to heat an Orchid-house. The dimensions of the house are 22 feet by 12 and 14 feet by 12, being an area of 442 square feet. This is heated by a small boiler, containing 3 gallons of water, which is connected by a flow and return pipe with a tank, carried by gutters of brick and Bridgewater-squares round the house, the cement being the Portland, which I find greatly superior to any other. A temperature of 90° can be obtained in a very short time, with abundance of steam at will. The fuel used is the cinders from my dwelling-house, which, with 3 tons of anthracite, used in getting up the fire, is all that is used in a year, being a cost of about 3*l*. The boiler is the invention of an iron-founder and a mason in this town, who are in the habit of building stoves and other like buildings. The power of the boiler is such, that I would undertake to heat a house of much larger dimensions with the same means. Mr. Veitch, of Exeter, on a late visit to Truro, saw the plants and the mode of heating, and expressed his approbation of the method adopted, as being perfectly calculated for the growth of Orchids. The rapid growth of my collection under their present treatment has far surpassed my expectations. If the foregoing account should interest any parties, I shall be happy to give them any information they may require on the subject. The sole object I have in making the circumstances known is to place in the power of persons of moderate income, who could not afford to incur the heavy expenses usually attendant on hothouses, the means of enjoying the beauties of hothouse plants. *H. S. Powell, Hon. Sec., Royal Cornwall Hort. Society, Truro.*

Vine Growing.—My earliest Grape house, which I begin to force about the 1st of February, has this season exhibited an appearance the like of which I never before witnessed. I have frequently seen something like small roots starting from the joints of the last year's wood and growing about 2 or 3 inches in length, but this year not only the joints of last year's wood but the older wood from the ground is as thick with these roots as they can stick, and also the wood between the joints. The young wood appears healthy, but all the bunches have dwindled away without coming into flower. Will you be so kind as to say what has been the cause of this disaster; the Vines hitherto have been pruned on the spur system; would you recommend them to be cut back as far as possible and treated on the long rod system. I should state that they did not bear last year, being covered with red spider. *R. N., Isle of Man.* [Your roots are out of order: and the atmosphere too damp. Consequently the plants throw roots into the air instead of the earth.]

The Destitute Highland Districts.—We have been requested by Mr. Bond, the secretary of the Royal Scottish Patriotic Society, to state that the Highland Relief Board having decided upon sending only Cabbage plants and Turnip seed to the destitute districts of the Highlands this spring, surplus packets of garden seeds, or baskets of good keeping Potatoes, will be thankfully received by the Society, and distributed as loans to persons locally recommended as industrious recipients. Packages to be forwarded for the Society, care of Messrs. Bigg, 53, Parliament street, London. We regret to understand, that, in consequence of the neglect of those permanent means of industrial amelioration which the Patriotic Society has unceasingly urged, the condition of the Highland peasantry in the destitute districts is deteriorating, instead of improving, and unless very different means be speedily adopted, an aggravated crisis of destitution will shortly arrive.

Rhododendrons. "*D. O.* Prune them like Laurels; now is the right season."—Extract from *Gardeners' Chronicle.* A lover of colour and an old subscriber thinks the above cruel and impolitic. What, cut off all the beautiful heads, which are now full of promise! *J. D. R., Lymouth, April* 17. [This is an example of criticising what is not understood. Has "J. D. R." any knowledge of the *question* to which the answer he quotes was given?]

Pomology.—During the last three weeks I have observed a letter or two in your Paper on the subject of the names of Apples and the derivation of the plants. I think it must be unknown to your correspondents on this subject that our public records contain good proof that our bluff King Henry VIII., who was a bit of an epicure, imported both Apple and Pear trees from France to the Royal Gardens in England. Many a passage may be found in his correspondence with his ambassadors in France on this subject. I do not know which of our now well known trees may there be mentioned, but I have heard a gentleman deeply read in our State Papers of that period attribute the naturalisation of the Pomeroy (*Pomme du roi*) Nonpareil, The—(name illegible)—(*Pair de Maine*)—and most of the Pippins (*Pepin*) to this royal gardener, as well as those old Pears that bear French names. *Z. Y. X.*

Cotoneaster Hedges, &c.—The Cotoneaster is readily increased by cuttings, layers, and seeds. The evergreen sorts, microphylla, marginata, and rotundifolia, are highly ornamental, grafted standard high upon the Pyrus tribe. In this way they form handsome pendent trees. They are also equally, if not more attractive, trained up as ornamental hedges, more particularly C. microphylla, on account of its small and close foliage. The Cotoneaster is naturally trailing in habit, but it may easily be made to assume a straight or pyramidal form, and will often attain the height of 5 or 6 feet in as many years. No plant perhaps is so well suited for an ornamental evergreen fence, and in winter, when thickly studded with scarlet berries among the dark glossy foliage, it is a very interesting object. As the plant grows old it becomes closer, the branches run into each other, and it is then most prolific in flowers and fruit, the latter lasts in freshness and beauty till it is replaced by the succeeding year's crop. A strong loamy soil, or even a light soil, if it is well prepared previously to their being planted, suits all the kinds best. To ensure a plentiful supply of their scarlet berries, they should be planted on a south aspect, and the soil must be well drained. The Cotoneaster being readily formed into architectural shapes, is a shrub well adapted for the exercise of artistic taste, more particularly on account of its even growth and durability. *C. M.*

Transformed Kale.—Towards the end of spring, 1842, about three dozen Kale plants, of a smooth leaved kind, were planted, to fill up a spare corner of a small garden. Six or eight plants over the number required were thrust into a dibble hole at the end of the ground, the whole being hoed and kept free from weeds during the summer, the plants in the dibble hole not being disturbed or thought of. They all grew vigorously, but about the beginning of August I was surprised to observe that those of the cluster of six or eight plants were forming bulbs of an oblong shape, while, on examination, not one of those planted singly showed the least tendency to bulb. As the season advanced the tendency to bulbing became more marked in the cluster of plants, so that I determined to preserve them for observation, and they were accordingly well earthed up before winter, and secured by a stake. The seed ripened about the end of July 1843, and was allowed to remain in the pods on the stalks until spring of 1844. On the 29th April, 1844, a small quantity of the above seed was sown, and on the 15th June three or four dozen plants were taken from the seed bed, and planted out in rows at the usual distance. Not one of them failed, and in the course of the season all the plants bulbed regularly but not largely, and in form of leaf

and or very coarse fare, be distinguished from the real Swedish Turnip. The Kale plant that furnished the seed has no peculiar local name that I am aware of; it very much resembles the Rape plant, and is frequently used by the Scotch people as a culinary vegetable. In 1845 I was from home and could not pay attention to the subject in April, which would probably have been the proper period; but in June, in a different and distant garden, I sowed some of the same seed first used, in order to repeat the experiment; I mean, seed of the kind that produced the three dozen plants mentioned above. When sufficiently grown, I took a number of plants from the seed bed, and stuck tufts of 6, 8, or 10 plants into dibble holes; but in no instance was there the least tendency to bulb. In the latter case, the soil was a dark deep mould, shaded, and somewhat moist; in the first instance, it was a light soil, with a good exposure. In 1846, in another garden of a lighter soil, I repeated the experiment sufficiently early in spring, but with no successful result. I send you some seed, which I am assured is of the kind used by me in the foundation of the experiment. I do not suppose that I labour under any deception or mistake, as I had nothing in view to warp my judgment, and as the bulbing was quite unlooked for and unexpected; nor do I think that the man employed by me could have effected a deception, as he never called my attention to the subject, nor do I suppose he ever looked at the cluster in the dibble hole. In fact, he was a jobbing gardener, of little or no science, but honest and simple. By repeating and varying the experiment under more scientific superintendence it may perhaps be ascertained that the Swedish Turnip should be called the *Turnip-rooted Kale*, as the *Kohl Rabi* is called the Turnip-rooted Cabbage. Can the name Ruta Baga (perhaps swollen root), have any reference to its origin? Confined space and pressure may have caused the bulbing, and my having observed the bulbing accidentally shows that the plants were not sunk very deep in the ground. Can Turnip plants be brought to Kale plants by squeezing a number of them in a dibble hole? I almost think they could. *J. G.* [We don't.]

Fastening Fruit Trees to Walls.—I beg to inform Mr. Glendinning that I have no great fancy for the tailor's rag bag, but that the best Peach trees I ever saw were freckled with red coats, which in my opinion were very proper coats for them and Nectarines. I have tried studding, and have found it not to answer so well as nails and shreds. Our walls here have been built half a century, and they have not got the small pox yet. They have been only repaired once in that time. We have nearly 300 yards of walls in Hatfield Hall gardens, with trees on both sides of them; I loose all my Peach trees from the wall every year, but I do not draw the nails out, I use cast iron ones, which with a sharp rap on the side break in the wall. In this way the wall sustains no injury. Facts are against studs, and "facts are stubborn things." White Mr. G. is tying 500 strings to studs, I could put in 1000 nails. This is my opinion, and I have tried both plans *James Wilson Roberts, Gardener, Hatfield Hall, Wakefield, Yorkshire.*

Visiting the Nursery Gardens round London.—Nothing can give a person more pleasure than a visit from an old acquaintance, or an old customer, but there are parties who, coming up to town on business entirely disconnected with gardening, and having a day or two to spare, must spend their time somehow, and they make up their minds to visit the nursery gardens merely to pass an hour, as they call it, with the nurseryman, whose every minute in spring is gold itself. The countryman forgets that of every shilling taken in business round London, tenpence of it is bespoken for rent, labour, taxes, tithes, charities, and many other things, and that men who have to live by their industry can ill afford to spend time needlessly. From the nature of their calling such men must be polite to visitors, and must show them every thing; but my advice to visitors is, not to occupy the principal a moment longer than is necessary—short and to the purpose should be their motto. The ingenuity of some of these gentlemen to discover something to talk about is remarkable—one tells a long story about his Asparagus seed, how it did not come up, &c; another about his Cucumbers being shorter than he expected them to be; his Melons, too, were not so well flavoured as he anticipated; in fact, anything to make out a long story, and to finish the hour—even politics and Rush are not forgotten. Well, if one can stand it so long, and sends his visitor off pleased, he tells his friends that Mr. So-and-so is a very nice man. He will tell you anything about plants you want to know. Call upon him the first time you go to town. Here again the poor nurseryman, for his civility, is doomed to spend another profitless hour; and should Mr So-and-so on the second visit happen to be short and explicit, and after 10 minutes' conversation bid the gentleman good morning, he gives great offence, and all through the visitor forgetting that to a man in business time is money, and that he has but little need to waste it. In making this statement, however, I hope gentlemen and gardeners will not suppose that I wish to stop visits from them; quite the reverse. I only wish to give a friendly hint to persons who enter nurseries merely with the view of killing time, as they call it. *C.*

Peas Growing on the Hamiltonian Plan.—Would any of your readers state whether or not they have succeeded in fruiting Pine-apples on the Hamiltonian system in a house or pit heated by a Polmaise stove. *J. L., Peterfield, Hants.*

Concrete Walks.—I have seen several receipts in your Paper for the above, but one ingredient invariable in-gredients seems to be fine gravel. In the Paper of 31st. ult. broken flints are mentioned. Now I have to fetch gravel 15 or 20 miles; flints are not to be had at all. Hard limestone, or granite chippings, I can get, and tar, sand, and lime, of course. Can I make my walks good with these? Can any of your correspondents give about the price per square yard? *A. R. T.*

Varnishing Sheet Glass to prevent burning.—As Canada balsam will not do for this purpose, I think that a varnish composed of Linseed oil and a little acetate of lead, dabbed on with a small piece of cloth, might answer; it dries quickly and is not softened by the heat of the sun. *R. C.*

Hardy Ferns suitable for Rockwork.—The following are a few good ones for this purpose:

Gymnogrammitis cetereach, fronds 3 to 6 inches high.
Polypodium vulgare, fronds 8 to 12 inches high.
P. cambricum, fronds 8 to 10 inches high. This and the two former are evergreen and British.
P. phegopteris, fronds 6 to 10 inches high, British.
P. dryopteris, fronds 6 to 8 inches high, British.
P. calcareum, fronds 6 to 8 inches high, British.
P. virginianum, fronds 8 to 14 inches high.
Wood-in hvensis, fronds 2 to 4 inches high, British.
Cistopteris dentata, fronds 6 to 9 inches high, British.
C. fragilis, fronds 6 to 10 inches high, British.
Aspidium Lonchitis, fronds 6 to 10 inches high, evergreen, British
A. lobatum, fronds 16 inches to 2 feet high, evergreen, British.
A. thelypteris, fronds 8 to 10 inches high, British.
A. cristatum, fronds 10 to 14 inches high, British.
A. Goldianum, fronds 10 to 14 inches high
A. tenue, fronds 6 to 8 inches high.
Asplenium septentrionale, fronds 3 inches high, evergreen, British.
A. alternifolium, fronds 3 inches high, British.
A. trichomanes, fronds 3 to 6 inches high.
A. viride, fronds 3 to 5 inches high.
A. lanceolatum, fronds 3 to 6 inches high.
A. Adiantum nigrum, fronds 6 to 8 inches high.
Scolopendrium vulgare, fronds 14 inches high.
S. crispum, fronds 6 to 10 inches high.
S. multifidum, fronds 3 to 6 inches high.
Blechnum boreale, fronds 12 inches high. This with the seven that immediately precede it, are evergreen and British.
Cryptogramma crispa, fronds 3 to 8 inches high (British).
Onoclea sensibilis, fronds 6 to 10 inches high.
Dicksonia pilosiuscula, fronds 6 to 10 inches high
Struthiopteris germanica, fronds 10 inches high.

B. S. Williams, Gardener to C. B. Warner, Esq., Hoddesdon, Herts.

Bulb Preservers.—It has occurred to me that gutta percha might be useful for the purpose of protecting bulbs whilst they are out of the ground. They could be placed either in cells made for the purpose or in the large tubing which is made by the gutta percha company, the ends of which can so easily be sealed up. *Samuel Holmes*, 14 *Charles-street, City road.*

A Garden and Bees.—Rapin's "History of England," fol. 1733, which I was turning over the other day, contains a very pretty vignette, representing an apiary in the centre of a garland of flowers, entwined by a motto, "*Sic vos, non vobis, mellificatis Apes*," and presently, meeting with the following passage written by some unknown hand about 20 years after, I could not avoid attaching it to this pleasing and interesting rural emblem of at once a garden and bees. "There is no flower in one's possession that is less abounding in moral instruction than in beauty and sweetness, nor can one observe that industrious nicety with which the bee examines into everything that comes in her way without considering a reproachful admonition; and if one does not collect some useful lesson that may support one under all the ensuing revolutions of one's life from every flower that such insect can extract provision from against the future exigencies of hers, one ought to place it to the account of negligence, and to think one's self guilty of the most unpardonable folly in suffering her alone to profit from that which most people assume the privilege of calling their own. In short there is such a close affinity between a proper cultivation of a flower garden and a right discipline of the mind, that it is almost impossible for any thoughtful person that has made any proficiency in the one to avoid paying a due attention to the other. That industry and that care and perseverance which are so requisite to cleanse a garden from all sorts of weeds, will naturally suggest to any one, how much more expedient it must be to exert the same diligence in eradicating all sorts of prejudices, follies, and vices from the mind, where they will be as sure to prevail, without a great deal of care and correction, as common weeds on the open downs, or any other neglected piece of ground. And as it requires more pains to extirpate some weeds more than others, accordingly as they are more firmly fixed, more numerous, or more naturalised to the soil, so those errors and faults will be found the most difficult to be suppressed which have been of the largest growth, and have taken the deepest root—which are most predominant in number and most congenial to the constitution." As some of your readers and plodders in the garden of Eden may like to know the origin and meaning of the words aforementioned, "*Sic vos, non vobis*," I may plainly translate it for them: "So you do not labour for yourselves;" and add that these words are merely the commencement of some stanzas written by the ancient poet Virgil, in which he complains that as bees do not make honey, or sheep bear fleeces for their own use, so the profit of his labours had been usurped by others. Virgil composed the following stanza, and fixed it without a name on the palace gate:

"Nocte pluit tota, redeunt spectacula mane,
Divisum imperium cum Jove Cæsar habet."
It rains all night, the shows return with day,
Cæsar with Jove divides imperial sway.

Augustus used great endeavours for a long time, in vain, to discover the author. At length, one Bathyllus, a very indifferent poet, had the impudence to own them, which gained him great favour and reward from Cæsar. This being a great mortification to Virgil, he fixed on the same gate these words, four times repeated, "*Sic vos, non vobis.*" In English, "for others three." Augustus desired that the same might be completed, which many having attempted in vain, Virgil, with another line prefixed, thus filled them up.

"*Hos ego versiculos feci, tulit alter honores.*"
Sic vos non vobis mellificatis apes.
Sic vos non vobis vellera fertis oves.
Sic vos non vobis fertis aratra boves.
"These lines were mine, another has the praise.
For others thus the birds their mansions rear,
For others thus the sheep their fleeces bear,
For others thus the bees their sweets prepare,
For others thus their yoke the oxen bear."

Which being known, Bathyllus was as much ridiculed at Rome as Virgil was admired. *Spierius.*

Supposed Cause of the Potato Blight.—From a circumstance which occurred on the night of the 10th of this month (February), I am the more inclined to believe, as I heretofore have done, that the blight of the Potatoe, as also epidemic disease, is inflicted more by atmospheric influence than by other causes to which they are attributed. My residence is on the S.W. side of the mountain, parallel with the Mendips, and just at the W. commencement. Mountain limestone highly incorporated with iron to the apex forms the base, and is about midway up between the valley or marsh and the summit. I have a 2 acre piece of ploughed land, which, for years before the blight appeared, I divided into two equal parts alternately planting Potatoes and white Oats, highly manuring the Potato part with yard dung, guano, and old salt herrings. Till the blight appeared, our table was extolled for the goodness of the Potatoes, and the Oats were good, considering the average depth of soil, which is not more than 1 foot. This field faces nearly S.W., and is frequently enveloped in saline mist from the Bristol Channel, in a direct line distant about 6 miles. On the E. adjoins a square underwood, rising perhaps 60 feet, and then E., and in a hollow comes the kitchen garden, still on the limestone, and very shallow, 18 inches deep; this I am necessitated to be annually extravagantly manuring. Not to go too far back with dates, I will begin with 1845. In the June of that year I was riding home about 10 o'clock through my tenant's ploughed field, which is situated about a quarter of a mile from hence, perhaps 200 feet lower in the valley, a beautiful rich sandy soil, in one of the coombs of the mountain, I observed a very dense fog slowly approaching, but not extending very wide, which I found to have divided, part passing up the hill my way, and the other meeting me full in the face, I rode under a large Oak in the hedge where there were several sorts, and by its slow progress it hung about the trees, with an abominable stench, offending my horse's olfactory nerves. In the morning, when the fog, which was light, dispersed about 11 o'clock, I went to my tenant, who was in the field, and told him of the circumstance, remarking the adhesion to the trees, and upon search 100 yards immediately under them, the leaves and stems of the Potatoes were as if they had been burned; we then went to my field and garden: the field was totally stricken, and the garden partially. During this season we had many such fogs; my Potatoes were worthless and the Oats smutty. The tenant's crop was not half a crop. These Potatoes were planted by both of us on account of their early ripening in 1846; 1847, very bad crops again; last year, out of my acre I had but 3½ sacks, tryng the experiment of planting them in rows 5 feet apart, between Yellow Globe Mangold Wurzel, which failed. I then set to, and had the N.W. rows dug, and planted therein Drumheads, dug out the rotten Potatoes, procured about 6 tons of old herrings, which were dug in as near the Drumheads as prudence allowed, and, although it was a dry August when they were planted, I am drawing an excellent crop. In my garden I planted several sorts of early Potatoes between Beans, Peas, Cauliflowers, Cabbages, &c., also 5 feet apart, some in the N. and S. direction, and some E. and W., which did well, and having a fine day in July, I got men and took up every Potato, sorted the seed, and, as it was a fine afternoon, had it spread over the gravel walks to green. A fog came on in the night and ruined every seed, and a large patch of late Potatoes of my servant's in his garden adjoining. I have taken up Potatoes which have been left in the ground, and planted them in rows without disturbing their growth, and left untouched many plants which came in the fresh planted rows, but they have not been hardier than the others. And now for the night of the 10th. I was again riding home the same road about 10 o'clock P.M., and within about 2 miles of home, I observed a fog approaching, which soon enveloped me, and, like the fogs heretofore, it had an abominable stench, similar to that we supposed proceeded from the Potato leaves; but now there were not any Potato leaves in any form, the fields I passed were either pasture, fallow, or Wheat. In three days after this, I felt myself getting very unwell, and I am so still, with influenza, and I hear there are numbers like myself. *Henry Cottrell, Rhodyate Lodge, Congresbury, Bristol.*

Societies.

HORTICULTURAL, *April 17.*—E. BRAHAM, Esq., in the chair. Col. Hall, M.P., B. T. B. Gibbs, and H. Tuke, Esqrs., were elected Fellows. Few plants were exhibited on this occasion—a circumstance no doubt owing to the unfavourableness of the weather, a frosty wind, accompanied by snow storms, prevailing through-

out the day. Among the subjects produced was a remarkably fine specimen of Cyclamen persicum, from Mr. Myatt, of Deptford. It formed a mass, some 18 inches across, of sweet-scented white flowers, standing well up above the healthy foliage, and this from a single root in a 12-inch pot. A Certificate of Merit was awarded it.—Mr. Smith, gr. to G. Anderson, Esq., of Regent's park, sent a plant new to gardens, which had been obtained by sowing the soil which was found adhering to the roots of some plants imported from Guatemala. It was stated to be a stove plant belonging to the genus Rondeletia.—Messrs. Bass and Brown showed a tall, pink-flowered Gloxinia, much injured by travelling, and J. Allnutt, Esq., of Clapham, the red-flowered Camellia Palmeri.—This being the height of the Cineraria season, various groups of this useful spring flower were exhibited. Mr. Henderson, of the Wellington-road nursery, sent 12 seedlings, the best of which were Mdlle. Rosati, white with a dark disc, and edged with bluish lilac, a fine flower, but rather small; Mdlle. Perodi, in the way of Kendall's Beauty of Newington; Flora M'Ivor, intense crimson purple; Nymph, white with a purple centre; Fanny Elsler, white; and Beauty, a deep velvety purple, which contrasted well with the yellow pollen masses of the disc. Eleven seedling Cinerarias, dwarf and well bloomed, for which a Certificate was awarded, were produced by Mr. Pond, of Bath. Among these the most striking were Bride, pale lilac, with a light centre; and Bridesmaid, a large flower, white, tipped with purplish lilac. Finally, Mr Salter, Versailles Nursery Hammersmith, sent a seedling Cineraria named Incomparable.—Beautiful cut specimens of crimson and delicate pink Rhododendrons, together with a bunch of the yellow Chinese Azalea, were exhibited by Mr. Cox, gr. to W. Wells, Esq., of Redleaf.—Mr. Frost, of Dropmore, sent flowers of two seedling Azaleas, named Frosti and Andersonii; and along with them a cut specimen of the red-flowered Hæmanthus multiflorus, a poisonous plant from the tropical parts of Africa.—Of fruit, Mr. Jones, gr. to E. Hutchings, Esq., sent four nicely swelled Queen Pine-apples for the season, for which a Banksian Medal was awarded. They weighed respectively 3 lbs 10 oz., 3 lbs. 8 oz, and two 3 lbs 7 oz.—Mr. Davis, of Oak-hill, was awarded a Banksian medal for a handsomely grown Providence Pine, weighing 7 lbs. He also sent a nice dish, but perhaps hardly ripe enough, of Sweetwater Grapes.—Mr. Drummond of Pontypool Park, showed a good specimen of the smooth-leaved variety of Cayenne Pine-apple, weighing 4 lbs. 4 oz, for which a Certificate of Merit was awarded.—Mr. Toy again sent specimens of Keens' Seedling Strawberry, and along with them a plant of the same in fruit.—A clean looking sample of Ash-leaved Kidney Potatoes, perfectly free from disease, was exhibited by Mr. Torbron, gr. to J. Lane, Esq., of Leyton. They were stated to have been produced thus: In December the tubers were set vertically in pots, in rich soil, in a Vinery. When the young growths had advanced from 4 to 6 inches in length, and had presented the leaves to the light, they were removed to a greenhouse and placed along the pathway. Early in February a leaf-pit was prepared for them, having no flues or linings. The plants were turned out of the pots and planted in rows 18 inches apart, in the soil which was placed above the dead leaves. They were watered, to settle their soil about their balls, and were stated to have received no water since, it being apprehended that, as there was no command of artificial heat, if water was given them they might become drowned and diseased. They produced young Potatoes fit for table in the third week in March. Air was admitted on all favourable occasions, by partially removing the lights. In this way it was stated that by turning the dead leaves so as to create a little heat, two crops might be obtained in the year.—Mr. Warner, of Jewin street, sent one of his Patent Garden Engines, the chief novelty of which consists in the fulcrum on which the handle rests being fixed outside the water-pipe. By this means no part of the handle is connected with the water-tube, and a sound joint at the axis of the handle is maintained.—From the garden of the Society came various Orchids, among which were well-flowered specimens of Cattleya Skinneri and C. intermedia; the white-lipped Oncidium (O. leucochilum), Maxillaria Harrisoniæ, and others; also several Azaleas; the yellow-flowered Cytisus racemosus; Erica Bowieana and ziziniella, the latter adding the flowers of hiemalis to the habit of propendens; and a plant of Nemophila insignis. It was mentioned that in some of the plants of this, the spotting is more disposed to run into the white ground colour than in others.

It was announced that the Auditors' Account was ready for delivery.

Packets of Potato seed from New Zealand, presented to the Society by Earl Grey, were distributed to such Fellows as wished to receive them.

Royal South London Floricultural, *April* 18.—This exhibition, the first of the season, was held in the Horns Tavern, Kennington. The day being very cold, with occasional snow storms, the tables were not so well furnished with stove and greenhouse plants as usual; but there was no lack of Pansies, Auriculas, and Cinerarias, all of which were produced in capital condition.

Among Stove and Greenhouse Plants, the best collection was supplied by Mr. Bruce, of Tooting. It comprised Azaleas, Heaths, a beautifully managed plant of Hovea Celsi, Epacris miniata, Boronia anemonefolia, Acacia diffusa, and other plants. Mr. Young, of Camberwell, was second, and Mr. Hamp third. In the Nurserymen's Class, Mr. Pawley, of Bromley, was first. In the group was a nicely-flowered plant of the pretty yellow flowered Tropæolum brachyceras. Of specimen plants, Mr. Bruce sent a profusely-blossomed Erica mutabilis, for which a first prize was awarded. Mr. Wood contributed an interesting collection of Alpines.

The best group of Cinerarias was sent from the Wellington-road Nursery, by Mr. Henderson. It comprised Rosette, purple; Consuelo, blue; Alboni, white edged with pink; Wellington, in the way of Beauty of Newington; Coronet, white with a dark disc and edged with purple; Zenobia, bluish purple; Fair Rosamond, white, faintly edged with pink; Annie, a clean looking flower, white, with a purple centre, and petals tipped with the same colour; Cerito, white bordered with lilac, one of the best flowers exhibited; Emperor, a large rosy crimson; and Diana Vernon, purple. These were all nice dwarf well-flowered plants. Another collection, spoiled by travelling, was supplied by Messrs. Ivery, of Dorking. Besides the above, groups of eight plants came from Messrs. Robinson, Pond, and Mocket. Among these we remarked nice plants of Beauty of St. John's Wood; Attraction; Compacta, a neat looking variety in the way of King; and various others.

In Polyanthuses, four varieties, the 1st prize was awarded to Mr. Holland, of Middleton, near Manchester, for Buck's George IV., Beauty of England, Princess Royal, and Pearson's Alexander.

Best pair of Auriculas, Amateur's Class, 1st prize to W. S. Ginger, Esq., Maida-hill, with Taylor's Glory and Page's Champion; 2d, to J. Chapman, Esq., Brixton, with Hogg's Waterloo and Dickson's Duke of Wellington; 3d, to J. Edwards, Esq., with Conqueror of Europe and Crucifix. Best four, 1st prize to J. Chapman, Esq., with Britannia, Smith's Waterloo, Hogg's ditto, and Conqueror of Europe; 2d, W. S. Ginger, Esq, with Duke of Wellington, Glory, Ringleader, and Alexander; 3d, to Mr. Edwards, for Unique, Conqueror of Europe, Crucifix, and Champion. Best 4, Nurserymen's Class, 1st prize to Mr. Dickson, of Acre-lane, for Unique, Champion, Glory, and Duke of Wellington; 2d, to Mr. Bushell, of Kennington; and 3d, to Mr. Gaines, of Battersea.

Best 24 Pansies, Nurserymen's Class, 1st prize to Mr Turner, of the Royal Nursery, Slough, for Almanzor Duke of Norfolk Climax, Rainbow, Mrs M. Hamilton, Juventa, Perseus, Charmer, Addison, Miss Edwards, Attraction, Arethusa, Duchess of Rutland, Zobdi, Aurora, Ophir, Model of Perfection, Supreme, Duchess of Norfolk, Commodore, Constellation, Princess, Example, and Mrs. Beck; 2d, to Mr. Thompson, Iver; 3d, to Mr. Bragg, Slough. Amateurs' Class, 24 blooms, 1st prize to Mr. Edwards, for Superb, Mary Jane, Mrs M. Hamilton, Juventa, Miss Edwards, Constellation, Supreme, Climax, Rainbow, Model of Perfection, Commodore, Almanzor, Caroline, Duke of Norfolk, Arethusa, Example, Curion, Perseus, Wonderful, Aurora, Prince of Orange, Lord J. Russell, Zobdi, and Princess; 2d, to Mr. Over, Streatham; 3d, to H. Harms, Esq., Brixton-road.

Seedlings.—Certificate to Messrs. Ivery and Son, for a Polyanthus named Conqueror, a clean and distinct variety, and one which promises to be a useful flower; two ditto to Mr. Dickson, Acre-lane, for Auriculas, Sir C. Napier and Freedom, clean flowers, but not particularly striking; one ditto to Mr. Kendall, of Stoke Newington, for Cineraria Richard Cobden, a well formed blue; ditto to Mr. Henderson, for Cineraria Pauline, purplish lilac; ditto to the same for Mdlle Perodi, also for Adela Vithers, purple with a white centre, and to Calioue Grisi, a pretty clean-looking variety, white edged with pale blue. Certificates were also awarded to Mr. Hamp, for a blue Cineraria named Abdalonymus; to Mr. Ambrose, for Cineraria alba purpurea, lilac tinged white, with a dark centre; and to the same for Modesty, white, washed with lilac; ditto, to Mr Ivery, for a white and purple Cineraria named One in the Ring. Two Rhododendrons, a red and a white, to which certificates were awarded, were contributed by Mr Gaines. Among seedlings worthy of notice, to which no awards were made, we would mention Kendall's Queen of the Isles Cineraria, and a Pansy named Hunt's Helen, shown by Mr. Bragg, a fine showy flower, white and purple.

Garden Memoranda.

Messrs. Jackson's Nursery, Kingston.—Since we last visited this nursery a large span-roofed stove has been erected where formerly the packing shed stood. It has a raised chamber in the centre, closed in with slates, on which the plants stand, the surface heat being obtained from 4-inch hot-water pipes, which run round the house under the shelves. This house is chiefly occupied with Orchids, which are pretty largely cultivated here—another long span-roofed house, besides this one, being filled with this fashionable tribe of plants. Cape Heaths, too, as most of our readers no doubt know, form a considerable portion of the house stock of this nursery. Among these some of the spring-flowering varieties were in blossom. We more especially remarked several nice plants of triumphans and androsæmæflora, two easily managed and pretty Heaths for small collections, the snowy globes of the one forming a fine contrast with the round pink flowers of the other. Associated with them were two unusually large plants of E. depressa, one of which could not measure less than 3½ feet high and as much through. In a large greenhouse, whose shelves were packed full of fine young Heaths and Epacrises, was a fine specimen of Rhododendron campanulatum, one of the best of the hardy light-coloured kinds. To be had in perfection, with the flowers uninjured, this, like others of the finer Rhododendrons, must either be moved under glass when the blossoms begin to open, or it must be protected by a mat or by some other means where it grows. Intermixed here and there with the plants in this house were specimens of Cereus flagelliformis and Malleanii, which, managed in the following manner, served to break the uniformity and stiff appearance which too often prevail in plant houses. They were grafted on strong stems, from 4 to 6 feet high, of C. speciosissimus. The latter were supported by stakes, on whose tops were fixed circular horizontal trellises, and over these trellises the drooping stems of C. flagelliformis and Malleanii were trained. In this way, whether in bloom or not, they have a pleasing effect, which is moreover heightened by grafting on the top of all a little ball of Cactus multiplex. In this house we noticed Canarina Campanula, a pretty old-fashioned bell-flowered plant, which has become scarce, probably on account of the difficulty experienced in propagating it. It is stated to be best increased by pieces of the root, and even these are often long in starting into growth.

Lee's Unique Pelargonium was in bloom in the stove. To a brilliant scarlet flower this variety adds the fine variegated foliage of Mangles striped. The north show-house was gay with the usual spring flowers, and so was the little show-house at the entrance of the nursery. This latter is about to be replaced by a larger and much finer house, which is now being built, and whose roof Messrs. Jackson contemplate glazing with rough plate glass. In one of the show-houses was Daphne odora rubra, than whose fragrance nothing can be sweeter. It was stated that D. Mezereum forms a better stock than D. Laureola for this Daphne, the latter being apt to canker.

In the open grounds we observed fine plantations of that most compact of Thujas, viz. T. stricta; also of the weeping Holly grafted on the common kind. It appears to be decidedly pendulous. There were likewise, out of doors in pots, many nice young plants of Cryptomeria japonica. This is found to strike freely from cuttings put in pots and removed to a cold frame, till the cuttings become what gardeners call calloused; and then placed in heat. Taxodium sempervirens strikes very readily under the same treatment. The latter often throws out a sucker from the base of the cutting close to the ground; and when such is the case, the top of the cutting is cut away, and the sucker is encouraged, and in this way as handsome plants are obtained as are raised from seed. Large plants of this Taxodium in Mr Jackson's nursery were much browned by the weather, and the same thing happens, we believe, in other places. It is, however, in his opinion, perfectly hardy about London.

Of spring-flowering shrubs, few are handsomer than Ribes sanguineum, and in the shrub form it is familiar to every body; but it is less common in the shape of a tree. Messrs. Jackson, however, have them from 10 to 12 feet in height, with clean stems from 4 to 5 feet high, and viewed when in bloom against the green sward, they have a capital effect managed in this fashion. Among small Conifers, the Irish Juniper, fine young plants of which we saw here, deserves especial notice, because of its compactness, and for rockwork, J. recurva is suitable, on account of its pendent habit.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Stoves.—The increased amount of heat and moisture in these structures, aided by longer days and more powerful sunlight, is of course inducing a development of new growth, and it is the province of the gardener to take care that this should be so directed as to make each individual plant approximate, as nearly as possible, to a perfect specimen. To this end they should be carefully and constantly watched, as every piece of neglect or mismanagement, however trifling in itself, tends, in a proportionate degree, to defeat the object in view. To lay down more than general principles is impossible, but it is necessary to urge three things upon every cultivator of plants; these are observation, reflection, and action—indispensable at all times, but at no season more so than at the present. Premising that the plants have been carefully potted in suitable soils, the next important point is situation, the temperature of which should of course be in proportion to that of the localities from which the plants come. Theory points out the advantage of a moderate bottom-heat, as the earth is invariably some degrees warmer than the atmosphere; practice proves this, and proves also that an excess of heat is as injurious to the roots as to the tops. Ample space for every plant is indispensable, and, in regulating this, the error is always on one side; if the plants are at all crowded, it is impossible to make handsome specimens of them, however well they may be attended to in other respects. After securing the largest possible amount of light, as much heat and moisture may be supplied as the plants will bear without producing weak or spindling growth; taking this as the criterion, any individual plant which seems to require a warmer or cooler, a moister or drier situation should be accommodated accordingly. Plants of shrubby habits will require, besides the general direction of the shoots, the occasional stopping of any young growths which are unduly taking the lead; and climbers on trellises will require daily attention, to prevent their twining about the wires, and training themselves after a

fashion of their own. On the other hand, we do not think it a good plan to keep the tender young growths tied in to their very points, as the practice has the effect of crippling them and preventing their progress; and the plants, especially of delicate species, soon acquire a stunted appearance. We prefer allowing the points of the shoots of strong growing kinds to keep from 12 to 18 inches in advance of the tied-in portion, taking care, however, to prevent entanglement. Mealy bug, scale, and other insects which torment stove plants, increase with frightful rapidity at this season, and it is necessary to make the most strenuous exertions to keep them in check, and, if possible, to extirpate them.

FORCING DEPARTMENT.

PINERIES.—With the advancing season the temperature may be increased from 60° to 65° by night. Take advantage of fine weather to close with a good heat, 90° to 95°, and apply copious syringing to all plants except those which are in blossom or ripening their fruit. Examine the state of the soil frequently, and see that it is sufficiently moist beneath the surface, as the frequent syringing will give it a moist appearance without penetrating sufficiently deep to moisten the whole. VINERIES.—Attend to disbudding, and thinning of bunches and berries in the successional houses, and make as much use of the syringe as possible, to keep down insects, until the berries attain the size of Peas, after which its use is imprudent. PEACH-HOUSE.—During dull weather maintain a moderate temperature, with a rather dry atmosphere. In damp weather it will be necessary to admit more air and keep up the day temperature with fire-heat. Keep the green fly in check by fumigating, if the ordinary syringing of the house prove insufficient. Keep the young growths neatly tied in. FIG HOUSE.—As the fruit begins to ripen, the atmosphere should be kept rather drier, to prevent their rotting; on damp dull days sufficient fire heat should be produced to allow of a freer admission of air, that any superabundant vapour may escape. MELON PITS.—During the setting of these crops carefully avoid excessive moisture, and allow more than a sufficient quantity to set, as it is an easy matter to thin them after danger of damping is over; remove the blossoms as soon as they fade, and allow no more male blossoms to expand than are sufficient to fertilise the females. FRENCH BEANS.—Let these have an abundant supply of water, and especially amongst the foliage, as this plant happens to be a particular favourite with the red spider, and is frequently used by it as a stepping-stone to something of more importance. Apply a wash of lime and sulphur to the walls in the inside of the houses or pits, especially to those portions upon which the sun can shine; the fumes arising therefrom are destructive to the red spider.

FLOWER GARDEN AND SHRUBBERY.

As the planting out season is so near at hand especial attention should be directed to the hardening of the young stock of plants for bedding out, by admitting a gradually increased quantity of air into the frames; and after they are sufficiently inured to it they may be set on beds of ashes or gravel, and protected from frosts by fixing hoops over them and covering with mats at night. If young plants, which were potted in small pots early in the spring, cannot be temporarily planted in frames of soil, it will be an advantage to give them an occasional watering with liquid manure or guano-water, to keep them in a healthy state till they can be put into the open ground. If they are permitted to become stunted in their growth, it is not at all easy to induce many of the kinds to start again, especially if much dry weather occurs at planting out time. The frost and snow, within the last week, show us how precarious the weather is, and warn us not to commence filling the beds too soon; but the future occupants of these beds will be much benefited if the interim be employed in turning the soil over again and exposing a new surface to the influence of sun and air. Chrysanthemums from which layers will be required for flowering in pots, should now be planted in a good open situation, where the soil is tolerably rich; and plants intended for large specimens will be much improved if allowed to form their growth in the open ground, and assisted in summer with liquid manure. In moderately warm localities, Chrysanthemums form admirable late autumn flowering plants, if turned out against a south wall. Half hardy annuals sown in frames, &c, should be pricked out into other frames to strengthen a little before they are removed to the flower beds. The sowing of hardy annuals, unless already done, should be immediately attended to, if they are required for early flowering; it is a good plan to sow a few patches of early flowering kinds once in three weeks to the end of June, by which a succession of gaiety will be produced throughout the summer and autumn.

FLORISTS' FLOWERS.

Whilst writing this article, the ground is now, the 18th April, covered with snow, and during the past night there has been a severe frost. All watchful florists will have taken care of their Tulips, by well covering the hoops (which have previously been recommended to span the beds) with mats, or in fact anything to counteract the effect of the frost; and we fear from the circumstance of having had so much mild weather, that we may have yet severe nights which will seriously affect florist flowers. In frosty weather it is advisable not to be in too great a hurry to remove coverings from either Tulip beds or Auricula frames; as it often happens that the bright sun, by thawing too quickly, causes serious damage. AURICULAS will require more water. The pipes composing the trusses should be examined, and should they be found too crowded, or misshapen which will often happen, they must be cut out with a very sharp-pointed pair of scissors. In order to allow the pipes to expand without injuring each other, a small ball of cotton wool, the size of a pea, may be placed on the upper part of the stem; by which means they will be kept separate. Where seed is an object, the flowers may be cross impregnated. It is not advisable to cross a grey, white, or green-edged Auricula with a self-coloured one; nor is it a good plan to have Alpines, or Auriculas with yellow centres and shaded margins, with the general collection of fine sorts; as they are apt to deteriorate the offspring or seedlings. POLYANTHUSES.—Save any extra fine seedling pin-eyed flowers, and cross them with the finest named sorts; keep the beds and frames free from slugs, which at this time of the year cause much havoc amongst the flowers. They may be entrapped with a small quantity of bran placed under a tile, supported at each corner by a small stone, so that they may just crawl under it.

HARDY FRUIT GARDEN.

Disbudding wall trees will be the principal work in hand during the next few weeks in this department. This operation should be performed gradually, removing foreright and back buds only at the first examination, and regulating the permanent shoots afterwards. Where the walls are furnished with projecting coping or weather-boards, the soil at the foot of the walls is liable to become very dry; if upon examination it is found to be so, it should be well watered, and, as such a situation affords an excellent harbour for insects in various stages, the water will serve two purposes if soot is dissolved in it. When disbudding, or otherwise working at wall trees, avoid as much as possible all treading upon the soil; a plank and a few bricks, moved along as the work advances, will prevent the compression of the soil, and add no little to the comfort of the workman. As we are just now commencing trade in wasps, we cannot do better than commend the practice to others; we pay 1*d.* a head for every wasp caught in the parish from this time to the 1st of June, in every one of which the embryo of a nest is destroyed.

KITCHEN GARDEN.

As the various crops appear above ground the soil about them should be loosened, to allow their roots to make a freer progress, and at the same time to destroy the young seed weeds which spring up along with them; and after the young plants have gained a little strength they should be thinned if necessary, and the rows hand-weeded. Crops which have been some time on the ground, and especially those amongst which the soil has been much trodden in gathering the produce, as Parsley, Spinach, &c., should have the soil loosened between the rows. Proceed with the formation and manuring of Celery trenches, that all the dirty work may be completed, and the walks &c. put in respectable order. Sow Celery on a warm border for late crop, and prick out into frames the young plants of early sowing. Make a sowing of Dwarf French Beans in a cool frame, to be transplanted into the open air as soon as the weather will permit. Sow Vegetable Marrows and Gourds in 4-inch pots, two seeds in each, and place them in a warm frame. Another sowing should now be made of Cauliflower, Broccoli, Borecole, Cabbages, and Savoys, and dust some quicklime over the young plants of former sowings, to preserve them from slugs. Encourage the growth of Tomatoes in a warm frame, and repot them as soon as they require it, that they may be strong forward plants for turning out as soon as the season will permit; with our short summers we can scarcely be too early with these plants. Repot Capsicums, and do not allow them to flower till they have formed good plants. Prick out Basil, Savory, &c., from the seed pans into boxes or frames, preparatory to their being planted out next month. Sow seeds of Cardoons in 3-inch pots, two seeds in each, and plunge them close to the glass in a cool frame; the advantage of raising them in this way over sowing the seed in the open air, is that at planting time the young plants can be arranged according to their sizes, and by this method the difficulty of earthing up plants grown on the old method is avoided; it frequently happened that a very strong plant grew by the side of a very weak one, and to do justice to the strong one the weak one was nearly buried.

State of the Weather near London, for the week ending April 19, 1849, as observed at the Horticultural Gardens, Chiswick.

April.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday . 13	19	29.341	29.218	51	30	39.0	S.W.	.12
Satur. . 14	20	29.538	29.288	55	32	43.5	S.W.	.03
Sunday . 15	☾	29.719	29.548	50	36	43.0	E.	.08
Monday . 16	22	29.726	29.710	50	34	42.0	N.	.00
Tues. . . 17	23	29.776	29.718	47	24	36.0	N.W.	.02
Wed. . . 18	24	29.921	29.861	50	32	41.0	W.	.28
Thurs. . . 19	25	29.884	29.701	39	32	35.5	N.E.	.45
Average		29.801	29.608	48.8	30.8	39.8		0.98

April 13—Drizzly; rain, heavy clouds; clear and frosty.
— 14—Frosty; slight haze; snow clouds; fine; clear.
— 15—Rain, overcast at night.
— 16—Cloudy throughout. [frosty.
— 17—Light clouds, with cold dry air; snow in afternoon; clear and
— 18—Re sterous; clear; ground white with snow at night.
— 19—Rain; tempestuous sky; broad snow-flakes, driven by brisk easterly wind, melting as they fell; cloudy and cold at night.
Mean temperature of the week 7½ deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending April 28, 1849.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.
Sunday 22	50.7	33.5	42.1	12	0.32 in.	3 5 3 1 1 3 5 1
Mon. 23	52.0	30.3	42.1	13	0.52	1 4 3 — 4 3 4 5
Tues 24	53.9	37.4	45.1	10	0.56	3 2 4 4 1 6 2 1
Wed. 25	56.6	39.0	47.3	10	1.40	4 4 2 2 0 3 1 2
Thurs. 26	50.2	37.7	43.5	11	0.12	3 3 2 3 1 2 2 2
Friday 27	50.4	37.6	44.0	13	0.12	5 1 3 2 4 4 3 —
Satur. 28	50.0	37.5	43.8	9	0.10	1 4 4 4 4 4 — 2

The highest temperature during the above period occurred on the 28th 1830—therm. 81 deg; and the lowest on the 25th, 1837—therm. 25 deg.

Notices to Correspondents.

TO OUR CORRESPONDENTS.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

ARABIS: *F G G.* Arabis rosea is a very pretty pink-flowered Calabrian biennial; we never saw it in cultivation. Perhaps the plant so called is Arabis verna, sometimes named A. violacea, an *annual* from the south of Europe, with the habit of Aubrietia.

BOOKS: *J R.* No book will give you the information sought, except some of the French Encyclopædias of Natural History, and Martius' great work on Palms.—*T A.* Boccius's "Fish in Rivers and Streams," reviewed at p. 455 of our last year's volume ‡

CAMELLIAS: *B W G.* Your plant is terribly out of health. Look to its roots, which is as necessary as feeling the pulse of animals. Your letter is torn to pieces, in consequence of its having been used *as a cover*, and we can hardly decipher it.—*M O C and Reader.* They like warmth and shade from bright sunshine when they are making their wood. After that is made, and their flower-buds are set, they should be gradually hardened off by placing them in a cooler situation under glass. They may afterwards be placed out of doors for a few weeks, to thoroughly ripen them.‡

CHARCOAL: *A Lady.* Break it up and mix it with the soil, or with other manure.

CLUB IN CABBAGES: *C K S.* Wood ashes containing much carbonate of potash are largely used against the club; but we are not acquainted with the effect of nitrate of potash or saltpetre; and your loss of 2000 Cauliflowers by using it would make us hesitate before we applied it, except experimentally.

DAMSONS: *M B.* There are many kinds of Damsons. The one commonly cultivated about London is roundish, inclining to obovate. The figure you have sent corresponds with that of the Shropshire Damson, called also the Prune Damson and Long Damson. In the Descriptive Catalogue of Fruits published by the Horticultural Society, eight varieties of Damsons are enumerated; or as many as 34, if we include the Damas prunes of the French. They vary both in form and colour. Any small wild Plum may be called a Damson; or, if round, a Bullace. The name was formerly written Damascene. Some of them had probably been raised originally from the stones of Damascus Prunes.‖

DRIED PLANTS: *Zeta.* Always wash them with a weak tincture of corrosive sublimate. Even now you may preserve what you value, for the fluid will kill fungus, insects, eggs, and larvæ. But what is a *green* fungus in an herbarium? We never saw such a thing. The change in colour of the Primula is what always happens in time.

FEEDING CARP AND TENCH: *Anon.* "A friend of mine used to fatten carp for table, by putting Pea-flour in linen bags, which the fish will suck, and thrive upon, in the pond, suspended by a bit of stick, or tied to the bank." *E. V.*

GREENHOUSE PLANTS: *Young Amateur.* Next week.‡

GUANO: *John Fryer, jun.* We have no reason to suppose that the indurations are adulterations; they appear to be coarse crystalline masses of muriate of ammonia, and contain plenty of phosphoric acid, and were no doubt formed naturally in the guano beds. If you desire further information you must have the masses analysed, an office we cannot undertake.

KEW: —. We cannot interfere. One-sided statements carry no conviction to our minds. The principle of fines is equitable; if the principle is badly carried out, that is another question.

LAWNS: *Quæstio vexata.* Frequent rolling is not injurious to Grass lawns on damp clay soils. The oftener they are rolled the better, except in frosty weather.

LEAF-MOULD: *R P.* Walnut tree leaves will make as good leaf-mould as other leaves, provided they are sufficiently rotted. What is the difference?‡

LIQUID MANURE: *B A.* Allow it to clear itself, and then use it in small doses. Fowls'-dung water is strong, and must be used with caution. Try its effect first on some plant which you do not care about ‡

NAMES OF PLANTS: *B H B.* Eriobotrya japonica, a hardy fruit tree in Devonshire and Cornwall.—*J C Humphreys.* Erica Mansoniana.‡—*Lee Shem.* 1, Euphorbia jacquiniflora; 2, Boronia triphylla; 3, Boronia anemonefolia.

NURSERYMEN: *A R T.* We had forgotten it, and thank you for the reminder, which shall be profited by *next week.*

POLMAISE: *G B.* Your case is under consideration, and will be noticed next week.

POTATOES: *A Sub.* Dr. Klotzsch's method is a failure, as we anticipated when it was made known.

QUOTATIONS: *One of the People.* Fiddle-de-dee. If quotations are essential to the meaning of an author, they are translated, if they are mere embellishment, translation is needless. Are people not to be musical because some folks have no ear for music?

SEEDS: *A Constant Sub.* Ceylon seeds, if of annuals or perennials, may be treated as Balsams or Cockscombs. What is Bandekol? Alligator Pear is a great tree, requiring a stove, and the Custard Apple is another; neither are worth the trouble of sowing.

STRAWBERRIES: *E V.* Placing them on the tan is the cause of the evil; they have gone blind because they have had too much bottom-heat.‡

SWINDLERS: *E F.* We cannot allow this Paper to be made the vehicle of attacks upon men's honesty, unless in cases of notorious swindlers. As to that you have sent, we can only say that if the man did what is alleged you ought to have punished him legally; that would have settled the matter. For us to publish a charge concerning which we know nothing, and which you did not yourself prosecute, as you might have done, would be most unjust.

THE WEATHER: *A Hampstead Subscriber* wishes to know whether there has ever been known on record such weather as during the last week for the month of April? There was nine degrees of frost on the 18th inst. at 6 o'clock, A.M., in a garden here.

TIMBER FELLING: *Inquirer* asks whether Larch should be felled between May and September. We should much like to hear the opinion of men practised in timber felling as to this point. We should prefer any other period except March and April, but we admit that the question is one in want of elucidation.

TOBACCO: *Shortcut.* Our view of the matter was given at p. 371 of our volume for 1846, to which we beg to refer you. The method of cultivation has been often explained, especially at page 650, 1844, and page 660, 1845. The advantage to cottagers of growing Tobacco is open to the greatest doubt. They can hardly buy a worse article than they would themselves prepare.

TREE ROSE. The price of this work is reduced to 3*s.* 6*d.* (post free), to be had at the Office of this Paper, or of any bookseller.

VINES: *Emma.* You should have allowed a leading shoot to go on without stopping, and then the eyes on the young shoots would not have broken so generally. The preventive being too late, resolve to adopt the mode of close-spurring at the winter pruning, and then you may console yourself that little or no damage has occurred.‖

SEEDLING FLOWERS.

CINERARIA: *D R.* Much too small, and the colour very common.*

HEARTSEASE: *J C.* A nice dark flower, shaded in the centre with violet; good in shape and texture.*

PERUVIAN AND BOLIVIAN GUANO ON SALE

BY THE ONLY IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WILLIAM JOSEPH MYERS AND CO., LIVERPOOL;
And by their Agents,
GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
COTESWORTH, POWELL, AND PRYOR, LONDON.

To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:

CORN AND GRASS MANURE, ... per ton	£9	10 0
CLOVER MANURE ... ... ,,	8	0 0
TURNIP MANURE ... ... ,,	7	0 0
SUPERPHO-PHATE OF LIME ... ,,	7	0 0
SULPHURIC ACID AND COPROLITES ,,	5	0 0

N.B.—PERUVIAN GUANO, from selected cargoes (in Dock).
SULPHATE OF AMMONIA, &c.
Office, 69, King William-street, City, London.

GUANO CHEAPER THAN EVER.

POTTER'S GUANO is now 7*l.* per ton, and of superior quality, owing to recent chemical discoveries, and an improved mode of manufacture. An experience of eight years has shown it to be fully equal to the best Peruvian Guano, and 25 per cent. cheaper. See testimonials. If a quantity is taken a specific arrangement may be made.

GYPSUM (Great Reduction in Price), is offered at 15*s.* per ton, at the works, loose, or in bags if required. It has been analysed by an eminent chemist, and pronounced pure.—W. H. POTTER, 28, Clapham-road Place, Kennington.

GUANO AND OTHER MANURES.

PERUVIAN GUANO, of the finest quality, direct from import warehouse.
NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SULPHURIC ACID AND COPROLITE.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of

MARK FOTHERGILL, 201 A, Upper Thames-street, London.

A Treatise on Guano, Superphosphate of Lime, &c., will be forwarded on receipt of 8 postage stamps. Free to purchasers of Guano, &c.

BURBIDGE AND HEALY'S NEW BOILER.—The above is a modification of their Boiler (before published), modelled expressly for the large Conservatory, Chiswick Gardens, where it is now at work. From the observations B. and H. have been able to make, they are warranted in stating it to be the "Ne plus ultra" for warming large plant structures. As a proof, one charge of fuel has been kept burning for 48 hours without any addition, and one boiler of the size used is equal to warm 1500 feet of 4-inch pipe. They are also extensively put up at the Royal Botanic Gardens, Kew. Smaller boilers upon the same plan.

BURBIDGE and HEALY, 130, Fleet-street, London.

TO ORCHIDEA GROWERS.

BURBIDGE AND HEALY, 130, Fleet-street, respectfully call attention to their method of warming Orchidea Houses. They have had the honour of warming the Orchidea Houses at the undermentioned places:

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick, additions to the House.

Also the Orchidea Houses of the following distinguished growers of this interesting class of plants.

The Bishop of Winchester, Farnham Castle.
J. Lyons, Esq., Ladiston.
J. Warner, Esq., Hoddesdon.
Messrs. Henderson, Pine-apple Place.
J. Schroder, Esq., Stratford.
R. Hanbury, Esq., Poles, near Ware.
W. Webb, Esq., Clapham.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences. Wire-work, &c.

AGRICULTURAL SEEDS (delivered carriage-free to London, or any Station on the Eastern Counties or Eastern Union Lines), all of the finest quality for growth and stock.

MANGOLD WURZEL, fine long red ...	per lb.	0*s*	9*d*
,, ,, Yellow Globe and Red Globe	,,	0	9
,, ,, Long Yellow	,,	1	0
WHITE SILESIAN SUGAR BEET ...	,,	1	0
CARROT, large White Belgian	,,	1	0
,, large green-top red Altringham ...	,,	1	0
LARGE CATTLE PARSNIP	,,	1	3
TURNIP, Swedes, fine purple-top	,,	1	0
,, ,, Skirving's	,,	1	0
,, Norfolk White, Green, and Red round...	,,	0	6
,, Skirving's Improved Purple-top Scotch	,,	0	10
,, Fine Green-top Yellow Scotch ...	,,	0	10
,, Dale's Hybrid	,,	0	10
,, Yellow Tankard or Scotch Pudding ...	,,	0	10
And all other Turnips at the lowest prices.			
LARGE DRUMHEAD CATTLE CABBAGE...	,,	2	6
FINE LUCERNE	,,	0	10

GRASSES.

The best selected varieties, mixed for Permanent Pastures, suited to different descriptions of soils. Having for many years devoted considerable attention to the selection and supply of these Grasses, we are enabled to offer them with a confidence of their giving entire satisfaction. Price, per bushel, with the addition of a proportion of Clover and heavy Grasses, 10*s.*; or 30*s.* per acre of 2 bushels and 6 lbs.

THE FINEST MIXED LAWN GRASSES, 5*s.* per peck, or per lb. 1 3
Fine Pacey Rye Grass, per bushel 5 0
True Italian Rye Grass, per bushel 5 6

All other Agricultural Seeds at the lowest prices. Our Agricultural Seed List will be forwarded on application. Also prices to the trade.

BASS and BROWN, Seed Establishment, Sudbury, Suffolk.

WHITE BELGIAN CARROT ... per lb. 1*s.* 3*d.*
LARGE YELLOW BELGIAN DO. ... ,, 1 6
LONG RED ALTRINGHAM DO. ... ... ,, 1 3
LONG ORANGE DO. ... ... ,, 1 6
SHORT ORANGE DO. ... ... ,, 1 3
FINE LONG RED MANGOLD WURZEL ... ,, 1 0
YELLOW AND RED GLOBE DO. ... ,, 1 0
RENDLE'S IMPERIAL SWEDE TURNIP ... ,, 1 0
SKIRVING'S PURPLE TOP DO. ... ... ,, 1 0
LAING'S, MATSON'S, & ASHCROFT'S DO. ,, 1 0
PURPLE & GREEN-TOP SCOTCH YELLOW DO. ,, 0 10
DALE'S HYBRID DO. ... ... ,, 0 10
WHITE, RED, AND GREEN ROUND DO.... ,, 0 6
WHITE, RED, AND GREEN GLOBE DO.... ,, 0 6
WHITE, RED, AND GREEN NORFOLK DO. ,, 0 6
BEST RED AND WHITE CLOVER ... ... ,, 0 5
FINE TREFOIL ... ... ,, 0 2
LARGE GUERNSEY CATTLE PARSNIP ... ,, 1 3
LARGE DRUMHEAD CABBAGE ... ... ,, 1 6
FINE ITALIAN RYE-GRASS ... ... per bushel 8 0
COMMON RYE-GRASS ... ... ,, 8 0
PACEY'S PERENNIAL RYE-GRASS ... ,, 6 0

With all other Agricultural Seeds at the lowest market prices.

Our Agricultural Seed List is now ready, and we shall be happy to send a copy to any one who may wish to obtain it.

Apply to WILLIAM E. RENDLE and Co.,
SEED MERCHANTS, Plymouth.

The South Devon Railway is now open to Plymouth (Laira Green), and we now enjoy Railway communication to all parts of England and Scotland, and have made arrangements with Messrs. PICKFORD and Co. *for the cheap delivery of our Goods to every Town in Great Britain. Any instance of overcharge should be immediately communicated to us, as it is our interest to see that our customers are charged at the lowest rates. Constant Steam Communication from this Port to Cork, Dublin, Glasgow, Liverpool, London, Falmouth, and most of the principal Ports in the Kingdom.*

☞ All Orders above 2*l.* will be delivered, free of Carriage, by Messrs. PICKFORD and Co., to any Station on the Great Western, Bristol, and Exeter, or South Devon Railways; or to any Town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers.

GRASS SEEDS.

CORNER OF HALF-MOON-STREET, PICCADILLY.

THOMAS GIBBS AND CO., the SEEDSMEN TO THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND, beg to inform their Agricultural friends that they have now finished cleaning their bulks of the different kinds of Grass Seeds, which are now ready for delivery. T. G. and Co. beg to call particular attention to the following, viz.

MIXTURES OF SELECTED NATURAL GRASSES for laying down land to permanent MEADOWS and PASTURES, with a proper admixture of the permanent Clovers, properly apportioned, to suit the nature of the different soils and the purposes for which they are intended.

RENOVATING MIXTURES for improving old Grass land

FINE MIXTURES for forming garden lawns and Grass plots.

Also, Italian Rye Grass, and all other kinds of Grass seeds and Clovers.

CARROTS.
Large White Belgian Carrot,
Large field Altringham Red Carrot.
MANGOLD WURZEL.
Yellow or Orange Globe,
Long Red,
Red Globe, and Long Yellow.
TURNIPS.
Purple and Green-top Swedes,
Skirving's and Laing's Swedes,
Gibbs's Green and Red-top Yellow Hybrid,
Green, White, and Red Globe,
Green, White, and Red Tankards.
CABBAGES.
Large Drumhead Cattle Cabbage,
One thousand-headed Cattle Cabbage,
Kohl Rabi, Purple and Green kinds.
PARSNIP.
Large Cattle Parsnip.

Clovers, Sainfoin, Furze or Gorse, White Mustard, Rape, and all kinds of Agricultural, Kitchen Garden, and Flower Seeds.

THOMAS GIBBS and Co., the Seedsmen to the Royal Agricultural Society of England, corner of Half-moon-street, Piccadilly, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S-ROAD, CHELSEA.

LENCH having erected three Patent Hothouses for sale on his premises (viz., one Span-roof, 15 feet 6 inches wide and 28 feet long, 50*l.*, 16 and 21-oz. glass; one Span-roof, 13 feet wide and 28 feet long, 40*l.*; one Lean-to, 16 feet 6 ins. wide and 28 feet long, 50*l.*), invites the attention of Gentlemen about to erect Hothouses to inspect his Patent Plans, when they at once will perceive the vast superiority of these Houses over any others hitherto erected, for strength, lightness, durability, handsome appearance, healthiness to plants of every description, the roofs of one principle being formed without wood, putty, or paint, with a smooth surface and only about 5-8ths of an inch of light taken up in any part.

The Agricultural Gazette.

SATURDAY, APRIL 21, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY,	April	24—Agricultural Society of England.
THURSDAY,	—	26—Agricultural Imp. Society of Ireland.
TUESDAY,	May	1—Agricultural Society of England.
THURSDAY,	—	3—Agricultural Imp. Society of Ireland.

EXPERIENCE of DR. NEWINGTON'S HAND CULTIVATOR enables us cordially to recommend the use of it to spade-husbandry farmers. It is somewhat like a 3 or 4 pronged rake—the teeth of which are removable at will, so that any form may be employed—one which shall enter the land, as it is pulled forwards, and so stir it to a depth of 3 or 4 inches—one which shall pare the surface and so destroy its weeds—or a third which shall mark a succession of drills in the land for the seed rows. On all, except stiff lands, and on such we have not tried it, we can safely assert its power to economise labour.

MR. WILKINS, in his recent communication upon BOX-FEEDING, asserts that he has "truth, Nature, science, men of education, and men of wisdom, all on his side." Now if he can prove that the first only of this long list of auxiliaries justifies his opposition to that system of cattle feeding which, with such unwearied pertinacity, he has denounced, then, of course, we can have nothing to say in reply. If the "truth" be with him, he *must* conquer all opposition; this alone will make him all powerful, and his "men of education," and his "men of wisdom," *his** "Nature," and *his** "science," may, without harm, be left out of court, for their testimony will not in the least add to the strength of his position.

But we do not admit that the truth is with him: we believe that the student of his writings has yet to search for it—has, indeed, yet to learn the true method of search. What we want is the fact of the matter in question; and to this end we must seek for trustworthy evidence of it. Now we submit that in such a case as this, it is not in so far as men are "scientific" and "wise," but in so far as they possess perfect senses and honesty, that they are good witnesses. Those who have superintended abstruse and laborious calculations, have justly preferred assistants who could add and subtract, and multiply and divide, but do little else—who had no other aim than rightly to perform their task—no anxiety about the result of it—and no perception of analogies arising out of previous knowledge to help them to an end; and there are cases, we believe, in which the intelligent student of natural phenomena will also reasonably prefer the evidence of the mere senses (if perfect), to that which has, perhaps unavoidably, been modified by a pre-judgment, however accordant with pre-existing knowledge. A fore-knowledge of "Nature" is of no assistance to the man who only wants to know whether his cattle lie dry in their lair: a reputation for "science," however true, will not help the man who only inquires into a *past fact*; such as, whether this and that food have nourished. Let "Nature's" decision be read in the farmer's experience; let the "science" of the subject be gathered out of its observed history: we follow a mischievous example when we personify them; Nature is merely the truth which senses and consciousness present to the mind of man, and science is just the systematised knowledge of that truth. Neither of them can have any existence independently of FACT; and far less in defiance of it. When we talk of a natural *law* we use a word which should convey the idea not of a power regulating, but of a mere declaration describing *fact*—a "law of Nature" *describes* a number of facts, it does not *govern* them; it is a mere formula expressing the connection *observed* amongst a set of kindred occurrences: and if "Nature" and "Science" are to be appealed to as though the evidence of the senses on any question of mere fact were to be scouted, we may as well at once abandon the whole sum of truth which the BACONIAN philosophy has investigated and determined, and revert to the foolish dreams and analogies which misguided the Schoolmen of old.

If any correspondent then should wish through us to instruct his brother farmers further on box-feeding, let us hear nothing more of "Nature," and as little as possible about "Science:" what he should inform us is—the space allowed to each of his cattle, the weight of litter daily supplied to them, the quantity and kinds of food they receive, whether or not they are dry and comfortable, whether or not the air in their boxes be sweet, and to what extent under these circumstances the animals have improved in a given time.† [Pray read the note.]—And if any one will criticise evidence such as this, let him endeavour to show that the senses of sight and of smell, from which it has proceeded, were imperfect or misled, or that the weighing machine was out of order, or even that this witness's honesty is doubtful, and he will in so far damage his opponent's cause: but so long as he shall content himself with appealing to 'the laws of Nature,' or to 'the judgment of scientific men,' or to any other of the stereotyped phases of the day, he may rest assured that he will be doing nothing to elicit the truth. And if *he* have cases to adduce in which this practice has been attended with mischievous consequences, let him, too, state the particulars we have specified, in order that the immediate cause of these consequences may appear. "If I know that my cattle, each of them standing and lying in a space of about 100 square feet, littered daily with from 15 to 20 lbs. of long straw, and fed daily on 1 cwt. of Mangold Wurzel, 4 or 5 lbs. of

* These italics are not meant offensively, far from it: they are employed merely to convey the truth that science or Nature is not, like a "man of wisdom" or a "man of education," capable of citation and examination as a bodily independent witness; for neither of these words can, as commonly used, be regarded as anything more than an expression of the mind of the man who uses them.

† If any of our readers able to furnish such information, will kindly give us his name and address, we will send him a tabular form in which the questions requiring to be answered are arranged, so that their answers may admit of ready comparison.

ment, and 8 or 10 lbs. of straw chaff, improve rapidly in flesh, are healthy, live in a sweet air, and keep a dry and clean coat, though the soiled litter be suffered to accumulate under them, and whether the floor of the box be paved or porous—is any amount of reference to so-called Science or Nature likely to drive me from my approval of the practice?—or is any description of faulty cases likely to do more than convince *me* of the *gross* mismanagement to which such cases must be owing?"*

But it is not to box-feeding that we would confine our remarks. That subject we consider has already occupied an undue portion of our space: and it is almost exclusively because the discussion of it has exhibited a character illustrative of agricultural controversy generally, that we have referred to it now. The correct use of precise terms would save one-half the controversies of the day; and we wish to guard our readers against the careless use of the important words—Nature and Science. Strictly they signify Truth, and the systematic knowledge of truth, but they are often mischievously, though unintentionally employed, as meaning the *writer's* notions of truth and *his* idea of what its knowledge tells.—This was the case in olden time and theology suffered because men did not compare God's word and works together, but the Word with *their notions* of His works. And it is the case in smaller matters still; and no art can be expected to advance while the every day experience of its practitioners is opposed to the so called science of those who pretend to teach its theory.

It is not *those* who maintain the inviolability of fact that oppose true science—*they* thus strengthen its foundations, and help to extend its territory; it is those who place true science in the false position of disputing facts. The truly scientific man receives all facts most gladly and submissively, and uses them to strengthen or to alter, as the case may be, those laws of Nature under (into) which his previous acquisitions are arranged; he reads the records of experience with avidity, and readily submits to every fact they prove, whatever be the tale it tell. He employs the theories or laws expressing previous knowledge as useful guides to new research, and they help his inexperience in untried circumstances; but he holds no notion in the face of facts, however sure the place it once obtained in what was then called science.

True science is continually advancing, correcting and enlarging itself by every new fact which practice reveals, and it is thus becoming a better guide to the improvements of which practice is yet susceptible. For science, thus explained, every intelligent farmer feels the highest respect; and not only is he not inconsistent in the matter, but we maintain that he never more satisfactorily exhibits this respect than when he firmly opposes the doctrines of a science, falsely so called, which may contravene the evidence which his experience daily lays before his senses.

"We must take things as we find them." It is not meant that to alter them for the better is not a legitimate aim, or that we should conclude just to enjoy or to suffer our lot as the case may be. Certainly not; nothing is more desirable than courageous effort in the midst of difficulty—nothing more likely to better a man's position than that wholesome discontent with it which will lead him to struggle for its improvement. We must, doubtless, take things as they are, but only in this sense—that our system of management, we shall find, must be accommodated to them much more frequently than they to it. The farmer has long been accustomed to this: he is surrounded by influences which are nearly, if not altogether, beyond his control, and all he can do for himself is skilfully to regulate his conduct with relation to them.

Whether the price he obtains for his produce be one of these influences, beyond human guidance, or not, we shall not attempt to inquire; for the questions, whether its present low pitch is to be permanent, and whether its causes be removable, do not affect the lessons it may teach us. We know it to be a present fact of serious importance to farmers, and it is wiser, in discussing the subject, to treat it as a thing to which we must submit; because, by success in the attempt which (with an altered practice) *must* be made to meet it, we shall be enriched if it should cease, provided we be saved if it last. The general opinion, too, attributes it to our loss of protection, so that we are thus precluded from discussing its causes or the best way to remove them, we are confined to the question—How may their effect be met?

Some agriculturists assert that so great a fall of prices cannot be met at all, and they treat attempts to prove the contrary as a sign neither of honesty in you, nor of friendship to them. Will a reduction of rent help them?—the whole of their rental is hardly more in amount than the 1*s.* 6*d.* per bushel of their grain, and the 1½*d.* per lb. of their meat, which they have lost! Will a reduction of wages be of any use? It is impracticable, or, if possible, insufficient! Is it an increased yield you speak of? The greater capital needed is awanting, or if present, it adds to the cost as well as to the quantity of its produce!—Nevertheless, there *are* men of honest will and sound mind who do believe that the profits of agriculture in the long run are not so dependent on prices—who believe that even the losses which now impend may be averted, notwithstanding the causes by which they are threatened: and we submit that at all events it is wise to give a hearing to their arguments. Their first proposition admits of a proof which, however satisfactory to the national interest in agriculture, is, it must be confessed, of small comfort to any existing generation of its practitioners. Profit is independent of price; because, on the average, men will not bid against one another, and raise the cost of any business beyond an amount compatible with the income from it to which their habits of life have accustomed them; so that by the diminished competition for land a general reduction of receipts will ultimately fall upon the landlord rather than upon the farmer, and, by the increased competition for land, a general increase of receipts will ultimately tell to the advantage of its owner rather than of its mere cultivator. But however true in the long run this may be, every one knows that the effect of any alteration in receipts falls at first upon the receiver; it is he who benefits, he who suffers, as they rise or fall; in fluctuating times his position safely rests upon a pretty constant average, but when prices permanently alter for the worse he must suffer; though agriculture no doubt will rise uninjured in the hands of his successor, who shall then profitably occupy the position in which *he* was ruined, because the market value of that position at which he will occupy it will then have diminished to the point at which the usual profits are attainable.

This is doubtless poor comfort for farmers; but is their ruin unavoidable as prices fall? can they do nothing to meet their difficulties? That depends upon the question. What is the most profitable agriculture? And it is because their whole system of management often admits of such improvement—that all have not despaired even though Wheat does not sell for more than 5*s.* per bushel, nor meat for more than 5*d* per lb.

Nothing can be more certain than that the farming which just paid its way with higher prices will not pay now: we must alter the methods which then barely cleared their cost, and we must take for examples those who then were getting rich, while we were only not getting poor.

And here we must drop our own illustrations for those of another. Mr. Caird, of Baldoon, a tenant farmer of Wigtonshire, has lately published a pamphlet, entitled, "High Farming, under Liberal Covenants, the best Substitute for Protection,"† which we strongly advise our readers to procure. It is not an anti-corn-law performance: its title just means "high farming, under liberal covenants, the best substitute for high prices," and that is the reason we can refer to it here. "It is not an argumentative publication. Its sole object is to describe a system of farming which has been practised for some years with great success, and highly remunerative results—in order to show that the cause of agriculture is not 'desperate.' A single example has been selected as best calculated for the faithful exhibition of details, and thus most likely to be found instructive and practically useful; and a farm of comparatively moderate extent has been chosen, both because of the excellence of its management, and as affording greater facility of comparison with the average of farms in Great Britain." It is just the history of a profitable farm, and of the methods which made it pay. Want of space hinders further remark upon it this week, but we advise farmers and landowners to purchase it for themselves, and study its encouraging contents.

RELATIVE POSITIONS OF OUR AGRICULTURE, AND THE OTHER MANUFACTURES

In instituting a comparison between the position of our manufactures and our agriculture, I have chosen the iron and cotton trades as representatives of the former, and will proceed from well authenticated statistical tables to adduce one or two facts bearing on the position those trades occupied at different dates, and comparing these with that occupied by our agriculture at as nearly possible similar dates so that we may obtain some idea of their relative position at the present time. These statistical statements shall occupy as short a space as possible, my principal object being to awaken discussion as to the causes I shall assign for the present backward position of English agriculture.

First, with respect to the iron trade. In 1788 the number of tons of pig iron produced was 61,300; in 1845, 1,250,000—or an increase of twenty-fold within 60 years. This speaks most forcibly to the extent of the demand for, and the capital employed in, the production of so great a weight of metal. In 1788 the average produce of a furnace was 15 tons per week; in 1845 the average produce was 100. This illustrates more forcibly still the improvements that have been brought to bear on the process of manufacture. The result of the introduction of one improvement, viz., the hot blast, has been to reduce the actual cost in coals and wages, of the manufacture of each ton of iron by 1*l.* 12*s.* 6*d.*, at the same time doubling the produce of each furnace, and thereby effecting in addition the saving of half the capital required in the erection of furnaces. From a comparison of the average price to the consumer, during the last 10 years of the cold blast, with the first 10 years of the hot, we ascertain that there is a saving of 3*l.* 17*s.* 6*d* per ton. The cause, therefore, of the rapid rise in the iron trade is, we see, owing to improvement in the manufacture, to the capital immediately brought into play, to work out these improvements, and the increased demand for iron, it being now applied from the cheapness at which it can be procured (consequent on these improvements) to numerous purposes for which wood was formerly applied.

It appears somewhat ridiculous to bring forward arguments to prove the different position which the cotton trade now occupies to that of 1788, especially to those who are more or less connected with the trade, and who are well aware that instead of talking of being improved since that time, we might with greater truth say it has been created. The rapid rise of our manufacturing towns is sufficient evidence—an argument ever staring us in the face. What is the Manchester of 1848 compared with the Manchester of 1788? Why a doctor, well known in town, told a friend of mine, the other day, that when in practice, the end of last century, he resolved on taking a house in the country, for the benefit of his health; it stood immediately opposite where is now the Queen's hotel, now the centre of the town. Then look at Stockport, Stalybridge, Ashton, Middleton, Oldham; in fact all the towns around Manchester have risen since that date, and their rise is to be attributed entirely to the demand which has been created for the products of the cotton trade. A comparison of the returns of the population at these dates is another argument akin to the last. In 1788, 50,000, now nearly 400,000. It is not a population born and bred in the neighbourhood; this would indeed be contrary to the pretty well known laws which enable us to calculate the increase of our population; it is a population brought *from* a distance, an able bodied race pouring in from all quarters to supply the demand which, when trade was in the highest prosperity, arose for labour. Another and better argument may be taken from a comparison of the number of pounds of cotton imported into this county; in 1790 it amounted to 31,447,605 lbs.; in 1835 (I cannot get the returns of a later date, but they must exceed considerably that of 1835) the amount was 333,043,464; then look at the official value of the export; in 1790, 1,662,369*l.*; in 1835, 52,533,278*l.*

I will not bring forward any other argument to prove our position, these will suffice. I might have brought forward statements to show the several causes at work which brought about this rapid rise, specifying the different improvements as they occurred, their result, Arkwright's master improvement; but this, the rise and progress of the cotton trade, would furnish subject matter for an essay itself. The same causes, we see, which occasioned the rise in the iron trade, have occasioned the progress in the cotton trade—unlimited capital ready to take advantage at once of every improvement; science and skill originating improvements; energy and competition lending their aid in carrying out the improvements, till at last we have before us a result the astonishment of the whole world; for what part of the known world have not Manchester goods penetrated. And all this not being the work of ages, but the work of yesterday, within the memory of living witnesses.

Let us now turn to the state of agriculture, and at the outset we are met with a fact of a very suspicious nature—the absence of all authoritative statistics whatsoever. This, when we consider the vital importance of the subject at issue, when we consider that had such statistics been in existence much of the destitution and famine and death of the past two years might have been avoided, by enabling Government in time to provide for the ascertained deficiency, and seeing, at the same time, that the machinery in existence for collecting land tax and assessed taxes is equal (with scarcely any additional outlay) to effect this, I think it is not too severe to tax Government, who are set up to watch the interests of each subject of the state, with criminal indifference in this matter. But it is a suspicious fact; there is a reason for hushing up the matter. Did we possess an acquaintance with the capabilities of the soil; with its value; with its higher produce in one district (though of an inferior description of soil) to that of another; we should ascertain the reasons for small returns in some of the richest districts; how the resources of the soil are squandered in others; how the crops grown by tenants with their own capital are consumed by the landlord with his hares and rabbits, all of which correct statistics would furnish us with. If all this were patent to every one, landlords would soon learn to treat their

* We must postpone till next week a detailed statement of the construction of our boxes, for which a correspondent asks.

† William Blackwood and Sons, Edinburgh and London.

* This paper is an abstract of one read before a Society in Manchester.

tenants as the merchant treats his customer, each having an interest in the welfare of the other, in the soil, and in bringing out its capabilities.

In the absence of statistical information, in order to prove my assertion that English agriculture has not progressed in the same ratio as manufactures, I make use of arguments such as the following: I avail myself, for instance, of information which I have been enabled to get possession of, from letters written by persons of undoubted integrity and reputation in the year 1788. These letters, written to a person about to take up farming in that year, in a district I am well acquainted with, describe the mode of farming then adopted, entering minutely into the mode of cultivation of each crop in the rotation, and the mode of feeding stock—in fact gives as full a description as can be given on paper; and I can deliberately state, and am borne out in the statement by practical farmers in the district, that these same letters, if the date was altered from 1788 to 1840, would accurately describe the state of farming now.

Another argument can be drawn from the greater proportion of old pasture land in England, never broken up within the memory of man, which it can be proved would, if converted into arable and properly managed, produce many fold what it does now. In its present form it is in a comparatively dormant state. This so much pasture land in our country is a question of great national importance, for where (and I state facts) 2½ labourers were employed in a pasture farm, there are now, when converted into arable, 15; and where 50*l.* was spent in payment of labour, 355*l* is spent now, and profitably spent, I am not wrong in calling it a national question.

Then look at the state of our fields (a ride along any railway supplies abundant evidence); look at the hedgerows—the waste of land there. In a farm with which I was connected, 10 per cent. was gained by merely taking up the crooked fences. In Devonshire this amounts to 15 and sometimes 20 per cent. actually wasted—worse than wasted, for these fences afford harbour for vermin of every description. Then of the 32,342,000 acres in England, 25,632,000 are said to be cultivated, 3 454,000 waste land but capable of improvement, and 3,252,000 unprofitable; but of the 25,0 0,000 acres cultivated, three fourths require drainage; in their present state they do not yield, the arable, in many instances, one-fourth; the pasture, one-tenth what they are capable of producing if properly managed.

Many cases can be instanced of the benefit accruing to landlord and labourer from an improved state of agriculture. The landlord would get a greatly increased rent; the labourer, instead of seeking a master, being willing to work, and finding none, as is now too frequently the case, would be sought after, and we all know what a difference that will make in his circumstances. The tenant would benefit by his increased produce, and by being made less dependant on the seasons. His stock well sheltered, in well ventilated buildings, instead of being starved, and losing during the winter all the benefit gained during the summer. I have only referred to one improvement—drainage; this, however, is the basis of good agriculture, all other improvements are useless, if brought to bear on undrained land, the money is thrown away. There are many other improvements of great importance, such as the right application of artificial manures, the use of new systems in feeding stock, improved implements enabling work to be more efficiently and rapidly finished, the use of steam engines in threshing and preparing corn for market; all these have been demonstrated to be a considerable saving over the systems in general use.

Our agriculture needs improvement, can be improved, and capital can be profitably expended in its improvement. Improvements, we saw, were the foundation of the rise of the cotton and iron manufactures. Now why, with these facts staring us in the face, do improvements not spread in agriculture? Why do we see one farm yielding 40 bushels per acre, and over the hedge the field of another farmer yielding only 15 or 20? What is the great impediment to agricultural improvement? The principal reason undoubtedly is the faulty relationship between landlord and tenant. In agricultural improvement time is of essential importance. It is not so much so with manufactures, an order is received and immediately steam engines and machinery, doing the work of thousands, are set to work and the goods are supplied; but no outlay, however large, can shorten the time necessary to bring to maturity and to reap our crops. Hence we see the greater reason that there should be security afforded the farmer in carrying out his improvements. The benefit of these improvements extends over many years, it requires many crops to repay the original outlay, and unless he possesses an interest in the soil, securing to him the benefit of his investment, there can be no plainer or more effectual impediment to all improvement. But what is the real state of the case? why, in England the lease is the exception rather than the rule. The farms are almost entirely held from year to year. Six months' notice determines the tenancy; and however we may pride ourselves on our independency, we have at the present time in our agricultural districts generally a very correct representation of the feudal system still in existence. At the time of a county election, it is perhaps even better seen than of old.

Then there is the game question, the most fruitful source of annoyance between landlord and tenant, and one of a most demoralising tendency to the labourer. It is really monstrous the importance attached to the game by the landlord, and the injury done by the game to the tenant. I wrote to a farmer who was suddenly ejected from his farm, asking him for information under this head. He is one of our best farmers, looked up to by all as a man of great judgment, and sought after in every arbitration case. He writes me, "I could furnish you with some of the most flagrant instances of ill usage in regard to being turned out of land after having effected vast improvements." His own case is one. He took a farm on the Cotswold Hills, though he could not get a lease, yet, being on good terms with his landlord, and knowing the capabilities of the soil, he laid out many thousand pounds in its improvement. Well, one day he was, no doubt, much surprised to receive a notice to quit six months after date, the only reason assigned being that the gamekeeper could not get sufficient rabbits for the use of the house on his farm; and not one penny of the thousands he has laid out on that property can he get returned. What more effectual impediment than this can be found to the progress of improvement? This is not an isolated case, every county can furnish similar.

The great amount of pasture land in our county is just the consequence of all this. It does not require much outlay in labour; the rent is almost the only item of expenditure, so that if the tenant is obliged to leave he does not lose, as in the case of arable land, the amount he has expended in labour. So also with the game in pasture land, they only destroy what would make up the rent; in arable land, again, they destroy the amount paid for seed, the expenses of labour, as well as what was intended to pay the rent.

In answer to all this I may be referred to districts such as Lincolnshire, Norfolk, and some other of our eastern counties, whose state of agriculture will compare with that of any county in Scotland or in the world, and be told even how the lease is the exception rather than the rule, and that if you offer the tenant a lease he scorns it, and prides himself on the confidence that exists between him and his landlord. This is all true, yet we find if there is no security between landlord and tenant, there is what is called a tenant right, an understanding between tenants, which has now become the custom of the country, and in the absence of all agreements this custom stands good in law. There is a custom of the following description. I, for instance, take a farm, and lay out 1400*l.* in draining it; by the custom of the county the benefit of this drainage extends over 14 years; if, therefore, I am compelled to quit the farm after the first year of my occupancy, I am supposed only to have derived 100*l.* benefit from the 1400*l.* I laid out, and the incoming tenant is obliged to remburse me the 1300*l.*, and so in proportion with all other improvements: for building, 21 years' interest; liming, 7, and so on. This, in fact, amounts to a lease; it gives security to the outlay of capital.

The next reason I brought forward to account for the rapid rise of our manufactures was unlimited capital to take advantage of every improvement. In those districts where there are no leases, and no tenant right, we have seen that unlimited capital would be of little or no value, for where there is no security for the return of capital, there is little chance of its outlay; besides, under present circumstances, where the farmers in these districts are men of capital (which they as a general rule are not), they are afraid to live in a different style to that they have been accustomed to, lest the landlord should suppose that they have got their farms too cheap, and raise their rents; but give security, and there will be no want of men of capital. I can point to instances in Lincolnshire and Norfolk where farmers have laid out to the amount of many thousands on their land, and live in the best style, keeping their packs of hounds, in fact, constituting the gentry of the district. In reference to capital, it is very generally diffused on too large a surface; there is a pride in having a large farm; whereas, if the capital employed in the large farm were employed on a smaller surface, so that improvements might be properly carried out—a much larger per centage would be obtained. I would just make a remark as to the amount of capital that may be employed in the cultivation of the soil; 18½ millions of acres are said to require drainage, and 3½ millions of waste land capable of improvement—say 20 millions in all. This at 6*l.* an acre for drainage will amount to 108 millions. The average capital employed in the cultivation of the soil is less than 5*l* per acre; it certainly should rarely be less than 10*l.*; that will be an additional 100 millions required or 200 millions are required to place agriculture in England in the position which its importance demands. Then, with reference to the last reason I adduced for the rapid rise of our manufactures—the skill, the assistance rendered by men of science. Agriculture has with justice been termed the most ancient of arts yet the most modern of sciences. It has been regarded till within the last few years in all nations as a menial employment—a drudgery. In uncivilised countries, where the missionary would persuade the lord of creation to lay aside his bow and arrows, and take the spade and cultivate the Maize or the Potato, so that he may have a certain instead of a precarious subsistence, which the encroachments of civilisation renders still more precarious. "Am I a squaw," he answers, "that you would thus degrade me?". But what has science done for agriculture? This is a question much mooted now. Who can estimate the advantages that has flown from that source to other arts? The steam-engine, for instance, has had the effect of a new creation in manufactures. Every day familiarises us with the triumph of science over physical power; and, judging by analogy, if the success of science has been so great in other arts we have good grounds for calculating on great things being yet in store for our agriculture. Why, there is virtue in a ton of coals, if some of our scientific men would only show us how to direct it, to plough 200 acres of land, 7 inches deep, in one day. Only let some Watt or Arkwright in farming find how to apply this truth! We know the capabilities of the steam-engine, but we do not know how to apply it. Again, what means have been taken to give our farmers a scientific education, or any education at all? Till within the last few years there was no school for agricultural pupils whatever; it was thought, and acted on, that, if there was a son in the family not so bright as others, he would at least do for a farmer.

I will, however, just state, in conclusion the state of agriculture in the better districts. The counties in England and Scotland where the impediments to improvements I have alluded to do not exist to such an extent, abundantly show that even though greater difficulties, both in climate and soil, exist, yet we see a vastly improved state of things; a state that proves that the agriculture of England needs improvement, can be improved, and that capital can be profitably expended in its improvement. Give the tenant—give the man of capital a fair field and no favour, and our nation will rank first with respect to its agriculture, as it pre-eminently does with respect to its manufactures and commerce. *Thomas C. Morton, Manchester.*

Home Correspondence.

Potato Disease.—I wrote to you about three weeks ago, informing you, from the appearance of the roots of some very early framed Potatoes, that the disease had shown itself twice in some frames. Since then the disease has made much progress, and the new Potatoes, although no larger than Walnuts, have already become affected, and I fear worse than ever. Let me recall to you what on former occasions I had noticed, namely, that the disease first affects the shoot or rather root from the eed or set, and this is to be seen at a very early stage of growth. The disease appears to me to be wholly independent of external influence, as I there explained. I confess I do not agree in what you have said on the influence of manure, for I last year saw Potatoes alike affected, grown on all soils and in several situations, and in dry sandy soils, and where no manure had been applied for many years. For instance in a sand pit which had been dug over 20 feet deep, and which has been planted with Potatoes by my labourers in plots annually for 8 or 10 years, and without manure, and which never fails to give a crop, and yet last year the whole had the disease as bad as any. *Hewitt Davis.*

Forty day Maize.—A letter in a late number, from Mr James P Cobbett, seems to demand some notice from me. I will, however, premise that a letter, substantially the same, from the same gentleman, appeared in the *Hampshire Advertiser* of March 17, to which I fully replied in the following number of that paper. What I have to say now, therefore, will, like Mr. Cobbett's letter to you, appear as a tale twice told, for I have no statement to differ from, and little to add to that reply. Not to occupy too much of your valuable space I will reduce my quotations to the strictest limits the answer requires unless you should think proper to publish it *in extenso*. I there said:—"I have read very attentively, within the last 48 hours, the 'Treatise on Cobbett's Corn,' a 5*s.* book of 300 pages, and find that I was fully justified in saying that Cobbett cultivated the American corn. In chap ii. he says, 'I imported last year (1827) some early corn from New York. I sold the greater part of it and reserved a little to plant in my field. * * * I planted it (the American sort) year after year for 10 years in Hampshire, and always planted from seed of my own sowing. * * * But though these sorts of American corn are very good to look at, they are not sure as to ripening.' Then he gets some ears of another sort from a gentleman's garden in Artois, in France, in 1826, which he did not sow till 1827, obtaining from two ears 'rather short of a bushel of shelled corn.' We see, then, that during 10 years he cultivated, in Hampshire, American corn, and afterwards that from Artois. He publishes in his tract two prints of this latter, in each of which he figures three seed-heads to a plant, and though he says it grows but 4 feet high, some of them bear four and more seed-heads, and one has even seven. I send you copies of these prints, that you may compare them with the plant you have of the Forty-day Maize. You will see that this latter has no such pretensions, for it bears but one seed-head, and it is rare that it bears more. He says that his corn averages from 270 to 300 grains per head—the Forty day Maize cannot boast, on a high average, of more than 200. The yield he obtained was 100 bushels per acre—my experience will not permit me to hope for more than 48 bushels. He further adds, 'So prolific have some of the plants been, that we have found many, very many ears, each having a small ear growing out from the side, or rather bottom of it. In several instances, two small ears growing thus; in some instances three; in one instance, at Kensington, four; in one instance, at Barn Elm, five; and in another six, so that in this last instance there is a clump of seven ears, coming out of one and the same footstalk, or tail.' In another chapter he says, 'Each plant will send out from the bottom of the stalk, just where it meets the ground, one, two, three, four, or more suckers.' It is a characteristic of the Forty-day Maize, that it rarely bears more than one head, and as rarely

throws out a sucker. Such a plant as Cobbett describes, with three heads and often more, and so *many* suckers, is quite a bush, and exactly answers to the appearance of much of the ordinary American corn that I have seen sown in Europe; and from the entire description of the 'Cobbett corn,' (found in a garden in Artois), I have little doubt that it was a variety of American origin. The Maize of the Pyrenees, from which I have produced the new hybrid I call Forty-day Maize, is extensively cultivated, and has been the food of the Basques from time immemorial. It is, in all probability, as ancient with them as is their occupation of the country; and if such a plant as Cobbett's corn was described to a Basque farmer, and the seed offered to him, he would most certainly reject it as unfit for the climate. But it is exactly the differences I have signalised that constitute the value of the Forty-day Maize, and disposes it to rapid maturity. Its yield is quite sufficient to satisfy the desires of reasonable people—the money-value of the crop being superior to that of Wheat. As to *Mais à Poulet*, I scarcely know any use for it except to show the two extremes of grain in the Maize plant, from the giant American to the dwarf, shot-grained, worthless, wild, *Mais à Poulet*. I could criticise Mr. Cobbett's description of his culture, and upon which his ideas were very unsettled; also his period of sowing, for he fluctuated between mid-April and end of May, having no sure observation to guide him; then the sowing half a-dozen seed in a bunch, a plan only suitable in a very rich soil and hot climate; the untimely stripping the plant of its leaves, &c. But he taught what he knew; he could do no more. His efforts, though they have fallen short, were above all praise; and notwithstanding there is a great deal of irrelevant matter in the treatise, there are many single pages of observation worth all the money the book costs." In conclusion, I beg to say, that the instances quoted by Mr. James Cobbett of the successful culture of Maize are very gratifying, and give me greater confidence in the task I have undertaken, not as a mere imitator of his father, but from a desire to impart the experience acquired during a long residence in a mountainous country, of temperate climate, where Maize is not cultivated, as is generally the case in the north and south of France, as an amateur or as a cattle crop, but has been raised from time immemorial for the food of the people. *W. Keene.*

Pig Killing.—Your indefatigable correspondent the Rev. G Wilkins, has not only the pen of a ready writer but a happy versatility of genius; put out of court by the testimony of numerous practical witnesses against his theories of bullock feeding, he turns with a ready facility to the art of pig killing, and recommends a mode by which the unfortunate animal is to be subjected to the disagreeable process of having his head broken before his throat is cut, or to speak more technically, the "aorta" opened. I object to this plan, on the score of humanity; having seen both pigs and bullocks killed in this way, I feel satisfied that their suffering is aggravated and not diminished; just by the knock on the head the animal is certainly prostrated at once, and there the advantage ends.—I wish you could prevail on your correspondent to suggest some mode by which the public should be spared the pain and annoyance of listening to the details of misery of the agricultural labourer, and of the ruined condition of the tenantry, and teach landowners how to be thankful for the possession of their estates, and how to use them most advantageously as well for the public as for themselves, through the instrumentality of tenants equally independent in their power of action, whether as farmers or electors—as in their capital. We might safely then leave such writers as "N. A. D. P." to propound their schemes of spoliation in the halls of the Chartists. "The only way" he says, "of benefiting the agricultural interest is by reducing the national debt - that is, by lowering the interest on money, and so enabling both landowners and farmers to procure capital at low interest, in order to employ it productively on the cultivation of the soil." In other words, plunder the national creditor to enrich the landowner and his tenant farmer! *W. H.*

Gorse.—I often see enquiries about Gorse in your columns. I am so much indebted to the information I derived from your Paper on this point, that I feel bound to give the results. I dibbled in 2 acres among Barley four years since, and I believe that I have a more valuable return from them than any 4 acres on my farm. I should, however, add, that mine is a light, sandy soil, unsuitable for growing hay. During the winter months I cut a cart-load daily, which is mixed with cut and steamed straw. I find my cows and horses very fond of it, and in high condition. Last winter, for three months I gave my horses neither hay nor corn. They had nothing but straw cut and steamed, and Gorse, with a fair supply of Carrots. I never saw them in better condition. My cows also give an abundance of good milk upon this diet. I strongly recommend all who have light and fine soil to try it. Perhaps some one who reads this will inform me of the best machine for bruising it. *W. D. Fox.*

Irish Waste Land Improvement.—If the ear should be deaf, and the feelings blunted to the sufferings of Ireland, still there is one of the strongest passions in the human breast, self-interest, which pleads loudly in this very wretched cause. What has Ireland cost us since the Union? Can it be less than 50 millions of money?—probably a great deal more. What does it cost us at the present time? There are 36,000 troops in that country. A regiment of infantry 1000 strong is said to cost 30,000*l.* a year; a regiment of cavalry a great deal more. If Ireland were now ruled by the good will and affections of the people, instead of by the bayonet, 6000 troops might be sufficient. The remaining 30,000 may be set down at a million sterling a year. To this is to be added the police force, 12,000 men, which cannot be reckoned at much less than half-a-million. Here there is a million-and-a half of money a year that might be saved to the country; a sum that would go a good way towards satisfying Messrs. Cobden, Hume, and Bright in the reduction of the army. It is further to be considered that, since the time of the Union, Ireland has been a dead weight and a drain upon this country, instead of its being a treasure, a source of wealth; it has been exempted from the income and assessed taxes, yet it is still overwhelmed with a taxation which the land cannot bear. Here are to be found ruined proprietors, tenants defrauding their landlords, and clandestinely quitting their holdings, and cottiers perishing from want and misery. In short, Ireland is in an infinitely worse state now than it was when we took the government of the country upon our own shoulders, half a century ago. To what is this to be attributed? To one cause, and one cause only—the want of work. Mr. Powlett Scrope, to whom Ireland is so much indebted, has brought this question before the House of Commons repeatedly, but it has been received with lukewarmness and indifference, and he has often had to speak to almost empty benches. The only plausible answer that was given to his proposition was by the present Secretary for Ireland, who stated, that if Government were to undertake a plan of that kind, it would reduce Ireland to a mass of pauperism. This may be very true, if it were to be conducted in the same manner as the work was in the late instance; but by judicious management, and by a plan the same as has been mentioned in Scotland, those evils might be avoided. A great statesman thinks everything is to be effected by a grand *coup d'état*; but common sense points out that the first thing in legislation is to give food to the indigent poor. Did not the greatest sovereign this country has perhaps known, the maiden queen, act upon this principle, when she passed the poor-law upon part of which we are acting this very day, leaving out at the same time one most important part, that each parish was to set the idle and unemployed to suitable work? The Chinese pass with us for barbarians, but in their laws and institutions they have many things which it would do well for us to copy. One of their maxims is, that to govern a people peaceably and well, the first thing is to have them well fed. And in what way could China maintain her 300 millions of people, but by cultivating every nook and corner of the country; in some parts raising large crops by irrigation, in others growing two or three crops on the same land in the same year by high cultivation. The strength of a people is in its numbers, so long as subsistence can be found for them; and it may be very questionable whether, if Ireland were cultivated in the same way that China is, instead of the 8 millions which it is now supposed to subsist (one third of whom are perhaps barely subsisted), it might not equally well subsist 30 millions, or a great many more. If no attempt is to be made to bring more land into cultivation, the only alternative left is to promote emigration; but there are many reasons why home colonisation is preferable to foreign. The expense of sending 500,000 persons, with their wives and families, to Australia, or any colony capable of supporting them, would be enormous; and, to use a familiar illustration, where such a thinning of the people takes place, it usually acts like the thinning of a plantation—the other trees grow so much the faster. Your correspondent, already alluded to, says, that if, instead of improving the farming of certain districts, these were left to themselves, the evil would work its own cure; the people would soon starve down, either by death or emigration, to the point of support which the soil would naturally yield. This argument seems rather to belong to some member of an emigration committee, or of some company of undertakers, than to a legislator who consults the welfare and happiness of his people. There is an old story in heathen lore of a great tyrant called Procrustes, who had an iron bed, on which he bound his victims; if their legs projected over the bedstead, he had them cut off to fit it, if they were too short, he had them drawn out by force: so, here, the land is not to be made to suit the people, but the people to die off to suit the land. The existing session of Parliament is a most important one for Ireland. In the last session nothing, or next to nothing, was done; the only measure that was passed was the Encumbered Estates Bill, to give power to ruined proprietors to sell their estates with more ease. The reason assigned for the omission was that the House was so much engaged with other bills, Jews' bills and others of a similar kind, that they had not time to legislate for Ireland. (This, at all events, holds out a strong argument for repeal). It remains to be seen whether the present session will be more productive of good. All seem alive now to the necessity of something effectual being done. The landlords, feeling the poor-law measure pinch them severely, are happily coming forward to force Government into a change of system. It is their interest to see that wherever Government money is bestowed, it be employed in reproductive works, and it is still to be hoped that the 2 or 3 millions of destitute people may be set to work on the waste lands of the kingdom, and thus not only obtain competent wages, but be improved in their domestic and social habits. *Law, Ravestone.*

Pigs and their Tails.—I see in a late number of your Paper an article signed "W. C. S.," showing the cause of pigs losing their tails is attributable to weakness; I always thought so myself, but I was told the other day that I was quite wrong. A friend asked me to come and see a fine pig which he had just purchased, and which I found to be minus this ornamental appendage. I asked him what induced him to buy a pig without a tail, which I considered to be a great defect. He replied, "Oh, the pig was born so;" I said, "Nonsense, there is the stump plain enough where it has come off either from weakness, or, owing to sickness it has been purposely cut off by the doctors." But there was no convincing him, and he turned round and appealed to his gardener, who was at work near us, "If some particular breed of pigs were not always born without tails." The man declared his master was right, and said that the sort (but I forget the breed he spoke of), when they were born, the whole litter would be without tails. I thought it simply ridiculous—but I could not persuade either master or man that the pig before us ever possessed an inch of tail more than the bit of stump we were speaking of, which might have been an inch perhaps in length, but not more certainly. I quite agree with "W. C. S.," that crossing with a more hairy breed is the more certain remedy to adopt to cure this defect. *A Subscriber.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House in Hanover-square on Tuesday last, the 17th of April: present—Mr. RAYMOND BARKER, Vice-President, in the Chair, Earl of Tyrconnel, Sir John V. B Johnstone, Bart., M.P., Mr. Blanshard, Mr. Brandreth, Mr. Burke, Colonel Challoner, Mr. Dyer, Mr. Fuller, M.P., Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Kinder, Mr. Jos. Laycock, Mr. C. E. Overman, Mr. Apsley Pellatt, Mr. Roddam, Professor Sewell, Mr. Spencer Stanhope, Mr. Hampden Turner, Mr. T. Turner, and Professor Way. The Baron Mertens d'Osten, deputed to this country on the present occasion by H.M. the King of Belgium, to inspect the practical results of the different systems of drainage adopted in England, took his seat at this Meeting of the Council as one of the life-members of the Society.

The following new Members were elected:

Paxton, Joseph, Chatsworth, Bakewell, Derbyshire
Kitton, John, Norwich
Quicke, John, jun., Newton House, Exeter
Fenn, George, Beccles, Suffolk
King, Charles, New Cottage Farm, Potter's Bar, Herts.
Buck, James, Warham, Wells, Norfolk
Cobb, Robert L., Higham, Rochester, Kent
Holmes, George, Brooke, Norwich
Wilson, William, Scarning, East Dereham, Norfolk
Johnson, John Godwin, Norwich
Reeve, James, Snetterton Hall, Larlingford, Norfolk
Seaman, Robert, Norwich
Wiley, Joseph, Sprowston, Norfolk
Throld, William, Norwich

The names of four candidates for election at the next meeting were then read.

PRIZE ESSAYS.—Mr. PUSEY, M.P., Chairman of the Journal Committee, reported to the Council the following awards made by the Judges of Essays: namely—

I. The Society's Prize of 50*l.* for the best Report on the Farming of Sussex, awarded to JOHN FARNCOMBE, of Patriot Place, Brighton.

II. The Society's Prize of, 20*l.* for the best account of the Breeding and Management of Pigs, awarded to THOMAS ROWLANDSON, of Greek street, Liverpool.

QUALITY OF WATER.—Colonel CHALLONER having submitted to the Council a specimen of sterile peat soil dug up on his estate in Surrey, in which were found decaying portions of wood mixed with a blue substance, Prof. Way reported his examination of the same, and his opinion that the blue substance contained in that soil was Prussian blue. Col. Challoner then stated the contamination which that soil communicated to the pure water, from the higher sands that passed through the peat below, and the circumstances generally affecting the supply of water in his locality. This statement led to a very interesting discussion and detail of facts connected with the difference in the quality of water as obtained, at almost contiguous sources, from the different mineral strata of the country, Sir John Johnstone citing the fact that the purest water, as far as his own experience extended, was derived from the sandstone formations, and Mr. Fisher Hobbs detailing the circumstances under which common chalk shot down, in quantities of 2 or 3 tons, into wells yielding water impregnated with iron, was found entirely to correct the character of the water derived from that metal, a fact which Professor Way regarded as very important and strictly accordant with the laws of chemical decomposition.

INODOROUS ANIMAL MANURE.—The Marquis of DOWNSHIRE reported to the Council, that he had found the rich animal matter converted by the chemical process of Mr. Home (late 2d Life Guards), of 22, Brick-street, Park-lane, into a powerfully fertilising manure, so economical and advantageous an application—one ton, at 6*l.*, being equal in effect to 15 tons of farm-yard manure—that he had this year ordered 10 tons of it for the use of one of his farms. The Council ordered their best thanks to the Marquis of Downshire for this intimation, with a request that his lordship would favour them with a detailed report of any results he might obtain in the application of the manure in question.

STEAMED BONES.—Mr. WHEELE, of Bullrush court, Reading, favoured the Council with two specimens of bone, submitted by him to the operation of steam at

high pressures, agreeably with the suggestion of Mr. Blackhall in Scotland, for the purpose of extracting the gelatine, and leaving the phosphate of lime, or earthy matter of bones, more distinctly applicable as a manure. The first specimen had been submitted to a pressure of 50 lbs. to the square inch for eight hours, and 13 cwt. of bones had yielded 15 pailfuls of jelly; the same bones exposed to the same pressure for 12 hours longer had furnished 12 more pailfuls of a weaker jelly. Mr. Wheble simply reported to the Council these results as he had obtained them, without being too sanguine as to the value of the process in question in comparison with the ordinary mode of at once disintegrating the particles of bone, and modifying the chemical character of its phosphate of lime by means of sulphuric acid.—Professor Way had analysed the specimens of bone then submitted to the Council by Mr. Wheble, and had found two remarkable facts connected with the process:—1. That the bones, after 28 hours' steaming, still contained 15 per cent. of gelatine; 2, that the greater proportion of the gelatine extracted was obtained in the earlier period of the process, the additional 12 hours' steaming procuring only 3 per cent. more of that animal matter.—The Council ordered their best thanks to Mr. Wheble for the favour of this communication, and to Professor Way for his chemical examination.

Professor Simonds.—Professor Simonds communicated to the Council his acknowledgment of the honour conferred upon him by his election as one of the Honorary Members of the Society, and "that, while that distinguished mark of their favour recognised his previous efforts to be worthy of their patronage and support, it would stimulate him to increased exertions in the furtherance of their national objects." Professor Simonds also expressed his entire willingness to accede to the request of the Council that he should deliver a Lecture before the Members on the occasion of their ensuing Norwich Meeting in July next.

Stoppage of Drains.—Captain Richardson favoured the Council with replies to queries, suggested at a former Meeting of the Council by Dr. Calvert, in reference to the stoppage of drains by masses of vegetable fibre, supposed by Captain Richardson to proceed from the roots of the Mangold Wurzel crop adjoining. These replies not only furnished, in Captain Richardson's opinion, additional strength to his conjecture in reference to the nature of this vegetable fibre, but included the experience of another party, Mr. Stanford, who was led by him to adopt the same opinion.—In order to investigate this subject microscopically, Mr. Brandreth Gibbs favoured the Council with a supply of actual fibres from the Mangold Wurzel root. An interesting discussion then ensued, in the course of which Mr. Fisher Hobbs cited his own experience, as well as that of the late Mr. Handley and of Mr. Love, on the great depths at which the roots of the Wheat and Barley plants would strike into the earth. He thought the subject a most important one in connection with the question of deep cultivation and the placing of drains at least 4 feet below the surface, in order to remain, under ordinary circumstances, beyond the reach of radical fibres. He had great confidence in the use of collars applied to drain-pipes, for preventing the insinuation of these fibres.—The Chairman also cited the experience of Mr Badcock, of Oxford, and Mr. Blanshard that of Viscount Barrington, in reference to the great depths to which the Wheat plant had been found by them to proceed.—Prof. Way had recently read with great interest that portion of the statement of Mr. Chadwick to the Sanitary Commission (page 22), which related to the faculty of plants to seek food or manures by their roots, and the conditions under which they were repelled from entering the mouths of drains, a subject which had engaged the attention of Mr. Denison some years ago when drawing up his report on the Clipstone Water-Meadows for the Society (Journal, vol. i., p. 364), and he thought Mr. Fisher Hobbs's suggestion of common tar for such a repellent application to the mouths of pipes, as a very good one.

Draining Level.—The Earl of Tyrconnel favoured the Council with the inspection of a very accurate and simple levelling instrument, made, under his lordship's instructions, by Mr. Cooke, an optician, residing at York, and which he had himself employed with very great success in the drainage operations on his own estates. The instrument consisted of a small but powerful telescope, furnished with cross-wires in the eye-piece, and containing a spirit-level, embedded out of danger in the upper part of its tube. This telescope was placed by means of an universal joint, on a very firm and simple folding tripod stand, and the spirit-level admitted of accurate adjustment by a screw. The level was used with a mahogany graduated sliding-staff, and was accompanied with a book of instructions for its use. Lord Tyrconnel hoped that the cheap rate at which this level was made, and the satisfactory manner in which it furnished its results, would render it desirable to all parties engaged in the most important but delicate operations of land drainage. The best thanks of the Council were then expressed to Lord Tyrconnel for the favour of this inspection and explanation. A letter was read from Mr. Charnock on the advantage of Mr. Cooke's level, and of his own success in reference to the employment of mechanical means for cutting out and filling in drains.

New Hoe.—Dr. Spurgin presented to the Council one of his newly-invented "Shark's-tooth Hoes," for the purpose of hoeing without injury to the roots of plants, for which the Council ordered their best thanks.

The Council then adjourned to Tuesday next.

Miscellaneous.

Presentation of Plate.—On Friday morning, a deputation of the clerks and workmen belonging to the agricultural repository of Messrs. Stratton and Hughes, of this city, waited on their late employer, Mr. Richard Stratton, of Cheltenham-road, to present him with a handsome testimonial, in the shape of a waggon, constructed entirely of silver. This unique and beautiful specimen of art is the fruit of a subscription raised for the purpose and was constructed to order by Mr. Williams, of Barton-alley. It weighs upwards of 18 oz., and is built on a linear scale of half-an-inch to the foot, every detail of the wheels, axles, under carriages and body being shown with the greatest fidelity. The waggon is enclosed in a glass case, and bears the following inscription: "To Richard Stratton, Esq., this testimony of respect and attachment is presented by his late clerks and workmen, 30th March, 1849." This testimonial is considered a peculiarly appropriate recognition of the celebrity which Mr. Stratton has enjoyed as a builder of waggons for more than 40 years, and marks the sense of pride and gratification entertained by those who for many years have been associated with him. The serious attack of illness from which Mr. Stratton is suffering has prevented the usual ceremonies and speeches which would have been appropriate to the occasion, but in the event of his return to health the present will no doubt be suitably acknowledged. We understand that the waggon is now open to public inspection in the show rooms of the agricultural repository, Clark-street. [We regret exceedingly to add that since the foregoing paragraph was penned, Mr. Stratton's illness has terminated fatally. He breathed his last on Sunday night, just 6 months after his retirement from business, deeply lamented by all who knew him.] *Bristol Gazette.*

Calendar of Operations.

APRIL.

Berwickshire Merse Farm, *April* 13.—We have finished sowing Barley, ploughing land for Turnips, threshing Oats for the horses, threshing and delivering Peans, carting dung as the land was too wet for ploughing, the shepherd attending the ewes lambing—they are twinning well this year. *J. B.*

Lammermuir Sheep Farm, *April* 12.—After the finest month of March we have had for several years, the weather has become unusually stormy for April. In fact since the 28th of March we have scarcely had a dry day, but snow, sleet, and cold rain from the east in continued succession. As might have been expected, this has had a most injurious effect on sheep stock generally, especially on ewes, which are now so near lambing, indeed they have sustained more injury during the last fortnight than during any six weeks of the past winter. Unfortunately, also, our Turnips were finished about the 1st of the month, except a very few Swedes reserved for the milk calves and ewes, which, from some cause or other, require to be confined for a few days. But there are few evils without some mitigation, for although the weather is so unfavourable, our hills exhibit a greener hue than they have done at this date for several years past, consequently we do not anticipate a want of milk among the ewes. Though we have a few lambs, yet the regular lambing time does not begin until the 15th, after which the shepherds will be kept very busy for some weeks. We find at very useful, at this season especially, to have a few well-sheltered spots, conveniently situated for the shepherd, fenced off some time previous to the lambs making their appearance, into which ewes that are shy to their lambs, or have twins, may be put for a few days. This prevents much confusion and disturbance, as the shepherd knows at once where to find these special objects of his care, and, having been saved for a short time previous, there is generally Grass sufficient for them, though when such is not the case, a few Turnips, when to be had, will make up the deficiency. The jackets were removed from the Cheviot hogs about the middle of March. This is rather sooner than we had intended, but having had occasion at that time to have the ewes and them collected, we preferred doing it then to making another gathering and disturbance afterwards, with the probability of doing more injury to the ewes than any benefit the hogs might derive from retaining their covers for another fortnight. Those from the black-faces are being removed this week, when we also take the opportunity of branding our initial letter on their horns. Another year's trial of the jackets has greatly raised our opinion of their utility. Out of 600 ewe hogs (only about 70 of which received 16 weeks' Turnips), the loss during six months has scarcely been 1½ per cent.; while, in respect of condition, they will stand comparison with many in the district which have had four months' Turnips. When the jacket is removed, the wool underneath is found to have retained all the yoke it possessed in the end of November, when they were put on, affording a curious contrast to the bleached appearance of those parts which are uncovered. The sowing of corn was completed on the 26th of March. As we find Barley to be a precarious crop, we have sown nothing but Oats and a few Peas. The wet weather having prevented us from touching the fallows, men and horses have been employed in carting home wood for paling and other farm purposes, in repairing roads, and carting earth and rubbish into heaps for compost, and in other odd jobs. The planting of Potatoes will engage our earliest attention. *A Lammermuir Farmer.*

South Hampshire Farm, *April* 14.—Previous to the late rains, which commenced with the month of April, we had sown all the land which was cleared of the Turnip crop with Barley and Oats, also a few acres of Beans and Peas, all of which kinds of spring corn were sown under the most favourable circumstances, and that which is come up carries a very promising appearance. The dry weather of the past month of March seems to have had its usual effect upon the Wheat plant, and in many instances the Wheat, which looked sickly and bad before March, has now a strong and vigorous aspect; indeed, the Wheat plant in general, at the present time, may be said to promise well for a crop. The horse labour upon the farm has been of a varied character; it may be said that the horse labour is in a very forward state generally, but little time having been lost by bad weather since the commencement of the year. Our horses have been employed since our last report ploughing and preparing land for Barley and Oats, carting manure and planting Potatoes, ploughing and subsoiling land intended for Carrots, which we should have drilled by this time but the ground is rather too wet; when prevented from working on the land the horses have been employed at the threshing machine, having threshed out two ricks of Wheat lately, and carted to mill. Odd horses are kept continually at work removing hurdles in advance of sheep, carting Swedes for pigs and cows, carting manure from the stables and cattle boxes. Our Clover seeds and pasture land have been rolled with good effect after the late rains; the Wheat land was seeded with Italian Rye-grass and Hop Clover, harrowed and rolled in during the dry weather in March. The manual labour has been, draining in peat soil from 8 to 10 feet in depth, also draining in clay and gravel subsoil from 8 to 4 feet in depth. In the peat soil we use a 4-inch arch tile with sole; in clay soil we use a flat-sided pipe tile with narrow sole. At intervals the men have been attending the threshing-machine and winnowing Wheat; preparing night-soil and ashes in manure-house for Turnips; also mixing superphosphate of lime with dry ashes, in readiness to be drilled with Carrot seed. The shepherds are now fully employed attending sheep on Turnips. Our Turnips will probably last a fortnight longer, and without a favourable change in the weather, sheep-keep will be short during the month of May. We have not yet sold many south-Iowa lambs, the fall of lambs having been later than usual during the past season. Our Somerset lambs are nearly all sold, and many of the horned ewes are very fat and ready for market; but for some weeks past the trade for mutton has been so bad that none but the best southdown wethers and ewes find a ready sale, and those at a very reduced price. Corn is still selling at a very low price; indeed it is difficult to sell damaged Wheat and Barley, immense quantities of which have been used for inferior purposes, such as feeding pigs, &c. When we consider the short produce of Wheat, and the large quantity not available for the miller, it seems likely we may have a rise in prices before harvest, should there be any diminution in the foreign supply. *J. B.*

Notices to Correspondents.

Barley: *A Spade Farmer.* We should have dibbled in Beans or some *grain* crop to ripen about the same time.

Barn Floors, &c.: *Rus in Urbe.* The less, of course, you try them with heavy weights the better.—Winter Tares are none the safer for being sown earlier than September.—Your compost may be spread after the first cut of Clover, and if weather suits you, that would be the best time you *could* apply it.

Compost. *N. L.* We know of no precise proportions in which the ingredients are to be mixed. The more of the manure, with about 3 cwt. of salt per acre, the better. The earth will be a valuable addition or not, according to its quality.

Conveyance of Water: *C. M. S.* A ditch with well puddled bottom and sides, will convey it for a short distance without loss over a porous subsoil.

Malt Coombs. *Inquirer.* They are the dried sproutings.—About Dorsetshire terms we have inquired.

Reaping Machines. We want the history of reaping machines. Will any one, acquainted with any of them, kindly name and describe it for us.

Rent Clause: *An Essex Man.* "Yielding and paying, therefore, yearly, and every year, a clear rent equal in amount to the value of — quarters of Wheat, calculated for such payment according to the seven years' average price of Wheat, published in the *London Gazette* in the January immediately preceding the date of such payment."

Suet Bark. *S. S.* We have used large quantities of it as an absorbent of liquid manure without injury. The Wheat has suffered from other causes than this, we imagine.

Stables, &c. *A Subscriber.* Room for three horses will be needed on 100 acres of land, say 18 feet by 24, which will leave space for harness, corn, &c. Our dressing and threshing barn is three storied, and 40 ft. by 20, for about 240 acres.

Young Chicks: *Rus* says: "Some young chicks which had been fed on egg and rice [eggs boiled hard? rice unboiled?], fell sick with a disease which caused their crops to feel quite hard. They were found on being opened to be full of water. How should they have been treated?" No doubt improper diet caused indigestion and produced fever—fever urged them to slake their excessive thirst, and the surplus liquid thus imbibed may have filled up the air-cells, which abound among the abdominal viscera—dropsy was the consequence. These complaints are very common, not only among the young but also adult fowls. See "D. S. E.'s" articles on Diseases of Poultry and their cure. Prevention is the only true method, as regards young chickens.

Erratum. For "brought," in page 218, col. *b*, line 40 from the top, read "bought."

Markets.

COVENT GARDEN, April 21.

Notwithstanding the severity of the weather, the market continues to be well supplied with Vegetables and Fruit, but trade is very dull. Pine-apples are sufficient for the demand. Hothouse Grapes are very good and more plentiful. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst vegetables, young Turnips may be obtained at 3s. a bunch, and Carrots at 1s. 6d. Cauliflowers and Broccoli are sufficient for the demand. Asparagus, French Beans, Rhubarb, and Seakale are plentiful. Potatoes remain stationary. New Potatoes from Cornwall fetch 1s. per lb. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Gardenias, Tulips, Hyacinths, Cinerarias, Tropæolums, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 9s		Chestnuts, p. peck, 4s to 7s	
Grapes, hothouse, p lb, 10s. to 15s		Almonds, per peck, 6s	
— foreign, p. lb., 1s 6d to 3s		— sweet, per lb., 2s to 3s	
Strawberries, p. oz., 6d to 1s 6d		Walnuts, p. 100, 1s 6d to 2s	
Apples, dessert, p. bsh., 8s to 12s		— p. bush., 10s to 24s	
— kitchen, p. bsh., 4s to 8s		Nuts, Bar., p. bush., 20s to 27s	
Oranges, per doz., 1s to 2s		— Filb., p. 100 lbs., 60s to 100s	
Lemons, per doz., 1s to 2s		— Cob, p. 100 lbs., 90s to 150s	
— per 100, 10s to 18s		— Brazil, p. bsh., 12s to 19s	

VEGETABLES.

Cabbages, p. doz., 3d to 1s		Onions, p. bunch, 2d to 4d	
— red, p. doz., 2s to 6s		— p. bush., 4s to 6s	
Greens, p. doz bunches, 1s 6d to 4s		— Spanish, p. doz., 1s 6d to 4s	
		— pickling, p. hf. sieve, 1s 6d to 3s	
Cauliflowers, p. doz., 2s to 4s		Shallots, per lb., 4d to 8d	
Broccoli, white, p. bun., 1s to 2s		Garlic, per lb., 4d to 8d	
— brown, p. bun., 6d to 1s 3d		Artichokes, Jerusalem, p. half sieve, 9d to 1s	
Sorrel, p. hf. sieve, 9d to 1s		Lettuce, Cab., p. sc., 4d to 6d	
Potatoes, per ton, 60s to 100s		— Cos, do., 9d to 1s 6d	
— per cwt., 3s to 10s		Endive, per score, 1s to 2s 6d	
— per bush., 2s 6d		Mushrooms, per pottle, 6d to 1s 3d	
Turnips, p. doz. bun., 1s		Small Salads, p. punn., 2d to 3d	
Red Beet, per doz., 2s		Fennel, per bunch, 2d to 3d	
Horse Radish, p. b., 4s 6s		Savory, per bunch, 2d to 3d	
Asparagus, p. 100, 6s to 9s		Thyme, per bunch, 2d to 3d	
Seakale, p. punn., 2s		Watercress, p doz. bun. 6d to 9d	
Rhubarb, p. bundle, 4d to 1s 6d		Parsley, p. hf. sieve, 2s to 4s	
French Beans, p. 100, 1s to 2s		— Roots, p bdle., 1s to 1s	
Cucumbers, each, 1s to 2s 6d		Marjoram, green, p bun., 9d to 1s	
Leeks, per doz., 6d to 1s		Mint, green, per bunch, 4d to	
Celery, p. bundle, 6d to 1s 3d			
Radishes, p 12 bands, 6d			
Carrots, p. doz. bun., 3s to 8s			
Spinach p. sieve, 1s 6d to 2s 6d			

HAY.—Per Load of 36 Trusses.

Smithfield, April 19.

Prime Meadow Hay	70s	to 78s	Clover	60s	to 95s
Inferior ditto	60	65	New Clover	—	—
Rowen	50	60	Straw	27	30
New Hay	—	—		J. Cooper.	

Cumberland Market, April 19.

Prime Meadow Hay	75s	to 80s	Inferior	50s	to 80s
Inferior ditto	50	65	New Clover	—	—
New Hay	—	—	Straw	28	34
Old Clover	90	96		Joshua Baker.	

Whitechapel, April 19.

Fine Old Hay	68s	to 72s	New Clover	84s	to 90s
Inferior ditto	50	60	Inferior ditto	50	60
New Hay	63	68	Straw	24	30
Old Clover	95	100			

SMITHFIELD, MONDAY, April 16

We have a considerably larger supply of Beasts than on Monday last. The dead-markets being clearer than of late, and the weather being good, trade is active; however, the increased quantity causes on the average rather lower prices. Our top quotations are not so readily obtained as of late. The number of Sheep is rather larger, but still it is small. Trade is more cheerful, but prices are very little higher. Lamb is in request, and the choicest make 2d. per 8 lbs. more than on Friday. We have only a few Calves on offer, and they are not of first-rate quality. Trade continues steady. From Germany and Holland there are 191 Beasts, 516 Sheep, and 47 Calves; from Norfolk and Suffolk, 2300 Beasts.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Here-fords, &c.	3	4 to 3	8	
Best Short-horns	3	2 — 3	6	
2d quality Beasts	2	6 — 2	10	
Best Downs and Half-breds	4	0 — 4	4	
Ditto Shorn	3	6 — 3	8	
Best Long-wools	3	8 to 4	0	
Ditto Shorn	3	4 — 3	6	
Ewes & 2d quality	3	8 — 4	0	
Ditto Shorn	2	10 — 3	4	
Lambs	5	8 — 6	8	
Calves	4	0 — 5	0	
Pigs	4	6 — 4	10	

Beasts, 8892; Sheep and Lambs, 26,800; Calves, 90; Pigs, 250

FRIDAY, April 20.

We have a pretty good supply of Beasts, quite equal to the demand. Monday's prices remain unaltered, although there is more difficulty in obtaining the highest ones. Trade is very dull for Sheep; the number is not excessive, therefore scarcely any reduction is submitted to. The supply of Lambs is short, but the cold weather prevents any rise in price, late rates are, however, freely given, owing to the shortness of the supply. There is a large number of foreign Calves, in consequence trade is heavy at a reduction of about 4d per 8 lbs. From Holland and Germany we have 92 Beasts and 145 Calves; from Scotland, 250 Beasts; and 130 Milch Cows from the home counties.

Best Scots, Here-fords, &c.	3	4 to 3	8	
Best Short-horns	3	2 — 3	6	
2d quality Beasts	2	6 — 2	10	
Best Downs and Half-breds	4	0 — 4	4	
Ditto Shorn	3	6 — 3	8	
Best Long-wools	3	8 to 4	0	
Ditto Shorn	3	2 — 3	6	
Ewes & 2d quality	3	4 — 3	10	
Ditto Shorn	2	8 — 3	2	
Lambs	5	8 — 6	8	
Calves	3	8 — 4	8	
Pigs	4	0 — 4	10	

Beasts, 856; Sheep and Lambs, 5450; Calves, 285; Pigs, 260.

HOPS, FRIDAY, April 20.

MESSRS. PATTENDEN and SMITH report that the market continues about the same. Fine Hops are very scarce.

POTATOES.—SOUTHWARK, WATERSIDE, April 16.

The Committee report that our market continues scantily supplied with English Potatoes, but we are so well supplied with foreign growth that there is not much advance in prices. The following are this day's quotations:—Yorkshire Regents, 130s. to 180s.; Scotch, do., 120s. to 140s.; Scotch Whites, 90s. to 100s.; French Whites, 80s. to 100s.; Belgian do., 80s. to 90s.; Dutch, 100s. to 110s.

MARK LANE.

MONDAY, APRIL 16.—The supply of English Wheat at this morning's market was exceedingly small, which enabled factors to dispose of the land carriage samples at an advance of 2s. to 3s. per qr. on the prices of this day se'nnight. Foreign must be written 2s. per qr. dearer, but the sale was less extensive than last week.—We quote an advance of 1s. per qr. on Barley and Oats; 1s. to 2s. on white Peas.—Beans are the turn dearer.—The top price of town-made Flour is raised 2s per sack.

FRIDAY, APRIL 20.—The arrivals of grain from abroad continue good; those of English small. This morning's market was moderately attended, and buyers of Wheat confine their purchases to their immediate wants on about the terms of Monday last.—Barley, Beans, and Peas support that day's quotations, the last mentioned being in good demand.—Oats continue to meet a fair sale at the late advance.—Since the 13th instant prices of Wheat throughout the country have advanced about 2s. per qr., making the entire rise about 4s. from the lowest point. The trade has been firm, but buyers are not disposed to follow up prices, owing to the general opinion that a reaction to the same extent will follow the raising of the blockade by the Danes; but if this be not immediate, and supplies decrease, the very large requirements for consumption may enable holders to maintain the advance. The top price of Flour was raised here 2s. per sack on the 16th instant, and a similar improvement has occurred in French and American. Barley, Oats, and white Peas are each 1s per qr. dearer. Indian Corn continues in good request at the late advance.

LIVERPOOL, FRIDAY, APRIL 20.—We have had very cold weather with much snow, hail, and rain, since Tuesday. Supplies continue moderate, but the trade has been rather slow, and at this day's market there was a poor attendance of dealers; the transactions were in retail at a decline of 1d. to 2d. per bushel on Wheat, and 6d. to 1s. per barrel on Flour. Oats were in moderate request, and 4d. per bushel dearer, and good Oatmeal, from scarcity, rose 6d. per load. No change in Barley, Beans, or Peas. For Indian Corn there was a fair sale at Tuesday's prices.

IMPERIAL AVERAGES.	WHEAT.	BARLEY	OATS.	RYE.	BEANS.	PEAS
Mar. 3	45s 6d	29s 1d	19s 7d	26s 11d	30s 2d	32s 11d
— 10	45 1	29 0	16 11	26 11	30 1	33 1
— 17	45 4	29 2	17 0	28 9	30 11	30 8
— 24	44 9	28 6	17 1	26 4	28 9	31 6
April 7	44 5	28 10	16 9	26 5	28 1	29 6
— 14	44 3	28 6	17 0	28 1	28 5	30 11
Aggreg. Aver.	44 8	28 10	16 10	25 2	29 1	31 4
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICE.	MAR. 3.	MAR. 10.	MAR. 17.	MAR. 24.	APR. 7.	APR. 14.
45s 6d		...	...	...	...	...
45 4	...	...	...	...	...	...
45 1	...	...	...	...	...	...
44 9	...	...	...	...	...	...
44 5	...	...	...	...	...	...
44 3	...	...	...	...	...	...

PRICES CURRENT.

	London. Apr. 9. qr.	London. Apr. 16 qr.	Liverpool. April 10. 70 lbs.	Liverpool. April 17. 70 lbs.	Wakefield. Apr. 6 qr.	Wakefield. Apr. 13 qr.	Boston. Apr. 11 qr.	Boston. Apr. 18 qr.	Birmingham. April 12. 62 lbs.	Birmingham. April 19. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d	s. d. s. d
New, red	38 to40	40 to42	6 3 6 8	6 6 6 10	42 to45	43 to47	38 to45	41 to47	5 10 6 4	6 0 6 6
„ white	44—47	46— 48	6 10 7 4	7 0 7 7	42—47	45—51	40—48	45—50	6 2 6 8	6 5 6 11
Old, red	40—43	42—46	6 6 8 6	8 6 6 11	41—43	42— 44	—	—	6 1 6 6	6 2 6 8
„ white	46— 50	48—52	6 10 7 6	7 0 7 8	—49	—50	—	—	6 1 6 9	6 4 7 0
Foreign	36—56	38—58	5 6 8 0	4 4 8 0	38—50	39— 51	—	—	5 4 7 0	5 6 7 2
			480 lbs.	barrel						
Rye—New	24—25	22—24	—	—	—	—	—	—	—	—
Foreign	24—25	24 — 23	—	—	—	—	—	—	—	—
Foreign meal	7l. 5s	6l.—7l	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding	21—24	22—26	—	—	21—22	21—22	24—26	24—26	23—27	23—26
Malting	24— 28	25— 29	30s—32s	30s—3 2s	26—31	26—31	26—28	28—30	29—33	29—34
Foreign	18—26	19 —29	—	—	21—26	21—26	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White	19—24	19—26	2s 3d 3s 0d	2s 4d 3s 0d	—	—	14—18	14—19	18—30	18—30
Black	16—21	16—22	2 2 2 6	2 3 2 7	—	—	—	—	17—18	17—18
Foreign	14— 19	16—20	2 2 2 4	2 3 2 5	—	—	—	—	—	—
			qr.	qr.		qr.				
Peas—Boilers	24 —27	25—28	34s—	34s—	—	28 32	—	—	36—40	33—38
									196 lbs.	196 lbs.
Grinding	22—28	23—26	28 —30s	27 —28s	—	—	—	—	11—12	11—12
Foreign	24— 32	24 —33	31 —33	30 —33	—	—	—	—	—	—
Beans—										
New, small	20—30	20—30	27 —32	30 —33	29—30	29—30	24—30	26—32	11—13	11—13
Longpods, &c.	26—32	26— 32	—	—	—	—	—	—	—	—
Old	27—39	27—39	32 —34	32 —34	35—36	35—36	34—36	34—36	14—16	14—16
Foreign	22— 36	21—36	30 —32	24 —32	25—27	25—27	—	—	10—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign	36—40	36—40	—	—	—	—	—	—	—	—
Linseed Cakes										
British	9l. 7s	9l. 7s	7l. 15s—8l.	7l. 12s	—	—	—	—	—	—
Foreign	6l.—9l.	6l.—9l	—	—	—	—	—	—	—	—
Indian Corn—	24—28	26— 30	28s—31s	30s—33s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	36—40	36—44	32—36	32—37	—	—	35—38	32—38	33—40	34—40

Weekly Averages and Imports.	Aver. Apr. 17	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT	47 6	18330	44 10	10126	44 5	12506	48 9	3585	47 2	3918
BARLEY	30 4	5280	26 11	1408	28 9	4694	26 0	12	30 7½	650
OATS	18 10	16430	16 11	295	16 9	905	12 11	1093	17 6½	1175
RYE	25 0	—	25 10	770	28 5	—	—	—	—	—
BEANS	27 4	—	—	195	28 1	1248	28 3	321	—	1220
PEAS	28 0	—	—	670	29 0	22	—	—	—	—
SIGNED	KINGSFORD and LAY.		SEGAR and TUNNICLIFFE.		SANDARS and DUNNS.		THOMAS WRIGHT.		J. and C. STURGE.	

MURIOPHOSPHATE.

PONTEY, BOWEN AND CO., beg to call the attention of their Friends and Agriculturists generally to the above valuable MANURE, which they continue to manufacture under the inspection of an eminent agricultural chemist. This Manure has been sufficiently tested to enable the Advertisers to say it is equal to any now offered to the public, and in consequence of the favourable testimonials received from a number of gentlemen who have tried it, they have been induced to prepare a large stock, which they can supply immediately in excellent condition.

P. B. and Co. also manufacture BONE MANURE, half-inch and fine dust, warranted genuine, which they will deliver free to any part in the west of England, or to Bristol, per rail. They have also on hand a supply of Superphosphate of Lime, Peruvian Guano, Nitrate of Soda, Gypsum, Salt, Charcoal, &c. Samples of each may be seen, and prices obtained, on application at the Bone Mills, Drake's-place, or to Mr. PONTEY, Cornwall-street, who will furnish any information required relative to quantity and sorts for various crops and soils.

Drake's place, Plymouth, April 21.

THE LONDON MANURE COMPANY would, at the present time, call particular attention to their CORN MANURE, which they strongly recommend as a top-dressing for all corn crops. It contains a large amount of ammonia and phosphates, and will be found an excellent substitute for guano. Price 7l. 7s per ton (3 cwt. per acre). For Turnips, Mangold Wurzel, and Carrots, they would urge the use of the Urate, or Superphosphate of Lime; both containing an increased quantity of phosphates and other mineral substances, so essential for all root crops.

The following MANURES they supply on the best terms:—Peruvian Guano, Nitrate of Soda, Sulphate of Ammonia, Soda Ash, for destroying Wireworm, Gypsum, Sulphuric Acid, Agricultural and Fishery Salt, Charcoal, &c.

EDWARD PURSER, Secretary.

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Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

DO YOU BRUISE THE OATS YOU GIVE YOUR HORSES? No. Then you lose one bushel out of every three, and your Cattle do not do half so well. MARY WEDLAKE AND CO.'S OAT BRUISING MILLS; superior Chaff Engines, simple in construction, doing from 30 to 300 bushels daily, and more. All respectable Coachmasters and Brewers use these Implements.—To be seen at 118, Fenchurch-street, opposite Mark-lane, close to the Blackwall Railway.

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Vulcanised India-rubber Garden Hose, fitted with brass taps, copper branch, and roses complete, ready to be attached to Pumps, Water-butts, or Cisterns.—Sole Manufacturer, JAMES LYNE HANCOCK, Goswell-Mews, Goswell-road, London.

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ORCHIDS FROM VERAGUA, SOUTH AMERICA.

MR. J. C STEVENS begs to announce for Sale by Auction, at his Great Room, 38, King-street, Covent Garden, on TUESDAY, 24th April, at 12 for 1 o'clock, ANOTHER PORTION OF Mr. WARCZEWICZ'S COLLECTION OF ORCHIDS, &c.; comprising Trichopilias, Brassavolas, Cattleyas (several unknown and undescribed), a Lacæna, a most splendid Puya, three varieties of a very fine Beslerii, and some terrestrial Orchids, with the drawings and dried specimens exhibited.—May be viewed on Monday and morning of Sale and catalogues had.

ESTABLISHED ORCHIDS, the property of a Gentleman.

MR. J. C. STEVENS will include in his Sale on TUESDAY, 24th inst. (after the imported Plants as per previous advertisement), a small COLLECTION OF ORCHIDS which are very healthy, and comprises some of the favourite varieties of Brides (including Crispum), Dendrobiums, Miltonias, Oncidiums, Odontoglossums, Cattleyas, &c.; many of which have flower spikes.—May be viewed on the morning of Sale and Catalogues had.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS PROTHEROE AND MORRIS will submit to public competition, by Auction, at the Mart, Bartholomew-lane, on THURSDAY, April 26, at 12 o'clock, a first-rate collection of CARNATIONS, PICOTEES, PINKS, choice HEARTSEASE, FUCHSIAS, VERBENAS, DAHLIAS, &c. —May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

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TO BE SOLD, either together or separately, an ALDERNEY COW with a CALF by her side, an ALDERNEY COW in CALF, an ALDERNEY HEIFER, and an ALDERNEY BULL; they are beautiful of their kind, and of the purest blood, and will be sold a bargain.—Enquire of Mr. OLIVER, Post-office, Ewell, Epsom.

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TO BE LET, and entered upon at Michaelmas, 1849, the capital FARM of CASTLE LLOYD, in the parish of Langharne, comprising 570 acres, well adapted to the 4-course shift capital new House, and most convenient Homestead. Rates and Tithes moderate. A Lease will be granted to a respectable tenant. Langharne is of easy access to several desirable shipping ports, and not far distant from the line of the South Wales Railway.—For particulars, and to treat, apply to Mr. HARVEY, Land-agent, Haverfordwest, Pembrokeshire

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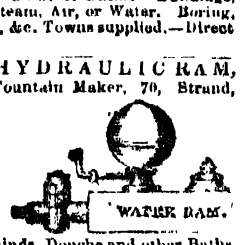

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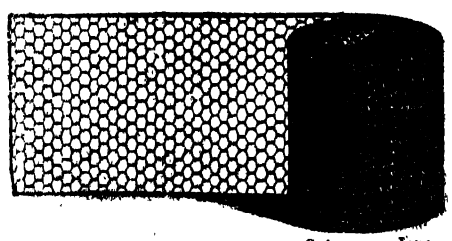

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2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d. per yd
2-inch " strong " ...	9 "	6½ "
2-inch " extra strong " ...	12 "	9 "
1½-inch " light " ...	8 "	6 "
1½-inch " strong " ...	10 "	8 "
1½-inch " extra strong " ...	14 "	11 "

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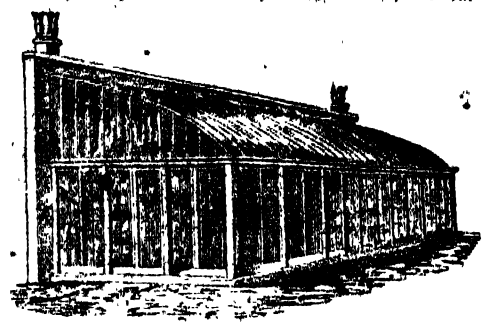
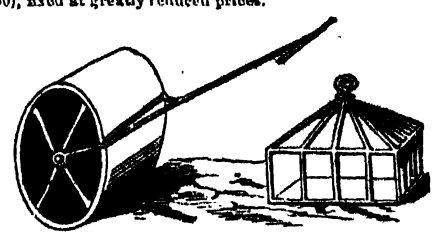


COTTAM and HALLEN having had experience in the erection of HOTHOUSES and CONSERVATORIES (made of Iron or of Iron and Wood combined), and from many improvements they have made during that time, can with confidence undertake to erect such buildings with economy and dispatch.

HOT WATER APPARATUS for heating the above and other buildings of which they have constructed upwards of 3000, fixed at greatly reduced prices.



COTTAM and HALLEN have on show at their Factory, No. 2, Winsley street, Oxford-street, a great variety of the following articles, for GARDENS, &c., at *Greatly REDUCED PRICES*, viz.:

Garden Rollers,	Hand-glass frames,
Garden Engines,	Flower Stakes,
Garden Syringes,	Flower-bordering,
Watering Pots,	Flower Stands,
Garden Vases,	Garden Arches,
Mowing Machines,	Garden Chairs.

Every description of Work, both plain and Ornamental in wrought and cast iron, for Gardens, &c. &c.

HORTICULTURAL TOOLS and AGRICULTURAL IMPLEMENTS of all kinds

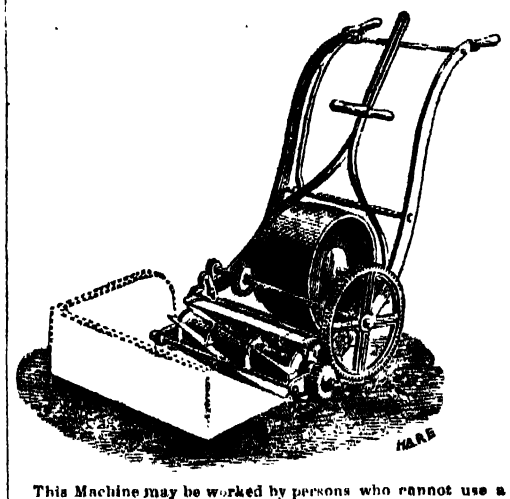
STRONG IRON HURDLES, strained Wire Fencing, &c.

Show Rooms at the MANUFACTORY, 2 Winsley-street, and 76, Oxford street, three doors West of the Princess's Theatre

BUDDING'S PATENT MACHINE FOR CUTTING LAWNS, PLEASURE GROUNDS, BOWLING GREENS, &c.

MANUFACTURED BY

JOHN FERRABEE AND SONS, Phœnix Iron Works, near Stroud, Gloucestershire.



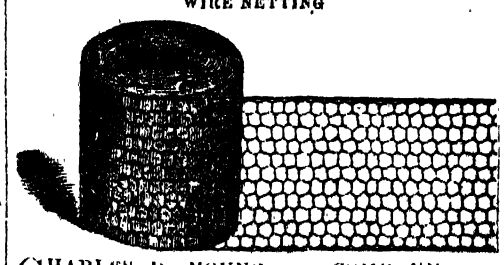
This Machine may be worked by persons who cannot use a scythe. It may be adjusted to cut any length, and leaves a more even and uniform surface than can be produced by the most skilful mower. The Grass may be cut when dry, and may be collected in the box, enabling the gardener to cut his lawns at the most convenient time and rendering sweeping afterwards unnecessary; while, with the same amount of labour, more than double the quantity of work can be done than with a scythe. Upwards of 3000 of these machines are now in use. They are made of various sizes both for hand and horse power, and the prices this season have been considerably reduced.

Messrs. Ransome and May, Ipswich, are General Wholesale Agents for London, Middlesex, and the adjacent counties; also for Cambridgeshire, Northamptonshire, Lincolnshire, and the Eastern Counties.

The Machines are also sold by the following Ironmongers: Mr. W. Drury, Castle-street, Liverpool; Messrs Lister and Lees, Cateaton-street, Manchester; Messrs Mapplebeck and Lowe, Bull-ring, Birmingham; Messrs J Nelson and Sons, 47, Briggate, Leeds; Mr. T. Johnson, Leicester; Messrs. Young and Spence, Shrewsbury; and Messrs. Sanders & Haywood, Derby.

TO PERSONS PARALYSED, &c.—EXTRAORDINARY CURE BY HOLLOWAY'S OINTMENT AND PILLS.—Copy of a letter from Capt. E F. Ferris, Commanding Rampora Forces, Rohilcund, India, Jan. 15, 1849.—To Professor HOLLOWAY, Sir, "I deem that your wonderful medicines ought to be made well known, and I take the liberty of reporting a miraculous cure under my own eye. An old woman had been for the last two years quite bed-ridden, having entirely lost the use of her legs from the hip joint. Her limbs were apparently quite dead and without the slightest feeling, but by the use of your Ointment and Pills she is quite restored. (Signed), E F. Ferris."—Sold by all vendors of medicine, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING



CHARLES D YOUNG AND COMPANY (LATE W AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c., 22, PARLIAMENT STREET WESTMINSTER, LONDON, CASTLE-BUILDINGS, DERBY SQUARE, LIVERPOOL; 128, HIGH-STREET, EDINBURGH; and 32, ST. ENOCH SQUARE, GLASGOW, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits to Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9d.; 24 ins., 1s., 30 ins., 1s 3d.; and 36 ins., 1s 6d per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3 15 0
Do of 100 yards, 24 ins wide	.. ..	5 0 0
Do. of 100 yards 30 ins wide	.. ..	6 5 0
Do. of 100 yards, 36 ins. wide	.. ..	7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.

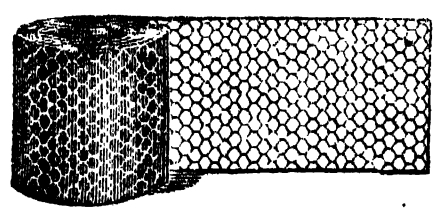
This Netting is also admirably adapted for Pheasantries and Poultry yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C D Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard

C D YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s is equal to 2½ yards of any other article in the market, the same width, at 9d. per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 21, 36, and 48 inches wide, it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide 3d. per yard		30 inches wide 7½d. per yard	
18 " " 4½d " "		36 " " 9d. " "	
24 " " 6d " "		48 " " 1s. " "	

Galvanised do., 1d per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d each; Garden arches, 2 s. each; Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX 63, Snow-hill, London.

CREAM-LAID NOTE PAPER, five quires for 9d.; large size ditto, five quires for 1s., cream-laid envelopes, 3d. per 100, ditto, self-sealing, 1s per 100; black bordered ditto, 1s. per 100; good note paper, 7s. 6d. per ream; copy books, 2s. 6d. per dozen; sealing wax, 14 sticks for 1s.; card-plate engraved 2s. 6d; 100 cards printed, 2s 6d.; writing cases, 1s. to 10l. 10s.—At WILLIAM LOCKWOOD'S, 75, New Bond-street. Remittances for 30s. and upwards sent carriage free

METCALFE'S ALKALINE TOOTH-POWDER will be found to be the best that has yet been produced; it contains no acids, nor anything that can injure the finest enamel; it thoroughly removes the tartar and all impurities, produces that beautiful white appearance so much to be desired, and its fragrant perfume tends to sweeten and purify the breath. M. and Co., from the many years they have been celebrated as Tooth-brush Makers, have had opportunities (that occur to few) of testing the relative merits of those powders that have been brought before the public. They have now succeeded in procuring the receipt from which the above Powder is prepared, and confidently recommend its universal adoption. Wholesale and retail at METCALFE, BINGLEY, & Co's, Brush-makers to H.R.H. Prince Albert, 2s per box. Caution.—The genuine powder will have the Royal Arms, combined with those of H.R.H Prince Albert, on the lid of the box, and the signature and address of the firm, thus: "METCALFE, BINGLEY, and Co., 130 R., Oxford-street, London."

ROBERT COOPER,

NURSERYMAN, SEEDSMAN, AND FLORIST,

SION NURSERY, CROYDON.

PELARGONIUMS.

Selection left to R. Cooper, 6s., 12s., and 18s. per dozen.

	each—s.	d.
Acteur	1	0
Anais	2	6
Beauty of Croydon	1	0
Beck's Admiral	1	0
,, Arabella	2	6
,, Aurora	2	6
,, Black Prince	1	0
,, Cleopatra	1	0
,, Desdemona	2	6
,, Hebe	1	0
,, Hebe's Lip	2	6
,, Lucy	1	0
,, Marc Antony	2	6
,, Meteor	1	0
,, Mustee	2	6
,, Rosy Circle	2	6
,, Stella	1	0
,, The Purple	1	0
,, Zansummim	1	0
,, Zebbia	2	0
Ceres	1	0
Celestial	1	0
Columbus	1	0
Consort	1	0
Cossack	1	0
Duke of Cornwall	1	0
Duke of Hamilton	1	6
Duchess of Leinster	1	0
Duchess of Sutherland	1	0
Egbert	1	0
Emma	1	0
Emperor Nicholas	1	0
Enchantress	1	0
Fair Maid of Devon	1	0
Fairy Queen	1	0
Fulgens	1	0
Forter's Ardens	3	6
,, Armada	3	6
,, Conflagration	1	0
,, Constellation	1	0
,, Dido	1	0
,, Gipsy	1	0
,, Medora	1	0
,, Milo	1	0
Foster's Nabob	1	0
,, Orion	2	0
,, Robustum	1	0
,, Selina	1	0
,, Shield of Achilles	1	0
,, Sir R. Peel	1	0
,, Sultana	1	0
Garth's Black Dwarf	1	0
,, Coronation	1	0
,, Gipsy Queen	1	0
,, Wizard	1	0
,, Wonder	1	0
Gem of the West	1	0
Glorianum	1	6
Grand Duke Constantine	2	0
Hector, Cock's	1	0
Jehu	1	0
Ivanhoe	1	0
King of Saxony	1	0
Lady Sale	1	0
Lancli	1	0
Madame Taglioni	1	0
Madelina	1	0
Masterpiece	1	0
Milo, Cock's	2	6
Mulberry	1	0
Oberon	1	0
Orange Perfection	1	0
Phosphorus	1	0
Prince Alfred	2	6
Princess Alice Maud	1	6
Priory Queen	1	0
Queen Philippa	1	0
Queen Victoria	2	0
Redworth	1	0
Rosetta superb	1	0
Sarah, Lumsden's	1	0
Sarah Jane	1	0
Sidonia	1	0
Sir Walter Scott	1	0
Spartan	1	0
Sunrise	1	0
Trafalgar	1	0
White Perfection	1	0

SCARLET GERANIUMS.

Selection left to R. Cooper, 4s., 8s., and 10s. 6d. per dozen.

Brighton Hero	0	9	Mrs. Mayler 1 0
Britannia	0	9	Nimrod 0 9
Cottage Maid	1	0	Nosegay 0 9
Emperor	0	9	Perfection 1 6
Fireball	1	0	Prince Albert 0 9
Firefly	1	6	Prizefighter improved 0 9
Globe compactum	0	9	Queen, Perpetual 1 0
Grove's Scarlet	0	9	Shrubland 0 9
Lady Charlotte	0	9	Smith's Superb 0 9
Lord Farnborough	0	9	Tom Thumb 0 9
Lucia rosea, pink	0	9	Waterloo 0 9

GERANIUMS FOR BEDDING, &c., &c.

Basghot Park	0	9	Ivy-leaf, variegated 0 9
Crispum	0	9	Mangle's Silver striped 0 9
Dandy, variegated	0	9	Nervifolium 0 9
Fair Helen	0	6	Nutmeg-scented 0 6
Gold, variegated	0	6	Oak-leaf 0 9
Ivy-leaf, pink flower	0	2	Prince of Orange 0 6
,, white ,,	0	9	Rose-scented 0 9
,, purple ,,	0	9	

FUCHSIAS.

Selection left to R. Cooper, 6s., 12s., and 18s. per dozen.

Acanthe, Dickson's	0	9	Hairstorm 1 0
Albano, Schofield's	2	0	Heroine, Knight's 1 6
Atrosanguinea	1	0	John, Jennings's 1 0
Aurantia, Tiley's	0	9	Jenny Lind, Tiley's 2 0
Beauty of Chelmsford	2	0	Lady Buxton, Barkway's 2 6
,, of Leeds	1	0	Lady Peel 1 6
,, of St. Leonard's	1	6	Lancantha 1 0
Compacta, Barkway's	0	9	Madame Bravy 1 0
Comte de Beaulieu	1	0	,, Pelo 1 0
Constellation	1	0	Monstrosa 1 0
Corallina	0	9	Mont Blanc, Kendall's 2 6
Crimson King, Kendall's	2	0	Napoleon 1 0
Delicata, Newberry's	0	9	Ne plus ultra, Smith's 2 0
Dr. Jephson	0	9	One of the King 1 0
Dr. Smith, Smith's	2	0	Ophelia, Holmes' 1 6
Dreadnought, Kendall's	2	0	Pius IX., Salter's 2 0
Duke of York	0	9	Purity, Barkway's 1 0
Elizabeth, Kendall's	2	0	Rosa Quinta, Salter's 1 6
Ellen, Cripps'	1	0	Scarlettina rubra 2 0
Enchantress, Mayle's	2	0	Spanish Infanta, Kendall's 2 0
Exoniensis	0	9	Splendida, Low's 10 6
Exquisite	0	9	Taurus 0 9
Hulalie, Salter's	1	6	The Rajah, Low's 10 6
Formosa elegans	0	9	Venus victrix 0 9
Fountain	2	0	White Perfection 1 0
Gellah	1	0	

VERBENAS.

Selection left to R. Cooper, 4s., 6s., and 10s. per dozen.

Admiration, Knight's	1	6	Fire King, West's 1 6
Alice Hawthorn	0	6	Gem of the West 1 0
Amethystina	0	6	Harlequin, Salter's 1 6
Anacreon, Salter's	1	0	Heloise 1 0
Antagonist	0	9	Ignea 0 6
Arrés, Smith's	0	6	Imperatrice Josephine 0 9
Arethusa, Knight's	1	0	Imperial, blue 0 6
Barkeri	0	6	Incarnata perfecta 1 0
Beauté Supreme	0	6	Juno, Salter's 1 6
Beauty of Sussex	1	6	La Villageoise, Salter's 1 6
Bicolor grandiflora	0	9	Lord John Russell 1 0
Cardinal, Chauviere's	1	6	Leonora 0 6
Clotilde, ditto	1	6	Louis Philippe 0 6
Comte de Paris, Salter's	1	6	Lychnis, Bell's 1 6
Coronet, Pearson's	0	9	Madame Dehu 1 0
Cyclops, Smith's	0	9	,, Rattier 1 6
Defiance, Robinson's	1	0	Magnifica 0 6
Duc d'Alençon	1	6	Mars 0 6
Duchesse de Caux	1	6	Martiniana, Bell's 1 6
Duke of Norfolk	1	6	Ne plus ultra, Smith's 1 6
Edmondiana	1	0	Orpha, Salter's 1 6
Emperor, Salter's	1	0	Plena, Chauviere's 1 6
,, of China	1	6	Prima Donna, Knight's 0 9
,, of Scarlets	1	0	Queen of Beauties 0 6
Emma	0	6	Reine d'Amour 0 9
Fair Helen	0	6	Rising Sun 1 0
Rubra multiflora	1	6	Victory, Manley's 1 0
Sir Margaret, Barker's	1	6	Voltaire, Salter's 1 6
Vesuve de Saveuse	1	6	Yu'pan superb, Bell's 1 6
Vampa, Chauviere's	1	6	Yoedlii 1 0

BEDDING-OUT PLANTS.

Alonzoa grandiflora	0	6	Mimulus cardinalis 0 6
Anagallis grandiflora	0	6	Nasturtium, double 0 9
Anemone japonica	0	6	Nierembergia filicaulis 0 6
Antirrhinum bicolor	0	6	Œnothera taraxacifolia 0 9
,, caryophylloides	0	9	Pentstemon excelsum 1 0
,, delicatum	0	9	,, gentianoides album 0 9
,, delicatissimum	0	6	,, ,, coccineum 0 6
,, Fowlii, superb	0	9	,, ,, verum 0 9
,, Ibrahim Pacha	0	9	M'Ewenii 1 0
,, Hiacinum	0	6	Princess Helena 1 0
,, Lovely Nancy	0	6	,, venustum 0 9
,, Rob Roy	0	9	Petunia alba superba 1 0
,, speciosum	0	9	,, Beauty Supreme 1 0
,, superbum	0	9	,, Delight 0 9
,, variegatum	0	6	,, Duncansonia 0 6
,, Youngii	0	9	,, fragrans 0 6
Balm of Gilead	0	9	,, Patriot 0 6
Balsamina latifolia	0	9	,, Pet Superb 0 6
Bouvardia angustifolia	0	9	,, Prince of Oldenburgh 0 9
,, flava	0	9	,, Roi de Purpure 0 6
,, splendens	0	9	,, rosea superba 0 9
,, triphylla	0	9	,, Sir R. Sale 0 6
Calceolaria amplexicaulis	1	6	,, Vanguard 0 6
,, floribunda	0	6	Phlox alba purpurea 1 0
,, Kayli	0	9	,, azurea 0 9
,, Kentish Hero	1	0	,, bicolor 0 9
,, polyphemus longifolia	0	9	,, Brownii 1 0
,, viscosissima	0	9	,, Cleopatra 0 9
Cineraria amelloides	0	6	,, Coldryana 1 0
Cobœa scandens	1	0	,, cordata grandiflora 0 9
Cuphea miniata	1	0	,, decussata 0 6
,, platycentra	0	6	,, frondosa 1 0
,, strigulosa	0	6	,, glaberrima 0 6
Diplacus puniceus	0	9	,, lacta 0 6
Eccremocarpus scaber	1	0	,, Maxeppa 0 6
Euthales macrophylla	0	9	,, Newmannii 1 0
Gaillardia picta	0	6	,, omniflora 0 6
,, Wellsiana	0	9	,, ,, rosea 0 9
Gazania uniflora	1	0	,, picta 0 9
Heliotropes	0	6	,, Riversii 0 6
,, Souvenir de Liege	7	6	,, speciosissima 1 0
,, Triomphe de Liege	1	0	,, Van Houttii 0 9
,, Voltairianum	0	9	Rhodochiton volubile 1 0
Houtzia coccinea	1	0	Salvia alba 1 0
Iberis semperflorens	0	9	,, angustifolia 0 6
Lantana crocea	0	9	,, azurea 1 0
,, formosa	1	0	,, Camertonii 0 9
,, mixta	1	0	,, coccinea splendens 1 0
,, pulcherrima	1	0	,, fulgens 0 6
Linum flavum	0	9	,, ,, variegata 0 6
Lobelia fulgens	0	9	,, gesneriiflora 0 9
,, Chalmerii	0	6	,, Grahami coccinea 0 9
,, compacta	0	6	,, mexicana 1 0
,, alba	0	9	,, patens 0 9
Lophospermum Cliftoni	1	0	,, ,, alba 2 6
,, Hendersoni	0	9	,, prunelloides 0 9
,, spectabile	0	9	,, pulchella 0 6
Lycanis coronata	0	9	Senecio elegans pleno 0 6
,, grandiflora	1	0	Solanum jasminoides 1 0
Maurandya Barclayana	1	0	Stachys aurantia 1 0
,, ,, alba	1	0	Tropæolum speciosum 2 6

AURICULAS.

Commerce	2	0	Page's Duchess of Oldenburgh 2 6
Dormand's William IV.	2	0	Page's Lord Hill 2 6
Eaton's Earl Grey	2	6	Queen of the Alps 1 6
Gabriel's Duke of Wellington	2	6	Smith's Britannia 1 6
Hodley's Lord Nelson	2	6	,, Princess Charlotte 2 0
Hughes' Pillar of Beauty	3	0	Taylor's Glory 3 6
Lady Blucher	2	6	Thompson's Revenge 2 6
Metcalf's Lancashire Hero	3	0	Waterhouse's Conqueror of Europe 5 0
Moore's Jubilee	2	6	Watt's George Canning 2 0
Oliver's Lovely Ann	2	0	Wood's Lord Lascelles 2 0

Or the Collection, 2l. 2s.

CALCEOLARIAS.

Adonis	1	6	Hebe 3 6
Apollo	1	0	Juno 2 6
Argo	1	6	Lady Constable 1 6
Ceres	2	6	Lady of the Lake 1 6
Dido	1	6	Pirate 1 6
Eclipse	2	6	Sir H. Hardinge 1 6
Fair Helen	1	6	Sir H. Gough 2 6
Glory	1	0	Standishii 1 6

Or the Collection, 1l. 5s.

AZALEA INDICA.

Addisoni	1	6	Lucombemajestica 2 6
Alba	1	0	Macrantha 1 6
,, pleno	1	6	Optima 2 6
Aurantiaca	1	6	Pæoniflora 1 6
Candidissima maxima	1	6	Phœnicea 1 6
Danieliana	1	6	,, elegans 2 0
Double crimson	2	0	Rosea 1 0
Excellens	1	6	,, punctata 1 6
Exquisite	1	6	Refulgens 1 6
Fastuosa	1	0	Semiduplex rosea 1 6
Fulgens	1	6	Semipleno 1 6
Georgiana	1	6	Speciosissima 2 0
Gledstanesii excelsa	2	6	Splendens 1 6
Grandis, Smith's	1	6	Triflora 1 6
Iucarnata	1	6	Variegata 2 6
Jenkinsoni	2	0	Ventricosa 1 6
Jonnerii	2	0	Woodsii 1 6
Lateritia	2	6	

Or the collection, 2l. 10s.

MISCELLANEOUS PLANTS.

Abelia rupestris	1	6	Æschynanthus Boschianus 1 0
Abutilon striatum	1	0	,, Horsfieldii 1 0
,, vexillum	1	0	,, Lobbianus 1 6
Achimenes argyrostigma	1	0	,, pulcher 1 6
,, coccinea	0	6	,, radicans 1 6
,, floribunda	1	0	,, parasiticus 1 6
,, grandiflora	1	0	,, Paxtoni 2 6
,, Liepmanii	1	0	,, Roxburghii 2 6
,, longiflora	1	0	,, zebrinus 1 6
,, patens	1	0	Amaryllis 1s. 6d. to 5 0
,, picta	1	0	Angelonia Gardneriana 1 0
,, Skinneri	1	6	Ardisia crenulata 1 6
Adamia versicolor	2	6	Begonia coccinea 1 6
Begonia fuchsioides	1	6	Hoya Hidwillii 2 6
,, hydrocotilifolia	1	6	,, carnosa 1 6
,, insignis	1	6	Hydrangea hortensis 1 0
,, manicata	2	6	,, Japonica 1 0
,, nitida	1	6	Hypericum ægyptiacum 1 0
,, parvifolia	1	0	,, hircinum 1 0
,, sanguinea	1	6	Inga pulcherrima 1 6
,, semperflorens	1	6	Indigofera decora 1 6
Boronia serrulata	1	6	Jasminum nudiflorum 2 6
Bignonia Tweediana	1	6	,, affine 1 6
Brachysema platyptera	1	6	,, grandiflorum 1 6
Burchellia capensis	1	6	Justicia carnea 1 6
Cactus speciosissimus	1	6	,, M'Donnellii 1 6
Calystegia pubescens	1	0	Leschenaultia splendens 1 6
Camellias 2s. 6d. to	10	6	Lilium eximium 1 0
Centradenia rosea	1	6	,, lancifolium album 1 6
Cestrum aurantiacum	1	6	,, ,, punctatum 2 6
Chirita sinensis	1	0	,, ,, roseum 2 0
Clerodendron fragrans pleno	2	6	Linum trigynum 1 6
Cinerarias 1s. to	2	6	Lycopodium cæsium 1 0
Clematis azurea grandiflora	1	6	Maherola incisa 1 0
,, Sieboldii	1	6	Manettia bicolor 1 6
,, smilacifolia	1	6	Mimulus conductor 1 0
,, nutans	1	6	Morina longiflora 2 0
Clianthus puniceus	1	6	Mussænda frondosa 2 0
Columnea splendens	1	6	Myrtus tenuifolius 1 6
Crassula coccinea	1	0	Nordmannia cordifolia 0 9
Cotoneaster marginata	1	0	Passiflora alata 1 6
Cytisus Atlecana	1	6	,, Bonapartea 1 6
Deutzia staminea	1	0	,, cærulea 1 6
Dolichos lignosus	1	6	,, ,, racemosa 1 6
Dioama fragrans	1	6	,, Loudoni 1 6
Echeveria secunda	1	0	,, Lemicheziana 1 6
Epacris Atlecana	1	6	,, Mayana 1 6
,, autumnalis	1	6	,, Milne's hybrid 1 6
,, campanulata rubra	1	6	,, palmata 1 6
,, ceratiora	1	6	,, princeps 1 6
,, coccinea	1	6	,, quadrangularis 2 6
,, coruscans	1	6	,, racemosa 1 6
,, Cunninghamii	1	6	Pavetta indica 1 6
,, grandiflora	1	6	Pentas carnea 1 6
,, hyacinthiflora	2	6	Phaius grandiflorus 2 0
,, impressa	1	6	Platycodon grandiflorum album 1 6
,, ,, carnea	1	6	Plumbago capensis 1 0
,, lævigata	1	6	Porphyrocoma lanceolata 2 0
,, miniata	2	0	Primula integrifolia 1 0
,, nivalis	1	6	,, marginata 1 0
,, paludosa	1	0	,, purpurea 1 0
,, purpurascens	1	0	,, rubra 0 9
,, sanguinea	1	6	Poinsettia pulcherrima 1 6
,, splendida	1	6	Pitcairnia rubicea 2 6
,, Tuntoniensis	2	0	Pleroma elegans 1 6
Eranthemum pulchellum	1	6	Prostranthera violacea 1 0
,, variabile	1	6	Rhynchospermum jasminoides 3 6
Ericas of sorts 1s. to	5	0	Ruellia formosa 1 0
Eutaxia myrtifolia	1	0	Saxifraga sarmentosa 1 0
Fabiana imbricata	1	0	Scutellaria macrantha 2 6
Ficus repens	1	6	Siphocampylus bicolor 1 0
Forsythia viridissima	1	0	Silene Schafta 1 0
Franciscea augusta	2	6	Solandra grandiflora 1 6
Gardenia Fortuni	3	6	Spiræa lanceolata 1 6
Genera Herberti	1	0	,, prunifolia pleno 1 0
,, Sutton	2	0	Statice armeria latifolia 1 0
,, zebrina	1	0	,, pseud armeria 1 0
Gloxinia candida	1	6	,, mucronata 1 6
,, Cartoni	1	6	,, sinuata 1 0
,, carina	1	6	Stephanotus floribundus 2 6
,, insignis	1	6	Stigmaphyllon ciliatum 2 6
,, maxima	1	6	Strutilola erecta 1 6
,, rubra	1	6	Stylidium fasciculatum 1 0
,, speciosa	1	6	Thunbergia coccinea 1 6
,, tubiflora	1	0	Tradescantia zebrina 1 0
,, ,, rosea	1	0	Tremandra Hugelii 1 0
,, Youngii	1	6	Tacsonia mollissima 2 6
Gudia imberbis	1	6	Vinca rosea 1 0
Hibbertia grossulariæfolia	1	0	Violet, Double Tree 0 6
Hibiscus sinensis, double			Weigela rosea 1 0
yellow	2	6	Xanthosia rotundifolia 1 6

ROCK PLANTS.

Arabis albida
,, lucida
,, ,, variegata
Asperula odorata
Aster alpinus
Aubrietia purpurea
Campanula alpina
,, elegans
,, speciosa
Cherleria sedoides
Cirsea alpina
Comarostis fragarioides
Crucianella stylosa
Draba aizoides
Dryas octopetala
Epimedium alpifium
Euphorbia Cyparissias
Fragaria indica
Frankenia lævis
Fumaria formosa
Geranium affine
,, ibericum
,, Lancastrense
,, macrorhizon
,, sanguineum
,, striatum
Glaux maritima
Gnaphalium arenarium
,, dioicum
,, margaritaceum
,, plantagineum
Horminum pyrenaicum
Iberis saxatilis
Lamium variegatum
Linum anglicum album
,, montanum
Lotus corniculatus pleno
Lysimachia nummularia
Myosotis intermedia
Œnothera pumila
Potentilla tridentata
Ranunculus amplexicaulis
Saxifraga aizoides
,, aspera
,, decussata
,, hirsuta
,, marginata
,, muscoides
,, palmata
,, pedatifida
,, pyramidalis
,, umbrosa
Scabiosa montana
Scutellaria minor
,, scordifolia
Sedum album
,, anacampseros
,, Ewersii
,, Forsterianum
,, ochroleucum
,, oppositifolium
,, pallens
,, reflexum
,, sexangulare
,, spurium
,, stellatum
Sempervivum americanum
,, arachnoideum
,, globiferum
Senecio abrotanifolius
Silene caucasica
,, rubella
Spiræa japonica
Thymus corsicus
,, variegatus
,, minimus
Veronica repens
,, saxatilis
Vinca herbacea
,, minor pleno

The above 6s. per dozen.

Collections of Dahlias 6s. to 12s. per dozen.
,, of Chrysanthemums 6s. to 8s. per dozen.
,, of Herbaceous Plants.
,, of Roses in pots, &c. &c.

Catalogue of Seeds will be sent on application.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, APRIL 21, 1849.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 17.—1849.] SATURDAY, APRIL 28. [PRICE 6d.

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ROYAL BOTANIC SOCIETY, Regent's-park.—The EXHIBITIONS OF PLANTS, FLOWERS, and FRUIT, for competition this season, will be held on WEDNESDAYS, May 16th, June 20th, and July 4th.

The Exhibition of Plants in the AMERICAN GARDEN will be open on SATURDAYS, May 26th, and June 2d, at 2 o'clock.

Tickets, each to admit one person, on any one of the above-mentioned five days, may be obtained at the Gardens by orders from Fellows of the Society. Price, on or before May 5th, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each. Fellows may have packets of 30 tickets until May the 5th, for 5l. 5s.

THE EXHIBITION OF AMERICAN PLANTS AT OAKLEY SQUARE, KING'S ROAD, CHELSEA, WILL BE CONTINUED THIS YEAR, AS USUAL.

HOSEA WATERER, KNAP HILL NURSERY, WOKING, SURREY.

CAMELLIA STOCKS.

RENÉ LANGELIER begs to say he has still some fine healthy plants to dispose of, fit for immediate grafting or inarching, of which a specimen may be forwarded on application, with an inclosed stamp. They are 100 for 50s. Reference or remittance from unknown correspondents.

Clarendon Nursery, St. Helier's, Jersey.

THUNBERGIA DODDSII.—This splendid variety will be ready on the 1st of May. Fine plants, 10s. 6d. each. Usual discount, when three are ordered. Orders addressed to JOHN KEYNES, Nurseryman, Salisbury.

JOSLING'S ST. ALBAN'S GRAPE.—Fine 2 years-old plants of the above, carriage paid to London, 10s. 6d. each, usual allowance to the trade. A remittance must accompany the order.—ROBERT JOSLING, Seedsman, St. Alban's.

SEEDLING PELARGONIUMS.

J. HINE has still fine plants of his set of Ten New Varieties, which he can strongly recommend, 5l. the set.

Also, of Miller's Set of Eight, price 25s. Descriptive Catalogues on application.—Providence Nursery, Ramsgate.

FIRST-RATE FUCHSIAS AND VERBENAS.

THOMAS SORRELL, NURSERYMAN and FLORIST, Springfield and Chelmsford, respectfully informs the Trade and Gentlemen in general that it is his intention to let out his two FUCHSIAS "CARACTACUS" and "ISABEL," and VERBENAS "OCEAN MONARCH" and "SHYLOCK," which are pronounced to be unique in all properties. Descriptive Catalogue can be had on application as above.

SEEDLING PETUNIAS.

BASS AND BROWN are now sending out the following beautiful and first-rate varieties, descriptions and characters of which are given in the *Gardeners' Chronicle* of March 24th and 31st.

Brilliant	...	5s. 0d.	Spotted Beauty	...	5s. 0d.
Beauty of Suffolk	..	5 0	Hesperus	...	3 6
Renown	...	5 0	Nymph	...	5 0
Telegraph	...	5 0			

The usual allowance to the Trade by taking the set.

Seed and Horticultural Establishment, Sudbury, Suffolk.

GERANIUMS, FUCHSIAS, CINERARIAS, VERBENAS, CHRYSANTHEMUMS, IRIS GERMANICA, AND SELECT CHOICE PLANTS.

G. PARSONS, FLORIST and SEEDSMAN, by appointment, to Her Majesty, Western-road and Montpelier-road, Brighton, begs to inform the nobility and gentry that his spring Catalogue of the above is ready, and will be forwarded on application.

G. P. at the same time begs to offer Zauschneria californica, 12s. per dozen; Calceolaria amplexicaulis, 9s. per dozen; Calceolaria "Kentish Hero," 9s. per dozen; Plumbago Larpentæ, 12s. per dozen; Verbena "Robinson's Defiance," the finest scarlet for bedding, 6s. per dozen.

RHODODENDRONS.—The Subscriber, after years of attention to this superb class of Shrubs, has succeeded in raising six splendid seedlings, perfectly hardy, flowering in May and June, which he intends sending out this autumn.—Terms, 31s. 6d. each plant; the set, 5l. Cash, or reference, from unknown correspondents; the usual trade discount on two of each, or the set. A coloured drawing of No. 1, "Morion," may be seen at Messrs. Hurst and M'Mullen's, 6, Leadenhall-street, London; and an accurate description of the other five will be sent on prepaid application to the same, or to JOHN MEEKS, Perry Barr Nursery, near Birmingham.

*** The above have been ordered by several noblemen and gentlemen, who saw them in flower, and also by the following Nurserymen:—Messrs. Low and Co., Clapton; Mr. H. Waterer, Knap-hill Nursery, Woking; Messrs. Jackson, Kingston, Messrs. Pearson, Chelwell, Notts; Mr. M'Intyre, Taunton; Mr. Smith, Worcester, &c. &c.—Perry, April 28.

RENDLE'S NEW SPRING CATALOGUE OF PLANTS is now published, and can be had on application to WILLIAM E. RENDLE and Co., Nurserymen, Plymouth.

4, Great Russell-street, Covent-garden, London.

JOHN KERNAN begs to inform his customers that the present, and up to the beginning of May, is the most favourable time for sowing ANNUALS out of doors, the more so from the fear of the earlier sowing having been cut off by the late severe frosts. Catalogues may be had on application.

			s.	d.
A pure stock of Skirving's Swedish Turnip		per lb.	1	0
" "	Laing's Swedish do.	"	1	0
" "	Purple-topped Yellow Bullock do.	"	1	0
" "	Dale's Hybrid do.	"	1	0
" "	Red and White Round do., &c. &c.	"	1	0
" "	Yellow Globe Mangold Wurzel	"	1	0
" "	Red Globe do.	"	1	0
" "	Long Red do.	"	1	0
Mixed Meadow Grass		per bush.	10	0
Finest varieties of Grass mixed for Lawns		per lb.	1	6

Clovers, Trefoil, &c. &c.

EDWARD GEORGE HENDERSON, Wellington-road, St. John's Wood, London, will, on the 1st of May, commence sending out the following—

PHLOX DEPRESSA, at 7s. 6d. and 10s. 6d. each.
GAILLARDIA SPLENDIDISSIMA, 10s. 6d.
PETUNIA ELEGANTISSIMA, 5s.; 6 plants supplied for 21s.
SALVIA AZUREA COMPACTA, 5s. and 10s. 6d.

For description of the above, see *Gardeners' Chronicle*, Apr. 14.

BEDDING PLANTS.

JOHN HAYES, FLORIST, Farnham, Surrey, begs to offer upwards of 100 distinct varieties of Bedding Plants, 14 varieties of Geraniums, including Colling's Superb, Shrubland Superb, and Tom Thumb, from 2s 9d. to 3s. 6d. per dozen, 14 varieties of Verbenas, from 2s. to 3s. 6d.; and other varieties described in Catalogues, which will be sent on receipt of one postage stamp.

NEW SEEDLING DAHLIAS, to be sent out in May:—GAINES' "Queen Dowager," 10s. 6d., yellow ground, tipped with pure white, acknowledged to be the most distinct fancy Dahlia ever exhibited. It obtained a prize at Teddington. GAINES' "Delicata," 10s. 6d.; GAINES' "Goldfinch Superb," 10s. 6d.; GAINES' "Elegantissima," 10s. 6d.

N. GAINES has a few good plants left of his new Seedling PELARGONIUMS and CALCEOLARIAS, which he can recommend. A Descriptive List can be had by applying at the Nursery, Surrey-lane, Battersea.

FUCHSIA SPECTABILIS; OR, QUEEN OF FUCHSIAS.

MESSRS. VEITCH AND SON have much pleasure in offering this magnificent FUCHSIA to the public. It has only to be seen to be admired, being without doubt the most beautiful of all hitherto introduced species. Whether we look at the exceeding beauty of its blossoms, habit, and foliage, or at the certainty of its becoming the parent of an altogether new race of Hybrid Fuchsias, there cannot be a doubt but that it completely outvies all other known species. It was exhibited at the Horticultural Society's Rooms, in Regent-street, on the 22d of April, 1848, and had the Large Silver Medal awarded. It was also exhibited at Regent's-park in June, and had the First Prize for new and rare plants. A woodcut and description of it is given by Dr. LINDLEY in No. 20 of the *Gardeners' Chronicle* of last year. It is also figured in "Curtis's Botanical Magazine" and "The Florist" for June last, on reference to which further particulars and a full description can be obtained. Well-established plants will be ready for delivery on and after Monday, the 7th of May, at 21s. each, with one over to the trade on every three taken. Orders will be executed strictly in the rotation received, and a list of such of the trade as have ordered it will appear in the next week's advertisement. From unknown correspondents a respectable reference, or the amount prepaid, will be required, without which plants cannot be sent.—Exeter, April 28, 1849.

N.B.—A beautiful coloured plate of the above can be had by inclosing 13 postage stamps.

HUGH LOW AND CO. can with the greatest confidence recommend the undernamed:

HELIOTROPIUM, "SOUVENIR DE LIEGE."—This fine new variety, now for the first time offered in this country, possesses the great advantage of flowering naturally very early, and also continuing in perfection for a much greater length of time than any of those previously introduced. The individual flowers, as also the truss, are very large and highly fragrant; colour pure violet with a yellowish tinge towards the centre. The habit of the plant is very dwarf and compact, and from the long continuance of its flowering, and other good qualities, it will undoubtedly prove a very desirable acquisition either for bedding or pot culture. Price 7s. 6d.

FUCHSIA, "THE RAJAH."—This is the finest of the dark varieties. Habit compact and good; corolla violet purple, beautifully cupped; sepals bright red, of waxy consistence, as much reflexed as a Turncap Lily. Price 10s. 6d.

FUCHSIA, "SPLENDIDA."—This is also a dark variety of great merit, and in particular remarkable for its very fine habit and profusion of flowers. Price 10s. 6d.

The Fuchsias named above were obtained from seeds by JOHN WILMORE, Esq., of Birmingham, and the acknowledged superiority of that gentleman in improving, by careful and scientific hybridisation, some of the finest genera of plants, will be a sufficient guarantee for the excellence of those now offered. Plants of the Heliotrope and the Fuchsias will be ready to send out in May. The usual discount to the Trade.

BORONIA TETRANDRA (B. microphylla of gardens).—A very fine new species. Habit compact; a most abundant bloomer, producing the flowers in the way of B. pinnata; will make an excellent specimen plant for exhibition. Strong plants, 7s. 6d.

In addition to the above, H. Low and Co will be able to supply all the novelties sent out by other growers, including the Continental Phloxes, Verbenas, and Chrysanthemums, now so much admired. Catalogues of which, containing also their General Collection, are in course of publication, and when ready will be forwarded, post free, on application.

Clapton Nursery, London, April 28.

CHISWICK HORTICULTURAL FETES.—Parties attending this Grand National Show, will find excellent accommodation at R. SHELLEY'S, Pack Horse and Talbot, Turnham Green. Beds, Breakfasts, Luncheons, Dinners, Suppers, &c. A cold collation relaid through the day. Moderate charges. N.B. Good Coach-houses and Stabling.

VIOLA LUTEA.—An imported species from Patagonia. This lovely little hardy, bright yellow VIOLET, was exhibited at Chiswick, in May, 1848, when it had the Banksian medal awarded, and was universally admired. Messrs. VEITCH and Son will have well established plants ready for delivery, on and after Monday, the 7th of May, at 5s. each, or six for 21s. to the trade.—Exeter, April 28.

MESSRS. J. AND H. BROWN inform the Nobility and Gentry they can supply all the most approved novelties of the season, both Exotic and for planting out.

		s.	d.
25	New hardy Belgian Azaleas, on their own roots, with flower buds, one of a sort, by name	20	0
25	American Azaleas, ditto ditto ditto	15	0
25	Hardy flowering shrubs, one of a sort, by name	10	0
12	Rhododendrons, including scarlet, white, and rose, hardy varieties	12	0
	New hardy yellow Rhododendrons each 7s. 6d. to	10	6
6	Andromedas, of sorts, including floribunds, for	8	0
	Hardy Heaths, Kalmias, and Ledums, per dozen	8	0
6	Fine hardy Magnolias, one of a sort	10	0
	New Orange and Scarlet Trumpet Honeysuckle, each	2	6
	New Hardy Climbers in pots, including Roses, Clematis, Jasmines, &c., per dozen	12	0
12	Tea Roses for greenhouse culture, one of a sort	9	0
	Dahlias, best show varieties, per dozen 9s. and	12	0
	Cryptomeria japonica and 6 choice hardy Pinus for	10	0
12	Greenhouse Azaleas, one of a sort, blooming plants	25	0
12	Choice Camellias, by name, ditto, ditto	30	0
50	Choice flowering Greenhouse plants, one of a sort	45	0
24	Choice Ericas, one of a sort, by name	18	0
	Plumbago Larpentæ, good plants	3	6
	Tropæolum speciosum and Zauschneria Californica, each	2	6
6	Beautiful new Japan Lilies, one of a sort	12	0
	Choice Carnations and Picotees, per dozen	12	0
	Pæony roots, new double, white, pink, blush, and crimson, one of a sort, per dozen	9	0
25	Choice Herbaceous Border Plants, for	7	6
	Hardy Ferns, and other plants, for rockwork, per doz.	8	0
	Cinerarias and Calceolarias, strong plants, per dozen	12	0
	Fancy Geraniums, per dozen 12s. and	18	0
	Best Petunias and Verbenas, one of a sort, per dozen	6	0
	New scarlet and variegated Geraniums, Pentstemons, Salvias, Phloxes, Antirrhinums, Heliotropiums, Pansies, and Fuchsias, per dozen	6	0
25	Papers of Choice Flower Seeds, 5s.; 50 Ditto, 10s.; sent free by post.—Albion Nursery, Stoke Newington, London, April 28.		

SELECT BEDDING PLANTS.

WOODLANDS NURSERY, MARESFIELD, near UCKFIELD, SUSSEX.

WM. WOOD AND SON have much pleasure in offering the following desirable plants:

SALVIA PATENS ALBA, 2s. 6d. each, and 18s. to 24s. per doz. This truly beautiful variety will prove a decided acquisition to the collection of bedding plants, its flowers are equal in size to Salvia patens, and of the purest snowy white, with a small spot of light blue on the lower lip of each flower.

The stock of the subjoined VERBENAS is in the possession of W. W. and SON, and the varieties are recommended as the finest in cultivation.

COUNTESS OF HAREWOOD—French white, bright rosy eye, a very large, distinct, and superb variety, 3s. 6d. each.

HONOURABLE MRS LASCELLES—bright purple, clear white eye, well adapted for bedding; 3s. 6d.

MRS WATSON—most brilliant scarlet, bright primrose eye, habit compact and dwarf, flowering in great profusion; this is unquestionably the finest Verbena in its class, and will prove one of the best varieties for grouping, 5s.

ROBIN HOOD—bright vermilion scarlet, lemon eye, large and superb; 3s. 6d.

The usual discount to the Trade.

The following are highly recommended for bedding.

		per doz.	s.	d.
Anemone japonica			6	0
Balsamina latifolia			6	0
,, repens, deep yellow, fine			12	0
Calceolaria amplexicaule			9	0
,, Kayii			6	0
,, Seedlings unblowned, from first-rate varieties, 6s., 9s., and			12	0
Cuphea platycentra			4	0
,, strigillosa			4	0
Heliotropium Triomphe de Liege			9	0
,, Voltaireanum			6	0
Lobelia erinus compacta			4	0
,, ,, grandiflora			4	0
,, ramosa			4	0
Nierembergia intermedia			6	0
Plumbago Larpentæ, beautiful blue, 9s. and			12	0
Salvia oppositiflora, very fine			12	0
,, patens			6	0
,, ,, alba, 18s. and			24	0
,, splendens			6	0
Zauschneria californica, 12s. and			15	0
Geraniums, best scarlet varieties, by name, 6s. and			9	0
fine show varieties, 9s., 12s., and			18	0
Ivy-leaved of sorts			6	0
scented leaved of sorts			6	0
Cinerarias, very splendid named varieties, coming into bloom, 9s., 12s., and			18	0
new varieties of this season			30	0
Fuchsias, superb kinds, by name, 6s., 12s., and			18	0
Verbenas, the best in cultivation, 5s., 9s., and			12	0
Petunias, distinct and showy, 6s., 9s., and			12	0
Chrysanthemums, fine and distinct vars., 9s. and			12	0
Do., the newest continental varieties			18	0

N.B.—Catalogues of the above may be had gratis, on application; additional plants presented with each order. A remittance or reference required from new customers.

TWELVE FIRST-CLASS GERANIUMS can be selected from RENDLE'S CATALOGUE for 20s; or 20 for 30s. Twelve Second-class do. for 10s. Catalogue on application to William E. Rendle and Co., Nurserymen, Plymouth.

CHOICE BEDDING PLANTS.

J. HOLDER and CO. beg to inform the Nobility, Gentry, &c., that they have on hand a large Stock of strong and healthy Plants for bedding out, consisting of Dahlias, Fuchsias, Verbenas, Petunias, Salvias, Alonzoas, Calceolarias, Antirrhinums, Pentstemons, Cupheas, Scarlet Geraniums, &c., which can be had at 4s. and 6s. per dozen.

Nurseries, Bedford-road and Wellington-road, Clapham.

N.B. The Trade supplied.

MESSRS. S. and J. DILLISTONE beg to offer the following, in good plants, 6s. per dozen, or 100 plants, portions of each variety, 40s., including basket and carriage to London.

ANEMONE JAPONICA.
ANTIRRHINUM, including several fine seedlings.
AGERATUMS, CALCEOLARIAS, CUPHEAS.
DAHLIA, fine show and fancy varieties.
GERANIUMS, Scarlets, including Tom Thumb, and others.
GAILLARDIAS, HELIOTROPES, in varieties.
PENTSTEMONS, including alba, gigantica, elegans, &c.
PETUNIAS, in fine varieties.
PHLOXES, in fine Continental varieties.
ROSES, fine varieties of Tea, China, &c.
SALVIAS of sorts.
SWEET WILLIAMS, finest double selected.
VERBENAS, including Robinson's Defiance, and other new ones of last season.

100 good Herbaceous Plants, in 50 varieties, for 30s.

Post-office orders are respectfully requested to be made payable at Haverhill, and from unknown correspondents a respectable reference or prepayment.

Lists may be had upon application; also all the novelties of the season, at the prices sent out by the raisers.

Sturmer Nurseries, Haverhill, Suffolk, April 28.

BEDDING PLANTS.

HART and NICKLIN, Florists, Guildford, Surrey, beg to inform the public they are now prepared to send out extra strong plants of Robinson's SCARLET DEFIANCE VERBENA, at 6s. per dozen, carriage paid to London; the plants are fit for turning out in beds immediately, having been in frames for some weeks. This Verbena is allowed to be the best scarlet yet out. Also good plants of Symon's Mont Blanc, a pure white, at 6s. per doz. The following Verbenas at 1s. per plant, or 10s. per dozen: St. Margaret, Lady of the Lake, Desirable, Annica, Emperor of China, Orpha, Felix, La Villageoise, Vulcan Superb, Viscount de Sonival, Felix, and Mad. Rattier. Pansies: Marchioness of Lothian, a pure yellow, and Firebrand, approaching scarlet, 2s. 6d. each. Finest named sorts, 12s. per doz., very good do., at 6s. per doz. Scarlet Geraniums, Petunias, the best kinds of Phlox, Pentstemons, Calceolarias, yellow and bronzed, each, 6s. per doz. Warranted strong healthy plants.

TWELVE NEWEST FIRST CLASS DAHLIAS can be selected from RENDLE'S CATALOGUE, for 18s., including a plant of Toun's Champion of England and Star of the West, two of the finest flowers of the day. Catalogues on application to William E. Rendle and Co., Nurserymen, Plymouth.

STORY'S HYBRID FUCHSIAS.—"ELEGANTISSIMA" AND "NEWTONIENSIS."

W. H. STORY, Esq., White Hill, Newton Bushell, Devon, having passed into the hands of Messrs. Veitch and Son the Stock of the above beautiful and distinct varieties, they beg to inform the Public that they will be able to supply well established plants on and after Monday, the 7th of May. Woodcuts of them are given in the first number of "The Florist;" the upper flower being "NEWTONIENSIS," and the one most reflexed "ELEGANTISSIMA." The latter was exhibited at Regent's Park in June, and had a first class certificate awarded.

The Editor of "The Florist," in describing them, says, "they are very distinct in colour, with no poverty of any kind about them, but much richness. The texture smooth and glossy on the surface; and, from their peculiar and elegant form, they show to the greatest advantage their compact and deep violet-coloured corollas, their sepals are a bright scarlet crimson, and altogether they are very desirable varieties."

"ELEGANTISSIMA," 10s. 6d.; "NEWTONIENSIS," 10s. 6d.

Messrs. Veitch and Son have also at the same time to offer Heben's "GEM OF THE WEST," 10s. 6d. each, the stock of which they have purchased of the raiser, Mr. Heben, Gardener to W. Daubuz, Esq., Killiow, Truro, and which they believe to be the best white Fuchsia in existence. The tube is long, pure white, without any toughness or coarseness so usual in white Fuchsias. Sepals symmetrical, smooth and well reflexed, showing a beautiful, well formed violet purple corolla. Habit and foliage unexceptionable. Messrs. Veitch, considering the above three varieties to be unequalled by any in existence, confidently recommend them, believing they will give perfect satisfaction. The usual discount when three of each or either are taken.—Exeter, April 28.

N.B. From unknown correspondents a respectable reference, or the amount prepaid, will be required, without which plants cannot be sent.

IMPORTANT TO HOLLYHOCK GROWERS.

EDWARD TILEY begs respectfully to apprise the nobility, gentry, and others that he has been successful in procuring a quantity of the above seed, saved by a gentleman amateur, from one of the choicest collections in the world; the bloom is very symmetrical and handsome—the outer or guard petals do not extend more than half an inch beyond the centre, forming a perfect circle; it is free from indentation or curl, in any part; the centres are unique, and form that of half a globe, composed of innumerable smooth edged petals, closely and neatly folding the one within the other. This is the true character of the flower the seed has been saved from by the grower of it. Growers wishing to get a good collection should not delay the present opportunity; the seed spoken of so highly has been thoroughly proved, and bring the major part of the plants equal to the collection the seed was saved from. Sold in packets 2s. 6d. each, or packets containing 200 seeds, 5s.; larger packets of 500 seeds, 10s. Parties purchasing the above may depend on having the finest double Hollyhocks yet grown.

E. T. has a choice collection of SWEET WILLIAM SEED to dispose of, saved from semi double flowers of the finest colours, producing the greater part double; the varieties have been shown at the different exhibitions, and much admired, for the last two years. Sold in packets, 1s. 6d. each.

GERMAN ASTER SEED, unequalled for the superior quality of the flower, forming that of half a ball, beautifully quilled; above 20 distinct varieties, in packets, 1s. 6d. each.

ANTIRRHINUM SEED, all saved from fine striped and spotted varieties; 1s. per packet.

24 choice varieties of HARDY ANNUAL SEEDS, 2s. the packet; or a packet of each of the above, including a packet of the 24 Hardy Annuals, for 8s.

Improved Walcheren Cauliflower Broccoli, Wilcove do., Tamworth do., 1s. each per packet. These Broccolies have proved the best in cultivation.

The whole or any part of the above sent postage free, on the receipt of a post office order, or the amount in penny postage stamps.—Sold by Edward Tiley, Seedsman and Florist, 10, Pulteney Bridge, Bath.

FUCHSIAS, INDIAN AZALEAS, CAMELLIAS, DWARF ROSES, VERBENAS, CINERARIAS, PETUNIAS, and CHRYSANTHEMUMS can be obtained at the lowest prices, on application to William E. Rendle and Co., Nurserymen, Plymouth.

Our new Plant Catalogue is now ready, and can be had on application.

TO CHICORY GROWERS.—Finest Foreign Seed at reasonable prices. Contracts entered into for the ensuing crop.—Apply to R. Christian, 24, Lime-street, City.

T. TURVILL, Florist, &c., Baddow-road, Chelmsford, begs most respectfully to return his sincere thanks to those friends who have favoured him with their kind and liberal support, and assures them that all future orders will meet with his strict attention. He now recommends to their notice the following List, including his unrivalled White Fuchsias, &c.

NEW DAHLIA.

C. TURNER.—Beautiful white, tip with bright purple round, well cupped, very high centre, good outline, and very constant. T. Turvill has no hesitation in saying this is the best Dahlia he ever raised; it was a seedling from Standard of Perfection; the fine habit and form, with high centre at all times. This flower has been seen by most of the first growers, and pronounced by them the best light flower they have seen. In 1847 and 1848 it took five first class certificates at the Metropolitan and other open shows; the early frost prevented it from being shown more last season.—Plants, 10s. 6d.

NEW FUCHSIAS.

ELEGANCE.—Pure white tube and sepals, well expanded, showing the fine bright rosy vermilion corolla; it measures from 6 to 8 inches, including seed vessel to the tip of the pistil, and is allowed by all who have seen it to be the best white Fuchsia yet sent out; it has a most beautiful foliage, and very graceful habit. See the "Florist," for October, and the *Gardeners' Chronicle* for August 5, besides other horticultural works.—Plants in May, 10s. 6d. each.

GEM.—Very white tube and sepals, with a bright violet purple corolla, the sepals extending horizontally, so that the corolla is well seen; a handsome variety, with full average size, free in flowering, and very graceful.—Plants in May, 10s. 6d. each.

FIRE KING.—Light pink tube and sepals, well expanded, corolla of the brightest scarlet, fine, and vivid in colour, excellent habit, and good foliage.—Plants in May, 7s. 6d. each.

SHYLOCK.—Large stout flower, with light pink tube and sepals, striped with rose, fine stout rosy crimson corolla, sepals short, colours clear and very handsome; a decided improvement on Beauty of Leeds.—Plants in May, 7s. 6d. each.

These Fuchsias have been carefully selected from several thousand seedlings.

PETUNIAS.

PRINCESS ALICE.—Fine formed flower, peculiarly rich lilac colour, darkly veined with claret, and flamed and shaded with deep rose, with dark purple throat.—Plants, 3s. 6d. each.

PRINCE OF WALES.—Large bold flower, pale blush, beautifully shaded with purple, with black throat.—Plants, 3s. 6d. each.

CONSERVATIVE.—Nearly blue, pretty, self; quite distinct, good outline.—Plants, 3s. 6d. each.

T. T. can with confidence say they are quite distinct from any yet out, having purchased the stock of a successful grower of the Petunia. All orders from unknown correspondents must be accompanied with post-office orders, payable at Chelmsford.

SELECT PLANTS NOW SENDING OUT.

BASS and BROWN are now sending out the following choice Selections. Their DESCRIPTIVE PRICED CATALOGUE may be had on application.

	s.	d.
GERANIUMS.		
25 Superb Show varieties, 21s.; 12 for	12	0
25 New and Superb ditto, 50s.; 12 for	30	0
Fine varieties, 6s. to 9s. per dozen.		
*FUCHSIAS.		
12 of the following superior new varieties of 1848, for 15s. (purchaser's selection 20s.): Smith's Ne plus ultra, Dr. Smith, and Esteem; Salter's Hercules and Pius IX., Miellez' Flavescens, Prince de Lambelles, Roi de Romo, and Triumph; Knight's Heroine and Ibrahim Pacha; Turville's Beauty of Chelmsford and Fountain; Tiley's Jenny Lind, Barkway's Brilliant and Lady Buxton, Sheriff's Scarletina reflexa, Mayle's Enchantress.		
25 fine varieties, 10s.; 25 superior vars.	17	6
12 fine vars., 5s.; 12 superior vars.	9	0
50 varieties, in very fine and choice assortments	25	0
*PETUNIAS.		
12 superior new varieties of 1848	15	0
12 fine varieties, 4s.; 12 superior ditto	9	0
*VERBENAS.		
12 of the following superior new varieties of 1848 for 12s. (purchaser's selection, 15s.), viz., Barker's Lady of the Lake and St. Margaret, Smith's Captivation and Vixen, Salter's Harlequin, Ivery's Emperor of China, Robinson's Defiance; Edmunds' Edmundiana, Vulcan Superb, Perfection, White Giant, and Marquis of Douro, Gill's Duke of Norfolk, Petoil, Supreme, and Gillmanii; Barnes's Rosa, Knight's Beauty of Sussex and Arethusa, West's Rubra multiflora, Beadle's Diversity and Anacreon.		
25 fine varieties, 8s.; 25 superior varieties	12	0
12 fine varieties, 4s.; 12 superior varieties	7	6
*CHRYSANTHEMUMS.		
12 superb new varieties, as follows, for 15s., viz., Amadis, Diamant de Versailles, Etiole de Versailles, Gem of Versailles, Hector, Helvetius, La Reine d'Or, Madame Chauviere, Pharamond, Polar Star, Reine des Belges, and Thalia.		
25 fine varieties, 10s. 6d.; 25 superior varieties	17	6
12 fine varieties, 6s.; 12 superior ditto	9	0
GREENHOUSE PLANTS.		
50 fine and select species and varieties	50	0
25 ditto, 28s.; 12 ditto	15	0
12 extra choice and select	25	0
STOVE PLANTS, 12 fine and select varieties	18	0
*ACHIMENES, 12 fine and select varieties	7	6
" Six fine new varieties for 15s., viz., Fimbriata, floribunda elegans, Ghiesbrichtii, Knightii, Patens major, and venusta.		
GLOXINIAS, 6 fine varieties	6	0
HARDY HERBACEOUS PLANTS, 100 fine and select showy varieties, including many new	50	0
50 Ditto ditto, 30s.; 25 ditto ditto	17	6
ROCK PLANTS, 25 varieties, 12s.; 12 varieties	7	6
*PHLOX, 12 fine varieties	9	0
ANTIRRHINUMS, 12 fine vars., 6s.; 12 superior ditto	10	0
HARDY ORNAMENTAL CLIMBING PLANTS, 12 vars.	9	0
GREENHOUSE CLIMBING PLANTS, 12 select vars.	12	0
HARDY SHRUBS, 12 select varieties	12	0

Those marked thus * can be sent by post if desired, without extra charge. Goods sent carriage free to London; and for nearly carriage of goods of 40s. and upwards extra plants sent gratis. Particular attention is paid to secure packing, and strong packages provided for plants sent to long distances.—Post office orders are payable either to Bass and Brown or to Stephen Brown. Remittances requested from unknown correspondents.

Seed and Horticultural Establishment, Sudbury, Suffolk.

EARLY SIX-WEEKS TURNIP.—This remarkably fine WHITE TURNIP is decidedly the best for early sowing, to feed off for Wheat, being of quicker growth than any other Turnip; of large size, and good solid bulbs. Price 6s. per gallon, or 1s. per pound. Also Skirving's Liverpool Swedes, and other choice Turnips, Mangold Wurzels, &c., grown carefully from transplanted bulbs. Priced Lists of which will be forwarded on application, addressed to John Sutton and Sons, Reading, Berkshire.

*** Carriage free to London, Bristol, and Basingstoke.

STATUES, VASES, FOUNTAINS, GARDEN ORNAMENTS, Coats of Arms, and Architectural Embellishments in IMPERISHABLE STONE, at considerably reduced prices, by Vaughan and Co., 60, Stone's End, Borough, London. Croggon, late of Coade's, Superintendent.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. Deane's extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	" Knives, various
Borders, various patterns	Hammers	" Saws
Botanical Boxes	Hand-glass Frames	" Scissors
Cases of Pruning Instruments	Hay Knives	" Shears
Chaff Engines	Hoes of every pattern	Rakes in great variety.
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Daisy Rakes	Hotbed Handles	Scythes
Dibbles	Ladies' Set of Tools	Scythe Stones
Dock Spuds	Labels, various patterns, in zinc, porcelain, &c.	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
" Stands in Wires and Iron	Menographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanic Borders and Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
" Loops	Mowing Machine	Trowels
" Rollers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extractors and Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. Deane are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—Deane's Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

FLOWER-POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford-street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price for cash.

250, Oxford-street, near Hyde-park.

SLATE WORKS, ISLEWORTH.—The following articles manufactured in Slate for Horticultural Purposes, by Edward Beck, may be seen in use at WORTON COTTAGE, upon application to the Gardener, Sundays excepted: Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot-water Tank Covers, Flower-beds for Balconies, Shelves fitted to hold Water for Orchidaceous Houses, &c. Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

BEE HIVES.

GEORGE NEIGHBOUR and SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—George Neighbour and Son, 127, High Holborn, London.

"Nutt on Bees" (6th edition), now published.

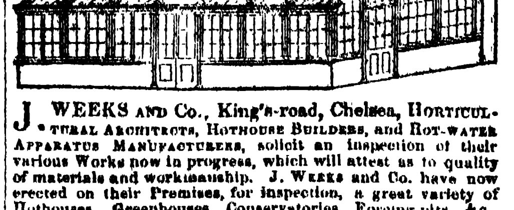
WASP CATCHERS.

UNDERWOOD, Cutler to Her Majesty, 56, Haymarket, London, begs to inform Amateurs, Gardeners, Nurserymen, and others, that he has manufactured a superior Entomological Tongs, from 6 to 12 inches, in square and oval shapes. It is well-known that every Wasp caught in the early part of the season, is the destruction of a whole nest. Also an improved Knife for cutting honey-comb from bee-hives. A large assortment of Improved Budding Knives, Pruners, Saws, &c.

THE Lightest, Cheapest, and most Efficient Roofing Material is CROGGON'S PATENT IMPROVED ASPHALTE FELT. A House, 40 feet by 24 feet in the clear, may be erected complete, for 17l. 17s. 10d. Price of the Felt, one penny per square foot, in rolls 32 inches wide. Samples and details may be had by post. A Large stock always on hand, to ensure punctuality.—Croggon and Co., 2, Ingram-court, Fenchurch-street, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.



J. WEEKS and Co., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. Weeks and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

HORTICULTURAL SOCIETY OF LONDON.—EXHIBITIONS AT THE GARDEN.

The First Meeting will take place on SATURDAY, the 5th of May. Subjects for Exhibition must be at this Office on Friday the 4th, or at the Garden before half-past Eight o'clock, A.M., on the day of Exhibition.

The Gates will be open to visitors at One, P.M. Tickets are issued to Fellows at this Office, price 5s. each, or at the Garden in the afternoon of the days of Exhibition, at 7s. 6d. each; but then only to orders from Fellows of the Society.

N.B. No Tickets will be issued in Regent-street on the days of Exhibition. 21, Regent street.

ESTABLISHED 1786.

GERANIUMS, DAHLIAS, &c., AT VERY LOW PRICES.

WILLIAM E. RENDLE AND CO. have much pleasure in announcing that the South Devon Railway was opened to Plymouth on Monday the 2d of April last; the terminal station being adjoining our Nursery Grounds.

We have this season a very large stock of Geraniums, Dahlias, Fuchsias, &c., including all the newest and best kinds in cultivation, and which we are enabled to offer at the following Low Prices.

Our New Plant Catalogue is now ready, and should be obtained by all who have Gardens.

GERANIUMS.

FIRST CLASS.—Purchaser's Selection of 12 from the following List for 20s., or 20 for 30s.—Lyne's Mercury, Lyne's Star of the West, Folley's Black Prince, Lyne's Sir Walter Raleigh Gilbert, Lyne's Sir Robert Sale, Lyne's Nourmahal, Lyne's Remembrance, Lyne's Peri, Lyne's Queen of Beauties, Beck's Gigantea, Beck's Bacchus, Beck's Hebe's Lip, Beck's Desdemona, Beck's Margaret, Beck's Zenobia, Beck's Sirius, Beck's Rosy Circle, Foster's Orion, Beck's Mostea, Beck's Marc Antony, Beck's Isabella, Standard of Perfection, Gaines's Mary Queen of Scots, and Prince Alfred.

SECOND CLASS.—Purchaser's Selection of 12 from the following list for 10s.—Lyne's Duke of Cornwall, Sunrise, Rosebud, Chaplet, Apollo, and Sidonia, Hoyle's Sarah Jane, Titus, Gipsy Queen, and Champion; Catleugh's Orion, Thurtell's Othello and Pluto, Gaines's Duchess of Leinster and King of Saxony, and Foster's Madeline.

Other sorts from 5s. to 10s. per dozen.

SCARLET GERANIUMS.

20 plants of good varieties, including some of the following, for 15s.—Beauty of St. John's Wood, Hendersonii, Tom Thumb, Vivid, Compacta, Monarch, Eclipse, Britannia, Surpass Frogmore, and Cottage Maid.

DAHLIAS.

FIRST CLASS.—Purchaser's selection of 12 from the following list for 18s., including one plant of Tom's CHAMPION OF ENGLAND, and one plant of Tom's STAR OF THE WEST. These two excellent flowers were shown at the Exhibition of the Plymouth Amateur Dahlia Society, on the 28th of September, 1848, and won the Silver Medal. The following description is from the *Plymouth Herald*, October 7th, 1848. "An extra Prize (Silver Medal) was awarded to Mr. Toms, Gardener, Tamerton Foliott, for two exquisite seedlings, which bid fair to take a prominent place in future winning stands, named Tom's Star of the West, a flower possessing every requisite for a Show Dahlia, and unrivalled in colour, which is a clear bright yellow. The other, Tom's Champion of England, a flower of fine crimson, faultless in form, and perfectly unique as to its petals, which, instead of being as in other Dahlias, each petal in this variety is doubled, that is, there are two petals to one." Cardinal Ferretti, Jenny Lind, Hamlet, Yellow Standard, Walter Hilson, Felix, Ackbar, Shylock, Tonson d'or, Queen of England, Fire King, Boule de Feu, Florence Dombey, Andromeda, Queen of Sheba, Lady of the Lake, Mrs. Anderson, Arnel, Nell Gwynne, Belted Knight, Commander, Box, Rol de Pontily, and Amy.

SECOND CLASS.—Purchaser's selection of 12 from the following list for 8s., or 20 for 12s.—Cassandra, Berrier, Lady Sale, Duke of York, Bloudetta, Captain Warner, Princess de Radzville, Star, Metropolitan Queen, Model, Ludwig, Hanscate'sin, Bijou de Colshaut, Essex Rosy, Schoon Erfurture, Lady Featherstone, Adrian de Condille, Bertha von Gera, Alexandrina, Marc Antony, Beauty of Bath, Princess Wellina, Pantaloon, Prusser, Prima Donna, Master George Clayton, Madame Dresser, Madame Zephier, Quinota, Melina Adam, Lady Sangster, Eugene de Dijon, Miss Vyse, Joseph Balmio, Cleopatra, Bathonia, Sir Edmund Antrobus, Multicator, Mrs. Walner, Harlequin, Enterprise, Marquis of Aylesbury, Standard of Perfection, Victorine, Bees-wing, and Mrs. Keynes.

FUCHSIAS.

Purchaser's selection of 20 from the following list for 12s.—Passingham's Duke of Cornwall, Star of the West, Apollo, Rosalia, and Conqueror; Purity, Ellen, Exquisite, Duchess of Sutherland, Hailstorm, Acantha, One in the Ring, Duchess of Kent, White Perfection, Delicata, Coralina, Dr Jephson, Beauty of Dalston, Eximea, Napoleon, Goliah, Hero, Lancashire Witch, Rockin's Una, Mrs. Lane, Virginia, Sanspariel, Admirable, Sylph, Glorious, Trafalgar, Coronation, Cleopatra, Penelope, Lady Julia, Rosabella, Sir William Magnay, Princess Alice, Magnet, Sidmouthii, Nymph, Gigantea, Uttoxeter Beauty, Exoniensis, Lowreyii, Fulgens, and Formosa Elegans.

INDIAN AZALEAS.

Purchaser's selection of 12 for 20s., or 20 for 30s.—Gledstanesii superba, Vivid, Flammea, Nymph, Grandis, Pink superb, Rosea bicolor, Attraction, Coquette, King of Saxony, Incarnata, Admirable, Sirius, Glory, Carnea, Sunbeam, Rubescens, Pompeii, Pink Perfection, Sappho, Jennerii, Cleopatra, Apollo, Semi duplex rosea, Formosa rosea, Standishii semipleno, Alba striata Prince Albert, Minerva, Addisonii, Refulgens, Smithii Magnifiora, Alba trifiora, Woodsii, Grandiflora maculata, Gledstanesii excelsa, Barbata, Rosea punctata, Optima, Purpurea pleno, Gledstanesii, Exquisite, Splendens, Danielsiana, and Smithii coccinea.

DWARF ROSES, IN POTS.

Including the CHINESE, BOURBON, NOISETTE, and TEA-SCENTED VARIETIES.

Purchaser's selection of 12 for 18s., or 20 for 28s.—Souvenir de la Malmaison, Bouquet de flore, Prince Albert, Pierre de St. Cyr, Thermocles, Austerlitz, Camelliaflora, Smith's Yellow Noisette, Solfaterre, Thea perfection, Felton, General Vallaise, Bougere, Charles Reybaud, Delphine de Gaudet, Belle de Florence, Eugene Beauharnais, La grande superbe, Duchesse de Luxembourg, Rubra, Fairy Queen (Red), Marjolin, Fabrier, Theresa Isabella, Moliere, Duc de Luxembourg, Henry the Fifth, Cramoisie superieure, Semperflorens, Madame Laffay, and Louis Phillipe d'Angers.

CINERARIAS.

Purchaser's selection of 12 for 15s. Maid of Artois, Fulgida, Eminent, Delicata, Lady Fellowes, Lady Seymour, Flash, Monarch, Nobilis, Desirable, Cramoisie superieure, Fairy Queen, Superb blue, Paragon Queen, Duke of York, Compacta, Madonna, Red Rover (Colmar's), Countess of Zetland, Phillis, Bijou, Favourite, and Maratina.

VERBENAS.

Purchaser's selection of 20 for 10s.—Defiance, (Robinson's) Atrosanguinea, Rubra, Gigantea, Hermoine, Satellite, Coronet, Mont, Blanc, Gem, Barkerii, Harlequin, Lord John Russell, Carnlescens, Striata coccinea, The Giant, Emma, Boule de feu, Excelsa, Alba intexcens, Minstrel Boy, Louis Phillipe, Lilac perfection, Favourite, Fulgens, Miss Harcourt, Incarnata perfecta, Bicolor odorata, and Ibrahim Pacha.

Purchaser's selection of the following from our General List.

12	Choice Miscellaneous plants, first class	16s.
20	Ditto " " "	25
20	Ditto " " second class	15
12	Choice Miscellaneous Climbers, first class	16
20	Ditto " " "	25
20	Choice Herbaceous plants	10
100	Ditto "	40
6	Choice Antirrhinums	5
6	Choice Petunias	5
12	Choice Achimenes, Gloxinias, and Gesneras	15
20	Choice Chrysanthemums	12
6	Choice Cactus	9
12	Fine Camellias, 18 inches to 2 feet high	36
20	Ditto " "	52
40	Ditto " "	100

*** *All Orders above 2l. will be delivered, free of carriage, by* Messrs. PICKFORD and Co., *to any Station on the Great Western, Bristol, and Exeter, or South Devon Railways; or to any Town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers. All orders by Railway will be sent by* PICKFORD and Co., *unless ordered by any other conveyance.*

All Goods not thoroughly approved of, immediately exchanged; and it is particularly requested that any deficiency in quantities, or inattention to orders, be immediately communicated to us.

*** To prevent disappointment, we hope that all orders will be sent to us as EARLY as POSSIBLE - we shall then be able to supply all the sorts enumerated in this list; but if they are delayed, we fear that we shall be deficient in some instances, having only a limited supply of some sorts.

ORDERS WILL BE ATTENDED TO IN STRICT ROTATION.

Great attention is at all times paid to careful packing. We have sent a great number of plants to the North of Scotland and Ireland, and they have arrived in most excellent condition.

WILLIAM E. RENDLE and Co., Plymouth.
Counting-house, Union-road.
Adjoining the Plymouth Station and Terminus of the South Devon Railway.

The Gardeners' Chronicle.

SATURDAY, APRIL 28, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	April	30	Zoological (Anniversary)	1 P.M.
			British Architects	8 P.M.
			Medical	8 P.M.
TUESDAY,	May	1	Horticultural (Anniversary)	1 P.M.
			Royal Institution (Anniversary)	2 P.M.
			Linnean	8 P.M.
			Civil Engineers	8 P.M.
WEDNESDAY,	—	2	Geological	8½ P.M.
			Zoological	8 P.M.
THURSDAY,	—	3	Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	—	4	Botanical	8 P.M.
			Royal Institution	8½ P.M.
SATURDAY,	—	5	Horticultural Gardens	1 P.M.
MONDAY,	—	7	Entomological	8 P.M.
			Chemical	8 P.M.
			Pathological	8 P.M.
TUESDAY,	—	8	Syro Egyptian	7½ P.M.
			Medical and Chirurgical	8½ P.M.
WEDNESDAY,	—	9	Literary Fund	3 P.M.
			Society of Arts	8 P.M.
			Graphic	8 P.M.
THURSDAY,	—	10	Royal Society of Literature	4 P.M.
FRIDAY,	—	11	Asiatic	8 P.M.
			Philological	8 P.M.
SATURDAY,	—	12	Asiatic (Anniversary)	2 P.M.
			Royal Botanic	3½ P.M.

COUNTRY SHOWS.—Tuesday, May 1. Manchester and South Lancashire Tulip.—Wednesday, May 2. Meath Horticultural, Walsall Floral and Horticultural.—Friday, May 11. Cornwall Horticultural.

"WHAT WEATHER! What wretched weather in April! Did you ever know so bad a spring?" are questions put on all sides, every one believing, as they always do, that the bad weather of the day is the very worst that has been ever felt; so keen is our perception of pain present, and so quick our forgetfulness of pain past. For ourselves we neither admit London weather to have been unusually severe, nor the spring itself unusually unpropitious. In April 1849 we forget the snow and sleet, and heavy rains of April 1848, especially since the latter fell by night, and the former have fallen by day. No doubt there has been more snow, and a lower temperature in this present month of April than we always have; the season itself is backward, and May 1849 will resemble April 1848. So much the better.

Nothing is more disadvantageous to this country than the nice comfortable warm springs which tender folks delight in. Such springs only force into growth a delicate race which the first cold night cuts off. It is delightful to see on the very threshold of winter, as we quit his dreary tent, the meadows sparkling with vernal flowers, and the orchards painted white and pink with the delicate harbingers of autumnal fruit, and to feel the soft west wind as the Atlantic breathes upon these northern shores. It is a charming thing to realize the old poet's description:

> "Whanne that Aprile with his shoures sote
> The droughte of March hath perced to the rote,
> And bathed every veine in swiche licour,
> Of whiche vertue engendred is the flour;
> Whan Zephirus eke with his sote brethe
> Enspired hath in every holt and hethe
> The tendre croppes, and the yonge Sonne
> Hath in the Ram his halfe cours yronne,
> And smale foules maken melodie,
> That slepen alle night with open eye,
> So prikketh hem nature in hir corages;
> Than longen folk to gon on pilgrimages, &c. &c."

Nothing can be more agreeable. But unfortunately such pleasures carry penalties in their train, and the fair promise of CHAUCER'S spring is too frequently marred by an unpoetical May. There can be no doubt that upon the whole such springs as we are now enduring are far more advantageous to the cultivator than the brilliant days in which holiday folks delight. It generally happens in cold springs that when the cold weather does leave us we feel no more of it; and it is always found that the flowers "engendred" amidst storms and sleet, are the most capable of enduring such cold as they may have to bear.

Such is the case in the present spring. The Plums and Cherries have suffered no great damage; Pears will, for anything that has yet happened, be a crop, and as for Apples, they are as safe as if we were at Christmas. Of course we speak of the neighbourhood of London. And yet, because the flowers of standard Apricots are killed, and a good many Gooseberries have perished in the snow, we hear men crying that they are ruined. They find a great part of the Pear blossoms black; they wholly overlook the numbers that are not touched; and it never occurs to them that the destruction, by some means or other, of four-fifths of all the blossoms that ever appear is indispensable: if they are not carried off by frost, they must prey on each other and fall, from the impossibility of the trees that bore them ever bringing up such a prodigious brood.

In like manner, there are those who anticipate nothing but failure on the part of the exhibitors at the first meeting in the Garden of the Horticultural Society, which will be held next Saturday. We see no cause for fear. Some of the most interesting meetings ever held at Chiswick have been early in May, as the following figures will show:

Date.	Morning.	Noon.	Max. Temp. in shade	Wind.	Visitors.
1834.					
May 10	Fine.	Fine.	73	Little, S. W.	1402
1835.					
May 9	Fine.	Fine.	71	Brisk, S. W.	1308
1846.					
May 9	Fine.	Very fine.	72	Brisk, S. W.	4658

On all these occasions the weather has been magnificent, and the show superb. This year the meeting is but four or five days earlier; and we see no cause for apprehension if the weather is favourable. The plants will all come from under glass, and we shall not believe that our English gardeners have so lost their skill as to be baffled by a few cold days, which their greenhouses cannot feel. This, at least, is certain, that the exhibitors have all the same chance, and as the Horticultural Society's Garden meetings are essentially *for competition and comparison*, the result must be the same to those who contend for prizes.

SOME of our acquaintances complain that the NURSERYMEN "withhold all information as to the propagation and management of common plants purchased from them in the way of business." We cannot believe that this is generally the case; instances of such wrong-headedness may be found; but, upon the whole, nurserymen are among the most intelligent and shrewd of tradesmen, and they are too wise to kill the goose which lays the eggs they live upon. For ourselves, we have always found them extremely ready to furnish, for public or private use, any information which can fairly be demanded of them. It is their first interest to do so, and they are not the men to neglect their interests in any way.

As, however, we must suppose from the complaints that have reached us, that some dealers in plants pursue an illiberal course, it may not be amiss to explain to them how entirely it is opposed to their own welfare. If an amateur buys a plant, he certainly does not do so for the mere purpose of putting half a-crown into the seller's pocket; he buys it in order that he may have the pleasure of seeing it thrive, and reward him with the beautiful colours or forms which he has heard that it possesses. To secure these colours or forms is, however, entirely the work of good cultivation; and if a buyer does not know what good cultivation is, the seller should tell him. If he does not, and the plant disappoints the expectation formed of it, although the disappointment may arise wholly from the buyer's want of skill, the nurseryman is the sufferer; for the buyer is unconscious of his own deficiency, and naturally throws the blame on the nurseryman. This may be of no account now and then, but in the long run it has the effect of driving purchasers away. The buyer says to his neighbour, "I would not advise you to deal at that nursery, for I never could make the plants from it thrive. There must be something wrong with his stock, for I have had no difficulty since I purchased of Mr. ——, a very civil man, who is always ready to tell you what to do. Indeed, if it had not been for him, I should have given up gardening altogether." Of course he would; it would have been

useless to persevere against endless disappointment: and there was no chance of success unless the poor amateur would serve an apprenticeship to a gardener, which would have been more than his horticultural *furor* was equal to.

We can assure those who entertain a different opinion on this subject, that they lie under a great mistake. Their policy should be to give their customers all possible information, and thus to encourage the spirit of gardening; for on that their trade wholly depends. We would even say that if they are wise they will not only abandon their narrow-minded views, but take a course directly opposite, by printing labels containing the names of the principal plants they sell, and short practical directions for their perfect management.

We announce with much satisfaction that the Court of Directors of the East India Company have, with that unvarying liberality for which they are so much distinguished, directed the distribution of the different botanical collections that have been sent to the India House, during the last few years, by Messrs. Griffith, Falconer, Helfer, and others. The distribution will take place under the superintendence of Dr. Royle. We understand that Mr. Griffith's Palms have already been prepared, and will be immediately issued to those men of science among whom it is intended to divide them.

RAISING ANNUALS.

The following is perhaps the most economical mode of raising annuals with regard to certainty and ultimate effect. Before proceeding, however, to detail the system, I feel induced to offer a few remarks on the general character and expression of annuals as objects of decoration, either in the parterre or for the unassuming flower border. Our present mode of clumping, as it is termed, has had the effect of forcing many of these interesting things into other and less legitimate situations in the garden. Thus, in later years, we find whole lines of Clarkias, Collinsias, Chryseis, and other gaudy annuals, occupying marginal borders, the facing of slips, or long promenades. These things certainly, in a hot summer's day, when all of a glare, take one by surprise; but although they serve to astonish, they do not permanently please. The banishment of annuals from the parterre, however, has not been caused entirely by the clumping system; it has, in part, arisen from their too often unsatisfactory character in such a situation. If a wet summer supervene, the annuals are smothered with gross leaves, which give them a weedy appearance, the soil in which they are grown in general being by far too rich. They, moreover, spread so widely that all become confused, and high keeping is at an end, unless the pruning knife be applied, and then adieu to the beauties of the annuals.

I would not here insist that annuals should by any means be allowed to supplant the lovely Verbena, the Pelargonium, Petunia, the Antirrhinum, &c.; the question is, whether they can be made to combine with them, or whether any other situation can be found for them. As to a combination with our half-hardy bedding plants, the only thing on the face of the matter which offers any impediment is the fleeting character of many of our annuals, together with their unruly habit of growth, as before named. By the plan I am about to propose, it will be seen that the first of these difficulties is readily overcome, merely by the ease, economy, and certainty with which successions can be produced and removed at any given period, so that, like "dissolving views," when the eye has been satiated with one picture, another and another may spring up in its room; and all this during one short summer. The second difficulty is removed by the very same mode, without any farther concern; by the course I shall describe the annuals will all be compact in growth, be the season what it may.

For beds of mixed character, which are in their very nature changeable, on account of the blanks caused in early summer by the decay of our most precocious floral beauties, the plan will be found eligible, and also for the mere flower border. The plan is simply using squares of turf from a very old pasture, representing when in use a small garden pot, but with this difference, that there is small expense in their making, less still in their carriage, and three distinct sowings at proper periods will provide against blanks in the most extensive garden in Britain, to say nothing about their adaptation to a regular bedding system.

The first matter of import is to procure turves 3 inches thick, from any rest land which possesses a strong and tough sward or turf. I need scarcely point to very old pastures. I have, however, seen turf cut from common lands, nay, from country lanes, which was not to be excelled for the purpose. Having procured a lot of these in the early part of February, the next thing is to wait for bad weather, and during such, without hindrance to other business, the little turf pots, as I must call them, may be cut off by hundreds in the course of a few hours by a man or two, who not only can but will work. It is best to place a level and strong board on the floor of the shed where the operation is performed; on this the turves may be cut with facility. Four inches square would seem to be the most eligible size of all others for the purpose; and if the turves have been cut 1 yard in length, by 1 foot in width, each turf will of course make 27 of these little squares. This done, the next thing is to cut little hollows in the centre of each; these are scooped out with great ease with the point of an old knife; care must be taken in this part of the operation, to leave an edge or bordering intact; such will constitute the rim, and will serve to retain the necessary amount of water.

The next point is to subject them to as strong a heat, either moist or dry, as will at once destroy not only all the vegetation which may exist, but also insects and their eggs. This is the only really tedious part of the process; we, however, find no difficulty worthy of consideration; for during bad weather we have recourse to one of Burbidge and Healy's boilers, which heats our Orchid house. Close to the shed which contains this, and as close to a permanent supply of water, we have established our depôt; here the turf pots are placed when sown, in order to chime in with a system of watering which exists in that position; and where of course no neglect can take place.

Our boiler has a tap in the bottom for clearing out the pipes, being at the lowest level; and from this tap we can draw water heated to nearly 200°. Placing a large tub then beneath this tap, we three parts fill it with the cut turf pots, for so we must now call them. The tap is then turned on to them, and when the tub is full the tap is graduated, so as to run away slightly, and in fact just enough to keep the water in the tub hot enough to destroy vegetation, the surplus water of course running over slightly, escaping by the stoke-hole drain close at hand. Our rude turf pots remain in for half an hour, and then give place to another lot, and so on.

I must now, before concluding, advert to one more most essential part of the plan, and which omitted, success would be rather problematical. This is a plot of ground so contrived as to bid defiance to slugs and snails. I have got some beds prepared by making an excavation of 6 inches, and then filling the hollow with clean cinder ashes. On these the slugs will not travel, but in order to prevent all possibility of their doing so, I water the whole ash-bed, when completed, with the scalding water before alluded to, infusing as much salt in the water as it will carry previous.

The turves thus prepared, nothing more is necessary but to insert a pinch of seed in each at the proper period, and to cover with a little soil, then to give the whole a watering, in order to close the soil about the seeds. The times of sowing must of course be regulated by the period during which they are required to be in blossom. If the proprietor is at home most of the summer and autumn, three distinct sowings should be made. One in the middle of March, a second the middle of April, and a third the middle of May. With such a provision, there need be no fear of a single blank in the parterre or flower borders, provided enough of the turf pots are employed.

Many of the dressy things of the May sowing, if removed to a cool aspect just before they blossom, will become so retarded as to be of much service in October for decorating the shelves of the greenhouse. They will be found to have rooted slightly through the turves and may be taken up and inserted in small pots, filling round with a little soil; such on a light shelf will blossom for many weeks, and thus assist in filling up that hiatus which always occurs in October and November; when chilling storms have made the flower garden desolate. For the latter purpose I would recommend the following especially, Collinsia bicolor, Clarkia pulchella, red and white; Schizanthus of kinds; Kaulfussia amelloides; Lobelia, the small dwarf blue kinds; Gilia tricolor, Nemophila atomaria, Lupinus nanus and Hartwegi; Mignonette, Leptosiphons, Clintonia pulchella, Platystemon californica, dwarf German Asters, Phlox Drummondi, Schizopetalon Walkeri, Tagetes florida, Campanula Lorei, Gypsophila elegans, &c. These I suggest as being of tolerably compact habit, good blooming properties, and by no means of a common-place character, for in the introduction of such things to the greenhouse shelves, the latter point should by all means be studied, in order to meet the eye of refined taste.

In conclusion, I would point to the eligibility of these little turves to the amateur, to assist in carrying out a system of window gardening; for although such persons will have their Pelargoniums, their Ericas, their Camellias, Azaleas, and even, as your correspondent "Dodman" suggests, their Orchids, yet the gaiety of these can scarcely be rendered of a continuous character; and here how convenient would be a little reserve ground—a miniature annual garden—where, at any period from May to December, the proprietor can, before breakfast any morning, bring in half-a dozen of these little turf pots, just emerging into blossom. Such might either be inserted in a 5 inch pot, called 48s about town, or they might merely be laid in an ornamental saucer, and immediately surrounded with fresh moss, pouring a little water in the saucer. *Robert Errington, Oulton Park, April* 18.

DISEASES OF PLANTS.

(*Continued from page* 244.)

§ 2. *Of the Causes of Diseases of Plants as generally admitted by Writers.*—All naturalists agree that all plants must be considered as diseased where the performance of their functions is in any way impeded, but they are not much agreed as to the causes of such perturbation. At first it was laid down that excess or deficiency of sap was the origin of all diseases of plants, and this was the opinion of the Greek writers. I admit that a great number of the infirmities of vegetable productions derive from the sap, either by its intrinsic quality or its quantity, or its unequal distribution, as was stated by Tournefort, who maintained also that many diseases would be repeated in the presence of external accidents. But all these causes are insufficient to account for certain infirmities, such, for instance, as that of the fruit remaining acid or without colour, not attaining maturity, nor acquiring their proper colour.

Some have thought that excess or deficiency of perspiration might be the origin of these disorders. But here I must distinguish the different meanings attributed to the term cause. I admit that a suppressed or a too much excited perspiration may be the immediate occasion of serious diseases in a plant, such as canker. But I think that we must look for the primary cause by which a plant previously healthy became thus affected. In this point of view I cannot consider the suppressed or excited perspiration as the origin of the disease, but rather as the disease itself, or, still more correctly speaking, as the symptoms of the disease. The great heat of summer, by distending the vessels, and instilling into them an excess of caloric, disturbs the ordinary course of vegetable functions, and occasions a more considerable or more rapid loss of sap by evaporation. But who does not see that all this is the consequence of the excess of heat, which has stimulated beyond measure the fibres and the whole system of the plant? On the contrary, if the same plant, by the action of cold, is obliged to part with a portion of the caloric necessary for its ordinary functions, by that loss of a necessary stimulus and energy the ordinary secretions will not take place, and its perspiration will be checked. But the weakness, that is to say disease of the plant, will have preceded this deficient perspiration.

I have mentioned some authors who distinguish internal from external causes of disease; but it is in vain that I have sought for any exactness in this division. They say, for example, as in the article "Maladie," of Rozier's "Cours Complet d'Agriculture," that the sudden death of a plant is owing to internal causes; yet, on entering into details, they add that it may proceed from a sudden *coup de soleil*, which dries them up, or from the bite of an insect which, producing an extraordinary exudation of sap, makes the plant perish. In the same article, blight is classed amongst diseases occasioned by external causes. But let any one answer candidly, do we know with certainty what it is that produces this terrible malady?

Nor is the distinction between local and general disorders at all satisfactory. It should first be ascertained that the former do not in fact attack the remainder of the plant; that is to say, that the whole plant does not suffer from the injury of a portion of it. I will mention one instance in support of my objections. Writers place among local diseases the white spots which are observed on some leaves. Now I feel convinced that this disorder has its seat in the whole plant, which has degenerated into a state of continued weakness, from the want of some particular aliment, although it only shows itself in the leaves. This is so true, that by removing the plant to a rich soil, and treating it with appropriate manures and copious irrigations, the spots have disappeared, and the leaves recovered the primitive green over their whole surface.

Some, again, love to designate certain diseases as epidemic, attacking at the same time a large number of plants; others as endemic, because they are confined to particular species only; and, lastly, they call sporadic those which attack only this or that individual. This mode of dividing diseases is very uncertain, for it is far from being precisely determined what we should understand by an epidemy, or rather I should say an epidendry. So also, as a large number of vegetables are unknown to us, and we have only studied the diseases of a very few species, it is a very hazardous thing to assert that only this or that plant is subject to this or that malady. On this account I would reject the classification founded on the number of plants attacked. It is easy to see that almost all the systems of vegetable pathology have been founded on the opinion so universally received, that there exists the greatest analogy between animals and plants. The diseases peculiar to the former have been sought to be recognised in the latter; and even from the earliest times the same names have been given to the disorders of both, as Pliny has recorded: *societate nominum quoque cum hominum miseriis*. It is therefore not to be wondered if some have thought of adopting the system of the so-called *humorist*, and deriving all diseases, except wounds, from the bad quality of the juices of plants; in our days, on the contrary, it has been endeavoured to apply to the vegetable system *in extenso* the medical reforms introduced by Brown; and this to such a degree that they would adopt the Brownian theory to the practice of agriculture. Thus it was proposed to suppress "the system of undigested manures," to lay no more dung on the fields, but to resort to the mechanical mixture of earthy substances, this being supposed by such practicians to be the whole secret of cultivating the soil. Tull and Chateauvieux attempted to put these views into practice. Their expensive, and, however exact, most unfortunate experiments have shown the absurdity of the hopes entertained.

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

A Few Remarks on Roses.—Several matters of importance in the culture of Roses require to be attended to, which are yet too simple to demand any lengthened observations. These we shall bring together in the present paper, and then dismiss this flower for the present; hoping for all gardeners that their labours,

wisely conducted, may be rewarded by abundance of bloom, and that the season may be propitious.

Where there are many Roses in a garden, a late bloom should be secured by pruning some of them late; that is, after the first leaves are developed. The severe weather of last week has sadly nipped many of the early flower blossoms, and such trees will do admirably for this experiment. Cut them in, so that new buds may be brought into activity, and these will flower a month after those which are not so treated. Moving them at this time will have the same effect, although it is rather late for this operation. It may be done if necessary; and the trees thus transplanted should be cut close in, and well watered in dry weather. Contrivances to secure a late bloom are less necessary now that autumnal Roses are so numerous; but at the same time the amateur may wish to prolong the flowering of some kinds which have not this late habit. We have found that old favourite, the common Provence Rose do well when moved late.

Attention should be given to every Rose tree before it is in full leaf, to ascertain the position its branches are likely to take when they are laden with the full foliage and flowers of summer. We have often been vexed at the tendency to bend down to the ground, of some of our best bushes which we thought were strong enough to retain an erect position; and when stakes are applied at that late period of growth, the tree can seldom be made to assume a natural appearance. The best plan is, to go round the garden and stake up all trees which, judging from past observation, are not sufficiently supported. Imagine them as they will be in July, when "washed in a shower," and when "the plentiful moisture" will add so much to their weight, and act accordingly. Let the staking and tying up be performed with taste, so that the bush when in bloom shall have a unique and compact appearance.

Insects should be sought after in the egg state, or, at all events, when the caterpillar first appears. The grubs which bury themselves so adroitly in the folds of a Rose-leaf do not come by chance, but proceed from the egg to a gradual maturity; if therefore their habits are studied they may be caught in time, before they have made many meals on Rose-buds. Children might be of great use in searching out these pests, when taught to distinguish between those which are injurious and those of an ichneumon or parasite character. Papers in former numbers of the *Chronicle* may be advantageously consulted on this subject.

The shoots of Briars must be arranged for budding, only two or three being left in the position required for the head of the future tree. Tree Roses lately formed must be guarded by stakes reaching up to the budded part, which must be tied to them. Without this precaution, some high wind may carry away the whole head, as much to the surprise and annoyance of the proprietor as were felt by John Gilpin when he lost his hat and wig. *H. B.*

SELECT SPRING FLOWERING PLANTS FOR GROUPS, &c.

(*Continued from p. 245.*)

VIOLA PALMENSIS (V. stricta).—A neat dwarf hardy herbaceous plant, 6 inches high, producing numerous pale blue flowers, from the last week in March until May.

SCILLA BIFOLIA.—A neat hardy bulb, 4 inches high, with spikes of rich marine blue starry flowers. In blossom from the last week in February until the middle of March.

SCILLA PRÆCOX.—Like the last in habit, and producing small spikes of bright azure blue nodding starry flowers.

VERONICA ANCENA?—A decumbent growing hardy herbaceous plant, 4 inches high, bearing numerous spikes of rich blue blossoms from the first week in May until the second week in June.

VERONICA SAXATILIS.—A compact, hardy, herbaceous plant, 2 inches high, displaying rich blue salver-shaped blossoms from the second week in May until the third week in June.

TRICHONEMA BULBOCODIUM.—A hardy bulbous plant, 3 inches high, with grass-like foliage, and numerous comparatively large, light-blue Crocus-like flowers, having a yellowish centre. In blossom from the second week in April until the first week in May.

NARCISSUS TENUIFLORUS, BULBOCODIUM, AND SEROTINUS.—Neat, hardy bulbous plants, from 4 to 6 inches high, with dark green rush-like leaves, and large conspicuous rich golden-yellow funnel-shaped flowers. In bloom from the middle of May until the second week in June.

SAPONARIA OCYMOIDES.—A decumbent hardy herbaceous plant, with a profusion of lively peach-coloured salver-shaped blossoms. In flower from the middle of May until the second week in June.

ANEMONE HORTENSIS SUPERBA.—A hardy herbaceous tuberous-rooted plant, 6 inches high, with brilliant scarlet starry flowers, 2 inches wide. In blossom from the second week in May until the middle of June.

ANEMONE STELLATA.—A hardy herbaceous plant, 6 inches high, with purplish-crimson starry blossoms 1½ inch in diameter. In flower from the last week in April until the middle of June.

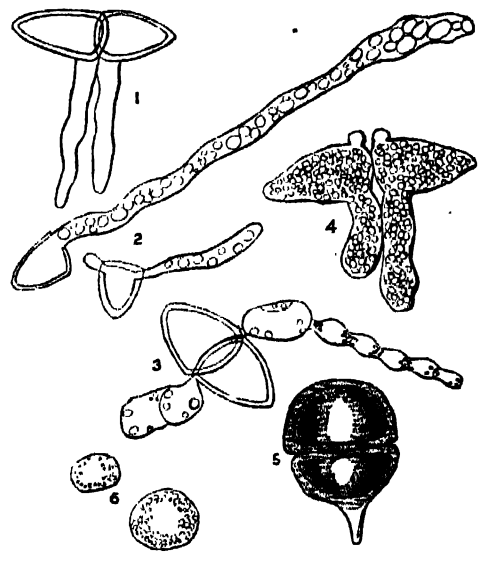
ANEMONE PAVONINA.—A hardy herbaceous tuberous-rooted plant, from 4 to 6 inches high, having bright double scarlet flowers 1½ inch in width. In blossom from the last week in April until the last week in May.

LASTHENIA CALIFORNICA.—A hardy annual, from 4 to 6 inches high, having lively green, erect, broad, grass-like leaves, and compact, golden yellow, Senecio-like flowers, 1 inch in diameter. In blossom from the middle of May until the third week in June. Sown in a store-bed at successive periods throughout the year, a sufficient supply will be obtained for large groups or beds throughout the summer and autumn. *William Wood, Fishergate Nurseries, York.*

PODISOMA FUSCUM.

THERE is a small group of fungi, consisting of the two genera Podisoma and Gymnosporangium, and occurring only on different species of Juniper, which, in outward aspect, resemble exactly the gelatinous masses of certain Tremellæ, though in point of fact nearly allied to the mildew of Wheat. A very singular part of their economy is their reproduction year after year from the same mycelium, which forms discoid patches on the living stems exactly as in the curious genus Cystaria, so important an article of food to the Fuegians; it gives rise to tubercles of various sizes on the living branches of various species of Beech. A figure of one of the species, Podisoma macropus, Schwein., was published in the Volume for 1845 of Sir W. J. Hooker's "London Journal of Botany," from a sketch by Dr. Wyman, who was so fortunate as to observe the germination. Mr. Woodward forwarded to me sketches illustrative of the germination from Cirencester in 1847, which confirmed the curious observations of the Messrs. Tulasne on the germination of Uredineæ, published in the early part of that year.

In April of the following year he was so good as to forward to me a specimen of Podisoma fuscum, which enabled both myself and Mr. Broome to observe the germination, and to secure sketches of the various phases which were exhibited. Professor Gasparini has lately published a memoir on the subject, which has not yet reached me. Meanwhile I am anxious to record Mr. Woodward's observations, regretting that in the multitude of avocations I have neglected to do so at an earlier period. The spores vary extremely in different parts of the same tremelloid mass, being sometimes strongly pointed, sometimes perfectly obtuse; the pointed spores, however, seem the only ones which have the power of germination. Each spore consists of two cells, both of which are furnished on either side just above the point of juncture which a single pore through which the germinating thread protrudes exactly after the fashion of pollen tubes. Occasionally all the four pores are fertile, but more frequently one or two only protrude the cotyledonoid. The pores of the two cells, it should be observed, correspond exactly in position. In no case have more than two been observed in each hemispore. *M. J. B.*



Figs. 1, 2, 3, 4, spores of Podisoma fuscum, germinating; fig. 2 shows clearly the protrusion of the cotyledonoid from the secondary membrane; fig. 5, a spore more obtuse than usual, which has not germinated; fig. 6, masses which appear to have escaped from the spores, and which eventually elongate into cotyledonoid threads.

Home Correspondence.

A Mixed Flower Garden.—About 15 years ago the rage commenced for having each clump filled with one sort of plant; the gardener, of course, had no objection to this new species of arrangement, because he could see that it would not be near so much trouble to him as the old plan. The beds once filled, the summer's labour as regarded them was at an end; such beds, however, gave to the flower garden an appearance not unlike that exhibited by one of General Evans's Legion men on their return from Spain. The old coats of these worthies had once been red, but they were then amply patched with yellow, blue, green, black, &c., and were bare and thin; such is a Dutch flower-garden. The fault generally committed in forming a mixed flower-garden or border, is planting too thickly; the plants ought to stand not less than 3 feet apart; the roots and foliage would then be clear of those of their neighbours, and room would be afforded for winter manuring and digging. In planting clumps the plants should range nicely, the highest being in the centre; and in borders they should gradually rise from front to back. It is sometimes necessary to lift the plants altogether, and rearrange them, and this gives an opportunity of trenching and deepening the soil. It was no doubt the bad arrangement that prevailed in clumps and borders that brought about the present system of flower-gardening. If the above arrangements were carried out properly, and the herbaceous plants placed at proper distances apart, there would be plenty of room for introducing Verbenas, Petunias, Calceolarias, Scarlet Geraniums, &c., between them in May. These latter would form little clumps of themselves, quite large enough to render the bed gay and interesting, without the pain to the eye attendant on looking on a large mass of bright colour. The flower-gardens now-a-days may be compared to regiments formed into squares, producing a gaudy effect a mile off, but formal, stiff, and tame near at hand. As respects annuals, they are entirely mismanaged; a hundred are allowed to come up in a square foot, and there they remain to bloom, becoming mildewed for want of air and sun, and the roots fighting and gasping for food. They are strangled below ground as well as above. Can fine blossom be expected under such management? or can they last long in flower? *James Cuthill, Camberwell.*

The Weather.—It may be interesting to know that after a mild winter we have to-day, April the 19th, 4 inches of snow on the ground—a very unusual occurrence even in the midland counties. *C. H. Catling, Botanic Garden, Birmingham.*—Last night was so winterly that I fear for the safety of all sorts of fruit. The frost and snow were so intense that my Apricots, protected by glass, suffered equally with those exposed. They are black, and that on April 18th. *J. Wighton, Cossey Gardens, near Norwich.*—Tuesday, April 17th, was cold and drear, with northerly wind. About 4 P.M. a heavy shower or rather storm of snow lasted two hours, and covered the ground about 2 inches deep. A further fall in the night added about 2 inches more, which was reduced by ground thaw to a total of about 2 inches in the morning. Thermometer at night, before midnight, 25°. Wednesday, 18th: a bright sun produced a total thaw by 11 A.M., but snow came on in the evening, and fell heavily. Thursday, 19th: Snow commenced about 11 A.M., and continued almost without intermission till nightfall. The flakes were large and thick, and about 6 P.M. the snow was fully 6 inches deep on an average, but had drifted much in places. At this time the accumulation of snow, which had frozen upon the trees, threatened general destruction. The branches were heavy with sap, and the swelling buds caught a vast quantity of snow, so that the limbs of Oak and Elms bent under the unusual weight, and the crack and crash of falling branches was heard in all directions. The wind blowing with great force, increased the stress upon the stems and limbs. In this neighbourhood several large Birch and Willow are torn up by the roots, others are split or broken short off, and many large limbs of Oak and Elm are broken down. Beech and Fir have escaped better, but several Plum and other fruit trees are torn up by the roots. Friday, 20th, presented trees laden with lumps of ice as big as a man's fist, which continued falling as the sun gained power, but were not all detached till towards 11 A.M. The wind, though less violent, blew strong from the north, but the thermometer rising to 38° or 40° in some places, the snow melted rapidly and caused a great land flood, a powerful sun aiding its influence. Their united force, however, did not dissolve the snow on the hills, and about 6 P.M. I made snow-balls as large as I could move, the snow continuing 3 or 4 inches deep. It is too early to judge of the effect upon fruit trees, but I fear we shall have a bad account to give; though, from the direction of the wind, trees on south walls may have escaped. *J. R., Seven Oaks.*—On the 17th of April a fall of dry snow occurred, and continued without intermission all day, drifting and blocking up roads throughout the country; there was in some places 20° of frost on the night of Tuesday the 17th; the "oldest inhabitant" has scarcely ever seen such a severe snow-storm at this advanced period of the season. The weather is still stormy and cold, but the snow, which was from 6 to 10 inches deep, is much wasted on the low grounds, although every hill has its mantle of white. The depth of rain, in the shape of melted snow, for the week ending 21st April, was 1·51 inches, mean lowest temperature 29°. Out-door labour in garden or farm is at a stand-still. *H. Walker, gr., Mayen, Banffshire.*

Blistered Leaves.—I am inclined to think that this unsightly deformity is partly owing to frost injuring the tender leaf. I have heretofore attributed it to red spider or brown scale, or at any rate some species of acarus, and sulphur applied to walls appears to abate it; but this year the Peach and Nectarine foliage having expanded very early, has been unusually injured, and its present appearance threatens an extraordinary amount of blistered leaves. I call attention to the subject now, because observation of the phenomena of the next three weeks or month may tend to settle this question. The foliage has been undoubtedly much injured, and if such injury ever produces blister, it will do so this year almost universally. If, contrary to my expectation, blister does not prevail, it will be pretty clear that frost is not its chief cause. Insects always harbour in blistered leaves, but whether they are attracted by the shelter or by the sap of the injured leaf, or whether they themselves cause the injury, seems doubtful. *J. R., Seven Oaks.*

Should Larch be cut between May and September?—No; the resin of all Pines is indurated and concentrated in winter, and forms the preserving power of this most valuable timber. Between May and September the new resin is in the process of elaboration, being held in solution in the abundant sap from which it is about to be deposited in the course of the summer. The saccharine matter in the sap diffused through the vessels of the tree renders the wood, and especially the alburnum, unacceptable food to insects. The whole mass of the tree being dilated with this fluid, on being cut down and exposed to the sun collapses and splits in a longitudinal but rather spiral direction. Lord Ashburton, a few years since, cut much Larch in Hampshire in spring, barking it for the sake of selling the bark, which is of about half the value of Oak bark. All the bodies of the tree became split with deep sun cracks; not a board could be cut out of any of them. They would only do for poles or beams, and were much deteriorated for

those purposes, especially if they were to be squared I believe the profit of the bark was dearly purchased by the deterioration of the timber. *Hantamensis.*

Feeding Carp.—I imagine that your correspondent will not be very successful in fattening carp "on pea flour tied in bags." The following is a better method. Take the crumb of a loaf a day old, and moisten it with cold water, work it with the hand into a stiff paste. If too moist, add some more dry crumbs; then work in plenty of honey, but do not make it too soft. Make it into small balls, about the size of a blackbird's egg. Feed the carp with this and they will thrive wonderfully; and if one be wanted for the table, you have only to put a hook inside one of the balls, covering shank and all. Carp are very fond of worms bred in old pigs' dung. *Leonard Barber, April 23.*

Forsythia viridissima.—The extraordinary hardiness of this shrub has just been severely tested. A large plant is growing before my windows, in very rich and moist soil, and its luxuriant wood was very imperfectly ripened last autumn. It is now covered with flowers, and these have not sustained any injury from 7° of frost, nor from a coating of frozen snow which loaded the plant on Friday last. *J. R., Seven Oaks, April 21.*

The Italian Cypress, Linum flavum, &c.—There are two or three observations I must make on some statements in last week's *Gardeners' Chronicle*. 1. In the first place it is quite a mistake to suppose the Italian Cypress too delicate for our climate. It has been neglected from want of knowledge how to treat it; but there are many fine specimens in our gardens, and the plant seems rapidly coming into fashion again. The Cypress in this damp climate is apt to grow too fast and too succulent. To correct this, it ought to be planted on dry, hard, gravelly soil, no matter how poor, if not impervious to the roots. Further, it ought to be pruned, kept to a leader, and even headed, if it grow too luxuriantly. It is sure to recover itself. But the best way to give a good figure to the tree, which, like some others of the Conifers, is apt to divide into two leaders near the root, is to trim it up continually to a bare stem to the height of 3, 4, and 6 ft., after which it will go a-head and run up to a point as well here as in Italy. The mistake our gardeners make is to treat it as a bush, branching from the root upwards like a Thuja or Juniper, a tendency which ought to be sedulously counteracted. 2. In the next place, I see a correspondent mentions among spring plants to bed out, Linum flavum. This I suspect must be the common greenhouse plant Linum creticum, or some such species, from Flora Græca—suffrutescent, low, tender, but easily manageable. The true Linum flavum, which should be a hardier plant (as to cold), but much more difficult to manage, is, as well as its variety L. serrulatum, a rare plant in gardens. It is not suffrutescent, but herbaceous, tall, bearing handsome heads of flowers, and is a Midsummer plant in its own country—Austria, Hungary, and the Apennines. 3. Arabis rosea, of Calabria, is little more than a pink variety of A. collina, pretty on its native rocks, but coarse and weedy in a garden; not comparable to the Aubrietia. 4. Thuja stricta. Is it not Thuja pyramidalis of Tenore, published 20 years ago? *S., Dorsetshire.* [It is a variety of T. orientalis.]

Cotoneaster Hedges.—I agree with "C. M.," p. 245, that hedges of Cotoneaster look remarkably well all the year round, and particularly in winter, as he says; I mean C. microphylla. I have a plant of it here, 12 years old, the finest I ever saw; it is 10 feet high, with a stem thicker than my wrist, and feathered from the ground upwards, all the side branches falling gracefully, like those of Weeping Willows. It is placed on the face of a steep bank of the poorest sandy soil, over chalk, and in a north aspect. I planted two hedges of it, one on each side of a walk, and in a sandy soil, but with a south aspect. Next year after planting, I drove a row of stakes a yard high along the centre line of each hedge, and about a yard apart, run a tarred cord in a double row along the stakes, and to these cords and stakes I trained the incipient hedge for a few years, by which means I obtained a good foundation; these hedges are not yet out of their stays, but they promise very well. *D. Beaton.*

Vines.—Your Calendar writer says that "the tendrils of Vines are a provision of Nature to enable them to cling to trees for support in their natural habitat, but that they are of no service where artificial means are used for the purpose, and should in all cases be removed, as an unnecessary draught upon the energies of the plant. Stop all fruit-bearing spurs at the first joint above the bunch." Facts appear to me to be against the above statement, for in the long run I have found that Vines deprived of their tendrils, although fixed to their supporters, pushed weaker the following year, and were less fruitful. As regards stopping the bearing shoots, it is obvious that the operator must be guided by the space vacant for training, and the quantity of fruit to be matured. *Constant Reader, April 23.*

Cryptomeria japonica is said to be as hardy as the common Spruce Fir, but I have not found it to be so. The place where I live is very cold and unkind. I have several times in the course of 20 years seen Laurels, Bays, Laurustinus, Arbutus, Alaternus, China Arborvitæ, and even common Box and Holly, which have stood singly on the Grass, killed to the ground, and I am sorry to say that a Cryptomeria which I planted on the lawn has shared the same fate. It grew at a rapid rate until the frost came. Between November and March the fog at times lies very heavy here, and in the mornings the leaves and wood are often coated with a solid mass of ice. This has been the case with my Cryptomeria this year, and it has died, while the Spruce Firs are not injured. As soon as I saw the effects of this coating of ice on my Cryptomeria, and that it must shortly die, I put some stakes round it and covered it with a mat when the nights were likely to be frosty, but this I think did it neither good nor harm. *A Constant Reader, Andover-road, April 23.* [We can only say that a climate in which Box and Holly are killed, may also be unsuited even to Spruce Firs.]

Select Spring flowering Bedding Plants.—Mr. Wood's contributions under this head are very acceptable to country gardeners, and to the writer among the rest. The best plant for a white bed in May that I have seen is Stellaria graminea. Those who have grown Tagetes tenuifolia, or Sanvitalia procumbens, the two best shaped growing plants we have for yellow beds, will best understand the way in which the Stellaria will fashion itself as a bedder. Four years since a quantity of roots of the Stellaria was brought in along with peat earth. I left them to take their own course in the American bed, and having no support but what the branches could receive from each other. They formed a thick evergreen mass perfectly round, and a yard in diameter, and during the whole month of May, for three seasons, the mass was literally covered with white starry flowers, so that at a little distance you could not see a leaf. In the three years this mass of Stellaria attained the height of 18 inches in the middle; and having encroached on some neighbours, I had it cut down, after flowering last May. In the autumn I took the whole away, divided the roots, and planted them in patches on roots and rockwork. They are now coming into flower beautifully. If I wanted a gay flower garden in May, which I do not, the family being then in London, I would use the Stellaria as freely as the autumn-sown Clarkias and other annuals that could be cleared off the ground in time for the usual bedding out things. I would remove the Stellaria to any open places in the shrubbery after flowering, and I would then divide it into little patches. These would be ready next February to remove into beds for flowering the following May. *D. Beaton.*

Rain at Cobham Lodge, Cobham, Surrey.—Snow lay at Cobham on the 18th, 19th, and 20th of April [1849?] This has not happened in any April since that of 1839.

1848.	Inches.	184	Inches.
January	1.42	August	3.44
February ..	2.71	September	2.26
March ...	1.30	October ..	3.50
April	1.01	November	1.51
May	.11	December ..	2.77
June	3.08		
July	2.36	Total	20.56

—C. M., April 5

Bedding Roses.—Allow me to correct two or three errors of description in the list of Roses given by "H. B.," p. 245. The Bourbon Rose, Pierre de St. Cyr, is not "dark purplish crimson," but bright rose; the China Rose, Eugene Hardy, is not "creamy pink," but creamy white; Triomphante is not dark rosy crimson, but deep rose, generally paler than Archduke Charles. His method of planting Tea-scented Roses among hardy Roses is not advisable. As they are so often killed by the winter, they should be planted in a bed by themselves, so as to be easily protected. *Rosa.*

Rustic Plant-houses.—A friend of mine intends to construct a building for half-hardy plants of large growth, such as the Araucaria excelsa, Acacia lophantha, the Dryandras and Banksias, in fact, plants which require much space and a very slight degree of protection. His idea is to form a house of tall Larch poles, with the bark on, and he would feel obliged by any suggestion as to the roof and sides, which, as he proposes to have very little glass, should (the sides at least) be made to open with facility, and to be taken away entirely in the summer, or, rather, for seven or eight months of the year, the poles only to be left, covered with creepers. Cheapness and durability, combined with warmth, being the desirable qualities of such coverings, any hints or suggestions would much oblige.—*Inquirer.*

Rough Plate Glass.—Had sheet glass answered for gardening purposes when we obtained it cheap, there would have been no occasion for rough plate; but as the latter article seems better adapted for our wants, we market-gardeners are desirous of using it, provided we could obtain it as cheap or nearly so as sheet; for struggling, as we do, with foreign competition, we want a cheap article and see no reason why rough plate glass should not be nearly as cheap as sheet. I cannot understand why small squares should be 4*d.* per foot, and the large 6*d.*, when I am informed that plate glass is rolled out into plates of 10 feet by 5 feet: if there ought to be any difference, it should be on the side of the small squares, more trouble being required to cut them. Mr. Hartley, in a letter at p. 345 of your volume for 1845, says, "What is wanted is a coarse thick glass, weighing not less than 16 to 20 oz. per foot, at about 3*d.* per foot." Now, in this he is right; and having produced the article, I hope he will descend to the price; for then, I am sure, a much larger quantity would be used. I apprehend that the majority of glass buyers look wishfully at plate glass; but, comparing 2½*d.* with 6*d.*, they decide either to wait or put up with sheet. *J. L., Deptford.*

Taylor's Amateur's Bar Hive.—I observed in last week's number a review of Taylor's Amateur's Bar-Hive. The reviewer condemns bars in super hives, chiefly on the plea that bees work upwards, which is not the case. Nothing is said against bars in stock-hives, except that the bars and their respective guide-combs would not correspond with the different kinds of cells in the lower parts of the combs; *i. e.* the deep or honey-cells joined to the bars would not correspond with the shallow or brood cells in the lower parts of the combs; it must be remembered, however, that exactly the same thing occurs in hives without bars. The reviewer next states, that "the extraction of old brood combs is impracticable with safety to the bees." The reason he assigns is, that "supposing the operation be performed about the 1st of February, the weather might not permit the bees to repair the damage (*i. e.* to rebuild brood combs) before the 1st or middle of April." He surely cannot be ignorant of the fact that the breeding of young bees requires the same temperature as the elaboration of wax; he will perhaps also bear in mind that the breeding of bees, with a few exceptions of extraordinary cases of retardation, is never delayed beyond the middle of February. Taking these facts into consideration, is it not evident, then, that the bees, with a little help in the way of feeding, would be able to rebuild their brood combs during the month of February, or, at the latest, the early part of March? The same authority then writes "The safer way is to leave the doctoring of the combs to the bees themselves." May I take the liberty of referring him to Mr. Cottou's most beautifully illustrated work, entitled "My Bee Book," where he will find seven plates, showing the successive stages of the brood combs during the first six years, after which time they become useless; and this accounts for colonies of bees which take up their abode in hollow trees, &c., entirely disappearing after eight or nine years, except in those cases where enough room is afforded them to construct new combs; whereas hives which have been regularly cleaned out have been known to exist 40 or 50 years. These and the last two facts are, I think, sufficient reasons for taking out the old, dirty, and useless brood combs which exist in the centres of hives that are more than two years old. *A Young Apiarian.*

Taylor's Amateur's Bar hive.—I beg to offer a remark or two on your reviewer's notice of my bar-hive. I have no wish to misrepresent myself, though this is of little importance in comparison with the evil of misleading, though incorrectly, others. Opinions differ so much, and have differed for centuries as to the comparative merits of bee hives and bee management, that it would indeed be remarkable had I succeeded in putting an end to sundry points in common dispute among too many apiarian wranglers—a class who rarely hold in recollection the story of the two travellers and the chameleon. Improvement of every kind must be the result of accumulated experience. I have occasionally offered my own, usually accompanying it with some kind of reason when novelty in practice called for it, and, I believe, at all times without dogmatising. As regards the particular object on which your reviewer claims the undoubted right of differing with me, I must observe that his quarrel is mainly directed to the principle adopted in my amateur's bar-hive. Now, I am not guilty of appropriating without acknowledgment what is not my own property. The objections urged are met, and, as I think, satisfactorily refuted, by the well known introducers (in its present form) of the bar system—Dr. Bevan and Mr. Golding, in their respective works "The Honey Bee" and "The Shilling Bee-book." A principle that has been acted upon successfully for many years by two of our most distinguished apiarians, rests on something more than mere opinion. As to my particular modification or application of it, I have given this for what it is worth to those to whom it is principally applicable, and as an answer once for all to various inquiries among my amateur apiarian brethren regarding it, I believe that certain dealers are making my hives—I hope adhering to the rules of construction I most approve myself. Even had I the most remote eye to pecuniary consideration, I trust I should not be induced to borrow a leaf from the book of Peter Pindar's razor maker. One word as to my mode (somewhat novel, doubtless, but cheap and very effectual) of protecting a common straw hive. I am asked by your reviewer "why not place the whole hive under proper shelter?" intending by this, I presume, a regular bee house. The poor cottager to whom the matter most nearly applies, would probably to this question give the same reply in substance as if I were asking him why he did not place his family residence in a similar mansion to Stafford house. It might perhaps be expected that I should add a line as to your reviewer's objection to the use of zinc or other metal in certain parts of bee apparatus. Man is usually the creature of circumstances, and my lot at one time fell near a ready zinc worker, who to greater quickness, and somewhat less of cost, added facilities of construction beyond those possessed by a common artificer in wood. The experience of some years in the use of a few articles so made convinced me that (under some exceptions) the common objections alleged against them were chimerical. My feeding pans have always had wooden floating bottoms to receive the bees. *Henry Taylor.*

Societies.

LINNEAN, *April 17.*—Dr. WALLICH in the chair. A very extensive and beautifully preserved collection of North American plants was presented by Dr. Boott. Francis Rauch, Esq., presented a collection of the cones of 17 species of Pinus. A specimen of fossil cane, supposed to be Arundo Donax, was presented to the museum. The Rev. Dr. Landsborough was elected an Associate. A paper was read from J. Woods, Esq., on the genus Atriplex. The author remarked on the difficulty of distinguishing the species of this genus, and gave an account of some of the more remarkable European forms, more especially those which were British. Mr. Babington, who was present, confirmed Mr. Wood's opinion of the great difficulty attending the investigation of the species of this genus. A Latin letter from Linnæus to the Rev. John White, brother of Gilbert White, acknowledging some specimens in natural history, in the possession of J. Gould, Esq., was read. Some specimens of Tea from the East India Company's plantations in the Himalaya were exhibited, and some infusion being made, the black was pronounced by the Fellows as especially strong and good.

MICROSCOPICAL, *April 25.*—G. BUSK, Esq., President, in the chair. Messrs. J. Matthewson, J. Hodgson, F. J. Hudson, and D. Gideon Mantell were elected Fellows. Mr. Shadbolt read a paper on the Structure of the Hairs in a species of Tarantula found

in Logwood brought from America. The hairs were remarkable for the crenatures at the lower portion of the hair being directed upwards, and those at the upper part downwards. They were all hollow. The President stated that one distinction between the hairs of the invertebrate and vertebrate animals was that the former were invariably hollow throughout. Mr. Quekett stated that the hairs of invertebrate animals were always jointed and not continuous with the follicle, as in the vertebrate animals. Mr. Quekett read a paper on the Structure of the Elastic Tissue from the Ligamentum nuchæ of the Giraffe. The ultimate fibres were found to possess a striation which made them resemble the fibrillæ of muscular tissue. The fibres of the elastic tissue were much larger than those of muscular tissue.

Society of Arts, *April* 18.—The Vice-President in the chair.—Mr. F. Pellatt read a paper on the Supposed Influence of Oxygen on the Colour or Tint of Flint Glass. The author, in commencing his paper, stated that the remarks contained in the same are entirely the result of experience in the manufacture of glass in large quantities, it being only under such circumstances that many of the changes there noticed can be observed; because they are so minute that, in dealing with small quantities, their occurrence would not be perceptible. In speaking of white glass, the term is comparative, as no glass is perfectly colourless, and, to the practised eye of the glass-maker, there exist no two pieces of the same tint or shade; the word colour, therefore, is used to denote that particular tint or shade, whatever it be, which all white transparent glass possesses. With these remarks, the author proceeded to consider the action of oxygen as affecting the colour of flint glass in two distinct particulars. 1st, its action upon the glass mixture during its melting or founding whilst in a state of fusion; and 2d, during its annealing or gradual cooling. The constituents of flint glass are silica, lead, carbonate of potash, and nitrate of potash. The silica is found sufficiently pure as fine sand, which abounds in some districts; that from Alum Bay, Isle of Wight, is much esteemed. The protoxide of lead, litharge, or the deutoxide red lead, is the state in which the lead is used; and the potash is the ordinary carb. and nitrate of potash of commerce. These, when mixed in certain proportions, and subjected to a strong heat for 60 or 70 hours, produce flint glass. The purer the metal the more transparent the glass; but although all the materials be chemically pure, a colourless glass is not the product: owing to some chemical change which takes place during the melting, the glass is tinted with green. This is generally stated to arise from the presence of oxide of iron; but the author believes that, in most instances, it is owing to the want of a necessary proportion of oxygen in the mixture, which the following experience will go far to prove. The tint of green is always minus when the lead in the glass mixture is in the highest state of oxygenation, that is, when red-lead is used; and lowest when litharge is employed in the mixture. When an excess of carbonate of potash is used, the green tint is deep, but may be entirely overcome by the use of the nitrate of potash, and superseded by a purple tint when no metal but lead is present. Oxygen, being the agent by which these changes in the colour of the glass are effected, the glass maker, in order to overcome the green tint always present when oxygen is minus, uses the oxide of manganese, which has the property of giving off its oxygen very slowly. An excess of manganese gives to glass a purple tint, and where altogether absent the glass is always green. Having thus called attention to the peculiar composition and mode of manufacturing flint glass, Mr. Pellatt proceeded to describe the changes which take place in the colour or tint of glass, and the methods employed by the glass manufacturer to convert the mass from a green, purple, amber, or other tint, to a pure or colourless metal; he brought forward examples tending to prove that the changes in the colour of glass are due to the presence or absence of a given proportion of oxygen. Manganese, as a metal, gives no colour to glass, although by the oxygen it yields to the lead in the mixture a purple colour is produced, because by reducing the quantity of oxygen, either by pelling or subjecting the glass to a long continued heat, or by submitting it to the action of carbon, the purple colour is removed, though the manganese still remains. Iron and copper also assume a different colour when combined with different proportions of oxygen. If this be true, may not all colours of the oxygen of other metals, such as iron, copper, and lead, be due to the combination of certain proportions of oxygen with the metal or metals present, so as to induce a particular molecular arrangement, from which the glass has the power of absorbing a particular colour? A lengthened discussion followed the reading of the paper, at the close of which the thanks of the meeting were presented to Mr. F. Pellatt for his communication.

Botanical, of Edinburgh, *April* 12.—The President in the chair. The following communications were read: 1. Algæ orientales, part 8. By Dr. Greville. 2. On the Irritability of the Style of various species of Goldfussia. By J. S Sanderson, Esq. 3. On the Mode of Growth in Nostochineæ. By J. Ralfs, Esq. 4. Remarks on some Mosses found near Penmanshiel. By J. Hardy, Esq. 5. Dr. Balfour made some observations on the Structure of Lyurp, a peculiar, hairy, scale-like matter found on the leaves of Eucalyptus dumosa. This substance is considered by Newport as being caused by the attack of an insect. The nature of it is still involved in much uncertainty. It has been analysed by Dr. Anderson, and is found to contain a large amount of sugar. The hairs which surround the cup-like bodies are marked with striæ, which converge in a peculiar manner towards a space running along the length of the tube. The tubes contain granular and amylaceous matter, which becomes blue by the addition of iodine. The hairy matter surrounding the cochineal insect, does not become blue by iodine. Specimens of both substances were exhibited under the microscope, and drawings of the structure were shown. Dr. Balfour exhibited a fine specimen of dry rot (Merulius lachrymans) on a plank several feet in length, taken from a cellar at Holyrood Palace. S. Cobbold, Esq., and W. H. Broadbent, Esq., were elected Fellows.

Reviews.

Syllabus of a Complete Course of Lectures on Chemistry, including its applications to the Arts, Agriculture, and Mining. By Professor E. Solly. Longmans. 8vo; pp. 185.

The object of this work, as stated in the preface, is to present to the student a sketch of the science of chemistry, and its application to the Arts, Mining, and Agriculture. This object has been attained in no ordinary degree. The Syllabus before us supplies a want which must have been felt by every student in chemistry, in directing his attention, first, to those substances which are deserving of study, and secondly, to the important properties of those substances. With the present work before him, the student will no longer be uncertain as to what is worth examining and remembering; he will no longer be obliged to puzzle his brain with endeavouring to remember everything, that he may not lose that which is of real importance; but he will see at once what is mere matter of curiosity and what of real practical utility—what is to be read merely, and what is to be inwardly digested.

The arrangement of the present work is in one respect different from that generally adopted. Instead of treating first of inorganic bodies and then of organic bodies, the author places the latter immediately after carbon and before the metallic elements; this we think an improvement. Organic compounds consisting of two or more of the elements oxygen, hydrogen, nitrogen, and carbon, why not dispose of them immediately after those elements. According to the common arrangement, chemistry is divided into the chemistry of, first, non-metallic elements; second, metallic elements; and thirdly, organic bodies; in the first division are found carbon and nitrogen, but these, to say the least, have as much right to be treated of in the third as in the first division. Our author's arrangement is, in our opinion, more convenient than that in common use.

As a specimen of the way in which Mr. Solly has treated his subject, we extract the following passages:

"*Carbon.* Symb. C. Eq. 6.—A. Exists native, pure, as the diamond, nearly pure in plumbago and some forms of stone coal; as carbonic acid, in the air, in limestone and various rocks; and with hydrogen, &c., in coal, and all forms of organic matter. B. Obtained as charcoal, by the imperfect combustion of wood and other forms of organic matter; pure, as lamp-black, from the imperfect combustion of highly carbonaceous substances. C. Properties.—As diamond, very hard, brilliant, colourless, or nearly so, crystalline, transparent, solid, infusible, fixed, combustible at a white heat; as charcoal, black, softer, opaque, sometimes earthy looking, sometimes brilliant metallic lustre, infusible, very unchangeable, combustible in the air at a red heat, or even below. Some forms of charcoal possess remarkable power of absorbing and condensing gases, in consequence of which they are used as purifiers and disinfectors. D. Uses.—The diamond, as a gem; for cutting tools, as the glazier's diamond, as a cutting and grinding material; for pivot-rests in delicate machinery, as plumbago, to diminish friction; as charcoal, for fuel, as a deoxidising agent, as a purifier, anti-putrescent, and filter for water, &c."

"*Carbonic acid—fixed air, choke-damp*—C O_2.—*a.* Exists in the atmosphere, formed by combustion, respiration, fermentation, and volcanic action; exists in the solid form in the native carbonates of lime, magnesia, iron, copper, &c. *b.* Formed by burning any of the forms of carbon in the air or oxygen; by decomposing a carbonate by a more powerful acid. *c.* Properties.—A transparent, colourless gas; sp. gr. 1·527; slightly soluble in water; a non-supporter of combustion or respiration; condensed to the liquid form by a pressure of about 40 atmospheres, and solidifiable by the cold produced during its own evaporation. Its acid powers are very feeble; it scarcely reddens vegetable blue tests. Combined with bases, it forms carbonates; and it is expelled with effervescence from these compounds by almost all other acids. At a high temperature, carbonic acid is decomposed by several of the metals, carbonic oxide being formed. Potassium and sodium decompose it entirely, carbon being separated. Carbonic acid is essential to the growth of plants. It is employed in the manufacture of various carbonates."

"*Chemistry of Vegetable Life.*—A. The Food of Plants. The Soil. A mixture of silica, alumina, lime, magnesia, organic matters, oxide of iron, with small quantities of phosphates, carbonates, sulphates, nitrates, and muriates of the alkalies. Its mechanical structure varies greatly, and influences its nature almost as much as its chemical composition. The Air. It contains carbonic acid, salts of ammonia, moisture: these things are not only absorbed direct by plants, but, by their action on the soil, assist in rendering its constituents available as food for growing plants.—B. Growth of Plants.—Germination. A vital point or embryo, surrounded by appropriate food, and placed under suitable conditions, grows. The conditions necessary for germination are, a temperature above 40°, moisture, and oxygen to cause those chemical changes which are necessary. Light is prejudicial. Diastase, or a similar substance, is formed; the starch, &c., becomes soluble; the embryo grows, and a young plant is formed. When it has roots and leaves, it absorbs carbonic acid, ammonia, and water from the soil, together with various inorganic salts. C. Under the influence of light, organic matter is formed, woody fibre and starch, &c., are deposited, and the plant grows and increases, giving off the surplus oxygen from its leaves. In the formation and ripening of seed a slight difference is observed. these parts generally do not evolve oxygen. When plants have completed their growth, and formed seed, they die, ceasing to decompose carbonic acid and water, &c.; the oxygen of the air reacts on the organic matter they have formed; it slowly decomposes, giving out carbonic acid and water, and undergoing cremacausis or decay. Besides the gaseous food of plants, particular earthy and saline matters are necessary to plants; hence they exhaust the soil, when constantly cultivated in the same place. To remedy this, rotations of crops and various manures are employed, or the soil is left more or less fallow, that, by the action of the air on the stony particles it contains, it may acquire a fresh supply of the salts, &c., the plants have removed."

"*Lime and Phosphoric Acid.*—Phosphates of lime. The tribasic phosphate, 3 Ca O, $P O_5$, occurs native in Spain and other places, as Apatite, &c.; it exists abundantly in bone, and may be obtained from bone-ash, or formed direct: it is a white solid, almost insoluble in water, though more soluble in water containing carbonic acid; the native varieties are phosphorescent when heated, used as a source of phosphoric acid and as a manure. The other phosphates may readily be formed from this salt by acting on bone earth by sulphuric acid, a superphosphate of lime is obtained, which is much used as a manure; as sold, it appears to consist of phosphoric acid, phosphate of lime, and sulphate of lime."

On the whole we think the work before us will be found extremely valuable, as laying before the student those great points in chemical science to which he must direct his especial attention, and the study of which is worth following up in the larger treatises of Graham, Brande, Kane, Dumas, Berzelius, or Gmelin. It is furnished with a copious Index, and is printed by Messrs. Bradbury and Evans with their usual excellence and good taste.

Miscellaneous.

Death of Dr. Gardner.—A letter has been received in town from Lord Torrington, Governor of Ceylon, announcing the sudden death, from apoplexy, of Dr. George Gardner, superintendent of the Botanic Garden, Peradenia, Kandy Ceylon. This zealous naturalist was a pupil of Sir W. J. Hooker, when professor of botany in the University of Glasgow. Soon after leaving Glasgow, he undertook the enterprising journey recorded in his "Travels in the Interior of Brazil" (see *Athenæum*, No. 1012). He penetrated on this occasion as far west as the tributaries of the Amazon, and from near the equator to the 23d degree of south latitude. Upon his return from Brazil, about five years since, he was appointed to the office of Superintendent of the Botanic Garden at Kandy, Ceylon. Since then, he has been actively employed in preparing materials for a Flora of the country,—and undertook frequent excursions for that purpose. "The literary part of my work," says Dr. Gardner, in a recent letter to a correspondent of ours, "progresses but slowly; but materials are accumulating in abundance, and soon I hope to sit down to it in good earnest. I have just returned from a month's tour made in company with Sir Emerson Tennent through the interior of the northern half of the island." The loss of so indefatigable and sound a naturalist, in the prime of life (we believe he was not much above 30) will be seriously felt; and it is to be hoped that his collections and manuscripts will be carefully preserved. *Abridged from the Athenæum.* [To gardeners Dr. Gardner is well known as the author of some most interesting papers on the Vegetation of Brazil, published in the Journal of the Horticultural Society. His loss is serious to the government of Ceylon as well as to science, for at the time of his death he was engaged in preparing an elementary work on Vegetable Physiology and Botany, adapted to the wants of the Kandian population.]

Sale of Orchids.—Another consignment of Orchids collected by Mr. Warczewicz, was brought to the hammer on Tuesday last, by Mr. Stevens; also 97 lots of established plants, chiefly Orchids, the property of a private gentleman. The highest sum realised on the occasion was 6*l.* 6*s*, for a fine specimen of the best variety of Cattleya Mossiæ. A Puya, called Splendidissima, found at an elevation of 7000 feet above the level of the sea, fetched 1*l.* 11*s*. Other lots, in all 197, ranged between 11*s.* and 2*l.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Orchids.—All the species which are commencing their growth should be carefully examined, and repotted

or surfaces, according to their respective requirements. Let the old stuff be picked away as far as is possible without injuring the roots. The most suitable material in the shape of soil for these plants is leaf-mould, which has been sufficiently baked or sweated to destroy everything pertaining to animal life; this should be mixed with one-third its bulk of pure sand, and interspersed and packed with small blocks of turfy peat. Perfect drainage, however, is unquestionably of the greatest importance in the cultivation of Orchids, and to secure this a portion of potsherds should be mixed up with the soil, except in that for Stanhopeas, for the latter protrude their flower-stems through the bottoms of the baskets, which for this genus should be considerably shallower than the hemispherical ones recommended for general purposes. A liberal supply of water must be given to those plants which are in an active growing state, and a warm moist atmosphere must be maintained during the day, particularly in warm weather, and especially amongst Vandas and their congeners from the hottest localities, and Dendrobia, which are in a growing state. Shading in bright strong sunshine is indispensable, but the abuse of this is as common as the use of it. The canvas should be so arranged that it can be removed or applied in a few moments; the difficulties of covering or uncovering, in many instances, prevent the necessary punctuality in this matter. Climbers in conservatories should now have a portion of their shoots pruned in harder than usual, to produce shoots for late autumn flowering. The training of the young shoots should have regular attention, that they may at all times have a neat appearance; on the other hand carefully avoid the stiff formal appearance produced by tying in the shoots to their extremities. If the house is sufficiently lofty, climbers never look so graceful as they do when allowed to hang down in festoons from the rafters.

FLOWER GARDEN AND SHRUBBERY.

The evergreens which were placed in the flower beds before winter should now be removed to the reserve garden, in order that the ground may be prepared for its summer occupants. The beds which have been filled with Crocuses or other winter and spring flowering bulbs are generally prepared for this purpose by taking up the bulbs about this time; such a practice, however, is very objectionable, as the foliage is not sufficiently ripened; and even if the bulbs are left in the ground until properly matured, and then taken up, the flowers are not near so fine or so strong as they would have been if they had been left undisturbed. This may be managed by laying a few inches of fresh soil on the beds, and planting the summer flowers in it. When the latter operation is being performed, the leaves of the Crocuses are brought together and tied in knots, to allow them to mature themselves without interfering with their successors. In removing the plants in the autumn, it should be borne in mind to draw them, not dig them up, lest the bulbs beneath should be injured thereby; at the same time a portion of the spring top dressing should be removed, sufficient to leave the Crocus bulbs about two or three inches from the surface. By the method here described, we are enabled to display gorgeous masses of flowers, both winter and summer, without the plants of one season interfering with those of another.

FORCING DEPARTMENT.

PINERIES.—Where the bottom heat is supplied by fermenting material, it must be carefully watched, and on the first indications of a decline, the surface of the old tan should be loosened up and a few inches of fresh material laid over it. A steady heat is essential now, when they are making rapid progress, but most especially amongst fruiting plants. As the sun will now be a powerful auxiliary in keeping the heat up, it will not be so necessary to renew the entire bed; it will generally be sufficient to adopt the above plan, patting the top-dressing close down by means of a light, narrow, short-handled spade. Keep up a strong moist atmosphere during the day, and shade with thin bunting in very bright sunshine. VINERIES.—When the fruit is fully ripe let the temperature fall to 55° by night, and give plenty of air during the day. Endeavour to keep the foliage green and healthy as long as possible; and if proper attention has been paid to preventing the establishment of insects on the Vines, this will be an easy matter, and the advantages which the future crop will derive therefrom will be an ample recompense for the pains which have been taken. PEACH-HOUSES.—The Peaches started early in November will now be approaching maturity, and will consequently require more air and less moisture; but in all cases avoid sudden changes.

HARDY FRUIT GARDEN.

Apricot walls must be frequently gone over, and the caterpillars destroyed; and where the fruit has set very thickly, a portion of those where they are most crowded should be removed at once; but at least twice the quantity which would constitute a fair crop should be left till the stoning is over. Disbudding of Peaches and Nectarines should also be proceeded with; and both these and the Apricots should be washed once a week with the engine. The remains of the evergreen branches should be gradually removed where the fruit is set, as their presence is no longer useful. Notwithstanding the severity of the weather within the last fortnight, we are inclined to hope that it has not done so much damage to the fruit as many had feared it would. Where the wall trees had only slight protection, they have escaped uninjured; and in places where the protecting branches had been removed before the severe weather set in, all the shoots, &c., escaped which lay close to the wall, and were consequently kept dry; and short spurs only, which protruded forward a few inches, were injured; in this instance the projection of coping is only slight. An excellent example of the utility of such projections for the protection of fruit trees has just presented itself to me. Some rider Apricots had been planted against the east wall of a dwelling house about 18 feet high, the eaves of which project about two feet; this was the only protection they had, but as they were thus kept perfectly dry, neither the leaves nor the flowers (just setting), were injured, although exposed to the first rays of the morning sun. The blossoms of choice Pear trees should now be thinned, taking advantage of this means of balancing their luxuriance, calculating the strength of each, and leaving sufficient to prevent a too-exuberant growth on one hand, but removing enough to prevent any stunting or mutual impoverishment, resulting from a superabundance of flower buds. It is quite common for more fruit to set on Pear trees than they can properly support, and in the first struggle for existence, it frequently happens that more embryos fall off than we wish; this is only to be prevented by timely thinning of the blossoms.

State of the Weather near London, for the week ending April 26, 1849, as observed at the Horticultural Gardens, Chiswick.

April.	Moon's Age.	Barometer. Max.	Barometer. Min	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday .. 20	26	29.806	29.564	47	25	36.5	N.	.01
Satur. .. 21	27	29.926	29.864	48	27	37.5	W.	.00
Sunday .. 22	●	29.940	29.762	48	39	43.5	S W.	.32
Monday .. 23	0	29.863	29.581	50	8	41.0	S W.	.21
Tues. .. 24	1	29.894	29.704	56	43	49.5	N.	.00
Wed. .. 25	2	29.745	29.728	62	44	53.0	W	.03
Thurs. .. 26	3	29.836	29.724	60	29	44.5	N.W.	.01
Average .		29.821	29.701	53.0	30.1	41.0		0.48

April 20—Clear and cold, snow and hail in forenoon, clear and frosty.
— 21—Clear and frosty; cloudy; clear and frosty.
— 22—Hazy; overcast, rain at night.
— 23—Rain throughout; overcast at night.
— 24—Cloudy throughout
— 25—Hazy and drizzly; fine, partially overcast.
— 26—Rain, cloudy, fine, frost at night.
Mean temperature of the week 4½ deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending May 5, 1849.

April and May.	Average Highest Temp.	Average Lowest Temp	Mean Temp.	No of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 29	62.0	39.2	50.6	7	0.75 in.	2	3	4	2	4	2	2	4
Mon. 30	61.1	42.4	51.8	9	0.31	3	3	5	1	3	4	2	3
Tues 1	63.4	42.3	52.8	9	0.51	1	2	5	2	5	4	4	—
Wed. 2	64.5	42.4	53.4	7	0.72	1	2	6	—	5	4	3	1
Thurs. 3	62.5	42.5	52.5	11	0.40	1	4	5	1	4	4	1	3
Friday 4	63.7	42.4	53.1	6	0.70	3	4	6	—	5	2	2	1
Satur. 5	62.9	42.1	52.5	14	0.98	3	3	2	3	7	3	1	1

The highest temperature during the above period occurred on the 4th 1831—therm 81 deg., and the lowest on the 29th of April, 1836, 1848, and 5th of May, 184.—therm. 27 deg.

Notices to Correspondents.

ANAGALLIS: *E F L.* Monelli will possibly suit you best.‡

AUSTRALIA: *J S.* The books you mention ought to be useful in Australia; also all kinds of agricultural seeds suitable to the climate, if of very fine quality. We cannot answer letters privately; that is a fixed rule.‡

AZALEAS: *Tottyana Minima.* Lateritia, variegata, optima, fulgens, and Old White.‡

BACK NUMBERS: Full price will be given for Nos. 27, 35, 37, for 1846, and Nos. 1 and 16 for 1847.

BEANS: *H.* The cause of disease should always be considered on the ground where plants are attacked. Your letter conveys no information that enables a judgment to be formed. We will examine them microscopically, and mention them again next week.

BOOKS: *Phadrick.* "Elements of Botany," are essentially different in their plan from any other book. Endlicher's "Grundzüge" is a good book for systematic purposes; but we cannot recommend it to those who wish to study vegetable anatomy and physiology.—*C W.* Hooker's "Muscologia Britannica."

CALCEOLARIAS: *Tottyana Minima.* Van Tromp, Attractor, Refulgens, Masterpiece, and Holmesii.‡

CAMELLIAS: *B W G.* It is not in the power of any man to say what the immediate cause of disease is, unless he is able, by actual inspection, to ascertain *all the facts.* We really must beg you to investigate the matter yourself. We can come to no other conclusion than that of which you are already apprised.—*J A.* The leaves sent look as if they had been burned by sheet glass. Camellias like shade when they are making the new growth.‡—*Tottyana Minima.* Candidissima, Chandlerii, Eximia, Fimbriata, Imbricata, Bealii, Duchess of Orleans, Eclipse, Leeana superba, Old White, Carswelliana, and Donkelaari ‡

CINERARIAS: *Tottyana Minima.* Cerito, Beauty of Newington, Lady Peel, Sapphire, and Attraction ‡

CONIFERÆ: *H.* We have such a list in preparation, but it moves slowly in consequence of the difficulty of making it accurate, in the absence of which it is useless.

DEODAR SEEDS: *H.* They are perfect, and may be expected to grow.‡

DRIED PLANTS: *Zeta.* See how eyes differ; what you call a *green* fungus is what we and everybody else call *blue* mould, Mucor mucedo. There is nothing the matter with the specimen. Wash it with corrosive sublimate, as directed, and the mould will disappear, without reappearing.

ERICAS: *Tottyana Minima.* Propendens, Metuleflora bicolor, Bergiana, Aristata major, Hartnelli, Jasminiflora, Hiemalis, Intermedia, Cavendishii, Grandinosa, Lamberti rosea, Perspicua nana, Savilleana, Trossula, Willmoreana, and the different varieties of Ventricosa.‡

FLOWER GARDENS: *T S F.* Certainly. Shrubs are indispensable; but they must be small, neat, and not disposed to throw up suckers. Roses of course. Where flower-gardens are necessarily bounded by straight lines, or where other difficulties present themselves, the general principles which we have proposed must be departed from, and then comes into play the taste and skill of the operator, who will dexterously mask what he cannot exclude. Permanent bushes and garden "furniture" may be here employed effectively. We have seen a square garden enclosed in walls so cleverly laid out that the squareness is not at all noticed till after a careful examination. In your case we should think that the lawn *G* might be thrown into a regular half oval or half circle, or some tolerably regular figure, by a little shaping of E and D. As to bays, promontories, and all such deviations from principle, they must be regarded as exceptions, and ought to be avoided in flower-gardens with as much care as they should be provided in plantations, to which alone they are strictly applicable. We can, however, conceive the possibility of making a flower-garden fit gracefully into the bays and promontories of a plantation that surrounds it. But all this is special matter into which we cannot enter with any public advantage.

FUCHSIAS: *Tottyana Minima.* Purity, One in the Ring, Mieller' Napoleon, Coralina, Exoniensis, Formosa elegans, and Criterion.‡

GARDEN NETS: *E F L* will be thankful for information respecting the best way of keeping worsted nets when laid up from the ravages of moths.

GRAPES: *R F* asks, with reference to the setting of the Muscat of Alexandria, whether the following directions by Abercrombie are sound, and approved of by eminent cultivators of the present day: "Particularly observe to have a sultry moist climate while the blossom is coming out, until it is off and the fruit set." A high temperature is still recommended; but intervals of dryness are considered essential for effecting the shedding of the hood-like calyx and the distribution of the pollen. ‖

GREENHOUSES: *C C.* The best and cheapest material for covering greenhouses and hothouses where miscellaneous plants are kept, especially Roses, is glass.

GREENHOUSE PLANTS: *Tottyana Minima.* Eriostemon intermedium, Boronia triphylla, B. pinnata, Epacris miniata, Pimelea spectabilis, Aphelexis purpurea macrantha, Torenia asiatica, Podolobium staurophyllum, and Polygala acuminata.‡

HORTICULTURAL SOCIETY: *E P.* Tuesday next is *not* a day on which an exhibition is held in Regent-street. It is merely an anniversary meeting for the despatch of business.

INSECTS: *J F.* The insects sent from Dunach are one of the species of spring-tailed insects (Podura sp.), generally supposed to feed upon decaying vegetable matter, and not on healthy plants. Can your gardener inform us precisely in what manner the plants were attacked? *W.*—*A Sub.* We can give you no advice respecting the black beetle which feeds on the Cucumbers, without seeing a specimen. *W.*—*F P.* Your Cherry trees are badly infested with the common mussel scale. The parts of the trees which will bear it should be scraped, and the scrapings carefully burnt; the other parts should be washed over with any soapy or gummy mixture, which will form a scale over the scales, and prevent the young ones (which will now shortly hatch) from making their escape. If they do effect their escape, they may be destroyed by hot water. *W.*

MELLOCA: *Quercus.* See p. 828 of our vol. for 1848.‡

NAMES OF PLANTS: *An Old Sub.* The jelly-like fungus on the Juniper is Podisoma Juniperi, concerning which genus and its curious structure you will find a notice in another column. We know of no cure for it. The other is the Norway Maple.—*H T.* Senecio Petasites; should be grown like Cinerarias and similar soft-wooded greenhouse plants.—*Marcelly.* The Pulmonaria latifolia of gardeners is only a broad leaved form of P. officinalis; 1, Gnaphalium uliginosum; 2, Verbascum nigrum; 3, Blechnum boreale; 4, mosses have nothing to do with gardening; 5, Veronica scutellata; 6, Lycopus europæus; 7, Galeopsis Tetrahit.—*H W L.* Looks like a bit of Corydalis cava, *alias* tuberosa; also called Fumaria.—*J K M.* Cerastium arvense.—*W A Z.* Amelanchier ovalis.

PAINT FOR IRON HURDLES: *Northwood.* See pp. 719 and 766 of our volume for 1848.‡

PANSIES: *Tottyana Minima.* Copstellation, Supreme, White Sergeant, Rainbow, Arethusa, Duke of Norfolk, Optima, Candidate, Duchess of Rutland, and Model of Perfection ‡

PAXTON'S COTTAGER'S CALENDAR. The reprint is now ready, price 2*d* each copy. Parties wishing to have copies for distribution among their tenantry, can be supplied at the rate of 25 copies for 5*s*.

PELARGONIUMS: *Tottyana Minima.* Hebe's Lip, Pearl, Forget-me-Not, Brilliant, Orion, Cassandra, Centurion, Mount Etna, and Aurora ‡

PINE-APPLES: *P.* Good Pines cannot be grown under the circumstances you describe, unless you can have heat (artificial) for nothing. If you can command the waste hot water of a steam-engine, and can afford the expense of an efficient apparatus to conduct it, then you may grow Pines as easily as Cabbages, under glass. Or if you have the command of large supplies of hot dung; but then you must submit to some cost in labour. Your question would have been better put to some "intelligent" gardener in the neighbourhood, who knows what your means are. If you try any experiment grow Queens for summer and Cayennes for winter use.

POLMAISE: *J T.* The system you recommend is not a fanciful theory, and can be most effectually and economically applied. To the second question we answer yes; to the third, consult Mr. Kendall, of Stoke Newington, who has taken up the subject professionally; to the fourth, it is impossible for the Editor of a journal to furnish plans which should be obtained from professional men. *L.*—*J F.* If you will forward us your address we may possibly be able to assist you. *L.*

RHODODENDRONS: *Tottyana Minima.* Arboreum, Russellianum, Nobleanum, splendidum, and campanulatum ‡

ROSES: *L W S.* We suspect that your Roses are planted too deeply; nothing is more likely to cause the production of suckers. If, upon examination, they are found to be too deep, replant them in the autumn, taking care to keep their roots near the surface. In the mean time, as the points of the suckers appear above ground, trace them to their source and pull them out if possible. Young Roses are all more or less disposed to produce suckers, but if the latter be constantly destroyed for a year or two they will in most cases ultimately disappear altogether.‡

STRAWBERRIES: *E F.* We see no reason for altering our opinion.‡

THE LANCASHIRE SWINDLERS: *C D.* We have put your papers into good hands, in the hope that they will lead to the conviction of the parties; but we cannot occupy our columns with further warnings. We have said enough to put the world on its guard, *if that be possible.* By the 3d of March we had fully exposed the system, and yet we find that one of your invoices is actually dated March 20. Surely you have nobody to blame but yourself. Those who will trust anybody and everybody can expect nothing better than the loss of their money.

WATER LILIES: *A W.* None are hardy except the yellow and white. ‡

WIRE TRAINERS: *C S.* Stretching the wires horizontally will answer best, unless you adopt the plan recommended in another column. Peaches do as well fan trained as by any other method. We are of opinion that rough plate glass will prove suitable for all gardening purposes.‡

MISC.: *A M S.* What is the New Zealand Gooseberry? If it is the common Physalis, you have nothing to do except to raise it and treat it like a tender annual, planting it out in June at the foot of a warm wall. Clerodendron belongs to the natural order of Verbenes (Verbenaceæ).

SEEDLING FLOWERS.

CINERARIAS: *J and S S.* Large bright rosy lilac; petals firm and tolerably full, but as a whole somewhat starry. A desirably variety to breed from.*

RHODODENDRONS: *R Rillott.* 1, Light rosy purple, marked rather slightly with dark brown spots on one of the upper petals, and shading off towards the centre to a pale blush. A very pretty variety. 2, Dark rosy purple, finely marked on the upper petals with numerous dark spots. A very showy and prettily marked variety, in the way of R. tigrinum.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

TURNIP SEEDS, &c.

W. DRUMMOND & SONS, Agricultural Museum, Stirling, N.B., will furnish, free, on application, priced Lists of TURNIP and other AGRICULTURAL SEEDS.

N.B. All parcels of Seeds above 2l. value (with the exception of Grain and Vetches), delivered free of carriage in London, Liverpool, Hull, Newcastle, and many other parts to which there is a direct communication.

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GEORGE GIBBS & Co. beg to notice that the Agricultural List, with prices, for the ensuing season is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address GEORGE GIBBS and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c. &c., 26, Down-street, Piccadilly, London.

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STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Duke of Devonshire's, Chatsworth Gardens.
Earl of Gainsborough's, Oakham, Rutlandshire.
Earl of Zetland's, Upleatham, Yorkshire.
Robert Hanbury, Esq., Poles, near Ware, Herts.
Mr. Glendinning's Nursery, Turnham-green.
And at least 500 other important places.

BURBIDGE and HEALY, 180, Fleet-street, London.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PAT ENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronized and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry; and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

, Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

AGRICULTURAL SEEDS.

HOGG AND WOOD, SEEDSMEN TO THE NORTHUMBERLAND AGRICULTURAL SOCIETY, beg to inform their agricultural friends that their large and well selected Stocks of FIELD TURNIPS are now ready to send out; delivered free in Newcastle-upon-Tyne, Hull, and London. The Turnip Seeds, to the growth of which H. and W. have for many years given much and careful attention, comprise, amongst many others, the following varieties:

YELLOWS: Dale's Hybrid, green-top; Border Imperial, brown-top; Skirving's Yellow, purple-top; and Aberdeen Yellow. SWEDES: Purple and Green-top; Hogg's Dwarf-top, Purple-top; Laing's (from M. A. Laing's own stock); Skirving's; and Fetterscairn. GLOBES: White, Pomeranian, Red, and Green. TANKARDS: Red and White.

MANGOLD WURZEL, CATTLE CABBAGES, FIELD CARROTS, and FIELD PARSNIPS, besides every variety of AGRICULTURAL SEEDS, of which a complete Catalogue, with prices attached, may be had free by post upon application.

N.B.—A remittance is required from unknown correspondents.

Coldstream, N. B., April 28.

THE LONDON MANURE COMPANY would, at the present time, call particular attention to their CORN MANURE, which they strongly recommend as a top-dressing for all corn crops. It contains a large amount of ammonia and phosphates, and will be found an excellent substitute for guano. Price 7l. 7s. per ton (3 cwt. per acre). For Turnips, Mangold Wurzel, and Carrots, they would urge the use of the Urate, or Superphosphate of Lime; both containing an increased quantity of phosphates and other mineral substances, so essential for all root crops.

The following MANURES they supply on the best terms:—Peruvan Guano, Nitrate of Soda, Sulphate of Ammonia, Soda Ash, for destroying Wireworm, Gypsum, Sulphuric Acid, Agricultural and Fishery Salt, Charcoal, &c.

EDWARD PURSER, Secretary.

40, Bridge-street, Blackfriars, London.

JOHN YOUNG, ENGINEER and MILLWRIGHT, begs respectfully to call the attention of Landed Proprietors and Tile Manufacturers to his Registered PIPE and TILE MACHINE, which gained the Silver Medal at the Highland and Agricultural Society's Show in Edinburgh in 1848. All Clays will suit with the ordinary preparation which is required for hand moulding, no washing, screening, nor any extras whatever being required; and, with three men and four boys, it will be warranted to make from 8000 to 9000 pipes or tiles per day.—For further particulars, apply to JOHN YOUNG, Newton Green, Ayr.

PORTLAND CEMENT.—Testimonials received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flowerpots, &c., in boxes, of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole agents in London, G. and J. DEANE, Horticultural Implement Warehouse, 46, King William-street, London-bridge.

PATENT FLEXIBLE INDIA RUBBER PIPES AND TUBING FOR RAILWAY COMPANIES, BREWERS, DISTILLERS, FIRE-ENGINES, GAS COMPANIES, GARDENING AND AGRICULTURAL PURPOSES, &c.

THE PATENT VULCANISED INDIA-RUBBER HOSE PIPES are made to stand Hot Liquor and Acids without injury—do not become hard or stiff in any temperature (but are always perfectly flexible), and as they require no application of oil or dressing, are particularly adapted for Fire-engines, Pumps, Gas, Beer-engines, Gardens, and all purposes where a perfectly flexible pipe is required. Made all sizes from ¼-inch bore upwards, and of any length to order.

Vulcanised India-rubber Garden Hose, fitted with brass taps, copper branch, and roses complete, ready to be attached to Pumps, Water-butts, or Cisterns.—Sole Manufacturer, JAMES LYNE HANCOCK, Goswell-Mews, Goswell-road, London.

N.B. Vulcanised India-rubber Washers of all sizes for Joints of Hot-water and Steam Pipes, and Vulcanised sheet Rubber, any thickness, for all kinds of Joints, and other purposes.

The Agricultural Gazette.

SATURDAY, APRIL 28, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY,	May	1—Agricultural Society of England.
WEDNESDAY,	—	2—Highland and Agricultural Society.
THURSDAY,	—	3—Agricultural Imp. Society of Ireland.
TUESDAY,	—	8—Agricultural Society of England.
THURSDAY,	—	10—Agricultural Imp. Society of Ireland.

FARMERS' CLUBS.—May 1: Ardleigh, South Devon — May 3: Burton-on-Trent, Plympton St. Mary — May 4: Halesworth, Debenham — May 5: York, Northampton, Newcastle. — May 7: London, Great Oakley, Clyst, Much Wenlock.—May 8: Framlingham — May 9, Tavistock.

WE closed our last observations (p. 234) on the subject of the SMALL-POX IN SHEEP, by stating that, to get rid of the disease, self-denial must be exercised, and inconvenience submitted to, by individuals. Such is the case with all sanitary measures adopted with reference to man, and the same rule obtains with animals. The dreadful mortality of the disease, the ruinous consequences it entails, and the virulence of its infectious character, afford, however, very cogent reasons in favour of the adoption of the most stringent measures to prevent the spread of the malady, for the superiority and the greater individual value of our sheep renders the disease of greater consequence in this country than on the Continent.

The disorder having been imported into this country, where it now exists to some extent, it is evident that sanitary and preventive measures, to be effectual, must be of two kinds, viz., the preventing the introduction of diseased sheep from abroad, and the prohibition of the sale of infected animals in this country, as well as those actually labouring under the disorder.* Either of these plans must be very incomplete and ineffectual without the other. With regard to the first, Government has already appointed inspectors at the various outports, whose duty it is to examine all sheep and cattle arriving from other countries. It has been asked, with some reason, whether this inspection, without a quarantine, will be sufficient to prevent the small-pox being again imported? In our opinion, the inconveniences and objections to quarantine are almost insuperable. It would necessarily entail considerable expense, and would demand renewed inspection and a large space for the proper isolation of the animals. We have before stated that 10 days is the usual period between exposure to contagion and the papular stage of the disease, when it is usually discovered, and it is certainly possible that, with a quick voyage, the infection might have been received, and the animals examined, before the symptoms are externally manifested. Though this may be possible, however, it is extremely unlikely, and for the following reasons. The fact of the appointment of inspectors is now so well known at foreign ports, that it is not at all likely that the parties importing will expose their sheep to the chance of infection for some little time previous to their embarkation. If they are infected, they will have become so at least some days previous to their shipment, so that, by the time they are submitted to inspection, there is scarcely a doubt but what some of the sheep will exhibit the disease in the papular stage. But supposing this should not be the case, there is now such a well-founded dread of these foreign sheep, that few farmers will be found to speculate on them, and if they do, there is very little doubt but what every precaution will be used in keeping them apart from others, so that in fact they will be placed under quarantine by the purchaser. Under these circumstances, we think that the appointment of *competent* inspectors will have the effect of preventing the re-importation of small-pox. This, however, will be of very doubtful benefit, unless some stringent measures are at the same time adopted with reference to the spread of the disease in this country.

We have before alluded to the causes which have perpetuated it. They are ignorance of the nature and symptoms, concealment of its existence, and the sale of sheep from a diseased flock. The removal of these causes will, we imagine, get rid of the evil. To effect the first is the principal object of these remarks, and to accomplish the others we deem it most advisable that an Act of Parliament should be passed, containing the following provisions:—The appointment of an inspector by every Board of Guardians, whose services shall be paid for by the Board, or from some fund provided by Government, and not by the owner of any diseased or suspected flock, whose losses will be enough without this additional burden. The inspector only to be paid when his services are required. The Act should render it imperative on every flock-master to report to the Board of Guardians the existence, or even the supposed existence, of the small-pox amongst his sheep, and any *wilful* concealment of such knowledge should be punished by certain penalties, to be recovered before a magistrate.

On the communication of this information to the Board, their inspector shall immediately be directed to examine the flock, and report the state they are in. The most advisable method should then be adopted with reference to the flock, the expense of which should be defrayed by the Board, unless the owner should prefer adopting his own course. No sheep, however, should be allowed to be sold from the farm for the space of 21 days after the inspector has certified that the flock is free from the disease, except in the case of fat sheep, which may be slaughtered on the farm. It may be urged, as an objection to this plan, that it inflicts an individual hardship on the unfortunate person who may be visited with the disease. It certainly does to a certain extent, and so it ought, for individual benefit should never be allowed to stand in the way of public good; but, at the same time, it provides such party with the best advice and assistance under which he may get rid of the disease with the least loss, and in the shortest space of time. Besides which, up to the period of his sheep being attacked, he partakes equally with his neighbours of the advantage and security afforded by the prophylactic measures we have advised. We may observe, in favour of the plan, that it involves no new or expensive machinery, as it avails itself of a Board already in existence, and the members of which are the parties most interested in the evil they are called upon to guard against. There is only one officer to be appointed in each union, and he is only to be paid when his services are really required.

The disease is so decidedly contagious and infectious, that we doubt very much whether it is ever propagated in any other way, although, in many instances, it is difficult or impossible to trace the

* There is already in existence an Act of Parliament, subjecting to penalties the act of selling animals affected with the small-pox, but this does not apply to sheep having the disease in an early stage, before the symptoms have been externally manifested.

source of the infection. But, whilst this is the case, we have numerous proofs that when the disease has existed on a farm, by strict and careful measures it has readily been prevented from spreading to the neighbouring flocks. With these facts before us, coupled with the advantage of our insular position, we do not think we are too rash in offering the confident opinion that, by stringent and judicious measures, we may not only follow up, surround, and extinguish this foreign enemy, but also for the future effectually repel the invader from our shores. *W. C. S.*

To any one who can command the calmness to reason, or the patience to be reasoned with, under the depressing influence of a low Corn-market, and whose views regarding the interests of Agriculture are not bounded in by the gloomy horizon of a few months, when extraordinary causes that we know of, and others perhaps that we do not know, are in operation,—a short sketch of what may be called the 'Price-of-Corn Legislation' of this country, from early times, may perhaps be found to contain some permanent and useful materials of thought.

For *six hundred years*, within a fraction it has been the fortune, or the misfortune, of Agriculture, in this Country, to be the pet of Parliament. Ever since the country has *had a Parliament*,—from the '*Judicium Pillorie*' downwards, kings, ministers, and politicians have treated Husbandry precisely as very loving but injudicious old ladies treat, or are libellously said to treat, the baby-heir who *is to be*, or indeed in their eyes already *is*, a great man. The illustrious *darling* is affectionately made sick, once or, it may be, twice in every twenty-four hours, by every ingenuity that the lollypop or cake shop can devise, partly because his precious life and health are so very important, and partly because they are all in turn so clamorously fond of him. "Do *leave the child alone!* he'll grow fast enough, if you won't poison him with your rubbish and fooleries!" one can hear the sensible and outraged nurse exclaiming under a paroxysm of worn-out patience and civility —and whoever can sit down for a few hours and take a review of the Agricultural Legislation of this kingdom from the year 1360, when the first statutory prohibition was made against the Exportation of Corn, and wade through all the various Acts that succeeded it, first against *Exportation*, then against *Importation*, then again *both*, then to *regulate* them, finding them intractable in fetters; then against the extension of Arable land then against Pasture, then to regulate the number of a man's Sheep-flock, then to prevent the sub division of large Farms, then the consolidation of small ones —interspersed all the way with laws to *regulate Prices*—how much an ox was to sell for, how much a pig, what the Farmer was to charge for a bushel of Corn—*under* what prices it might be *regrated* or *ingrossed* (bought by a dealer to sell again), *at* what prices it might be exported, and *above* what prices it might be imported,—the man who can 'friend all this, down to the just-expired alteration of the last link in this long series,—must have a strong heart, and a strong stomach if he can sincerely wish back again a system exhibiting, altogether, not only a misapprehension of the duties of secular government, and of its power to control or to divert from their course the natural laws which govern the course of trade, but which educates the mind of the husbandman, generation after generation, into a sort of political reliance for high prices, upon Acts of Parliament and 'Farmer's Friends.' 'Friends by the law of contraries well known imply 'enemies'; and accordingly when a period of low prices came round, the farmer was set beating the air in a sort of blind man's buff exasperation to *get at them*. But for that long bandage wound for so many centuries around his eyes, it is just possible that he would have taken a different, perhaps an opposite, view, and begged, (not the first among mankind,) to be 'delivered from his friends.'

It is not yet a century ago since the *exportation* of Corn then taking place from this country under a government 'Bounty' was fully as fierce a subject of discussion as its *importation* has uniformly supplied to the memory of our own generation. The long continuance of such a state of things has had the natural effect of throwing around the subjects of agriculture and the 'Price of Corn' a political atmosphere, from which it was impossible for any one approaching them, to escape. The question was galvanised: the instant you touched it, you were the victim of a sort of electro-political alternative; you were declared to be 'positive' or 'negative,' whether you were personally conscious of the affection or not. To be free from the impulse, or the prejudice, of one or other handle of the question was to be superhuman; to be indifferent or insensible to them, inhuman. Neutrality, as in Sparta, was a crime; so far at least as it was believed to be a possibility. To say that you could not quite make up your mind what Legislation had to do with the price of Corn, any more than it had with the price of Houses, Furniture, Books, Horses, Carriages, Dress, or any other article of human want, was to be hooted down as a 'free trader.' To say that you could not see why a nation that had a public revenue to make up, to meet the annual expenses of Government and the annual interest of a debt, if it recognised the principle of Custom-duties at all, should not levy its tax contingent upon every article that passed through the Custom House, that was worth taxing at all, *i. e.*, that would bring a reasonable sum to the Exchequer at a rate of duty low enough not to interfere with consumption—was to be howled at as a 'Protectionist,' a taxer of the life-blood and sinews of labour, or, worse still, riddled by a cross-fire from both sides as a 'Fixed-duty-man.' For the eye of Party strife, on either side, is impatient of any shade of opinion less inflamed than its own, and during the acute stage is angry with the distinctions it cannot see. Not to be with it is to be against it.

But when the fever-exaltation is over, voices can be heard, and views of the subject begin to shew themselves, which were inaudible and invisible before. The friend of Husbandry points to this long continued strife, and asks how it was to be expected that during its continuance that quick-eared and cautious thing Capital should betake itself to the cultivation of the soil, as it would, safely and largely, to any other business which not being propped upon stilts, had none to fall from, and was burthened according to its true, not its fictitious, stature. The same voice which confidently assured the Farmers that if the duty on Corn was abolished, the Agricultural Interest would be ruined, gave notice trumpet-tongued to the Capitalist to have nothing to do with Agriculture. The same unthinking cry which demanded from the Legislature a duty framed with the avowed object of acting upon the price of the article, raised up a corresponding violence on the part of the consumer, denouncing *all duty whatever* upon it, even for the fiscal purposes of the State. The recoil corresponded to the impulse: and the best of all protection which the agriculturist could have received,—a fair field and no favor, beyond that exact amount of duty most truly profitable to the State, viz., that which brought the largest revenue to the Exchequer with the least injury to the consumer, or interference with the Trade, was lost, after the same fashion that a certain canine speculator that we wot of, once dropped a bone into the deceptive stream that reflected one looking much larger.

The long and persevering attempts to regulate the prices of farming produce by Acts of Parliament, Proclamations, Council-orders, and Magistrates at Quarter Sessions, form one of the most curious features of our Statute book, from the earliest times down to the present. The following is a list of the Acts during the period when England was an exporter of Corn.

34 Edw. III., c. 20. (1360.) Exportation prohibited.

17 Rich. II., c. 7. (1393.) Exportation permitted, *except to 'the King's Enemies.'* "Nevertheless the King wills that his Council may restrain the same when they shall think best for the profit of the realm."

15 Hen. VI., c. 2. (1436.) Exportation permitted without license when the price was not above 6*s.* 8*d.* at the place of shipment.

3 Edw. IV., c. 2. (1463.) *Im*portation prohibited when price at place of import was under 6*s.* 8*d.* a quarter.

24 Hen. VIII, c. 2. (1533.) *Ex*portation prohibited; with a few exceptions. Prices to be regulated by the Lords of the Council and made known by proclamation. Farmers to sell at the prices proclaimed.

25 Hen. VIII., c. 13 (1533.) No renting Farmer to keep more than 2000 sheep; nor to rent more than two farms. As much land to be kept in Tillage in every Parish as had been since the accession of Hen. VIII. under a heavy penalty for every acre left in pasture.

3 Edw. VI. (1549.) Proclamation. No man to buy any agricultural commodity for the purpose of *selling it again*, except regular brokers, and they must not have more than 10 quarters of any kind of grain in possession at one time. All justices, in their hundreds, to look what surplus corn was in every barn, and appoint it to be sold *at a reasonable price*. One justice to be in every market town to see the corn bought. Whoever brought no corn to market to forfeit 10*l.*

5 & 6 Edw VI., c 14. (1551.) Engrossers (persons buying to sell again) subjected to heavy penalties. For the *third offence* to be set in the Pillory, to forfeit their personal effects and be imprisoned during the King's pleasure. Farmers buying corn for seed, to *sell an equal quantity out*, under penalty of forfeiting double the amount.

1 & 2 Phil. and Mary, c. 5. (1554.) Exportation allowed when price of Wheat not above 6*s.* 8*d.*, Rye 4*s.*, and Barley 3*s.* per quarter. When above that price exportation to cease. Penalty for exporting at all without a licence, to be double the value of vessel and cargo, and imprisonment of the master and mariners for one year. If a vessel contained more than was mentioned in the License a penalty of treble the value of the cargo, and imprisonment. The cargo only to be taken to the port named in the Licence.

5 Eliz., c. 5. (1562.) Wheat allowed to be exported, only when under 10*s.* per quarter; Rye, Peas and Beans 8*s.*; Barley and Malt 6*s.* 8*d.* But only from such Ports as her Majesty might by proclamation appoint.

5 Eliz., c. 12. (1562.) No one to be licensed as a *Corn-badger* except resident householders of three years' standing, who are married, of the age of 30, and not servants or retainers of any other person. License to be renewed every year. Licensee to find security not to forestall or engross, in their dealings, and never to buy out of open market.

13 Eliz., c. 13. (1571.) Average price governing exportation to be settled once a year by the Lord President and Council, and the Justices of Assize. Corn allowed to be exported, to friendly countries, when Proclamation not made to the contrary, under a poundage duty of 1*s.* per quarter; if exported by special license, not under the act, duty to be 2*s.* per quarter.

35 Eliz., c. 7. (1592-3.) Exportation forbidden when Wheat was above 20*s.* the quarter. Poundage on exportation, 2*s.* per quarter.

1 Jac. I., c. 25. (1603-4.) Importation of Wheat prohibited when it was under 26*s.* 8*d.* per quarter.

21 Jac. I., c. 28. (1623.) Buying corn to sell again prohibited when Wheat was at or above 32*s.* per quarter, and other corn in proportion. Exportation to cease on royal proclamation.

12 Car. II., c. 4. (1660.) Wheat under 44*s.* per quarter, export duty to be 5*s.* 6*d.* per quarter; above 44*s.*, duty 6*s.* 8*d.* Exportation to be free when the price was under 40*s.*

15 Car. II., c. 4. (1663.) When Wheat did not exceed 48*s.* per quarter, export duty to be 5*s.* 4*d.* per quarter, and persons might buy corn to sell again (if not sold *within three months after the buying*) and keep it in their granaries meanwhile, "any Statute to the contrary notwithstanding."

22 Car. II., c. 13. (1670.) Exportation permitted when Wheat was under 53*s.* 4*d.* per quarter. Poundage to be 1*s* per quarter.

About this time the tide began to turn; population was increasing rapidly, and England becoming an *Im*porter of Corn. For about a century the Statute-book presents a state of utter bewilderment between Exportation and Importation, endeavouring to *regulate* one and the other by the most incongruous mixture of duties and 'bounties,' the Acts succeeding each other with a rapidity proportionate to their successive failure, and 'blowing hot and cold' alternately, but too late, the Cycle having begun to turn before the Law could be got into operation. We shall give an Epitome of this remarkable 'middle period' in our next; following it by a similar review of the Statutes passed after the time when the balance fell entirely, and *Im*portation became established. Of all that can be said of 'price-legislation', the Statutes themselves tell the most curious tale, each at the same time supplying the best commentary upon its predecessor. *H.*

PROSPECTS OF FARMING.—No. V.

The prospect farmers have in future of being dependent in their farming upon prices that are not likely to be higher than they were 70 years ago, when the rents of their farms were only about two-thirds of what they are now paying for them, may make desirable they should have their attention drawn to the better position of their farms and to the advantages they now have that they had not then to assist them in more cheaply cultivating their land. By reminding them of their altered position in these respects I may possibly aid in giving the confidence that is so necessary to induce further exertion, at the same time I shall be showing how much valuable assistance to farm cheaper is obtainable by means that are too often overlooked.

On reference to Arthur Young's carefully collected statistics of Agriculture, dated 1771, we learn that at that period the rent of land in England on the average of many returns taken from almost every county, was found to be 14*s.* an acre, the tithe was 3*s.* 4*d.* an acre, and the poor-rates amounted to 2*s.* 8*d.* in the pound.

The wages of the labourer were, in harvest, 13*s.* 1*d.* per week; at haymaking, 9*s.* 11*d.*; in winter, 7*s.* 10½*d.* The prices of grain, Wheat, 42*s.* per qr.; Barley, 27*s.*; Oats, 18*s.* And of provisions, meat, 3½*d.* per lb.; cheese, 3¾*d.*; butter, 6½*d.*; bread, 1½*d.* If we admit rent, rates, and tithe, of the present day to be 50 per cent. higher, and labour to be 10 per cent. dearer than in those days (which is hardly the case), the farmer will be said to be cultivating his farm at an additional cost of 16*s.* an acre, as compared with these charges 70 years ago; but this will be to suppose his cultivation to have continued the same, and that he shall have derived no advantage from the improvements that the advance of science and skill all this time have been introducing, and which have done so much to assist in every other pursuit; we have, therefore, further to take to account, what has on the other side been doing in the period to alter his position for the better.

In the past 70 years much has been doing to benefit the farmer; he has been enabled to greatly diminish the labour of his farm by the introduction of better implements, the fertility of his land has been increased by new fertilizers, and the extended growth of cattle food, which the higher price of meat has called for; and the condi-

tion of his farm generally has been improved, and in a variety of ways. These are advantages that cannot readily be represented by figures, and yet who will say, in these respects, the farmer's position has not been mended more than 18*s.* an acre per annum. For instance, in this period, the lighter and less expensive ploughs now in use have been introduced; a change that has in itself effected a saving of 3*s.* or 4*s.* an acre every time of ploughing. The ground is now better ploughed with a pair of horses than it was with four, and not unfrequently with six. New harrows, scarifiers, hoes, and rolls, have been invented, by which the return to fallow is made much less necessary, and the heavy cost of cleaning and reducing heavy land to a tilth has been greatly diminished. Drills have been perfected, that, with other advantages, have made a saving of seed to the extent of a third or more of what it was the custom to sow, and which indeed was necessary from the more imperfect tillage of the day, and the allowance that had to be made in sowing broadcast, a reduction of this expense of 4*s.* or 5*s.* an acre or more.

Roads have been extended and so improved, that, coupled with the better formed carts and waggons now in use, the load of the past century is but a half carriage of the present day. This week I delivered, a distance of four miles, 40 bushels of Beans and 64 bushels of Barley, a weight of 2¾ tons, with only two horses. I question if four would, 78 years ago, have drawn this load over the same ground. Threshing machines have been brought into use that are found to be economical both in labour and in preventing of waste. These and other means have been given to the farmer to lessen his expenditure, at the same time that he has been benefiting by the larger fertility which the progress of agricultural improvement and the better condition of his farm have conferred. It is, therefore, not by a reference to a period of lower rents that the farmers' position will be seen to be changed for the worse.

I omit any mention of those matters that have latterly fallen within every day reach of the farmer, and added much to his comfort, but which, 78 years ago were partaken by him only occasionally and as luxuries, for he has a right to share with other classes. But I hope to remove some of the grounds for despair by showing the present position of the farmer, under a return of the prices of 1771 to be as good as it then was, when he not only did not dread free trade, but was actually dependant on foreign markets for the sale of the surplus produce he then raised beyond the wants of the home consumption. *Hewitt Davis*, 3, *Frederick's-place, Old Jewry, London.*

RENT, TITHES, RATES, WAGES, &c., IN 1685.

It was calculated in a former paper that the class of agricultural labourers in 1685 numbered 800,000 males above 20 years of age; and another calculation, on totally different grounds, will show that this estimate was not far from the truth. King, whom Mr. Macaulay often quotes as an authority, states that there were in England at that period 880,000 families of the common people. The males above 20 must therefore have amounted to at least 1,000,000. Of these Mr. Macaulay has told us that four-fifths were engaged in agriculture; hence we come again to the conclusion that the agricultural labourers numbered 800,000 men.

With regard to rent, Mr. Macaulay supposes that while in some parts of England it has increased tenfold, in others it has only doubled; but that probably on the average it has quadrupled. Alison shows (Vol. XX., p. 51) that the rental of England averages now 28*s.* per acre. A comparison of these two statements would lead to the conclusion that in 1685 rent was generally about 7*s.* per acre.

Tithe.—"King estimated the whole income of the parochial and collegiate clergy at only 480,000*l.* per annum Davenant at only 544,000*l.* It is certainly now more than seven times as great as the larger of these two sums. It follows that rectors and vicars must have been, as compared with the neighbouring knights and squires, much poorer in the seventeenth than in the nineteenth century." It also follows that as tithe is now usually under 7*s.* per acre, it would in 1685 have been about 1*s.* per acre, if there had been the same quantity of cultivated land as at the present time; but, as there was only two-thirds of the quantity under cultivation then, the tithe must have averaged about 1*s.* 6*d.* per acre.

Poor rates, in the reign of Charles II., amounted to about 700,000*l.* a year; they went on rapidly increasing, "and appear to have risen in a short time to between 800,000*l.* and 900,000*l.* a year, that is to say, to one-sixth of what they now are. The population was then less than one-third of what it now is. The minimum of wages, estimated in money, was one-half of what it now is, and we can therefore hardly suppose that the average allowance made to a pauper can have been more than half of what it now is. It seems to follow that the proportion of the English people which received relief then must have been larger than the proportion which receives relief now." If the proportion was the same as now, the number who received relief in 1685 would be 411,000; they could hardly have exceeded 450,000, or 1 in 12 of the whole population; now, their numbers vary from 1 in 9 to 1 in 13, according to the state of the country. The whole sum raised for poor-rates in 1685 was only one-sixth of what is paid now; but it must be borne in mind that there was one-third less cultivated land, and much less tithe, house property, mills, manufactories, &c., to be assessed to the rate; so much so that probably the rate per acre was not less than one-half of what the farmer pays per acre now.

Beggars.—Davenant and King both estimated the number of beggars and paupers together at 1 330,000; the number of paupers we have shown to have been about 450,000, which would leave 880,000 as the number of those who lived wholly or at certain seasons by begging. If the proportion of beggars to the whole population was the same now as then, the number of beggars in the present day would be about 2,850,000. They certainly do not amount to nearly this number, and the trade is no doubt on the decline. That the whole country was overrun by vagrants in former times is evident from the great severity of the laws passed for their suppression. In 1536 it was decreed that "a sturdy beggar" should be whipped for the first offence, have his right ear cropped for the second, and be hanged for the third. By statute 1 Edward VI. (1547), a vagabond was to be branded on the shoulder, adjudged a slave to any one who should demand him, to be fed on bread, water, and refuse meat, and beaten and chained if he would not work. In 1572 it was enacted that "all persons whole and mighty in body, * * * loitering and refusing to work for such reasonable wage as is commonly given," should "for the first offence be grievously whipped, and burned through the gristle of the right ear with a hot iron of the compass of an inch about;" for the second, be deemed felons, and for the third suffer death, without benefit of clergy. By statute 39 of Elizabeth, c. 3 and 4, every able-bodied person refusing to work for the ordinary wages was to be "openly whipped until his body be bloody, and forthwith sent from parish to parish, the most straight way to the parish where he was born, there to put himself to labour as a true subject ought to do." —*Bohn's Cyclopædia of Political Knowledge.*

Wages.—The common wages of a farm labourer appear to have been 4*d.* a day, with food, or 8*d.*, without; in the more northerly counties they were lower than this. In Devonshire they were 5*s.* a week; in Suffolk, 5*s.* in winter and 6*s.* in summer. In Essex, in the year 1661, when Wheat was 70*s.* a quarter, labourers earned only 7*s.* in summer and 6*s.* in winter The pay of a private soldier was 4*s.* 8*d.* per week, and of a manufacturer 1*s.* per day. A few years later (in 1720), masons earned at Greenwich 2*s.* 6*d.* a day, they are now paid 5*s.* 3*d*; bricklayers obtained 2*s.* 6*d*, they now earn 4*s.* 10*d.* The average price of Wheat was 50*s.* a quarter, and a great majority of the nation, unable to obtain Wheat, lived upon Rye, Barley, and Oats. Bear and meat were cheaper; but sugar, salt, coals, candles, shoes, stockings, all the produce of tropical countries, of mines, and machinery, were dearer; bedding and clothing were dearer, and less serviceable too. This being the case, our ancestors surely were worse off in the good old times than we are now. Why, then, are these called the "good old times!" Mr. Macaulay proceeds to explain this, and illustrates his meaning with much beauty and point:

"In spite of evidence many will still image to themselves the England of the Stuarts as a more pleasant country than the England in which we live. It may at first sight seem strange that society, while constantly moving forward with eager speed, should be constantly looking backward with tender regret. But these two propensities, inconsistent as they may appear, can easily be resolved into the same principle Both spring from our impatience of the state in which we actually are. That impatience, while it stimulates us to surpass preceding generations, disposes us to overrate their happiness. It is, in some sense, unreasonable and ungrateful in us to be constantly discontented with a condition which is constantly improving. But, in truth, there is constant improvement, precisely because there is constant discontent. If we were perfectly satisfied with the present, we should cease to contrive, to labour, and to save with a view to the future. And it is natural that, being dissatisfied with the present, we should form a too favourable estimate of the past. In truth, we are under a deception similar to that which misleads the traveller in the Arabian desert. Beneath the caravan all is dry and bare; but far in advance, and far in the rear, is the semblance of refreshing waters. The pilgrims hasten forward and find nothing but sand where, an hour before, they had seen a lake. They turn their eyes, and see a lake where, an hour before, they were toiling through sand. A similar illusion seems to haunt nations through every stage of the long progress from poverty and barbarism to the highest degrees of opulence and civilisation. But if we resolutely chase the mirage backward, we shall find it recede before us into the regions of fabulous antiquity." (Macaulay, Vol. I, p. 426.) *An Essex Man.*

Home Correspondence.

Rooks.—I take the liberty of predicting that in the course of a few years the farmers of this county will be unable to grow corn crops at all! You must not be startled at a supposition so bold as this. I will premise my explanation by a short statement made in works upon Natural History upon the very best authority. Many years ago, the Coffee plants in the island of Madagascar, were attacked by the grakle, a well known bird on the African coast. The grakle is an insect feeder, but having used up the supply, it betook itself in pure necessity to Coffee. An edict was speedily issued and carried into effect, for the annihilator of grakles, and every bird on the island was destroyed. All went on very well for a year or two; when lo and behold, the insects and their larvæ having the field to themselves began to make sad bevoc upon the Coffee plants. What was to be done? There was no alternative but that of bringing back the grakle, which was in due season imported. The Coffee planters had however gained something by experience, and they resolved to profit by the same; they managed to keep the grakle within bounds, and they well knew that he would do the same by the insects. And they were right. By preserving a *juste milieu* doctrine between the two, they were enabled to grow Coffee. Now I apprehend the farmers in the present day are much in the same position as the Coffee planters of Madagascar. There has been for some time a system practised in this neighbourhood of poisoning birds by wholesale; thousands upon thousands have thus been destroyed, and the system continues. Can anything, I ask, be more absurd and irrational; I had almost said stupid, than this abominable practice. I will say nothing about the beauty and harmony of living nature, I will not whisper a syllable of the goodness and beneficence and wisdom of its great author, for I know from experience, that against prejudice in agricultural districts such arguments have no weight; neither will I attempt to picture the horror with which I have witnessed this familiarity with poison spreading like an evil pestilence among the beautiful of God's works. But this I will say, that if the farmers of England run blindly and wilfully into the proved and fatal error of the Coffee planters of Madagascar, if they permit the grub and the wireworm to destroy the crops of this country—and this they will do most assuredly if they annihilate insect feeders—then they will not only effect their own ruin, but they will inevitably cause a great national calamity. *C. R. Bree, Stowmarket, April* 13.

Saintfoin.—I have read a letter from one of your correspondents dated West Somersetshire Farm (in the paper of March 10), in which the writer says:—"We grow Saintfoin, which answers very well, particularly if fed with sheep instead of being mown." Now, having been a grower of Saintfoin for the last 32 years, and having been led by my practice to a very different conclusion, I beg, through the medium of your paper, or in such way as you may be able to suggest, to ask the writer, who signs himself "H. E.," a few queries respecting his experience. 1st. How early in the season do you put on your sheep? 2d. How long do you keep them on it? 3d. Do the sheep eat the whole of the plant, or how do you dispose of their refuse? 4th. How many years successively have you fed your Saintfoin with sheep? My reasons for asking these questions are, that I have, from experience, laid it down as a rule never to allow a hoof of stock in the fields between Christmas and August, when the after-Grass is fit to feed, unless it be a piece which I intend to break up, and in which I wish to destroy the Saintfoin. As I am very desirous of recommending the growth of Saintfoin, and as my opinion is frequently asked respecting it by those who have had less experience in its culture, I should be particularly obliged by your obtaining for me the information above mentioned. *Richard Young, Milverton, Somerset, April* 10.

Choking of Subterranean Drains.—A short time since, Mr. Hawkins, of Assington, a gentleman occupied in farming and professionally engaged in land-surveying and draining, brought me a slimy substance which he described as collecting within and choking up drains in certain localities. He referred me to Mr. Parkes' "Essays on Land Drainage," p. 66, for an account of this substance and its analysis by Mr. R. Phillips. Mr. Parkes considers it to be an aggregation of peroxide of iron precipitated from the chemical solution of the protoxide united with carbonic acid in the water. I immediately told Mr. Hawkins that I was satisfied this matter was of vegetable origin, and I showed him, under the microscope, that it was composed of extremely delicate confervoid filaments. It was evidently some minute fresh-water Alga. I forwarded a fragment to Mr. Thwaites, of Bristol, whose researches and discoveries among the lower groups of this family of plants have recently been shedding much light upon their physiology. He informs me that it is a nondescript species, with which he has been acquainted for the last two years, and had assigned to it the name of Cathetocladus Ralfsii, having first received it from Mr. Ralfs, the author of a recent most admirable volume on our British Desmidieæ, one of the lowest and strangest of the groups of the same family of plants. After having carefully washed a mass of the Cathetocladus, to get rid of the sand with which it was mixed up, I dried and burnt it in an open crucible. It lost 25 per cent. of organic matter, and left a residual ash of 75 per cent. This ash was of a dull red, and apparently consists almost entirely of peroxide of iron and silica. So many of the lower Algæ secrete silica, that it does not seem to be at all improbable that considerable accumulations of this mineral and peroxide of iron might originate within drains entirely from the decay of these plants, however carefully all extraneous matters were prevented from entering them. Strata of considerable thickness have been formed in some places from the siliceous cases of certain microscopic plants. But still, in the absence of experiment, or accurate observation to the contrary, I should be inclined to think that the evils complained of might be avoided if sand and other matters were carefully excluded from finding their way into the drains. For the plant itself would periodically decay, and I should suppose it would then be readily carried off by the current, if there were no foreign matters entangled in it. If the "light flocculent floating little masses," described by Mr. Parkes, p. 70, were really compos

of peroxide of iron, they would have subsided by the laws of specific gravity, however finely the particles of which they were constituted may have been originally subdivided; and unless I have forgotten my hydrostatics, a diminution in the bore of the drain-pipes could not possibly cause "a more concentrated stream of water" to be directed through them, as described, at p. 69. This is a different problem from that by which we compare the velocity of a given quantity of fluid as it passes through a narrow portion of a channel, with the velocity of the same quantity as it passes through a wider portion. A smaller discharge, but not a more rapid one, would be the only result obtained by so far diminishing the bore that the pipes should be completely filled. If Mr. Parkes has been successful in preventing the accumulation of the deposit, the reason must either be owing to the Alga not being able to grow under the altered conditions in which it now finds itself, or else to his having succeeded in keeping out such extraneous matters as would have assisted in retaining the decaying plant within the pipes. *J. S. Henslow.*

Will a heat varying from 80° to 110° answer the purpose of Incubation?—To this inquiry I think I may safely reply it will not; the heat should be maintained at 100° and no more, but as I should not like to mislead any one, I will state a trial I made lately with some duck eggs (the eggs were the large Aylesbury breed); in the first place I took a thermometer and placed it under a sitting hen, and the heat the third day was 90°. I placed it under her again when she had set a week, it then indicated 100°; I then got some eggs and placed them in a box with some flannel at the bottom, and some at the top, and placed the thermometer with them. I then placed them in a flued pit, under the surface of the soil, and left an open space under and around the box, for the heat to find its way. The top of the box was covered with a large slate, to keep the heat in; this was on 12th March, and all appeared to go on well for some days, the heat kept at about 100°, sometimes a little under or little over; but I soon found the heat could not be kept regular, for after the fire was made up at night, I found the heat not above 90° in the morning; but after they had been in long enough, to determine which had got birds in, and which had not, I examined them, and found four with birds (or likely to be), the remainder I discarded (but I should here remark that having had my own ducks stolen, I was compelled to purchase chance eggs, and I set a hen at the same time on duck eggs, and they were all bad but one) and at the expiration of the time, 28 days, no birds making their appearance, I broke them and found one bird had been completely formed, the others were not so forward, but would have been if it had not been for inequality of heat, to which I attribute the loss, for the fluctuation of heat was less on the single egg than on the others, being placed in one corner, and that did not suffer till some time after the others, when the glass indicated 110°, being the highest point it reached. But I am so certain of success if I can procure a heat varying not more than 95° to 100°, that if I can procure some eggs to be depended on, I shall place them in a dung bed, and keep a correct register of heats, morning and evening; and if it is of service to you it shall be at your command, but let not an amateur be discouraged, but try his luck; let him keep a register of heats and give the results. *W. Turner, Holloway.*

Box-feeding.—I have just read the Rev. Mr. Wilkins's letter in your Paper of the 7th inst., and as I am pointedly asked a question by him, I must answer it, and at the same time make some observations. Mr. Wilkins, referring to a former letter of mine, asks, "Is that true, 'Inquirer;' do you really pity me?" Truth obliges me to answer, I do not. I cannot pity a man, let him meet with what rubs he may, who writes (not only on the subject of Mr. Warnes's statements) as he does; wilfully, as it appeared to me, misrepresenting and holding up to ridicule a well meaning man, and actually changing his statement of profit from 10*l.* to 6*l.* 12*s.* If I am wrong in this opinion, I am truly sorry for it. Mr. Wilkins alone knows whether I am or not. I stated, as Mr. Wilkins correctly quotes, "The animal increased in value in the last six months 10*l.*, and not 6*l.* 12*s.*, as Mr. Wilkins states." Mr. Wilkins adds, "Now be so kind as to turn to Mr. Warnes's own article, published at page 59, and dated by him Dec. 16, 1848." I have done so, and what do I read? Why this. "The heifer is considered to weigh 70 stones of 14 lbs.; three weeks since I refused 30*l.* for her; on Thursday last 29*l.* was only offered. Taking the last sum as the criterion of value, and deducting the original cost, 8*l.* 10*s.*, leaves 20*l.* 10*s.* for 12 months' maintenance." Mr. Warnes continues:—"She was one of six; one died, and four were sold at the end of six months at 19*l.* each, at which time this one was of equal value; therefore, if this one had at that time been sold, she would have paid 10*l.* 10*s.* for six months' keep, whereas, by retaining her six months longer, her value only increased 10*l.* more, viz., from 19*l.* to 29*l.*" Now, I would ask Mr. Wilkins, can anything be plainer? In June the animal was worth 19*l.*, and at Christmas 29*l.*; is not this 10*l.* for six months' keep? If Mr. Wilkins was bewildered by seeing that in June beef was only worth 7*s.* per stone, and had risen at Christmas to 8*s.* 3*d.*, and that as the animal had increased in weight 16 stones in that time, and that therefore it had only paid 6*l.* 12*s.* for its keep, instead of 10*l.*, that may account for his mistake, but does not alter the fact; but I will press this point no further. I think I have said enough to convince Mr. Wilkins that, in his zeal and fondness for drollery, he really did misrepresent Mr. Warnes's statement, and I now believe that there existed no such intention on his part; and therefore I sincerely regret having expressed a hint, (not against an adversary, but) that Mr. Wilkins's statement was intentionally dishonest, and I do this the more readily because I feel that an anonymous writer has no right whatever to question the integrity of any one. I have no wish to consider Mr. Wilkins as an adversary, and I would just hint to him that the observations on Sir Charles Burrell's statement made by his, Mr. Wilkins's, friends, who say, "Such feats can be accomplished nowhere else than in Sussex," is calculated to create adversaries. As to box-feeding, I would remark, in reply to his observation, that Mr. Nesbitt, considered to be a man of science, has eulogised the system, at the Farmers' Club discussion, March 7; but I look upon the testimony of practical farmers in its favour to be of even more consequence. No one knows better than Mr. Wilkins that the failure of some attempts can never disprove the value of others which have been successful. *Inquirer.*

Is the precious Season for Cultivating the Land to be again passed over in useless discussion on the impoverished state of Ireland, and her consequent sufferings? Is time to be wasted in pointing out what we all know? when the remedy is obvious, if men would but put their hands to the plough and not turn back. I have often asserted that the regeneration of Ireland can only be brought about by the introduction of plenty of work with fair wages. It appears ridiculous to ring the changes upon over population. It cannot be denied by those who have any knowledge of the Emerald Isle, that the land is capable of bearing the burthen of a population half as numerous again, as at present exists. What has been accomplished by Mr. Hamilton, Mr. Blacker, and one or two other gentlemen? Surely if these patriots can improve their estates to their own advantage, and for the benefit of their tenants and labourers, cannot other proprietors follow so bright an example? Supposing the exertion to require a certain sacrifice of comfort and money, would not the inconvenience and expense be amply repaid by seeing one of the finest countries in the world rival England, both in agricultural and manufactured produce. There is scarcely a limit to the resources of our sister country. It is only craving for a portion of the intelligence and perseverance of the United Kingdom, to excite its hidden treasures, and bring into action the vigour and strength of the island. Resident proprietors are wanted, and Mr. J. O'Connell is not far wrong in recommending a stringent income tax on absentees. The capital of the country must not be withdrawn to be spent in other lands, a free circulation of money is required which can only be brought about by consuming the fruits of industry in the country. The soil of Ireland is unrivalled; reclaimable land abundant, water power unlimited; coal and turf to be had in large quantities; plenty of materials for road making; a mild climate; marble, stone, iron, copper, lead, &c., inexhaustible sea-fisheries on the coasts, and the inhabitants naturally a powerful and hardy race. This is no exaggeration, and it may be fairly asked, how come famine and disease to overwhelm so fine a country? Well may foreigners express their astonishment at thousands starving in a country rich in everything necessary to insure the happiness and prosperity of mankind. It is an anomaly. Is another spring to pass and half the land remain barren? Is another winter to bring pestilence and desolation to our very doors? We have been provoking Providence for the last two years, by neglecting the warnings vouchsafed to us. Can we imagine that our continued disobedience, in not providing the means of alleviating a heavy calamity, will much longer exempt us from some severe visitation in England? It is in the power of Parliament to enact laws for the better management of the affairs in Ireland. The error of Government has been, legislating for a part of the United Kingdom, of which they knew little, and whose interior economy differs so widely from that of England. Where disease in the human subject becomes severe from neglect, violent remedies are applied, to save the patient's life, which would not be admissible in the treatment of the case at an earlier stage. So it is with Ireland; and recourse must be had to forcing into the island both labour and capital, a heavy fine on absentees, sale of waste lands on condition of immediate cultivation, a premium on working mines, and the establishment of district farming societies, might assist in inducing a return to order and regularity. Did the people of England see a prospect of sensible remedial measures being adopted towards Ireland, there would be no difficulty in raising a subscription to promote any reproductive scheme, so as to guard against our hard earnings being frittered away as they have been. As soon as the landed proprietors of Ireland unite with the Government in promoting profitable employment, I shall be ready with 10*l.* to aid the laudable work, and I feel confident thousands will join with me, who are now tired of contributing to idleness. *Falcon.*

Clay Lands.—Among the communications to your current volume, few will be found more valuable to the clay farmer than one of the 24th of March, from Mr. Mechi, in which he offers some very intelligent remarks on certain questions, confessedly of great interest and of common enough occurrence in the progress of land improvement—questions namely as to—1st. Cases of defective (probably because shallow) drainage; and 2d. The proper method of working drained clays. In any cases of incomplete drainage Mr. M. would not disturb the shallow drains already in operation, obviously a most expensive proceeding, but would introduce a series of deep drains at intervals of 50 yards and upwards according to the subsoil, and states his own experience as favourable to the plan. I happen to have a parallel case in 30 acres of clay land, drained with tiles some ten years since at a depth of about 20 inches, which drainage, although beneficial, by no means exhibits an improvement corresponding to the outlay. I had determined to adopt the very plan which Mr. M. advises, and I shall now with more confidence look for a similar success. Certainly the thing is worth a trial, as being so easy and economical. In very many instances of partial failure, the supposed expense of the remedy is the only but very sufficient objection to further effort; but if so simple a method shall be found efficacious, we may yet hope happily to rectify our various mistakes in this direction. Supposing an eight-acre field, lying in 30 lands, each 8 yards wide, and shallow drained in every furrow, how easy to take up every 6th, 6th, or 7th, and relay the same at a depth of 4 or 5 feet; a very different thing truly to taking up the whole, and yet possibly as satisfactory in its effect. With respect to the method of working drained clays, the fashionable advice is to plough on the flat, and to trust entirely to the drains for carrying away all surface as well as bottom water. Here Mr. M. suggests the keeping all strong soils still in lands, and I can speak to the propriety of such management from a dozen years' experience. To gain the full advantage of draining on clays, the true policy, I am persuaded, is to treat them in almost every respect as if they were still wet, ploughing them into sufficiently raised lands of any determined width, keeping the interfurrows constantly open, and cutting all the requisite surface aids to facilitate the speedy running off of all superfluous water. Upon this system hasty or long continued rains can do no harm; the underground drainage will not be tasked beyond its power (and clays draw slowly), and the greatest possible amount of benefit will be seen to arise from the combined operation. On every occasion when I have been less attentive than usual to surface furrowing, I have invariably suffered in proportion to the negligence. Of consequence I now regard it as a prudent, if not an established rule in strong land management, "That open surface furrows be treated as of equal importance with under drains." As regards the steps preliminary to the actual drainage, the wet and strong soils we are speaking of are laid up, from time immemorial, in lands irregular in breadth and height, and this for the purpose of insuring a tolerable surface dryness. Nevertheless all our experience goes to prove that this is not enough for the requirements of profitable cultivation, which English taxes, coupled with Legislative changes, stimulate to the utmost at the present moment. Hence, indeed, this universal draining; hence mechanical appliances. Of course we must avoid any mis-expenditure of labour, and should, to this end, economise in the laying out as well as in the execution of our plans of improvement. Suppose the drainage of a field to be decided upon, the common mode, I am afraid, is, to take the straightest hedge, and after setting off the first line, to lay off the rest according to the predetermined width, without any reference as to how such lines may fall. Accordingly a field so lined off shows one drain in the bottom of a furrow, another on the crown of a land, and others at every point between the other two; and upon completion of the cutting, the variations in real depth will be nearly as numerous as the drains. Sometimes, too, the lines run with the open furrow, at other times across them at various angles, and thus the fall may be utterly compromised. For myself, when I began farming, I laid out the lands anew at 8 yards, the width I proposed to drain at, in the direction of the fall, and as straight as possible, gathered them twice, and then executed an under drain 20 inches deep in every interfurrow. It is in the fields drained at this depth, that I purposed introducing the distant deep drains, which I find Mr. Mechi recommends. In those lately drained, after the same preliminaries, I cut 3 and 3½ feet deep, a cutting really equivalent to 3½ and 4 feet, if the fields were again ploughed level. And, lastly, I land up at 4 yards instead of 8 yards, that is, plough each 8 yard land into two 4 yard lands, but always keep what we may call the main interfurrows nearly or quite over the drains. This final arrangement does not require the lands to be raised so high, and, consequently, does not to the same extent bare the furrows of soil; and besides the ploughing is more expeditiously performed, and the drains admit of easy reference. As these are cut in the deep interfurrow in the first instance, the cutting is as economical as it can well be—in some cases 3 feet being nearly equal to 4 feet, but of course at the cost of 3 feet. I have been so satisfied with the result as a whole, that I thought it worth mentioning for the use of those who may be about commencing the draining of any stiff land. I would earnestly advise all such to adopt my first step as the readiest, and in every respect the most satisfactory for the contemplated purpose. Upon this plan there need not be an unnecessary inch of cutting, nor need a single inch be lost. *J. B., Worcestershire.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House in Hanover-square, on Tuesday last, the 24th of April: present The Hon. Robert Henry Clive M.P., Trustee, in the Chair; Earl of Tyrconnel, Earl Beauchamp, Sir John V. B Johnstone, Bart., M.P., Sir John P. Boileau, Bart., Mr. Almack, Mr. Raymond Barker, Mr. Bosan-

quet, Mr. Burke, Rev. Thomas Cator, Colonel Challoner, Mr. Cherry, Mr. Evelyn Denison, M.P., Mr. G. Dyer, Mr. Fuller, M.P., Mr. Gaussen, Mr. B. Hall, Mr. Fisher Hobbs, Mr. Kinder, Mr. King, Mr. Lewes, Mr. W. Miles, M.P., Mr. C. E. Overman, Mr. Parkins, Mr. Apsley Pellatt, Prof. Sewell, Prof. Simonds, Mr. Slaney, M.P., Mr. Spencer Stanhope, Mr. Stansfield, M.P., Mr. Hampden Turner, Prof. Way, and Mr. W. B. Webster.

The following new Members were elected:

Kendall, John, Hog Hall, Burbage, Hinckley, Leicestershire
Buckland, Thomas, Wraysbury, Staines, Middlesex
Holloway, Henry, Ringwood, Hampshire
Nicholson, Henry, Peterborough, Northamptonshire

The names of 14 candidates for election at the next meeting were then read.

Prize Essay.—Mr. Pusey, M.P., Chairman of the Journal Committee, reported the Essay on the Management of Barley, to which the Judges had awarded the Society's Prize of 15*l.*, and also the Essay in that class which they had "commended." The Chairman of the Council then opened the sealed motto-paper, containing the name of the author of the former essay, when it was found that the Prize belonged to Mr. Hall W. Keary, of Holkham, Norfolk. The sealed motto-paper, containing the name of the author of the commended essay, wa referred unopened to the Chairman of the Journal Committee, in order that he might, at his discretion, open it or not, agreeably with the 5th rule of competition for Essays, and communicate accordingly with the author if he thought proper to do so: the commended essay bore the motto, "Without Practice, Theory is nothing."

Diseases of Cattle.—The Chairman took that opportunity of stating his conviction that the Society had it in their power to confer a great practical benefit on their members residing throughout the country, as well as on the community at large, by deputing from time to time a first-rate veterinary surgeon into those districts where disease of any kind prevailed to a considerable extent among the live stock of farmers, with an instruction that he should report to the Council the result of his personal examination into the circumstances of such malady, and into the local cause of its occurrence or aggravation, as well as the measures he would recommend for arresting its progress and preventing its further outbreak in other districts. This statement led to an unanimous expression of the value of the measure proposed, and to an animated discussion on the subject, in which Colonel Challoner, Mr. Fuller, Mr. Overman, Sir John Johnstone, Mr. Dyer, Mr. Parkins, and Professor Sewell, favoured the Council with their views on the subject. The chairman then gave notice, that as the question he had ventured to suggest had received the concurrence of the members present on that occasion, he should move at the next Monthly Council, that it should be referred to the consideration of the Veterinary Committee of the Society, with a request that they would report on the subject to the Council at their earliest convenience.

Blue Earth.—Professor Way having ventured an opinion at the last meeting in reference to the nature of the blue substance found in the peat soil submitted by Colonel Challoner to the Council, and which from a casual inspection he then supposed to be Prussian blue, had been led, by a communication he had received from the Rev. Professor Henslow, to submit it to analysis, and had found it, as that gentleman expected, to be, not Prussian blue, but another salt of iron, namely, the phosphate. Prof. Henslow stated that the earthy phosphate of iron was often found in the fens of Cambridgeshire, and was frequently seen coating the empty shells of the fresh-water mussel, picked up by crows, and left on the banks of the river. He also remarked that phosphate of iron sometimes occurred in lumps; and he thought it probable that the phosphoric acid of that substance might be derived from the decomposition of animal matter, whilst the bog-iron would constitute a ready source for the oxide of that metal forming the base of the salt in question. Colonel Challoner having found, as he had remarked at the previous meeting, that the peat soil under consideration was a most sterile one, he had still been curious to ascertain its effects on the growth of plants, when mixed in small proportions with garden mould, especially in reference to the change which the salt of iron it contained would produce in the colour of the petals of the Hydrangea and similar plants, and he had accordingly instructed his gardener to make these trials, and report to him the result.

Presents.—The Earl of Carlisle transmitted to the Council (through the President) a copy of the statement of Mr. Chadwick, C.B., on the application and value of Liquid Manure, which the Council referred to the Journal Committee. The Earl of Tyrconnell presented specimens of hollow bricks (made by the tile-machine) for the building of cottages, with a statement of their peculiar advantages, and of localities in which they were manufactured. The Agricultural Society of Paris presented their report of proceedings, and Mr. Raynbird, his work on the Agriculture of Suffolk. Thanks were ordered by the Council for the favour of these donations.

The Council then adjourned to the 1st of May.

Calendar of Operations.

APRIL.

Bedfordshire Farm, *April* 24.—The weather of late has been rather unfavourable for ploughing, or otherwise cultivating the land; we have notwithstanding been enabled to finish Barley sowing satisfactorily on light soils. Dung carting and rolling pastures occupied the team when wet, and but little dung now remains in the yards, or any other species of carting to employ and prevent the horses from working the land when fine. Our green crop fallows were nearly all ploughed during the present and preceding month, but ploughing has not been carried on in wet days. We are now preparing for, and shall sow Mangold Wurzel immediately the weather permits. The Orange Globe kind is generally preferred to others; we sow from 4 lbs. to 5 lbs. per acre. The seed is frequently steeped, although it is of very little consequence whether sown wet or dry. Mangolds are very suitable for stiff soils, where Turnips cannot be grown to advantage for feeding off by sheep. Mangold Wurzels are more adapted for spring than winter food; our cattle and sheep are now receiving a daily allowance. The cattle consume about 1½ bushel a day each, and the sheep from 15 lbs. to 20 lbs. each. The fatting sheep are folded on the poorest pasture, where some "fog" exists, with a view to destroy it, and otherwise improve the condition of the land. The sheep have a daily allowance of bruised Oats and Tares (about three-fourths of a pound each) in addition to Mangolds, and a little hay chaff. Stock soon learn to eat Mangold Wurzels by mixing a few with Turnips, sliced up together. A mixture is also at first more suitable for keeping the system in order. When all our roots are exhausted we purpose giving the fatting cattle Grass, Rye, or Tares cut up with straw as a substitute. We usually sow a few acres of Tankard Turnips about the middle of May, for early consumption in September. The horse-labour prospectively, up to hay-time, will be chiefly connected with Turnip sowing, hoeing Beans, &c., between the rows. The manual labour will be filling and spreading dung, spreading lime, threshing and dressing corn, attending upon stock, hoeing corn, &c. The hours of labour with us are now from 6 o'clock to 6 o'clock, with an hour and a half for meals. The wages range from 9*s.* to 12*s.* per week for men, according to duty and ability. It is no uncommon practice around us for men to leave off work at 5 o'clock in the afternoon. It is also no uncommon thing for labourers, especially hedgers, to be allowed to carry home, daily, a bundle of wood with them. We entirely dissent from uncertified perquisites, and have had some difficulty in opposing the system. Labourers are generally pretty well employed in this district; but under various forms of pay and management. The Wheat crops have commonly a healthy appearance, neither too forward nor backward. The early sown Barley does not appear to have suffered much from the late inclement weather. Altogether the crops look promising; but times are certainly, on the whole, very unprofitable for farmers generally. *R. S.*

Berwickshire Merse Farm, *April* 20.—Since last report we have been employed carting dung to the fallow land for Wheat, as the weather has been so stormy that we could not plough. We have been threshing Beans and Oats, and cleaning the stack-yards, leading Thorns and repairing the fences; a man and a woman feeding the cattle with sliced Turnips and 10 lbs. of Bean-meal each. *J. B.*

Dorset Farm, *April* 23.—Since the month came in, the weather has been very unfavourable for field operations. Rain has fallen in considerable quantity, and last week we had a heavy fall of snow, with some severe frosts at night, which have checked vegetation to some extent, and consequently keep for stock will not be so plentiful as it appeared at one time to be, and probably a part of the Clovers intended for mowing will be required for feeding. We have found a large quantity of roots very useful at the present time, when Grass is getting short. Our beasts are still in the house, fed on cut Swedes and Mangold Wurzel mixed, and hay, with 4 lbs. oilcake per day. Our ewes and lambs are eating down the water meadows, part of which were laid up for mowing on the 1st of this month, and the rest will be laid up on the 1st of May. Our work in the fields has not got on so fast as we could have wished, as the land has seldom been in a state fit for going on, and in many cases it would be better that the horses were in the stable idle than treading the land when so wet. We have been employed in ploughing some naturally dry fields, and carting out dung to be ready for application when the weather admits of putting in the root crops, and also carting stones from the fields and other materials for new farm buildings. We shall as soon as possible be sowing Rape, then Mangold Wurzel, Carrots, and Turnips and in the meantime every favourable opportunity must be embraced for cleansing the land for these crops. All our Grasses are sown among our Barley, the Rye we bush-harrow in, but only roll the Clover, thinking that quite sufficient for covering them, for there is I think no doubt that one chief cause of Clover failure is the seed being buried too deep. We have top dressed part of our Wheat with soot, at the rate of 30 bushels per acre. *G. S.*

Stirlingshire Carse Farm, *April* 21.—The weather for some time past being both dry and frosty, and, owing to these hard frosts, not so suitable for Barley sowing, yet it has been very suitable for labouring carse land. We therefore have been going on giving the fallow land a second furrow, it being very advantageous to plough land in spring intended for fallow as early as possible, both for the killing of any weeds that may be in the land; and, as soon as this is done, the land enriches by lying a week or two between the furrows, and weeds are easiest destroyed in the months of April, May, and June. We have commenced to-day to give the land intended to be sown with Barley a grubbing with a six-horse grubber, which tends greatly to lessen the labour afterwards. Barley sowing in this district is not far advanced, owing to the cold stormy weather we have had of late, yet the labour of fallow land, as well as what is intended for Turnips, is fully as far advanced as usual at this season. There are fears entertained that the late frosts have injured the Bean plant, but it is not easy to say positively until we have a little growth, which will show at once if the heart blade is injured or not. *W. F.*

Sussex Farm, *April* 23.—The weather has been very unsettled of late; we have had heavy falls of snow, with hard frost, and a considerable deal of rain. We are now engaged carting out manures for the Mangold and Swede crops; also faggots to burn lime, bushes to repair hedges, and stones to roads; but as soon as the land is dry, we shall dung and plant Mangold, and prepare the land for Swedes, bush-harrow and roll the meadows intended for hay, as we have now sent off our teg lambs to the mown land intended for fatting. Our ewes are nearly all lambed, and the weather has been very unfavourable for young lambs, still we have been very fortunate, as we have not lost a single one. If we had not been so well provided with Swedes we should have lost many. *J. B.*

Notices to Correspondents.

Chaff Engine: *An Essex Man.* In reply to your question regarding the chaff engine on this farm, the one we use is full sized and cost 12*l.* 12*s* It has three knives, and will cut with the smallest wheel 1 bushel per minute; this is horse chaff. The next sized wheel is for sheep and cattle; it will then cut 2 bushels a minute, requiring one man to feed and two lads to supply him with fodder and clear away the same, with a little boy to drive the pony; but the same party steam the whole as it is cut, carrying water for the boiler, filling chaff bags, &c. It has been in use three years, and, with the exception of new knives, has not cost 10*s.* for repairs. The steam apparatus is under the chaff loft, and consists of a small boiler with two boxes, containing each about 60 bushels. Let the straw and hay be ever so inferior in quality, after it has undergone the steaming process we find the cattle eat it with avidity, and by mixing a very small portion of hay chaff with the straw, the latter becomes more palatable, as in steaming together it absorbs the flavour of the hay. *H. E., Somerset Farm.*

Fattening Lambs: *F. J.* Young animals require plenty of nitrogenised food, and Peas are found to agree well with lambs. A little Linseed cake should be given at the same time, which, with the mothers' milk and the run before the hurdles, will make them thrive well. *W. C. S.*

Forty-day Maize: *A Sub.* See Mr. Keane's pamphlet, "Facts for Farmers."

Letting Cows in Dorsetshire: *Inquirer.* Cows are let in Dorsetshire from 2*d* Feb. for a year, and in some cases from the 14th May, at about 10*l.* per cow. The farmer finds all accommodation for the use of the dairy. The renter finds all the utensils, and feeds and keeps the cows clean; and the owner, if he wishes to have any of the calves, allows about a quarter's rent for each, the dairyman keeping them until the 14th May, when they are supposed to be fit to feed on the pastures. If the term of entry is 2d Feb., the in-coming tenant has all the calves of the season; and if on the 14th May, he has none of them. The cows are fed during the winter on hay, and in summer in the water meadows, with perhaps a piece of dry pasture in addition. *G. S.*

Lucerne: *Clericus.* Your best plan would be to sow by hand; half an acre would be sown in half a day by a man; and if he used Dr. Newington's hand cultivator, he might make the rows at any distance you please in an hour's time; and then while covering one row he could sow another. The intervals must be left unoccupied for hoeing.

Management of Store Cattle: *R. K.* We have kept them on straw and Linseed. About 1 lb. of Linseed each daily, made into a salt soup and thrown over the requisite quantity of straw chaff, gives the latter a savour which induces its consumption in sufficient quantity. As to the quantity of chaff which a young beast will consume, we cannot speak from experience; but you may perhaps fairly calculate it at about 18 or 20 lbs. daily.

Mange: *A Young Farmer.* The scab or mange, as it is usually termed, is very contagious. Let the affected animal be thoroughly anointed with the following: Sulphur vivum, ½ lb.; White hellebore, 1 oz.; Oil of petroleum, 4 oz.; Linseed oil, 2 lbs., mixed together. Use daily for several days, then thoroughly wash, and the liniment repeated if necessary. Remove the other animals, and whitewash every part. *W. C. S.*

Oxalic Acid: *Aliquis.* The oxalate of ammonia is soluble; it is the oxalate of lime that is insoluble.

Phosphate of Lime: *Amateur.* It is never *made;* our natural supplies are abundant in bones, which are half phosphate of lime, and in coprolites, which give from one-third to two-thirds phosphate of lime. The biphosphate is made from the phosphate by adding one third their weight of sulphuric acid to bones, which are first well wetted, and, after the addition of the acid, suffered to lie in a heap for a week or two; and at length mixed with ashes and sown, 3 or 4 cwt. per acre, as a mature for Turnips. Gypsum is never prepared artificially; there are great beds of it in the marls of the new red sandstone. You cannot *make* it so cheaply as dealers supply it.

Rural Chemistry, 2d Edition, revised and enlarged; by Edward Solly, Esq., may be had at the office of this Paper, and of all Booksellers. Price 4*s.* 6*d.*

Wages: *A Poor Tenant* puts the following question—What proportion of the gross average produce of a tillage farm should be taken for rent, and what for expenses, interest on capital, &c., after deducting all rates, tithe payments, &c., and whether the value of a peck of Wheat should be the wages of a day labourer?

Erratum: *Hantonlensis.* Thank you. We have not the original by us; but the inference drawn would indicate that the decimal point has been misplaced, so that the figures should be "from 0·065 m. to 0·507, and from 0·080 m. to 1.00." See p. 235, col. *b*, lines 38, &c.

Markets.

COVENT GARDEN, April 28.

The severity of the weather has somewhat diminished the supply of some vegetables; but, upon the whole, most kinds are sufficient for the demand. Fruit has altered little since our last account. Trade is rather brisker. Pine-apples fetch from 6*s.* to 10*s.* per lb. Hothouse Grapes are very good and more plentiful. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst vegetables, young Turnips may be obtained at 2*s.* 6*d.* a bunch, and Carrots at 1*s.* 6*d.* Cauliflowers and Broccoli are sufficient for the demand. Asparagus, French Beans, Rhubarb, and Seakale are dearer. Potatoes were also dearer. New Potatoes fetch from 6*d.* to 2*s.* per lb. Lettuces and other saladings are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Gardenias, Tulips, Hyacinths, Cinerarias, Tropæolums, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb.,	6*s* to 10*s*	Chestnuts, p. peck,	4*s* to 7*s*
Grapes, hothouse, p. lb,	10*s.* to 12*s*	Almonds, per peck,	6*s*
— foreign, p. lb.,	1*s* 6*d* to 3*s*	— sweet, per lb.,	2*s* to 3*s*
Strawberries, p. oz.,	6*d* to 1*s* 3*d*	Walnuts, p. 100,	1*s* 6*d* to 2*s*
Apples, dessert, p. bsh.,	6*s* to 12*s*	— p. bush.,	16*s* to 24*s*
— kitchen, p. bsh.,	4*s* to 8*s*	Nuts, Bar., p. bush.,	20*s* to 22*s*
Oranges, per doz.,	1*s* to 2*s*	— Filb., p. 100 lbs.,	60*s* to 100*s*
— per 100,	7*s* to 20*s*	— Cob, p. 100 lbs.,	90*s* to 150*s*
Lemons, per doz.,	1*s* to 2*s*	— Brazil, p. bsh.,	12*s* to 16*s*
— per 100,	10*s* to 18*s*		

VEGETABLES.

Cabbages, p. doz.,	9*d* to 1*s* 6*d*	Onions, p. bunch,	2*d* to 4*d*
— red, p. doz.,	2*s* to 6*s*	— p. bush.,	4*s* to 6*s*
Greens, p. doz. bunches,	1*s* 6*d* to 4*s*	— Spanish, p. doz.,	1*s* 6*d* to 4*s*
Cauliflowers, p. doz.,	2*s* to 4*s*	— pickling, p. hf. sieve,	1*s* 6*d* to 3*s*
Broccoli, white, p. bun.,	1*s* to 2*s*	Shallots, per lb.,	4*d* to 8*d*
— brown, p. bun.,	6*d* to 1*s* 3*d*	Garlic, per lb.,	4*d* to 8*d*
Sorrel, p. hf. sieve,	9*d* to 1*s*	Artichokes, Jerusalem, p. half sieve,	9*d* to 1*s*
Potatoes, per ton,	120*s* to 240*s*	Lettuce, Cab., p. se.,	4*d* to 6*d*
— per cwt.,	6*s* to 12*s*	— Cos, do.,	9*d* to 4*s*
— per bush.,	4*s* to 7*s*	Endive, per score,	1*s* to 2*s* 6*d*
Turnips, p. doz. bun.,	1*s* to 2*s*	Mushrooms, per pottle,	6*d* to 1*s* 3*d*
Red Beet, per doz.,	6*d* to 1*s*	Small Salads, p. pun.,	2*d* to 3*d*
Horse Radish, p. bdl.,	1*s* to 6*s*	Fennel, per bunch,	2*d* to 3*d*
Asparagus, p. 100,	3*s* to 15*s*	Savory, per bunch,	2*d* to 3*d*
Seakale, p. punnet,	2*s* to 3*s* 6*d*	Thyme, per bunch,	2*d* to 3*d*
Rhubarb, p. bundle,	6*d* to 1*s* 6*d*	Watercress, p. doz. bun.,	6*d* to 9*d*
French Beans, p. 100,	1*s* to 2*s*	Parsley, p. hf. seive,	2*s* to 4*s*
Cucumbers, each,	1*s* to 2*s*	— Roots, p. bdle.,	1*s* to 1*s*
Leeks, per doz.,	6*d* to 1*s*	Marjoram, green, p. bun.,	9*d* to 1*s*
Celery, p. bundle,	6*d* to 1*s* 3*d*	Mint, green, per bunch,	4*d* to
Radishes, p. 12 hands,	6*d*		
Carrots, p. doz. bun.,	3*s* to 8*s*		
Spinach p. sieve,	1*s* 6*d* to 2*s* 6*d*		

HAY.—Per Load of 36 Trusses.

Smithfield, April 26.

Prime Meadow Hay	75*s*	to 80*s*	Clover	60*s*	to 95*s*
Inferior ditto... ...	60	70	New Clover	—	—
Rowen	50	60	Straw	27	30
New Hay	—	—	J. Cooper.		

Cumberland Market, April 26.

Prime Meadow Hay	74*s*	to 80*s*	Inferior	55*s*	to 80*s*
Inferior ditto... ...	55	66	New Clover	—	—
New Hay	—	—	Straw	28	32
Old Clover	90	95	Joshua Baker.		

Whitechapel, April 26.

Fine Old Hay ...	70*s*	to 75*s*	New Clover	80*s*	to) s
Inferior ditto ...	50	55	Inferior ditto... ...	55	65
New Hay	63	70	Straw	24	30
Old Clover	92	100			

HOPS, Friday, April 27.

Messrs. Pattenden and Smith report that the market continues the same.

SMITHFIELD, Monday, April 23

In consequence of an extraordinary supply of Beasts, both as regards numbers and quality, prices are lower. *Choice small* Beasts, &c., are not plentiful, and it is only for such our highest quotation is realised. The majority are heavy Beasts; several remain unsold. The number of Sheep is also larger and the demand small; trade is slow at a reduction of about 2d. per 8 lbs. The cold weather has caused a decreased consumption of Lamb, and although the supply is not large, lower rates are taken. Trade is steady for Calves and Pigs. From Germany and Holland there are 372 Beasts, 480 Sheep, and 44 Calves; from Norfolk and Suffolk, about 3000 Beasts; and from Scotland, 300.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	4	to 3	6
Best Short-horns	3	0	— 3	4
2d quality Beasts	2	4	— 2	8
Best Downs and Half-breds	4	0	— 4	2
Ditto Shorn	3	4	— 5	6
Best Long-wools	3	8	to 4	0
Ditto Shorn	3	0	— 3	4
Ewes & 2d quality	3	2	— 3	8
Ditto Shorn	2	8	— 3	0
Lambs	5	8	— 6	4
Calves	3	8	— 4	8
Pigs	4	0	— 4	10

Beasts, 4349; Sheep and Lambs, 25,320; Calves, 132; Pigs, 210

Friday, April 27.

Considering the quantity of Beasts left over from Monday, the supply to-day is but small; it, however, exceeds the demand, and our top quotations of Monday are taken in still fewer instances. There is an increased supply of Sheep; trade is very bad, and late rates are only maintained for a few of the most selling Downs. Lamb is plentiful, a great many are of inferior quality, these make but little money, and the best kinds are 4d. per 8 lbs. lower. The number of Calves is very large; trade is exceedingly dull; a reduction of fully 4d. per 8 lbs. is submitted to, and a clearance cannot be effected. From Holland and Germany we have 113 Beasts, 100 Sheep, and 148 Calves, from France, 12 Beasts; from Scotland, 160, and 122 Milch Cows from the home counties.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c	3	4	to 3	6
Best Short-horns	3	0	— 3	4
2d quality Beasts	2	4	— 2	8
Best Downs and Half-breds	4	0	— 4	2
Ditto Shorn	3	4	— 3	6
Best Long-wools	3	6	to 3	10
Ditto Shorn	2	10	— 3	2
Ewes & 2d quality	3	0	— 3	4
Ditto Shorn	2	6	— 2	10
Lambs	5	0	— 6	0
Calves	3	4	— 4	4
Pigs	3	8	— 4	8

Beasts, 715; Sheep and Lambs, 6880; Calves, 362; Pigs, 260.

POTATOES.—Southwark, Waterside, April 23.

The Committee report that there have been many fresh arrivals since our last report, from Yorkshire, Scotland, and the Continent, all of which have met a ready sale, which can only be attributed to the very cold weather, as the supply was large for the time of year. To-day the weather is much milder, and will affect the demand considerably. The following are this day's quotations:—Yorkshire Regents, 130s. to 180s.; Scotch do., 120s. to 140s.; Scotch Cups, 110s. to 130s.; Whites, 100s. to 110s.; French Whites, 100s. to 120s., Belgian do., 100s. to 110s.; Dutch, 100s. to 120s.

MARK LANE

Monday, April 23.—This morning the supply of English Wheat by land carriage samples, although small for the season, slightly exceeded that of last week; fine qualities were taken off at the full prices of this day se'nnight, but inferior and much of the Kentish remained unsold at a late hour, although offered at a trifling decline. Notwithstanding a good attendance of country buyers, the business in foreign was of a retail character, at a decline of 1s. to 2s. per qr.—Barley fully supports our quotations.—Beans are the turn dearer.—Peas are unaltered in value.—The Oat trade is slow at last week's prices.

Friday, April 27.—The arrivals of foreign corn this week have been less than for some time past; nevertheless, having a thin and spiritless attendance of buyers at this morning's market, business was exceedingly limited, and where clearances were imperative purchasers were difficult to be found at a reduction of 1s. per qr, although holders generally were not disposed to press sales. English Wheat is unaltered in value.—Barley, Beans, and Peas remain as on Monday.—Oats are in good demand, and late prices fully supported.—Prices of Wheat throughout the country have declined 1s to 2s. per qr. since the 20th instant, and business has been generally of the most limited character in this and all other descriptions of corn. In the Baltic, owing to farmers being busily engaged in the fields, supplies of Wheat have been very small, and prices consequently about sustained. At Stettin the demand for consumption had rendered them even rather firmer; red Wheat varies from 36s. to 38s., f. o. b.; white or mixed, 37s. to 45s.

Liverpool, Friday, April 27.—The weather since Tuesday has been very fine. We have had a large arrival of Indian Corn, but of other articles the import has been moderate. At this day's market there was a fair attendance of dealers, and rather a good demand for Wheat at the full prices of Tuesday. Flour was not so freely offered, and the sale was more limited. We had only a moderate demand for Oats and Oatmeal at the same prices, which may be said also of Barley, Beans, and Peas. Indian Corn declined 1s. per Quarter, and the demand was tolerably active

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas
Mar. 10	45s 1d	29s 0d	16s 11d	26s 1d	30s 1d	33s 1d
— 17	45 4	29 2	17 0	23 9	30 11	30 8
— 24	44 9	28 10	17 1	26 4	28 9	31 6
April 7	44 5	28 9	16 9	24 5	28 1	29 6
— 14	44 3	28 6	17 0	23 1	28 5	30 11
— 21	44 5	28 8	16 8	22 4	28 11	28 9
Aggreg. Aver.	44 6	28 9	16 10	24 5	28 10	30 7
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Mar. 10	Mar. 17.	Mar. 24	Apr. 7.	Apr. 14.	Apr. 21.
45s 4d	..					
45 1	—					
44 9		..				
44 5			..			
44 5				..		
44 3					..	

Prices Current.	London. Apr. 16 qr.	London. Apr 23 qr.	Liverpool. April 17 70 lbs.	Liverpool. April 24. 70 lbs.	Wakefield. Apr 13 qr.	Wakefield. Apr. 20 qr.	Boston. Apr. 18 qr.	Boston. Apr. 25 qr.	Birmingham. April 19. 62 lbs.	Birmingham. April 26. 62 lbs.
Wheat—										
New, red	40 to 42	40 to 42	6 6 10	6 3 6	43 to 47	45 to 48	41 to 47	40 to 46	6 0 6 5	10 6 4
„ white	46 — 48	46 — 48	7 0 7 7	6 9 7 4	45 51	46 — 52	45 — 50	44 — 48	6 5 6 11	6 3 6 8
Old, red	42 — 46	42 - 46	6 8 6 11	6 6 6 9	42 - 44	43 - 45	—	—	6 2 6 8	6 0 6 5
„ white	48 — 52	48 - 52	7 0 7 8	7 0 7 6	— 50	51	—	—	6 4 7 0	6 2 6 10
Foreign	38 — 58	38 - 58	4 4 8 0	4 6 8 0	39 51	40 - 52	—	—	5 6 7 2	5 2 7 0
			480 lbs.	barrel						
Rye—New	22—24	22—24	—	—	—	—	—	—	—	—
Foreign	22—23	22 23	—	—	—	—	—	—	—	—
Foreign meal	6l.—7l.	6l.—7l.	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding	22 - 26	22 - 26	—	—	21 - 22	22 23	24—26	24 — 26	23—26	23—25
Malting	25 - 29	25—29	30s—32s	30s—32s	26 - 31	27 - 32	28—30	28—30	29—34	29—33
Foreign	19—29	19—29	—	—	21 - 26	22—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship	—	—	—	—	39 - 42	39 - 42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White	19—26	19—26	2s 4d 2s 9d	2s 6d 3s 0d	- -	—	14—19	14—19	18—30	18—30
Black	16—22	16 - 24	2 3 2 7	2 5 2 8	-	—	—	—	17—18	17—18
Foreign	16—20	15—20	2 3 2 5	2 4 2 7	—	—	—	—	—	—
			qr.	qr.		qr.				
Peas—Boilers	25— 28	25— 28	34s—	34s—	28—32	28 32	—	—	33—38	33—40
									196 lbs.	196 lbs.
Grinding	23—26	23 - 26	27 —28s	27 —28s	—	—	—	—	11—12	11—12
Foreign	24 - 33	24 - 33	30 —33	30 —33	—	—	—	—	—	—
Beans—										
New, small	20—30	21 - 31	30 —33	28 - 33	29 - 30	29—30	26—32	26—32	11—13	11—14
Longpods, &c.	26—32	27—33	—	—	—	—	—	—	—	—
Old	27 - 30	—	32 - 34	32 —34	35—36	35 - 36	34—36	34—36	14—16	14—16
Foreign	21—36	21—36	24 —32	24 —32	25—27	25—27	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32 -40	32—40	—	—	—	—
Foreign	36—40	36—40	—	—	—	—	—	—	—	—
Linseed Cakes										
British	9l. 7s	9l. 7s	7l. 12s	7l. 12s	—	—	—	—	—	—
Foreign	6l.—9l.	6l.—9l.	—	—	—	—	—	—	—	—
Indian Corn	26— 30	26— 30	30s—33s	30s—33s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	36—44	36—44	32—37	32—35	—	—	32 - 38	32—38	34—40	34—40

Weekly Averages and Imports.	Aver. Apr. 21	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT	47 5	7590	44 3	3677	43 11	9417	46 2	1988	44 8½	5856
BARLEY	30 0	180	28 10	1328	28 6	3059	—	—	—	500
OATS	18 7	1710	16 10	1969	17 9	402	13 10	505	18 0	1100
RYE	23 7	—	25 2	—	—	—	—	—	—	—
BEANS	34 5	—	—	2118	29 7	451	29 5	251	—	26
PEAS	29 10	—	—	321	24 6	30	—	—	—	—

Signed { *Kingsford and Lay.* | *Segar and Tunnicliffe.* | *Sandars and Dunns.* | *Thomas Wright.* | *J. and C. Sturge.*

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, have the pleasure to hand their New List of Prices of SHEET GLASS for Cash.

HORTICULTURAL GLASS,

CUT TO SIZE UP TO 40 INCHES LONG.

16 oz. from 3d. to 3½d. per foot.	SHEET SQUARES. In boxes of 100 feet.	
21 „ 3½ „	Under 6 by 4	12s. 6d.
26 „ 3½ 7½ „	6 by 4 and 6½ by 4½	15 0
32 „ 4 9½ „	7 by 5 and 7½ by 5½	17 6
	8 by 6 and 10 by 8	20 0

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS, in sizes not exceeding 5 feet superficial.

¼ thick ... per foot 1s. 0d.	½-inch per foot 2s. 0d.
⅜-inch ... 1 2	1 inch ... 3 0
⅛-inch ... 1 6	

PATENT ROUGH PLATE TILES.

⅛ thick each 0s. 11d.	¼-inch ... each 1s. 7d.
½-inch ... 1 8	⅝-inch ... 2 0

SHEET GLASS TILES AND SLATES.

	16-oz.	21-oz.	26-oz.	32-oz.
Tiles made of Sheet Glass	8d.	10d.	1s.	1s. 4d.
Slates, 20 ins. by 10		10d.	1s.	1s. 4d. 1s. 8d.

Slates are kept in stock of the usual sizes, and made to any dimensions.

GLASS MILK-PANS, PROPAGATING AND BEE GLASSES, Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, Lamp Shades, and Lactometers for trying the quality of Milk. 4 tubes 7s 6d.; 6 tubes, 10s. Self Registering Thermometers for Greenhouses.

HARTLEY'S PATENT ROUGH PLATE GLASS.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 31, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

GLASS.

E. AND W. H. JACKSON are supplying SHEET, ROUGH PLATE, and CROWN GLASS for Horticultural purposes, at very reduced prices. BRITISH AND PATENT PLATE of superior manufacture, for Glazing dwelling-houses, for which purpose these articles are now superseding all inferior Glass. ORNAMENTAL GLASS of the newest designs for the decoration of Conservatories, &c. E. and W. H. J. also supply PATENT OPTICAL FLINT GLASS, Thin Glass, Slides and Cells for Microscopic purposes, French Shades, Propagating Glasses, &c. Estimates, Lists of Prices, and every information forwarded on application at their Warehouse, 315, Oxford street, London.

GLASS.

THOMAS MILLINGTON, 87, Bishopsgate-street-without, London (same side as Eastern Counties Railway Terminus) BRITISH PLATE GLASS, 1 early ½ inch thick, in sizes under 1 foot superficial, 1s 2d. per foot; this is the best article for Greenhouses and Garden Frames of every description, as nothing can break it in an ordinary way. Horticultural Glass, in cases of 200 feet, No. 16 oz., 40s.; No. 21 oz., 60s.; No. 26 oz., 87s 6d., No. 32 oz., 112s. each, case included

Cut Squares, in 100 feet boxes. Crown. No 16 Horticultural.

Sizes under 6 ins. by 4 ins.	10s. 6d.		12s. 6d. per box.
6 by 4 „ 7	by 5	12 6	15 0 „
7 by 5 „ 8	by 6	14 6	17 6 „
8 by 6 „ 10	by 8	16 6	20 0 „

Squares above 10 by 8, in Crown or Horticultural, 2½d to 3d. per foot, according to size and quantity. Patent Rough Plate Tiles, ⅛ in., 10d.; ¼ in., 1s. 3d. each; do. Slates, ⅜ and ½ inch thick. Patent Rough Plate Glass for Skylights, Warehouses, and Floors, ⅛ in. thick, 6d.; ¼ in., 1s.; ⅜ in., 1s 2d., ½ in., 1s. 6d.; ⅝ in., 2s.; 1 in., 3s. per foot, in sizes under 5 feet superficial. Lactometers, for testing the quality of milk, 4 tubes, 7s 6d.; 6 tubes, 10s. complete. Glass Milk pans, Pastry Slabs, Rolling Pins, and Moss Dishes for Bulbous Plants. Propagating and Bee Glasses Fish Globes. Gas and Lamp Glasses of every description. Linseed Oil Putty, 8s., White Lead, 28s per cwt. Linseed Oil, Turpentine, Paints, Colours, Varnishes, Brushes, and Tools in every variety.

AGRICULTURAL SEEDS (delivered carriage-free to London, or any Station on the Eastern Counties or Eastern Union Lines), all of the finest quality for growth and stock.

MANGOLD WURZEL, fine long red	per lb.	0s	6d
„ „ Yellow Globe and Red Globe	„	0	9
„ „ Long Yellow	„	1	0
WHITE SILESIAN SUGAR BEET	„	1	0
CARROT, large White Belgian	„	1	0
„ large green-top red Altringham	„	1	0
LARGE CATTLE PARSNIP	„	1	3
TURNIP, Swedes, fine purple-top	„	1	0
„ „ Skirving's	„	1	0
„ „ Norfolk White, Green, and Red round	„	0	6
„ Skirving's Improved Purple-top Scotch	„	0	10
„ Fine Green-top Yellow Scotch	„	0	10
„ Dale's Hybrid	„	0	10
„ Yellow Tankard or Scotch Pudding	„	0	10
And all other Turnips at the lowest prices.			
LARGE DRUMHEAD CATTLE CABBAGE	„	2	6
FINE LUCERNE	„	0	10

GRASSES.

The best selected varieties, mixed for Permanent Pastures, suited to different descriptions of soils. Having for many years devoted considerable attention to the selection and supply of these Grasses, we are enabled to offer them with a confidence of their giving entire satisfaction. Price, per bushel, with the addition of a proportion of Clover and heavy Grasses, 10s.; or 30s. per acre of 3 bushels and 6 lbs.

THE FINEST MIXED LAWN GRASSES, 5s. per peck, ¼ or per lb.		1	3
Fine Pacey Rye Grass, per bushel		5	0
True Italian Rye Grass, per bushel		5	6

All other Agricultural Seeds at the lowest prices. Our Agricultural Seed List will be forwarded on application. Also prices to the trade.

BASS and BROWN, Seed Establishment, Sudbury, Suffolk.

NETTING OF ALL SIZES FOR FRUIT TREES, &c., sold for ready money only, by RENWAY and Co., Bridport, Dorset.

1 foot wide, 2 inch mesh, to protect rows of Peas, Strawberries, &c. from birds	½d. per yard run.
2 feet wide, 2-inch mesh, ditto	1½d. „
2 inch mesh, any size	2d. per sq. yard.
2½ inch mesh	1¾d. „
2½ inch mesh	1½d. „

Waterproof Netting double the price of the above, and will last 20 years, with care.

Rabbit Nets set to line, 5 feet deep, 4d. per yard.
Do. 4 do. 3d. „
Sheep Nets, 5 do. 6d. „
The Nets to be Tanned as for exportation.
Fishing Nets of all kinds made to order.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS PROTHEROE AND MORRIS will submit to public competition, by Auction, at the Mart, Bartholomew-lane, on THURSDAY, May 3d, 1840, a first-rate collection of CARNATIONS, PICOTEES, PINKS, choice GERANIUMS, FUCHSIAS, CINERARIAS, DAHLIAS, &c., and a variety of plants in bloom.—May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark-lane, on MONDAY, April 30, 1840, at Two o'clock, precisely, 1000 Tons PERUVIAN GUANO, imported by Messrs. ANTONY GIBBS and SONS. The greater part to be delivered overside the Import Ship. Catalogues and further particulars in due time, from J. A. RUCKER and BENCRAFT, Brokers, 26, Commercial Sale Rooms, Mincing-lane, London.

GREEN ROAD, SOUTHSEA, about ½ a mile from Portsmouth

TO BE SOLD BY PRIVATE CONTRACT.—A Plot of FREEHOLD LAND, about 1¼ acre, which has been upwards of 20 years in cultivation as a Nursery, with a Young Stock. Also a stock of large Fruit Trees, in full bearing, with Greenhouse 84 feet in length, two Melon Pits, &c., with supply of good water. It is situated in the healthiest part of Southsea. As the present proprietor is declining business, it will be sold a bargain, with or without the Nursery Stock. The ground is adapted for the nursery business, or for a Gentleman to build a Family Residence.—For particulars apply to Mr. J NOBES, Nurseryman, &c., Green-road, Southsea, Hants.

TO NURSERY AND SEEDSMEN.

TO BE SOLD by Private Contract, that old and long-established Nursery and Seed Business BROMPTON PARK NURSERY, carried on for many years by Messrs GUAL, ADAMS, and HOGG; the situation is first-rate, and the connection good.—For particulars apply to Mr. JOHN SANGSTER, Nursery Seedsman, Newington Butts, London; Mr. ROBERT DONALD, Nurseryman, Woking, Surrey; or to SOLE and TURNER, Solicitors, 68, Aldermanbury, London.

MR MACFIELD'S GRAND COLLECTION OF TULIPS will be sold on the Premises, New North-road, Hoxton, on WEDNESDAY, May 23d. Catalogues to be had at the meeting places of the Society for the Encouragement of Floriculture and Horticulture; at the Red Lion, Hampton; Star Inn, Slough; Greyhound, Dulwich; and of Mr. MACFIELD, Bookbinder, Hoxton, who will forward them by post to any part of England.

FOR SALE.—A Covered Van, Horse, and Harness, complete or separate. The Van is a very superior one, painted green, with grasshopper springs; the Horse is a bright bay, rising 6 years old, 17 hands high; Harness, brass mounted, nearly new.—Address, I. T., White Hart Hotel, Bromley, Kent.

TO BE LET, on Lease, a FARM, in the county of Warwick, consisting of about 80 acres, Meadow and Pasture, and 160 acres of Arable. A respectable House, and the Farm Buildings in good repair.—Applications to be addressed to Mr. W ENDALL, Land Agent, Henley-in-Arden, Warwickshire.

MESSRS REID AND BEVAN beg to call the attention of Agriculturists seeking Farms to their immediate and Michaelmas Entry List, of good Stock, Corn, and Dairy Farms, in all parts of the country—the full particulars of which may be obtained by enclosing six postage stamps to their offices 38, Red Lion-square, London.

HEAL AND SON'S LIST OF BEDDING, containing a full description of Weights, Sizes, and Prices, by which purchasers are enabled to judge the articles best suited to make a good set of Bedding, sent free by post, on application to their Factory, 196 (opposite the Chapel), Tottenham-court-road, London.

MURIOPHOSPHATE.

PONTEY, ROWE AND CO., beg to call the attention of their Friends and Agriculturists generally to the above valuable MANURE, which they continue to manufacture under the inspection of an eminent agricultural chemist. This Manure has been sufficiently tested to enable the Advertisers to say it is equal to any now offered to the public, and in consequence of the favourable testimonials received from a number of gentlemen who have tried it, they have been induced to prepare a large stock, which they can supply immediately in excellent condition.

The following is the copy of a letter just received.

"Old Newnham, Plympton, April 21, 1840.—Gentlemen, Having used your Muriophosphate in competition with several other manures, I have great pleasure in informing you that it proved by far the most valuable. I applied only 2 cwt per acre, with peat ashes, and such was the superiority of the crop of Turnips, that it was awarded the first prize at the South Devon Agricultural Show in December last, where there were 16 other competitors! You may safely recommend the Muriophosphate for the poorest land, as my crop was grown on thin, shelly, rocky, soil. I shall require a considerable quantity this season, and hope you are prepared with a large stock of the same quality. I am, gentlemen, your's respectfully, GEORGE COAKER.

"To Messrs PONTEY, ROWE, and Co.,
Manure Merchants, Plymouth."

P., R., and Co. also manufacture BONE MANURE, half-inch and fine dust, warranted genuine, which they will deliver free to any part in the west of England, or to Exeter, per rail. They have also on hand a supply of Superphosphate of Lime, Peruvian Guano, Nitrate of Soda, Gypsum, Salt, Charcoal, &c. Samples of each may be seen, and prices obtained, on application at the Bone Mills, Drake's place, or to Mr. PONTEY, Cornwall-street, who will furnish any information required relative to quantity and sorts for various crops and soils.

Drake's place, Plymouth, April 28.

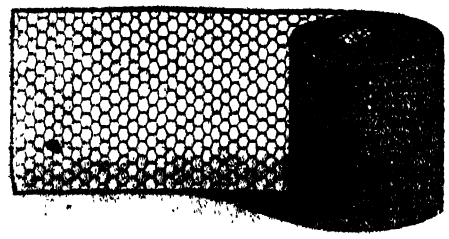
MANURE IS MONEY.

Most important to Land Proprietors, Farmers, Graziers, Gardeners, and others.

A NEW AND EXCELLENT TREATISE, "THE FARMER'S FRIEND AND COMPANION;" showing how to Farm to meet the Times, and save Money, by introducing, for the benefit of the Agriculturists, a new and most valuable Receipt for the Manufacturing of the New Patent Manure, which will be sent gratis, and can be manufactured without a License by every Farmer, as the preparation is most simple and cheap, and suitable for all seasons, soils, and crops, at the trifling expense of 1l. per acre, warranted equal to 12 loads of farm-yard manure, and a perfect substitute for all foreign manures. Also showing how to Fatten every description of Stock and Poultry, at one-third the cost now adopted, the best and cheapest method of Draining, &c. This valuable Treatise on Farming and Grazing, registered and entered at Stationers' Hall, contains also a collection of 150 of the most valuable Receipts ever discovered in Agriculture for profit, &c., with full directions for use, by the late celebrated agriculturist, Mr. ELLMAN, and others, and patronised and highly recommended by H. R. H. Prince Albert, at Windsor Farm, the Royal Agricultural Society of England, their Graces the Dukes of Richmond, Portland, and Bedford, &c. &c., and will be forwarded without fail, by return of post, free, to any part of the country, by enclosing 1s., or 13 postage stamps, addressed, prepaid, to Messrs. TAYLOR and Co., 49, Exeter-street, Lisson-grove, London. Mind the address.

N.B. The Receipt for Manufacturing the Patent Manure can be had alone by forwarding six postage stamps.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.

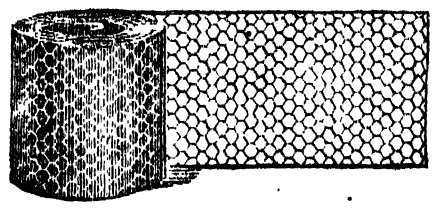


	Galvanized.	Japanned Iron.
2-inch mesh, light, 24-inch wide	7d. per yd.	5d per yd.
2-inch " strong "	9 "	6½ "
2-inch " extra strong "	12 "	9 "
1½-inch " light "	8 "	6 "
1½-inch " strong "	10 "	8 "
1½-inch " extra strong "	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3d. per yard	36 inches wide	7½d. per yard
18 " "	4½d. " "	36 " "	9d. " "
24 " "	6d " "	48 " "	1s. " "

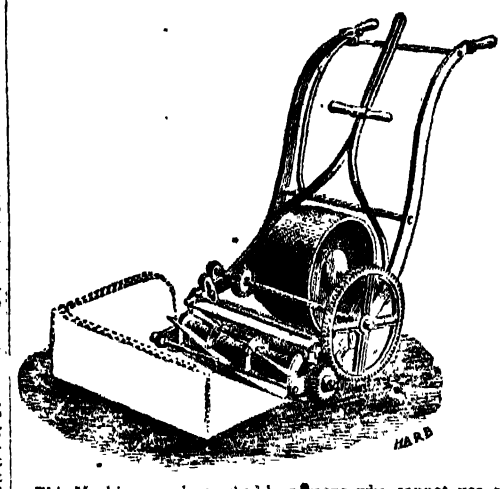
Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c; Window Blinds, 1s 10d per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d each; Garden arches, 20s. each; Flower Stands, from 3s. 9d each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 63, Snow-hill, London.

BUDDING'S PATENT MACHINE FOR CUTTING LAWNS, PLEASURE GROUNDS, BOWLING GREENS, &c.

MANUFACTURED AND SOLD BY

JOHN FERRABEE AND SONS, Phœnix Iron Works, near Stroud, Gloucestershire, Engineers, Millwrights, Machinists, Iron and Brass Founders, and Manufacturers of Agricultural Implements.



This Machine may be worked by persons who cannot use a scythe. It may be adjusted to cut any length, and leaves a more even and uniform surface than can be produced by the most skilful mower. The Grass may be cut when dry, and may be collected in the box, enabling the gardener to cut his lawns at the most convenient time, and rendering sweeping afterwards unnecessary; while, with the same amount of labour, more than double the quantity of work can be done than with a scythe. Upwards of 3000 of these machines are now in use. They are made of various sizes both for hand and horse power, and the prices this season have been considerably reduced.

Messrs. Ransome and May, Ipswich, are General Wholesale Agents for London, Middlesex, and the adjacent counties; also for Cambridgeshire, Northamptonshire, Lincolnshire, and the Eastern Counties.

The Machines are also sold by the following Ironmongers: Mr. W. Drury, Castle-street, Liverpool; Messrs. Lister and Lees, Cateaton-street, Manchester; Messrs Mappleback and Lowe, Bull-ring, Birmingham; Messrs J Nelson and Sons, 47, Briggate, Leeds; Mr. T. Johnson, Leicester; Messrs. Young and Sycamore, Shrewsbury; Messrs Sandars & Haywood, Derby; and Mr. John Higginsworth, Market-place, Nottingham.

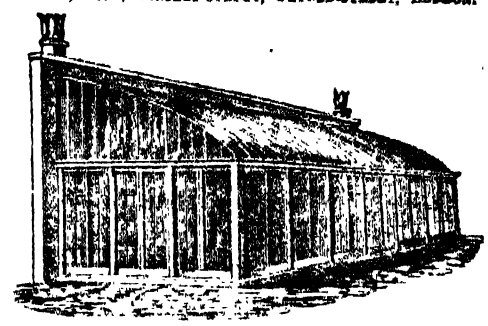
GUANO AND OTHER MANURES.

PERUVIAN GUANO, of the finest quality, direct from import warehouse.
NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SULPHURIC ACID AND COPROLITE.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of

MARK FOTHERGILL, 291 A, Upper Thames-street, London.

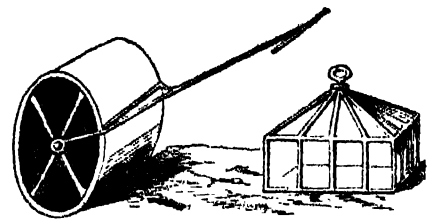
A Treatise on Guano, Superphosphate of Lime, &c., will be forwarded on receipt of 8 postage stamps. Free to purchasers of Guano, &c.

COTTAM & HALLEN, ENGINEERS, IRON FOUNDERS, &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON.



COTTAM and HALLEN having had experience in the erection of HOTHOUSES and CONSERVATORIES (made of Iron or of Iron and Wood combined), and from many improvements they have made during that time, can with confidence undertake to erect such buildings with economy and dispatch.

HOT WATER APPARATUS for heating the above and other buildings of which they have constructed upwards of 3000, fixed at greatly reduced prices.



COTTAM and HALLEN have on show at their repositors, No 2, Winsley-street, Oxford street, a great variety of the following articles, for GARDENS, &c., at GREATLY REDUCED PRICES, viz.

Garden Rollers,	Hand-glass frames,
Garden Engines,	Flower Stakes,
Garden Syringes,	Flower-bordering,
Watering Pots,	Flower Stands,
Garden Vases,	Garden Arches,
Mowing Machines,	Garden Chairs.

Every description of Work, both plain and Ornamental in wrought and cast iron, for Gardens, &c. &c.

HORTICULTURAL TOOLS and AGRICULTURAL IMPLEMENTS of all kinds.

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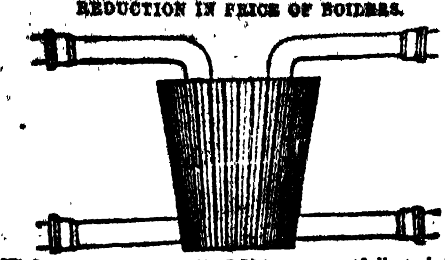

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C. Lidgard, Secretary.

ERICA MURRAYANA.

THOMAS JACKSON and SON are now sending out, in 3-inch pots, well established plants of this beautiful ERICA. It is a hybrid between E. aristata and E. vestita coccinea, raised by Mr. A. Turnbull, of Bothwell Castle Gardens, from whom we received it. It is figured in "Paxton's Magazine of Botany," Vol. II., No. 124, and was exhibited at the Royal Botanic Gardens, Regent's-park, and awarded their Seedling Prize.

Plants, 10s. 6d. each, with one added for every three ordered. Nurseries, Kingston, Surrey, May 5.

BASS and BROWN'S PRICED DESCRIPTIVE CATALOGUE OF GERANIUMS, FUCHSIAS, PETUNIAS, VERBENAS, DAHLIAS, CHRYSANTHEMUMS, GREENHOUSE and STOVE PLANTS, &c., will be sent free by post on application.—Seed and Horticultural Establishment, Sudbury, Suffolk.

NEW VERBENA, "BEAUTY OF HANDSWORTH."

HENRY POPE begs to inform his friends and the public generally that he is now ready to supply plants of the above VERBENA; colour, a beautiful bright pink, with light eye, the truss of exquisite form and good habit.

Plants 5s. each.—Gib Heath, near Birmingham.—May 5.

NEW AND SUPERB FANCY DAHLIA—"GENERAL CAVAIGNAC."—This magnificent Fancy Dahlia is now being let out, as well as all other new Dahlias raised by other growers, by E. HUNT, 27, Sale-street, Paddington, where Catalogues may be had on application. "General Cavaignac" is in colour bright crimson, tipped with pure white, petals of great consistency, well cupped, quite free from ribbing, and perfectly smooth on the edges. It was awarded First Class Certificates by the London Floricultural Society, August 8th; at Rosherville, Aug. 15th; at Salisbury, Aug. 24th; at Devizes, September 1st; at the Royal South London, Sept. 13th; at Slough, Sept. 22d, and at the North London, Sept. 26th. Price, 10s. 6d. per plant, with the usual discount to the trade. Remittances respectfully requested from unknown correspondents.

UNBLOOMED SEEDLING CALCEOLARIAS.

HENRY MAJOR, Knosthorpe, near Leeds, begs to announce that he is now sending out his Unbloomed Seedling CALCEOLARIAS, saved from fine varieties, in parcels of 20, at 7s. 6d. per parcel, or three parcels for 1l., post-free. They will all bloom this year. A few sets of H. M.'s 10 beautiful new shrubby Calceolarias still remain, at 2l. the set. A Descriptive List of the New Calceolarias, as well as of a few choice Pansies, may be had on prepaid application. From unknown correspondents a remittance is respectfully requested with the order.

JOHN RIVERS begs to direct the attention to the following new and genuine TURNIP SEEDS.

		s.	d.
Skirving's large short-necked Swede. This variety has been much improved by several years' attention in cultivating those with a short neck	per lb.	1	0
Purple-top Swede	,,	1	0
Laing's	,,	1	0
Dale's hybrid, superior stock	,,	1	0
Rivers' do., Green-top White, large	,,	1	0
Common white	,,	0	7
Do. Purple-top do.	,,	0	7
Do. Green-top do....	,,	0	7

A reference is requested from unknown correspondents. Carriage paid to London for orders of 20 lbs. and above.

Sawbridgeworth, Herts.

FUCHSIAS, INDIAN AZALEAS, CAMELLIAS, DWARF ROSES, VERBENAS, CINERARIAS, PETUNIAS, and CHRYSANTHEMUMS can be obtained at the lowest prices, on application to William E. Rendle and Co., Nurserymen, Plymouth.

Our new Plant Catalogue is now ready, and can be had on application.

TWELVE FIRST-CLASS GERANIUMS can be selected from RENDLE'S CATALOGUE for 20s.; or 20 for 30s. Twelve Second-class do. for 10s. Catalogue on application to William E. Rendle and Co., Nurserymen, Plymouth.

SWEDE TURNIP SEED.—IMPROVED PURPLE-TOP; this variety has been carefully selected from Skirving's Liverpool. Price 40s. per bushel, and every other kind of Seeds in cultivation, of the best quality, and moderate price, at J. G. Waite's, Seed Merchant, 181, High Holborn, London.

BEDDING PLANTS.

JOHN HAYES, Florist, Farnham, Surrey, begs to offer upwards of 100 distinct varieties of Bedding Plants, 14 varieties of Geraniums, including Colling's Superb, Shrubland Superb, and Tom Thumb, from 2s 9d. to 3s. 6d. per dozen. 14 varieties of Verbenas, from 2s. to 3s. 6d.; and other varieties described in Catalogues, which will be sent on receipt of one postage stamp.

THE EXHIBITION OF AMERICAN PLANTS AT OAKLEY SQUARE, KING'S ROAD, CHELSEA, WILL BE CONTINUED THIS YEAR, AS USUAL. HOSEA WATERER, KNAP HILL NURSERY, WOKING, SURREY.

EDWARD GEORGE HENDERSON, Wellington Nursery, St. John's Wood, London, is now sending out—

Phlox depressa, at 7s. 6d. and 10s. 6d. each. Of the latter size only four plants are left.

Gaillardia splendidissima, 10s. 6d. each.

Petunia elegantissima, 5s. each.

Salvia azurea compacta, at 5s. and 10s. 6d. each. Of the latter size only three plants are left. For description of the above see *Gardeners' Chronicle* of April 14.

Salvia patens alba, 2s. and 2s. 6d. each, and 18s. per dozen.

,, oppositifolia, 2s. 6d. each, and 24s. per dozen.

Browallia Jamesonii, 3s. 6d. and 5s. each.

Plumbago Larpentæ, 2s. 6d. each, and 24s. per dozen.

Calceolaria species, a new shrubby yellow, 2s. 6d. and 3s. 6d., and 24s. per doz.

Calceolaria Kentish Hero, 1s. and 1s. 6d. each, and 12s. p. doz.

,, Amplexicaule, 9d. and 1s. each, and 9s. per doz.

,, Shankleyana, 3s. each, a darker variety than Kentish Hero.

Fuchsia serratifolia multiflora, 2s. each.

Pentstemon cordifolia, a distinct variety, 3s. 6d. and 5s. each.

Impatiens, or Balsamina repens (prostrata), a beautiful yellow, 3s. 6d. each.

Verbena John Salter, scarlet orange, crimson centre; a splendid and most desirable variety, 3s. 6d. each.

Anemone japonica, 9s. per dozen.

,, ,, hybrida, a new hybrid between vitifolia and japonica, and will make an acceptable addition to the bedding plants, 2s. 6d. each, 24s. per doz.

Veronica speciosa coccinea, a fine variety, 2s. 6d. each.

The Trade supplied.

SELECT PLANTS.—The following are now sending out, strong plants; any may be had free by post without extra charge, except those marked p. Packages delivered carriage free to London, or with orders of 40s. and upwards, plants sent gratis for expense of distance. Particular attention is paid that all plants are true to colour and name, and sent carefully and securely packed for travelling to any distance.

BEDDING PLANTS.

ANAGALLIS COCCINEA SPLENDENS, 6s. per dozen.
BOUVARDIA SPLENDENS, 6s. per doz.; Flava, 9s. per doz.
p. BALSAMINA LATIFOLIA, 5s. to 9s. per dozen.
p. CALCEOLARIA, in 5 fine shrubby varieties, 9s. per dozen.
CHÆNOSTOMA POLYANTHA, 6s. per dozen.
CUPHEA, in 3 fine varieties, 6s. per dozen.
GAILLARDIA, in 5 varieties, 6s. per dozen.
HELIOTROPIUM VOLTARIANUM, 6s. to 9s. per dozen.
,, ,, PERUVIANUM, 6s.
,, ,, TRIOMPHE DE LIEGE, 9s. per dozen.
LANTANA CROCEA, 6s. to 9s. per dozen.
LOBELIA ERINUS GRANDIFLORA and COMPACTA ALBA, 4s. to 6s. per dozen.
PLUMBAGO LARPENTÆ, 18s. per doz., or 2s. 6d. each.
,, CAPENSIS, 6s. to 9s. per dozen.
SALVIA, in 6 fine vars., 6s. per doz; Patens alba, 2s. each.
,, OPPOSITIFOLIA, 12s. to 18s. per doz.; each, 2s. 6d.
ZAUSCHNERIA CALIFORNICA, 1s. 6d. each.
FUCHSIAS, in fine select assortment, 5s. and 9s. per dozen.
,, superior new vars. of 1848, 15s. per dozen.
VERBENAS and PETUNIAS, fine and select, 4s. to 7s. 6d. per dozen.
Ditto ditto superior new of 1848, 12s. per doz.
CHRYSANTHEMUMS, fine and select, 6s. to 9s. 6d. per doz.
Ditto, superior new varieties, 15s. per dozen.
p. GERANIUMS, fine and select vars., 6s. and 9s. per dozen.
p. ,, superb show varieties, 12s. per dozen.
p. DAHLIAS, fine and select, 5s. and 9s. per dozen.

HARDY BEDDING PLANTS.

ANTIRRHINUM, in fine select vars., 6s. per dozen.
ANEMONE JAPONICA, 5s. per dozen.
CAMPANULA NOBILIS, 9s. per dozen.
LOBELIA, in 4 fine varieties, 9s. per dozen.
PENTSTEMON, in 8 fine vars., 7s. 6d. per dozen.
PHLOX, in fine assortment, 9s. per dozen.
20 varieties, 12s. 6d.
p. ROCK PLANTS, 25 vars., 12s.; 12 vars., 7s. 6d.

SELECT GREENHOUSE AND STOVE PLANTS.

	s.	d.
12 ACHIMENES, fine and select, 7s. 6d.; 6 fine new	15s	0d
p. 6 GLOXINIA, in 6 fine varieties	6	0
p. 50 vars. fine and select GREENHOUSE PLANTS...	50	0
p. 25 ditto, 28s.; 12 vars.	15	0
p. 12 Select GREENHOUSE CLIMBERS	12	0

Our Priced Descriptive Plant Catalogue will be sent free by post, on application.

Post-office orders may be made payable to either Bass and Brown or to Stephen Brown. Remittances requested from unknown correspondents.

Seed and Horticultural Establishment, Sudbury, Suffolk.

FIRST CLASS DAHLIAS.

JOHN KEYNES begs to submit the following list of First Class DAHLIAS, at reduced prices: [illegible] Lilac Standard, the best out in its class; Purple Standard, likewise first-rate; Miss Chaplin, Sunset, and Victoria [illegible]. Parties ordering the four first-named varieties, will have Victoria Regina included without charge. All the most approved Flowers in cultivation, at proportionally moderate charges. Orders directed to John Keynes, Castle-street Nursery, Salisbury, will meet with immediate attention.

FANCY DAHLIAS.

JOHN KEYNES, of Salisbury, will be ready to send out the following splendid and most constant flowers of the season, in May, at 7s. 6d. each. Miss Blackmore, Rainbow, Miss Stevens, and Sunbeam, all of which have been accorded certificates at the principal exhibitions.

DAHLIA PRIZES.

JOHN KEYNES, of Salisbury, offers the following Prizes for the best Six Blooms shown from the nine Flowers advertised as above, at the Salisbury, London Floricultural, and South London Societies. First Prize, 2l.; 2d do., 30s.; 3d do., 1l.; 4th do., 15s.; 5th do., 10s. Open to Amateurs and Gentlemen's Gardeners. No entrance money.

SEEDLING PELARGONIUMS.

J. HINE has still fine plants of his set of Ten New Varieties, which he can strongly recommend, 5l. the set. Also, of Miller's Set of Eight, price 25s. Descriptive Catalogues on application.—Providence Nursery, Ramsgate.

STORY'S HYBRID FUCHSIAS, "VIOLA LUTEA," &c.

MESSRS. VEITCH and SON will commence sending out plants of the following Beautiful Novelties, on Monday next, the 7th inst. All orders will be executed in the rotation received.

FUCHSIA, STORY'S "ELEGANTISSIMA" ...... [illegible]
,, ,, "NEWTONIENSIS" ...... [illegible]
,, HEBEN'S "GEM OF THE WEST" [illegible]

The usual discount to the Trade when three of each or more are taken.

"VIOLA LUTEA," 5s. each, or Six Plants to the Trade for 21s.—Exeter, May 5.

N.B.—From unknown correspondents a respectable reference or the amount prepaid is required, without which plants cannot be sent.

ROYAL NURSERY, SLOUGH.

C. TURNER has strong plants now ready for delivery of those superior new DAHLIAS and VERBENAS advertised in the *Gardeners' Chronicle* of March 24th, 31st, and April 7th. Also the following, the selection of which being left to C. T., first-rate varieties may be depended on:

Dahlias, 12s., 18s., 24s., and 30s. per dozen.
Fancy Dahlias, 9s., 12s., 18s., 24s. and 30s. per dozen.
Fuchsias, 9s., 12s., and 18s. per dozen.
Chrysanthemums, 6s., 9s., and 15s. per dozen.
Geraniums, 12s., 18s., and 24s. per dozen.
Petunias, 6s., 9s., and 12s. per dozen.
Pansies, 6s., 12s., and 20s. per dozen.
Verbenas, 6s., 9s., 12s., and 18s. per dozen.
Anemone japonica, 9s. per dozen.
Plumbago Larpentæ, 1s. to 2s. 6d. each.
Cryptomeria japonica, 2s. 6d. to [illegible]

THE FINEST SHOW CARNATIONS, PICOTEES, PINKS, PANSIES, FUCHSIAS, VERBENAS, CINERARIAS, GLOXINIAS, &c.

YOUELL and Co. are now executing orders for the above, in strong healthy plants, at the following prices. Also their superb new Red-edged Picotee, "The Gem," at 10s. 6d. per pair.

CARNATIONS AND PICOTEES.	£	s.	d.
12 pairs of very fine show flowers, by name, 1l. 4s. and	1	16	0
25 ditto ditto ditto 2l. 10s. and	3	6	0
12 pairs of newest and finest first class show flowers ...	2	16	0
25 ditto ditto ditto ditto ...	5	0	0

Fine mixed border Carnations, 12s. per dozen pairs.

PINKS.—Finest first class show varieties, 12s. and 18s. per dozen pairs.

PANSIES.—Finest first class show flowers, 10s. and 12s. per dozen.

FUCHSIAS.—The newest and most beautiful varieties out, 9s., 12s., and 18s. per dozen.

VERBENAS.—The most select and beautiful of last season, 6s. to 9s. per dozen.

CINERARIAS.—Fine flowering plants of the best show varieties, 9s. to 18s. per dozen.

CHRYSANTHEMUMS.—The most select of the new and beautiful varieties, 9s. to 12s. per dozen, per post, free.

GLOXINIAS.—A most splendid collection of new varieties, including Teuchlerii, Griffithii, &c., 12s., 18s., and 24s. per doz.

ERICAS.—Fine bushy plants of the best free flowering sorts, 9s. per dozen.

FLOWER SEEDS.—20 packets of new and choice kinds, per post, free, for 6s.

Catalogues of the above, with an extensive variety of highly ornamental plants, will be forwarded by enclosing two postage stamps.—Great Yarmouth Nursery.

BEDDING PLANTS, strong and well rooted.

		s.	d.
Cuphea platycentra	per dozen	4	0
Bouvardia coccinea		4	0
Heliotropes, Peruvian and Voltaireanum, 4s. to		6	0
Salvia patens alba		18	0
,, fulgens and patens		6	0
Roses, Teas and Bourbons		9	0
Fuchsias and Petunias, 4s. to		6	0
Verbenas and Ageratums, 3s. to		4	0
Climbers: Lophospermums, Maurandyas, Eccremocarpus, Scabers, &c.		6	0
Verbena, Robinson's "Defiance," extra fine ...		6	0
Mimulus Coleii and Scarlet Geraniums ...		6	0
Zauschneria californica, 12s. to		15	0
Dahlias and Pentstemons		6	0
Phlox and Antirrhinums		6	0
Pansies, the best show flowers, 6s. to ...		[illegible]	0

Orders of 20s. and upwards will be sent [illegible] any distance not exceeding 100 miles.

Samuel Walters, Hilperton, Trowbridge, Wilts.

ESTABLISHED 1786.

GERANIUMS, DAHLIAS, &c., AT VERY LOW PRICES.

WILLIAM E. RENDLE AND CO. have much pleasure in announcing that the South Devon Railway was opened to Plymouth on Monday the 2d of April last; the terminal station being adjoining our Nursery Grounds.

We have this season a very large stock of Geraniums, Dahlias, Fuchsias, &c., including all the newest and best kinds in cultivation, and which we are enabled to offer at the following Low PRICES.

**** Our New Plant Catalogue is now ready, and should be obtained by all who have Gardens.*

GERANIUMS.

FIRST CLASS.—Purchaser's selection of 12 from the following List for 20*s*., or 20 for 30*s*.—Lyne's Mercury, Lyne's Star of the West, Folley's Black Prince, Lyne's Sir Walter Raleigh Gilbert, Lyne's Sir Robert Sale, Lyne's Nourmahal, Lyne's Remembrance, Lyne's Peri, Lyne's Queen of Beauties, Beck's Gigantea, Beck's Bacchus, Beck's Hebe's Lip, Beck's Desdemona, Beck's Margaret, Beck's Zenobia, Beck's Sirius, Beck's Rosy Circle, Foster's Orion, Beck's Mustee, Beck's Marc Antony, Beck's Isabella, Standard of Perfection, Gaines's Mary Queen of Scots, and Prince Alfred.

SECOND CLASS.—Purchaser's Selection of 12 from the following list for 10*s*.—Lyne's Duke of Cornwall, Sunrise, Rosebud, Chaplet, Apollo, and Sidonia; Hoyle's Sarah Jane, Titus, Gipsy Queen, and Champion; Catleugh's Orion, Thurtell's Othello and Pluto, Gaines's Duchess of Leinster and King of Saxony, and Foster's Madeline.

Other sorts from 5*s*. to 10*s*. per dozen.

SCARLET GERANIUMS.

20 plants of good varieties, including some of the following, for 15*s*.—Beauty of St. John's Wood, Hendersonii, Tom Thumb, Vivid, Compacta, Monarch, Eclipse, Britannia, Surpass Frogmore, and Cottage Maid.

DAHLIAS.

FIRST CLASS.—Purchaser's selection of 12 from the following list for 18*s*., including one plant of Tom's CHAMPION OF ENGLAND, and one plant of Tom's STAR OF THE WEST. These two excellent flowers were shown at the Exhibition of the Plymouth Amateur Dahlia Society, on the 28th of September, 1848, and won the Silver Medal. The following description is from the *Plymouth Herald*, October 7th, 1848. "An extra Prize (Silver Medal) was awarded to Mr. Toms, Gardener, Tamerton Foliott, for two exquisite seedlings, which bid fair to take a prominent place in future winning stands, named Tom's Star of the West, a flower possessing every requisite for a Show Dahlia, and unrivalled in colour, which is a clear bright yellow. The other, Tom's Champion of England, a flower of fine crimson, faultless in form, and perfectly unique as to its petals, which, instead of being as in other Dahlias, each petal in this variety is doubled, that is, there are two petals to one."—Cardinal Fernetti, Jenny Lind, Hamlet, Yellow Standard, Walter Hilson, Felix, Ackbar, Shylock, Toison d'or, Queen of England, Fire King, Boule de Feu, Florence Dombey, Andromeda, Queen of Sheba, Lady of the Lake, Mrs. Anderson, Arnel, Nell Gwynne, Belted Knight, Commander, Box, Roi de Pontilly, and Amy.

SECOND CLASS.—Purchaser's selection of 12 from the following list for 8*s*., or 20 for 12*s*.—Cassandra, Berrier, Lady Sale, Duke of York, Biondetta, Captain Warner, Princess de Radzville, Star, Metropolitan Queen, Model, Ludwig, Hanseatetain, Bijou de Golshault, Essex Rosy, Schoon Erfurture, Lady Featherstone, Adrian de Condille, Bertha von Gera, Alexandrina, Marc Antony, Beauty of Bath, Princess Wellina, Pantaloon, Prussia, Prima Donna, Master George Clayton, Madame Dresser, Madame Zaphler, Quinoto, Melina Adam, Lady Sangster, Eugene de Dijon, Miss Vyse, Joseph Balmio, Cleopatra, Bathonia, Sir Edmond Antrobus, Multicator, Mrs. Walner, Harlequin, Enterprise, Marquis of Aylesbury, Standard of Perfection, Victorine, Bees-wing, and Mrs. Keynes.

FUCHSIAS.

Purchaser's selection of 20 from the following list for 12*s*.—Passingham's Duke of Cornwall, Star of the West, Apollo, Rosalia, and Conqueror; Purity, Ellen, Exquisite, Duchess of Sutherland, Hailstorm, Acantha, One in the Ring, Duchess of Kent, White Perfection, Delicata, Coralina, Dr. Jephson, Beauty of Dalston, Eximea, Napoleon, Goliah, Hero, Lancashire Witch, Hockin's Una, Mrs. Lane, Virginia, Sanspariel, Admirable, Sylph, Gloriosa, Trafalgar, Coronation, Cleopatra, Penelope, Lady Julia, Rosabella, Sir William Magnay, Princess Alice, Magnet, Sidmouthii, Nymph, Gigantea, Uttoxeter Beauty, Exoniensis, Lowreyii, Fulgens, and Formosa Elegans.

INDIAN AZALEAS.

Purchaser's selection of 12 for 20*s*., or 20 for 30*s*.—Gledstanesii superba, Vivid, Flammea, Nymph, Grandis, Pink superb, Rosea bicolor, Attraction, Coquette, King of Saxony, Incarnata, Admirable, Sirius, Glory, Carnea, Sunbeam, Rubescens, Pompeii, Pink Perfection, Sappho, Jennerii, Cleopatra, Apollo, Semi duplex rosea, Formosa rosea, Standishii semipleno, Alba striata, Prince Albert, Minerva, Addisonii, Refulgens, Smithii Magnifica, flora, Alba triloba, Woodsii, Grandiflora coccinea, Gledstanesii excelsa, Barbata, Rosea punctata, Optima, Purpurea pleno, Gledstanesii, Exquisite, Splendens, Danielsiana, and Smithii coccinea.

DWARF ROSES, IN POTS.

Including the CHINESE, BOURBON, NOISETTE, and TEA-SCENTED VARIETIES.

Purchaser's selection of 12 for 18*s*., or 20 for 28*s*.—Souvenir de la Malmaison, Bouquet de flore, Prince Albert, Pierre de St. Cyr, Thermocles, Austerlitz, Camelliaflora, Smith's Yellow Noisette, Solfaterre, Thea perfection, Felton, General Vallaise, Bougere, Charles Reybaud, Dulphine de Gaudet, Belle de Florence, Eugene Beauharnais, La grande superbe, Duchesse de Luxembourg, Rubra, Fairy Queen (Red), Marjolin, Fabrier, Theresa Isabella, Moliere, Duc de Luxembourg, Henry the Fifth, Cramoisie superieure, Semperflorens, Madame Laffay, and Louis Phillipe d'Angers.

CINERARIAS.

Purchaser's selection of 12 for 15*s*.—Maid of Artois, Fulgida, Eminent, Delicata, Lady Fellowes, Lady Seymour, Flash, Monarch, Nobilis, Desirable, Cramoisie superieure, Fairy Queen, Superb blue, Paragon Queen, Duke of York, Compacta, Madonna, Red Rover (Colmar's), Countess of Zetland, Phillis, Bijou, Favourite, and Maratina.

VERBENAS.

Purchaser's selection of 20 for 10*s*.—Defiance, (Robinson's) Atrosanguinea, Rubra, Gigantea, Hermoine, Satellite, Coronet, Mont Blanc, Gem, Barkerii, Harlequin, Lord John Russell, Coralescens, Striata coccinea, The Giant, Emma, Boule de feu, Excelsa, Alba lutescens, Minstrel Boy, Louis Philippe, Lilac perfection, Favourite, Fulgens, Miss Harcourt, Incarnata perfecta, Bicolor odorata, and Ibrahim Pacha.

Purchaser's selection of the following from our General List.

12	Choice Miscellaneous plants, first class	... ...	16*s*.
20	Ditto ,, ,,	... ..	25
20	Ditto ,, second class	... ..	15
12	Choice Miscellaneous Climbers, first class	... ..	16
20	Ditto ,, ,,	.. .	25
20	Choice Herbaceous plants	... ...	10
100	Ditto ,,	.. ...	40.
6	Choice Antirrhinums	.. ...	5
6	Choice Petunias	...	5
12	Choice Achimenes, Gloxinias, and Gesneras	.	15
20	Choice Chrysanthemums	... ...	12
6	Choice Cactus	.. ...	9
12	Fine Camellias, 18 inches to 2 feet high	... ...	36
20	Ditto ,, ,,	... ...	52
40	Ditto ,, ,,	.. ..	100

**** All Orders above 2l. will be delivered, free of carriage, by* Messrs. PICKFORD and Co., *to any Station on the Great Western, Bristol, and Exeter, or South Devon Railways; or to any Town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers. All orders by Railway will be sent by* PICKFORD and Co., *unless ordered by any other conveyance.*

All Goods not thoroughly approved of, immediately exchanged; and it is particularly requested that any deficiency in quantities, or inattention to orders, be immediately communicated to us.

*** To prevent disappointment, we hope that all orders will be sent to us as EARLY AS POSSIBLE—we shall then be able to supply all the sorts enumerated in this list; but if they are delayed, we fear that we shall be deficient in some instances, having only a limited supply of some sorts.

ORDERS WILL BE ATTENDED TO IN STRICT ROTATION.

Great attention is at all times paid to careful packing. We have sent a great number of plants to the North of Scotland and Ireland, and they have arrived in most excellent condition.

WILLIAM E. RENDLE and Co., Plymouth.

Counting-house, Union-road.

Adjoining the Plymouth Station and Terminus of the South Devon Railway.

TULIPS.—120 ROWS OF FIRST-RATE FLOWERS for sale, in one or more rows, at the option of the purchaser, growing in the garden ground of Mr. SELBY, New North-road, Hoxton.—Catalogues, with prices affixed, can be obtained of Mr. WOOLNOUGH, on the ground, or 6, Bateman's-row, Shoreditch, London.

EDWARD GEORGE HENDERSON has now completed his Priced Catalogues for the season of 1849, and which may be had on application.

No. 1 contains Greenhouse Plants.
— 2 ,, Ericas and Epacris.
— 3 ,, Azaleas, Camellias, and Rhododendrons.
— 4 ,, Geraniums, Cinerarias, and Lobelias.
— 5 ,, Stove Plants.
— 6 ,, Miscellaneous Bedding Plants.
— 7 ,, Verbenas and Petunias.
— 8 ,, Chrysanthemums and Phloxes.
— 9 ,, Fuchsias, Dahlias, and Antirrhinums.

Wellington Nursery, Wellington-rd., St. John's Wood, London.

MESSRS. S. AND J. DILLISTONE beg to offer the following, in good plants, 5*s*. per dozen; or 100 plants, portions of each variety, 30*s*., including basket and carriage to London.

ANEMONE JAPONICA.
ANTIRRHINUM, including several fine seedlings.
AGERATUMS, CALCEOLARIAS, CUPHEAS.
DAHLIA, fine show and fancy varieties.
GERANIUMS, Scarlets, including Tom Thumb, and others.
GAILLARDIAS; HELIOTROPES, in varieties.
PENTSTEMONS, including alba, gigantica elegans, &c.
PETUNIAS, in fine varieties.
PHLOXES, in fine Continental varieties.
ROSES, fine varieties of Tea, China, &c.
SALVIAS of sorts.
SWEET WILLIAMS, finest double selected.
VERBENAS, including Robinson's Defiance, and other new ones of last season.

100 good Herbaceous Plants, in 50 varieties, for 30*s*.

Post-office orders are respectfully requested to be made payable at Haverhill, and from unknown correspondents a respectable reference or prepayment.

Lists may be had upon application; also all the novelties of the season, at the prices sent out by the raisers.

Sturmer Nurseries, Haverhill, Suffolk, May 5.

SEEDS.—MEADOW AND PASTURE GRASS SEEDS, in mixtures suited to various soils, &c., at 32*s*. per acre, allowing 2 bushels and 12 lbs. to each acre. Directions for sowing and treatment will accompany the seeds. Mixed sorts for improving old Grass Lands, 1*s*. 3*d*. per lb. Fine sorts for forming Lawns, &c., 1*s*. 4*d*. per lb.

GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address GEORGE GIBBS and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c. &c., 26, Down-street, Piccadilly, London.

G. ROGERS, FLORIST, &c., Uttoxeter, having a large stock of strong blooming plants of GERANIUMS, many of them 2 years old, headed down, begs to offer them at very low prices. No charge for hamper, &c., when the order contains a remittance.

12 fine Geraniums, 9*s*. to 12*s*.; 12 extra fine ditto, including a plant of Foley's Black Prince, 24*s*.
12 fine Verbenas, 6*s*.; 12 extra ditto, all new last year, 10*s*.
12 Cuphea platycentra, 8*s*.; 12 ditto strigillosa, 6*s*.
12 fine Fuchsias, 6*s*. to 9*s*.; 12 ditto, all new last year, 18*s*.
12 fine Cinerarias, 6*s*. to 9*s*.; 12 ditto, extra fine, including G. R.'s 3 seedlings, 24*s*.

CHOICE PLANTS.

Myosotis azoricus, 2*s*.; Campanula nobilis 1*s*.; Lythrum roseum superbum, 1*s*.; Salvia patens alba, 2*s*. 6*d*. to 3*s*. 6*d*.; Zauschneria Californica, 2*s*.; Plumbago Larpentae, 2*s*. to 3*s*. 6*d*.; the set of 6 for 10*s*.; Puya altensteinii, 5*s*.; Browallia Jamesoni, 3*s*. 6*d*.; Pitcarnia punicea, 2*s*. 6*d*.; Weigela rosea, 1*s*. 6*d*. to 2*s*. 6*d*.; Funkia grandiflora, 5*s*.; the set of 5 for 15*s*.

NEW DAHLIAS.

Turnfield's Lord Dacre, 10*s*. 6*d*.; Dodd's Dr. Frazer, 10*s*. 6*d*.; Salter's Conspicua, 10*s*. 6*d*.; Battey's Favourite, 7*s*. 6*d*.; Wedgwood's Beauty of Maer, 10*s*. 6*d*.; White Lady, 10*s*. 6*d*. If the 5 are taken they will be supplied cheap.

12 fine show flowers, 9*s*. to 12*s*.; 12 extra fine ditto, all new last year, 24*s*.

PETUNIAS.—New seedlings, Rogers's King of Crimsons, 5*s*.; Rogers's Bella Donna, 5*s*.

ANTIRRHINUMS.—Rogers's Lady Sale, 5*s*.

G. R.'s Descriptive List of all the above may be had on application. The North Staffordshire Railway now offers every facility for the speedy delivery of all goods sent from Uttoxeter.

FUCHSIA SPECTABILIS.

MESSRS. VEITCH AND SON will commence sending out plants of this splendid FUCHSIA on Monday, the 7th inst., at 21*s*. each, when all orders will be executed in the rotation received.—Exeter, May 5.

The following Nurserymen and Seedsmen having ordered plants will be enabled to supply them true:

Messrs. Austin and McAslan, Glasgow
Mr. W. P. Ayres, Blackheath
Mr. W. Allen, Totness
Messrs. Bigland and Co., Manchester
Mr. James Barkaway, East Dereham
Mr. E. Beck, Isleworth
Mr. T. Bunyard, Maidstone
Messrs. Burgess and Kent, Penkhull
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Mr. S. Bryan, Grantham
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Mr. B. R. Cant, Colchester
Mr. Cattell, Westerham
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Mr. Darby, Cirencester
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Mr. Gaines, Battersea
Mr. Griffin, Bath
Mr. Gill, Blandford
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Mr. Halley, Blackheath
Mr. S. Hodges, Cheltenham
Mr. W. H. Heale, Swindon
Mr. Hartnoll, Yeovil
Mr. Josh. Harrison, Richmond
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Mr. T. De Jonghe, Brussels
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Mr. Jeffries, Ipswich
Messrs. Jackson and Co., Kingston
Mr. Kendall, Stoke Newington
Mr. Keynes, Salisbury
Messrs. Low and Co., Clapton
Messrs. Lee and Co., Hammersmith
Mr. Lane, Bridgewater
Messrs. Lane and Son, Berkhampstead
Messrs. Lucombe, Pince, and Co., Exeter
Mr. R. Lang, Kilmarnock
Mr. A. Mackie, Norwich
Mr. Macintyre, Taunton
Mr. Meldrum, Kendal
Mr. Miller, Newcastle
Mr. Perkins, Leamington
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Mr. Pettite, Bury St. Edmund's
Mr. Pope, Birmingham
Messrs. Page and Son, Southampton
Messrs. Sang and Son, Kirkcaldy
Mr. R. M. Stark, Edinburgh
Mr. John Salter, Fulham
Mr. John Stewart, Dundee
Mr. Stephens, Taunton
Mr. Smith, Worcester.
Messrs. Sanders and Son, Abergavenny
Mr. John Shaw, Manchester
Mr. Sorrell, Springfield
Mr. Smith, Islington
Mr. Edward Tiley, Bath
Mr. C. Turner, Chalvey
Mr. Turvill, Chelmsford
Mr. Van Houtte, Ghent
Messrs. Widnall and Davis, Grantchester
Mr. R. Whibley, London
Mr. Wood, Plymouth
Mr. J. C. Wheeler, Kingsholm, Gloucester
Mr. G. Wheeler, Warminster
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Messrs. Wood and Son, Maresfield
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SELECT FUCHSIAS, VERBENAS, &c.

HENRY WALTON is now sending out the following Choice Varieties:

FUCHSIAS.—Atrosanguinea, Albano, Beauty Supreme (of Leeds—of Chelmsford), Corallina, Crimson King, Dr. Smith, Dreadnought, Enchantress, Esteem, Eulalie, Fountain, Flavescens, Gigantea Reflexa, Great Britain, Leucantha, Jenny Lind, Mont Blanc, Madame Breary, Napoleon, One-in-the-Ring, Ophelia, Oldfordensis, Prince Albert, Purity, Pius IX., Roi de Rome, Spanish Infanta, Scarlatina Reflexa, White Perfection. Selection from the above, 12*s*. per dozen; H. W.'s selection, 8*s*. 6*d*., in fine healthy plants, by post, if required.

VERBENAS.—Arabella, Champion, Smith's Conqueror, Captivation, Cyclops, Count de Paris, Champion, Barker's Cœur de Lion, Robinson's Defiance, Duke of Norfolk, Desirable, Smith's Desirable, Barker's Edmontiana, Emperor, Excelsa Superb, Emperor of China, Fire King, Gem, Gilmaniana, Jenny Lind, Lady of the Lake, Lord J. Russell, Lychnis, Lilac Rival, Miss Sarah, Marquis of Douro, Mrs. Barker, Magna, Marchioness of Ailsa, Paragon, Rainbow, Rising Sun, Sir R. Peel, Satellite, St. Margaret, Tricolor, Vulcan Superb, Vivid, White Perfection, Zabdii.

FRENCH VARIETIES.—Ariel, Anacreon, Annias, Clotilde, Duchesse de Caze, Heloise, La Coquette, La Reine, La Reine de France, La Villageoise, Juno, Medora, Madame Lafay, Multicolor, Souvenir, Valentine de Souvenir. The Collection as above, 1*l*. 5*s*.; Purchaser's Selection, 7*s*. 6*d*. per dozen; H. W.'s Selection, 3*s*. 6*d*. to 5*s*. per dozen, post free, if required.

GERANIUMS.—Hebe's Lip, Sir R. Sale, Remembrance, Isabella, Hoyle's Isabella, Beck's Desdemona, Margaretta, Mustee, Favourite, Rosy Circle, Aurora, Beauty of Clapham, Nourmahal, Princess, Chaplet, Sir W. Raleigh, Queen of Beauties, Marmion, Peri, Zanzummin, Gigantea, Prince Alfred, Standard of Perfection, Lady Bulkey, Carnubrius, Queen Philippa, Hebe, Pluto, Camella, Beauty Suspass. The Collection as above, 1*l*.; Purchaser's Selection, 12*s*. per dozen; H. W.'s, 9*s*.

CHOICE BEDDING PLANTS.—Verbenas, Robinson's Defiance, 4*s*. 6*d*. to 6*s*. per dozen. Best Petunias, 4*s*. 6*d*. Antirrhinums, choice varieties of last spring, 6*s*. to 9*s*. per dozen; Alonzoa grandiflora, Cuphea strigillosa, platycentra, 6*s*. 6*d*. per dozen. Geraniums, Scarlet, Ivy-leaved, Variegated, and other Varieties, 5*s*. per dozen. Pentstemons, 6*s*. Mimulus Moodii, Moodii, Splendidissima, 4*s*. 6*d*. per dozen. Stachys Pansa, 4*s*. 6*d*. Ageratum Mexicanum, 4*s*. Phlox omniflora, 4*s*. Heliotropium, Triumph de Liege, 6*s*.; Voltairianum, 6*s*. Best Old Varieties of Verbenas, 3*s*. 6*d*. per dozen.

Plants carefully packed and forwarded to all parts of the kingdom. Plants given over, in proportion to orders. All orders to be accompanied with a remittance, payable at Burnley.

Edgend, Marsden, near Burnley, Lancashire.

TURNIP SEEDS, &c.

W. DRUMMOND & SONS, Agricultural Museum, Stirling, N.B., will furnish, free, on application, priced Lists of TURNIP and other AGRICULTURAL SEEDS.

N.B. All parcels of Seeds above 2*l*. value (with the exception of Grain and Vetches), delivered free of carriage in London, Liverpool, Hull, Newcastle, and many other parts to which there is a direct communication.

FLOWER-POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford-street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price for cash.

250, Oxford-street, near Hyde-park.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—GEORGE NEIGHBOUR and SON, 127, High Holborn, London.

"Nutt on Bees" (6th edition), now published.

HORTICULTURAL SOCIETY OF LONDON.
LECTURES ON HORTICULTURE.—1849.
Dr. LINDLEY having consented to deliver Six Lectures on Horticulture to the Fellows of the Society during the months of May, June, and July, the Council have appointed the following Tuesdays for this purpose, at 3 o'clock, P.M., viz.:—
May—15th and 29th.
June—12th and 26th.
July—3d and 17th.
And in order to facilitate the dispatch of other business, these Lectures have been also appointed Ordinary General Meetings, at which Fellows of the Society may be elected, and objects of exhibition received.
The subjects of the Lectures will be,—
May 15.—The materials from which plants derive their Food.
,, 29.—The Root, its means of obtaining food, and its other properties.
June 12.—The Leaves and their importance in the general economy of the plant.
,, 26.—The Stem, whether regarded as timber, or as a means of propagation; together with the circumstances which hasten or defer its destruction by decay.
July 3.—The Flower and Fruit of Plants; the circumstances which most contribute to their perfection or imperfection.
,, 17.—The Diseases to which plants are liable, and the mode of alleviating them; so far as existing knowledge offers the means of forming any judgment.
These Lectures will be illustrated by specimens, explaining the subjects under consideration; and persons who have any remarkable objects which bear upon the questions of the day, are invited to send them to Regent-street. It must, however, be clearly understood that such objects cannot be received one moment later than 12 o'clock on the day of Lecture.
On these occasions no one can be admitted to the Meeting Room except Honorary Members and Fellows of the Society, their wives or sisters, and visitors specially introduced by them; or the Foreign and Corresponding Members of the Society.

HUGH LOW AND CO. can with the greatest confidence recommend the undernamed:
HELIOTROPIUM, "SOUVENIR DE LIEGE."—This fine new variety, now for the first time offered in this country, possesses the great advantage of flowering naturally very early, and also continuing in perfection for a much greater length of time than any of those previously introduced. The individual flowers, as also the truss, are very large and highly fragrant; colour pure violet with a yellowish tinge towards the centre. The habit of the plant is very dwarf and compact, and from the long continuance of its flowering, and other good qualities, it will undoubtedly prove a very desirable acquisition either for bedding or pot culture. Price 7s. 6d.
FUCHSIA, "THE RAJAH."—This is the finest of the dark varieties. Habit compact and good; corolla violet purple, beautifully cupped; sepals bright red, of waxy consistence, as much reflexed as a Turncap Lily. Price 10s. 6d.
FUCHSIA, "SPLENDIDA."—This is also a dark variety of great merit, and in particular remarkable for its very fine habit and profusion of flowers. Price 10s. 6d.
The Fuchsias named above were obtained from seeds by John Willmore, Esq., of Birmingham, and the acknowledged superiority of that gentleman in improving, by careful and scientific hybridisation, some of the finest genera of plants, will be a sufficient guarantee for the excellence of those now offered. Plants of the Heliotrope and the Fuchsias will be ready to send out in May. The usual discount to the Trade.
BORONIA TETRANDRA (B. microphylla of gardens).—A very fine new species. Habit compact; a most abundant bloomer, producing the flowers in the way of B. pinnata; will make an excellent specimen plant for exhibition. Strong plants, 7s. 6d.
In addition to the above, H. Low and Co will be able to supply all the novelties sent out by other growers, including the Continental Phloxes, Verbenas, and Chrysanthemums, now so much admired, Catalogues of which, containing also their General Collection, are in course of publication, and when ready will be forwarded, post free, on application.
Clapton Nursery, London, May 5.

RENDLE'S NEW SPRING CATALOGUE OF PLANTS is now published, and can be had on application to WILLIAM E. RENDLE and Co., Nurserymen, Plymouth.

TWELVE NEWEST FIRST CLASS DAHLIAS can be selected from RENDLE'S CATALOGUE, for 18s., including a plant of Tom's Champion of England and Star of the West, two of the finest flowers of the day. Catalogues on application to WILLIAM E. RENDLE and Co., Nurserymen, Plymouth.

CAMELLIA STOCKS.
RENÉ LANGELIER begs to say he has still some fine healthy plants to dispose of, fit for immediate grafting or inarching, of which a specimen may be forwarded on application, with an inclosed stamp. They are 100 for 50s. Reference or remittance from unknown correspondents.
Clarendon Nursery, St. Helier's, Jersey.

The Gardeners' Chronicle.

SATURDAY, MAY 5, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	May 7	Entomological	8 P.M.
		Chemical	8 P.M.
		Pathological	8 P.M.
		Medical	8 P.M.
		British Architects (Anniversary)	8 P.M.
TUESDAY,	— 8	Syro-Egyptian	7½ P.M.
		Civil Engineers	8 P.M.
		Medical and Chirurgical	8½ P.M.
		Geological	9 P.M.
WEDNESDAY,	— 9	Literary Fund	3 P.M.
		Society of Arts	8 P.M.
		Graphic	8 P.M.
THURSDAY,	— 10	Royal Society of Literature	4 P.M.
		Antiquarian	8 P.M.
		Royal	8½ P.M.
FRIDAY,	— 11	Astronomical	8 P.M.
		Philological	8 P.M.
		Royal Institution	8½ P.M.
SATURDAY,	— 12	Asiatic (Anniversary)	2 P.M.
		Royal Botanic	3¾ P.M.
MONDAY,	— 14	Geographical	8½ P.M.
TUESDAY,	— 15	Pharmaceutical (Anniversary)	11 A.M.
		Horticultural	3 P.M.
WEDNESDAY,	— 16	Geological	8½ P.M.
THURSDAY,	— 17	Royal South London	1 P.M.

COUNTRY SHOWS.—Wednesday, May 9: Hammersmith Heartsease.—Thursday, May 10: Tunbridge Wells Horticultural and Floral.—Friday, May 11: Cornwall Horticultural.—Monday, May 14: Liverpool Horticultural.—Tuesday, May 15: Hampshire Horticultural.

THE rival DUBLIN HORTICULTURAL SOCIETIES have now held their first exhibitions for the year, within two days of each other, and it is desirable to draw attention to the result. The Royal Horticultural Society has of late been too frequently alluded to in our columns; it consists of the rich and fashionable people of the Irish metropolis, and has gained an unenviable celebrity by the stand which its Council long made against any change in its unpopular management or managers. The Improvement Society is less known, has few fashionable supporters, but boasts of many powerful enemies among those who patronize its rival; and it carries with it the good wishes of most of the true friends of Horticulture.

In the same room, in the same week, within two days of each other, these two bodies produced the best evidence they could of their respective claims to public favour, and we sincerely trust that their comparative success will prove a salutary lesson to those whom it concerns. The details of the exhibitions are given in another column. We confine ourselves to general facts.

First came the Improvement Society, poor and little friended; but with a good heart and a sound cause. The best among the gentlemen who occupy themselves with Horticulture, and all the gardeners who were permitted to act for themselves, stood by it, and consequently a fine collection of plants was produced, doing credit to the state of gardening in Ireland, and proving that the elements of success exist there if men can only be found to combine and apply them wisely. In the words of an eyewitness, "the Orchids were numerous, in good condition, and in some cases rare and valuable. In stove and greenhouse plants there were many which indicated good cultivation. The Ericas and Azaleas produced by the gardener of Mr. BURNS would not have been disregarded at a great English Show. They exhibited good management in getting them into condition for the exhibition, and evinced likewise very excellent culture." The rain was however incessant, and the attendance of visitors scanty.

Next came the Royal Society, with a fine day, and a concourse of some 1500 or 2000 people, who, malicious rumour says, were to a great extent admitted with free tickets. What those good folks came to look at, except each other, nobody could discover; unless it was the Lord LIEUTENANT with his suite, and the Duke of LEINSTER in a coach and four. The exhibition did not contain a single plant whose cultivation could have been spoken well of half a century ago. The whole thing was a wretched failure. Let us hope that it will have taught the authorities of this fashionable (?) association that public opinion cannot be neglected with safety, and that, although idlers may be attracted by music and great names, the men who constitute the sinews of all countries, and who must be most especially looked to as the workers out of Ireland's regeneration, will not support a public body in which self-seeking is the most conspicuous feature.

But while we look with satisfaction at this fall of the mighty and rise of the lowly, we would not encourage for a moment the system of rivalry which has sprung up in Dublin. If continued it may be fatal to the interests of all parties; and we must repeat, what we have often urged, that one body only, zealous, united, and therefore powerful, can ultimately serve the public interest in such a matter as that in question. Dublin is not London, and it is incapable of supporting more than one Society of Horticulture. That one, be it what it may, Irishmen should strive to establish: how, it is not for us to say. We have objected to the Royal Society in language sufficiently explicit, for reasons sufficiently plain; but it was to its intolerable management that the criticism was applied, not to the body as a body. That we were right in our objections is abundantly evident from the changes to which the framers of its laws have at last been driven. At the exhibition, the singular termination of which the city of Dublin has just witnessed, the Council, 1st, excluded the judges until the plants were all ready for adjudication, *a new practice*; 2d, they appointed *no* members of the council judges, *a new practice*; 3d, they invited none as judges but practical men, the very same individuals selected by their rivals on the previous Tuesday, *a new practice*; 4th, they allowed open competition, also *a new practice*. In this manner they silently acquiesced in the justice of four of the complaints that have been made, and it may be that they have at last hauled down their flag, with its senseless motto of VESTIGIA NULLA RETRORSUM. But it may be too late: it may be that their countrymen have lost all confidence in those who will only mend "upon compulsion." That is, however, a question for Irish gentlemen to settle among themselves. For ourselves, we see plainly enough that the exposure, of which we have had the honour to be the public instrument, has done its work effectually.

IN our last article on the CULTURE OF COTTON IN INDIA, we described the result of the experiments made by the American planters in north-western India during the first year of their being in that country. We found that, though they laboured under some disadvantages, and the season was unusually dry, yet that the American method of cultivation seemed very superior to that pursued by the natives, for even the Indian Cotton, as planted by the Americans, continued green and was bearing fruit, when that planted by the natives produced nothing, and was dried up. But we stated our conviction that the climate of Bundlecund and of the Doab was too dry for the culture of American Cotton without the aid of artificial irrigation. We find that Dr. IRVINE, then of Gwalior, was of the same opinion, for he advises "that about two waterings ought to be given early in the season, before the rains are heavy, and three copious waterings after the rains cease, at proper intervals. Under this treatment, I venture to say that there will be no obstacle found to the successful culture of American Cotton, of the common though most superior species." Cotton Papers, page 113.

Captain BAYLES having represented that the American planters, far from being disheartened, were confident that they could succeed not only in introducing the Mexican seed, but in improving the indigenous Cotton, so as to make it a marketable and profitable Cotton; the Agra Government authorised whatever was thought requisite for insuring the success of the experiment; l. c., pp. 113 and 116. But neither land nor money, nor the zeal of men, nor the labour of cattle will suffice, unless the elements are favourable; and the planters were singularly unfortunate in the particular seasons during which they made their experiments, though it is doubtful whether the climate in general is ever suitable to the successful culture of American Cotton, without the aid of such artificial irrigation as may be supplied by a canal. Mr. ALLEN, who succeeded Captain BAYLES, reports, on the 19th of August, that 1008 acres of land were under Cotton culture on the part of Government, but "the beginning of the season was decidedly favourable, though rather late; between the 7th and 25th of July 10 inches of rain fell, and the planters began to complain that there was too much, for the red soils became a mass of mud, in which it was impossible to work, and the low lands were flooded. Since the 25th of July we have had no rain, and the plants are consequently beginning to droop for want of moisture; the season is certainly now unfavourable." Of the planters themselves, Mr. MERCER states his conviction that Bundlecund "is, and always will prove too dry and uncertain ever to produce Cotton to advantage." Moreover "the seasons in this part of India are too short, even if they were more favourable, for after the rains end, and no other than the recommencement of this dry west wind ever can be expected, which will always inevitably cut short our crops, and deteriorate their quality." Mr. FINNIE says, "the grand characteristic of this country appears to be—a flood, a drought; the latter greatly predominating." Mr. BLOUNT observes, with both candour and good sense, "it will, no doubt, appear strange that we should complain of the dryness of the season, as we have always asserted that Cotton does not require a great deal of rain. Last year there was no rain after the 26th August, and this season bids fair to be like the last, as it has now been 25 days since we have had rain. If such are the average seasons of Bundlecund, you will at once perceive that the rains are not sufficient, nor can planting operations be commenced early enough to ensure a good crop of Cotton. There is no doubt but that Cotton will grow in this part of Bundlecund, and yield a small produce, but we must have a far more favourable season than I have yet seen, to expect more than one maund of 'seed Cotton' from the best lands."

These letters, embodying the opinions of three of the planters, on the subject of the unsuitableness of Bundlecund to the growth of Cotton, particularly of American Cotton, were forwarded by Mr. ALLEN, with an intimation that "they think that Rohilkund or Goruckpore may answer. The planters seem to me to think more of climate than of soil, or rather I should say that they think it more difficult to find a favourable climate in India than a favourable soil." Subsequent to this, Mr. FINNIE was directed to make a tour through the Doab to ascertain its capabilities more to the north and east, while Mr. BLOUNT proceeded to the south and east, through Goruckpore and the adjoining districts. Mr. MERCER, who had been "transferred to Bombay, was to report *en route* on the capabilities of the country in the Saugor and Nerbudda territories, through which he would pass." Mr. FINNIE having perambulated a great portion of north-west India, applied for permission to establish a model farm at Agra. This being granted, he arrived there in April 1843. It was also arranged "that the ryots should be encouraged to cultivate Cotton on their own lands, according to Mr. FINNIE's directions, receiving from the planter seed, ploughs, and such advances (of money) as might be absolutely necessary." "But the model farm was a complete failure." Want of rain, when most required, and a superabundance afterwards, are stated by Mr. FINNIE to have combined to ruin a great portion of the cultivation, whilst that which pro-

duced was injured by insects, and suffered from the depredations of the natives." Cotton-cleaning machinery, under an English engineer, Mr. FROST, was also established at this place; though this we need not notice. But in April, 1846, Mr. BELL, who had long been established as a merchant and planter, near Agra, proposed to the local Government (Cotton papers, p. 261) to cultivate the best kinds of native Cotton by making engagements with the ryots, and sending it in a clean state to market. The Manchester spinners did not, however, approve of this Cotton, from the shortness of its staple; the experiment was, therefore, discontinued after the second year.

We have seen that the planters when settled in the Doab and Bundlecund sighed for Rohilkund and Goruckpore, as well as Dacca and Jubbulpore, while Mr. TERRY wished for Rungpore. The effects of the moist climate of the latter, and of Dacca, we have already seen, and now proceed to state the results of American culture in a medium situation and climate, as found at Goruckpore. Mr. BLOUNT on arrival at this place, in January, 1843, writes: "I do not hesitate to state as my opinion, that the character of the rainy season and moist climate of this district will prove highly favourable to the production of the American plant;" and "I think this one of the most favourable districts that could be selected for carrying out the object of Government;" so Mr. READE, the Collector of the district, writes at the same time. "The humidity of the atmosphere, the absence of hot winds, the abundant and lasting dews, the rich vegetable mould, the undulating surface of the country, and the invariably plenteous supply of rain, enable me to anticipate success." A glimmering of success, he states, would make the culture popular and extensive, and he adduces the sugar cane, of which not less than 150,000 acres were in cultivation, though seven years ago there were not 10,000 acres in all Goruckpore. "Indian superstition vanished at the sight of success;" (Cotton Papers, p. 214). Mr BLOUNT was, on the 16th February, authorized to establish a farm of 118 acres, and directed to be supplied with all the requisites.

But the first accounts we hear are, that up to the 1st August the season had been a most unpropitious one, and that Mr. BLOUNT had been unable to plant his Cotton until late in the season, and that, of the native Cotton sown, the greater portion had not then come up; while Mr. READE writes that "the pest of this place is countless cattle, whose pertinacity and agility in overcoming fences is proportionate to their cupidity of Mr. BLOUNT's Cotton plants." On the 30th of September we regret to find Mr. BLOUNT reporting "that the American Cotton plant is an entire failure at this farm." He is unable to assign any other cause for this failure than that it appears entirely unsuited to the climate of the country, being forced to maturity at too early an age. The plants, though only three months old (when they should be in full vigour), appear entirely exhausted. They "were green and flourishing up to the 15th inst., at which time the fruit commenced falling without being touched by the worm;" others, on the best soil of the farm, produced young fruit plentifully, which was immediately attacked by a small caterpillar, which eat into both flowers and fruit—every pod touched by them immediately falls off. "All the first foliage has dried and dropped off; the plants are now putting out a few sickly shoots from the top bud, which may produce Cotton, but such a result is scarcely to be hoped for."

Notwithstanding these unfavourable appearances, Mr. BLOUNT reports, on the 1st December, that "after the rains of the 11th September the plants began throwing out new shoots, and the major part of these continued to improve up to the present time, and have now more blossoms on them, and quite as good a prospect as at any time during the season;" and he inquires, "Has the American Cotton plant elsewhere ever manifested such a remarkable example of premature decay and complete resuscitation?"

The experiment was repeated in the season of 1844, and Mr. B. reports, on the 1st October, "a total failure of the experiment," though the season had "been quite different from that of 1843; in that year there was rather a scarcity of rain; this season has been a very wet one, the old plants pruned promised to yield a most prolific crop, but the fruit has dropped off before arriving at maturity; this has not only been the case with the American but with every other description of Cotton on this farm," with the exception of the kinds indigenous in the district. But on the 18th December he reports, that though "the plants during the month of September had been entirely stripped of foliage and fruit by worms," yet "during the month of October it put forth new shoots and flowered again, and in a great measure had recovered from the damage sustained from worms and insects," and that the plants will yield a very fair produce; a quantity of cupas (Cotton with the seed) is already collected, and I think from the quantity of pods yet on the plants, that 30 or 40 maunds will be collected during this and the next month; while of a small portion, planted on a spot freshly cleared from jungle, he says on the 8th of January, "The American is, without doubt, the best I have seen since I have been in the country; the plants are weighed down with the fruit, and the pods are quite as large as they attain in the United States. If I can secure this field from thefts, I think it will yield 300 or 400 lbs. of cupas per acre."

It is to be regretted that Mr. BLOUNT's engagement having nearly expired, the experiment was not repeated, with his improved information; for it appears to have been prematurely considered to be an entire failure, as neither the soil nor the culture best suited to the climate, nor the causes of failure, had been ascertained. A horticulturist here might as reasonably conclude that Fuchsias could not be successfully flowered, because full grown buds fall off in such numbers, when plants are removed from a greenhouse to a warm and dry room. Though Mr. BLOUNT does not mention the fact, we have no doubt that the shedding of the leaves, and the falling of the bolls, will be found to be connected with the change of climate which takes place at the conclusion of the rains. That is, from heat and excessive moisture, with a cloudy sky, to a bright and powerful sunshine with great evaporation, and then to comparative cool and clear weather, with much dew. It was at this time that the plants were found to revive and bear a crop, though they were supposed to have been exhausted. A little irrigation, as practised in many places by the natives, would make the transition probably more easy. Mr. BLOUNT's exertions and zeal were undoubted, for Mr. READE states, "It is due to him from me that I should observe, if industry and attention could have insured success, he would have succeeded."

IT may interest the Experimentalists in POTATO GROWING to know that Count LE LIEUR, of Ville sur Arce, a French gentleman of great horticultural experience, has hit upon a plan of stopping the disease, which he assures us has produced the best results. He plants in a greenhouse the soundest Potatoes he can find; and when the stems are well in leaf he layers their points. As soon as the points are rooted, they are separated from their parent with a ball of earth, and transferred to the open ground, not later if possible than the month of June. These plants produce, he says, perfectly sound tubers in the course of the autumn; and the Count assures us that such tubers, if used for seed in the following year, produce a crop entirely free from disease. This is one of the few proposals which deserve serious attention, and we recommend the experiment to immediate trial.

WASPS.

THE time being at hand when wasps begin to leave their winter quarters, some account of their history may not only be interesting, but also suggest the best means of destroying them. It may be needless to mention that however strong a colony of wasps may be, they are all the offspring of one solitary queen, who began the nest in the end of spring. Though well armed she will not strike when disturbed at her work. The nest is made of a sort of paper, which the insect manufactures with its strong mandibles from the fibre of decayed wood. In order that the foundation should be firm the materials are masticated, mixed with a glutinous substance similar to that of the props between the divisions of their combs. The delicate structure is deposited in a subterranean cavity, or suspended to a branch, as in the case of the tree wasp. At first it is like a small peg fixed in a beam, if I may so call it, the head forming three or five cells similar to those of hive bees, except in being curved a little at the lower part, in order to hold in the larvæ, whose heads are of course downwards, as are the mouths of the cells. These are surrounded or defended by a covering about the size of a thrush's egg cut in twain. The queen, who of course is as yet the only inhabitant, lays an egg in each of the half-finished cells, and which is curiously fixed on one side near the bottom. The eggs are hatched in a few days, and the voracious grubs are carefully fed by the mother until they close the cells with their cocoons or web. The workers appear in about two weeks; after that time the queen does not leave the nest; she gets too heavy with eggs to be able to fly; her time is solely occupied in depositing them. The workers soon become numerous, and the little structure increases from one comb to perhaps 12, built one beneath another, altogether making enough to fill a small beehive. By that convenient arrangement the top of each comb is a floor to the next, so that the brood can be easily tended.

I know of no writer who has noticed the manner in which wasps enlarge the covering of their nest. It is clear enough, however, that this is effected by a succession of circular outside coatings, three or four of which are in different stages of progression before the nest is larger than a hen's egg. When about that size the combs are covered by the lowest coating, with the exception of a small entrance below. The vespiary is now an interesting object, the laden insects entering with supplies for the brood, while those within are occupied in cutting away the inside coatings of the nest, not only in order to make room for the enlargement of the combs, but also for materials for their construction. Many of the returning wasps are also nimbly employed outside in adding to the coatings. The labour of the working wasps must be great, in order to make the paper city capable of holding 3000 inhabitants, the sole progeny of one queen, who about three months back was the only inmate.

It may be worthy of remark that wasps wage war upon and devour many noxious insects larger than themselves; still they are friendly one with another, but as they lay up no store, not even one day's supply, they possess nothing worth pillaging. We consequently need not wonder at seeing wasps foraging everywhere for food for their craving young. This description of a wasp's nest must be supposed to be taken from one in a large cavity or suspended from a branch. But both our two sorts of ground wasps are excellent miners, and it is astonishing to see the space they hollow out in order to afford room for their nests. Scarcely one issues from the ground without a load of earth or a small stone in its mouth; when heavy, they drop their load near the entrance, and it accumulates into a little heap, which may lead to the discovery of the nest. The paper of the Vespa vulgaris, or common wasp, at least in this quarter, is like that of the Vespa crabra (hornet), very brittle, of a sandy brown colour, like the rotten wood of which it is made; while that of the V. rufa is of a bluish colour, and of much firmer texture, similar to the paper of the tree wasp, which is rare in this locality. The nests of the two last are more exposed to damp than the others, consequently they require to be made of better materials. V. rufa dwells underground and prefers wet places, even the very verge of water. All the four species economise their paper materials, for after the real object of the founders of the colonies is attained (depositing eggs to produce males and females), the rearing of workers ceases. The cells in the upper or first-formed combs in which the latter were bred, being useless, are cut off and wrought over again with larger ones below, for the purpose just noticed. This accounts for the absence of cells in the top divisions of wasps' combs when examined late in the season. The males and females are both bred in the same sized cells; the larvæ of the latter are readily known by their longer cocoons, or rather web, which the insects spin to close the mouths of the cells. When hatched they are larger than the males, who are stingless, having long dark curved horns, and are met with abroad late in autumn, in search of food. As the season draws to a close, the workers begin to desert the nest, leaving the queens to their shifts. Being deserted, by instinct they betake themselves to solitary winter quarters, amongst dry moss, &c., to appear again in spring, to fill the land with pests.

It is worthy of remark that as the season advances many give up the pursuit of destroying wasps' nests, and try to save their fruit by gauze netting, trapping and drowning the invaders in bottles of sweet liquor, all of which are good, still there will always be enough of wasps escape to attend on the brood destined to increase their race the following year. Each colony may contain 100 queens, and supposing only 50 to survive the winter, and the spring prove favourable, each would be a founder of a new colony; consequently destroying one nest in autumn would of course be equal to killing 50 queens in spring, a thing perhaps hardly thought of. If the destruction of wasps' nests were followed up on Professor Henslow's simple plan of pouring about a wineglassful of turpentine into the holes and closing them, and giving a trifle, even only ½d. a head for queens in spring, similar to the plan adopted by the Earl of Traquir and others, those swarming plagues would be much fewer in our land. *J. Wighton.*

DISEASES OF PLANTS.

(*Continued from p. 260.*)

§ 3. *On the Analogy insisted on between Animals and Vegetables.*—Before proposing the bases on which it appears to me advisable to found a system of vegetable pathology, I think it necessary to examine the much discussed analogy which it is pretended exists between organised beings of the two kingdoms, and to fix our ideas on this most relevant question. Bearing in mind that I have undertaken to write for the instruction of practical cultivators, little or not at all versed in physical science, and who do not like to follow their author through long theoretical discussions, I shall abstain from entering into minute details.

I admit that plants are endued, like animals, with a species of vitality, by which they are born, grow, and repreduce themselves. They have for this purpose the power of assimilating, like them also, the elements which they suck up, and of discharging themselves of those elements which are useless to them, and which if they remained with them might impede the due course of their vital functions. But if it is sought to observe in what manner all this takes place in the one and the other case, I fear much that the admitted analogy must soon give way. Is it not true that the faculty of moving, of feeling, and even that of selecting or refusing food at will is entirely denied to plants? They nourish themselves entirely by unorganised substances. They cannot refrain from

imbibing the fluids that are prepared for them, the moment that external agents force them to do so. Animals, on the contrary, at their will feed or fast, select their food at pleasure, and all feed upon organised substances; the latter fact, although it may have been occasionally doubted in relation to some insect supposed to feed upon earth, is now generally admitted by all naturalists.

Animals have the power of impeding their respiration, which takes place by means of an internal movement. In vegetables it may be considered as merely passive, always produced by some external agent; nor have they the power of impeding or stopping it. Thus, in relation to them, respiration may, strictly speaking, be considered as a mere loss of substance. In good conscience, if we examine the thing closely, can we really draw a comparison, minutely exact, between the organic functions of these two classes of beings, animal and vegetable, when we are obliged, at the same time, to confess our ignorance of those of plants, notwithstanding the luminous discoveries of Mirbel! We may admire, as an effort of genius which does him infinite honour, the parallel drawn lately by Delametherie between the systems of animal and vegetable organisation, but we must confess, at the same time, that it totters at every step.

Is there, in the animal kingdom, any phenomenon resembling that of grafting, which, if I may so express it, assures a kind of immortality to plants, and especially to those classes which, being the most perfect, were first selected to prove the analogy of the two kingdoms? Where have we ever heard that one animal has supplied aliment to a portion of another animal in such manner that the result should consist of two animals, each of which should supply productions peculiar to itself? The experiments of Baroni and his trials deserve their full share of praise, but I do not think that any one can derive from them any argument in favour of an analogy between vegetable and animal grafting.

Certainly there is not among animals any phenomenon analogous to that of those trees which will indifferently shoot forth leafy boughs or roots, according as they happen to be above or below ground. Nor do we see anything resembling suckers or offsets. True, indeed, it is, that the phenomenon of propagation by cuttings may be compared to what happens with polypi; nor do I contest this point of analogy. There is nothing I desire more than that the history of this extraordinary being may be fully investigated, and its place assigned definitively in that class of animals to which it may belong. I might then be convinced that this is indeed that being so much sought after, the connecting link in the great chain of beings, which man always fancies he sees clearly, but which yet remains hidden from his sight. But even if the analogy should be clearly made out between the reproduction of polypi and that of vegetables, by means of the detachment of a portion of themselves, there remains the difficulty of extending it farther; and in order to generalise the resemblance, all the other objections I have stated must be removed.

I admit, freely, that the fecundation and propagation of plants present phenomena which recall to the least instructed mind those of animal reproduction. But if the comparison is carried out in detail, what analogy can be found between the fecundation, gestation, and birth in viviparous animals, and anything that takes place in plants? No one more than myself venerates the doctrines of Linnæus. But it would be no difficult matter to show that the comparisons he has made between the espousals of animals and plants, though brilliant and attractive, are not verified by facts. A greater degree of resemblance may be traced between seeds and eggs. Some have fallen into an extreme, in my opinion, directly opposite. They incline to believe in a much greater affinity between plants and minerals, than between the former and animals. They found it upon the simplicity of the texture of plants. But is not this simplicity much more apparent than real? Because we have hitherto only discovered cells and tubes of which we do not well know the nature, we cannot from thence conclude that they are really simple.

I should have preferred joining the opinion of the numerous party who have striven to show a great similarity between the operations of organic life in animals and vegetables. But after having examined the question without prejudice, respecting always the authority of men celebrated for their learning, yet not accepting it as positive proof, I have remained far from being convinced of the accuracy of the comparisons they have instituted. That there really exist points of resemblance is self-evident, but only in a general view; so that, if the expression may be allowed, if we wish to establish an abstract analogy, it is clear in all directions, and, with the slightest colouring given to it by eloquence, persuades readily. But if, with a cool mind, we come to analyse and examine the phenomena in detail, weighing them exactly in the scale of philosophical reasoning, these analogies diminish wonderfully in some points, and disappear altogether in others. It must be admitted the system is most attractive. Man, having proposed to himself the task of using his utmost endeavours to discover all the links of the chain which connects in one graduated series all the beings existing on our globe, he flatters himself he will find them more readily by constant comparisons of the beings themselves. Perhaps he may succeed, but too great haste in reaching the end will only lead him into error. Admitting, therefore, the analogy at large, which makes us rank plants also among organised beings possessing vital faculties, let us confine ourselves at present to the accurate investigation of the phenomena of each reign, without caring for too close a comparison of them with each other. When once we have a satisfactory account of all the data concerning the life of both plants and animals, we may then be better qualified to decide upon the relations they bear to each other.

A strong suspicion has suggested itself that one of the reasons why vegetable pathology is as yet in its infancy, and makes such slow progress, is the idea, so strongly rooted, that it must be studied according to some system bearing exact analogy to animal pathology. On that account I have endeavoured to establish it on another basis, to rely upon the knowledge chemistry and physiology have given us of the nature of vegetable life, and on the practical observations made on their maladies. For a moment I was tempted to resort to the principles adopted by Beaume for animal pathology, but which have found little favour among the ministers of Esculapius. But not to speak of the difficulty of the thing, I saw that even if I succeeded, it would be of little practical use, especially to those who may perhaps read this essay. I gave up, therefore, such an arduous undertaking to some learned chemist, who may possess a complete series of exact vegetable analyses, and may be well versed in all physical and therapeutical observations relating to plants.

NOTES OF A TRAVELLER.—No. V.

The "Sacred Bamboo."—Shanghae, Jan. 16, 1849.—The Chinese New Year's-day is now approaching, as it falls this season on the 24th of this month. Flowers are as much sought after here at this festive season, for the purposes of decoration, as they are at home at Christmas time. There is also a plant, with red berries, which takes the place of our English Holly. It is the Nandina domestica, and is called by the Chinese the "Tein-chok," or Sacred Bamboo. Large quantities of its branches are brought in at this time from the country and hawked about the streets. Each of these branches is crowned with a large bunch of red berries, not very unlike those of the common Holly, and, when contrasted with the dark, shining leaves of the species, are singularly ornamental. It is used chiefly in the decoration of altars, not only in the temple, but also in private dwellings and in boats; for here every house and boat has its altar, and hence the name of "Sacred Bamboo," which it bears.

The Nandina is found in English gardens, but judging from the specimens which I have seen at home, no idea can be formed of its beauty. It does not appear to produce its fruit so freely in England as it does in China, probably owing to the temperature of our summers being lower than those of its native country.

The Chinese have always said that the winter was to be a cold one, and there appears to be some truth in the prediction. At all events, the last few days have been piercingly cold. The thermometer has been down to 17° Fahr., and there is every appearance of its going down much lower. We do not feel the actual cold so much as the piercing wind, which seems to find its way through one's clothes, and every pore of the body. It is no wonder that the plants of Northern China, such as Weigela, Cryptomeria, &c., are perfectly hardy in England. The autumnal months here were very fine; October and November passed with scarcely a cloud in the sky, and we had not more than three or four rainy days from August to the end of December. *R. F.*

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

A Few Floral Arrangements.—The beauty of a flower garden depends as much on a presiding taste as on the intrinsic loveliness of the productions with which it is filled; for the commonest flowers, well arranged, may attract more attention than the more valuable ones which are carelessly disposed. This is the time when this presiding influence may be employed with the greatest effect, as the beds will soon be filled for the summer, and the character of the garden for the whole season be indelibly impressed upon it. *Obsta principiis* is a good motto for a gardener; be cautious and resolute at the beginning of your labours, and you will reap the benefit in the results. It is very common to find a garden filled on the principle of the proverb "first come, first served;" habit, colour, and size are not taken into account, and thus, however expensive the collection may have been to its owner, its general effect is bad. A gardener should be an illustration of the Horatian rule—

Reddere personæ scit convenientia cuique.

Plants of tall growth should be kept at a distance from the edges of beds and borders, that position being reserved for dwarf varieties; a regular gradation is thus preserved, which is pleasing to the eye. Climbers, such as major Convolvulus and the hardy Ipomœas, may be grown with beautiful effect near the stems of Laburnums and other fancy trees, so as to cover them with their foliage and flowers. To do this with success, attention must be given to the soil, which is often poor and dry around trees; remove it as far as you can without injuring the roots, and put some rich mould in its place. Honeysuckles make fine objects when grown like pillar Roses; they may be pruned so as to assume a correct pyramidal form, like a Fir tree; and by having different sorts a good bloom may be secured all the summer and autumn. On the other hand, the habit of this plant for rambling may be indulged by allowing it to grow wildly among Laurels and other shrubs. Climbing Roses may be left to Nature in some situations in large gardens. I planted Adelaide d'Orleans two years ago, and trained it to a Fir pole 12 feet high, and then left it to itself, only taking the precaution to look to the fastening at top once a year, lest the whole mass should break from its moorings. Its size is now wonderful. It throws its branches among the Laurels, and up the Apple trees in its vicinity, and being on the verge of a lawn is a beautiful object. *Sed hactenus hæc.* Such observations are innumerable, and we can only suggest, leaving applications to our readers.

Dahlias are often planted in rows, and in this case they should have the space of 4 or 5 feet clear between each. The intervals may be well occupied with annuals, such as Stocks, Asters, Marigolds, &c. Or Fuchsias of different sorts will make an agreeable foil to the stiffness of the Dahlias. When Verbenas and other creepers begin to grow they should be at once trained, and made to assume their destined course. Pegging down is the ordinary mode, but a better one is to cover the bed with sprigs of some brushy wood, among which the trailing shoots will entwine themselves, and be naturally supported. Some persons may object to the appearance of the bare sticks at first, but they will soon be covered. Whoever has seen the extensive flower garden of Colonel Sowerby, at Putteridge Bury, will have noticed and admired this arrangement. Let nothing be overcrowded. Keep a reserve of annuals, &c., to supply failures and fill up vacant spaces. Weed carefully. Give daily inspection, and remember that when summer is allowing vegetation to increase by some inches in length every day, what is done should be done quickly. *H. B.*

*** "H. B." returns his thanks to "Rosa" for the corrections supplied of his list of Roses, the week before last. "H. B." followed the printed catalogue, and therefore is not himself to blame. In reference to planting Tea Roses with more hardy ones, the objection of "Rosa" amounts to nothing. If an amateur likes some of that variety mixed with hardier sorts, it will be as easy to protect them in winter as when planted in a bed by themselves. "H. B." does so in his own case, without difficulty.

Home Correspondence.

Fastening Fruit-trees to Walls.—I have practised the following method, and found it to answer very well. I procured some copper wire rather thicker than bell wire, and, putting it through a small iron staple, or over the head of a strong nail driven into the wall immediately under the coping, and doubling the wire, plaited the two ends of it together, not very tightly, until the plaiting reached the foot of the wall. It was then stretched quite tight, in a vertical position, close to the face of the wall, and the lower end of it fastened to another staple or nail at the foot of the wall, and in order to keep the wire steady, two or three small staples were then driven over it into the joints between the bricks at about equal distances from each other. Then with the point of an old garden knife, and by a gentle turn of the hand, one of the folds or twists of the plaiting was opened where it was required to fasten a branch, and into the opening a ligature was inserted. By fixing in this manner copper wire at proper intervals along the wall, I was enabled to fasten the trees to my satisfaction, with very little damage to the wall, and at no great expense. I commenced by leaving the intervals between the wires about 18 inches broad, with the intention, if found necessary to reduce them to 9 inches by adding other wires. I have found the larger intervals to suit the trees already trained very well, but the smaller to be better for trees, or such parts of them as are in the course of training. The ligature I first used was composition wire, twisting the ends round the copper wire. This makes a very good and neat tie; but I now use tar-twine, and find it answers very well. Instead of plaiting the wire in one piece the whole height of the wall, it is sometimes easier to plait it in two lengths, fastening them together to a staple in the middle of the wall. I consider the method I have endeavoured to explain to be superior to wood trellises, as being not only less expensive, but much neater and more durable, and also affording the trees fuller benefit of the heat of the wall, by their branches being placed in contact with it. I also think it a better plan than that of strong single vertical iron wires, as mentioned by "T. A.," because the branches of the trees cannot easily be tied to a single vertical wire so as to prevent their sliding, and because copper wire need not be painted or galvanised; it is also better, I think, to use small staples than stay nails, with holes through their flat heads, as the former are less troublesome. The above method I also think more convenient than Mr. Glendinning's system of studs, inasmuch as it allows greater liberty in the direction of training the branches, for it is equally suitable for fan and horizontal training, which studs cannot be made to be without nearly covering the wall with them; it is also much less injurious to the wall. *A. T., Whitehaven.*—The finest Peach trees that I have seen were fastened to the wall with studs similar to those suggested by Mr. Glendinning. I saw them annually for five years, and they were always in the best health and bore excellent crops of fruit. It is however 10 years since I saw them last, so that I am unable to speak of their health now. The trees in question were grown on the wall in the garden of the Lady Massey Stanley, Haggerstone, Northumberland. *Constant Reader.*

Spring Frosts are generally so injurious to the blossoms of fruit trees, even when not expanded, that the following extracts from my journal of remarkable horticultural events may be of interest to your readers.

"1847, April 16: Severe frost; thermometer registered 22°, or 10° of frost; the blossom-buds of Pears have thrown off their scales, and are just bursting. Are they injured?—August: No Marie Louise; Pears of nearly all other kinds an abundant crop." "1848, April 27: Sharp, severe frost; thermometer registered 27°, or 5° of frost; Louise Bonne Pears just off bloom, Beurré Capiaumont and Marie Louise nearly in full bloom.—August: No Marie Louise Pears; this is the fifth season of their failure. No Williams' Bon Chretien, very few of Beurre Capiaumont, Louise Bonne, and other kinds; not the twentieth part of a crop. In the north of England, commencing at York, and in Scotland, Pears were a most abundant crop." "1849, April 18: Sharp wind, frost with light showers of snow, thermometer suspended in an exposed place on the north side of a tree, its usual situation, registered 19, or 13 degrees of frost. Plums in full bloom, the petals are all turned brown; Louise Bonne Pears, and some few others, nearly in full bloom, apparently all destroyed.—April 30: Beurré Capiaumont, Williams' Bon Chretien, and most Pears in full bloom, the footstalks of the flowers are shorter than usual, the petals also seem curled and not so large as usual, the anthers and stigmas look healthy; the blossom of the Pears under calico protectors, seems quite perfect and healthy." It will be seen by the above, that when the blossom is not expanded it will stand a severe frost, even 10 degrees, as in 1847, except Marie Louise, which seems remarkably tender. In 1848, five degrees of hoar frost killed nearly all the blossom; it was then expanded, but in the north, where it was more backward, it escaped. On the 18th ult. it was much more advanced than on April 16th, 1847, but not so much so as in 1848, with a frost much sharper than in either of the above periods; the result I look forward to with much interest. *Thomas Rivers, Sawbridgeworth.*

Effect of the Atmosphere on Glass.—I notice some remarks in your last Number upon a subject I lately brought forward at the Society of Arts; "The presumed influence of oxygen upon the colour of glass." That part of the subject of most importance to your readers your reporter has overlooked—I mean the change of colour which takes place in glass merely by exposure to the atmosphere. The green colour of the ordinary plate glass, after some years becomes yellow, and from longer exposure to atmospheric influence, red—in all probability the protoxide of iron, to which the green colour is due, taking up a further charge of oxygen from the atmosphere; whilst white glass, in which oxide of manganese has been used, becomes purple. I am of opinion that the colour of all glass becomes altered by exposure to the atmosphere; the particular change depending upon the metallic base of the original colour. *F. Pellatt.* [The remarks alluded to were a mere report officially sent us from the Society of Arts.]

Transmission of Seeds from India.—A friend offered me various seeds, together with a lot of Pine seeds, as well as Juniper, Thuja, and Berberry seeds. I directed them to be sent in brown paper, avoiding the oil-cloth which invariably enveloped my former packages from the same source, which seeds so transmitted frequently misgave. The suggestion has been adopted; a piece of plain, open canvas was wrapped round the whole, and I have never received or seen seeds from abroad in such beautiful order. The package was despatched on the 31st January last, and the Juniper and Berberries look as fresh as if they had been pulled within two or three weeks; all the others look equally well. *A Constant Subscriber, Edinburgh.* [You see the advantage of taking our advice in this matter.]

Cutting Larch in May.—My practice has been to cut my Larch and peel it (the bark pays all expense) in May. My woodman points out to me that all rails cut then, and peeled, are of twice the duration of those cut in winter and used with the bark on. I must observe that my Larch are young and only fit for beams, spars, posts, and rails. I cover them over with tops, to prevent the sun from cracking them, for they remain in my woods until the autumn. *Jos. Dent, Ribston Park, Wetherby.*

To Preserve Woollen Nets from Moths.—Immerse them in a bath of soap and water, then take them out, wring them, and plunge them into another tub containing a strong solution of alum and water. This is the old German receipt for rendering cloth waterproof. Nets, &c., once so treated, will never afterwards be attacked by moths. *C. A. Walker.*

Patent Rough Plate Glass (see p. 262).—Permit me to inform "J. L." that the cost of production does not in all cases regulate the price at which an article can be sold. Your correspondent being a market gardener will, I suppose, understand why one Cauliflower is sold for 6*d.* and another for 4*d.*, the cost of production being the same for the one as for the other. Small squares cost as much to manufacture as large ones, and the reason they are sold (most frequently under prime cost) is to insure a ready sale. The profits are derived from large panes; small ones are in no case made purposely. They are formed out of the cuttings of larger panes, and out of broken ones. In a plate glass manufactory, where squares are cast containing from 100 to 120 feet superficial, the average of the sizes finished is only about from 12 to 15 feet. The cost of rough plate glass is about 1*s.* per foot; the process of making is an expensive one. Mr. Hartley by his invention is enabled to sell at 6*d.* per foot in crates, and from 4*d.* to 7*d.* in squares (taking the average), conferring thereby a boon, I think, to gardeners. "J. L." surely does not recollect that patent rough plate is but in its infancy. There has not yet been time to discover the cheapest mode of making it, nor is its use so general as that of sheet glass. The present price, however, when its substance is taken into account, is moderate; 16-ounce sheet glass, small sizes, being about 2½*d.*, and patent rough plate only 4½*d.* (and not 6*d.*), and double the substance. When the demand for it shall have increased, and some of the expenses of machinery and so on been covered, a reduction may be expected. *G. W. K.* [In our opinion Mr. J. L. is unreasonable.]

Spring Flowering Bedding Plants.—Mr. Beaton (p. 262), speaking of Stellaria graminea as the best plant for a white bed in May, must surely mistake graminea for Holostea. Stellaria Holostea flowers in April and May, but graminea not before June and July. *W. T., May* 2.

Potato Crop of 1849.—I planted some Potatoes in the open ground about six weeks before Christmas, and on digging some yesterday found most decided marks of disease, quite of the old character. The haulms look yellow and sickly, and I regret to say that I see many of the same aspect in this island. *A Subscriber, Jersey, April* 30. [Anglesea, Kent, Cornwall, and Sligo afforded similar cases some time since.]

Sheet Glass.—I think it but justice to the manufacturers of sheet glass to state that I used upwards of 13,000 feet of it in replacing the damage done by the hailstorm on the 14th July last, and that up to this date I have not observed a leaf injured, with the exception of a few Fig and Peach leaves on trees trained on the back wall. The injury is, however, so trifling that it is not deserving of notice—not a twentieth part so much as used to happen under the best quality of crown glass. The job was done, including taking out the old putty, carriage of glass, &c., the glass not under 16 oz., at 4*d.* per foot. *D. Ferguson.*

Animal Charcoal v. *the Potato Disease.*—I was last year much disappointed in my first Potato frame. The set rotted before the young shoot had acquired strength enough to obtain sustenance from the soil, which I had taken particular care to have made porous and light, such as from experience I had found to be best for Ash-leaved Kidneys. The other frames in succession were not at all diseased, nor can I account for this except on the supposition that the vegetation of the first sets was affected by the remarkably dark weather which prevailed during the months of November, December, and January. I subsequently consulted a chemist on the matter, and he recommended the trial of animal charcoal coarsely pulverized, as it would serve both as a manure, and by keeping the soil dry and porous, give the sets a better chance. In the beginning of November last I had the bed made with Oak leaves in the usual way, but covered 6 inches deep with a mixture of Melon mould and animal charcoal in equal proportions. The sets of Ash-leaved Kidneys were planted some days after. In the beginning of March I took up my first dish of Potatoes, which were free from disease. When all the Potatoes were collected I examined the original sets, which I had the satisfaction to find dry and shrivelled, in consequence, I believe, of the employment of the animal charcoal. I have now two other frames, which were treated in the same manner, ready for use, and entirely free from disease. I have also used the same substance for the growing of Fuchsias and Cinerarias, with the best results. *Richard Syme, Gr., Port Eliot, St. German's, Cornwall.*

Viola lutea.—I see a new plant advertised under the name of Viola lutea, but I am much at a loss to account for such a specific name being attached to a plant imported from Patagonia. My associations with Viola lutea (not having seen the new one), are all connected with botanical rambles in the subalpine districts of our own loved isle. It may be said that this is merely a nurseryman's name, and the only term that would sufficiently express its bright yellow tint; but really when we consider the immense host of genera, species, varieties, and sub-varieties, not to speak of hybrids, that are continually pouring in on us, many of them with jaw-breaking names, the botanical and horticultural world have a right to require that every care should be taken to avoid applying the same name to two different plants. In the department of florists' flowers there is also great danger of this. We often see in lists of these two or three Queens, Dukes of Wellington, Ne Plus Ultras, &c., distinguished only by the raiser's name, thus leading to endless mistakes and frequent disappointments. I would be glad if some plan was put into practice by which such systems could be checked. *Methodicus.*

Covering Vine Borders.—My Vines are planted in an outside border, and, what is worse, in a damp situation. At the commencement of forcing I was placed between hope and fear. I resolved, however, to cover with fermenting material. Mr. Saul mentioned in your columns lately that early covering in autumn with light litter is sufficient to retain the heat during winter, but in this I differ from him. He compares the covering of a Vine border to putting on his great coat, forgetting that his body is supplied with heat "—" times in a day. The border he would, however, exclude from receiving heat when an opportunity presents itself. In a Vine border that had been well covered in autumn with light litter, I found the temperature as near that of the adjoining ground as nine and nine-ninths are to ten; but in a border covered with fermenting material the thermometer stood at 79° Fahrenheit, and at 18 inches deep the heat of the soil was 67°. These two measurements of ground temperature were made within 20 feet of each other. I am convinced that covering with light litter does not retain heat for any length of time, but that it affords a preventive against frost. I also found the soil that had been covered up from the influence of the atmosphere, stagnant, while that exposed was dry and mellow. For many days in the beginning of March, when the temperature is high, with a bright sun, I throw my fermenting material into ridges, exposing a space of 4 feet of border between each ridge; but I take care to replace the dung before the sun has ceased to shine on the border. This dries the soil and does not lower its temperature. The thermometer did not vary two degrees. I consider it to be a mistake to cover Vine borders with light litter early in autumn. A little manure should be forked into the border every year early in autumn, and it should remain uncovered until we are likely to get sharp frost, when a little light litter should be laid on the border. Litter being a non-conductor of heat, very little will be sufficient, and it should be thrown aside in fine weather; this should be continued until a short time previous to forcing the Vines, when fermenting material should be used in small quantities. *Vitis.*

Societies.

HORTICULTURAL, *May* 1, *Anniversary.*—J. J. BLANDY, Esq., Vice-President, in the chair. The annual report of the Council and Auditors was read. It was resolved unanimously that this report be adopted, and that the thanks of the Society are due to the Council for the able manner in which they have conducted the affairs of the Society. The ballot for Council and officers then took place, when the Lord Bishop of Winchester, Col. Challoner, and Dr. Jackson were elected new members of Council, in the room of Sir George Staunton, Bart., M.P., C. B. Warner, Esq., and J. H. Schröder, Esq. The President, Treasurer, and Secretary were re-elected, and Messrs. Gray, Hobbyn, and Loddiges were appointed Auditors for the ensuing year.

ROYAL HORTICULTURAL IMPROVEMENT, OF IRELAND.—This Society held its spring meeting in the Rotunda, in Dublin, on the 24th ult., and, as the first exhibition of the year, much interest was excited, particularly amongst those who are anxious to promote the progress and prosperity of horticulture; and there are many such—men who look upon societies of this kind as great national benefits, knowing that, as gardening progresses, agriculture must follow in its wake. Unhappily a division exists, however, amongst those who can more especially promote so desirable an object, and that has given rise to the present Society, which made on this occasion a very creditable appearance. The plants were abundant, and many of them well cultivated; and, as none of the public botanic gardens contributed specimens, the display may be taken as the cream of Ireland's attainments in gardening skill. The gardener of J. C. Lyons, Esq., produced on this occasion some magnificent Orchids, loaded with their interesting flowers; a remarkable specimen of Phalænopsis amabilis, with a richly furnished spike of bloom, attracted universal attention, being the first plant of the kind ever exhibited in Dublin. His other specimens of Oncidiums, &c., were in equally fine condition. These were not put up for competition, but were merely sent to aid the progress of the Society. — W. T. Hamilton, Esq., contributed some fine Orchids and other choice stove plants. Puya Alstensteinii was in full flower, and was greatly admired; the same gentleman's gardener also sent a beautiful and exceedingly well-cultivated group of Cinerarias, by far the best in the exhibition, and collections of this plant were numerous. Good cultivation was well displayed in the varied collections of Mr. Mathews, gr. to — Burns, Esq. His collection of Indian Azaleas was in capital bloom, well grown, and shown as plants ought to be. His Cape Heaths, also, were excellent, and indicated a thorough knowledge in the art of cultivation; they were in vigorous growth, and covered with flowers and foliage to the pot. Florists' flowers were indifferent, so was the fruit. Vegetables were abundant, and some fine Potatoes, apparently free from disease, were put upon the tables in an adjoining room. The Rotunda, where the exhibitions are generally held, is a spacious building, but ill adapted for horticultural displays, being destitute of sufficient light to show off the plants to advantage. The day, unfortunately, was most unpropitious, still a considerable company attended, and most of the chief promoters of horticulture in the neighbourhood were there. One of the military bands was present on the occasion, and everything appeared to go off in a satisfactory manner. Both exhibitors and visitors were apparently gratified with the Improvement Society's effort, which unquestionably was both respectable and meritorious to all concerned.

ROYAL HORTICULTURAL, OF IRELAND.—This Society has been established for the purpose of promoting the various branches of gardening, and its career has been distinguished by very extensive patronage. Its first meeting this year was held in the Rotunda, on the 26th of April last, and with the exception of a single shower, the day was all that could have been desired. The Lord Lieutenant, the Duke of Leinster, and Lord Charlemont, together with upwards of 1500 visitors, honoured the Society with their presence. The garden adjoining the Rotunda was thrown open for the company, and a military band was in attendance. To all

appearance the institution had everything in its favour—abundant patronage and glorious weather; but here we must pause; the gardening public of Ireland had totally deserted it. The choice plants, the unique and gorgeous specimens—the highest products of the intelligent gardener's skill, which had so magnificently decorated the Rotunda two days previously, were not now to be found; and to any individual deeply interested in horticultural pursuits, such an exhibition as the one under notice must have produced the most painful sensation. A generous public was never less rewarded, nor could have been more disappointed than it was at the display which the Royal Horticultural Society made on this occasion; for as far as good cultivation was concerned we should be glad to enumerate a single plant having the least pretensions to it. The eight best specimens of stove and greenhouse plants were Boronia pinnata, an Amaryllis, Erythrina Crista-Galli, Aphelexis humilis, Polygala oppositifolia, Begonia coccinea, Euphorbia splendens, and Eutaxia myrtifolia; and a ragged exhibition it was. In Covent-garden Market such plants would not have fetched 4*d.* each The Lord Lieutenant's prize was awarded to Boronia triphylla, *a little nursery plant in a 6-inch pot*, which was certainly the best plant in the exhibition. The principal collections were huddled together in huge boxes, crammed so full of moss that it was impossible for the uninitiated to judge the merits of the plants individually, had they possessed any. It seems to be the practice at Dublin exhibitions to use enormous unwieldy boxes, and to stuff moss all over the surface of the pots, which, to say the least of it, is very bad taste. The plan is justified on the plea that in this way a number of indifferent plants make a goodly display. We cannot, however, quite admit such reasoning as this, if the promotion of horticultural merit is the object in view. It must have been evident to every one who witnessed Ireland's Royal Exhibition, that the whole assemblage of stove and greenhouse plants was of the worst possible description. Of course we except some fine old botanical specimens from the Glasnevin Gardens, which constituted the only redeeming feature. Among florist flowers there were a few good Auriculas; Hyacinths also were creditable; fruit was generally indifferent; vegetables were fine, particularly Broccoli and Potatoes, of which there was a good supply.

LINNEAN, *May* 1.—The President in the chair. J. R. Atkins, Esq., and C. Prentice, Esq., were elected Fellows. Dr. Boott, Mr. Gould, and Mr. Solly were elected auditors for the ensuing year. J. Hogg, Esq., exhibited a wasp's nest found under the roof of his house, at Norton, in Durham.—The reading of Mr. Newport's paper on the Anatomy and Development compared with the Economy and Instincts of Chalcididæ and Ichneumonidæ, which had been commenced at a former meeting (and of which a report of the part read appeared in No. 12 of this Journal for the 24th of March), was continued and concluded. Before proceeding with the second part of the paper Mr. Newport read a postcript to the preceding, in support of his former statement that he had discovered the parasite Anthophorabia in the nests of bees, in the years 1831 and 1832, but which statement had been questioned before the Society by Mr. J. O. Westwood, who had endeavoured to make it appear that Mr. Newport's knowledge of the insect was derived from some verbal communications by himself in 1847. This gentleman now showed this supposition to be groundless by the evidence of a Fellow of the Society, who was present when the paper was read, and to whom Mr. Newport had communicated the fact in the year 1832, 15 years before Mr. Westwood's verbal communications, and who now authorised him to mention the circumstance. The authority on which Mr. Newport had recently given a name to this insect was that of rules established in a report by a committee of naturalists of the British Association in 1842, of which committee Mr. Westwood was an assenting member at the time the regulations were adopted and published. The author of the paper then corrected a mistake he had made as to the kind of food of the larva of Monodontomerus, which he now regards, from further anatomical investigation, as carnivorous, as shown by Mr. Smith, and not as polliniverous, as he had supposed. The continuation of the paper was a detailed history of the development of a species of the singular parasitic genus Paniscus, the young of which are produced from eggs affixed to the skin of a caterpillar, and subsist on the insect, attached to the egg-shells, until they are full grown. The casting of the tegument by these larvæ, and some remarkable peculiarities in their anatomy, were pointed out, as well as a singular error in the description of the head of these parasites by Mr. Westwood, who had mistaken the rudiments of their antennæ for ocelli. The species was then followed through its changes to the imago state. The paper was concluded with an account of the mode in which the alimentary canal in insects is developed, the author showing that it is formed in the embryo by the gradual inclusion of the yolk by the sides of the segments meeting and uniting along the middle line of the dorsal surface of the body, commencing in the penultimate and anal segments, and continuing forwards to the thoracic, in which part Rathké formerly showed the yolk to enter in Crustacea. By this mode of formation the author explained the way in which the digestive apparatus of parasitic hymenoptera remains a closed sac during the period of feeding and growth, and detailed the order and mode of formation of the appendages of the canal; showing that in proportion to the more or less early development of structures, and their ultimate greater or less degree of perfection, such is the more or less early development of function in the parts themselves and of special instincts in the animal. The paper was illustrated with drawings of the objects mentioned.—Mr. J. O. Westwood read a short paper on the same subject.

Country Show.

YORK HORTICULTURAL, *April* 25. — At this, the first Exhibition this season, the following prizes were awarded. Stove Plants: 1, Mr. Appleby, for Gesnera Cooperii; 2, J. Bell, Esq., for Gloxinia Snowiana; 3, the Hon. P. Dawnay, for Justicia carnea. Climbers: 1, Lord Howden for Tropæolum Jarratti; 2, J. Buckle, Esq., for Clematis azurea grandiflora; 3, Messrs. Backhouse, for Gompholobium polymorphum. Orchids: 1, 2, 3, Messrs. Backhouse, for Dendrobium fimbriatum, Maxillaria Harrisonii, and Lycaste aromatica. Rhododendrons (President's prize): 1, 2, 3, J. Roper, Esq., for R. Albertii, R. altaclerense, and R. Cunninghamii. Geraniums: 1, J. Roper, Esq., for Camellia; 2, H. Baines, Esq, for Sylph; 3, T. W. Wilson, Esq, for Duke of Cornwall. Greenhouse Plants: 1, 3, Messrs. Backhouse, for Boronia pinnata, and Chorozema Chandlerii; 2, the Hon. P. Dawnay, for Hovea Celsi. Azaleas: 1, Mr. Edward, for lateritia; 2, J. Bell, Esq., for seedling; 3, Mr. Appleby, for A. indica alba. Epacris or Correa: 1, Mr. Appleby, for C. speciosa major; 2, Messrs. Backhouse, for E. grandiflora; 3, J. Hutton, Esq., for E. Willmoreana. Cinerarias: 1, Hon. P. Dawnay, for the Countess of Zetland; 2, 3, J. Richardson, Esq., for two seedlings. Ericas: 1, Messrs. Backhouse, for E. Macnabiana; 2, J. Bell, Esq., for E. Cavendishii; 3, J. Hutton, Esq., for E. Beaumontiana. Pimeleas: 1, J. Richardson, Esq., for P. decussata; 2, for P. Hendersonii; 3, Mrs. Davies, for P. spectabilis. Acacia, or Cytisus: 1, J. Richardson, Esq., for C. canariensis; 2, Mr. Appleby, for C. racemosa; 3, Messrs. Backhouse, for Acacia pulchella. Fuchsias: 1, J. Roper, Esq., for Beauty of Leeds; 2, Hon. P. Dawnay, for Duchess of Sutherland. Calceolarias: 1, Messrs. Backhouse, for Goliah; 2, J. Hutton, Esq.; 3, Hon. P. Dawnay, for Sir Thomas Benson. Rose Tree in Pot: 1, T. W. Wilson, Esq, for La Reine. Hardy Shrub: 1, J. Buckle, Esq., for Glycine sinensis; 2, Mr. Appleby; 3, J. Hutton, Esq, for Daphne Cneorum. Hardy British Plant: 1, Mr. Appleby, for Gentiana verna; 2, 3, Messrs. Backhouse, for Asplenium septentrionale and Hymenophyllum Wilsoni. Hardy Herbaceous Plant: 1, J. Buckle, Esq., for Cypripedium Calceolus; 2, H. Baines, Esq, for Trillium grandiflorum; 3, Mr. Appleby, for Fumaria nobilis. Specimen Plant: J. Richardson, Esq., for Polygala grandiflora. President's Prize: J. Roper, Esq., for Rhododendron Alberti. Several other prizes were awarded, but as we have only received a list of them, without the names of the subjects for which they were given, they are not worth reporting.

Reviews.

Flower-Gardening for Ladies. By J. B. Whiting. Bogue. 12mo.

A SHILLING manual, of 142 pages, full of excellent practical information on the subjects of which it treats. It is prefaced by a coloured vignette, and contains woodcut illustrations of garden implements, flower-gardens, and modes of layering and grafting. It is divided into six chapters:—The 1st is on soils and manures; the 2d, on implements and gardening operations; the 3d, on laying out a flower-garden; the 4th, on the classification, propagation, and duration of plants; the 5th, on planting, potting, watering, and pruning; and the 6th, on the management of flower garden plants. This latter chapter is copiously interspersed with select lists of Roses, ornamental Shrubs, Dahlias, Tulips, Hyacinths, Verbenas, and other popular bedding plants. The following extracts, from chapters I. and VI., will give some idea of the manner in which our author treats his subjects:

"For making *liquid manure*—that is, fertilising matter suspended in water—nothing at present known is equal in effect to good *Guano*. There are, however, so many methods practised of adulterating this valuable substance, that great caution is requisite in order to obtain it genuine. A handful of guano mixed with a common sized watering pot of water makes an exceedingly nutritive and stimulating liquid, especially adapted for plants which have filled their pots with roots, and which it may not be desirable to re-pot. Given in moderation, this mixture acts beneficially upon all plants to which we have seen it applied; but caution is necessary in administering it, for an over dose would be very injurious, if not fatal. Guano is sometimes applied by sprinkling the powder over the surface of the soil, to be dissolved and washed down by the rains, or by artificial watering.

"*Pigeons' dung*, as well as that of domestic fowls, when steeped in water, make powerful stimulants, equal perhaps in strength to guano, but less convenient to use.

"*Nitrate of Soda*, one of the class of mineral manures, is occasionally used in the flower-garden, for re-invigorating the Grass on lawns. For this purpose it must be broken small and sprinkled thinly over the turf, just before the Grass begins to grow in spring."

"PELARGONIUM.—This genus furnishes a number of admirable flower-garden plants, which are popularly known as Scarlet Geraniums, Horse-shoe Geraniums, Ivy-leaved Geraniums, and variegated Geraniums. Of the first class we have not seen a better variety for a low bed than General Tom Thumb. Its foliage is a shining light green; its flowers bright scarlet and numerous; and its habit dwarf and spreading. It is, however, rather tender in constitution, and therefore requires a little more warmth in winter than most others. The Bath Scarlet and the Frogmore Scarlet are two older sorts, which bloom freely, and are fine in colour; and the same may be said of Mrs. Mayler, Punch, and the Huntsman, with many other varieties of more modern origin. The Horse-shoes are distinguished by a dark mark on the leaves, of the form of a horse's shoe. Some of these, as Pre-eminent and Cottage Maid, have the bright scarlet flowers of the preceding kinds, but those usually called by this term are descendants from Pelargonium zonale, an African species, and are known by gardeners as the Red Horse-shoe, which has crimson red flowers; the Purple Horse-shoe, which has red flowers, suffused with purple; and compactum, which has close heads of red blossoms. The true Ivy-leaved Geraniums are considered distinct species by botanists. One kind (Pelargonium lateripes) has reddish flowers; another (P. scutatum) has nearly white blossoms. The latter is sometimes employed for bedding, when its long flexile shoots should be pegged down; but both species are chiefly useful for hanging over the sides of elevated boxes, baskets, or vases. Many varieties of variegated-leaved Geraniums are cultivated; the best of these for our purpose are the Red-blossomed, which has leaves margined with white, and deep coloured small flowers; and Mangles's, which has leaves edged with clearer white, and flowers of a delicate pink colour. Another variety known as the Cup-leaved has pretty pink flowers; but the plant is more delicate than the two preceding sorts. A new kind has lately been raised (and is in the possession of Messrs. Lee, nurserymen, Hammersmith), which has bright scarlet flowers, and promises to be a great acquisition to this tribe, if it should not prove too tender for bedding. A very distinct and desirable Pelargonium has become extensively known within the last year or two under the name of Lucia rosea. Its leaves resemble those of the scarlets, and so also do its flowers in form and style, but the colour is a delicate pink. To form large bushes for dotting about the lawn, or for single plants to fill large vases, several scarlets of very robust growth are cultivated, of which those called Smith's Emperor and Smith's Superb will be found as good as any. All these can be readily propagated by cuttings during the growing season; and they generally produce seed freely, from which new varieties might be raised. We prefer cuttings to pot singly in small pots and sandy soil, keeping them close and warm till rooted, and cautiously avoiding over watering; for as the shoots are rather succulent, an over supply of moisture is certain to rot them. In autumn, when the beauty of the flower garden is over, the old plants should be taken up with good roots, and potted, cutting their heads well in; they ought then to be put under glass and encouraged to push young roots; and, if properly managed during winter, they will form healthy plants for turning out into the beds again in the following spring. A stock of young plants ought, however, to be maintained, to supply deficiencies, as some of the old ones will unavoidably die. Some of the hardier varieties may be wintered in a cellar, by merely covering their roots with soil; and when the weather is sufficiently settled in spring, they can be transferred direct to the flower-garden, without the trouble of potting them. We have found the Red Horse-shoe and the Red-blossomed Variegated bear this treatment best. A new class, designated fancy Pelargoniums, has lately become popular. The best for bedding are said to be Diadematum, Diadematum rubescens, Rouge et Noir, and Queen Victoria. These, with such other varieties as are found to succeed planted out, would form a novel and interesting bed in a warm situation."

The little book before us is no "arm-chair production;" but the result of the experience of one of our best gardeners. We can therefore confidently recommend it to all who would successfully manage their own flower-gardens.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

PROCEED with potting all stove or greenhouse plants which require it, in order that they may make the best use of the next two months in producing a vigorous growth, and have plenty of time for maturing it before winter. Many of the free growing plants which were potted early in the season will now require larger pots, with which they should be immediately supplied, unless it is wished to flower them in their present sizes. In the latter case occasional waterings of liquid manure, of moderate strength, will be useful, both to maintain the present vigour of the plants, and to assist the future development of their flowers. Keep a moist growing atmosphere in the conservatory by frequently sprinkling the paths, curbs, and other evaporative surfaces, in warm weather; and when syringing sprinkle well the walls of the house, that they may give off, in combination with moisture, the heat which they have absorbed during the day. In fine weather syringe Pelargoniums, and close the house a little before the sun goes off it. Hard wooded plants, also, which have been recently potted, will be considerably benefited by a gentle syringing at the same time. During this season, when the greater part of the plants is in active growth, and requires more warmth and moisture,

those which are in flower should be kept in a house by themselves, where their blossoms can be preserved by shading, free admission of air, and a drier atmosphere. As the cooler pits and frames are set at liberty, they may be made very useful during the summer by filling them with suitable composts, and turning out young greenhouse plants into them, there to make their summer's growth. Treated in this manner they make much greater progress during a season than when grown in pots, and are with less difficulty induced to form handsome plants. The principal points requiring attention are, to secure a good drainage beneath the soil, to give each plant sufficient space, and to elevate the bed as near the glass as possible, allowing only sufficient height for the plants themselves and a vigorous summer's growth. This plan, however, should not be adopted without due consideration as to the facilities at command for preserving them in autumn and winter, after they are taken up and potted, when the frames will be required for other purposes.

FLOWER GARDEN AND SHRUBBERY.

In favourable localities the operation of turning out may now commence, if the ground is all in readiness; but if any of this is yet unprepared, such work should first be completed, as in doing it no risk is incurred. We can scarcely consider ourselves secure from sharp weather yet, and therefore think it prudent only to recommend planting in the most favourable situations, or where there are ample means of protection at command. We have commenced planting out, but to protect the plants in case of a sudden change in the weather, as well as to shelter them from the rays of the sun, we are using the Yew branches taken from the wall trees that no longer require covering; the lower ends of these are sharpened and stuck in in a leaning position over and amongst the plants. This is a simple method of preventing, at a small cost, a loss which would be irreparable. After the hardiest kinds, as Pentstemons, &c., are planted, Calceolarias and Verbenas will come next in turn, selecting first the best established of those plants which have been gradually inured to the open air. Except in very extensive places, very little advantage is gained by commencing too soon, and the meantime may be more usefully employed by performing all preliminary operations, and getting the work forward elsewhere, that a stronger force and less divided attention may be devoted to this work as soon as it may be prudently commenced. It will, however, be advisable first to ascertain the quantity of plants in readiness, and compare it with the quantity of each kind required for the proposed arrangement, that alterations rendered necessary by a deficiency of any species, may at once be made. While active preparations are being made for the first planting out, it must be remembered that gaps will occur in the beds during summer and autumn, and that some of the beds which are filled at first with transient annuals will require entirely renewing; to meet these demands, a reserve must be established of late annuals, and half hardy plants, of all kinds used in the beds. For this purpose we prepare a bed of coal ashes rolled solid, and lay upon it 2 or 3 inches of soil composed of chopped turves, leaves, and coarse sand; in this we prick out young plants of such kinds as are likely to be required, at distances of from 4 to 6 inches asunder. After trying various methods of economising labour and materials, we have for several years past adopted this for the general preparation of the bedding out stuff for an immense flower garden, thereby saving annually the expense of many thousands of small pots, besides deriving other advantages from the practice.

FORCING DEPARTMENT.

PINERIES.—Let the plants be liberally supplied with moisture this growing weather, and especially the plants which are swelling their fruits; to the latter it should be given in the shape of liquid manure, and where it is desirable to produce the fruit as large as possible, its swelling will be assisted by depriving the plant of suckers, and affording a slight shading during bright sunshine. Maintain a moist atmosphere, by sprinkling all evaporative surfaces, and by loosening the surface of the tan, to allow of a free exhalation. Take advantage of every opportunity of keeping up a successional supply, by introducing a fresh plant for each fruit that is removed. VINERIES.—Attend to tying, thinning, and stopping the shoots &c., as recommended in former Calendars. Where plants of any kind are necessarily grown beneath Vines, the shoots of the latter should be stopped at the first joint above the fruit, and the spurs on which there is no fruit should be stopped at the fourth or fifth leaf. This will also apply to Vines on the rafters of greenhouses, which are just now breaking. In disbudding not more than twice the number of shoots necessary to produce a crop should be retained, one half for this year, and the other half for next year's crop. MELONS.—Those who are anxious to produce Melons in the greatest perfection, should plant about the beginning of May, as they thereby secure the four finest months in the year for growing and maturing them; and as they are also the finest months for the increase of insects, no pains should be spared to keep them in check. To this end all damaged leaves should be removed, as insects generally effect a lodgment most easily on those parts of the plants which have received some check in their healthy development.

FLORISTS' FLOWERS.

We would advise our Pink-loving readers to go carefully over their beds; they will find some plants emitting perhaps nine or ten shoots for flowering. Now it will be obvious that, if these are all allowed to perfect one or more blooms, that the energies of the plants will be so much taxed that they will be individually small and weak. We have just reduced the number of stems on our plants to one or two, according to their strength, and, after loosening the surface soil, have applied a dose of weak liquid manure made from sheep droppings. In Tulips the amateur must be guided by circumstances as to the period of putting on his awnings; in the south they are a week or 10 days earlier than in the north; it will therefore be necessary to use discretion, but the unpractised cannot err much if they cover as soon as the blooms show colour, but practice is the only sure guide. We have heard from various parts of the country complaints of the flower buds having withered away, and in some instances whole collections have suffered from disease, brought on, we imagine, by overgrowing.

KITCHEN GARDEN.

All the shoots first produced on the Asparagus beds should be cut, both small and large, leaving none to shoot up into leaf till it be thought prudent to discontinue cutting for the season. Seakale pots, and the materials with which they have been surrounded, should now be cleared away, the remaining etiolated foliage cut off, and the ground forked and sprinkled with common salt. A cool, moist atmosphere should be maintained in the Mushroom house, and cleanliness as strictly attended to as the nature of the place admits of; let the hay used for covering the beds be occasionally changed, as it forms a more congenial harbour for insects when allowed to get old and musty. Pay attention to the destruction of woodlice, by laying slices of Turnips to attract them, in addition to which a few toads should be kept on all the beds. The Onions will soon require thinning, and if a sufficient breadth has not been sown, a bed should be prepared for transplanting those into which are thinned out of the principal bed. Make a sowing of the silver-skinned variety, moderately thick, to produce small bulbs for pickling.

State of the Weather near London, for the week ending May 1, 1849, as observed at the Horticultural Gardens, Chiswick.

April and May.	Moon's Age.	Barometer Max.	Barometer Min.	Thermometer Max.	Thermometer Min.	Thermometer Mean	Wind.	Rain
Friday 27	4	29.838	29.660	61	40	50.5	h	.04
Satur.. 28	5	30.000	29.881	59	37	48.5	W	.28
Sunday . 29	D	30.260	30.178	68	44	56.5	S W.	.00
Monday 30	7	30.284	30.209	66	35	50.5	E.	.00
Tues. .. 1	8	30.141	30.006	56	9	47.5	N E	.00
Wed. . 2	9	29 956	29.854	65	48	56 5	N E.	.09
Thurs... 3	10	29.810	29.797	74	44	59 0	E	.01
Average .		30.041	29.910	64 1	40.4	52.7		0.42

April 27—Foggy; low white clouds; small rain
28—Fine; heavy showers, partly hail, with thunder, clear at night.
— 29—Slight haze; very fine, overcast
.. 30—Fine, very dry air, clear at night.
May 1—Cloudy throughout
— 2—Foggy, with thick drizzle; overcast; thunder storm at night.
— 3—Foggy, hazy, fine; clear, suddenly overcast, rain at night.
Mean temperature of the week 1 deg. above the average.

State of the Weather at Chiswick during the last 25 years, for the ensuing week, ending May 12, 1849.

May	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 6	62.6	40.6	51.6	10	0.48 in	—	5	3	2	3	6	1	1
Mon 7	64 2	42 0	53.1	8	0.45	2	5	2	2	4	5	1	2
Tues 8	63 6	42.1	52.8	7	0.57	—	4	5	—	5	3	5	1
Wed. 9	62 6	41.2	51 9	9	0 60	2	5	4	1	2	7	2	-
Thurs. 10	62.3	39.6	50.9	6	0 10	4	4	4	1	1	4	4	1
Friday 11	62.9	41.4	52.1	8	0.26	3	0	3	1	1	3	1	2
Satur 12	63.4	41.7	52.6	9	0 40	2	0	0	1	3	3	1	2

The highest temperature during the above period occurred on the 8th 1830, and 12th, 1833—therm 81 deg.; and the lowest on 11th, 1838—therm 27 deg.

Notices to Correspondents.

ANTS, &c. *T S H.* Next week

BEANS. *H and Beta.* The seed from which these have been raised was diseased, as is often the case. Beans for sowing should always be examined by breaking some of them, and if they are black in the inside they should be rejected. Such Beans are not uncommon in Mark-lane. We are very sorry to hear that cultivators are experiencing such large losses as you describe.

BOOKS: *F L M.* See p. 97 (Newspaper). Gardeners can obtain it for 3*s.* 9*d* a Number.‡—*G B.* Donn's "Hortus Cantabrigiensis."‡—*Two Young Gardeners*: We are quite unable to answer the inquiry.—*J A P.* Will you favour us with your address.

CACTI. *George Summers.* Boiling water brought into contact with Cacti will kill them; but if it is poured over the earth in which they grow it will cease to be boiling. We never tried the experiment, but can conceive that it may be beneficial.

CINERARIAS: *Sub.* When they have done flowering cut off the flower-stems and old leaves and place them in a cold pit or frame, which must be kept rather close for two or three weeks, to cause the plants to grow. Afterwards admit air freely by day and keep them close at night. About the beginning of August divide the old plants into pieces and put them into small pots; then return them to the pit or frame and keep them close. Afterwards, as they grow, give them more air, and shift them into larger pots, and as the danger of frost approaches remove them to the greenhouse, where they will bloom in spring.‡

DAPHNES *A H.* D. Aucklandi is hardy; what is D. formosissima? We are unable to answer the enquiry about Funkia. Mr. Fortune introduced no new species of that genus.

FRUIT TREES *A T W.* Of the mixtures you mention lime and water will answer best. What is your object in painting the stems of your trees?‡

GAS WATER: *J A P.* It is impossible to offer any opinion, because gas water varies extremely in strength Try it first on a small scale, by way of experiment.‡

GLASS: *H D.* We do not know whether linseed oil and acetate of lead will make a good varnish for glass. Such points must be determined experimentally. Why not try it? We have no information. Probably it would be best to put it on in the inside.—*Sub.* Patent rough plate will suit you best.‡

INDIAN PLANTS: *A Const. Sub.* Nos. 1, 2, and 5, hardy; 3 and 4 greenhouse; the rest stove plants. No. 1 is the only one that is new and valuable.

INSECTS: *Anon.* We suppose you allude to the red mite Trombidium holosericeum, which is, however, considered harmless. Can you not send specimens to enable us to determine the species? *W.*

LYCHNIS: *Rosabel.* Lychnis fulgens and coronata are hardy perennials.‡

MONSTERS: *G E Luff.* Such Daisies are not uncommon. They constitute what is called a "fasciated" structure.

NAMES OF PLANTS: *Derwendeg.* Asplenium Adiantum nigrum. *S. P. B.* 1, Oncidium Cavendishianum; 2, Epidendrum aromaticum. It is difficult to say what ails your Java Rhododendron leaves from the specimen sent. It looks as if it had been injured by cold in some way or other. Perhaps your plant is out of order at the root. We would advise you to look to that.‡—*Somerset.* We do not recognise it.—*Ballendrin.* In the absence of flowers, we can only guess at your plant; but we see no reason why it should not be Rhamnus hybridus.—*Rythe.* Muraltia Heisteria.—*Sub.* Goldfussia anisophylla, Cyanotis vittata. The Goldfussia bears funnel-shaped lilac flowers.‡

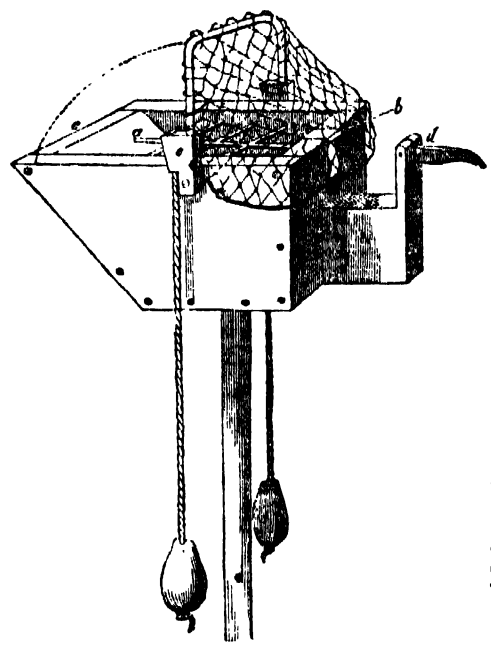
PEAT: *Amateur.* The material sent *might* do for Orchids.‡

PELARGONIUMS: *A Lady.* The leaves sent are affected by the "spot," an evil caused, it is believed, by cold and damp. It is not infectious.

PLATYPERS: *R.* Thanks. We are very full of matter, but will take an early opportunity of inserting it.

POLMAISE: *G. Bentham.* Polmaise is certainly not in fault in your case, if, as you state, no escape of gas has taken place from the stove. It is clearly a case of scorching, caused by the rays of the sun acting on tender leaves in a very damp atmosphere. This opinion is strengthened by your statement that it occurred after a period of dark dull weather. *L.*

BIRDS: *A Clergyman.* We know of no better plan of getting rid of them than by shooting them, or by trapping them by means of Mr. Knight's trap, which we borrow from one of our early volumes.‡



References.—The trap is in the act of springing up. It consists of a wooden box, open on the upper side, and placed on a staff. A strong wire is carried across it from *c*, and is so contrived as to move freely from *b* to *c*; to one side of this wire is attached a net, which is secured on the other side to the back of the box. Connected with the ends of the wire is a piece of line, to which weights are attached (brickbats or stones do very well); the object of these is to pull the wire forward to the front of the trap the moment it is sprung, and so to enclose the bird in the net. When set, the wire is drawn back to the space between *b* and *d*; the catch *d* is turned over the edge of the wire and applied to a notch in a moveable block at *b*; the block communicates with the tiller *a*, on which the bait is placed; the pressure upwards of the wire upon the catch, in consequence of the weight of the stones attached to it, keeps it firmly applied to the notch *b* until the tiller is disturbed; but the moment a bird touches the point *a*, the apparatus is disarranged, *b* and *d* separate, and the wire is instantly brought over to *c*, in the direction of the dotted line, thus taking the bird prisoner.

POLYANTHUSES: *G J B.* Alexander, George IV., Formosa, Invincible, Bang Europe, Beauty of England, Princess Royal, Defiance, Freedom, Cheshire Favourite, Nicholson's Goldlace, and Cox's Prince Regent.‡

ROSES. *Amicus.* You had best prune them back now as far as they appear to be dead.‡

SOUTH ESSEX HORTICULTURAL SOCIETY: *G N* complains that the prizes are not paid to the exhibitors. We presume there is some good answer to this. No doubt the gardeners will be paid, even although it be out of the pockets of the committee.

TAXODIUM SEMPERVIRENS: *Alnus.* It is a mountain plant; in general it may be considered hardy, but it is sometimes injured in severe winters; probably, however, more from local circumstances than from the effects of cold. It likes a loamy soil, and a slightly elevated situation, best.¶

VINES: *W D.* Your Vine leaves do not appear unhealthy; they seem to have been slightly affected by some insect, but they are fresh enough for bringing the fruit to maturity. The fruit is never perfectly ripe till after the wood has become brown.‖—*A Subscriber.* Muscats requires more heat than the Black Hamburgh does; yet, with a temperature of 70°, the bunches ought not to die off as you describe. We should suppose the roots are chilled. You may stop the fruit-bearing shoots above the second joint.‖—*L J P.* Stop all fruit-bearing spurs at the first joint above the bunch, and all laterals above the first leaf. Unfruitful spurs should also be shortened well back.‡—*Susan.* Leave it till autumn, and remove it then.‡

WILD FLOWERS: *A Lady.* We have no idea that a publisher could be found for such a work. We are quite unable to name one, unless it be Mr. Lovell Reeve, of King William-street, Strand.

WINTER VIOLET GRASS: *Sub.* Ionopsidium acaule or Cochlearia acaulis are its botanical names. It is a little Portuguese annual, sent to the Horticultural Society a few years since by the Duke de Palmella. See p. 289 of our volume for 1846.‡

SEEDLING FLOWERS.

FUCHSIAS: *T Turvill.* Elegance is a good bold flower, with a clear white tube and bright rosy purple centre; texture good. Gem—tube clear white, but too short, with a bright rosy purple centre. Fire King—flower large, tube flesh coloured, with an orange scarlet centre, texture good, very showy.*

PETUNIAS: *H J Hine.* Exacta—pale blush, good form, not over large, and nicely marked in the centre with violet veins; a very pretty variety. Majestica—large shaded violet flowers; too thin, and not unlike many others in cultivation. Lavendula pencillata—large pale lilac, nicely veined all over with deep violet; a pretty variety, but rather thin. Pet superb—flowers small, pale, flesh-coloured, with a bright purple centre, slightly veined; a distinct-looking variety, but much too small.*

BURBIDGE AND HEALY'S NEW BOILER.—The above is a modification of their Boiler (before published), modelled expressly for the large Conservatory, Chiswick Gardens, where it is now at work. From the observations B. and H. have been able to make, they are warranted in stating it to be the "Ne plus ultra" for warming large plant structures. As a proof, one charge of fuel has been kept burning for 48 hours without any addition, and one boiler of the size used is equal to warm 1500 feet of 4-inch pipe. They are also extensively put up at the Royal Botanic Gardens, Kew. Smaller boilers upon the same plan.

BURBIDGE and HEALY, 130, Fleet-street, London.

TO ORCHIDEA GROWERS.

BURBIDGE AND HEALY, 130, Fleet-street, respectfully call attention to their method of warming Orchidea Houses. They have had the honour of warming the Orchidea Houses at the undermentioned places:

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick, additions to the House.
Also the Orchidea Houses of the following distinguished growers of this interesting class of plants.
The Bishop of Winchester, Farnham Castle.
J. Lyons, Esq., Ladiston.
J. Warner, Esq., Hoddesdon.
Messrs. Henderson, Pine-apple Place.
J. Schroder, Esq., Stratford.
R. Hanbury, Esq., Poles, near Ware.
W. Webb, Esq., Clapham.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

CLARK'S METALLIC HOTHOUSE WORKS, 55, Lionel-street, Birmingham.—Proprietor, Mr. THOMAS CLARK; Manager, Mr. JOHN JONES.

Mr. CLARK presents his grateful thanks to the Nobility and Gentry for their liberal patronage of the above Establishment, during a period of thirty years, and begs to state that the repeal of the duty on Glass enables him to offer his METALLIC HOTHOUSES at a greatly reduced price. These Houses are glazed with British Sheet Glass, in panes of from 24 to 30 inches in length, and of such thickness as to preclude all danger of accidental breakage, whilst that which arises from the action of frost is effectually prevented by the peculiar mode of glazing adopted. As a sample of his Metallic Hothouses, in which all the most recent improvements are happily combined, Mr. CLARK refers to the magnificent range erected by him in the new Royal Gardens at Windsor, admitted by competent judges to be the most complete of its kind in the world.

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PERUVIAN GUANO, of the finest quality, direct from import warehouse.
NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SULPHURIC ACID AND COPROLITE.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
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A Treatise on Guano, Superphosphate of Lime, &c., will be forwarded on receipt of 8 postage stamps. Free to purchasers of Guano, &c.

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EDWARD PUGSLEY, Secretary.
40, Bridge-street, Blackfriars, London.

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TURNIP MANURE ... ... ,,	7	0	0
SUPERPHOSPHATE OF LIME ... ,,	7	0	0
SULPHURIC ACID AND COPROLITES ,,	5	0	0

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SULPHATE OF AMMONIA, &c.
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THE PATENT VULCANISED INDIA-RUBBER HOSE PIPES are made to stand Hot Liquor and Acids without injury—do not become hard or stiff in any temperature (but are always perfectly flexible), and as they require no application of oil or dressing, are particularly adapted for Fire-engines, Pumps, Gas, Beer-engines, Gardens, and all purposes where a perfectly flexible pipe is required. Made all sizes from ¼-inch bore upwards, and of any length to order.
Vulcanised India-rubber Garden Hose, fitted with brass taps, copper branch, and roses complete, ready to be attached to Pumps, Water-butts, or Cisterns.—Sole Manufacturer, JAMES LYNE HANCOCK, Goswell-Mews, Goswell-road, London.
N.B. Vulcanised India-rubber Washers of all sizes for Joints of Hot-water and Steam Pipes, and Vulcanised sheet Rubber, any thickness, for all kinds of Joints, and other purposes.

PORTLAND CEMENT.—Testimonials received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.
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The Agricultural Gazette.

SATURDAY, MAY 5, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS

THURSDAY,	May	8—Agricultural Society of England.
THURSDAY,	—	10—Agricultural Imp. Society of Ireland.
TUESDAY,	—	15—Agricultural Society of England.
THURSDAY,	—	17—Agricultural Imp. Society of Ireland.

FARMERS' CLUBS.—May 7: London, Great Oakley, Clyst, Much Wenlock —May 8 Framlingham —May 9: Tavistock · May 11. Hadleigh.—May 14 Claydon.

IN an adjoining page our readers will find another long article on BOX-FEEDING, by Mr. WILKINS, which we confess we should not have published, even in the abridged form in which it appears, had it not been the last of so long a series. For, deduct the very complimentary allusions to the editor—the quotations illegible by ordinary cattle-feeders—the passage on the value of Linseed as food, which really has nothing to do with the question of Box *versus* Stall—deduct the allusions to antiquity with its cattle-feeding "soon after the Deluge"—and the lengthened announcement of intended lectures by the writer—and we really can find in it but one new statement of any importance bearing upon the subject, and there the writer is in error. It is a mistake, whatever the "authority" in its favour, to suppose that so large a quantity of manure would be produced, independently of their litter, by Sir C. BURRELL'S oxen, as Mr. WILKINS calculates: but, suppose him to be right in his calculations, does he not see that the larger the quantity—the more hopeless the case in his mind as regards the comfort of these animals—the stronger does the fact tell against him? for their comfort *was* achieved, and by the very system which he denounces. Read Sir C. BURRELL'S statement on this subject in page 172—what can argument and calculation effect in the face of perfect evidence against the result to which they lead? But this is the peculiarity of this controversy; our opponent flies on all occasions to analogy, and *à priori* demonstration, and so called science and nature; and it appears impossible to detain him over statements of fact, and yet these are really the only points which ought to influence us. It is a dangerous practice to pin one's faith to the deduction of a possibly imperfect acquaintance with Nature; let us always try first to ascertain the facts of a disputed question, and we may be sure that, when once they shall have been correctly determined, they will prove capable of scientific explanation. But no—Mr. WILKINS is so convinced of certain general truths that nothing will appease his hostility to a practice by which, after all, they are not in the least contravened! What though the products of fermentation are injurious to health—what though cruelty to animals both inculpates and degrades—what though Linseed-oil and Bean-meal be more nutritious than Linseed-meal alone *—the FACT remains that Sir C. BURRELL'S cattle were comfortable and healthy. Will Mr. WILKINS just consider this fact: our cattle during the past three years have been box-fed, that is, they have been at liberty, each in a space of about 100 square feet, where they have been daily littered, the manure being allowed to accumulate under them—and they have been dry and comfortable, sleek and healthy, growing rapidly in fat and flesh amid a wholesome air, and on a dry lair. There is the fact. What room is there for such adjectives as pestiferous, dismal, putrifying—why should we talk of "living cattle graves," or of the "cadaverous effluvia" arising from them—in describing it? Mr. WILKINS has not yet attempted to disprove this statement of fact, though his wit has sometimes succeeded in raising a laugh at the assertors of it: his present communication is no answer to it—it is merely an attempted satire in three languages on those who urge it.—We had hoped to have secured his undoubted powers as an advocate on the side of what is unquestionably a practice of great agricultural importance, but we have now lost all hope of this: we foresee that it will be Argument *versus* Fact—Analogy *versus* Eyesight—"Science" *versus* Truth—the Rev. GEORGE WILKINS *versus* Box-*feeding*—to the end of the chapter.

* What *this* has to do with the question we cannot conceive.

MR. CAIRD'S PAMPHLET.*

"ONE swallow does not make a summer;" by parity of reasoning, half a score of ill-informed agriculturists do not represent the farming public of these realms; therefore, I trust that "Messrs. Huxtable, Mechi, and Co," (as a recent writer in the *Mark Lane Express* has it), will not desert the field where they have acquired such imperishable honour by their exertions in the cause of enlightened agriculture.

I can well understand why an educated gentleman shrinks from such rude contact with persons incapable of understanding him, and as incapable of appreciating the high motives which actuate an intellectual man in stepping forth from the happy retirement of his own circle, and placing himself prominently before the public. But nevertheless, as I am convinced that the majority of the thinking portion of the agricultural world feel their obligation to the eminent firm above mentioned, it is very much to be desired that they—the members of the firm—will again come forth to instruct the ignorant, and encourage the wavering minds of men at the present time.

It seems certain that, amidst the general gloom and darkness at present shrouding the prospects of the tenant farmers, that the mind itself is so depressed as to be almost incapable of the necessary exertion to look the danger steadily in the face, to ascertain whether the cause of our alarm is a spirit of evil, or a substantial good in an uncouth garb. Now, whether protection is to return or not, it is quite certain that at present the land must be cultivated independent of that prop, therefore it behoves the luckless farmer (if he will style himself so), to set himself to work to discover the means of walking alone. I therefore join you, sir, in recommending, in earnestly recommending, every farmer in this kingdom, aye, and every landlord too, and every landlord's agent—as one mean to this very desirable end—to procure and diligently peruse Mr. Caird's pamphlet on "High Farming;" the cost is only 1*s*. No doubt there will be much cavilling, I have heard some already, but such will ever be the case; some minds will not be convinced, and why? Because they are ignorant of the premises! One would have thought that any statement from such a cautious canny chiel as Mr. Caird would have been quite satisfactory, but no! he has sought admission into the copartnery of the scientific improvers of his profession, and he must be prepared, like them, to run the gauntlet of captious criticism.

But this is a digression To return: it is now some time since I first heard and adopted the opinion enunciated by Mr. Caird, that henceforth the farmer's main hope will be in his green crops; let him exert himself with all his strength to produce heavy green crops, and the corn crops will take care of themselves upon the good things remaining in the soil. But now comes the cry "what are we to do with these green crops when we have got them;" and this I understand as the real "tug of war"—the great difficulty—which the tenants by themselves cannot overcome; the very great majority of them have not the capital, and those of them who have, have not the necessary security for its outlay to enable them to erect sheds, feeding houses, tanks, &c., all of which machinery is absolutely necessary to enable the producer of green meat to convert it profitably into butcher's meat, and thereafter into grain. Here, in this dilemma, it is imperative on the landlord to step forward, as has been done by Col. M'Douall, the Earl of Stair, and some others; and either themselves build, or give such encouragement to tenants of capital, intelligence, and skill, as shall induce them to expend their own means in providing such accommodation.

The tale that the landlord has not himself the means of doing this, will no longer be of any avail, this has become a national question, and a remedy must be found; the owners of the soil have themselves produced this state of things, to adopt Mr. Caird's simile, they have themselves removed the "crutch," whether as "mischief makers or as wise physicians," time alone will develope. But, having done so, they are bound to watch, to ascertain whether the subject of the experiment is "a real cripple or a hypochondriac;" and even in the latter case, finding him a little stiff, from the long continued use of the instrument which they induced him to use, as much for their own purposes as for his, they are morally bound to afford him support, to assist him till he can plant his foot firmly on the ground. In those cases where the landlord has not the means of rendering assistance, and there are vastly too many such cases, the same remedy must be applied as Mr. Caird suggests for those farmers who hold too much land for the amount of their capital. Let an "encum-

* On "High Farming Under Liberal Covenants the Best Substitute for Protection." Blackwood and Sons, Edinburgh and London.

bered estates bill" be brought into operation, and the landlords as well as the farmer in like circumstances, will find that by investing the amount realised by the sale of part of their lands in the improvement of the remainder, their rental is not decreased but increased, inasmuch as the interest on money invested in the purchase of land, does not nearly equal that realised by an investment in the improvement of an estate by draining, &c.; in the one case, he is fortunate in securing 3 per cent., in the other, no tenant would decline paying, at the very least, 5 per cent. So that in effect, the landlord so situated would, by selling part of his estate and improving the remainder with the purchase money, be withdrawing his capital from a poor investment and re-investing it in a better. I am met here by the objection, "we cannot sell in the present depressed state of the market," but I content myself by repeating the last argument, even at the reduced upset price, the additional interest will yield as large a return as you before possessed.

I sat down down for the mere purpose of uttering a cry for the distressed, to invoke some good genius to the farmers' aid, to induce those wise and good philanthropists who have devoted themselves to the study of the laws and science of agriculture, for the sole purpose of elevating the present degraded position of the farmer, to come forth from their hiding places; and, despite the "cerberean" noises which seemed to have alarmed them, again raise their voices and wield their pens in those praiseworthy efforts, which in combination with Mr. Caird's pamphlet, and similar exertions, may tend to re-invigorate the agricultural constitution. But I have been betrayed by the deep interest I feel in the subject, into the act of wielding my own pen much longer than I ought to have done, though I have something more to say on the subject yet.

Before concluding, permit me to give expression to the gratification and instruction I derived from the last number of your *Gazette*; among other good things, it places box feeding in a better light than it has hitherto obtained. The letter of T. C. Morton, also calls for a vote of thanks from every reader of the *Gazette*. *Edgar Slade, Chislehurst, April* 24.

FORTY-DAY MAIZE.

YOUR correspondent, "T. A." has requested me to give some particulars respecting the mode of cultivating this plant. Not having time to attend to it myself, I sent to Mr. Poynter, and asked him to do it in my stead. The following is what he has written; and your readers may depend on his correctness, because he is a practical and experienced man. I take this opportunity to correct an error I made when before referring to Mr. Poynter. He tells me he is not, and never was, gardener to the gentleman at Manchester whom I named. *J. P. Cobbett, April* 26.

As you wish to have something of a history of my Indian corn, or Maize growing, I comply with your request. In the year 1798 I had a few seeds of Maize given to me by a Frenchman. He had been drawn for a conscript, but having an aversion to the smell of gunpowder, and no relish for honour and glory, he by some means made his escape, and came to England, where he became gardener to Bartolozzi, the most celebrated engraver of his day, and who was then my father's next door neighbour. I planted my corn in little hills about 4 feet apart, 4 plants to each hill, on a warm south border at the end of my father's house. I kept it very clean, and earthed the hills higher as the corn grew. I perfectly succeeded. But my corn grew on a very warm and sheltered spot. There was a Grape-vine at the end of the house near where the corn grew, at least 25 feet high, the Grapes of which always ripened well; so you may imagine my corn had every advantage of situation it could have. I had no other motive for growing it than as a curiosity, and my admiration of its singular beauty as a plant. I used to give nearly my whole crop away, and whether to cow, horse, ass, fowl or man, it was always an acceptable present. I thus continued the growing of it for some years, until at last, from being too liberal, and not taking proper care of my reserve stock, I by some means lost the seed. From that period till, I think, 1827 or 1828, I ceased to be a Maize grower. At that time Mr. Cobbett first broached his design of growing Maize in England. I obtained, along with some seeds of the "Cobbett Corn," about 8 or 9 different varieties of Maize. I had about 30 perches of a lightish rich soil dug. I planted the corn with a dibble, dibbling in the seeds singly, about 2 inches deep, about 6 inches apart in the rows, and the rows 2 feet asunder. It was planted the first week in May; scarcely a seed missed, it was up in a few days. It had several common flat hoeings, to destroy the weeds, and promote its growth. At the first hoeing I had every other plant cut out, leaving it for a crop at about a foot apart in the rows. Before the leaves of the rows began to touch each other, I had the rows dug between; and a short time afterwards slightly earthed up the rows with a common flat hoe. The "Cobbett Corn" ripened about Michaelmas, and was gathered in in October. I drew the husks backwards, and tied the corn up in bunches, and hung the bunches up in a dry room. This is the way I would recommend to every cultivator of it on a small scale. Its appearance will not disgrace even a gentleman's parlour. In this way of planting and managing I continued all my subsequent growths of it. In regard to the other sorts given to me, none but one ripened. They, with that exception, grew from 5 to 10 feet high, a large mass of green leaves, suckers, and stalks. Large cobs were well formed, but on opening the cobs, it was evident that it would require two English summers to come together to ripen it. It was all in a soft, milky state. The one sort above excepted, that did ripen, was the "Chicken corn" (*Mais à Poulet*) This ripened by the middle of August, five weeks before the "Cobbett corn" came to an equal degree of ripeness. The grains of this were of a darker yellow, more of a carroty colour than the "Cobbett corn," which last is the very identical sort given to me by my old friend the Frenchman in 1798. The grains of this "Chicken corn," though small, were as sweet, as sound, and as perfect as any Maize I ever saw, whether English or foreign. I must now notice a remarkable circumstance attending my cultivation, in subsequent years, of this "Chicken corn." It increased in the size of the grains and cobs, until both became nearly as large as the "Cobbett corn," but still preserved a peculiar flatness on the tops of the grains, and a darker shade of colour. It also retained an earlier degree of ripening than the "Cobbett corn," but not by any means equal to that of my first growth of it. These circumstances make me conclude it is only an accidental variety of Philip Miller's Zea vulgare, which "Cobbett's corn" certainly is. My opinion is that these species of corn will succeed well in any of the southern counties of England on light sandy soils, not too poor or bleak, nor too highly manured. No doubt it delights in a sunny aspect, and that eastern; and, more particularly, northern slopes of land are to be avoided. Miller, in his "Gardener's Dictionary," 6th edition, printed 1771, estimates that his Zea vulgare, on the light sandy soils of the south of England, would produce 50 bushels an acre, and be a crop far preferable to Beans and Peas. I think his opinion was a correct one. The best time for planting I consider to be as early in May as the weather will permit; but I once planted some on the 2d of June, which succeeded as well as any I ever grew. *T. Poynter.*

BOX FEEDING.

Δεινὴ δὲ κλαγγὴ γένετ' ἀργυρέοιο βιοῖο.
Οὐρῆας μὲν πρῶτον ἐπῴχετο καὶ κύνας ἀργούς,
Αὐτὰρ ἔπειτ' αὐτοῖσι βέλος ἐχεπευκὲς ἐφιεὶς
Βάλλ'. ILIAD, α., lines 49—52.

I DO not happen to possess a copy of "Gil Blas," but the Editor's article on box feeding has brought a passage in that admirable work so vividly to my recollection, that I cannot resist the inclination it has excited within me to refer to it on the present occasion.

[We have not room for an analysis of the satire which Mr. Wilkins gives. The narrative, so far as given, terminates with the conversation of Dr. Sangrado and Gil Blas, his assistant, in which the scruples of the latter are answered. "Gil, after all my instructions," said he, "thou art still but a simple novice, my fame, my professional reputation, and personal interest, all depend upon the mode of practice I have adopted, and as a proof of its correctness, thou knowest how extensive it is become, and that it is daily increasing; I, however, in some measure acknowledge the truth of what thou hast related, and confess that I, like, thee, have never seen a patient alive twice; but then my practice is a sound practice, a wonderful discovery in the art of treating diseases, simple and efficacious, and, besides, Gil, thou knowest I have written a book in defence of my practice, and therefore I cannot depart from it."]

Literature may be searched in vain for a keener satire upon the follies of men than that which is contained in the few words of the empirical doctor, and it is so applicable to the modern box-feeder, that I hope I shall be excused for the drawing attention to it, and I hope it will make him reflect that neither numbers nor great names can make quackery science nor error truth. My friend, the Editor, has a farm, and he has not only sunken his "living cattle graves," and placed his beasts in them, but he has also written his books or his articles in defence of the system he is practising, and, therefore, like the learned Dr. Sangrado, he cannot depart from it, as his honour, his professional character would be compromised were he to relinquish it. But it is as sure to give way before examination into its merits and scientific investigation, and become a mere matter of history, as hundreds of other absurdities have which have existed before it, and are not forgotten.

But I must not forget the motto I have placed at the head of this paper, because it exhibits in a few words more correctly than anything I could have written myself the cause and effects of most of the follies to be found among mankind. I have adopted it also to show that men in all ages and countries have always been nearly the same, more inclined to adopt and follow error than truth, or, as we learn from the highest authority, to "love darkness rather than light." The sublime Homer, whom, with thousands of others, I can hardly think of without falling into the sin of idolatry, has so exactly described both the cause and effect of box feeding, that nothing which I can bring to the mind of the general reader will so clearly exhibit them. First, he implies that avarice is the moving spring in all those absurdities; Apollo, he writes, hurls among men an arrow from his silver bow. This excites their cupidity for wealth, but it infects the vulgar and illiterate first, whom he compares to the lower order of animated beings; and then by degrees it works its way into the minds of the learned and more polished, whom alone he admits to be worthy to be called men.

"On mules and dogs the infection first began,
And last the vengeful arrows fell on man."

Exactly like this has been the origin and progress of box-feeding; it began first in that modern Bœotia, the fens of Norfolk, and then worked its way to the model farm of my friend the Editor of the *Agricultural Gazette*

But I must draw more closely to my subject, and descend into dismal regions among muck and bullocks; and were I apt at making sense verses, to keep up my courage, as boys whistle by night when they pass through churchyards, I would sing, commencing in the following strain:

Res alta terra caligine (stercore) que mersas cano

as I descend, but as I was not born a poet, I proceed in plain prose. First, then, to dash at once into *medias res*, I inform cattle feeders that I have not been idle, although I have, I admit, kept them some time in suspense. They will remember that one excuse they have made for box-feeding has been that it enables them to feed their cattle with Linseed meal instead of oilcake; and that the latter is greatly adulterated. Now, although I never could discern the drift of this argument, yet I determined to put it to the test; and therefore, in the first week in March, I obtained and sent to an analytical chemist several samples of oilcake for analysis, and in consequence of the illness of that gentleman, I did not, until Thursday last, receive back the results of his analysis, and then only of three samples out of the number I sent him. These, however, prove that oilcake bought of respectable crushers, when not restricted in price, is free from adulteration; the samples analysed for me contained nothing more than crushed Linseed.

The quantity of oil, I also inform cattle feeders, varies from one-fourth to one-third of the quantity of seed by weight. Thus the only difference between oilcake and Linseed-meal consists in the oil that the seed contains before it is crushed. For my own part, I do not admit the extraordinary value of Linseed oil in the fattening of cattle; but, if it possess the value which box-feeders attribute to it, I advise them to buy the oil and mix it with Bean-meal instead of feeding with Linseed-meal. But, as I have stated, I cannot understand why cattle should be thrust into pits to enable them to eat Linseed-meal. I admit it has been stated that the flesh of animals is "more tender and more juicy" when they are kept on their own excrements than it is when kept dry, clean, and sweet; but butchers have informed me that it is not so, and I give credence to the butchers.* However, as I wish to give my opponents all the advantage in my power, I shall not dispute with them that in order to keep the urine and dung under cattle, when they are fed with the genuine compound as made from the original receipt, the beasts must be kept in pits or tanks, otherwise from the liquid nature of excrements of cattle so fed, they would run away and probably be lost. But, for general agricultural purposes, is manure made in the box-feeder's "living cattle graves" equal to, or better than, manure made by cattle kept in a more natural way? I answer this question fearlessly, and I stake my reputation on its correctness, that manure made in such boxes is less valuable than manure made on almost any other plan. I cannot, of course, in an article of this kind, give the grounds for this assertion, but, as I am about to deliver some lectures upon this subject, which will be published, the public will be enabled to judge how far what I am advancing will be borne out by the facts and authorities I shall thereat produce.

In my lectures I shall show, in order to prove that truth and nature are on the side I have adopted, that cattle stables, built soon after the deluge, were provided with drains, in order to keep them sweet and clean, and convey the liquid excrements into tanks exactly such as I have all along recommended to cattle feeders. I shall also prove that cattle are more liable to diseases, and especially those of the lungs, when confined in sunken pits, than when they are kept above ground on a dry well littered flooring, and breathing a pure and uncontaminated atmosphere. I shall also prove, from authorities which admit of no refutation, that its own excrements are destructive of the health of every created being, whether of animal or vegetable nature, when suffered to remain under it, and sooner or later will destroy it. I shall also show that for the most obvious causes this is a universal law of nature, and one which man cannot, with all his ingenuity, destroy, nor without the most consummate arrogance attempt to do so. And I shall further, I feel satisfied, prove to all who may attend the lectures I shall deliver, that what is called box feeding aims at improving the laws of Nature, or, in other words, at the setting of them at defiance. But chiefly, I hope to be able to show the truth of what was the chief object I had in view when I first took up my humble pen on this, to me, most interesting and important subject; and, indeed, was almost the sole object I then had in doing so, until I was driven from it by men who would not, or could not, understand the drift I was aiming at.

Strictly speaking, "priceless manure," or manure beyond price, as Mr. Warnes most aptly designates the stuff made from his compound, and cheap beef, have only been secondary in my thoughts when I have been writing on this subject. My object was to show that domestic animals cannot be considered by merciful men as mere machines, as void of sensation as a steam-engine or dung-cart. I wished to show that cattle might be fatted for the food of man in a natural cheaper than in a non-natural manner, and with much less inhumanity. I believe that man is accountable to the Supreme Judge for his treatment of the inferior sensitive beings, which have been intrusted to him for his use but not for his abuse. We call ourselves Christians, and boast of our humanity and refined feelings, but who that has read the sublime sentiments of some heathen sages, as we call them, can help feeling how inferior we are in all these points to many of those good and great men. For example, compare the box-feeder, he I mean who confines his cattle for months together in dungeons full of their own excrements, with the sentiments attributed to the heathen sage,

Isque, licet cœli regione remotos
Mente Deos adiit, et quæ natura negabat
Viribus humanis, oculis ea pectoris hausit.

and see which ought to be called the Christian, he who lived 500 years before, or he who now lives 1849 after the birth of the divine founder of our faith.

Quid meruistis, oves, placidum pecus, neque tuendos
Natum homines, pleno quæ fertis in ubere nectar!
Quid meruere boves, animal sine fraude, dolisque,
Innocuum, simplex, natum tolerare labores?

Exclaims the heathen sage; "Cattle are mere muck-making machines," writes the Christian box-feeder. Let the humane and thoughtful judge between them, and I thank Heaven we have yet, in this though degenerate age, many such men still living amongst us.

In taking leave of this subject, so far as controversy is concerned in the *Agricultural Gazette*, which I now do, I beg, through this medium, to thank heartily those gentlemen who have written to me, and kindly supplied me with much very valuable information, and I inform them that the substance of their communications shall be interwoven in the matters I shall bring forward at the lectures I have above referred to, and copies containing the whole shall be forwarded to each gentleman who has so favoured me. I observe also, that I have requested the Secretary of the Witham Literary Institution, whereat the lectures will be delivered, to inform all the gentlemen whose names have appeared in the *Agricultural Gazette* in connection with this subject, of the time when the lectures will be held, and likewise that discussions will take place at the same time upon any of the subjects which may be advanced. I also observe that, as the subject is a national one, and affects the national character, I have requested that medical men and veterinary surgeons may be invited to attend, and candidly give their opinions on all that may be advanced by myself. Perhaps, too, I ought to state, that I intend to give the authorities for all the sentiments I may utter, and among them, as well as references to scientific books (I shall give the books), I shall produce the opinions of feeders, butchers, seed crushers, analytical chemists, and writers on animal and vegetable physiology; my object being, as I have before published, either to prove myself to be on the right side, or for others to prove that I have been on the wrong. Let me also not forget to state, that out of the four box-feeders I some time since referred to, one of them, the third, now denounces the pits as strenuously as I myself do, and the fourth has lost three of his oxen by rotten lungs. Mr. Warnes also wrote, let it never be forgotten, that out of his six Dutch heifers he lost one. In conclusion, I press upon the advocates of this monstrosity that authorities state that the solid excrements of a cow are 68¾ lbs., and the liquid excrement about 32 lbs. daily. Now, with these data, let us take Sir C. Burrell's 21 beasts confined in their sunken pits in his cattle house, and the account will stand thus. I drop the fraction.

Solid excrements every three months...	119,298 lbs.
Liquid excrements, ditto	61,152 lbs.
Total quantity of excrements, liquid and solid	180,445 lbs.

This mass of fermenting, putrifying animal excrement is enclosed within a building, and forms beds for 21 beasts. For such an abomination I have no language, but I repeat, that not only is the health of the cattle deteriorated, but, the manure itself also is less valuable than it would be if thrown out into a properly constructed farm yard, and mixed up with the manures made by the other cattle. *George Wilkins*.

* See *Agricultural Gazette*, March 17, page 172.

Home Correspondence.

Relative Expence of Erecting Boxes or Stalls for Feeding Cattle.—In the "Calendar of Operations" in the *Agricultural Gazette* of April 14th, I observe that your correspondent, from a Galloway Farm, states that "a building with a feeding-passage in front constructed for the accommodation of 50 cattle in boxes, would contain 100 tied up in stalls." Now as box-feeding is deservedly exciting much attention, I am anxious, with your permission, to show that the question of economy in the erection of buildings for the rival systems of stall and box-feeding is not so simple as the above statement would make it appear. Those who have attended to the planning of buildings for box-feeding will agree, I think, that the proper arrangement for this purpose is to have a feeding-passage running down the centre of the building, with boxes on each side. Thus head-room is gained over the passage by its being brought under the highest part of the roof; while the boxes, being excavated, say 2 feet, below the level of this passage, admit of the side walls being kept lower than if the passage were taken along the wall of the building. On the contrary, in stall-feeding, as there must be a space behind the animals for cleaning out the stalls, and head-room for constant passing behind them; if there is to be also a feeding-passage at their heads, as proposed by your correspodent, the building would be most cheaply erected to contain all the stalls in one length, not a double set of stalls, as this latter would necessitate a very wide span for the roof. Hence, a shed for 20 cattle in boxes would require a width of 18 feet for the two rows of boxes, and 3 feet 6 inches for the feeding-passage between them, making a total width within the walls of 21 feet 6 inches, or, with 18-inch walls, a width of 24 feet 6 inches from out to out. The length, at 10 feet 3 inches for each box, including the rails between them, would be 102 feet 3 inches in the clear, or, from out to out, 105 feet 3 inches. A shed for stall-feeding as many cattle would require a width of 9 feet for the stalls, 4½ feet behind the stalls, and 3 feet 6 inches for the feeding-passage in front, in all 17 feet in the clear, or 20 feet from out to out. The length would be the same as that of the double box-feeding shed. The only difference then in the superficial space occupied by the boxes is an addition of 4 feet 6 inches in the span of the roof. The extra roofing would amount to 552 square feet. Against this additional width, however, some important savings are to be set off in the construction of the box-feeding shed. First, the stalls must be paved or pitched. This important item of expence is saved in the boxes, in which the animals, standing upon a thick bed of litter, do not require any pitching. Supposing the pathway not paved in either case, here is a saving of 1380 square feet of pitching in the box-feeding shed. Second, the floor of the stalls being on a level with the ground, and requiring head-room for a man to pass under each wall, the wall-plates must be raised to a height above the ground line of 6 feet at least; whereas there being no passage behind the animals in boxes, and the bottom of these being sunk 2 feet below the ground line, the wall plate need not be above 5 feet high, thus a foot height of walling is saved along each length of 105 feet 3 inches. The tie beams may be kept 18 inches above the wall plates, so as to give head room. Third, the side walls of the box-feeding shed are not continuous, but only form distinct piers of masonry. The intervening spaces of 6 feet each at the back of each box being closed by rough doors, by which the animals are admitted to their boxes, and by which the manure is emptied into carts backed into the doorway. A shed for stall feeding might certainly be built in this respect on the same plan, piers of masonry only being employed to support the wall plate at intervals, and the remainder of the walls being composed of wattled furze, rough boards, &c. Still I believe it would be found practically, that though a rather larger area is occupied by a given number of beasts in boxes, than is required for the same number in stalls, the expence of the houses, each being constructed on the cheapest plan, would not be materially different, certainly not enough so to outweigh the great additional value of manure preserved under cover, and every particle, liquid and solid, collected till carted on to the land, over that which is day by day wheeled out of stalls, and left to be robbed of much of its fertilising properties by the elements; unless indeed the additional expence of manure sheds, tanks, pumps, water carts &c., is incurred for its more perfect collection. By adopting the double range of boxes, with a pathway between them, the additional length to be traversed in feeding the animals mentioned in your correspondent's communication is avoided, and therefore cannot be set off against the additional labour in daily cleaning out the stalls. I hope that these remarks may not be without their use in correcting an idea which is often hastily formed as to the greater cost of erecting sheds for box-feeding, to the prejudice of that system. *T. T.*

Pig's tails.—The prevailing opinion in this neighbourhood (Suffolk) is, I believe, that if the floor of the breeding sow's sty be not of wood, you will be subject to have pigs minus tails. Since I have tried this plan I have always had pigs with tails, whereas before the failure was of no uncommon occurrence. Doubtless if you get a hardy breed less failure will be the result of a cold or damp floor. *C. W.*

Russian Cattle.—In a recent perusal of Thornton's "Life in Russia" (at page 220, speaking of the supply of the St. Petersburgh market with cattle from the Ukraine), I met with the following, which I send to you, presuming it may afford a useful hint to some of our farmers or cattle breeders. The author says, "These oxen are fine large beasts, of a uniform pale slate colour, with black muzzles and hoofs, and crescent-shaped horns; and it strikes me that the introduction of the breed into this country would be beneficial to our graziers." *Quercus.* [About the pamphlet, apply to any bookseller; it is published by Blackwood, Edinburgh and London.

Cottage Ventilation.—[We have been favoured with the following from Mr. Slaney, whose reference to this subject at a late meeting of the English Agricultural Society had induced the enquiries of a correspondent.] My statement was of a cheap plan for warming and drying cottage rooms, where there was no fire, by a flue from the back of the kitchen or other room where a fire was constant. It is simple, effectual, and cheap. In building a cottage, the floor of which should of course be above the level of the soil (and the adjacent soil should be drained, to be properly dry), lay some common drain pipes of an inch or two in diameter under the floor to communicate with the outer air through the wall; bring the other end into a small air-chamber built at the back of the grate generally used, either separated from it by an air-tight strong iron plate or by good brickwork (so that no smoke can pass); from the top of this air-chamber, leave in the wall a small flue open of half brick size, or less up the wall at back of the chimney (separated safely from smoke of course), up to a place in the floor or floors above where you may conveniently form such opening, and whence the air warmed in the air chamber below will constantly come out. If it opens into both rooms up stairs, you can easily stop one opening when you please, and throw the whole to which room you like. It might be carried to a room on the second floor if needed, or into any adjacent closet or place for drying clothes, shoes, or wet garments; so that a workman might have all dry by morning. This plan, or something equivalent, is often practised in halls or houses of the rich, but seldom or never for the poor, who want it most. I have such a chamber and small flue at back of my saddle room fire, it warms and dries the coach house, to which it adjoins, and also when stopped in the coach house, drys an Oat room above. The aspect of the cottage, which should be south if possible, is seldom attended to, and various other important points are neglected; country builders have no guide or real knowledge on the subject, and think of nothing but the outside for gentlemen, and saving first cost for others. A good, cheap, practical work, on good plans for cottages, with good plates, and on simple or useful cottage comforts, is much wanted; price, not above 5*s.* I know of none such. *R. A. Slaney.*

Artificial Gypsum — At a recent meeting of the French Central Society of Agriculture, M. Moll spoke of the advantages arising from the employment of artificial gypsum in those cases in which the nature of the soil, or the crops to be obtained, indicated the application of this manure; but when the land to be manured was so situated that the natural gypsum could only be obtained at such a price as to render its employment not sufficiently remunerating. As there may be localities in England where a knowledge of the process of preparing this artificial gypsum would be of service, I send the following instructions. Take 1 cwt. of well slaked and sifted lime, and add to it 11¼ lbs. of sublimed sulphur in fine powder, and intimately mix them together. At the expiration of a few days the mixture, which was at first of a pale yellow colour, will appear white; oxygen having been absorbed, the sulphur converted into sulphuric acid, and a sulphate of lime or gypsum formed. This artificial gypsum will be found to contain a certain portion of carbonate of lime or common chalk, which has not been transformed into sulphate, but this, instead of being a disadvantage, is in reality of great benefit, as its admixture with the gypsum keeps the latter in a state of powder, and prevents its hardening. The mixture of sulphur and slaked lime must be slightly moistened, and every part by degrees exposed to the action of the air, but care must be taken not to add so much water as would make the mixture of a pasty consistence, otherwise the gypsum formed would harden, and require much labour to reduce it to the fine powder necessary for its employment as manure. *E. H. Durden.*

Pig-killing.—In reference to this subject I should not have noticed the attack upon my veracity by "W. H.," if I had not a nobler object in view than the correction of misrepresentations. I have no high opinion of my very humble abilities; but if I had been ignorant or foolish enough to have advised pigs to be killed in the manner this irresponsible writer attributes to me, I ought to have a motley coat. What anonymous correspondents may think of me I care not; but I inform them that I am not blockhead enough to suppose, and especially not to publish, that pigs could with certainty be instantaneously killed by merely knocking them on the head. I wrote no such thing as knocking on the head: although I do not happen at this moment to have the number of the *Agricultural Gazette* by me in which my directions for the killing of pigs were published, I will give "W. H." permission to knock me on the head if he can find the language in it which he has attributed to me. I described a mode for the instantaneous deprivation of the life of pigs, and one which I have seen practised I may write hundreds of times. Death was instantaneous without a groan or struggle. Nor is this any novelty; I could appeal to the whole medical profession, if my own experience had not rendered it unnecessary as far as I myself am concerned, and I feel quite confident that there is not one of that fraternity in the whole of this wide world who does not know that what I have written on this subject is strictly correct. "W. H." must surely know the difference between what he has called a "knock on the head" and striking an instrument into the brain. *C. Wilkins.*

How does Lime act when applied?—Regarding this there have been and are more opinions than it would be worth while to enumerate; but, if I mistake not, the prevailing idea is that it acts on organic matter, vegetable or animal, hastens its decomposition, and thus produces an increased supply of food to plants. "Farmer" himself seems to be of this opinion when he says, "Quicklime is very beneficial to dissolve vegetable matter," "in the ground," as I understand from the first part of the sentence. Of the truth of this I have serious doubts. That lime has power to decompose vegetable matter, and does it too, I by no means deny, but that its doing so is generally beneficial admits of dispute in all cases except that of peaty soils, in which the antiseptic quality peculiar to them retards the decomposition of organic matter so much as to render them incapable of supplying sufficient food to any of the cultivated crops. In these soils the accelerated decomposition of vegetable matter is beneficial, in all others it is the reverse. It appears to me that this will strike every practical man as a fact, if he will only consider for what end he applies his most esteemed manures, of organic origin, and why he esteems one manure above another. Does he not apply them in order to render his land more fertile, not for one season only, but for a term of years? And does he not esteem them more in proportion to the enduring nature of their fertilising powers? Surely he does. How then can he suppose that, by hastening their decomposition, lime is beneficial? Why the more slowly they decompose the better, for then they will be a continuous source of food, but when their decomposition is wholly and rapidly effected, many of the substances they contain evaporate, others become soluble faster than the plants can assimilate them as food, liable, therefore to be washed from the soil; by degrees this consequence ensues, and the good effect of the manure is gone for ever. Perhaps I might even go farther, and attempt to show that, were its effects confined to accelerating the decomposition of organic matter, lime, from a mode of action different from that I have just spoken of, would often be productive of harm, and but too rarely of good. It is known to all chemists that if carbon be only partially oxidised, the result is oxalic acid, and this partial oxidation I have no doubt does often take place. Now oxalic acid and lime form that most insoluble compound, oxalate of lime, which can do good to nothing. Perhaps this may be disputed and regarded as a *casus belli* by some, but I do not hesitate to say, I believe it myself. No; farmers may rest assured, that organic matters decompose rapidly enough without the aid of lime, else there would not be such a lack of manure on our lands as there is. I have to live by farming myself, and a hard enough job I find it, but if any one could inform me how I might retard the too rapid decomposition of the manures applied on my farm, I would take courage, and hail him as a benefactor, not to myself only, but to the whole human species. Lime, then, is not or ought not to be applied for the purpose of hastening the decomposition of vegetable matters, in any save peaty soils. *Aliquis.*

Box-feeding.—The evidence given in the *Agricultural Gazette*, on the subject of box-feeding has been, with one or two exceptions, entirely in favour of that system; but still the statements made and reiterated by Mr. Wilkins against it, are so decided and so emphatic, that many persons may be led to imagine that he has good grounds for the strong assertion he makes of the practice being unhealthy, because the cattle are always wet, cold, and dirty. It occurred to me that I could very easily test this fact by putting an animal into a loose horse box that was empty and detached from my stable, and keeping it there for a sufficient length of time. Accordingly, I had it littered down, and turned into it a milch cow. The floor of this loose box was flagged and slightly sloped towards the door. I gave orders that no dung should be removed, but fresh litter should be lightly spread over the dung as often as necessary. In this state the cow was kept for three months before the manure was removed. Now then for the result. The floor being flagged and sloped, the urine might have been expected to percolate through the litter to a certain extent; but it did not do so, the litter soaked it all up, there was no bad smell, the cow was always clean and dry, gave an abundance of milk, and from the sleekness of her coat gave indubitable signs of good health. This experiment has completely satisfied me that a box on a dry foundation (even when sunk 2 feet below the surrounding ground), must not be wet, dirty, cold, or uncomfortable, and that it is a system well calculated to improve the condition of cattle by keeping them warm, dry, and clean. All that is necessary, beyond a dry box, is attention on the part of the attendant in the supply of litter; and as there is always a man kept to look after and feed cattle put up to fatten, it is no extra expense giving an extra supply of straw, as the quality and quantity of manure made by this system amply repays the value of the straw. I have not touched upon the question of compounds for feeding, as that is a separate subject. *W. Hudyson.*

Bones and Acid.—To those who dissolve bones in sulphuric acid, I beg to communicate a method I have now, for the second season, adopted with success,

whereby I make very short work of an otherwise troublesome job. Under cover, either in a manure barn or cart shed, I make a clay basin or trough, 20 feet by 10, with edges 20 inches wide and as high, into which, having previously thrown 100 bushels of half-inch bones, and having damped them, I pour from the carboys 1700 lbs. of acid: the contents of each carboy being marked by the maker, I have not the trouble of weighing. As soon as the requisite quantity of acid is poured into the trough, two men with common iron road scrapers or long iron rakes, commence stirring, continuing so to do until effervescence subsides, two hours completing the work. I leave the mass for 10 days, when, by the addition of sufficient water, I bring the whole to the consistence of a thick gruel, cinder dust being then added as usual. *W. S.*

Lime.—It must now be my duty to show how lime does benefit the soil, and in order to do so more clearly, it will be necessary to notice the mode in which plants appropriate and assimilate their food, what that food consists of, &c.; in short, the nutrition of plants generally. Plants, then, live entirely on substances of mineral origin. Decayed organic particles cannot be absorbed by the roots or leaves of a growing plant, until such particles have lost all trace of organisation and returned to their primary condition of inorganic atoms. I say primary, because of necessity the inorganic creation must have existed before the organic, and have afforded nutrition to it when formed. If then a sufficient supply of the minerals necessary to the growth of a plant could be kept in the soil, without the application of manures of vegetable or animal formation, it would be quite in vain to apply them, for they are by no means indispensable. Unfortunately, however, this could not be done except at great expense, and therefore we are obliged to call in the aid of these manures, and by their means return to the soil what we had previously deprived it of. But not only must the minerals exist within reach of the plant to be fed by them, but they must exist in such a state as that they can be acted on by the solvent power of water. Unless they are in this state they are of no use whatever. No doubt carbonic acid, oxygen, ammonia, perhaps nitrogen in its pure state even, or else in the form of nitrates, are absorbed from the atmosphere; but the silicates, phosphates, sulphates, alkalies, and true metals, &c., can only be assimilated from a solution of each in water. Now, many of these minerals exist in a very insoluble state, and while they remain in it, water can never dissolve them. The action of the atmosphere and water combined certainly do tend to disintegrate the rocks and set free the minerals which they contain, but they can only effect the decomposition by slow degrees, much too slow to afford so full a quantity of each substance to a plant as it stands in need of during its growth. Now, here we have need of an accelerator. There is no danger of exhausting the minerals of which the soil is composed; the case stands very differently with them, and the minerals artificially applied by the industrious hand of man. The supply is sufficient to last eternally, not an atom being capable of annihilation, and an infinitesimal proportion only being carried off in succeeding crops. Here then is the key to the benefit derived from the use of lime. It acts on the rocks containing the mineral ingredients which are so essentially necessary to the vegetable kingdom, decomposes them, renders them soluble in water, and with no stinted nor illiberal hand spreads them in the path of each individual plant, or lays them at its feet, when if it is not a crabbed, soured, stunted thing, it picks them up, devours them greedily, and seems, from the cheerful aspect and the lively green it assumes, to rejoice exceedingly over the delicious repast. It may be useful to give an instance of such an effect. For instance then let us take the rock felspar. *Aliquis*

Churn.—Having seen in a late Number of your Paper a new kind of churn, I flatter myself that the one I have invented, which is worked by wind, would be found a useful appendage to a dairy. I have tried it, and found it to answer perfectly, and not the slightest trouble to set working. I have made the sweeps to take off the crank, so that if there is no wind a handle might be attached to it; but I have always found plenty of wind, even on the stillest day. The churn, in my model, only makes a pound of butter, as, having made it only for amusement, I thought it large enough to prove its utility. I have shown it to a farmer, and he considers it a very useful thing, and will most probably have one for his dairy. I send you the drawings of it, which I think will make it quite clear. The churn is the old upright one, the top of it taking off, together with the short length of the piston, with the beater attached to it, so as to get the butter. In very cold weather, I throw boiling water inside the house, holding the churn (before you put the churn in), and the steam makes the inside quite warm, and consequently it will churn quicker. When you think the butter is churned, the pin must be drawn out, and then the churn can be taken away without disturbing the mill. *An Amateur Churn-maker.*

[You cannot reason from a model to a full sized implement in such a case: that is to say, if the latter be made *after* the former, suppose that every part of the model be increased in size four times, then the surface of the increased implement will be as the square, but its solidity as the cube of four, compared with its original size, that is to say, the surface of the sweeps, which represents the force, will be 16 times, but the weight of parts to move 64 times greater than it was before. Of course it is possible to proportion the work to the power, whatever the size; but our argument has, at all events, this degree of force, that a current of wind which would work the model would not work the full-sized machine. Besides, wind is unsuited as an agricultural power.]

Live and Carcass Weight of Pigs.—I have usually sold the whole of my pigs by weight alive; but this season, being unable to do so, and the question having been frequently put to me—what proportion does the carcass bear to the live weight? I have sent you the live and dead weights of those I have sold this winter, fed chiefly on Carrots boiled, a small portion of Barley-meal and Linseed being mixed with them. I am feeding on Mangold Wurzel (boiled), the Carrots being nearly exhausted.

Live and Dead Weights of some Fatting Pigs sold from Martin's Farm, 1849.

Live Weights. Cwt.	qrs.	lbs.		Dead Weights. Scores.	lbs
1	3	15	—	7	11
1	3	7	—	7	3
1	3	15	—	7	7
2	1	0	—	8	19
2	0	0	—	8	2
1	3	19	—	7	19
1	3	0	—	7	0
1	3	10	Four	10	10
2	0	19	—	8	10
2	2	0	—	10	9
2	1	17	—	9	10
2	0	0	—	8	2
2	0	22	—	8	14
2	2	3	—	11	0
2	3	1	—	12	1
2	0	7	—	8	17
1	3	3	—	7	12
1	2	3	—	6	6
1	3	19	—	8	15
2	1	15	—	11	13
2	1	11	—	11	2
2	1	14	—	10	13

Live Weights. Cwt.	qrs.	lbs.		Dead Weights. Scores.	lbs
2	1	10			
2	1	2	—	29	3
2	1	8			
2	3	10	—	12	9
2	3	2	—	11	18
1	2	25	—	8	10
2	0	2	Three	7	6
2	2	10			
2	2	18	—	32	0
2	1	21			
2	1	14	—	10	10
2	2	18			
2	1	22	—	31	4
2	2	13			
2	0	21	four small	7	9
3	0	5			
3	0	18	—	26	4
3	2	6	—	15	14
2	1	21			
2	2	18	—	40	16
2	1	20			
2	2	4			

M. Sandford.

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Special Council was held at the Society's House, in Hanover-square, on Monday, the 30th of April: present, the Earl of Ducie, V. P., in the Chair; Sir J. V. B. Johnstone, Bart., M.P., Mr. Raymond Barker, Mr. Bennett, Mr. Brandreth, Mr. Burke, Colonel Challoner, Mr. Childers, M.P., Mr. Evelyn Denison, M.P., Mr. Brandreth Gibbs, Mr. Hillyard, Mr. Fisher Hobbs, Mr. Hudson (Castleacre), Mr. Kinder, Mr. Lawes, Mr. W. Miles, M.P., Mr. Milward, Mr. Pusey, M.P., Mr. Shaw, Mr. Shaw, jun., Mr. Shelley, Mr. Stansfield, M.P., and Mr. Thompson.

The Report of the Chemical Committee, referred at the last Monthly Council to the special consideration of this meeting, was fully discussed, and, with certain amendments, adopted, and ordered to be reported to the monthly meeting of the following day.

A Monthly Council was held on Tuesday, the 1st of May; present, His Grace the Duke of Richmond, K.G., Trustee, in the Chair; Earl Ducie, Lord Bridport, Hon. R. H. Clive, M.P., Hon. Capt. Dudley Pelham, R.N., Sir M. W. Ridley, Bart., Sir C. Lemon, Bart., M.P., Sir J. V. B. Johnstone, Bart., M.P., Sir R Price, Bart., M.P., Sir T. D. Acland, Bart, M.P., Colonel Austen, Mr. Raymond Barker, Mr. Barnett, Mr. Blanshard, Mr. Bramston, M.P., Mr. Brandreth, Mr. Burke, Colonel Challoner, Mr. Childers, M.P., Mr. Henry Colman, Mr. Evelyn Denison, M.P., Mr. Garrett, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Hillyard, Mr. Hippesley, Mr. Fisher Hobbs, Mr. Hudson (Castleacre), Mr. Kinder, Mr. Lawes, Mr. Miles, M.P., Mr. Milward, Mr. Pendarves, M.P., Mr. Pusey, M.P., Prof. Sewell, Mr. Shaw, Mr. Shaw, jun., Mr. Stansfield, M.P., Mr. Manners Sutton, Mr. George Turner, Mr. Thos. Turner, Mr. T. Umbers, Mr. Jonas Webb, and Mr. H. Wilson.

The following new members were elected.

Underwood, Joseph, Blackheath-park, Kent
Fellowes, Richard, Inglefield House, Reading, Berks
Stephen, Robert, Watton, Norfolk
Patrick, Jarman, Wiggenhall, St. German's, Lynn, Norfolk
Fellows, Wm. Manning, Ormsby, Great Yarmouth, Norfolk
Platten, Robert, East Winch, Lynn, Norfolk
Sallitt, Matthew, Saxlingham, Norwich
Sharman, Peter, Elsing, East Dereham, Norfolk
Abel, John, Norwich
Harris, James, Plumstead Common, Woolwich
Blyth, Robert John, Norwich
Benson, J., York
Girling, John, Earlham, Norwich
Hotchkys, Arundel Calmady, Cleverdon House, Bradworthy, Devon.

The names of 28 candidates for election at the next meeting were then read.

Finances.—Colonel Challoner, chairman of the Finance Committee, presented the monthly report on the accounts of the Society; from which it appeared that the current cash-balance in the hands of the bankers at that date was 1653*l.* (including 1000*l.* on the Norwich subscription account, and 653*l.* belonging to the account of life compositions for investment). This report, and the recommendation of the Committee that Messrs. Gurney and Co., of Norwich, should be requested to act as the local bankers of this Society on the occasion of the ensuing country meeting in that city, was adopted by the Council.

Country Meeting of 1850.—The report of Mr. Raymond Barker, Mr. Brandreth Gibbs, Mr. Shaw (London), Mr. Fisher Hobbs, and Mr. Milward, the members of the Inspection Committee, who had paid a personal visit to the various localities in the western district, offered by their respective authorities for the purposes of the Society's country meeting in 1850, having been read, the Council received the several deputations, composed of some of the most influential residents in the counties of Devon, Wilts, and Somerset, who had favoured the Society by their attendance on that occasion, in order that they might render to the Council every required information connected with their respective counties, and at the same time bear testimony, by their personal presence, to the great interest excited throughout the west of England on the subject of the Society's Country Meeting of next year, to be held in that part of the country. The Report of the Inspection Committee having informed the Council, as the result of their personal enquiries and examination, "that the general accommodation offered by each of the towns proposed for the Meeting would answer the purposes of the Society, and that at each of them the greatest readiness and anxiety were manifested to meet the requirements, and further the objects of the Society," the Duke of Richmond, as Chairman, proceeded to address each of the deputations as they presented themselves, in reference to the comparative advantages possessed by each locality and to receive in reply the information required. The Council then voted their best thanks to these deputations for the favour they had done them by their attendance, and proceeded to the decision of the particular place in the Western District to be selected for the Society's Country Meeting of 1850. It was then moved by Mr. Hillyard, seconded by Mr. Brandreth, and carried unanimously, that the City of Exeter should be the place of such meeting. The deputation from that city represented to the Council that to select Exeter as their place of meeting would fall in with the plans and principles of the Society, as there was no district more alive to improvement than that in which it was situate, nor any that could be more truly said to need that improvement. They dwelt on the fact that every other part of England had participated in the advantages bestowed by the presence of the Society, and all but the farmers of the West of England, properly so called, had benefited accordingly; that the Society's great national meetings had been held in the northern, the southern, and the eastern districts of the country; that Wiltshire had had the advantage of a proximity to the Southampton meeting, and Taunton to the one held at Bristol, while Devonshire and Cornwall, in the far west, felt themselves neglected; they therefore thought that Exeter, the metropolitan city of those counties, had a great claim to the preference of the Council on that occasion; especially when it was considered that their celebrated breed of cattle, which had already carried off the honours of the Society at every former meeting, would be but too happy to be exhibited in their native district, and when, it might also be added, that the city itself, with its 40,000 inhabitants, its admirable localities adapted for the purposes of the meeting, its railway accommodation, and the 10,000 visitors along the northern and southern shores of the famed county of Devon, would promote in every respect the success of a meeting at all times regarded as a national one, but more peculiarly so at the present important period of the agricultural interest. The deputation concluded their statement by an assurance that every difficulty would be removed to promote the perfect arrangements of the Society, and that a hearty welcome would be given to the members of the Society on visiting Exeter.

Country Meeting of 1853.—The Council decided, on the motion of Colonel Challoner, seconded by Mr. Milward, that the District for the Country Meeting of 1853 (after the South-Eastern District for 1851, and the South-Wales district for 1852), should be comprised of the counties of Leicester, Lincoln, Nottingham, and Rutland, and be designated the "East Midland" District.

Prizes for Essays.—Mr. Pusey, M.P., Chairman of the Journal Committee, reported the Essay to which the Judges had awarded the Society's Prize of 50*l.*, for an account of the best method of increasing the existing supply of animal food; and the sealed motto-paper being opened, the successful author of the winning Essay in question was ascertained to be John Chalmers Morton, of Whitfield Farm, Gloucestershire. The essays bearing the following mottoes were also reported as having been "commended" by the Judges: namely, "And the land shall yield its increase," "O. U. Y.," and "Practice." Mr. Pusey then moved the consideration of the Prizes for Essays to be awarded in 1850, when the following schedule was agreed to, subject to such conditions of competition as should be published in the next part of the Society's Journal, and to the standing regulation that the Essays intended to compete should be sent to the Secretary of the Society, at 12, Hanover-square, London, on or before the 1st of March:

Farming of Lincolnshire	£50
Farming of Somersetshire	50
The Causes and Means for the Prevention of Abortion in Cows	30
The Diseases of Live Stock occasioned by Mismanagement	30
The Cultivation of Oats	20
The Rearing and Management of Poultry	20
The Climate of the British Islands in its Effect upon Cultivation	30
The Destruction of the Wireworm	50
	£280

Agricultural Chemistry.—On the motion of the Earl of Ducie, seconded by Mr. George Turner, the following Report of the Chemical Committee was adopted.

REPORT OF THE CHEMICAL COMMITTEE.

The Committee recommend that in future the privilege of obtaining analyses of manures, agricultural products, and soils, at the following reduced rates, be made a privilege of all members of the Society.

No. 1. An opinion as to the genuineness of a manure in the market.—7*s.* 6*d.* By this is meant such an opinion as could be formed by a scientific person, by

inspection, with a few simple confirmatory experiments. [It will protect from fraud, but is not calculated to assist materially in the choice of the best specimens, where all are genuine; it will inform the applicant whether a specimen of guano, or oilcake for instance, be adulterated or not; but will not touch the question of its relative value as a pure specimen. Such an opinion will only apply to ordinary market articles, as guano, oilcake, superphosphate of lime, sulphate of ammonia, gypsum, common salt, &c.]

No. 2. Guano. A determination of the nitrogen (ammonia), or of the same and of the earthy phosphates, &c.—1*l*. The following is an instance, taken at random, of such an analysis:

Water	17.95
Organic matter and ammonial salts	51.39
Sand, &c.	1.34
Earthy phosphate, principally phosphate of lime ...	30.98
Alkaline salts, and loss, to make up the difference, often consisting of common salt, &c.	8.34
	100.00

This is all that is needed to give the agricultural value of guano, or a close approximation to it.

No. 3. Limestone. The proportion of lime.—7*s*. 6*d*. The proportion of magnesia.—10*s*. The proportion of lime and magnesia.—15*s*.

This analysis is sufficient for many purposes; but in most limestones sulphur, lime, phosphorus, and magnesia are present. The next analysis is better for farmers, inasmuch as it is impossible to say how much of the effect may be due to minute ingredients.

No. 4. Limestone, or marls, including carbonates, phosphate, sulphate of lime, and magnesia, with sand and clay.—1*l*.

No. 5. Partial analysis of a soil, including sand, clay, organic matter, and carbonate of lime.—1*l*.

No. 6. Complete analysis of soil.—3*l*.

No. 7. Letter, asking advice, one topic.—7*s*. 6*d*. On more than one topic, 10*s*.

No. 8. Oilcake, or dung, or any animal products (such as cheese or butter in milk), nitrogen, and phosphoric acid.—1*l*. Oilcake, including nitrogen, oil, and phosphoric acid, 30*s*.

That a salary of 200*l*. a-year be paid to Professor Way for this purpose, and that the Committee have further power to expend a sum not exceeding 300*l*. a year in such chemical inquiries for the Journal as the Council shall think expedient from time to time to direct, on consideration of the report made by the Chemical Committee.

That, in order to insure a regular and efficient attendance, the following members be added to the Committee:

Lord Portman	Mr. Lawes
Mr. Hyatt	Mr. Hudson (Castleacre)
Mr. Hoskyns	Mr. Sheridan, M.P.
Mr. Jonas	Dr. Daubeny
Mr. J. Manwaring Paine	Mr. Acland.

The present members of the Committee are:

Mr. Pusey, M.P.	The Rev. A. Huxtable
Sir John V. B. Johnstone, Bart., M.P.	Mr. Thompson, and
Mr. W. Miles, M.P.	Mr. Shaw (Strand).

Member of Council.—On the motion of Colonel Challoner, Mr. Henry Blanshard was unanimously elected a General Member of the Council, in the place of Mr. Raymond Barker, transferred to the class of Vice-Presidents.

Steward.—On the motion of Mr. Brandreth, seconded by Mr. Hillyard, Mr. Charles Stokes of Kingston, Notts., was unanimously elected a Steward of Cattle in the place of Mr. Druce, who retires this year by rotation.

Judges.—The Council appointed the following Committees for the selection and recommendation to the Council (from nominations made by the members on or before the ensuing General Meeting on the 22d inst. at 12 o'clock), of Judges for the Norwich Meeting: namely, *Committee for Stock*—Lord Portman, Mr. Hudson (Castleacre), Mr. Brandreth, Mr. Druce, Mr. Shaw (London), Mr. Kinder, Mr. Stokes, Mr. Milward, Mr. Grantham, Mr. Bennett, and Mr. Hillyard. *Committee for Implements.*—Lord Portman, Col. Challoner, Mr. Miles, Mr. Shelley, Mr. Thompson, Mr. Fisher Hobbs, Mr. Brandreth, Mr. Shaw (London), Hon. Capt. Pelham, and Mr. Shaw (Northampton).—Mr. Fisher Hobbs was very desirous that it should be known by the members at large of the Society that they had the privilege of nominating parties to act as Judges at the country meetings of the Society, by transmitting their names to the Secretary on or before the 22d of May in each year, provided they certified from their personal knowledge that the parties they proposed were qualified and willing to act as Judges for the particular class for which they were respectively recommended, and who were unconnected with any exhibitor of Stock, or maker of Implements, and had no direct personal interest in the Stock exhibited as the breeder of any of the animals upon which they might be called upon to adjudicate.

House List.—The Council agreed by Ballot to the House List of Council required by the Bye-laws to be recommended by them to the General Meeting at the annual elections on that occasion.

American Agriculture.—Mr. Colman, one of the Honorary Members of the Society, attended the Council on his return from a visit he had paid to America, and reported the active progress made by the New York State, as well as by the Massachusetts Agricultural Society, especially in the application of chemical science to the immediate and practical purposes of agriculture. He was happy to find in whatever direction he had moved in his native country, during his recent visit to the other side of the Atlantic, that while the labour, the intelligence, the enterprise, and the public spirit of the Royal Agricultural Society of England formed the theme of general approbation, the cultivators of the soil in that part of the world were stimulated by its exertions and following its example *pari passu*, with the same important results to the science and practice of remunerative farming. He had had the pleasure of communicating to his friend Mr. Pusey some interesting details connected with such results, and should be happy to find them considered by him worthy for the pages of the Journal of the Society.—The New York State Society being already on the list of corresponding societies, the Council, at the suggestion of Mr. Colman, took that opportunity of adding the Massachusetts Society to the list.

Veterinary Reports.—On the motion of the Hon. R. H. Clive, M.P., the Veterinary Committee were requested to report to the Council on the subject suggested by Mr. Clive at the previous meeting.

Lecture.—The Rev. Edwin Sidney communicated his willingness to deliver a Lecture before the Members on the occasion of the ensuing Norwich Meeting, as requested by the Council.

Miscellaneous Communications.—Col. Challoner, Mr. Garrett, Mr. Hillyard, and Mr. Shaw (Northampton), gave notices of motion connected with the competition for the prizes of the Society. Letters were received from the Town-Clerk of Norwich, and the Superintendent of the Police of that city.

The Council then adjourned to Tuesday next.

Royal Physical of Edinburgh, *March* 14.—Professor Fleming in the Chair. Mr. Barlow, the Assistant Professor at the Veterinary College, brought before the Society some observations *on the structure of horn*, as found in the hoof of solipeds, and as an appendage to the head in domestic ruminants. He remarked that in such animals as the horse, where the foot is solid, and almost exclusively devoted to the support of weight, the investing horn attains a high degree of organisation. In solipeds it is for the most part composed of cylindrical tubes, arranged nearly parallel to each other, and following the direction of the wall of the hoof. At their upper ends, and in connection with the true skin, the tubes are so large as to be visible to the naked eye, and contain prolongations of blood vessels or villi on which they are moulded and secreted; their lower ends are filled by a white scaly exudation from the extreme end of each villus. They are to be regarded as possessing all the essential characters of strong hairs agglutinated into large masses by an intervening deposit, and so arranged, that, whilst their lower ends wear away by the friction to which they are exposed, their upper ends are in a state of continued reproduction. Gerber and others have supposed these tubes to be the ducts of sebaceous glands; but this is disproved by the vascularity of the villi they contain, and also by the circumstance that such ducts always open on the external surface nearest to the glands from which they pass, and not in a situation where their orifices would be obstructed by the friction to which the organ in which they are found is continually exposed. There are but few of these tubes in the horn of the head in domestic ruminants; this consists of successive layers, yearly secreted from the thick periosteum of the frontal bone, and its production is most rapid when the hair on the general surface of the body is in active growth. Numerous interesting sections of various kinds of horn were exhibited under the microscope.

Reviews.

High Farming, under Liberal Covenants, the best Substitute for Protection. By James Caird, Farmer, Baldoon. W. Blackwood and Sons, Edinburgh and London.

We refer again to this pamphlet, in order to give our readers an idea of its contents. Our object is just so far to explain the character of the work as to induce its circulation among agricultural readers, as we sincerely believe that the simple detail of facts connected with the skilful and profitable management of land, which an intelligent agriculturist has here given us, is more likely to be useful than the most laboured argument of the cleverest writer who is without a personal experience to appeal to. The following is a description of the farm about which the pamphlet is written:

"The farm of Aushness, of which Mr. David Macculloch is the tenant, is situated on the bay of Luce in Wigtonshire, within a few miles of the southernmost point of Scotland. It has a warm south-eastern exposure, and an elevation above the sea level of from 10 to 70 feet. The winters are mild and moist, frost being very slight, and never of long continuance. The farm consists of 260 acres of arable land, 30 of which are reclaimed moss, 40 black moorish soil intermixed with white sand, 125 light sandy soil—better adapted for Wheat than for Barley or Oats, when in a high state of cultivation—and 65 acres of superior red Turnip soil. The whole is incumbent on the grauwacke, or lower silurian formation. It forms part of the estate of Col. M'Douall, of Logan, is well fenced and watered, intersected by a public road, and sheltered from the prevailing winds by the woods surrounding the demesne of Logan. It is 12 miles from the town of Stranraer, whence there is regular steam communication with Glasgow, and about two miles from Port Logan, where produce can be shipped for Glasgow or Liverpool, and manure, &c., imported."

The land, except where naturally dry, has all been drained and subsoil ploughed; excellent buildings, of which a plan is given, have been erected on it; some of it is reclaimed from peat-moss. The details of its ordinary management are arranged under the heads of manure, crops, and stock. An immense stock of cattle is fattened every year upon the land, the fertility of which is of course in proportion to the manure thus supplied to it. The tenant has permission to shoot over the farm, "so that he has it in his power to prevent any undue increase of game, while he has, at the same time, a personal interest in its fair preservation. An arrangement of this kind between landlord and tenant has been found quite satisfactory; and an instance on a more extensive scale, on the estate where the writer has his own farm, may be mentioned, to show how easily all cause of complaint on this head may be removed. A few years ago, on some of the farms of the Earl of Galloway, in this county, the ravages of game were very great, and in several instances considerable sums were paid to the tenants for the damage done to their crops. Much discontent was felt by the tenants, which has all been removed by the landlord giving permission to every tenant on his estates to kill hares and rabbits, being the description of game most injurious to crops. The consequence has been, that in situations where game was excessive, it is thinned down; but as each has a personal interest in the matter, and can now kill hares without a game license, he is careful to prevent all trespass, which would interfere with his rights, as well those of the landlord. The expense of watching is saved to the landlord, the work is much more effectually done, and the result, it is believed, has in every respect, been mutually satisfactory to landlord and tenant." And the results of the whole system of management are such as make it well worthy the study both of farmers and landowners. We propose hereafter to give a few further extracts from the work in another section of the Paper; but we strongly advise our readers to make the whole performance a matter of personal study. The writer is a "practical man," one who himself depends upon the profits of farming, and his judgment will therefore be received, as it ought, with the greater confidance.

Miscellaneous.

Important Experiment.—The Metropolitan Sewage Manure Company lately made the third of a series of experiments with a view of ascertaining the most convenient and expeditious mode of applying water or sewewage to the ground. The mode of application first tried was that in use by the Manchester Liquid Manure Irrigation Company, viz.: a jet from a hose directed by a man moving from spot to spot, as in the operation of sowing. It was found that in this manner an acre of ground could be watered in 48 minutes with 15 tons of water—a result which fully bears out the great economy of time by this mode of applying water to the land. A trial was then made of the mode of irrigation from a centre. A tube with an inclined plane spreader was attached to a revolving stand pipe, and carried gradually round, the inclined plane being elevated or depressed so as to cover a circle of upwards of 30 yards in diameter. By this means the most perfect shower was obtained, and the whole ground fully watered. The engine was worked under 65 feet pressure. A plain jet issuing from a free round orifice measured 18 to 27 yards, and the shower extended full 15 yards. It seemed to be the unanimous opinion of the parties present that this mode of application from a centre was greatly to be preferred to the hose, and that it would be practicable to water an acre of ground from nine successive centres direct from the stand pipes.

The Corn Weevil.—Some years ago, we found a house overrun with weevils; after numberless attempts to destroy them, we were led to observe, that they were almost entirely on the south wall (our rainy side), and that they appeared to breed in incredible numbers in any unusually damp spot or corner. Taking the hint, we cased the wall on the outside with slate, and made the house in every respect perfectly dry, and in a short time the weevils died off and disappeared. Since adopting this precaution, we have not had the least trouble, and have only been reminded that such an insect exists when an accidental spot of damp has appeared to generate them again. We think ourselves, therefore, entitled to say, that these insects require moisture, and that if the grain and granary, as both ought always to be, are dry and healthy, weevils will not long remain. This plan has the merit of costing less than nothing, because the injury that corn sustains directly from damp is more than equivalent to the expence of keeping premises dry, leaving its indirect influence in the generation of weevils out of the question. *W. W., Wiveliscombe, Somersetshire; in the Economist.*

Oak Bark has receded in value. As might be expected, the advanced prices of the last three months have materially increased the importations from the continent, which during the past month have amounted to nearly 700 tons; the consequence is a fall of 10*s*. to 15*s*. per ton. As to English bark, it is yet too early in the season to form any opinion as to what will be the extent of the fall of Oak timber. We hear of large numbers of trees to be felled in various parts of the country, but the reports are far too crude to be relied on. There can, however, be little doubt that the recovery of the articles from the ruinously low prices of the past year will induce many to cut their timber now, who would otherwise have deferred it till winter. At this period last year the value of English bark was 10*l*. to 12*l*. per load—it is now 14*l*. to 17*l*., which is an advance of more than 40 per cent. There is little

chances, if we have an average fall of timber, of the present high prices continuing, but we expect in the coming bark harvest its value will be at least 20 to 25 per cent. above the rates of the past year. *Kent Herald, April* 12.

Notices to Correspondents.

Books : *J.L.* Low on the "Management of Landed Property."

Box-feeding : *Hibernicus.* Please excuse the delay, we are getting drawings made, which will be engraved.

Drains : *F.H.S.* We would use pipe tiles, with collars of considerable length.

Gorse Crusher : *W.D.C.* Mrs. Wedlake manufactures one.

Pigs : *An Original Sub.* The pig has inflammation of the throat (unless an abscess is forming). It should be bled, and have a dose of salts and sulphur, half an ounce of each. If an abscess forms, it should be opened. Slater and White's works are useful works, if a late edition is procured. *W.C.S.—J.M.S.* Give the pig 5 to 12 grains of "Hydrargyrus cum creta," according to its age and size (which you have not mentioned), every third day till the symptoms are removed, and apply a little mild mercurial ointment to the scabs. *W. C. S.*

Seeds for N. Latitudes *A Missionary.* We are not in possession of such information as will enable us to say what the agriculture is of 54° N. lat. and 109° W long, and advise you to make enquiries of those who have experience. Wheat, of course, will not thrive. Summer crops, which come fast to hand, are most to be relied upon. As frost does not easily kill hardy seeds, it may be worth trying the effect of sowing before winter, if the point has not been settled by others, which you can easily ascertain for yourself by consulting the writers on climates similar to that in which you are about to reside.

Shelless Eggs *W E* is referred to "D. S. E.'s" fourth article on Diseases of Poultry, in No. 26, June 26, 1847. Roosting in the open air no doubt disposed the hen to catarrh, and prevents fowls from laying so many eggs as when they are warmly sheltered. Any respectable dealer will supply "W. E.," or if he live in the country, any friend in town, who will visit the markets, may pick up what sorts he may require if he be a judge. Those are not all Dorking which happen to have five toes.

Waste Manures : There are large quantities of alkali refuse lying in the neighbourhood of all our extensive manufactories of soda, and in very many cases, large quantities of muriatic acid are also running to waste at those establishments. Is there any practical difficulty in applying this waste muriatic acid to the refuse previously calcined, the product of which would be sulphate and muriate of lime, after the muriatic acid had been so poured over it? In the neighbourhood of this waste, also, sulphuric acid can usually be procured at small cost; would it not pay to convert the whole of the calcined refuse into gypsum by the use of a sufficient quantity of vitriol to convert the carbonate of lime, of which the calcined refuse partly consists, into sulphate? Moreover, this accumulation of refuse is generally so placed that it could be easily applied to fix the ammoniacal refuse of towns, if proper tanks and reservoirs were constructed to secure the drainings in dry weather, when they are rich and might be profitably saved, allowing the sewers to be flushed out by rains, and the liquids, then less valuable, to escape. Usually speaking, as this product would be obtained on the banks of navigable rivers, and in large towns where the land around is valuable, it might be profitably applied to the land, and thus a nuisance become what the Almighty seems to have intended most nuisances to be, a benefit. *L.L.B.*

Markets.

COVENT GARDEN, May 5

The weather having taken a favourable change, the supply of vegetables has been well kept up, and most kinds are sufficient for the demand. Fruit has altered little since our last account. Pine-apples fetch from 6s. to 10s. per pound. Hothouse Grapes are very good and more plentiful. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst vegetables, young Turnips may be obtained at from 2s. to 3s. a bunch, and Carrots at from 2d. to 2s. Cauliflowers and Broccoli are sufficient for the demand. Asparagus, French Beans, Rhubarb, and Seakale are dear. Potatoes were also dearer. New Potatoes fetch from 6d. to 2s. per lb. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Gardenias, Tulips, Hyacinths, Cinerarias, Tropæolums, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Chestnuts, p. peck, 4s to 7s
Grapes, hothouse, p.lb.,8s.to12s	Almonds, per peck, 6s
— foreign, p. lb., 2s to 3s	— sweet, per lb., 2s to 3s
Strawberries, p. oz., 6d to 1s	Walnuts, p. 100, 1s 6d to 2s
Apples, dessert, p. bsh., 8s to 12s	— p. bush., 16s to 24s
— kitchen, p. bsh., 4s to 6s	Nuts, Bar., p. bush., 20s to 22s
Oranges, per doz., 1s to 2s	— Filb., p. 100 lbs., 60s to 160s
— per 100, 7s to 20s	— Cob, p. 100 lbs., 90s to 160s
Lemons, per doz., 1s to 2s	— Brasil, p. bsh., 12s to 16s
— per 100, 12s to 20s	

VEGETABLES.

Cabbages, p. doz., 9d to 1s 6d	Onions, p. bunch, 2d to 4d
— red, p. doz., 6s to 12s	— p. bush., 6s to 7s
Greens, p. doz. bunches, 1s 6d to 3s	— Spanish, p. doz., 1s 6d to 4s
Cauliflowers, p. doz., 2s to 6s	— pickling, p. hf. sieve, 1s 6d to 2s
Broccoli, white, p. bun., 1s to 2s	Shallots, per lb, 6d to 10d
— brown, p. bun., 6d to 1s 6d	Garlic, per lb., 6d to 1s
Carrol, p. hf. sieve, 9d to 1s	Artichokes, Jerusalem, p. half sieve, 9d to 1s
Potatoes, per ton, 120s to 240s	Lettuce, Cab., p. sc., 4d to 6d
— per cwt., 6s to 12s	— Cos, do., 6d to 4s
— per bush., 4s to 7s	Endive, per score, 1s to 2s 6d
Turnips, p. doz. bun., 1s to 2s	Mushrooms, per pottle, 6d to 1s 3d
Red Beet, per doz., 1s to 1s 6d	Small Salads, p. pun., 2d to 3d
Horse Radish, p. bdl., 1s to 6s	Fennel, per bunch, 2d to 3d
Asparagus, p. 100, 3s to 16s	Savory, per bunch, 2d to 3d
Seakale, p. pannet, 2s to 3s 6d	Thyme, per bunch, 2d to 3d
Rhubarb, p. bundle, 6d to 1s 6d	Watercress, p. doz. bun., 3d to 9d
French Beans, p. 100, 2s to 4s	Parsley, p. hf. sieve, 2s to 4s
Cucumbers, each, 2d to 3s	— Roots, p. bdl., 1s to 2s
Leeks, per doz., 6d to 1s	Marjoram, green, p. bun., 3d to 4s
Celery, p. bundle, 1s to 2s	Mint, green, per bunch, 3d to 4d
Radishes, p. 12 bunds, 6d to 1s	
Carrots, p. doz. bun., 5s to 6s	
Spinach p. sieve, 1s to 2s	

HAY.—Per Load of 36 Trusses.

SMITHFIELD, May 5.

Prime Meadow Hay	75s to 84s	Clover	60s to 95s
Inferior ditto	45 70	New Clover	— —
Sheep	50 60	Straw	26 30
New Hay	— —		J. Cooper.

CUMBERLAND MARKET, May 3.

Prime Meadow Hay	75s to 84s	Inferior	55s to 80s
Inferior ditto	55 65	New Clover	— —
New Hay	— —	Straw	28 32
Old Clover	90 95		Joshua Baker.

POTATOES.—SOUTHWARK, WATERSIDE, April 29.

The Committee report that there have been very few arrivals since our last report, which has left our market very short of all sorts of Potatoes. The following are this day's quotations:—Yorkshire Regents, 160s. to 220s.; Scotch, do., 140s. to 180s.; Scotch Whites, 100s. to 120s.; French Whites, 120s. to 130s.; Dutch, 120s. to 140s.; Belgian, 120s. to 130s.

SMITHFIELD, Monday, April 30.

We have fewer Beasts than on Monday last; the demand is also smaller. Buyers are very cautious, owing to the warm weather, only a few choice Scots make 3s. 6d. The number of Sheep is likewise rather less, but trade is decidedly worse, especially for big polled Sheep. The weather is favourable for Lamb; there is an active demand at fully late rates. Calves meet with a dull sale; very few realise our top quotations, and second-rate are decidedly lower. From Holland and Germany there are 237 Beasts, 430 Sheep, and 74 Calves; from Norfolk and Suffolk, about 2500 Beasts; from Denmark, 44, and from Scotland, 200.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ..	3	2	to 3	4
Best Short-horns	3	0	— 3	2
2d quality Beasts	2	4	— 2	10
Best Downs and Half-breds	4	0	— 4	2
Ditto Shorn ..	3	4	— 3	6

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools .	3	6	to 3	10
Ditto Shorn	3	0	— 3	4
Ewes & 2d quality	3	0	— 3	6
Ditto Shorn ..	2	6	— 2	10
Lambs	5	0	— 6	0
Calves	3	4	— 4	0
Pigs	3	8	— 4	8

Beasts, 3576; Sheep and Lambs, 23,100; Calves, 141; Pigs, 235.

Friday, May 4.

There is a large number of good Beasts on offer, and but very few purchasers, owing to the glutted state of the dead markets. A considerable proportion remain unsold, and those disposed of make fully 2d. per 8 lbs. less than on Monday. The supply of Sheep is also much beyond the demand, and although there is a disposition to take lower prices, they cannot all be sold. Lamb is the only thing in request, but no higher rates can be obtained. Calves are a very dull sale, only a very choice one makes 4s. 4d, and that rarely. From Holland and Germany we have 84 Beasts, 160 Sheep, and 58 Calves; from Scotland, 400 Beasts, and 128 Milch Cows from the home counties.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. .	3	0	to 3	2
Best Short horns	2	10	— 3	0
2d quality Beasts	2	2	— 2	8
Best Downs and Half-breds	3	10	— 4	0
Ditto Shorn ..	3	4	— 3	6

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools .	3	6	to 3	8
Ditto Shorn ..	3	0	— 3	2
Ewes & 2d quality	2	8	— 3	4
Ditto Shorn ..	2	4	— 2	10
Lambs	5	4	— 6	0
Calves	3	4	— 4	2
Pigs	3	4	— 4	4

Beasts, 893, Sheep and Lambs, 7070; Calves, 248; Pigs, 270.

HOPS, Friday, May 4.

Messrs. Pattenden and Smith report that the market is brisk at late prices, with a tendency to advance, as the accounts from the plantations speak of the bine as being very backward, and in many places suffering from the effects of fleas, slugs, &c.

Mid and East Kents .	p. cwt.	50s to 130s	Farnhams .	p. cwt.	84s — 126s
Weald of Kents		40 — 75	Yearling Kents ..		40 60
Sussex		35 — 65	Yearling Sussex ..		40 — 56
			Old Hops		20 — 35

MARK LANE.

Monday, April 30.—The supply of English Wheat from the neighbouring counties this morning was again small, and with the exception of a few of the finest samples of white, which realised last Monday's prices, was sold at a decline of 1s. to 2s. per qr. upon the rates of this day se'nnight. Foreign met a slow retail inquiry at a similar reduction.—Barley, Peas, and Oats are purchased at our last week's quotations.—New Beans must be written 1s. per qr. dearer; other sorts are unaltered.

Friday, May 4.—The arrivals of English corn during the week have been moderate, those of foreign large. The weather during the last day or two being fine and warm, and the attendance at this day's market very bad, scarcely any business occurred, although probably a slight decline in the value of Wheat would generally have been conceded, to have effected sales from on board. Prices of spring corn are nominally unaltered. Floating cargoes of Indian Corn on the coast find buyers at 32s. to 34s. per qr. Barrel Flour is neglected, and good brands of American offering at 24s. without attracting attention.—The corn trade of Great Britain since the 27th ult. has been depressed, and prices of Wheat have declined 1s. to 2s. per qr. By the last accounts from the North of France, Belgium, and Holland, prices of Wheat were maintained, and the Rotterdam market had been cleared of red Wheat at 42s. to 45s. per qr., f. o. b. In Hamburgh shipments were closing, owing to the blockade and the ships in port being loaded. In the lower Baltic business was lifeless, there being neither supplies nor demand, and prices consequently nominal. In Dantzic about 8000 qrs. of Wheat have been purchased, at an advance of 1s. to 2s. per qr., quotations varying from 38s. to 44s.

Liverpool, Friday, May 4.—We have had only moderate supplies since Tuesday. The weather continues remarkably fine. There was a poor attendance of dealers at this day's market, and the business was limited in both Wheat and Flour, at about Tuesday's prices; at a small reduction we might, however, have had more extensive transactions. Oats and Oatmeal were dull, and inferior qualities rather lower. No change in Barley, Beans, or Peas. Indian Corn was not plentiful, and buyers had to give an advance of about 6d. per quarter.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas
Mar. 17	45s 4d	29s 2d	17s 0d	23s 9d	30s 11d	30s 8d
— 24	44 9	28 10	17 1	26 4	28 9	31 6
April 7	44 5	28 9	16 8	26 5	28 1	29 6
— 14 .	44 3	28 6	17 0	23 1	28 5	30 11
— 21	44 5	28 8	16 8	22 4	28 11	28 9
— 28	46 0	28 10	17 2	27 5	29 3	29 9
Aggreg. Aver.	44 8	28 9	16 10	25 0	28 7	30 5
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Mar. 17.	Mar. 24.	Apr. 7.	Apr. 14.	Apr. 21.	Apr. 28.
46s 0d	..	...	...	...	..	...
45 4	..	...	...	...	..	...
44 9	.	...	...	...	...	...
44 5	...	...	...	...	...	...
44 5	...	...	...	...	...	...
44 3	..	...	...	...	...	...

PRICES CURRENT.	London. Apr. 23 qr.	London. Apr. 30 qr.	Liverpool. April 24. 70 lbs.	Liverpool. May 1. 70 lbs.	Wakefield. Apr. 20 qr.	Wakefield. Apr. 27 qr.	Boston. Apr. 25 qr.	Boston. May 2. qr.	Birmingham. April 26. 62 lbs.	Birmingham. May 3. 62 lbs.
	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
Wheat—										
New, red ...	40 to 42	40 to 42	6 3 6 8	6 3 6 8	45 to 48	41 to 47	40 to 46	40 to 46	5 10 6 4	5 10 6 3
„ white ...	46—48	45—47	6 9 7 4	6 9 7 4	46 52	43—51	44—48	44—48	6 3 6 8	6 3 6 8
Old, red ...	42—46	42—46	6 6 6 9	6 6 6 9	43—45	42—44	— —	— —	6 0 6 5	6 0 6 5
„ white ...	48—52	48—52	7 0 7 6	7 0 7 6	—51	—50	— —	— —	6 2 6 10	6 2 6 9
Foreign	38—58	36—56	6 8 0 6	6 3 8 3	40—52	39 -51	— —	— —	5 2 7 0	5 2 7 0
			480 lbs.	barrel						
Rye—New ...	22—24	22—24	—	—	— —	—	— —	— —	—	—
Foreign...	22—23	22 - 23	—	...	—	—	— —	— —	—	—
Foreign meal	6l.—7l	6l.—7l	—	—	—	—	— —	— —	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	22—26	22—25	—	—	22— 23	22- 23	24—26	24 —26	23—25	23—25
Malting... ..	25—29	25- 29	30s—32s	30s—32s	27—32	27- 32	28—30	28—30	29—33	29—33
Foreign... ...	19—29	19—29	—	—	22—28	22—28	— —	— —	—	—
					6 bush.	6 bush.				
Malt—Ship ...	— —	—	—	—	39—42	39—42	— —	— —	—	—
			45 lbs.	45 lbs.						
Oats—White...	19—26	19 —26	2s 6d 3s 0d	2s 6d 3s 0d	- -	—	14—19	14—19	18—30	17—30
Black...	16— 22	16- 22	2 5 2 8	2 5 2 8	- -	—	— —	— —	17—18	17—18
Foreign	15—20	15- 20	2 4 2 7	2 4 2 7	—	—	— —	— —	—	—
			qr.	qr.			qr.			
Peas—Boilers	25—28	25—29	34s—	34s—	28—32	28—32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—26	23—26	27 —28s	27 —28s	— -	—	—	—	11—12	11—12
Foreign ...	24—33	24—33	30 —33	30 —33	— -	—	—	—	—	—
Beans—										
New, small ...	21—31	22—32	28 —33	28 —33	29- -30	29—30	26—32	26—32	11—14	11—14
Longpods, &c....	27—33	28—34	—	—	—	—	— —	— —	—	—
Old	—	—	32 —34	32 —34	35—36	35—36	34—36	34—36	14—16	14—16
Foreign ...	21—36	21—36	24 —32	23 —32	25—27	25—27	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	36—40	37—42	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	6l.—7s	6l.—7s	7l. 12s	7l. 12s	—	—	—	—	—	—
Foreign ...	6l.—6l.	6l.—7l	—	—	—	—	—	—	—	—
Indian Corn—	26—30	26—30	30s—33s	31s—34s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	36—44	36—44	32—35	32—37	—	—	32—38	32—38	34—40	34—39
Weekly Averages and Imports.	Aver. May 1.	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	49 11	22920	44 5	1105	45 6	12078	45 0	2723	48 3	—
BARLEY ...	32 5	5300	28 9	756	29 1	1989	— —	— —	—	—
OATS... ...	18 5	21410	16 10	3362	17 5	1335	14 3	897	18 2½	470
RYE	23 9	—	24 5	—	— —	— —	— —	— —	—	—
BEANS ...	27 11	—	—	2839	29 4	1035	29 6	414	30 0	2488
PEAS... ...	29 7	—	—	522	27 0	88	— —	— —	—	—
SIGNED	*KINGSFORD and LAY.*		*SEGAR and TUNNICLIFFE.*		*SANDARS and DUNNS.*		*THOMAS WRIGHT.*		*J. and C. STURGE.*	

Sales by Auction.

JAVA ORCHIDS.

MR. J. C. STEVENS begs to announce for Sale by Auction, at his Great Room, 38, King-street, Covent-garden, on THURSDAY, May 17, at 12 for 1 o'clock, an importation just arrived from Java, comprising three or four quite new distinct species of Aerides, a few strong plants of Saccolabium in the way of Blumei, some fine masses of Grammatophyllum speciosum, a very fine new Calanthe, Vandas, and other Orchids, in good condition, having been brought home by the Collector. May be viewed the day prior and morning of sale, and Catalogues had.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition, by Auction, at the Mart, Bartholomew-lane, on TUESDAY, 8th, and THURSDAY, 10th of May, very choice PICOTEES and PINKS, VERBENAS, FUCHSIAS, HEARTSEASE, CINERARIAS, a fine collection of DAHLIAS, GERANIUMS, and other Plants in bloom.—May be viewed the morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

SALE OF DAIRY STOCK.—There will be Sold by Public Auction, at Mains of Duchrae, near Castle Douglas, N.B., on TUESDAY, the 15th day of May next, the following DAIRY STOCK: 5 pure bred Jersey Cows; 2 pure bred Alderney ditto; 4 pure bred Alderney Heifers; 1 pure bred Jersey Heifer; 3 Cows out of Ayrshire Cows by a Jersey Bull; 10 pure bred Shetland Cows. The above have been bred from stock selected by the owner in the Channel Islands, and are remarkable for size, symmetry, and milking qualities. Castle Douglas is 16 miles from Dumfries, from whence is a railway to Carlisle.

SALE OF A VALUABLE COLLECTION OF HEATHS, CAMELLIAS, and other rare GREENHOUSE PLANTS.

DALGLEISH AND FORREST will sell by Auction, on TUESDAY, 29th May, the whole valuable collection of GREENHOUSE PLANTS, in the Conservatories at Carstairs House, Lanarkshire. Catalogues may be had from Messrs. BARCLAY and SKIRVING, Buchanan-street, Glasgow; from the Gardener at Carstairs; and from DALGLEISH and FORREST, 4, St. Andrew-square, Edinburgh. Sale to commence at half-past 12 o'clock, in order to suit the 11 o'clock train from Edinburgh, per Caledonian Railway.

4, St. Andrew-square, Edinburgh, May 5

LANDED PROPERTY.—Mr. EDWARD RYDE (of the late Firm of SANDERSON and RYDE), SURVEYOR, LAND AGENT, &c., respectfully solicits the favours of Gentlemen having for Public or Private Sale, or desiring to Purchase, LANDED ESTATES, TIMBER, FARMING STOCK, &c. Surveys, Maps, Valuations, and the Agency of Estates and Collection of Rents by yearly contract. A Registry of Farms to Let at Michaelmas.—14, Upper Belgrave-pl., Eaton-sq., London.

FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark-lane, London, on MONDAY, May 7, at Two o'clock precisely, 1400 Tons PERUVIAN GUANO, Imported by Messrs. Antony Gibbs and Sons, to be delivered overside ex "Monarch" and "Commerce." Catalogues and further particulars in due time from J. A. RUCKER and BENCRAFT, Brokers, 26, Commercial Sale Rooms, Mincing-lane, London.

TO NURSERYMEN, SEEDSMEN, AND OTHERS.

TO BE SOLD, on Advantageous Terms, the remainder of the Lease of a small, compact NURSERY and GOOD SEED BUSINESS, the former well stocked with Trees of various kinds, Greenhouse and other buildings, situated opposite a Railway Terminus in the vicinity of one of the principal Market Towns. The above are well worthy of notice, and may be had either together or separately. For particulars, apply to Mr. CHARLWOOD, Seed-merchant, Tavistock-row Covent-garden, London.

TO NURSERY AND SEEDSMEN

TO BE SOLD, by Private Contract, that old and long-established Nursery and Seed Business BRIGHTON PARK NURSERY, carried on for many years by Messrs. GRAY, ADAMS, and HOGG, the situation is first-rate, and the connection good.—For particulars apply to Mr. JOHN SANGSTER, Nursery Seedsman, Newington Butts, London. Mr. ROBERT DONALD, Nurseryman, Woking, Surrey; or to SOLE and TURNER, Solicitors, 68, Aldermanbury, London

FARM AND COTTAGE VILLA RESIDENCE.

TO BE LET, for the remainder of a term (5½ years), a very Picturesque COTTAGE RESIDENCE and FARM, upon which a large sum has been expended by the present lessee, but whose health compels him to retire from it. 218 acres of land, 100 of which are Forest Land, yielding yearly a considerable sum, in underwood, 45 Grass, the rest under crop, all in the highest state of cultivation, close to a railway station, 30 miles (1 hour) from London Bridge. The present proprietor would make a great sacrifice to a respectable tenant.—Apply to E. H., at Mr. Bull's, 113, Chancery lane, London, and full particulars will be sent.

FARM TO BE LET.

TO BE LET, in the neighbourhood of London, a FARM. No one need apply who cannot command in Stock and Money 2500*l.*—Address, by letter, Alpha, care of the Publisher of the *Gardeners' Chronicle*, 5, Upper Wellington-street, Strand, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.

J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, have the pleasure to hand their New List of Prices of SHEET GLASS for Cash.

HORTICULTURAL GLASS,

CUT TO SIZE UP TO 40 INCHES LONG.				SHEET SQUARES. In boxes of 100 feet.			
16 oz. from 3*d.* to 3½*d.* per foot.				Under 6 by 4		12*s.*	6*d.*
21 ,,	8½	5	,,	6 by 4 and 6½ by 4½		15	0
26 ,,	3½	7½	,,	7 by 5 and 7½ by 5½		17	6
32 ,,	4	9½	,,	8 by 6 and 10 by 8		20	0

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS, in sizes not exceeding 5 feet superficial.

⅛ thick ... per foot	1*s.* 0*d.*	¼-inch per foot	2*s.* 0*d.*
⅜-inch	1 2	½ inch	3 0
⅝-inch	1 6		

PATENT ROUGH PLATE TILES.

⅛ thick .... each	0*s.* 11*d.*	¼ inch ..... each	1*s.* 7*d.*
½-inch	1 3	⅝-inch	2 9

SHEET GLASS TILES AND SLATES.

	16-oz.	21-oz.	26-oz.	32-oz.
Tiles made of Sheet Glass	8*d.*	10*d.*	1*s.*	1*s* 4*d.*
Slates, 20 ins. by 10	10*d.*	1*s.*	1*s.* 5*d.*	1*s.* 8*d.*

Slates are kept in stock of the usual sizes, and made to any dimensions.

GLASS MILK-PANS, PROPAGATING AND BEE GLASSES, Pastry Slabs, Hyacinth Glasses and Inches, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, Lamp Shades, and Lactometers for trying the quality of Milk, 4 tubes 7*s.* 6*d.*; 6 tubes, 10*s.* Self Registering Thermometers for Greenhouses.

HARTLEY'S PATENT ROUGH PLATE GLASS.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes. Inches.				Inches.			Per foot.	Per 100 feet
		Under	6	by	4	at	1½*d.*	is £0 12 6
From 6	,, 4	,,	7	,,	5	,,	2*d.*	,, 0 16 8
7	,, 5	,,	8	,,	6	,,	2½*d.*	,, 0 18 9
8	,, 6	,,	10	,,	8	,,	2½*d.*	,, 1 0 10
10	,, 8	,,	12	,,	9	,,	2½*d.*	,, 1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.				
21 or ,,	3¾*d.*	5*d.*	,,	,,
26 oz. ,,	3½*d.*	7½*d.*	,,	,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Reflective Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

GLASS.

E. AND W. H. JACKSON are supplying SHEET, ROUGH PLATE, and CROWN GLASS for Horticultural purposes, at very reduced prices. BRITISH AND PATENT PLATE of superior manufacture, for Glazing dwelling-houses for which purpose these articles are now superseding all inferior Glass. ORNAMENTAL GLASS of the newest designs for the decoration of Conservatories, &c. E. and W. H. J. also supply PATENT OPTICAL FLINT GLASS, Thin Glass, Slides and Cells for Microscopic purposes, French Shades, Propagating Glasses, &c. Estimates, Lists of Prices, and every information forwarded on application at their Warehouse, 315, Oxford-street, London.

GLASS.

THOMAS MILLINGTON, 87, Bishopsgate-street without, London (same side as Eastern Counties Railway Terminus). BRITISH PLATE GLASS, nearly ¼ inch thick, in sizes under 1 foot superficial, 1*s.* 2*d* per foot; this is the best article for Greenhouses and Garden Frames of every description, as nothing can break it in an ordinary way. Horticultural Glass, in cases of 200 feet, No. 16 oz., 40*s.*, No. 21 oz., 60*s.*, No. 26 oz., 87*s.* 6*d.*; No. 32 oz., 112*s.* each, case included.

Cut Squares, in 100 feet boxes.	Crown.	No. 16 Horticultural.
Sizes under 6 ins. by 4 ins.	10*s.* 8*d.* .	12*s.* 6*d.* per box.
6 by 4 ,, 7 by 5 ...	12 6 .	15 0 ,,
7 by 5 ,, 8 by 6 .	14 6 .	17 6 ,,
8 by 6 ,, 10 by 8	15 6 .	20 0 ,,

Squares above 10 by 8, in Crown or Horticultural, 2½*d.* to 3*d.* per foot, according to size and quantity. Patent Rough Plate Tiles, ⅛ in., 10*d.*; ¼ in., 1*s.* 3*d* each; do Slates, ¼ and ½ inch thick. Patent Rough Plate Glass for Skylights, Warehouses, and Floors, ⅛ in. thick, 6*d.*, ¼ in., 1*s.*; ½ in., 1*s.* 6*d.*; ⅝ in., 1*s.* 9*d.*; ¾ in., 2*s.*; 1 in., 3*s.* per foot, in sizes under 5 feet superficial. Lactometers, for testing the quality of milk, 4 tubes, 7*s.* 6*d.*; 6 tubes, 10*s.* complete. Glass Milk-pans, Pastry Slabs, Rolling Pins, and Moss Dishes for Bulbous Plants. Propagating and Bee Glasses. Fish Globes. Gas and Lamp Glasses of every description. Linseed Oil, Putty, 8*s.*; White Lead, 26*s* per cwt. Linseed Oil, Turpentine, Paints, Colours, Varnishes, Brushes, and Tools in every variety.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, Chinese, bernacle, brent, and laughing geese, sheildrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

THE IMPROVED HYDRAULIC RAM, fixed by FREEMAN ROE, Fountain Maker, 70, Strand, London, can be worked by a small stream of half-an-inch, where a fall of 2 feet can be obtained. The same RAM, without the aid of a Tank or Cistern, arranged to throw a Jet of Water constituting a Fountain with the head of water beneath.

Engines for deep wells of all kinds, Douche and other Baths. Buildings heated by hot water. Water wheels to work small pumps, from 15*l.* Estimates given for the supply of towns, &c.

A newly-invented Portable Vapour Bath, all complete for 4*l.*

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE'S extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	,, Knives, various
Borders, various patterns	Hammers	,, Saws
Botanical Boxes	Hand-glass Frames	,, Scissors
Cases of Pruning Instruments	Hay Knives	,, Shears
Chaff Engines	Hoes of every pattern	Rakes in great variety.
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Daisy Rakes	Hotbed Handles	Scythes
Dibbles	Ladies' Set of Tools	Scythe Stones
Dock Spuds	Labels, various patterns, in zinc, porcelain, &c	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
,, Stands in Wires and Iron	Menographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanic Bordersand Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
,, Loops	Mowing Machine	Trowels
,, Rollers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extractorsand Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE'S Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

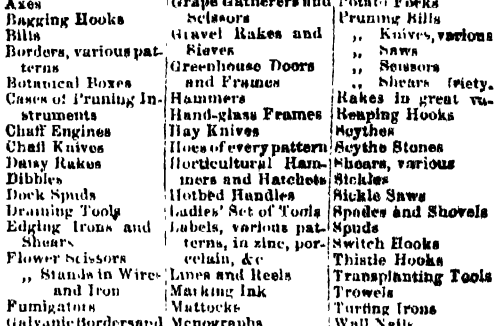
HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LEGG, Cheltenham.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 400 and 500) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a copy of the testimonials, will be sent on application to WALTER CARSON, 17, Tokenhouse Yard, back of the Bank of England.—No Agents.—All orders are particularly requested to be sent direct.

SCHOOL FOR GENERAL AND SCIENTIFIC EDUCATION (especially with regard to AGRICULTURE), Wickham Market, Suffolk, under the immediate patronage of the Right Hon. Lord Rendlesham, M.P., conducted by Mr. G. DOWNES. A Farm, Laboratory, &c., are attached to the School. For terms, apply to Mr. G. DOWNES, Wickham Market, Suffolk.

STATUES, VASES, FOUNTAINS, GARDEN ORNAMENTS, Coats of Arms, and Architectural Embellishments in IMPERISHABLE STONE, at considerably reduced prices, by VAUGHAN and Co., 60, Stone's End, Borough, London. CROGGON, late of Coade's, Superintendent.

COTTAM & HALLEN, ENGINEERS, IRON-FOUNDERS, &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON.



COTTAM and HALLEN having had experience in the erection of HOTHOUSES and CONSERVATORIES (made of Iron or of Iron and Wood combined), and from many improvements they have made during that time, can with confidence undertake to erect such buildings with economy and dispatch.

HOT WATER APPARATUS for heating the above and other buildings (of which they have constructed upwards of 3000), fixed at greatly reduced prices.

COTTAM and HALLEN have on show at their repository, No. 2, Winsley-street, Oxford-street, a great variety of the following articles, for GARDENS, &c., at Greatly REDUCED PRICES, viz.:

Garden Rollers,	Hand-glass frames,
Garden Engines,	Flower Stakes,
Garden Syringes,	Flower-bordering,
Watering Pots,	Flower Stands,
Garden Vases,	Garden Arches,
Mowing Machines,	Garden Chairs.

Every description of Work, both plain and Ornamental in wrought and cast iron, for Gardens, &c. &c.

HORTICULTURAL TOOLS and AGRICULTURAL IMPLEMENTS of all kinds.

STRONG IRON HURDLES, strained Wire Fencing, &c.

Show Rooms at the MANUFACTORY, 2, Winsley-street, and 76, Oxford-street, three doors West of the Princess's Theatre.

NEW GAILLARDIA.

GAILLARDIA PICTA TUBULOSA.—This beautiful Gaillardia was raised from seed, and submitted to Messrs. Henderson and Co., of Pine-apple Place, Edgeware-road, for their opinion. The following was their reply:—

"Pine-apple Place, ... 9, 1847.

"Dear Sir,—The Gaillardia is certainly very ..., provided it comes throughout the season quite true, and ... character to the one now sent; all depends on this, as frequently late in the season I have noticed a bloom come similar to yours, though never constant; should it be permanent it will be a good addition to the family, and worth your increasing.

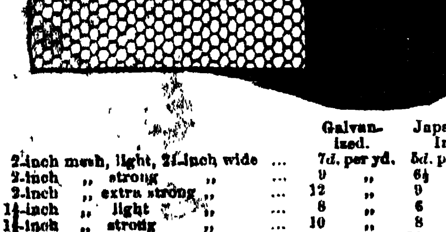
"Mr. E. H. Fuller, Florist, Worthing."

According to the above opinion I have tried the Gaillardia for two seasons, and bloomed it perfectly true and constant, and can strongly recommend it to the favourable notice of Florists and Amateurs. Strong plants, in 60-sized pots, will be sent out the second week in May, at 1s. 6d. each, and may be had of Messrs. Henderson and Co., Pine-apple Place, Edgeware-road; Mr. Hamilton, 156, Cheapside; and Mr. Denyer, 82, Gracechurch-street, London.

At the same time will be sent out a seedling Geranium, named "THE HERO OF MOULTAN," at 10s. 6d. each. It is a fine showy variety; large flower, upper petals very dark, and spot good. This will become a good Trade flower. The usual Trade allowance when three plants of each are taken. Orders will be executed in strict rotation.—Edwin H. Fuller, the Floricultural Grounds, Park Crescent, Worthing.

HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the Kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes, and Lights of all sizes, kept ready for use, packed and sent to all parts of the Kingdom; warranted best material. Garden-lights of every description, at James Watts', Hothouse Builder, Claremont-place, Old Kent-road. Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

GALVANISED WIRE GAME NETTING.—3d. per yard, 2 feet wide.

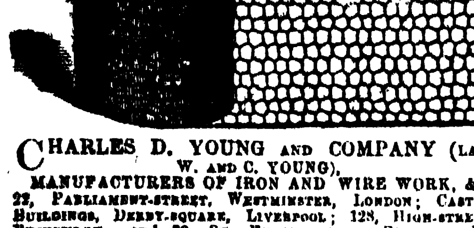


	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d. per yd
2-inch „ strong „ ...	9 „	6½ „
2-inch „ extra strong „ ...	12 „	9 „
1½-inch „ light „ ...	8 „	6 „
1½-inch „ strong „ ...	10 „	8 „
1½-inch „ extra strong „ ...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG), MANUFACTURERS OF IRON AND WIRE WORK, &c., 22, Parliament-street, Westminster, London; Castle-Buildings, Derby-square, Liverpool; 128, High-street, Edinburgh; and 32, St. Enoch-square, Glasgow, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

Prices.—18 ins. high, 9d.; 24 ins., 1s.; 30 ins., 1s. 3d.; and 36 ins., 1s. 6d. per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	.. ..	£3 15 0
Do. of 100 yards, 24 ins. wide	.. ..	5 0 0
Do. of 100 yards, 30 ins. wide	.. ..	6 5 0
Do. of 100 yards, 36 ins. wide	.. ..	7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. Young and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s. is equal to 2½ yards of another article in the market, the same width, at 9d. per yard. Samples for inspection sent free of expense.

C. D. Young & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland

EDWARD MITCHELL, Bristol Nursery, and 55, Marine-Parade, Brighton, Florist and Seedsman, by appointment to her Majesty, begs to inform the Nobility and Gentry that his GENERAL CATALOGUE OF CHOICE PLANTS, consisting of Geraniums, Fuchsias, Dahlias, Chrysanthemums, Verbenas, Lilium lancifolium, Camellias, Orchids, Greenhouse, Stove, and other New and Select Plants, is now ready, and will be forwarded upon application.

E. M. having a large stock of the following, he begs to offer strong Plants at the annexed prices:

Mitchell's Scarlet Geranium Tam o'Shanter,	2s. 6d. ea.	24s. p. doz.	
Do. do. do. Tom Thumb's Master,	2s. 6d. „	24s.	„
Do. do. do. Ibrahim Pasha ...	1s. „	9s.	„
Zauschneria californica ...		12s.	„
Calceolaria, Kentish Hero, the very best for bedding		9s.	„
Do. [illegible]		9s.	„
Plumbago [illegible]		6s. and 9s.	„
Chrysanthemums, [illegible] varieties ...	6s. „	12s.	„
Verbenas ...	4s. „	6s.	„
Fuchsias ...	9s. „	15s.	„
Dahlias ...	6s. „	12s.	„

Achimenes venusta, coccinea superba, floribunda elegans, 12s. per lb.

Do. Ghiesbrechtii, 2s. 6d. each.

Post-office orders are expected from unknown correspondents.—Kemptown, May 5.

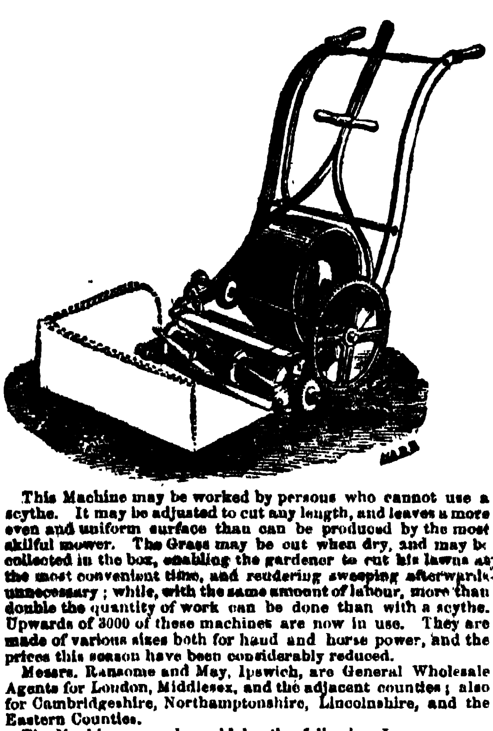
DO YOU BRUISE THE OATS YOU GIVE YOUR HORSES? No. Then you lose one bushel out of every three, and your Cattle do not do half so well.—MARY WEDLAKE AND CO.'S OAT BRUISING MILLS; superior Chaff Engines, simple in construction, doing from 30 to 300 bushels daily, and more. All respectable Coachmasters and Brewers use these Implements.—To be seen at 118, Fenchurch-street, opposite Mark-lane, close to the Blackwall Railway.

N. B. Linseed Mills, Bean Mills, and Malt Mills, in great variety.

BUDDING'S PATENT MACHINE FOR CUTTING LAWNS, PLEASURE GROUNDS, BOWLING GREENS, &c.

MANUFACTURED AND SOLD BY

JOHN FERRABEE AND SONS, Phœnix Iron Works, near Stroud, Gloucestershire, Engineers, Millwrights, Machinists, Iron and Brass Founders, and Manufacturers of Agricultural Implements.

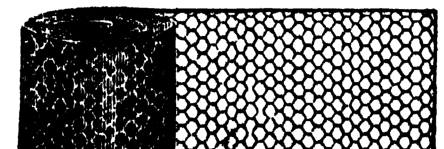


This Machine may be worked by persons who cannot use a scythe. It may be adjusted to cut any length, and leaves a more even and uniform surface than can be produced by the most skilful mower. The Grass may be cut when dry, and may be collected in the box, enabling the gardener to cut his lawns at the most convenient time, and rendering sweeping afterwards unnecessary; while, with the same amount of labour, more than double the quantity of work can be done than with a scythe. Upwards of 3000 of these machines are now in use. They are made of various sizes both for hand and horse power, and the prices this season have been considerably reduced.

Messrs. Ransome and May, Ipswich, are General Wholesale Agents for London, Middlesex, and the adjacent counties; also for Cambridgeshire, Northamptonshire, Lincolnshire, and the Eastern Counties.

The Machines are also sold by the following Ironmongers: Mr. W. Drury, Castle-street, Liverpool; Messrs. Lister and Lees, Cateaton-street, Manchester; Messrs. Mapplebeck and Lowe, Bull-ring, Birmingham; Messrs. J. Nelson and Sons, 47, Briggate, Leeds; Mr. T. Johnson, Leicester; Messrs. Young and Spence, Shrewsbury; Messrs. Sandars & Haywood, Derby; and Mr. John Wigglesworth, Market-place, Nottingham.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3d. per yard	30 inches wide	7½d. per yard
18 „ „	4½d. „ „	36 „ „	9d. „ „
24 „ „	6d. „ „	48 „ „	1s. „ „

Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot, Flower Trainers, from 3d. each; Garden arches, 20s. each; Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of Thomas Henry Fox, 63, Snow hill, London.

CHOICE FLOWER SEEDS.—Many Flower Seeds having been destroyed by the late severe weather, J. Carter begs leave to enumerate a list of such as are proper for sowing in the open ground, any time this month, to flower this season, see No. 1; and also of such as flower next year, see No. 2, and Greenhouse Seeds, see No. 3. He can also supply the beautiful new *Schizanthus retusus albus*, seed of which is exclusively in his possession, at 2s. 6d. per packet. All forwarded prepaid at the prices mentioned.

FLOWER SEEDS.

No. I.—ANNUALS, &c.

	s.	d.
Antirrhinum, 6 var. ...	1	0
Aster, 24 finest var. ...	3	0
„ 12 do. do. ...	1	6
Balsam, 6 extra fine ...	1	6
„ Camellia, 6 do. ...	1	6
„ rose-flowered, 6 ...	1	6
Brachycome, 4 var. ...	1	6
Calliopsis, 4 finest ...	1	0
Chinese Larkspur, 6 ...	1	6
Clarkia, 5 fine var. ...	1	0
Dianthus, 6 finest ...	2	0
Gaillardia, 6 do. ...	1	6
Geum, 4 extra fine ...	1	6
Godetia, 6 fine var. ...	1	6
Jacobæa, 6 do. ...	1	6
Larkspur, 12 finest ...	2	6
Lobelia, 6 dwarf ...	1	6
Marigold, 4 finest ...	1	0
Mesembryanthemum, 3...	1	6
Nemophila, 4 finest ...	1	0
Petunia, 20 extra fine ...	5	0
„ 6 do. ...	1	6
Phlox Drummondii, 4 ...	2	0
Poppy, 12 var. ...	2	0
Portulaca, 5 do. ...	2	0
„ striatiflora, new ...	1	0
Salpiglossis, 4 ...	1	6
Schizanthus, dwarf, 4 ...	1	0
„ tall, 3 ...	1	0
Stock, German, 24 ...	3	0
„ „ 12 ...	1	6
„ 6 larger packets ...	2	0
Zinnia elegans, 12 ...	4	0
„ „ 6 ...	2	0
25 fine annuals ...	6	0
Auricula, Alpine ...	0	6
Carnation, flakes ...	2	6
„ bizarres ...	2	6
Picotee, white ...	2	6
„ yellow ...	2	6
50 var. separate ...	12	0
Mixed Carnation ...	2	6
„ Picotee ...	2	6
Delphinium, 4 s. ...	1	0
Helianthemum, m. ...	0	6
Hollyhock, dou. m. ...	0	6
Lupinus, mixed ...	0	6
Pentstemon speciosum ...	1	0
„ mixed ...	0	6
Phlox, perennial, m. ...	0	6
Ranunculus, m. ...	1	0
Scabiosa, 20 var. ...	0	6
Stock, Brompton, 3 ...	0	6
„ Queen, 3 ...	0	6
„ Imperial, 3 ...	1	6
Sweet William, 3 ...	1	0
Wallflower, double, 3 ...	3	0
„ single, mixed ...	0	6
„ double „ ...	0	6

No. II.—FLOWER NEXT YEAR.

	s.	d.
Alstrœmeria, 4 sp. ...	1	6
Aquilegia, 4 sp. ...	1	0

No. III.—GREENHOUSE SEEDS.

	s.	d.
Calceolaria, splendid ...	1	0
Cineraria, „ ...	1	0
Erica, 30 sp. m. ...	2	6
Gladiolus, 20 var. ...	1	0
Hibiscus, 6 var. ...	2	6
Ipomœa, new Arabian ...	1	6
„ rubra cærulea ...	1	6
Ixia, finest m. ...	0	6
Lophospermum, m. ...	0	6
Maurandya, m. ...	0	6
Sparaxis, fine m. ...	0	6
Thunbergia, 6 var. ...	2	6

The above, and most other Flower Seeds, to be had of James Carter, Seedsman and Florist, 238, High Holborn, London. Sixpenny packets, mixed, may be had of the seeds No. 1.

_ KNIGHT'S TALL MARROW PEA, warranted of superior flavour, and most proper for present sowing, 1s. 6d. per quart; Waite's blue King of the Marrows, extra fine, 5s. per quart. A Catalogue of Bulbs will be published in the autumn.

BEDDING PLANTS.

WM. HAMILTON, Seedsman and Florist, 156, Cheapside, London, can supply the above in great variety at very moderate prices, as also all the new Dahlias, Verbenas, Pansies, Geraniums, Fuchsias, &c., coming out this season, including FUCHSIA SPECTABILIS, 21s. each; Viola Lutea, &c.

ANNUALS FOR MAY SOWING, in packages of 12 varieties, 2s. 6d., 25 varieties, 5s. 6d., free by post 6d. extra; all of good quality. WATER LILIES, 1s. each.

Improved FLOWER SUPPORTERS for Dahlias, Peas, and Climbing Plants, 4s. 6d. each. CANVAS for shading Greenhouses or Frames, Tulips, or other flower-beds, 4d. per yard. Vegetable seeds, &c.—156, Cheapside, London.

SELECT BEDDING PLANTS.

WOODLANDS NURSERY, MARESFIELD, near UCKFIELD, SUSSEX.

WM. WOOD AND SON have much pleasure in offering the following desirable plants

SALVIA PATENS ALBA, 2s. 6d. each, and 18s. to 24s. per doz. This ... beautiful variety will prove a decided acquisition to the co... tion of bedding plants; its flowers are equal in size to Salvia patens, and of the purest snowy white, with a small spot of light blue on the lower lip of each flower.

The stock of the subjoined VERBENAS is in the possession of W. W. and Son, and the varieties are recommended as the finest in cultivation.

COUNTESS OF HAREWOOD—French white, bright rosy eye; a very large, distinct, and superb variety, 3s. 6d. each.

HONOURABLE MRS. LASCELLES—bright purple, clear white eye, well adapted for bedding; 3s. 6d.

MRS. WATSON—most brilliant scarlet, bright primrose eye, habit compact and dwarf, flowering in great profusion; this is unquestionably the finest Verbena in its class, and will prove one of the best varieties for grouping; 5s.

ROBIN HOOD—bright vermilion scarlet, lemon eye, large and superb; 3s. 6d.

The usual discount to the Trade.

The following are highly recommended for bedding.

	s.	d.
Anemone japonica ... per doz.—	6s.	0d.
Balsamina repens, deep yellow, fine ...	12	0
Calceolaria amplexicaulis ...	9	0
„ Kayii ...	6	0
„ Seedlings unbloomed, from first-rate varieties, 6s., 9s., and ...	12	0
Cuphea platycentra ...	4	0
„ strigillosa ...	4	0
Heliotropium Triomphe de Liege ...	9	0
„ Voltaireanum ...	6	0
Lobelia erinus compacta ...	4	0
„ „ grandiflora ...	4	0
„ ramosa ...	4	0
Nierembergia intermedia ...	6	0
Plumbago Larpentæ, beautiful blue, 9s. and ...	12	0
Salvia oppositiflora, very fine ...	12	0
„ patens ...	6	0
„ „ alba, 18s. and ...	24	0
„ splendens ...	6	0
Zauschneria californica, 12s. and ...	18	0
Geraniums, best scarlet varieties, by name, 6s. and...	9	0
„ fine show varieties, 9s., 12s., and ...	18	0
„ scented leaved of sorts ...	6	0
Cinerarias, very splendid named varieties, coming into bloom, 9s., 12s., and ...	18	0
„ new varieties of this season ...	30	0
Fuchsias, superb kinds, by name, 6s., 12s., and ...	18	0
Verbenas, the best in cultivation, 6s., 9s., and ...	12	0
Petunias, distinct and showy, 6s., 9s., and ...	12	0
Chrysanthemums, fine and distinct vars., 9s. and ...	12	0
Do., the newest continental varieties ...	18	0

N.B.—Catalogues of the above may be had gratis, on application; additional plants presented with each order. A remittance or reference required from new customers.

Printed by William Bradbury, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, May 5, 1849.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 19—1849.] SATURDAY, MAY 12. [Price 6*d*.

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ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The First EXHIBITION this season, in the Gardens of this Society, will take place on Wednesday next, May 16. Gates to be opened at 2 o'clock. The North Gate communicates directly with the Marquees. Tickets to be obtained at the Gardens, by orders from Fellows of the Society, *5s.* each, or on the day, *7s. 6d.* each.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.—Under the Patronage of Her Most Gracious Majesty, THE QUEEN. THE SECOND EXHIBITION this season, of the above Society, will take place at the ROYAL SURREY ZOOLOGICAL GARDENS, on THURSDAY the 17th of May, 1849. Open to all Exhibitors, when Prizes will be awarded for the following productions, viz., Miscellaneous and Orchidaceous Plants, Pelargoniums, Azaleas, Cape Heaths, Tulips, Heartsease, and Vegetables. In addition to the above, Mr. R. J. Lawrence, of Hampton, offers 10*l.* value of Tulips to Amateurs. Lists of Prizes and the Rules of the Society may be obtained from John Taylor Neville, Secretary, Ebenezer House, Peckham, Surrey.

THE LONDON FLORICULTURAL SOCIETY will hold their SECOND EXHIBITION for the Season at the London Tavern, Bishopsgate-street, City, on Thursday, the 24th inst. Flowers to be exhibited: Pelargoniums, Calceolarias, Cinerarias, Tulips, and Pansies. Plants to be ready for the Censors by One o'clock precisely. Friends of the Members will be admitted at Three o'clock, on producing a written admission signed by a Member. The prizes will be awarded in classes and Certificates given for deserving Seedlings.—John Dickson, Acre-lane, Brixton, near London, May 12

THE EXHIBITION OF AMERICAN PLANTS AT OAKLEY SQUARE, KING'S ROAD, CHELSEA, WILL BE CONTINUED THIS YEAR, AS USUAL.

HOSEA WATERER, KNAP HILL NURSERY, WOKING, SURREY.

GARDENERS' BENEVOLENT INSTITUTION.—The SIXTH ANNIVERSARY DINNER in aid of the Funds of this Society, will take place at the London Coffee-house, on Friday, the 1st June next, W. F. G. Farmer, Esq., High Sheriff of Surrey, in the Chair, supported by the following Noblemen and Gentlemen, who have kindly consented to act as Stewards:

The Right Hon. the Earl of Ellesmere.
The Right Hon. Lord Viscount Brackley, M.P.

The Baron Goldsmid.	Alexander Henderson, M.D.
Captain James Lamont, R.N.	William Hills, Esq.
The Rev. Charles Annesley.	C. W. Johnson, Esq.
The Rev. John Austen.	William Jones, Esq.
William M. Attwood, Esq.	John Lawrie, Esq.
Thomas Clarke, Esq.	Charles Palmer, Esq.
John E. Davies, Esq.	Edmund Tattersall, Esq.
Charles W. Dilke, Esq.	George E. Tilbury, Esq.
John Edwards, Esq.	Charles Baring Wall, Esq., M.P.
John Foster, Esq.	John Wilmot, Esq.
Braudreth Gibbs, Esq.	Samuel Wilson, Esq., Alderman
Thomas Grissell, Esq.	John M. Wrench, Esq.

By order, E. R. Cutler, Secretary.

GARDENERS' BENEVOLENT INSTITUTION—Notice is hereby given, that a SPECIAL GENERAL MEETING of the Subscribers to this Institution will be holden at the London Coffee-house, Ludgate-hill, on Wednesday the 20th June next, to consider a Report from the Committee as to one of the Pensioners who is in the receipt of parochial relief; also for the purpose of Electing TWO PENSIONERS on the Funds of the Charity from among the following Candidates, whose testimonials have been examined and approved of by the Committee:

Name.	Age.	Residence.	Application.
Edward Marshall	69	London	7th
Mary Brown	82	London	5th
John Skeates	69	Brixton	5th
Thomas Mills	72	Dulwich	4th
Charles Ainslie	83	Leyton	3d
John Appleby	57	Clapham	3d
Robert Duncan	70	Highgate	3d
Ogilvie Neil	80	Scone, N. B.	3d
Humphrey Taylor	70	Clapham	3d
James Battey	65	London	2d
Edward Beach	74	Quedgley, Gloucester	2d
John Cocks	62	Brixton	2d
Richard Rudland	78	Dartford	2d
John Shepherd	70	Clapham	2d
William Browne	71	Andover	1st
Rice Evans	71	London	1st
John Hunden	65	Bath	1st
Cornelius Robinson	70	Blackheath	1st
John Snow	65	Farnborough	1st

The chair will be taken at half-past 11 o'clock. The ballot will commence at 12, and close at 2 o'clock, precisely. No person will be allowed to vote whose subscription is unpaid on the day of election.

By order, Edward R. Cutler, Secretary,
May 12, 1849. 37, Farringdon-street.

BEDDING PLANTS.—An extensive variety, very fine and strong.

BASS and BROWN'S Stock of their Collections of VERBENAS, FUCHSIAS, PETUNIAS, GERANIUMS CHRYSANTHEMUMS, and other varieties of Bedding Plants, is this season particularly strong and fine. Priced Descriptive Catalogues sent free by post on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

CHOICE FLOWER SEEDS.—Many Flower Seeds having been destroyed by the late severe weather, J. Carter begs leave to enumerate a list of such as are proper for sowing in the open ground, any time this month, to flower this season, see No. 1; and also of such as flower next year, see No. 2, and Greenhouse Seeds, see No. 3. He can also supply the beautiful new *Schizanthus retusus albus*, seed of which is exclusively in his possession, at *2s. 6d.* per packet. All Flower Seeds forwarded prepaid, at the prices mentioned.

FLOWER SEEDS.

No. I.—ANNUALS, &c.	*s.*	*d.*
Antirrhinum, 6 var.	1	0
Aster, 24 finest var.	3	0
,, 12 do. do.	1	6
Balsam, 6 extra fine	1	6
,, Camellia, 6 do.	1	6
,, rose-flowered, 6	1	6
Brachycome, 4 var.	1	6
Calliopsis, 4 finest	1	0
Chinese Larkspur, 6	1	6
Clarkia, 5 fine var.	1	0
Dianthus, 6 finest	2	0
Gaillardia, 6 do.	1	6
Geum, 4 extra fine	1	6
Godetia, 6 fine var.	1	6
Jacobæa, 6 do.	1	6
Larkspur, 12 finest	2	6
Lobelia, 6 dwarf	1	6
Marigold, 4 finest	1	0
Mesembryanthemum, 3	1	6
Nemophila, 4 finest	1	0
Petunia, 20 extra fine	5	0
,, 6 do.	1	6
Phlox Drummondii, 4	2	0
Poppy, 12 var.	2	0
Portulaca, 5 do.	2	0
,, striatiflora, new	1	0
Salpiglossis, 4	1	6
Schizanthus, dwarf, 4	1	0
,, tall, 3	1	0
Stock, German, 24	3	0
,, 12	1	6
,, 6 larger packets	2	0
Zinnia elegans, 12	4	0
,, ,, 6	2	0
25 fine annuals	6	0

No. II.—FLOWER NEXT YEAR.		
Alstrœmeria, 4 sp.	1	6
Aquilegia, 4 sp.	1	0

SEEDS.	*s.*	*d.*
Auricula, Alpine	0	6
Carnation, flakes	2	6
,, bizarres	2	6
Picotee, white	2	6
,, yellow	2	6
50 var. separate	12	0
Mixed Carnation	2	6
,, Picotee	2	6
Delphinium, 4 s.	1	0
Helianthemum, m.	0	6
Hollyhock, dou. m.	0	6
Lupinus, mixed	0	6
Pentstemon speciosum	1	0
,, mixed	0	6
Phlox, perennial, m.	0	6
Ranunculus, m.	1	0
Scabiosa, 20 var	0	6
Stock, Brompton, 5	0	6
,, Queen, 3	0	6
,, Imperial, 3	1	6
Sweet William, 3	1	0
Wallflower, double, 8	3	0
,, single, mixed	0	6
,, double ,,	0	6

No. III.—GREENHOUSE SEEDS.		
Calceolaria, splendid	1	0
Cineraria, ,,	1	0
Erica, 30 sp. m.	2	6
Hibiscus, 6 var.	2	6
Ipomœa, new Arabian	1	6
,, rubra cerulea	1	6
Ixia, finest m.	0	6
Lophospermum, m.	0	6
Maurandya, m.	0	6
Sparaxis, fine m.	0	6
Thunbergia, 6 var.	2	6

The above, and most other Flower Seeds, to be had of James Carter, Seedsman and Florist, 238, High Holborn, London. Sixpenny packets, mixed, may be had of the seeds No. 1.

"KNIGHT'S TALL MARROW PEA, warranted of superior flavour, and most proper for present sowing, *1s. 6d.* per quart, Waite's blue King of the Marrows, extra fine, *5s.* per quart. A Catalogue of Bulbs will be published in the autumn

MESSRS. S. and J. DILLISTONE beg to offer the following, in good plants, *5s.* per dozen; or 100 plants, portions of each variety, *30s.*, including basket and carriage to London.

ANEMONE JAPONICA.
ANTERRHINUM, including several fine seedlings.
AGERATUMS, CALCEOLARIAS, CUPHEAS,
DAHLIA, fine show and fancy varieties
GERANIUMS, Scarlets, including Tom Thumb, and others.
GAILLARDIAS; HELIOTROPES, in varieties.
PENTSTEMONS, including alba, gigantea elegans, &c.
PETUNIAS, in fine varieties.
PHLOXES, in fine Continental varieties.
ROSES, fine varieties of Tea, China, &c.
SALVIAS of sorts.
SWEET WILLIAMS, finest double selected.
VERBENAS, including Robinson's Defiance, and other new ones of last season.

100 good Herbaceous Plants, in 50 varieties, for *30s.*

Post-office orders are respectfully requested to be made payable at Haverhill, and from unknown correspondents a respectable reference or prepayment.

Lists may be had upon application; also all the novelties of the season, at the prices sent out by the raisers

Sturmer Nurseries, Haverhill, Suffolk, May 12

EDWARD MITCHELL, Bristol Nursery, and 55, Marine Parade, Brighton, Florist and Seedsman, by appointment to her Majesty, begs to inform the Nobility and Gentry that his GENERAL CATALOGUE OF CHOICE PLANTS, consisting of Geraniums, Fuchsias, Dahlias, Chrysanthemums, Verbenas, Lilium lancifolium, Camellias, Orchids, Greenhouse, Stove, and other New and Select Plants, is now ready, and will be forwarded upon application.

E. M. having a large stock of the following, he begs to offer strong Plants at the annexed prices:

Mitchell's Scarlet Geranium Tom Thumb's Master,	*2s. 6d.* ea.	*24s.*	p. doz.
Do. do. do. Tom Thumb's Master,	*2s. 6d.*	*24s.*	,,
Do. do. do. Ibrahim Pasha	*1s.*	*9s.*	,,
Zauschneria californica		*12s.*	,,
Calceolaria, Kentish Hero, the very best for bedding		*9s.*	,,
Do. Amplexicaulis		*9s.*	,,
Plumbago Larpentæ	*6s.* and	*9s.*	,,
Chrysanthemums, consisting of all the leading varieties		*6s.*	,, *12s.* ,,
Verbenas		*4s.*	,, *6s.* ,,
Fuchsias		*9s.*	,, *18s.* ,,
Dahlias		*6s.*	,, *12s.* ,,

Achimenes venusta, coccinea superba, floribunda elegans, *12s.* per dozen.

Do. Ghiesbrechtii, *2s. 6d.* each.

Post-office orders are expected from unknown correspondents.—Kemptown, May 12.

ERICA MURRAYANA.

THOMAS JACKSON and SON are now sending out, in 3 inch pots, well established plants of this beautiful ERICA. It is a hybrid between E. aristata and E. ventita coccinea, raised by Mr. A. Turnbull, of Bothwell Castle Gardens, from whom they received it. It is figured in "Paxton's Magazine of Botany," Vol. II., No. 124, and was exhibited at the Royal Botanic Gardens, Regent's-park, and awarded their Seedling Prize.

Plants, *10s. 6d* each, with one added for every three ordered. Nurseries, Kingston, Surrey May 12.

IMPORTANT TO MARKET GARDENERS.

KING OF THE CABBAGES.—This CABBAGE is the earliest and best in cultivation, and can be had in any quantity at J. G. Waite's Seed Establishment, 181, High Holborn, London.

SWEDE TURNIP SEED.—IMPROVED PURPLE-TOP: this variety has been carefully selected from Skirving's Liverpool. Price *40s.* per bushel, and every other kind of Seeds in cultivation, of the best quality, and moderate price, at J. G. Waite's, Seed Merchant, 181, High Holborn, London.

FUCHSIA "SIR CHARES NAPIER."—This is one of the finest dark varieties of Fuchsias ever yet offered to the Public. It is very remarkable for its fine habit and profusion of blooms; it is a large bold flower of great merit. The sepals are beautifully expanded, showing its extra large violet purple corolla to the greatest advantage; it is very much superior to that well known Fuchsia, "Colossus," which has been so much admired. It was seen in bloom last summer by numerous amateurs and nurserymen, at E. Tiley's Nursery, and who were quite unanimous in pronouncing it the best dark variety of Fuchsia they had ever seen. Blooms of it were sent to the Gardeners' and Florists' Journal, and spoke of in the manner as above. Fifty plants of it were ordered last summer by parties who saw it in bloom. Fine healthy plants are now ready to send out, at *10s. 6d.* each. The usual allowance made to the Trade when three are taken.

UNEQUALLED VERBENA "CRITERION."

Edward Tiley has much pleasure in offering this superb Seedling Verbena, so much admired while in bloom last season. It is a most profuse bloomer, and a very attractive variety. One plant not more than 15 inches in diameter had above 65 trusses of blooms on it at one time, besides buds. The colour is a beautiful orange scarlet, with large primrose eye, giving the flower a very striking and handsome appearance. This also was sent to the Gardeners' and Florists' Journal, October 7th. "E. T.—Seedling Verbena, scarlet truss and flower of medium size, form first-rate, the petals are broad, flat, and close, approaching the shape of a Polyanthus; eye primrose, very circular; a fine show variety." A box of blooms was sent a second time, and received the like answer. Strong plants are now ready to send out, *5s.* each. The usual allowance made to the Trade when three are taken. Postage and package free, on the receipt of a Post-office order.

Seeds of Superb Double Hollyhock, *2s. 6d.* per packet; Sweet William (double), *1s. 6d.* do.; Antirrhinum, *1s.* do., still on hand. For particulars, see Advertisement in this Paper of April 28th.

Sold at Edward Tiley's General Seed Shop, 16, Pulteney-bridge, Bath.

ROSES.

EDWARD DENYER begs respectfully to inform Noblemen, Gentlemen, and his friends in general, that in his Rose House, which is entirely appropriated for the growth, ROSES in pots may now be seen in full bloom, price, from *18s.* to *20s.* per dozen. Also Geraniums and Greenhouse plants in great varieties. A very large stock of plants for Beds and Flower-borders, viz., Geraniums, Fuchsias, Verbenas, Heliotropes, Calceolarias, &c. &c., from *4s.* to *6s.* per dozen. Orders to the amount of *10s.* sent carriage free 10 miles, to the amount of *40s.*, 50 miles, and to the amount of *5l.*, 100 miles. Catalogues on application.

N.B. E. Denyer begs to inform his customers he has no Seed Shop in London; the only establishment he has is at Loughborough Nursery, Brixton, near London.—May 12.

HUGH LOW and CO. can with the greatest confidence recommend the undernamed:

HELIOTROPIUM, "SOUVENIR DE LIEGE."—This fine new variety, now for the first time offered in this country, possesses the great advantage of flowering naturally very early, and also continuing in perfection for a much greater length of time than any of those previously introduced. The individual flowers, as also the truss, are very large and highly fragrant; colour pure violet with a yellowish tinge towards the centre. The habit of the plant is very dwarf and compact, and from the long continuance of its flowering, and other good qualities, it will undoubtedly prove a very desirable acquisition either for bedding or pot culture. Price *7s. 6d.*

FUCHSIA, "THE RAJAH."—This is the finest of the dark varieties. Habit compact and good; corolla violet purple, beautifully cupped; sepals bright red, of waxy consistence, as much reflexed as a Turucap Lily. Price *10s. 6d.*

FUCHSIA, "SPLENDIDA."—This is also a dark variety of great merit, and in particular remarkable for its very fine habit and profusion of flowers. Price *10s. 6d.*

The Fuchsias named above were obtained from seeds by John Wilmore, Esq., of Birmingham, and the acknowledged superiority of that gentleman in improving, by careful and scientific hybridization, some of the finest genera of plants, will be a sufficient guarantee for the excellence of those now offered. Plants of the Heliotrope and the Fuchsias will be ready to send out in May. The usual discount to the Trade.

BORONIA TETRANDRA (B. microphylla of gardens).—A very fine new species. Habit compact; a most abundant bloomer, producing the flowers in the way of B. pinnata; will make an excellent specimen plant for exhibition. Strong plants, *7s. 6d.*

In addition to the above, H. Low and Co will be able to supply all the novelties sent out by other growers, including the Continental Phloxes, Verbenas, and Chrysanthemums, now so much admired, Catalogues of which, containing also their General Collection, are in course of publication, and when ready will be forwarded, post free, on application.

Clapton Nursery, London, May 12.

HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION AT THE GARDEN, MAY 5, 1849.

AWARD OF THE JUDGES.

THE CERTIFICATE OF HONOUR.

1. To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for a collection of 30 Stove and Greenhouse Plants.

THE LARGE GOLD MEDAL.

1. To Mr. Cole, Gardener to H. Colyer, Esq., of Dartford, for a collection of 40 Stove and Greenhouse Plants.
2. To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for 20 species of Exotic Orchids.

THE GOLD KNIGHTIAN MEDAL.

1. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for a collection of 15 Stove and Greenhouse Plants.
2. To Mr. Mylam, Gardener to S. Rucker, Esq., jun., F.H.S., for 20 species of Exotic Orchids.
3. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for 19 species of the same.
4. To Mr. Smith, Gardener to W. Quilter, Esq., of Norwood, for 16 varieties of Cape Heath.
5. To Messrs. Rollisson, of Tooting, for the same.

THE GOLD BANKSIAN MEDAL.

1. To Mr. Carson, for a collection of 15 Stove and Greenhouse Plants.
2. To Messrs. Veitch and Son, of Exeter, for 20 species of Exotic Orchids.
3. To Mr. Plant, Gardener to J. H. Schroder, Esq., F.H.S., for 10 species of the same.
4. To Mr. Mylam, for 15 varieties of Cape Heath.
5. To Messrs. Veitch and Son, for the same.
6. To Messrs. Paul, of Cheshunt, for 12 varieties of Roses in pots.
7. To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for a collection of Greenhouse Azaleas, in 12 varieties.

THE LARGE SILVER GILT MEDAL.

1. To Mr. Green, for a collection of 15 Stove and Greenhouse Plants.
2. To Mr. Jack, Gardener to R. G. Loraine, Esq., of Wallington, Surrey, for a collection of 6 Stove and Greenhouse Plants.
3. To Mr. Dobson, Gardener to Mr. Beck, F.H.S., for 10 species of Exotic Orchids.
4. To Mr. Jack, for 6 species of the same.
5. To Mr. Hamp, Gardener to J. Thorne, Esq., of South Lambeth, for a collection of Amaryllids.
6. To Mr. Cock, F.H.S., for 6 new varieties of Pelargonium, in 8-inch pots.
7. To Mr. Dobson, for the same.
8. To Mr. Parker, Gardener to J. H. Oughton, Esq., of Roehampton, for 6 varieties of Pelargonium, in 11-inch pots.
9. To Mr. Dobson, for the same.
10. To Mr. Gaines, F.H.S., for 6 Fancy Pelargoniums.
11. To Mr. Slowe, Gardener to W. R. Baker, Esq., F.H.S., for 12 varieties of Roses in pots.
12. To Messrs. Lane and Son, Gt. Berkhampstead, for the same.
13. To Mr. Cole, for 15 varieties of Cape Heath.
14. To Messrs. Pamplin, Lea-bridge-road, Essex, for the same.
15. To Mr. Taylor, for 6 varieties of the same.
16. To Mr. May, for a collection of Greenhouse Azaleas, in 12 varieties.
17. To Mr. Carson, for the same, in 6 varieties.
18. To Mr. Green, for Tall Cacti in flower.
19. To Mr. Parker, Gardener to J. H. Oughton, Esq., for six *distinct* species of Pelargonium, exhibiting superior cultivation.

THE CERTIFICATE OF EXCELLENCE.

1. To Mr. Gerrie, Gardener to Sir John Cathcart, Bart., F.H.S., for a collection of 15 Stove and Greenhouse Plants.
2. To Mr. Slowe, for a collection of 6 Stove and Greenhouse Plants.
3. To Mr. Gaines, F.H.S., for 6 new varieties of Pelargonium, in 8-inch pots.
4. To the same, for 6 varieties of Pelargonium, in 11-inch pots.
5. To Mr. Francis, of Hertford, for 12 varieties of Roses, in pots.
6. To Messrs. Frazer, Lea-bridge-road, Essex, for a collection of Greenhouse Azaleas, in 12 varieties.
7. To Mr. Gerrie, for the same, in 6 varieties.
8. To Mr. May, for Pimelea spectabilis.

THE LARGE SILVER MEDAL.

1. To Mr. Pawley, of Bromley, Kent, for a collection of 15 Stove and Greenhouse Plants.
2. To Mr. Bruce, Gardener to Boyd Miller, Esq., of Tooting, for a collection of 6 Stove and Greenhouse Plants.
3. To Mr. May, for 10 species of Exotic Orchids.
4. To Mr. Iveson, Gardener to the Duchess Dowager of Northumberland, F.H.S., for Dendrobium Wallichianum.
5. To Messrs. Fairbairn, of Clapham, for Erica Cavendishii.
6. To Messrs. Rollisson, for Epacris miniata.
7. To Messrs. Veitch and Son, for Boronia spathulata.
8. To the same, for a new shrubby Calceolaria, from Peru.
9. To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., for a bunch of Black Hamburgh Grapes, weighing 2 lbs. 5 oz.
10. To Mr. Davis, Gardener to Lord Boston, F.H.S., for three Providence Pine-apples.

THE SILVER KNIGHTIAN MEDAL.

1. To Mr. Malyon, Gardener to T. Brandram, Esq., of Lee Grove, Blackheath, for a collection of 15 Stove and Greenhouse Plants.
2. To Mr. Stanly, Gardener to H. Berens, Esq., F.H.S., for a collection of 6 Stove and Greenhouse Plants.
3. To Mr. Glendinning, F.H.S., for the same.
4. To Mr. Bruce, for Dendrobium fimbriatum.
5. To the same, for Erica mutabilis.
6. To Messrs. Veitch and Son, for Æschynanthus speciosus.
7. To Mr. Stowe, for Tetrandra verticillata.
8. To Mr. Jackson, F.H.S., for Rhododendron campanulatum superbum.
9. To Mr. Green, for Erica Hartnelli.
10. To Mr. E. G. Henderson, of the Wellington Nursery, St. John's-wood, for Boronia tetrandra.
11. To Messrs. Rollisson, for the best named collection of Plants (no error in 15).
12. To Mr. Davis, of Oak-hill, East Barnet, for a basket of Black Hamburgh Grapes.
13. To the same, for 3 Providence Pine-apples.

THE SILVER BANKSIAN MEDAL.

1. To Mr. Campbell, Gardener to Thomas Huggins, Esq., of Norwood, for a collection of 15 Stove and Greenhouse Plants.
2. To Mr. Hamp, for a collection of 6 Stove and Greenhouse Plants.
3. To A. Rowland, Esq., F.H.S., for 12 varieties of Roses, in pots.
4. To Mr. Ivory, of Peckham, for a collection of Cinerarias in 12 varieties.
5. To Messrs. Rollisson, for a new Hoya, from Java.
6. To Mr. Cole, for the second best named collection of Plants (two errors in 30).

THE CERTIFICATE OF MERIT.

1. To Mr. E. G. Henderson, for a collection of Cinerarias in 12 varieties.
2. To Mr. Carson, for Azalea lateritia.
3. To Messrs. Rollisson, for Talauma mutabilis.
4. To Mr. Williams, for the third best named collection of Plants (two errors in 20).
5. To Mr. Mylam, for the third best named collection of Plants (two errors in 20. N.B. These two collections were named with equal accuracy.

RENDLE'S NEW SPRING CATALOGUE OF PLANTS is now published, and can be had on application to WILLIAM E. RENDLE and Co., Nurserymen, Plymouth.

BEDDING PLANTS.

JOHN HAYES, FLORIST, Farnham, Surrey, begs to offer upwards of 100 distinct varieties of Bedding Plants, 14 varieties of Geraniums, including Colling's Superb, Shrubland Superb, and Tom Thumb, from 2s. 9d. to 3s. 6d. per dozen. 14 varieties of Verbenas, from 2s. to 3s. 6d.; and other varieties described in Catalogues, which will be sent on receipt of one postage stamp.

SEEDLING PELARGONIUMS.

J. HINE has still fine plants of his set of Ten New Varieties, which he can strongly recommend, 5l. the set. Also, of Miller's Set of Eight, price 25s. Descriptive Catalogues on application.—Providence Nursery, Ramsgate.

ROBERT WHIBLEY informs his patrons and friends that he can supply plants of FUCHSIA SPECTABILIS, at 21s. each. For general Advertisement see *Gardeners' Chronicle* of April 14, 1849.—Chester Nursery, near Walcot place, Kennington-road, London.

AZALEA INDICA.—This beautiful tribe can now be had, fine blooming plants. Catalogue of Prices will be sent on application, and an inspection of the stock is recommended. A large collection of strong plants for bedding is now ready.

H. LANE and SON, Nurseries, Great Berkhampstead, Herts.

TWELVE FIRST-CLASS GERANIUMS for 12s., or 30 for 1l.; 12 of the newest FUCHSIAS for 12s.; 12 of the newest VERBENAS for 5s. 6d. to 7s. 6d. See HENRY WALTON's Advertisement in the *Chronicle* of May 5, page 274. Catalogue on application.

Edgend, Marsden, near Burnley, Lancashire.

FINE NEW GLOXINIAS.—To those who admire their GLOXINIA ALBO SANGUINEA, JAMES BACKHOUSE AND SON can confidently recommend the following.

GLOXINIA EXQUISITA.—Pure white, with rose streak and vivid carmine blotch; larger than G. albo sanguinea. Very beautiful. 10s. 6d.

G. DELICATA.—Clear white, with pale lemon-coloured throat, margined by a crimson line and blotch. 10s. 6d.

G. LABIATA.—Lowest petal clouded all over with rose colour, the others white, rich blotch. 10s. 6d.

G. ALBO SANGUINEA SUPERBA.—Larger and finer in every way than G. albo sanguinea. 7s. 6d.

*** The above are J. B. and Son's Seedlings.

G. WORTLEYANA (? or Violacea alba.—Clear white, with a pale lemon-spotted throat, which is nearly encircled by a violet crescent. 5s.

G. CARMINATA SPLENDENS.—Far surpassing G. rubra in size, form, and richness of colour. 7s.

BRACEA VICTORIA.—Drummond says of this plant, "To this the most splendid vegetable production I have ever beheld, in a wild or cultivated state, I have given the name of our gracious Queen." It bears white, yellow, orange, and blood-red bracteas, from 4 to 10 inches across when 4 years old. 15s. to 21s.

TRITONIA AUREA. 10s. 6d.

The usual discount to the trade.—York Nurseries, May 12.

NEW ACHIMENES.—ACHIMENES KLEEI, a variety in the way of Grandiflora, with smaller foliage and rosy pink flowers, very distinct. A Certificate was awarded to it by the Horticultural Society of London, August 1, 1848.—Price 5s., per post.

LONGIFLORA MAJOR.—The flower is half as large again as the Longiflora, and of a deeper blue, the foliage quite green and very superior, the under surface of the leaf being without the rusty appearance of Longiflora. It was exhibited with the above. They were presented to us by G. W. Skinner, Esq., and may be relied on as worthy to be in every collection, the flowers being large, with small foliage. Price per plant, 5s. per post.

H. LANE and SON, Nurseries, Great Berkhampstead, Herts.

CHOICE BEDDING PLANTS.

J. HOLDER AND CO. beg to inform the Nobility, Gentry, &c., that they have on hand a large Stock of strong and healthy Plants for bedding out, consisting of Dahlias, Fuchsias, Verbenas, Petunias, Salvias, Alonzoas, Calceolarias, Antirrhinums, Pentstemons, Cupheas, Scarlet Geraniums, &c., which can be had at 4s. and 6s. per dozen.

Nurseries, Bedford-road and Wellington road, Clapham.

N.B. The Trade supplied.

NEW AND SUPERB YELLOW DAHLIA, "GOLDEN CUP."

J. ASHWORTH begs to inform his Friends and Florists in general that he has purchased this superb DAHLIA of R. GRUNDY, Esq., Park Hills Cottage, and can send out strong Plants at 10s. 6d. each, with the usual discount to the Trade. Winnings last year.—Sept. 2d. The Second Prize in its class, at the Ostrich Inn, Rooden-lane, near Manchester. Sept. 6th. An Extra Prize for 6 blooms, at the Botanical Gardens, Manchester. Sept. 8th. The First Prize in its class, at Ashton-under-Lyne. Sept. 22d. A First Class Certificate for the best Seedling of 1847, and in the First Pan of 12, at Cheetham-hill, near Manchester. "Gardeners and Farmers' Journal," Sept. 9th, 1848. "R. G. Golden Cup is a desirable variety. Form good, centre tolerable, shape and substance of florets first rate; depth of ditto barely sufficient; colour a beautiful yellow, size usual average."

Victoria Gardens, Bury, Lancashire, May 12.

TULIPS.—120 ROWS OF FIRST-RATE FLOWERS for sale, in one or more rows, at the option of the purchaser, growing in the garden ground of Mr. SELBY, New North-road, Hoxton. Catalogues, with prices affixed, can be obtained of Mr. WOOLNOUGH, on the ground, or 6, Bateman's-row, Shoreditch, London.

JOHN RIVERS begs to direct the attention to the following new and genuine TURNIP SEEDS.

Skirving's large short necked Swede. This variety has been much improved by several years' attention in cultivating those with a short neck	per lb.	1s.	0d.
Purple-top Swede	,,	1	0
Laing's	,,	1	0
Dale's hybrid, superior stock	,,	1	0
Rivers' do., Green top White, large	,,	1	0
Common white	,,	0	7
Do. Purple-top do.	,,	0	7
Do. Green-top do.	,,	0	7

A reference is requested from unknown correspondents. Carriage paid to London for orders of 20 lbs. and above.

Sawbridgeworth, Herts.

READ'S GARDEN ENGINES AND MACHINES.—As summer approaches, the larvæ of destructive insects are propagated in infinite multitudes, and impregnate with millions of insects the very air we breathe, to the great injury of the young shoots of trees, Vines, plants, and every species of vegetation put into motion and growth by the genial influence of the season. RICHARD READ, Instrument Maker (by special appointment), to Her Majesty, begs to inform Amateur and Practical Gardeners, &c., that he has made considerable improvements in his GARDEN ENGINES AND MACHINES, which are now so perfect that he will warrant the valves to keep in repair during the term of the patent. Manufactured ONLY at 35, Regent Circus, Piccadilly. Established 25 years.

TWELVE NEWEST FIRST-CLASS DAHLIAS can be selected from RENDLE'S CATALOGUE, for 18s., including a plant of Turn's Champion of England and Star of the West, two of the finest flowers of the day. Catalogues on application to WILLIAM E. RENDLE and Co., Nurserymen, Plymouth.

SELECT PLANTS.—The following are now sending out, strong plants; any may be had free by post without extra charge, except those marked p. Packages delivered carriage free to London, or with orders of 40s. and upwards, plants sent gratis for expense of distance. Particular attention is paid that all plants are true to colour and name, and sent carefully and securely packed for travelling to any distance.

BEDDING PLANTS.

ANAGALLIS COCCINEA SPLENDENS, 6s. per dozen.
BOUVARDIA SPLENDENS, 6s. per doz., Flava, 9s. per doz.
p. BALSAMINA LATIFOLIA, 5s. to 9s. per dozen.
p. CALCEOLARIA, in 5 fine shrubby varieties, 9s. per dozen.
CHENOSTOMA POLYANTHA, 6s. per dozen.
CUPHEA, in 3 fine varieties, 6s. per dozen.
GAILLARDIA, in 5 varieties, 6s. per dozen.
HELIOTROPIUM VOLTARIANUM, 6s. to 9s. per dozen.
,, ,, PERUVIANUM, 6s.
,, ,, TRIOMPHE DE LIEGE, 9s. per dozen.
LANTANA CROCEA, 6s. to 9s. per dozen.
LOBELIA ERINUS GRANDIFLORA and COMPACTA ALBA, 4s. to 6s. per dozen.
PLUMBAGO LARPENTÆ, 18s. per doz., or 2s. 6d. each.
,, CAPENSIS, 6s. to 9s. per dozen.
SALVIA, in 6 fine vars., 6s. per doz.; Patens alba, 2s. each.
,, OPPOSITIFOLIA, 12s. to 18s. per doz.; each, 2s. 6d.
ZAUSCHNERIA CALIFORNICA, 1s. 6d. each.
FUCHSIAS, in fine select assortment, 5s. and 9s. per dozen.
,, superior new vars. of 1848, 15s. per dozen.
VERBENAS and PETUNIAS, fine and select, 4s. to 7s. 6d. per dozen.
Ditto ditto superior new of 1848, 12s. per doz.
CHRYSANTHEMUMS, fine and select, 6s. to 9s. 6d. per doz.
Ditto, superior new varieties, 15s. per dozen.
p. GERANIUMS, fine and select vars., 6s. and 9s. per dozen.
p. ,, superb show varieties, 12s. per dozen.
p. DAHLIAS, fine and select, 5s. and 9s. per dozen.

HARDY BEDDING PLANTS.

ANTIRRHINUM, in fine select vars., 6s. per dozen.
ANEMONE JAPONICA, 5s. per dozen.
CAMPANULA NOBILIS, 9s. per dozen.
LOBELIA, in 4 fine varieties, 9s. per dozen.
PENTSTEMONS, in 8 fine vars., 7s. 6d. per dozen.
PHLOX, in fine assortment, 9s. per dozen.
,, 20 varieties, 12s. 6d.
p. ROCK PLANTS, 25 vars., 12s.; 12 vars., 7s. 6d.

SELECT GREENHOUSE AND STOVE PLANTS.

12 ACHIMENES, fine and select, 7s. 6d., 6 fine new	15s.	0d.
p. 6 GLOXINIA, in 6 fine varieties	6	0
p. 50 vars., fine and select GREENHOUSE PLANTS	50	0
p. 25 ditto, 28s. 12 vars.	15	0
p. 12 Select GREENHOUSE CLIMBERS	12	0

Our Priced Descriptive Plant Catalogue will be sent free by post, on application.

Post-office orders may be made payable to either BASS and BROWN or to STEPHEN BROWN. Remittances requested from unknown correspondents.

Seed and Horticultural Establishment, Sudbury, Suffolk.

FUCHSIAS, INDIAN AZALEAS, CAMELLIAS, DWARF ROSES, VERBENAS, CINERARIAS, PETUNIAS, and CHRYSANTHEMUMS can be obtained at the lowest prices, on application to WILLIAM E. RENDLE and Co., Nurserymen, Plymouth.

Our new Plant Catalogue is now ready, and can be had on application.

SEEDS — MEADOW AND PASTURE GRASS SEEDS, in mixtures suited to various soils, &c., at 32s. per acre, allowing 2 bushels and 12 lbs. to each acre. Directions for sowing and treatment will accompany the seeds. Mixed sorts for improving old Grass Lands, 1s. 3d. per lb. Fine sorts for forming Lawns, &c., 1s. 4d. per lb.

GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address GEORGE GIBBS and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c. &c., 26, Down-street, Piccadilly, London.

TURNIP SEEDS, &c.

W. DRUMMOND & SONS, Agricultural Museum, Stirling, N.B., will furnish, free on application, priced Lists of TURNIP and other AGRICULTURAL SEEDS.

N.B. All parcels of Seeds above 2l. value (with the exception of Grain and Vetches), delivered free of carriage in London, Liverpool, Hull, Newcastle, and many other parts to which there is a direct communication.

FLOWER POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford street, respectfully announces that he has a very large assortment of the above articles in various colors, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford-st. near Hyde-park, London.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE's extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	,, Knives, various
Borders, various patterns	Hammers	,, Saws
Botanical Boxes	Hand-glass Frames	,, Scissors
Cases of Pruning Instruments	Hay Knives	,, Shears
Chaff Engines	Hoes of every pattern	Rakes in great variety
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Daisy Rakes	Hotbed Handles	Scythes
Dibbles	Ladies' Set of Tools	Scythe Stones
Dock Spuds	Labels, various patterns, in zinc, porcelain, &c.	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
,, Stands in Wires and Iron	Menographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanic Borders and Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
,, Loops	Mowing Machine	Trowels
,, Rollers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extractors and Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE's Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

HORTICULTURAL SOCIETY OF LONDON.
LECTURES ON HORTICULTURE.—TUESDAY NEXT, MAY 15, at 3 P.M.—"THE MATERIALS FROM WHICH PLANTS DERIVE THEIR FOOD."
No one can be admitted except Honorary Members and Fellows of the Society, their wives or sisters, and visitors specially introduced by them, or the Foreign and Corresponding Members of the Society.—21, Regent-street, May 10, 1849.

JOSLING'S ST. ALBAN'S GRAPE.—Fine 2 years-old plants of the above, carriage paid to London, 10s 6d. each, usual allowance to the trade. A remittance must accompany the order.—ROBERT JOSLING, Seedsman, St. Alban's.

TWELVE FIRST-CLASS GERANIUMS can be selected from RENDLE'S CATALOGUE for 20s.; or 20 for 30s. Twelve Second-class do. for 10s. Catalogue on application to WILLIAM E. RENDLE and Co., Nurserymen, Plymouth.

SELECT BEDDING PLANTS.
WOODLANDS NURSERY, MARESFIELD, near UCKFIELD, SUSSEX.
WM. WOOD AND SON have much pleasure in offering the following desirable plants:—
SALVIA PATENS ALBA, 2s. 6d. each, and 18s. to 24s. per doz. This truly beautiful variety will prove a decided acquisition to the collection of bedding plants; its flowers are equal in size to Salvia patens, and of the purest snowy white, with a small spot of light blue on the lower lip of each flower.
The stock of the subjoined VERBENAS is in the possession of W. W. and SON, and the varieties are recommended as the finest in cultivation.
COUNTESS OF HAREWOOD—French white, bright rosy eye; a very large, distinct, and superb variety, 3s. 6d. each.
HONOURABLE MRS LASCELLES—bright purple, clear white eye, well adapted for bedding; 3s. 6d.
MRS WATSON—most brilliant scarlet, bright primrose eye, habit compact and dwarf, flowering in great profusion; this is unquestionably the finest Verbena in its class, and will prove one of the best varieties for grouping; 5s.
ROBIN HOOD—bright vermilion scarlet, lemon eye, large and superb; 3s. 6d.
The usual discount to the Trade.

The following are highly recommended for bedding.

Anemone japonica	per doz.—6s.	0d.
Balsamina repens, deep yellow, fine	12	0
Calceolaria amplexicaulis	9	0
,, Kayii	6	0
,, Seedlings unbloomed, from first-rate varieties, 6s., 9s., and	12	0
Cuphea platycentra	4	0
,, strigillosa	4	0
Heliotropium Triomphe de Liege	9	0
,, Voltaireanum	6	0
Lobelia Erinus compacta	4	0
,, ,, grandiflora	4	0
,, ramosa	4	0
Nierembergia intermedia	6	0
Plumbago Larpentæ, beautiful blue, 9s. and	12	0
Salvia oppositiflora, very fine	12	0
,, patens	6	0
,, ,, alba, 18s. and	24	0
,, splendens	6	0
Zauschneria californica, 12s. and	15	0
Geraniums, best scarlet varieties, by name, 6s. and	9	0
,, fine show varieties, 9s., 12s., and	18	0
,, scented leaved of sorts	6	0
Cinerarias, very splendid named varieties, coming into bloom, 9s., 12s., and	18	0
,, new varieties of this season	30	0
Fuchsias, superb kinds, by name, 6s., 12s., and	18	0
Verbenas, the best in cultivation, 6s., 9s., and	12	0
Petunias, distinct and showy, 6s., 9s., and	12	0
Chrysanthemums, fine and distinct vars., 9s. and	12	0
Do., the newest continental varieties	18	0

N.B.—Catalogues of the above may be had gratis, on application; additional plants presented with each order. A remittance or reference required from new customers.

ROYAL NURSERY, SLOUGH.
C. TURNER has strong plants now ready for delivery of those superior new DAHLIAS and VERBENAS advertised in the *Gardeners' Chronicle* of March 24th, 31st, and April 7th. Also the following, the selection of which being left to C. T., first-rate varieties may be depended on:
Dahlias, 12s., 18s., 24s., and 30s. per dozen.
Fancy Dahlias, 9s., 12s., 18s., 24s. and 30s. per dozen.
Fuchsias, 9s., 12s., and 18s. per dozen.
Chrysanthemums, 6s., 9s., and 15s. per dozen.
Geraniums, 12s., 18s., and 24s. per dozen.
Petunias, 6s., 9s., and 12s. per dozen.
Pansies, 6s., 12s., and 20s. per dozen.
Verbenas, 6s., 9s., 12s., and 18s. per dozen.
Anemone japonica, 6s. per dozen.
Plumbago Larpentæ, 1s. to 2s. 6d. each.
Cryptomeria japonica, 3s. 6d. to 5l. 5s.

The Gardeners' Chronicle.
SATURDAY, MAY 12, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	May 14	Medical	8 P.M.
		Geographical	8½ P.M.
TUESDAY,	— 15	Pharmaceutical (Anniversary)	11 A.M.
		Horticultural (Lecture)	3 P.M.
		Civil Engineers	8 P.M.
WEDNESDAY,	— 16	Royal Botanic Gardens	2 P.M.
		Society of Arts	8 P.M.
		Geological	8½ P.M.
THURSDAY,	— 17	Royal South London	8 P.M.
		Antiquarian	8 P.M.
FRIDAY,	— 18	Royal Institution	8½ P.M.
MONDAY,	— 21	Chemical	8 P.M.
		Pathological	8 P.M.
		Statistical	8 P.M.
		British Architects	8 P.M.
TUESDAY,	— 22	Medical and Chirurgical	8½ P.M.
		Horticultural (Lecture)	3 P.M.
		Zoological	9 P.M.
WEDNESDAY,	— 23	Ethnological	8 P.M.
		Microscopical	8 P.M.
THURSDAY,	— 24	Royal Society of Literature	4 P.M.
		Linnean (Anniversary)	1 P.M.
		Numismatic	7 P.M.
FRIDAY,	— 25	Royal	8½ P.M.
		Philological (Anniversary)	8 P.M.
SATURDAY,	— 26	Royal Botanic (American Plant Show)	2 P.M.

COUNTRY SHOWS.—Monday, May 14: Liverpool Horticultural.—Tuesday, May 15: Hampshire Horticultural.—Wednesday, May 23: Derby Midland Horticultural.

ONE of the best points in the character of the English is the unconquerable resolution which impels them to proportion their exertions to their difficulties, and to struggle on, with hope and perseverance, against what other people would fancy insurmountable. It is the want of this which weighs so fatally on the prosperity of Ireland. In a small way, the working of our English spirit was well illustrated at the EXHIBITION held last Saturday in the GARDEN OF THE HORTICULTURAL SOCIETY. It is needless to say that the present spring has been, and still is, most unfavourable to the growth of plants under glass; so cold that ventilation was often impossible; so gloomy that nobody could calculate how long it would take to bring his flowers out. And hence we heard on all sides the most unhappy anticipations of what was to befal the Exhibition of Saturday. "Nobody will have anything to show," said one; "I know for certain that Mr. S. won't have an Orchid in bloom," cried a second; "Every great Rose-grower must stay at home," quoth a third; "For my part," exclaimed another, "I have been to Mr. B.'s and Mrs. X.'s, and I am convinced that they could not fill a caravan between them." How far these dismal forebodings were verified, those who had the good fortune to see the late Exhibition best can tell.

For ourselves we have no hesitation in saying, that the most favourable spring could not have produced more real success in everything essential. Their productions did the exhibitors the highest honour. The Azaleas were the finest yet beheld; larger and larger, brighter and brighter, more and more varied, every season adds to the attraction of this delightful part of a May flower show. If our English gardeners produced nothing else, their Azaleas would place them at the head of their profession. We should like to see the face of KEYING, or Chow-ry, or any of the great Chinese lovers of Horticulture, transferred by electric telegraph from the Azalea gardens of Fa-tee, which they fancy a paradise, to our Chiswick tents in the Azalea season. Good Azalea growing may be taken as a test of the highest skill in greenhouse management, as the Orchids are the test of hothouse practice; and this makes the result of Saturday's Exhibition the more valuable, for it is not merely the intrinsic beauty of the plants brought forward which deserves applause, it is the unmistakeable evidence thus afforded of a power being resident among the exhibitors that will ensure equal success in all they earnestly undertake, which gives such things real public importance. Men of intelligence, bred in gardens where such plants as those in question were obtained, will never know how to grow even a Cabbage plant unskilfully.

Well might the Council of the Horticultural Society, in their late Report, assert "that up to the present time English Horticulture continues to make steady progress." The late event entirely confirms their other statement, "that the pre-eminence of modern English gardening is, in a great degree, attributable to the encouragement it receives from the Fellows of the Society, not only in their corporate capacity, but as private individuals."

Look at the Roses. Of these plants the cultivation in pots was once deemed hopeless, and it is undoubtedly attended by difficulties that some men cannot conquer. And yet they were on this occasion faultless examples of the highest gardening, and a much better test of it than a Pine-apple. Had Roses been a little more in bloom they would have divided the interest of the Exhibition with the Azaleas and Orchids. As it was they had no lack of eager admirers. "Really this is very [illegible]," Lady [illegible] was heard to say. "My gardener positively must grow these charming things; I like them much better than the trees in summer; and besides, how delightful to bring such graceful Roses into a drawing room!" Perhaps her Ladyship more particularly alluded to a yellow Banksian Rose when she spoke of what was graceful! The word entirely suited one of the most beautiful specimens in the whole Exhibition, although upon the whole, of the beauty of Roses in pots grace forms but a small portion.

We have no intention to enter into details in this place; they are amply given in another column. It is, however, only right to state that the stove and greenhouse plants in both large and small collections were admirable, that among the Heaths a blemish could not be found, and that the Orchids were, as they always will be, the great attraction for those who are more interested by perfume, variety, beauty and elegant singularity, than by brilliant colours in great masses of foliage. The only striking novelty among them was an Arpophyllum, showing what the genus may be expected to produce hereafter, when the specimens acquire greater age. It will certainly prove a general favourite.

New plants, or what were called so, appeared but sparingly; the best of them was Calceolaria grandis, a fine Peruvian shrub quite new, with leaves like a Fuchsia, from Messrs. VEITCH. Although not so new, yet nearly as interesting, because of its clever management, was an Indigofera decora, produced by Mr. IVESON, from the garden of the Duchess Dowager of Northumberland. We mention this the more particularly because it appears to have escaped the observation of the Judges.

It is of no small moment that exhibitions of this kind should receive all the support that the public can give them. There was not a person at Chiswick on Saturday that was not, or might not at some future time become, the possessor of a garden. No one there could be otherwise than interested in studying the highest known standard of excellence in this necessary luxury. And every one must have felt that no gardener could be there who would not go away with his intelligence advanced, and his emulation excited by the admirable productions of his brethren. This would be the more felt if it were known to everybody, as well as to ourselves, how apparently inadequate to great results are the means possessed by several of the best exhibitors, and that the finest of the plants in some cases came, not from great conservatories and palatial establishments but from places whose maintenance is not beyond the means of many shopkeepers. If that were known, the remarkable skill which works out such great results with modest means would be better appreciated than it is.

The day of this exhibition was ushered in by a warm and brilliant morning, preceded by a night worthy of July. Up to half-past 1 everything was fair and favourable; but at that time a thunder-storm came up, driving to the tent the part of the crowd which was in the Garden, and home again those who were still on the road. After an hour or so the rain ceased, the air cleared, the temperature rose, and presently the bands were playing, the gay visitors promenading, and the new-born foliage of the trees glittering in the sunbeams as if nothing had occurred to mar the scene. The number of visitors was however much curtailed by the storm, the total number being 2054. In the early part of the day the Exhibition was honoured by the inspection of their Royal Highnesses Prince ALBERT, the Duke and Duchess of Cambridge, and other distinguished personages.

We lately ventured to express a hope that some of our numerous practical correspondents would favour us with the result of their experience as to the best season for FELLING [illegible] TIMBER. May we venture to repeat the request. It is necessary that we should soon give our own views upon the subject; and we are anxious to know how far they agree or disagree with those of experienced foresters. We do not want dissertations, but should much prefer short letters, either for publication or for our own guidance. It is a highly important subject, greatly in want of *rational* discussion.

ON THE CONDITIONS ESSENTIAL TO THE MOST PERFECT CULTIVATION.—No. V.

AMONGST the many faculties of the mind, varying as they do in quality if not in quantity, and speaking of them as phrenologists have laid them down in their charts of the human cranium, there is perhaps not one (at least of the perceptive faculties) which a gardener has more need to be prominent in than that of order, embracing as it does the power of performing operations at the most fitting time, and in the best manner. With the gardener the time present is all in all; his success depends upon its right appropriation, upon the order of its disposal; "put not off till to-morrow that which can be done to-day," becomes in his case not only a moral precept but a physical necessity. The mechanic may fling down his tools by the side of his half finished work, lounge away a week, and on his return nothing will have gone wrong but his pocket. Thousands in receipt of lucrative salaries have no more demand upon their forethought (and none of skill) than the termination of the present day, and have no necessity for placing at the head of the column of to-morrow's cares, a "brought forward" from the page of yesterday. But not so with the gardener,* every day and hour has its specific demand upon his thought if not his hands; to-day is but the preface to to-morrow; winter is a preparation for summer; operations this year are necessary to bring about desired results 12 months in the future. In fact, the present is the only time for some one part of his operations; and this brings me to seeds and seedlings.

In vegetable, as in animal life, much of the success attendant on the full development in the adult depends upon the external circumstances to which it may be subjected in the earlier stages of existence. Mental and moral philosophy both afford abundant evidence of the fact, that the earliest impressions, from external sources, are the most readily received and the most difficult to eradicate in subsequent stages of progress. And this is equally true of vegetable as of animal life. Circumstances affecting any organised being, even in its embryotic state, influence the development of that being through every stage of its independent existence. But I am treading upon an almost unknown field of research, and one that offers a wide region for the labours of science to expose, and in it will be found

* I feel it necessary to make this parenthetical remark because I know many persons, I had almost written gentlemen, experience great difficulty in discriminating between a gardener and a labourer in a garden, and I regret that the majority of the "world" think the terms synonymous. Acts recorded in the police reports of the London papers are attributed to "gardeners" which a pugilist of St. Giles's would deem a disgrace to be charged with.

much that bears upon the labours of the scientific horticulturist. To discuss the subject here would be out of place; relating, as such an enquiry does, to the philosophy of organic development, as influenced through the parent, rather than to the development of vegetable life, under the influence of external circumstances alone. But to our seeds: seed sowing is a simple operation, but it nevertheless involves many remarkable phenomena, and one of the most beautiful instances of vegetable physiology and chemistry in combination, is afforded us in the germination and springing into life of a seed. But I must pass over the scientific part of the subject, and come to its practical application. The young gardener will find the former fully explained in any elementary treatise on botany or vegetable chemistry.

To enable a seed to produce a healthy plant, *i. e.*, supposing the seed to be perfectly organised, and to have received no mutilation in its cotyledons, it is necessary that air be present, light excluded, and that an uniform amount of moisture be supplied from the moment of the commencement of germination. It is thus the latter process is induced, and it is to moisture withheld immediately afterwards, that much of ill success in raising seedlings may be attributed. Seeds are often destroyed by over-kindness in sowing them in a too finely pulverised soil, or rather in a soil so beautifully prepared that it becomes a dense mass, impervious to air; under such circumstances the seeds, in their efforts to germinate, decay, from that agent being withheld. Seeds of quick germinating powers are best sown in a soil the moisture of which is sufficient for the plant till it attains a tolerable size. Mechanical means must of course be employed to retard evaporation. Gardeners are often called upon to raise great quantities of seedlings without any proper structure for the purpose. No good results can follow the most anxious attention in this respect where seeds have to be placed in frames devoted to other purposes, or on the shelves of houses devoted to plant growing or forcing. Partial success may and does attend such a course, but where any quantity of seeds has to be attended to, a proper structure should be provided for them; one in which the operator can do his work without exposing the inmates to the external air is required. As well might one place an infant in circumstances favourable only to adults, and expect it to thrive, as to place seedlings in structures devoted to the wants of fully developed plants.

For the present I shall presume our seedling is fully above the soil and progressing favourably; by the time my next paper is before the readers of the *Chronicle*, it will be in a fit state to be "pricked off." I have much to say on that point, and shall therefore defer it till then. In the meantime I would say, beware of the watering pot; err rather on the dry side of the question. The powers of very young seedlings to resist drought are wonderful, much greater than is commonly supposed. *G.*

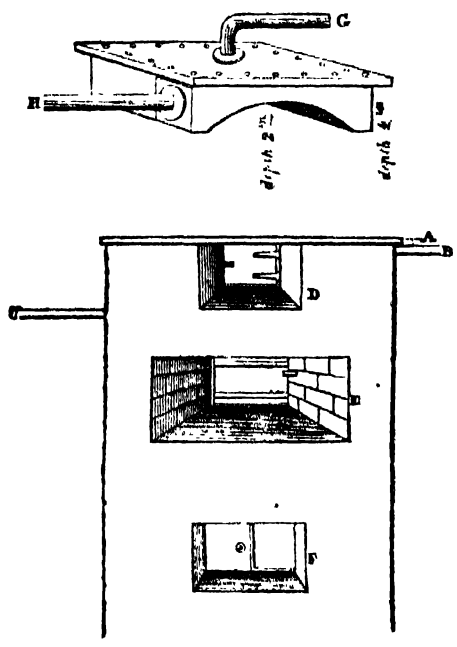
PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

REMARKS ON FRUIT TREES.—Every gardener at this season of the year is looking with great interest to his fruit trees, endeavouring to divine what kind of a crop each is likely to produce. This important question cannot always be decided by the presence of abundance of blossom, for many causes may render abortive trees which are now covered with beautiful flowers. Frost may yet commit ravages; blight may make the young fruit to fall prematurely; and even the excess of production may so weaken the powers of vegetable life, that a crowded exhibition of bloom may end in sterility. It is too late now to suggest precautions against frost, nor can we do much in preventing the damage done by blight, except it is by picking or washing off insects as they appear. But the last occasion of a deficient crop comes under our own control, and deserves at this time the thoughtful consideration of the gardener.

When the florist wishes to have fine flowers at a horticultural exhibition, he allows only a few to grow on the plant, which receive the energies which would otherwise be expended on the perfecting a greater number. For the same reason wall fruit is thinned when too many are set to allow of all to be large and fine. This principle, generally well understood and acted upon, is little thought of in reference to an overcrowded display of blossom. Fruit trees are covered with one mass of flower, and we congratulate one another on our excellent prospects. But a little consideration will show us that if too many set fruits may injure one another, too many blossoms may come under the same category. It has been lately recommended in the *Gardeners' Chronicle* to thin out the blossoms of Pear trees, in order to secure a crop, and the advice is philosophic. In the case of trees whose fruit grows separate, as Apricots and Peaches, this necessity is not so pressing, but when it appears in a cluster, as with the Pear, it is obvious that there is danger of one pushing off its neighbour in the act of growth. I have a Pear tree at the corner of the house, with a southern and eastern aspect, so that the tree in spring has two different climates to grow in. It is always covered with blossoms, and makes but little wood. It would appear as though a crop should be secured on one side or the other of this tree, but in five years we have gathered only four Pears. Having read the advice to thin out the blossoms, I ascended a ladder last week, to reconnoitre and form my own opinion on the subject. The clusters of flowers I found very large, some having as many as 20 on one stem. The lower row, which blooms first, was set, while the upper tiers were scarcely in flower. I pinched all off but the lower row, consisting of three or four blossoms, and I now hope to succeed better. However, if I do not, the principle will not be altered, and I shall attribute the failure to a cause yet to be discovered. It is manifest to me that with such a crowding of blossoms, all ran a great risk of being shouldered out of their places. *H. B.*

CHEAP PLAN OF HEATING.

In your volume for 1846, p. 51, you gave a description of my brick Arnott's stove. I used then to place a pan of water on the stove, to give out moisture; but observing this water always very hot, I thought it might as well circulate, and accordingly I had a stout copper boiler placed on the stove over the fire. This acted remarkably well, but in a year was burnt through. I have recently had iron boilers cast, of which the accompanying is a sketch. These answer so well, and are so cheap (for Mr. Hughes, of the Wharf, Bishop Stortford, has only charged 25*s.* each for them), that I feel they cannot be too well known. The brick Arnott's stove and boiler can be put up at the trifling cost of 3*l.* or 3*l.* 10*s.*



A, iron plate; B, flow-pipe; C, return pipe, D, door over the boiler, E, feeding door; F, ash-pit door; G, flow-pipe, made of wrought iron, screwed in so that it can be turned in any direction; H, return pipe.

The stove being placed in the house, is, as you are aware, fed by the lower stratum of cold air near the floor, as the draught is all conveyed through the ash-pit door; this leads to a sort of Polmaise circulation. The heat from this description of stove is most genial, although dry, unless a pan of water is placed on it; but with a tank heated by the boiler the combination is perfect. A stove of the size given at p. 51, 1846, with a boiler and tank, will heat a house 60 feet by 12, and at a very small cost. The tank will be found the most expensive. I find zinc troughs, 8 inches wide and 1 ins. deep, the cheapest. Mine are in cement troughs, which after three years' service failed from leakage; but for a house I should place my zinc troughs in a rough case of 1-inch deal. They must have support, otherwise they will give way and become useless.

Zinc troughs of the above dimensions cost here 8*d.* per foot; the village plumber puts them up. Owing to the small quantity of water which the boiler holds, the circulation is most rapid, and the quantity of fuel (coke) consumed exceedingly small. It is, indeed, well calculated to carry out the idea of "Dodman," and make Orchids, forced flowers, and fruits, cometable by "the million." In describing the zinc trough I have omitted to say that, fixed as I have described it, it is adapted only for a forcing pit out of doors, constructed, as such pits usually are; to heat a house on the tank system is generally expensive, as bricks, mortar, and masonry are required. I had, therefore, better describe my mode of getting over these expensive processes. I will suppose a lean-to house, 10 or 12 feet wide, with a path along the centre, and a door at end; in the middle of this house, against the back wall, a brick Arnott's stove fixed with boiler; now, standing in front of the stove, the flow pipe we will suppose to the right hand, the return pipe to the left. A bench made of any kind of rough boards (they should be 1 inch thick or nearly so), supported on stout supports let into the ground, must be made along the back of the house to the right hand of the stove, and another at back to the left; this may be 4 feet or more wide, according to choice, and a bench of like dimensions in an unbroken line along the front, as there is there no stove to interrupt it. The benches should have at front and back an edging of stout board, so as to make them in fact shallow troughs, 4 inches deep in the inside, and 4 feet or more wide, commencing from the right hand of the stove; the flow pipe must be conducted into the zinc trough,* which should be placed in the centre of the wooden bench. When the end of the house is reached, a lead pipe of 1 inch bore will conduct the water across to the front bench, with its zinc trough in the centre, or a cross bench may be made at the end, the water will then flow along the front till it arrives at the entrance door at end; a lead pipe must now conduct it down inside the door-post, inside the sill, and up the opposite door just into the trough in the bench at back, and so to the return pipe in boiler; we have thus the tank formed, but no covering. This I manage as follows.

The troughs, whether of zinc or thin galvanised iron, are too weak to bear any weight; therefore on each side of them are placed bricks on edge, leaving 2 or 3 inches space between each, and then the slates called "Duchesses," 2 feet by 1 foot, are laid across endways, their extreme ends resting on the edges of the bench, the opposite ends in the bricks on edge; if the bench is 4 feet wide, these will fit exactly; they may be slightly lapped without mortar, then covered with sand, cinder ashes, or sawdust, and the tank is complete; the hot air and steam circulate freely through the spaces left in placing the bricks, and the hollow bench will always be filled so as to heat the whole of the surface. The joints of the bench need not be water-tight, but they should be tolerably close, otherwise too much steam will escape; a slight edging of ½ inch board may be added to the bench, front and back, if required for plunging pots, so as to hold the materials used. *Thos. Rivers, Sawbridgeworth.*

DISEASES OF PLANTS.

(*Continued from p. 276.*)

§ 4. *Bases upon which I have founded the division of Diseases of Plants.*—The greater part of the diseases of plants depend on the disturbance of their vegetable economy, produced by the same elements which sustain and govern it. No one at the present day (saving perhaps some few who still recognise the universal agent phlogiston, and treat as fables all the facts proved by modern chemists), doubts any longer that carbon, oxygen, hydrogen, and a little azote, are mainly and constantly the constituent elements of vegetables. These are required by them at every moment for their existence, their growth, the repair of their losses, and their reproduction. They derive one portion from the atmosphere, by means of their leaves, and draw another portion from the earth, by the help of their roots. The object of the cultivator is, therefore, to render the soil capable of supplying to them this nutriment. He does this by preparing it by manipulation, enriching it by manures, and if necessary fertilising it by irrigations. These irrigations, even if the water be perfectly pure, supply oxygen and hydrogen, but as it ordinarily contains various other substances, they much assist vegetation; rain water, for instance, contains four substances most useful to plants. Manures supply carbon and azote, and during the process of their decomposition and conversion into soil, owing to the great affinity of organised substances in a state of decomposition for oxygen, they attract that element which the plant requires for its prosperity.

All the most accurate observations made of the phenomena of vegetation tend to prove that the action of the organic qualities of plants, by which they appropriate to themselves the above-mentioned elements, is entirely subordinate to the immediate impulses which they receive from those very agents before they are assimilated to and combined with the plants. The vegetable liquids into which those agents are transformed do not cease to concur in promoting the organic action. But it is certain that caloric, light, and even electricity, are the agents whose action is the most efficacious, and whose influence is the most decided and energetic on the state of vegetable organisation.

There is no cultivator so young but he knows that, as heat increases or subsides, so does vegetation increase or diminish. He is also perfectly aware that excess of heat, as well as excess of cold, will entirely deprive plants of life. It is well known that that principle which produces in ourselves the sensation of heat, that is to say caloric, distends the vascular system in plants, increases their vital energy, rarifies their fluids, promotes their circulation, and facilitates the exercise of all their functions, perfecting their solids and agitating their fluids. It favours the absorption of aliments which, according to Sennebier, takes place more readily in the sun than in the shade. And lastly, it has been observed that seeds ripened in a warmer climate than ours, when confided to the earth, germinate with greater rapidity than those raised in colder countries, or ripened in our own climate.

Some are of opinion that light has a greater action on vegetable economy than heat itself, and I am not indisposed to adopt their ideas. In fact there is no doubt that it gives the colour to plants (which heat alone cannot do), condenses their resinous juices, eminently favours their inspiration and respiration, determines the movements of several parts of plants, as for instance the expansion of their flowers. All these phenomena will not be produced in the same degree by the sole action of heat. Light in conjunction with heat promotes the circulation of liquids, the assimilation, secretion, and nutrition of plants, developes those modifications which are the origin of the numerous and varied compound substances produced during the process of vegetation.

But in order to produce a conviction of this im-

* Galvanised iron, "gauge 32," costs the same as zinc wire, 8*d.* per foot.

portant action of light on plants in the minds of those who are ignorant of all physical sciences, but who are accustomed to observe the country, I would only beg them to recall to their memory some of those phenomena which must have come under their daily notice. Is it not true that plants placed in winter in a dark or faintly lighted cellar, always turn their tender or new shoots in the direction of the small ray of light which penetrates? An experience of more than 20 years has fully convinced me that plants, during the course of the severe season, suffer much more in proportion from the want of light, than from absolute cold.* I have, therefore, in my *Giardiniere* (a Gardener's Guide), laid down as a rule for the preservation of tender plants during winter, first, that the greenhouse for their reception should be adequately lighted, and secondly, that it be kept sufficiently warm. Every one knows that plants, kept for a length of time with insufficient light, when suddenly brought out and exposed to it, even with the precaution of placing them in the shade, suffer considerably. Again, all who have collections of plants in pots, arranged on stages, must have seen how several of them turn towards the light; in these cases, by merely turning the plant so that the convexity of the curve be exposed to the light, it will soon straighten itself. From this I derived another precept, that delicate plants should be frequently changed in position, in order to expose them to as much light as possible. Whoever has visited dense forests, will have observed that whilst the summits of the trees luxuriate in a vigorous vegetation, the surface of the earth is either bare or slightly covered with weak discoloured herbs. It is an undoubted fact, that plants grown in a dark place are soft, slender, weak, and insipid, whilst the same ones vegetating under the full influence of light are vigorous, full of savour, or even acridity.

I am aware that of late some celebrated physiologists have endeavoured to throw much doubt on the action of electricity on vegetation. I am far from pretending to decide a question of so much importance, but I confess that I do not see anything as yet to refute experiments of Malmbray, Nollet, Bosc, Menon, Jalabert, Nuneberg, Linnæus, Kortling, Achard, Bertholon, Giardini, D'Ormoy, Carmoy, Rozier, &c., and giving their full weight also to those of Ingenhouz, Sylvestre, Troostwych, Kragenhoff, Rowland, and Van Marum, I cannot bring myself to deny the extensive influence which electricity may have on vegetable economy. At the same time, not to speak of artificial electricity, I cannot but take notice of what presents itself daily to our observation; I allude to the close relation, in appearance at least, between the vicissitudes of atmospheric electricity and those of vegetation. Plants grow with the greatest vigour and rapidity in spring. Vegetation diminishes in summer,† and resuming a certain degree of activity in autumn, stops entirely or becomes inappreciable in winter; but the quantity of electricity, whether mild or stormy, is much greater in spring than in summer, is renewed in autumn, and is almost null in winter. It may be added that the more lurid the days the more vigorous the vegetation, as may be so frequently observed in spring and autumn when the atmosphere is most charged with electricity. Finally, plants grow more in the night than in the day, that is when the atmosphere has the most electricity near the surface of the soil.‡ All this induces me to place myself on the side of those who are of opinion that electricity extends a wide influence in promoting the vital functions of plants.

The health of vegetables consisting in the just degree in which they exercise the organic properties with which they are endowed; and this exercise being in close connection with the number and strength of the agents which influence them, it follows that the excess or deficiency of these agents must produce disease.

Home Correspondence.

Training the Italian Cypress and similar Conifers.—Allow me to notice some remarks by "S., Dorsetshire," on the "Italian Cypress and some other Conifers." He says, "the best way to give the tree a good figure, which, like some other Conifers, is apt to divide into two leaders near the root, is to trim it up continually to a bare stem to the height of 3, 4, and 6 feet, after which it will go ahead, and run up to a point as well here as in Italy." In the preceding sentence he speaks of "heading it, if it grow too luxuriantly." I presume he would only "head it" to prevent its becoming top heavy, which would, in my opinion, be a probable result of its being "trimmed up continually to 3, 4, and 6 feet." I may, perhaps, misapprehend "S.;" but as he classes some other Conifers with the Italian Cypress, no doubt he would treat them alike. Now, I do not know what "S.'s" ideas of a "good figure" of a tree are, but certainly an Italian Cypress, with a bare pruned stem of 6 feet, would cut rather a poor figure near a well furnished tree of equal age. The effect of leaving branches as near the ground as possible is, first, to give the plant a well furnished appearance, which, I believe, most growers consider desirable; secondly, to strengthen the lower part of the trunk, and prevent the sap from running too much to the top, which is likely to make the tree top heavy. Of course any branch which is considered likely to interfere with the main shoot can be cut back, though pinching the shoot off is better, as this changes the branch from a contending leader into a subordinate member. This is the system very generally adopted, though I think its propriety doubtful in the case of Cedars, as a variety of outline and habit is desirable; and by pursuing this mode of treatment a uniformity is attained; so that in the case of Cedars I would not touch a contending leader, unless in some very few exceptions, where there might be a probability of the tree splitting. Any visitor to Kew Gardens may see an example of "S.'s" system in an Araucaria imbricata. I think it is about 10 or 12 feet high, and has a bare "trimmed up" stem of about 6 feet. If he wishes to see an example of the opposite system, let him go to Dropmore, where, by-the-bye, some one, who I presume held "S.'s" opinions, actually had the taste to pick off some of the tops of the lower branches of the largest Araucaria imbricata there. I should like to have ducked him. I hope that "S." will give us his idea of a good figure, and his opinion as to the propriety of staking Conifers, as this subject should be discussed. *R. M., South of Ireland.*

Varnishing Glass to Prevent Burning.—Boiled linseed oil and sugar of lead, or, as it is termed by painters, patent driers, forms a good varnish for sheet-glass. It should be laid on outside. Neither sun nor frost will affect it in a shorter space of time than two years. I had my Vineries covered with it last May. It was laid on with a brush, and afterwards daubed all over with a cotton or linen cloth ball stuffed with tow to give it a freckled or frosted appearance. By this means I cured burning. The lower roof sheets were cleaned late in autumn, the roof in dark weather being too opaque. The top lights were left uncleaned; but this season, when my first houses of Vines broke, they told me in language not to be mistaken that they had been too much in the dark. As soon as I discovered that, I had the top lights cleaned also, and since then in bright days we have had a return of burning. I really begin to think, however, that of the two evils, oiling the roof, or running the risk (and a serious one it is) of scorching, the last is the least of the two. *James Roberts, Raby Castle, April 7.*—I painted the sashes of a pit 53 feet long with linseed oil two months ago, and it answers perfectly as yet. The oil was put on outside. The painter by mistake painted part of a sash inside before I noticed him; what was done inside, however, I allowed to remain, in order to see whether inside or outside was best; but on the first bright sun we had in the morning, a great portion of the moisture hung to the oil in small drops of water, which formed foci everywhere where there was a drop. We had our Vineries so scorched last year that I thought the fruit would not come to perfection; this year I painted the glass with slaked lime, applied with a common long-handled hall-broom tied to a long pole. I have repeated this three times this spring, for in cloudy wet weather the lime is washed off, or nearly so, which gives the Vines or plants the benefit of the light. The lime can be put on almost as soon as a man could put on a shading with mats, and it does not require to be taken off, for the rain effects that part of the business. *G. Urquhart, Wimbledon.*

Gold Fish.—I have had a fountain these last four years, supplied by the water-works of the town, in which are gold and silver fish, and three or four plants of the Lotus; it has been perfectly clear until the last two months, when I put in a few sods of turf to the roots of the plants, and ever since I have been annoyed with a nasty green slime floating on the top, and adhering to the sides. Several of the fish have died within the last six weeks. By suggesting a remedy you will oblige, *M. W. K.*

Blistering of Peach Leaves.—I do not think that frost is the cause of this evil, at least in a direct way. I had a Peach tree on a wall in the open air, close to two others; every year it was covered with blistered leaves, so much so as to ruin the young wood, while the other trees, less sheltered, were scarcely affected. I at length removed it under glass, since which time it has not had one leaf injured. I planted a Nectarine taken out of a house in its room. The leaves of the latter are not affected, and it has now several well set fruit on it. The Pears here, notwithstanding the frost of the 17th ult., seem to have set pretty freely, although there were icicles 3 and 4 inches long from some of the flower bunches. *E. F. L.*

Snow on the Ochil Hills.—I confess that I had formed a wrong idea of the knowledge that "Quercus" had of these hills, for I imagined that he had been well acquainted with them, from the "Skirra Muir" to the Crook o' Devon, and that he was ready to point out some nameless chasm, sheltered from the southern sun, where snow was to be obtained at the hottest season of the year; but when he informs us that he never had a foot upon these hills, I have my doubts whether it was the Ochils at all on which he saw the snow at the season he mentions. Now I hope "Quercus" will not take it amiss when I tell him that he has probably made a mistake about the situation where the snow was when he saw it, for he might see snow at the season he names, and mistake one mountain for another. He will also remember that it is not so very long ago that we were told in the *Chronicle* that we should not at all times believe everything we see, as in the case of the viper question. If we are to receive with caution what we may see within a few feet or yards of us, a little more caution will be required when the object we look upon may be some miles from us, as the snow would likely be from "Quercus" when he looked upon it. And it may, after all, have been some old Highland carle of a mountain, with hoary locks, that he had seen, looking over the north-west shoulder of the Ochils, that had deceived him; for it is no uncommon thing for travellers to mistake one range for another. We are told by those who have studied the subject that a greater degree of cold prevails in the upper regions of the atmosphere than at low levels; this is manifest by the snowy covering of the summits of very elevated mountains in all latitudes, even if no direct experiments had been made on the temperature that prevails there. These, however, have been made in great number; and the constant and regular decrease of the temperature in ascending above the surface of the earth to such altitude at least as can be reached, has not only been fully established, but the law according to which the decrease takes place determined with considerable certainty. According to theory, the decrements of heat, in ascending the higher regions, should follow the same proportion as the decrements of the density; but this law is greatly disturbed by local peculiarities. The variation of temperature at different altitudes is the simultaneous effect of three general causes: 1, the absorption of rays of light in their passage through the atmosphere, which is much greater in the dense strata near the surface of the earth than in the upper regions; 2, the radiation from the surface; and 3, the ascending current: the two last also producing a greater effect on the strata near the surface. Any circumstance, therefore, which modifies these causes must also modify the law which connects the decrease of heat with elevation. The south front of the Ochils being somewhat precipitous, snow is soon melted when a thaw sets in, except near the summit of Benclengh, where the ground is more flat, and consequently snow will remain much longer in places that are elevated, and where the rays of the sun strike it in a more oblique direction, than in other parts of the hills. I have no desire to convince "Quercus" against his will, for I know that it is a difficult thing to eradicate ideas from the mind after they have been rooted there for 40 years; but I am certain that, if he would examine the ground more minutely when he comes back again, he would find that where the snow lies longest on the Ochils, and is seen from the plains below, that it will not be in chasms; and I have still my doubts whether it was the Ochils at all on which he saw snow during the dog-days. *Peter Mackenzie, West Plean.*

Protected Trellises.—It is stated in the Appendix to the second volume of the Transactions of the Horticultural Society (1822), that M. Noisette, of Paris, had found Peaches and Nectarines to do very well trained on espaliers, and that he had invented a case or cover, with glass lights, for the protection of the trees. From this it would appear that Mr. Ker's plan of growing Peaches under moveable sashes is not new, but that it is merely an improvement on the plan adopted some 30 years since by M. Noisette. *J. L. M.*

Should Larch be Cut between May and September?—It is apparently satisfactorily proved by your correspondent "Hantoniensis" that it should not. He says that "Lord Ashburton, a few years since, cut much Larch in Hampshire in spring, barking it for the sake of selling the bark; that all the bodies of the trees became split with deep sun cracks; and not a board could be cut out of any of them." Consequently I will allow the timber would be much deteriorated. Mr. Dent, who I am glad to find advocates, in your last Number, the peeling of Larch, recommends it to be covered with tops to prevent cracking, a good plan, if it is to be cut down at the time of peeling, but I would suggest to both gentlemen, in my opinion, a better practice, viz., to peel their Larch standing, and not to cut it down for at least six months after the removal of the bark. In this way the wood will not collapse rapidly to cause splits, but will dry gradually and become exceedingly tough. I have lately been cutting up Larch peeled in the summer of 1847, which was not cut down till last winter, and the sawyers say, with much truth, that "it is as tough as cow's-horn." The bark will pay the expenses of peeling and cutting down, but I must say that I think the improvement of the timber by the removal of the bark in the way I have stated far outweighs any consideration on that score. *W. C., Doncaster.*

Botanical Chart of British Plants.—You state (page 280), that you are unable to give the name of a publisher for wild flowers. I have in my possession a little work compiled by a friend, entitled "The Botanical Chart of British Flowering Plants and Ferns," showing in one view their chief characteristics, generic and specific names, with the derivation, their localities, properties, &c. She had this volume printed by Bins and Godwin, Bath, and it is sold by them; Whittaker, London; Curry, Dublin; and Johnstone, Edinburgh. If this will be of any use to your correspondent, or tend to recommend this work to your friends, I shall feel repaid for my trouble. *Constant Reader.*

How long do Bees live?—The natural length of a queen's life has never been ascertained, but some have been known to live four or five years. The drone, "the lazy yawning drone," only lives as many months. Hatched in April, they are generally cast out of the hive by the other bees, to starve, about June or July; I have even known the workers drag the half formed drones from their cells, and carry them out to perish. The ancient Greeks had an ingenious method of excluding drones from the hives. "It was observed that these gentlemen (the drones), though in no way inclined to work, would yet occasionally on very fine days go abroad for exercise, rushing forth in squadrons, mounting aloft

* It is still the general custom in a great part of the Continent, especially towards the south, to place those plants which require being kept from frost during winter, in dark cellars or outhouses, to save the expense of regular greenhouses.—*Note of the Translator.*

† The season of summer rest is much longer and more decided in the south of France and Italy than in this country.—*Note of the Translator.*

‡ This is not made out by the most careful experiments.—*Ed.*

into the air, and there wheeling and sporting and manœuvring in the sun. Taking advantage of their absence, they spread a fine net over the hive-entrance, the meshes of which, large enough to admit the bee would exclude the drone." This would not be a bad plan for the English bee master to adopt; but he should wait till the bees themselves have begun to drive out the drones; for surely they alone can judge of the proper time for this harsh measure. The drone doubtless serves an important purpose, although we must acquiesce in the amusing description of old Butler, who says, "He is a gross, stingless bee, that spendeth his time in gluttony and idleness. For however he brave it with his round velvet cap, his side gown, his full paunch, and his loud voice, yet he is but an idle companion, living by the sweat of others' brows. He worketh not at all, either at home or abroad, and yet spendeth as much as two labourers; you shall never find his maw without a good drop of the purest nectar. In the heat of the day he flieth abroad, aloft, and about, and that with no small noise, as though he would do some great act; but it is only for pleasure and to get him a stomach; and then returns he presently to his cheer." The life of the common bee is busy and short. Those which are hatched in the spring of one year die before the close of the next, generally about August or September. They die, weakened by old age, worn out with toil, or suddenly destroyed by one of a thousand accidents; snapped up by a tomtit, interrupted in mid flight by a swallow, dashed headlong into a pond by the boisterous wind, trampled on by a child, crushed by the foot of a cow while sucking honey from white Clover or wild Thyme, overpowered by a hornet, wounded in mortal combat by a wasp, caught in a treacherous spider's web, swallowed by a cold and bloated toad while resting on the ground, burnt or neglected by their owners, or killed in fierce battle with the robbers from a neighbouring hive. *An Essex Man.*

Cytisus canariensis.—This beautiful and free flowering shrub is exceedingly well adapted for conservatory display during the spring months, inasmuch as it presents an admirable contrast to the delicate colours of the Chinese Azaleas, and the more gorgeous masses of Indian and hybrid Rhododendrons which ought to abound in all such structures in the earlier part of the season. It is also an excellent subject for bouquets, the bright yellow colour of its spikes yielding sprightliness and variety when used in conjunction with Camellias, Roses, Primulas, Cinerarias, and such like; whilst Violets, Sweet Briar, Balm of Gilead, and sprigs of Myrtle, furnish the requisite sweetness It is grown here in bottomless pots, plunged to the rim in the conservatory bed. By this means it is kept within moderate bounds, and flowers more freely when grown in the open soil. This system also insures a positive degree of health which large pot-bound specimens seldom present for any lengthened period; the plants are moreover readily removed when re arrangement is required, and this, when occasionally repeated, gives an air of freshness to the whole house, for one tires of seeing the same plant continually under the same circumstances and associations. There is a large plant growing here in an inverted Seakale pot, and plunged to the rim in the conservatory border, which measures 12 feet in height and 7 feet through, and is at this moment, and has been for these last two months, profusely covered with its spikes of brilliant yellow blossoms; and there are many other plants of not more than from 2 to 3 feet in height, which blend their flowers with those of Cinerarias, Hyacinths, and such like, down to the floor of the house. It is rather subject to the attacks of red spider, and requires, in consequence, a somewhat free use of the syringe when out of flower, and an occasional drenching with soapsuds, which here are a never failing remedy against the attacks of these troublesome insects; care is however taken to ascertain that this material is not too dirty, or overcharged with potash or other deleterious ingredient, or the plants would have a dirty appearance for some considerable time. *James Duncan, Busing Park, May 2.*

Asparagus.—Permit me to add my testimony to the correctness of the plan for growing this vegetable described by Mr. Cuthill. Ten years since I took possession of a garden in which was a small Asparagus bed; it was about 9½ yards long and 3½ feet wide. It had been in existence about 30 years, and when I took possession of it, the garden had belonged to the same proprietor the whole of that time, who advised me to dig it up and make a new one, as he said it was worn out. I, however, determined to try what I could do with it; and immediately raked all the earth I could off it without quite laying bare the roots, and then followed exactly the plan recommended by Mr. Cuthill. Every autumn I covered it over with manure, which I raked off in the spring, when I afterwards gave it plenty of salt in wet weather, or by mixing it with water and putting it on with a watering-pot in periods of drought. The result of this treatment has proved itself, I think, to be perfect; for my bed immediately improved greatly, and soon became all I could wish it to be. Yesterday I was in two gardens, the owners of which keep two gardeners each, and one, or each, has more square rods of Asparagus beds than I have square yards; and yet I will undertake to cut more, and better Asparagus, than both of them can from their large beds. And, besides, I have cut for a fortnight, and could have cut for three weeks, whilst one of these has not yet cut at all, and the other only a very small dish yesterday. My Asparagus also, at this time, is so thick and good that I have cut a fine dish for this day, and I could if I liked cut nearly or quite 100 more. I advise all gentlemen, therefore, who possess Asparagus beds, to rake them down as low as they can in the autumn, without exposing the roots too much; to fill up the valleys between them entirely; and then cover the whole well over with good manure, which has been previously well salted. Then, in the spring, when the manure has been raked off, let plenty of salt be given to the beds, which, in wet weather, may be merely thrown on with the hand; but, in dry weather, it should be mixed well with water and put on with a watering-pot. For the making of new beds, I advise that they never be raised higher than the surrounding ground; and should, of course, always receive the same treatment as Mr. Cuthill has advised for old beds, and then the owners of them will be astonished at the largeness and quantity of the Asparagus. *Geo. Wilkins, Wix, March 3.*

Transplanting Potatoes.—We hope that all who have availed themselves of the opportunity of raising Potatoes as precocities, or before their natural time, have not lost sight of the necessary preparation of the ground for their reception. Where this important operation has been overlooked, no time should be lost in effecting this object, as the time has now arrived for the removal of the Potatoes from the nursery-bed or greenhouse, into the open compartment destined to receive them. Plants in pots or turves should now be hardened off, and fully established about 6 inches high; and seedlings should be ready to be plunged into the well prepared ground, with their roots entire. Plants thus managed are supposed to have tubers already formed, and about a fortnight in advance of the general crops, a point of vast importance under present circumstances. It is now also a proper time for planting, in pots or turves, the intended second crop of Potatoes; and in like manner, a month hence, the third crop; in the latter case, however, there need be no recourse to artificial heat. Sufficient plants may be raised on one square yard of ground to transplant a large garden, and whole sets for this purpose are best preserved abroad by spreading them thinly in a shady place, and then planting them without destroying their shoots. This plan affords ample opportunity for preparing the ground after crops of Broccoli, Cabbages, &c. *Haray and Son.*

Societies.

HORTICULTURAL, *May 5*: GARDEN EXHIBITION.—The leading features of this great exhibition being fully reported in another column, we will at once commence to describe the scene in detail.

In collections of 30 STOVE and GREENHOUSE PLANTS the Certificate of Honour, the highest prize the Society offers, was awarded to Mr. May, gr. to Mrs. Lawrence, of Ealing-park, for a group of large and admirably cultivated plants. At the back stood an immense Epacris grandiflora, and, supporting it, huge plants of Podolobium staurophyllum and trilobatum, the former forming a globe of yellow and brown blossoms some 4 feet in diameter; Boronia pinnata, 4 feet high and as much through; Chorozema varium nanum, a beautiful bush; a large Daviesia latifolia, with long pendent shoots richly clothed with short spikes of brown and yellow flowers; the lovely Dipladenia crassinoda; a small Hovea Celsi, Chorozema Lawrencenum, a pretty variety; the yellow-flowered Gompholobium barbigerum, the best of the genus; a pretty Adenandra speciosa, and other well cultivated plants. Of Azaleas, the collection contained Old White and splendens, the latter quite a mass of salmon flowers; and of Cape Heaths, persoluta alba and a pretty fastigiata lutescens. These, together with Aphelexis humilis, A. purpurea macrantha, and an Ixora coccinea, formed the chief features of this fine collection.—Another group of 30 plants was contributed by Mr. Cole, gr. to H. Colyer, Esq., of Dartford. This comprised famous specimens of cultivation, but all much too small to compete successfully with the large and fine plants produced from the garden of Mrs. Lawrence. Mr. Cole's best plants were Pimelea spectabilis, Aphelexis humilis, and the finer A. purpurea macrantha, several species of Ixora, small but all well bloomed; the Violet-blossomed Tetratheca verticillata, a silvery-flowered Everlasting, Hovea Celsi, the pretty white-blossomed Sphenotoma gracilis, Gompholobium polymorphum, several Azaleas, a few Cape Heaths, and other popular stove and greenhouse plants.

Collections of 15 STOVE and GREENHOUSE PLANTS were numerous. The best, which was communicated by Mr. Taylor, gr. to J. Coster, Esq., of Streatham, contained a pyramidal Eriostemon buxifolium, Pimelea spectabilis, a double flowered red Azalea, Erica Hartnelli, the pink-flowered Adenandra fragrans, a beautifully blossomed and well cultivated Ixora coccinea, richly clothed with flowers and leaves down to the pot; a white Azalea, and a pretty Erica Linnæoides.—The second group in point of merit was produced by Mr. Carson, gr. to W. F. G. Farmer, Esq. It contained a pretty Franciscea macrophylla, the Anemone-leaved Boronia, Oxylobium Pultenæa, covered with large yellow globular heads of flowers; the Violet-flowered Prostranthera, Leschenaultia formosa, and several Azaleas.—The third group came from Mr. Green, gr. to Sir E. Antrobus, Bart. It consisted of a purple and white flowered Everlasting; a good Dendrobium nobile, insufficiently in flower; a white Azalea, the twining, yellow-flowered Gompholobium splendens, which few manage well; Erica aristata major, than which we have seldom seen it finer; Pimelea spectabilis, and other plants. Other collections of 15 plants came from Messrs. Gerrie, Pawley, Malyon, Campbell, and Pamplin. In these we remarked Weigela rosea and Bauera rubiæfolia, a pink-flowered shrub, not often seen at exhibitions.

Collections of 6 STOVE and GREENHOUSE PLANTS were numerous. The best came from Mr. Jack, gr. to R. G. Loraine, Esq., of Wallington. It contained Pimelea linifolia, Aphelexis humilis, Adenandra speciosa, Ixora coccinea, a well-managed Franciscea acuminata, and Azalea splendens.—The next best group, which came from Mr. Slowe, gr. to W. R. Baker, Esq., consisted of Dillwynia floribunda, Aphelexis humilis, Epacris grandiflora, a blue Leschenaultia, Boronia pinnata, and Pimelea decussata. Other creditably managed collections of sixes came from Messrs. Bruce, Stanly, Glendinning, and Hamp. Among these the most remarkable plant was a neat, compact variety of Chorozema varium, called Chaudlerii, certainly an improvement on the old C. varium. This was in the collection of Mr. Bruce.

ORCHIDS.—Fine as the different exhibitions of these undoubtedly were, as we shall presently show, as regards cultivation, all of them fell short of the finely managed 20 plants from the garden of C. B. Warner, Esq., of Hoddesdon. These were produced in capital condition, and did credit to the skill of Williams, Mr. Warner's gardener. The group contained a large Dendrobium cærulescens, somewhat injured by travelling; Epidendrum crassifolium, with 15 flower-spikes; Phaius Wallichii; Oncidium sphacelatum, with 12 spikes, but not sufficiently advanced; Dendrobium nobile, 3 feet high, and as much through; Lycaste Harrisoniæ; the yellow-lipped Cyrtochilum filipes; Zygopetalum rostratum, well flowered; a good Dendrobium densiflorum; the curious Oncidium phymatochilum; the grassy-leaved brown flowered Maxillaria tenuifolia; the bright yellow Oncidium bifolium; and good plants of Cattleya Skinneri, Lycaste cruenta, and others.—The next collection, in point of merit, was shown by Mr. Mylam, gr. to S. Rucker, Esq. The gem of this group was Vanda suavis, bearing two glorious spikes of purple-spotted white flowers. Associated with it were Aerides virens; Galeandra Devoniana, with trumpet-shaped chocolate-streaked white flowers; Oncidium phymatochilum, with a great branched flower-spike some 4 feet high: Epidendrum tibicinis; a noble Dendrobium densiflorum, with 14 bunches of yellow blossoms; Vanda insigne, a species in the way of suavis but not so handsome; the rare rather than beautiful Huntleya Meleagris; Chysis bractescens, well flowered; and Leptotes bicolor, forming quite a mass of purple and white blossoms.—A third group of 20 plants was produced from Messrs. Veitch's Nursery, Exeter. This collection also contained Vanda suavis, but not so bright or so fine as Mr. Rucker's one; likewise a large Dendrobium nobile; the yellow-lipped D. tortile; a well flowered D. macrophyllum; Cypripedium barbatum, beautifully flowered; Cattleya Skinneri; the small transparent blush-flowered Dendrobium aduncum, and various Oncids.

Collections of 10 ORCHIDS were numerous. The best group was produced by Mr. Carson, gr. to W. F. G. Farmer, Esq.; its chief novelty was Arpophyllum giganteum, an attractive and distinct-looking Orchid, with little waxy purple flowers, looking like so many shells beautifully arranged round an upright flower-spike. The plant in question was however but a poor representation of the wild beauty of this species. Associated with it were Brassia maculata major, Phaius grandifolius, Broughtonia sanguinea, copiously ornamented with deep crimson blossoms; a capital Cattleya Skinneri; the brown-spotted Acineta Humboldti, with 5 pendent spikes of 10 flowers each; the yellow and white Burlingtonia fragrans, and Maxillaria tenuifolia.—The next best group was exhibited by Mr. Plant, gr. to J. H. Schroder, Esq., of Stratford. It contained good plants of Phaius Wallichii; Calanthe veratrifolia, beautifully flowered; the purple Cattleya Skinneri; a beautifully managed Trichopilia tortilis, forming a little globe a foot through; Vanda cristata, and other Orchids.—Other collections of 10 plants were shown by Mr. Dobson, gr. to Mr. Beck, and Mr. May, gr. to Mrs. Lawrence. Mr. Beck's plants were all in slate pots, small, but in excellent health. Mrs. Lawrence's group was also chiefly composed of small plants.—Mr. Jack, gr. to R. G. Loraine, Esq., obtained a silver gilt medal for a nice group of 6 species.—As single specimens, Mr. Iveson, gr. to the Duchess Dowager of Northumberland, showed a well cultivated Dendrobium Wallichianum, and Mr. Bruce, D. fimbriatum.

AZALEAS.—Being numerous and generally large plants, these made a magnificent display. Than three specimens produced by Mr. Green, who obtained the 1st prize for 12 varieties, nothing could possibly be finer. The varieties to which we allude were variegata, lateritia, and Gledstanesii, and to these we may add his double red. The above could not measure less than from 5 to 7 feet high, and from 4 to 5 feet across; and they were so thickly studded with flowers, that hardly a green leaf could be seen. Other remarkable sorts were optima, brilliant rosy crimson; sinensis, and exquisita.—Mr. May, gr. to Mrs. Lawrence, also sent a a good collection of 12 plants, comprising an admirably flowered sinensis, 5 feet high and 4 feet through; exquisita; lateritia; Rawsonii, purple; variegata; old white; coronata, a brilliant rosy crimson; Lawrenceana, splendens, and Gledstanesii.—Messrs. Frazer, of Lea-bridge, showed well-managed plants of lateritia; sinensis; triumphans; splendens; Minerva, a very bright red; Fielderii, a good white; exquisita; Smith's coccinea; refulgens, the most brilliant of reds; purpurea superba; variegata; and optima.

Collections of 6 Azaleas were exhibited by Mr. Carson, and by Mr. Gerrie, gr. to Sir John Cathcart, Bart. Mr. Carson's plants were, Smith's coccinea, a column of flower at least 8 feet high; a double red nearly as large; lateritia, exquisita, a beautiful Gledstanesii, and speciosissima.—Mr. Gerrie produced double red, phœnicea, speciosissima, variegata, and splendens.—Six small Azaleas were also shown by Mr. Pamplin, of Ipsa-bridge; Mr. Carson showed a fine plant of lateritia, as a single specimen.

Two collections of tall Cacti were exhibited, the best being from Mr. Green; but they were both insufficiently in flower, and on that account made but little display.

Roses.—Never, perhaps, has there been a more unpropitious season for bringing forward the "Queen of Flowers" in perfection than the present, and never, even in the best of years, have we seen the task better accomplished. The exhibitions of Messrs. Paul and Lane were perfect of their kind. The leaves were of the healthiest green, and there was a freshness about the flowers which was quite delightful.—Messrs. Paul obtained the Gold Medal, with admirably-grown specimens, trained according to the plan laid down in "The Rose Garden." The tallest shoot was brought to the centre of the plant, and around this the others were disposed, gradually decreasing in height as they receded from the centre, till the lowest branches were fixed horizontally—the plants being alike on all sides. We give the heights and widths, the latter measured at the base, of the varieties forming this collection:—*Hybrid Perpetual:* Madame Laffay, a splendid bush, 3 feet high and 4 feet wide; Aubernon, 2⅔ ft. high and 4 ft. wide; Mrs. Elliot, 1½ ft. high and 4 ft. wide; William Jesse, 1½ ft. high and 3 ft. wide. *Bourbon:* Armosa, 3 ft. high and 3½ ft. wide; Ceres, 1½ ft. high and 2 ft wide; Mrs. Bosanquet, 2½ ft. high and 4 ft. wide. *China:* Madame Lacharme, 2 ft. high and 2 ft. wide. *Tea-scented:* Madame de St. Joseph, very fine, 2 ft. high and 3 ft. wide; Niphetos, 2½ ft. high and 3 ft. wide; Safrano, 3 ft. high and 2 ft. wide; Comte de Paris, 1½ ft. high and 2 ft. wide. Mr. Lane's plants were—*Hybrid Perpetual:* Baronne Prevost, blush; Comtesse Duchatel, rosy pink; Duchess of Sutherland, blush; Edward Jesse, lilac crimson; Lady Alice Peel, rosy crimson; Louis Bonaparte, rose; Robin Hood, pinkish lilac; William Jesse, crimson; Duc de Chartres, shaded crimson. *Bourbon:* Armosa, rosy blush. *Rubifolia:* Baltimore Belle, white; and the Yellow Banksian. The latter was finely grown and beautifully flowered.—Mr. Francis, of Hertford, showed a third and good collection, consisting of—*Hybrid Perpetual:* Aubernon, La Reine, Baronne Prevost, Duchess of Sutherland. *Bourbon:* Souvenir de la Malmaison, Armosa, Reine des Vierges. *Hybrid Bourbon:* Charles Duval, Paul Perras. *Tea:* Elise Sauvage, Comte de Paris. *China:* Eugene Hardy.—Among private growers the competition lay between Mr. Slowe and A. Rowland, Esq., of Lewisham. In Mr. Slowe's group, to which the 1st prize was awarded, we remarked Bouquet de Flore, Bougere, Hymene, Elise Sauvage, Triumphant, Belle Emile, Safrano, Caroline, Mrs. Bosanquet, Archduke Charles, and Pactolus.—From Mr. Rowland came Dauphin, Armosa, Safrano, Augustine, Mouchelet, Devoniensis, Madame Laffay, William Jesse, Mrs. Bosanquet, and Baronne Prevost.—Mr. Noble, of Bagshot, sent a specimen of Mr. Fortune's Yellow China Rose. It resembles Jaune Desprez, but is more coppery in colour.

Cape Heaths.—Decidedly the best collection exhibited was that from Mr. Smith, gr. to W. Quilter, Esq., of Norwood. This was altogether composed of fine specimens; we would, however, more particularly point to one of propendens, which was perfect of its kind. It formed a globe about 4 feet in diameter, profusely ornamented with little pink bells, and the branches hung down in such a manner as to half conceal the pot. Hardly inferior to this was his elegans, a species more difficult to manage; Hartnelli, too, was capitally grown, and well flowered; and so were nitida, a small white-flowered kind; perspicua, trossula, Sprengelii, mutabilis, and others.—Mr. Mylam, gr. to S. Rucker, Esq., also showed a capitally managed collection. It contained savoides elegans, a delicate pink-flowered kind, in the way of the vestitas; perspicua nana, clothed with flowers and foliage to the pot; Hartnelli and Sprengelii, both well grown; an elegans only equalled by Mr. Smith's plant; aristata major, tortuloflora, and a small but well-flowered odora rosea. The gem of Mr. Coles's collection, which was placed third, was aristata major; it however also contained other good plants.—Collections of 15 Heaths were also sent by Messrs. Rollisson, Veitch, and Pamplin. In the first group we noticed the comparatively new Heath called Sindryana, a variety in the way of hiemalis.—Messrs. Veitch sent several new sorts raised by Mr. Story. These were named sanguinea, retorta vittata, Devonia, and per-elegans, all very pretty, but too much like one another, and not sufficiently distinct from aristata, which is evidently one of their parents. Mr. Pamplin's plants were small; the best perhaps among them was vestita rosea.—A collection of 9 Cape Heaths was shown by Mr. Taylor, gr. to J. Coster, Esq., of Streatham.—Of specimen Heaths, the most remarkable were a huge Cavendishii, hardly sufficiently in flower, from Mr Fairbairn; a fine Hartnelli from Mr. Green, and a pretty mutabilis from Mr. Bruce.

Single Specimens.—By far the best shown was the huge Pamelea spectabilis, described at p 199, from the garden of Mrs. Lawrence. It was not quite in full bloom, but as it was it formed the subject of admiration of all who saw it. It is a "worked" plant—probably on P. decussata, which forms a good stock for this species.—The next plant in point of merit was a large Epacris miniata, from the nursery of Messrs. Rollisson. This variety has got the name of being a shy bloomer, but such character could not apply to the plant under consideration, for it was literally covered with pretty red and white flowers.—Messrs. Veitch showed a new half shrubby pale pink Boronia, called spathulata, pretty, and apparently a profuse bloomer, but still too dingy in general appearance to rank above a third class plant. The same nurserymen also sent Æschynanthus speciosus.—Mr. Slowe produced a small but neat Tremandra verticillata. Various other single specimens of more or less merit were exhibited, but we have only room to mention the following, viz, a good Stephanotus floribundus from Mr. Turnbull, gr. to the Duke of Marlborough; Cyrtoceras multiflorum, from Messrs. Rollisson; a nice Indigofera decora, with long pendent racemes of delicate pink flowers, from Mr. Iveson, gr. to the Duchess Dowager of Northumberland; and a large and well flowered Weigela rosea from Mr. Gaines.

New Plants were but few. That which commanded the most attention was the new, shrubby, clear yellow flowered Calceolaria, from Messrs. Veitch, mentioned in another column.—Mr. Henderson sent a third class Boronia, named tetrandra; Messrs. Rollisson, a small brown-flowered Hoya, from Java; and Talauma mutabilis, a pale yellow flowered Magnoliad; and Messrs. Veitch had their yellow flowered Violet. Some other new plants were exhibited; but they were not considered by the judges to be worthy of reward.

Of Rhododendrons the best was a seedling, named campanulatum superbum, from Messrs. Jackson, of Kingston. It is a good trusser, the flowers individually large, pure white, with the exception of the upper petals, which are deeply and distinctly spotted with crimson; a beautiful variety; but it has more to do with ponticum than campanulatum.—Mr. Gaines also showed a thickly spotted light-coloured seedling, with compact heads, but small and inconspicuous compared with the above.—Messrs. Rollisson produced some crimson and pink hardy kinds; but nothing striking or remarkable.

Pelargoniums.—These were deficient in number, but some of the groups were well managed and nicely bloomed. In confirmation of this statement, we would point to the collections of Mr. Parker and Mr. Beck, which were both, to use a grower's phrase, "well done." Mr. Parker's plants (new varieties in 11-inch pots) were Luna, Superb, Duke of Cornwall, Hero, Zanzummim, and Rosy Circle. Nurserymen (same class), 1st, Mr. Dobson, gr. to Mr. Beck, for Forget-me-not, Negress, Guhelma, Blanch, Grandiflora, and Centurion; 2d, Mr. Gaines, for Negress, Prince Albert, Emma, Cotherstone, Achbar, and Queen of Bourbons. New varieties in 8-inch pots, 1st, Mr. Cock, of Chiswick, for Painted Lady, Hebe's Lip, Pearl, Negress, Bertha, and Forget-me-not. Nurserymen (same class), 1st, Mr. Dobson, gr. to Mr. Beck, for Refulgent, Delicatissima, Rosamond, Grandiflora, Gustavus, and Blanch; 2d, Mr. Gaines, for Brenhilda, Sir W. R Gilbert, Negress, Brockii, Caractacus, and Mrs. Brock. Mr. Beck also showed eight plants not for competition.

Of Cape Pelargoniums, Mr. Parker was the only exhibitor. He showed well managed plants of Campylia holosericea, Physmatanthus elatus, Pelargonium bicolor ardens, Blandfordianum, and tricolor.

Fancy Pelargoniums:—Mr. Gaines showed 6 pretty plants of Mulatto, Anais, Lady Rivers, Nosegay, Ibrahim Pacha, and Madame Miellez. The same grower also exhibited the following seedling fancy varieties—viz. Gem, a good shaped rosy pink, margined with white; and Dianthus, showy, but deficient in shape.—Mr. Beck exhibited a plant of the curious variety called Harlequin.

Seedling Pelargoniums:—Mr. Hoyle, of Reading, sent four, named Nonsuch, Christabel, Prince of Orange, and Satisfaction.

Cinerarias:—There were several collections of these exhibited; but with one or two exceptions they consisted of plants too small to make much display.—Mr. Ivery, of Peckham, showed a group of 12, the best of which were Satellite, Cerito, Gem, Eleanor, and Delight.—Mr. Henderson, of St. John's Wood, sent Emperor, Cerito, Calypso, Fair Rosamond, and 8 other less valuable sorts.—Mr. Pond, of Bath, exhibited a nice group, the gem of which was Sir C. Napier.—Mr. Gaines also showed 6 nice plants.—Mr. Kendall, of Stoke Newington, produced well grown single specimens from his Polmaise house, of Newington Beauty, Richard Cobden, and Queen of the Isles, all good sorts.—Mr. Henderson, of St. John's Wood, exhibited 18 seedlings, the best of which were Flora McIvor, Amy Robsart, Carlotta Grisi, and Wellington.—Ten seedlings, the best of which was Vesta, also came from Mr. Parr, of Bath; and Mr. Salter sent 2, one of which, Amalie, is large and distinct, white, tipped with rosy purple.—Mr. Ivery showed One in-the-ring and Candidate, both white and rosy pink, the former the better of the two in shape.—Finally Mr. Busby, of Stockwood Park, produced Grand Master and Purpurea alba, two large and showy varieties, more especially the former.

Calceolarias.—Mr. Gaines showed well-flowered plants of Miranda, Duchess of Cleveland, Gem, Conspicua, Goldfinder, and Cid. There were also four seedlings exhibited, but all of them inferior to many already in cultivation.

Amaryllids.—Mr. Hamp showed a small collection, for which he received a silver gilt medal.

Fruit.—Some was shown, and was considered worthy of reward. Mr. Davis, gr. to Lord Boston, produced three Providence Pine-apples, well-swelled and handsome fruit. They weighed, respectively, 9 lbs. 9½ oz., 8 lbs. 5½ oz., and 8 lbs. 3 oz. Mr. Davis, of Oak Hill, also showed good Providences, whose weights were respectively 6 lbs. 15 oz., 6 lbs. 9½ oz., 6 lbs. 7½ oz., and 6 lbs. 3½ oz. He also showed an Enville, weighing 3 lbs. 4 oz. The same grower sent, moreover, some good Black Hamburgh and Sweetwater Grapes. The latter were, however, hardly ripe. Beautiful bunches, for the season, of Black Hamburgh Grapes were produced by Mr. Fleming, gr. to the Duke of Sutherland. One of these bunches, well coloured and well swelled, weighed 2 lbs. 5 oz. Mr. Turnbull sent Black Hamburgh Grapes and May Duke Cherries. We observed a dish of Pelvilain's Princess Royal Strawberry, a large and fine looking variety; but said to be far too acid.—Mr. Snow, gr. to Earl de Grey, exhibited dishes of the following Apples in good condition, viz., French Crab, Blenheim Orange, Scarlet Nonpareil, Boston Russet, Winter Queen, and an unnamed sort.

Entomological, *May* 7.—The President in the chair. Amongst the donations received since the last meeting was a corked and glazed cabinet of 75 drawers, presented by F. Bond, Esq., to whom a special vote of thanks was given for this handsome present. Mr. Douglas exhibited the cocoon and empty shell of Elachesta rufo-cinerea found on the outside of the stem of the common Dock; likewise the larvæ of Porrectaria lineola, which inhabit moveable cases found on Ballota nigra. Mr. S. Stevens exhibited the larvæ of Oncocera Cardui, a rare Tinea, which bores into the stems of Thistles; and Mr. Westwood stated that the larvæ of a small weevil, Apion æneum, feed in the same manner within the stems of the Hollyhock, to which they are occasionally very destructive. Mr. Stainton exhibited a series of the late Mr. Haworth's typical specimens of minute Lepidoptera, belonging to Mr. Allies, which were very valuable in determining the synonymes of these insects. Captain Parry exhibited a box of very beautiful Coleoptera, chiefly from the west coast of Africa, including various new species; and Mr. Hogg a large and curiously formed British wasp's nest, from the neighbourhood of Stockton-upon-Tees. A paper was read by Mr. Dallas, containing the description of a new genus of Cimicidæ, from Boutan, in the East Indies; and Mr. Douglas read the continuation of his memoir on the species of minute moths belonging to the genus Gelechia. Mr. Westwood called the attention of the Society to the descriptions and notices which he had published in his "Introduction," and in the "Journal of Proceedings" of the Society for July, 1847, of a minute but singular Hymenopterous insect, parasitic in the nests of mason-bees and wasps, to which he had applied the name of Melittobia Audouini, having at the same meeting exhibited specimens of the insect, and drawings of its structural details. The facts and characters given in these notices were sufficient to identify the insect, and distinguish it from every known species of the family to which it belongs. Notwithstanding this, Mr. Newport (who was present at the above-mentioned meeting) had recently read a memoir on the same insect before the Linnean Society, and had given it the name of Anthophorabia retusa, the description of which was, however, perfectly unintelligible, six out of nine of the characters laid down by Mr. Newport (see ante, p. 183) being erroneous, Mr. Westwood's characters of the insect being as follows:—"Melittobia, Westw., 1847. Anthophorabia, Newp., 1849. Female: 1, head not broader than the thorax; 2, antennæ eight-jointed, pilose, the 2d, 3d, 4th, and 5th joints nearly equal, the 6th, 7th, and 8th forming an oval terminal mass; 3, thorax and abdomen of equal length; 4, wings veined as in the typical Eulophi, without any median bifid nervure or vein; 5, tarsi four-jointed. Male: 6, antennæ nine-jointed, basal joint arched, greatly dilated, and excavated near the extremity beneath, 2d and 3d joints small, nearly equal, 4th, 5th, and 6th, very small and sub-annulose, 7th, 8th, and 9th forming an elongate oval mass; 7, eyes and stemmata wanting; 8, wings abbreviated; 9, length three-fourths of a line." At the same time Mr. Westwood entirely disclaimed having doubted the fact of Mr. Newport's discovery of this insect in 1832, or of having endeavoured to make it appear that Mr. Newport's knowledge of the insect was derived from the communication of Mr. Westwood. Mr. Westwood likewise complained that in the report of the proceedings of the Linnean Society of the 1st instant (see p. 279), Mr. Newport had stated that Mr. W. had mistaken the antennæ of the larva of the Ichneumonidæ for ocelli; the fact being that, although De Geer had described the dark points in question as eyes, Mr. Westwood, having in view the structure of the head of the larvæ of the saw-flies and aculeate hymenoptera, had expressly guarded himself from determining their nature, simply stating that they *resembled* ocelli.

Botanical, or London, *April* 13.—The President in the chair. Dr. Mitchell and J. Dickinson, Esq. were elected members. Mr. H. Taylor exhibited specimens of Anemone ranunculoides, which he found still growing at Abbotts Langley, Herts. Mr. G. Maw presented a specimen of Linaria supina Desf. discovered by him at St. Blazey's Bay, Cornwall. The continuation of "The Flora of Gloucestershire," was read.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

As all the principal potting is or ought now to be completed, the routine work in this department

will consist in watering, airing, and shading; training the plants, and keeping them and the houses perfectly clean. If the pots have been carefully drained, and the plants potted in open soil, water may be freely administered to those which are growing and rooting freely. Sufficient air should at all times find admission into the houses, to produce a free circulation, but during the most active season of growth little more than this should be admitted, unless for the purpose of keeping the temperatures down. As a general rule, shading should only be used in strong sunshine, and should be so arranged that it may be easily removed. A moist atmosphere is indispensable in conjunction with a high temperature for plants in a growing state. Where bottom-heat is produced by tan or other fermenting materials, be careful that it does not decline too soon, that is, before the plants have completed their growth. Climbers and other free growing plants will require constant attention in training and occasionally stopping the young growths, especially of plants intended to form specimens of high cultivation. Pelargoniums, Calceolarias, and other summer-flowering greenhouse plants, should have sufficient room to stand without crowding, with abundance of air and light. The flower stems of the Calceolarias should be supported with small neat stakes. In the Orchid-house the moisture should be moderate, unless accompanied with light and heat. In watering and syringing, care must be taken to prevent the moisture lodging in the young growths, as they are liable to damp off in their early stage. Keep all the houses perfectly clean, and the pots free from moss and weeds. Constant attention will be necessary to keep the plants clean and free from insects, of which all the troublesome kinds breed most rapidly at this season. Balsams, Cockscombs, Amaranthus, and other tender annuals required for summer and autumn decoration should be shifted on progressively, using rich loamy soil.

FLOWER GARDEN AND SHRUBBERY.

Planting out will now be the principal operation in this department; and, to guard against casualties, I would still recommend the use of evergreen prunings. The surface of the ground should be made as rough as possible between the plants, by which evaporation will in a great measure be prevented, and the beds can be finished off after the plants have fairly started into growth. But if the appearance of the rough surface would be decidedly objectionable, it may be made fine at once, and a thin layer of short Grass from the lawn spread over it, to prevent the escape of moisture; this will soon be concealed by the extending foliage. In either case the plants should be well watered, taking care to moisten the bed thoroughly. Unless we are favoured with a fair proportion of dry weather during the next three weeks, every precaution will be necessary to husband the moisture of the earth. The distance asunder in planting must of course be regulated by the entire quantity of plants prepared, but if you wish to produce an early as well as a splendid late display of floral beauty, do not be too parsimonious. Never within our recollection have we seen masses too thickly planted; but in many places have we observed beds planted very much too scantily to produce the desired effect. Another very common fault is to plant too near the edge of the bed, in consequence of which the outside plants have to undergo a constant mutilation, or else are left projecting in a very unsightly manner over the boundary of turf or box, very much to the injury of the latter. Shrubs, which have been recently planted, must not be allowed to suffer for want of water.

FORCING DEPARTMENT.

Pineries.—Continue to afford a slight shade during strong bright sunshine, to all Pine-plants, except those which are grown under Vines. Maintain a moist atmosphere, with a high temperature, and a free circulation of air during the day. Where they are still grown in pots, many of the plants in all stages will now require repotting; this should be attended to as they need it, that, by shifting a few at different times, the fruit may also ripen in succession. Vineries.—If the outside borders have been kept covered with warm litter, according to previous recommendations, they will not require water, unless in very dry situations. They should, however, be occasionally examined and watered with liquid manure or guano water, in the proportion of half an ounce to a gallon of water, if the state of the soil requires it. Give air early in the morning, commencing with a little, and increasing it gradually till mid-day. Peaches and Nectarines which are just ripening should be assisted by a dry atmosphere, a free admission of air back and front, and by removing any leaves which shade the fruit from the rays of the sun. In the succession house very little fire will be required at night, if the sun-heat is properly economised, by closing early in the afternoon. Tie in the young shoots as they advance. Cherries.—Give more air and keep a drier atmosphere where the fruit is ripening. Let the trees on which the fruit is swelling have plenty of water; syringe freely in fine weather, and keep the foliage and fruit free from insects. Strawberries should now be abundantly supplied with water, or they will change colour before they are perfectly swelled. Melons.—Keep up the heat in the beds by adding fresh linings as they require it. If plants on which the fruit is near ripening require water, give it in the morning, and avoid wetting the leaves, that the vapour arising from the soil may pass off during the day. Keep the shoots thin and regular, allowing not more than three or four fruit to swell on each plant.

FLORISTS' FLOWERS.

Whenever the weather will permit, Dahlias may be planted out, the soil, as a matter of course, having been prepared for them. If this important point has been neglected, leaf-mould, rotten, very rotten, dung should be well incorporated with the soil previous to planting; the plant may then be taken out of the pot without breaking the ball of soil, and carefully set, at which time it will be requisite to place the main stake, as it is apt to injure the roots if delayed to a later period. As new and fine sorts, which will be an acquisition to any collection, however select, we may mention the following: Collison's Dreadnought, deep maroon; Barham's Beauty of Hastings, white, beautifully tipped with rosy crimson; Grenadier (Turner's), fine deep crimson; Turner's Mr. Seldon, splendid rosy purple. On referring to our notes we find these amongst the very best we saw last season. Tulips.—How fearfully have these splendid flowers suffered in many localities from the late severe frosts and cutting winds. Those who have had coverings and have been unremitting in attention have been unable to escape. Various beds, however, that we have seen, and which were early covered with very small meshed nets or lace have escaped comparatively unhurt. Cover with the awning as soon as the flowers show colour; and if memorandums are to be made of injured flowers, it must speedily be done, as they are soon over. The amateur must recollect the importance of cross breeding these fine flowers; but more on that subject next week. Ranunculuses.—Attend to these plants by carefully stirring the surface soil, filling up all cracks in the bed, and destroying all insects in the vicinity. Auriculas should be moved to their summer quarters, if not already done. A stage, having a northern aspect, covered with a light moveable awning, is best. Pull out the decaying petals, and attend to the plants regularly with water. Pinks.—Occasional doses of weak liquid manure will be beneficial; and these, as well as Carnations and Picotees, should immediately have their sticks placed to them.

HARDY FRUIT GARDEN.

Peaches and Apricots on Walls.—Proceed with the final disbudding of these, leaving no more shoots than can be laid in without crowding. Where the young shoots are over luxuriant, they should be stopped as soon as they have made from 4 to 6 leaves, and from the laterals consequently produced, one or more may be selected; these will form good bearing shoots of moderate strength. The young fruit of Peaches, Nectarines, and Apricots will require thinning where they are too thick; the thinnings come in usefully for tarts. Attend vigilantly to the destruction of caterpillars and aphides, depending principally upon hand-picking and the use of the engine. After the destruction amongst the wall fruit in many parts of the country by the late stormy and cold weather, the unquestionable advantage of constructing walls and flues, and furnishing them with canvas screens, will be generally admitted, as they need not be used unless they are required; but in the stormy seasons to which our island is so liable, crops may be preserved, even in the most unfavourable localities, by these means, which would otherwise be lost. Where the walls are not constructed with flues, a few Spruce branches laid in among the blossoms (to prevent injury from the cold currents which sweep along the wall in windy weather), and over these the canvas, will generally, we may say always, render the crop safe. The canvas should be of the kind commonly used for this purpose, and can be readily made to pull up or let down by a proper arrangement of lines and pulleys. We are well aware that this is rather an expensive recommendation, but when it is compared with the advantage to be gained, we think it worthy of adoption. If it is worth while to build walls for choice fruit trees, it is worth while to be at a little additional expense to render the crop certain.

State of the Weather near London, for the week ending May 10, 1849, as observed at the Horticultural Gardens, Chiswick.

May.	Moon's Age	Barometer. Max.	Min	Thermometer. Max	Min.	Mean	Wind.	Rain.
Friday.. 4	11	29.840	29.82	77	47	62.0	E	.00
Satur... 5	12	29.819	29.751	74	48	59.5	N.E	.40
Sunday. 6	13	29.843	29.813	64	45	54.5	N.E.	.00
Monday 7	O	29.899	29.846	58	36	45.5	N.E.	.02
Tues. 8	15	30.016	29.991	58	39	47.0	N.E.	.00
Wed .. 9	16	29.992	29.970	54	40	47.0	N.E.	.06
Thurs....10	17	29.914	29.856	61	42	46.5	N.W.	.01
Average....		29.916	29.875	61.1	42.0	51.5		0.49

May 4—Fine; very fine; clear; sultry.
— 5—Clear and fine; very fine; thunder, lightning, rain, and hail in afternoon.
— 6—Overcast; cloudy, overcast.
— 7—Overcast and cold; fine; cloudy.
— 8—Heavy clouds and cold; fine; cloudy.
— 9—Fine, white clouds, with very clear intervals; showery.
— 10—Overcast; cloudy and showery; overcast
Mean temperature of the week 1 deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending May 19, 1849.

May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 13	64.4	39.8	52.1	9	0.22 in.	3	6	4	—	3	3	3	2
Mon. 14	63.7	41.4	52.6	8	0.66	3	4	5	1	3	4	2	1
Tues 15	63.0	41.7	52.3	6	0.41	3	5	2	1	3	3	3	—
Wed. 16	62.2	42.6	52.4	7	0.24	4	4	4	—	2	5	1	1
Thurs. 17	63.5	42.1	52.8	8	0.56	1	5	4	—	2	4	4	2
Friday 18	64.0	44.2	54.1	8	0.17	1	5	4	2	2	6	3	—
Satur. 19	61.8	44.3	54.8	9	0.50	2	5	5	1	2	6	2	—

The highest temperature during the above period occurred on the 17th 1838—therm. 86 deg.; and the lowest on the 15th, 1839—therm. 26 deg.

Notices to Correspondents.

Back Numbers: Full price will be given for Nos. 1, 2, 3, 8, 32, for 1846, and Nos. 16, 18, 26, 30, 31, 34, 35, 38, 39, 40, for 1847. 1s. will be given for No. 46, 1848, with the Newspaper.

Books: *A S W.* No book gives or can give information worth having concerning the soil which every separate plant requires. If there were such a book nobody would buy it or read it. Sweet's "Hothouse Cultivator" comes nearest to it. We know no more of the Sikkim Rhododendrons than we have stated.

Bees: *Apis.* If the combs in your bell-glasses are in good condition, put them on the hive as soon as possible. The combs will entice the bees to ascend, and fill the glasses much sooner than if the latter were empty. If the cells be very dark cut them out, except a few in the centre, near the bottom, for decoy combs. *W.*

Beehives: *G.* As regards the style of hives, much depends on taste; but the common bar-hive is on the best principle. We cannot recommend dealers; but if economy is an object, you may purchase in most provincial towns a good straw-hive, on the depriving plan, for about 4*s.* or 5*s.*, that will suit your purpose. Its dimensions should be about 1 foot in diameter, 10 inches deep, flat at top for the cap or small hive to rest upon, and there should be a hole left for the bees to ascend. *W.*

Camellias: *F H.* Old White, Imbricata, Chandleri, Florida, Punctata, and Reticulata.‡

Cape Bulbs: *A Subscriber.* Pot them in good loam; treat them like spring bulbs, keeping them in frames or a greenhouse until their leaves are formed, and then turn them into the open air where they are well sheltered. Crinums and the true bulbs may all be managed in the same manner, but they require more heat.

Dried Plants: *Llewellyn.* Glue them neatly to separate half sheets of foolscap paper; use good hot rather thin carpenter's glue. Before they are quite dry, wash them with a solution of corrosive sublimate. Each sort should have its own half sheet of paper. The directions lately given by a contemporary are not to be praised; quite the contrary.

Fuchsias: *G B.* We are unable at present to recommend you Fuchsias "let out this spring." Purity is one of the best whites, and Exoniensis and Formosa elegans are both good dark varieties.‡

Glass: *H E K.* Both suitable; take the cheapest.‡

Greenhouse Plants: *E H.* Cytisus racemosus, Oxylobium Pultenæa, Eriostemon Myoporoides, Coleonema rubrum, Epacris grandiflora, and Kennedya Marryattæ; the latter trained on a wire trellis will possibly suit your old-fashioned house.‡

Insects: *J C X.* The caterpillars sent are a colony of the moth Hithyia socialis, a species of comparative rarity, which are said to feed on the honey in the nests of the humble-bee. Can you possibly obtain any further particulars by searching the tree from which they were blown down? You will find a similar colony described by us in the "Magazine of Natural History," vol. ix., p. 528. *W.*

Labels: *G B.* It is difficult to say what are best for plants. The enamelled are the neatest, but they are dear and not always correctly written. Painted lead answers well and is cheap; or lead may be stamped with steel moveable letters and then painted white; the sunken places being missed by the brush, the letters appear black. This is perhaps the best, but it requires neatness and some dexterity.

Leaves: *Leyton.* The leaves sent look as if they had been burned through sheet glass. The mode of remedying the evil will be found in another column.‡

Mistletoe: *B A C.* It may be propagated from seeds or by grafting. The seeds should be put in in February or March, but if you can get ripe berries you might try them now. Slit the bark on the under side of the branch, say of an Apple or Hawthorn tree, making the cut quite down to the wood; raise the bark up a little, then insert the seeds freshly squeezed from the berry, press down the bark again, and the operation is finished. It may be grafted any time in May. Make an incision and insert a thin slice of Mistletoe, having a bud and one leaf at the end. You will, however, we imagine, be most successful with seeds. The Mistletoe will grow upon the Hawthorn, Apple, Black Italian Poplar, Lime, Sycamore, Acacia, Laurel, Willow, and with difficulty on Oak.‡

Names of Plants: *A H.* We are unacquainted with the Funkia. It was not brought home by Fortune. The paragraph to which you refer was received from Mr. Lemaire. It would be easy for you to procure it from Van Houtte.—*J L.* It is Sedum dasyphyllum.—*A Constant Sub.* We know nothing of either Bandekot or Carbury, nor can we find anyone who does. If you will give us their scientific names we shall have no difficulty in furnishing information; but Indian names, like all vernacular foreign names, are unintelligible.—*V U Z.* Not a Chara. The other is Hypnum not Sphagnum.—*A E.* A white variety of the wild Hyacinth.—*Rusticus.* 1, Carex vulgaris; 2, Carex recurva; 3, young Poa pratensis?—*J A.* Oncidium guttatum, the dark variety of luridum; Epidendrum ibaguense, very handsome.—*Cantium.* Myrtus bullata, Daphne alpina, Acacia pulchella, and something else not determinable by leaves alone.—*G W.* Dendrobium cretaceum, apparently.—*F C.* Amelanchier Botrysptum, white; and Amygdalus nana, pink.—*John Smith.* Apparently a morsel of Corydalis glauca, but the specimen unfit for determination.—*Marcelly.* 1, Genista tinctoria; 2, Melilotus officinalis; 3, Teucrium Scorodonia; 4, Jungermannia Blasia; 5, Centaurea nigra; 6, Genista anglica; 7, Scolopendrium vulgare; 8, not sent; 9, Ceterach officinarum.—*Z.* Fuchsia cordifolia.—*J Fort.* Erica lævis.

Oranges: *M H L.* They will succeed in fibry loam, leaf-mould, and sand, used in a rough state.‡

Paxton's Cottager's Calendar. The reprint is now ready, price 3*d.* each copy. Parties wishing to have copies for distribution among their tenantry, can be supplied at the rate of 25 copies for 5*s.*

Pear Trees: *E F L.* We do not recommend you "to mulch the ground round them with straw or slates."‡

Pelargoniums: *L H.* Sylph, Rosetta superb, Duke of Cornwall, Lady Flora, Nymph, and Orion will perhaps suit your circumstances.‡

Potash: *J W S.* The pearlash of the shops is obtained from plants by burning and purifying. It is caustic potash. If you want to use it, mix it with some fermenting material for a short time, a dung-heap for example, and use the drainage water; or you may mix it with peat and water; if you employ it in its raw state you must use very little at a time, dissolved in plenty of water. No rule *can* be given. Some plants require much more than others.

Tree Rose. The price of this work is reduced to 3*s.* 6*d.* (post free), to be had at the Office of this Paper, or of any bookseller.

Misc: *R M.* Plant your Rhododendron robustum in a partially shaded place, say behind a north wall. The Thuja will do in any open rather dry situation.‡

SEEDLING FLOWERS.

Calceolarias: *L M O.* Flowers thickly marbled, or irregularly striped with chocolate brown upon a yellow ground, a very pretty variety, but rather small. The flowers are also slightly indented in the outline.*

Heartsease: *Y Y.* No 99, flowers very large, outline good, with upper petals bronzy purple, lower ones bright yellow, with a broad bronze margin, and a patch of dark maroon near the eye, and slightly feathered; a very good variety if constant. No. 1, pale yellow, with a slight violet edging and dark eye; rather too crumply and irregular in outline. No. 2, pale yellow, with dark eye and upper petals slightly stained with violet; a flat flower, good in texture and outline, but rather small, judging from the flowers sent. No. 3, purple, with yellow centre, received in bad condition, but apparently defective in outline.*—*Edmonds.* No. 4, inferior in outline, but tolerably good in texture and colours. No. 5, good in outline, size, and colours, but rather coarse and uneven at the edges. No. 7, good in shape and texture, and nicely marked, but flower sent rather small. No. 8, good in shape and texture, but slightly indented on the bottom petal. No. 9, good in form and texture, but too small. No. 10, good in outline, texture, and colours, and nicely marked; the best. Nos. 7, 8, and 10 are the best amongst your seedlings; No. 11 is imperfect.*

THE FOLLOWING MANURES are manufactured at Mr. Lawes' Factory, Deptford Creek:

CORN AND GRASS MANURE, ... per ton	£9	10	0
CLOVER MANURE ... ... ,,	8	0	0
TURNIP MANURE ... ... ,,	7	0	0
SUPERPHOSPHATE OF LIME ... ,,	7	0	0
SULPHURIC ACID AND COPROLITES ,,	5	0	0

N.B.—PERUVIAN GUANO, from selected cargoes (in Dock).
SULPHATE OF AMMONIA, &c.
Office, 69, King William-street, City, London.

GUANO AND OTHER MANURES.
PERUVIAN GUANO, of the finest quality, direct from import warehouse.
NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SULPHURIC ACID AND COPROLITE.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of
MARK FOTHERGILL, 201 A, Upper Thames-street, London.
A Treatise on Guano, Superphosphate of Lime, &c., will be forwarded on receipt of 8 postage stamps. Free to purchasers of Guano, &c.

THE LONDON MANURE COMPANY would, at the present time, call particular attention to their CORN MANURE, which they strongly recommend as a top-dressing for all corn crops. It contains a large amount of ammonia and phosphates, and will be found an excellent substitute for guano. Price 7l. 7s. per ton (3 cwt. per acre). For Turnips, Mangold Wurzel, and Carrots, they would urge the use of the Urate, or Superphosphate of Lime; both containing an increased quantity of phosphates and other mineral substances, so essential for all root crops.
The following MANURES they supply on the best terms:—Peruvan Guano, Nitrate of Soda, Sulphate of Ammonia, Soda Ash, for destroying Wireworm, Gypsum, Sulphuric Acid, Agricultural and Fishery Salt, Charcoal, &c
EDWARD PURSER, Secretary.
40, Bridge-street, Blackfriars, London.

PERUVIAN AND BOLIVIAN GUANO ON SALE
BY THE ONLY IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WILLIAM JOSEPH MYERS AND CO., LIVERPOOL;
And by their Agents,
GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
COTESWORTH, POWELL, AND PRYOR, LONDON.
To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c, upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.
Royal Botanic Gardens, Kew.
Horticultural Gardens Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Duke of Devonshire's, Chatsworth Gardens.
Earl of Gainsborough's, Oakham, Rutlandshire.
Earl of Zetland's, Upleatham, Yorkshire.
Robert Hanbury, Esq., Poles, near Ware, Herts.
Mr. Glendinning's Nursery, Turnham-green.
And at least 500 other important places.
BURBIDGE and HEALY, 130, Fleet-street, London.

SLATE WORKS, ISLEWORTH.—The following articles manufactured in Slate for Horticultural Purposes, by EDWARD BECK, may be seen in use at WORTON COTTAGE, upon application to the Gardener, Sundays excepted. Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot-water Tank Covers, Flower-beds for Balconies, Shelves fitted to hold Water for Orchidaceous Houses, &c.—Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.
S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.
Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

PORTLAND CEMENT.—Testimonials received from all quarters, prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.
Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

TURNIPS.
POTTER'S GUANO.—Very large crops of TURNIPS and MANGOLD WURZEL have been obtained by the use of this celebrated Manure. Price, 7l. per ton. Also,
GYPSUM, first quality, 15s. per ton, an excellent Manure for Turnips and other root-crops, either used alone or mixed with Guano or Bone-dust.
SUPERPHOSPHATE OF LIME.—Farmers may effect a great saving in making their own, and will have the satisfaction of knowing that they use a pure article.
Mr. POTTER supplies Bone-phosphate (containing about 65 per cent. of pure Phosphate of Lime) for this purpose, and gives plain and practical directions for making the Superphosphate. Price, 6l. per ton. Also, FOSSIL PHOSPHATE, for the same purpose (containing about 60 per cent. of pure), in fine powder, at 4l. 10s. per ton.—W. H. POTTER, 28, Clapham-road-place, London.

BEE HIVES.
GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—GEORGE NEIGHBOUR and SON, 127, High Holborn, London.
"Nutt on Bees" (6th edition), now published.

SHETLAND PONIES AND CATTLE.—Just landed, direct from Shetland, a quantity of very handsome small PONIES; size, from 8¾ to 12 hands high. Also some very handsome small COWS and HEIFERS, down Calving, some with Calf by side, and in milk; also some small OXEN and SHEEP, for feeding. These Cows give a large quantity of milk for their size, which is very rich, similar to the Alderney, and they are very hardy and suitable to this climate. To be seen at THOMAS ORTON'S, Salesman and Importer to her Majesty, 69, Wapping.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.
The MAY GENERAL MEETING of the Members will be held at 12, Hanover-square, on Tuesday, the 22d of May, at 12 o'clock. By Order of the Council,
London, May 1st, 1849. JAMES HUDSON, Secretary.

The Agricultural Gazette.

SATURDAY, MAY 12, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
TUESDAY, May 15—Agricultural Society of England.
THURSDAY, — 17—Agricultural Imp. Society of Ireland.
TUESDAY, — 22—Agricultural Society of England.
THURSDAY, — 24—Agricultural Imp. Society of Ireland.
FARMERS' CLUBS.—May 14 Claydon.—May 21, W. Hereford.

It is a fortunate circumstance for the makers, as well as the subjects, of human laws, that the most unwise Acts are the least permanently efficacious. The history of the Agricultural Legislation of this country affords a string of evidence illustrative of this truth, which if, instead of being distributed over many centuries, it could have come before the experience of one generation, would have been sufficient to cure the most determined 'price-regulator' that ever endeavoured to control the changes of seasons, the alternations of cycles, and the course of Trade.

The briefest and most comprehensive view which can be taken of the history of the Corn-trade during the last five centuries is that which divides it into three great periods: the first embracing about three centuries, which may be called the *Exporting* period, the second occupying about one century, which may be most significantly described as the 'Bounty' period, (expressing as that word does the elixir by which it was sought to keep alive the dying system) and the third extending from the latter part of the eighteenth century to the present time, which may be properly designated as the *Importing* period. Wars, political events, and occasional years of extraordinary deficiency or fruitfulness have had their transient effect at particular epochs throughout each of these periods; but viewed in relation to the whole, these effects have been no greater than those produced by the larger and smaller waves that momentarily hasten or retard the ebb and flow of the ocean. Gradually but steadily, from being a great exporter, this country has become a great importer. Again and again has the old story of the Danish King been re-enacted; the puny chair of the legislator has been planted at the water's edge, and the vain mandate given to the tide, 'So far shalt thou come and no further!' and again and again have the legislator and his chair been driven back and compelled to take up a new position to find the same order similarly regarded.

"There are but two ways," says the acute Historian of the middle ages, "in which Agriculture can keep pace with the wants of a growing population, one by bringing fresh land into cultivation, the other by increasing, with the aid of Science, the produce of that which is already inclosed." The first of these resources of a thronging people has pretty nearly gone to the full length of its tether in England. Occasional scarcities have at various times exercised a stimulating effect upon Inclosure, and when a succeeding cycle of good harvests has recurred, temporary depression of price has been the natural result of a larger produce from a larger breadth; but the momentary over-supply was soon pressed upon afresh, and another series of Inclosure-bills again reduced to narrower limits the reserve which lay behind the growing wants of each succeeding generation. In the reign of GEORGE I., only sixteen Inclosure Acts were passed; in the succeeding reign there were 226; while the number of such acts during the *first twelve years* of GEORGE III. amounted to 585: at a later period still (from 1804 to 1814) the number of Inclosure Bills during *the space of ten years* amounted to 1084. During the whole reign the number passed was upwards of 3000.

But even and regular as is the course of those great progressive changes by which an exporting country becomes an Importer in spite of new inclosure of common or waste lands, and a growing increase of acreable produce,—it is a remarkable fact, and one which has of late attracted more attention than formerly, from the Statist and the Legislator, that the same irregularities and oscillations which give 'variety' to all the great changes in the natural world—which we see in the unequal waves that bring in the tide,—in the minor changes of temperature which diversify the progress of the seasons, by periods of heat and cold that seem to contradict the coming change,—in the wavelets of a river that ripple up the surface against the stream while the great undercurrent is rolling on below undisturbed,—the same minor variations under the well known name of 'Cycles,' to which every trade is more or less subject, have from time to time been peculiarly visible in the history of the Corn-trade. It is against these that Legislation has continually directed its efforts, and ever in vain. The seasons in their courses fought against the petty statesmanship which thinking to be wiser than Nature strove to intercept the operation of *causes* by statutes aimed against *effects*. The *new law* came always too late. *The object had moved before the missile could reach it.* There was nothing actually blameable in the attempt: its folly was not wilful or wanton: the indignation which made Lord KENYON, at the Salop Assizes, threaten '*the full vengeance of the law* against those wicked forestallers who bought up the people's corn at one end of the year only to sell it again at the other,' was an honest indignation, erring only through ignorance,—the same ignorance which led a good judge, and a good man, Sir MATTHEW HALE, to condemn to death hundreds of poor innocent wretches charged with *witchcraft:* he was but the instrument that carried into execution a popular belief of the day, which he himself shared. Lord KENYON did the same in carrying out the sentence of the law against the 'Forestallers and Regraters' of corn whom the common voice of the public then denounced as the enemies of mankind, instead of recognising in their agency that commercial speculation which however self-interested in its personal and immediate object, operates in fact as the natural safety-valve which relieves a glut and prevents *Scarcity* from becoming *Famine*. We smile perhaps now at the judicial severities, against poor old wretches whose charms and incantations had 'dried up the cows' udders and blighted the growing crops,' and may laugh outright at the denunciations which branded the early growth of our inland corn-trade with the curious nicknames of 'Forestalling' 'Regrating' and 'Corn-badgering:' but we shall scarcely have earned the right to smile until we have, as a class, shaken off the absurd Legislation-worship which imagines that an 'Act of Parliament' is invested with some divine power to control the effect of Seasons and Cycles, or that any human power, except the natural operation of Commerce, can even attempt it without mischievous results.

We resume the epitome of these Acts, commenced in a former number, taking it up at the period when Importation and Exportation began to jostle each other in the struggle for the ascendancy.

1 Wm. and Mary, c. 12. (1693.) 'An Act for Encouraging the Exportation of Corn.' A Bounty of 5*s.* a quarter granted on all Wheat exported, and other Corn in proportion, so long as the price was under 48*s.* a quarter.

[This is the celebrated Bounty Act. The markets, had been lowered by a series of good harvests, and the object of the Act was to encourage prices by promoting the export of Corn. A cycle of bad harvests however succeeded, and *for seven years it did not come into operation at all.*]

11 & 12 Wm. III., c. 1. (1699.) Bounty Act Suspended.

11 & 12 Wm. III., c. 20. (1700.) All duties and Poundage on Exportation abolished.

[The improved harvests, at the commencement of the century, now began to bring the Bounty Act into operation. An immense extension of tillage gradually took place, and in spite of the exportation of 31 millions of quarters of corn (on which upwards of six millions sterling was paid in 'Bounties' from the public revenue), prices *kept continually falling.* Wheat fell from 56*s.* 6*d.* in 1700 to 29*s.* 2½*d.* in 1751. The average of the half century ending in 1765 was only 35*s.* a quarter.] The two following acts exhibit the uneasiness and surprise exhibited at the falling markets, and a supposition of incorrectness in the average returns of prices.]

2 Geo. II. (1729.) Alteration in the mode of taking the averages. The returns to be settled in future by the Collectors of Customs.

5 Geo. II. (1732.) An act for preventing the supposed fraudulent introduction of foreign corn. Justices at Quarter Sessions to make enquiry and presentment upon oath of the common market prices. The averages to be taken four times a year.

6 Geo. III. (1766.) Proclamation. All Exportation suspended. The laws against Forestallers and Regraters to be strictly enforced.

[The cycle of productive harvests had turned. From 1730 to 1755 there had been only one deficient season. For the next 20 years they were very frequent.]

7 Geo. III (1767.) Exportation again suspended.

10 Geo. III. (1770.) Exportation forbidden. Average returns of prices to be made weekly.

11 Geo. III. (1771.) Exportation prohibited.

12 Geo. III. c. 71. (1772.) *Importation* allowed, Duty free. Repeal of several statutes and ancient restrictions interfering with the internal Corn trade of the kingdom, on the ground that "by preventing a free trade in the said commodities (Corn, Flour, Cattle, &c.), they discourage the growth and enhance the price of the same, and bring great distress on the inhabitants of many parts of the kingdom."

[The five years ending in 1775 were all deficient harvests. The Wheat averages had risen from 29*s*. 2½*d*. in 1751, to 51*s*. for the 10 years ending in 1774. The old Bounty Act of 1689 had become a dead letter. Exportation and the Bounty had been repeatedly suspended. "From 1766 to the present year," says ARTHUR YOUNG, "we have had a perpetual shifting policy in which nothing has been permanent."]

13 Geo. III., c. 43. (1773.) The preamble of this Act states that it had been frequently necessary to suspend the operation of previous Statutes, and that a *Permanent Law* on the Corn-trade "would afford encouragement to the Farmer, and afford a cheaper and more constant supply to the poor." Whenever the price of Wheat was at or above 44*s*. per quarter, Exportation, and the Bounty, were to cease, as well as *the carrying of British grain coastwise*. At or above 48*s*. per quarter the Duty on foreign Wheat to be sixpence a quarter. Foreign Corn warehoused under Bond (in twenty-five British Ports specified in the Act) might be re-exported Duty-free.

[Under this Act the home market was opened to foreign supplies on more favourable terms than before. Importation was regular and considerable: but the prices were steadier for the following twenty years than they had been for a long period. A gradual extension of tillage took place, amounting to about two million and a half acres. The average price for the whole period was 45*s*. 6*d*. a quarter. ADAM SMITH's opinion of this Act was that "it not the best which could be framed, it was the best the times would admit of. Perhaps," he adds, "it may in due time prepare the way for a better."]

With this Act ends the Middle Period. How far ADAM SMITH's expectation was fulfilled, the next will show. New and unforeseen events burst in upon the improved legislation which had begun to obtain towards the latter part of this period, and broke up afresh into its elements the fabric which experience had gradually moulded into shape. From the year 1791, the whole lesson had to begin anew, under the disastrous teaching of War, the great disorganiser of Commerce, the deceiver of existing and the punisher of succeeding generations. *H.*

CUMBERLAND ONE-HORSE CARTS

I HAVE heard it stated, but know not on what authority, that Cumberland is the original country of one-horse carts. Certain it is, that while waggons in England and two-horse carts in Scotland are either still common or only lately departed, the one-horse cart has existed in Cumberland "time whereof the memory of man knoweth not the contrary." A two-horse cart is a thing never seen among the hills, and the waggons of Warwickshire and Oxfordshire are totally unknown. The epithet "Scotch," as a generic appellation of the best single-horse carts, is not correct; the Scotch cart being in all probability derived from that of Cumberland, as it is really inferior in some essential qualities to the latter. If the single-horse cart is to bear any distinctive name, it should be called the Cumberland cart, both because it, in all probability, was first generally used there, and because the best forms of it are to be found in that county. Old persons recollect since all goods were brought to the markets, of the mountain market towns, on pack horses—from the hill farms and cottages that is; and since the first carts, merely a few flat boards on wheels without side pieces, brought the "poaks" over Whinlatta, Cartlings, and the Ruise; so that, said an aged informant, if the sacks fell off, as often happened, they could easily be put on again. Much, one would think, on the principle of the Irishman who considered the holes in his brogues useful for letting out the water. An old map of Whitehaven shows a string of pack-horses carrying the coals from the pits to the ships.

The reasons why one-horse carts should be first and generally adopted, and therefore first be brought to perfection in a hilly country, are very evident. With four wheels in the mountain roads of Cumberland it would be continually necessary to lock the hind wheel. Down hill the shaft horse does all the work, and with a moderate—or one horse—load, there is less for a horse to do, and less danger in doing it, than in the case of the shaft horse of a double cart, with a heavier load, and a leader encumbering him with help. The single horse can recover himself better in case of a stumble, than the shaft horse in a two-horse cart, and in passing through and round the multitudinous sinuosities of the ancient lanes of Cumberland, in making their extraordinary entrances and exits into fields, fold-yards, and farms, and in passing over the great numbers of narrow bridges necessary in a country intersected by so many streams, the light "handy" one-horse cart is invaluable. The great numbers of "statesmen," each in the most patriarchal manner tilling his own little freehold or copyhold estate, and the almost universally small size of the farms, making sometimes even a single horse as I have heard it said "half a horse too much," are other reasons for the adoption of single-horse carts among the hills. From whatever cause, however, one-horse carts are, and have ever been, since the days of pack-horses, universally used in the Cumberland mountains; and as might be expected from the circumstances above mentioned, they have been brought to greater perfection there than anywhere else. This will appear a bold assertion to the admirers of Scotch carts, and to the prize givers and winners of premiums for single-horse carts at our great agricultural shows. A Cumberland single-horse cart has never been presented for competition, and yet if one of John Hogg of Keswick's or John Postlethwaite of Portcuscale's best make could be produced at Norwich in June next, I am greatly mistaken if it would not be acknowledged by the judges to be *facile princeps*.

The following remarks will perhaps bear out this opinion, with those who have not yet seen or heard of the Cumberland one-horse carts. In Feb. 28 (1847 or 1848), you recommend in Notices to Correspondents "a very good strong tilt cart 8½ or 9 cwts., such as shall carry a ton of roots and, with suitable frame, a ton of straw well loaded." Mr. Allon, of Benton near Newcastle, in a very capital paper on one-horse carts, read at the Newcastle Farmer's Club, recommends the carts he himself uses, 8 cwt. each on the average. I observed in a report of the York meeting of the Royal Agricultural Society that many of the members had expressed great surprise and gratification at the lightness of the prize carts—8 cwt. and upwards. So that the best are from 8 cwt. to 8½ or 9 cwt. Now, out of hundreds weighed at the small market towns of the Cumberland mountains, I am assured that a very small number reach 7 cwt. I enclose you a list of 30 carts weighed as they entered the town, chiefly with coals, the whole, 174 cwt., averaging 5⅞ cwts. each; farmer's carts average 6 cwt., and seldom are more than 6¼ cwt. Very strong, clever, efficient, roomy carts, from 6 to 6¼ cwt., will carry a ton, or on an emergency even 22 or 23 cwt. of coals or lime; and the light horses of the country not unfrequently draw a ton of lime 15 or 16 miles from the kiln. Doubtless this is not a common, but by no means an unusual load for one of these light carts and light horses. Fifteen cwt. of coals is the common load of carts weighing 5¼ cwt.; and of two carts just passing, one is 6, one 6½ cwt.; the horses are by no means heavy, and they have just returned with a ton of lime each from a kiln 15 miles distant.

So much for their capacity; and with respect to durability, these two carts have been 12 and 15 years respectively on the farm, in daily use, and are in excellent preservation. A careful farming friend tells me "if kept dry they will last no end to time," that his best one, 10 years old, looks quite good, and will no doubt serve him 10 years more. The shafts are usually of Ash, beams of Oak, and the boards of Birch or Alder; some have Larch boards, but they are said to be apt to take fire from the lime; the fibres of this wood being more apt to rise and present surfaces easily inflamed. I believe the choice specimens of the Cumberland one-horse carts are only to be found among the hills; even at Caldbeck, on the outside shoulder of Skiddaw, the carts are not considered equal to the genuine manufacture of the heart of the mountains; and so near as Penrith, the bulk, weight, and peculiar form of the Scotch cart is visible. A few workmen only, even in the district itself, are considered quite first-rate; but there are a few whose handiwork, little as this is imagined by the men themselves or the worthy agriculturists of the hills, would, unless I am greatly mistaken, carry off the palm from all England and Scotland.

I believe it would be a real boon to the agricultural interest if the merits of the Cumberland one-horse carts were generally known. A first-rate specimen exhibited at Norwich in June, would be the readiest way to effect this. The Scotch carts, and the prize carts of the great shows, average from 8 to 9 cwt. each; those of Cumberland, 6 to 6½ cwt. The heavy masses of wood and iron, called waggons, considered necessary in the days of bad roads, are in many parts of England still retained. The average weight of waggons on a farm will be very considerably more than if the same farm were furnished with the Scotch one horse carts. Let us suppose then the whole of the farms in Great Britain supplied with that form of one-horse cart called Scotch, considered the best. As the estimated arable land in Great Britain is 19 millions of acres, and the pasture 27½ millions;* by allowing three carts to every 100 acres of arable, and two to every 100 of pasture, we shall have 570,000 carts required for the arable, and 550,000 carts for the pasture land of the whole country. Taking each improved cart at the lowest average weight of 8 cwt., we have 8,960,000 cwts. of carts dragged about the roads of Great Britain. Were the equally efficient Cumberland cart of 6 cwt universally adopted, 2,240,000 cwts. might be dispensed with; in other words about 200,000 horses in Great Britain are working in vain, for 112,000 tons weight of carts are at this moment dragged about our highways and byeways for no useful purpose whatever. *L. V. R.*

HIGH FARMING.

THE old adage that "prevention is better than cure," unfortunately is not applicable to the condition in which the British farmer finds himself placed at the present juncture. The disease under which he has, during the past year, been languishing, in consequence of the unusually protracted wet weather of last autumn, and by which his crops of corn sustained such immense injury, rendering a great proportion unfit for the market, has been accelerated by the introduction, this spring, of foreign corn, duty free, to compete with, and of course to reduce the price of, his soundest and best samples below that at which, under the present general system of husbandry, the farmer can possibly raise them, even if he have a favourable season for his harvest. I believe, however, that a cure may be effected, but it must be by the co-operation of their landlords in the first instance, by affording them the means of having their land thoroughly drained; and this, in my opinion, ought to be done exclusively by the landlords, and a per-centage charged upon the outlay to the tenants. The temperature of the soil being thus very considerably raised, one material step will be gained towards effecting a cure for the disease under which the farmer is suffering; and this, it should be observed, is the first step to be taken towards a progressive recovery. It is of no use applying tonics to the patient until he is in a state to bear them; neither is it of any use applying heavy dressings of manure to starved and water-logged land; but when, by judicious and thorough drainage, the land is brought into a proper state for its reception, then should the tonic, in the shape of good manure, be applied, and that with a liberal hand; and there cannot be a question but that under such treatment the farmer will enter upon a new lease of his existence.

But a great obstacle to high farming exists in deficiency of capital. I can confidently assert from my experience, as a land-agent, amongst farmers, that nine out of ten of them are not possessed of more than half the capital required for properly stocking and cultivating their farms. It is the small farmer's ambition (and almost the only spark of ambition which he has in his constitution) to occupy as much land as he can possibly manage to enter upon; and the consequence of this fatuity is, that immediately there is any depression in the market, or an unfavourable season occurs, the cry is raised against high rents, &c., and the landlord is called upon to make an allowance; or in other words to subscribe perhaps 10*l*., to enable his tenant to pay 100*l*. of rent.

Does not this circumstance alone prove to us that the farmers' capital is insufficient, and that were the generality of farmers to content themselves with farms of one-half the size of what they now occupy, and to cultivate their land highly, keeping as great a number of stock upon 100 acres as they have been hitherto able to maintain upon 200 acres, and thus doubling the quantity, and, by judicious feeding and management, the quality of their dungheaps, saving at the same time the liquid manure, which in 99 cases out of 100 is now allowed to run to waste, they might still be in a position to make a living, and perhaps a more comfortable one than they have ever been able to make under the old system, backed by a protective duty. But then to effect this, the assistance of the landlord (as in the case of draining) must be again called in, for there are few farmsteads which afford sufficient accommodation for tying up the number of beasts which ought to be kept so as to convert into beef and manure on the most approved and economical principles the straw and root crops grown upon the farm. And this brings me to the subject of stall-feeding of cattle on prepared food. I have taken much pains to examine into and compare the different statements which have been made of the results of stall feeding by agriculturists in Yorkshire, and I find, although slightly differing in minor detail, yet on the whole there is very little real difference either in the quantities of food allowed to each beast, or in the result as to increase of weight, &c. I will therefore make free with the name of only one of the parties to whose statements I allude—H. S. Thompson, Esq., of Moat Hall, near York, who gives the result (see Yorkshire Agricultural Society's Transactions, for 1846) of feeding two bullocks for 65 days, and again other two bullocks for 31 days, on prepared food. I will not here give the increase in weight of each individual beast, but will merely state that the average increase of weight of the four bullocks for 31 days was about 6 stones each, and that they were fed as follows:

Weekly Cost per head at the time when the bullocks were fed:

10½ lbs. Linseed, at 1½*d*. per lb. ...	1*s*. 8¼*d*.
35 lbs. Bean-meal, at 1*s*. per stone ...	2 6
100 lbs. Coal daily, for boiling Linseed at 14*s*. per ton, or 4*s*. 5½*d*. per week for 20 bullocks, or for each bullock weekly ...	0 2¾
Extra wages, 4*s*. per week for 20 bullocks, or 2*d*. four-tenths per head, say ...	0 2½
	4*s*. 8*d*.

Weekly Cost per head (would have been) at present prices, *i. e.* Beans about 4*s*. per bushel, and Linseed at 5*s*. 3*d*. per bshl. of 53 lbs., and coals at about two-thirds of the price stated by Mr. Thompson.

Linseed ...	1*s*. 3*d*.
Bean-meal ...	2 2½
Coals ...	0 2
Wages ...	0 2½
	3 8
Now 6 stones of Beef for 31 days is 1 st. 5 lbs. per week gained, at 6*s*. ...	7 6
From which deduct the cost at the reduced price, per week ...	3 8
And there remains to pay for about 5 stones of straw and 44 lbs. of Turnips weekly ...	3 10
Then 5 stones of straw, at 2½*d*. ...	1 0½
And 44 stones of Turnips, at ¾*d*. ...	2 9
	3*s*. 9½*d*.

* Porter's "Progress of the Nation." Fractional parts and all the "Improvable" and "Useless" land is omitted in the above calculation.

Thus it will be found on calculation that a crop of Turnips of 17 tons will return the farmer 8*l.* 10*s.* per acre, and of 20 tons the return will be 10*l.* per acre and so on, at the same time that the straw consumed by the cattle will leave 2¼*d.* per stone; and taking the Turnip crop at 20 tons per acre, we find that one acre is sufficient to stall feed three beasts for 24 weeks, whilst under the old system of feeding, *i. e.*, on Turnips and meadow or Clover hay, I should say that on an average, of Swedes and white Turnips, about 14 stones per day will be consumed by each beast, and thus, at 20 tons per acre, 1 acre will winter feed for 24 weeks 1⅓ bullocks, besides the consumption of 140 or 150 stones of hay. Now, supposing that the hay be estimated to be worth (upon the farm) 4*d.* per stone—

145 stones of hay must be put down at	£2 8 4
14 stones of Turnips daily = 2352 stones, at ¾*d.* per stone	7 7 0
Making the cost of feeding one bullock for 24 weeks..	£9 15 4
I have shown that the cost of feeding a bullock on prepared food is 7*s.* 6*d.* per week, *i. e.*, to leave ¾*d.* per stone for Turnips, and 2¼*d.* per stone for straw, and therefore the cost for 24 weeks will be	9 0 0
Showing a saving in the feeding of each bullock of ..	£0 15 4

And, as in the one case an acre of Turnips will be sufficient for 3 bullocks, whilst in the other it will only suffice for 1⅓ bullock, it follows that for every ton of manure made from an acre of Turnips under the old system, 2¼ tons may be made under the modern improved plan of feeding upon prepared food; and, with his manure heap increased from 200 loads to 450 loads, without any additional expense, but rather with a saving in the cost per head of feeding his stock, may we not confidently hope that the farmer will be able to produce such an increased quantity of corn per acre as will more than make up to him the reduction in prices to which he is obliged to submit. *William Tuke, Land-agent, &c., Bradford, Yorkshire.*

Home Correspondence.

Prospects of Farming.—As Mr. Hewitt Davis's letter in your valuable *Gazette* of the 28th of last month is apt to mislead the undiscerning, may I request the favour of you to insert the following observations thereon. Mr. H. Davis, in assuming the rent of land to have been, in 1771, about two-thirds of what it is now, entirely overlooks, in his eagerness to prove his case, that a great quantity of very inferior land has been brought into cultivation since that time, which necessarily tends to diminish the average rent of land now. Every one knows that the last land brought into cultivation is, with few exceptions, the inferior. To make a correct comparison of the amount of rents at the two periods, he should be able to show what proportion the rent of land in cultivation in 1771 bore to the rent of the same land in cultivation now. We were told the other day by a Surrey farmer that there were 40,000 acres in Surrey alone paying only 7*s.* 6*d.* an acre, which I apprehend have chiefly been brought into cultivation since 1771. Unless Mr. H. Davis can handle agricultural statistics better than he has done in the letter alluded to, I should advise him to keep to farming, and not meddle with them. His conclusions are not supported by any authority. *F. C., South-street.*

Saintfoin Growing.—The following are the answers to Mr. Young's inquiry regarding the management of Saintfoin on this farm. 1. How early in the season do you put on your sheep? That depends on the season; we have 20 acres now ready to feed, sown last spring with nursery Wheat. 2. How long do you keep them on it? Until the sheep have eaten it, hurdling off a fresh portion for them every day. 3. Do the sheep eat the whole of the plant, or how do you dispose of their refuse? They eat the whole; a southdown wether when kept constantly folded, seldom leaves any refuse. 4. How many years successively have you fed your Saintfoin with sheep? We seldom allow our Saintfoin leys to remain down beyond four or five years: it is a mistaken idea that the Saintfoin plant is injured by feeding, after it has established itself in the land; though the year it is sown, no stock should be allowed on it. We have one field which was sown down with spring Wheat in the year 1847, half of which was fed last year, the remainder mown. The plant on the part fed was stronger at the fall of the year, and is better at the present time, than that which was mown. We are necessarily obliged to mow a certain part of our artificial Grasses for hay; otherwise we should always feed them, as we prove from experience it is the best system. *H. F., Somerset Farm.*

Practice with Science.—The Royal Agricultural Society could not have chosen a more appropriate motto for a work intended to promote agricultural knowledge than the one just mentioned. The principles of agriculture had long lain obscured by the mists of prejudice, or only partially illumined by the light of natural reason, when the original experiments of Tull, the later discoveries of Davy, Liebig, and Johnston, and the enlightened performances of many eminent men, opened the way to a better practice. The science of the present day has shown itself in draining, in tillage, and in the application of manures. First, in regard to draining; water is supposed of itself not to be injurious to land, but only to become so from its redundancy or stagnation. It is Mr. Parkes' opinion ("New Husbandry," p. 68) that one of the greatest sources of fertility which Nature has provided, and the management of which she has partly put in our power, is rain; and one great object we have to accomplish is to make use of all the rain, and to make it go through the ground, that it may operate in its various ways, both physically and chemically. This explains the theory of draining. The object aimed at should be, not to give a quiet passage off the surface to the water, by the large high butts which were common in former days, but rather to lay the land flat, or nearly so, and, by the aid of deep stirring of the soil, resist the admission of the water into the drains, gradually but effectually. In one of your late numbers, Mr. Mechi advocates the laying of land into butts of a moderate size and height. As everything coming from so high an authority must have its weight, it may be material to consider on what grounds he forms this opinion, or rather change of opinion. That a great deal of the water that falls on land, whether grass or arable, will run on the surface to a lower level, if there is one, no one will perhaps dispute. If land is undrained, the lower part of a field is invariably the wettest; if laid in butts, and it be in Grass, the Rushes will grow in the furrow, not at the top of the ridge; if ploughed, the sides near the furrow will be bare of the Wheat or other plant. To obviate this, furrow-draining came into use; and, not only in theory but in practice, it appears to have had the desired effect, as any one who has seen the rich and verdant fields in the midland counties will testify. The principle upon which this sort of draining acts is plain and intelligible. The water falling on the higher part descends along the declivity, and is then caught by the drain below; but it may be a question whether the effect will be the same if there be no drain there to catch it. A case in point occurred to myself last year. A field of about 10 acres, consisting of a light porous sand, lay in large high butts, there not having been time to throw them down. It had been drained a short time previously with drains 3 feet deep, but these drains were not in the hollow or lower parts of the butts. The latter part of the season was wet, which caused the water to lie in the hollow places. Part of the field was in Potatoes, part in Mangold; the former were sound at the top of the butt, but quite rotten at the lower part The Mangold also was starved and diminutive where it had lain wet. This seems to prove two things; that the disease in Potatoes has been caused by wet, and that in land lying in butts, it is necessary to preserve the proper position of these, so that the drains may be situated at the lower part of them; and unless this be done, the land may as well not be drained at all. This same land has now lain all winter quite flat with a crop of Wheat upon it in rows 14 inches apart, and during the whole time not a drop of water has lodged on the surface. The mould betwixt the drills is in a fine friable state, having been stirred with one of Mr. Garrett's horse-hoes followed by Dr. Newington's excellent newly invented implement, the hand-row-hoe and cultivator, of which I will speak more presently. Another part of draining in which science has been shown is in the depth of drains. The old style of draining was to make drains 16 inches deep; thus allowed 12 inches above the tile. In Grass land, when laid in butts, it seemed to answer well, and also in ploughed land laid in the same way, with the drains kept in the furrows. But a greater depth of ploughing is common now to what it was formerly. The principle also upon which drains are supposed to act, is changed. It used to be supposed that the water which passed through the upper stratum of soil was stopped when it came to the clay. It is now believed that it penetrates the clay also; and it is for the purpose of drying this and making it more permeable to the roots of plants, that drains are put deeper. It may seem strange that an inch pipe, placed 4 or even 5 feet in solid clay, should act at all; but intelligent and practical men have found, that it will cause fissures, and through these the wet will enter into the tiles. Some have gone so far as to say that when the clay has got dried by the drains, earth worms will bore down to them, and thus further assist the passage of the water into the drains. There is one point more worth noticing: which is the best material for filling up the drains? Some light materials used to be put at the top of the tiles such as brushwood, straw, &c It is now recommended that the drains should be filled up with clay, and it may be supposed, if the solid clay may be made to crack by the removal of the water from it; that which has been stirred, exposed to the atmosphere, and broken into small lumps has a better chance of doing so. Thus much in regard to the science of draining. *Law. Rawstorne.*

An Old Saintfoin Grower begs to assure Mr. Richard Young that he may with safety feed off his young Saintfoin any time before it becomes tough, provided he does not pen the sheep back upon it, in which case they will destroy the plant, by eating out the head of it. All cattle are fond of it, and thrive wonderfully on it. We sometimes fancy the first growth is too bitter for the butter, the aftermath is best, and the cows always increase their butter 1 lb. or more each, on being turned into it. For horses, nothing can equal it, and it is a common saying, that Saintfoin hay alone is as good as any other hay with corn; and in the case of sheep having the scour, this plant, either as grass or hay, will often stop it in 24 hours. In a word, from long experience, I do not hesitate to pronounce it the most valuable food for animals that the earth produces. It generally stands six or seven years, and the only inconvenience attending it is, that the ground gets stocked with wireworm, an evil perhaps attending all old pastures; it will thrive only on chalky soils. *J. D., May* 1.

Pigs.—A correspondent informs us that in some parts of Hampshire, nothing is more common than to see several pigs in a large trip without tails. They are not born without them, but rot off in the course of five or six weeks after they are born; and in support of the general opinion that it is from high breeding, it may be remarked that it never happens to a coarse pig, but always with the fine-haired, tender sort. He has had many in his own yard, and seen hundreds. *J. D., May* 1.

Farm Expenses.—Perhaps it may assist a "Poor Tenant" in his inquiry as to the average expenses of a farm, to take the old rule of four rents; one for the landlord, one for rates, tithes, and seeds, one for labour, and other expenses, the fourth for interest on capital, and profit; and he may read with advantage that excellent paper of Mr. Hewitt Davis's in your last number on things as they were 70 years ago, and things as they are now, and likely to be as long as the free trade fever runs so high. *J. D., May* 1.

On the Amount of Labour in the market, compared with the able-bodied men, depends in a great measure the good conduct of the lower classes of society. It may be truly said that idleness is the mother of all mischief. It will be found wherever employment is regular and wages fairly remunerative, crime will diminish; and, on the contrary, wherever occupation is uncertain, sometimes raising the artisan to affluence, and then reducing him to the starving point, such changes will naturally produce an unsettled state of mind, followed by irregularities, which, by constant repetition, become habitual, and are difficult to remove. A stranger visiting a locality under such disadvantages will feel disgusted at the careless and immoral state of the population, and pronounce the labourers, &c., to be incorrigible; there may be some truth in his statement, but before condemning all, he should inquire into the matter, when he will probably find sufficient cause to account for many of the evils complained of. Those who mix amongst the poor must acknowledge the difficulties which surround a man in providing for a wife and children on 10*s.* per week. Now, is the case altered in the event of wet days being deducted from his time? thus reducing the agriculturist to a sum on which alone he cannot live, unless he has other resources. He cannot starve, he must therefore have recourse to other means to obtain the necessaries of life, either begging, borrowing, or appropriating to his own use things that do not belong to him. Where a neighbourhood is filled with the lazy and dissolute, it will generally be found that profitable work is scarce, and existence is to be supported by a description of "chance medley." The only way of improving such a place is by the introduction of remunerative labour, an experiment well worth trying, which by perseverance cannot fail to succeed. A farming club established in each parish, with a view to supply useful employment to those who want it, based on sound principles of equity and justice, would have a beneficial influence on society at large. This would be no great tax upon the pockets of the ratepayers, who would, by joining together and carrying out such an institution, add to the comfort and respectability of the labourers, and diminish the inmates of the union If one quarter of the sums thrown away on beggars and impostors (by the hands of the kind-hearted but mistaken donors), was applied, under proper regulations, to local improvements, how much less vice, wickedness, and misery would exist in the United Kingdom. It is not to be denied that great annoyance and inconvenience are too often experienced by the conduct of the labourers in neglecting their work, or going through it in such a slovenly manner as to leave it almost worse than undone, the result of low wages; a man feeling himself underpaid, scrambles over his task. Although this is to be lamented, it is not to be wondered at that the poor should be discontented when the (comparatively speaking) rich grind them down to the lowest farthing. It must be allowed that bad pay and hard work are not compatible with contentment and respect for masters. A long period of short-sighted mismanagement has brought things in the agricultural districts to the present disagreeable state. The growth of food and employment have not kept pace with the increase of population. Landowners and tenants fancying that high prices could last with an overstocked labour market was a fallacy. The introduction of machinery and cheap manufactures, combined with a superabundance of hands and a low rate of wages, necessitated either a greater supply of food produced at home by superior cultivation, or an importation from abroad, at a reasonable price, to enable the artisan and labourer to live. The former would, of course, have been the most advantageous to the country, but from apathy on the part of agriculturists they have not evinced the knowledge and industry of their brethren of Birmingham, Manchester, Sheffield, &c., but have opened the ports to the entrance of grain free of duty, before the country was prepared for the sudden change. Therefore, till the land is in a better state of cultivation, farmers cannot expect the same amount of profit they made in what are termed "the good old times of high prices," they must be satisfied with a moderate return, till science and untiring energy have been brought to bear upon the land. It is disheartening to hear some individuals say "produce is so depreciated the soil is not worth tilling." However depressed agricultural stock may be at the present season, there is enough to be done with it to cheer men on to do more, provided they are not crushed under allotment rents. The capital of working men consisting in their bones and sinews, they have not the same facility of using it as if they possessed a modicum of the current coin of the realm. This should be a consideration when we blame the labourer for not finding work; money is

easily conveyed from place to place, but a peasant and his family cannot travel in search of employment without entailing on them an almost ruinous expense; should he go alone he has to pay for lodging and washing extra, absorbing all his gains, and on his return to his cottage he finds himself in worse condition than when he went away, in the hope of bettering himself. There is no wish to advocate the claims of the labourer to the prejudice either of the farmer or any one else, but when men have health, strength, and inclination to earn their bread honestly, it is bad policy not to give them an opportunity of becoming independent, and free from the contamination of private charity or the union, both of which should be reserved for the sick, aged, and orphans. The task of reclaiming the indolent will be a heavy one; but if our country, under the blessing of God, is to prosper, it must be accomplished, and the sooner we seriously set about it the more wisdom we shall show. Perhaps some of your readers will take up this subject, and suggest plans for creating profitable employment. It has often been said, "What can a man do in Ireland?" There is a practical answer now ready for all—do as Lord Hill has done. *Falcon.*

The Scab in Sheep.—This disease is held to be as discreditable to the farmer as mange or lice in cattle. But as it is infectious, the most careful men are liable to suffer by it, sometimes from sheep straying either from their own or their neighbours' flocks, sometimes from their rubbing against a post or gate in passing in a road from one part of the farm to another, if an infected animal has previously left the virus; or other accidents may sow this fruitful source of evil. It is far from being confined to half-starved sheep, out of condition; though from their treatment, turned on roads, commons, and waste places, they are more exposed to casualties; but it occasionally inoculates the finest flocks, and if the shepherd is unskilful or dishonest, the breed is irrecoverably damaged or lost. Clater's "Cattle Doctor," published at 6*s.*, contains a very good account of the scab, and prescribes a good method of cure by mercurial ointment; but in this neighbourhood, and in Lincolnshire, the preparation of the ointment is left to the druggist who is also required to be skilful and honest as well as the shepherd. One pound of quicksilver well "killed" with 5 lbs. of greasy materials is the proper proportion, but a good druggist will mix these articles better and in a more uniform consistence than a farmer can. It is called sheep ointment, and as well as being used for the scab, is by many farmers, indeed the majority of them, applied in the autumn two or three weeks before going to Coleseed to all the sheep, excepting lambs, at the rate of 2½ lbs. to the score. The lambs are dressed in the spring before the flush of Grass comes, in a still less quantity, to kill the ticks and clean the wool, and is generally found beneficial to the sheep. But to cure the scab 3½ or 4 lbs. is applied to the score (20), rubbed in *secundum artem* along several lines on the back, meeting other lines along the limbs; the sheep are shut up the following night, and care is taken to keep them about a fortnight afterwards on dry or spare food. I should have stated, however, that if the infected animals are very bad, they first require "knotting," that is, some ointment slightly smeared on the sore and scabby places which would soon extend all over the sheep; after being dressed with a nearly equal quantity of ointment to each sheep, in a few days they are carefully examined, and if no fresh places have appeared and a more healthy surface is shown on the diseased parts, nothing more is done, but this close watching must be continued, and every means adopted to improve their health. If after a short time a "knot" appears on any of them, or a suspicious scurf, redness, or dirtiness in the skin, the suspected animals must be separated and receive a slight dressing of ointment; if ewes, the mildest means must be adopted to check the disorder without weakening the constitution; a little practice and great attention will seldom fail, with good ointment, to get rid of the pest. The quantity of quicksilver used by some druggists in this neighbourhood is very great, the ointment being much safer and more serviceable than any mere liquid application. *J. W., Peterborough.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House in Hanover-square, on Tuesday last, the 8th of May. Present: the Earl of Chichester, President, in the chair, Duke of Richmond, Marquis of Downshire, Lord Camoys, Baron Mertens, Hon. R. H. Clive, M.P., Hon. G. C. Agar, Mr. Almack, Mr. Raymond Barker, Mr. Burke, Colonel Challoner, Mr. E. Collingwood, Rev. J. Cooke, Mr. W. Dunnison, Mr. Dyer, Mr. Fuller, M.P., Mr. Brandreth Gibbs, Mr. E. Greenwood, Mr. F. Greenwood, Mr. Fisher Hobbs, Mr. Kinder, Mr. Neil Malcolm, Mr. C. E. Overman, Mr. Parkins, Professor Sewell, Mr. Robert Smith, Mr. Spencer Stanhope, and Mr. Hampden Turner.

Sir Robert Jacob Buxton, Bart., of Shadwell-park, Thetford, Norfolk; and John Tanqueray, Esq., of Hendon, Middlesex, were elected Governors of the Society.

The following new members were elected:

Proctor, Thomas Beauchamp, Langley-park, Loddon, Norfolk
Buggers, George, Hurstperpoint, Sussex
Thompson, Robert, Norwich
Chaffey, Richard Trenchard, Perridge House, Shepton-Mallet, Somersetshire
Moore, Samuel S., Town Close, Norwich
Holland, Dr. Charles, Rodbaston Hall, Stafford
Aldous, Robert, Burlingham, Norwich
Vincent, John Francis, Frostenden, Wangford, Suffolk
Burton, David, jun., Cherry-Burton, Beverley, Yorkshire
Webber, Samuel, Ipswich, Suffolk
Bridges, John Westwood, Tuxford, Nottinghamshire
Coode, George, Haydock, Newton-le-Willows, Lancashire
Ludgater, John, Stiffkey, Wells, Norfolk
Mumford, George, Cockfield, Stowmarket, Suffolk
Barwell, John, Norwich
Barthropp, N. G., Cretingham, Woodbridge, Suffolk
Turner, John, Trowse, Norwich
Case, Frederick, Testerton House, Fakenham, Norfolk
Hill, Josiah, Briston, East Dereham, Norfolk
Gower, George, Dilham, Smallburgh, Norfolk
Sharman, Peter John, Scarning, East Dereham, Norfolk
Batterham, John, Terrington, Norfolk
Pillans, William Potts, Swaffham, Norfolk
Gidney, Jeremiah William, East Dereham, Norfolk.

The names of 14 candidates for election at the next meeting were then read.

Exeter Meeting.—Mr. Charles Brutton, Secretary to the Local Committee at Exeter, having been the bearer to the Council, on the part of the authorities of that city, of their agreement with the Society, duly executed under the great seal of the corporation, and the signatures of the mayor and town clerk, the Council directed a duplicate agreement to be sealed in their presence, with the great seal of the Society, and signed by the President and Secretary, under the powers of the Charter of Incorporation.

Tobacco Culture.—The Duke of Richmond presented to the Council a specimen of the dried leaves of the Tobacco plant grown at Chelsea. His Grace also favoured the Council with the following statement made by the party from whom he had received the specimens then submitted to the inspection of the members.

"Every person cultivating fruits, vegetables, or flowers, especially in the forcing department, have been plagued to keep their houses and plants free from the numerous aphides to which they are subject, and to effect this without injury to the tender plants under cultivation, tobacco is, at present, the only known safe and sufficient resource, and there are but few who have not found it more convenient and safe to make purchases of this essential article, notwithstanding its costliness, than trust to uncertain remedies. Among this number the writer is obliged to place himself; but not until he had made many attempts to save or lessen an expenditure so unsatisfactory. Thus circumstanced, about the month of March, 1848, a gentleman, living in his immediate neighbourhood, who had been induced to attempt the cultivation of tobacco for his own consumption, the use of which he had found it expedient to discontinue, kindly offered his remaining stock to the writer, for the purpose of fumigating his plant-houses; and, on making a trial, it was found a most valuable article for the purpose, and far excelling anything in efficiency he had ever before used. Information as to the mode of its preparation, and the particular variety, was fully obtained, and a determination to cultivate a sufficient quantity for all future purposes resolved upon. An inquiry was made for the sort required at the respectable seedsmen of the metropolis, but all to no purpose; the only tobacco procurable was the sweet or Virginian variety. This, my informant confidently affirmed, it was useless to attempt the cultivation of; but at length I succeeded, as I then supposed. A florist and a friend, who himself had cultivated, as he stated, the particular sort I was inquiring after, gave me a small packet of his seed; and thus the first difficulty was supposed to be overcome, and its cultivation proceeded with. The number of plants prepared was 160, which were finally planted out the first week in May. As the plants grew it became manifest that the sort under cultivation was the Virginian variety of the finest description, and the most difficult to prepare. It was, however, too late to alter. The plants continued to grow, despite the chilliness of our summer; and in the month of August, a first gathering of ripe leaves was made, which, when cured, yielded about 28 lbs. of very fine tobacco. Early in September a second gathering, but little inferior to the first, produced about 14 lbs.; and about the beginning of October, a final gathering of the young leaves was made, which, when green, weighed above 2 cwt., but only produced of cured tobacco 14 lbs. The waste made at different times in the process of drying and curing, and leaves dirtied from proximity to the ground, amounted to about 14 lbs. The stalks also were found to possess a large portion of the tobacco qualities.

"According to this statement, the relative produce, per acre, would be in the following proportion, allowing 6000 plants to that space; while at Amerafort, in Holland, the average is 9600:—

UPON A CALCULATION OF 6000 OF				
Best Tobacco ..	1050 lbs., value at	6*d.*	£26 15	0
Second	525	,, 5*d.*	10 18	9
Third	525	,, 4*d.*	8 15	0
Waste	525	,, 2*d.*	4 7	6
			£50 16	3

"A money crop of 50*l.* per acre will doubtless startle at first sight, and I have endeavoured in vain to discover any mistake in the conclusions, while it should be remembered this experiment was made in 1848, and a more unpropitious season could not be selected. The only conclusion that it is possible to come to is, that a much larger sum per acre might be realised. The expenses of cultivation are small in comparison; the plants requiring principally to be kept clear from weeds, by repeated hoeing during the summer, affording an opportunity thoroughly to clean the land; and I have no hesitation in asserting that it is not an exhausting crop. One man would superintend 3 or 4 acres; additional help being only necessary at planting and gathering time. As an illustration of this part of the subject, I will give an extract from a letter, published by an Irish gentleman, in 1830, who had cultivated the plant successfully. He says:

"'The total cost of production in Ireland may be said to stand thus per English acre—

Two ploughings, one cross-ploughing, two harrowings, rolling, hand-picking and cleaning of weeds, opening and rolling of the drills	£2	10	0
Rent	1	10	0
Labour, from the planting to the curing process ...	11	5	0
Manure	2	8	0
Tithe and Assessments	0	3	6
	£17	16	6

"'I find, from my farm accounts, the labour and charge upon a tobacco crop may be estimated at 30*l.* or 30 guineas per Irish acre, which is equal to 18*l.* or 18 guineas per English acre, where the land is prepared by horse-labour. But in the county of Wexford, where the spade has been employed, the expense of plants, preparation, and labour, is estimated at 50*l.* per Irish acre, or 30*l.* per English. It therefore follows that tobacco can be produced in Ireland for 4*d.* per lb., which is the price of tobacco of ordinary or middling quality imported from America. But, at the same time, a higher rate of remuneration is required for the Irish and British grower, to meet the casualties to which this delicate exotic is liable in our northern and variable climate.'"

Miscellaneous Communications.—The Earl of Yarborough transmitted, on the part of Mr. Culverhouse, the statement of a new mode of treating bones for manure by caustic alkali instead of acid.—Mr. Majendie presented a sample of Australian Wheat, on the part of Lady Franklin; and a supply of Potatoes, on the part of Lieut. Simpkinson, R.N. Mr. Majendie stated that the Potatoes were grown at Brown River, Van Diemen's Land, and were considered as the best variety in that part of the world.—Mr. Lance favoured the Society with his report on the growth of Potato seeds from Chili, and of Wheat from Australia, both of which had furnished unfavourable results; whilst his own Potato seeds had succeeded perfectly. He attributed failure in the Chilian seeds to their having had their viscous pulp washed away from them; his own having been left with that natural covering attached to them.—Dr. Royle presented, on the part of the East India Company, a supply of the Deodara Pine seed, from the Himalaya Mountains.—The thanks of the Council were ordered for these communications.

The Council then adjourned to Tuesday next.

Farmers' Clubs.

London, *April 2*: *On deep Cultivation.*—Mr. Mechi said—

We are all agreed that some degree of cultivation is necessary for our seed-bed; Nature herself has proved this necessity by disintegrating the surface of our globe, using the chemical aids of air and of water, and clothing it with vegetation, adapted by the Almighty wisdom to the soil and to the climate for the use of animated nature. In vain does man select the most imperishable material as a record of his skill; chemical affinity, by the ultimate action of heat and cold, of air and water, decomposes and crumbles to dust and to shapeless masses the architectural beauties of antiquity. It is a singular fact, that rarely do we meet with a farmer who would deny the benefit of a long summer-fallow on tenacious soils—I mean a frequent ploughing of the surface soil, and yet, how few are prepared to admit the advantage of a similar operation to the subsoil! This seeming discrepancy is, however, not to be wondered at. The greater part of the heavy and hard-bottomed land of this kingdom is undrained, or drained too shallow to admit of subsoiling. Experience has proved, that to subsoil without previous draining is most injurious. On undrained lands the open furrows act as drains to the disturbed soil; but when the subsoil is broken up below those furrows without any subterranean escape for water, it becomes after rains a puddled mass, into which the horses' feet force the upper soil, or seed-bed, very much to its injury. In fact, it is a great impediment to cultivation, and hurtful to the crops; therefore, drainage must precede subsoiling. There are many reasons why a disturbance of the subsoil may be profitable, where deep ploughing or digging would be ruinous. Let us beware of burying our seed-bed, which has so long been cultivated and manured: if we do this, and bring to the surface a bad, stagnated, undecomposed subsoil, we shall feel its ill effects for years. I speak practically in this matter; for wherever the yellow soapy subsoil of the new ditches has been spread on the surface, it makes a miserable seed-bed, and is most difficult to work. Let us keep the surface soil where it is; for in breaking up the subsoil, quite enough of it will of necessity be mixed with the upper soil. As the solutions of lime, manure, and atmospheric influence gradually ameliorate the under soil, we can year by year gain 1 inch by deeper ploughing; remembering, however, that it will be 100 tons of new earth per acre, a pretty strong dressing. In dealing with inferior subsoils we must be governed by our facilities for obtaining abundant supplies of lime, chalk, and manure, which would enable us to take a greater liberty with the under soil. I will now state what soils I consider require deep cultivation. Strong, heavy, tenacious clays of almost every description; these should be broken up in dry weather, because the treading of many horses is not then injurious; besides, the subsoil, being dry, is torn or broken up into fragments and irregular masses, which freely admit the summer heats and evening dews; whereas, if done when wet, the putty-like subsoil would collapse, and the surface become kneaded by the treading of horses. Sandy, silty, or gravelly soils, having a hard bottom of iron sandstone, or masses of puddling-stone (an admixture of pebbles with protoxide of iron, forming a sort of rusty rock-stone); these soils have generally contained much spring water, headed back by occasional veins of clay, and are much benefited by subsoiling. I find by breaking up these soils to the depth of 21 to 24 inches, instead of the common depth of 4 to 5 inches, that all crops succeed better, particularly roots, green crops, and Clover. Their roots descend deeper, and are consequently less subject to injury by the vicissitudes of extreme cold or drought—of course drainage secures them from stagnant water. I speak feelingly on this subject, for before I drained and subsoiled my land our winter crops were often injured, as well as our summer ones. I am convinced that it is the freezing of the roots in our shallow soils that often destroys our Clovers, our Tares, and our Wheats. I have traced the roots of Wheat and Tares from 9 to 18 inches below the surface, even so early as Christmas, where the soil has been sufficiently moved and pulverised; and we all know that Clover roots descend very deeply into good, friable subsoils. The pan, or impervious mass, that is often formed immediately below the plough, is a great impediment to the roots of plants; subsoiling remedies this evil. It often requires great force to break up this pan. The advantages of subsoiling on such soils as I have described are observ-

able for several years. One result of deepening the staple is to cause a less rapid, but more perfect development of the plants. Their growth is prolonged, and forms a striking contrast to the hasty prematurity and inferior produce of shallow soils with a hard and unpulverised substratum. It is stated by Liebig, and other eminent chemists, that iron has the power of attracting ammonia from the atmosphere, which contains it in unbounded supply; if so, this at once accounts for the beneficial results of breaking up deeply, and exposing to atmospheric influences our tenacious clays, which abound in iron; my heavy soils show by analysis near 8 per cent. of peroxide of iron. Another advantage of subsoiling is the destruction of deep-rooted weeds; I know of instances where roots of Thistles and other weeds, as thick as one's finger, have been disturbed by the fork and the subsoil plough, but which were merely pruned by the ordinary plough. Dressings of chalk, marl, and heavy earths sink down in stratified layers, and in a few years are below the reach of ordinary ploughing. Subsoiling and crossing the land by deep summer ploughings often restore to us the lost application. If we needed an argument against those immense mounds or lands, so often met with in the midland counties, the impossibility of cross-ploughing them would be conclusive evidence; still, being so formed, it would be dangerous indeed to alter too suddenly the relative position of the seed-bed and subsoil. My own experience does not extend to calcareous soils; but we have evidence on Mr. Hewitt Davis's Surrey farms, that the gradual breaking up of the chalks is highly beneficial, especially in destroying or checking the growth of deep-rooted weeds. At the farm of the Royal Agricultural College, Cirencester, similar good results have been derived by deep cultivation, under the judicious and unprejudiced management of Mr. Wilson: the soil there is mostly corn brash, or laminated limestone; the breaking up of this by deep ploughing and subsoiling has a very noisy, and rather ludicrous, rattling effect. I have generally a great respect for the practical experience of agriculturists; but I am bound to say, that on the chalks and limestones custom has assumed (without practical experience) that deep cultivation would be injurious. There are some soils in which subsoiling or deep cultivation is, perhaps, rarely requisite, except to remove deep-rooted weeds, resulting from neglectful farming, or to recover a lost dressing of marl or chalk. These are loose, hot, dry sands and gravels: deep, loose, rich, friable vegetable loams, and reclaimed felty bogs. In all these soils air and water have a very free passage. I have reason to know that in many instances some of them are most profitably managed by consolidation with sheep folding, and by heavy rolling, the breast-plough and scarifier absolutely or nearly superseding the common plough. With regard to the mode and cost of deep cultivation, my experience is, that where horse labour can be properly applied, it is always more profitable than manual labour; the relative weekly cost bearing no comparison with the relative power. In very strong clays during dry weather manual labour is almost unavailable; so also in hard, concreted, rocky bottoms. My mode of subsoiling is as follows: we open the ground 8 to 9 inches deep, with a strong full-breasted iron plough, drawn by three horses abreast, having an equalising Scotch hinged iron whippletree. Smith of Deanston's subsoil plough follows in the track of the first plough, drawn by six strong horses, breaking up 14 inches of the subsoil. The first plough turns a furrow slice on this, and is again followed by the Deanston plough. The cost is as follows:—

9 horses at 2*s.*	..	£0	18 0
3 men at 1*s.* 8*d.*	.. .. ..	0	5 0
		£1	3 0

Quantity ploughed, five-eighths to six-eighths of an acre per day, seldom so much as the latter. Of course the chains and every part of the subsoil plough are very strong, and it is severe work for six good horses in hard soils. I find a small wheel in front of the subsoil plough a great advantage; it causes the plough to swim true, and prevents those violent jerks so injurious to the ploughman and his cattle. Compare a man using a pick-axe with the power of six strong horses, applied to a point almost as small. The hard or stony subsoil, that doggedly resists the repeated hackings of the labourer, is broken up and shivered to atoms by the resistless plough, which groans and rattles as it wedges itself amongst the stubborn masses. The fork and the spade can only be advantageously employed, during the winter months, in soils of a more workable character than some of mine, which are too clung and soapy in wet weather. In a more friable field I have forked, under the plough, seven acres with advantage, at a cost of 42*s.* per acre, including ploughing. I leave the details of this to be explained to you by Mr. Beadel, who is experienced in this matter, and to whom great credit is due, seeing how much labour he has employed. I say nothing of spade husbandry, because that cannot, yet, become the general custom of the country; however desirable it may be, and undoubtedly is, in over-populated districts during the winter season. After subsoiling, the land is crossed and intermixed by a strong common drag-harrow, having teeth or spikes 18 inches long, and drawn by four horses abreast, the driver sitting on the frame. Although an old fashioned tool, I can find none better suited to the purpose of deeply raking the ground, and bringing the unbroken lumps to the surface, to be crushed by Crosskill's roller, or to be pulverised by atmospheric influences. As to the recurrence of subsoiling, observation must guide us; there is a tendency in soils to settle down, and become solid. We shall seldom err in trench-ploughing our land for root crops once in four years. Trench-ploughing will be found easy where once the land has been subsoiled; this I sometimes do before winter, having three horses to each plough, so arranged as not to tread or solidify the work. The leading plough has a full bold breast; the second, that follows in the track of the first, has a smaller breast or mould-board. I have used Read's subsoil plough with advantage, and it is a very convenient tool for small farmers with a limited team; of course it does not go so deep as Smith of Deanston's powerful tool. In Scotland it has (with some improvements by Mr. Slight, of Edinburgh) been considered to require less power than Smith's plough. It is the opinion of Mr. Smith, in which I entirely concur, that subsoiling greatly facilitates the passage of water to drains. I find that subsoiling materially assists the evaporative powers of tenacious soils, rendering them drier, and consequently much warmer; in fact, evaporation is a super-drainage of the soil after the ordinary drains have ceased running. When land is trench-ploughed a second time, it should be across, or at right angles with the first subsoiling. Although I advocate deep cultivation and a loose subsoil, I attach much importance to a fine, firm seed-bed; particularly for Turnips, Mangold, Rape, and Mustard: Crosskill's roller effects this comfortably in dry weather. Allow me here to pay a tribute of justice and respect to the father of subsoiling in this kingdom, I mean Mr. James Smith, of Deanston; he is entitled to our gratitude, not only for applying to the subsoil Jethro Tull's admirable principles of tillage, but for his general, ardent, and excellent exertions to promote our native agriculture. We must all deeply regret the generally shallow tillage of this kingdom. In too many instances the mouth of an ordinary wine glass, or 2½ inches, is a common depth in some districts, whilst rarely can we find the furrrow slice cut deep enough from the solid land to cover the level of a wine glass in a standing position, which is only 4½ inches. The result of this shallow cultivation is made apparent to all who travel by rail during summer, the question frequently being, which is the strongest crop, the weeds or the corn and roots? In conclusion, I thank you for your patient attention to my very long story; my excuse must be the importance of the subject. I have always felt that agriculture is the corner stone of our existence as a nation—our increasing millions must be fed and employed. Our acres do not multiply—the time is coming when we must use much more labour and capital, and produce a much larger quantity of food from the present space of ground. This can be effected only by greater depth of cultivation, and largely increased supplies of manure. Science and more live stock will help us to the latter; but the cottage-gardens and allotments on our heaths and wastes give undeniable evidence of the productive powers of our poorest soils, under the influence of deep and frequent cultivation.

LONDON, *May 7*: *Monthly Meeting of the Committee of Management.*—Present: Messrs. J. Beadel, W. Bennett, W. Cheffins, W. Fisher Hobbs, W. Hutley, C. W. Johnson, T. Knight, J. J. Mechi, J. C. Nesbit, W. Shaw (of the Strand), Robert Smith (Devon), R. B. Smith (Edmonton), J. Thomas, H. Trethewy, J. Tyler, and Owen Wallis. T. KNIGHT, Esq., in the chair. The minutes of the last meeting were read, confirmed, and signed by the chairman of this day. The following gentlemen were elected Members of the Club:

C. R. Cundall, [illegible]ton Farm, Andover, Hants.
R. F. Jenning[illegible]ideford, Devon.
E. W. Johnson, Chichester, Sussex.
J. P. Ley, Bideford, Devon.
J. Parsons, North Stoneham, Southampton.
R. Raper, Chichester, Sussex.
H. Self, Martin Great Bedwin, Wilts.
H. Wolf, Park Hill Farm, Andover, Hants.
R. E. Yellard, Bideford, Devon.

Some other names of gentlemen proposed were read for the first time. The following works were reported as presented to the Club, and the thanks of the Committee ordered the donors of them:

1. "The Rural Encyclopædia." Parts in continuation. By Messrs. Fullarton, the publishers.
2. "The Farmers' Magazine." In monthly numbers. By the editor.
3. "The Sporting Magazine." In monthly numbers. By the editor.
4. "Facts for Farmers on the Cultivation of Maize." By the author.
5. "Proposed Measures for the Removal of National Distress." Published in 1827. By Mr. A. Scott, the author.
6. A Pamphlet "On the Agricultural Value of Sewage and other Drainage Waters." By Mr. Cuthbert Johnson, the author.

The following Members were chosen as a Sub-Committee to make the necessary arrangements for the Anniversary Dinner of the Club, to take place at Greenwich on Tuesday, June 5, being the day following the next Monthly Meeting:—J. Beadel, W. Fisher Hobbs, C. W. Johnson, T. Knight, W. Shaw (of the Strand), and Robert Smith.—On the motion of Mr. Fisher Hobbs, seconded by Mr. Trethewy, it was resolved, "That the Secretary be requested to make out, by the next Monthly Meeting, a list of all Members in arrear of Subscription, in order to enable the Committee to take proceedings for the recovery of the same."

Miscellaneous.

Spade Cultivation.—A society of 75 members have taken an eight acre field for spade cultivation at Huddersfield. Whenever any of the members are out of employment they will receive a ticket for 6 days' work or 12 days' work, and be paid a fair day's wages for a fair day's work, and thus prevented from becoming burdensome to the town, and having pauper relief. There are two such societies in the town already, and this is the third. There is hardly a village within 7 miles of Huddersfield but has its allotment society or industrial farm. *Leeds Intelligencer.*

Calendar of Operations.

MAY.

DORSET FARM, *May 7.*—Since last report, having had better weather, we are again in the fields, endeavouring to extirpate some of the many weeds with which they are infested, and if it continue as favourable for another month as it has been for the past week, we may make up some of our leeway. But even with the most favourable weather we shall have no time for resting on our oars, for much has to be rectified this year that was imperfectly done last; for it is certain that if we cannot get protection from foreign grown corn, we must try to protect ourselves from home grown weeds, and allow other nations the monopoly of them if they will. We have got in all our Grass seeds, and have sown a few acres of Rape, all in very good order; and now we are getting in Mangold Wurzel. We first raise the drills for them at the distance of 26 inches, then apply about 20 yards of good dung per acre; it is spread in the bottom of the drills, then the drills are split to cover in the dung, and when necessary a light roller is passed over them previous to dibbling the seed with Newberry's hand machine (a machine which in careful hands does its work very satisfactorily). We have been also engaged rolling our Wheat and Barley; some of it with Crosskill's clod crusher, and some with a plain roller. The Wheat round this place looks very well; the same may be said of the Barley; and, with recent sunshine, Grass is beginning to assume a fine dark colour, and we may say that present appearances promise in due time abundance both for man and beast. Our work for some time to come will be cleansing and preparing the land for and sowing the various root crops. *G. S.*

STIRLINGSHIRE CARSE FARM, *May 5.*—The weather having become very fine for some time past, we have been busily employed with out-door labour, chiefly engaged with preparing Barley land for sowing, and finishing it, and although it is taking a good deal of work to bring it to a fine mould, yet it is working to a considerable depth of loose soil, which is considered very advantageous on stiff clay. The weather having become warm as well as dry, the brairds, both of Beans and Oats, are coming forward with a pretty good stalk, and it is evident that none of these grains have been injured by the late severe frosts. The Wheat is also recovering very fast from the injuries it sustained at the end of winter. *W. F.*

SUSSEX FARM, *May 8.*—We have now planted part of our Mangold Wurzel, and we are at present employed in planting the remainder, and preparing the land for the Swede crop. The land works very bad, being so wet in the bottom. We are harrowing, rolling Wheat and Oats, and hoeing Wheat and Beans. The Wheat crop improves very much, but in many places it is very patchy and thin. The land here in general is well adapted to the growth of roots, but the growing of green crops is very much neglected in this quarter. We sow a fair proportion of our land with green crops every year, and we never find the difficulty our neighbours complain of, that when they grow a few acres they do not know what to do with them. Our neighbours are mostly in favour of the old bare fallow system, as they call it. Some fallow their land for two years, and the Wheat crop of the third year is below 10 bushels per acre. We grow Wheat after Turnips at the rate of 34 to 38 bushels per acre, and our land is not of first quality for Wheat, as it is a light soil. *J. B.*

Notices to Correspondents.

AGRI. CHEMISTRY SOCIETY: *Almus.* Ask Mr. Huxtable.

BOX-FEEDING: *Investigator.* Your communication must be declined. It states no new facts: but asks, must not the animals be unhealthy? must they not be miserable and filthy, &c., placed on their own excrements? The answer is, there is no necessity for any such thing. We cannot prolong this discussion, but shall be very glad to receive statements of experience connected with it. We should be glad of the name of any correspondent who can furnish us with the condition of his cattle during the past winter, whether fed in stalls, or boxes, or yards.

DISSOLVED BONES: *P Q.* See page 283.

DRAINS IN PEAT: *F H S.* You ought not to place over confidence in an opinion founded on mere description. We should be inclined to place the drains 4 feet deep and 8 or 10 yards apart; and collars should be employed much longer than the common sort, so as to hold the line of pipes rigidly together.

FOOT-ROT IN SHEEP: *E H.* Pare the feet so as to permit the escape of any confined matter, and dress every two days with a little hydrochloric acid. Make the sheep walk daily over calcined powdered gypsum, laid down in a place protected from the weather, to which, if you please, you can add some powdered charcoal. *W. C. S.*

GRASS. *J A P.* Eight horses may eat 1½ cwt. of hay a day, that is about 27 tons a year, which may grow on 14 or 15 acres of good Grass land.

MAIZE: *E W W* asks where he can get the Pyrenean Maize, as he has applied, without success, to one eminent seedsman, and is afraid of the season for sowing it being past before he can get any?

ORNAMENTAL AND DOMESTIC POULTRY, by the Rev. E. S. Dixon, price 5*s.* 6*d.*, is now ready, and may be had at the Office of this Paper, and of all Booksellers.

PIG KILLING: *C* says, a correspondent of the 21st ult. disputes the truth of pigs being more quickly killed by a blow on the head than by being struck with a knife. Stopping the other day at a blacksmith's shop, to get my horse's shoe altered, when the butcher came in to have his axe pointed, I asked his opinion. He said, "I have just killed eight, as dead as ever they were alive, by a single blow."

PIGS: *L L.* The Yorkshire breed is "large and lengthy." So is the Rudgwick: Rudgwick is a village on the borders of Surrey and Sussex.

ROTATION OF CROPPING: *A Poor Man Beaten by the Times* writes thus—"Considering myself a moderate farmer, and of some years' standing, I shall feel greatly obliged if you, or your readers, can direct a course of cropping and stocking my farm to enable me to meet the pressure of the times. The distance from London is 15 miles, and within a quarter of a mile of a railway station. Below I describe the land, rent, and taxes upon it—50 acres of arable land, light and gravelly; 15 do. water meadow. Rent, 146*l.* 5*s.*; taxes, 22*l.*; highway rate, 5*l.*; total, 173*l.* 5*s.*" [The subject of rotations suited to various supposed prices for agricultural produce, well deserves the attention of agricultural writers.].

RURAL CHEMISTRY, 2d Edition, revised and enlarged; by Edward Solly, Esq., may be had at the office of this Paper, and of all Booksellers. Price 4*s.* 6*d.*

SEEDS: *J A P.* Oats, per acre, 3 or 4 bush.; Barley, 2½ bush.; Wheat, 1½ bush.; Beans, various, according to size of Bean; Peas, 2 to 3 bush.; Rye, 3 to 4 bush.; Rye-grass, 1 to 2 bush.; Clover with do., 10 to 16 lbs.; Tares, ½ to 4 bush.; Turnips, 3 lbs; Mangold Wurzel, 7 lbs, Carrots, 5 lbs.; Rape, 3 or 4 lbs.

WATERPROOFING *J L* Apply to Mr. Hancock, Goswell-mews, Goswell-street-road, London.

MISC: *Y Z.* We do not undertake to answer enquiries as to respectability.

*** Communications reaching town after Wednesday, cannot be answered before the following week.

Markets.

COVENT GARDEN, MAY 12.

The cold unseasonable weather has rendered Vegetables somewhat scarce and dear. Fruit has altered little since our last account. Pine-apples fetch from 6*s.* to 10*s.* per pound. Hothouse Grapes are good and plentiful. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, young Turnips may be obtained at from 1*s.* to 3*s.* a bunch, and Carrots at from 2*d.* to 2*s.* Broccoli is sufficient for the demand. Asparagus, French Beans, Rhubarb, and Seakale are dear. A few green Peas from Cornwall have made their appearance. Potatoes have not altered since last week. New Potatoes fetch from 6*d.* to 2*s.* per lb. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Gardenias, Lily of the Valley, Cinerarias, Tropæolums, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 6*s* to 10*s*	Chestnuts, p. peck, 4*s* to 7*s*
Grapes, hothouse, p.lb, 6*s*. to 10*s*	Almonds, per peck, 6*s*
— foreign, p. lb., 2*s* to 3*s*	— sweet, per lb., 2*s* to 3*s*
Strawberries, p. oz., 6*d* to 1*s*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
Apples, dessert, p. bsh., 6*s* to 12*s*	— p. bush., 16*s* to 24*s*
— kitchen, p. bsh., 4*s* to 8*s*	Nuts, Bar., p. bush., 20*s* to 22*s*
Oranges, per doz., 1*s* to 2*s*	— Filb., p. 100 lbs., 60*s* to 160*s*
per 100, 7*s* to 20*s*	— Cob, p. 100 lbs., 80*s* to 150*s*
Lemons, per doz., 1*s* to 2*s*	— Brazil, p. bsh., 12*s* to 16*s*
— per 100, 10*s* to 18*s*	

VEGETABLES.

Cabbages, p. doz., 9*d* to 1*s* 6*d*	Onions, p. bunch, 2*d* to 4*d*
— red, p. doz., 6*s* to 12*s*	— p. bush., 6*s* to 7*s*
Greens, p. doz. bunches, 1*s* 6*d* to 3*s*	— Spanish, p. doz., 1*s* 6*d* to 4*s*
Broccoli, white, p. bun., 1*s* to 2*s*	— pickling, p. hf. sieve, 1*s* 6*d* to 3*s*
— brown, per bundle, 6*d* to 1*s* 3*d*	Shallots, per lb., 6*d* to 10*d*
Sorrel, p. hf. sieve, 9*d* to 1*s*	Garlic, per lb., 6*d* to 1*s*
Potatoes, per ton, 120*s* to 240*s*	Artichokes, Jerusalem, p. half sieve, 9*d* to 1*s*
— per cwt., 6*s* to 12*s*	Lettuce, Cab., p. sc., 4*d* to 9*d*
— per bush., 4*s* to 7*s*	— Cos, do., 6*d* to 2*s*
Turnips, p. doz. bun., 1*s* to 2*s*	Endive, per score, 1*s* to 2*s* 6*d*
Red Beet, per doz., 1*s* to 2*s*	Mushrooms, per pottle, 6*d* to 1*s* 3*d*
Horse Radish, p. bdl., 1*s* to 6*s*	Small Salads, p. pun., 2*d* to 3*d*
Asparagus, p. 100, 1*s* 6*d* to 8*s*	Fennel, per bunch, 2*d* to 3*d*
Seakale, p. punnet, 2*s* to 3*s* 6*d*	Savory, per bunch, 2*d* to 3*d*
Rhubarb, p. bundle, 4*d* to 1*s* 6*d*	Thyme, per bunch, 2*d* to 3*d*
French Beans, p. 100, 2*s* to 3*s*	Watercress, p. doz. bun., 6*d* to 9*d*
Cucumbers, each, 4*d* to 2*s*	Parsley, p. hf. sieve, 1*s* 6*d* to 3*s*
Leeks, per doz., 6*d* to 1*s*	— Roots, p. bdle., 1*s* to 1*s*
Celery, p. bundle, 1*s* to 2*s*	Marjoram, green, p. bun., 9*d* to 1*s*
Radishes, p. 12 hands, 4*d* to 8*d*	Mint, green, per bunch, 3*d* to 4*d*
Carrots, p. doz. bun., 5*s* to 6*s*	
Spinach p. sieve, 1*s* to 2*s*	

HAY.—Per Load of 36 Trusses.

SMITHFIELD, May 10.

Prime Meadow Hay	75*s*	to 80*s*	Clover	60*s*	to 95*s*
Inferior ditto... ...	55	70	New Clover	—	—
Rowen	50	60	Straw	27	31
New Hay	—	—		J. Cooper.	

CUMBERLAND MARKET, May 10.

Prime Meadow Hay	75*s*	to 80*s*	Interior	75*s*	to 84*s*
Inferior ditto	50	65	New Clover	—	—
New Hay	—	—	Straw	28	32
Old Clover	90	95		Joshua Baker.	

HOPS, FRIDAY, May 11.

Messrs. PATTENDEN and SMITH report that there is a good demand for all Hops with colour and quality, at late prices.

POTATOES.—Southwark, Waterside, May 7.

The Committee report that the Continental arrivals during the last week have been very extensive, and have met a dull sale at a considerable reduction from our former quotations the warm weather has checked consumption very much, and affected the value of every sample of Potato. The following are this day's quotations:—Yorkshire Regents, 160s. to 200s.; Scotch, do., 130s. to 140s.; Scotch Whites, 90s. to 100s.; French Whites, 100s. to 110s.; Dutch, 90s. to 110s.; Belgian, 90s. to 105s.

SMITHFIELD, Monday, May 7.

The number of Beasts is rather less than on Monday last still it is considerable, and the average quality very good. We have a more numerous attendance of buyers, and the weather being good a fair clearance is effected at a little more money The supply of Sheep is also smaller, it is, however, quite adequate to the demand; it is with difficulty that rather higher prices are obtained. The weather is cold for Lamb; trade is dull, but prices are not much altered. Calves are not quite so plentiful, they are fully 2d. per 8 lbs. dearer. From Holland and Germany there are 274 Beasts, 960 Sheep, and 79 Calves; from Nortolk and Suffolk, 2000 Beasts; and from Scotland, 500

Per st. of 8 lbs.—	s	d	s	d	Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	2 to 3	4		Best Long-wools	3	8 to 4	0	
Best Short-horns	3	6 — 3	2		Ditto Shorn	3	0 — 3	4	
2d quality Beasts	2	4 — 2	10		Ewes & 2d quality	3	0 — 3	6	
Best Downs and Half-breds	4	0 — 4	2		Ditto Shorn	2	4 — 3	0	
Ditto Shorn	3	6 — 3	8		Lambs	5	0 — 6	0	
					Calves	3	6 — 4	6	
					Pigs	3	8 — 4	8	

Beasts, 3279; Sheep and Lambs, 20,380, Calves, 137, Pigs, 220

Friday, May 11.

We have a good supply of Beasts, the demand, owing to the weather and clearer dead markets, is considerable, and an advance is readily obtained of fully 2d. per 8 lbs. Good Sheep are by no means plentiful; trade for them is brisk, they make on the average 2d. per 8 lbs. more than on Monday, and some of the choicest realise even a larger advance. The weather is unfavourable for Lamb, however, late rates are fully supported. The number of Calves is large, it chiefly consists, however, of foreign and middling qualities, consequently a choice one readily makes 4s. 6d., and in a few instances rather more. From Holland and Germany we have 78 Beasts, 150 Sheep, and 112 Calves; from Scotland, 300 Beasts; and 120 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	4 to 3	6		Best Long-wools	3	10 to 4	2	
Best Short-horns	3	2 — 3	4		Ditto Shorn	3	2 — 3	6	
2d quality Beasts	2	6 — 3	0		Ewes & 2d quality	3	0 — 3	8	
Best Downs and Half-breds	4	0 — 4	4		Ditto Shorn	2	6 — 3	2	
Ditto Shorn	3	6 — 3	10		Lambs	5	4 — 6	0	
					Calves	3	8 — 4	6	
					Pigs	3	8 — 4	8	

Beasts, 978; Sheep and Lambs, 7500, Calves, 304, Pigs, 250.

MARK LANE.

Monday, May 7.—The supply of English Wheat from the neighbouring counties at this morning's market was small, and, excepting the choicest white Essex, could only be disposed of at a decline of 1s. to 2s. per qr. upon the prices of this day se'nnight. The arrivals of foreign amount to 43,875 qrs., and although the attendance was larger than last week, buyers confined their purchases to retail quantities at the above reduction.—Barley must be written the turn cheaper.—Beans and Peas meet an improved inquiry, and we advance our quotations for the latter 1s. per qr.—Owing to the quantity of foreign Oats showing, the trade is dull, and prices 6d. per qr. lower.

Friday, May 11.—The foreign arrivals, although good, have not much increased since Wednesday. This day's market was moderately attended, and many holders evincing increased firmness, the business transacted was not large, but there was more inclination to purchase common and ordinary qualities of red Wheat where it could be done at any reduction in prices.—Barley is the turn lower.—Beans and Peas are unaltered in value.—The Oat trade is firm at late quotations.—The corn trade of the kingdom since the 4th inst. has remained in an inanimate state, which we attribute chiefly to the continuation of very large arrivals; these in a great measure are owing to the prevalence of the late strong easterly winds, hurrying nearly all that was afloat in the North and Baltic Seas over at once. Wheat has fallen in price about 1s. per qr.; holders are indisposed to sell at a further reduction, since the arrivals may now be expected on a more moderate scale, and consumers generally do not hold largely. Barley and Oats are also rather lower, but Peas and Beans more inquired after, and the turn dearer.

Liverpool, Friday, May 11.—Contrary winds still limit our arrivals To-day there was an average attendance of buyers. Wheat was taken to a moderate extent at Tuesday's rates, and Flour meeting a better enquiry, sales proceeded more easily at the prices of that day. Oats, held for a small advance but with Oatmeal were only in retail request. Barley the turn dearer. The same may be said of Beans, and Peas. Indian Corn, in the absence of an active demand, receded 6d. to 1s. per quarter.

Imperial Averages.	Wheat.	Barley	Oats.	Rye.	Beans.	Peas
Mar. 24	44s 9d	28s10d	17s 1d	26s 4d	28s 9d	31s 6d
April 7	44 5	28 9	16 9	26 5	28 1	29 6
— 14	44 3	28 6	17 0	23 1	28 5	30 11
— 21	44 5	28 8	16 8	22 4	28 11	28 9
— 28	46 0	28 10	17 2	27 5	29 3	29 9
May 5	46 9	28 11	17 6	25 4	29 8	30 1
Aggreg. Aver.	45 0	28 9	16 11	24 10	28 9	30 2
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Mar. 24.	Apr. 7.	Apr. 14.	Apr. 21.	Apr. 28.	May 5.
46s 9d	..	..	..	..	..	
46 0		..	..	..		
44 9		..	..	..	..	..
44 5	..	..	..	..	..	..
44 5	..	..	..	..	..	..
44 3	..	..	..	..	..	..

PRICES CURRENT.	London. Apr.30 qr.	London. May 7. qr.	Liverpool. May 1. 70 lbs.	Liverpool. May 8. 70 lbs.	Wakefield. Apr.27 qr.	Wakefield. May 4. qr.	Boston. May 2. qr.	Boston. May 9. qr.	Birmingham. May 3. 62 lbs.	Birmingham. May 10. 62 lbs.
	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
Wheat—										
New, red ...	40 to42	40 to42	6 3 6 8	6 3 6 8	41 to47	43 to47	40 to46	38 to45	5 10 6 3	5 9 6 2
„ white ...	45—47	45—46	6 9 7 4	6 9 7 3	43 51	45—48	44—48	42 48	6 3 6 8	6 1 6 6
Old, red ...	42—46	42—46	6 6 6 9	6 6 6 9	42—44	42- 44	—		6 0 6 5	5 10 6 3
„ white ...	48—52	48—52	7 0 7 6	7 0 7 6	-- 50	-- 50	—	--	6 2 6 9	6 0 6 8
Foreign	36—56	36—56	6 3 8 3	4 6 8 3	39 -51	39- 51	—	—	5 2 7 0	5 2 7 0
			480 lbs.	barrel						
Rye—New ...	22—24	22—24	—	—	—	--	—	—	—	—
Foreign...	22—23	22 - 23	—	--	—	—	—	—	—	—
Foreign meal	6l.—7l.	6l.—7l.	—	—	--	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley—										
Grinding ...	22—25	22 - 25	—	—	22—23	22—23	24—26	24— 26	23—25	23—25
Malting... ...	25—29	25 - 29	30s—32s	30s—32s	27 -32	27— 32	28—30	28—30	29—33	29— 33
Foreign... ...	19 -29	19— 29	—	--	22 28	22—28	—	--	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39 42	39 -42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	19—26	17—26	2s 0d 3s 0d	2s 9d 3s 0d	—	—	14—19	14—19	17—30	18—30
Black...	16—22	16- 22	2 5 2 8	2 5 2 8	—	—	—	—	17—18	17—18
Foreign	15—20	15—20	2 4 2 7	2 4 2 7	--	--	—	—	—	—
			qr.	qr.		qr.				
Peas—Boilers	25—29	26- 32	34s—	34s—	28—32	28 -32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—26	23—26	27 — 28s	27 —28s	-	—	—	—	11—12	11—12
Foreign ...	24— 33	24—33	30 —33	30 —33	--	--	—	—	—	—
Beans—										
New, small ...	22—32	21— 32	28 —33	30 —33	29 -30	29—31	26—32	28—32	11—14	11—14
Longpods, &c....	28—34	28—34	--	—	—	—	—	—	—	—
Old	—	—	32 —34	32 —34	35—36	35—36	34—36	34—36	14—16	14—16
Foreign ...	21—36	21—36	23 —32	24 —32	25—27	25—27	—	—	11—13	11—13
Linseed—Feed	—	--	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	37- -42	37—42	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9l. 7s	9l. 7s	7l. 12s	7l. 12s	—	—	—	—	—	—
Foreign ...	6l.—7l.	6l.—7l.	—	—	—	—	—	—	—	—
Indian Corn—	26—30	26—30	31s—34s	32s—35s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	36—44	36—44	32—37	32—37	—	—	32 -38	32—38	34—39	36—38

Weekly Averages and Imports.	London. Aver. May 8.	London. Impts	Liverpool. Averages.	Liverpool. Imports.	Wakefield. Aver.	Wakefield. Impts.	Boston. Aver.	Birmingham. Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	47 10	17720	46 0	4326	47 1	16264	43 4	1423	44 0	2360
BARLEY ...	30 7	6930	28 10	6	29 7	1678	—	—	—	1944
OATS	18 0	23320	17 2	1233	19 4	1179	14 7	641	18 10½	640
RYE	24 0	—	27 5	1025	—	—	—	—	—	—
BEANS ...	26 1	—	29 3	—	31 3	1073	30 5	225	—	2723
PEAS... ...	30 5	—	29 9	—	31 0	110	—	—	—	—
Signed	KINGSFORD and LAY.		SEGAR and TUNNICLIFFE.		SANDARS and DUNNS.		THOMAS WRIGHT.		J. and C. STURGE.	

MILK PANS, PROPAGATING GLASSES, &c.

JAMES PHILLIPS & CO. beg to hand their reduced prices, as follows:

GLASS MILK PANS.

12 inches diameter, each	2s. 0d			20 inches diameter, each	4s. 6d	
14 „ „	„ 2 6			22 „ „	„ 4 6	
16 „ „	„ 3 0			24 „ „	„ 5 0	
18 „ „	„ 3 6					

PROPAGATING GLASSES.			DEE GLASSES.			CUCUMBER TUBES.	
2 in. diam., each	0s.	2d—0	3d	24 inches long	...		2s. 0d
3 „ „	0	3 —0	4	22 „	...	...	1 10
4 „ „	0	4 —0	5	20 „	...	...	1 8
5 „ „	0	6 —0	7	18 „	...	...	1 6
6 „ „	0	8 —0	10	16 „	..	...	1 4
7 „ „	0	10 —1	1	14 „	..	...	1 2
8 „ „	1	0 —1	4	12 „	..	...	1 0
9 „ „	1	2 —1	8				
10 „ „	1	4 —2	0				
11 „ „	1	6 —2	8				
12 „ „	2	0 —3	6				

Made to any length.

PEACH GLASSES, 10d. each. WASP TRAPS, 3s. 6d. p. doz. LACTOMETERS for trying the quality of Milk, 4 tubes, 7s. 6d. Address, 116, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY and CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

GLASS.

E. and W. H. JACKSON are supplying SHEET, ROUGH PLATE, and CROWN GLASS for Horticultural purposes, at very reduced prices. BRITISH and PATENT PLATE of superior manufacture, for Glazing dwelling-houses, for which purpose these articles are now superseding all inferior Glass. ORNAMENTAL GLASS of the newest designs for the decoration of Conservatories, &c. E. and W. H. J. also supply PATENT OPTICAL FLINT GLASS, Thin Glass, Slides and Coils for Microscopic purposes, French Shades, Propagating Glasses, &c. Estimates, Lists of Prices, and every information forwarded on application at their Warehouse, 315, Oxford-street, London.

GLASS.

THOMAS MILLINGTON, 87, Bishopsgate-street-without, London (same side as Eastern Counties Railway Terminus). BRITISH PLATE GLASS, nearly ¼ inch thick, in sizes under 1 foot superficial, 1s. 2d. per foot; this is the best article for Greenhouses and Garden Frames of every description, as nothing can break it in an ordinary way. Horticultural Glass, in cases of 200 feet, No. 16 oz, 40s; No. 21 oz., 60s.; No. 26 oz., 87s. 6d., No. 32 oz., 112s. each, case included.

Cut Squares, in 100 feet boxes.	Crown.	No. 16 Horticultural.
Sizes under 6 ins. by 4 ins. ...	10s. 6d.	12s. 6d. per box.
6 by 4 „ 7 by 5 .	12 6	.. 15 0 „
7 by 5 „ 8 by 6 .	14 6	.. 17 6 „
8 by 6 „ 10 by 8 ..	15 6	... 20 0 „

Squares above 10 by 8, in Crown or Horticultural, 2½d. to 3d. per foot, according to size and quantity. Patent Rough Plate Tiles, ½ in., 10d., ¾ in., 1s. 3d. each; do. Slates, ½ and ¾ inch thick. Patent Rough Plate Glass for Skylights, Warehouses, and Floors, ¼ in. thick, 6d.; ½ in., 1s., ¾ in., 1s. 2d.; ½ in., 1s 6d.; ¾ in., 2s., 1 in., 3s. per foot, in sizes under 5 feet superficial. Lactometers, for testing the quality of milk, 4 tubes, 7s. 6d., 6 tubes, 10s complete. Glass Milk pans, Pastry Slabs, Rolling Pins, and Moss Dishes for Bulbous Plants. Propagating and Bee Glasses. Fish Globes. Gas and Lamp Glasses of every description. Linseed Oil Putty, 8s.; White Lead, 26s per cwt. Linseed Oil, Turpentine, Paints, Colours, Varnishes, Brushes, and Tools in every variety.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

BENCH offers for sale Patent HOT-HOUSES, which he will warrant far superior to all others, in every respect, viz, 1 Span Roof, 28 feet 6 ins. long, 13 feet 6 ins. wide, 40l., Lean-to, 28 feet 6 ins long, 16 feet 6 ins. wide, 50l., with best timber and 16-ounce glass of large size. Patent Lights for Pits, Frames, &c., requiring no paint, 7d., 8d., and 9d., per superficial foot, according to quantity, &c.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the Improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flowerpots, &c., in boxes, of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole agents in London, G. and J. Deane, Horticultural Implement Warehouse, 46, King William-street, London-bridge.

JOSIAH AND JESSE JESSOP (Sons of, and late Assistants to, Mr. C. H. Jessop), respectfully notify that they have commenced business as Nurserymen, Seedsmen, Florists, and Dealers in British and Foreign Birds, at "the Aviaries," St. James's Square, Cheltenham, and trust by promptitude in the execution of all orders with which they may be favoured, to merit a share of patronage. Bee boxes, Gold and Silver Fish, Useful and Ornamental Poultry, Foreign Birds, Rabbits, &c.

FLEXIBLE INDIA-RUBBER PIPES AND TUBING, for Railway Companies, Brewers, Distillers, Fire Engines, Gas Companies, Gardening and Agricultural purposes, &c.—J. L. HANCOCK'S Patent VULCANISED INDIA-RUBBER HOSE-PIPES are made to stand hot liquor and acids without injury—do not become hard or stiff in any temperature (but are always perfectly flexible), and as they require no application of oil or dressing, are particularly well adapted for Fire Engines, Pumps, Gas, Beer Engines, Gardens, Liquid Manure, and all purposes where a perfectly flexible pipe is required. Made all sizes, from ¼ inch bore upwards, and of any length to order. Vulcanised India-rubber Garden Hose, fitted with brass taps, copper branch, and roses complete, ready to be attached to pumps, water-butts, or cisterns. Sole Manufacturer, James Lyne Hancock, Goswell-mews, Goswell-road, London.

James Lyne Hancock invites the attention of parties using long lengths of FLEXIBLE GARDEN HOSE to his SELF-ACTING HOSE-PIPE REEL, which will be found a most convenient machine for readily winding up and conveying away the hose when out of use. By it also liquid manure is easily distributed from tanks.—N. B. Vulcanised India-rubber washers of all sizes, for joints or hot-water and steam pipes, and Vulcanised sheet rubber any thickness for all kinds of joints, and other purposes.

Sales by Auction.

JAVA ORCHIDS.

MR. J. C. STEVENS begs to announce for Sale by Auction, at his Great Room, 38, King-street, Covent-garden, on THURSDAY, May 17, at 12 for 1 o'clock, an importation just arrived from Java, comprising three or four quite new distinct species of Acrides, a few strong plants of Saccolabium in the way of Blumei, some fine masses of Grammatophyllum speciosum, a very fine new Calanthe, Vandas, and other Orchids, in good condition, having been brought home by the Collector. May be viewed the day prior and morning of sale, and Catalogues had.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, Bartholomew-lane, on THURSDAY, May 17, 1849, at 12 o'clock, a first-rate collection of DAHLIAS, FUCHSIAS, VERBENAS, HEARTSEASE, fine GERANIUMS, and other plants in bloom —May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, Leytonstone.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to offer to Public Competition by Auction, on the Premises, 14, Princes-square, Kennington, by order of the Proprietor, retiring from the fancy, on MONDAY, May 28, 1849, at 3 o'clock, a rich bed of TULIPS, about 80 rows, comprising Pandora, Marcellus, Maid of Athens, Louis XVI., Aker's Appelles, Lord Collingwood, Duke of Devonshire, Pindar's Sir Robert Peel, Musidora (like Fanny Kemble), Thalia, Brulante Eclatante, Madame Malibrau, Emperor of Austria, Major Beauclerk, and many seedlings that are not yet out, a capital stage, roller, and canvas complete, Tulip cabinet for 80 rows.—May be viewed one week prior to the sale. Catalogues had on the Premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone, Essex.

CHOICE TULIPS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by the Executrix of the late Mr. G. Jeffery, to sell by Auction, on the premises, Paradise-row, Rotherhithe, on TUESDAY, 29th May, his superb collection of TULIPS, OFFSETS, TULIP-STAGE, CABINETS, &c. This fine collection, made at great expence of money and time, is worthy the prompt attention of Amateurs, Collectors, and the Fancy. PROTHEROE and MORRIS invite their friends to an early inspection of this superb stock, for the purpose of adding attractive flowers to their collections.

DALSTON NURSERY.

To Noblemen, Gentlemen, Nurserymen, Florists, and others

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Smith, to sell by public Auction, on the premises, Dalston, Middlesex, on MONDAY, May 21st, and following day, at 12 o'clock precisely, in consequence of the land being required by the London and Birmingham West India Dock Junction Railway Company, the valuable GREENHOUSE PLANTS, consisting of choice Azalea indica, Pimeleas, Burchellias, Correas, Metrosideras, Nerines, Begonias, Erythrinas, Hydrangea japonica, Daphne indica rubra, Myrtles, Acacias, Heliotropes, Cactus, Geraniums, Chrysanthemums, Fuchsias, Verbenas, large Aloes, Mesembryanthemums, Magnolias, Wistarias, Roses, Sweetbriars, Clematis, Persian Lilacs, white Brooms, double Furze, &c.—May be viewed two days prior to the sale. Catalogues had, 6d. each (returnable to purchasers), on the premises, at his shop, Covent-garden, of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NURSERY AND SEEDSMEN.

TO BE SOLD, by Private Contract, that old and long-established Nursery and Seed Business BROMPTON PARK NURSERY, carried on for many years by Messrs GRAY, ADAMS, and HOGG, the situation is first-rate, and the connection good —For particulars apply to Mr JOHN SANGSTER Nursery Seedsman, Newington Butts, London; Mr. ROBERT DONALD, Nurseryman, Woking, Surrey, or to SOLE and TURNER, Solicitors, 68, Aldermanbury, London.

TO FRUITERERS, GREENGROCERS, AND OTHERS

TO BE DISPOSED OF, a SHOP, HOUSE, and convenient premises (18 years of lease unexpired), in a first-rate situation; business extensive. Coming-in moderate. —For particulars, address, post paid, to Mr. MOORE, 21, King-street, Covent-garden, London.

FARM TO BE LET.

TO BE LET, in the neighbourhood of London, a FARM. No one need apply who cannot command in Stock and Money 2500l.—Address, by letter, Alpha, care of the Publisher of the *Gardeners' Chronicle*, 5, Upper Wellington-street, Strand, London

FARM WANTED in the South of England, where the communication with London is frequent and convenient, with a good family residence. An Agriculturist who has made farming on scientific principles his study and practice, and who is much engaged in the management and general improvement of landed properties, being about to quit his present farm, is desirous of taking another on an estate where his example may be useful to the tenants in introducing a better system of agriculture, and where he may be engaged in the general management and improvement of the property. The Advertiser wishes more particularly to address himself to the owners of large properties contemplating extensive improvements. —Address, Mr. HEWITT DAVIS, No. 3, Frederick's-place, Old Jewry, London.

To DAIRY FARMERS, BREEDERS of PIGS, POULTRY, &c.

PARTNERSHIP.—The Advertiser, with capital at command, is desirous of joining in PARTNERSHIP with some practical man in the above line. Within a few miles of London preferred.—Apply by letter to H. R., at Mr. Cooper's, Chemist, 20, Royal Exchange, London.

MIDDLESEX.—SUNBURY WINDMILL, RESIDENCE, COTTAGE, LAND, &c., for investment or occupation.

MR. EDWARD RYDE, SURVEYOR, LAND AGENT, &c., is instructed to offer for Sale, by Private Contract, the above valuable FREEHOLD PROPERTY, situate in the vicinity of good roads, and in close proximity to several Stations on two important lines of Railway within 15 miles of London.—Full particulars at his offices for the Survey, Valuation, Sale, or Purchase of Landed Property, 14, Upper Belgrave-place, Eaton-square, London.

HAYMAKING SEASON.—Haymaking Machines, with back or reversing action.—MARY WEDLAKE, the Widow of the Inventor and Patentee, begs to acquaint the nobility, gentry, and the public generally, that those HAYMAKING MACHINES, under the name of WEDLAKE'S Patent, are not manufactured by MARY WEDLAKE and Co., but are imitations only, and, although somewhat like in appearance, cannot compare with the genuine ones in durability.

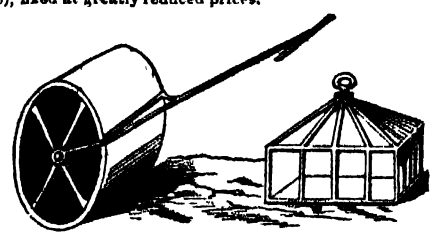
118, Fenchurch-street, opposite Mark-lane.

HEAL AND SON'S LIST OF BEDDING, containing a full description of Weights, Sizes, and Prices, by which purchasers are enabled to judge the articles best suited to make a good set of Bedding, sent free by post, on application to their Factory, 196 (opposite the Chapel), Tottenham-court-road, London.

COTTAM & HALLEN, ENGINEERS, IRON FOUNDERS, &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON.

COTTAM and HALLEN having had experience in the erection of HOTHOUSES and CONSERVATORIES (made of Iron or of Iron and Wood combined), and from many improvements they have made during that time, can with confidence undertake to erect such buildings with economy and dispatch.

HOT WATER APPARATUS for heating the above and other buildings of which they have constructed upwards of 3000), fixed at greatly reduced prices.



COTTAM and HALLEN have on show at their repository, No. 2 Winsley-street, Oxford-street, a great variety of the following articles, for GARDENS, &c., at Greatly REDUCED PRICES, viz.:

Garden Rollers,	Hand-glass frames,
Garden Engines,	Flower Stakes,
Garden Syringes,	Flower-bordering,
Watering Pots,	Flower Stands,
Garden Vases,	Garden Arches,
Mowing Machines,	Garden Chairs.

Every description of Work, both plain and Ornamental in wrought and cast iron, for Gardens, &c. &c.

HORTICULTURAL TOOLS and AGRICULTURAL IMPLEMENTS of all kinds

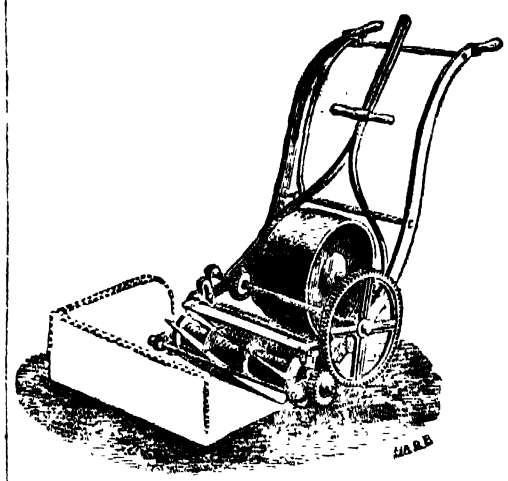
STRONG IRON HURDLES, strained Wire Fencing, &c.

Show Rooms at the MANUFACTORY 2 Winsley-street, and 76 Oxford-street three doors West of the Pantheon Bazaar.

BUDDING'S PATENT MACHINE FOR CUTTING LAWNS, PLEASURE GROUNDS, BOWLING GREENS, &c.

MANUFACTURED AND SOLD BY

JOHN FERRABEE AND SONS, Phœnix Iron Works, near Stroud, Gloucestershire, Engineers, Millwrights, Machinists, Iron and Brass Founders, and Manufacturers of Agricultural Implements.



This Machine may be worked by persons who cannot use a scythe. It may be adjusted to cut any length and leaves a more even and uniform surface than can be produced by the most skilful mower. The Grass may be cut when dry, and may be collected in the box, enabling the gardener to cut his lawns at the most convenient time, and rendering sweeping afterwards unnecessary; while, with the same amount of labour, more than double the quantity of work can be done than with a scythe. Upwards of 3000 of these machines are now in use. They are made of various sizes both for hand and horse power, and the prices this season have been considerably reduced.

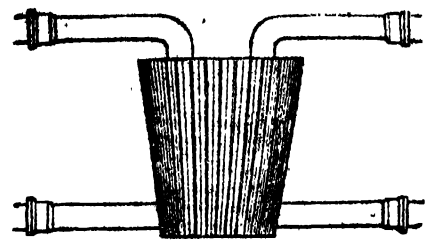
Messrs. Ransome and May, Ipswich, are General Wholesale Agents for London, Middlesex, and the adjacent counties; also for Cambridgeshire, Northamptonshire, Lincolnshire, and the Eastern Counties.

The Machines are also sold by the following Ironmongers: Mr. W. Drury, Castle-street, Liverpool; Messrs Lister and Lees, Cateaton-street, Manchester; Messrs. Mappleback and Lowe, Bull ring, Birmingham, Messrs J. Nelson and Sons, 47, Briggate, Leeds; Mr. T. Johnson, Leicester, Messrs. Young and Spence, Shrewsbury; Messrs. Sanders & Haywood, Derby; and Mr John Wigglesworth, Market-place, Nottingham.

METCALFE AND CO.'S NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose—1s. An improved Clothes Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes of improved graduated and powerful friction. Velvet Brushes which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

CAUTION.—Beware of the words "From METCALFE'S" adopted by some houses.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

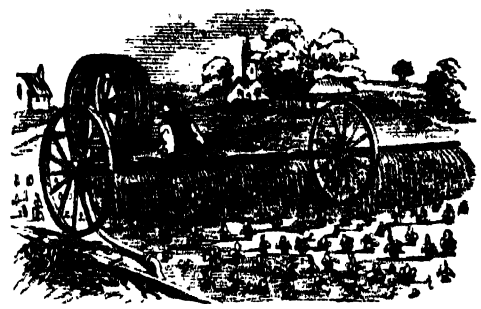
10 in.	will warm	50 ft. 4 in. pipe	..	£1	15 0
12 in.	do.	75 ft. 4 in. do. ..	...	2	5 0
14 in.	do.	100 ft. 4 in. do. ...	..	2	15 0
16 in.	do.	150 ft. 4 in. do. .	...	3	10 0
18 in.	do.	250 ft. 4 in. do ..	...	4	10 0
21 in.	do.	350 ft. 4 in. do. ...	...	5	10 0
24 in.	do.	450 ft. 4 in. do. ...	...	7	0 0

NEW PATTERN BOILERS.

30 in.	will warm	800 ft. 4 in. pipe	..	15	15 0
36 in.	do.	1500 ft. 4 in. do. ...	..	25	0 0

All Boilers with double arms, up to 18 in., 5s. extra; to 24 in., 10s extra, all above, the same price.

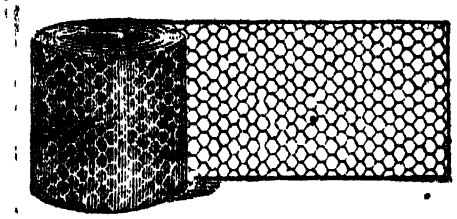
130, Fleet-street, London, May 12.



WOODE'S PATENT IRRIGATOR & CATARACT.

Working Models of these Implements may be seen in operation daily, from 9 A.M. till 2 P.M., at 475, Oxford-street, Bloomsbury, where particulars may be had.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



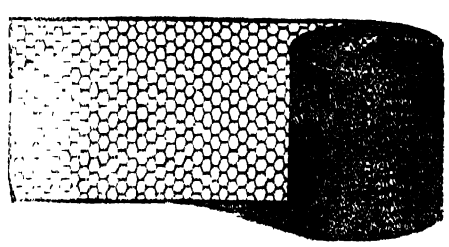
GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide. It can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3d.	per yard	30 inches wide	7½d.	per yard
18 "	4½d.	" "	36 "	9d.	" "
24 "	6d	" "	48 "	1s.	" "

Galvanised do., 1d per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard, if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames, Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d each; Garden arches, 20s. each; Flower Stands, from 4s 9d each, Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work, Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 63, Snow-hill, London.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



		Galvanized.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7d. per yd.	5d. per yd.
2-inch " strong "	..	9 "	6½ "
2-inch " extra strong "	...	12 "	9 "
1⅝-inch " light "	..	8 "	6 "
1⅝-inch " strong "	....	10 "	8 "
1⅝-inch " extra strong "	..	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Sheddings, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronized and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry; and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

GRAY, ORMSON, AND BROWN, Duke's-road, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

GRAY, ORMSON, and BROWN, have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

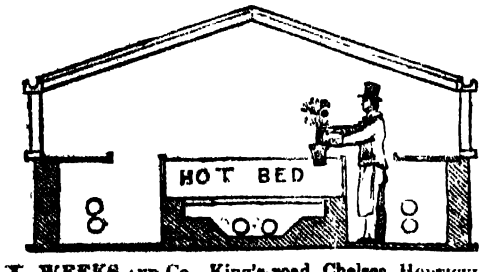
N.B. Plans and Estimates furnished free.

STRAWBERRIES, FLOWERS, &c.

ROBERTS'S HORTICULTURAL DOUBLE TILES.—A new invention, lately registered, patronised by the Horticultural Society.—Those who wish to grow Strawberries to perfection, and free from dirt, should purchase the above Tiles; specimens may be seen, together with an improved Flower Supporter, also Tiles and Socket for growing Melons, Cucumbers, Celery, &c., on a new and improved principle, at JAMES CHANTRES', Seedsman, 74, King William-street, London, who is appointed Agent for the sale of them

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

WORKS

PRINTED FOR

TAYLOR, WALTON, AND MABERLEY,

28, UPPER GOWER STREET, AND 27, IVY LANE, PATER-NOSTER ROW.

I.

Young's Lectures on Natural Philosophy and the Mechanical Arts. A new edition, with Reference and Notes. By the Rev. P. KELLAND, M.A., Professor of Mathematics, &c. in the University of Edinburgh. Two vols. 8vo, with 43 copper plates, 24*s.* cloth.

"All who seek information should know that Young is not merely a popular writer, but by far the most popular of those whose accuracy can be relied on in a vast range of subjects, and who have actually written through that range."—*Athenæum.*

II.

Liebig's Agricultural Chemistry.—Fourth Edition, 8vo, 10*s.* 6*d.*

"It is not too much to say, that the publication of Professor Liebig's Organic Chemistry of Agriculture constitutes an era of great importance in the history of agricultural science. Its acceptance as a standard is unavoidable; for following closely in the straight path of inductive philosophy, the conclusions which are drawn from its data are incontrovertible."—*Silliman's Journal.*

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Liebig's Researches into the Motion OF THE JUICES IN THE ANIMAL BODY. This work contains, in connection with the Author's remarks on the effects of evaporation in plants, his opinion as to the origin of the Potato Disease; also a very ingenious plan, by a German, for the protection of the Potato plant from disease.

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A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 20—1849.] SATURDAY, MAY 19. [Price 6d.

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A FLORAL AND FANCY FETE will be held at the Hanover-square Rooms on the 21st and 22d of June next, in aid of the Royal Asylum of the St. Anne's Society, under Royal and exalted patronage. Programmes will be published in a few days, with the list of patronesses, &c.
2, Charlotte-row. E. F. Leeks, Secretary.

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The Right Hon. Lord Viscount Brackley, M.P.

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By order, E. R. Cutler, Secretary.

GARDENERS' BENEVOLENT INSTITUTION —Notice is hereby given, that a SPECIAL GENERAL MEETING of the Subscribers to this Institution will be holden at the London Coffee-house, Ludgate-hill, on Wednesday the 20th June next, to consider a Report from the Committee as to one of the Pensioners who is in the receipt of parochial relief; also for the purpose of Electing TWO PENSIONERS on the Funds of the Charity from among the following Candidates, whose testimonials have been examined and approved of by the Committee.

Name.	Age.	Residence.	Application.
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Mary Brown	82	London	5th
John Skeates	69	Brixton	5th
Thomas Mills	72	Dulwich	4th
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John Shepherd	70	Clapham	2d
William Browne	71	Andover	1st
Rice Evans	71	London	1st
John Hurden	65	Bath	1st
Cornelius Robinson	70	Blackheath	1st
John Snow	65	Farnborough	1st

The chair will be taken at half-past 11 o'clock. The ballot will commence at 12, and close at 2 o'clock, precisely. No person will be allowed to vote whose subscription is unpaid on the day of election.

By order, Edward R. Cutler, Secretary,
May 19, 1849. 97, Farringdon-street.

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G. ALBO SANGUINEA SUPERBA.—Larger and finer in every way than G. albo sanguinea. 7s. 6d.

*** The above are J. B. and Son's Seedlings.

G. WORTLEYANA (?) or Violacea alba.—Clear white, with a pale lemon-spotted throat, which is nearly encircled by a violet crescent. 5s.

G. CARMINATA SPLENDENS.—Far surpassing G. rubra in size, form, and richness of colour. 5s.

HAKEA VICTORIA.—Drummond says of this plant, "To this, the most splendid vegetable production I have ever beheld, in a wild or cultivated state, I have given the name of our gracious Queen." It bears white, yellow, orange, and blood-red bracteas, from 4 to 10 inches across when 4 years old. 15s. to 21s.

TRITONIA AUREA. 10s. 6d.

The usual discount to the trade.—York Nurseries, May 19.

ESTABLISHED 1786.

GERANIUMS, DAHLIAS, &c., AT VERY LOW PRICES.

WILLIAM E. RENDLE AND CO. have much pleasure in announcing that the South Devon Railway was opened to Plymouth on Monday the 2d of April last; the terminal station being adjoining our Nursery Grounds.

We have this season a very large stock of Geraniums, Dahlias, Fuchsias, &c., including all the newest and best kinds in cultivation, and which we are enabled to offer at the following Low Prices.

*** Our New Plant Catalogue is now ready, and should be obtained by all who have Gardens.*

GERANIUMS.

FIRST CLASS.—Purchaser's Selection of 12 from the following List for 20s., or 20 for 30s.—Lyne's Mercury, Lyne's Star of the West, Foley's Black Prince, Lyne's Sir Walter Raleigh Gilbert, Lyne's Sir Robert Sale, Lyne's Nourmahal, Lyne's Remembrance, Lyne's Perl, Lyne's Queen of Beauties, Beck's Gigantea, Beck's Bacchus, Beck's Hebe's Lip, Beck's Desdemona, Beck's Margaret, Beck's Zenobia, Beck's Sirius, Beck's Rosy Circle, Foster's Orion, Beck's Mustee, Beck's Marc Antony, Beck's Isabella, Standard of Perfection, Gaines's Mary Queen of Scots, and Prince Alfred.

SECOND CLASS. Purchaser's Selection of 12 from the following list for 10s.—Lyne's Duke of Cornwall, Sunrise, Rosebud, Chaplet, Apollo, and Sidonia; Hoyle's Sarah Jane, Titus, Gipsy Queen, and Champion; Catleugh's Orion, Thurtell's Othello and Pluto, Gaines's Duchess of Leinster and King of Saxony, and Foster's Madeline.

Other sorts from 5s. to 10s. per dozen.

SCARLET GERANIUMS.

20 plants of good varieties, including some of the following, for 15s.—Beauty of St. John's Wood, Hendersonii, Tom Thumb, Vivid, Compacta, Monarch, Eclipse, Britannia, Surpass Frogmore, and Cottage Maid.

DAHLIAS.

FIRST CLASS.—Purchaser's selection of 12 from the following list for 18s., including one plant of Tom's CHAMPION OF ENGLAND, and one plant of Tom's STAR OF THE WEST These two excellent flowers were shown at the Exhibition of the Plymouth Amateur Dahlia Society, on the 28th of September, 1848, and won the Silver Medal. The following description is from the *Plymouth Herald*, October 7th, 1848. "An extra Prize (Silver Medal) was awarded to Mr. Toms, Gardener, Tamerton Follott, for two exquisite seedlings, which bid fair to take a prominent place in future winning stands, named Tom's Star of the West, a flower possessing every requisite for a Show Dahlia, and unrivalled in colour, which is a clear bright yellow. The other, Tom's Champion of England, a flower of fine crimson, faultless in form, and perfectly unique as to its petals, which, instead of being as in other Dahlias, each petal in this variety is doubled, that is, there are two petals to one."—Cardinal Ferretti, Jenny Lind, Hamlet, Yellow Standard, Walter Hilson, Felix, Ackbar, Shylock, Toison d'or, Queen of England, Fire King, Boule de Feu, Florence Dombey, Andromeda, Queen of Sheba, Lady of the Lake, Mrs. Anderson, Ariel, Nell Gwynne, Belted Knight, Commander, Box, Roi de Pontilly, and Amy.

SECOND CLASS.—Purchaser's selection of 12 from the following list for 8s., or 20 for 12s.—Cassandra, Berrier, Lady Sale, Duke of York, Biondetta, Captain Warner, Princess de Radzville, Star, Metropolitan Queen, Model, Ludwig, Hanseatstein, Bijou de Colshault, Essex Rosy, Schoon Erfurture, Lady Featherstone, Adrian de Condille, Bertha von Gera, Alexandrina, Marc Antony, Beauty of Bath, Princess Wellina, Pantaloon, Prusser, Prima Donna, Master George Clayton, Madame Dresser, Madame Zaphler, Quinoto, Mollina Adam, Lady Saugster, Engene de Dijon, Miss Vyse, Joseph Balmio, Cleopatra, Bathonia, Sir Edmund Antrobus, Multicator, Mrs. Walner, Harlequin, Enterprise, Marquis of Aylesbury, Standard of Perfection, Victorine, Bees-wing, and Mrs. Keynes.

FUCHSIAS.

Purchaser's selection of 20 from the following list for 12s.—Passingham's Duke of Cornwall, Star of the West, Apollo, Rosalia, and Conqueror, Purity, Ellen, Exquisite, Duchess of Sutherland, Hailstorm, Acantha, One in the Ring, Duchess of Kent, White Perfection, Delicata, Coralina, Dr. Jephson, Beauty of Dalston, Eximea, Napoleon, Goliah, Hero, Lancashire Witch, Hockin's Una, Mrs. Lane, Virginia, Sanspariel, Admirable, Sylph, Gloriosa, Trafalgar, Coronation, Cleopatra, Penelope, Lady Julia, Rosabella, Sir William Magnay, Princess Alice, Magnet, Sidmouthii, Nymph, Gigantea, Uttoxeter Beauty, Exoniensis, Lowreyii, Fulgens, and Formosa Elegans.

INDIAN AZALEAS.

Purchaser's selection of 12 for 20s., or 20 for 30s.—Gledstanesii superba, Vivid, Flammea, Nymph, Grandis, Pink superb, Rosea bicolor, Attraction, Coquette, King of Saxony, Incarnata, Admirable, Sirius, Glory, Carnea, Sunbeam, Rubescens, Pompeii, Pink Perfection, Sappho, Jennerii, Cleopatra, Apollo, Semi duplex rosea, Formosa rosea, Standishii semipleno, Alba striata, Prince Albert, Minerva, Addisonii, Refulgens, Smithii Magniflora, Alba triflora, Woodsii, Grandiflora maculata, Gledstanesii excelsa, Barbata, Rosea punctata, Optima, Purpurea pleno, Gledstanesii, Exquisite, Splendens, Danielsiana, and Smithii coccinea.

DWARF ROSES, IN POTS.

Including the CHINESE, BOURBON, NOISETTE, and TEA-SCENTED VARIETIES.

Purchaser's selection of 12 for 18s., or 20 for 28s.—Souvenir de la Malmaison, Bouquet de flore, Prince Albert, Pierre de St. Cyr, Thermocles, Austerlitz, Camelliaflora, Smith's Yellow Noisette, Solfaterre, Thea perfection, Felton, General Vallaise, Bougere, Charles Reybaud, Delphine de Gaudet, Belle de Florence, Eugene Beauharnais, La grande superbe, Duchesse de Luxembourg, Rubra, Fairy Queen (Red), Marjolin, Fabrier, Theresa Isabella, Moliere, Duc de Luxembourg, Henry the Fifth, Cramoisie superieure, Semperflorens, Madame Laffay, and Louis Phillipe d'Angers.

CINERARIAS.

Purchaser's selection of 12 for 15s.—Maid of Artois, Fulgida, Eminent, Delicata, Lady Fellowes, Lady Seymour, Flash, Monarch, Nobilis, Desirable, Cramoisie superieure, Fairy Queen, Superb blue, Paragon Queen, Duke of York, Compacta, Madonna, Red Rover (Colmar's), Countess of Zetland, Phillis, Bijou, Favourite, and Maratina.

VERBENAS.

Purchaser's selection of 20 for 10s.—Defiance, (Robinson's) Atrosanguinea, Rubra, Gigantea, Hermoine, Satellite, Coronet, Mont Blanc, Gem, Barkerii, Harlequin, Lord John Russell, Cœrulescens, Striata coccinea, The Giant, Emma, Boule de feu, Excelsa, Alba lutescens, Minstrel Boy, Louis Phillipe, Lilac perfection, Favourite, Fulgens, Miss Harcourt, Incarnata perfecta, Bicolor odorata, and Ibrahim Pacha.

Purchaser's selection of the following from our General List.

12	Choice Miscellaneous plants, first class	..	16s.
20	Ditto ,, ,,	...	25
20	Ditto ,, ,, second class		15
12	Choice Miscellaneous Climbers, first class	.	16
20	Ditto ,, ,,	.	25
20	Choice Herbaceous plants	.	10
100	Ditto ,, ,,	.	40
6	Choice Antirrhinums	..	5
6	Choice Petunias	...	5
12	Choice Achimenes, Gloxinias, and Gesneras		15
20	Choice Chrysanthemums	..	12
6	Choice Cactus	.	9
12	Fine Camellias, 18 inches to 2 feet high		36
20	Ditto ,, ,,	..	52
40	Ditto ,, ,,		100

*** All Orders above 2l. will be delivered, free of carriage, by* Messrs. PICKFORD and Co., *to any Station on the Great Western, Bristol, and Exeter, or South Devon Railways; or to any Town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers. All orders by Railway will be sent by* PICKFORD and Co., *unless ordered by any other conveyance.*

All Goods not thoroughly approved of, immediately exchanged; and it is particularly requested that any deficiency in quantities, or inattention to orders, be immediately communicated to us.

** To prevent disappointment, we hope that all orders will be sent to us as EARLY AS POSSIBLE—we shall then be able to supply all the sorts enumerated in this list; but if they are delayed, we fear that we shall be deficient in some instances, having only a limited supply of some sorts.

ORDERS WILL BE ATTENDED TO IN STRICT ROTATION.

Great attention is at all times paid to careful packing. We have sent a great number of plants to the North of Scotland and Ireland, and they have arrived in most excellent condition.

WILLIAM E. RENDLE and Co., Plymouth.

Counting-house, Union-road.

Adjoining the Plymouth Station and Terminus of the South Devon Railway.

FLOWER POTS AND GARDEN SEATS

JOHN MORTLOCK, 250, Oxford-street, respectfully announces that he has a very large assortment of the above articles in various colors, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford-street, near Hyde-park, London.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—GEORGE NEIGHBOUR and SON, 127, High Holborn, London.

"Nutt on Bees" (6th edition), now published.

HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the Kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes, and Lights of all sizes, kept ready for use, packed and sent to all parts of the Kingdom, warranted best material. Garden-lights of every description, at JAMES WATTS', Hothouse Builder, Claremont-place, Old Kent-road. Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

SEEDS.—MEADOW AND PASTURE GRASS SEEDS, in mixtures suited to various soils, &c., at 32s. per acre, allowing 2 bushels and 12 lbs. to each acre. Directions for sowing and treatment will accompany the seeds. Mixed sorts for improving old Grass Lands, 1s. 3d. per lb. Fine sorts for forming Lawns, &c., 1s. 4d. per lb.

GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address GEORGE GIBBS and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c., 26, Down-street, Piccadilly, London.

TULIPS.—120 ROWS OF FIRST-RATE FLOWERS for sale, in one or more rows, at the option of the purchaser, growing in the garden ground of Mr SELBY, New North-road, Hoxton.—Catalogues, with prices affixed, can be obtained of Mr. WOOLNOUGH, on the ground, or 6, Bateman's-row, Shoreditch, London.

TURNIP SEEDS, &c.

W. DRUMMOND & SONS, Agricultural Museum, Stirling, N.B., will furnish, free, on application, priced Lists of TURNIP and other AGRICULTURAL SEEDS.

N.B. All parcels of Seeds above 2l. value (with the exception of Grain and Vetches), delivered free of carriage in London, Liverpool, Hull, Newcastle, and many other parts to which there is a direct communication.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, bernacle, brent, and laughing geese, sheildrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls, white Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

GREENHOUSES AND HOTHOUSES made by Machinery.—A Lean-to Greenhouse, 12 feet by 8, two glass ends, one door, 3 feet of glass in front, glazed, 16 oz. sheet glass, painted three times, delivered to the railroads in London, for 15l. 10s.; a do. 15 feet by 10, 22l. 10s.; a do. 18 feet by 12, 28l. 10s.; a do. 21 feet by 12, 32l. 10s. 1½-inch lights, glazed, and painted three times, 11½d. per foot; 2-inch do. 1s.; if glazed with Hartley's patent rough plate, 1s. 4d. Warranted best materials.—J. LEWIS, Hothouse Works, Stamford-hill, Middlesex.

STRAWBERRIES, FLOWERS, &c.

ROBERTS'S HORTICULTURAL DOUBLE TILES.—A new invention, lately registered, patronised by the Horticultural Society.—Those who wish to grow Strawberries to perfection, and free from dirt, should purchase the above Tiles; specimens may be seen, together with an improved Flower Supporter, also Tiles and Socket for growing Melons, Cucumbers, Celery, &c., on a new and improved principle, at JAMES CHARTERS', Seedsman, 74, King William-street, London, who is appointed Agent for the sale of them.

NEW AND UNRIVALLED FUCHSIAS.

T. TURVILLE can still supply a few more sets of "Elegance" and "Gem," which were exhibited at the Royal Botanic Gardens on Wednesday last, and obtained Certificates. The usual discount when the set is taken.

Baddow-road, Chelmsford, May 19.

BASS AND BROWN'S PRICED DESCRIPTIVE CATALOGUE OF GERANIUMS, FUCHSIAS, PETUNIAS, VERBENAS, DAHLIAS, CHRYSANTHEMUMS, GREENHOUSE and STOVE PLANTS, &c., will be sent free by post on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

TWELVE FIRST-CLASS GERANIUMS for 12s., or 30 for 1l.; 12 of the newest FUCHSIAS for 12s.; 12 of the newest VERBENAS for 3s. 6d. to 7s. 6d. See HENRY WALTON'S Advertisement in the *Chronicle* of May 5, page 274. Catalogue on application.

Edgend, Marsden, near Burnley, Lancashire.

ROSES.

EDWARD DENYER begs respectfully to inform Noblemen, Gentlemen, and his friends in general, that in his Rose House, which is entirely appropriated for the growth, ROSES in pots may now be seen in full bloom, price, from 18s. to 20s. per dozen. Also Geraniums and Greenhouse plants in great varieties. A very large stock of plants for Beds and Flower-borders, viz., Geraniums, Fuchsias, Verbenas, Heliotropes, Calceolarias, &c. &c., from 4s. to 6s. per dozen. Orders to the amount of 10s. sent carriage free 10 miles; to the amount of 40s., 50 miles; and to the amount of 5l., 100 miles. Catalogues on application.

N.B. E. DENYER begs to inform his customers he has no Seed Shop in London; the only establishment he has is at Loughborough Nursery, Brixton, near London.—May 19.

RHODODENDRON JAVANICUM, OF BLUME; OR THE BEAUTIFUL ORANGE-COLOURED RHODODENDRON FROM JAVA.

WILLIAM ROLLISSON AND SONS beg respectfully to inform the Nobility, Gentry, and trade, that they intend sending out, on and after Monday the 18th June, fine healthy plants of the truly magnificent Rhododendron Javanicum, the variety with beautiful orange-coloured flowers, as advertised in the *Gardeners' Chronicle* last autumn.

W. R. and SONS beg to remark that their Collector in Java gathered the seed from which their stock was raised, off plants of the orange-coloured variety, spotted with red, which he had seen in flower some time previously, and on this account, W. R. and SONS can positively warrant them to be the genuine plant, as above described. This most beautiful, interesting, and dwarf-growing shrub is admirably adapted for planting out in a conservatory, or growing in pots in a greenhouse or cold frame, and our Collector having found it upon the volcanic range of mountains in Java, 9,700 feet above the level of the sea, there is every reason to believe that it will prove a hardy plant, at least in some part of this country.—Tooting Nursery, near London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.

J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

GOODE'S PATENT IRRIGATOR & CATARACT. Working Models of those Implements may be seen in operation daily, from 9 A.M. till 2 P.M., at 473, Oxford-street, Bloomsbury, where particulars may be had.

JOSIAH AND JESSE JESSOP (Sons of, and late Assistants to, Mr. C. H. Jessop), respectfully notify that they have commenced business as NURSERYMEN, SEEDSMEN, FLORISTS, and Dealers in British and Foreign Birds, at "the Aviaries," St. James's Square, Cheltenham, and trust by promptitude in the execution of all orders with which they may be favoured, to merit a share of patronage. Bee boxes, Gold and Silver Fish, Useful and Ornamental Poultry, Foreign Birds, Rabbits, &c.

TO BE SOLD, an ALDERNEY BULL, one of the greatest beauties that was ever seen; 1½ year old, of the purest blood, and the colour a dark liver and brown. He has no fault, and the owner can be referred to, if required.—Apply to Mr. OLIVER, Post-office, Ewell.

SHETLAND PONIES AND CATTLE.—Just landed, direct from Shetland, a quantity of very handsome small PONIES; size, from 8½ to 12 hands high. Also some very handsome small COWS and HEIFERS, down Calving, some with Calf by side, and in milk; also some small OXEN and SHEEP, for feeding. These Cows give a large quantity of milk for their size, which is very rich, similar to the Alderney, and they are very hardy and suitable to this climate. To be seen at THOMAS OXTON'S, Salesman and Importer to her Majesty, 39, Wapping.

TWELVE NEWEST FIRST CLASS DAHLIAS can be selected from RENDLE'S CATALOGUE, for 18*s.*, including a plant of Tom's Champion of England and Star of the West, two of the finest flowers of the day. Catalogues on application to WILLIAM E. RENDLE and Co., Nurserymen, Plymouth.

FUCHSIAS, INDIAN AZALEAS, CAMELLIAS, DWARF ROSES, VERBENAS, CINERARIAS, PETUNIAS, and CHRYSANTHEMUMS can be obtained at the lowest prices, on application to WILLIAM E. RENDLE and Co., Nurserymen, Plymouth.

Our new Plant Catalogue is now ready, and can be had on application.

FIRST CLASS DAHLIAS.

JOHN KEYNES begs to submit the following list of First Class DAHLIAS, at reduced prices: comprising Lilac Standard, the best out in its class; Purple Standard, likewise first-rate; Miss Chaplin, Sunset, and Victoria Regina. Parties ordering the four first-named varieties, will have Victoria Regina included without charge. All the most approved Flowers in cultivation, at proportionally moderate charges. Orders directed to JOHN KEYNES, Castle-street Nursery, Salisbury, will meet with immediate attention.

FANCY DAHLIAS.

JOHN KEYNES, of Salisbury, will be ready to send out the following splendid and most constant flowers of the season, in May, at 7*s.* 6*d.* each. Miss Blackmore, Rainbow, Miss Stevens, and Sunbeam, all of which have been accorded certificates at the principal exhibitions.

DAHLIA PRIZES.

JOHN KEYNES, of Salisbury, offers the following Prizes for the best Six Blooms shown from the nine Flowers advertised as above, at the Salisbury, London Floricultural, and South London Societies. First Prize, 2*l.*; 2d do., 30*s.*; 3d do, 1*l.*; 4th do., 15*s.*; 5th do., 10*s.* Open to Amateurs and Gentlemen's Gardeners. No entrance money.

RENDLE'S NEW SPRING CATALOGUE OF PLANTS is now published, and can be had on application to WILLIAM E. RENDLE and Co., Nurserymen, Plymouth.

FUCHSIA "SIR CHARES NAPIER."—This is one of the finest dark varieties of Fuchsias ever yet offered to the Public. It is very remarkable for its fine habit and profusion of blooms; it is a large bold flower of great merit. The sepals are beautifully expanded, showing its extra large violet purple corolla to the greatest advantage; it is very much superior to that well known Fuchsia, "Colossus," which has been so much admired. It was seen in bloom last summer by numerous amateurs and nurserymen, at E. TILEY'S Nursery, and who were quite unanimous in pronouncing it the best dark variety of Fuchsia they had ever seen. Blooms of it were sent to the Gardeners' and Florists' Journal, and spoke of in the manner as above. Fifty plants of it were ordered last summer by parties who saw it in bloom. Fine healthy plants are now ready to send out, at 10*s.* 6*d.* each. The usual allowance made to the Trade when three are taken.

UNEQUALLED VERBENA "CRITERION."

EDWARD TILEY has much pleasure in offering this superb Seedling Verbena, so much admired while in bloom last season. It is a most profuse bloomer, and a very attractive variety. One plant not more than 15 inches in diameter had above 65 trusses of blooms on it at one time, besides buds. The colour is a beautiful orange scarlet, with large primrose eye, giving the flower a very striking and handsome appearance. This also was sent to the Gardeners' and Florists' Journal, October 7th "E T.—Seedling Verbena, scarlet truss and flower of medium size, form first-rate, the petals are broad, flat, and close, approaching the shape of a Polyanthus, eye primrose, very circular; a fine show variety." A box of blooms was sent a second time, and received the like answer. Strong plants are now ready to send out, 7*s.* each. The usual allowance made to the Trade when three are taken. Postage and package free, on the receipt of a Post-office order.

Seeds of Superb Double Hollyhock, 2*s.* 6*d.* per packet; Sweet William (double), 1*s.* 6*d.* do., Autarrhinum, 1*s.* do., still on hand. For particulars, see Advertisement in this Paper of April 28th.

Sold at EDWARD TILEY'S General Seed Shop, 16, Pulteney-bridge, Bath.

SELECT PLANTS.—The following are now sending out, strong plants; any may be had free by post without extra charge, except those marked p. Packages delivered carriage free to London, or with orders of 40*s.* and upwards, plants sent gratis for expense of distance. Particular attention is paid that all plants are true to colour and name, and sent carefully and securely packed for travelling to any distance.

BEDDING PLANTS.

ANAGALLIS COCCINEA SPLENDENS, 6*s.* per dozen.
BOUVARDIA SPLENDENS, 6*s.* per doz.; Flava, 9*s.* per doz.
p. BALSAMINA LATIFOLIA, 5*s.* to 9*s.* per dozen.
p. CALCEOLARIA, in 5 fine shrubby varieties, 9*s.* per dozen.
CHÆNOSTOMA POLYANTHA, 6*s.* per dozen.
CUPHEA, in 3 fine varieties, 6*s.* per dozen.
GAILLARDIA, in 5 varieties, 6*s.* per dozen.
HELIOTROPIUM VOLTAREANUM, 6*s.* to 9*s.* per dozen.
" " PERUVIANUM, 6*s.*
" " TRIOMPHE DE LIEGE, 9*s.* per dozen.
LANTANA CROCEA, 6*s* to 9*s.* per dozen.
LOBELIA ERINUS GRANDIFLORA and COMPACTA ALBA, 4*s.* to 6*s.* per dozen.
PLUMBAGO LARPENTÆ, 18*s.* per doz., or 2*s.* 6*d.* each.
" CAPENSIS, 6*s.* to 9*s.* per dozen.
SALVIA, in 6 fine vars., 6*s.* per doz; Patens alba, 2*s.* each.
" OPPOSITIFOLIA, 12*s.* to 18*s.* per doz.; each, 2*s.* 6*d.*
ZAUSCHNERIA CALIFORNICA, 1*s.* 6*d.* each.
FUCHSIAS, in fine select assortment, 5*s.* and 9*s.* per dozen.
" superior new vars. of 1848, 15*s.* per dozen.
VERBENAS and PETUNIAS, fine and select, 4*s.* to 7*s.* 6*d.* per dozen.
Ditto ditto superior new of 1848, 12*s.* per doz.
CHRYSANTHEMUMS, fine and select, 6*s.* to 9*s.* 6*d.* per doz.
Ditto, superior new varieties, 15*s.* per dozen.
p. GERANIUMS, fine and select vars., 6*s.* and 9*s.* per dozen.
p. " superb show varieties, 12*s.* per dozen,
p. DAHLIAS, fine and select, 5*s.* and 9*s.* per dozen.

HARDY BEDDING PLANTS.

ANTIRRHINUM, in fine select vars., 6*s.* per dozen.
ANEMONE JAPONICA, 5*s.* per dozen.
CAMPANULA NOBILIS, 9*s.* per dozen.
LOBELIA, in 4 fine varieties, 9*s.* per dozen.
PENTSTEMON, in 8 fine vars., 7*s.* 6*d.* per dozen.
PHLOX, in fine assortment, 9*s.* per dozen.
" 20 varieties, 12*s.* 6*d.*
p. ROCK PLANTS, 25 vars., 12*s.*; 12 vars., 7*s.* 6*d.*

SELECT GREENHOUSE AND STOVE PLANTS.

12 ACHIMENES, fine and select, 7*s.* 6*d.*; 6 fine new 15*s* 0*d*
p. 6 GLOXINIA, in 6 fine varieties 6 0
p. 50 vars. fine and select GREENHOUSE PLANTS... 50 0
p. 25 ditto, 28*s.*; 12 vars. 15 0
p. 12 Select GREENHOUSE CLIMBERS 12 0

Our Priced Descriptive Plant Catalogue will be sent free by post, on application.

Post-office orders may be made payable to either BASS and BROWN or to STEPHEN BROWN. Remittances requested from unknown correspondents.

Seed and Horticultural Establishment, Sudbury, Suffolk.

TWELVE FIRST-CLASS GERANIUMS can be selected from RENDLE'S CATALOGUE for 20*s.*; or 20 for 30*s.* Twelve Second-class do. for 10*s.* Catalogue on application to WILLIAM E. RENDLE and Co., Nurserymen, Plymouth

BEDDING PLANTS.

JOHN HAYES, FLORIST, Farnham, Surrey, begs to offer upwards of 100 distinct varieties of Bedding Plants, 14 varieties of Geraniums, including Colling's Superb, Shrubland Superb, and Tom Thumb, from 2*s* 9*d.* to 3*s.* 6*d.* per dozen. 14 varieties of Verbenas, from 2*s.* to 3*s.* 6*d.*; and other varieties described in Catalogues, which will be sent on receipt of one postage stamp.

HORTICULTURAL SOCIETY OF LONDON.

LECTURES ON HORTICULTURE.—TUESDAY NEXT, MAY 22, at 3 P.M.—"The ROOT, its means of obtaining food, and its other properties."

No one can be admitted except Honorary Members and Fellows of the Society, their wives or sisters, and visitors specially introduced by them; or the Foreign and Corresponding Members of the Society.—21, Regent-street, May 16, 1849.

The Gardeners' Chronicle.

SATURDAY, MAY 19, 1849.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	May	21	Chemical	8 P.M.
			Pathological	8 P.M.
			Medical	8 P.M.
			Statistical	8 P.M.
			British Architects	8 P.M.
TUESDAY,	—	22	Horticultural (Lecture)	3 P.M.
			Civil Engineers	8 P.M.
			Medical and Chirurgical	8 P.M.
			Zoological	9 P.M.
WEDNESDAY,	—	23	Microscopical	8 P.M.
			Society of Arts	8 P.M.
			Ethnological	8 P.M.
THURSDAY,	—	24	Linnean (Anniversary)	1 P.M.
			Royal Society of Literature	4 P.M.
			Numismatic	7 P.M.
			Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	—	25	Philological (Anniversary)	8 P.M.
			Royal Institution	8½ P.M.
SATURDAY,	—	26	Royal Botanic Gardens (American Plant Show)	2 P.M.

COUNTRY SHOWS.—Wednesday, May 23 Derby Midland Horticultural—Thursday, May 24: Liverpool Floral and Horticultural.

ABOUT three years since, a Committee of the House of Lords complained of the legal prevention of TOBACCO CULTIVATION, as being a burthen affecting real property. The absurdity of this complaint we pointed out at the time,* and we had hoped that the public had become too intelligent to ask a Government to assist them in doing that in England which can only be done profitably in a totally different climate. Men might as well ask for Acts of Parliament to enable them to grow Sugar, Indigo, and Cotton. The Lords' Committee, instead of proclaiming that the illegality of Tobacco cultivation is a burthen on land, should have prayed that the laws should be rigorously maintained, for, if its growth were permitted, they would soon discover, in their exhausted fields and impoverished tenantry, that they had mistaken a plague for a blessing. For the proofs of this we refer our readers to the place above quoted.

We see, however, that the Duke of RICHMOND has revived the question, by bringing before the Royal Agricultural Society a pamphlet by a MR. LITTLE, of Chelsea, who asserts that Tobacco growing would be highly profitable, and therefore, in the present depressed state of agriculture, should be permitted. According to this gentleman, a Tobacco crop is worth 50*l.* an acre, subject to expenses, which he estimates, upon the authority of some Irish grower, to amount to from 18*l.* to 30*l.* The process by which this result is arrived at is worth an analysis. In the first place, MR. LITTLE states that his Tobacco was *very fine*; by this he must mean fine looking, or he can have no knowledge of what constitutes fine Tobacco. It happens that we have in our possession a sample of his produce, forwarded by himself, and we are obliged to say that it is of the worst quality we doubt whether it would bear any price whatever in the market. And thus it always must be with English grown Tobacco, so that a correspondent who complains to us that he has repeatedly planted it without ever obtaining "the right sort," may console himself with the reflection that the right sort is not producable in England. He may grow the leaves, stem, and flowers, but the quality is unattainable. By the side of MR. LITTLE'S sample are now lying before us some of the finest leaves from Guatemala, a Tobacco hardly inferior to that of Cuba, carefully prepared for the manufacturers; and for that Tobacco not more than 1½*d.* a lb. can be obtained. Nevertheless, MR. LITTLE values his crop at 6*d.* per lb. for the best part, and at 5*d.* to 2*d.* for the remainder!

The second point of his calculation consists in assuming that a Tobacco crop will yield 2625 lbs. of cured leaves per acre. But there is no reason to believe that any such quantity can be obtained. It is true that VAN AELBROOK estimates an average Flemish crop at above 3000 lbs., but this is contradicted by other authority. According to SCHWERTZ the growers in Alsace do not obtain more than 15 quintals per hectare, or about 600 lbs. per acre, and the Prussian crop is not estimated at more than 1450 lbs. Perhaps the first of these quantities represents what is marketable, and the second what is obtained from the land, whether marketable or not. Let us next examine the cost of obtaining this crop.

The Duke of RICHMOND'S correspondent does not himself pretend to any acquaintance with this part of the question. He relies upon his Irish friend. He merely suggests that it cannot cost much, because so little is required in the shape of labour during the growth that one man would superintend three or four acres; and he asserts, "with no hesitation, that it is not an exhausting crop." We are curious to learn how MR. LITTLE ascertained this fact? he probably means that his crop of Tobacco, consisting of 160 plants, did not run out his garden at Chelsea in the very first year. But if he will inquire into the experience of Tobacco-growers he will find that he is as much mistaken in this as in every other matter concerning which he *has* written. The estimate of the cost per acre of manure alone is in Flanders 29*l.*; and it is notorious that in Virginia it speedily exhausts all except the very best land. MR. LITTLE'S Irish calculator is, however, satisfied with estimating the cost of manure at 2*l.* 8*s.* per acre! We are assured that very little labour is needed; but MR. PORTER, who is rather better authority, states that "Tobacco husbandry calls for continual labour in weeding and earthing up the plants, and in constantly stirring the earth about the roots, and these labours must be persisted in through the whole growth of the crop." In fact the Irish calculation, on which MR. LITTLE relies, admits that the cost of labour is 13*l.* 15*s.* per acre; it is probably much more, wherever labour bears the usual English value.

These amendments of MR. LITTLE'S calculations will place the profit of Tobacco growing in Great Britain in a somewhat different point of view. The account will really stand thus:

	£	s.	d.
Cost of labour, rent, taxes, &c. (Irish estimate)	15	8	6
Manure (Flemish estimate)	29	0	0
	£44	8	6
Return from cured leaves, 1050 lbs. (MR. LITTLE'S estimate) at 1¼*d.*	6	11	3
Remainder at nil	0	0	0
Loss per acre	£37	17	3

Of course this calculation would be altered if a heavy protecting duty were put on Tobacco from abroad, and no duty were levied upon that of domestic growth; but we cannot conceive that an English Government could be found irrational enough to take such a course. It would be as reasonable to expect that an act should be passed for the promotion of Cotton cultivation in Great Britain, by prohibiting the importation of foreign Cotton.

What the Government should do, for the sake of revenue, as much as for the pecuniary advantage of the public, is, to reduce the duties on Tobacco, so as to render smuggling a ruinous trade. That in one branch of the Tobacco duties the frauds and smuggling are enormous, in consequence of an extravagant duty of 9*s.* 6*d.* per lb., is notorious. We allude to cigars; and as means exist of showing to what an extent the frauds in this article of trade must necessarily be, we take it for the sake of illustration.

The quantity of foreign cigars which pay duty in this country may be taken to average from 25 to 28 millions annually.* But Cuba alone exported to Great Britain in 1847 26,760,000, according to the Parliamentary returns, and there must be an enormous additional quantity brought here from further sources. In 1843 the British West Indies exported to this country cigars to the value of 477*l.*; in 1842 some are reported among exports from the Mauritius, and we presume that small quantities, which we have not remarked, are mentioned as having been sent from other places.

In the returns of exports from most cigar making countries, no distinction is made between those sent to Great Britain and elsewhere, but it appears that the quantity exported from the following places was as follows:

German Commercial Union,	1842	601,898,200
Belgium	1844	45,101,500
France	1843	140,673,000
Manilla	1839	42,400,000
Venezuela	1847	167,692

In round numbers these countries alone export annually about 830 millions of cigars, reckoning only 100 to the lb., instead of 120, which is nearer the truth.

But it would seem that Cuba alone sends here fully as many as pay duty, and that none can arrive from any other part of the world. Yet if we consider what a large quantity of Manilla cigars is publicly sold, and the probability that a great portion of the 700 or 800 millions exported from European countries is landed on our coast, no reasonable doubt can exist that the larger part of all

* See *Gardeners' Chronicle*, 1846, June 6.

* It is difficult to say what is the average number of foreign cigars in a pound. The ordinary sized run to about 120, regalias to about 75; intermediate sizes exist in trade; small cigars are not sold, we imagine, in sufficient numbers to be worth calculation.

the foreign cigars consumed in this country is smuggled. We have heard it estimated that not more than 1 lb. in 3 lbs. pays duty; and thus it must always be so long as the present customs charge of 9*s.* 6*d.* per lb. is insisted upon. We suspect that unmanufactured Tobacco would give very similar results.

If we are at all near the truth in these calculations, it is perfectly clear that the relief to be solicited from Government, for the benefit of the middle and lower classes, consists not in permission to seek destruction by engaging in a ruinous and worthless cultivation, but in a large reduction of duties, which impoverish the exchequer, press heavily upon the consumer, and benefit nobody except the smuggler.

We entirely agree with Earl Grey in the observations he made the other night, in the House of Lords, in reply to the Duke of Richmond:—"It had been complained," said his lordship, "that injustice was done to the farmer because he was not allowed to grow Tobacco; but their lordships knew that the climate of this country was so unfavourable to the growth of that plant that, if foreign Tobacco were admitted free of duty, there was not the remotest possibility that our growers could enter into competition with those of foreign countries. The present law was merely maintained to support the revenue, and to prevent an artificial trade from being bolstered up by the circumstance that a duty was levied upon foreign Tobacco, while no duty was imposed upon English Tobacco. If there were any possibility that persons in this country could grow Tobacco upon equal terms with the foreign producer, he apprehended that there could be no objection to applying the same principle to Tobacco which had been adopted with regard to Beet-root sugar, which was allowed to be manufactured in this country on paying the same duty that would be charged upon it if it were manufactured in the colonies." That is the only view of the question which a statesman can take; and we trust it will put an end to the idle schemes of men so ignorant of the connection between climate and vegetation as to be unable to understand why a tropical crop, demanding much labour, cannot be grown profitably in the North of Europe, where labour is necessarily dear.

In the London papers of last week is reported a case of stealing Orchids by a man of the name of Snow, who is stated to have declared before the magistrate, "that he had committed the theft in consequence of an application made to him by *one of the Duchess of* Sutherland's *gardeners*." As Orchids are not cultivated at any of her Grace's establishments except Trentham, and as this fact is generally understood, Mr. Fleming, the highly respectable gardener there, is anxious that it should be clearly explained that he knows nothing whatever of the affair, and that he does not even know a gardener of the name of Snow, except Earl De Grey's.

We make this statement at Mr. Fleming's desire, although for ourselves we should have taken no notice of an assertion proceeding from a thief struggling for escape from conviction, even if Mr. Fleming's high character did not place him above suspicion. We have also inquired into the facts of the case, and we learn from the Chief Clerk that the exact words used by Snow were these: "I know a young man who is lately gone into a situation, and has written to me to get him some plants. He is at the Duchess of Sutherland's. I know I have done wrong; for stealing is a shocking thing." Upon the face of this statement it is false; for Snow first asserted that "the young man was lately gone into a situation," and immediately afterwards, that "he is at the Duchess of Sutherland's;" so that, according to Mr. Snow, the young man not only tempted him to commit the robbery, but himself possessed the property of being in two different places at one and the same time.

MIXED FLOWER GARDENS VERSUS BEDS IN MASSES OF CONTRASTED COLOURS.

I confess that I am sorry to find your correspondent Mr. Cuthill boldly attempting to advocate the revival of, and to pass a eulogium on, the frittered flower-gardening of past years, and I trust he will not be offended by my taking the liberty of saying (in all courtesy) that my view of the subject is not consonant with his. The difference between indiscriminate mixture and variety was not so well understood a few years ago as it now is. I think that the mixed flower border is the most apt illustration of Mr. C.'s simile (the uniforms of the Spanish Legion) "a thing of shreds and patches." That great authority, Mr. Repton, speaking of plantations where the trees are mixed in a regular manner, says: "In the system of planting, all variety is destroyed by excess of variety. For example: if 10 different clumps be composed of 10 different sorts of trees in each, they become so many things exactly similar; but if each clump consist of the same sort of tree they become 10 different things." This observation applies with equal force to a mixed flower-garden.

It must be admitted that the mode of filling the flower beds of a mansion must be subservient to the requirements and residence of the family in the country; and it is now customary to pass the delightful months of May and June in London, and to resort to the country in July, at which time what can be more beautiful than a terrace-garden arranged in well contrasted masses of colour? In such a garden we avow the principle of artistical disposition; it is an adjunct to the mansion, and should bear the same impress of art and refinement which the "*elegantiæ formarum spectator*" would desire. In such a garden may be introduced vases, sculptures, and other works of design, which would give a character and unity of expression to the whole, while the Cypress would, by its elegant form and associations and perpendicular direction, beautifully contrast with the long horizontal lines of balustrade.

In the gradual progress of society there will be found in general a disposition to adopt old practices which are familiar to us. To advocate what we have been long accustomed to is perhaps natural, but it is a privilege of man, as a reasonable being, to think as to how far old usages are consistent with a state of refined civilisation, and, availing myself of this, I will proceed to test the rival modes of flower gardening by our advanced standard.

Ornamental flower gardens are in general placed as appendages to regular buildings, as mansions, conservatories, &c., and as such must be regarded as episodical works of art, forming a part of the variety of the garden scenery, but constituting in themselves a perfect whole. To do this there must be symmetry, congruity, and harmony of the parts. Montesquieu says, "things which we see in succession ought to have variety, for our soul has no difficulty in seeing them; those, on the contrary, that we see at one glance ought to have symmetry." Upon this principle, and upon that of producing a greater amount of variety, I prefer the massed to the mingled flower garden, wherever it is in connection with a residence of any architectural pretension, remembering always that the gay assemblage of Pelargoniums, Calceolarias, Petunias, Verbenas, &c., are not to be jumbled together in chaotic confusion; but placed with due consideration, to heighten, by contrast, their individual and collective effects. It is one of the great sins of the present day that fashion in these matters is too often mistaken for taste.

> "Despotic Fashion, in fantastic garb,
> Oft, by her votaries, for the magic robe
> Of Taste mistaken, with ill-guiding step
> Directs our path."

I think that art in gardening matters cannot be too highly developed on the ground immediately surrounding a mansion residence. In such a situation it forms a striking contrast to the more distant scenery, each lending to the other a charm; the one of art and brilliant colouring, the other of nature and repose.

I would extend the principle of introducing flowers in masses to the lawn and shrubberies, for the same reason, that greater variety is produced thus than by the old method of mingling together shrubs, herbaceous plants, and annuals in the summer, leaving bare, naked, raw surfaces of mould to offend the eye in the winter and spring months. In the outlines of shrubberies I would avoid the long meandering curves by which too many are distinguished, and endeavour to imitate that bold, irregular, and beautiful effect that intricacy and variety which Nature's hand gives to her own works. In the graceful curves of a walk, made to avoid real or apparent obstacles, or to lead to special or beautiful scenes, there is reason and the beauty of utility; but in long monotonous curves of belts and clumps, with single herbaceous plants ranged with the precision of the plants in our old greenhouses, there is monotony and bad taste.

A walk, too, is avowedly a work of art; it is intended for human comfort and convenience, and like all others of the luxuries (which by habit become the necessaries) of refined society, it should seem what it is, and therefore cannot be too smooth, easy, or highly defined. In the shrubbery the outlines should be those of nature, introducing masses of various kinds to prevail in different localities, and allowing everywhere the shrubs to kiss the turf without the intervention of a raw cutting margin, or those abominable stripes of turf so commonly used as margins, and not inaptly termed ribbons.

If herbaceous plants are used, their proper place appears to me to be rather in the transition flower garden (or that which usually intervenes between the mansion and wilder grounds), than in the parterre or terrace garden. In the beds of the latter the finest effect will be produced by masses of our summer and autumn bedding plants, by various evergreens kept in pots in reserve and plunged in the beds for winter season, and by bulbs treated in the same way for the spring decoration. If herbaceous plants are used they should be in large masses, and the less regular their arrangement is the better will be their effect. *Henry Bailey, Nuneham.*

CHICORY AS WINTER SALAD.

Before I knew that the blanched leaves of Chicory formed excellent salad, I was often at a loss to furnish the table as I wished during the months of January, February, and March; for however plentiful the minor articles, as Mustard, Cress, Celery, Rampion, Radishes, &c., might be, we were still at a loss for a substitute for Lettuce and Endive. The Hardy Green Hammersmith Lettuce is very useful when grown in frames, but few gardeners can spare frame room enough to grow a sufficient quantity to supply a family for three months. This being exactly my case, I was very glad to see Chicory noticed in the *Chronicle* several years ago, and hailed it as an economical method of supplying the deficiency. Nor have I been disappointed in my expectations; and as I know that many gardeners are labouring under similar difficulties, it occurred to me that a few particulars concerning it might not be unacceptable.

Chicory is highly esteemed and very generally cultivated by our neighbours on the Continent, and I think it is only necessary to make its economy, utility, and general good qualities more universally known, to secure more attention to it in this country. In regard to its alimentary qualities, it is as wholesome as Endive; in flavour it is superior to it, and it is generally considered to surpass the famous *Barbe de Capucine* of the French. In cultivation, it requires no more attention than Endive and Lettuce, than which it is much hardier, and requires no artificial protection; indeed so far is it from needing anything of the kind, that the roots should during winter be kept in the coldest part of the garden until within a fortnight of the time in which its leaves will be required, and then a constant supply of its blanched foliage may be obtained from space very little larger than would be necessary to produce an adequate supply of Mustard and Cress during the same period.

An open border should be chosen for this plant, and as it produces long Carrot-shaped roots, the soil should be deep, rather light, and moderately rich. Fresh manure should not be applied unless the ground is very poor; and when it is really necessary, guano will be found preferable to that from the stables. If guano is used, it should be sown broadcast over the beds as soon as the plants are fairly up. The ground should be double dug and well pulverised to the full depth, in order that the long tap roots may meet with no impediment in their downward progress. About the middle or end of June, the seed should be sown in drills, 16 inches asunder. If the seed seems good it should not be sown too thickly, for the plants must be thinned out to the distance of 8 inches from plant to plant. This is a much better method than sowing in a bed and afterwards transplanting, as they are liable to lose their tap roots during the operation, to obviate which is an essential point in their successful cultivation. As snails are particularly fond of Chicory, especially when the plants are young, it will be advisable to sprinkle a little quicklime over the beds as soon as the plants are above ground. Nothing more is necessary, except to fork between the rows before the leaves cover the ground, and afterwards to keep the beds free from weeds. By the end of November the larger leaves will have decayed, leaving only a few small ones in the hearts of the plants. At this time they should be taken up and neatly laid in at the back of a north wall, to prevent the undue excitement occasioned by warm summer weather. Care should be taken to injure the roots as little as possible during this operation.

About a fortnight before the blanched leaves are required for use, a sufficient quantity should be removed into a spare corner of the Mushroom-house or some similar place, where they can have a little heat. They should be planted in old tan, sand, or some other light material which contains just sufficient moisture to set the fibres in motion. In planting, the crowns should stand at least half an inch above the surface, and any loose soil should be removed from about the leaves with a syringe, in order that the young foliage may be perfectly clean when cut. In the space of 10 days the leaves will have made a vigorous growth of as many inches, and if they have grown in perfect darkness the colour will be a delicate creamy white. When the leaves are about a foot high they will be ready for use, and as soon as they are cut the roots should be removed and others brought forward to succeed them. After the earlier forced roots are removed they may be returned to the north border, and have a little old tan strewed over their crowns. Here their strength will in some measure be recruited, and they will bear forcing a second time, and will produce a second crop of leaves towards the middle or end of March. These will be produced from the lateral buds around the base of the crown, if in the first cutting it has not been pared too close; these will scarcely be so fine as the first crop, but will prove very useful late in the season, if the supply of roots is limited.

An easy and at the same time an effectual method of blanching Chicory leaves is to have a few wooden boxes constructed, about 12 or 14 inches deep, and to invert these over the plants. Each box should be large enough to cover a sufficient number to supply a respectable salad for a week, which will vary from 1 to 3 dozen, according to the requirements of the family. By proper attention to removing the old roots in rotation, and substituting fresh ones in their places, a supply of excellent salad may be obtained from a space large enough to hold three of these boxes.

Any one who possesses a garden in which to grow the plants in summer, may blanch them in a cellar, with equal facility, if it is kept sufficiently dark, except that it will require three weeks to produce the leaves of the requisite length. If the cellar is used for this purpose, it will be the readiest way to form a stack in one corner, and lay the roots horizontally in sand as you would to preserve Carrots. The roots should not be all put in at once, but a layer or course of roots should be brought in once a week, and by the time, the

fourth course is in, the first will be ready to cut. Under this system the old roots should not be removed, but retained to produce a second cutting; and by taking advantage of this property, it will not be necessary, after the first 4 or 5 weeks, to bring in a fresh supply of roots oftener than once in a fortnight or three weeks. The roots should be laid about 3 inches asunder in quincunx order with those below them, and with about 3 inches of sand between the courses. I flatter myself that this hint will be particularly useful to the denizens of towns, in pointing out to them a cheap method of procuring the luxury of a first-rate winter salad.

It is worth while to remark that as Chicory commences its growth very early, the blanched leaves may be obtained out of doors in the months of February and March, by planting the roots in a moderately dry border, and inverting a close box over them, in the same manner as directed for growing them in the Mushroom-house. By this method a somewhat longer time will be necessary to produce leaves of the requisite length, for which reason it will only be resorted to when other means are not convenient. *G. Fleming, Trentham.*

HINTS TO FLORISTS.

Tulips.—Top cloths will have been generally put on before this time. I fear that we shall not have a good bloom this season, the frosts of the 17th and 18th of last month having more or less injured every collection with which I am acquainted. I have now, May 10th, Musidora, Lord Strathmore, Pretiosa alias Thunderbolt, Bolivar, Duke of Devonshire, Champion of England, Violet Alexander, Rosa blanca, and Lord Collingwood in bloom; still an early bloom will not be general.

Pansies.—These must be kept rather close; for the easterly winds which prevail sadly tend to produce rough and crumpled blooms; plants in pots will now be in perfection, not so those in the open borders—they have all their duty to perform. First-class seedlings are as yet "few and far between;" more sunshine and warmer weather may, however, soon unfold novelties for general cultivation in 1850.

Carnations and Picotees.—These require to be gone through two or three times a week, in order to keep them properly tied up, disbudded, and clean. Prepare their top dressing.

Dahlias.—Ground for these should be levelled and well dug, for they must soon be planted out. Do not allow your plants to become pot bound, nor to want water; it is no bad practice, about this time, to "take stock," and then you will see in what sorts you are deficient. *E.*

DISEASES OF PLANTS.

(*Continued from p. 293.*)

§ 5. *Classes into which I have distributed Diseases, Hints on their Nomenclature, Methods of Treatment.*—Relying on the principles I have expounded, and after having examined all known facts which bear upon vegetable therapeutics and pathology, it has appeared to me that three classes of disease may be established, founded on the different modes in which the above-mentioned agents exercise their influence.

There are, besides, disorders which clearly owe their origin to the work of man or of animals, or to some external violence purely mechanical, which, if they are not duly attended to, are productive of the worst consequences to the injured plant. These must be placed in a separate class; they may in truth be called diseases proceeding from external causes. The cultivator of trees is more than any one called upon to study them, in order to their prevention and cure; for with us, in particular, trees in productive cultivation have considerably shorter lives than their natural constitution would give them. In this class we would enumerate all those diseases of which even the ancients have spoken, which are the result of injuries inflicted in various ways by insects.

Notwithstanding the observations and researches of the most diligent physiologists on vegetable disease, it must be confessed that there are many of which the origin is either entirely unknown or remains clouded in much uncertainty. Enemy as I am to all hypothesis, and firmly determined to reason as far as I am able on ascertained facts alone, I have preferred establishing a separate class for these diseases, under a name which should itself declare the obscurity of all theory relating to them. Thus all the diseases of plants, hitherto known to us, are here divided into five classes.

1. Diseases constantly stenic (arising from excessive vigour; inflammatory).
2. Diseases constantly astenic (arising from debility).
3. Diseases which are derived sometimes from the stenic sometimes from the astenic state.
4. Wounds.
5. Indeterminate diseases.

Those who are so adverse to the system of Brown, that the moment they perceive one single term employed by him, throw aside the book that repeats it, will, perhaps, on seeing this division, loudly condemn me, and accuse me of being in contradiction with myself, as, after reproving those who wish to apply to cultivation the above-mentioned medical system, I seem to have adopted it myself. But I beg the reader to examine the matter closely, and he will find many differences. I only mention one important one. According to the Brunonian theory, all diseases without exception may be derived from *stenia* or from *astenia*. But my system expressly rejects this principle. If I have adopted the words *stenic* and *astenic*, it is only because I could not find in the Italian language any words that express precisely the same idea, and which I should have preferred, and because I was unwilling to have recourse to periphrases. Moreover, the terms in question are now become so common, and their meaning is so well understood, that it would have appeared an affectation on my part to refuse to adopt them, merely because they do not please some people.

In studying the different kinds of vegetable disease defined by writers, it has appeared to me that very frequently the symptoms of disease have been confounded with disease itself or its cause. This has arisen probably from the universal mania of giving to them the names of disorders which afflict animals. This explains why, in most cases, the names do not give as true an idea of the malady as would appear necessary. Therefore, in order to avoid this inconvenience as much as possible, I have made it a rule to change the greater number of the old names, and in particular of those used in animal pathology. It would have been my wish to have taken all the technical terms from our beautiful language, but that was impossible. I have thus been compelled to make use of many words taken from the Greek. Let not this, however, deter any one from reading my book who thinks he can derive any use from it, for, after every generic name of a disease he will find a clear explanation of it.*

In the following pages, after briefly exhibiting the principal circumstances which it may be necessary to know relative to the origin and progress of each disease, dwelling at greater length on those which appear to me of the greatest importance among such as are known, I shall then point out the most efficient method of treatment. But as it may often happen that the remedies for different diseases may be much the same, I shall in such cases, to avoid repetition, enter only once into their details, the more so as I have resolved, for the convenience of amateurs, to be at all times as brief as possible.

Every one who casts his eye on the present work is requested to bear in mind its title. It is but an essay on a subject of vast extent, in the treating of which the greatest difficulties occur at every step. Nor can I offer it as more than a rude sketch, which remains imperfect, chiefly, it is true, owing to my own inaufficiency, but also from another cause. Although I would flatter myself that I have adverted to all diseases at present known to us, and that if any are spoken of under other names they may still be reduced to some of the genera or species registered under my classes, yet their enumeration cannot but be incomplete. As yet, those only who have studied agriculture, rather than those who are versed in physiological and chemical science, have attended to vegetable pathology. They have therefore only directed their inquiries to those maladies which affect the plants used by man in rural economy, which is, indeed, but the smaller number, and the principal portion of which are indigenous to our own country, or cultivated in them from time immemorial. It is, therefore, easy to understand that among the immense number of vegetable races which remain to be examined in a state of disease, and especially taking into consideration the diversity of climates, by extending observation to the whole, by comparing especially those disorders which affect particular families or genera, it will not be difficult some day to diffuse a much greater light on the subject, and further to extend the series of diseases which affect plants. And it is also to be hoped that some conclusions will be drawn which will tend to explain the origin and causes of many as yet obscure.

I fear I shall be reproved by some for having too much cut down certain genera and established too many species. If I have indeed done so, my motive has been the desire of inducing young people and amateurs, for whom I especially write, to observe the phenomena with accuracy and diligence. It has appeared to me less inconvenient to divide the thing a little too much than, for the sake of brevity, to put the reader in danger of not well understanding the subject, which, indeed, is not one of the most familiar. I know not any one who, in Italy, at least, has treated it from the point of view and to the extent that I have. On this plea, therefore, I claim some indulgence on the part of the public.

* The author here refers also to a dictionary or glossary of botanical technical terms, which he gives at the end of the work. *Translator's Note.*

ON THE GENERAL PRINCIPLES OF SUCCESSFUL PLANT CULTIVATION.—No. VI.

There is so obvious an analogy between a cutting and a seedling when removed from what may be termed the nursery, and placed in circumstances to enable either to develop itself as an independent individual, that remarks applicable to one are equally appropriate to the other. There are individual cases in which such distinctions are not admissible; but as general principles are only aimed at in these papers, such need not be adverted to, or in any way affect the line of proceeding I intend to follow.

Consult almost any horticultural work in which allusion is made to the subject under consideration; peruse the "calendars of operations" in the numerous periodicals devoted to floriculture, and ten to one some passage similar to the following will meet your eye: "When your plants are all pricked off," or "repotted," as the case may be, "give the whole a good watering, to settle the soil about their roots." Shades of departed seedlings, of cuttings rotting with the hopes that hung upon your destiny, how could you give the lie to the efficacy of that treatment. Thousands of seedlings and cuttings have been killed by the "cold water cure." Now I know no argument, either practical or scientific, that can be advocated in favour of this practice. I have many times instituted comparisons, and the result has invariably been in favour of plants not watered immediately after mutilation of the roots. In the present paper allusion will be made chiefly to seedlings and cuttings, but the remarks apply, in a great measure, to all repotted plants.

Physiologists know that there is a vast difference between the simple mechanical absorption of fluid by a mutilated portion of a plant, and that carried on by the vital energy of vegetable life through the rootlets. In the former case the vessels of the plant are distended with fluid; but owing to the vital energy being checked by the mutilation of its parts, decomposition of that fluid by which the purposes of vegetable life are to be served, can take place but imperfectly. As a consequent result, the plant becomes extremely susceptible of external influence, its constitution is attacked, and I need not say numbers of plants in this state perish. What should we say of a physician who prescribed a full and nutritive diet to a person reduced to the verge of death by starvation? or who would recommend a patient to place a frost-bitten limb in a warm bath? To furnish a mutilated plant with a full amount of moisture is equally absurd, for there is a great analogy between vegetable and animal life.

Every plant possesses within itself the requisites of supporting its own existence; nay, of increasing its bulk, without aid from external sources, provided always it is surrounded by a medium sufficiently charged with moisture to prevent evaporation from its tissues; and again, every mutilated plant should be allowed to repair that mutilation before it is placed under circumstances enabling it to increase its bulk. These two points being established, their practical results will be found to be of the highest importance. Having potted off your cuttings or seedlings in mould of sufficient dampness, remove them immediately to a close frame or pit, and allow them to remain in this condition two days without water, and without flagging. To do this your cuttings must not have been pot bound, but must have been potted off immediately on their being well rooted. If, from their size and mutilation of root, all your care will not prevent them from drooping, render the air surrounding them sufficiently damp to enable them to regain their lost moisture by absorption through the leaf and soft portions of their stems, but give not a drop of water to the roots. After two or three days of this probationary treatment, they will bear a good watering; then gradually inure them to the air. I have tried this method side by side with the watering system immediately after potting, and the results will not bear comparison, either as regards present or future condition of the plants.

By treating plants as above described they will bear the full action of sun and air very much sooner than by the old method, the general bearing of their appearance is much improved, their health is much more robust; and who can say how much of the future excellence of a plant depends upon the treatment it receives when young. *G.*

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

Dahlias.—In the directions of a celebrated cookery book under the article "Hare," the first piece of advice is, "Catch your Hare!" So before we proceed to give a few counsels respecting the above-named flower we say, Get your Dahlias. This is the right time for purchasing if you have no stock of your own, or for adding to your collection. We have received the following list of 36 really good flowers from a celebrated grower, and can confidently recommend them, altogether or in part, to those readers who are disposed to invest some loose cash in this article. The names next those which designate the flowers, refer to the parties who raised them.

Beauty of Hastings, (Barham), White, tipped with rosy crimson
Cardinal Ferretti, (Van Remynghe), Deep scarlet
Conspicua, (Girling), Sulphur, and purple shaded
Dreadnought, (Collison), Crimson maroon
Earl of Clarendon, (Turner), Bright scarlet orange
Grenadier, (Turner), Deep rosy crimson
Imbricata, (Hodges), Fine constant purple
Louis Philippe, (Turner), Crimson
Marchioness of Cornwallis, (Whale), Blush
Marchioness of Worcester, (Sealey), White, tipped with pink
Miss Prockter, (Prockter), Blush, with pink shade
Mr. Seldon, (Turner), Rosy purple, shaded with lilac
Mynn, (Drummond), Crimson
Priam, (Collison), Bright rich crimson
Princess Radzivill, (Gaines), White and purple, mottled
Privateer, (Turner), Yellow, tipped and edged with bright red
Richard Cobden, (Stein), Dark crimson
Rubens, (Turner), Orange
Scarlet Gem. (Turner), Extra fine form
Shylock, (Collison), Finest scarlet
The Hero (Turner), Rose
Victory, (Prockter), Dull red
Violet Perfection, (Prockter), Rich violet purple
Yellow Standard, (Keynes), The best Yellow

The following are Fancy Dahlias.

Debureau, (Miller), Rose and crimson, striped like a Carnation
Duchess of Sutherland, (Turvill), Rosy purple, tipped with white
Emelie Lehmann, (Deegen), Rosy scarlet, tipped with white
Euterpe. (Turner), Red tipped with white
Flora, (Hooper), Yellow, white tipped
Freund Schmidt, (Sieckman), Red tipped white
George Leiss, (Deegen), Purple and white
Madame, (Wachy), Purple, tipped with white
Miss Jane, (Howard), Purple, tipped with white
Miss Stevens, (Dodds), Buff, orange and white
Riexende Von Elsterthal, (Deegen), Rosy purple, white centre
Roi de Points, (Batteur), Maroon, tipped with white

If you order any or all the above of a respectable nurseryman, they will come to you in small pots, well rooted, and safely packed in moss. It is a pleasure to observe the skill and care displayed in this department of the florists' duty, by which

such delicate plants as young Dahlias come many miles as safely as the moss in which they are enveloped. Each plant is tied to a stake, and lest the ligature should injure the frail stem, a piece of cotton is interposed between it and the stick. The moss must be removed carefully, the tie unfastened, and the cotton taken away. Put the foliage in order, water if requisite, and put the whole into a shaded frame or greenhouse. The next day, the plants will look as well as though they had never been travellers, and they should then be re-potted into larger pots, and kept a week or two before they are consigned to the open air. This last advice is of the utmost importance, for young plants from a nursery have been subjected to heat to bring them forward; and should they be put in the ground at their first arrival they are sure to suffer, however fine the weather may be. By re-potting, and accustoming them gradually to the weather, no time will be lost, and vexatious losses prevented.

The Dahlia loves moisture, and therefore soil should be prepared which will not easily become dry. A substratum of rotted cow-dung, a foot below the surface, will be beneficial. The soil should have a mixture of leaf-mould and very rotten frame manure, with a portion of road grit. Plant low, so that when watered all the moisture may be directed to the roots, and not run off to a distance, as is often the case. Put the stake in at the time of planting, for driving it in afterwards will injure the roots. Planting should be finished everywhere before the end of May, or there will be little time for the plants to attain perfection before the early frosts of our country rob them of their beauty. *H. B.*

SELECT SPRING AND SUMMER FLOWERING PLANTS FOR GROUPS, &c.

(*Continued from page* 261.)

SAXIFRAGA CERATOPHYLLA.—A hardy evergreen herbaceous plant, 6 to 12 inches high, of remarkably neat habit, and bearing erect pure white blossoms, from the third week in May until the last week in June. It is well adapted for rock-work.

SCILLA CAMPANULATA.—A neat hardy bulbous plant, of slender hyacinth-like habit, 12 inches high, and producing numerous erect spikes of pale blue, bell-shaped flowers, from the second week in April until the last week in May. Adapted for small groups or parterres.

SCILLA CAMPANULATA ALBA.—Similar in habit to the last, but having erect spikes of snow-white bell-shaped flowers. It forms an elegant object in small groups or parterres, from the second week in April until the second week in May.

MYOSOTIS SCORPIOIDES ALBA.—A dwarf compact plant, which produces a profusion of small clusters of clear white starry blossoms, from the last week in April until the first week in June. Adapted for edgings or for small parterres.

IRIS PUMILA and I. CRISTATA.—Hardy species, growing 6 inches high, with large conspicuous purple flowers, which are in perfection from the first week in April until the first week in May.

IRIS PUMILA ALBA.—Similar in habit to the last, with conspicuous creamy white flowers In bloom from the first week in April until the first week in May

ANTHERICUM LILIASTRUM.—A hardy herbaceous plant, 12 ins. high, with white Lily-like flowers, which are in beauty from the last week in May until the first week in July.

ARENARIA GRANDIFLORA and A. MONTANA.—White-flowering hardy herbaceous plants, which grow from 6 to 12 inches high In bloom from the last week in May until the latter end of June.

VIOLA PENNSYLVANICA.—A hardy herbaceous species, 12 ins. high, of neat habit, and having numerous conspicuous light blue flowers, ½ inch wide. In perfection from the middle of May until the first week in June.

SALVIA PRATENSIS SUPERBA.—An ornamental hardy herbaceous plant, from 18 to 24 inches high, and bearing numerous long densely-flowered spikes of rich marine-blue blossoms, from the third week in May until the first week in July.

DRACOCEPHALUM MOLDAVICA.—A hardy annual, 12 inches high, of compact bushy habit, and having numerous dark blue blossoms. In perfection from the first week in July until the first week in September.

ECHIUM VULGARE.—An ornamental hardy annual or biennial plant, 12 to 24 inches high, with numerous spikes or racemes of rich blue blossoms. In beauty from the first week in July until the first week in September.

ECHIUM VIOLACEUM.—Also a hardy annual, 18 to 24 inches high, with densely-flowered spikes of violet-blue blossoms. In flower from the last week in June until the middle of September. A suitable plant for back-ground effect in large groups or beds.

MIMULUS HODSONI.—A hardy herbaceous plant, 18 to 24 inches high, with numerous large, clear rosy-pink blossoms, 1 inch in diameter. In flower from the first week in June until the middle of July.

MIMULUS COLEI.—A hardy herbaceous plant, 18 inches high, with numerous rich crimson blossoms. In perfection from the first week in June until the last week in July.—*Wm. Wood*

Home Correspondence.

Dublin Horticultural Societies.—The *Gardeners' Chronicle* has been earnestly endeavouring, for some months, to induce a new system of management in the body designated the "Council of the Royal Horticultural Society of Ireland" But it appeared to me, on a recent visit to Dublin, that the attempt has been vain, supposing always that an opinion can be formed from their last exhibition, when, as was publicly stated, the most strenuous efforts were made to crush the second Society, which has been called into existence through the mismanagement of the Council of the old one. Being a disinterested party, and coming into contact, at both exhibitions, with a number of gentlemen connected with both institutions, I had an opportunity of forming some opinion of the merits which belonged to these two exhibitions, and of the support they respectively received from those interested in the promotion of horticulture, in the neighbourhood of Dublin. I may also state, that as both parties put forth their strength, the means were furnished of forming some idea of the real condition of gardening in Ireland, and of the elements in existence to support with respectability a Dublin Horticultural Society, to be maintained in a popular condition by the splendour of its exhibitions. I say *a* Society, because it is clear to my mind that there is not the material, either in funds or respectable garden produce, to support two. On the late occasion it was evident that the plants go to one Society, and the money to the other. This cannot long continue, even in Ireland, where diversity of opinion is the ruling ingredient of the public mind. Irishmen surely cannot long continue to throw away their half-crowns to look at rags of horticulture such as those were which disgraced the tables of the Rotunda at the Royal Horticultural Society's meeting. The show was indescribably miserable; nevertheless a large number of the respectable classes attended. Surely every rational person who can reflect upon the advantages which must be diffused through a country deplorably behind in gardening, by stimulating and encouraging horticultural skill and talent, must be struck with remorse at finding himself aiding by his presence or purse a body of men whose proceedings can have no other effect than to thrust gardening, and with it social improvement, back into the dark ages, thus inflicting a grievous injury upon a country which sorely needs the co-operation of all classes to effect improvement in every possible way. All in this country know the beneficial influence which successful gardening has had. The gardeners, by showing what great results could be effected in a small way, have led farmers into a similar line of competition, and have brought out men's energies, which might have been unknown till they were extinguished in the churchyard. These salutary lessons have evidently been overlooked by those whose fostering care has been applied to wither and blight the smallest germs of successful gardening in Ireland. No liberal gentleman, or striving intelligent gardener, could be expected to submit very long to the practices which have brought this society, and its exhibition, to be the jest of even the Dublin carmen. I was myself told by one of the fraternity that "the" flower show had been held two days previously, and was advised to wait outside, because I could see the Lord Lieutenant quite as well there as in the Rotunda. I heard no one, even although belonging to the Royal Society, attempt to deny that the exhibition was other than a miserable failure. On the other hand the Improvement Society gave convincing evidence that there is material and talent in Dublin to maintain a good exhibition; for if properly encouraged, the spirit of improvement manifested on that occasion will never slumber. Many of the plants were small specimens, but apparently under good management; and every year must enhance their beauty, and render them more fitting objects for exhibition. The competitors were numerous; in fact, as far as exhibitors went, they embodied all that were worth retaining. I am convinced that no one who possesses the least knowledge of the subject will be bold enough to say, that with the exception of the specimens from the Glasnevin Botanic Garden, any of the plants at the "Royal" could have had any other than a damaging effect on the exhibition of the Improvement Society. Yet, so warped is the public mind in Dublin, that the highly respectable display made by the Improvement Society was scarcely noticed by their own press, while, on the contrary, the "Royals," who gave birth to a ridiculous abortion, in the presence of a multitude of witnesses, had teeming columns singing their triumph! instead of a funeral dirge; apparently in justification of that wrongheadedness which has reduced their exhibitions to farces. It is to be hoped, however, that there is good sense enough, and union of purpose enough, still in Ireland to wipe away and extinguish this national sin and disgrace, which clogs so heavily the wheels of improvement, and presses down an abundance of talent, requiring only honesty and fair dealing in order to expand. It is to be sincerely hoped also that an opportunity will shortly be afforded us of congratulating our gardening friends in Ireland on some final termination of their differences. *R. Glenhmurry.*

Curculum altissimum.—A large specimen of this plant has been finely in flower in the conservatory here for many weeks. It produced 22 flower stems. As soon as the flowers began to open in the stove, I had the plant removed to an intermediate house, with a view to insure not only a fine expansion of flowers, but also to mure it to a cooler temporature, in order that the period of blooming might be prolonged as much as possible; after a considerable number of the flowers were expanded, it was then placed in the conservatory, where it has been an object of much interest, nor does it seem to have suffered from the low temperature to which it has been exposed, although the thermometer on several occasions did not register more than 38°. A great aid in matters of this kind is to withhold water as much as possible from all such plants, when exposed to a low temperature. *James Duncan, Busing Park, May* 1.

Arrival of a Flight of Insects.—The east winds, which have prevailed at this place for several weeks, were succeeded on Sunday morning, the 13th, by a gentle wind from the south. On this change taking place, myriads of winged insects were observed covering the cliffs, and so filling the air that a lady here, on looking out of the window, thought it was raining heavily. They continued throughout the day in an exhausted state, and on Monday and Tuesday seemed mostly dead or dying. The specimens which I send you were captured while alive. No one here seems to have been previously acquainted with this insect. *One Seeking after Knowledge, Cromer, Norfolk, May* 16. [The insect was the common Bibio Marci, and a similar phenomenon was observed at Luton, in Bedfordshire.]

Potato Disease of 1849.—I have just come out of my garden, where I have been examining some plants of the Ash-leaved Kidney, now about 4 to 6 inches above ground, and which were planted Feb. 17. There is such clear evidence of the "plague-spot" visible, that I think it worth while sending you a leaf or two. It may prove an early caution to the public. I may add that they grow in a walled garden, in a border facing the south east, and in a light soil. *B. O. B., Brenchley, Kent, May* 13.

Animal Charcoal.—Observing in the *Chronicle* of the 5th inst., a recommendation of animal charcoal, for preventing the disease of Potatoes, and as good for the growing of Fuchsias, may I beg the writer to be kind enough to give me directions, in your next number, how I may prepare the charcoal. *An Amateur.*

Club in Cauliflowers, Cabbages, &c., may be prevented by examining the plants when they are lifted out of the seed bed for final transplanting. Wherever a wart is seen on the stem, open it with the thumb nail, and a maggot will be found in it, which is the real depredator. If this is done no club will take place. The largest warts are found on plants that have stood on the seed bed through the winter. Soot sown on the surface of the beds prevents the eggs being deposited in the plants when the latter are in a tender state, but this is not to be depended on entirely as a remedy. *C. S., jr., Riddings Park, May* 8.

The late Frost.—At page 261 it is stated that, in many places, there were 20° of frost in the stormy week which had then just passed; but there must surely be some error in the statement. I do not think it possible that such intense frost could occur at that advanced period of the year. 20° of frost! why, that is only 12° above 0°; this would be considered very severe even in the depth of some of our coldest winters. *A Meteorologist.*

Hedge Sparrows Fed by a Robin.—In the autumn of last year I had occasion to head down a great number of Filbert trees, which were bundled and stacked on the spot for Pea sticks. The other day, having occasion for them, I commenced removing them; and, after taking away all but about three bundles, I discovered among them a hedge sparrow's nest, with four young ones and one egg. Not wishing to destroy the nest, for I have always considered these birds more beneficial in a garden than otherwise, I collected a bundle of bushes, and placed it therein in the most natural position I could. During this operation my attention was attracted by a robin perched on an Apple tree close by, apparently much concerned at what I was about; I could not imagine what could be his interest in the matter, for I knew that the nest was not of his building, or the contents of his kind. After I had completed my job, I withdrew a few yards from the spot, to see if Mr. Robin intended interfering in the matter; and, to my surprise, he came down from the tree, hopped about, looked at the young ones, and seemed very much pleased. He then flew off, but soon returned with some food and fed the young birds, which he continues to do. Now the question is, how he came in possession of this adopted family, for I am quite sure that the young birds and the nest are those of the hedge sparrow. *Wm. Hurst, Cheshunt.*

Corrosive Sublimate.—Finding that a wonderfully dilute solution of corrosive sublimate is destructive to worms, I have wished to try its effect on slugs, as a protection to Carrots &c., but have been deterred, from the fear that it might be absorbed and communicate deleterious qualities to the root. I apprehend, however, there would be no sort of danger in applying it to such crops as Peas or Beans, because it must be rendered insoluble by albumen, and so detained in the stalk and leaves without the possibility of ever reaching the seed itself. *Ignoramus.* [Corrosive sublimate may be used in small quantities with plants having a thick hard skin, but we cannot advise you to take anything for granted in employing so deleterious an agent. Proceed experimentally, step by step. It kills slugs readily.]

Zinc Cisterns for Aquatic Plants.—It having been stated that zinc is injurious to vegetation, I beg to observe that Limnocharis Humboldti is growing freely, in a zinc trough in the hothouse of the Rev. W. Steggall, at Thuraton. Probably one of your correspondents will inform me if gold and silver fish will live in vessels lined with zinc, the water being the same temperature as the hothouse. *N. S. H., Bury St. Edmund's.*

Bandekoi.—I beg to inform your correspondent that this is the common name in the whole of the south of India for the fruit of Hibiscus esculentus, a mucilaginous vegetable very generally used in cookery at Madras. I do not recognise Carbery, but imagine the fruit of Averrhoa Carambola is intended. *Capt. William Munro, Preston, May* 13.

Rabbits.—I am finishing a paling, 3 feet high, round my outer garden, as a protection against rabbits. A friend has a close paling, 4 feet high, and his gardener assures him he has seen the rabbits leap it, and in snow seen their tracks where they leaped in and out. Is it possible? I cannot think so. *Cavanensis.*

Blistering of Peach Leaves.—Frost is not the direct cause of this evil; as far as my experience goes, blistered leaves are chiefly caused by the roots (not the branches or buds) being placed in uncongenial circumstances; damp cold roots produce watery unripened wood, with immature buds, which, in their turn, produce blistered leaves. This season, when disbudding a Nectarine, I was struck with the fact that almost every leader produced blistered leaves, and that the buds at the bottom of the shoot were almost all healthy. This tree is on an east wall; its roots are deep in an uncongenial soil, it does not ripen its wood well, and therefore (I think) the effect is blistered leaves, in proportion to the dampness and coldness of the autumn and

unripeness of the wood. Two years ago I lifted two young trees from the same wall, which were in a very bad state. I took them to a south wall, kept their roots dry and shallow, in a good loam, and they are now two of the most healthy trees in the garden. This season I lifted several old trees, which were very unhealthy. I found their roots in a bad state, and I treated them in a similar manner. One or two of them are recovering; the others, I am afraid, were too far gone before the remedy was adopted, otherwise, I feel satisfied, that this treatment would prevent the blistering of the leaves, and that placing the roots in congenial circumstances is the first and most important step towards restoring the unhealthy tree to fruitfulness and vigour. *J. Mundell.* [But *why* or *how* can roots produce the supposed effect?]

Arum maculatum, a Food Plant.—I beg to call attention to the culture of this very common British plant, and more especially now, because it is just coming into flower, and may therefore be easily found either for plants, or to make experiments with the roots. This plant has been known as an article of food in the isle of Portland (where it abounds) for many years, and therefore the introduction of its culture into other places may reasonably be expected. I need not state how valuable the roots of some of the Arads are in the West Indian Islands; the Edoe and the Tanier of St. Kitt's (or St. Christopher's), are species and varieties of Caladium, and belong to Arads; but the Dumb Cane, belonging to the same order, is so very acrid and paralysing that a slice of the size of a sixpenny piece, would, it is said, make a person dumb. I can answer for its driving any one to madness from pain with a very slight touch, and before we can do anything with this tribe of plants as culinary articles, I must distinctly warn and guard every one against eating or chewing, or even tasting the beautiful white tubers of Arum maculatum in a raw state; and were it not for this acrid quality I have not the least doubt but that this plant would have figured in a corner dish as an excellent dinner vegetable years ago, in the same way as the leaves and roots of the Caladiums above mentioned are eaten in the West Indian islands. A schoolfellow of mine sent me Edoe and Tanier roots years ago, to try their culture in Staffordshire. They succeeded in the bothouse, but failed out of doors, treated as the Dahlia. The important secret of Caladium eating, and of Arum eating, is this, that the acrid and paralysing principle is so volatile, that it flies off with a very little heat; hence roots roasted or boiled are eatable, but in a raw state the root of Arum maculatum is like eating fire. Now this is the point that I would beg to have experiments made upon by different parties, namely, the cooking. That this vegetable is a great delicacy there cannot be a doubt; that it is cultivated and manufactured into a tasteless and purely white farina there cannot be a doubt. I have made this white farina, and made the farina into beautiful transparent jelly, as good to all appearance, and to taste, as arrowroot at 2*s.* a pound, imported from the West Indies; and in one hour from the time we collected the tubers out of the hedgebanks, the jelly was cooked, and as the plant is well known, and in flower at this time, there can be no difficulty in submitting the matter to actual experiment. That the plant will be generally cultivated in every garden, and served up regularly at every table, is certain; for the tubers are of a nice round form, as large as pheasants' eggs, weighing from 1 to 1½ oz. each, white as snow, and yielding an immense per centage of farina to the bulk of tuber, at least double that of the Potato; and the pulp, when bruised, is not half so dirty or offensive as the pulp of the Potato. The plant is one of the earliest and hardiest plants we have, and occupies little space, its two or three leaves being about the size of a man's hand each, and with the spatha rising about 9 inches or a foot above the surface of the soil, and at this rate not occupying more than one-fourth of a square foot for each plant, or 36 plants to the square yard, which at the rate that the plants are to be found in an uncultivated state, would yield about 3 lbs. of tubers for every square yard, or about 6½ tons an acre; but as the plant delights in shade and moisture, and is quite an undergrowth, and of so early a habit, other crops could be got on the same land, as this crop could be harvested in time for Mangold Wurzel to be sown the same season. The best form of cultivation would assuredly be to imitate the natural habitat of the plant, by giving it a slope to grow on, and rich food to feed on, for all early plants in our climate require shelter; and I find the finest tubers near water, and in the shade of trees in hedgebanks, as in the park at Tor Abbey, nearly on a level with the sea, on the margin of a brook. Again, where leaf-mould has accumulated on the sloping shady face of a hedgebank, I find the tubers very fine. It is therefore evident that the same culture that has brought Asparagus shoots to be half an inch in diameter in a garden, whilst the natural Asparagus on the sea coast is generally about the size of a stocking needle, would fatten the roots of Arum maculatum. I have had the roots boiled, the water very carefully removed from them, and I have eaten them, and several other parties have eaten them; but if any of the liquor remains about the tubers the acrid taste will be felt. By preventing the plant from flowering large tubers might be got, as they do not generally form offsets, but maintain their individuality, and the new tuber is found at the tip of the old one, the old one perishing as the new one approaches perfection, and out of at least 100 cases I only found one forming offsets. To plant them on the flat, shallow ground would assuredly prove a failure. The long beds in which it is said to be so successfully grown in the isle of Portland might be imitated, but I think, when the great importance of deep soil, bottom heat, thorough drainage, and superior ventilation, are duly considered, there will be few gardeners found growing the higher orders of vegetables on the flat surface. Such beds, then, might have their sloping sides filled with Arum, and their level surfaces cropped with other culinary crops, and thus secure a new vegetable, so pure, so white, and so agreeable, that the Potato in its best of days never equalled, and all this in the present uncultivated state of the plant, whilst the first samples of Potato tubers, from their native wilds, were diminutive in size, and very inferior in quality. In regard to the leaves of Arum being eatable, I do not pretend to say; and even if they were, they would not be of much importance to us in the present state of gardening, when so many other good greens are at command. Should any of the liquor be left with the tubers after cooking, or even moisture left about them, they will not need pepper to season them; for I warrant they will prove warm enough. The starch, when pure, is white and perfectly tasteless; and the well-boiled and dried tubers are decidedly a delicacy, and free from any acrid taste. Again I would be for experiments to be made, as it is easy now to get roots, and the taste is as well told by one tuber of an ounce in weight as by a sackful; and, if these experiments are recorded in your columns, a little time will try the value of the article. *Alex. Forsyth.*

Garden Robberies.—My garden was robbed on Wednesday morning. The thief climbed over the walls, and selected about 300 plants just ready for bedding out, leaving the pots and everything else untouched. My reason for writing to you is to put your readers on their guard at this season, when such robberies are frequent. *H., Beckenham, Kent, May* 17.

Cheap and invaluable Dentifrice.—Dissolve two oz of borax in three pints of boiling water. Before quite cold, add thereto one teaspoonful of tincture of myrrh and one tablespoonful of spirits of camphor. Bottle the mixture for use. One wine-glass of the solution, added to half a pint of tepid water, is sufficient for each application. This solution, applied daily, preserves and beautifies the teeth, extirpates all tartarous adhesion, produces a pearl-like whiteness, arrests decay, and induces a healthy action to the gums. *Anon.* [This is really an admirable preparation.]

Societies.

Horticultural, *May* 15.—R. Hutton, Esq, in the chair. The following elections took place, viz., the Earl of Shelburne, J. F. Fletcher, J. G. Sheppard, A. Cuthill, T. Fortescue, H. Harms, J. Edwards, G. Reed, Esquires, and Mr. H. Hart. Dr. Lindley then delivered the first of the six Lectures on Horticulture, which have been already announced. The subject was the "Food of Plants." With the assistance of apparatus, furnished by the Royal College of Chemistry, a series of beautiful experiments was skilfully performed by Mr. Medlock in illustration of the composition of plants, and of their food. Among these, the decomposition of carbonic acid, and the consequent separation of its charcoal; of olefiant gas, with the same result; the conversion of the most delicate flowers into charcoal; the production of ammonia from Coffee leaves; the conversion of starch, gum, and sugar into charcoal, by the removal of their water; and the formation of phosphoric acid, were particularly striking. The next Lecture, on "the Root; its means of obtaining Food, and its other Properties," was announced for Tuesday next, at 3 o'clock.

Royal Botanic, Regent's Park, *May* 16.—This Society was fortunate enough to have a fine day for its first exhibition this season. True the morning was wet, but it cleared up early, and the afternoon though cloudy was fine. The show was a very good one; but on the whole less striking than that at Chiswick on the 5th inst., for although there was no lack of Orchids, Stove and Greenhouse Plants, &c., the Azaleas were not near so numerous nor so beautiful as they were on that occasion. On the other hand, however, Pelargoniums and Roses were more plentiful, and the former, especially, superior to those produced at the last Horticultural Society's fete. Falling so soon after the Chiswick meeting, this show, as may be imagined, was largely composed of plants exhibited on that occasion, and as these were fully reported on at p. 294, we shall not re-describe them, but confine our remarks to what was not then present.

Collections of 30 Stove and Greenhouse Plants were shown by Mrs. Lawrence, Mr Cole, gr. to H. Colyer, Esq., of Dartford, and by Messrs. Pamplin and Pawley. In these groups, which were all in excellent condition, we did not remark anything strikingly different from what the same exhibitors showed on the 5th of May. We did observe, however, in Mrs Lawrence's collection, a beautiful little plant of Gompholobium polymorphum, which should not escape notice, on account of the way in which it was trained. It is usual to load the tiny shoots of this pretty creeper over a shield-formed or circular wire trellis, and this is no bad way of exhibiting the beauty of its flowers, but then the plant has a stiff and very formal appearance. In this instance it was trained on neat sticks, judiciously disposed, so as to give it a shrub-like form, and, arranged in this fashion, it certainly has a much better effect than when trained in the way we have mentioned above.

Capital groups of 20 Stove and Greenhouse Plants were contributed by Messrs. Green and Taylor. Among Mr. Green's plants was Mr. Fortune's Gardenia (G. Fortuni), with 10 open flowers on it, nearly as large and as double as a good sized Rose, of snowy whiteness, and emitting the most delicious perfume. This was one of the most attractive plants of the exhibition. Mr. Taylor had a neat specimen of Aotus gracillimus, a pretty greenhouse shrub, bearing long slender spikes of yellow and brown flowers.

In collections of 10 Stove and Greenhouse Plants, the principal competition lay between Messrs. Carson, Jack, Campbell, Slowe, Mulyon, Stanly, and Young, who all produced groups of well cultivated plants. Several other tens were also staged, but they were all inferior to the above.

Orchids.—One of the most attractive features of the exhibition of Orchids was a most beautiful specimen of Camarotis purpurea, from Mr. Holford's gardener, Bassett. It formed a pyramid at least 5 feet high, richly ornamented with flower-spikes from top to bottom. We purposely give this fine specimen a prominent place in our report, because by some oversight the exhibitor's name was not attached to it, and therefore Mr. Bassett did not receive the credit he deserved for so meritorious a production.

Large Collections of Orchids were contributed by Mr. Mylam, gr. to S. Rucker, Esq; Mr. Williams, gr. to C. B. Warner, Esq., and Mr. Rae gr. to J. J. Blandy, Esq., of Reading. In Mr. Mylam's group we remarked Lycaste tyrianthina, with three open Violet blossoms; the Orange-flowered Lælia cinnabarina, with three fine spikes; a mass of Phalænopsis grandiflora, two plants of Vanda insignis, one so much brighter than the other that it closely approached the beauty of V. suavis; the buff chocolate-spotted Dendrobium Dalhousianum; Odontoglossum citrosmum, and Acineta Humboldti and stapsiloides. Mr. Williams had a neat plant of the somewhat scarce Dendrobium Ruckeri, D. macrophyllum, a mass of flowers; and the yellow-flowered Cattleya citrina. Mr. Rae sent fine examples of Cattleya Skinneri, Phaius Wallichii, the yellow-flowered Mormodes luxatum, Peristeria cerina, and other nice plants.

Collections of 15 Orchids were exhibited by Mr Plant, gr. to J. H. Schroder, Esq., Mr. Carson, gr. to W. F. G. Farmer, Esq., and Mrs. Lawrence. In the first group we remarked Cattleya intermedia, Sobralia macrantha, and Saccolabium guttatum. Mr. Carson had a pretty Barkeria spectabilis; but the chief feature of his collection was an Acanthophippium bicolor, beautifully grown and flowered. Mrs. Lawrence had two Saccolabiums, with long drooping racemes of pink and white flowers; and a nice Cattleya intermedia.

Groups of 6 Orchids were shown by Mr. Jack, gr. to R. G. Loraine, Esq., Mr Dobson, gr. to Mr. Beck, Mr. Bruce, gr. to B. Miller, Esq., and Mr. Green. Mr. Jack had a huge mass of Dendrobium fimbriatum; Mr. Dobson a beautiful Oncidium ampliatum major, Mr. Bruce the brown flowered Oncidium crispum, and Mr. Green a good Phaius Wallichii. A pretty Odontoglossum, with green, brown-barred sepals and petals, and violet lip, tipped with white, was shown as a single specimen.

Of Cape Heaths there was an admirable display, and the same may be said of Roses. The collections of the latter, both from amateurs and nurserymen, were highly creditable to their respective exhibitors.—Messrs. Paul's group was again produced, in better condition as regards bloom than it was at Chiswick. His William Jesse, Aubernon, Baronne Prevost, Augustine Mouchelet, and Madame de St. Joseph, one of the best of light salmon Roses, might be said to be perfection in pot Rose culture.—The groups of Messrs. Lane and Francis, who were equal, were also capital examples of this kind of cultivation.

Among single specimens, Mr. Iveson, gr. to the Duchess Dowager of Northumberland, had a most beautifully bloomed plant of the Sierra Leone Gardenia Stanleyana.

New Plants.—Messrs. Veitch had Mitraria coccinea, a soft-wooded plant, with much inflated tubular scarlet flowers, a first class species, they also sent the handsome Nepenthes sanguinea, and some small species, and a pretty Heath of Mr. Story's raising, called Victoria Regina.—Messrs. Henderson showed Epacris intermedium and Rhododendron Gibsonii; Mr. Iveson a little straw-coloured Hoya, Mr. Gaines a good yellow Rhododendron, and Mr. Turner, of Slough, a pan of the pretty Verbena called Wyness's Princess Alice.

Pelargoniums, as we have already stated, were exhibited in great numbers, and for the most part in capital condition. For 12 plants in 8 inch pots the competition lay between Mr. Cock and Mr Stains, and that in the Nurserymen's Class between Mr. Dobson, gr. to Mr. Beck, and Mr. Gaines, the awards being made in the order in which the names stand. Mr. Dobson also gained the 1st prize for six fine plants in 11-inch pots; and six beautiful plants were likewise contributed by Mr. Parker. The best groups of "fancies" were contributed by Mr. Moseley and Mr. Gaines. Mr. Hoyle showed the same seedlings which he had at Chiswick. He received a 1st prize for Satisfaction, a 2d for Christabel, and another for Prince of Orange, that being the nearest approach to scarlet of any exhibited.—Mr. Gaines also received a 2d prize for a pretty seedling "Fancy," in the way of Statuiski or Ytduiski, called Hero of Surrey. The same exhibitor showed a very nice collection of Calceolarias. Several groups of Cinerarias were also produced, but these, with the exception of a few plants from Mr. Kendall, were poor representations of what Cinerarias should be.

We had nearly forgotten to mention that some tall Cacti were shown, but they were not finely flowered. There were also one or two nice groups of Ferns from Mr. Williams.

Royal South London, *May* 17.—This second Show of the season was held in the Surrey Zoological Gardens. The subjects of exhibition were disposed in four good sized tents. The first one was chiefly filled with stove and greenhouse plants from Messrs. Cole, Pamplin, Bruce, Young, Hamp, Hook, and Pawley, whose respective exhibitions were again produced in capital order. In one corner of this tent was the Tulip and Heartsease Show. Tulips are in general produced in considerable quantity at this meeting; but the season being so backward, on the present occasion there were very few, and what were brought forward not generally sufficiently expanded. The best stand was exhibited by Mr. Lawrence, of Hampton. We remarked in this nice blooms of Fabius, Strong's King, and Prince Albert. Another good stand was exhibited by A. Lane, Esq., of West Wycombe, who obtained the 1st prize in the Amateurs' Class; and J. Edwards, Esq., of Holloway, had a nice second stand, in which we observed good blooms of Platoff, Cerise Blanc, Polyphemus, and David.—The best exhibition of Pansies was produced by Mr. Turner, of Slough. Among his blooms, Mrs. Hannan, Zabdi, Climax, Juventa, Exquisite, Duke of Norfolk, Supreme, and Mrs. Bragg, were conspicuous.—Among Amateurs, Mr. Edwards was first. He showed nice flowers of Zabdi, Mrs. Hamilton, and Gem. Mr. Bragg, of Slough, had also a nice stand. Mr. Turner received a Certificate for Mrs. Beck, Mr. Schofield for Negro, and Mr. Lane for Emma, all seedling Pansies. The next tent contained Cape Heaths, together with a few fancy and seedling Pelargoniums at one end. The latter were chiefly from Mr. Beck, who obtained Certificates for Emily, a fine flower in the way of Centurion, but larger; and for Dowager, which is also a distinct and showy variety. These were seedlings of 1848. He likewise exhibited a seedling of 1849, called Ponsil, a promising flower of very bright colour.—Mr. Gaines received Certificates for Hero of Surrey and Gem, two "Fancy" Pelargoniums.—The third tent was filled with Roses in pots from Messrs Paul and Francis; also with Cinerarias and Calceolarias, the latter from Mr. Gaines.—The fourth tent was occupied with Pelargoniums, the best of which came from Mr. Beck, Mr. Parker, Mr. Foster, and Mr. Gaines; and with Azaleas from Messrs. Bruce, Cole, and Ivery.

Hammersmith Pansy, *May* 9.—The flowers were produced on this occasion in excellent condition. Class 1, Amateurs, 24 blooms: 1st prize to J. Edwards, Esq., of Holloway, with Almanzer, Addison, Mrs. Hamilton, Constellation, Miss Edwards, Zabdi, Rainbow, Bellissima, Duke of Norfolk, Blooming Girl, Superb, Disraeli, Exquisite, Pizarro, Aurora, Great Britain, Arethusa, Juventa, President, Duchess of Rutland, Polynices, Climax, Gem, and Princess. 2d, to A. Lane, Esq., of Wycombe, with Almanzer, Duke of Norfolk, Lady Sale, Great Britain, Rainbow, Blooming Girl, Constellation, Exquisite, Marchioness of Lothian, Aurora, Achilles, Lucy Neal, Model of Perfection, Masterpiece, Milton, Excellent, Superb, Climax, Caractacus, Disraeli, Lord J. Russel, Attila, Baroness Weatman, and Mrs

Bragg. 3d, to Mr. Scotcher.—Class 2, Nurserymen, 36 blooms. 1st prize to Mr. C. Turner, of Royal Nursery, Slough, with Constellation, Almanzer, Juventa, Dr. Wolff Mrs. Hamilton, Dr. Hawtrey, Miss Edwards, Rainbow, Duke of Norfolk, Climax, Pisarro, Aurora, Marchioness of Lothian, Addison, Exquisite, Shakespeare, Arethusa, Royal Standard, Cyprus, Duchess of Rutland, Great Britain, Mrs. Beck, Perseus, Example, Model of Perfection, Supreme, Blooming Girl, Lady Lacon, Polynices, Optimus, Attila, Earl Clarendon, Hamlet, Euclid, Princess, and Gem. 2d, to Mr. Bragg, of Slough, with Rainbow, Blooming Girl, Constellation, Climax, Ophir, Miss Edwards, Duke of Norfolk, Aurora, Superb, Nobilis, Oberon, Almanzer, Lucy Neal, Model of Perfection, Example, Disraeli, Marchioness of Lothian, Rainbow, Leda, Duchess of Rutland, Milo, Duchess of Norfolk, Jupiter, Exquisite, Mrs. Bragg, Callistor, Masterpiece, Arethusa, Zabdi, Lord J. Russell, Carna, Milton, Punch, Lord Hardinge, Creole, and Alexander. 3d, to Mr. Thompson, of Iver.—1st Class Certificate to Mr. Hunt's "Helen;" and also the Premier Seedling Prize of one sovereign, presented by Mr. J. G. Waite. Certificates to Polyphemus (Thomson), and The Tartar (Lane), the three varieties being flowers of good average merit.

Reviews.

De Candolle's Prodromus. Vol. 13, part 2. 1849.

WE have just received this new part of De Candolle's great undertaking. It precedes the first part of the 13th vol., which is to appear hereafter with the Nightshades and Plantains. The present volume extends to 468 pages, and comprehends Phytolaceads, Chenopods, Basellads, and Amaranths, by Moquin-Tandon, and Nyctagos by Choisy, and thus is made the commencement of the much-wanted systematical details belonging to the vast mass of little known and unarranged Monochlamyds.

Miscellaneous.

Sale of Orchids.—A collection from Java, consisting of 141 lots, was sold on Thursday last by Mr. Stevens. It was stated to comprize some novelties, more especially four new species of Aerides, a new Calanthe, and some plants of a Saccolabium, in the way of Blumei. The highest sums realised on the occasion were 5*l.* 15*s.* and 5*l.* 10*s.* for good plants of Vanda tricolor. Other lots fetched from 1*l.* 5*s.* to 3*l.* 10*s.* each.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

AZALEAS should be attended to as they go out of bloom, potted if they require it, and placed in a favourable situation for forming their young growths. Many plants, and particularly large ones, which received a liberal shift last year, will not have filled their pots so full of roots as to render re potting indispensable; and we find it an excellent plan to allow such to make their growth and set their flower-buds without additional root-room. This growth will of course be a moderate one, and about September, when the danger of their starting into a fresh growth is over, we give these plants a small shift, and place them in a cool house; in the new soil so supplied they continue during the remainder of the autumn and winter, to produce roots, but without making any progress in the tops; and, the roots being thus in advance of the head, the plants are prepared to meet the flowering season with extra vigour; for in the size and colour of the flowers Azaleas so treated far surpass those which have been treated in the ordinary way. Though these useful plants succeed very well in ordinary peat, to which a small proportion of leaf-mould and sandy loam, with a liberal supply of sand, have been added, yet those who can procure Wimbledon peat, at a moderate expense, will find it to their advantage to do so, as the splendid perfection to which the Azalea attains in that soil is ample repayment. In potting large specimens, and especially those in whose compost peat predominates, make use of tin tubes of about half an inch in diameter, to pierce the old balls in various directions, and fill up the holes so made with coarse sand or washed road-grit. By this simple method a passage for the water is secured into all parts of the ball.

FLOWER GARDEN AND SHRUBBERY.

Little can be said under this head, except to urge every gardener forward in planting out his bedding stuff; and particularly to take advantage of moist showery or dull weather to push this work on with extra speed, by borrowing workmen from other departments, as it is evident that when once the season is sufficiently advanced, and the plants properly hardened, the sooner the entire stock is planted the better. On the other hand, care should be taken not to push the work on more rapidly than is consistent with its proper execution; many late spring propagated plants will be considerably benefited by remaining a week or fortnight longer in the frames, as unless they are fairly established before they are planted out, they will be a long time before they start into growth in a satisfactory manner. Where the young plants have been pricked out into frames of soil, attention should be paid to lifting them with a sufficient ball of earth and roots, and also to conveying them quickly and with as little injury as possible to their destination; where they should be immediately planted and watered. To those who do not object to yellow flowering plants, when properly disposed, we cannot resist the opportunity of recommending the double flowering Furze, although this is not the season either for planting or propagating it. We have it planted as single specimens, and in entire clumps, in the more distant parts of the pleasure ground, and the effect at this moment is beautiful, contrasting as it does with the dark green masses of Rhododendrons and other evergreen shrubs. It may by some be considered common, but it is certainly one of the most effective of our May flowers, and its fragrance wafted towards us from the different clumps is agreeable without being overpowering; for masses or groups, young plants of from 3 to 5 years old are the most suitable. A sowing of annuals should now be made for autumn flowering, including Mignonette, Nemophila, Virginian Stock, Silene, Collinsia, Sweet Pea, Gilia, Kaulfussia, Godetia, Clintonia, &c. Particular attention should be paid to the Rosary; the young buds will want looking after as carefully as Apricots, as they are troubled in a manner very similar, and in this, as in the case of the fruit trees, the best remedy is to examine them carefully and destroy the caterpillars with the thumb and finger.

FORCING DEPARTMENT.

PINERIES.—Continue to maintain a steady bottom-heat of from 80° to 85°, and attend to the watering with the strictest regularity; if these points are not attended to, the plants will receive a check which will throw them into fruit prematurely, and of course at the expense of size and quality. VINERIES.—The crops for the supply of the family during the late autumn and winter months will now require regulating as regards bunches. MELONS.—As large-sized Melons are not required for preserving, those which are intended for this purpose may be left thicker than those which are grown for table, and in which size is almost as much an object as flavour. By preserving the foliage of the early plants in a clean and healthy state, they will produce a second crop. Frames in which Potatoes have been forced should now be prepared for late Melons. Let the soil be good, 18 inches or 2 feet deep, and if the frames are not supplied with hot-water pipes, supply, by means of linings or fermenting material beneath the bed, a bottom-heat of about 80° to start with.

FLORISTS' FLOWERS.

The late refreshing rains have had the happiest effect on the *cleves* of the amateur. RANUNCULUSES particularly have dashed on under its influence amazingly. Now carefully go over the beds, filling every crevice, and fasten the soil with a light hand round the neck of the plants; if the bed is properly prepared they will require but little more trouble till they bloom. Weed the pans of seedlings; we would advise this to be done with a small pair of sharp-pointed scissors, with which the intruders may be cut off close beneath the surface of the soil; by this means also the young and fragile plants are not misplaced, or even pulled up, as is sometimes done when eradicating their coarser neighbours. Shade them from the sun, but let them also have the benefit of light rains.

State of the Weather near London, for the week ending May 17, 1849, as observed at the Horticultural Gardens, Chiswick.

May		Moon's Age	Barometer.		Thermometer.			Wind.	Rain.
			Max	Min	Max.	Min	Mean		
Friday	11	18	30.101	29.847	56	30	43.0	N.	.00
Satur	12	19	30.205	30.172	62	41	51.5	E.	.00
Sunday	13	20	30.046	29.728	63	41	52.0	S W	.02
Monday	14	21	29.623	29.525	68	47	57.5	W.	.01
Tues	15	☾	29.571	29.500	69	49	59.0	N W.	.37
Wed.	16	23	29.422	29.353	68	50	59.0	S W.	.02
Thurs	17	24	29.476	29.286	62	49	55.5	S W.	.01
Average			29.762	29.644	62.7	43.8	53.8		0.50

May 11—Densely clouded, cloudy and cold, clear.
— 12—Slight frost early A.M., fine, overcast, with slight haze, cloudy.
— 13—Very fine, overcast, clear at night, slight rain.
— 14—Rain, low clouds, fine, rain.
— 15—Cloudy, fine, overcast.
— 16—Heavy rain in the morning, cloudy; densely overcast.
— 17—Cloudy, showery, rain at night.
Mean temperature of the week 1 deg. above the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending May 26, 1849.

May.		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained	Greatest Quantity of Rain.	Prevailing Winds.							
							N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday	20	65.1	44.3	54.8	11	1.14 in	1	4	5	3	3	4	1	2
Mon	21	66.8	43.0	54.4	9	0.36	2	4	7	2	4	2	1	2
Tues	22	66.8	43.1	55.2	10	0.10	5	[illegible]	3	3	3	3	2	1
Wed	23	68.3	47.1	57.7	7	0.21	1	[illegible]	3	4	1	3	2	4
Thurs.	24	67.8	43.4	55.6	9	0.54	2	5	6	—	3	1	3	1
Friday	25	65.7	44.3	55.5	7	0.64	1	10	1	1	1	4	5	—
Satur	26	66.3	41.8	53.6	9	0.27	1	8	3	1	2	4	3	2

The highest temperature during the above period occurred on the 25th 1843—therm. 82 deg., and the lowest on the 25th, 1849—therm. 29 deg.

Notices to Correspondents.

MAY we beg our CORRESPONDENTS to bear in mind that we cannot undertake to make chemical analyses, and that it is foreign to the purposes which this journal endeavours to serve to reply to questions having no relation whatever to gardening. One gentleman begs to know what metal he finds in a gravel pit, another is anxious to know whether he is bound to pay his seedsman's bill, a third begs for the names of a bundle of sea-weeds, mosses, and lichens. For the future we *must* decline noticing all such inquiries.

ANEMONES: *E D S.* When the foliage assumes a yellow tint, take up the roots and dry them in a shady situation; the fibres may then be rubbed off, and the roots stored in a cool and dry place till planting time comes again. The soil for Anemones should be of a light and friable nature, enriched with decayed vegetable matter, by no means use manure, it is apt to destroy the roots if it comes in contact with them. The Ranunculus will flourish in a damper situation than the Anemone. Deep, rich, mellow loam, with a small proportion of sand, will, in favourable seasons, answer them well. Perhaps your roots produced a profusion of flowers last year, or they may have been kept in the ground too long last season, or they may have been planted late this spring—all these things militate against their well doing. *W.*

ARAUCARIA: *Sub.* You had better cut its leader back; but you cannot long keep it under glass. The only thing to be done is to stop it as much as you can. Cut its roots next autumn.

ASPARAGUS: *Geo. W.* You will see, upon reflection, that the editor of a newspaper cannot act as an intermediate agent. Mr. Cuthill's address is Camberwell.

BACK NOS: 1s. each will be given for Nos. 3, 5, and 10, for 1841.

BEES: *J P.* A fresh swarm cannot be united with safety to an old stock, unless both parties of bees are fumigated in the evening, and one of the queens is taken away, say the one from the old hive; then mix the bees together, and proceed in the way you mention for returning a swarm to its parent hive; but except your old stock is very weak, and the swarm late, perhaps you had better let the operation alone, for the weak colony may recruit itself before the end of the season. *W.*

BERBERIS: *Cavancnsis.* Layer it in July, taking care to tongue the layer.

BOOKS: *G.* The third part of the "Elements of Botany" is *nearly* ready.—*C W.* There is no means of obtaining it, if out of print, except at an auction or at a second-hand bookseller's.—*G T.* Latin is needless. Begin by mastering Lindley's "School Botany."—*J H.* "Moore on the Cucumber." Melons and Pines require very different treatment, and therefore cannot be successfully cultivated together. ‡

INDIA-RUBBER: *P J.* You may dissolve it in pure naphtha or in camphine.

INSECTS: *H B.* The myriads of black flies belong to the harmless species Bibio Marci. (See *Gard. Chron.* 1844, p. 765.) The larvæ live in the ground on decayed particles of vegetable matter. *W.*—*G A.* Your Rose destroyer is the grooved weevil, Otiorhynchus sulcatus. For remedies, see answers to "Mac J." and "J. H." *W.*—*J C X.* The large active larvæ in the honey-comb are the caterpillars of the wax moth, Galleria cereana, and not of Ilithyia sociella, which is said to infest the nests of the *humble* bee. *W.*—*Sir W. J.* The insects on the Larch shoots are females of Chermes Laricis (a very remarkable species allied to Coccus), covered with eggs arranged in bundles like bunches of Grapes. *W.*—*Mac J.* The beetles which have done so much mischief to your young Rose shoots are the Otiorhynchus sulcatus. (See *Gard. Chron.* 1841, p. 292.) They should be collected with great perseverance by laying down sheets under the trees after nightfall, and then smartly shaking the trees, when they will fall down, and must be thrown into boiling water. If not attended to, their progeny will shortly appear in numbers and devastate the roots of your tender plants. *W.*—*J H.* See the preceding answer to "Mac J." Moreover, all holes in your Peach-wall should be carefully stopped. Adopt the mode of training upon wire. Salt laid at the base of the wall will kill the maggots, and strong decoctions of tobacco, aloes, and quassia will drive away the perfect beetles. *W.*

LILIES OF THE VALLEY: *Diss.* Wait till the leaves are quite yellow, and then transplant them. If they are abundant with you, we should ourselves be much obliged by a small basket-full. You must not take them up so long as the leaves are at all green.

MELONS: *Farmer.* Probably your fruit is allowed to set before the plants are old enough to support it; possibly it is not set at all.

NAMES OF PLANTS: *Diss.* Genista anglica.—*J S W.* 1. Sisymbrium officinale; 2. Some Daucus, indeterminable in such a state; 3. Anthyllis vulneraria; 4. Myosotis collina?—*John Lamont.* Menziezia empetrifolia, a very pretty thing.—*Saillonian.* Scilla verna.—*S.* Burlingtonia venusta.—*Marcelly.* Sisymbrium Irio; common Sanicle. Buy Babington's book (Manual).—*Agricola.* 1. Lathyrus palustris; 2. Myosurus minimus; 3. A Cerastium, not in flower; 4. Erophila vulgaris; 5. probably Arabis ciliata.—*C Oate.* Alyssum saxatile.—*C Ewing.* Hentreya scandens.—*J W H.* The plant which "a highly respectable seedsman" sold you for double white Narcissus is Muscari monstrosum. Your Geranium is probably too luxuriant to flower; check its growth a little by some means, and then it will possibly blossom with you. ‡

PAXTON'S COTTAGER'S CALENDAR. The reprint is now ready, price 3*d.* each copy. Parties wishing to have copies for distribution among their tenantry, can be supplied at the rate of 25 copies for 5*s.*

SUN-DIALS: *Constant Reader.* Sun-dials are frequently placed in gardens as something ornamental, but, from being badly set, they are often of no use. All that is required in the case of a horizontal dial is to set it perfectly level, and with the 12 o'clock line exactly in the plane of the meridian. The compass, as you experienced, is not a sure guide, for the needle points not to the true, but to the magnetic north, more than 20° to the west of the meridian. The extent of its deviation is variable. Perhaps the best plan for you to adopt is to obtain the Greenwich time from a railway station, and by it set your dial, allowing for the equation of time, and for the longitude of your place, the latter at the rate of 4 minutes for every degree of longitude, earlier if situated east of Greenwich, later if west. Or, by the following simple method you may find the meridian very exactly, and gardeners may as well know how to do this as have to guess at it. Place the dial as nearly right as you can by a watch. At some distance on the north side of it elevate a line or straight-edge horizontally, so that you can see under the same on looking along the back of the stile. In this particular direction you will observe, in a clear starlight night, a star larger than those near it. Dials were sometimes set by it, but not correctly, as it is not exactly in the plane of the meridian. Round a point near it stars in its vicinity appear to move; mark one of them, and looking through a small hole, observe when it is just seen under the straight-edge; suspend a plummet by a white thread so as the latter may appear to intersect the star. After describing an arch, the star will again appear below the straight-edge, mark the point under which it is seen on the latter, by there suspending another plumb-line. The middle point between these two is due north from the small hole through which the view was taken, and if one of the plumb-lines be moved to this point, and the other so as to intersect the hole viewed through, both lines will be exactly in the plane of the meridian.||

MISC. *An old Sub.* Double Oxlips are not uncommon. This is, we believe, an answer to your inquiry; but your letter, in consequence of your having made it into the cover of a box, and having sealed it down with most admirable care, is so torn to pieces that we are uncertain about its import.

SEEDLING FLOWERS.

CALCEOLARIAS: *G D.* Your flower was dried up, and all its colours were faded when we received it.*—*R C.* A very pretty spotted variety, good in shape, and distinct in colour, which is yellow, thickly speckled with dark brown.*—*A U R.* No. 1, pale lemon-coloured ground, spotted with purple; small and bad in shape. 2, yellow, marbled with crimson; pretty, but bad in outline, and rather small. 3, dull brownish purple, with a few pale yellow markings; tolerably good in shape, but dull in colour. 4, pale yellow, irregularly dotted and marked with brown; very bad in shape.*—*T G Y.* No 1, bright yellow, thinly dotted with brown; rather irregular in outline, and not distinct from many others. 2, bright yellow ground colour, thinly spotted with dark brown; tolerably good in shape, and very showy. 3, pale yellow ground colour, thickly and irregularly beset with rather large spots of shaded purple; a handsome large flower, good in shape and distinct. 4, pale lemon ground, thickly and irregularly marked with large dark brown spots; a showy variety, but bad in outline. 5, chocolate brown, with a few small yellow dots, and circular markings of a deep yellow; good in shape and colour—a very handsome variety. 6, yellow ground, thickly marbled with brown; good in shape, and very showy. 7, shape tolerably good, size rather large, colour purplish crimson, with a few light buff markings; a very nice variety. 8, flowers large, pale yellow, rather thickly set with brown spots; very pretty and good in outline, but rather flat. 9, pale straw colour, thinly spotted with purplish brown; bad in outline. 10, pale buff, thickly spotted with light purple; small, and irregular in outline. 11, flowers large, purplish crimson, marked with a few irregular lemon-coloured lines; a fine showy variety, but slightly indented in the outline and rather flat. 12, flowers small, purplish crimson, on a pale straw-coloured ground; tolerably good in shape, but too small. Nos. 3, 5, 6, and 7 are the best.*

MIMULUS RUBINUS: *A. Clapham and Co.* Your seedling has flowered, and proves to be a very fine thing. It has by far the largest and handsomest flowers we have ever seen on any Mimulus.*

from his office, and that an Executive Council of five persons should be appointed. The House rejected this motion with great disgust, and adjourned to the following day, when Vice-President Bauer informed the assembly that as the Vicar of the Empire had refused to sanction the programme of the Ministry, it had resigned. On the 11th the following resolutions were proposed by the Committee of Safety :

"1. That the members of Parliament shall take their oath on the Constitution of the empire. 2. That the Regent shall be summoned likewise to take the oath. 3. That the German Governments shall be summoned to call upon the civic authorities, the military, and the national guards, to take that oath 4. That the Parliament shall summon those German states that have recognised the Constitution to place their armies at the disposal of the House. 5. That a deputation of 12 members shall be appointed for the purpose of asking the Regent whether he has formed another Cabinet."

After a debate of some length, on the motion of the committee, the division on those motions was adjourned to the following day, when the Assembly withdrew the resolutions, but adopted the following instead of them, with the sanction of the committee, by 163 votes to 142 : "All the armed force of Germany, including the landwehr and national guard, shall solemnly swear to maintain the Constitution of the empire ; the central provisional government is invited to give the necessary orders for that purpose, if the German states do not freely conform thereto."

Prussia —Civil war was partially commenced in the Rhenish provinces, and it will require all the resources and energy of the Government to stem the torrent. By letters of the 10th from Dusseldorff and Elberfeld, we learn that there has been very serious conflicts between the people and the troops in these towns. In consequence of the refusal of the landwehr of Elberfeld to obey the order for enrolment, troops were directed to be sent from Dusseldorff on the 9th. An immense crowd accordingly assembled in Dusseldorff to prevent the departure of the soldiers, and they paraded the streets with a red flag, singing revolutionary songs, and shouting "Hurrah for the Republic!" The detachment destined for Elberfeld having been resisted by the people, fired on them. Thereupon the people immediately constructed barricades on different places, and especially in the Bokkerstrasse. They also rushed into the churches and sounded the tocsin During the night the fighting raged with great violence, and amidst the noise of artillery and musketry the tocsin continued to clamour, as a signal for a general rising. The troops had the advantage, but at midday on the 14th the insurgents still held out at several barricades. The number of slain was 20, 15 of whom were insurgents. At Elberfeld engagements took place between the troops and the insurgents, arising from the disobedience of the landwehr. Some combatants were killed on both sides. At length the soldiers, anxious to avoid a street fight, retired from the town. The insurgents completely destroyed the house of the burgomaster, captured the prison, and released the prisoners. It is said, but whether truly or not is not known, that 20,000 of the landwehr and national guard of Elberfeld and the environs, with reinforcements from Iserlohn, Solingen, and Mulheim-on-the-Ruhr, have assembled at Elberfeld, to oppose the troops, and it is added that they are well supplied with arms and ammunition, and have six cannon in their possession ; 500 peasants entered Elberfeld to oppose the troops. In addition to the above, disturbances have taken place in the mining and manufacturing districts of the Ruhr, and at Glabbach and Heydt attacks on the manufactories were dreaded. At Graefrath, Neuss, and Crefeld, there have also been popular risings, but no details are given. Strong detachments have been sent to the different places in insurrection from Cologne, Julers, Wesel, Bonn, and Coblentz. Meanwhile the plenipotentiaries of a few of the German States, whom Prussia has invited to meet at Berlin to draw up a Constitution, have already commenced their labours under the direction of General Von Radowitz. The States represented besides Austria are Bavaria, Saxony, Hanover, Mecklenburgh. It is said that Austria has declared that she will admit and acknowledge the formation of a closer union of states, and that the Constitution of this closer union will be founded on the following basis : 1. There shall be a House of Representatives of the people, and another of Representatives of States, besides a Council of Sovereigns, with certain legislative attributes. 2. One Sovereign to be at the head of the Executive. 3. Unity of diplomatic representation. 4. Unity of commerce, &c.

Austria and Hungary.—Accounts from Vienna, of the 12th inst., state that the city of Prague had been placed in a state of siege, on account of the evident determination of part of its inhabitants to make a diversion in favour of the Hungarians. The measures taken by the Government stopped the progress of the intrigue. Some of the leaders were arrested, and large quantities of arms and ammunition seized in the course of domiciliary visits. Part of the national guard has been suspended ; public meetings have been prohibited, and most strangers exiled from the town.—From Hungary we learn that the Emperor made his entrance into Presburg on the 10th. His arrival was followed by that of Prince Schwarzenburg and the Russian General de Berg. The Emperor went immediately to visit the army. He entered the city *incognito*, without attendance, and alighted at the Casino. The long inaction of the Hungarian army, of which nothing has been heard for the last fortnight, seems to countenance the notion that the Magyars are gathering their strength for some great blow. Some outposts are said to have been seen in the neighbourhood of the Jablunka Pass. Görgey is said to be advancing on the Moravian and Silesian border, at the head of 80,000 men ; and another body of 15,000 are said to have advanced from Raab and taken possession of Œdenburg. The Hungarian army at Pesth began the bombardment of Ofen, on the opposite bank of the Danube, on the 6th, and after firing for 24 hours had already opened a breach. The Hungarian batteries were planted on the Adler, Schwaben, and Blocksberg. The bombardment of Pesth from Ofen had begun two days previously, and been exceedingly destructive both to property and life, the noble buildings on the quay at Pesth having been entirely demolished. On the afternoon of the 6th the firing on Pesth ceased, and Görgey was requested by the government commissioner Iranyi to send an officer to Ofen to parley, and stop the continuation of hostilities against Pesth, on pain of the garrison being put to the sword on the capture of the fortress. Presburg is at present the grand focus of attraction. The Schlossberg, a steep hill with a ruined castle surmounting it, immediately overlooking the town, and commanding a magnificent view of the great plain of Hungary, watered by the Danube, has been converted into a strong fortress bristling with cannon. In the town itself trenches have been dug, and for miles round the most gigantic preparations made to provide against any inroad of the Magyars. The Russian vanguard of 17,000 men passed through Cracow on their road to Biala on the 5th. Two-thirds were infantry, the rest cavalry. They had 80 field pieces with them. The other two corps, each of 30,000 men, will enter Gallicia by way of Brody and Tarnopol ; the corps destined for Transylvania, will proceed partly through Bukowina and Wallachia.

Bavaria, Baden, &c —The German journals represent the movement in favour of the Constitution to be rapidly spreading. In Hesse Darmstadt the people had declared for the Constitution, and the national guard of Worms and other places had sent strong detachments to support an insurrection which had broken out in the Palatinate of Bavaria. The Bavarian Government published a proclamation on the 10th, declaring the provisional government, which had established itself in the Palatinate, to be illegal, and all its acts null and of no effect. The proclamation exhorted the people to be calm, and added that, on the meeting of the Diet, it would indicate what it had done, and what it wished to be done, with respect to the Constitution. At Munich, on the 10th, the Government made an imposing display of troops, to prevent a demonstration by the students in favour of the Constitution. Ludwigshafen, in the Palatinate, had been taken by the national guard, and the troops had joined with them and had sworn to the Constitution. At Landau, a revolt broke out among the Bavarian soldiers, in consequence of their officers attempting to prevent them from fraternising with the people. The soldiers fired on the officers, killed six, and destroyed a barrack. All the regiments then swore to the Frankfort Constitution. At Spires, the Bavarian garrison sided with the citizens, and resolved to oppose the entrance of the Prussians, who thereupon returned to Frankfort.—In the sitting of the Baden Diet at Karlsruhe, on the 11th inst., the President, according to former resolution of the Diet, took the oaths of all the members present to the Constitution of the German Empire. Four battalions of Baden troops stationed at Rastadt subsequently revolted, murdered five of their officers, and proclaimed the Republic. The insurgents made themselves masters of the fortress, as well as all the military stores. At the same time a battalion revolted in Lorrach, murdered the colonel, and joined in the republican movement. Freyburg and Offenburg are also in insurrection, and a general republican movement all through Baden may be expected. In consequence of these outbreaks, the Grand Duke of Baden has fled from his capital under escort of a troop of horse and artillery. Karlsruhe itself is asserted to be in a state bordering upon anarchy, part of the garrison having followed the example of the mutineers at Rastadt, and liberated Struve and other republican prisoners.

Saxony.—The latest intelligence from Dresden is to the afternoon of the 9th inst. It informs us of the final suppression of the insurrection. The city surrendered at 10 o'clock in the morning of that day, after a combat which had lasted almost incessantly from the morning of the 7th. During this bloody struggle, and before the insurgents surrendered, the gallant Saxon garrison, aided by the light infantry battalion of the Prussian Guards, rendered themselves masters of three parts of the old town, defended by the rebels, and were drawing completely round the Altmarkt, which had been converted by enormous barricades into a fortress. In lieu of sacrificing life in attacking these barricades in front, the pioneers cut their way from house to house, while the artillery kept a heavy fire of shot and shell upon the impediments. Towards the close of the contest a large number of the combatants surrendered ; but it was only with difficulty they were preserved from the vengeance of the soldiers, who were irritated to the last degree by the nature of the conflict and the obstinate resistance. The prisoners made were nearly all very young, the refuse of the population, mixed up with Poles and country people, and some draughts from the mob of Leipsic. The rebel burgher guard commander, Heintze, has been taken, and will be tried by court-martial. Messrs. Tzschirner, Heubner, and Todt, however, the members of the provisional government, escaped and were at once outlawed, and a reward was offered for their apprehension. During the conflict Tzschirner put forth a proclamation promising the treasures of the celebrated "green vaults" to the populace, if victors. "Let us hold together," says this bandit, "only two days, and the German republic will have received its baptism of blood!" Such was the language of the promulgators of the German Constitution, the adherents of Frankfort, the generators of German unity. Dresden suffered severely from the effect of the firing. The opera-house was burnt down, the Museum of Natural History, and other portions of the glorious museums of the Zwinger, so celebrated for their treasures, have been reduced to a heap of ruins. No less than 80 pictures in the unrivalled Dresden gallery have suffered, including Rubens's Rape of the Sabines, and the famous Virgin and Child of Murillo, which is perforated with balls. Much more injury would have been done but for the courage and zeal of the Director, M. Schulze, who, at the risk of his life, unhung the most valuable paintings during the fire, and laid them on their faces on the floor, it being impossible to remove them. A melancholy accident occurred during the conflict, an Austrian colonel, Prince of Schwarzburg-Rudolstadt, with his servant, having been killed by mistake, by the Prussians who stormed the Hotel de Rome. The unfortunate Prince, it appears, was ill and in bed in the Hotel de Rome, when the hotel was taken and his door forced open by a detachment of soldiers. The Prince rose, and with a lamentable rashness discharged two pistols upon the intruders, whose bayonets pierced him the moment afterwards. The loss which the Saxon troops sustained in the Dresden riots was 23 killed and 67 wounded. The loss of the Prussians was not so great, though several of their officers were killed.—Letters from Leipzic of the 8th state that the authorities of that town have at length succeeded in mastering the disturbances which took place on the 5th, 6th, and 7th. The riots were repressed by the joint exertions of the military and the civic guards.

Denmark and the Duchies.—The propositions made by Lord Palmerston to the Governments of Denmark and Prussia, in reference to the Schleswig-Holstein question, have been accepted by the Danish Minister ; and there is good reason to believe that the Prussian Minister in this country will also give in his adhesion to the arrangement on the part of his Government. There is therefore every prospect that this contest, out of which has hitherto arisen so much political animosity and commercial inconvenience and loss, will be speedily terminated. That every day's delay was producing disastrous fruits, is proved by the fact that since the entry of the principal part of the German army into Jutland, they have been fighting daily. Two deadly engagements took place successively near Kolding and Fredericia between the two armies, and to the great disadvantage of the Danes, at the conclusion of which we find the German troops within gunshot of the latter town. As the Imperial army is provided with a formidable artillery, it is not probable that this fortress will be able to resist much longer, but that it will speedily be obliged to surrender. The last advices from the Danish army represent it as being in a very dangerous situation, in case they were attacked, as the easterly wind would prevent their crossing over to Fühnen.

Italy.—The reinforcements of the French army have reached Gen. Oudinot, who has seized the port of Fiumicino for the purpose of disembarking them. No further hostile movement on the part of the French general has taken place, but it is reported that in consequence of a conference held at his head-quarters on the 7th, and at which the ministers of Great Britain, France, and Prussia attended from Gaeta, the French army have been allowed to enter Rome, to save the city from the Neapolitans. It is more probable that this step, if true, was taken to save the city from the Austrians, as the advanced guard of the Neapolitans has already been repulsed with loss by the legion of Garibaldi and Galletti. The following is the account of this repulse, from the Italian papers :

The Neapolitans, who call themselves crusaders in this case, and wear the sign of redemption on their breasts, had occupied the province of Frosinone without striking a blow, and had moved on the 4th from Velletri to Albano. On the same day Garibaldi was on his way to meet them at the head of about 3000 men, having reinforced his legion by the Lombard Battalion, some emigrants, the revenue soldiers, and some troops of the line. About 11 A.M., the Neapolitan vanguard, about 1000 strong, was bivouacking at Torre di Mezza Via, a distance of 10 miles from Rome, on the Albano-road, when Garibaldi suddenly attacked them and put them to flight. However, on the arrival of a reinforcement of Neapolitan troops, the engagement recommenced at about three miles from Marino. The last advices of the 6th, up to 5 P.M., state that Garibaldi was at Tivoli, having driven back the Neapolitan army, he had taken some ammunition waggons and about 60 prisoners. The King of Naples had been at Velletri shortly before, and received deputations from the inhabitants of various places. He has deposed the existing authorities in the provinces he occupies, and put priests in their stead.

On the 4th it was with difficulty that Prince Doria's palace and picture gallery were preserved by the strenuous efforts of government from being burnt by the mob, when they learned the news of that nobleman being in the enemy's ranks advancing against his country. On the same day the shopkeepers and others contributed of their own free impulse, 60,000 hard silver dollars, which were lodged in the coffers of the Roman exchequer, to be added to the sinews of war. An old priest, called Benedetto Picchi, brought the only silver cup, fork, and spoon he had. The cardinals' carriages and confessional boxes had all been broken up to make barricades, and the Ponte Molle was blown up on the 3d to cut off the communication with the Campagna on that side. In the streets of Rome stones

are piled at intervals with the inscription, "Arms for women." Many women, during the French attack, stood fearlessly in the most dangerous posts armed with muskets, knives, and stilettos. All the villas and pleasure grounds round Rome within gun-shot from the walls, including the Villa Borghese and the Villa Pamfili-Doria, have been levelled to the ground, to prevent shelter for the enemy. The Roman triumvirate have published a report on the affair of April 30, from details furnished by the Minister of War. The French are in it said to have lost 1500 men in killed, wounded, and prisoners; and the Romans 50 killed and 200 wounded. A letter from Garibaldi, after speaking of the bravery displayed by the Roman troops, says:—"A quantity of arms, drums, and other matters have remained in our hands. The wounded French, before expiring, expressed their sorrow for having fought against their Republican brethren." The firing of the French artillery has injured the upper part of St. Peter's and a portion of the Vatican gallery. One of their balls pierced the cupola of St. Peter's, and seriously injured two pieces of tapestry in the Vatican after the designs of Raphael, the same of which we have the cartoons at Hampton Court. Garibaldi was the hero of the battle, and received a slight wound, which, however, did not prevent him from taking an active part in the remainder of the action. After the French had retreated, they sent to Rome for surgeons and physicians, who were readily allowed to go; all the wounded French remaining on the field were carried into the hospitals by the Romans.—The Austrian force which had entered the Roman states has arrived before BOLOGNA. It is under the command of Marshal Wempffen, who has issued a proclamation that he came to re-establish the government of Pius IX.; but a strong resistance was expected from the Bolognese.—A letter from LEGHORN, of the 7th, says that General d'Aspre, who was before the town, had given it 48 hours to surrender at discretion. The consuls had addressed the people in the streets, to induce them to give way before an overwhelming force, but in vain. The Austrians then took the city by assault, and entered it on the 11th.—The FLORENCE papers of the 8th speak of an attempt at a demonstration in that capital on the preceding evening, but the disturbance was quelled by the national guard. The intervention of Austrian troops has had a very unfavourable effect on the feelings of the people in general.—From PALERMO we learn that hostilities have been unexpectedly renewed. It appears that several of the members of the Sicilian Government had been bribed to bring about a reaction in favour of King Ferdinand. These persuaded the real Sicilian patriots to go to Catania to fight against the Neapolitans, the reactionists well knowing that that town would probably succumb. It did so, and advantage was taken of this at Palermo to advise the national guard and regulars not to fight. Notwithstanding the efforts of Stabile and Ruggero Settimo, this counsel for a time predominated, and a deputation left to meet Filangieri, and offer him the complete surrender of Palermo. The deputation having left, and with it the principals of the reaction, the plot was discovered at Palermo, the traitors fled, and the people are now up in arms, and in possession of city and forts. Scordato and Michelo are leaders. The city will resist to the last. A portion of the Neapolitan force was, by the last accounts, near Palermo, the main body at Caltanisetta.

TURKEY.—The accounts from Constantinople mention the complete failure of the Russian Envoy Extraordinary, General Grabbe, in his attempt to induce the Porte to enter into a new convention with Russia, a convention which would annul the treaties of 1841, and would deprive the Porte of the right which she possesses as regards France and England, which powers signed the treaties of 1841, and thereby guaranteed the independence and integrity of the Ottoman empire. General Grabbe laid great stress on the indifference of the Cabinets of London and Paris in the question of the principalities, and endeavoured to prove to the Porte that the alliance with Russia alone, and without the western powers, would be most likely to insure to the Porte calmness and security. Just at the moment when Russia was carrying on this game at Constantinople, with the evident object of ruining the Anglo-French influence, which incommodes her in the East, a French steamer brought the official intelligence to General Aupick and Sir Stratford Canning that Baron Brunow, the Russian minister in London, had given the solemn assurance to Lord Palmerston that Russia had given up all idea of a new convention with the Porte. Upon this, the Porte replied to General Grabbe by the most formal refusal to sign any new convention. The news of the concentration of Russian troops at Odessa has determined the Divan to arm the Bosphorus with artillery.

CANADA.—Our accounts from Canada are to the 1st of May, and are of great importance. On the 25th of April the Governor-General went to the Parliament House in Montreal, to give the royal assent to various bills which had been passed, and among them the Indemnity Bill. The moment the clerk of the House read the title of this bill, as returned with the royal sanction, the galleries in which the spectators were assembled burst out into hisses and groans, and immediately the persons in them left the House to communicate to the city the unwelcome tidings. The sequel to the story is told in a few words. Lord Elgin, as the representative of the sovereign, was personally outraged. The Parliament was dissolved by violence. The members were driven from the building, to which the torch of the incendiary was applied, and in the space of a few hours the Parliament House, the records and archives of the colony, and a fine library, were reduced to ashes, the fire companies standing by in willing or compelled inactivity, and neither police nor military interfering to prevent or avert the outrage. The swearing-in of a number of Frenchmen as special constables caused a great increase to the excitement. One report states that the constables fired upon a large body of the rioters. On the way to the Parliament-house, the Governor-General and the obnoxious members were pelted with eggs and dirt; the Governor himself was struck on the head with a stone and in the face by an egg. During this scene the Riot Act was read, and the troops ordered to charge. No lives were lost, though the crowd was very dense. So intense became the excitement in consequence of the arrival of the French, that the Governor-General had to give orders for their arms to be taken away. Strong apprehensions were entertained of still greater violence. The accounts from the country were very alarming; and in some places the authorities were compelled to assist in burning the effigy of the Governor-General. The following is the detailed account of the riots given in one of the Montreal papers opposed to Government.

MONTREAL, April 26.—Yesterday afternoon, it was known in all the places of resort that his Excellency would go down to Parliament and sanction numerous bills, particularly the one relating to the Customs. It was never presumed for one moment, however, that the notorious Indemnity Bill was to be one of them. At 4 P.M, the hour appointed for the ceremony, a fair assemblage of people were collected in front of the parliamentary buildings. It was not till 5 P.M. that the Governor entered the council chamber, and took his seat on the throne. In the meantime a rumour had got abroad that the obnoxious bill was indeed to be assented to. The report quickly spread, and before the conclusion of the ceremony a crowd of about 1500 persons were collected together to receive the representatives of British sovereignty with the long announced honours. The royal sanction was given to 48 bills, amongst which, the crowd were informed by those who had been in the interior of the buildings, was the obnoxious bill. About 6 o'clock his Excellency entered his carriage and was driven off at a rapid rate, amidst curses, yells, hootings, and a shower of rotten eggs, dirt, and stones. Lord Elgin had to run the gauntlet of the various missiles for the distance of 100 yards. The carriage windows were down, and Col. Bruce was inside with him. Three eggs entered the carriage, and some struck his lordship in the face. Horses, equipage, footmen, &c., were all completely covered with the unsavoury missiles. The staff fared very little better. The fact of the royal sanction having been given to the Rebellion Losses Bill, now spread like wildfire. By 7 o'clock alarm bells were ringing all over the town, and cries went through the streets calling a mass meeting, to be held on the Champ de Mars at 8 o'clock. By the appointed time upwards of 2000 people had assembled, and by 9 o'clock it had swelled to 5000. One of the leaders of the mob got upon a chair, and addressed them in a violent and inflammatory manner, amidst continued and deafening cheers. "The time for action had arrived. We must work. We have passed resolutions enough—they have been disregarded. To the Parliament House!"—A chord in the hearts of the multitude had been touched, which every heart re-echoed. The moving thousands, preceded by torches, marched at a furious rate in the direction of the Legislature. By 10 P.M 8000 persons were in front of the buildings, where the Assembly were in full session at the time. A shower of stones, "as thick as leaves in Vallambrosa," were poured upon the windows, which, from the brilliant manner in which they were lighted, afforded a most tempting mark. When the stones came pouring into the windows, the members of the Assembly thought it time to beat a retreat, and retired into the lobby, there to await the issue of events. No sooner had the members left than about 100 of the mob, armed to the teeth, rushed into the Assembly room, and their leader, swearing he would come Oliver Cromwell over them, placed himself in the Speaker's chair, assumed the hat, and announced, with stentorian lungs, "Gentlemen, the French Parliament is dissolved!" adding, "and we are all going to ——!" One brawny fellow then seized hold of the mace, which, from the House being in committee at the time, lay on the table, and having shouldered it, marched off. The rest set to work, and the destruction commenced. Whilst this body of men were smashing everything inside the Legislative Assembly room, a cry of "Fire!" was suddenly raised. In the meantime Colonel Gugy, heading the members, clerks, and ladies, rushed through the hall of the house, and out at the principal door, agreeably surprised at not finding themselves stopped. The fury and rapidity with which the flames spread can hardly be imagined; in less than 15 minutes the whole of the wing occupied by the House of Assembly was in flames, and, owing to the intimate communications between the two houses, the Upper House was rapidly involved in the same destruction. The mob had now amounted to almost incredible numbers, and remained stoical spectators of the scene. The troops arrived shortly afterwards, and were received with loud cheers, which several companies of the 23d Regiment returned. One soldier, a private, fired his musket in the air; he was immediately arrested and sent to the guard-house. By 11 o'clock nothing but the smouldering ruins of the house remained. None regret the loss of the buildings; every one of the splendid libraries, in which were the archives and records of Canada for hundreds of years; valuable works from every quarter of the globe were heaped in profusion within those walls; 1100 volumes of records of the British House of Commons, of which no other copy was extant, were destroyed. Not 80 dollars' worth of property was saved. The loss is irreparable, and is regretted by all. The Queen's picture was saved from the burning buildings, but destroyed in the streets. The party in charge of the mace carried it to Donegana's Hotel, and there placed it in the hands of Sir Allan M'Nab. No lives were lost. T. B. Turner, Esq., of the *Montreal Courier*, Sir Allan M'Nab, and the Hon. W. Badgely, in attempting to save some books from the library, were nearly lost. They were obliged to drop the works and rush for the legislative council chamber door, which, to their horror, they found locked. Their cries were heard by a party in the library of the council, who had axes, and the panel was smashed in; they then escaped by a ladder from the balcony. It was rumoured amongst the mob that the French members were hid in the cellars, and would be destroyed by the fire. The announcement was received with the most brutal cheers. At 12 o'clock, satisfied with the work of the evening, the multitude dispersed. His Excellency the Governor-General, with his family, came into town, and remained all night under the protection of a large guard at Government House. Early this morning, Messrs. Mack, Howard, Montgomerie, and Ferries, proprietor of the *Montreal Gazette*, were arrested on a charge of arson. They were taken before the police magistrates, and, after an examination of a few hours, remanded to gaol till to-morrow. The excitement during the day was intense. A mob of 3000 persons accompanied them to the goal. Through the influence of their leaders the mob were prevented from any outbreak. Had they chosen to do so, the hundred soldiers who guarded the cabs would have soon been settled. But it was represented that more good would arise from their incarceration for a few hours. In the evening it was announced that a meeting would be held at the Champ de Mars to-morrow at 2 o'clock, the Hon. George Moffatt to be in the chair, when the peace and safety of the country will be discussed. It has already been decided that safety and peace can only be ensured by his Excellency going home. Notice will be given him to quit the confines of Canada before the expiration of the week. Sir Benjamin D'Urban is to be called upon to administer the affairs of the country till he receives tidings from home. A French magistrate, named Arniot, who went to gaol with the prisoners, was nearly torn to pieces by the mob. An assemblage of persons was collected outside the Government House during the whole day, for the purpose of laying hold of the Ministry, and were only prevented from entering the house by the presence of the military, with whom it is determined by the British party not to quarrel, and it was also the military's desire. The soldiery enjoyed the fun excessively, and many were the scoffs and jeers passed by both officers and men on the French party. Every now and then one of the Ministry would make his appearance at the door, and quickly retire at the precious howls of the mob that greeted his presence. The Governor was not in town, he having left in the morning. Half a regiment is stationed at Monklands. About eight o'clock the mob was augmented to several thousands. Messrs. Lafontaine and Holmes determined to make an attempt to get out in a cab through the mob, which they succeeded in doing, after the cab had been turned round half a dozen times, the lives frightened out of them, and their clothes torn and bespotted with the yolk of eggs. The frontier of the mob then gave way, and one of the leaders having given the word, "to Mr. Hincks's house," the multitude moved off in the direction of Beaver Hall. Three cheers were given for the military as they passed the guard house. Having arrived at Mr. Hincks's residence, the work of destruction began; and all the windows and doors of the dwellings of Messrs. Hincks, Holmes, and Wilson (a Radical) were smashed to pieces. Luckily at that moment a cry was made, "To Mr. Lafontaine's;" which, together with the account that Mr. Hincks had moved during the day, completely drew off the mob. Immediately upon arriving, the house of Mr. Lafontaine, quite new and finished, also the property of Mr. Lafontaine himself (although he had not moved into it), was furiously attacked. The outbuildings were set on fire, and the house completely gutted, furniture smashed, magnificent pier glasses broken to pieces, feather beds ripped up, and every sort of destruction possible. Three times the house was on fire, but put out by the leaders. After the work was accomplished and the mob returing, they suddenly found themselves in the presence of a regiment of troops, for whom they immediately gave three cheers and passed by. Thus ended the second night. Messrs. Mack, Ferrers (editor of the *Montreal Gazette*), Montgomerie, Esduile, and Howard were arrested on a charge of arson, arising out of the destruction of the Parliament House. They were conveyed from the court to the gaol, accompanied by a strong detachment of the 19th Regiment. There was no attempt at a rescue, as was very generally expected. They were generally committed for rioting. On the night of the 26th the mob broke the windows of the houses on Beaver-hall-terrace, belonging to Mr. Hincks, the Inspector-General, Messrs. Holmes, member for the city, and Mr. Wilson, and afterwards set fire to the sheds of a building in the St. Antoine-road, belonging to Mr. Latontaine, the Attorney-General for Lower Canada.

The latest dates from Montreal, by electric telegraph, are to the 1st inst. The following is the substance of the intelligence:—A deputation of French Canadians, congratulating Lord Elgin on the quiet state of the country, arrived in town on that morning from Quebec. A large mob was prepared on the wharfs to receive them; they were, however, landed at the Longueil-ferry, about a mile below the city. It was feared that should they go down again by steamer the boat would be attacked. On the same night Mr. Boulton was to move in the House of Assembly for a dissolution of the Union of the two Provinces, and an address calling upon the people of the city to keep the public peace, signed by the most influential members of the Conservative party, was to be sent out immediately. Intelligence had reached Montreal from Toronto of an immense meeting having been held, at which a petition to the Queen to recal Lord Elgin, and to dissolve the Parliament was decided on. The news from Kingston was to the same effect. So far as regarded the external appearance of Montreal, everything wore a peaceful appearance when the latest accounts left, and Lord Elgin's despatch to the Home Government treats the whole affair as a lawless riot, got up by disappointed political parties, and to be put down by the ordinary means at his disposal.

Parliament.

HOUSE OF LORDS.

FRIDAY.—The Royal Assent was given by commission to various bills. *The Reporters' Gallery.*—The Earl of GALLOWAY brought a complaint against the papers for the report of his speech of the previous evening, stating that this was another and a strong example of the misrepresentations which often took place in the reports of the proceedings of the House, tending to lower its character, as well as the characters of some of their lordships.—The Earl of MOUNTCASHEL complained that he was always either misrepresented or not reported at all, and he did hope after what had passed, that the reporters would be brought under some better control, in order to compel them to give full, fair, sufficient, and correct reports of their lordships' proceedings.—Earl GREY also entered into an explanation in correction of a mistake of a portion of his speech on the Navigation Bill with reference to Canada, which had been misunderstood by the reporters. *The Rate in Aid.*—The Earl of CARLISLE moved the second reading of the Rate in Aid (Ireland) Bill. He admitted that a rate in aid was liable to objection, but it was the readiest and most effectual remedy the Government could devise to meet the pressing and peculiar wants of Ireland. An income tax had been suggested as a better and more just mode of raising the required fund, and the Government were not indisposed to try that plan if they found the representatives of Ireland really preferred it. But though opportunities were given, both in and out of Parliament, the Irish representatives did not evince their agreement to have an income tax, and therefore the Government had no alternative but to propose the rate in aid, which had the great advantage of not requiring new machinery or a new staff for collecting. He would not, however, say that the time would not come when the subject of an income tax for Ireland would have to be discussed.—The Earl of RODEN moved, as an amendment, that the bill be read a second time that day six months. He opposed the measure because he believed it to be unjust, and inadequate for its professed object; because it would destroy the working of the Poor-law; and because it would become the strongest argument in the hands of those who sought the separation of the two kingdoms. He did not feel it to be his duty to propose any tax in substitution. It was the business of the Government to devise a tax that would answer the desired object, and it was simply the duty of all those who considered such proposed tax as calculated to work greater evil to refuse their assent to it. It was his opinion that Government, in in-

The Newspaper.

SATURDAY, MAY 19, 1849.

THE BEST ENGLISH WATCHES.—A. B. SAVORY and SONS, WATCHMAKERS, 9, Cornhill, London, opposite the Bank, request the attention of purchasers to their stock of London-made PATENT LEVER WATCHES, which are manufactured by themselves in their own house. In silver cases, with the detached escapement and jewelled, the prices are four guineas and a half, six, and eight guineas each; or in gold cases, 10, 12, 14, and 16 guineas each. The very large stock offered for selection includes every description, enabling a customer to select that which is more particularly adapted to his own use. Every watch is warranted.

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Age	Without Participation in Profits. 1 Year.	7 Years.	For Life.	Age	With Participation. For Life
	£ s. d.	£ s. d.	£ s. d.		£ s. d.
21	1 3 0	1 5 9	1 14 11	20	1 17 4
30	1 3 1	1 5 3	2 2 7	30	2 6 10
40	1 6 1	1 8 2	2 17 8	40	3 3 6
45	1 10 0	1 13 9	3 9 9	45	3 16 3

Specimens of Additions made to Policies issued in 1840.

Age at Entrance.	Sum Assured.	Annual Premium.	Bonus added to Sum Assured	Equivalent Reduction of Annual Premium until next Division.
	£	£ s. d.	£	£ s. d.
32	2000	49 10 0	244	19 18 0
40	5000	139 3 4	540	35 19 0
42	2000	68 1 8	267	17 12 0
45	5000	190 12 6	668	77 12 0

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WILLIAM EMMENS, Secretary.

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PETER MORRISON, Resident Director.

1, Princes-street, Bank, London, May 19.

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A. HAMILTON, Secretary.

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News of the Week.

A POPULAR COMMOTION, characterised by a wanton spirit of destructiveness, and bearing unmistakeable evidence of previous organisation, broke out at Montreal on the 26th ult., immediately after the Indemnity Bill had received the assent of the GOVERNOR-GENERAL. The riots commenced by an attack on the House of Parliament while it was in full session, and terminated in the irruption of a band of ruffians into the hall of the Assembly, and in the seizure of the Speaker's chair by their leader who proceeded to dissolve the Parliament after the well-known precedent of CROMWELL. The work of demolition then began. The torch of the incendiary fired the building, and without a single effort being made to arrest them, the flames spread with unexampled rapidity, until the Parliament House, the invaluable archives of the colony, and the most magnificent library on the American continent, were reduced to ashes. The GOVERNOR-GENERAL, Lord ELGIN, was pelted with rotten eggs and with missiles of various descriptions, and several of the leading members of the legislature were subjected to very violent treatment. After the demolition of the Parliament House, the mob proceeded to destroy the houses of some of the leading Ministers and Liberals, but at length dispersed on finding themselves in presence of the troops. The riots were entirely suppressed by the evening of the 27th. Many suspected persons had been then arrested, and the more respectable leaders of the British party, in whose names these outrages were perpetrated, were preparing to assist the Government in restoring order and tranquillity to the colony. Much violence, however, still prevailed at the public meetings, which the Government had wisely allowed to be held without interference, and petitions to the QUEEN were in preparation, praying for the immediate recall of Lord ELGIN and for the dissolution of the Union of the two Provinces. The latest news states that order had been completely re-

established, and Lord Elgin's despatch not only confirms this fact, but shows that the means at his disposal are sufficient to suppress any attempt to renew the disturbances.—In Germany every week is bringing matters more nearly to a crisis. The insurrections at Dresden and at Leipsic have been put down by the steady loyalty of the troops, both Saxon and Prussian, who responded to a man, every inducement held out to them by the ultra democrats. The Prussian landwehr, also, the calling out of which was by many considered a hazardous experiment, has responded loyally to the call, and the disturbances on the Lower Rhine, in that densely-peopled district which has been so long infected with revolutionary principles, have been effectually put down by the ordinary means at the command of the local authorities. In Baden, however, republicanism appears to be for the time triumphant. The handful of soldiers who form the military establishment of that petty state, wanting the *esprit de corps* which binds large armies together, have gone over to the people, and have placed the fortress of Rastadt in the hands of the revolutionary party. The Grand Duke also has fled from Carlsruhe where a Republican Ministry has been already formed. At Frankfort, every recent act of the Central Parliament has identified it irrevocably with the ultra democrats. The Ministry have resigned, the Archduke has openly expressed his disagreement with the principles of the Assembly. Austria and Prussia have recalled their deputies and Saxony doubtless will do the same. If, however, the Frankfort Parliament be kept alive by the representatives of the smaller States who have accepted the Constitution, it is hardly likely to hold its ground against the scheme of a double confederation, which is now under the consideration of the Congress of German plenipotentiaries which the King of Prussia has convoked at Berlin. At this Congress Austria and Bavaria are fully represented, and it is said that both these Powers have given their assent to the scheme of federal union proposed by Prussia, as the measure which is best calculated to reconcile the people of Germany to the rejection of the Frankfort Constitution.—The news from the seat of war in Hungary is confined to a few details of the bombardment of Pesth by the Imperial garrison at Ofen on the opposite bank of the Danube, and of the subsequent bombardment of Ofen by the Magyars from the Blocksberg and other hills which command the fortress of that town. The latest accounts mention the destruction of the noble palaces which formed the ornament of the quay of Pesth, and the probability that the Imperialists would be compelled to surrender to the superior artillery of the Hungarians who are justly exasperated by the destruction of their favourite city. The young Emperor of Austria has arrived at Presburg, where he will remain until the Russian reinforcements have arrived, when he will assume in person the command-in-chief of the allied armies.—In France, the elections have taken place this week without disturbance of any kind. The results are, at present, only partially known, but enough has been ascertained to show that they will be altogether favorable to the cause of order, and that the moderates have been returned in the proportion of four to one over the socialists and democrats. The Government sustained a second defeat in the Assembly on Tuesday, on the subject of a telegraphic despatch, which the Minister of the Interior, with an imprudence which seems characteristic of his office, had forwarded to all the departments, with the view of holding up to public obloquy every member of the Assembly who had voted against the Government in the vote of confidence on their Italian policy. This despatch was brought before the Assembly on Tuesday, and was so universally reprobated that the Minister only obtained five votes in his favour, while 519 voted against him.—From Italy, we learn that the Roman troops under Garibaldi have succeeded in defeating the Neapolitans in two engagements; and that the Austrians who had crossed the Po last week and entered the Legations have commenced the bombardment of Bologna. At Rome, enormous preparations have been made to defend the city; the noble villas beyond the walls, which have for years been objects of attraction to every traveller, have been reduced to ruins, in order that they may not afford a shelter to the invaders; the Ponte Molle has been blown up; and even the Vatican and the Capitol are now said to be mined. It is, however, again reported that a "transaction" is in progress, the object of which is to allow the French to take possession of the city as a protection against the other armies which are marching to attack it.—From Sicily we have news of the renewal of hostilities at Palermo, at the very moment when General Filangieri was preparing to enter the city. The popular leaders are in possession of the forts, and are determined, it is said, to defend their capital to the last.

In the House of Lords, on Friday, the second reading of the Rate in Aid Bill was carried by a majority of two. In the House of Commons, on the same night, the Irish Incumbered Estates Bill passed the second reading without a division. On Monday, on going into committee on the Parliamentary Oaths Bill, Lord J. Russell expressed his readiness to omit from the oath the words abjuring the authority of the Pope. A long and desultory discussion ensued, and, after two divisions, the Chairman was allowed to report progress. On Tuesday Mr. Monsell's motion, on the subject of emigration, as a remedy for the necessities of Ireland, was agreed to. Last night, on the House going into committee on the Parliamentary Oaths Bill, Mr. O'Connell, in consequence of some previous debate having been imperfectly reported, took notice of the presence of strangers. The result of this was, of course, the clearance of the galleries, so that no report of last night's proceeding can be given by the public papers.

Home News.

Court.—The Queen, Prince Albert, and the Royal Family continue at Buckingham Palace. The Duke and Duchess Augusta of Saxe Cobourg Gotha, accompanied by their three children, arrived at the Palace on Saturday, on a visit to the Queen. In the evening the royal party were present at the Royal Italian Opera. On Monday her Majesty and the Prince, accompanied by the Duke and Duchess Augustus of Saxe Cobourg Gotha, went to Windsor Castle, and returned to the Palace in the afternoon. In the evening the royal party attended the German Opera at Drury Lane Theatre. On Tuesday the royal party attended Her Majesty's Theatre. On Wednesday the Queen gave a State Ball (the second this season) at Buckingham Palace, to a party of 1900, comprising the members of the Royal Family and foreign Princes and Princesses in England, all the members of the Diplomatic Corps, the ladies and gentlemen of the Royal household, and a very numerous circle of the nobility and gentry.

Cabinet Council.—A Cabinet Council was held on Saturday at the Foreign-office. It was attended by all the Ministers, and sat two hours and a half.

Order of the Bath.—The Queen has given orders for the appointment of Lieut.-General the Right Hon Sir Edward Blakeney, Knight Commander of the Bath, to be Knight Grand Cross of the Order.

Colonial Bishopric.—The Queen has been pleased to constitute the island of Hong Kong and its dependencies to be a bishop's see and diocese, to be called the Bishopric of Victoria, and to name and appoint the Rev. George Smith, D.D., to be ordained and consecrated bishop of the said see.

Foreign.

France.—The defeat of the Ministry in the National Assembly, and the consequent resignation by M. Leon Faucher the Minister of the Interior, of his seat in the Cabinet, are the events of the day; and so important are they, that they have for a moment suspended even the interest felt in the general election. After all, however, the defeat is not so much a blow to the Cabinet generally, as it is a condemnation of M. Faucher personally; and that it is felt in this light by the Government itself, is evident from the fact that, while the Cabinet retains its place, M. Leon Faucher has resigned. In order to understand the position of affairs, it is necessary to state that on Friday the Government obtained a victory on the Italian question, and that the National Assembly at the same time upset its resolution of the previous Tuesday. It will be remembered that on the receipt of the first acts of General Oudinot, his proclamations in favour of the Pope, his abuse of the Roman Republic, and his defeat under the walls of Rome, the National Assembly marked its disapprobation of the conduct of the Government by passing, by a majority of 87, a vote by which it declared that the expedition to Civita Vecchia had been turned to purposes very different from those contemplated by the Assembly when it agreed to it, and "inviting" the Government to take measures to prevent such an abuse in future. All this was overturned on Friday, when the National Assembly, by a majority of 37, passed a vote which may be considered in the light of a vote of confidence, and which completely upset the previous vote. The division took place on a motion brought forward by M. Jules Favre, to the effect that the Assembly should retire to its bureaux for the purpose of nominating a committee, which would be charged to draw up a resolution that the Ministry had lost the confidence of the Assembly. The Assembly was thus placed between the difficulty of an immediate collision with the Government and a retractation of its previous resolution. It chose the latter, and by a majority of 37 it passed to the order of the day *par et simple*, or, in other words, it expressed its confidence in the Ministry. The proposition to impeach the President and the Ministers was afterwards rejected by 388 votes to 138; and finally the Assembly refused to send to the bureaux the proposition to prosecute the general who had acted in contravention of the decree of May 11, 1848, giving power to the President to call out the troops. Matters would probably have remained in this state if the Minister of the Interior, M. Leon Faucher, had not been imprudent enough to send the following telegraphic despatch to the prefects of the departments:

The Minister of the Interior to the Prefect of the — . After a very animated discussion on the affairs of Italy, the National Assembly voted the order of the day against the proposition of M. Favre, which declared that the ministry had lost the confidence of the country, by a majority of 329 votes to 292. This vote consolidates public peace: the agitators only awaited a vote hostile to the ministry to fly to the barricades and renew the scenes of June. Paris is quiet.

This was followed by the names of those who had voted for and against the order of the day. The despatch was sent to 32 departments, and would have been sent to the rest if there had been time. It arrived on the very day before the elections, and was immediately published in placards by the prefects. The effect may be conceived, when it is remembered that all those who voted for the order of the day are said "to have consolidated the public peace," and are thus in a manner recommended to the gratitude of the electors who are friends to order; while those who voted against the order of the day are classed among "the agitators, who were only waiting for a hostile vote to fly to the barricades and renew the tragedy of June," and are thus held up to public reprobation and vengeance. The adding of the names of the representatives who voted on the one side or the other left no doubt of the object of the despatch, especially arriving, as it did, when no explanation could be given before it had had its effect on the elections. The universal reprobation with which this despatch has been viewed is clearly shown by the result. M. Maillard on Tuesday brought the subject before the Assembly, when no less than 519 recorded their condemnation of M. Faucher, while only five voted in his favour. In consequence of this vote the Minister of the Interior immediately went to the President of the Republic, to whom he gave in his resignation, which was accepted. No one has been yet appointed as his successor, and it is supposed that the appointment will be postponed till after the meeting of the new Assembly. In the meantime, M. Lacrosse conducts the affairs of the department of the Interior. It is said that, immediately after the meeting of the Assembly, a further modification of the Cabinet will take place, and that it is probable that M. Molé may take office as Prime Minister. In that case, M. Berryer and Marshal Bugeaud will be called on to take office. M. Thiers, it is understood, declines to enter the Cabinet at present.—The Paris elections terminated on Monday, and are said to be much more favourable to the Moderates than was expected. There appears also to be no doubt that in the departments the Moderates have beaten the Socialist and democratic candidates.—General Courtais, who has just been acquitted at Bourges, appeared in the Chamber on Saturday, after his long imprisonment. He was surrounded by his friends, and took his seat on the benches of the Mountain.—M. Lacave Laplagne, formerly Minister of Finance, died on Sunday, in the Rue Castiglione, of an attack of gout.—Madame de Rumigny, and General de Rumigny, formerly aide de-camp of Louis Philippe, died a few days since at Laval, of cholera; and the celebrated Madame Recamier also died a few days ago of cholera, which is increasing very much in Paris.

Frankfort.—In the sitting of the German Parliament of the 10th inst., a letter was read from the President of the Regent's Cabinet, Baron Gagern, informing the House that the Cabinet had submitted a programme to the approval of his Highness the Regent, pointing out the measures which the Cabinet advised with respect to the disturbances which had been occasioned by the attempted execution of the Constitution; that the Regent had objected to the programme, and that the members of the Cabinet had, consequently, resigned. After an animated debate, in which a motion was made to send a deputation to the Regent, a series of resolutions were moved by M. Reden, and adopted by the Assembly, with a majority of 41 votes. These resolutions were, that—

"The gross violation of the peace of the empire of which the Prussian Government has been guilty, by its unauthorised interference in the kingdom of Saxony, shall be repressed by all available means.

"Public tranquillity and safety shall be preserved, but the endeavours of the people and their representatives to execute the Constitution of the empire shall be protected against constraint and oppression."

It was next resolved to send a deputation to the Regent to urge him to form a Cabinet which would undertake to execute the above resolutions. The deputies returned after a short absence, and made a report, from which it appeared that the Archduke had received them with something like a sneer, and that his reply to their petition was both curt and evasive. The House resolved to refer this report to the Committee of Safety. At the end of the sitting a motion was made by M. Schlöffel that the Regent should be declared to be an enemy of the German people, that he should be removed

her throat. The parties are both natives of Banbury, though for some time past resident at Leamington, where the husband was a builder, and had accumulated some property, being the owner of nine or ten houses in that place. They have a family of six or seven children; and a son of the wife, born previous to her marriage with Layton, resided with them. There appears to have been some disputes recently about this property, and Layton accused his wife, her son, and one of her brothers, at Neithrop, with conspiring to defraud him of it. On Monday week, he set off with his wife to walk to Banbury. They were seen together upon the road six or seven miles from that town. One man who saw them thought they were "sweethearting," as Layton had his arm over his wife's shoulder. When they reached the spot above referred to, Layton threw a handkerchief over her head, put a pistol close to her forehead, under her bonnet, and fired it. An oblong piece of lead, half an ounce in weight, with which it was loaded, lodged in the forehead, and the powder burnt her face; he then took out a large table knife, with which he cut her throat, and also wounded her hands. She screamed, and several persons being within hearing they ran to her assistance, and several of them went in pursuit of Layton, who ran into the fields. He was captured and taken to Great Bourton, to which place also his wife was conveyed. On the following day one of the county magistrates took the depositions of the injured woman, and the medical men extracted the lead from her forehead, which had produced an extensive compound fracture of the skull, and was so firmly embedded in the bone as to require considerable force and dexterity to remove it. Mrs. Layton has been unable to swallow anything since the attempt, so that it is necessary to introduce the stomach-pump two or three times a day, for the purpose of supplying her with medicine and nourishment, and although she is now sensible, faint hopes are entertained of her recovery. The prisoner is now in the gaol of this town, and maintains the most perfect indifference and taciturn demeanour, and seems perfectly unconscious of the position in which he is placed.

Bath.—On Thursday week the coroner's inquest on the body of Henry Merchant was resumed at the Guildhall, and from the interest the case excites, the room was crowded in every part. The prisoner, Charlotte Harris, being somewhat recovered from her late illness, was again present in custody. A good deal of evidence was adduced, but it was not of sufficient importance to call for a detailed report. The inquiry was again adjourned for a week.

Brocklesby.—On Thursday week, the wife of a labourer named Farrow, in the service of the Earl of Yarborough, was brutally murdered upon a footpath between the villages of Brocklesby and Keelby. It appears that during the morning the husband went to his work at Brocklesby, and in the afternoon his wife, as usual every Thursday, went to the shop at Keelby, taking with her a little butter for sale, an empty flour bag, and some money. She had proceeded only three-quarters of a mile when, in a field, near a gate where four ways meet, she was assailed and murdered. Her pocket was torn from her side, its contents taken out, and the lifeless body was left in such an undisturbed state that none of the persons who afterwards found it, nor even the surgeon of the next village, who examined it, in the least suspected that a violent death had taken place. And even when the money was missed, so absent from the thoughts of all persons was the idea of murder, that it was conjectured that some tramp might have robbed the dead body. It was not until the corpse, which had been removed to her residence, was prepared for interment, that the state of the head under the hair led to the suspicion that foul play had been used. It was then found that there was a fracture on the back of the skull of great magnitude, extending from the right to the left side of the base of the skull. The injuries were sufficient to cause almost immediate death, and appeared to have been produced by means of some blunt heavy instrument repeatedly and violently used. The supposed murderer is an agricultural labourer, named Overton, who is in custody.

Cambridge.—The parish of Fen Ditton, about two miles from this place, was on Sunday week the scene of most extraordinary and disgraceful doings. In conformity with a sentence lately passed in the Arches Court by Sir Herbert Jenner Fust, a man named Edward Smith, a gardener and the village fiddler, was to stand and do penance in the parish church for defamation of Mrs. Martha James, the wife of the Rev. William Brown James, rector of the parish. Long before the time fixed for the commencement of the service the thoroughfares leading to Ditton from Cambridge and other adjacent places were crowded with passengers, and there were not less than 3000 persons in the village before the bells had done chiming. The majority of these were, of course, members of the lower orders. The churchyard was crowded, and as soon as the doors were open a rush took place into the edifice that would have disgraced the upper gallery of a theatre in London on a boxing night, and every available spot was occupied in less than 5 minutes. The screen was covered by men (bargees) sitting astride, the capitals of the pillars had each their human occupant, and Ditton Church, which is computed to be capable of seating 1000 persons, was crowded to suffocation, the majority of the audience standing upon the seats, and eagerly fighting for the places which would command the best view of the place where it was supposed Smith would stand. The Rev. A. H. Small, of Emmanuel College, Cambridge, was the gentleman who had undertaken to do duty for the rector on the occasion. Mr. and Mrs. James took their seats in the rector's pew, and the service commenced. All eyes were strained to get a glimpse of Mrs. James; and the officiating minister had no sooner commenced, than he was saluted with a shout of "Speak up, old boy," and a chorus of laughter; and similar interruptions were continued throughout. The hymns were omitted, by the special request of the rector, made to Mr. Small, at an interval in the service. Mr. Small, having concluded the prayers, entered the pulpit, and taking his text from the 7th of Matthew, "Judge not, lest ye be judged," proceeded to the delivery of an impressive discourse, interrupted by the breaking of windows by the mob outside, cat-calls, whistles, laughter, and other unseemly noises, which increased as he proceeded, until his voice was finally drowned, partly by the noise inside, and partly by that outside, consequent upon a dog-fight which had been got up in the churchyard. The interest excited by this gave way in its turn to that excited by a cry of "Smith is coming," several times reiterated, and the struggle that ensued for places commanding a view of the aisle, up which he was to proceed to his appointed position opposite the reading-desk, baffles all description. At last, his veritable appearance was announced by a shout from the parties outside, and a complete stop was put to the sermon. At this time there were several parties smoking in the body of the church, as the smoke was seen rising towards the roof, and a smell of tobacco was patent to all. The shout outside subsided as Smith entered the church, but was taken up by its occupants with three hearty cheers, clapping of hands, whoops, and other discordant sounds. On his reaching the reading-desk, the press was so great that he had to be lifted into the pew of the churchwardens on men's arms, and, when there, he was mounted on a hassock placed on a seat immediately facing the pew of the Rev. Mr. James. Nothing but this would satisfy the audience, and quiet was in some degree restored by Smith waving over his head the paper from which he was to read his recantation. Mr. Small essayed a continuance of his discourse repeatedly, but was as often met by cries of "Smith, Smith, one cheer more for Smith," the said cheer being most heartily given, and Smith as often calling "Silence for the minister" This uproar continued, and then Smith beckoned to Mr. Kent, one of the churchwardens, and asked him what was to be done, saying "You see what a state the church is in; you know what is best; I am your prisoner, and will do as you think proper." While this observation was making, a broom, which had been found in one corner of the church, flew across it, and fell within a yard of the pulpit, then came a hassock, then another; the pews were then broken, and the pieces were flung in all directions; the hassocks came thick as hail, being evidently aimed at Mr. Small and Smith, who, by this time, were standing close together, the one reading and the other listening to the recantation. Mr. Small having closed his book and descended from the pulpit for the purpose of hearing it, as the only means of preventing the total demolition of the interior fittings of the edifice, which at one time seemed inevitable. It was impossible to hear a word Smith said; and Mr. Small had no sooner left the pulpit than it was occupied by spectators, who maintained their position there to the end of the proceedings. At last a hassock struck Mr. Small, and at the same moment Smith concluded reading his recantation, and moved out of the pew to leave the church. On his setting his foot on the stones of the aisle, he was taken up by the mob, amid shouts of "Bravo Smith; well done Smith," and the most hearty cheers, and carried out on men's shoulders. On his way to the Plough, to which he repaired, he was called upon for a speech, and in reply, said to the immense crowd which was besetting him, "I am sorry I cannot ask the whole of you home to dinner, but I am a poor man." On his way through the village the inhabitants rushed out to shake hands with him, and on his entering the Plough, the house was immediately filled with his admirers, who consumed the remainder of the afternoon in smoking and drinking on the green. Mr and Mrs. James, on the other hand, were hooted on their exit from the church, and were followed to the rectory house by a mob, some of the members of which broke the windows with stones.

Carmarthen.—The wife of the farmer, Thomas Davies, as was expected from the nature of her husband's murderous attack, died soon after our report last week had been despatched. At the inquest it was clearly proved that the husband was the murderer of the poor woman and their child, and that he had been insane for the last 12 months. The jury returned a verdict in accordance with this evidence.

Hastings.—The adjourned inquest on the bodies of Richard Geering and his two sons who were supposed to have been poisoned by the wife and mother of the deceased, was resumed on Monday. Professor Taylor, to whom the intestines had been forwarded for examination after the bodies had been exhumed from Guestling churchyard, attended from London, and read a most elaborate report describing the symptoms he discovered upon an examination of the internal organs of the elder deceased Richard Geering, from which he had derived proof that he died from the effects of arsenic, no less than 7 grains having been found in the stomach, the liver, the bile in the gall bladder, and in the fleshy substance of the heart; that George Geering, one of the sons, died from some irritant poison, and that mercury had been found in the stomach and liver; and that James Geering died from arsenic, which was found in various parts of his body. The medical men who made the *post mortem* examination were then examined, and the inquest was again adjourned to Wednesday, when the coroner summed up the evidence at great length, and the jury, after a brief consultation, returned a verdict of "Wilful murder against Mary Ann Geering" in each case. The prisoner will therefore be committed to the county goal, at Lewes, for trial at the autumn assizes, on three separate charges of murder. She is to be brought up before the county magistrates on Saturday, when she will be committed for trial on a fourth charge—that of attempting to destroy the life of Benjamin Geering, her son, by administering to him a certain poison.

Lincoln.—The palace of John o'Gaunt, in Lincoln, has been sold by auction; and it is reported that the building is to be pulled down, and the materials sold. It was at one of the windows of this guild-hall that Lord Hussey was beheaded, for taking part in the rebellion against the Reformation; and the citizens are reputed to have so far favoured the Catholic movement which brought several to the block and the axe, as to resist as a presumptuous innovation the injunction that the church services should be read in a language they could understand! The doomed palace is generally considered to have been built by John o'Gaunt for the summer residence of Katherine Swinford, the sister of Chaucer, the poet. The remains of this lady are interred in the cathedral, near those of Henry of Huntingdon, the historian.

Portsmouth.—We mentioned some time since that two convicts had succeeded in making their escape from the convict hulk. One of them was detected a few days since, by a policeman at East Barnet, near London, at the moment one constable was handing the description of the convicts, at the extremity of his beat, to the other, who began to peruse the description just as the convict was passing, and at once took him into custody. It is now the general belief that the other convict has been drowned in his attempt to escape, and if that has been the result it will deter others from attempting to escape in future On the night the two jumped overboard several others intended to follow their example, if successful.

Winchester.—On Friday the farmers of North Hants gave a dinner to Mr. Shaw, the unsuccessful candidate at the late election. It is stated that the tenant farmers have subscribed a sufficient sum to pay all the expenses of the recent contest, and that they express a confident belief that Mr. Shaw would be returned to Parliament should he again be a candidate for North Hants.

Worcester.—Mr. Feargus O'Connor's Land Scheme at Redmarley, says *Lloyd's Gazette*, has completely exploded. Six families have left, and the remainder are said to be in a state approaching to destitution.

Wycomb.—On Friday week Mr. Hines, a farmer of Hillsden, and his wife, elderly persons, were awakened by hearing a talking up above, where were sleeping two servants, a man and a boy. Mrs. Hines called out, thinking it was the servant man stirring. There was, however, no answer Immediately after this, a noise was heard at the bedroom door, which was fastened. Mr. Hines got out of bed, and demanded who was there. No answer was returned, and soon after the door was burst violently open, and two men entered. One was armed with a gun, and the other with a brace of pistols, and two other men came in afterwards. It seems they had already been upstairs, and had frightened the servants, and the man with the pistols stood at the bedroom door pointing them up the stairs further to intimidate them. The robbers brought lights into the room with them, and it appears that, in the true Jack Sheppard style, they were particularly courteous. One said, however, to Mr. and Mrs. Hines, that they wanted victuals and money, and that they would have them or their lives. They took a purse out of Mr. Hines's breeches pocket, which contained only 1s. 6d. They then made Mr. Hines get out of bed, one saying he could "smell money," and then they searched the bed. After this two remained with Mr. Hines, whilst the other two obliged his wife to go down stairs with them in her night clothes to show them where she had a little money, which she gave them. They next searched for and found a dozen or two of silver spoons, a silver cream jug, and some other small articles of plate. They then took a bottle of rum, a bottle of wine, some cold meat, some cheese, and some bread, and having collected together all their booty, made off. As early as possible, however, when Mr. Hines and his family had recovered from their panic, information was conveyed to the local constables, who going in pursuit came upon the thieves at Stokenchurch-hill, where they found them comfortably taking their ease on a bank by the road-side. The goods were recovered and identified. The gun, a kind of old fashioned duelling pistol (neither of them loaded), and a small pistol which was loaded, were taken from the prisoners, who evidently form a portion of a regularly organised band of professional burglars, whose head quarters are in London. They were committed for trial at the assizes.

Ireland.

The State Prisoners.—In consequence of the decision of the House of Lords on the Writ of Error, in the case of Mr. O'Brien and Mr. M'Manus, it is expected that the Government will give orders for the immediate transportation of those gentlemen, and Mr

Meagher, to Bermuda, all idea of carrying out the capital sentence having of course been abandoned.—By the last West India mail a letter was received by Mr. Mitchel's family, written just as he was about to take his departure from Bermuda for the Cape. His health continued extremely precarious, having been then suffering from a spasmodic attack, which lasted, with scarcely any intermission, for a period of 11 days. His spirits, however, remained unbroken, and, although barely able to write, he looked confidently to the change of climate as the means of restoring him to comparative health and strength.—Mr. John Martin, of Loughorne, for several months a prisoner in Richmond Bridewell, under sentence of transportation for treason felony, is, it appears, at the point of death. From the day of his conviction it was evident to all who saw him that he was labouring under organic disease, consequently no attempt was made to carry the sentence into effect, and he has since been treated with all the attention due to his painful malady.

The Poor-Law Commission.—The vacancy at the Irish Poor-law board, caused by the resignation of Mr. Twisleton, has been filled by the appointment of Mr. Power, who has been, since the passing of the amended Poor-law, in 1847, the assistant-commissioner for Ireland.

Board of National Education.—Mr. James O'Ferrall, brother of the Governor of Malta, has been appointed a commissioner of national education, in the room of the late Right Hon. A. R. Blake. There is no salary attached to the office.

Murder at Portumna Castle.—Miss Prendergast (a venerable lady of 79, and a connexion of the Sligo family), was, on last Friday night, inhumanly murdered and mutilated. She was found quite dead on Saturday morning, by the daughter of Lord Clanricarde's steward, her pockets rifled, but no other effects touched or disturbed. The lady was evidently robbed, but why the murderers took her life is strange, as she was wholly defenceless, and had not even a maid-servant living in the house, or any near neighbour to give an alarm.

Railways.

Traffic and Prices, from the List of Messrs. Hill, Fawcett, and Hill, in the *Railway Chronicle* of this day.

Name of Railway.	Gross Receipts of Traffic. 1849. For Week ending.		Corresponding Wk., 1848.	Amount Paid	Price per Share, Friday, 3 o'clock.
Aberdeen	May 12	570	..	50	17½-8½
Birmingham & Oxf. Junction	—	..	..	20	24½-5½
Do. Wolverhamp. & Dudley	—	..	..	10	14½-5½
Do. Do., and Stour Valley	—	..	..	1½	10½ 11
Bristol and Exeter	—	..	..	90	58-60
Buckinghamshire	—	..	..	16½	14½ 5
Caledonian	— 6	4,961	3,521	50	27½ 8
Do Preference	—	..	..	10	11½ ½
Chester and Holyhead	—	..	..	50	14-16
Do. Preference	—	..	..	15	12½-3½
Eastern Counties	May 13	14,410	15,013	20	8-½
Do North. & East., 5 per ct.	—	..	..	50	53 5
East Lancashire	— 13	2,948	1,006	25	15½-6½
East Lincolnshire	—	..	..	25	27-8
Edinburgh and Glasgow	— 12	3,983	3,411	50	41½-2½
Great Northern	— 13	1,959	..	20	10½-¾
Gt. South. & Western, Ireland	— 12	3,872	2,490	45	32-4
Great North of England	—	..	..	100	224-7
Great Western	— 6	17,592	21,504	100	78-80
Hull and Selby	—	..	..	50	93-5
Lancaster and Carlisle	May 6	2,312	1,907	50	45-50
Lancashire and Yorkshire	— 13	11,962	9,273	86	58 61
Do. Guaranteed 6 per cent.	—	..	..	10	11½ 2
Do. Preston and Wyre	—	..	..	25	36-8
Leeds and Bradford	—	..	..	50	95-7
London and Blackwall	— 13	753	1,106	12½	4½ ¾
London, Brighton, & S. Coast	— 12	8,566	8,885	50	36½-7½
Do. do., Guaranteed 6 p. ct.	—	..	..	5	..
Do. and Greenwich	—	..	..	12½	9½-¾
Do. and North Western	— 13	40,181	41,987	100	128 30
Do. do., New ¼ shares	May	..	..	7	10-½
Do. do. 1-5th shares	—	..	..	2	7¼-½
Do. and South Western	— 13	9,448	9,254	50	34-6
Manchester, Sheff., & Lincoln	—	.	..	100	36-8
Midland	— 13	20,607	20,378	100	68-70
Do. 50l. Shares	—	..	..	25	14-5
Do. Birmingham and Derby	—	..	..	100	48-5
Do. Bristol & Birmingham	—	..	..	100	122½-3½
Norfolk	—	..	.	100	34 7
North British	— 13	2,890	2,018	25	11 ½
North Staffordshire	May	.	..	17½	12½ ¾
Oxford, Worcester, & Wolver.	—	..	..	50	16 7
Scottish Central	— 13	1,233	..	25	23-5
Shrewsbury and Birmingham	—	..	..	11	5-½
Do. and Chester	— 13	1,369	616	18	16-7
Shropshire Union	—	..	..	5	2½-¾
South Eastern	— 12	7,940	8,689	31½	21½-2
Do. (No. 1)	—	..	..	25	15 7
Do. (No. 2)	—	..	..	27	13-5
Do. (No. 3)	—	..	..	30	19-21
Do. (No. 4)	—	..	.	10	6½-¾
South Wales	May	..	..	38	..
York, Newcastle, and Berwick	— 13	11,811	11,135	25	20-1
Do. Extension	—	..	..	20	13½-4½
Do. G. N. E. Purchase	—	..	..	8	4-½
York and North Midland	— 12	6,354	8,370	50	31-3
Do Preference	—	..	.	10	5-6
Do. East & Wt. Riding	—	.	.	25	.
FOREIGN RAILWAYS.					
Boulogne and Amiens	May 13	1,227	1,276	20	7½ 8
Central of France	—	.	..	20	13 ¼
Namur and Liege	—	..	..	20	6½-7½
Northern of France	— 6	13,245	9,016	13	10½-11
Orleans and Bourdeaux	—	..	..	7	3½ ¾
Paris and Orleans	— 6	7,699	6,355	20	31-3
Paris and Rouen	— 12	5,205	3,933	20	22-½
Paris and Strasburgh	—	.	.	10	4½-¾
Rouen and Havre	— 12	2,209	1,690	20	10½-11
Sambre and Meuse	—	..	..	20	3-4

The Eastern Counties.—At the adjourned meeting of this company on Saturday, the chair was taken by Mr. Cash, the chairman of the committee of investigation, Mr. Waddington and all the directors of the company having resigned their seats and abstained from attending the meeting. Mr. Duncan, the solicitor to the company, also sent in his resignation. The result of the poll on the subject of the amalgamation with the Norfolk Company, gave 10,554 votes for, and 2588 against it, being a majority in favour of the amalgamation of 7966 votes. The amount of stock represented was—in favour of the amalgamation, 604,220l.; against it, 114,600l. The majority of proprietors in favour was 440. This result was received with much cheering. It was then resolved, after some amendments had been negatived, that a committee, consisting of 30 proprietors, be selected by the investigation committee, including 6 holders of stock of 10,000l. and upwards, 6 from 5000l. to 10,000l., 6 from 3000l. to 5000l., 6 from 2000l. to 3000l., 6 from 1000l. to 2000l., together with the committee of investigation, making the whole 38, 12 to be a quorum, for the purpose of nominating 8 new directors for the future management of the company; such nomination to be presented to an adjourned meeting of the shareholders, to be held on Thursday, the 31st inst.

Law.

Court of Queen's Bench.—[Sittings in Banco.]—*The Queen v. Charrtie.*—This was an information against the defendant for an offence against the statute 9 Geo. III., by being engaged in procuring the sale of a cadetship in the East India Company's service. The defendant had been charged with this offence, together with persons named Rallett, Mrs. Stuart, and Sir W. Young. The first two had made default, the last had been tried with the present defendant, and a general verdict of guilty had been entered against them. Sir W. Young had since died, and this defendant was now brought up for judgment. Affidavits in mitigation, in some of which the defendant received a very high character, were put in and read. Mr. Crowder and Mr. Samuel Warren were heard in mitigation of punishment. The Attorney-General, Sir F. Thesiger, Mr. Peacock, and Mr. Forsyth appeared for the East India Company. The first-named gentleman addressed the court in aggravation of punishment. Mr. Justice Patteson, in passing sentence, expressed his deep regret that a man who had received so high a character should have engaged in transactions at once so reprehensible and so illegal as these, and observed, that it was the positive duty of the court to prevent, as far as the punishment of one guilty person could operate on others, to prevent them becoming so, the repetition of this offence. A sum of 800l. had been clearly traced to the defendant's bankers as part of the money obtained in this transaction. This defendant, now that Sir W. Young was dead, attempted, in contradiction to what he had before done, to induce the belief that this money had not been applied to his benefit. This attempt was made, not in the way of direct assertion, for the proof of such a thing would be somewhat in contradiction to what had appeared at the trial, but by insinuation, that the money had been applied to the purposes of some other person. The court did not, however, think that any real cause for mitigation of punishment had been made out, and therefore the sentence of the court was, that the defendant should be imprisoned in the Queen's Prison for the space of one year, and should pay a fine of 800l. to the Queen, and be further imprisoned till such fine was paid.

Central Criminal Court.—*The Robbery of Coins at the British Museum.*—*Timoleon Vlasco*, aged 24, was indicted for stealing 266 coins, valued at 500l., the property of the trustees of the British Museum. The prisoner, a gentlemanly-looking man, who is by birth a Greek, and of good family, pleaded guilty. There was also a further charge against him for stealing 71 coins, valued at 150l., the property of General Fox, in his dwelling house. To this indictment the prisoner also pleaded guilty. He was sentenced to transportation for seven years.

Sporting.

Newmarket Second Spring Meeting: Thursday.—*Match*, 100, h ft. Mr. W. S. Stanley's St. Ann beat Duke of Bedford's Saddle.—*Match*, 200, h ft. Duke of Bedford's Retail beat Lord Clifden's Czarina.—*Handicap Plate* of 50l. Lord Clifden's Sagacity beat Lord Stradbroke's Pylos, Colonel Anson's Irish Jig, and 8 others.—*Sweepstakes* of 10 sovs each, 10 subs. Mr. Ashburn's Impression beat Duke of Rutland's Ondine and Mr. Bouverie's Hardingstone.—*Sweepstakes* of 10 sovs each. Lord Enfield's Slashing Alice beat Lord Exeter's f by Voltaire out of Galata and Mr. James's Jane Eyre.

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viting a particular section of the House of Commons to advise them on this question, had acted in a most unconstitutional manner.—The Archbishop of Dublin, however much he felt disinclined to oppose any measure submitted by Government with good intentions, and with the design of relieving the appalling distress existing in Ireland, could not conscientiously vote for this rate in aid unless he should receive some security that the rate would not increase and perpetuate the misery. He attributed to the unfortunate principle of out-door relief to the able-bodied poor a great portion of the present distress, and this rate in aid would only bolster up that principle.—Lord Beaumont blamed the Irish representatives for their want of candour in not informing the Government distinctly whether or not they would support an income tax, and he also blamed the Government for their want of resolution in not pressing an income tax. The noble lord contended that the rate in aid would endanger the collecting of the ordinary rates, and that the sum raised under it would never suffice for the support of the really destitute. He also insisted that it would aggravate pauperism and prevent the letting and cultivation of land. In his opinion, the real cure for the worst parts of Ireland was emigration, and until emigration on a large scale should be promoted by the State, other remedies would have little effect. The noble lord opposed the second reading of the bill.—After some observations from the Earl of Rosse on the working of the Poor-law, and descriptive of the impoverished condition of Ireland, the Marquis of Clanricarde defended the bill, on the ground of absolute necessity. He said that should their lordships refuse to sanction it, there would be no legal means in the hands of the Government to support the poor, and next week 10,000 persons would be left to starve.—Earl Fitzwilliam complained that the independence of their lordships' house had been in some degree menaced, when they were told that unless they immediately passed this bill they would have on their heads the blood of thousands of their fellow countrymen. The answer to that threat was—why had the Government postponed this measure to the last moment? They had quite failed in performing their duty. Believing the measure to be neither just nor adequate, he was prepared to vote for the amendment. He could not persuade himself that Government were such cowards as to allow the people of Ireland to starve rather than take on themselves the responsibility of raising 100,000*l*. He therefore had no fear that by throwing out the bill their lordships would be causing the deaths with which they had been menaced.—The Earl of St. Germans regretted that Government had not withdrawn their proposition of a rate in aid, and adopted the recommendation of the committee. But, in the present position of affairs, he saw no alternative but to accept the bill, though he confessed that he regarded it as partial and inadequate.—Lord Monteagle looked around in vain for the supporters of the bill. Even the very proposers of it condemned it. He opposed the measure as unjust, impolitic, and quite inadequate. He also opposed it because he looked upon the security of the rate in aid as a fraudulent one.—Lord Audley considered all the circumstances of the case, and not having heard any proposal of a more practical nature, was willing to support the bill.—The Earl of Wicklow opposed the bill. He felt satisfied that, should it be rejected, the Government would have no difficulty in passing through both Houses of Parliament a measure in substitution of it, such as would give satisfaction to the country.—The Marquis of Lansdowne admitted that the principle of a rate in aid, as a permanent system, was liable to just condemnation; but it was only as a temporary expedient that he asked their lordships to assent to it. It had been said the Ministers might take on themselves the responsibility of applying 100,000*l*. should this bill be rejected; but no Minister during the sitting of Parliament would dare to do so. It was said that there was no security that this rate in aid would not be a permanent tax; but he assured their lordships, on the part of the Government, that is was their determination not to propose the continuance of the rate in aid under any circumstances whatever. The House then divided, when the second reading was carried by a majority of 2, the numbers being 48 to 46.

Monday.—*French Invasion of Rome.*—Lord Beaumont asked some questions as to whether any communications had been made to her Majesty's Government as to the intention of the French Government's occupying a portion of the Roman territory; and also as to whether any communication had been made by the Neapolitan Government as to their objects in invading the Roman States. In putting these questions, the noble lord addressed the House at considerable length as to the state of affairs at Rome during the last 12 months.—The Marquis of Lansdowne stated in reply, that on the 21st April her Majesty's Government received an intimation from the Government of France of their intention to send a French force to Civita Vecchia, with the view of promoting the internal peace of Italy, and of establishing a constitutional and regular Government at Rome. No declaration as expressive of concurrence was made by her Majesty's Government on the subject, as they had no reason to doubt the intention that was expressed.—The Earl of Aberdeen thought the House had a right to expect a more explicit explanation than that which they had just heard, nor could he conceive that the noble marquis could have allowed the entry of 20,000 French troops into central Italy except on some definite understanding. Looking at the public declarations of French official characters, the best thing to be hoped was that they did not speak truth, because, otherwise, if those declarations were to be accepted as correct, the matter would be very serious indeed. It was really most extraordinary that the result of that mischievous interference of her Majesty's Government in the affairs of Italy which began by the mission of Lord Minto should have been to expose that country to French intervention, and he could not help thinking that the journey of the noble lord had been practically more fatal than anything else could have been to the real freedom of Italy.—Earl Minto declared that he had omitted no opportunity during his journey of declaring that however desirous her Majesty's Government might be of seeing wholesome reforms introduced into Italy, yet that they would not hear of or tolerate any change as regarded the territorial arrangements of the treaty of Vienna.—Lord Brougham said that if the object of the noble lord's mission was to keep Italy free from French intervention, he certainly could not congratulate the Government on the ultimate result. He remembered when he was in office some years ago how he was rated by politicians of the old school for the occupation of Ancona by the French, but he must say he thought the occupation of Rome by the French a much more important matter. He did not believe from what he had seen at Paris that the French Government knew very distinctly what they meant in sending an expedition to Italy, except, perhaps, it were to satisfy the craving of the mob for military glory.—The Marquis of Londonderry was convinced that the great desire of the French Government and of the President was peace. He was surprised that the noble and learned lord, who had gone to France with a very large body of Englishmen to fraternise with the population of Paris, should have spoken as he had done of that population.—Lord Brougham most peremptorily contradicted the story that he went to France with a large body of Englishmen. He happened to land at the same time with them, but he had no communication with any one of them but once, and that was for the purpose of avoiding the supposition that he had anything to do with that most absurd expedition. *The Rate in Aid.*—The House then went into committee on the Irish Rate in Aid Bill, and after one or two amendments had been agreed to, the bill passed through committee, and it was arranged that the report should be brought up on Tuesday, on the understanding that there should be no discussion, and that the third reading should take place on Friday.

Tuesday.—*State of Canada.*—Lord Stanley called the attention of Earl Grey to the alarming accounts which had arrived from Canada. After reminding the Government of the heavy responsibility which would rest upon them in this matter, the noble lord said that he should for the present content himself with putting two questions—first, whether the Governor-General of Canada had acted without advice or instruction from her Majesty's Government at home, and had been allowed so to act; and, secondly, whether her Majesty's Government had any explanation to offer as to the present condition in which Canada appeared to be.—Earl Grey replied that he had just received a despatch from Lord Elgin which would be laid before the House when it next met. It would appear from that communication that Lord Elgin had acted throughout with his accustomed judgment and good sense, and that, although a riot of a very aggravated nature had certainly taken place at Montreal, there was no reason to apprehend a war of races in Canada. As for the question of responsibility, in his opinion it rested quite as much with the noble lord and with the Opposition as with the Government.—Lord Stanley remarked that no Government had been fonder of throwing responsibility on their opponents than the present administration. So long, however, as he retained his seat in that House, so long should he continue to exercise the right of expressing his opinion.—After further discussion, the Marquis of Lansdowne rose to order, and recommended that the discussion be postponed till the despatch was laid on the table. The matter then dropped. *The Entry of Russians into Austria.*—The Marquis of Lansdowne, in answer to Lord Brougham, stated that though considerable bodies of Russian troops had crossed the Austrian frontier, at the request of the Austrian Government, he did not think, under the circumstances, that England was bound to interfere in the matter. *Agricultural Distress.*—The Duke of Richmond then brought forward the question of agricultural distress, and in the course of his speech drew a lamentable picture of the ruin which had been brought on the agricultural part of the population by free trade measures. The Government now said that they could not retrace their steps, and for that reason the farmers wished to see another Administration in power. For his own part, though the resignation of the Ministry was sometimes held up *in terrorem* over the country, he wished they would resign, for he was convinced there would be no difficulty in finding better men to fill their places. His reason for bringing this subject before the House was to ascertain whether the Government admitted the existence of agricultural distress, and if so, whether they were prepared with any measures to alleviate it.—The Earl of Winchilsea could not remain silent on the present occasion, for he thought that a continuance of the existing state of things would seriously affect the prosperity and tranquillity of the country. For years they had pursued a fatal course, whereas if native and colonial industry had been properly encouraged, the colonial and home markets would have been able to consume all that the manufacturing interest of the country could have beneficially produced. They had still a loyal population in the country, but discontent was beginning to be felt, arising out of the distress occasioned by free-trade measures; and on the Government would rest the awful responsibility of involving this country in consequences which it was awful to contemplate.—Earl Grey did not think the present a fitting occasion to re-open the question of free trade. With regard to the question put by the Duke of Richmond, he was quite aware of the existence of great distress in the agricultural districts, and he could assure the noble Duke that he sincerely deplored it; but, looking at what had occurred in former years, when similar distress had been brought under their attention, his firm conviction was that any measures that might be adopted in the vain hope of relieving distress which arose from circumstances beyond their control, would do far more harm than good.—The Earl of Malmesbury was sorry to hear that the Government, while they admitted the existence of great agricultural distress, were yet unwilling to take any steps to alleviate it.—After some explanatory observations from the Duke of Richmond, the matter dropped.—Their lordships then adjourned to Friday, over Thursday, which was Ascension Day.

Friday.—*Navigation Bill.*—Lord Stanley gave notice of his intention to move amendments on this bill, which would totally alter its character. He proposed to maintain the principle of not granting a British registry to a foreign ship, to maintain the coasting trade for British vessels, and to uphold the principle of the existing Navigation-laws with some few exceptions.—The *Irish Land Improvement and Drainage Bill* was read a first time.

HOUSE OF COMMONS.

Friday.—*Irish Land Improvement Bill.* The Chancellor of the Exchequer moved the second reading of the Land Improvement and Drainage (Ireland) Bill.—Major Blackall urged the necessity of enlarging the scope of the bill, so as to include the erection of farm buildings, which were now wanted, in consequence of the consolidation of farms according to the modern system.—Mr. S. Crawford considered the measure wholly insufficient for its object, and unequal to the exigencies of the case.—After a short discussion, in which several members took part, Mr. Horsman protested against the bill, not because it was a perseverance in a system of money grants to Ireland, but because it was a perseverance in an imperfect and bad system of money grants. He believed that the money, like that which had gone before it, would be wasted and thrown away. Looking at what had been attempted by Government for Ireland, and at what they proposed now to do, he greatly feared that they would fail in this attempt, as they had certainly failed in all their former efforts. This bill was nothing but a scheme to lend money on the personal security of bankrupt proprietors.—Sir G. Grey said that advances of a similar description had been eminently successful in England and Scotland, as well as in Ireland, on former occasions; and it was on the experience of these beneficial results that Government justified the advance of 500,000*l*. they now proposed. The hon. gentleman, in sneering at the bill, showed his ignorance of its provisions. It was not, as he fancied, intended to advance the money upon the personal security of bankrupt proprietors, but upon the security of the land. As to the insinuation that the money to be advanced under the bill would be wasted and thrown away, he repudiated it, and assured the House that every care would be taken to apply it properly.—The bill was read a second time, and ordered to be committed on Monday. *Incumbered Estates (Ireland) Bill.*—The Solicitor-General moved the second reading of this bill.—Mr. A. Stafford, Mr. J. O'Connell, Mr. Grogan, and Sir H. Barron, approved of the principle of the bill.—Colonel Dunne feared that it would be dangerous to vest such extraordinary powers as were conferred by this measure in the three commissioners, from whose decision there was to be no appeal.—Sir A. Brooke advised the introduction of a clause into the bill, or the enactment of a supplementary measure, to compel purchasers under it to reside a certain period of the year in Ireland, or to find employment for the population.—Mr. Turner objected to that part of the bill which ousted the Court of Chancery from its jurisdiction.—Mr. Sadleir approved of the bill generally, although it was defective in many of its provisions.—Mr. Keogh looked upon it as the most useful that had yet been brought forward for the regeneration of Ireland, and therefore he should support it.—Mr. Henley believed there could be but one opinion as to the advisability of freeing the incumbered estates of Ireland. He approved of that principle, and therefore he should support the bill, but he saw in it many particulars highly objectionable, and its details would require to be examined with the greatest attention.—Mr. Martin considered that it would be an improvement of the bill if the jurisdiction of the commissioners was confined to estates upon which the incumbrances bore a certain and defined proportion to their estimated value.—The Solicitor-General explained the bill; the main object of which, he said, was to enable the commissioners to effect that at once, and without cost, which could only be done by the Court of Chancery, slowly and expensively.—Mr. Napier was ready to support the second reading of the bill, reserving to himself the right of objecting to it on the third reading, should it not receive those amendments in committee which would render it practically and beneficially applicable to Ireland.—The bill was read a second time.

Monday.—The *Marriage Bill* debate was fixed for Wednesday, the 6th June. *Irish Land Improvement.*—On the order of the day for going into committee on the Land Improvement and Drainage (Ireland) Bill being read, Mr. Roebuck took occasion to express his opinion of the policy—If he could call it by that name—pursued by the Government towards Ireland. After reviewing the state into which Ireland had been thrown by the famine, and the opportunity which then offered for alleviating the condition of the people of that country, an opportunity which the Government had permitted to pass unimproved, the honourable and learned gentleman developed his views as to the real cause of Irish misery, read some severe lectures to the Irish proprietors, and animadverted upon the bill on which it was sought to go into committee. Like the sums which had already been voted for Ireland, that now proposed to be advanced would not be applied *bonâ fide* to the maintenance of the Irish people, but to the maintenance of the Irish proprietors. The doles which had been already made had been shamefully misapplied, all classes in Ireland, from the highest to the lowest, scrambling for them in the most barefaced manner. The *animus* of the Irish members had been developed by Mr. Reynolds, when he said that he wanted to have a "pull at the Exchequer." It was to have a pull at the Exchequer that they came there, but, so far as he was concerned, they would not be gratified. This bill proposed another pull at the Exchequer, and as such he opposed it. It was part and parcel of a mischievous policy, which sustained the Irish proprietary under the guise of benefiting the Irish people. The Exchequer, at which another pull was proposed, was filled from the hard-earned wages of the English people, and he could not avoid taking the first opportunity that offered to raise his voice against the "rapacious desires of an idle, wasteful, and extravagant landed proprietary." The Irish landlords were not the real, but the nominal, proprietary of Ireland. The land, of right, belonged to the mortgagees, and the mere nominal owners should no longer remain an incubus upon it. Let them cease to be called and to act as Irish landlords, and descend into the simple character of Irishmen, earning an honest livelihood by their hands and heads. The charity of this country had been egregiously misapplied in Ireland. Those who should have been the almoners of the poor in Ireland appropriated to themselves, in the most rapacious spirit, the charities of this country. Unless the Government put a stop to this, the sources of charity in this country would be speedily dried up. The hon. and learned gentleman concluded by dilating still further upon the rapacity and immoralities of the Irish landlords.—Mr. John O'Connell observed, that although the thunderbolt had fallen, Irishmen were not struck down. They had heard for weeks that the bolt was in preparation for them, and in hurling it the hon. and learned gentleman had accompanied the effort with the "grimaces of a mountebank, and ——"—The Speaker here informed Mr. O'Connell that he had made use of an unparliamentary expression which he must retract.—Mr. J. O'Connell retracted the expression, and in reply to Mr. Roebuck's charge of immorality, which was indiscriminately launched against the whole Irish people, asked if there were any child murders in Ireland for the sake of burial fees? If there were any Irishmen in the Guards whom it was dangerous for a man to approach at night in a sentry box? If there were any poisoners or procurers of abortion in Ireland, or political economists preaching horrible doctrines?—Sir H. W. Barron followed briefly in support of the bill, defending the conduct of the Irish landlords, and avoiding personalities.—Lord John Russell observed that Mr. Roebuck reminded him of Baron Munchausen's horn, which had been frozen up, but emitted sweet sounds when it had an opportunity of thawing. After the many Irish debates which they had had that session, the honourable and learned gentleman was mistaken in thinking that there was any very great relish for them now. The noble lord then briefly defended the bill.—Mr. Horsman censured the conduct of the Government, and accused them of a want of Christianity in suffering thousands of starving people to apply on a certain day in April for assistance, without providing for them a single sixpence.—Sir George Grey retorted the charge of want of Christian charity on the hon. member, who had voted against the third reading of the Rate in Aid Bill.—Mr. Keogh said that Mr. Roebuck had only thrice addressed the House since his return to Parliament, and each time had he assaulted, in a vituperative spirit, every party in the House, as well as the representatives, the landlords, and the people of Ireland. "Thrice the brindled cat had mewed"—thrice had the hon. and learned member spoken in that "green and bilious vein which ran through every inch of his body"—thrice had he given loose to his bitterness with all the acerbity of a spiteful self-tormentor, but the Sheffield blade was not, after all, so dangerous a weapon.—The Chancellor of the Exchequer deprecated personal attacks, and invited the House to pass to the order of the day; and, after a few words from Colonel Dunne and Mr. Moore, the House went into committee, when the discussion wandered from the details of the bill into the past Irish policy of the Government, which was vindicated by Lord J. Russell. *Parliamentary Oaths Bill.*—On the next order, for going into committee on this bill, Sir R. Peel expressed a hope that it was the intention of Government to place Jews in the same position as other classes of her Majesty's subjects with regard to civil offices.—Lord J. Russell replied to the effect that such was the intention, and that, should the present bill pass, a measure would be introduced in conformity with that intention.—After some observations from Mr. Bankes, Mr. P. Howard, Mr. Goulburn, and Mr. Law, the House went into committee on the bill.—On the first clause, containing the form of oath to be taken as a qualification for sitting in Parliament, instead of the oaths of allegiance, supremacy, and abjuration, Mr. V. Smith moved the omission of the concluding words of the oath (to be taken by persons not Roman Catholics) abjuring the temporal or civil jurisdiction and authority of the Pope in this realm, and pledging the taker to defend the settlement of property as established by the laws, upon the true faith of a Christian.—The amendment was opposed, in the first instance, by Lord J. Russell, but, after a long discussion, he admitted that he did not think, upon consideration, that the retention of the words abjuring the Pope of Rome, and respecting the settlement of property, were necessary, and he consented to their being expunged, but he saw no reason for omitting the words "upon the true faith of a Christian."—Sir R. Peel thought Lord J. Russell had acted wisely in determining to omit the words relating to the Pope, which were superfluous, and those relating to the settlement of property, and recommended that an attempt should not be made to elaborate too perfect an oath, which might create new impediments.—Sir R. Inglis warned the committee that whatever was omitted would be considered to have been abandoned.—Mr. V. Smith consented to adopt Lord John's proposal, but a desultory and animated discussion arose as to the precise purport of the amendment, and the form in which it was to be put, at the close of which the committee divided on the motion of Mr. Spooner, that the Chairman report progress, which was negatived by 211 against 122.—After a second division, upon the motion that the chairman leave the chair, which was likewise negatived, Lord J. Russell agreed (it being half-past 12 o'clock), that the chairman should report progress.—Lord Palmerston obtained leave to bring in a bill to legalise *Marriages in the Houses of British Consuls abroad.*

TUESDAY.—*State of Canada.*—Mr. HERRIES inquired if the Government had received authentic information of the late events in Canada and if they would lay the information on the table: likewise if they had yet received the votes and minutes of proceedings in the Colonial Legislature. Mr. ROEBUCK desired also to know if the Indemnity Bill, being a money bill, did not require a message from the governor general or instructions from the Colonial-office prior to its introduction.—Lord J. RUSSELL replied that a despatch had been received at 4 o'clock that day giving an official account of the disturbance in Montreal, and that it would be laid on the table forthwith. His lordship declined to answer other questions until the despatch should be produced. Mr. ROEBUCK pressed for a reply to his question whether instructions had been sent from the Colonial office for sanctioning the Indemnity Bill.—Lord J. RUSSELL preferred to reserve his answer to a future day.—Mr. DISRAELI remarked that if Mr. Roebuck had been in the House on the 22d of March last he would have heard Mr. Hawes give a distinct declaration that no such instructions had been sent to Lord Elgin—that the Colonial Secretary had the utmost confidence in Lord Elgin—and that the Governor general was left to his unfettered discretion with regard to the Indemnity Bill.—Mr. HAWES having entered the House at this moment, Mr. ROEBUCK put the question again to the Under Secretary.—Lord J. RUSSELL, however, again replied, declining to enter further into the question, merely saying that the answer given by Mr Hawes on a former occasion was, in point of fact, correct.—Sir J. PAKINGTON asked if petitions had not been received from different parts of Canada praying for the recall of Lord Elgin.—Lord J. RUSSELL did not know.—Mr BRIGHT inquired if the disturbances had been put down.—Lord J RUSSELL said that Lord Elgin stated in his despatch that Montreal was tranquil. He did not mention the state of the provinces, but he (Lord John Russell) hoped they were tranquil. There was, however, no doubt that numerous meetings had been held throughout the provinces.—Mr P. HOWARD wished to know if there was any intention to send our troops, or the Guards, to protect the Governor General and the colony.—Lord J RUSSELL replied that there was sufficient military force in the colony. *Emigration in Ireland.*—Mr MONSELL called attention to the subject of emigration with reference to the necessities of Ireland. He recommended a system of emigration as a supplement to the measures introduced, or to be introduced, for the improvement of Ireland. Without such a system it would be vain to expect capital to go into the country, or the social state of the people to be permanently elevated. Funds would be required for any large system of emigration, which, he thought, should be drawn from Ireland. The object should be to direct the stream of emigration to our colonies, instead of allowing it to flow to the United States. To show the loss sustained by this country, and the advantages obtained by the American Republic by the monopoly of this emigration, the hon member quoted from Mr. Mackay's book, "The Western World," and then he proceeded to point out the facilities offered by our own colonies for the absorption of emigrants, and concluded by imploring the House and the Government to take measures whereby the colonies, the country, and the emigrants themselves would be benefited. The hon member moved for papers.—Mr. J. O'CONNELL moved an amendment, to the effect that emigration was a partial, tardy, and expensive remedy for the evils of Ireland, that it was immediately necessary at present to check the emigration going on, and that the most pressing object to consider was the progress of starvation, disease, and death, &c.—Mr. MOORE opposed the amendment. Sir G. GREY admitted that a well-considered system of emigration would be likely to prove advantageous to the mother country, the colonies, and the emigrants. He considered some of the suggestions made by Mr. Monsell very valuable, and recommended the hon member to bring them forward in a practical shape, by moving them as clauses to the amended Poor-law Bill, when, he promised him, they would receive the attentive consideration of the Government. As the motion was apparently made to evoke some expression of opinion, he supposed it would not be pressed to a division.—Mr. E. B ROCHE, Mr. F O'CONNOR, Sir J YOUNG, Mr SCULLY, and Mr. BOURKE addressed the House, and a division took place on Mr. J O'Connell's amendment—For the amendment, 10, against it, 45, majority against it, 35.—Mr. MONSELL's motion for papers was then agreed to without a division.—Mr. PEARSON moved for a select committee to inquire into and report upon the practicability of establishing a uniform system of discipline, primitive, reformatory, and self supporting to all persons sentenced to imprisonment for crime.—Sir G. GREY, while objecting to a speculative inquiry extended over so large a field as that proposed by the hon. member, was willing to admit that the time might come when Parliament should inquire into the question of prison discipline. Should a general wish be expressed by the House during the present session that an inquiry into the system of building prisons and of prison discipline should take place, he would not object to it.—After some observations from Mr. ROBERT PALMER, the debate was adjourned, on the motion of Mr BROTHERTON.—The Grant of Land (New South Wales) Bill was read a third time and passed. The Grand Jury Cess (Ireland) Bill passed through committee.

WEDNESDAY.—*State of Canada.* Mr. HAWES laid upon the table of the House some papers respecting Canada.—Mr. ROEBUCK took occasion to state the substance of private letters received from the province, which showed that there was no foundation for the supposition that the present excitement there partook of the character of a war of race. The Indemnity Bill was a money bill, providing for the appropriation of local funds, and he thought that the Imperial Parliament had no right to interfere with the Canadians in disposing of their own money. Such interference would give rise to a real cry for annexation, there being nothing but a sham cry for it in the province now.—Mr. HAWES deprecated discussion upon the subject, until the House had had an opportunity of thoroughly appreciating the whole question.—Mr GLADSTONE concurred with Mr. Hawes, but protested against the inference which might be drawn from what fell from Mr Roebuck that the Imperial Parliament had no right to interfere with the disposal of the colonial revenues. He admitted that it should not interfere on lighter grounds.—Sir G GREY did not regard such an inference as deducible from what had fallen from the hon and learned gentleman. He trusted, however, that discussion would be avoided until the House was in possession of the whole case.—The matter, after some observations from Mr NEWDEGATE and Mr. E. DENISON, was dropped.—The House then went into committee on the *Landlord and Tenant Bill* which, after a great many amendments had been made, passed this stage, and was ordered to be reported on Monday. *Mr Smith O'Brien.*—Lord JOHN RUSSELL gave notice that on Friday he should move that Mr William Smith O'Brien be expelled the House.

THURSDAY.—*Eastern Counties Railway.*—A petition having been presented by Mr. DIVETT, signed by 31 shareholders of the Eastern Counties Railway Company, praying for an investigation into the charges made against Mr Hudson, as chairman of that company, and for his expulsion from the House in case they should be substantiated, and a second having been presented by Mr. CHANTRELL, signed by 60 shareholders, including also Mr Waddington and Mr. Bagshaw, directors of the said company, Mr HUDSON rose and defended himself from the charges, declaring that he was not guilty of them, and that he was ready to abide by any investigation the House might think fit to institute. He accused the railway committee of inquiry, who had made these charges, of great unfairness, and with having refused to hear his explanations. The hon. member was cheered at the conclusion of his speech, and immediately left the House.—Mr. WADDINGTON and Mr. BAGSHAW also answered to the charges alleged against them, and expressed their willingness to undergo the strictest examination. *State of Canada.*—Mr. GLADSTONE complained of the meagreness of the information afforded by the documents which had been laid on the table respecting Canada, and asked if there were no other papers relative to transactions anterior to recent events.—Mr. HAWES replied that all the papers in the Colonial Office had been produced. The *Land Improvement and Drainage (Ireland) Bill* was then read a third time and passed.—Lord JOHN RUSSELL then moved the second reading of the *Poor-law Relief (Ireland) Bill.*—After some observations from Mr., GROGAN, Mr. P. SCRIPPE, Mr. OSBORNE, Lord CLAUDE HAMILTON, Mr. CALLAGHAN, Colonel DUNNE, Mr. H. HERBERT, Sir W. SOMERVILLE, and Mr. V. SMITH, Lord JOHN RUSSELL briefly defended the maximum rate proposed, intimated that he would not be a party to extending the rate in aid to Ulster for a longer period than the two years, confessed himself anxious to consider a clause in committee for the furtherance of emigration on a plan somewhat similar to that proposed by Mr Monsell, and declared that he was ready to pay every deference to the recommendation of the select committee with respect to the area of taxation.—The discussion was continued by Mr. HORSMAN, Mr NAPIER, Mr CLEMENTS, Mr. M. O'CONNELL, Sir H W BARRON, Mr MONSELL, Mr. S CRAWFORD, Sir D. NORREYS, and Mr STAFFORD, after which the bill was read a second time.—The *Account of Turnpike Trusts (Scotland) Bill* was read a third time and passed.—The *Police of Towns (Scotland) Bill* was read a second time.

FRIDAY.—*Mr. Smith O'Brien.*—In accordance with precedents, Lord J. RUSSELL, instead of moving that he be expelled, moved that a new writ be issued for Limerick in the room of W. Smith O'Brien, adjudged of high treason, which was agreed to. *Parliamentary Oaths Bill.*—The House went into committee on this bill. Mr J. O'CONNELL (who had taken offence at the omission of some speeches in the reports of a previous sitting) called attention to the fact that there were strangers in the gallery. The gallery was immediately cleared. It is said that a discussion took place on the course adopted by Mr. O'Connell, who was entreated by more than one member to abandon his determination. This he refused to do, upon which he was assailed with loud and repeated hisses and "hahs," which reverberated throughout the lobbies and galleries. The House then proceeded with the regular business before it, which, of course, will not be conveyed to the public through the ordinary channels of intelligence.

City.

MONEY MARKET, FRIDAY.—BRITISH FUNDS: Consols for account 91⅞ to ¼; Three per Cents. Reduced, 90¾; Three and a Quarter, 90¾ to 1; Bank Stock, 195; Exchequer Bills, 45s. to 48s. prem.—FOREIGN: Mexican Bonds, 29¼ to ⅜; Brazil Old, 79; Spanish Threes, 33¼; Portuguese Fives, 78; Ditto Fours, 29; Dutch Fours, 76⅛.

Gazette of the Week.

TUESDAY—BANKRUPTS—C. CHARE, Paddington-green, Middlesex, Victualler—D. FIELD, Frome, Somersetshire, Woollen-draper—J. N. HART, King-street, Finsbury-square, Watch-manufacturer—J. HUGHES, Holyhead, Anglesey, Draper—T. I. JACKSON, Southampton, Auctioneer—S. NORTH, Spilsby, Lincolnshire, Innkeeper—R. RAMSDEN, Dewsbury, Yorkshire, Boue merchant—C. RICHARDSON, Birmingham, Coachmaker—T. ROBINSON, Ripon, Yorkshire, Ironfounder—J. SYKES, Friday-street, Cheapside, Warehouseman—J. TURNBULL, Scarborough, Yorkshire, Woollen-draper.

BANKRUPTCY ANNULLED—T. TESSITI, Soham, Cambridgeshire, Victualler.

FRIDAY BANKRUPTS—P. BOND, Birmingham, and of Burton upon-Trent, Staffordshire, Corn dealer. W. COVERMAN, Farringdon-street, Draper. R. DAVIS jun., Launceston, Linen draper. H. G. [illegible], North Audley-street, Middlesex, Apothecary. W. H. HOLGATE, Wolverhampton, Staffordshire, Pawnbroker.—S. PROSSER, Houlston and Middle Scalp, Meltster. J. JACOBS, Christchurch, Canterbury, Auctioneer and Furniture-dealer.—V. JOHNSSON, Park place, Camden town, and J. S. ROLLESTON, Brunt Broughton, Lincolnshire, Butchers.—I. PERRY, jun., High-street, Camberwell, Oilman.—S. SERJEANT, Bradford, Yorkshire, Druggist.—H. WALKER, Coleman-street, Oilman.

SCOTCH SEQUESTRATIONS.—J. ADAM and W. ANDERSON, Glasgow, Merchants.—D. BAIRD, Edinburgh, Picture-dealer.—G. GORDON, Monyfold, Banffshire, Insurance broker.—W. MILLER, Edinburgh, Umbrella manufacturer.

Metropolis and its Vicinity.

MR. BAPTIST NOEL'S SECESSION.—The following letter has been addressed by the Hon. and Rev. Baptist Noel to the Bishop of London, in reference to the Clergy Relief Bill, now before Parliament:—

My Lord,—As a dissenter from the doctrine and discipline of the establishment, I have taken before a magistrate the oaths prescribed by 52 George III; yesterday I preached for Mr. Binney at the Weigh House Chapel, and received the Lord's Supper with the members of that Church; and I am ready to do any other proper and lawful act which your lordship may suggest by which I may publicly declare my dissent. I had intended to be silent for some time but the progress of Mr Bouverie's bill has changed my intention, because as that bill will doubtless pass through the House of Lords without material alterations, and I am unable to avail myself of it, I wish to ascertain as soon as possible whether its effect will be to sentence me to imprisonment for preaching the gospel. Had the act simply declared that the seceding clergyman is deprived of all offices and emoluments within the establishment, and incapable of them for the time to come, I should have thoroughly approved it. Had it further enacted that each seceder, upon proof of his secession, should be reduced from the ministry, I might have thought that the legislature was intruding into matters beyond its competence when it ordered bishops to depose ministers of Christ, and that this afforded new proof of the bondage of the church to the state in spiritual things, but I should have submitted cheerfully to its enactments. But this bill makes me a party to my own deposition from the ministry. I am to certify to your lordship my avowal of dissent, upon which you are ordered to "depose me from holy orders," and then I am to be free from all pains and penalties. To avail myself of this act is to purchase exemption from legal penalties by consenting to my deposition from the ministry; it is to avow, not that I have ceased to be a minister of the establishment, but that I have ceased to be a minister of Christ. We deposition from orders merely an act of exclusion from the body of the established clergy, I should willingly consent to it, but as it is an act which declares me to be no longer a minister of Christ, I cannot do so, because with every wish to pay due respect to the legislature, I cannot purchase exemption from any penalties by a lie. When I was ordained, I was required to declare my belief that I was "inwardly moved by the Holy Ghost to take upon me this office and ministration," and that I was "called according to the will of our Lord Jesus Christ to the ministry of the church." Those who lightly enact the deposition of a minister may think that this declaration is a farce: but in my case, at least, it was a solemn declaration of the truth. That call of Christ, determined by the influence of the Holy Spirit in the heart, with other suitable qualifications, seems to me the substance of ordination; and the recognition of this call by a bishop is one among several modes in which the call of the church is added to the call of God. As I believed then I believe now, that I have been called to the ministry by Christ, and no prelate, church, or parliament, can either exonerate me from the obligations of the ministry, or deprive me of its privileges; and if I should say, as this bill invites me, that I have ceased to be an ordained minister of Christ, I should lie. Although I attach no especial value to episcopal ordination, yet it is valid; and I can no more be a layman than a presbyterian or congregational minister is so. Whatever, therefore, Parliament may enact, I can neither cease to be a minister nor cease to preach; and if the law requires it, I would rather suffer any length of imprisonment for preaching the gospel than purchase an exemption from trouble by either declaring that I am no minister, or by ceasing to preach. I shall take the liberty of sending this letter to two or three newspapers, because I wish the character of the "relief" afforded to seceding clergymen, by the bill now passing through Parliament, to be known. I remain, my dear Lord, your Lordship's faithful servant, BAPTIST W. NOEL.—Hornsey, May 7.

METROPOLITAN SEWAGE MANURE COMPANY.—The half-yearly ordinary general meeting of the shareholders in the above company was held last week in Waterloo-place, Pall-mall. C. J. Fuller, Esq., presided. The report stated:—

"That the directors had established the most amicable relations with the Commissioners of Sewers, who had granted them permission to communicate by means of a pipe with the Ranelagh Sewer, and also gave them the Eel Brook and Stanley Villa Sewers for their operations. By this arrangement the company would be able to carry on their operations within the district of Fulham, without incurring the large outlay which a tunnel sewer would have rendered necessary. The sewage thus placed at their disposal by the Commissioners of Sewers, was, in quantity, amply sufficient for the supply of the entire district embraced by their present works, and in quality considerable stronger and better than that given to them by act of Parliament. They were thus enabled to supply sewage in quantity and strength for all purposes of gardening and agriculture. Several public experiments, conducted in presence of the Commissioners of Sewers, and several scientific and practical agriculturists, had demonstrated the perfect facility and economy of the company's improved mode of applying sewage to the land. The works completed, and ready for general operations, extended over an area of 900 acres. The company had already entered into arrangements with market gardeners, to supply nearly 100 acres, and further applications were daily received. It was calculated that the produce of the present limited area, when the sewage should be taken by all its occupiers, would yield a profit of 4 or 5 per cent, and when, at a very trifling additional cost, they would be able to accommodate 600 acres more, they might calculate on a return of at least 8 per cent. The company's liabilities were comparatively small, and the number of defaulters on calls was materially lessened. In conclusion, the directors congratulated the shareholders on their having surmounted all obstacles, and fairly commenced their undertaking under national auspices." The financial statement exhibited—For capital account, 46,200*l.*; payment in advance of calls, &c., 9780*l.* 9*s.* 8*d.*—Total, 55,980*l.* 7*s.* 8*d.* The receipts to 31st March were 29,972*l.* 10*s.* 2*d.*; the expenditure, 28,306*l.* 7*s.* 7*d.*, balance in hand, 1666*l.* 2*s.* 7*d.*

The Chairman, in moving that the report be received, said that they had had some trifle to pay, but they were now in a position to carry on their works at a smaller expense than if the difficulty had not occurred. Instead of making a sewer from Ranelagh to Stanley-bridge, they were now permitted by the commissioners to communicate with a pipe, and by this means a very great expense would be avoided. The small capital with which they had started had to bear the whole of the preliminary expense. The troublesome opposition they had already had to contend with had been defrayed from it, and therefore, with a full list of subscribers, they would have an increase of capital, subject to no diminution for liability already incurred. It only remained for them to exert themselves to fill up the number of shareholders wanted, and they might assure themselves of large per centages for their investment. The Chairman concluded by expressing his surprise that the landlords should exhibit so much apathy towards an improvement which would enable them easily to compete with the foreigner. Mr. Bonomi seconded the adoption of the report. The Rev. Mr. Hewson moved, and Mr. Hargreaves seconded, a vote of thanks to the directors, which was unanimously agreed to. Mr. Morillier proposed that the thanks of the shareholders be given to Dr. Guy, for his able exertions and useful works in the cause of the company and sanitary reform. The resolution was unanimously agreed to. Dr. Guy returned thanks, and expressed his confidence in the future prosperity of the company.

INTERMENTS IN THE CITY.—At the meeting of the city commissioners of sewers last week, the report of the committee of health, upon the subject of interments in the City, was read. It stated that the Attorney-General and Mr. Turner were of opinion that the commissioners had no power, under the act, to prevent the continued interments in question; that such interments were not a measure against which the Lord Chancellor could grant an injunction, or power to make rules and regulations; and that the evils enumerated could not be remedied without the intervention of the Legislature.

Provincial.

AGRICULTURAL MEETINGS.—HEREFORD.—A great public meeting of the landowners, farmers, labourers, and tradesmen of the county of Hereford was held in this city on Thursday week, and was attended by an immense crowd of all classes, the object of the meeting being "to take into consideration the depressed state of the agricultural and trading interests of the county, and the best means to be adopted for the relief thereof." The requisition was signed by upwards of 1300 persons, including noblemen, gentry, farmers, and traders. They met in the morning on Widemarsh-common, near the city, and thence proceeded to the Shire-hall, which was densely crowded. The High Sheriff (W. Barnely, Esq.) presided; and resolutions in favour of protection, an amendment of the Tithe Acts, and a revision of the public expenditure and taxation, were moved and seconded by Mr. H. Higgins, tenant farmer, of Brinsop-court, E. Evans, Esq., of Eyton-hall, Mr. Barson of Kynaston, Mr. France of Marley, Mr. H. Chillingworth, R. Peyton, Esq., Mr. Stallard, farmer, J. King King, Esq., and Mr. Bailey, M.P., and carried by a large majority. The Rev. Archer Olive of Whitfield, Mr. Huggitt, M.P., and Sir R. Price, M.P., addressed the meeting on the subject of free trade, contending that it had not had a full and fair trial. Sir R. Price argued that the farmers would never succeed in again obtaining protection, that their condemnation of free trade was hastily formed, and that they would now be glad to have that protection for the maintenance of which he resigned his seat as member for the county (a fixed duty on corn), the opinion of the constituents being in favour of adhering to the old sliding scale, which he strongly condemned.

BANBURY.—At Banbury, on Monday week, a desperate attempt was made by a man, named James Layton, to murder his wife by shooting her, and afterwards cutting

THE FOLLOWING MANURES are manufactured at Mr. Lawes' Factory, Deptford Creek:

CORN AND GRASS MANURE, ... per ton	£9	10	0
CLOVER MANURE ... ... ,,	8	0	0
TURNIP MANURE ... ... ,,	7	0	0
SUPERPHOSPHATE OF LIME ,,	7	0	0
SULPHURIC ACID AND COPROLITES ,,	5	0	0

N.B.—PERUVIAN GUANO, from selected cargoes (in Dock).
SULPHATE OF AMMONIA, &c.
Office, 69, King William-street, City, London.

GUANO AND OTHER MANURES.
PERUVIAN GUANO, of the finest quality, direct from import warehouse.
NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SULPHURIC ACID AND COPROLITE.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of
MARK FOTHERGILL, 201 A, Upper Thames-street, London.
A Treatise on Guano, Superphosphate of Lime, &c., will be forwarded on receipt of 8 postage stamps. Free to purchasers of Guano, &c.

THE LONDON MANURE COMPANY would, at the present time, call particular attention to their CORN MANURE, which they strongly recommend as a top-dressing for all corn crops. It contains a large amount of ammonia and phosphates, and will be found an excellent substitute for guano. Price 7l. 7s. per ton (3 cwt. per acre). For Turnips, Mangold Wurzel, and Carrots, they would urge the use of the Crate, or Superphosphate of Lime, both containing an increased quantity of phosphates and other mineral substances, so essential for all root crops.
The following MANURES they supply on the best terms:—Peruvian Guano, Nitrate of Soda, Sulphate of Ammonia, Soda Ash, for destroying Wireworm, Gypsum, Sulphuric Acid, Agricultural and Fishery Salt, Charcoal, &c.
EDWARD PURSER, Secretary.
40, Bridge-street, Blackfriars, London.

TURNIPS.
POTTER'S GUANO.—Very large crops of TURNIPS and MANGOLD WURZEL have been obtained by the use of this celebrated Manure. Price, 7l. per ton. Also,
GYPSUM, first quality, 15s. per ton, an excellent Manure for Turnips and other root-crops, either used alone or mixed with Guano or Bone-dust.
SUPERPHOSPHATE OF LIME.—Farmers may effect a great saving in making their own, and will have the satisfaction of knowing that they use a pure article.
Mr. POTTER supplies Bone-phosphate (containing about 65 per cent. of pure Phosphate of Lime) for this purpose, and gives plain and practical directions for making the Superphosphate. Price, 6l. per ton. Also, FOSSIL PHOSPHATE, for the same purpose (containing about 60 per cent. of pure), in fine powder, at 4l. 10s. per ton.—W. H. POTTER, 28, Clapham-road-place, London.

PERUVIAN AND BOLIVIAN GUANO ON SALE
BY THE ONLY IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WILLIAM JOSEPH MYERS AND CO., LIVERPOOL;
And by their Agents,
GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
COTESWORTH, POWELL, AND PRYOR, LONDON.
To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

BURBIDGE AND HEALY'S NEW BOILER.—The above is a modification of their Boiler (before published), modelled expressly for the large Conservatory, Chiswick Gardens, where it is now at work. From the observations B. and H. have been able to make, they are warranted in stating it to be the "Ne plus ultra" for warming large plant structures. As a proof, one charge of fuel has been kept burning for 48 hours without any addition, and one boiler of the size used is equal to warm 1500 feet of 4-inch pipe. They are also extensively put up at the Royal Botanic Gardens, Kew. Smaller boilers upon the same plan.
BURBIDGE and HEALY, 130, Fleet-street, London.

TO ORCHIDEA GROWERS.
BURBIDGE AND HEALY, 130, Fleet-street, respectfully call attention to their method of warming Orchidea Houses. They have had the honour of warming the Orchidea Houses at the undermentioned places:
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Horticultural Gardens, Chiswick, additions to the House.
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The Agricultural Gazette.
SATURDAY, MAY 19, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, May 24—Agricultural Imp. Society of Ireland.
FRIDAY, — 25—Agricultural Society of England.
SATURDAY, — 31—Agricultural Imp. Society of Ireland.
FARMERS' CLUBS.—May 22. W. Hereford.—June 2. Newcastle, Northampton, York.

PROGRESSIVE IMPROVEMENT is the work which every successive age has to help forward. Perfection the far distant goal whither human knowledge is slowly but surely approaching. The object is constant, but can only be attained by obeying the moral and physical laws which govern the universe: the wrestlers for the prize are ever changing and disappearing from the arena, while their places are occupied by a fresher, more vigorous, and more numerous generation of athletæ in the "Battle of Life." For some 6000 years have the human race been struggling onward to a point—still scarcely discernible in the dim future—with which all men in all ages have associated the idea of Perfection. The portion which each generation has contributed to the "Tree of Human Knowledge," is recorded in the history of the past—the multiplication and extension of its branches constitute the work of the present and the future, and has yet to be witnessed. Some bygone periods have been stationary or retrogressive—art and science have languished, still the tree was never long wholly unproductive of good, scanty as the fruit might be. The present age is profuse of promise; philosophy, art, and science are now, more than at any former period, investing man with dominion over the materials of Nature; improvement is advancing with quickened and ever quickening velocity. Air, earth, water, fire, and the "winged lightning" are harnessed to the chariot of human knowledge, and hurry it onward with a speed which ever supersedes the invention of to-day by a newer and better discovery on to-morrow. How, we may well ask, has agriculture, man's earliest occupation, progressed, and what is its present condition? It may not unfitly be regarded as the main trunk, from which all the branches of human knowledge have sprung; and, as such, we might naturally expect a healthy and rapid growth, an internal vigour productive of continuous increase. Yet how sickly has been her condition, how slow her progress, and how dependent her position, when contrasted with the luxuriant branches and foliage which surround her, and which, instead of receiving support from their parent, collect sustenance for her from the ends of the earth and the four winds of heaven. Every element of mind and matter has been pressed into the service of agriculture, and still her periodical exhibition of distress occurs, now asserting that and anon its opposite—never herself—as the cause of her misery.

To descend from the figurative to the real, to learn from the past a lesson for the future, let us inquire soberly to what it is we are indebted for anything that is really worthy of commendation in the present condition of agriculture? In doing this we shall neither consider the subject in its relation to the art of cultivating the ground, nor to the principles of science by which practical operations should be guided, but rather direct attention to that important element which forms the groundwork of agreement between landlord and tenant. Fortunately, the political relations of agriculture are now fewer and simpler than they recently were. The *fata morgana* of "legislative protection" no longer hang out their distorted and illusive images of impossible prosperity to allure the farmer from the path of self reliance, or send him on an *ignis fatuus* chase after high prices: the *mirage* of the "sliding scale" is now dispelled before the truer light of a more natural law, and however dreary the new aspect of agriculture may appear to many, still it is not fraught with the broken promises and blasted hopes which so thickly strew the past. Objects can now be seen in their natural and proper position, and those who look at them with sober, discriminating eyes, run little risk of mistaking the false for the real, the shadow for the substance.

What is it, we ask, then, that has incontrovertibly contributed to the good of agriculture, both in its social and industrial aspects? Right or wrong, the northern part of Great Britain has acquired the distinction of being pre-eminently successful in the cultivation of the soil. Land has quadrupled its value in many parts of Scotland within the last 60 years, a result which at one time might arise from the war prices, but latterly can only have been sustained by increased productiveness. But this increase of produce is itself a consequence of other causes: capital liberally but judiciously expended, and labour skilfully directed, must precede improvement. But these agents are not peculiar to Scotland, far from it; the soil is not naturally fertile, nor its climate favourable to vegetation, its proprietors and farmers were not originally wealthy, nay, their poverty was proverbial, neither was its rural population half a century ago particularly remarkable for industrious habits. Is it possible to assign an adequate reason why Scotland and some of the border counties on the south side of the Tweed have, in the face of great natural disadvantages, risen so rapidly from a comparatively low state of agriculture to a pitch of general excellence not equalled by any other country, either in Europe or out of it? The cause, we believe, is so obvious, "that he who runs may read," and can be clearly traced, not to any physical superiority of race, soil, or climate, but to the early adoption of a wise and liberal system of letting land, founded upon a just recognition of the mutual rights and obligations of landlord and tenant.

The introduction of the 19 years' lease into Scotland after the union with England, and more especially since the House of Hanover was firmly seated on the British throne, has done more for agriculture within the last 50 years than the feudal system could have accomplished in as many centuries. The true principle of action, in order to insure success in any undertaking, is to give the actors in it a personal and palpable interest in its accomplishment. Contrast for an instant the condition of a tenant-at-will with a tenant-on-lease: the former, if without a covenanted compensation for improvements made, is at the best but a house-renter, a squatter, *pro tempore*, without the independence of the backwood's pioneer, whose removal is at his own disposal; the tenant-on-lease, on the contrary, is really and truly bound to the soil by the ties of secured interest and prospective possession. The landlord, so far as he is himself concerned, is only a life proprietor, and if liberal in the mode of letting his land, and at the same time strict in enforcing the observance of mutual obligations, then may his tenants, to the third and fourth generation, continue to occupy the same farm and acquire an attachment to it, deeper in degree than that experienced by the real owner, because more localised in its object, and more closely associated with the affections of the past and the present, and also with the hopes of the future. It is this feeling which in some degree elevates the relation between landlord and tenant above that of an ordinary commercial transaction; and if it be based on the foundation, not merely of a legal document, but of moral obligations and mutual interests, accompanied with an enlightened cultivation of the soil, then have we all the exactness of business transac-

tions without their asperities. Although we view the 19 years' lease without any reference to successive renewals, it is still a large proportion of the lease of human life, and its natural tendency is to concentrate the thoughts and energies of the lessee upon definite objects, and lead to a systematic course of operations, with the reasonable expectation of ultimate reward.

The history of agriculture presents few causes so conducive to improvement as the system of granting leases of such a nature as neither renders the tenant's interests temporary or insecure by shortness of duration, nor the landlord's claims stationary by a term of occupancy so extended that circumstances may arise long before its expiry to alter materially the value of land, enhancing or depressing its value unjustly to one or other of them. The 19 years' lease experience has proved to work well, but whatever may be the duration of tenure, the *principle* of granting leases for a definite period of years, or an equivalent in the shape of tenant right, *i. e.*, compensation for permanent improvements, is unassailable. The basis of mutual advantage is, in fact, the only ground upon which men in a commercial and enlightened age can be induced to work amicably and helpfully together. The owner of thousands of acres, had he no one to cultivate them, would be no better off than he who had but as much ground as would occupy his own labour. Capital, skill, and sinews are indispensable, and these can only be supplied by the farmer and labourer. Under the feudal or slave system, the serf or vassal might be compelled by a dire necessity to cultivate his owner's acres, and for no other requital than his daily crust of bread; but, happily for us, such a state of slavery has passed away "as a tale that is told;" *might* no longer rides roughshod over human thoughts and actions, and *right*, though sometimes even yet sorely treated, is generally recognised as the best standard by which to measure and arrange the social relations and business transactions of men. It would be a harsh and perhaps a very unjust sentence to pass on the tenant at-will system, still so common in many parts of England and Ireland, to characterise it as essentially feudal in principle; yet, to an enlightened, unprejudiced mind, the effects of both on agriculture have a strong family resemblance. The vassal of the "olden time" tilled his master's acres with no interest in his labour beyond the supply of his daily wants; the tenant at-will of our day can scarcely be expected to cultivate his land with the reasonable hope of a higher reward; the present, or a brief future, bounds his prospects and his interest in his farm, or, at the best, a hope, often insecure, in his landlord's willingness to let him run on from year to year, is all the incentive he has for exertion. It is painful to reflect that the cause of agricultural improvement has been so grievously retarded by political and party predilections, and how frequently party support has been made the condition upon which the tenure of land depended. To mix up politics with agricultural matters, so as to degrade the tenantry of Britain, and, as a natural consequence, retard the progress of improvement, is a social and moral evil of no insignificant nature, especially in a country where the cry for cheap food is daily waxing stronger.

We have cited the present condition of agriculture in Scotland as a favourable illustration of the working of the lease system; abuses, errors, absurdities in practice, there may still be in that system, but, notwithstanding these, the country where it has so long existed has made surprising strides in the right direction, and we cannot be far wrong in attributing its improved agriculture to that very system whose claims we have advocated. This is the "open question" of the agricultural press at present, and needs to be iterated and reiterated until it be finally passed and adopted, in one form or other, by the unanimous vote of the landlords and tenantry of the United Kingdom. *J.*

A PRISON FARM.

I BELIEVE I may, without fear of being thought to take too much upon myself, be one among the number to respond to the call of the leading section of the *Gazette* of March 31; for the principles of Mr. Pearson's new system of prison discipline, so far, at least, as they stand upon industrial labour, are those on which I based my plan of poor relief for Ireland in the year 1832—the moral, industrial, and social improvement of the poor by their productive and self-supporting employment. And although there are, no doubt, many better able to give Mr. Pearson the information he asks for, yet may I not be deemed altogether unqualified to afford some assistance, since I have devoted a very large portion of my life to the subject.

By the establishment of parochial poor farms, I proposed so to limit the areas of relief as to enable every man to return to his home at night, ready to avail himself of any chance of local employment, and I thus did away with the necessity of building palaces for the dormitories of beggars, together with all attendant expenses. Upon the calculations I then made, bearing on Potatoes, I found I only required the produce of one-third of an acre to support each individual, taking collectively all ages and strengths. I think, therefore, by the adoption of a somewhat similar system of tillage, Mr. Pearson may be able to provide food for 1100 men and employment for an equivalent of 500, on 1000 acres of land, even though the diet be so superior to what the poor and unconvict Irish would be too happy to have; and I will endeavour to show that he may not only do this, but that he may obtain a very large surplus into the bargain, which may enable him to carry the benevolence of his discipline beyond the period of imprisonment.

I need not occupy the time of Mr. Pearson, or that of the readers of the *Gazette*, or at least such of them for whom the subject may have sufficient attraction, with a dissertation on the fertilising actions of the atmosphere induced in the soil by frequent stirrings of the surface of it. If a fallow once or twice in a rotation is found so to promote the fertility of the soil, and so to disturb its natural productions as better to insure remunerative crops of artificial growth, there appears to me no reason to doubt that a continuous fallow will, by inducing increased fertility, and a destruction of those denizens whose productions we have only been in the habit of checking, most certainly give us far more remunerative crops. If the change of crop at intervals is found, after a winter's waste and loss, to be the means of offering to the crop of change its peculiar nutriment, I cannot doubt that much more of this peculiar nutriment will be offered to it at the moment it is freed—*in its nascent state*—from its counter crop, without adulteration, loss, or diminished action by six or eight months' recompositions in the soil.

Hitherto, mixed cropping has been confined to plants of similar or very nearly similar composition, of the leguminous families, and even in these unscientific arrangements it is stated the results have been very satisfactory; that the two crops have grown and produced without causing any decrease of luxuriance or diminished production in either. But let us introduce a cereal crop in interlinement with a leguminous one, and it is only reasonable to expect greater luxuriance and larger production; they will mutually feed each other.

It is said that a crop of Drumhead Cabbage will produce as heavy a crop in rows four feet asunder, as it will in rows at two feet; there are many instances on record of Potatoes producing very largely where a wide space has been allowed; I have myself continually found Potatoes produce as heavy crops in rows three feet apart, as in any closer planting. Every one knows that a drilled crop of Turnips is superior to a broadcast one. Indeed it is only in our knowledge of the great distances at which green crops may with advantage be drilled that we are deficient; we have had much discussion on thick and thin sowing, but a wide-rowed culture of grain is an Upas tree, in the contemplation of which farmers keep at a respectful distance, yet it is one that, from repeated experiments, I can vouch for being as worthy of their regard as that of any leguminous or root crop, both for superior productiveness and the facility it affords for the extirpation of weeds. I have found Barley sown in rows 2½ feet apart more productive than rows at 1½ foot, and far more so than at narrower distances, or broadcast, and in one instance, in a garden experiment, where a distance of 3½ feet occurred between two rows, I found these two rows gave a much higher figure to the acre than those did that were only at half that distance; they yielded at the rate of 6 qrs. 7 bush. (52 lbs. to the bushel). In field experiments the yield has been much greater in rows about 2 feet apart than in narrower rows or broadcast.

Hence I conclude that in highly manured and well laboured land the distance between the rows of grain crops may be so extended as to admit of a leguminous crop between them, with air and space for full development, say 4 feet; and these wide rows not only admit of, but, I believe, require much more manure than narrower rows, and thus will enable us to extend the limits of high farming. In the wide rows of Barley above mentioned, there had existed in the space between them, during the previous winter, a row of Celery, which, as a matter of course, had been well manured.

An objection may be started to the interlining of grain and green crops, from the difficulty of harvesting the former without injury to the latter, but this objection is objectless where there exists such a command of manual labour as Mr. Pearson contemplates, for the grain crop may be carried, as fast as it is severed from the ground, to the strips left as headlands between the compartments.

For this purpose, and for the lodging of manure heaps, and other uses of the compartments, I propose to divide the farm into parallelograms 360 yards wide, intersected by strips 8 yards wide; to these strips the manure may be brought, as made, from the cattle-houses in hand trucks, and from thence wheeled in barrows when required upon the compartments, the greatest wheeling distance being half the width of the parallelograms, or 180 yards; the grain and the other products of the compartments being deposited in a similar way on the strips, and from them conveyed in the hand trucks to the stack-yard and the cattle-houses, or the store-yards. The farm is 1000 acres; I propose to set off 60 acres for artificial perennial Grasses; I appropriate 920 acres for the production of mixed crops; from these 920 acres I have to deduct 20 acres for the strips between the parallelograms, which leaves 900 acres, and which I propose to crop as follows (the 20 acres not appropriated will be required for buildings, yards, roads, fences, &c.) On the strips between the compartments may be made the seed beds for the Borecole, Cabbages, and Rape, convenient to where the plants will be used up.

FIRST OR STOLEN CROP.

	No. of Acres.	Previous Crop.	Time of Planting	Crop.	Time of using.
1	75	Bere or Rye	July	Borecole	March
2	75	Ditto	Ditto	Ditto	April
3	75	Ditto	August	Rape	November
4	75	Ditto	Ditto	Ditto	December
5	75	Wheat	Ditto	Ditto	January
6	75	Ditto	Ditto	Ditto	February
7	75	Ditto	September	Ditto	March and previous mths.
8	75	Ditto	Ditto	Nonpar. Cab.	May
9	75	Ditto	October	Ditto	May
10	75	Ditto	Ditto	Ditto	June
11	75	Ditto	Ditto	Early Wellington	June and July
12	75	Ditto	Ditto	Ditto	July

SECOND CROP.

Time of planting or sowing	Crop.	Time of clearing off.	Succeeding Grain crop.
May	Swedes	October or	Wheat
May	Swedes	November	Ditto
February	Drumhead Cab.	August	Bere or Rye
March	Ditto	September	Ditto
February	Potatoes	October	Ditto
Feb. or March	Parsnips	November	Wheat
April	Mangold Wurzel	October	Ditto
May	Drumhead Cab.	September	Bere or Rye
May	Ditto	October	Wheat
June	Aberdeen	November	Ditto
July	Do. & Dale's H	Ditto	Ditto
July and Aug.	Turnips	Ditto	Ditto

PERIODS OF USING CROP, QUANTITIES, &c.

Months.	Crop.	No. of Acres.	Weight in tons of each crop.	Weight in tons for each month.
January	Rape	75	900	
	Aberdeen T	75	1125	2025
February	Rape	75	900	
	Swedes	75	1125	2025
March	Borecole	75	900	
	Swedes	75	1125	2025
April	Borecole	75	900	
	Parsnips	75	900	1800
May.	Early Cabbage	150	1800	
	Grass		250	2050
June	Early Cabbage	125	1875	
	Grass		250	2125
July ...	Cabbage	100	1800	
	Grass		250	2050
August ..	Cabbage	100	1800	
	Grass		250	2050
September .	Cabbage .	100	1800	
	Grass .		250	2050
October	Cabbage .	100	1800	
	Leaves Mangold		250	2050
November	Rape	75	900	
	Turnips	75	1125	2025
December	Rape	75	900	
	Aberdeen, &c.	75	1125	2025
				24,300
	Mangold Wurzel	75		1,350
	Rape . . 4	75		900
	Potatoes	75	600	26,550

I have made this calculation at three-fourths of what may be considered the average of full crops, and I feel well assured that it will prove under the mark. I have left the 75 acres of Rape to be spread over the winter months in case of deficiencies, and the 75 acres of Mangold Wurzel to afford occasional variety. I have then 26,550 tons of food, with the straw of 900 acres of grain, and which I will not reckon under five tons an acre. And on the supposition of 1 lb. of meat being made during the consumption of 150 lbs. of green food, this quantity of 26,550 tons ought to produce 177 tons of meat, which is 71 tons over the amount required by Mr. Pearson; this, at 4*d.* a pound, will give us a surplus value on the green crops converted into flesh of 2650*l.* Were this surplus of green crops sold in the market, as in the case of a prison farm established in the neighbourhood of a town capable of consuming it, the cash return would amount to a prodigious sum. The labour of our criminals and of our paupers would soon pay off our national debt.

Taking the produce of the grain in the same ratio of three-fourths of a full crop under ordinary culture, and I am confident I do not take it at too high a figure, agreeable to the estimate of the Editor of the *Gazette*, it will require 346 acres of Wheat and 96 acres of Bere or Rye, as an equivalent for the same breadth of Oats, for the use of the establishment, leaving a surplus of 254 acres of Wheat and 204 acres of Bere or Rye; or 682 quarters of Wheat, and 764 quarters of Bere or Rye. The surplus value of produce will then stand thus:

682 quarters of Wheat, at 45*s.*	£1534
764 quarters of Bere or Rye, at 20*s.* ...	993
71 tons of meat, at 4*d.* per lb.	2650
	5177

In a future paper I will enter into calculations of the quantity of labour and its distribution that this tillage will absorb. It will, however, be at once seen, that the

labour will be spread very evenly through the year, and I believe it will be found fully to the amount proposed, *J. M. Goodiff, Granard, April 23.*

CHEAP MANURING.

WHEAT.—The heaviest crop of Wheat, on the large scale, that I have on record, was 11 quarters per acre, but the details of dressing were not stated; and if they had been, we should regard it only as a happy accident, not to be expected again in the present state of agricultural knowledge; and several others, down to 7 quarters, are in not very different circumstances. But between 6 and 7 quarters is not so uncommon, and of this I have several examples, of which the following are the most intelligible:

	qrs.	bush.	
No. 1	6	7	by Rape dust
2	6	6½	by sulphate of ammonia
3	6	6½	by nitrate of soda
4	6	4	by drainage of the dung heap.

1. Rape dust, generally answers, and contains both phosphates and nitrogen. 4. Dung drainings also contain both, varying, of course, with the quality of the dung; when that is good, the liquor is highly suited for Wheat. Let the farmer, then, consider what he is losing, in allowing this to run away to waste. 2 and 3. Sulphate of ammonia and nitrate of soda are more uncertain; they contain plenty of nitrogen, but no phosphate, which is equally necessary for the production of grain; so that, when the land is deficient in phosphates, they can produce only straw. From these cases we learn that a good supply of nitrogen should be added to the Wheat dressing given in our No. 4, and it appears, from Mr. Lawes' experiments, that the manure and soil ought to contain 5 times as much nitrogen as the crop.

1 acre of Wheat, 25 bushels, may average nitrogen 25 lbs., and this quantity is contained in

	lbs.	Value.
Sulphate of ammonia, about	120	18s. per cwt.
Nitrate of soda,	150	16s per cwt.

which may be added to our bone, &c, before directed, in 2, 3, or 4 times this quantity: the 5 times, estimated by Mr. Lawes, applying to quite exhausted land.

But there are other sources of nitrogen, often cheaper than these. Night-soil is the most important of them, where of easy carriage. Another is sheep dung, perhaps most conveniently applied by eating off the previous crop upon the ground. And the bone itself, when recent (as from the Union-houses), contains 5 or 6 per cent. nitrogen; which may be easily fermented to ammonia, making the bone almost as tender as it is with acid and salt. This is done by heaping it with twice its measure of refuse tan bark, sawdust, or peat, damp enough to ferment; when, in a few days, more or less, according to the warmth of the weather, the bone will have become quite crumbly or tender, and the peat, bark, or sawdust will have absorbed the ammonia as it is generated. Where neither bark, peat, nor sawdust is at hand, ashes, sand, or even loose earth will promote the fermentation, but will not make so good an absorbent for the ammonia, nor so good a manure afterwards. The addition of gypsum, half the weight of the bone, will help in both these respects. This fermented bone has not yet been tried for Wheat. It is more of the nature of guano, and if found to answer as well as bone with acid, would be easier to the farmer to prepare. Salt will prevent its running the Wheat to straw. Old porous bone, however, is not so good for fermentation as fresh bone. We may therefore say,

No. 1., WITH ACID.

Bone.	Salt.	Acid.	Sulph. Magnesia.	Pearl ash.	Sulph. Ammonia.
80 lbs.	40 lbs.	40 lbs.	½ cwt.	½ cwt.	2 cwt.

No. 2, BY FERMENTATION

Bone.	Gypsum.	Sawdust, wet.	Sulph. Magnesia	Nitrate Soda.	Nitrate Potass.
80 lbs.	40 lbs.	160 lbs.	½ cwt.	1 cwt.	½ cwt.

The bone, sawdust, and gypsum to be fermented together a fortnight or more, till the bone is well crumbled; and the sulphate of magnesia and nitrates of soda and potass then mixed in. But they will hardly ferment in so small quantity as this; probably not less than 2 or 3 qrs. of bone and the other ingredients in proportion. One-half of the sawdust, peat, or bark may be mixed with the bone, the rest used for a bed under it, and to cover it lightly over and catch all stray ammonia.

BARLEY. The best crops of Barley of which I have noted the details are:

qrs.	bush.	qrs.	bush.	qrs.	bush.
1.... 8	4	2.. 8	3	3 8	1

All from guano after dunged green crops.
4. .... from nitrate of soda and salt } each 7 quarters.
5. .... from ditto of potass and salt }

But as guano is an almost universal manure, containing phosphates, ammonia, more or less alkali and organic matter, we learn but little from this, further than that the fermenting method may be the best for preparing it. Why salt should have been so very useful to Barley is not very clear; but as it is the cheapest of manures, there is no motive for omitting it; and as this contains soda enough, we may use nitrate of potass, and so save the pearlash. Our Barley dressing then will be per acre:

Bone.	Gypsum.	Damp Sawdust.	Nitre.	Salt.	Sulph. Magnesia.
100 lbs.	50 lbs.	200 lbs.	1½ cwt.	1½ cwt.	40 lbs.

The bone to be fermented with the gypsum and sawdust, and the other ingredients mixed in when all is crumbled or tender. Experiments are, however, rather deficient for Barley, and it would be well to try the dressing made with acid, as well as that by fermentation.

OATS.—Of Oats I have two recorded crops of 10 quarters each.

1 and 2 from sulphate of ammonia.

qrs.	bush.	
3	9	3 nitrate of soda and salt
4	9	0 bone-dust
5	8	6 guano.

Here sulphate of ammonia has the advantage of nitrate of soda, and bone-dust of guano; but upon comparing a great number of experiments, the mixture of nitrate of soda with sulphate of soda or of magnesia has been more generally successful than any of the others. This seems to leave it uncertain between the two following mixtures per acre:

No 1, BY ACID.

Bone.	Acid.	Salt.	Sulph. Ammonia.	Sulph. Magnesia.	Pearlash.
80 lbs.	40 lbs.	40 lbs.	2 cwt.	½ cwt.	1 cwt.

Mix as for Wheat.

No. 2, BY FERMENTATION.

Bone.	Gypsum.	Sawdust.	Sulph. Magnesia.	Nitre.	Salt.
80 lbs.	40 lbs.	160 lbs.	60 lbs.	1½ cwt.	1½ cwt.

To be mixed as the other fermented bone dressings.

BEANS.—The best crops detailed are:

	qrs.	bush.	
No 1 ..	8	6	from nitrate and sulphate of soda.
2	8	5	from gypsum.
3	8	5	from a compound dressing, consisting of charred bone, sulphuric acid, sulphate of magnesia, salt, and sulphate of soda.

The latter dressing was much like what we should infer from the others, except the waste of organic matter in charring; for sulphate of soda is produced by the action of sulphuric acid on salt, and nitrate of soda is often found to increase the leaf and stalk, and not the seed. Comparing these results with the Table, as before, we should say per acre:

Bone.	Salt.	Acid.	Sulph. Magnesia	Pearlash.
1 cwt.	½ cwt.	½ cwt.	½ cwt.	½ cwt

as almost all the potass is in the straw, which is sure to come back to the soil in some shape or other.

CLOVER (AND HAY).—Of red Clover, I have no details of recent crops; they are generally mixed with Rye-grass, which contains very different proportions of inorganic constituents. The most effective dressing for Rye-grass appears to be liquid manure, which produces surprising crops, as before stated; and gypsum and sulphate of soda agree well with Clover. Of hay I have heavy crops noted.

	Tons.	Cwt.	
No. 1	5	16	from a compound manure, something like that for Beans quoted above
2.	3	10	from sulphate of ammonia
3 . .	3	9	— nitrate of soda
4 . .	3	5	— sulphate of soda.

Comparison of these with many others, and the organic constituents of the plant, will give a mixture much like the compound manure of No. 1—say per acre

Bone.	Acid.	Salt.	Sulph. Ammonia.	Sulph. Magnesia.	Pearl-ash.
1 cwt.	½ cwt	½ cwt.	1 cwt.	½ cwt.	1 cwt.

POTATOES.—This is a delicate subject to treat of. Very heavy returns of Potatoes have been got from night-soil; but to dress with such a putrescent manure, a plant already perishing of rot, seems contrary to reason. The heaviest products per acre, in my notes, with portable inorganic dressings, are—

No. 1, 128 bags from nitrate and sulphate of soda
2, 360 bags from nitrate soda and sulphate magnesia
3, 302 bags from sulphates of soda, and ammonia.

Nos. 1 and 2 resisted the disease better than the surrounding fields; but in many cases ran too much to leaf. Soot and ashes appear to have been the best preservative dressings against the disease; and deep and early planting the most effectual precautions. The soot and ashes are best laid in the furrow over the Potato, but with earth between; and an acid top-dressing is much less putrefactive than a fermented one; and in the present state of this plant we must consider health and soundness rather than quantity. These considerations, compared with the inorganic contents of the plant, and the successful experiments, will lead us to something like the following:- (The sulphate of soda being formed from the salt and sulphuric acid.)

Bone.	Salt.	Acid	Nitrate Potass.	Sulphate Magnesia.
2 cwt.	1 cwt.	1 cwt.	1½ cwt.	½ cwt.

This is very deficient in potass: but the potass is chiefly in the stalk and leaf, which falls back to the ground; and the experiments of Mr. Lawes with Turnips, seem to show that the large quantities of potass in the ash of green crops are not necessary in the manure.

TURNIPS.—Whatever our doubts and difficulties about Potatoes, it is otherwise with Turnips. Of these we have surprising crops, up to 60 tons an acre, with bone and acid only, in addition to what was in the soil, and ground dressings. And although the contents in potass are so large (see No. 4), Mr. Lawes' recent experiments indicate that they find it in the soil, without needing so much in the plant dressing. But the phosphate should be supplied liberally. They come quickest into rough leaf, out of the way of the fly, with bone and sulphuric acid. The addition of salt seems to retard the rough leaf, but to increase the produce afterwards; and the bone, fermented with sawdust, &c., or with sheep dung, answers almost as well as with acid. Say per acre—

No. 1, ACID.

Bone.	Acid.	Salt.	Sulph. Mag.	Sulph. Ammon.	Pearl-ash?
3 cwt. (1 quarter)	½ cwt.	1	½	1	2

No. 2, FERMENTED

Bone.	Gypsum.	Saw-dust.	Nitrate Soda.	Sulph. Mag.	Pearl-ash?
A quarter.	1 cwt.	6	1	½	2

MANGOLD WURZEL, CARROTS, AND CABBAGE.—My reports of experiments on these are not yet sufficient to determine the best practical dressings. They appear all to like salt; and may, therefore, do better with the acid preparation than with that by fermentation; and I should think the Turnip dressing, No. 1, likely to suit them all. *J. Prideaux.*

SMALL DAIRY FARM.

MRS. R—— has 20 cows and three horses; the extent of her farm is not 40 acres. Her bill for grains this quarter amounts to 60*l.* She gives to each cow a bushel of grains a day—one-half in the morning and one half in the evening; she also gives about 1 lb. of Bean or Pea-meal twice a day to each cow. The grains cost her 3*s.* per load of 6 bushels, or 6*d.* per bushel. The cows get, beside this, about 10 to 20 lbs. of hay, say 15 lbs. on an average. The cow-house is only 27 feet long for 8 cows, two and two in a stall, *i.e.*, 3 ft. 4½ in. to a cow. There is a passage between the cows, for feeding them, about 3 feet wide, and a flag divides the cows from their food; the hay is put down on the floor, their grain and meal is given them in pails. The cows give from 8 to 16 quarts of milk daily, say 8 in winter and 14 in summer, and it is sold at 2*s.* 6*d.* to 3*s.* per dozen quarts in winter, and 2*s.* per dozen in summer. "If we can make 12 quarts a day all the year round it is grand; but this is seldom done."

	£	s.	d.
20 cows, say 10 quarts a day, give upwards of 6000 quarts per annum, or, at 2*s.* per dozen	608	0	0

The expenses may be:—

	£	s.	d.	£	s.	d.
Rent	150	0	0			
Taxes, say	50	0	0			
	200	0	0			
Grains, 4*l* per week	208	0	0			
Meal, 40 lbs. a day; per annum ..	40	16	0			
2 Men, at 12*s.* a week	62	8	0			
				531	0	0
Profit				£77	0	0

Not a very great per centage on the capital.

The cows are kept very clean, no dung or urine is to be seen; the whole of the house is covered with sawdust, every part of it except where the dung and urine are dropped. *J. M.*

Home Correspondence.

Zea Mays Quarantain and Tuscorora, versus *Forty-day Maize.*—Will Mr. Keen be kind enough to inform me from what varieties of Zea Mays he has obtained the new hybrids called Forty-day Maize. I have carefully compared the grains of the so called hybrids with two varieties purchased of Messrs. Page and Son, Seedsmen, Southampton, called by them Zea Mays Quarantain and Zea Mays Tuscorora (the former some years since the latter in the spring of 1848), and cannot detect the slightest difference in them, except that the hybrids appear to have ripened in a more favourable climate than that of England. Quarantain or Quarantine (literally 40 days) has never failed to ripen with me, and Tuscorora ripened with me last year, which by every one will be acknowledged an extremely unfavourable season for ripening Indian Corn. I was informed by the Messrs. Page, that Quarantain has been grown by them for 20 years, and never in one instance failed to ripen. Tuscorora has not been grown by them so long, but sufficiently long to enable them to say that it is as certain as the other, producing larger cobs, and showing earlier signs of maturity. I have no doubt that Mr. Keen has used great skill in producing these hybrids, but my impression is that his Forty-day Maize will prove to be the two varieties named. If any of your readers would like to practise my system of cultivation, I will be pleased to send it you; by one simple process the maturation of the crop is advanced at least a fortnight. *H., Hants.* [We have altered the signature of this letter, it being extremely inconvenient that the same fictitious signature should be used by different persons.]

May day in Ireland.—We have certainly had very severe weather, and I fear the early fruits will be scanty, but as to this day, certainly I never saw a more beautiful May-day: together with the number and variety of flowers, it seems to realise the old poetical description. Is it not sad to think, where Nature is so profuse, that man should be so wretched? Here we are planted in a large island of unexampled fertility, and can hardly be said to live, for fully two millions of our people are in a starving condition, while every month adds to the number of large districts, not only neglected but covered thicker and thicker with weeds. People are absolutely crazed after America, and yet we have a better America here. Look at the heats of summer and cold of winter in America, while here there is seldom one day in the 365 on which a man cannot, or, rather, would not, if he liked, be usefully and profitably employed; and the universal cry is "Give us employment," while those who ought to be able to give employment are lying under the ruins of the country. We are suffering from an accumulation of causes; not one cause, but a hundred, yet, I think, springing from not much more than four: the Potato, religion (so called), complicated tenures, and pride. The Potato brought the chief wants of man and his miserable wife and family down to half an acre of land and one iron pot. It did not even give these miserable creatures a chair or a bed, or the trouble of mastication, and it enabled the proprietors of estates to select from this abject race any number of labourers they pleased (if labourers they could be called), on the most arbitrary and pinching terms, in which *bona fide* coin was

seldom included. No wonder these proprietors, middlemen, and farmers, who were generally very ignorant, should be swollen with pride, and infected with extravagance. No wonder that their children should be uniformly looking beyond their stations in life, and that, wherever you went, you were sure to see multitudes of swaggering blades, cigar-smokers, sportsmen, anything but industrious citizens. I describe nothing but what I have myself witnessed during five years' residence in Clare and Tipperary. Next we come to religion, a delicate subject to touch upon. The Catholic, beloved by the people, because it gave them all they wanted—immunity. The Protestant, detested, because they thought it robbed them; and certainly, taking the two establishments, it is astonishing how the country could live under such priest pressure. The complication of tenures naturally sprung from competition for land. Land was artificially elevated on a pyramid of Potatoes; and, while the Potatoes were sound, the pyramid had a substantial look enough; and the several races of O'Connors, O'Briens, O'Gradys, O'Sullivans, &c., might be seen upon the apex, high up above the surface, waving flags and planning all sorts of enjoyments. But all at once fermentation and rottenness set in, and down came the pyramid, in the decayed ruins of which many have been smothered, and many are still struggling with slender hope, while the old eaters of the Potato made a general rush to the poor-house, or by crime became inmates of the gaol. This is by no means an exaggerated view of the condition of Ireland; and it has long been my conviction that nothing will do any good till the land can be released; therefore I look look forward to Sir Robert Peel's programme with more confidence than any other measure, and rejoice that Lord John was not too proud to adopt it, though I think the Solicitor-General's speech would have been more perfect if he had paid that tribute to Sir Robert which was his due. But that little concerns us. All I have to say, at least, is my conviction, that, if land is freed from its vexatious incumbrances, and that people are allowed to purchase and sell it as they wish, we shall soon see what Ireland can and will do. Every one has his crochet, and mine is to open books of registry in every county court in Ireland, where people might go, and, under a simple regulation, buy and sell free unincumbered land. Nothing else should be registered, and it would soon teach the Irish how much better it was to sell than to mortgage. Even with our old court rolls at Diss, how well we used to get on with our transfers of copyholds, though loaded with many absurdities. I want something like this, and that a small bit of parchment, such as we give at our cemetery, for 6 or 10 or 12 feet of ground in perpetuity, should convey equally well from 6 to 600 acres of land. I am told the equity lawyers (equity indeed!) are looking very blue; they are in the situation of rats which, having undermined an old house, prepare for a general scamper when they hear the timbers creaking. The Irish bench and bar have got the Chancery court from a bad road into a bog, and up to the very top of the wheels. It cannot move of itself, and therefore must be left behind, or like as in the case of a stranded ship, what has escaped the wreckers must be got out. If you read my Shadows, as I asked you to do, published in the "People's Journal," Dec. 1, 1847, and two following numbers, you would see many of the views there laid down amply verified; and now I tell you if these contemplated measures are honestly carried out, you will soon see a revival in Ireland. *P. M. T.*

On the Use of Lime.—Felspar is a compound substance totally insoluble in water. It is found in granite, clayslate and gneiss in very considerable quantity, and in every soil, more or less. Vanquelin states its analysis to be, silica 64, alumina 20, potash 14, lime 2. This is the finest kind of it; it is called adularia, and is found on the Alps. Dr. Ure gives the analysis of that which is found in granite and gneiss as, silica 60, alumina 22, and potash 14. Now here are two most essential ingredients in plants, namely, silica and potash, without which it is impossible that any of our cultivated crops can flourish, no matter how much nutritious food of a different kind is supplied to them. And the third, alumina, though by no means so essential as the other two, is of great service in affording a substance fit for the roots of vegetables to imbed themselves in, and for retaining moisture in the earth, by the solvent power of which a constant supply of the necessary minerals in a condition suitable for assimilation may be kept up. Felspar is thus one of the chief sources of the mineral food of plants. If we reduce it to a fine powder (on which, as above stated, water has no effect), and mix it with slaked lime, the felspar will be found in a great measure decomposed and become soluble in water, so that its elements are capable of assimilation. No wonder, then, that lime is productive of such beneficial effects on most soils. In clay soils, when the uncombined elements of felspar are exhausted, when it is either not in a state of decomposition, or its decomposition is being carried on too slowly, the benefit to be derived from the use of lime is almost incalculable. It does indeed change the face of nature, for where semi-barrenness before existed, heavy waving crops, the welcome indications of a new fertility, greet the admiring gaze of the delighted husbandman. And in lighter soils, in which, from the same cause, nothing but moss could be made to flourish for pasture, the use of lime produces the same effects. Whence, in such soils—were its beneficial influences confined to hastening the decomposition of vegetable matter—whence, let me ask, is to come the supply on which it is to act? Let these soils be analysed, and in all probability the organic matter contained will be very small. But granting that there is a considerable quantity, if lime accelerates its decomposition very much (and undoubtedly it does), the supply must ere long be exhausted, and after a season or two the soil would be poorer than it was previously to the application of lime. That mineral would therefore rank as in the end an impoverisher of land. But its good effects are observable not for one season merely, or two, but for 10 or a dozen, or even for 20 years and more; though, during that period, the land should not receive a particle of manure except what arose from the depasturing of animals. This source of manure existed previously, and no one will contend that lime could act beneficially on such manure; we are forced to conclude, then, that it has been acting on something else. I may now be allowed to express a hope that I have succeeded in the attempt to show that the theory which supposes lime beneficial on account of its accelerating the decomposition of vegetable matter, does not sufficiently account for its fertilising powers, and is therefore not the true one; and on the other hand, that the theory which supposes it to act chiefly and most advantageously in decomposing felspar, does sufficiently and satisfactorily account for them, and is therefore the true one. It is hoped that no one will understand me to mean that in no case can the powers of lime to dissolve vegetable matter be taken advantage of without benefit. I have already excepted peaty soils, and other exceptions remain to be made, viz. in the formation of composts of weeds, and like materials. *Aliquis.*

Stock or Pitch Markets.—That stock markets are beneficial to all interested cannot admit of a doubt; among their many advantages the following may be enumerated. They bring the article of which the buyer is in want directly under his notice, and consequently afford an opportunity of examining it in detail, and thereby remove a cause of frequent complaint, viz., that samples, from their smallness, do not afford a proper criterion for testing the condition of grain; and, besides, sometimes give it a false appearance, especially if the seller has had occasion to ride with it near his person for any length of time, it being well known that Wheat and Beans, besides getting firmer, have a gloss imparted to them; and, if Barley and Oats, the ends are rubbed off, which gives a different appearance from the stock of each when produced. An advantage also to the buyer, more especially if he is a beginner in trade, arises from his having an opportunity of comparing the different qualities when placed beside each other; but this is so obvious that it need not be enlarged on. Another important consideration to the farmer is, the time he saves by doing his business in this mode, a matter of considerable importance in seed time or harvest, at least it is found here that those having their stock command sales much readier than those with sample; and, besides, the latter frequently require another day for the delivery. Another consideration in favour of stock markets is, that "give and receive" (bags shifted, &c.), is the order of day in them; whereas, on sales effected by sample, payments are not always made at the specified time. An advantage, also, of stock markets is, that the superintendent thereof has positive data to go upon, enabling him to give, not only the average price, but the average weight also (a measure absolutely necessary in all markets, such as Stirling, where grain from carse, dryfield, and muirland meet); this is in order to determine the intrinsic rise or fall in it. These, with many other considerations which might be mentioned, show the decided superiority of stock markets over sample ones. *R. N.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House on Tuesday last, the 15th of May. Present: His Grace the Duke of RICHMOND, K.G., Trustee, in the Chair; Earl of Ducie; Lord Bridport; Baron Mertens; Hon. H. W. Wilson; Hon. R. H. Clive, M.P.; Hon. Captain Dudley Pelham, R.N.; Hon. Colonel H. Nelson Hood; Sir John V. B. Johnstone, Bart., M.P.; Sir John P. Boileau, Bart.; Mr. Almack; Mr. Raymond Barker; Mr. W. Burroughes; Rev. Thomas Cator; Colonel Challoner; Mr. Capel Cure; Mr. Evelyn Denison, M.P.; Mr. Druce; Mr. Dyer; Mr. Brandreth Gibbs; Mr. Foley, M.P.; Mr. Fuller, M.P.; Mr. Hawkes; Mr. Fisher Hobbs; Mr. Kinder; Mr. W. H. Little; Mr. Milward; Mr. C. E. Overman; Professor Sewell; Mr. Slaney, M.P.; Mr. Spencer Stanhope; Mr. Stansfield, M.P.; Mr. Edward Tull; Mr. C. H. Turner; Mr. T. Turner; Mr. T. R. Tweed; Professor Way; Mr. Henry Wilson; and Mr. George Wood.

William Fisher Hobbs, Esq., of Boxted Lodge, near Colchester, was elected a Governor of the Society.

The following new Members were elected:

Chamberlain, Robert, Sheriff of Norwich
Pike, Llewellyn Adolphus, Chute, Wiltshire
Ward, Robert Maystone, Watton, Norfolk
Busk, Joseph, Little Berkhampstead, Hertfordshire
Brown, Frederick, King-street, Norwich
Armitage, George, Yattington, Newbury, Berkshire
Clarke, W. R., Wymondham, Norfolk
Fernandes, Edward, Hatton Parsonage, Warwickshire
Hills, David, Norwich
Fellowes, James, 29, Gloucester-place, Portman-sq., London
White, Richard, Norwich
Andrew, George, Carne, St. Austell, Cornwall
Hastings, John, jun., Gressinghall, East Dereham, Norfolk
Brady, Robert Watts, Kerdiston, Reepham, Norfolk.

The names of 20 candidates for election at the next Meeting were then read.

Communications were received from Mr. Little, of Llanvair Grange, Monmouthshire, on the stoppage of drains under crops of Mangold Wurzel, with specimens of the fibrous matter found in the drains. From Mr. G. E. Frere, of Roydon, Norfolk, on the Lecythis Zabucajo of Brazil, and the Araucaria imbricata of Chili, with a copy of the first number of Sir W. Hooker's "Journal of Botany;" from Mr. Greaves, of Matlock-Bath, Derbyshire, a report on his trial of various foreign seeds transmitted to him from the Council (referred to the Journal Committee); from Mr. Slaney, M.P., on the great advantages of sewerage manure, and on garden cultivation, the industrial training of youth, and the instruction of children in workhouse unions; from Mr. Blamire, on the value of water impregnated with lime applied on pasture lands during the night in hot summers; from Mr. Parkes, on the system of subsoil irrigation in conjunction with drainage, recommended by him in his lecture at the Newcastle meeting in 1846 (Journal, vol. vii. pp. 249—272); from Mr. Raymond Barker, a statement on the efficacious results obtained by Mr. Tower in the administration of alcohol, in a certain state of dilution with water, to cattle affected with pleuro-pneumonia (referred to the Veterinary Committee); from Mr. Fuller, M.P., a report on the singular exemption of Alderney cattle in immediate communication with disordered animals in Anglesey, from the epidemic prevailing in that part of the country, the only instance of attack among the Alderneys being that of a bull of that breed, which recovered, although confined in the same house in which the Anglesey cows were dying (referred to the veterinary committee); from Baron Mertens, an enquiry as to the comparative hardiness of the short-horned and Hereford breeds of cattle. These communications gave rise to much interesting discussion and detail of practical experience, among the members present. Mr. Mayhew presented a copy of his work on the horse's mouth; and M. le Chev. F. M. d'Orgebray, of Paris, a copy of his work on agricultural cultivation in connection with drainage.

The Council then ordered their usual thanks for these communications, and adjourned (over the week of the General Meeting) to Tuesday, the 29th of May.

Farmers' Clubs.

BURTON-ON-TRENT: *Profitable Stock Keeping*.—The following summary of the propositions made by Mr. Lyon in a lecture at the Farmers' Club, should receive the attention of farmers. The topic of discussion was "what is the most profitable plan to pursue with respect to the live stock of the farm?" and the unanimous assent of the members was given to these propositions:—Young animals grow more quickly for a given amount of food than older. By high feeding a lamb of South-down breed (not a large sort) may be 15lbs or 16lbs. a quarter at a year old; at the same age a young ox may be from five or six score a quarter. This produce, from the smaller quantity of food which animals consume while young, is equal to what they will yield in any subsequent year, from a larger quantity. It is profitable therefore to feed young animals on a greater proportion of corn than older ones will pay for. If young animals be reared well or kept from the beginning they acquire a constitution which insures their growing more in subsequent years from a less proportion of food; they also feed more easily and yield more largely of milk. The progeny of well reared stock improves from generation to generation. When an animal is in good condition it yields a greater produce for its food than when it is poor and lean. If therefore an animal be first fed on good pasture till it is fresh and fat, and then removed to poor keep, so as to lose its condition, not only is the food wholly lost on which it declined in flesh, but all the good food which it may consume for some time afterwards has very much less effect. The feeding of animals should therefore be quite continuous, as well as liberal, in order to be fully profitable. All animals pay best for that amount and kind of food which causes them to produce more largely. That which makes rearing stock grow and thrive faster, that which makes feeding beasts or sheep fatten more quickly, and that which makes milking beasts milk most profusely, and for the longest time, is the most profitable kind of food. The principle of continuous feeding is especially applicable to milking cattle. For if the milk be suffered to fall off it cannot be brought fully to return like the fattening propensity; and if, during the interval between the cessation of the milk and calving, the state of constitution which promotes the flow of milk decline, it requires a long period to bring out the full effect of the liberal food given afterwards, and the cow never yields so largely as she otherwise would have done. It is always profitable to grow on land a succession of nutritious food for all stock kept on it. But in those cases where the natural produce of the land is deficient in richness, or where much straw in proportion to other forage is grown, or where the casualties of season cause crops of cattle food to be deficient, it is always advantageous to add a portion of artificial strong food, such as cake or corn or linseed, to the food of animals, whether rearing, feeding, or milking stock.

NEWCASTLE: *On the bare Summer Fallowing of Land.*—MR. WM. SHIELD read a paper on this subject, from which the following are extracts:

1. The peculiar advantages supposed to be derived by land during a summer fallow. 2. Whether these have been proved to be advantageous, and whether they will bear the test of investigation. 3. Causes and effects of so much land lying under summer fallow. 4. Suggestions for effectually working the land, and yet dispensing with the "bare summer fallow" after

the first year.—In considering the advantages peculiar to the summer fallowing of land, I shall briefly quote the opinions of some distinguished farmers in favour of it, so that persons whose minds are not yet decided upon the point may judge for themselves, when testimonies from others of an opposite character are adduced. Mr. Brown, of Markle, was of opinion that, "without summer fallows perfect husbandry was unattainable on all heavy or cold soils, and upon every variety on a close or retentive bottom." Sir John Sinclair, whose name is familiar to every intelligent agriculturist, says, "On such soils the universal opinion of experienced farmers is, that summer fallows cannot be dispensed with. They are accounted the foundation of their fertility." The following opinions are recorded by Sir John, in his "Husbandry of Scotland," from highly accredited persons: "Summer fallowing is undoubtedly the chief source of improvement in clay soils; * * and the point on which depends their culture in Scotland. * * They rectify the texture of clay soils that have become hard and impervious to sun and air by being ploughed wet in winter. * * They are advocated in consideration of little more than half the quantity of manure being required. * * Land thereby being left in infinitely superior condition. * * The crop of Wheat being so much more abundant than after Beans. * * Because thereby the farmer can alone be enabled to pay a high rent. * * And, finally, in consideration of naked fallows paying better than drilled crops, &c. * * Peculiar advantages are supposed to be afforded by exposure of every particle of soil to the influence of air, and to the heat of the sun. Also, by the destruction of weeds and insects. * * The destruction of the poisonous properties of the excrements of plants. * * By having the whole summer to cultivate, thereby rendering mechanical force unnecessary, and so forth." Professor Low says, "One reason for the adoption of the summer fallow on stiff clays is, that it affords the best preparation for Wheat, which is the most valuable of our cereal productions." But notwithstanding all that has been brought forward in support of this long established custom, I cannot think the arguments to establish their pre-eminence by any means conclusive, I shall, therefore, endeavour to show you, from the practice of approved husbandry, from my own observation, and from the light of science, that the bare summer fallow is not the most advantageous method of preparing land for corn, and that it would be better laid aside altogether, in effecting which I shall rest the basis of my argument upon the supposition that the great essentials of all good farming—thorough draining and subsoil ploughing—have been effectually carried out, and this leads me to consider, in the second place, whether the supposed advantages of bare summer fallowing will stand the test of investigation. I shall commence by asking the question, Does the exposure of the bare soil to the action of the air and sun produce the beneficial results stated? I have no doubt that great advantage is derived by exposure of the soil to the influence of the frost, air, and rain, as I shall afterwards endeavour to show, but on the other hand I decidedly think the benefits arising from a scorching sun, during the summer months, extremely questionable. Professor Liebig says, "The careful and frequent working of fallow land will accelerate and increase the disintegration, but for the purpose of culture it is quite the same, whether the land is covered with weeds or with a plant which does not extract the potash of the soil. The culture of Potatoes or Turnips will not impair the fertility, because they require no silica." If you refer to Rham's "Dictionary of the Farm," you will find that, after an extraordinary thick crop of Beans in Sussex, no less than five quarters of Wheat per imperial acre were produced. Mr. Malu, of Chelsea, advocated the shading of the land from the heat of the sun in consideration of all the rich juices of the manure or natural decomposing vegetable matter, being evaporated, and asks why it is that one good thick standing crop is always followed by another? Why let Wheat is better when the Clover has been mowed twice than it is when depastured? And why the land is always found to be in better heart after a heavy green crop than after a white one? The answer is, because the soil has been completely shaded from the sun. If a heap of stones be suffered to lie on a bare fallow throughout the summer, and be not removed till seed time the spot will not only be visible by a much stronger growth of corn in the first year, but for several years afterwards. And this must not be attributed to any chemical effect produced by the stones, for the very same effect was produced where, inadvertently, an old wooden door had been left upon a fallow during the summer. If you read Mr. Dudgeon's essay printed in the Royal English Agricultural Journal, you will find the following quotation:—"Wide drills, besides causing considerable waste of ground, prevent the land acquiring the benefit of that fertility which accrues from a complete and close covering." Mr. Jackson, also, whose prize essays you have probably read, in speaking of the Turnip as a fallow crop in cleaning the land from weeds, says, "The leaves being large and spreading afford a shade, which retains the moisture, and tends to decompose any vegetable matter in the ground." Now, gentlemen when you remember that the moisture of the atmosphere and carbonic acid are two of the principal agents in causing the degradation of the mineral properties of the soil, you will see that Mr. Jackson's assertion carries weight with it. Mr. Bailey, in his survey of Durham, 36 years ago, disputed the renewed fertility of dry soils by summer fallowing, alleging, "that experience has proved they can bear a crop of Turnips of considerable value, and after that a crop of Wheat equal, if not superior, to what it would have been from naked summer fallow, and the land left in an equal state of fertility," and concludes by saying, "the restorative fertility must therefore be owing to another cause." And for a moment we shall consider what this cause is. The decreased fertility of soils arises from the alkaline salts and soluble silica being removed by plants, and the object of fallowing is to restore them. * * There is one fallow crop peculiarly adapted to clay soils, which seems to have been nearly lost sight of. I allude to the Cabbage. Certain disadvantages are said to be consequent upon the growth of this invaluable plant, but they should be far more formidable before the farmer should decide upon their prohibition. Last summer, if I mistake not, I saw some Cabbages growing in a field under the management, I was informed, of Mr. James, of Wylam. This is not a new crop. Excellent supplies were produced many years ago, as at Raby; but still, as a regular field crop, they do not make way. Chopped Bean straw, well harvested, mixed with Cabbages, or Swedes, passed through the Turnip slicer, have, by experience, been found most nourishing food for cows, oxen, and horses, and these are all fallow crops for strong land. The plan adopted by the Earl of Lovelace, of introducing a row betwixt the drills of Beans, might be pursued, I fancy, with great advantage, particularly on small strong land farms near large towns. The objection of the injury done to the land in carting off the Turnip crop has also been brought to bear more powerfully against the Cabbage: but I should grow the Cabbage as an auxiliary crop, not looking to it at all when the land was wet, following the plan of storing the Turnips, by which this evil would be remedied. With respect to fallowing, as a relief to Turnip soils, there is very much truth in what has been adduced relative to the exhaustion of the soil by the too frequent repetition of Turnips and other crops, but whether fallowing be the best means of restoring fertility or not may be questioned. I shall call your attention to another method, which proved perfectly successful, and was practised on the farm of Saughton, three miles from Edinburgh. The system of farming upon it was of the most liberal description, and for a number of years, Mr. Dods, the tenant, found the happiest results from his liberality. His farm being conducted on the four-shift rotation, at length gave way, and in spite of the most liberal manuring, became more and more unproductive. Attached to a system which had made his fortune, he thought of no change to cure the evil, and at the end of his tack, against the wish of the proprietor, he gave up his farm in disgust. Mr. Binnie, an opulent grazier, got the farm on lease, and with all expedition laid it down to pasture. Nothing could exceed the produce of Grass, and when again broken up for tillage, all the fertility which his predecessor had experienced was fully remixed. It is alleged that land is left in infinitely better condition after summer fallow than after any other preparation; that it is the best preparation for Wheat, &c. But upon this point, as upon many others, farmers are at issue. It were natural to suppose that when the fallowing of land was carried to its greatest extent the Wheat crop must have been very abundant, and that the land must have been kept remarkably clean; but the Rev. Mr. Rham tells us a very different story. In his "Dictionary of the Farm," you will find that "four times the seed was a full average for corn crops, and the land was overrun with weeds after a single crop." Hence, it was not an uncommon practice to have fallow every other year, and this was considered a superior system. "Beans," said the late Mr. Young, "after Clover, is most excellent husbandry, and preferable to sowing Wheat on the bare summer fallow, which does better after Beans, and also enables the farmer to get two profitable crops instead of one." Dr Charles Stuart, near Edinburgh, during 14 years, never once had recourse to summer fallowing during that period; he produced four crops of Potatoes, three of Beans, and seven of Wheat. The Wheat produced was from 32 to 41 bushels per imperial acre. Mr. Woodward, in his speech at Drayton, "wished strongly to impress upon the company how very essential green crops were to the growth of corn." Another person of eminence in the agricultural world said, "By all means let us get as heavy crops as possible of green plants, for thus, most assuredly, shall we chiefly increase the permanent fertility of our lands." Mr. Young, whom I have already quoted, in speaking of the preparation of land for corn, said, "That the land may be cleaned under drilled Beans as well as by a fallow, and the crop succeeded by corn; but if the soil be in such order that this culture is insufficient to cleanse it, then a second crop of drilled Beans should succeed, which will be very profitable husbandry, and cannot fail to bring the land into order." So far as naked fallows paying better than drilled crops, I cannot see any reason why such should be the case. The same author, in his direction to young farmers, upwards of 40 years ago, said, "If the spirited husbandman calculates the expense of a summer fallow, and also the account of a drilled Bean crop, he will find the necessity of this culture," he calls, even in those days, fallowing for Wheat an unprofitable practice—a practice the well informed husbandman will, after his first year, but rarely have recourse to. Mr. Blacker, in his invaluable little treatise on small farms, says, "Green crops are more profitable than corn crops when consumed by cattle house fed. Another reason assigned is, that little more than half the quantity of manure is required. The Rev. Mr Huxtable is of opinion that farms should, as much as possible be made self-supporting; and I think that gentleman has already done much to show that they may be made so. Mr. Blacker shows very clearly that the ground required in pasture to feed a cow during the summer only would, if under green crops, feed three the whole year round; and that the manure produced by one of these cows, house-fed, and well bedded, would be fully equal to that produced by three cows pastured in summer, and fed in winter upon dry hay or straw; thus making it appear that, by breaking up a given quantity of pasture, and substituting green crops, that nine times the amount of manure may be obtained. *The effects consequent upon fallowing.*—Want of profitable employment to a vast number of labourers is not the most unimportant, for if you will follow the various branches that shoot out from this root, you will be surprised how far and wide they spread. Increased employment for the labouring community might be obtained in rich abundance, with great profit to the landowner, by improving the estates in this favoured country. On Whitfield farm, the property of the Earl of Ducie, previous to improvement, only three men, two women, and one boy were employed. After the improvements, twelve men, nine women, and five boys. On the Rev. Mr. Huxtable's farm, after completion of improvements, the labourers constantly employed were increased four-fold. On these farms I fancy you will have some difficulty in finding a fallow field, for certainly the bare fallow affords no means for furthering the object under notice. Another consequent evil—insufficient stock to supply the demand of the people, followed by importations of foreign cattle. In the year 1847 there were imported into this country—27,811 bulls and oxen, 35,135 cows, 154,827 sheep. If you refer to pp. 17 and 18 of Mr. Huxtable's lectures on manures you will find a very ingenious calculation, the result of which is to show the comparative value of the dung of a cow for one year, with guano, or money—and it appears that 8*l.* is the sum, provided everything be saved. But, in order that we may not overrate the value, we shall put it down at 5*l.* per head per annum, and take, in round numbers, 10 sheep to a bullock. I have taken no notice of either pigs or calves, which properly ought to have appeared.

Cows, oxen, &c. ...	62,949
Sheep, 10 to a bullock	13,652
Total	76,601
Or, adding the trifling fraction of	3,399 for pigs and calves.
Making the total . .	80,000 oxen, which at 5*l.* per head 5 for manure.
Leaves . .	£400,000

Making it appear that, in the year 1847 at the lowest average, that enormous sum was lost in manure alone, and turned to good account by the enterprising foreigner. Over and above this, in the same year, 9,456,677 quarters of various kinds of corn were imported. *From the Newcastle Chronicle of May* 11.

Reviews.

Stable Economy: a Treatise on the Management of Horses, in relation to Stabling, Grooming, Feeding, Watering, and Working. By John Stewart, V.S., &c. W. Blackwood and Sons.

This is the fourth edition of a work originally published in 1838, and likely to remain a standard authority on the subjects of which it treats for many years to come. The reader will find in it full instructions on stable economy in all its departments. The construction and ventilation of stables—the character and education of stable men and boys—the nature of their work as regards the grooming, decoration, and general treatment of horses—the habits and vices of horses, and the accidents to which they are liable—the nature, composition, and preparation of their food—their fitness for work, and the best method of keeping them in the best working condition—and the management of diseased and defective horses, are all fully discussed. There is no better book for the instruction of the groom.

Miscellaneous.

Profit from Artificial Grasses.—As a proof of the value of the improved Grasses, an instance may be mentioned of a field of 4*l.* 2*r.* 3*p.* of thin, poor, black land, which had been much impoverished by over-ploughing, and would not have been worth more than about 25*s.* the acre for rent, on which the following profit was made the first year after being laid down in good order with proper Grasses. Twelve lambing ewes were bought in March at 15*s.* each, and were disposed of as follows:

13 Lambs and 1 ewe sold in July at 21*s.* each . .	£14	14 0
10 Ewes in September sold at 20*s.* each	10	0 0
3 Young horses to pasture from 5 to 6 weeks in June, &c.	3	5 0
7 Young cattle in October	0	15 0
Profit	28	14 0
Deduct for ewes bought at 16*s.* each ... £9 12 0		
Former value for rent at 1*l.* 5*s.* per acre ... 5 4 0		
Taxes 3*s.* per acre, or for 4*a.* 2*r.* 3*p.* ... 0 19 9	15	0 9
Clear profit above rent	£13	4 3

The New Husbandry, by Law. Rawsterne.

Mode of Hatching Eggs.—The hatching-house was built at the side of the cottage, and was a kind of long shed with mud walls, and thickly thatched with straw. Along the ends and down one side of the building are a number of round straw baskets, well plastered with mud to prevent them from taking fire. In the bottom of each basket there is a tile placed, or rather the tile forms the bottom of the basket; upon this the fire acts, a small fire being below each basket. Upon the top of the basket there is a straw cover which fits closely, and is kept shut whilst the process goes on. In the centre of the shed are a number of large shelves placed one above the other, upon which the eggs are laid at a certain stage of the process. When the eggs are brought they are put into the baskets, the fire is lighted below them, and an uniform heat kept up, ranging as nearly as I could ascertain, from 95° to 102°; but the Chinamen regulate the heat by their own feelings, and therefore it will of course vary considerably. In four and five days after the eggs have been subject to this temperature, they are taken carefully out, one by one, to a door, in which a number of holes have been bored nearly the size of the eggs; they are then held against these holes, and the Chinamen look through them, and are able to tell whether they are good or not. If good they are taken back, and replaced in their former quarters, if bad they are of course excluded. In 9 or 10 days after this, that is about 14 days from the commencement, the eggs are taken from the baskets and spread out on the shelves. Here no fire heat is applied, but they are covered over with cotton and a kind of blanket, under which they remain about 14 days more, when the young ducks burst their shells and the shed teems with life. These shelves are large and capable of holding many thousands of eggs; and when the hatching takes place, the sight is not a little curious. The natives who rear the young ducks in the surrounding country, know exactly the day when they will be ready for removal, and in two days after the shell is burst, the whole of the little creatures are sold and conveyed to their new quarters.—*Fortune's Wanderings in China.*

Calendar of Operations.

MAY.

Berwickshire Merse Farm, *May* 11.—Since last report we have been planting Potatoes on Grass land, manured with 3 cwt. of guano per acre, threshing Beans and Oats; and preparing land for Turnips, for which the weather is most favourable. We have sent the fat sheep to the market. *J. B.*

East Lothian Farm, *May* 12.—The weather, though cold, has been favourable for preparing Turnip land. We have been employed during the week making up drills and carting manure, spreading and covering the same, and sowing Swede Turnips. Wheat is looking well, also early sown Oats; late sown are not looking so healthy, owing to the continued cold weather. From the same cause Grass has made little progress, consequently stock has had but a scanty bite. *M.*

Galloway Farm, *May* 14.—The preparation of the Turnip land is now actively proceeded with. The weather having been very favourable in the early part of April, the whole of the green crop land was then turned over, and, being so long exposed to the cold dry weather, it works very fine and is easily cleared of weeds. We began ten days ago to sow early white Turnips, and are now going on with Dale's Hybrid and Yellows, all for early feeding to the dairy stock as soon as the Grass begins to fail in September. The first sown are now in fine braird. These early kinds we are sowing on the clay land, and hope to get them off in good time for Wheat in autumn. The land has been three times ploughed in spring, besides the winter furrow. It is manured with 32 loads of good dung, 4 cwt. of Peruvian guano, and 10 bushels of bones per imperial acre—the guano and bones sown by the hand on the top of the dung. The cows are now on these pastures during the day (where they have now a full bite), in the house at night. They are getting Bean-meal and draff twice a day, which adds very much to the richness of the milk. The hoggets have been washed and will be clipped in a day or two. The horses are now getting Rye-grass hay, two feeds of Oats, and in the evening a feed of boiled Beans or Barley daily. The pigs are fed on whey and distillery wash, with 1 lb. of Bean-meal per head mixed with it, besides their privilege of rooting out what they can get in the inclosed dung court, to which the whole refuse of the farm is carried. The grain at present daily consumed on the farm by the stock is as follows:

16 Horses, 14 lbs. each .. .	224 lbs.
90 Milk Cows, 4 lbs. each ...	360 ,,
28 Pigs, 1 lb. each ...	28 ,,
Total	612 lbs.

Besides a quantity of light grain which is daily given to the poultry. I have not time to-day to reply to the remarks of your correspondent as to the relative expense of buildings for box or stall-feeding, but will probably do so next week. *J. C.*

Lammermuir Sheep Farm, *May* 14.—The lambing season is now nearly over. Not for 22 years has there been so severe a snow-storm in the middle of April as that which ushered in the first week of the hill lambing season of 1849. Fortunately the ground was not frozen when the snow fell, and, having been unusually green in March, the sheep were always able to obtain some food, though some of them required the assistance of hay. Contrary to general expectation, though the ewes lost condition greatly, there has been little or no loss of lambs in this district. Indeed, we consider it to have been, hitherto, the most successful lambing we have ever had. Grass is certainly not over abundant, the cold, parching, east winds which have prevailed for nearly three weeks having greatly retarded vegetation; but, as rain has now begun to fall, we expect abundant pastures

soon. One "hirsel" of Cheviot lambs were castrated and docked this morning. With the exception of the black-faces and the very youngest of the other breeds, we purpose having all the rest operated upon this week, weather permitting. Potatoes were all planted last week. This is much later than we intended, but the snow melting had so thoroughly soaked the ground, that we could not with safety begin sooner. We are now preparing ground for Swedes, and hope to have them sown by the 22d inst. The Oats look well, and have been all rolled. *A Lammermuir Farmer.*

Notices to Correspondents.

A Wash for Sheep *An Irish Farmer.* Biggs's composition for dipping is very useful, and not very expensive. You cannot expect to get rid of a troublesome and loathsome disease without some trouble and expence. You will find an useful article on scab in our last number. *W. C. S.*

Box-feeding *E.* Horses have been box-fed successfully, and though we do not speak from experience, we believe you may safely try the experiment. - *Whitmilliensis.* Your criticism is just, but, under the circumstances, we think it need not be published.

Charcoal: *J H Gurney.* It is a good manure in all cases where luxuriant growth is desired, but it will not suffice for the Turnip crop, unless the land be otherwise enriched. Mix the quantity you intend applying with 3 or 4 cwt. of guano per acre, and sow the whole broadcast, before drilling the land up for the seed.

Cumberland Carts: *P H.* Apply to Mr. John Hogg, Keswick.

Fallow Crop: *C B E.* The term is properly applicable to all crops which admit of the land being thoroughly cultivated during their growth. Beans are more a fallow crop than Peas. About the pamphlet, see past numbers, or ask any bookseller.

Fences: *F A.* We have in a similar case to your's approached within 7 yards of the *butt* of a large Sycamore without any injury to the tree, and, in doing so, severed two or three roots of at least an inch in diameter. We have examined the roots of several trees to-day, and find them run 5 or 6 yards from the stem before they decreased to an inch in diameter. Those trees are about 7 feet in circumference, and, if it were a case of necessity, we should not hesitate in cutting a sunk fence at a distance of 7 yards from the stem. The Sycamore does not appear to be so readily injured as some other trees by a mutilation of its roots. *E.*

Heap: *Ross in Usk.* Your heap will rot more rapidly if all that liquid manure be thrown over it, and it be turned twice or thrice, than if you employ lime. Lime may be used on the *land*, some months before or after you apply this compost, but not along with the compost. Is the note about Mr. Boggis' boxes for publication?

Italian Rye grass: *J F H.* The produce altogether depends on the season and treatment. In wet seasons, where the land is manured after every cutting, four and even five cuttings have been taken in the season, each weighing probably 5 or 6 tons; and a quantity of 25 tons of green food is equal to the maintenance of three or four oxen, according to their size, for 150 days.

Maize *Derbyshire.* The enquiry was made last week.

Rural Chemistry. 2d Edition revised and enlarged, by Edward Solly, Esq., may be had at the office of this Paper, and of all Booksellers. Price 4s 6d.

Spade Husbandry: *J H Brooks.* There is no work of sufficiently detailed information on the subject. A pamphlet by Dr. Yelloly is frequently quoted as an authority.

Superphosphate. *J H.* We can recommend it. See page 25. It is used at the rate of 3 or 4 cwt. per acre, broadcast, before drilling the land up for Turnips.

The Best Management of a Cow: *C L.* Gentle usage. *W. C. S.*

Markets.

COVENT GARDEN, May 19.

The weather having become favourable, Vegetables are more plentiful. Fruit has altered little since our last account. A few Cherries have made their appearance. Pine-apples fetch from 6s. to 10s. per pound. Hothouse Grapes are good and plentiful. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, young Turnips may be obtained at from 1s. to 3s. a bunch, and Carrots at from 9d. to 2s. Broccoli is sufficient for the demand. Asparagus, French Beans, Rhubarb, and Seakale are still dear. A few green Peas from Cornwall have made their appearance. Potatoes are dearer. New Potatoes fetch from 6d. to 2s. per lb. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Gardenias, Lily of the Valley, Cinerarias, Tropæolums, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Chestnuts, p. peck, 4s to 7s
Grapes, hothouse, p.lb, 6s. to 10s	Almonds, per peck, 6s
— foreign, p. lb., 2s to 3s	— sweet, per lb., 2s to 3s
Strawberries, p. oz., 6d to 1s	Walnuts, p. 100, 1s 6d to 2s
Apples, dessert, p. bsh., 6s to 12s	— p. bush., 16s to 24s
— kitchen, p. bsh., 4s to 8s	Nuts, Bar., p. bush., 20s to 22s
Oranges, per doz., 1s to 2s	— Filb., p. 100 lbs., 60s to 100s
per 100, 6s to 16s	— Cob, p. 100 lbs., 90s to 150s
Lemons, per doz., 1s to 2s	— Brazil, p. bsh., 12s to 16s
— per 100, 7s to 14s	

VEGETABLES.

Cabbages, p. doz., 9d to 1s 6d	Onions, p. bunch, 2d to 4d
— red, p. doz., 6s to 12s	— p. bush., 6s to 7s
Greens, p. doz bunches, 1s 6d to 3s	— Spanish, p. doz., 1s 6d to 4s
Broccoli, white, p. bun., 1s to 2s	— pickling, p. bt. sieve, 1s 6d to 3s
— brown, per bundle, 6d to 1s 3d	Shallots, per lb., 6d to 10d
Sorrel, p. bt. sieve, 9d to 1s	Garlic, per lb., 6d to 1s
Potatoes, per ton, 100s. to 280s	Artichokes, Jerusalem, p. half sieve, 9d to 1s
— per cwt., 5s to 14s	Lettuce, Cab., p. sc., 4d to 9d
— per bush., 4s to 7s	Cos do., 6d to 2s
Turnips, p. doz. bun., 1s to 2s	Endive, per score, 1s to 2s 6d
Red Beet, per doz., 1s to 2s	Mushrooms, per pottle, 6d to 1s 3d
Horse Radish, p. bdl., 1s to 6s	Small Salads, p. pun., 2d to 3d
Asparagus, p. 100, 1s 6d to 8s	Fennel, per bunch, 2d to 3d
Seakale, p. punnet, 2s to 3s 6d	Savory, per bunch, 2d to 3d
Rhubarb, p. bundle, 4d to 1s 6d	Thyme, per bunch, 2d to 3d
French Beans, p. 100, 2s to 3s	Watercress, p doz. bun., 6d to 9d
Cucumbers, each, 4d to 2s	Parsley, p. bt. sieve, 1s 6d to 3s
Leeks, per doz., 6d to 1s	Roots, p. bdle., 1s to 1s
Celery, p. bundle, 1s to 2s	Marjoram, green, p bun., 9d to 1s
Radishes, p. 12 hands, 4d to 8d	Mint, green, per bunch, 3d to 4d
Carrots, p. doz. bun., 5s to 6s	
Spinach p. sieve, 1s to 2s	

HAY.—Per Load of 36 Trusses.

SMITHFIELD, May 17.

Prime Meadow Hay	70s to 80s	Clover	60s to 95s	
Inferior ditto	50 65	New Clover	— —	
Rowen	50 60	Straw	27 32	
New Hay	— —		J. Cooper.	

CUMBERLAND MARKET, May 17.

Prime Meadow Hay	75s to 84s	Inferior	50s to 80s	
Inferior ditto	55 65	New Clover	— —	
New Hay	— —	Straw	28 32	
Old Clover	90 95		Joshua Baker.	

WHITECHAPEL, May 17.

Fine Old Hay	68s to 72s	New Clover	78s to 84s	
Inferior ditto	45 55	Inferior ditto	55 65	
New Hay	68 68	Straw	26 30	
Old Clover	92 100			

The trade very dull at the above prices.

HOPS, Friday, May 18

Messrs. Pattenden and Smith report that there is no alteration to notice either in demand or prices.

POTATOES.—Southwark, Waterside, May 14.

The Committee report that notwithstanding the few arrivals coastwise, we have such an abundant supply from the Continent that we have to quote lower prices than last week. The following are this day's quotations.—Yorkshire Regents, 180s. to 220s.; Scotch Whites, 90s. to 100s.; Cups, 140s. to 150s.; French Cups, 100s.; Dutch, 90s. to 100s.; Belgian, 80s. to 90s.

SMITHFIELD, Monday, May 14.

There is a considerable decrease in the supply of Beasts, and the dead markets being clear, trade is brisk at an advance of about 4d. per 8 lbs. The number of Sheep is, for the time of year, a fair average, the demand, however, having increased, the trade is active at advanced rates. Lamb meets with a ready sale at fully late quotations. Choice Calves are rather dearer, but middling ones are a heavy trade. From Holland and Germany there are 170 Beasts, 820 Sheep, and 75 Calves; from Norfolk and Suffolk, 2000 Beasts; and from Scotland, 200.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	6 to 3	10	
Best Short-horns	3	4 — 3	8	
2d quality Beasts	2	8 — 3	0	
Best Downs and Half-breds	4	4 — 4	6	
Ditto Shorn	3	8 — 4	0	

Per st. of 8 lbs.	s	d	s	d
Best Long-wools	4	0 to 4	4	
Ditto Shorn	3	4 — 3	8	
Ewes & 2d quality	3	4 — 4	0	
Ditto Shorn	2	10 — 3	4	
Lambs	5	4 — 6	0	
Calves	3	8 — 4	10	
Pigs	3	8 — 4	8	

Beasts, 3002; Sheep and Lambs, 21,020; Calves, 180; Pigs, 230.

Friday, May 18.

We have more Beasts than of late, but not so many as was expected. Trade is heavy, at a reduction of fully 2d. per 8 lbs. Monday's advance in the price of Sheep has brought a large number to market this day; consequently quotations are lower, and they cannot all be sold. Lamb trade is also worse from the same cause; it is difficult to make 6s. of the very choicest, and middling ones are unsaleable. The supply of Calves is very large. A great many foreigners and middling kinds make low prices, and 4s. 6d. is an extreme quotation for the very best. From Holland and Germany we have 31 Beasts, 210 Sheep, and 206 Calves, from Scotland, 200 Beasts; and 130 Milch Cows from the home counties.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	4 to 3	8	
Best Short-horns	3	2 — 3	6	
2d quality Beasts	2	6 — 2	10	
Best Downs and Half-breds	4	0 — 4	4	
Ditto Shorn	3	6 — 3	10	

Per st. of 8 lbs.	s	d	s	d
Best Long-wools	3	10 to 4	2	
Ditto Shorn	3	2 — 3	6	
Ewes & 2d quality	3	2 — 3	10	
Ditto Shorn	2	8 — 3	2	
Lambs	5	0 — 6	0	
Calves	3	4 — 4	6	
Pigs	3	8 — 4	8	

Beasts, 1038; Sheep and Lambs, 10,780; Calves, 412; Pigs, 260.

MARK LANE.

Monday, May 14.—There was an exceedingly small supply of English Wheat to this day's market, and scarcely any spring corn. The value of the former remains unaltered from last week. Foreign meets a good retail inquiry at our extreme quotations.—Fine malting Barley fully supports late prices, but the demand for grinding qualities being limited, a slight concession was necessary where a clearance was required.—Beans must be written 1s. per qr. higher.—Peas are fully as dear.—Oats are a slow sale, but we do not alter our quotations.

Friday, May 18.—The supplies of English grain this week have been small, but we have to report an arrival of 17,650 qrs. of foreign Wheat. This day's market was thinly attended, and the few buyers present being unwilling to pay the prices of Monday, but little business resulted; we write the value of all articles nominally the same as on that day.—Indian Corn arrived on the coast is in demand at full prices, say 34s. for Galatz.—Barrel Flour is taken at 23s. to 24s. 6d., according to quality.—Since the 11th inst. the temperature has been warmer, and rain very general; the latter appears to be considered very beneficial to the growing crops in Scotland, but here it is believed to be injurious to the Wheat plant. Supplies both of home and foreign produce have fallen off, which has given more confidence to the trade, and former prices have been supported with an improved demand; in some of the country markets rather more money has been obtained. The Belgian markets are inanimate, and prices nominally unaltered. In Holland they are barely supported. No alteration appears to have occurred in the blockaded ports.

Liverpool, Friday, May 18.—We have a continuance of moist growing weather, and our supplies are good. With a moderate attendance of buyers to-day, there was a more animated demand for Wheat at 1d. per bushel advance. Flour 3d barrel dearer, but sales not so extensive. Fine Oats attracted little notice, but other descriptions moved more freely.—Oatmeal dull, without change in value.—Barley, Beans, and Peas taken in retail at full prices.—The demand for Indian Corn less active, and not over the extreme rates of Tuesday obtainable, the partial advance made in the interim being lost.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas
Mar. 31	46s 9d	28s 10d	17s 1d	26s 4d	28s 2d	31s 6d
April 7	46 5	28 9	16 9	26 5	28 1	29 6
— 14	44 3	28 6	17 0	23 1	28 5	30 11
— 21	44 5	28 8	16 8	22 4	28 11	28 9
— 28	44 0	28 10	17 2	27 5	29 3	29 9
May 5	44 9	28 11	17 6	25 4	29 8	30 1
Aggreg. Aver.	45 0	28 9	16 11	24 10	28 9	30 2
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Mar. 31.	Apr. 7.	Apr. 14.	Apr. 21	Apr. 28.	May 5.
46s 9d	...	...	...	...	...	...
46 0	...	...	...	...	...	...
44 9	...	...	...	...	...	...
44 5	...	...	...	...	...	...
44 5	...	...	...	...	...	...
44 3	...	...	...	...	...	...

PRICES CURRENT.	London. May 7. qr.	London. May 14 qr.	Liverpool. May 8. 70 lbs.	Liverpool. May 15. 70 lbs.	Wakefield. May 4. qr.	Wakefield. May 11 qr.	Boston. May 9. qr.	Boston. May 16 qr.	Birmingham. May 10. 62 lbs.	Birmingham. May 17. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	40 to 42	40 to 42	6 3 6 8	6 3 6 8	43 to 47	41 to 47	38 to 45	38 to 46	5 9 6 2	5 10 6 3
,, white ...	45— 46	45—46	6 9 7 3	6 9 7 3	43—48	43 -51	42—48	45—50	6 1 6 6	6 3 6 8
Old, red ...	42— 46	42—46	6 6 6 9	6 6 6 9	42—44	42—44	—	—	5 10 6 3	6 0 6 4
,, white ...	48—52	48- 52	7 0 7 6	7 0 7 6	-50	—50	—	—	6 0 6 8	6 2 6 9
Foreign	36- 56	36--56	4 6 8 3	4 6 8 3	39--51	39—51	—	—	5 2 7 0	5 2 7 2
			480 lbs.	barrel						
Rye—New ...	22- 24	22—24	--	—	—	—	—	—	—	—
Foreign...	22—23	22 - 23	—	—	—	—	—	—	—	—
Foreign meal	67.—71	67.—71	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley—										
Grinding ...	22 - 25	22—25	—	—	22—23	22—23	24—26	24 - 26	23—25	20—25
Malting... ...	25- 29	25—29	30s— 32s	30s—32s	27—32	27—32	28—30	28—30	29—33	29—33
Foreign.. ...	19—29	19—29	—	—	22—28	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39 42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White.	17- - 26	19—26	2s 9d 3s 0d	2s 9d 3s 0d	—	—	14—19	14—20	18—30	18—30
Black ..	16—22	16- -22	2 5 2 8	2 5 2 8	--	—	—	—	17—18	17—18
Foreign	15—20	15- - 20	2 4 2 7	2 4 2 7	- -	—	—	—	—	—
			qr.	qr.		qr.				
Peas—Boilers	26—32	26—32	34s- -	34s—	28—32	28—32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23 - -26	23 - 26	27 —28s	27 —28s	—	—	—	—	11—12	11—12
Foreign ...	24—33	24- -33	30 —33	30 —33	—	—	—	—	—	—
Beans—										
New, small ...	21—32	22—28	30 —33	30 -33	29—31	29—32	28—32	28—32	11—14	11—14
Longpods, &c....	28—34	—	—	—	—	—	—	—	—	—
Old	—	—	32 —34	32 —34	35—36	35—36	34—36	34—36	14—16	14—16
Foreign ...	21—36	21- - 36	24 —32	24 —32	25- -27	26—28	—	—	11—13	10—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	37—42	37- 42	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9l. 7s	9l. 7s	7l. 12s	7l. 12s	—	—	—	—	—	—
Foreign ...	6l.—7l.	6l.—7l	—	—	—	—	—	—	—	—
Indian Corn—	26—30	26—30	32s—35s	32s—35s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour —	36—44	36—44	32—37	27—35	—	—	32—38	32—38	36—38	32—38

Weekly Averages and Imports.	Aver. May 15	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ..	47 4	17650	46 9	8420	46 2	8768	43 8	1921	—	7036
BARLEY ...	31 3	1230	28 11	50	30 0	1875	—	—	—	776
OATS... ...	18 10	7820	17 6	1505	18 4	1184	14 2	544	19 5	—
RYE	24 0	—	25 4	—	—	—	—	—	—	—
BEANS ...	28 3	—	29 8	3305	30 3	249	31 11	211	—	178
PEAS... ...	29 2	—	30 0	16	31 5	99	—	—	—	—
Signed	KINGSFORD and LAY.		SEGAR and TUNNICLIFFE.		SANDARS and DUNNS.		THOMAS WRIGHT.		J. and C. STURGE.	

Sales by Auction.

DALSTON NURSERY.

To Noblemen, Gentlemen, Nurserymen, Florists, and others.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Smith, to sell by public Auction, on the premises, Dalston, Middlesex, on MONDAY, May 21st, and following day, at 12 o'clock precisely, in consequence of the land being required by the London and Birmingham West India Dock Junction Railway Company, the valuable GREENHOUSE PLANTS, consisting of choice Azalea indica, Pimeleas, Epacrises, Correas, Metrosideras, Neriums, Begonias, Erythrinas, Hydrangea japonica, Daphne indica rubra, Myrtles, Acacias, Heliotropes, Cactus, Geraniums, Chrysanthemums, Fuchsias, Verbenas, large Aloes, Mesembryanthemums, Magnolias, Wistarias, Roses, Sweetbriars, Clematis, Persian Lilacs, white Brooms, double Furze, &c.—May be viewed two days prior to the sale. Catalogues had, 6d. each (returnable to purchasers), on the premises, at his shop, Covent-garden; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to Public Competition by Auction, at the Mart, Bartholomew-lane, on THURSDAY, May 24, 1849, a first-rate collection of DAHLIAS, the newest varieties of FUCHSIAS, VERBENAS, HEARTSEASE, &c. Also, a choice assortment of GERANIUMS, and other plants in bloom.—May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

MESSRS. PROTHEROE AND MORRIS beg to announce that the Sale of TULIPS, advertised to come off on MONDAY, May 28, at 14, Princes-street, Kennington, will not take place.—Leytonstone, May 19.

CHOICE TULIPS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by the Executrix of the late Mr. G. Jeffery, to sell by Auction, on the premises, Paradise-row, Rotherhithe, on TUESDAY, 29th May, his superb collection of TULIPS, OFFSETS, TULIP-STAGE, CABINETS, &c. This fine collection, made at great expence of money and time, is worthy the prompt attention of Amateurs, Collectors, and the Fancy. PROTHEROE and MORRIS invite their friends to an early inspection of this superb stock, for the purpose of adding attractive flowers to their collections.—May be viewed two days prior to sale. Catalogues had on the premises: of the principal Seedsmen, London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TULIPS.

TO BE SOLD BY PRIVATE CONTRACT, at Park Cottage, Charlton Park, near Cheltenham, on THURSDAY the 24th instant, a Very Choice Collection of TULIPS, containing a very great variety, and of the best sorts, which have taken the proprietor 20 years to collect. May be viewed every day; free to the public. The Tulips will be sold in small or large quantities.

TO BE SOLD, a bargain, an EGG HATCHING MACHINE, adapted for 200 Eggs, on the Cantelonian principle. Those who possess a Farm yard and a good run for Poultry will find the above machine invaluable. It is calculated to produce 2700 head of Poultry annually.—Apply by post to W. S., Post-office, South Lambeth, London.

FARM TO BE LET.

TO BE LET, in the neighbourhood of London, a FARM. No one need apply who cannot command in Stock and Money 2500*l*.—Address, by letter, Alpha, care of the Publisher of the *Gardeners' Chronicle*, 5, Upper Wellington street Strand, London

WANTED TO RENT, in the Midland Counties, a well-situated House, in good repair, with Stabling, good Garden and Offices, for the reception of a gentleman's family with a Farm of about 100 acres. The right of shooting over an extensive manor desirable. Any reader of this Paper knowing of a residence answering the above becoming vacant, would confer a great obligation by directing a line to H. M. W., Post-office, Cheltenham.

APSLEY PELLATT AND Co. (late PELLATT and GREEN), Falcon Glass Works, Holland-street, Blackfriars, have always on hand, Bee Glasses, 1*s.* 2*d.* per lb.; Cucumber Glasses, 1*s.* 6*d.* per lb.; Milk Pans, 18-in., white glass, 5*s.* 6*d* each: Propagating Glasses, white, 1*s* per lb.; do., green, 10*d*; do., condensing, 2*d.* per lb. extra; Grane Shades, 1*s.* 6*d.* to 2*s.* each; Fish-bowls, from 1*s.* 6*d.* each; Wasp and Fly-traps, 10*s.* per gross, or 3*s.* 6*d.* per dozen. By the use of these traps fruit may be preserved from (otherwise certain) destruction.

BLUE PROPAGATING GLASSES—

3-in. diameter,	2*s.* per doz.	6-in. diameter,	3*s.* 6*d.* per doz.
4-in. ,,	2*s.* 6*d.* ,,	7-in. ,,	4*s.* ,,
5 in. ,,	3*s.* ,,	8-in. ,,	4*s* 6*d.* ,,

It being proved both theoretically and practically that blue glass is by far the most effective in propagating plants and in germinating seed, the above are offered at prices which must insure their general adoption.—To be had of EDWARD LACEY, Glass Merchant, 57, Broad-street, Birmingham.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

GLASS.

THOMAS MILLINGTON, 87, Bishopsgate-street-without, London (same side as Eastern Counties Railway Terminus). BRITISH PLATE GLASS, nearly ¼ inch thick, in sizes under 1 foot superficial, 1*s.* 2*d.* per foot; this is the best article for Greenhouses and Garden Frames of every description, as nothing can break it in an ordinary way. Horticultural Glass, in cases of 200 feet, No. 16 oz., 40*s.*; No. 21 oz., 60*s.*; No. 26 oz., 87*s.* 6*d.*; No. 32 oz., 112*s.* each, case included.

Cut Squares, in 100 feet boxes.	Crown.	No. 16 Horticultural.
Sizes under 8 ins. by 4 ins. ..	10*s.* 6*d.* .	12*s.* 6*d.* per box.
6 by 4 ,, 7 by 5 ...	12 6 ..	15 0 ,,
7 by 5 ,, 8 by 6 ..	14 6 .	17 6 ,,
8 by 6 ,, 10 by 8 ..	15 6 .	20 0 ,,

Squares above 10 by 8, in Crown or Horticultural, 2½*d.* to 3*d.* per foot, according to size and quantity. Patent Rough Plate Tiles, ¼ in., 10*d.*; ⅜ in., 1*s.* 3*d* each; do. Slates, ½ and ¾ inch thick. Patent Rough Plate Glass for Skylights, Warehouses, and Floors, ¼ in. thick, 6*d.*; ⅜ in., 1*s.*; ½ in., 1*s.* 2*d.*; ¾ in., 1*s.* 6*d.*; ⅞ in., 2*s.*; 1 in., 3*s.* per foot, in sizes under 5 feet superficial. Lactometers, for testing the quality of milk, 4 tubes, 7*s.* 6*d.*; 6 tubes, 10*s.* complete. Glass Milk-pans, Pastry Slabs, Rolling Pins, and Moss Dishes for Bulbous Plants. Propagating and Bee Glasses. Fish Globes. Gas and Lamp Glasses of every description. Linseed Oil Putty, 8*s.*; White Lead, 20*s.* per cwt. Linseed Oil, Turpentine, Paints, Colours, Varnishes, Brushes, and Tools in great variety.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, have the pleasure to hand their New List of Prices of SHEET GLASS for Cash.

HORTICULTURAL GLASS.

CUT TO SIZE UP TO 40 INCHES LONG.		SHEET SQUARES. In boxes of 100 feet	
16 oz. from 3*d.* to 4¼*d.* per foot.		Under 6 by 4	12*s.* 6*d.*
21 ,, 3½ 5 ,,		6 by 4 and 6½ by 4½ ...	15 0
26 ,, 5½ 7½ ,,		7 by 5 and 9½ by 5½	17 6
32 ,, 7½ 9½ ,,		8 by 6 and 10 by 8	20 0

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS, in sizes not exceeding 5 feet superficial.

¼ thick ... per foot	1*s.* 0*d.*	½-inch per foot	2*s.* 0*d.*
⅜-inch	1 2	1 inch	3 0
½-inch	1 6		

PATENT ROUGH PLATE TILES.

¼ thick ... each	0*s.* 11*d.*	⅜-inch ..... each	1*s.* 7*d.*
½-inch	1 3	¾-inch	2 0

SHEET GLASS TILES AND SLATES.

	16-oz.	21-oz.	26-oz.	32-oz.
Tiles made of Sheet Glass ...	8*d.*	10*d.*	1*s.*	1*s* 4*d.*
Slates, 20 ins. by 10	10*d.*	1*s.*	1*s.* 4*d.*	1*s.* 8*d.*

Slates are kept in stock of the usual sizes, and made to any dimensions.

GLASS MILK-PANS, PROPAGATING AND BEE GLASSES, Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, Lamp Shades, and Lactometers for trying the quality of Milk, 4 tubes 7*s.* 6*d.*; 6 tubes, 10*s.* Self Registering Thermometers for Greenhouses.

HARTLEY'S PATENT ROUGH PLATE GLASS.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—The readers of the *Gardeners' Chronicle* of Saturday, Feb. 24th, must have observed the high terms in which this Glass was spoken of by Dr. LINDLEY. We have re-arranged our list of prices to correspond precisely with those of the Patentee, to which we would beg the attention of the Nobility, Clergymen, Gentry, and others.

In squares under 8 by 6 ... 4½*d.* per foot

8 by 6 under 10 by 8	4½*d.*	10 by 8 under 14 by 10	5*d.*
14 by 10 ,, 1½ foot	5½*d.*	1½ foot ,, 3 feet	6*d.*
3 feet ,, 4 feet	6½*d.*	4 feet ,, 5 feet	7*d.*

A full List of Prices and every information may be had by applying to JAMES PHILLIPS and Co., Horticultural Glass Warehouse, 116, Bishopsgate-street Without, London.

GLASS.

E. AND W. H. JACKSON are supplying SHEET, ROUGH PLATE, and CROWN GLASS for Horticultural purposes, at very reduced prices. BRITISH AND PATENT PLATE of superior manufacture, for Glazing dwelling-houses, for which purpose these articles are now superseding all inferior Glass. ORNAMENTAL GLASS of the newest designs for the decoration of Conservatories, &c. E. and W. H. J. also supply PATENT OPTICAL FLINT GLASS, Thin Glass, Slides and Cells for Microscopic purposes, French Shades, Propagating Glasses, &c. Estimates, Lists of Prices, and every information forwarded on application at their Warehouse, 315, Oxford-street, London.

MIDDLESEX.—SUNBURY WINDMILL, RESIDENCE, COTTAGE, LAND, &c., for investment or occupation

MR. EDWARD RYDE, SURVEYOR, LAND AGENT, &c., is instructed to offer for Sale, by Private Contract, the above valuable FREEHOLD PROPERTY, situate in the vicinity of good roads, and in close proximity to several Stations on two important lines of Railway within 15 miles of London. Full particulars at his offices for the Survey, Valuation, Sale, or Purchase of Landed Property, 14, Upper Belgrave-place, Eaton-square, London.

HAYMAKING SEASON.—Haymaking Machines, with back or reversing action.—MARY WEDLAKE, the Widow of the Inventor and Patentee, begs to acquaint the nobility, gentry, and the public generally, that those HAYMAKING MACHINES, under the name of WEDLAKE'S Patent, are not manufactured by MARY WEDLAKE and Co., but are imitations only, and, although somewhat like in appearance, cannot compare with the genuine ones in durability.

11*b*, Fenchurch-street, opposite Mark-lane.

THE Lightest, Cheapest, and most Efficient Roofing Material is CROGGON'S PATENT IMPROVED ASPHALTE FELT. A House, 40 feet by 24 feet in the clear, may be erected complete, for 17*l.* 17*s* 10*d.* Price of the Felt, one penny per square foot, in rolls 32 inches wide Samples and details may be had by post. A Large stock always on hand, to ensure punctuality. CROGGON and Co., 2, Ingram-court, Fenchurch-street, London.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flowerpots, &c., in boxes, of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole agents in London, G. and J. DEANE, Horticultural Implement Warehouse, 46, King William-street, London-bridge.

MURIOPHOSPHATE.

PONTEY, ROWE AND CO., beg to call the attention of their Friends and Agriculturists generally to the above valuable MANURE, which they continue to manufacture under the inspection of an eminent agricultural chemist. This Manure has been sufficiently tested to enable the Advertisers to say it is equal to any now offered to the public, and in consequence of the favourable testimonials received from a number of gentlemen who have tried it, they have been induced to prepare a large stock, which they can supply immediately in excellent condition.

Among many other communications, the following has been received.

"Old Newnham, Plympton, April 21, 1849 Gentlemen, Having used your Muriophosphate last year in competition with several other manures, I have great pleasure in informing you it proved by far the most valuable. I applied only 2 cwt per acre, with peat ashes, and such was the superiority of the crop of Turnips, that it was awarded the first prize at the South Devon Agricultural Show in December last, where there were 16 other competitors! You may safely recommend the Muriophosphate for the poorest land, as my crop was grown on thin, shelly, rocky soil. I shall require a considerable quantity this season, and hope you are prepared with a large stock of the same quality. I am, gentlemen, your's respectfully, GEORGE COAKER.

"To Messrs. PONTEY, ROWE, and Co.,
Manure Merchants, Plymouth."

P., R., and Co. also manufacture BONE MANURE, half-inch and fine dust, warranted genuine, which they will deliver free to any part in the west of England, or to Exeter, per rail. They have also on hand a supply of Superphosphate of Lime, Peruvian Guano, Nitrate of Soda, Gypsum, Salt, Charcoal, &c. Samples of each may be seen, and prices obtained, on application at the Bone Mills, Drake's-place, or to Mr. PONTEY, Cornwall-street, who will furdish any information required relative to quantity and sorts for various crops and soils.

Drake's-place, Plymouth, May 19.

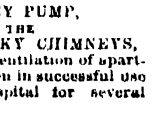
THE IMPROVED HYDRAULIC RAM, fixed by FREEMAN ROE, Fountain Maker, 70, Strand, London, can be worked by a small stream of half-an-inch, where a fall of 2 feet can be obtained. The same RAM, without the aid of a Tank or Cistern, arranged to throw a Jet of Water constituting a Fountain with the head of water beneath.

Engines for deep wells of all kinds, Douche and other Baths, Buildings heated by hot water. Water wheels to work small pumps, from 15*l.* Estimates given for the supply of towns, &c.

A newly-invented Portable Vapour Bath, all complete for 4*l.*

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 400 and 500) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a copy of the testimonials, will be sent on application to WALTER CARSON, 15, Tokenhouse Yard, back of the Bank of England.—No Agents.—All orders are particularly requested to be sent direct.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

BY HER MAJESTY'S  ROYAL LETTERS PATENT.

E. DENCH offers for sale Patent HOT-HOUSES, which he will warrant far superior to all others, in every respect, viz., 1 Span Roof, 28 feet 6 ins. long, 13 feet 6 ins. wide, 40*l.*, Lean-to, 28 feet 6 ins. long, 16 feet 6 ins. wide, 50*l.*, with best timber and 16-ounce glass of large size. Patent Lights for Pits, Frames, &c., requiring no paint, 7*d.*, 8*d.*, and 9*d.*, per superficial foot, according to quantity, &c.

HEATING BY HOT WATER.

CHEAP AND EFFECTIVE FENCE AGAINST HARES AND RABBITS.—Iron Wire Netting of various patterns, to exclude the smallest rabbits, in coils of 50, 100, or any given number of yards, at prices varying from 4*d.* to 1*s.* per yard run. Aviary net at proportionate prices. None sent out without at least two coats of the best anti-corrosive paint. Testimonials of the highest and most respectable character, received during the last 15 years, enable the advertiser to speak with confidence as to the excellence of the article. Apply to Mr. SAMUEL TAYLOR, Barnwood, near Gloucester, or to Robert Woodcock, at the Manufactory, Stoke Ferry, Norfolk.

MESSRS CHURCHILL AND BEANE, of Tonbridge Wells, Kent, having been appointed Superintending Agents for the sale of Dr. Newing's's Agricultural Implements, beg to inform the Public they are now in a position to supply any number, either of the HAND or LEVER DIBBLES, or the HAND DRILL-HOES, CULTIVATORS, and GRUBBERS With the latter implement a man can hoe, stir, and cultivate from 4 to 5 inches deep, 2½ acres a day of Wheat, Peans, &c References can be given to many of our most eminent agriculturists, both as to the efficiency, simplicity, durability, and economy of the above implements. A Prospectus sent on application.

COMFORT FOR TENDER FEET, AND A CERTAIN CURE FOR CORNS AND BUNIONS.

PAUL'S EVERY MAN'S FRIEND, Patronised by the Royal Family, Nobility, &c.

PAUL'S EVERY MAN'S FRIEND, which gives relief on the first application. Paul's Every Man's Friend (Corn Plaister) is generally admitted to be the best emollient application for Corns and Bunions, and is worthy of a trial on the part of those who are afflicted with such unpleasant companions. Testimonials have been received from upwards of 100 Physicians and Surgeons of the greatest eminence, as well as from many officers of both Army and Navy, and nearly 1000 private letters from the gentry in town and country, speaking in high terms of this valuable remedy.

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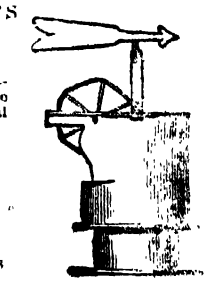

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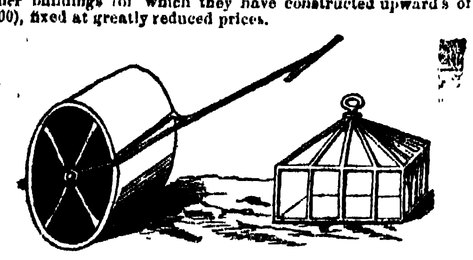

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Garden Syringes,	Flower-bordering,
Watering Pots,	Flower Stands,
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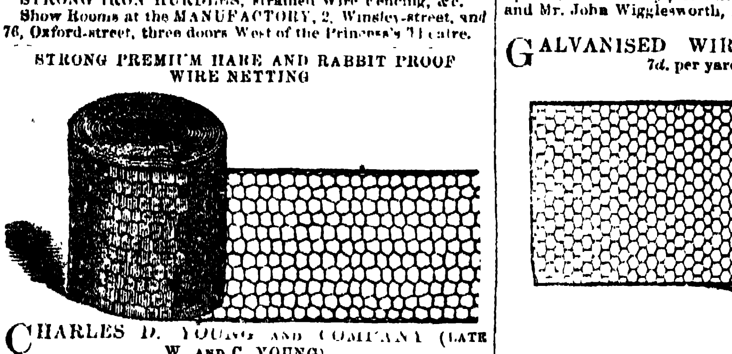

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This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs

PRICES. 18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3	15	0
Do. of 100 yards, 24 ins. wide	.. ..	5	0	0
Do. of 100 yards, 30 ins. wide	.. ..	6	5	0
Do. of 100 yards, 36 ins. wide	.. ..	7	10	0

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3 feet 6 in. wide......	2 13 0	5 feet ditto......	3 10 0
4 feet ditto	2 18 0	5 feet 6 in. ditto .	3 18 0

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MANUFACTURED AND SOLD BY

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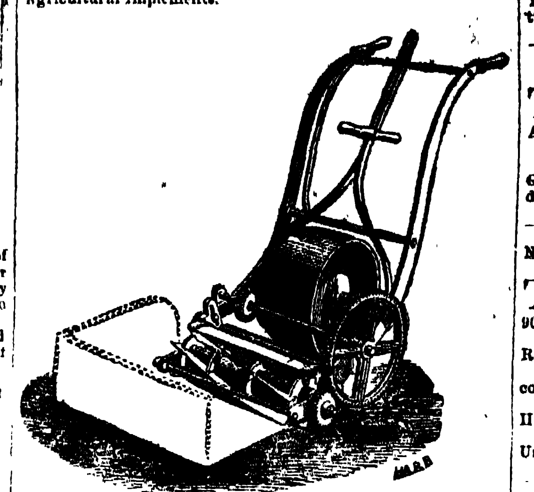

This Machine may be worked by persons who cannot use a scythe. It may be adjusted to cut any length, and leaves a more even and uniform surface than can be produced by the most skilful mower. The Grass may be cut when dry, and may be collected in the box, enabling the gardener to cut his lawns at the most convenient time, and rendering sweeping afterwards unnecessary; while, with the same amount of labour, more than double the quantity of work can be done than with a scythe. Upwards of 3000 of these machines are now in use. They are made of various sizes both for hand and horse power, and the prices this season have been considerably reduced.

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The Machines are also sold by the following Ironmongers: Mr. W. Drury, Castle-street, Liverpool; Messrs. Lister and Lees, Cateaton-street, Manchester; Messrs. Mappiebeck and Lowe, Bull-ring, Birmingham, Messrs J. Nelson and Sons, 47, Briggate, Leeds; Mr. T. Johnson, Leicester; Messrs. Young and Spence, Shrewsbury; Messrs Sandars & Haywood, Derby; and Mr. John Wigglesworth, Market-place, Nottingham.

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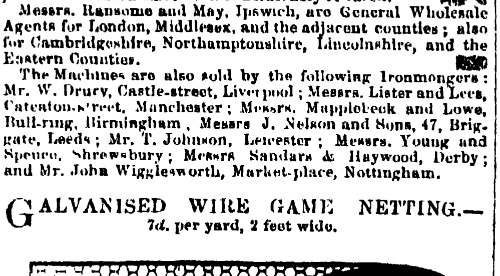

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2-inch mesh, light, 24-inch wide	.	7*d.* per yd.	5*d.* per yd.
2-inch ,, strong ,,	..	9 ,,	6½ ,,
2-inch ,, extra strong ,,	.	12 ,,	9 ,,
1½-inch ,, light ,,	...	8 ,,	6 ,,
1½-inch ,, strong ,,	..	10 ,,	8 ,,
1½-inch ,, extra strong ,,	.	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

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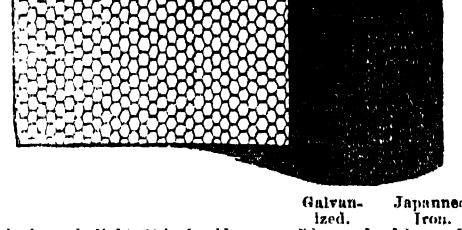

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18 ,, ,, 4½*d.* ,, ,,	36 ,, ,, 9*d.* ,, ,,
24 ,, ,, 6*d.* ,, ,,	48 ,, ,, 1*s.* ,, ,,

Galvanised do., 1*d.* per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1*s.* 3*d.* per running yard; if galvanised, 2*s.* Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1*s.* 10*d.* per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6*d.* per running foot; Flower Trainers, from 3*d.* each; Garden arches, 20*s.* each; Flower Stands, from 8*s.* 9*d.* each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 63, Snow-hill, London.

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AND
AGRICULTURAL GAZETTE.

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No. 21—1849.] SATURDAY, MAY 26. [PRICE 6d.

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ROYAL BOTANIC SOCIETY, REGENT'S PARK.—THE EXHIBITION OF PLANTS in the AMERICAN GARDEN will take place on SATURDAY next, June 2d. Admission by Tickets, to be obtained at the Gardens by orders from Fellows and Members of the Society, price 5s. each, except on the days of Exhibition, when they will be 7s. 6d. each. The Gates to open at 2 o'clock. The Bands of the 1st Life Guards and the Royal Horse Guards (Blues) will attend.

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.
Under the Patronage of Her Most Gracious Majesty the QUEEN.
THE THIRD EXHIBITION this season of the above Society will take place at the ROYAL SURREY ZOOLOGICAL GARDENS, on TUESDAY, the 12th June, 1849. Open to all Exhibitors, when Prizes will be awarded for the following productions, viz., Miscellaneous and Orchidaceous Plants, Pelargoniums, Cape Heaths, Roses, Pinks, Ranunculuses, Calceolarias, and Fruit. In addition to the above, Messrs. Paul and Son, of Cheshunt, offer Extra Prizes to Amateurs for 12 new Roses, to be shown in single blooms. Mr. E. Denyer, of Brixton, ditto to Amateurs, for 12 Roses, in single trusses of one stem. Also the same to Gentlemen's Gardeners. Mr. J. Wood, of Norwood, to Amateurs, for 12 Alpine Plants in flower, in pots. Lists of the Prizes and the Rules of the Society may be obtained from JOHN TAYLOR NEVILLE, Secretary, Ebenezer House, Peckham.

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GARDENERS' BENEVOLENT INSTITUTION.—The SIXTH ANNIVERSARY DINNER in aid of the Funds of this Society, will take place at the London Coffee-house, on FRIDAY next, W. F. G. FARMER, Esq., High Sheriff of Surrey, in the Chair, supported by the following Noblemen and Gentlemen, who have kindly consented to act as Stewards:
The Right Hon. the Earl of ELLESMERE.
The Right Hon. Lord Viscount BRACKLEY, M.P.

The Baron Goldsmid.	Alexander Henderson, M.D.
Captain James Lamont, R.N.	William Hills, Esq.
The Rev. Charles Annesley.	G. W. Johnson, Esq.
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By order, E. R. CUTLER, Secretary.

GARDENERS' BENEVOLENT INSTITUTION.—NOTICE is hereby given, that a SPECIAL GENERAL MEETING of the Subscribers to this Institution will be holden at the London Coffee-house, Ludgate-hill, on WEDNESDAY the 20th June next, to consider a Report from the Committee as to one of the Pensioners who is in the receipt of parochial relief; also for the purpose of Electing TWO PENSIONERS on the Funds of the Charity from among the following Candidates, whose testimonials have been examined and approved of by the Committee:

Name.	Age.	Residence.	Application.
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MARY BROWN	82	London	5th
JOHN SKEATES	69	Brixton	5th
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CHARLES AINSLIE	83	Leyton	3d
JOHN APPLEBY	57	Clapham	3d
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CORNELIUS ROBINSON	70	Blackheath	1st
JOHN SNOW	65	Farnborough	1st

The chair will be taken at half-past 11 o'clock. The ballot will commence at 12, and close at 2 o'clock, precisely. No person will be allowed to vote whose subscription is unpaid on the day of election.
By order, EDWARD R. CUTLER, Secretary,
May 26, 1849. 97, Farringdon-street.

ZOOLOGICAL GARDENS, REGENT'S PARK.—On Whit Monday and Whit Tuesday, ADMISSION SIXPENCE each Person.

AMERICAN NURSERY, BAGSHOT, SURREY,
Near Farnborough Station, South-Western Railway.
JOHN WATERER begs to announce his collection of AMERICAN PLANTS is now in bloom, and may be seen gratis. He has also an Exhibition at the Botanic Gardens, Regent's Park, which may be seen gratis by orders from Fellows of the Society.—May 26.

SELECT BEDDING PLANTS. — 100 CHOICE BEDDING PLANTS for 1l., suitable for planting out in the open border during summer, such as Antirrhinums, Verbenas, Petunias, Salvias, Senecias, Ageratums, Lantanas, Cupheas, Heliotropiums, Anagallis, Alonsoas, Scutellarias, Agathæas, Veronicas, Chænostomas, Calceolarias, Fuchsias, &c., too numerous to enumerate, securely packed in damp moss, carriage paid to London; smaller quantities may be had at 2s. 6d. to 3s. 6d. per dozen, post free, on receipt of the amount with the order, from BENJAMIN W. KNIGHT, Florist, &c., Tivoli, near St Leonard's-on-Sea, Sussex. Printed directions for treatment will be sent with each lot of plants.

CHOICE BEDDING PLANTS.
J. HOLDER AND CO. beg to inform the Nobility, Gentry, &c., that they have on hand a large Stock of strong and healthy Plants for bedding out, consisting of Dahlias, Fuchsias, Verbenas, Petunias, Salvias, Alonzoas, Calceolarias, Antirrhinums, Pentstemons, Cupheas, Scarlet Geraniums, &c., which can be had at 4s. and 6s. per dozen.
Nurseries, Bedford-road, and Wellington-road, Clapham.
N.B. The Trade supplied.

RHODODENDRON JAVANICUM, OF BLUME; OR THE BEAUTIFUL ORANGE-COLOURED RHODODENDRON FROM JAVA.
WILLIAM ROLLISSON AND SONS beg respectfully to inform the Nobility, Gentry, and trade, that they intend sending out, on and after Monday the 18th June, fine healthy plants of the truly magnificent Rhododendron Javanicum, at 21s. per plant, the variety with beautiful orange-coloured flowers, as advertised in the *Gardeners' Chronicle* last autumn.
W. R. and SONS beg to remark that their Collector in Java gathered the seed from which their stock was raised, off plants of the orange-coloured variety, spotted with red, which he had seen in flower some time previously, and on this account W. R. and SONS can positively warrant them to be the genuine plant, as above described. This most beautiful, interesting, and dwarf-growing shrub is admirably adapted for planting out in a conservatory, or growing in pots in a greenhouse or cold frame, and our Collector having found it upon the volcanic range of mountains in Java, 9,700 feet above the level of the sea, there is every reason to believe that it will prove a hardy plant, at least in some part of this country.—Tooting Nursery, near London.

CANVAS FOR SHADING.
WM. HAMILTON, SEEDSMAN and FLORIST, 156, Cheapside, London, begs most respectfully to make it known that he has a large quantity of CANVAS, suitable for Greenhouse Blinds, shading Flower Beds, &c., which he can supply at 4d. per square yard.
W. H. also begs to inform the Public that he can supply Bedding Plants of every description, as also all the new plants coming out this season. DAHLIAS, including show varieties, 6s. per dozen; FUCHSIAS and GERANIUMS, 6s. to 12s. per dozen; HELIOTROPES, VERBENAS, PETUNIAS, and PHLOXES, 6s. per dozen. The above warranted strong and healthy plants.
W. H. has ordered from Holland a large stock, in great variety, of BULBOUS ROOTS, a Catalogue of which will be published in the autumn, and forwarded on application.
156, Cheapside, London.

HART AND NICKLIN, FLORISTS, Guildford, can supply the undernamed Plants:
GERANIUMS. — Desdemona, Orion, Marc Antony, Jehu, Isabella, Rosy Circle, Othello, Magog, Constellation, Mustee, Pluto, Arabella (good healthy plants, well set with flower buds), 10s per doz.
PANSIES. — Marchioness of Lothian, Zabdi, Queen of Whites, 5s. the set.
VERBENAS.—Robinson's Defiance, scarlet, 6s. per doz.; smaller sized plants, 4s. per doz. Mont Blanc, white, 6s. per doz.; White Perfection, 4s. per doz.; Emperor of China, Vulcan superba, Orpha, Felix, La Villageoise (strong plants), 1s. each.

	Per doz.—s. d.			Per doz.—s. d.	
Petunias, of best sorts...	5	0	Dahlias, in good varieties	6	0
Phloxes „ „	5	0	Calceolarias	5	0
Salvias, various	5	0	Scarlet Geraniums	4	0
Anemone japonica, very strong	5	0	Pansies ....4s. to	6	0

FERNS. — 12 DISTINCT SPECIES OF HARDY BRITISH FERNS, collected from their localities, and adapted for either shady border or rockwork: One plant of each species for 3s. 6d.; Two for 6s.; Four for 10s.; or Ten for 20s., delivered in London or forwarded to the country. Address, JOHN LLOYD, 11, Gloucester-street, Vauxhall, London.

FLOWERS OF ALL HUES.
BENJAMIN W. KNIGHT, FLORIST, &c., Tivoli, near St. Leonard's-on-Sea, Sussex, begs to call attention to his select Plants, which he is sending out, securely packed, post free, at the annexed prices per dozen, fine distinct varieties: Verbenas, 2s. 6d.; Fuchsias, 3s. 6d.; Antirrhinums, 2s. 6d.; Pansies, 4s. to 6s.; Petunias, 3s.; Dahlias, Show or Fancy Flowers, 6s.; Chrysanthemums, 4s.; Cuphea platycentra and strigillosa, 3s.; Heliotropium Peruvianum, 3s.; H. Voltairianum, 4s.; Salvias, various, 2s. 6d.; Pentstemons, for bedding, 6s.; Anagallis, blue and scarlet, 3s.; Calceolarias, for bedding, 4s. Also the following choice new kinds, sent out in 1848, distinct varieties, per dozen: Verbenas, 6s.; Fuchsias, 6s. to 9s.; Antirrhinums, 6s.; Petunias, 6s.; Heliotropium Triumph de Liege, 9d. each. Printed directions for treatment will be sent with each lot of plants. Catalogues of his select plants may be obtained on prepaid application, enclosing a postage stamp. A remittance or reference is respectfully requested from unknown correspondents.

DOUBLE DAHLIAS. — Strong plants now ready, choice sorts named, all show and fancy flowers, 6d. each, or 5s. per dozen. The above, together with a Descriptive List of Dahlias, containing all the new and best varieties, may be had of WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch-street (near the Spread Eagle), London.

SPECIMEN ERICAS FOR SALE. — About 500 beautiful large young plants in splendid condition, and about 5000 small bushy plants; also a fine collection of Stove and Greenhouse Plants, and Climbers, at very low prices. The fine, healthy, dwarf, bushy plants at this Nursery, fully testify the superior arrangements of the Horticultural Buildings and Hot Water Apparatuses, &c.
J. WEEKS and Co., Horticultural Architects, &c., King's-road, Chelsea.

TURNIP SEED.—For Sale, 60 bushels of superior Green-top Yellow TURNIP SEED, of the growth of 1848, carefully selected and warranted genuine. For price, &c., apply to Mr. BRYAN CLARK, Farmer, Tuxford, Notts. Any quantity sent to suit purchasers.

NEW VERBENAS SENT OUT IN APRIL, 1849.
PRINCESS ALICE (Wiene's), white, deep cherry centre, large and splendid flower, 1s. 6d.
ROYAL PURPLE (Young's), deep purple, large flower, fine bedding variety.
LORD OF THE ISLES (Barker's), deep rose, fine large flower.
CARDINAL (Barker), dazzling scarlet, habit of old Melindres.
ECLIPSE (Epps'), delicate pink, a broad stripe of deep rose in the centre of the corolla, constant.
BRIDE (Barker's), fine white, sometimes shaded with rose.
DUCHESS OF NORTHUMBERLAND (Barker's), beautiful peach, rose pink centre, primrose eye, large truss, fine.
EPPSII (Epps'), brilliant deep rich red, dark disk, large bold truss, profuse bloomer, habit dwarf and compact.
JUNIUS (Barker's), purple lake, dark crimson, centre, yellow eye.
MISS THOROLD (Barker's), beautiful pale lilac, large truss.
EYEBRIGHT (Barker's), fiery rose, carmine centre, fine truss, good form.
Seven of the above received first-class certificates at the Royal South London exhibitions, and four are strongly characterised in the leading journals and periodicals of last autumn. The set of 11 are now respectfully offered for 15s., or six (choice of purchaser), for 10s., basket included. The plants are strong and well established.
The set of 24 leading varieties of last year, all very distinct and beautiful, as advertised in the *Chronicle* of April 21st, 20s. They are fine bushy plants coming into bloom.

SCARLET PELARGONIUMS.

Royalist ... 2s. 6d. to	5s.	0d.	Judy ...	...	1s.	6d.
Symmetry ...	2	6	Phenomenon ...	...	1	6
Gem of Scarlets	3	6	Brompton Hero	...	1	0
Rosy Morn	2	6	Pink Nosegay ...	...	1	0
Tom Thumb's Master	2	6	Mrs. Mayler ...	...	1	0
Punch ...	1	6	Shrubland Superb	...	1	0

The set of 12 for 18s.

HELIOTROPIUM "SOUVENIR DE LIEGE," colour pure violet, with a yellowish tinge towards the centre, and said to be the best of all Heliotropes for bedding and pot culture. Nice established plants, 3s 6d each. See Messrs. Low's Advertisement of April 7th, front page.

		s.	d.
Phlox depressa (Henderson)	...	2s.	6d.
Salvia azurea compacta (Henderson)	...	2	6
Calceolaria, species for bedding (Henderson)	..	1	6
Tropæolum speciosum	..	2	6
Zauschneria Californica	...	1	6
Calceolaria amplexicaulis	... 1s. to	1	6
„ Kentish Hero, 1s. each...	per doz.	9	0
„ viscosissima, 1s. each	„	9	0
„ Kayii, 1s. each	„	9	0

PETUNIA, CONWAY'S "BEAUTY SUPREME," the best of all the purples for pot culture or bedding, may be seen here now in bloom in the open ground and in pots, 3s. 6d. each.
PHILIP CONWAY, Earl's Court Nursery, Old Brompton-road, near London, May 26th.

FUCHSIA "SIR CHARLES NAPIER."—This is one of the finest dark varieties of Fuchsias ever yet offered to the Public. It is very remarkable for its fine habit and profusion of blooms; it is a large bold flower of great merit. The sepals are beautifully expanded, showing its extra large violet purple corolla to the greatest advantage; it is very much superior to that well known Fuchsia, "Colossus," which has been so much admired. It was seen in bloom last summer by numerous amateurs and nurserymen, at E. TILEY'S Nursery, and who were quite unanimous in pronouncing it the best dark variety of Fuchsia they had ever seen. Blooms of it were sent to the Gardeners' and Florists' Journal, and spoke of in the manner as above. Fifty plants of it were ordered last summer by parties who saw it in bloom. Fine healthy plants are now ready to send out, at 10s. 6d. each. The usual allowance made to the Trade when three are taken.

UNEQUALLED VERBENA "CRITERION."
EDWARD TILEY has much pleasure in offering this superb Seedling Verbena, so much admired while in bloom last season. It is a most profuse bloomer, and a very attractive variety. One plant not more than 15 inches in diameter had above 65 trusses of bloom on it at one time, besides buds. The colour is a beautiful orange scarlet, with large primrose eye, giving the flower a very striking and handsome appearance. This also was sent to the Gardeners' and Florists' Journal, October 7th. "E. T.—Seedling Verbena, scarlet truss and flower of medium size, form first-rate, the petals are broad, flat, and close, approaching the shape of a Polyanthus; eye primrose, very circular; a fine show variety." A box of blooms was sent a second time, and received the like answer. Strong plants are now ready to send out, 5s. each. The usual allowance made to the Trade when three are taken. Postage and package free, on the receipt of a Post-office order.
Seeds of Superb Double Hollyhock, 2s. 6d. per packet; Sweet William (double), 1s. 6d. do.; Antirrhinum, 1s. do., still on hand. For particulars, see Advertisement in this Paper of April 28th.
Sold at EDWARD TILEY'S General Seed Shop, 12, Pulteney-bridge, Bath.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.

EXHIBITION, MAY 16, 1849

AWARD OF THE JUDGES.

THE EXTRA GOLD MEDAL.

1. To Mr. May, Gardener to Mrs. Lawrence, Ealing Park, for 30 Stove and Greenhouse Plants.
2. To Mr. Mylam, Gardener to S. Rucker, Esq., Wandsworth, for a collection of Orchids.

THE MEDIUM GOLD MEDAL.

1. To Mr Cole, Gardener to H. Colyer, Esq., Dartford, for 30 Stove and Greenhouse Plants
2. To Mr. Green, Gardener to Sir E. Antrobus, Bart., Cheam, for 20 Stove and Greenhouse Plants.
3. To Mr. Mylam, for 15 Heaths.
4. To Mr. Plant, Gardener to J. H. Schroder, Esq., Stratford, for 15 Orchids.
5. To Mr. Williams, Gardener to C. B. Warner, Esq., Hoddesdon, for 25 Orchids.

THE GOLD MEDAL.

1. To Mr. Cock, Chiswick, for 12 Pelargoniums, in 8-inch pots.
2. To Mr. Dobson, Gardener to Mr. Beck, Isleworth, for 12 Pelargoniums, in 8-inch pots.
3. To Mr. May, Ealing Park, for 10 Azaleas.
4. To Messrs. Paul and Son, Nurserymen, Cheshunt, for 12 Roses, in pots.
5. To Mr. Smith, Gardener to W. Quilter, Esq., Norwood, for 15 Heaths.
6. To Mr. Taylor, Gardener to J. Coster, Esq., Streatham, for 20 Stove and Greenhouse Plants.
7. To Messrs. Veitch and Son, Nurserymen, Exeter, for 12 Heaths.

THE LARGE SILVER-GILT MEDAL.

1. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., Nonsuch Park, for 10 Stove and Greenhouse Plants.
2. To the same, for 15 Orchids.
3. To Mr. Francis, Nurseryman, Hertford, for 12 Roses, in pots.
4. To Mr. Frazer, Nurseryman, Lea-bridge-road, for 10 Azaleas.
5. To Mr. Green, for 6 Tall Cacti.
6. To the same, for 10 Azaleas.
7. To Mr Jack, Gardener to R. G. Loraine, Esq., Carshalton, for 6 Orchids.
8. To Messrs. Lane and Son, Nurserymen, Berkhampstead, for 12 Roses, in pots.
9. To Mr. Pamplin, Nurseryman, Walthamstow, for 30 Stove and Greenhouse Plants.
10. To Mr Rae, Gardener to J. J. Blandy, Esq., Reading, for 25 Orchids.
11. To Mr. Terry, Gardener to Lady Puller, Youngsbury, for 8 Roses, in pots.

THE LARGE SILVER MEDAL.

1. To Mr. Dobson, for 6 Pelargoniums, in 11-inch pots.
2. To Mr Gaines, Nurseryman, Battersea, for 12 Pelargoniums, in 8-inch pots.
3. To Mr. Parker, Gardener to J. H. Oughton, Esq., Roehampton, for 6 Pelargoniums in 11-inch pots.
4. To Messrs. Rollisson, Nurserymen, Tooting, for 12 Heaths.
5. To Mr. Stains, Middlesex-place, for 12 Pelargoniums, in 8-inch pots.

THE SILVER-GILT MEDAL.

1. To Mr. Clarke, Gardener to W. Block, Esq., Muswell-hill, for 10 Stove and Greenhouse Plants.
2. To the same, for 6 tall Cacti
3. To Mr. Cole, for 6 Heaths.
4. To Mr. Dobson, for 6 Orchids.
5. To Mr Falconer, Gardener to A. Palmer, Esq , Cheam, for 4 Azaleas.
6. To Messrs. Fairbairn, Nurserymen, Clapham, for 12 Heaths.
7. To Mr. Gaines, for 6 Pelargoniums, in 11-inch pots.
8. To the same, for 6 Fancy Pelargoniums.
9. To the same, for 6 Calceolarias.
10. To Mr. Jack, for 10 Stove and Greenhouse Plants.
11. To Mr. May, Ealing Park, for Pimelea spectabilis.
12. To Mr. Moseley, Edgeware-road, for 6 Fancy Pelargoniums.
13. To Mr. Parker, for 6 Cape Pelargoniums.
14. To Mr. Pawley, Bromley, for 30 Stove and Greenhouse Plants.
15. To Mr. Smith, Gardener to Mrs. Lawrence, Ealing Park, for 15 Orchids.
16. To Mr. Slowe, Gardener to W. R. Baker, Esq , Bayfordbury, for 8 Roses, in pots.
17. To Mr. T. Williams, Gardener to Miss Traill, Hayes-place, for 10 Stove and Greenhouse Plants.
18. To the same, for 15 Heaths.

THE SILVER MEDAL.

1. To Mr. Ambrose, Nurseryman, Battersea, for 6 Fancy Pelargoniums.
2. To Mr. Bruce, for 6 Orchids.
3. To Mr. Campbell, Gardener to T. Huggins, Esq., Norwood, for 10 Stove and Greenhouse Plants.
4. To Mr. Croxford, Gardener to H. H. Barnes, Esq., Stamford Hill, for ditto.
5. To Mr. Ivery, Florist, Peckham, for 6 Cinerarias.
6. To Mr. Iveson, Gardener to the Dowager Duchess of Northumberland, Sion, for Gardenia Stanleyana.
7. To Mr. Mylam, for Odontoglossum sp. Mexico.
8. To Mr. Rickwood, Gardener to — Lewis, Esq., Roehampton, for 6 Pelargoniums, in 11-inch pots.
9. To Messrs. Rollisson, for Epacris miniata.
10. To Mr. A. Smith, Gardener to J. Anderson, Esq., The Holme, Regent's-park, for Odontoglossum sp. Mexico.
11. To Mr. Stains, for 6 Fancy Pelargoniums.
12. To Mr. Stanly, Gardener to H. Berens, Esq., Sidcup, for 6 Calceolarias,
13. To Mr. Taylor, for 6 Heaths.

THE SMALL SILVER MEDAL.

1. To Mr. Bruce, for 6 Tall Cacti.
2. To Mr. Gaines, for 6 Cinerarias.
3. To Mr. Green, for 6 Orchids.
4. To Messrs. Henderson, Pine Apple Nursery, for Pimelea Hendersonii.
5. To the same, for Eriostemon intermedium.
6. To Mr. Hoyle, Reading, for a Seedling Pelargonium, of 1848, "Satisfaction."
7. To the same for ditto, with scarlet flowers, "Prince of Orange."
8. To Messrs. Lane and Son, for a seedling Azalea, "Alba magna"
9. To Mr. Malyon, Gardener to T. Brandram, Esq., Blackheath, for 10 Stove and Greenhouse Plants.
10. To Mr. May, Ealing Park, for 6 Heaths.
11. To Mr. Mylam, for correct Labels, Class I.
12. To Messrs. Rollisson, for Odontoglossum sp. S. America.
13. To Mr. Roser, Gardener to J. Bradbury, Esq., Streatham, for 8 Roses, in pots.
14. To Mr. Slowe, for 10 Stove and Greenhouse Plants.
15. To Mr. Turner, Florist, Slough, for 24 Pansies.
16. To Messrs. Veitch and Son, for Mitraria coccinea.
17. To the same, for Nepenthes sanguinea.
18. To the same, for a seedling Heath, "Victoria regina."
19. To the same, for Correct Labels, Class II.
20. To Mr. Williams, Hoddesdon, for 12 Exotic Ferns.
21. To the same, for 30 British Ferns.
22. To Mr. Wood, Nurseryman, Norwood, for 12 Alpines.

THE BRONZE MEDAL.

1. To Mr. Bassett, Gardener to R. S. Holford, Esq., Westonbirt, for Camarotis purpurea.
2. To Mr. Bruce, for 6 Heaths.
3. To Mr. Gaines, for a Seedling Pelargonium of 1848, "Hero of Surrey."
4. To Mr. Green, for 6 Heaths.
5. To Messrs. Henderson, for Rhododendron Gibsonii.
6. To Mr. E. Henderson, Wellington Nursery, for Nemophila maculata.
7. To Mr. Hoyle, for a Seedling Pelargonium of 1848, "Christabel."
8. To Mr. Iveson, for Hoya sp.
9. To Mr. Jack, for Jacaranda Clauseniana.
10. To Mr. Pamplin, for Correct Labels, Class II.
11. To Messrs. Rollisson, for Rhopala Corcovadensis.
12. To Mr. Stanly, for 10 Stove and Greenhouse Plants.
13. To Mr. Taylor, for Correct Labels, Class I.
14. To Mr. Turner, Gardener to — Williams, Esq., Holloway, for 12 Alpines.
15. To Messrs. Veitch and Son, for Boronia spathulata.
16. To the same, for Rhopala Corcovadensis.
17. To Mr. Young, Gardener to C. Barron, Esq., Denmark-hill, for 10 Stove and Greenhouse Plants.

THE CERTIFICATE OF MERIT.

1. To Mr. Bruce, for Adenandra speciosa.
2. To the same, for 6 Amaryllis.
3. To Mr. Carson, for Correct Labels, Class II.
4. To Mr. Cole, for Correct Labels, Class I.
5. To Mr. Falconer, for Leschenaultia formosa.
6. To the same, for a double red Azalea.
7. To Mr. Gaines, for Rhododendron, "Gaines's Aureum."
8. To Mr. Green, for Cryptolipton longiflora.
9. To Mr. Hamp, Gardener to J. Thorne, Esq., Lambeth, for 6 Amaryllis.
10. To Messrs. Henderson, for Dianthus mutabilis.
11. To the same, for Acacia grandis.
12. To the same, for Dichosma spinosa.
13. To Mr. E. Henderson, for Gesnera purpurea macrantha
14. To the same, for Boronia tetrandra.
15. To Mr. Ivery, for 12 Cinerarias.
16. To Mr. Mylam, for Gloxinia leuconerva.
17. To Messrs. Paul and Son, for 6 Yellow Roses.
18. To Mr. Stanish, Nurseryman, Bagshot, for Rosa sp. China.
19. To Mr. Tarvill, Chelmsford, for a Seedling Fuchsia, "Elegans."
20. To Mr. Wood, for 24 variegated plants.

R. MARNOCK.

SLATE WORKS, ISLEWORTH.—The following articles manufactured in Slate for Horticultural Purposes, by EDWARD BECK, may be seen in use at WORTON COTTAGE, upon application to the Gardener, Sundays excepted: Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot-water Tank Covers, Flower-beds for Balconies, Shelves fitted to hold Water for Orchidaceous Houses, &c.—Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

SPLENDID NEW LOBELIA—"FEU DU ROI."

JAMES MACINTYRE offers the above magnificent Seedling with the utmost confidence, it having been pronounced by all who saw it in flower to be far superior to any variety in cultivation. In size, shape, depth of colour, and general habit (which is strong and robust), it is quite unequalled. Plants will be ready on the 1st of June, at 5s. each, and an early application is necessary, as the stock is limited. The following nurserymen have ordered plants, who alone will be enabled to supply them true.

Messrs.	Messrs.
J. and C. Lee, Hammersmith	E. G. Henderson, Wellington-road, St. John's Wood
Pope and Sons, Birmingham	B. H. Fuller, Worthing
Moore and Son, Perry Bar	J. C. Wheeler, Gloucester
Knight and Perry, Chelsea	F. Warner, London
[illegible] Ronalds and Son, Brentford	Jno. Cattell, Westerham
[illegible] Lane & Son, Berkhampstead	Chas. Turner, Slough
J. A. Henderson & Co., Pine-apple-place	Veitch and Son, Exeter
Wm. Wood & Son, Woodlands	Malett, Barnstaple
Beddenbury, Bristol	Sandy, Stafford

4 feet [illegible] M. has also a fine stock of Lobelia fulgens, fulgens [illegible] One of these, [illegible] multiflora, praecox, fulgens pyramidalis, and soft bed. [illegible], violacea, &c. &c., at [illegible], and full particulars, [illegible] of Bedding, [illegible] May 26. facturers, 190 (o[illegible]

TURNIP SEEDS, &c.

W. DRUMMOND & SONS, Agricultural Museum, Stirling, N.B., will furnish, free, on application, priced Lists of TURNIP and other AGRICULTURAL SEEDS.

N.B. All parcels of Seeds above 2l. value (with the exception of Grain and Vetches), delivered free of carriage in London, Liverpool, Hull, Newcastle, and many other parts to which there is a direct communication.

SEEDS.—MEADOW AND PASTURE GRASS SEEDS, in mixtures suited to various soils, &c., at 32s. per acre, allowing 2 bushels and 12 lbs. to each acre. Directions for sowing and treatment will accompany the seeds. Mixed sorts for improving old Grass Lands, 1s. 3d. per lb. Fine sorts for forming Lawns, &c., 1s. 4d. per lb.

GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season, is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address GEORGE GIBBS and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c. &c., 26, Down-street, Piccadilly, London.

FLOWER POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford-street, respectfully announces that he has a very large assortment of the above articles in various colors, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford-street, near Hyde-park, London.

TO HORTICULTURAL AND FLORICULTURAL SOCIETIES.

BENJAMIN EDGINGTON, Manufacturer to the Horticultural Society, Chiswick, and the Royal Botanic Society, Regent's Park, solicits attention to his stock of MARQUEES and TENTS of every variety, and suitable for all climates. Orders, per post, duly attended to.—Address, BENJAMIN EDGINGTON, 2, Duke-street, Southwark. A Warehouse, 208, Piccadilly.

BEDDING PLANTS, strong and well rooted.

Cupheas, 4s. per doz.	Verbena, "Robinson's Defiance," [illegible] scarlet, 6s. per doz.
Heliotropes, Perdiana, and Voltairianum, 4s. per doz.	Do. best of last year, 9s. per doz.
Salvia patens alba, 2s. each.	Do. best old varieties, 4s. per doz.
Do. gesneriflora, 1s. each.	Pentstemon gigantea elegans [illegible] per doz.
Do. fulgens and patens, 6s. per doz.	[illegible], good [illegible] form, 6s. per [illegible] in pots.
Fuchsias, 6s. per doz.	Dahlias, 6s. to 12s. per doz.
Petunias, 4s. per doz.	
Lophospermums, Maurandyas, Eccremocarpus, Rhodochitons, 6s per doz.	
Phloxes, 6s. to 9s. per doz.	

Plants will be added to compensate for carriage. Catalogues may be had on prepaid application.

J. COLE, Rugby, Warwickshire

SELECT PLANTS.—The following are now sending out, strong plants; any may be had free by post without extra charge, except those marked p. Packages delivered carriage free to London, or with orders of 40s. and upwards, plants sent gratis for expense of distance. Particular attention is paid that all plants are true to colour and name, and sent carefully and securely packed for travelling to any distance.

BEDDING PLANTS.

ANAGALLIS COCCINEA SPLENDENS, 6s. per dozen.
BOUVARDIA SPLENDENS, 6s. per doz.; Flava, 9s. per doz.
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12 ACHIMENES, fine and select, 7s. 6d.; 6 fine new	15s	0d
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See the Gardeners' Chronicle, first Saturday in each month.

WATERER'S EXHIBITION OF FLOWERING AMERICAN PLANTS, BAGLEY SQUARE, KING'S ROAD, CHELSEA.

HOSEA WATERER begs to announce that the above Exhibition will open about Monday, May 28, and continue as usual during the month of June. In addition to the usual display of American Plants, the Exhibition will this year contain about Magnificent Specimens of the most desirable kinds of PINUSES. Gentlemen interested in the selection of fine specimens for planting, would find these of themselves worthy a visit.—Rose Hill Nursery, Knap-hill, Woking, Surrey.

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Also, of Miller's Set of Eight, price 25s. Descriptive Catalogues on application.
For bedding-out plants, J. H. has a fine stock of healthy young Heliotropes, Fuchsias, Petunias, Verbenas, Anagallis, Cupheas, Calceolarias, Gaillardias, Pentstemons, Antirrhinums, Salvias, &c. &c., which he offers at 4s., 6s. and 8s. per doz.
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TWELVE FIRST-CLASS GERANIUMS for 12s. or 20 for 1l.; 12 of the newest FUCHSIAS for 12s.; 12 of the newest VERBENAS for 2s. 6d. to 7s. 6d. See HENRY WALTON'S Advertisement in the *Chronicle* of May 5, page 274. Catalogue on application.
Edgend, Marsden, near Burnley, Lancashire.

CEDRUS AFRICANUS; OR, SILVER CEDAR OF MOUNT ATLAS.

R. GLENDINNING having raised, in the spring of 1848, a number of seedlings of this new and beautiful species of hardy CEDAR, from cones imported direct from Mount Atlas, offers them to the trade at the following reduced prices. Strong plants, in 60-sized pots,

25 for	...	£2	2 0
50 for	...	3	11 6
100 for	...	6	0 0

Chiswick Nursery, near London, May 26.

HORTICULTURAL SOCIETY OF LONDON.—EXHIBITIONS AT THE GARDEN.

The Second Meeting will take place on SATURDAY, the 9th of June. Subjects for Exhibition must be at this Office on Friday the 8th, or at the Garden before half-past Eight o'clock, A.M., on the day of Exhibition.
The Gates will be open to visitors at One, P.M. Tickets are issued to Fellows at this Office, price 5s. each, or at the Garden in the afternoon of the days of Exhibition, at 7s. 6d. each; but then only to orders from Fellows of the Society.
N.B. No Tickets will be issued in Regent-street on the days of Exhibition. 21, Regent-street.

The Gardeners' Chronicle.

SATURDAY, MAY 26, 1849.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	May 28	Geographical (Anniversary)	1 P.M.
		Medical	8 P.M.
WEDNESDAY,	— 30	Society of Arts	8 P.M.
		Geological	8 P.M.
FRIDAY,	June 1	Botanical	8 P.M.
		Royal Institution	8½ P.M.
		Asiatic	2 P.M.
SATURDAY,	— 2	Royal Botanic Gardens (American Plant Show)	12 P.M.

COUNTRY SHOWS.—Thursday, May 31: Wootton Floral and Horticultural, Leamington Horticultural, Oldham Floral and Horticultural.

IT has for a long time been evident that the country is becoming overstocked with GARDENERS. Of that fact the continually increasing number of advertisements for places bears painful evidence; and our private experience more than confirms it. Men of considerable skill, excellent character, and in the full possession of their physical powers, remain for years unemployed, unless as temporary labourers, gradually consuming their small savings, and witnessing the continual diminution of their resources at the very time that their unavoidable expenses are increasing. To many such, a wife and family, which under better circumstances would be blessings as well as a source of wealth, become a burthen which too often weighs their possessor to the ground. There can be no possible doubt that the market contains a much greater supply of gardeners than there is a home demand for.

The difficulties of many gardeners is not a little increased by the continually advancing intelligence of younger men, whose education has been conducted upon entirely different principles from those which formerly regulated the instruction of their class. Mere routine has lost its value. It has ceased to be thought enough that a man has passed a certain number of years in the practice of common gardening; it is expected that the mind should be cultivated as well as the soil. This change of circumstances operates most prejudicially upon many excellent men, who have possessed in their youth none of the advantages of the rising generation. *Martyrs*, not merely in mind but in body as well, to the execrable bothy system, they are now suffering an unmerited punishment for the delinquencies—and they deserve no better name—of those who undertook to prepare them for meeting the difficulties of a career in which nothing can now be effected without knowledge and a well-trained mind.

What such men can do it is hard to tell. For ourselves we believe that emigration presents the best means of leaving poverty and sorrow behind them, and of finding a land of promise in another hemisphere. But the great difficulty is to know whither to turn their steps. To become a voluntary exile is but a poor termination to the anticipation of prosperity at home which the young, honest, and industrious gardener may well have indulged in before the stern realities of a struggle with the world, especially such a world as England now is, have taught him that there is far less to hope for than to fear. If to that is added the uncertainty of success at the antipodes, when he has reached those countries where Christmas is summer time, and midsummer midwinter, a poor man may well dread the venture, and hopelessly hope on at home till all power of advance is gone.

For ourselves we are never desirous of recommending colonies to emigrants, not wishing to assume so serious a responsibility as that of giving a man advice which may prove fatal to him. It is better that those who think of emigrating should inquire for themselves, examining the many trustworthy guide-books which may now be found in every bookseller's shop. We think, however, that the following extract from a letter from Sydney, dated February 1, 1849, written by a gentleman of high standing and the greatest possible local knowledge of the country, and who, we may add, has no purposes of his own to serve, may prove a useful guide to some who are unable to come to any decision for themselves.

"In case you should know of gardeners desirous to emigrate, or unable to find employment, I may mention that there is a great dearth of them here. I mean of steady, sober men, with a fair amount of skill in their calling; but for men of unsteady or intemperate habits this is a very bad place to come to. I pass scarcely a week without some inquiry from persons of respectability about gardeners. Wages are from about 25*l.* to 40*l.* per annum, with board and lodging. We are giving what is equivalent to 60*l.* per annum, with board, &c., to men whose chief recommendations are zeal and fidelity rather than any particular skill in their calling. Almost every article of consumption is so cheap here that the foregoing are better wages than they may seem to be to people in England. Almost every article of clothing is equally as cheap. Hardware and earthenware are dearer. Food, &c., exceedingly low in price. Flour, 10*s.* per 100 lbs.; beef, 1*d.* to 1½*d.* per lb. per quarter; tea, 1*s.* 3*d.* per lb.; sugar, 2½*d.* to 3*d.* per lb.; tobacco, best American manufactured, 3*s.* 6*d.* to 4*s.* per lb. (this is heavily taxed); excellent colonial wine retails in quantities above 2 gallons at 3*s.* to 4*s.* 'Look,' said a newly arrived immigrant the other day, in my hearing, to a shipmate, as he held up a fine leg of mutton, 'Look, I bought *this* for ninepence!'

"Men with large families will experience more difficulty in finding situations with private families than single men, or men with active wives and only one or two children; but much will depend upon the kind of family. If old enough to work or to go out into service, and industriously inclined, this is just the country for such a family. Mere labourers obtain 20*s.* per week, without board, in the Sydney market gardens. A professed hand *might* not obtain much more. The great inducements to emigrate are the certainty of employment for themselves and for their children, as soon as they are old enough to go into service, the extreme cheapness of food, and of most of the ordinary comforts of the working classes, and the salubrity of the climate. Certificates of character, and qualifications, as ample as possible, should be brought by every emigrant. When respectably signed, they greatly facilitate early employment in good situations."

There can be no doubt that good gardeners are the very men to increase rapidly the prosperity of such colonies as those of Australia and New Zealand. They will be far more useful than mere farmers, knowing nothing more than the local cropping of a small English occupation. The colonists want to learn how to grow Tobacco, Cotton, Vines, Figs, Olives, and all sorts of Mediterranean produce. A farmer knows nothing of these things, which are the familiar acquaintances of gardeners of intelligence, or may become so. Books enough are to be found, no doubt, telling how such crops are to be dealt with; but men can no more learn gardening than shoemaking by mere books. Personal experience, manual dexterity, and routine habits are also indispensable, and these are what gardeners, most of all men, are likely to carry about with them. We therefore strongly recommend the above extract to the attention of those whom it may concern.

IN another column will be found a short notice of the beautiful little barometer, called an ANEROID. Without offering any opinion concerning its exact value as a philosophical instrument, we can bear witness to its great accuracy as a general indicator of changes in the weather, for which we believe it to be quite as valuable as the most costly barometers now in use; and with reference to this point we think it desirable to give the following statement by Captain MANGLES, an experienced officer of the Royal Navy, who has for many years occupied himself with studying meteorological phenomena.

"I hasten to give you an example of the premonitory powers of the 'Aneroid' to warn an observer of *coming* fine or bad weather. For the last 12 years I have used one mercurial barometer, two sympiesometers, with oil in the tube, and two more with a mineral mixture in the tube; all these I register at 10 at night, and at 7 in the morning, and I regularly insert their movements in a diary. For the 'Aneroid,' at the beginning of this year, I had *a fresh column ruled*, and by this arrangement I soon perceived the forewarning properties, and, consequently, greater value as a weather guide of the 'Aneroid,' as compared with its five rivals. I could cite numerous instances of this superior sensitiveness, but that of Saturday morning, May 5th, was most remarkable. I was much struck, on coming down at 8, while the sun was shining bright, and there was every appearance of a fine day, to find that my instruments stood thus:

	Barom.	Aneroid.	Sympiesom. Oil.	Sympiesom. Mineral.
May 4, 10 P.M.	29·82	29.87½	29.78	29.75
May 5, 8 A.M.	— 82	— 82½	— 78	— 75
	0	5	0	0

"Here we have the 'Aneroid,' in full sunshine, with a bright sky, and every appearance of a lovely day, still uncomfortable and in doubt as to what is forthcoming, while his companions say nothing. I confess that, looking at appearances, while I wrote down my register, I almost doubted whether *this time* the 'Aneroid' could be right; but, at about 1 P.M., I became convinced that there was no mistake. Let me add that, at least four or five times since January 1, 1849, this instrument has given me similar evidence of its superiority as a *forewarner*."

It will be in the recollection of our readers that the 5th of May here referred to was the day of the late Horticultural Exhibition at Chiswick.

Should this instrument prove always to possess the forewarning powers attributed to it by our correspondent, it will become of no little value in an uncertain climate like this.

"YOU SADLY NEGLECT US LITTLE GARDENERS," is a complaint sometimes addressed to us, and always attended to, as far as we can understand its meaning. We had imagined that weekly Calendars, admirable in their way, hints, scraps, and notices, were frequent enough in our columns to meet all possible wants. We now learn that we are mistaken, and how; a correspondent having sent us the following letter:

"There is a class of amateurs that, I am inclined to think, are overlooked by you. They are not 'cottage gardeners,' as you seem to address them; and, although your general remarks may be exceedingly useful to them, there are many quite beyond, not so much their resources of pocket, as of space and conveniences. As I am one of the class to whom I allude, I will explain myself by my own case. I live in a semi-detached villa, in a suburb north of London, and have a garden 34 yards long by 10 yards. Much engaged in the city, and very fond of horticulture, I find great relief from the anxieties of business in the cultivation of this little garden, and, with various periodicals and manuals, am fast learning the habits of flowers, and, with spade, rake, hoe, and pruning knife, gaining the experience of the practical man. This is my first year, and, from the most wretched-looking place you ever saw, with no beds, no edging, no gravel, rank Grass, and a fowl-roost, I have raised my little plot to the level of something like civilisation, and constantly receive the congratulations of friends. Still it is not quite the thing yet. My flowers come from the nurseryman, and are rather lanky. My annuals are only just above ground. I have no greenhouse, pit, or frame, only a hand-light or two, and two propagating glasses; if I had more, they would spoil appearances. Of course I have no manure—Where could I put it? The soil, I believe, is good. A gardener in the neighbourhood says he prepared it, and that it is road-sand thoroughly manured. Next year I look forward to much improvement; but I would with great respect suggest that a corner of your Paper should weekly be devoted to giving us hints, for you must be well aware there are thousands in or near London situated like myself, who, if they could go to the *Gardeners' Chronicle*, and be told what to do, would perseveringly cultivate their little gardens. The common cry is, that they cannot keep their plants in winter; and that, generally speaking, those they buy deteriorate instead of improve, and many other things that tend to dishearten. They want to know the remedies, and they look to you. But I trespass on your time. If you think well of our case, I shall be glad at intervals to communicate what strikes me, and submit it for your consideration. Meantime, I am, sir, your obedient servant, *E. O.*"

We are grateful for these hints, and have already taken means to supply the wants here suggested

Henceforward a corner of the paper will be devoted to the subject, and we have for the present entrusted the management of that corner to one of our most skilful correspondents, who will cultivate it with all the success which experience, intelligence, and *local knowledge* can ensure. We must, however, observe, that to do this, or anything else of the kind advantageously, depends in no small degree upon those for whose guidance such papers are intended. If the possessors of suburban gardens will supply hints, and explain their wants as they arise, information such as must suit them will be continually furnished. But as we have no peculiar power of diving into the recesses of our readers' minds, or of peeping over every hedge or wall round London, we may, in the absence of hints and explanations, misunderstand what is expected, and occupy space with instructions which may not be required. In the meanwhile Mr. E. O.'s note serves for the present as a supply of hints, and as a declaration of the course by which we desire to steer.

OXALIS FLORIBUNDA A BEDDING PLANT.

Those who have only seen this Oxalis treated strictly as a greenhouse plant can form little conception of what a showy thing it is when planted out of doors in masses. In planting it out, however, a little discretion is necessary. Avoid any situation where, from the position of high trees or buildings, the rays of the sun would be excluded from it during the greater part of the day; for its flowers will not expand fully in the shade, or in very dull weather. From its dwarf neat habit, no difficulty will be experienced in finding a situation for it; but the most appropriate one is, on raised beds among stones, on rockwork, or round the margin of beds containing taller plants, where it forms an excellent edging during summer. It must be admitted, however, that this pretty little plant is not propagated with that facility with which Verbenas, Petunias, Salvias, and many other bedding plants are; but when a stock of it is once obtained there is no further trouble, for the same plants can be made available many years in succession.

When the season is too far advanced for the flower garden to be any longer an object of great interest, Oxalis floribunda ought to be taken up and potted, in any light sandy soil, and placed on a shelf in the greenhouse, where it will be safe from severe frost or damp in the winter. In taking up the old plants, a quantity of short shoots will sometimes be found growing round their necks, close to the ground; these ought to be cut off close to the stem, and planted in sandy soil, in store pots half filled with crocks, after the manner of cuttings. As these shoots seldom exceed 1½ inch in length (not including the leaves), let them be inserted into the soil their whole length, and watered, in order to settle the soil about them; and if placed in any close pit until they emit roots, they will form an excellent stock for planting out the following summer.

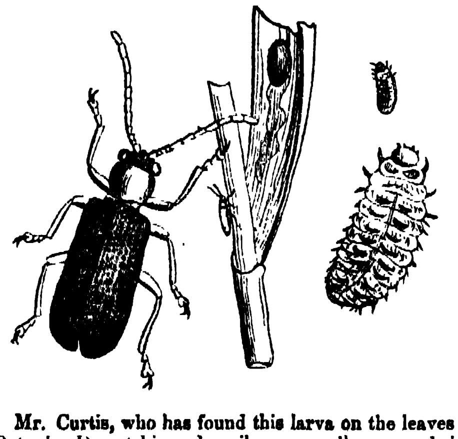
Though the Oxalis floribunda cannot be depended upon as being sufficiently hardy to stand our winters out of doors without protection, nevertheless, it is by no means so impatient of a low temperature as some might imagine. I have known it, when planted on a pile of stones laid against the south side of a building, with a little light soil thrown over them, but allowing some portion of the larger stones to stand up above the soil, to resist all the vicissitudes of three winters in succession without any protection whatever, unless the projecting stones can be considered as such. And in this case its condition was not such as we frequently witness in half hardy plants under such circumstances—a mere existence throughout the winter, and in spring so much injured as only to be fit to be thrown away; for these, in the intervening summers, flowered in the greatest profusion. *A. D., Dale Park, Arundel, Sussex.*

ENTOMOLOGY.

CRIOCERIS MELANOPA.

Amongst the various means by which insects are enabled to defend themselves whilst in their early and more helpless states from the attacks of their enemies, none is more remarkable than the power possessed by various larvæ of encasing themselves in a covering supplied from the interior of their own bodies. We do not here allude to the cocoons of silk spun by the larvæ immediately previous to their becoming chrysalides, but to coatings of slime or of excrement which they contrive to form into a shield over the whole body. Some larvæ emit a thick various-coloured fluid from numerous pores in different parts of the body, of which the larvæ of the larger Tenthredinidæ are instances, and it is a peculiarity of this secretion emitted by other species, as observed by Professor Peck, that it retains its humidity, although exposed to the fiercest sun; but we are inclined to believe that some of the slimy larvæ owe their coat of defence to a less cleanly secretion, the slime being nothing else than fluid excrement, which they are enabled, by the peculiar foldings of their skin, to spread over the whole of the upper surface of the body. This is effected in other species in a less fluid state, or being fluid at first, it hardens quickly and forms a shield. Of slimy larvæ examples may be cited in those of [illegible] Cionus scrophulariæ recently [illegible] in our pages, whilst the species which form a solid excrementitious umbrella-like covering belong to the genera Cassida, or tortoise beetles, Imatidium, and Crioceris, one species of the last named genus being found upon the white Lily, and named from its habits Crioceris merdigera by Linnæus.

Another species belonging to the same genus (which we have recently ascertained feeds on the leaves of Wheat), covers itself with a slimy coating, and it is chiefly from its close relationship to C. merdigera that we are led to believe its slimy secretion to be merely excrementitious and not emitted from pores all over the surface of the body. At the end of June, 1848, we observed a number of these small slimy larvæ feeding on Wheat in the fields at Ensham, near Oxford, eating off the upper epidermis of the leaves. They were at this time generally covered with thick black fluid, looking like an oval black and very shining body, and quite unlike an insect. One of them is represented in this state on the leaf in the accompanying drawing, and its appearance when denuded of the slime, is shown in the small figure on the right side of the plate, and its magnified representation is given beneath. The dorsal segments are furnished with elevated transverse tubercles with fine short bristles, by which it is enabled to cover itself with its secretion, in the same manner as the larva of the Cionus. When cleansed from its slime it is of a greenish yellow colour, with the head dark brown, and with two pale brown spots on the segment behind the head. The very numerous small upright and very short rigid hairs arise at the sides of the body from minute black dots. The basal joints of the legs have the articulations black, and there are two black dots on each side of the meso and meta-sternum.



Mr. Curtis, who has found this larva on the leaves of Oats in Dorsetshire, describes a small one as being brown, mottled with ochre, with a black head, and six small black pectoral feet; whilst a larger specimen was more ochreous, and after being immersed in water for 24 hours it became perfectly of that colour, and the six feet were brownish towards their tips, resembling in form the larva of the Asparagus beetle. "They feed down the leaves sideways, gnawing with their little mandibles an even line between the striæ either above or below the leaf [both on its upper and under surfaces], leaving only the membrane, which often dries and cracks, making a hole of greater or less extent. In other instances they had occasioned ochreous spots where they rested, and where their old skins had been cast off as they increased in size."*

These larvæ, which are extremely sluggish in their movements, spun cocoons of white opaque silk in the roll of the leaf, or in the angles of the box in which they were placed, within which they changed to pupæ at the beginning of July, and in a few weeks the perfect insects were developed, which proved to be the beautiful Crioceris melanopa of Linnæus and all subsequent authors.† This pretty insect, which belongs to the order Coleoptera and family Crioceridæ, is about one-fifth of an inch long, of a shining blue or green colour, with a dusky blue head and black antennæ, the prothorax red and very glossy, having a transverse impressed line near the hind margin; the elytra are glossy blue or green, each with several rows of deep punctures, and the thighs and tibiæ are reddish, with the tarsi black. In the perfect state it is very common, and widely distributed all over England. It is represented of the natural size creeping up the stem of Wheat in our engraving, and is magnified on the left side. *J. O. W.*

* Curtis, in Journal of Royal Agricultural Soc., vol vii. p. 81.

† Mr. Curtis gives it correctly as C. melanopa, but adds, by some lapsus calami, that it was named C. merdigera by Linnæus, thus confounding it with the Lily beetle.

DISEASES OF PLANTS.

(*Continued from p. 300.*)

Class I. — Diseases Constantly Stenical, *that is, derived from excess of vigour in the plant.*—The abundance of nutriment, its too substantial nature, the stimulus of heat, light, and electricity—the excessive joint action of these agents, or the separate and preponderant action of one of them, must be recognised as the immediate causes which produce in plants the diseases enumerated under this first class. Whatever tends to diminish the quantity or correct the quality of the aliment, or which may in any way weaken the action of the agents which thus operate on the plant, may cure it, or rather prevent the disease.

Genus I.—Bulbomania, *or excess of bulbs;* single species.*—Plants are naturally multiplied by seeds, buds, or bulbs. There is the greatest analogy between buds and bulbs, which are therefore both called by the name of hybernacules. Those who insist on the similarity of animals and plants, call the multiplication by seed, oviparous—and that by bulbs or buds, viviparous. I believe, in common with most physiologists, that all plants are originally derived from seed: most probably, that nature has predetermined the number of seeds that each flower should produce, and any superabundant formation of them may be hurtful, and the plant which has made more than it should do would suffer from exhaustion. But I have met with so few instances, that I have been unwilling to establish a genus which I should have called Spermatomania, that is, excess of seed. Indeed the Cotton plant, which sometimes fills its cells with more than the normal number of seeds, is the only example I have myself seen.

There is a considerable number of plants which reproduce themselves not only by their seeds, but also by means of buds, like trees. There are others, again, which are reproduced as well by bulbs as by seeds. According to the ordinary course of nature, bulbs should only be produced at the underground extremity of the plant—as, for example, in the Onion, the Tulip, &c., which bear seeds at the summit of their stems, and form bulbs underground. It may, however, sometimes happen that bulbs are produced, together with the seeds, at the top, as we see in the Garlic of our gardens; or that in the axils of the leaves, or on other parts of the plant, little bulbs may form which ought only to be found at the root. Thus Curtis and Duval have observed bulbs on the stalk of one of our commonest plants, the Ranunculus ficaria. In these instances the vegetable is, strictly speaking, out of its natural state, although it appears perfect. But it must be observed that plants which often abound in such productions easily degenerate. I do not venture this statement without some facts in confirmation. I gathered in the Apennines a plant of Dentaria bulbifera. Removed to my garden, it bore flowers and seeds for three years without any vestige of bulbs. I sought to induce it to form them by the application of manure. Accordingly, the fourth year it produced several. In the course of a few months it perished. I have observed, moreover, that in those years when the season is hot but damp, those plants which develop their shoots twice in the course of a few months, or which put forth many tubers or roots at the joints of their stalks, suffer considerably. Lastly, I have often examined the plants of the Garlic of our kitchens, and have always observed that those which produce little bulbs amongst their seeds have their underground bulbs much smaller and worse conditioned than usual. It has also appeared to me that all vegetables which produce these little bulbs and seeds promiscuously, or bear them on their stems, have a much smaller number of seeds or bulbs capable of supplying vigorous plants. Although dicotyledonous plants produce bulbs as well as monocotyledonous ones, they are much more frequent among the latter.

Truly, the knowledge of this species of disorder, confined to a small number of plants, cannot be of much importance, either for the agriculturist, or for the cultivator of botanical collections, nor yet for the practical gardener. The botanical student ought not however to be ignorant of it, in order that he may not take for species that which is but an accidental variation, which the most frequently will return to its primitive form, when deprived of the superabundant aliment, which, it has been seen, is the most usual cause of this morbid phenomenon. The alpine meadow Grass (Poa alpina), has a variety termed viviparous, which produces bulbs instead of flowers. I have never found it but in soils where there is a great deal of rich vegetable mould. Placed in those soils which are most natural to it, that is in flinty calcareous clayey earths, I never found it but with its panicle of flowers.

Genus II.—Antheromania, *or excessive production of male organs; single species.*—It cannot well be matter of doubt, that every flower has a pre-determined number of organs of generation, for securing the reproduction of the species; although it is true that in some plants we are but little acquainted with them. I flatter myself that any one which shall be found to exceed or want in the proper number of these organs will be admitted to be in a morbid state. Speaking of those plants which can easily be examined by us in their native stations, or which, transplanted into our country, have preserved their natural habits and properties, we can easily recognise this excess or deficiency, which

* In the arrangement of diseases, I have thought it best to commence by those which affect the higher organs, that is those of reproduction. If this book falls into the hands of an enlightened agriculturist, or of a lover of botany, he will probably approve of the plan. But if it falls to its lot to be in the hands of one who would exclude from agricultural works even the slightest trace of theory and erudition, he will perhaps be disgusted at seeing me treat of things that do not much interest him. I only beg of him to read on, and I flatter myself he will meet with something that even he will find useful. I know that not a few may be alarmed at certain names which are indeed new, and some not very easy to remember. I have already said that I have in vain hunted through the Italian dictionary to find words that should express my meaning, and that I have on every occasion explained the new terms I have created. Moreover I think that if we do not venture to give names to the things we treat of, if we cannot speak the language of botany and chemistry, we shall never succeed in penetrating the mysteries of nature. And without some knowledge of these, we cannot confer much benefit on agriculture. I refer to my introduction. I do not write for the [illegible]. My work is addressed to him who loves instruction, who does not hate books, or at least who ought not to hate them. *Author's Note.*

may give rise to various diseases. Here, I would observe, that after very numerous examinations of an immense variety of flowers, I have never observed any excess in the female organs, *, but it frequently happens in the case of the stamina or male organs. A Tulip should have but six. I have one in my herbarium with ten. Chlora perfoliata ought to have but eight; I have seen it with ten or twelve. I gathered the Tulip in a field near a country house, in the garden of which Tulips had been cultivated, and which had spread from thence into the surrounding fields. Where I gathered my specimen I saw the remains of a quantity of dung which had been deposited on the spot. The Chlora grows spontaneously on our hills; I have always found these flowers with superabundant stamina in places not much exposed to the sun, but in very rich soil, and they were always the flowers that grew on the summit of the panicle. I could adduce numerous other instances of this excess of stamina. It is however usually accompanied by a larger number of petals. Thus the above mentioned Tulip had also ten petals.

This disease interests the botanist more than the cultivator, for the same reasons which I have adverted to under Bulbomania. From the account I have given it is clear that it is owing to superabundant nutriment, and can be prevented at will by diminishing it, to which subject I shall return presently.

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

DAHLIAS.—As the plants advance in growth, they must be tied carefully to stakes arranged so as to preserve a natural appearance; avoiding, on the one hand, a tight broom-like fashion, and, on the other, an awkward severance and, as it were, dislocation of the branches. Unless regular tying is attended to, some unlucky wind will tear away a large portion of the plant. Pruning must not be neglected, the operation being regulated by the habit of the flower. If liable to become coarse, the knife must be little used, but if the tendency of the flower is to diminutiveness, it may be applied with advantage.

As it is of the utmost importance to keep up a regular moisture at the root, mulching is recommended in hot weather, *i.e.*, from the time of planting till September, or nearly through the whole season of growth. I have for several years been foiled in my attempts to keep evaporation from proceeding too rapidly, by the birds, who have scraped away, in the early morning, the Grass or other covering placed around the plants at night. Last year I covered the mulching with twigs, but from some cause I could not discover, they still persevered, and rendered my efforts futile. This year I intend to plant deeper, and gain a mulching by an extra thickness of mould between the surface and the root. I am not aware that this plan will have any disadvantages, while it will allow of a small depression being made to retain water. The principle to be remembered is, that artificial watering is, to some extent, an evil, as it hardens the soil and carries its fertilizing properties out of the reach of the plant. Whatever means, therefore, can be adopted to retain moisture, are, so far, favourable to a healthy development of vegetable growth. The best growers recommend frequent waterings with a fine rose over the foliage, when the sun is off the plants; besides the general benefit, it is said that the moisture prevents, to some extent, the attacks of earwigs.

The mention of that foe to florists, just alluded to, reminds us of the disappointment so often felt, when, having succeeded in getting a good bloom, our labours are neutralised by the fine teeth or mandibles of earwigs, ruining in a night the finest specimens. How can they be guarded against? No doubt by a greater acquaintance with the habits of the insect, and a more diligent warfare against it in all its stages of growth. But as this radical eradication of the pest is not to be looked for, we can only indicate the modes of checking their propensities, in some particular case. They may be caught by hundreds and killed, by Bean stalks placed among the foliage, or small pots half full of moss on the tops of the stakes. But the mischief is then partly done, as will be manifest from the colour of their internal juices, which are yellow, crimson, or orange, according as the flower they have been eating is of either of those hues. It was once thought sufficient to prevent their ascent, by water-pans, or by wool tied around the stem; but it is now known that earwigs have wings, and are consequently not dependent on their feet for access to their food. That they can fly is undeniable, but that they exercise the power much may be doubted. I never saw one on the wing, nor even preparing for flight, although I have been out in the nights of summer repeatedly, and watched their movements with a candle. I am inclined to think the faculty of flying is but rarely used, and that, therefore, while traps should be placed to catch them, means should also be taken to prevent their ascending to the Dahlias. It is known they dislike cotton or wool, which entangles their feet, and perhaps some oily substance in addition would effectually repel them. The wool should be tied lightly around the whole stem and the stake, so as to render ascent impossible without passing over it. *H. B.*

SELECT SPRING AND SUMMER FLOWERING PLANTS FOR GROUPS, &c.

(Continued from page 310.)

CALCEOLARIA ANTIRRHINIFLORA.—A yellow species, of excellent habit. In flower from the middle of June until October.

CALCEOLARIA KAYI.—A pretty yellow variety, which flowers from the last week in May until the middle of August.

CALCEOLARIA AURANTIA MULTIFLORA.—A neat Willow-leaved orange-yellow flowered variety, well adapted for small or large groups.

CALCEOLARIA VISCOSISSIMA.—A broadish leaved variety of good habit, and bearing large trusses of very bright yellow flowers from June until October.

CALCEOLARIA "KENTISH HERO."—A robust shrubby variety, producing large trusses of rich bronzy flowers, from July until October.

CALCEOLARIA SULPHUREA SPLENDENS.—A remarkably neat dwarf bushy shrub, bearing numerous trusses of large bright golden yellow blossoms, from July until October. Perfectly hardy, and forming a fine object as a single group in an herbaceous border.

ŒNOTHERA MACROCARPA.—A neat hardy herbaceous species, of decumbent habit, and having remarkably large bright yellow salver-shaped blossoms (4 inches diameter). In beauty from the second week in June until September, and forms a fine single group or bed.

ŒNOTHERA TARAXACIFOLIA.—A hardy herbaceous biennial, of decumbent habit, and bearing remarkably large conspicuous snow-white salver-shaped flowers, expanding towards the evening, from the second week in June until the middle of September. Adapted for a single group or small bed.

GAILLARDIA PICTA COCCINEA NANA; G. CORONATA NANA.—A herbaceous variety, 18 inches high, with numerous golden yellow Chrysanthemum-like flowers (3 inches diameter), having a rich brown-crimson centre. In flower from the middle of June until September. Very picturesque, and well adapted for small groups or larger beds.

GAILLARDIA WELLSIANA.—Similar to the last, but of rather taller and stouter growth, but having brighter coloured flowers, and forming an ornamental single group or bed.

PYRETHRUM PARTHENIUM FLORE PLENO.—A neat branching herbaceous variety, from 12 to 24 inches high, bearing a profusion of clear white double Ranunculus-like flowers (¾ inch in diameter), from the third week in June until September.

CYNOGLOSSUM LINIFOLIUM.—A compact annual, from 6 to 12 inches high, of whitish aspect, and bearing numerous white salver-shaped blossoms from the third week in June until August, suitable for a small group or edging.

MALVA MOSCHATA ALBA.—A hardy biennial, or annual, from 12 to 18 inches high, of branching habit, and producing a profusion of transparent white compact salver-shaped blossoms, 1 to 2 inches diameter, from the third week in June until October. It forms an excellent autumnal bed, or large group, and it is the latest plant of its colour.

CAMPANULA CARPATICA NIVEA.—A neat, dwarf, compact, hardy herbaceous plant, from 9 to 12 inches high, bearing a profusion of clear white open bell-shaped flowers (upwards of an inch in diameter), from the middle of June until August. Adapted for a select group or small bed.

PETUNIA "MALVINA."—A very neat dwarf variety, with numerous compact white flowers, delicately margined with a rosy tint. Adapted for a select group or small parterre. *William Wood.*

Home Correspondence.

Rough Plate Glass.—I have just been testing, through the medium of a crop of Strawberries, the merits of this article for horticultural purposes, in comparison with a good description of crown glass. Two contiguous pits of three lights each, heated by a brick tank and iron pipes from the same apparatus, were on the same day, and under precisely equal circumstances, filled with the variety of Strawberry known as Keens' Seedling; the one pit was covered with frames glazed with rough plate glass, and the other with lights glazed with very good crown glass. A good crop, undistinguishable in any way, whether in respect to size, colour, or flavour, has ripened in both pits. The only perceptible difference is in the foliage; the leaves under the crown glass are of a deep green and stubborn character, whilst those under the rough plate glass are larger and somewhat flaccid and of a paler green colour, and the footstalks are longer and scarcely so erect and stiff as in the other instance. No scorching or burning has taken place under either description of glass, nor has there been a sufficiency of sunlight during the progress of the crop to test the merits of either kind of glass in this particular. I am of opinion that for all the common, and probably most of the general purposes of gardening, the rough plate glass will be found invaluable. *James Duncan, Basing Park, May* 22.

Training Cypresses.—My observations, at p. 293, were only meant to apply to Conifers of the Cypress and Juniper sections, and of upright habit; in no way to Araucarias and Cedars, which are the most spreading of the tribe. The figure of a good Cypress, as seen in Greece and Italy, is that of a tall evergreen Poplar, rather more sharply pointed at the top while a young tree, but becoming rounder and more shaggy in character with age. The horizontal or spreading Cypresses throw their arms to so short a distance, and acquire by time so near a resemblance to the habit of the upright variety, as scarcely to deserve notice as an exception. The Cypress, like the Stone Pine, and some other Conifers, is apt to throw out, while young, an overstrong branch, which becomes a second or false leader, low down on the stem; it is to prevent the growth or predominance of such branches, that for a few years the trimming system is necessary to secure symmetry in the future tree. A Cypress is a tall, graceful tree, and not to be treated like an Arbor-vitæ, or a Juniper bush, throwing up a number of stems from the ground. And it is as little to be assimilated to the spreading Abietinæ in treatment as the Lombardy Poplar or the Quercus pyramidalis are to the Abele or the spreading Oak of our forests. *S., Dorset.*

Vines.—A generally successful cultivator of the Vine has not unfrequently to lament the failure in the setting of some of the superior sorts of Grapes, such as the Muscat of Alexandria, the Tottenham Park Muscat, Black Morocco, West's St. Peter, &c. On the Black Morocco, this season, producing a profusion of unusually large bunches, there is only one on which the berries are even partially well set; the rest are composed of small stoneless berries with here and there a single one swelling off; the excepted bunch happened to be placed upwards towards the glass. An unusually large crop of the St. Peter Grape is likewise composed of similar defective bunches. The same complaints are frequently made by other cultivators, and the sorts of Vines alluded to have been discarded by many, owing to the failure. Will you favour the writer with an explanation of the cause of this defect in the setting of the Grapes, and suggest any mode of treatment likely to remedy it. The temperature of the house has been usually from 75° to 80° during the time of blossoming, with as much moisture as possible [Oh!] produced by water thrown on the hot iron pipes, syringing being discontinued during that period, air being freely admitted. Nothing can exceed the strength and vigour of the Vines, the stems of many of 15 years' growth being as large as is usually found at double that age, great attention having been paid to the original composition of the border, which has since been largely supplied with decomposed animal matter. *Clericus, Devonshire.* [As much moisture as possible! There is the mischief. Vines cannot set their flowers in moisture.]

The late Frost.—I am living in north latitude, 52° 54', 310 feet above the sea, and in the month of May we have not had the thermometer at 20°, as spoken of at page 310. May 8, lowest temperature, 32°; May 9, 29½°, some Potato tops injured; May 12, 30°, the Potato tops received no fresh injury. The Potato tops injured on the 9th have since recovered, and are now doing very well. We have had no frosts but on the three days mentioned in the month of May. The Apple trees are looking very well. I keep a thermometer, which marks the lowest temperature, under glass, where there is no fire-heat, and I find that this thermometer does not fall so low by 5° or 6° as one out of doors. *C. A. A. Lloyd, Whittington, near Oswestry, May* 22.—You will oblige me by correcting an error in my statement regarding the severity of the weather in April. Instead of 20° of frost, it should have been, "thermometer stood at 20°"—12° frost. The mistake escaped my notice at the time, and I thank "A Meteorologist" for pointing out the error. *A. W., Moyen, Banffshire.*

Peeling Larch.—I am so much prepossessed in favour of this practice that, could a market be readily found for the bark, I would invariably adopt it, not only as a means of employment at a period when labour is generally abundant, but from a conviction that the timber is much improved by the operation, more especially if it is allowed to harden under partial protection from the fierce rays of the sun, which would otherwise split and rend it considerably. Some few years since a considerable quantity of Larch thinnings was cut down here and peeled; the trees, however, were somewhat large, averaging about 25 cubic feet; they were allowed to remain under the shelter of the growing trees until next season, when it was found that the timber had become so remarkably hard as to cause the workmen to complain much of it when cutting it into board and scantling; nor was it in any way cracked or rent, the partial shade of the trees having completely prevented this evil, and it was unquestionably better seasoned than if it had been removed from under the shade of the trees, and placed under a covering of boughs. Monteith, Bosc, and other authors, recommend that the timber should be barked at least some time previously to its being cut down; the practice, however, so far as I have seen it adopted, I conceive to be expensive, and not unattended with danger to those employed in the operation; nor have I been able to discover that the timber is better seasoned under this mode than by the more simple and efficacious one I have just described. The cheapness of Oak bark in late years has prevented the tanners in this district from using an inferior article in their trade, although they acknowledge it can be used advantageously in the production of some light articles which they manufacture. As regards the period of stripping, the Larch will be found to run at least a month earlier than the Oak; the early part of April is therefore the usual time at which the operation is most advantageously performed, a circumstance of some moment, at least when a great quantity is felled, because it does not interfere with the regular operations of the Oak bark harvest. The thin soil of this hilly district produces Larch of admirable quality, arising from the circumstance, I presume, of the annual layers being well ripened. It forms excellent roofs and floors; we also use it extensively for gates, and in all situations where twisting is no objection. *James Duncan, Basing Park, May* 21.

Potato Disease of 1849.—I have had some Ash-leaved Kidney Potatoes this year under a frame without heat. On the 21st April I took up a few, and I have dug some several times since, and have seen no cause, either in the root or in the haulm, to suppose that they were in any way touched with disease; but this evening, May 22, in digging up the remainder of them, I find about one-eighth part as bad as ever, thus verifying the fears of your Brenchley correspondent of the 13th inst. *J. S. Evenden, Wrotham, Kent, May* 22.

Antirrhinums.—It is often asked, can the capabilities of these flowers ever enable them to enter the rank of florist flowers; and if so, what position will they be able to elevate themselves to among those too-frequently overruled and rigidly-disciplined favourites. In reply, I would state that the Snapdragon flower, as regards markings and colours, is endued with powers and capabilities which, with attention and judgment in cross-breeding and culture, will ere long prove its right to range prominently amid the best of Flora's productions. A very brief period has as yet been devoted to the improvement of the Antirrhinum; and yet the rapid advancement the better and more attractive properties of this

* Instances, however, have since been observed, as for instance, in several Umbels of our hothouses, where the normal regularity number of two has been increased to three, four, or five. *Translator's Note.*

flower have made in this short space of time encourages me to hope that we may expect greater distinctness and regularity in its stripes and markings than in the Carnation or the Tulip themselves. This statement is based upon the fact that A. Youngii, a chance seedling, is a flower regularly marked and invariably having equal colouring on each side. Last year, out of 8 or 10 bushes of it planted in different parts of my garden, I did not discover any difference in any one of the flowers, which, however, are by no means good as to form. I believe that the old Reticulatum, and the varied ones like Ibrahim Pasha, will sustain the same fact with regard to invariability of marking. A right standard of perfection by which to judge of this flower is yet, however, a desideratum. *Wissinggam.*

Ripiphorus paradoxus.—That this insect, a sort of black-beetle, should be bred in the heart of wasps' nests seems incredible, but such is the fact. I have taken the intruders out of wasps' combs myself; they were mixed promiscuously with the real brood in the cells, and I am at a loss to know how they came there. One might imagine it to be as safe for "a child to play at the hole of the asp," as for these insects to peep into a wasps' nest, much less to descend and lay their eggs amongst such a throng of enemies. I suspect, however, that like the rest of their race, they live chiefly underground, and so can easily penetrate the paper walls of a subterranean vespiary. In this way they might escape the notice of the guards at the entrance, and quickly retire after having effected their purpose. But wasps being lively insects, it seems strange that brood of a race so different should be palmed upon them. While in the grub state, however, they may appear similar to wasps in that stage, and they are afterwards shielded by the cocoons. Or the beetles in question may be ichneumons, which feed upon the rightful owners of the cells. As they never mix with the wasps in the nest, we may conclude they retire as soon as they are bred. *J. Wighton.* [The parasitic connection between Ripiphorus paradoxus and the common wasp has been long ascertained, but the precise manner in which its larva lives in the wasp's cell has not been described, nor has any description of the larva yet been published. Latreille conjectured that the larva was fed by the wasps in mistake for one of their own brood; but it seems more probable that it is carnivorous, and feeds on the wasp-grubs. The abdomen of the female beetle is long and pointed, and well adapted for depositing the eggs in the deep cells, but the manner in which she evades the sentry wasps at the mouth of the nest is a problem. Would the wasps allow any other insect quietly to creep into the mouth of their nest? Would the hive bee do so? (See my observations in reply to "Ruricola" respecting Odynerus p. 472, 1848) or have these parasitic insects some peculiarity of instinct enabling them to enter the nest unheeded? We shall be much obliged to any of our correspondents for further information on the habits of this insect, as well as for specimens of the larva of different ages. *J. O. W.*]

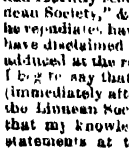
Balsamina latifolia.—Two small plants, from a cutting pot, of this showy Indian annual were presented to me late in October last year. I immediately potted them in 3-inch pots, in light sandy material, and then placed them on the front shelf of a cool stove, in which the thermometer frequently fell as low as 40° during the early part of winter; they were repotted early in January into 6-inch pots, using the mould of a somewhat heavier texture, and replaced in their former position; the temperature of the house has, however, been gradually rising with the advancing season, and the plants have been for some time beautifully in flower, their large peach-coloured blossoms rendering them objects of much attention, and raising them to the rank of drawing-room flowers, for which their durable character makes them well adapted. The leaves and stems are fleshy, of a dull reddish green colour, portraying the character of the genus to which it belongs. *James Duncan, Basing Park, April* 30.

Boldness and Sagacity of the Weasel.—Going down my garden this morning I saw a weasel dragging a young rabbit larger than itself across the walk. I gave chace, and the weasel dropped its prey at the edge of a heap of Pea-stakes, where it took refuge. I stood watching the weasel, who made a sudden rush out of his covert, seized the rabbit again, and I was only just in time to make him drop it. I then took the rabbit and laid it down about four yards from the heap of stakes, and stood over it with a large stake uplifted over my shoulder, prepared to strike, should the weasel come to the rabbit; after a great deal of peeping out of the sticks and chattering, the weasel came to the rabbit, but was back again in a moment; at length he fairly seized the prey, and gave me an opportunity of striking. I knocked him over, and after a great deal of kicking and rolling, he stretched himself out, and I thought he was dead; he lay apparently quite dead beside the rabbit, and I called the gardener, to tell him to look out for a rabbit's nest, and to see the weasel; while talking on the subject we turned round, and found the weasel gone. I am persuaded that he feigned death (as some other animals do), for if he had been stunned he would not have gasped and struggled as he did. *Cavanensis.*

Flower Sticks.—In forming these, after the laths are split, take one end of the stick in the left hand and hold it firmly upon a bench or table, &c., and with the right hand employ a small spokeshave, striking from you briskly, and moving the stick with the left hand round and round, in order to present the angles and portions requiring to be pared off to the instrument. A little practice will soon accustom any handy workman to round and polish off one-third more sticks in the same time in this way than he could have done with the knife; while none will be injured by splintering off, the spokeshave acting as a plane, and the sticks will be in every respect better finished. The blade can be arranged to take off a fine shaving at one end and a thicker one at the other, thus obviating the necessity of constantly adjusting the instrument. A spokeshave (small ones are the best for this purpose) costs about 9*d.* to 1*s* 6*d.* I prefer them, after four years' practice, without the brass sole. A lighter description of stick suitable for Calceolarias, Carnations, &c., may be cheaply and uniformly manufactured from thin board purchased at 3*d.* the superficial foot, and then with a small plough cut into sticks. *Wissingham.*

Calla æthiopica.—I have a specimen now bearing two corollæ (spathes) on one scape. One of them, which is much the smaller, rises on a short peduncle from within the dilated base of the other, but the two limbs do not sheath one within the other, but spread in opposite directions; and as the inner one only is furnished with a spadix, the other appears like a calyx to it, which, were this the usual mode of flowering, it would no doubt be considered. (Stop, stop!) Both are somewhat misshapen, and the effect of the whole is not nearly so graceful as in the usual single flower. *Hales leigh.* [This is a curious monster, the nature of which is misunderstood.]

Rabbit Fence.—"Cavanensis" appears to doubt the fact that rabbits will leap a fence 3 feet high; what will he say to their leaping in their wanton play a sunk fence of 6 feet? To complete the fence alluded to, iron rods about 1 foot long should be driven into posts one in every 20 feet, and allowed to project on the outside at an angle of 45°; three lines of wire should then be run through the iron rods, 2 inches apart. This will keep all secure *William Culverwell, Thorpe Perrow.*—Rabbits will jump a 5 feet paling if the head of the latter leans inwards. They jump against it, and run over it like a cat; a wire or a wood fence, however, not more than 3 feet high, with its head leaning outwards, will answer the purpose. Rabbits and hares run against the bottom of such a fence, and do not think of jumping over it. My father had a place much infested with rabbits, and we always found the above plan successful.



1 is better than 2, and 2 is better than 3; A being inside, B outside. *An Observer.*

Rust on Grapes is readily produced under certain conditions of the atmosphere of the house in which the Grapes are grown. During periods of wet and sunless weather, where a close, moist atmosphere is maintained, without due regard to perfect ventilation, the moisture is condensed on the berries, and in the more stagnant parts of the house a mouldiness is soon generated, which afterwards assumes the appearance known as rust. Thrips also cause a somewhat similar appearance, but distinguishable from true rust in being more glossy and superficial in character. *James Duncan, Basing Park, May* 16.

Felling Resinous Timber.—Allow me to make a suggestion in reference to your request for information as to the proper period for felling resiniferous trees. It appears to me that any information that can be collected in England must be of little authority, from want of a sufficient experience of the comparative durability of the timber. The true place wherein to seek information must be the north of Europe, where Fir timber has been for centuries in such universal use at home, and for export, that it must be a perfectly ascertained point, well known to every peasant and to every merchant, whether winter felled or summer felled timber is the most durable. You would probably find no difficulty in obtaining information from the Baltic ports, but at any rate there is such constant communication every summer between England and Switzerland, where the fact must be equally well ascertained,* that among your numerous correspondents some one might, one should imagine, easily be found, who would undertake a commission of enquiry, if you were to make it known, through your columns, that such was desired. I have been myself assured by a merchant long settled in Russia, who I should imagine must know, that all the Fir timber exported from the Baltic is felled in summer. *Ignoramus.*

Anthophorabia retusa.—I am sorry I have occasion to trouble you respecting some of the statements in the report of a meeting of the Entomological Society, printed at page 295, which I regret to say are erroneous. I trust that this report was not supplied to you by Mr. Westwood, who addressed the Entomological Society verbally, if I am correctly informed, for I was not present at the meeting, having withdrawn myself, and ceased to be a member of that Society at the end of last year. The report makes reference to that of the Linnean Society in your 18th Number (p. 279), and states that "Mr. Westwood entirely disclaimed having doubted the fact of Mr. Newport's discovery of this insect (Anthophorabia) in 1832, or of having endeavoured to make it appear that Mr. Newport's knowledge of the insect was derived from the communication of Mr. Westwood." And yet, in the same breath, after alluding to his having proposed the name of Melittobia Audouinii for an insect (which he now asserts is my Anthophorabia), he says, "Notwithstanding this, Mr. Newport, who was present at the above-mentioned meeting, had recently read a memoir on the same insect before the Linnean Society," &c.; and thus he again conveys the imputation he repudiates having made, and which, possibly, he would never have disclaimed but for the evidence of Mr. Nash in my favour, adduced at the reading of the second part of my paper. Now, I beg to say that Mr. Westwood most certainly did endeavour (immediately after the reading of the first part of my paper to the Linnean Society, on the 20th of March) to make it appear that my knowledge must have been derived from his verbal statements at the Entomological Society, in 1847, and he asserted (as many who were present may remember) that I had seen his drawings, which I instantly denied, and that I was in the chair of the Society at the time. The printed proceedings of the Society prove that Mr. Spence was in the chair, I was present at the meeting, but did not see his drawings or his insects, which, nevertheless, he appears to have produced; although, now that he admits my priority of discovery in 1839, it is quite immaterial whether I saw these or not in 1847. It was not until after the reading of the second part of my paper, on the 1st of May (six weeks after his attack on me), and after the evidence referred to had been adduced, that Mr. Westwood, to the surprise of those who were present on both occasions, disclaimed having cast the imputation, and then immediately read a second attack, which he had brought in his pocket for the purpose! Ample opportunity was afforded to him of making any statement he chose, yet he gave no answer whatever to two plain questions which I put to him before the Society, and on which the whole of the scientific matter hinges. The questions were—as to the identity of the two insects, and as to whether Mr. Westwood considers the rules for nomenclature which he (in committee of the British Association, in 1842) assisted to establish, and to which his name is printed in assent, are operative. He remained entirely silent; but it seems that he has shifted his attack to another society, at which I was not present, and at the meeting of which he well knew I was not likely to be present, to reply to his assertions, which are now made use of in your journal. As regards the identity of my species with his, the description which he has now for the first time published of his insect (although, by the date he has prefixed to it, he seems to wish it to be believed that this was a description given in 1847) differs so much from mine published in your journal in March last (p. 183), and also from the details in my drawings carefully made in 1831-32, as to render it most likely that the insect discovered by myself at that time, and now named Anthophorabia, and that alluded to by him in 1847 by the name of Melittobia, are quite distinct; in which case there is an end of the question, and his attacks upon me have been labour lost. Thus the male sex of my insect has stemmatous eyes; his has neither compound eyes nor stemmata; mine has the antenna four-jointed, with the second joint very large and globose; his has the same part nine-jointed, with the middle joints "very small and subannulose," without any such part as described in mine. Yet Mr. Westwood now asserts that the two insects are identical, and to support this assertion makes another, that my description is erroneous! a possibility certainly, but not, I think, from the details above given, a probability. There is one circumstance which I must now mention that may show Mr. Westwood's conduct in its proper light; it is this: I expressly stated, in the first part of my paper, when describing my insect, that he had proposed the name of Melittobia Audouinii for an insect which might probably have some affinity with mine, and I mentioned where and when he had done so, and, further, I quoted also the few allusions he had made to it, yet immediately afterwards he rose, and made it appear that I must have derived my knowledge of my insect from his verbal statements in 1847. Before closing this communication, I have to notice another part of the report, where it states that Mr. Westwood complains of my having pointed out that he had mistaken certain parts in the larvæ of Ichneumonidæ for ocelli, but which are rudimentary antennæ. Now I beg to say that if Mr. Westwood made the statements announced in this part of the report, he stated what none but himself could possibly be aware of, as he makes no reference whatever in his account of the head of the larva of Ichneumonides to his "Introduction," p. 147, and which description I quoted verbatim of his "having in view the structure of the head of the larvæ of the saw flies and aculeate hymenoptera;" moreover hints that "De Geer had described the dark points in question as eyes," as now asserted. He mentions De Geer, in a note, respecting the mandibles and lips, but not in any way, either in note or text, with reference to the eyes or the antennæ. The words in his 'Introduction" are, "the head (fig. 76, 14), furnished with two distinct round points, in those larvæ which I have examined, resembling ocelli," &c., but as mentioned in my paper, when quoting this remark, he does not allude to antennæ. Few persons, I think, will now doubt that he had fallen into the singular error stated, and which, let me add, he took not the slightest notice of when I pointed it out at the Linnean Society. I regret much, for the cause of science, that I have had occasion, when working out subjects on which Mr. Westwood has touched, to correct his errors and views, observations, assumptions, or assertions, the frequency of which may have been unpleasant to him; but I have felt it incumbent on me, as a physiologist and anatomist seeking facts, to do this, and I shall continue to feel so, however much he may be displeased at it. He may do the like by me when he has proper occasion, and I shall gladly admit corrections from any one that are honestly and impartially made. *George Newport, 49, Cambridge street, High Park Square.—Melittobia Audouinii.*—1st. I again deny having expressed a word of doubt as to the fact of Mr. Newport having become acquainted with his insect in 1832. 2d. I again assert that the facts and descriptions given by me of Melittobia Audouinii are sufficient for the identification of my insect, and ought (even had not Mr. Newport been present when my specimens and drawings were exhibited) to have satisfied him of its identity with his own insect. 3d. I reassert the identity of the insects, believing that the differences in the descriptions given by myself and Mr. Newport arise from his having drawn up his characters from inaccurate drawings made 17 years ago. If his description be made from the insects themselves, let them be examined by any competent entomologists. 4th. As to the so-asserted antennæ of the larvæ of the Ichneumonidæ, it is not quite correct, when a person asserts that one thing resembles another, to affirm that he states them to be identical. *J. O. Westwood.* [If this discussion is to be prolonged, we must beg that it be transferred to some other place.]

* The guides among the high Alps are commonly very intelligent persons, who must know all about the matter.

Societies.

Horticultural, *May* 22.—Sir Charles Lemon, Bart., M.P., in the chair. Dr. Lindley delivered the second of his six Lectures on Horticulture this day. The subject was "The Root; its Means of obtaining Food, and its other Properties." On this occasion the manner in which roots are formed, and the means by which they feed, together with a variety of questions connected with growth, drainage, transplantation, potting, watering, manuring, forcing, &c., were illustrated by examples. Specimens were also sent from the Society's garden of the following plants: Hoya imperialis (Messrs. Veitch's small-leaved variety), Lemonia spectabilis, Cyrtoceras multiflorum, a Parsonia from New Zealand, Lilium pyrenaicum, Nemophila maculata, Tropæolum edule, Erica Cavendishii, and Dillwynia clavata.

Caledonian Horticultural.—The spring competition and promenade meeting of this Society were held on the 12th inst., and the day being fine there was a large company. The following awards were made: For the four finest Shrubby Greenhouse Plants in flower, separate prizes were offered to nurserymen and practical gardeners, each class competing among them-

selves. The Nurserymen's Prize was gained by Messrs. James Dickson and Sons, who produced a large and beautifully-flowered plant of Daviesia latifolia, Hovea Celsi, Podolobium staurophyllum, and Platylobium rhombifolium. In the competition among practical gardeners, the 1st prize was awarded to Mr. Sleigh, gr. to Lord Advocate Rutherford, for compact and well flowered plants of Boronia anemonefolia, B. denticulata, Hovea Celsi, and Chorozema varium nanum. A 2d premium was voted to Mr. White, gr. to Mrs. Haig, for Chorozema Henchmanni, Leschenaultia formosa, Tetratheca verticillata, and Podolobium staurophyllum.—For the finest Rhododendron, either scarlet or light variety, a 1st prize was voted to Mr. Burns, gr. to C. G. Scott, Esq., for a white variety named Scottii; and a 2d premium was awarded to Mr. Cameron, gr. to S. Hay, Esq., for a dark variety named Queen Victoria.—For the four finest Cape Heaths, in pots, a 1st prize was voted to Mr. Veitch, gr. to Viscount Melville, for Erica perspicua alba, E. ovata, E. elegans, and E. fimbriata; a 2d premium was assigned to Mr White, for E. ventricosa coccinea, E. gemmifera, E. vestita alba, and E. jasminiflora nana.—For the finest flowered specimen of a perennial Tropæolum there were three competitors. A 1st prize was voted to Mr. Young, gr. to Mrs. H. N. Ferguson, for a beautifully flowered plant of T. tricolorum, trained on an upright branched trellis, so arranged as to cover the pot; and a 2d premium to Mr. Reid, gr. to Professor Syme, for a vigorous growing specimen of the same on a pyramidal trellis.—There was a brilliant display of Cinerarias, and two awards were made, the 1st to Mr. White, for Cerito, Newington Beauty, Satellite, and Eleanor; and the 2d to Mr. Ritchie, gr. to W. M. Innes, Esq., for Lady Prudhoe, Newington Beauty, Beauty of St. John's Wood, and Beauty of Peckham.—For the two finest flowered Cacti, distinct species or varieties, a first prize was awarded to Mr. Rennie, gr. to W. L. Gilmour, Esq, for C. splendidus and C. Jenkinsonii.—For Tropical Orchids an award was made to Mr. White, for Aerides crispum, and Peristeria Humboldti.—There was a keen competition in stage Auriculas, and two prizes were awarded, the 1st to Mr. Ritchie, for Taylor's Glory, Royal Standard of England, Colonel Gardiner, Hepworth's True Briton, Fletcher's Ne Plus Ultra, and Taylor's Ploughboy; and the 2d to Mr. Grieve, whose kinds were Lancashire Hero, Ringleader, Waterloo, Robert Burns, General Blucher, and Colonel Gardiner.—For the two largest and finest heads of Broccoli, a 1st prize was awarded to Mr. Gordon, gr. to J. H. M'Kenzie, Esq., the variety being Lake's new late white; and a 2d to Mr. M'Lachlan, Barnton, for M'Dougall's late white.—For the best forced Strawberries in pots, a prize was awarded to Mr. M'Lachlan, the kinds being Keens' Seedling and British Queen.—The prize of one guinea, offered by Messrs. Dickson and Co. to practical gardeners, for the best four Chinese Azaleas, was gained by Mr. Sleigh, Lauriston Castle, with finely flowered plants of splendens, elata plena, alba perfecta, and Minerva; and a 2d premium was voted by the Society to Mr. White, for fine specimens of exquisita, rubra plena, rosea, and Jacksoni. Besides the numerous collections of plants sent in for competition, there was, as usual, a large display of interesting productions for exhibition only. These were exhibited in the new Winter Garden Structure, and presented a gorgeous appearance. Messrs. Dicksons and Co. sent a large and varied collection of greenhouse plants, and three boxes of Pansy blooms. Amongst the former may be particularly noticed, a large white Azalea, and fine plants of Erica vestita and Weigela rosea. There was also a good collection of plants from Messrs James Dickson and Sons, including a finely flowered plant of Weigela rosea, and a large specimen of Statice macrophylla. Messrs. P. Lawson and Son, also sent a rich collection, consisting of Rhododendrons, Heaths, and other plants. From Mr. Carstairs, Warriston Nursery, there was a choice collection of plants, among which were some miniature Orange trees in fruit, and also first-rate specimens of Giant Asparagus. Mr. Stark's collection of greenhouse plants was likewise fine, and the plants, though small, were in high health. There was a good collection of plants from Mr. Kelly, and several seedling Rhododendrons from Mr. Purdie; also a collection of Alpines and a fine plant of Weigela rosea from Mr. Handasyde; and beautiful Cinerarias from Messrs Downie and Laird. From Mr. Forrester, Ratho, there was a good stand of Auriculas; and from Mr. Grieve, three boxes of named Pansies, and Auriculas in pots. From Professor Dunbar there was a large collection of plants, including a seedling Rhododendron, closely allied to arboreum, and a well-grown plant of Rosa Devoniensis; together with cut flowers of Rhododendrons, and 24 named varieties of Camellia japonica. S. Hay, Esq., exhibited Azalea phœnicia, Erica Cavendishii, with the rare Cereus Smithii in flower. Mr. Veitch produced a basket of Alpine plants, with some beautiful varieties of Dodecatheon Meadia, &c. Mr. Reid exhibited Sarracenia purpurea, and three flowering Orange trees. From Mr. D. Mackenzie came an elegant floral device. From Dr. Neill's garden was a basket of rare and interesting Alpines, and a myrtle-leaved Orange in fruit. Mr. Thomson, gr. to Captain Falconer, exhibited some cut flowers of Fritillaria persica, and a fine collection of rare Narcissi, including Narcissus bicolor and triandrus. There was also from Mr. White, a flowering plant of Cereus Crenatus, evincing superior cultivation, and for which a Certificate of Merit was awarded; from Mr. Rennie a fine plant of Cactus Jenkinsonii; from Mr. Sleigh, Azalea indica alba; Pansies, Polyanthuses, &c., from Mr. Pattison; and a flowering plant of Arum triphyllum from J. Hope, Esq.

Linnean, *May* 24.—The Bishop of Norwich in the chair. The anniversary meeting was held to-day. Mr. Forster, the treasurer, being deceased, the report on the state of the finances was read by the secretary. During the past year the Society had received 814*l.* 5*d.*, which added to the balance of last year, 69*l.* 5*s.* 8*d.*, made 883*l.* 6*s.* 1*d.* Of this, 636*l.* 9*s.* 3*d.* had been expended, leaving in the treasurer's hands a balance of 246*l.* 16*s.* 10*d.* The secretary then read a short notice of the following Fellows and Associates, who had died during the past year: Sir John Barrow, Bart., Edward Forster, Esq., Treasurer of the Society, Dr Gardner, of Ceylon, Dr Gorham, Alexander Macleay, Esq., W. Pilkington, Esq., Dr. R. J. N. Streeter, W. H. Lloyd, Esq., Dr. Walters, Professor Endlicher, of Vienna. With regard to this illustrious botanist, it was stated that he died of an attack of apoplexy, and that there was no truth in the statement that he had committed suicide. The two associates who had died were Mr. MacNab, of the Edinburgh Botanic Garden, and Mr. Cameron, of the Liverpool Botanic Garden. A collection of dried Algæ, from Norfolk Island, was presented by J. Couch, Esq. A new species of Luzula, from the Isle of Wight, was presented by Dr. Bromfield. A full-sized protrait of Sir Joseph Banks was presented by Sir Everard Home A lithograph of the Bishop of Norwich, and an engraving of Captain Holman, the blind traveller, were likewise presented to the Society. The following officers were elected for the ensuing year: President, the Lord Bishop of Norwich; Treasurer, W. Yarrell, Esq.; Secretary, J. J. Bennett, Esq; Under Secretary, R. Taylor, Esq. The following five members of Council were removed: J. S Bowerbank, Esq; W. J. Broderip, Esq.; the Very Rev. Dr. Buckland; W. J. Burchell, Esq., D.C L.; E. Forster, Esq., deceased; and the following five Fellows were elected: T. Bell, Esq.; F. Boott, Esq., M.D.; J. Gould, Esq.; J. Hogg, Esq.; and R. H. Solly, Esq.

Microscopical, *May* 23.—The President in the chair. J. Bambridge, Esq., and S. Gurney, Esq., were elected members. Mr. John Quekett read a paper on the structure of cartilage in animals Having referred to a previous paper read before the Society, he proceeded to point out the difference between permanent and transitionary cartilage. The former was seen in the ears, nose, and bronchial tubes of most animals, the latter was developed as a preparation for osseous structures. The appearances presented by cartilage cells in the lancelet, the myxine, and other cartilaginous fishes was described. In many of these fishes, as the sharks and rays, the skeleton presented true bone cells. The cartilage of the tail of the tadpole, the ear of the mouse and the bat, the young of the trout, was also described. The internal cells of the Chorda dorsalis of the latter closely resembled vegetable cells, and, in the early stages of their growth, presented crystals lying across them, closely resembling those found in plants, and called Raphides. Mr. Williams described a simple apparatus for holding bottles, with which to fish for animalcules, &c. It consisted of a piece of whalebone, which was fastened to the end of a stick or umbrella, by means of rings, in such a way that a bottle was conveniently held in a loop of the whalebone.

Midland Counties Florists, Derby, *May* 23.—First pan of Tulips, Mr. Lakin, with Pass Perfecta, Capt. White, Heroine, Triomphe Royale, Eclipse, and La Bien Amie. Second pan to Mr Jno. Gibbons, with Naylor's Blucher, Capt. White, Heroine, Lady Wilmot, Great Western, and Lord Vernon.

Royal Horticultural of Cornwall, *May* 11.—This was the first show of the season. The following awards were made. *Fruit.*—Best Pine-apple, Queen, G. C. Fox, Esq Best six Apples, Adam's Pearmain, ditto; second best, Golden Russet, Rev. Canon Rogers. Best dish of Strawberries, British Queen, Rev. T. Phillpotts *Flowers.*—Ornamental plant in flower, not previously exhibited, Weigela rosea, Bronze Medal, W. Daubuz, Esq. Best 12 Stove and Greenhouse Plants, Leschenaultia formosa, Eriostemon scabrum, Tetratheca hirsuta, Aphelexis purpurea macrantha, Gomphobolbium versicolor, Silver Medal, Mr. F. Passingham; second best, Siphocampylus coccineus, Cuphea platycentra, Gardenia florida, G. C. Fox, Esq.; third best, Clematis azurea grandiflora, Zichya coccinea, Justicia carnea, Cuphea platycentra, G N. Simmons, Esq.; best six varieties of ditto, Cyrtoceras reflexum, Siphocampylus coccineus, Torenia asiatica, W. Daubuz, Esq.; second best, Tetratheca verticillata, Balsamina latifolia, Mr. F. Passingham; third best, Sinningia floribunda, Pimelea spectabilis, Clerodendron splendens, H. S. Powell, Esq.; fourth best, Gardenia florida, Euphorbia splendens, G. N. Simmons, Esq.; best specimen Stove Plant, Cyrtoceras reflexum, W. Daubuz, Esq; second best, Torenia asiatica, Rev. T. Phillpotts, third best, Ardisia crenulata Mr F Passingham; best specimen of Greenhouse plant, Chorozema varium, Rev. T. Phillpots; second best, Aphelexis humilis, Mr. F. Passingham; third best, Prostranthera rotundifolia, Sir C. Lemon, Bart., M.P. Best collection of Orchids, Calanthe veratrifolia, Oncidium ampliatum, H. S. Powell, Esq.; best specimen of ditto, Phaius Wallichii, Rev. T. Phillpots; second ditto, Gongora maculata, Sir C. Lemon, Bart., M.P. Best collection of Gloxinias, Gesneras, and Achimenes, Achimenes grandiflora, picta, patens, Gloxinia Handleyana, Cartoni, Gesnera Suttoni, W. Daubuz, Esq.; second best, Achimenes picta and grandiflora, Gloxinia Passinghamii, macrophylla, and cerina, H. S. Powell, Esq. Best specimen of ditto, Gesnera suttonii, G. C. Fox, Esq. Best collection of Bulbous Plants, six Hybrid Amaryllis, J. Williams, Esq. Best six Pelargoniums, Brilliant, Foster's Orion, Lyne's Duke of Cornwall, Magog, Alboni, Forget-me-Not, Mr. F. Passingham, second best, Rosamond, Guillelma, Salamander, Brilliant, Zelinda, Lyne's Duke of Cornwall, W. Daubuz, Esq. Best specimen Fuchsia, F. fulgens, Mr. F. Passingham; second best, Josephina, G. C. Fox, Esq. Best six Heaths, depressa, intermedia, Hartnelli, Mr. F. Passingham; best specimen of ditto, Cavendishii, Mr. F. Passingham. Best collection of Azaleas, splendens, triumphans, optima, Indica candidissima maxima, phœnicea, Minerva, Mr. F. Passingham, second best, rosea, fulgens, barbata, rosea punctata, alba, W. Daubuz, Esq; best specimen of ditto, Optima, Mr. F. Passingham; second best, indica alba, Rev. T Phillpotts. Best collection of Cinerarias, Azurea grandiflora, Enchantress, Triumph, Brilliant, Princess Alice, Compacta, W. Daubuz, Esq.; best specimen of ditto, Rosea alba, W Daubuz, Esq. Best collection of Calceolarias, Alboni, Brilliant, Louis Philippe Jenny Lind, Rebecca, Eclipse Claudiana, W. Daubuz, Esq., second best, Louis Philippe, Zenobia, Grand Sultan, Lady Miles, Matilda, Mr. F. Passingham. Best collection of Heartsease, Lord Hardinge, Duchess of Sutherland, Optimus, Caroline, Model of Perfection, Marchioness of Lothian, Superbe, Dido, Blooming Girl, Magnificent, Supreme, Prince of Orange, Mr. W Woolcock Best six Roses in pots, Bengère, Madame Laffay, Mrs Bosanquet, Baronne Prevost, Belle Allemande, Bouquet de Flore, Mr. F. Passingham, best six varieties of cut ditto, Eugene Beauharnais, Comte de Paris, Devoniensis, Smith's Yellow Noisette, Caroline, Banksia lutea, Rev. Canon Rogers. *Abridged from the West Briton of May* 18.

Reviews.

Manual of the Mercurial and Aneroid Barometers. By John Henry Belville, of the Royal Observatory, Greenwich. 1*s.* pp. 53. Richard and J. E. Taylor, Red Lion-court, Fleet-street.

This little Manual contains explanations of the nature and construction of the mercurial barometer, and of a new instrument, also adapted for indicating the weight of the air, called the Aneroid, which may be carried in the pocket The explanations of the mercurial barometer refer chiefly to those of the upright form, which is doubtless the best. Most of these, all that are now made, are furnished with a Vernier scale, by which the height of the mercurial column may be read off to the $\frac{1}{100}$ or even the $\frac{1}{500}$ part of an inch. Those who do not understand the nature and use of the Vernier scale may easily do so by this manual, in which it is well explained and illustrated by an engraving A table of the mean height of the barometer at noon for Greenwich, deduced from 30 years' observations, is given; also various useful tables for the necessary corrections which require to be made in order to reduce the observed height of the mercury to the uniform standard of 32°. The remarks under "Phenomena of the Barometer" appear to have been made from long experience and careful observation. The following are examples:

"If the mercury fall with the wind at west, north-west, or north, a great reduction of temperature will follow; in the winter severe frosts; in the summer cold rains." * * "A fall of the mercury with a south wind is invariably followed by rain in greater or less quantities."

"When the mercury is very unsteady during calm rainy weather, it denotes that the air is in an electrical state, and that thunder will follow." * * * "In the summer months, if a depression of two or three-tenths of the mercury occur in a hot period, it is attended with rain and thunder, and succeeded by a cool atmosphere. Sometimes heavy thunder-storms take place overhead without any fall of the mercury; in this case a reduction of temperature does not usually follow."

The Aneroid, "for purely scientific purposes, is at present far removed from competition with the mercurial barometer; but it has, nevertheless, some advantages in its extreme sensibility and its portability." It consists of a flat circular box of corrugated elastic metal, exhausted of air. As the weight of the atmosphere is increased or diminished, so is the surface of the corrugated elastic box depressed or elevated; and this action being communicated to springs and levers, a hand is moved to indicate, on a dial-plate, the amount of pressure. The instrument is 4¾ inches across the face, and 1¼ inch in thickness.

The table of corrections to be applied for temperature is, so far as it extends, the same as that calculated by Professor Schumacher, and gives the corrections for every second degree, from 24° to 80° Fahr. In future editions it would render the work still more useful if these corrections were given for every degree, from 24° to 90° or 100°. It would then be available for India and other hot climates ‖

Garden Memoranda.

Mr. Groom's Tulips.—The present season has been most unfavourable to a fine display of Tulips. This fact the last South London floricultural show amply proved. Notwithstanding, however, the prevalence of easterly winds and late spring frosts which we have experienced, Mr. Groom has had a most excellent exhibition of this favourite flower. His best bed, 120 feet long, and containing about 2000 flowers, has been as fine as we have ever seen it in any former year. We say has been, for its beauty is now past, the bright days of this week, after so much dull weather, having driven the flowers rapidly out of bloom. The following favourite sorts were, however, still in good condition when we saw them, namely, Michael Angelo, Duchess of Sutherland, Marshal Soult, Dukes of Devonshire, Norfolk, Cambridge, and Sutherland; Victoria Regina, William IV., Prince of the Netherlands, Catalani, King of Saxony, Polyphemus, Lord John Russell, Louis XVI., Lac, Aglaia Rembrandt, Cerise Blanch, Nourri Effendi, Addison, Pompe funebre, and Lady Peel. In the show-house, at the entrance to this Nursery, we remarked Mr. Fortune's Gardenia in flower; and a specimen of Lilium lancifolium punctatum, bearing 11 buds and two fully expanded blossoms. This fine Lily has been found to force well. Glycine sinensis was beautifully in bloom in the roof of this house.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

MANY stove plants which commenced their growth early in the season will now be about completing it; and to mature it more perfectly, will require to be exposed to stronger light and a freer admission of air than they have been accustomed to during their season of growth. This method of procedure is particularly applicable to those plants which produce their flowers upon the young shoots of this year's growth; if plants of this description are kept too long in a hot, damp atmosphere, they will continue to grow, but flowers will be looked for in vain. At present there are not many plants to which these directions refer, but there are some, and the number will increase every week. The practised eye will readily detect the proper period at which to commence the gradual admission of a greater quantity of air, and the free exposure to the sun; but to the tyro this is no easy matter; however he must attentively watch the natural indications given by the plants, and the moment he observes the young growths to show a disinclination to proceed further, he may conclude that the proper time is come for ripening them. In some plants this disinclination will evince itself in the shape of terminal or lateral flowers, but these will be weak and few in number, if the plants are still confined in a hot moist atmosphere. One important thing to be observed is that the transition be gradual. Other plants which do not at present exhibit any desire to pause in their growth, should be encouraged with an adequate supply of heat and moisture, and by shading from the scorching rays of the sun. With plants still growing, the amount afforded of heat, shade, and moisture, should be increased rather than decreased, proportioning them to the still increasing length and strength of daylight. Let syringing be performed in good time in the afternoon, that all superfluous moisture may dry up before dark; to assist this admit a small current of air for a couple of hours after syringing, and allow this to remain on all night. This applies especially to houses with closely glazed roofs, where sufficient air to prevent stagnation cannot enter by means of the laps. Avoid high night temperatures as you would the plague; 65° at this season is hot enough for anything.

FLOWER GARDEN AND SHRUBBERY.

Those who commenced their planting out in good time, will now congratulate themselves on having done so, as the genial showers with which we have been visited during the last 10 days have started plants which were previously planted into rapid growth, and have prevented the more recently planted ones from receiving any check. Plants and weeds are growing with amazing rapidity, and let that be a warning to use all diligence to complete all the necessary work connected with the former, that the full force of your attention may be directed to the eradication of the latter. Herbaceous plants of all kinds are now growing rapidly, and unless many of them are immediately supplied with suitable stakes, they will soon have grown out of all shape, and many tender things will be blown about by the wind and broken. If Carnations, Picotees, Cloves, &c., are not staked already no time should be lost; they are charming things for the flower-garden, and invaluable for supplying cut flowers for vases or bouquets. Annuals which have been sown or pricked out into frames or beds require transplanting into their final situations, and biennials into reserved beds for planting out next spring. Spare hand lights and frames may be placed in shady situations, and made use of for propagating double Wallflowers, choice Dianthuses, Phloxes, Iberis sempervirens, and many other select herbaceous and half shrubby plants. If the Neapolitan and Tree Violets have not yet been attended to, they should be immediately parted and planted in a frame of rich leafy soil on a shady border.

FORCING DEPARTMENT.

Where Pines are grown on the planting out system it should be remembered that the soil will require an entire renovation at least once in three or four years; the time for this operation must be left to the judgment of the cultivator, if other circumstances are convenient; this is an excellent time of year for such a purpose, but the most favourable opportunity is when all or nearly all of the older plants in the pit have perfected their fruit. The few (if any) remaining may be left standing with a small mound of earth about their roots; and the younger plants which, one after another, have been put in as vacancies occurred, after being well watered, may be carefully lifted with balls and set in a close shed while the old soil is being removed and the new put in. The soil should consist of from one to two-thirds of peat, according to its quality, and the remaining portion of turfy loam, with a liberal admixture of sand. The plants of the back row should be planted before the soil is put in for the second row, and the remaining rows proceeded with in the same order, that none of the soil may be unduly compressed. If the new soil is moderately moist, it will be better to withhold water from the roots for a few days, to allow the plants to make an effort of their own, during which time a moister atmosphere must be kept up; and rather more than ordinary shading used, until the plants are thoroughly established. VINERIES.—Let these houses be abundantly supplied with air. In finally regulating the berries of the latest crops, which are expected to hang through the winter, rather more berries should be cut away than from those intended for earlier use. This will in a great measure save them from damp, which is unavoidable during the dark months, especially in low and unfavourable localities. In the autumn, these bunches will have a rather loose appearance by the side of those which have been less severely thinned; but they will show a decided advantage over them before the winter is past.

FLORISTS' FLOWERS.

PINKS.—Disbud; if for exhibition, leave one or two buds, according to the strength of the plant; where seed is required, some florists will leave them all on. Now we do not admire this "hap and a venture" sort of work. We say leave three or four blooms on each plant. Take care that, by artificial fertilisation, each is properly fertilised. The seed from these will give more real satisfaction, and be more likely to produce good flowers, than 30 pods which are left to chance. TULIPS.—These are a sad affair this season. Amateurs are desponding and disappointed; yet we will engage to say there is "a bright hope for them," for should there not be more breeders break or become rectified next season, in consequence of their being weakened, then we are no prophet. We have seen some sweet things, however, which we hope to note more at length shortly. We would, in the interim, advise the awning, where the foliage is much injured, to be kept on till the roots are taken up. In their present state, heavy or continuous rains would have a most prejudicial effect.

HARDY FRUIT GARDEN.

The materials used for protecting the blossoms being now removed from all descriptions of fruit trees, the principal work requiring attention amongst wall trees will be to clear them of all useless shoots, and to give them an occasional wash with the syringe or garden-engine, to destroy aphides, &c. Fruit trees of all kinds should be examined, and where a greater quantity is set than the trees can bring to maturity without injuring themselves, a portion should be removed; the extent of this thinning must depend upon the purpose to which the fruit will be appropriated when ripe. If intended for desert they should be left thinner than if required for preserving, as they will not arrive at perfection, either in flavour or appearance, if they are crowded upon the trees. All dead flowers, cobwebs, or other rubbish, should be cleared away, to give the trees a neater appearance, and to prevent the harbour of insects. This will particularly apply to Pear trees, as the Pear caterpillars find a shelter in such material, and if allowed to locate themselves there will soon destroy the greater part, if not the whole of the crop. Tie in or nail the leading shoots of Pear trees, as they require it, but do not, even for the sake of neatness, stop all the spur shoots, lest by so doing the natural fruit-spurs for next season are forced into wood spurs; the former are readily known by their short thick stunted appearance, and instead of producing a shoot only produce a bunch of from four to seven leaves. Young trees which are being trained into pyramids should be examined once a fortnight, and the shoots which are not wanted pinched in with the thumb and finger, by which the growth of others may be encouraged. This process should commence with the top shoots, that the sap may be directed into the lower branches; and after an adequate quantity of shoots of sufficient strength is secured to form the lower part of the tree, the leading shoots may be allowed to grow and furnish wood for the top of the tree. Stopping for wood is very different from stopping for the purpose of forming fruit buds; for which latter purpose it will be time enough to shorten the shoots a month hence. Gooseberries and Currants should have their young wood thinned out by immediately stopping at least half the number of shoots to three joints, to allow a freer circulation of air into the centre of the bushes, and the remainder of the shoots should be stopped during the summer, according as the shape of the bushes requires it.

State of the Weather near London, for the week ending May 21, 1849, as observed at the Horticultural Gardens, Chiswick.

May.	Moon's Age.	Barometer. Max.	Barometer. Min	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 18	25	29.858	29.467	64	47	55.5	W.	.01
Satur... 19	26	30.000	29.935	66	50	58.0	W.	.36
Sunday . 20	27	29.821	29.721	66	50	58.0	S.W.	.64
Monday 21	28	29.836	29.771	71	47	59.0	E.	.02
Tues. .. 22	●	29.866	29.744	66	45	55.5	S.W.	.20
Wed. .. 23	1	30.210	29.977	69	39	54.0	W.	.00
Thurs .. 24	2	30.302	30.086	76	50	63.0	S.	.00
Average....		29.969	29.805	66.8	46.8	56.8		1.43

May 18—Overcast; rain; cloudy.
— 19—Densely clouded; cloudy and fine; overcast; rain.
— 20—Rain throughout.
— 21—Hazy; heavy rain at night.
— 22—Rain, fine; showers in the evening; clear.
— 23—Fine throughout, clear at night.
— 24—Very fine; densely overcast
Mean temperature of the week 1½ deg. above the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending June 2, 1849.

May and June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 27	68.5	45.2	56.8	11	0.41 in.	1	3	3	1	1	3	2	1
Mon. 28	68.6	44.7	57.2	7	0.56	—	5	7	1	4	4	2	—
Tues 29	66.0	45.7	55.9	9	0.97	1	3	1	2	3	5	3	—
Wed. 30	68.0	45.4	56.7	8	0.21	2	5	4	—	2	6	2	2
Thurs. 31	69.9	46.5	58.2	7	0.38	—	3	2	—	3	6	4	1
Friday 1	70.4	46.9	58.7	11	0.47	3	4	1	5	5	1	4	—
Satur 2	69.8	47.4	58.6	8	0.98	—	4	3	2	2	5	3	3

The highest temperature during the above period occurred on the 30th 1847—thurs. 91 deg.; and the lowest on the 27th, 1838—therm. 33 deg.

Notices to Correspondents.

BACK NUMBERS: *G P.* We have one of the numbers, and expect to procure the other in a day or two.

ANTS: *T S H and Sub.* Turpentine will kill them; but it may also injure the Grass. Try its effect on the latter, on a small scale at first, by way of experiment.

BOOKS: *Specs.* Ladies' Botany, by Dr. Lindley, will probably answer your purpose; there is a large and a small edition of it.—*R Rilott.* If you will have the goodness to turn to p. 117 of our current volume, you will find a good illustration of what may be expected from the work in question. ‡

BIRD TRAPS: *W C.* We never recommend tradesmen. We should think any handy workman could make one for you according to the directions given at p. 280. ‡

CINERARIAS: *Justice.* Whatever you may think to the contrary, we repeat that, "with the exception of a few plants from Mr. Kendall, the various groups of Cinerarias shown at the last Royal Botanic Society's exhibition were poor representations, as regards cultivation, of what Cinerarias should be." Had you taken the trouble to make yourself acquainted with the circumstances of the case, you would have found that Mr. Kendall did not, and could not, show for a prize, for his collection of six plants contained seedlings, and several duplicates, which would have disqualified him, had he entered the lists with that end in view. This explains why his name did not appear in the award of the judges, and also proves that the above assertion may be true, although he left the exhibition unrewarded. If you will turn again to the reports in question, you will find that Mr. Ivery's plants are not "condemned" at the Park, and "praised" at Chiswick. The statements in the two reports are perfectly consistent with each other. *The Reporter to the Gardeners' Chronicle.*

GRAPES: *A Lady.* Yours is a case of shanking, possibly arising in the present instance from the roots having got down into bad soil. ‡

GRASS SEEDS: *J L.* They can only be destroyed by heating the dung-heap and frequently turning it over. You can do nothing more now than weed the Grasses out.

HORTICULTURAL SOCIETY: *G W.* There is no difficulty about being present at Dr. Lindley's lectures. You have only to obtain a written order of admission from some Fellow of the Society.

HYACINTHS: *M E.* We have no idea why a border of Hyacinths, in a warm and sheltered garden, has, for the last three years, borne the imperfect blossoms you have sent. We do not think that the roots will recover again.

INSECTS: *H P.* Why did you not send specimens of the minute black insects infesting the Phalænopsis? We will thank you for some, and in the mean time recommend you to try bruised Laurel leaves, the smell of which destroys insects, if the place where they abound be closely shut. *W.*—*W B B.* The cockroaches attacking the Orchideous plants are quite different from the domestic ones; they are an exotic species, imported with the plants. Will you send us specimens of the other species which attack the roots of the Orchids. *W.*—*M B W.* and *Hort. Soc. Gard.* The insects at the roots of Camellias, Kennedya, and Sedum, are the Otiorhynchus sulcatus. See last week's Answers to Correspondents. Moreover, as this is the period when the insects are undergoing their change from the pupa to the perfect state, with their skins tender (at the roots of the plants on which their larvæ have fed), it will be worth while to saturate the roots of such plants as are past recovery with a weak solution of corrosive sublimate, which will destroy the insects. *W.*—*D.* We shall be obliged for more specimens of the bacon insects, which we did not succeed in rearing. *W.*—*M M.* The caterpillar sent is a small one of the goat moth. Its presence is no sign of decay in the tree. Blow tobacco smoke into the burrows, which will drive the insects out, and then kill them. *W.*—*Crix.* The grubs at the roots of the Wheat are those of a Tipula, or daddy-long-legs (see *Gard. Chron.* 1841, p. 612; 1846, p. 817). Try watering the plants with brine, nitrate of soda, or a mixture of lime and gas-water; or, better still, employ children to pull up the dead plants and collect the grubs at the roots. The little black flies are Molobrus Thornæ, a kind of gnat, which is harmless. *W.*

MANURE. *E O.* Peruvian guano is the best possible manure for all plants that require manure at all, provided the soil is kept "open" by digging in leaves, &c., from time to time. The best way of using it is by pouring water over it, and using the solution thus obtained. The residue is not spoiled, but loses its activity, and may be used like any other solid manure.

MONSTERS: *Anon.* Your Cowslips are in a monstrous, but not uncommon condition, with the calyx growing into leaves.

NAMES OF PLANTS: *Rusticus.* Carex vulgaris is the plant misnamed C. conspicua by Smith. Indeed it is impossible for us to go on naming little miserable specimens of worthless weeds. Pray procure Babington's "Manual" for yourself. The proper and only business of this journal is to settle *doubtful points* concerning the names of plants.—*J Linden.* Your new Orchid, with erect spikes of yellow flowers, is a Cycnoches, which we call barbata; it must be very pretty. The Fuchsia may be the true luxensis, but a single flower and leaf afford insufficient means of forming a judgment in so difficult a genus. The box has been received within these few days; a thousand thanks; it is not yet opened, but shall be carefully examined.—*J B.* Epidendrum elatum, Odontoglossum laeve, Cirrhæa saccata.—*C M H.* Elæocarpus cyaneus, a native of New Holland, not of America.—*R T P.* Cerasus Padus, the Bird Cherry.—*R A.* Gloxinia Priestleyana, deep blue. The other is apparently Passinghamii ¶—*Marcelly.* 1, Barbarea præcox? fruit very young; 2, Helleborus fœtidus, apparently.—*Devonian.* 1, Myrica quercifolia, a Cape plant? 2, Libertia formosa; 3, saxifraga, allied to pedatifida, but smooth. Is this a wild plant?—*R W.* Seems to be Oxalis violacea, but the specimens are insufficient for exact determination. Do the flowers always grow singly?—*J A.* Cattleya intermedia, true; there are many varieties.—*H J.* 1, Muscari moschatum; 2, not Bellevalia, nor in a state to be determined; 3, the European Trichonema Bulbocodium.—*H R J.* The purple flower is Erinus alpinus, a charming rock plant, but rather tender; the other Sisyrinchium Iris.—*Miss L.* Oncidium Carthaginense.

PALM TREES: *J T.* The Talipot is the Corypha umbraculifera, that Palm from which they prepare those huge Indian fans, which may be occasionally seen in London, 6 to 8 feet long. That length represents less than half the diameter of the leaf. The statement of the flower being 7 to 10 feet long is a mistake; the flowers are quite small, but they appear in masses of considerable size. The writer used a figure of speech, taking the part for the whole—a huge bunch of flowers for a single flower.

MISC.: *X Y.* Kitchen garden crops would require not less depth of soil than 2 feet. You had better trench your new ground to this at least, mixing the decayed vegetable soil with the loam beneath, as you propose. Try portions trenched to the depths of 2½ and 3 feet.

SEEDLING FLOWERS.

AURICULAS: *S B G.* Flowers much faded when received, but judging from them, your seedling is a first-class flower.*

CALCEOLARIAS: *R C.* Your flowers reached us in very bad condition; but, judging from the specimens before us, they are all inferior, being either much too small or very defective in outline.*—*S E.* Both bad shaped, common-place kinds.*

CHEIRAN: *J A.* So withered when received that no opinion could be formed of it.*

CINERARIAS: *H J H.* A shaded purple, rather large; deficient in outline, but superior to many of the same colour at present in cultivation.*—*A. Mackie.* A first-rate variety, with deep purple flowers.*—*S E.* Small, and too common in colour.*

FUCHSIAS: *J B.* Too short in the tube, and too much like others already out.

HEARTSEASE: *G R.* Your seedling, named Uttoxeter Hero, is good in shape, texture, and markings.*

RHODODENDRONS: *G D.* Pretty, but common in colour, and too much like many others already in cultivation.*—*J K. Dillington.* One of those bright red varieties, of which there are so many. They are perfectly hardy, as far as the plants are concerned, but a slight spring frost destroys the flowers immediately they open, unless they receive some protection.*

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BY HER MAJESTY'S ROYAL LETTERS PATENT.

EDENCH offers for sale Patent HOT-HOUSES, which he will warrant far superior to all others, in every respect, viz., 1 Span Roof, 28 feet 6 ins. long, 13 feet 6 ins. wide, 40*l.*; Lean-to, 28 feet 6 ins. long, 16 feet 6 ins. wide, 30*l.*, with best timber and 16-ounce glass of large size. Patent Lights for Pits, Frames, &c., requiring no paint, 7*d.*, 8*d.*, and 9*d.*, per superficial foot, according to quantity, &c.
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STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.
S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.
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The Agricultural Gazette.
SATURDAY, MAY 26, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, May 24—Agricultural Society of England.
THURSDAY, — 31—Agricultural Imp. Society of Ireland.

FARMERS' CLUBS.—June 2: Newcastle, Northampton, York.—June 4: London, Great Coggeshall.—June 5: Framlingham, South Devon.—June 7: Ottery St. Mary, Clyst.—June 8: Halesworth, Hadleigh.—June 9: Peterboro'.

In our sketch of the two first of those three Periods into which, for convenience of review, the history of the CORN-TRADE legislation of this country divides itself, we have been tracing involuntarily the growth and development of a system only too natural to the representative government of a rising and industrious agricultural community, a system which beginning in infant times with the vain attempt to fix and keep down the cost of physical existence,—enacting, like the nursery king, a law that 'everything shall be cheap to everybody'—comes gradually to wave its magic wand the other way, to regard producers not consumers as the objects of its royal bounty and patronage; and slipping, by the common rule of transition, from one extreme into the other, to issue its august 'Be it enacted,' that prices shall be always good, always steady, always remunerative. Having decreed that it shall be so, the next step of nursery omnipotence, was in each case, to proceed by express and detailed enactment, to make it so. Legislated *cheapness* had defied the wand of the magician, outright: but the opposite and succeeding attempt presented an appearance of more feasibility.

"The more corrupt the Commonwealth" says Lord LYTTELTON, "the more numerous the laws." In other words, the further you depart from that simplicity which is the test of Natural Truth, the more trouble you involve yourself in to maintain your ground. The tangle thickens at every step. If you begin by 'taking something from everybody to give to somebody,' you must go on till you have taken something from each to give to everybody. The 'Bounty' of the last century is the burthen of this. The six millions sterling paid by our grandsires to the corn-exporters of their day now forms a portion of the public debt pressing upon the farmer, of our own, in common with the rest of the community. The stimulant given to 'Encourage Agriculture'—which verily it did, until, as we have seen, the extended tillage reduced the price of Corn from fifty-six shillings to twenty-nine by the end of the half century, producing the exact opposite of its intended effect—now survives, in its taxation form, to set on edge the teeth of the generation whose parents ate the Grapes when they were sour.

The Act of 1773 with which our second Period concluded, was violently opposed by the advocates of the Bounty System. It coquets, in the preamble, with their objections, and was framed with the view of modifying, not of abolishing the Bounty altogether: but the harvests that succeeded carried out the statute beyond its intention, and put a final negative upon the admissions of its preamble. The Bounty died a natural death.

But it was not yet suffered to be buried. A pleasing memory attached to it, and a growing discontent arose at the inevitable decay which increasing trade and population had begun to produce upon the Export trade in Corn from this country, a Commerce whose memorials went back into remote antiquity, and claimed an origin from the very days of Roman sway when Britain supplied Corn to the Imperial City, and was called 'the Granary of the Western Provinces;' and in 1791 another act was passed by the Legislature to revive the Export and the Bounty, and to stay the turning tide by permitting Exportation so long as the price was not above 46*s.* per quarter (2*s.* higher than the point fixed by the previous statute of 1773), and to prohibit Importation, by a duty of 24*s.* 3*d.* a quarter when the home price was under 50*s.*; but, above that price, and under 54*s.*, permitting it under a duty of 2*s.* 6*d.* the quarter.

A most eventful period succeeded. Never was the inability to export or the difficulty of obtaining foreign supplies, to eke out our own deficiency, so frightfully exhibited as for the next thirteen years, under the currency of an Act expressly framed to encourage the former and prevent the latter. Three bad harvests in succession drove up the home price to 108*s.* 4*d.* the quarter in August 1795; and a temporary Act was passed granting a 'Bounty' new to British ears—a bounty on *Im*portation varying from 8*s.* to 16*s.* the quarter. Grain-laden vessels were seized by our cruisers, and the owners or masters compelled to sell their cargoes to the British Government. Two or three better harvests reduced the price to 49*s.* 6*d.* the quarter in 1799, but in the following year it rose again to, no less a price than 134*s.* 5*d.* the quarter in spite of a renewal of the bounty on Imports. The advance continued unchecked in spite of Acts and Proclamations adopted with the view of obtaining supplies and reducing consumption, and in March 1801 the price of corn reached 156*s.* 2*d.* the quarter. For one month the price of the quartern loaf in London was 1*s.* 10½*d.*

Better harvests followed during the next three years, and the price gradually fell to 49*s.* 6*d.* in 1804. The Act of 1791 had of course never come into operation at all. The seasons had laughed at the Law-makers: but the lowered price brought them again to their HERCULEAN task. By the Act passed in 1804 the home-price at which Importation should be allowed was raised to 63*s.*: when it was below this the prohibitive duty of 24*s.* 3*d.* was fixed. From 63*s.* up to 66*s.*, the duty was 2*s.* 6*d.* the quarter. No sooner was the Act passed (June 20th) than another bad harvest followed, which raised the price before the end of the year from 49*s.* 6*d.* to 86*s.* 2*d.*: three middling harvests and five very deficient ones brought it, in August 1812, to 155*s.* the quarter: Fine Dantzic Wheat was sold at Mark-lane for 180*s.*, and Oats at the enormous price of 84*s.* the quarter.

A couple of good harvests (1813 and 1814) again reduced the price to 53*s.* 7*d.*: and this, together with the cessation of the war, produced another Corn-law, that of 1815. Under this law the home-price at which foreign imports were to be admitted was raised to 80*s.* the quarter. Three deficient harvests succeeded, and in 1817 and 1818 prices rose above this point, and an importation took place. But as each previous law had failed to come into operation in consequence of the extreme range of the succeeding prices, so the Act of 1815 now sunk into uselessness from the opposite cause. The good harvests of 1820 and 1821 produced a home-glut, and at the end of December in the latter year the average price of Corn in the Kingdom was 38*s.* 8*d*—being 41*s.* 4*d* *below the price calculated on by the existing Act*; under which the fluctuations that took place amounted to 200 per cent!

Under the joint influence of so many bad harvests since 1791, and expensive freights and insurance during a time of general war (amounting in 1810 to *from* 30*s.* *to* 50*s.* *the quarter from the Baltic Ports*) the average commercial value of Wheat had become, as it were, forgotten. Thirty years—a whole generation—had passed away since the unfortunate Act of 1791 had broken in upon the liberal and prudent system which had maintained steady prices for the twenty years previous, and attracted the deserved commendation of ADAM SMITH. The free importation price of 48*s.* the quarter had been raised successively to 50*s.*, 54*s.*, 63*s.*, 66*s.*, (72*s.*, 74*s.**) and finally, by the Act of 1815, to 80*s.* the quarter: and this, it will be observed, during a period for the most part of extravagantly high prices, and with no practical operation except that of lending additional delusion to the blinding temporary influences of War, with an extraordinary conjunction of bad harvests.

The futility of the Law of 1815 which merely held the word of promise to the ear, forming a delusive basis for contracts, but neither defending the consumer from a scarcity nor the producer from a glut; aggravating, in fact, every extreme by rigidly confining the corn-trade to the home-market, became sufficiently apparent during the seven years of its currency; and it was suspended by an Act passed in July, 1822, which declared that *as soon as foreign Wheat shall have been admitted for consumption under the* 55 *Geo. III., c.* 26 (*the Act of* 1815), a new scale of duties should be substituted, viz., at or above 70*s.* the duty to be 17*s.* per quarter for the first three months, and afterwards 12*s.*: above 75*s.* and under 80*s.* the duty for the first three months to be 10*s.*, afterwards 5*s.*. above 80*s.* and under 85*s.* a nominal duty of 1*s.*

Like so many of its predecessors, this Act never came into operation at all, as the contingency which was to give it life, never arrived. Prices did not reach 80*s.*, nor were the circumstances under which the Act was passed such as held out any prospect that it would be so. In the year 1826 however, in consequence of a deficient harvest, a temporary Act was passed for the admission of a certain quantity of foreign grain for consumption; and in the following spring a proposition was made to the House by the Government for the further admission of half a million of quarters during the recess of Parliament, which was granted, and acted upon in the September following.

The necessity of these temporary measures, added to certain propositions which had been made on previous occasions by Mr. RICARDO, Mr. HUSKISSON, and others, laid the foundation for a more elaborate and experimental attempt to regulate the introduction of foreign corn by a system of duties graduated, inversely, to the rise and fall of the home-price: an attempt remarkable in its kind, and deserving (as it is now susceptible), of a careful and dispassionate consideration; and which will bring to a close our review of a course of policy perhaps unexampled for variety and conflict and tenacity of opinion, in the annals of financial Legislation. *H.*

A WINTER'S TOUR IN SOUTH WALES.

THE following rough notes on the agriculture and general features of the several counties hereinafter mentioned have no other claim on the reader's attention than that of serving the purpose of half-an-hour's relaxation from weightier and more important matters. They are a jumble of loose, disjointed memoranda, a sort of *omnium gatherum*—tantamount to what our good wives are pleased to designate "a made-up dinner," and a very good dinner, too, it often turns out,

* Proposed in the House of Commons (March 1815) instead of 80*s.* but defeated by large majorities. We insert these as illustrative of the principle.

let me tell you. I wish what I am about to serve up may be half as palatable.

Circumstances not necessary to be more than briefly adverted to here, but involving an attempt at a renovation of health and strength, induced me to undertake a pilgrimage to, and make trial of, some of the celebrated mineral springs in certain districts of South Wales. My starting point being the neighbourhood of Gloucester, a few general remarks on the system of husbandry there usually pursued may not be uninteresting. The soil in the immediate vicinity of the city is a deep, rich, friable loam, the greater part of which is under hand culture, either as market gardens or as allotments, the produce of which finds a ready sale at what you would call high prices. And so they are; but then one ought to bear in mind the high rent at which such land readily lets—8 to 10 guineas per acre being by no means uncommon. The deep tillage which these lands receive, by the constant use of the trenching-fork and spade, affords a striking contrast, in the superior quality and amount of its produce, to that in the immediate neighbourhood, under the customary system of farm management. Certain portions of the Vale of Gloucester are, on the contrary, anything but what would be called kind for cultivation, whether by the plough or the spade, being naturally wet; deficient in proper ditches, without which all drainage is a mockery; in short, stiff, incorrigible blue clay, expensive enough in itself, but rendered doubly so by mismanagement and waste of labour. The tract between Gloucester and Cheltenham (7 miles) is one instance, among many, of the defective culture to which I have alluded. Bad as *it is*, however, it offers no excuse for the prodigal waste of horse-labour, involving, of course, that of man, with which its cultivation is attended. Three to five horses, at length, with two somebodies to look on, meet and vex you at every turn. Why, a Scotchman, or a Norfolk or Suffolk man, would do double the work with a pair abreast, and alone, and do it better, for I have always observed that the quantity of work done has been in the inverse ratio to the number of horses attached to the plough. Well, therefore, may these good people exclaim against the expenses of *spade* cultivation, when they themselves add so enormously and unnecessarily to the amount of this very important item. Nor is the expense by any means the greatest evil of such a system. The effects of the treading of so many heavy horses in single file, combined with the perpetual planing of the subsoil by a machine which is never allowed to go beyond a given depth of surface, are far too obviously injurious not to merit the most serious consideration of every clay farmer. The letter of C. W. Hoskyns, Esq., on this point * does not appear to be so well known, or, it known, to have received that attention it so well deserves at the hands of every occupier of stiff, tenacious clays. There ought to be a reprint of it by the Royal Agricultural Society, in a form to be transmitted by post, for the benefit of all heavy land farmers. Nothing that I have met with on the question of subsoiling, and the "imperfections of our venerated friend, the plough," can be compared with the sound sense and practical wisdom of this admirable treatise.

"The roots of delicate plants," well observes Mr. Hoskyns, "will not travel through earth that has never seen daylight. What, then, must be that rag of a surface that has been turned and torn for years (centuries) in a lazy strip of some 6 inches shallow, over a subsoil beaten into a hard road by the annual tread of 16 iron-shod hoofs, followed by a heavy ploughshare, that cauchardens it to a polished surface, such as you may see left in the track of a locked waggon-wheel, that has *gone screeching down* one of our steepest hills. If *the subsoil be* hard as a brickbat, intractable to the chemical solvents of the soil, *impervious to the rain and* every gentle atmospheric influence. Who made it so? Hook on six horses to a plough, two abreast, stick the share into a pathway that has been trodden but ten years by the light, leather foot of man, and try to turn it up. See how the horses will plunge and tear. Then judge what their hoofs have laid for hundreds of years, by way of a mattress under the seed-bed of our crops. Can we wonder that the germinating seeds rest uneasily, rise languid, and when drugged by the stimulant of vegetable manure, carry a weak and dropsical stem, that is "laid," when nearly ripe by the first rough breath of summer wind? Yet this is the way we go on, and ask no questions. Year after year the Wheat is sown, the surface is tickled over again by the seed-harrow, the furrows nicely finished off; it looks as pretty as—a gilt farthing; and the tale it tells the eye is about as true, the comparative value about as great!"

The following *exposé* of the defects of the plough, however startling to ancient prejudices, is but too true. "It turns over one-half the soil at the expense of the other half. I say turns over, for (especially on stiff soils) it does not cultivate: the spade does. The spade is plough, harrow, scuffler, clod-crusher, roller, scarifier, all in one. The plough, in turning what is above it, makes a road of what is under it; first, by the tread of the horses, and then by its own after-pressure, by which, in lifting a few inches of soil into contact with the atmosphere (the great object of all cultivation), it shuts and seals out the atmosphere from all below, thus making a positive bar to the descent of air, water, and the roots of plants, which Nature never made nor meant. In fact, by exactly the same power with which it lifts and loosens the one, it presses and hardens the other. And then comes the consequence. As you limit your depth of soil, you reduce the capability of produce; for the roots, forbidden to descend for food, begin to jostle and prey upon each other, and (as those who live above ground know too well) the weakest go to the wall. I have often examined half-perished roots, that have turned up like fish-hooks, in the struggle for life on meeting with the hardened subsoil."

In conclusion, Mr. Hoskyns well remarks:—"The spade is perfect, the plough is imperfect. Which, if either, is likelier to attest the last grand and crowning achievement of the steam-engine! Which can say that it never bruised or damaged, or gave a factitious bad name to the subsoil, when all the time 'Behold it was very good!'"

I offer no apology for the length of these quotations; the importance of the subject, and the workmanlike manner in which it is handled, will amply justify me in directing to it the attention of the reader. I shall only add, by way of *finis* on subsoiling, that since the appearance of Mr. Hoskyns' letter, the valuable "Revolving Subsoiler," of Mr. Joseph Paul, of Thorp Abbots, has been produced, first on his own farm, and subsequently in miniature at York. This important invention seems likely to realise all that Mr. Hoskyns has urged in favour of a radical up-tearing of the subsoil; and is eminently calculated, if not to supersede, at least to remove the objections he has so powerfully urged to the injudicious use of the plough on strong clays. "It is worked by a windlass and two or three horses, and will break up the land from 20 to 30 inches deep, and at the same time distribute on the surface any portion of the subsoil required." Of the interest excited at the York Meeting by the exhibition of the mere model, together with that of the draining machine on the same principle, I was an eye-witness, and do but express the opinion of hundreds who inspected it at Mr. Paul's stand, that it was by far the completest implement of the kind hitherto invented. I do not know that Mr. Hoskyns saw it; I sincerely hope he did, and should have been very anxious to have heard his opinion on a machine so admirably adapted to carry out his own common sense principles.

But to return to the Gloucestershire farmers. Their Bean culture is not bad; at all events superior to that of their Wheat. It is mostly by the dibble, but in a very different way to that pursued in many places. The work is done by women and girls, who, the land having been previously rolled, and laid tolerably level, make the holes across the stetch with one hand whilst with the other they deposit a Bean in each hole, as fast as made, from a bag carried before them. The dibble resembles a gardener's, and the work goes off quicker than might be thought possible, where only one hand instead of two is employed. The best criterion of the expedition of the process is its usual cost price, 7s. per acre: of course, like most dibbling elsewhere, the work is not regular enough to admit the horse-hoe. The soil of the Vale of Berkeley (between Gloucester and Bristol), though various, according to its good or bad drainage, is for the most part of very rich quality. No better proof need be adduced of this than the excellence of its dairy produce, for this is the head quarters of the far famed Gloucester cheese, the principal rival of which, in the very shops of Gloucester itself, is, strange to say, the American cheese. Some of these are excellent for toasting, greatly improved in the manufacture from what they were a short time ago, and in size perfect giants; still they want the fine flavour of the Berkeley, that peculiar gusto which soil alone can impart, and which a connoisseur in such matters so well knows how to appreciate. Before quitting Gloucestershire, I feel compelled to say a word in reprehension of *their general winter* management of stock. Nothing can be worse. The proportion of *arable to pasture land* (especially in the vales) is but inconsiderable, and the crops of corn far lighter, both in grain and straw, than they ought to be. The consequence is a deplorable want of litter both for fodder and lodging. Besides growing no Turnips, there seems to be an actual prohibition against cattle-feeding in sheds and yards. The poor things are therefore turned out, in the daytime at least, to shift for themselves as best they may, into the nearest paddock or homestall; often knee deep in mud and clay, to the great injury of the stock themselves, and the utter loss of that manure which, under a right system of management, *ought to have been accumulating for the benefit of* succeeding corn crops. There are doubtless exceptions; but that this is a very general practice I have had but too many opportunities of witnessing. The liberty of selling straw, and in a good market, offers another inducement for the adoption of this miserable, starvation system. It is a downright premium on robbery of one pocket to enrich another; throwing away the gold to fill the silver end of the purse. The landlords are not wholly blameless, not only for silently acquiescing in this penny wise and pound foolish practice, but too often, by the want of proper accommodation in yards and sheds, absolutely driving their tenants to its adoption. There are undoubtedly many brilliant exceptions to this want of attention to the interests and comforts of the tenants on the part of the landlords, and perhaps none more deservedly conspicuous than the "Whitfield Farm," the property of Lord Ducie, which has been completely remodelled, and new buildings planned and erected after the Scottish fashion, by the present intelligent occupier, John Morton, Esq. All the details of the improvements are already before the public in Mr. Morton's excellent work on soils. Here is exhibited a complete picture of the farm, in what may well be called the transition state from field to garden, or dible short of it. It offers a striking contrast to the old-fashioned log-trot system in general use among the dairy farmers in the neighbourhood.

Nearer to Gloucester, but in an opposite direction, I ought not in justice to omit laudable mention of the estate of Thomas Gambier Parry, Esq., of Highnam Court, the several farm-buildings on which have been completely renovated; the system of tile-drainage and other substantial improvements introduced and encouraged; and last, though not least, studded with a variety of commodious cottages, not less conspicuous for their elegance than for their adaptation to the wants and comforts of the various inmates. Such a spectacle presents a refreshing contrast to the spirit of extermination by which some of our country gentlemen are actuated, and which leads rather to pulling down than building up dwellings for their poorer tenantry; a practice which has been attempted to be justified by the necessity of the case, arising but too often from a selfish fear of imaginary burthens on the part of the proprietor; the greatest real burthen being a desolate and deserted village, often involving both loss and inconvenience to the employer as well as to the employed.

The disjointed and somewhat hasty remarks here thrown together refer but to a very inconsiderable portion of farm management in Gloucestershire. The hill system, a most important feature in its husbandry, has been left untouched; as has also its numerous orchards, so justly famed for the excellence of their produce in the form of cider and perry. These and other matters of agricultural interest are so amply developed in Mr. Bravender's Essay on the farming of Gloucestershire, published under the auspices of the Royal Agricultural Society, that a reference to that work will not fail to supply the requisite information.

Though not immediately connected with the subject of land or land management, I cannot resist the opportunity, before quitting this county, of attempting a brief description of a curious phenomenon which attends the rising of the tide in the Severn, the operation of which may be seen any day at and near Gloucester, but is vastly more conspicuous during spring tides. Instead of a gradual rise of the water, as in most rivers, the tide comes rolling in as a mighty wall, from 8 to 10 feet in perpendicular height, and with such noise as to be heard with ease and distinctness a mile or more before its approach becomes visible. To see this curious object in perfection, the spectator should avail himself of a favourable bend in the river; as, for instance, "the Parting," near Gloucester, or better still, "the Denny Point," by Minsterworth, about 5 miles down the stream; and a wonderfully interesting sight it is to behold the advancing mass of waters, roaring and lashing the banks on which you are standing, and in a moment transforming a rapid downward current into a still more rapid and noisy up current, on which boats and lighters, hitherto quietly awaiting the coming of the waters, may be seen tossing and tumbling about, as if undetermined whether to sink or swim, but soon borne along with a velocity proportioned to that of the advancing tide. Strange as it may appear to the unmitiated in such perils, and dangerous as it is in reality, there are not wanting persons adventurous enough to drift down the stream in small boats, to meet the approaching wave, on which, if they escape the destruction that threatens to overwhelm them, they are borne safely and swiftly to the point from whence they started. This sort of impromptu tide is known by the name of "the Bore." It is of rare occurrence, depending entirely on the peculiar formation of the bed of the tidal waters in a broad estuary, which at spring tides rise to an unusual height, and are forced up that part of the channel which suddenly contracts in the manner above described, as water would be through the neck of a bottle. Now the tides in that part of the Severn, and some of its tributary streams, particularly the Wye, at Chepstow, sometimes attain a height of 50 feet or more; and the sudden contraction in the width of the river at and about Newnham, up which this vast body of water has to be impelled, will sufficiently account for the phenomenon of "the Bore."

But, as the prolongation of this subject may justify the application of the term bore to myself, of which I am by no means ambitious, I shall for the present break off, hoping to resume my Welsh tour in my next. *T.*

* See *Gardeners' Chronicle*, Dec. 18, 1847.

CHEAP MANURING.

On the different dressings, in our late articles on this subject it may be observed, generally—1. That bone (softened either by acid or fermentation) is present in them all. This is, as before said, to make up the phosphoric acid carried off by each crop; and is less necessary where there is plenty of good dung, and the drainings from it carefully thrown back or applied to the land. In fact (as before said), where there is plenty of dung from corn or cake fed animals, with the drainage well preserved, these dressings may be useful rather in preventing the plant from running too rank in leaf and stem, than in forcing its growth.

2. Pearlash is mentioned, merely as a guide to the quantity of potass to be used, being the most constant and certain of the potass manures: and weed ashes, or any of the potass manures given in our 3d number, whichever comes easiest and cheapest, may be used instead. And it appears, from Mr. Lawes' experiments, that this ingredient is not so generally necessary as the composition of the plant would lead us to expect; and the stalks, &c., thrown back to the ground, will carry back much of the potass. It is, however, the safest

way, and I believe the most profitable, to use a potass manure, unless where much vegetable matter is supplied to the ground. When nitrate of potass is used instead of nitrate of soda, it gives about as much potass as an equal weight of pearlash. Pearlash or vegetable ashes should not be mixed with sulphate of ammonia or fermented dung, without much earth or vegetable matter, or some fixer of ammonia.

3. Sawdust is named, in the same way, to define the quantity; but bark refuse, or any of the other substitutes given in our 6th, may be used instead; or some or all of them mixed together, if handier and cheaper.

4. So for sulphate of magnesia; bittern may go instead; and in many cases the lime used for the land contains more magnesia than the plant requires. Where the lime is very strong of magnesia, it is better composted two or three months before using, with sawdust, &c., as burnt magnesia is hurtful to many plants till rendered mild again, by restoration of the fixed air which it lost in the kiln.

5. Guano we have said nothing about, because a universal manure, which everybody now knows how to use, and rather costly, and varying in strength and composition; and our object is to point out the cheapest and most uniform materials. For the same reason I have left aside the private manufactured dressings, of which the preparation is kept secret.

6. The quantities given, except in the case of Turnips, are smaller than usually recommended, our professed object being cheap manuring. The quantities directed for each crop will supply larger products than we can expect to average without dung; and whatever quantity of dung is used will, if the drainings are cared for, make up the deficiency. Where the ground gets only vegetable dressings, or the cheap dung substitute (to be given in our next), the quantities of our cheap dressings may be increased one-half, or more, according to the farmer's means.

7. Soot, where to be got genuine, although heavier carriage, is a valuable manure, especially for Potatoes; being at the same time stimulating and preventive of rot; and has been found very efficacious, mixed with salt, for Carrots and Parsnips. This addition of salt would be likely to improve it for the Potato. Coal soot seems to be the most active, and stronger, the higher the chimney.

8. We need not lengthen these letters by enlarging on the effects of differences of soil and climate upon the particular dressings; farmers generally knowing, better than the writer, how to suit their dressings to the stiffness or lightness of their land. It may be just noticed that saline manures, such as are recommended in these letters, should not be applied in dry weather; and that for dry light soils, they are often best composted with clayey and vegetable matter.

9. We may bear in mind, generally, in adapting these dressings, that the nitrogenous manures force the green leaf and stalk; the phosphates dispose to seed; the sulphates and salt to give solidity; and potass to healthy and vigorous vegetation.

A few observations may also be made on the dressings for the particular plants. *Wheat* has profited much by spring top dressings; the nitrates and ammonia (and even soot) having given great produce, but often with excess of straw and light grain, whilst bone and acid, sulphate of soda, and salt, have improved the grain, without increasing the straw. Hence the propriety of using them mixed together as prescribed in our 5th and 6th Nos. *Barley.*—There is no crop that needs this top dressing more than Barley, when taken after Wheat, as is so common in these counties; and yet no other has had so few experiments to guide us. Soot and salt mixed have been generally found to suit Barley. It will perhaps profit by more nitrogenous manure, *(ammonia and the nitrates), than it generally gets, the* straw being of importance as well as the grain. *Oats*, contrary to Barley, have been the subject of numerous, varied, and very successful experiments in Scotland; so that we may feel confidence in the conclusions given. *On Beans, Clover, Hay, and Potatoes*, nothing occurs to me to add, without going into more details than suits the present occasion. *Turnips*, greatly as they have flourished with bone and acid only, are still more to be depended on, with more compound manures. *J. Prideaux.*

Home Correspondence.

Practice with Science.—The next point to which the science of the age has been directed, is tillage. The uses of tillage, as they have been well explained by the inventor of the hand hoe cultivator, are to cause the ground to be mellow; to prevent the earth cracking in summer; to allow the dews to insinuate themselves into the pulverised soil; to allow the plants to receive the full advantage of every slight shower; to allow the carbonic acid to break down silica; to allow the air to penetrate the soil, so as to form carbonic acid by the decomposition of vegetable and animal matter; to remove parasites, so that the crop may consume the whole food, if it thinks proper. These valuable results arising from tillage cannot be estimated too highly, yet strange as it may appear, the attention of the public has not in general been much drawn to them, until of late years. It is now more than a century since Jethro Tull wrote his work on the "Horse Hoeing Husbandry," yet how little has it been studied or followed. Cobbett says of it, that "till he read Tull he knew nothing of the principles of husbandry; but what struck him most forcibly, when he came to read Tull, was, that all he had read before, with anything like principles in it, had been stolen from him, shockingly disfigured indeed, but still whatever there was of good, was his." The system of Tull seems directed to the extreme pulverisation of the soil by means of tillage, and he goes so far as to say, that the first and second ploughings, with common ploughs, scarcely deserve the name of tillage; they rather serve to prepare the land for tillage. The third, fourth, and every subsequent ploughing, may be of more benefit and less expense than any of the preceding ones. But the best ploughings will be more advantageously performed by way of hoeing. The utility of such repeated ploughings is sufficiently exemplified by their having been found a substitute for manure in a long course of cropping (as has been shown in the "New Husbandry," p. 187); and in the present day some of our best agriculturists have established the necessity of having the land thoroughly worked and comminuted into the smallest parts. A practice so contrary to the old system, which used to consist in having the Wheat land laid up in large clods, under the false idea that these huge protuberances would protect the tender plant during the winter, and if these were thrown down in the spring by a good stiff bush-harrowing, fresh soil would accumulate round the roots; but these people forget that the hard crust, which has been formed on the surface by the winter rains, will have so consolidated the particles of the soil, that the small fibres of the roots will have no power to luxuriate at their pleasure. The present tillage system, as practised by our scientific men, is no doubt a great step in advance; but of all the discoveries of the present day, the conversion of stiff stubborn clays into a friable mould, through the means of thorough draining, double treaching, or subsoiling, is by far the greatest. And if we consider fully the great importance of it, the enormous benefit it has conferred on landed proprietors, the great change it has effected on the face of a country, and the complete revolution it has made in the whole of our farming practice, we cannot be too thankful to Mr. Smith, of Deanston, the author of it. Now why should this invention be so greatly extolled? Let it be considered for a moment what has been the custom, what must be the custom without it. A great part, perhaps by far the greater part of this kingdom, consists of strong retentive land. As Grass land this may be managed tolerably well, without being drained, by its being manured and water-furrowed; but Grass land alone will give no straw for manure, and a certain quantity of ploughed land is necessary to most farms of any size. A soil of this kind is so difficult to manage—can only be worked at certain seasons, and in a certain state of the weather—is so opposed to cleanliness (the drill system being utterly impracticable, and a fallow required perhaps every third year), that if the outgoings were set against the returns, it may be a question whether the former would not greatly preponderate. It is on this account that, I believe it is Mr. Pusey who has said, that a man must be a pefect madman who would think of taking a farm of this kind without his landlord first consenting to have it drained. What then has been the result of ploughing land of this description? Does not the dismal appearance of a large part of the kingdom still bear marks of its effects? The land so ploughed, so worked out, so impoverished, has been abandoned to chance from the utter impossibility of its being made profitable under the plough. Let the reverse of this picture be seen. I would even take this miserable poor land in miserable poor pasture, and having first drained it, break it up. With a good dusting of guano it would give possibly a very fair crop of Oats. As soon as these are carried, let it be cross-ploughed and double trenched, if there is a fresh good soil to be brought to the surface; subsoiled if otherwise. Having had the benefit of the winter frosts, let it be well *worked for a green crop, to be succeeded the following* year by a white crop, with Grasses. It is believed that, with the exception of the draining, which is a permanent improvement, the expense here incurred by adopting a plan of this kind, under judicious management, would be fully and safely repaid; and, in the bargain, there would be a piece of land improved and improving yearly, and not scaring away the lovers of the art by its hideous aspect. The description here given of poor, undrained, ploughed land may seem as if we were viewing things on the dark side, but it is by no means an exaggerated one. It may be more agreeable to look at the brighter side, and to admire the change which in many cases has been made, in others ought to be made, by the adoption of the Deanstonising system, and the following this up with Mr. Tull's admirable practice of tillage, as will be seen in an ensuing paper. *Law. Rawstorne.*

The Prospect of the Potato Crop.—This is so interesting to the public that I am induced to forward you the following information, which you may rely arises from the observation not only of an experienced eye, but of one who has more than common extended means of obtaining information. My desire to early learn the condition of the coming Potato crop has led me, from time to time, to watch the growth in frames, and I have done so in different situations. I last year saw the first symptoms of disease in the underground shoot, or rootlet from the planted set. I found this became rusty and cankered close to the old set at an early period, about three weeks after the plant appeared, and before any ill was visible either in the leaf or young Potato. When the latter reached the size of a walnut, a discoloration of the skin at one end became apparent, and more so after three or four days' exposure out of ground. This year I have already traced the disease in the same forms wherever I have looked for it. In Devon I found the rusty symptoms, and in April the canker was apparent, and now many of the young Potatoes show very plainly the disease. There are now before me four samples, taken from different gardens, all of which contain one in three, or more, that are diseased, and I am therefore led to believe not only that this year's crop is likely to present the same failure as last year's, but also that the disease (whatever cause may have first originated it) has now an origin from the planted set, and not from any external cause. Those who wish to detect the disease in an early stage may find it, where it exists, by taking up a plant, and examining the root or shoot from the old Potatoes; this root will be seen in places to have lost its clear, watery, semi-transparent colour, and to have assumed a rusty brown stain; and one end of the young Potatoes will be seen discoloured as if bruised, particularly after three or four days' removal from the ground, and although, at first taking up, this discoloration does not extend inward, the Potato rapidly decays on exposure. *Hewitt Davis*, 3, *Frederick's-place, Old Jewry, May* 15.

On the Use of Lime.—My former communication on the use of lime was not for the purpose of provoking controversy, but solely to obtain information for myself and others as to the most scientific plan of applying it to the land. Unfortunately "Aliquis's" letter gives no light on the subject; all farmers here know that lime increases the productive powers of the soil. The question was, whether it was better to plough it into the land immediately after being slaked, as Mr. Fisher said, or to spread it on the surface for some time previously, as is the practice here. In reply to "Aliquis's" remarks, I did not mean that plants obtained carbonic acid from lime whilst it was becoming carbonised through the agency of the air; but by lime being spread on the surface of the ground, or on Potato stems, it was so exposed as to obtain carbonic acid rapidly from the air, the more readily to part with it again through chemical agency in the ground. I imagine that plants have the power of arresting what carbonic acid they require to sustain their growth, as decomposition of the carbonate of lime again takes place. Any acid in the ground will set a proportion free in the form of gas, and most likely the plants absorb it in this state. As to the other advantages of lime in killing insects, &c., it is quite another question. No doubt it is most valuable in this way; but the lime water carried down by the rain, when first spread on the surface, will answer this purpose; and our land is already so light, being generally decomposed clay slate, that increased lightness is not required. There is a learned article in the same Number on the conveyance of the earthy carbonates to plants, which, so far as I can understand it, quite agrees with my opinion on the system of plants obtaining the carbonic acid. The simple question of "the best plan of applying lime" still remains unanswered, and I should feel grateful to any agricultural chemist who would supply the information, with a good explanation. *Isle of Man.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

The half-yearly AUDIT OF ACCOUNTS was held at the Society's House in Hanover-square, on Friday, the 18th of May; present, Colonel Challoner, Chairman of Finance; and Col. Austen, Mr. Raymond Barker, and Mr Blanshard, members of the Finance Committee; and Mr. C. Hampden Turner, Mr. Knight and Mr. Boman, Auditors on the part of the Society. The accounts were examined, and being found correct, were certified accordingly by the signatures of the parties present.

The SPECIAL COUNCIL for taking into consideration *the Report to be made by the Council to the ensuing* general meeting of the Society, was also held on the same day; present, Mr. Raymond Barker, Vice-President, in the Chair. Hon. Captain Dudley Pelham, R.N., Sir Matthew White Ridley, Bart., Sir Charles Lemon, Bart. M.P., Sir John V. B. Johnstone, Bart., M.P., Colonel Austen, Mr. Barnett, Mr. Blanshard, Mr. French Burke, Col. Challoner, Mr. Milward, Prof. Sewell, Mr. Stansfield, M.P., and Mr. C. Hampden Turner.

The half-yearly GENERAL MEETING was held at the Society's House in Hanover-square, on Tuesday last, *the* 22d of May, the Earl of CHICHESTER, *President, in the* Chair. The Secretary, by direction of the President, read the following Report from the Council.

REPORT.

The Council have to report to the members at their present General Meeting, that during the past half year 3 governors and 226 members have been elected into the Society, 3 governors and 35 members have died, and the names of 6 governors and 893 members have been, on various accounts, omitted from the list of the Society, which accordingly now comprises 89 life governors, 178 annual governors, 582 life members, 1643 annual members, and 20 honorary members.

They think it, however, right to remark that, in the list of names which have been erased from the books of the Society, are included, not only those of members who, for various reasons in the course of things, have signified their desire to withdraw; but a much larger number, who, with reference to the transactions of former years, have ceased to belong to the Society. A corrected list of the governors and members will be printed at the end of the volume of the Journal for the present year.

The Council have elected Mr. Thomas Raymond

Barker a Vice-President of the Society, in the place of the Earl Talbot, deceased; and Mr. Henry Blanshard, a General Member of the Council, to supply the vacancy created in that body by the transfer of Mr. Barker's name to the list of the Vice-Presidents. They have also elected Professor Simonds an Honorary Member of the Society.

By the sale of 1000*l.* stock out of the invested capital of the Society, and the application of a portion of the current cash balance in the hands of their bankers, they have been enabled to pay off the loan contracted with Messrs. Drummond in the autumn of last year; and they have received from the Chairman of the Finance Committee an intimation that, previously to the ensuing Country Meeting, the Committee will be fully prepared to report in detail the result of their investigations into the whole financial condition of the Society, both in reference to points in which the expenditure may be submitted to judicious control, and to measures by which the income of the Society may be relieved from the inconvenience arising from unpaid arrears of subscription.

The Council receive with the highest satisfaction the continued assurance of the increasing value of the Journal of the Society; and it is a most gratifying fact, that out of an issue by post of upwards of 5000 copies of the last part, addressed to members residing in remote localities in the kingdom, only one instance of miscarriage has been complained of. They cannot but regard the combination of these most important circumstances, namely, the increased value of the work and the facilities for its mechanical transmission, as calculated very essentially to effect the diffusion of sound practical knowledge among their members, and through them among the agricultural community in general. They have decided that the price of the Journal to non-members shall henceforward be 10*s.* for each part, instead of 6*s.* as heretofore.

The Council, feeling the essential importance of calling in the direct aid of science for the purpose of effecting a decided advancement in the great object of improved cultivation, by the development of the latent energies of the soil, and a more exact knowledge of the sustenance required by or taken up by plants, have, after mature deliberation, agreed to the following report of their Chemical Committee, in the hope that while an immediate personal privilege is conferred by it on the members of the Society, a decisive step will have been taken for the attainment of the more remote, but not less certain, advantages resulting from a well-organized system of chemical research, on questions connected with the mutual relations of the plant and soil, and from analytical investigations into the composition and value of substances produced by the farmer, or employed in his operations.

REPORT OF THE CHEMICAL COMMITTEE.

"The Committee recommend that in future the privilege of obtaining analyses of manures, agricultural products, and soils, at the following reduced rates, be made a privilege of all members of the Society.

"*No. 1.* An opinion as to the genuineness of a manure in the market, 7*s.* 6*d.* By this is meant such an opinion as could be formed by a scientific person, by inspection, with a few simple confirmatory experiments. — [It will protect from fraud, but is not calculated to assist materially in the choice of the best specimens, where all are genuine; it will inform the applicant whether a specimen of guano, or oilcake for instance, be adulterated or not; but will not touch the question of its relative value as a pure specimen. Such an opinion will only apply to ordinary market articles, as guano, oilcake, superphosphate of lime, sulphate of ammonia, gypsum, common salt, &c.] No. 2. Guano. A determination of the nitrogen (ammonia), or of the same and of the earthy phosphates, &c., 1*l.* The following is an instance, taken at random, of such an analysis: Water, 17.95; organic matter, and ammonial salts, 51.39; sand, &c., 1.82; earthy phosphate, principally phosphate of lime, 18.00; alkaline salts, and loss to make up the difference, often consisting of common salt, &c., 8.34. Total 100.00 This is all that is needed to give the agricultural value of guano, or a close approximation to it. No. 3. Limestone. The proportion of lime, 7*s.* 6*d.*; the proportion of magnesia, 10*s.*; the proportion of lime and magnesia, 15*s.* This analysis is sufficient for many purposes; but in most limestones, sulphur, lime, phosphorus, and magnesia are present. The next analysis is better for farmers, inasmuch as it is impossible to say how much of the effect may be due to minute ingredients. No 4, Limestone, or marls, including carbonates, phosphates, sulphate of lime, and magnesia, with sand and clay, 1*l.* No. 5. Partial analysis of a soil, including sand, clay, organic matter, and carbonate of lime, 1*l.* No. 6. Complete analysis of soil, 2*l.* No. 7. Letter, asking advice, one topic, 7*s.* 6*d.*; on more than one topic, 10*s.* No. 8. Oilcake, or dung, or any animal products (such as cheese or butter in milk), nitrogen, and phosphoric acid, 1*l.* Oilcake, including nitrogen, oil, and phosphoric acid, 30*s.*

"That a salary of 200*l.* a year be paid to Professor Way for this purpose, and that the Committee have further power to expend a sum not exceeding 300*l.* a year in such chemical inquiries for the Journal as the Council shall think expedient from time to time to direct, on consideration of the report made by the Chemical Committee."

The Council have decided that the ensuing Country Meeting of the Society, at the city of Norwich, shall be held in the week commencing Monday the 16th of July, the Thursday, as formerly, being the principal day of the show; and they have the satisfaction of reporting that, great as was the number of implements exhibited at the York Meeting of last year over the entries on any former occasion, the number entered for exhibition and trial at the ensuing Norwich Meeting exceeds that amount by a very considerable number. They have received from the principal railway companies throughout the kingdom a grant of the same liberal concessions in favour of the Society's exhibitors as was made by them last year, namely, the free conveyance of live stock, and a reduction of one-half the usual rates of charge for implements, on proceeding to the show, and with similar concessions on returning from it, provided the animals or implements are unsold and remain *bona fide* the property of the respective exhibitors. The authorities of Norwich have granted the free use of St. Andrew's Hall, fitted up at their own expense, for the purposes of the Great Dinner of the Society, and of the Council Dinner; and Professor Simonds, and the Rev. Edwin Sidney, have kindly consented to deliver Lectures before the members on the occasion of their meeting in that city—the former, "On the Diseases of the Organs of Respiration, with particular reference to Pleuro-Pneumonia, in the Ox;" the latter, "On the Parasitic Fungi of the British Farm." It has been decided that the Country Meeting of the Society for the Western District shall be held next year at the city of Exeter; and that the District for the year 1853 shall be comprised of the counties of Leicester, Lincoln, Nottingham, and Rutland, and be designated the East-Midland District.

The Council have the satisfaction of receiving from their Journal Committee the most favourable report of the number and value of the Essays competing for the Society's Prizes of the present year. They believe that the spirit of inquiry thus aroused on so many important topics of practical interest will lead to that continued progress in the improvement of agricultural economy, in all its branches, which it has hitherto been the great object of the Society to promote. But while they regard the stimulus of honorary distinctions and pecuniary rewards, the collection and dissemination of important facts, and the communication of personal experience among farmers themselves at the Council Meetings in London, and at the Country Meetings held in successive districts of the kingdom, as most effective means for the extension of agricultural knowledge; they rely with the greatest confidence on the friendly co-operation of the owners and occupiers of land, for devising and carrying out, to their mutual advantage and the common good of the country, the most approved systems for the cultivation of the soil, and the best measures for promoting the comfort and welfare of those who depend upon it for their support.

In conclusion, they beg to remind the members of the Society that the Council Meetings, on the first Tuesday in each month, are set apart for the strictly official business of the Society, in order that the meetings on the other Tuesdays of the month may be devoted to the consideration and discussion of such communications of a practical nature as may, from time to time, be made to them; and they are desirous to make it extensively known that every member of the Society has the privilege of attending such three weekly meetings of the month, and has it in his power to contribute, by his participation in their proceedings, to the common interest of the parties present, as well as to the gradual promotion of the several objects of the Society.

By order of the Council, JAMES HUDSON, Secretary.

London, May 18, 1849.

On the motion of Mr. ROWLANDSON, of Liverpool, seconded by Mr. Moore of Appleby, Leicestershire, this Report was unanimously adopted.

Colonel CHALLONER, Chairman of the Finance Committee, presented the Balance Sheet from the Auditors of Accounts; from which it appeared, that the balance in hand, and the total receipts for the half-year ending 31st December, 1848, had been 5331*l.*; and the total payments during the same period 4733*l.*, leaving a balance in hand of 598*l.* Colonel Challoner then submitted to the members the quarterly statement of the funded property of the Society, and of income and expenditure; and reported the steps in progress by the Finance Committee for the recovery of the arrears of subscription due from members, but remaining unpaid.

On the motion of the Rev. G. F. HOLCOMBE, seconded by Mr. R. W. Baker, the thanks of the meeting were voted to the Finance Committee; and on the motion of Sir John Johnstone, seconded by Mr. Hillyard, to the Auditors, for their care in inspecting and reporting upon the accounts of the Society.

On the motion of Mr. RAYMOND BARKER, seconded by the Earl of Ducie, the Marquis of Downshire was unanimously elected President of the Society for the ensuing year.

On the motion of Mr. PERKINS, seconded by Mr. Little, of Llanvair, the trustees were re-elected.

On the motion of Mr. P. POLE, seconded by Mr. Dyer, the Vice-Presidents were re-elected.

The members having delivered in their balloting lists, the President named scrutineers for their examination, who reported the unanimous election of the following 25 members of Council for the ensuing two years. Col. Austen, Mr. Barnett, Mr. Bennett, Mr. Brameston, M.P., Mr. Brandreth, Col. Challoner, Mr. Childers, M.P., Mr. E. Denison, M.P., Mr. Foley, M.P., Mr. Hamond, Mr. John Hudson, Sir John V. B. Johnstone, Bart, M.P., Earl of Lovelace, Mr. W. Miles, M.P., Mr. Milward, Sir Robert Price, Bart., M.P., Sir M. W. Ridley, Bart., Mr. Shelley, Lord Southampton, Mr. Stansfield, M.P., Earl of Stradbroke, Mr. C. Hampden Turner, Mr. George Turner, Mr. Henry Wilson (Stowlongloft), and the Hon. Henry W. Wilson.

On the motion of Mr. PICKIN, of Whitemoor, seconded by Mr. P. Pole, Mr. Bell Crompton, of Duffield Hall, Derbyshire, was elected an auditor of accounts in the place of Mr. C. Hampden Turner, then elected on the Council.

On the motion of the Earl of DUCIE, seconded by Lord Feversham, the thanks of the meeting were voted by acclamation to the President, who acknowledged the compliment. The meeting then broke up.

Farmers' Clubs.

WITHAM: *Homesteads and Treatment of Cattle.*—The Rev. George Wilkins, of Wix, delivered a very interesting lecture at the Witham Institution on this subject, to a very respectable audience. Mr. H. DIXON was called to the chair. The Rev. Mr. WILKINS said:

Whoever passes through the county, and casts his eye over the farm-yards, and over the buildings contiguous to them, must be struck with the rudeness of many, and the want of design and order of the whole. He will see on many very fine farms buildings of the very worst description, and quite inadequate to the purposes for which they are required. Barns, stables, cattle houses, cart-lodges, piggeries, and all kinds of buildings in all kinds of shapes, will present themselves before him, built here and there and everywhere, except where sound judgment and good forecast would have placed them; and few of them, or none of them, adequate to the purposes for which they are required. The farm-yards themselves also are in general still much worse, if possible to be so, than the buildings contiguous to them. These in general are more exposed to all the inclemencies of the winter's rains, frosts, snows, and sleets, and to the summer's parching heats, than were the meadows and fields before the present system existed of cutting down the fences, and exposing all to the wild uproar of the waving elements, which often rage with so much violence over them through several of our winter months. And not only are the cattle thus exposed, shaking and shivering in the severest weather, and in all its changes, but the yards are nuisances in many other respects, and they strike with sorrow and sadness every contemplating mind who enters into or passes near them. Men of science, physicians, chemists, animal and vegetable physiologists, all inform us that however solid the matter may be which is taken into animal stomachs, or however solid it may be when carted from the homestead to the fields for the nourishment of future vegetables, it cannot be assimilated or received into the animal or vegetable system whilst it remains in a solid state, or, in other words, until it is converted into a fluid. This doctrine, which we all admit is capable of demonstrative proof, shows how important it is that the liquid of farm-yards, the food of plants, should all be most carefully preserved, and that none on any account whatever should be permitted to run away, escape, and be lost. Now we know from experience as well as from the deductions of science, that although all vegetables obtain the greatest part of their nutriment from the atmosphere which they inhale and assimilate, yet another part, although far less in amount, is as absolutely necessary for their support and development, and to bring them to matured perfection. Now, this second or smaller part is derived from decayed animal and vegetable matters, of which, to the agriculturists, the liquid and solid excrements of their cattle are the most valuable, and ought of course to be by them the most carefully preserved. But in how many homesteads is this first requisite accomplished? Do we not, on the contrary, frequently see farm-yards on the sides of sloping grounds, exposed, as I have said, to the sun, and washed by all the rains which fall from heaven? And do we not frequently see in or near those yards what is called a horse-pond, full of black liquor, at which all the cattle drink, and into which all their liquid excrements either run or are washed by the rains? And do we not witness also another painful spectacle of the liquid running from the pond or the yard, or both, into some neighbouring ditches, from which it descends to a contiguous brook, through which it is carried to and lost in the great sea? We cannot deny but this state of things has and now does exist; nor can we deny but a change must be made by all landlords and tenants (for each is equally concerned in these matters and inculpated), or they otherwise will be unable to contend with the competition which is now so fearfully let loose against them. I proceed, therefore, to give an opinion how farming homesteads may be erected and formed, so as to prevent most of the evils I have already referred to, and to secure the advantage which it is now, if it had not hitherto been, absolutely necessary that they should as far as possible possess. I need not of course state that the first thing to be considered is the proper size of the buildings intended to be erected, so that they be neither too large nor too small for the several purposes for which they are intended. But this having been decided on, the next thing to be considered is, the most proper situation for them to be erected on. When these important points shall have been settled, the buildings should be commenced, and I would recommend them to be placed in nearly the following order. The whole should form a long square, the barn or barns forming the north side, with door or doors opening into the yard or yards, for I should have one, two, or three yards, as they might be required, for the size of the farm or the quantity of arable land belonging to it. On one side of the yard should be the stables, roomy and lofty, and over which should be lofts for hay and corn, or other provisions for horses. On the other side should be ox stalls, should only one yard be required, and at the south end of the yard there should be wide sheds for those cattle to enter in if they pleased on one side the gateway, and piggeries on the other side. The gateway should be in the centre of the south side, and should be so arranged that it could be closed in tempestuous weather, or when I pleased, with high folding doors. The flooring of all these buildings should be at least 1 foot high above the surrounding ground, either in or outside of the yard. The centre of the yard should be much lower, say 3 or 4 feet, than the outsides at the doors of the several buildings; and over the centre should be erected a light shed covered over either with slates or thin galvanised plates of iron, so that the whole should form a large covered over but rather shallow tank. To this shed, in this hollowed out space, should be wheeled or conveyed every waste substance of whatever kind from the farm-house, and stables, and ox stalls, and piggeries; everything which could be collected there should be so as far as possible, until the whole was carted away on the land and ploughed in, or to a similarly constructed place at some corner of a field, to be in readiness when required. No filth should in any place be allowed to accumulate, nor especially in any buildings except under this large covered over tank; but especially should neither liquid nor solid excrements be permitted to remain so long as 24 hours together, under or near any shut up animal whatever on the farm. But from all the cattle houses drains should be made to convey all the liquid excrements as they were made without loss to the large tank, and the solid should be systematically wheeled there. The walls of the barns I would build 5 or 6 feet high with bricks, and then ascend to the roof with boards, cover over the roof with slates or galvanised iron; the floorings of the barns should be made with composition, except the threshing floor, which I should like to be of oak. The stables should be built altogether of bricks, and at least 10 or 12 feet from flooring to ceiling, a loft over, and covered in with slates or iron plates. The cattle houses should all have straw laid under the slates, or be entirely thatched. Should I erect a steaming-house, it should be made entirely of bricks, and near the south end of the tank. The piggeries for fattening pigs should be large, exposed to the sun, and built with especial reference to warmth. The pigs also should always be fed in boxes with flap-doors to them in the walls of their sleeping apartment, and they would always keep themselves perfectly clean. Then all the ox or cattle, pigs, and poultry, and everything of that kind, should have access constantly to all the manure in the large tank, the shed over which for that purpose being open on all sides, the pigs to turn it over and root among it for grain, the poultry to scratch among it for seeds of weeds, and whatever else they could find; and the store cattle to tread and consolidate it. To prevent loss by fermentation or putrefaction, gypsum ought always to be thrown on the heaps when required, the great use of which and its reasonable price being great recommendations for its being used much more extensively than it has hitherto been, as a fertilising dressing for all green crops. In this manner would I build a moderate sized homestead, say for a farm of 150 or 200 acres; but if I required two, or a double yard for a large farm, I would erect

down the centre of the yard a double row of ox stalls, so that the cattle should stand in them facing each other, and be fed from a parapet between the two rows of beasts. I need not add that all fattening cattle should be quite closed in during the night, within walls, either of bricks or boards during the winter season; or that their houses should be lofty, and all of them well and completely ventilated 3 or 4 feet above their heads, so that, without chilling currents of air, the stables and stalls would always be in the greatest possible purity of atmosphere, free from every conceivable kind of noxious vapour, which never fails to be evolved from accumulated heaps of excrements within buildings in which cattle are confined. From what I have already said, you will have perceived that in the treatment and well being of cattle, and to secure as far as possible their owners from those serious losses to which they are now often exposed, I consider three things as indispensable, namely, as nearly as it can be obtained, a uniformity of the temperature of the houses in which the beasts are confined; an atmosphere free from those noxious gases which are always generated and are evolved, whether perceived by man or not; from fomenting or putrifying animal and vegetable substances; and a deep and well littered flooring. These three things I consider to be absolutely indispensable, wherever cattle are to be kept for profit, or their owners secured, as far as human forethought and care can go, from disappointment and loss. In order to obtain the uniformity of temperature I before advised that the buildings should be covered with thatch, or that straw, to prevent the escape of caloric in the winter, and the action of the sun's rays in the summer, should be placed under the slates, and that the building should be closely boarded or built partly with bricks. To obtain perfect purity of atmosphere the buildings should be lofty, and orifices made in the walls or roof, covered over with perforated zinc or some other metal sheet, to facilitate the escape of the carbonised atmosphere, as fast as it has passed through the lungs of the enclosed animals. I advise also that a thermometer always be hung up in stables and cattle houses, and especially as they are now sold so cheap. To prevent as far as possible the atmosphere within the buildings from being contaminated by carbonic acid, or other gases noxious to animals' health, I strongly advise that drains should be made from the buildings to the tanks, and that the solid excrements should be removed at least once a day, and dry and clean litter put under the beasts as often as it is required, to encourage them to lie down and keep them clean. Should it be thought by gentlemen who have not tried it, that this perfect cleanliness involves great expense and labour, I assure them, from much observation in early life, that such is not the case, especially where the tank for the reception of the manure runs down the middle of the yard as I have described, and is on the descent from the buildings around it. The operations being daily performed, and the flooring of the stalls raised above the level of the yard, it is astonishing how quickly it is done. I must not forget to add, that cattle should not be tied up, but every beast should be loose in his stall. I am aware that a new plan of cattle feeding, the reverse of this, of making pits in the earth, at least 3 or 4 feet deep, and letting cattle down into them, where they are kept three or four months together, on their own liquid and solid excrements, has, within the last few years, been introduced, and that it has its advocates, but I hope and believe it is a practice very partially adopted, and I feel confident that it is even now greatly on the wane, and will very soon be a mere matter of history, or be altogether forgotten, or not worth recording; this is the deliberate opinion I have formed of what I may call revolting novelty. I am aware, however, that some gentlemen, in other respects of sound judgment, both practise and defend it; but we know, from our own experience, and from the history of our race, that there is nothing so monstrous but men of learning and abilities will profess to believe and defend it. For example, I have heard it contended by gentlemen in other respects quite sane, that a man by means of a few unmeaning strokes of the hand made over and up and down his body, may be made to see through a brick wall, and even to tell who and what are in houses hundreds of miles away from the operators. Therefore do not think any the more favourably of this novel system of feeding cattle in their living graves full of fermenting and putrifying excrement because some credulous gentlemen adopt and defend it. But permit me briefly to examine a little into its merits, and in doing so I give you some of the authorities on which my opinions are founded, and these are Davy, Liebig, Parkes, Professor Johnson, and Dr. Carpenter; all these great authorities, and I could give many more, emphatically show that there can be no accumulation of animal and vegetable substances without the processes of fermentation and putrefaction going on within it. They also show that there can be no fermentation without carbonic acid gas being generated and evolved from it and mixed with the surrounding atmosphere; and they further show that when animals breathe an atmosphere contaminated with carbonic gas, or with sulphuretted hydrogen gas, the latter of which always generates in cold stagnant pits containing animal and vegetable matter in a state of putrefaction, as well as the former from fermentation, such atmosphere is destructive of the health, and will at length destroy all beings which breathe it. From these authorities, therefore, and they are such as cannot deceive us, nor will be refuted, we are assured that cattle cannot be confined in these miscalled boxes in or on their own excrements without endangering their lives or destroying their health. It is true that some may escape visible injury, but generally speaking the effects are, and must be, such as I have described, and that they are so I now show. But I like not to rest on mere opinion, however well it may be founded, and I give you a few examples. The founder of this system, in a letter which he published in January last, writes that he bought six Dutch heifers, and put them in boxes, where one out of six died. A friend of mine was touched with this novelty, and he sunk pits in his previously made ox-stalls, and forced beasts down in them to fatten; some time afterwards I paid him a visit, and went to his boxes, where I saw some cattle looking much better than I expected. "Well," said I, "I am agreeably surprised; your cattle look well." "They may look well," said he, laying stress on the word look, "but I have lost several from rotten lungs. They are taken, and die almost instantly, unless I kill them. Well, I had another friend, and he built some fine buildings, and sunk his pits, and also called them boxes, and put cattle into them. Some time afterwards I saw this friend, and I said to him "How are your oxen?" "Two or three are queer," was his reply. Two or three weeks after that I saw him again, and put the same question, "How are your oxen?" "Three of them are dead, he replied." After these examples I then inquired of scientific men with what disease cattle would be affected when confined on their own excrements in such boxes, and the answers invariably returned were, that the lungs would be affected. Now, all those box-fed cattle died of diseased lungs, the same disease which scientific men said would attack them. But the advocates of the novelty say that the manure made in those boxes is increased so much in value that it more than counterbalances all loss sustained by the cattle. Mr. Warnes writes that it is beyond price, and this and priceless means the same thing; but instead of its being the best method by which manure can be made, there is not the least doubt whatever that for all agricultural purposes it is among the most unscientific and worst processes by which manure can be prepared, and for these reasons. But first let me observe that the quality of all manures depends upon the food upon which the animals are fed. But with respect to the best method of preparing manures, Professor Johnston quotes for our guidance an admirable little work, written by the late Mr. Francis Blackie, in which it is laid down that no kind of manures should be made separately, or in confined places, but that all kinds, namely, horse-dung, cow-dung, and pigs'-dung, should be regularly mixed together as they are all made, and that pigs should constantly have access to the mixed heap, to root and turn it over, and pick up loose grains of corn, and that store cattle should have access to it, to tread it down and consolidate it; and that poultry should have access to it, in order to scratch it about, mix it together, and with the pigs pick out all seeds of weeds, and eggs of insects from it. And that this is a plan which every wise farmer will acknowledge to be right I have no doubt whatever, otherwise horse-dung would be carted into one part of a field, the dung of fattening oxen into another part, and the dung of pigs into another part, or into another field, and the dung of store cattle to another, and so on; and thus rich manure would be here, poor manure there, hot in one place and cold in another, and so all would be in confusion, and shame the farmer; and, besides, seeds of all kinds would be carted into and spread on the fields, and by this means the land would soon become overrun with all kinds of weeds and insects, to the dismay and disgrace of the farmer, and ruin of his crops.—Mr. Mechi begged to state that he entirely concurred with Mr. Wilkins in his general principles, which he was quite sure were based on observation of nature, from which we should never deviate. He entirely agreed that it would be exceedingly wrong as to cattle, that they should be confined on their own excrement, for it was proved when the effluvia was allowed to escape, to be injurious to their health; but in speaking of box-feeding, properly managed, did that really take place? He ventured to deny that it did. He was quite convinced that in the cases that came under the observation of Mr. Wilkins, the management had not been proper, and he begged to state, that one of those cases was (Mr. Mechi's) own. When he began the box-feeding system, he used Wheat straw as litter for the cattle, and as he occasionally grew very strong reedy straw at Tiptree-hall from thin sowing, he found it did not absorb the urinary excrement of the animals; he found that the casing of the straw was glass, therefore the internal portion of the straw was hermetically sealed against the liquor, and it was found that when the animals pressed on the straw the liquor rose up between, and made them foul and filthy, and they might infer very unhealthy. Therefore, when hard and coarse Wheat straw was used as bedding for animals in boxes, it was essential that it should be cut into chaff, so that the liquor could at once be absorbed by the pores of the straw. They would observe that straw chaff under the animals would instantly absorb all the liquor, and by occasionally renewing the straw chaff, it would be found that there was little or no effluvium, and consequently no injurious effects were produced upon the animals. The whole question hinged on the sweetness of the boxes. He admitted if they were not sweet it was decidedly wrong and injurious to have them; but he contended that by using straw chaff in the way he had mentioned, there would be no effluvia, and that the condition of these boxes would be sweeter and more pure than stalls, from which ammonia was constantly escaping, from their being swept. ("No, no," from Mr. Hutley.) He would appeal to any practical man if this was not so. The floors of their stables were made with bricks, which were porous; the urinary excrement found its way into them, and if they swept a stable out two or three times a day there was a urinary smell rising up to the nostrils, especially in the morning, and it was impossible to go into them without smelling ammonia or other gases. It was not so in the boxes, as the urine came to be absorbed by the cut straw, which was as perfect an absorbent as a good sponge, especially if they used, as they ought to do, salt, gypsum, or some other fixers, which were useful to the animals and profitable to the farmers; and he was sorry to see they were not oftener used in agriculture, as they might be from their price, persons not being sensible of their value. He had noticed that the effect of the trampling of the animals on straw chaff in the boxes, was to make it a tenacious and hard mass, as hard as that table; and there was no doubt that the boxes were decidedly more sweet and wholesome than the frequently swept stable or stall. These were questions of fact; and though his friend had alluded to the loss of the animals in these boxes, he (Mr. M.) would refer to his own practice and experience. Of 11 animals that had been confined in these boxes for periods varying from 12 to 16 months, from their birth to their death by the knife, not one had in any degree suffered in health, much less in life, from disease; he had no case of a single instance of disease while they were confined in these boxes; and therefore his friend formed an erroneous or too one-sided a conclusion from what he had heard. He mentioned this, because he was afraid his practical farming friends who had not boxes had found out that disease sometimes attacked their cattle that had a wider range, and they knew that great losses had been sustained. There was one point relating to boxes to which he would refer. He thought sufficient attention was not paid to the feeding of the animals. Let them imagine one of themselves shut up, tied by the neck, and fed with the most luscious food, without being allowed to take exercise—what would be the result? Why, disease. And the same took place with regard to cattle. They were placed in an unnatural position, they were gorged and glutted, without corrective exercise, and without the substitute of occasional physic; the blood was too thick, they had disease of the lungs, and death, and serious losses ensued. His own animals had been maintained in health in this way—when they were on fattening food, and appeared to require it, 1 lb. of ordinary salts were given them in water: if they were heavy in the eye, or careless of feeding, and the circulation was sluggish, he applied this dose of salts, and it at once set them feeding, and made them lively,—they got in better condition by his removing that which would attack and produce disease in a man if placed in a similar situation. He knew a gentleman who took calves from the mother, tied them up, and never let them come away till they were fatted animals, which he sold at 20*l*. But he said—"What would be the result if I did not give them physic?—I always have a large quantity of Cupiss's Constitution Balls,"—and any one could see that these animals did better than those which were turned out on his rich meadows. Therefore, if they wished to make beef in the shortest time, at the least cost, if they went against Nature in any respect, they must counteract it by physic in other respects; and he had no doubt the neglect of this had been the great cause of the losses spoken of. Now, he agreed entirely with Mr. Wilkins in his observations as to the importance of mixing the different manures, and in practice he carried it out, for he had a tank as large as that room, in which the manure from these boxes, the stables, the piggeries, and the sheep-yards, were all put in together, mixed with gypsum and salt, and formed a valuable manure. He also agreed in the importance of economising manure, and he was glad to see this feeling more generally prevailing. Some time since the strong tea running away was thought no object, but we were beginning to look sharper than we did; and he trusted there would be more stock kept on the farms of the country. The small quantity of stock seen on some of the farms was evidence of want of capital, but he trusted the time was coming when the farmers would take less and in proportion to their capital, which would be an increase of capital for the extent cultivated, and would lessen that competition for land, which tended to raise rents rather too rapidly and injuriously. It would lead to a better system altogether. There would be more profit for the farmer, who would have more money to spend with the tradesman, and the tradesman would be able to give more orders to the manufacturers, who were in fact the consumers of the beef, pork, and mutton, which the farmer produced; we were all links of one great chain, and could not affect one without affecting the whole.—Mr. W. Hutley said he certainly felt indebted to Mr. Wilkins for his excellent paper; but there were some parts that he did not at all agree with as to the management of stock. He thought when he talked of erecting the buildings he had described for the cultivation of land and the fatting of stock, the best method would be to have the entire yard enclosed, and make a large place covered with zinc, and so provided that nothing could run away in the shape of liquid manure. He was quite sure that in those boxes there must be a great deal of ammonia escaping, and decomposition going on under the animals; and what Mr. Mechi had said as to the cutting the straw into chaff was the most extraordinary thing as to absorption. He did not approve of half Mr. Mechi said, because he thought he did not carry it into practice—some was right, but some was extremely wrong; and he thought by cutting straw into chaff it would not absorb half the liquid that Wheat straw would.—The Chairman said, in reference to the results of box-feeding,—when any gentleman said there was no effluvia, no fermentation, he could not be aware of two facts that must create the latter; moisture and warmth would necessarily at once create fermentation in all vegetable matter. There must be fermentation before putrefaction—the first process must be fermentation, and the next enquiry was whether that was injurious to animal life. He could not but think it was. If they quietly examined into the results of farming practices, he could refer to gentlemen who said they could get their animals fatted soonest and safest when exposed to the common atmosphere. There was no doubt that the effect of carbonic acid gas, which all animals gave out, was prejudicial to them, or why expel it?—and if animals were shut in these boxes or pits, discharging as they did this carbonic acid gas, he was satisfied, if there was not a free access of air, it must be injurious to their health. As to making manure, all animals lived on animals—that which decayed produced life again; and all animals were necessary for the life of one another; for, as the poet had said—

"Some fleas there are that live on men,
While other fleas bite them again;
These little fleas have little fleas that bite 'em,
So flea bites flea *ad infinitum*."

(Laughter.) He liked these discussions, for though some were frightened at it, he liked everything free. If he was an animal he should like the air free; and he did not like protection, which he called a system of boxing. (Cheers and laughter.)

Reviews.

A Plain Address to the Labouring Classes, on the Advantages of Savings' Banks and Friendly Societies. J. Hatton, Reading.

The importance of savings' banks and friendly societies cannot, in our estimation, be over-rated. Next in importance to education, and what education is above all calculated to encourage, is a habit among the labouring classes of honest dependence on their own exertions. They must learn to look upon parochial support or aid as the last resort to which the visitations of Providence drive the helpless and infirm, and not as a fund to remedy the appointed consequences of indolence, extravagance, or imprudence. Let the wholesome custom of saving be once begun, and it will generate that independence which is the parent of honesty, industry, and prosperity. As an instance, we may mention an interesting case which at the same time shows what may be effected by prudence and economy, even out of the wages of a day labourer. This man began to save at 20 years of age. He was never married; and saved 5*s*. regularly every week—that is to say, as nearly as possible. He had however no savings' bank or other institution to assist him, but was obliged to keep his money by him until he had a sufficient sum "to put out," as it is termed, to interest. This was evidently a disadvantage; but again, it was in some measure balanced by the superior rate of interest — for whereas the savings' bank only affords about 3, about the year 1770, when this man's period commenced, 5 per cent. could be readily obtained. Thus the party began to save at 20, and at 65 he retired on an annuity of 20*l*. a year. At the age of 65, then, the man in question went to his employer, a most respectable and intelligent north country English farmer, who is lately deceased. He stated that he was now perfectly independent; but at the same time should be miserable if he entirely left off work. He was so attached to the place, to his master, and the family, that it would have broken his heart to leave either it or them; and he therefore proposed, for the future, to pay 20*l*. a year for his board and lodging, and to be allowed to do as much work as he pleased, and no more. At about 75 he died, worth very nearly 1500*l*., which, we need not say, gladdened the hearts of his next of kin. Two nephews were his principal heirs, and received 450*l*. each. Seven nieces, married and single, received 50*l*. each. The rest was made up in small legacies and presents, left chiefly to the different members of his master's family. We might instance many other cases, more ordinary, possessing greater or less interest. The freedom which domestics in particular, farm servants, and others, usually enjoy from any save personal expenses, their comparative security from many of the common temptations to extravagance; and the inducements to economy which a judicious employer may, by advice, suggest, are all favourable to the success of such persons in wisely providing, during a period of health, for future necessities.

The subject of provident habits, however, requires to be more frequently and prominently brought under notice; and the circulation of the above "Address," which is published for wide distribution at a cheap rate (6*s*. per 100), is one means of awakening attention to it. Unhappily, there is a vast and lamentable disproportion in the number of our labouring classes who are able but do not save, to those who really do save. There is, we repeat, a vast number of the working classes who, when they have comparatively good wages, out of which they might spare something, yet never lay aside anything. They are content, year after year, generation after generation, to go on in the state called "from hand to mouth," and being liable any day to fall out of work they are sure to become dependent on charity. From this there must be some means of redemption. Surely here is room for the benevolent exertions of the philanthropist. How many—we do not say all—but how many might, by such institutions as savings' banks and friendly societies lay

up against sickness—might provide for the decline of life—might keep themselves independent of the parish, and thus benefit society—might assist themselves in the various other ways pointed out in the tract referred to—might make home more happy—and might place themselves in a more favourable position than they too frequently are at present, for becoming kind husbands and parents, faithful servants, and proper examples to the rising generation! Hence the duty of pressing on the labouring poor the advantage of connecting themselves with these institutions.

Notices to Correspondents.

A Lincolnshire Rotation. *P. P.* says, "As Oats are making in Lincolnshire a wretched price, 14*s* per qr., can you tell me of a good substitute for another season. We often sow Oats on a Clover lea previous to Wheat, but what think you of Beans? Can any of your correspondents say if they have tried such a course viz., Beans drilled on a Clover lea, the land in good order and to be followed by Wheat?" [Do you farm in the fen district?]

Barley: Z. We are not aware that it does "always turn yellow" under such circumstances; but, if so, apply guano or charcoal dust, and it will soon be green again. And, certainly, your experience regarding lime and guano is quite contrary to our own.

Box-feeding: *Hibernicus.* Plans are in preparation, but lest delay should inconvenience, we give the following description of a set of boxes on this farm. It was very cheaply erected against an east and west wall about 6 feet high, which had foundations about 2 feet deep. The ground was excavated 18 inches. The subsoil is a stiff clay. About 10 feet out from the wall posts were planted 8 feet apart, the top of each being on a level with the top of the wall. These are connected with a set of strong poles from top to top, squared at the ends so as to rest, and admit of being nailed on the uprights, and from the top of each there was also a strong pole reaching to the wall and acting as a beam for the roofing. These beams supported a number of smaller larch poles parallel to the wall about 1 foot apart, and on these was piled ridgewise a lot of faggots, which are thatched over. This was the shed. It was divided into boxes, one in each of the intervals between the poles, thus: From each beam there descended two uprights to the ground, in which they were sunk to a depth of 18 inches. One of these uprights was 3 feet from the wall and the other 3 feet from the main posts, and there was also an upright about 3 feet from each post, descending from the front beam to the ground. These uprights and posts formed the framework, against which three or four horizontal strips being nailed, divided the sheds into separate boxes, 10 feet by 8. In one of the front corners, that in which is the beam with the two uprights, 3 feet on either side of it, stands the feeding trough, made by nailing from post to upright, and from upright to upright, a set of strips, inclosing a triangular space, which is filled to a height of about 3 feet with coal ashes and then boarded over. This completed the business. The cattle were turned in upon the litter, and in three or four months, if put in fresh, were taken out fat, after having filled the 18-inch pit and risen about 18 inches above the level of the ground. The whole labour here need not exceed 10*s.* a box.

Liquid Manure: *Merthyr.* Urine may be applied undiluted in wet weather; but if the land and weather be dry it should be diluted with at least an equal quantity of water. All the soap-suds and other refuse of the house may be put in the same tank.

Markets.

COVENT GARDEN, May 26.

The weather still being favourable, Vegetables are plentiful. Fruit has altered but little since our last account. A few Cherries have made their appearance. Pine-apples fetch from 6*s.* to 10*s.* per pound. Hothouse Grapes are good and plentiful. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, young Turnips may be obtained at from 9*d.* to 3*s.* a bunch, and Carrots at from 9*d.* to 2*s.* Broccoli is sufficient for the demand. Rhubarb and Asparagus are plentiful. A few green Peas from Cornwall have made their appearance. Potatoes are dearer. New Potatoes fetch from 6*d.* to 2*s.* per pound. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Camellias, Gardenias, Lily of the Valley, Cinerarias, Tropæolums, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 6*s* to 10*s*	Lemons, per doz., 1*s* to 2*s*
Grapes, hothouse, p. lb, 5*s.* to 10*s*	— per 100, 7*s* to 14*s*
Strawberries, p. oz., 6*d* to 1*s* 3*d*	Almonds, per peck, 6*s*
Apples, dessert, p. bsh., 6*s* to 12*s*	— sweet, per lb., 2*s* to 3*s*
— kitchen, p. bsh., 4*s* to 8*s*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
Gooseberries, green, per pottle, 1*s* to 1*s* 6*d*	— p. bush., 16*s* to 24*s*
Currants, do., do., 1*s* to 1*s* 6*d*	Nuts, Bar., p. bush., 20*s* to 22*s*
Oranges, per doz., 1*s* to 2*s*	— Filb., p. 100 lbs., 60*s* to 160*s*
— per 100, 6*s* to 16*s*	— Cob, p. 100 lbs., 90*s* to 150*s*
Chestnuts, p. peck, 4*s* to 7*s*	— Brazil, p. bsh., 12*s* to 16*s*

VEGETABLES.

Cabbages, p. doz., 9*d* to 1*s* 6*d*	Onions, p. bunch, 2*d* to 6*d*
— red, p. doz., 6*s* to 12*s*	— p. bush., 7*s* to 10*s*
Greens, p. doz. bunches, 1*s* 6*d* to 2*s* 6*d*	— Spanish, p. doz., 1*s* 6*d* to 4*s*
Broccoli, white, p. bun., 2*s* to 4*s*	— pickling, p. hf. sieve, 1*s* 6*d* to 3*s*
— brown, per bundle, 6*d* to 1*s* 6*d*	Shallots, per lb., 10*d* to 1*s*
Cauliflowers, p. doz., 8*s* to 24*s*	Garlic, per lb., 6*d* to 1*s*
Sorrel, p. hf. sieve, 9*d* to 1*s*	Artichokes, Jernsalem, p. half sieve, 9*d* to 1*s*
Peascods, per qu., 100*s* to 280*s*	Lettuce, Cab., p. ac., 4*d* to 9*d*
— per pwk., 8*s* to 14*s*	— Cos, do., 9*d* to 1*s* 6*d*
— per bush., 4*s* to 7*s*	Endive, per score, 1*s* to 2*s* 6*d*
Turnips, p. doz. bun., 1*s* to 2*s*	Mushrooms, per pottle, 6*d* to 1*s* 0*d*
Red Beet, per doz., 1*s* to 2*s*	Small Salads, p. punn., 2*d* to 3*d*
Horse Radish, p. bdl., 1*s* to 6*s*	Fennel, per bunch, 2*d* to 3*d*
Asparagus, p. 100, 1*s* to 6*s*	Savory, per bunch, 2*d* to 3*d*
Rhubarb, p. bundle, 4*d* to 1*s* 6*d*	Thyme, per bunch, 2*d* to 3*d*
French Beans, p. 100, 1*s* 6*d* to 3*s*	Watercress, p. doz. bun., 6*d* to 9*d*
Cucumbers, each, 4*d* to 1*s* 6*d*	Parsley, p. hf. sieve, 1*s* 6*d* to 3*s*
Endive, per doz., 1*s* to 2*s*	— Roots, p. bdle., 1*s* to 1*s*
Celery, p. bundle, 1*s* to 2*s*	Marjoram, green, p. bun., 9*d* to 1*s*
Radishes, p. 12 bunds, 4*d* to 8*d*	Mint, green, per bunch, 3*d* to 4*d*
Carrots, p. doz. bun., 5*s* to 6*s*	
Spinach p. sieve, 2*d* to 1*s*	

HAY.—Per Load of 36 Trusses.

SMITHFIELD, May 24.

Prime Meadow Hay	65*s* to 70*s*	Clover	60*s* to 95*s*
Inferior ditto... ...	50 65	New Clover	— —
Rowen	50 60	Straw	26 30
New Hay	— —		J. Cooper.

Very little trade.

COMMERCIAL MARKET, May 24.

Prime Meadow Hay	75*s* to 90*s*	Inferior	56*s* to 80*s*
Inferior ditto... ...	50 65	New Clover	— —
New Hay	— —	Straw	25 30
Old Clover	90 95		Joshua Bates.

HOPS, Friday, May 25.

Messrs. Pattenden and Smith report that there is no alteration at present in the Hop market.

POTATOES.—Southwark, Waterside, May 21.

The Committee report that the Continental arrivals continue to be more than equal to the demand, which has been heavy during the past week; and with some samples lower prices have been submitted to. The following are this day's quotations:—Yorkshire Regents, 200*s.* to 220*s.*; Scotch Cups, 140*s.* to 150*s.*; Whites, 90*s.* to 100*s.*; French do., 80*s.* to 90*s.*; Dutch do., 80*s.* to 100*s.*; Belgian, 80*s.* to 90*s.*

SMITHFIELD, Monday, May 21.

The number of Beasts is larger than on Monday last. Trade is very heavy, owing to the warm damp weather; the attendance of buyers is, however, considerable, and a fair clearance is effected, but at lower rates. The supply of Sheep is also large, and trade slow. Small Downs of good quality are not much lower, but there is a large reduction in the price of fat polled Sheep. The Lamb trade is active, at late rates. The demand for Calves is very small, and our top quotation with difficulty realised. From Holland and Germany there are 290 Beasts, 600 Sheep, and 128 Calves; from Norfolk and Suffolk, 2100 Beasts; and from Scotland, 400.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ..	3	4 to 3	6	
Best Short-horns	3	2 — 3	4	
2d quality Beasts	2	6 — 3	0	
Best Downs and Half-breds ..	4	0 — 4	4	
Ditto Shorn ...	3	8 — 3	10	

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools .	3	10 to 4	0	
Ditto Shorn ...	3	4 — 3	6	
Ewes & 2d quality	3	0 — 3	8	
Ditto Shorn ...	2	8 — 3	2	
Lambs	5	0 — 5	10	
Calves	3	2 — 4	4	
Pigs	3	6 — 4	6	

Beasts, 3350; Sheep and Lambs, 25,070; Calves, 171; Pigs, 310.

Friday, May 25.

We have a short supply of Beasts; buyers are very cautious, the weather being warm, however, Monday's rates are fully supported, and a choice Scot occasionally makes 3*s.* 8*d.* The number of Sheep is smaller; the most selling kinds make 2*d.* per 8 lbs. more than on Monday. Lamb is plentiful, but is in demand at a little more money. There is an unusually large supply of Calves; trade is very slow, at a reduction of fully 4*d.* per 8 lbs.; several remain unsold. From Holland and Germany we have 58 Beasts, 400 Sheep, and 214 Calves; from Scotland, 200 Beasts; and 151 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	4 to 3	6	Best Long-wools .	3	8 to 4	0
Best Short-horns	3	2 — 3	4	Ditto Shorn ...	3	4 — 3	8
2d quality Beasts	2	6 — 3	0	Ewes & 2d quality	3	0 — 3	8
Best Downs and Half-breds	4	0 — 4	4	Ditto Shorn ...	2	8 — 3	4
Ditto Shorn ...	3	8 — 4	0	Lambs	5	0 — 6	0
				Calves	2	10 — 4	0
				Pigs	3	4 — 4	6

Beasts, 703; Sheep and Lambs, 9330; Calves, 585; Pigs, 270.

MARK LANE.

Monday, May 21.—The supply of English Wheat this morning was small; nevertheless, owing to the continued large arrivals of foreign Wheat and Flour, little progress could be made with the sale until a decline of fully 1*s.* per qr. was submitted to, at which the stands were not cleared at a late hour. Fine foreign red Wheat was in demand, and commands last week's prices, but ordinary qualities and white were difficult to move in quantities even at some reduction.—Barley, Beans, and Peas maintain our quotations of last week.—Oats being held for a slight advance checks sales.

Friday, May 25.—The supply of grain, both English and foreign, during the week has been moderate, but the attendance this morning was small, and buyers showing a general disinclination to purchase, business in Wheat was limited, and no progress could be made with sales, excepting at a reduction in prices.—Barley is a slow sale, unless at 6*d.* per qr. decline.—Beans and Peas are unaltered in value.—The Oat trade is heavy, and Monday's rates obtained with difficulty.—Indian Corn arrived is in good demand, and fine Galata is readily taken at 36*s.*, cost, freight, and insurance.—From the 13th to the 22d inclusive, heavy rain appears to have been general, but the last day or two were fine. Although we hear the Wheat plant very badly spoken of in some of the heavy land districts, generally speaking the crops are reported to have been benefited by the wet weather, and looking well. The corn trade here and throughout the country has been dull, and although there is a retail country demand for Wheat, occasioned by the scanty supplies in the provincial markets, yet it has been impossible to clear the foreign arrivals from ships without accepting a decline of fully 1*s.* per qr., town millers being unwilling to accede to late rates, owing to the competition they sustain from French Flour, which is now selling at 33*s.* per sack. Spring corn is not altered in value.

Liverpool, Friday, May 25.—We have had very moderate supplies since Tuesday. The weather continues very fine, and having a poor attendance of dealers at this day's market, the business was extremely limited, prices were about the same for Wheat, but rather lower for Flour. No change in Oats, Barley, or Peas. Egyptian Beans were more plentiful, and sold for rather less money. We had a small show of Indian Corn, which found buyers at an advance of 0*d.* on Yellow, and 1*s* per quarter on White.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas
April 7.....	44*s* 5*d*	28*s* 9*d*	16*s* 9*d*	26*s* 5*d*	28*s* 1*d*	29*s* 6*d*
— 14.....	44 8	28 6	17 0	23 1	28 5	30 11
— 21.....	44 5	28 8	16 8	22 4	28 11	28 9
— 28.....	46 0	28 10	17 2	27 5	29 3	29 9
May 5	46 9	28 11	17 6	25 4	29 8	30 1
— 19.....	44 9	28 0	17 8	25 9	30 7	29 11
Aggreg. Aver.	45 3	28 8	17 3	24 8	29 4	30 1
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Apr. 7.	Apr. 14.	Apr. 21.	Apr. 28.	May 5.	May 19.
46*s* 9*d*	...	...	...	...	...	...
46 0	...	...	...	...	...	...
44 9	...	...	...	...	...	...
44 5	...	...	...	...	...	...
44 5	...	...	...	...	...	...
44 3	...	...	...	...	...	...

Prices Current.	London.		Liverpool.		Wakefield.		Boston.		Birmingham.	
	May 14 qr.	May 21 qr.	May 15. 70 lbs.	May 22. 70 lbs.	May 11 qr.	May 18 qr.	May 16 qr.	May 23 qr.	May 10. 62 lbs.	May 17. 62 lbs.
	s. *s.*	*s.* *s.*	*s.* *d.* *s.* *d.*	*s.* *d.* *s.* *d.*	*s.* *s.*	*s.* *s.*	*s.* *s.*	*s.* *s.*	*s.* *d.* *s.* *d.*	*s.* *d.* *s.* *d.*
Wheat—										
New, red ...	40 to42	40 to42	6 3 6 8	6 4 6 9	41 to47	13 to47	38 to46	38 to46	5 9 6 2	5 10 6 3
„ white ...	45—46	45—46	6 9 7 3	6 10 7 4	43—51	43—51	45—50	42—49	6 1 6 6	6 3 6 8
Old, red ...	42—46	42—46	6 6 6 9	6 7 6 10	42—44	42—44	—	—	5 10 6 3	6 0 6 4
„ white ...	48—52	48—52	7 0 7 6	7 0 7 7	—50	—50	—	—	6 0 6 8	6 2 6 9
Foreign... ...	36—56	36—55	4 6 8 3	4 6 8 0	39—51	39—51	—	—	5 2 7 0	5 2 7 2
			480 lbs.	barrel						
Rye—New ...	22—24	22—24	—	—	—	—	—	—	—	—
Foreign...	22—23	22—23	—	—	—	—	—	—	—	—
Foreign meal	6*l.*—7*l.*	6*l.*—7*l.*	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley—										
Grinding ...	22—25	22—25	—	—	22—23	22—23	24—26	24—26	23—25	20—25
Malting... ...	25—29	25—29	30*s*—32*s*	30*s*—32*s*	27—32	27—32	28—30	28—30	29—33	29—33
Foreign... ...	19—29	19—29	—	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—42	—	—	—	—	—
			45 lbs.	45 lbs.					qr.	qr.
Oats—White...	19—26	19—26	2*s* 9*d* 3*s* 0*d*	2*s* 10*d* 3*s* 3*d*	—	—	14—20	14—20	18—30	18—30
Black...	16—22	16—22	2 5 2 8	2 5 2 8	—	—	—	—	17—18	17—18
Foreign ...	15—20	15—20	2 4 2 7	2 4 2 7	—	—	—	—	—	—
			qr.	qr.		qr.				
Peas—Boilers	26—32	26—32	34*s*—	34*s*—	28—32	28—32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—26	23—26	27 —28*s*	27 —28*s*	—	—	—	—	11—12	11—12
Foreign ...	24—33	24—33	30 —33	30 —33	—	—	—	—	—	—
Beans—										
New, small ...	22—28	22—32	30 —33	30 —33	29—32	29—32	28—32	30—33	11—14	11—14
Old	—	—	32 —34	32 —34	35—36	35—36	34—36	34—36	14—16	14—16
Foreign ...	21—36	21—36	24 —32	24 —32	26—28	26—28	—	—	11—13	10—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	37—42	37—42	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9*l.* 7*s*	9*l.* 7*s*	7*l.* 12*s*	7*l.* 12*s*	—	—	—	—	—	—
Foreign ...	6*l.*—7*l.*	6*l.*—7*l.*	—	—	—	—	—	—	—	—
Indian Corn—	26—30	26—32	32*s*—35*s*	32*s*—36*s*	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	36—44	36—44	27—35	32—37	—	—	32—38	32—38	36—38	32—38

Weekly Averages and Imports.	Aver. May 22	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. *d.*	qrs.	*s.* *d.*	qrs.	*s.* *d.*	qrs.	*s.* *d.*	qrs.	*s.* *d.*	qrs.
WHEAT ...	46 2	7650	45 2	8854	45 9	11597	44 11	2142	—	—
BARLEY ...	28 9	8330	28 9	12	30 3	3085	—	—	—	—
OATS... ...	20 5	14340	17 1	1374	18 7	2277	14 3	610	—	—
RYE	23 11	—	24 9	20	—	—	—	—	—	—
BEANS ...	27 10	—	—	11838	29 11	1490	31 10	270	—	—
PEAS... ...	32 3	—	—	912	27 7	443	—	—	—	—
Signed	*KINGSFORD and LAY.*		*BEGAR and TUNNICLIFFE.*		*SANDARS and DUNNS.*		*THOMAS WRIGHT.*		*J. and C. STURGE.*	

Sales by Auction.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew-lane, on THURSDAY, May 31st, and FRIDAY, June 1st, at 12 o'clock, a first-rate collection of DAHLIAS, FUCHSIAS, VERBENAS, fine GERANIUMS, and other Plants in bloom.—May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, Leytonstone, Essex.

CHOICE TULIPS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by the Executrix of the late Mr. G. Jeffery, to Sell by Auction, on the Premises, Paradise-row, Rotherhithe, on TUESDAY, 29th May, his superb collection of TULIPS, OFFSETS, TULIP-STAGE, CABINETS, &c. This fine collection, made at great expense of money and time, is worthy the prompt attention of Amateurs, Collectors, and the Fancy. PROTHEROE and MORRIS invite their friends to an early inspection of this superb stock, for the purpose of adding attractive flowers to their collections.—May be viewed two days prior to sale. Catalogues had on the premises; of the principal Seedsmen, London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

ESTABLISHED ORCHIDS.

MR. J. C. STEVENS begs to announce that he will sell by Auction, at his Great Room, 38, King-street, Covent Garden, on THURSDAY, May 31, at 12 for 1 o'clock, a GENERAL COLLECTION of ORCHIDS, the property of a gentleman who is giving up growing them, comprising established plants in good health, many of which have flower-spikes, and amongst them are good varieties, most of the favourite genera. May be viewed on Wednesday, and Catalogues had.

PARTNERSHIP.—An opening is presented in an ESTABLISHED NURSERY, near Town, to any Gentleman who has experience in the Trade. He will be required to bring in a sum of from 500*l.* to 700*l.*, or advantageous terms will be offered to any party who can take a part in the management of such a trade, and deposit a similar sum, with a view ultimately to a Partnership. Satisfactory references will be given and required.—Address, G. H., by letter, prepaid, care of Mr. Datnoit, Finsbury-place South, London.

FARM TO BE LET.

TO BE LET, in the neighbourhood of London, a FARM. No one need apply who cannot command in Stock and Money 2500*l.*—Address, by letter, Alpha, care of the Publisher of the *Gardeners' Chronicle*, 5, Upper Wellington-street, Strand, London.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE SOLD, on Advantageous Terms, the remainder of the LEASE of a small, compact Nursery, about 8 acres, well stocked with Trees of various kinds with Greenhouse and other buildings; situated opposite a Railway Terminus, in the vicinity of one of the principal market towns in England. The above is well worthy of notice. For particulars, apply to Mr. HANDY, 26, Cursitor-street, Chancery-lane, London.

IMPORTANT TO LANDOWNERS, TENANTS FOR LIFE, AND OTHERS DESIROUS OF DRAINING AND IMPROVING THEIR ESTATES.

THE DIRECTORS OF THE LANDOWNERS WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY, established 1844 and incorporated by Act of Parliament, are prepared to undertake all works of Drainage or Irrigation of Lands and general improvement of Estates, either at a fixed price per acre, or for a commission on the outlay, the landowner having the entire expenditure passing through his hands. They are prepared also to take a Mortgage or security of the property improved for the cost of the improvements.

All tenants for life and owners of limited interests in lands may, through this Company, charge the Inheritance of their lands with the value of permanent improvements, including farm and other buildings. And all owners or occupiers of land, whatever their holding, may, through this Company, obtain a permanent right of outfall, for the purpose of Drainage, through the lands of any other person, paying for the damage thereby occasioned, subject in case of objection only to the decision of the Inclosure Commissioners.

The great experience this Company has had in all parts of the kingdom, and the large extent of its staff, enables it to undertake works of any extent with facilities seldom attainable by individual proprietors.

Every information may be obtained on application to the Secretary, Mr. THOMAS MAY, 9, Bedford Circus, Exeter; of the Company's Agents, Mr. C. F. HUMBERT, Land Agent and Surveyor, Watford Herts; or Mr. J. H. CHARNOCK, Land Agent and Drainage Engineer, Copmanthorpe, near York.

CHEAP AND EFFECTIVE FENCE AGAINST HARES AND RABBITS.—Iron Wire Netting of various patterns, to exclude the smallest rabbits, in coils of 50, 100, or any given number of yards, at prices varying from 4*d.* to 1*s.* per yard run. Aviary net at proportionate prices. None sent out without at least two coats of the best anti-corrosive paint. Testimonials of the highest and most respectable character, received during the last 13 years, enable the advertiser to speak with confidence as to the excellence of the article. Apply to Mr. SAMUEL TAYLOR, Barnwood, near Gloucester; or to Robert Woodcock, at the Manufactory, Stoke Ferry, Norfolk.

STRAWBERRIES, FLOWERS, &c.

ROBERTS'S HORTICULTURAL DOUBLE TILES.—A new invention, lately registered, patronised by the Horticultural Society.—Those who wish to grow Strawberries to perfection, and free from dirt, should purchase the above Tiles; specimens may be seen, together with an improved Flower Supporter, also Tiles and Socket for growing Melons, Cucumbers, Celery, &c., on a new and improved principle, at JAMES CHARTERS', Seedsman, 74, King William-street, London, who is appointed Agent for the sale of them.

APSLEY PELLATT AND Co. (late PELLATT and GREEN), Falcon Glass Works, Holland-street, Blackfriars, have always on hand, Bee Glasses, 1*s.* 2*d.* per lb.; Cucumber Glasses, 1*s.* 6*d.* per lb.; Milk Pans, 18-in., white glass, 5*s.* 6*d.* each; Propagating Glasses, white, 1*s.* per lb.; do., green, 10*d.*; do., condensing, 2*d.* per lb. extra; Grape Shades, 1*s.* 6*d.* to 2*s.* each; Fish-bowls, from 1*s.* 6*d.* each; Wasp and Fly-traps, 40*s.* per gross, or 3*s.* 6*d.* per dozen. By the use of those traps fruit may be preserved from (otherwise certain) destruction.

BLUE PROPAGATING GLASSES—

3-in. diameter, 2*s.* per doz.	6-in. diameter, 3*s.* 6*d.* per doz.
4-in. ,, 2*s.* 6*d.* ,,	7-in. ,, 4*s.* ,,
5-in. ,, 3*s.* ,,	8-in. ,, 4*s.* 6*d.* ,,

It being proved both theoretically and practically that blue glass is by far the most effective in propagating plants and in germinating seed, the above are offered at prices which must insure their general adoption.—To be had of EDWARD LACEY, Glass Merchant, 57, Broad-street, Birmingham.

HEAL AND SON'S LIST OF BEDDING, containing a full description of Weights, Sizes, and Prices, by which purchasers are enabled to judge the articles best suited to make a good set of Bedding, sent free by post, on application to their Factory, 196 (opposite the Chapel), Tottenham-court-road, London.

MILK PANS, PROPAGATING GLASSES, &c.

JAMES PHILLIPS & CO. beg to hand their reduced prices, as follows:

GLASS MILK PANS.

12 inches diameter, each	2*s.* 0*d*	20 inches diameter, each	4*s.* 0*d*
14 ,, ,, ,,	2 6	22 ,, ,, ,,	4 6
16 ,, ,, ,,	3 0	24 ,, ,, ,,	5 0
18 ,, ,, ,,	3 6		

PROPAGATING GLASSES.	BEE GLASSES.	CUCUMBER TUBES.	
2 in. diam., each	0*s.* 2*d*—0 3*d*	24 inches long	2*s.* 0*d*
3 ,, ,,	0 3—0 4	22 ,,	1 10
4 ,, ,,	0 4—0 5	20 ,,	1 8
5 ,, ,,	0 6—0 7	18 ,,	1 6
6 ,, ,,	0 8—0 10	16 ,,	1 4
7 ,, ,,	0 10—1 1	14 ,,	1 2
8 ,, ,,	1 0—1 4	12 ,,	1 0
9 ,, ,,	1 2—1 8	Made to any length.	
10 ,, ,,	1 4—2 0		
11 ,, ,,	1 6—2 8		
12 ,, ,,	2 0—3 6		

PEACH GLASSES, 10*d.* each. WASP TRAPS, 3*s.* 6*d.* p. doz. LACTOMETERS for trying the quality of Milk, 4 tubes, 7*s.* 6*d.* Address, 116, Bishopsgate-street Without, London.

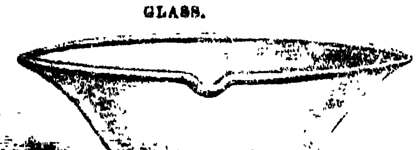
HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—The readers of the *Gardeners' Chronicle* of Saturday, Feb. 24th, must have observed the high terms in which this Glass was spoken of by Dr LINDLEY. We have re-arranged our list of prices to correspond precisely with those of the Patentee, to which we would beg the attention of the Nobility, Clergymen, Gentry, and others.

In squares under 8 by 6 . 4*d.* per foot.

8 by 6 under 10 by 8.	4½*d.*	10 by 8 under 14 by 10	5*d.*
14 by 10 ,, 1¼ foot..	5½*d.*	1¼ foot ,, 3 feet	6*d.*
3 feet ,, 4 feet ..	6½*d.*	4 feet ,, 5 feet	7*d.*

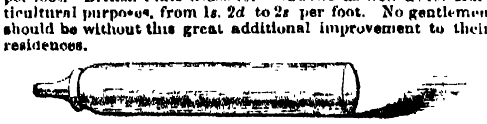
A full List of Prices and every information may be had by applying to JAMES PHILLIPS and Co., Horticultural Glass Warehouse, 116, Bishopsgate-street Without, London.

GLASS.



GLASS MILK PAN.

THOMAS MILLINGTON is supplying Foreign Sheet Glass, very superior to any other Glass in the market, in 100-ft. and 200-ft. cases, of large dimensions, 16-oz., at 3*d.* per ft., or cut to size in ranges, not exceeding 40 inches, at 3½*d.* per foot. British Plate Glass for Windows as well as for Horticultural purposes, from 1*s.* 2*d* to 2*s* per foot. No gentlemen should be without this great additional improvement to their residences.



CUCUMBER TUBE.

Estimates and List of Prices forwarded on application at the Warehouse, 87, Bishopsgate-street Without, London.

TURNIP MANURE.

CITY OF LONDON PORTABLE MANURE COMPANY.—The Managers of this Company beg to call the attention of Agriculturists to their "COMPOUND BONE AND FÆCAL MANURE," peculiarly well adapted for the growth of Turnips and Swedes. This valuable fertiliser, unlike the inorganic Manures recommended for the purpose, contains not only the superphosphate and sulphate of lime, but a large per-centage of potash, the characteristic principle of the Turnip, and every other constituent, organic and inorganic, which enters into the composition of that root. It is also a powerful vegetative stimulant, rapidly advancing the plant at the earliest period of its growth, thus placing it beyond the predatory attack of the Fly.

PRICES:

For Turnips and Mangold Wurzel ..	per ton	£6 6*s.*
,, Potatoes and Hops ...	,,	6 6
,, Wheat, Barley, Oats, Rape, &c.	,,	5 5

including packages, delivered at any London Wharf or Railway Station. Quantity per acre, from 3 to 5 cwt.

Orders and remittances to be sent to Messrs. STEVENS, ELLERMAN, COLEMAN and Co., at the Company's Works, Queen street, Church-street, Mile End New Town. For particulars apply at the Works, to Mr. W. WHITE, Agricultural and Consulting Chemist, late Hon. Secretary to the York Farmers' Club, author of "England's True Wealth, or Fæcal Matters in their relation to Agriculture," and to Mr. C. F. ELLERMAN, author of "Sanitary Reform and Agricultural Improvement."

N.B.—Landed proprietors and farmers are invited to visit the works.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Duke of Devonshire's, Chatsworth Gardens.
Earl of Gainsborough's, Oakham, Rutlandshire.
Earl of Zetland's, Upleatham, Yorkshire.
Robert Hanbury, Esq., Poles, near Ware, Herts.
Mr. Glendinning's Nursery, Turnham-green.
And at least 500 other important places.

BURBIDGE and HEALY, 130, Fleet-street, London.

SHETLAND PONIES AND CATTLE.—Just landed, direct from Shetland, a quantity of very handsome small PONIES; size, from 8½ to 12 hands high. Also some very handsome small COWS and HEIFERS, down Calving, some with Calf by side, and in milk; also some small OXEN and SHEEP, for feeding. These Cows give a large quantity of milk for their size, which is very rich, similar to the Alderney, and they are very hardy and suitable to this climate. To be seen at THOMAS ORTON's, Salesman and Importer to her Majesty, 69, Wapping.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flower-pots, &c., in boxes, of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole agents in London, G. and J. DEANE, Horticultural Implement Warehouse, 46, King William-street, London-bridge.

FLEXIBLE INDIA-RUBBER PIPES AND TUBING, for Railway Companies, Brewers, Distillers, Fire Engines, Gas Companies, Gardening and Agricultural purposes, &c.—J. L. HANCOCK'S Patent VULCANISED INDIA-RUBBER HOSE-PIPES are made to stand hot liquor and acids without injury—do not become hard or stiff in any temperature (but are always perfectly flexible), and as they require no application of oil or dressing, are particularly well adapted for Fire Engines, Pumps, Gas, Beer Engines, Gardens, Liquid Manure, and all purposes where a perfectly flexible pipe is required. Made all sizes, from ¼ inch bore upwards, and of any length to order. Vulcanised India-rubber Garden Hose, fitted with brass taps, copper branch, and roses complete, ready to be attached to pumps, water-butts, or cisterns. Sole Manufacturer, JAMES LYNE HANCOCK, Goswell-mews, Goswell-road, London.

JAMES LYNE HANCOCK invites the attention of parties using long lengths of FLEXIBLE GARDEN HOSE to his SELF-ACTING HOSE-PIPE REEL, which will be found a most convenient machine for readily winding up and conveying away the hose when out of use. By it also liquid manure is easily distributed from tanks.—N. B. Vulcanised India-rubber washers of all sizes for joints or hot-water and steam pipes, and Vulcanised sheet rubber any thickness for all kinds of joints, and other purposes.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry; and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

PORTLAND CEMENT.—Testimonials received from all quarters, prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose—1*s.* An improved Clothes Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes of improved graduated and powerful friction. Velvet Brushes which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

CAUTION.—Beware of the words "From METCALFE's" adopted by some houses.

COMFORT FOR TENDER FEET, AND A CERTAIN CURE FOR CORNS AND BUNIONS.

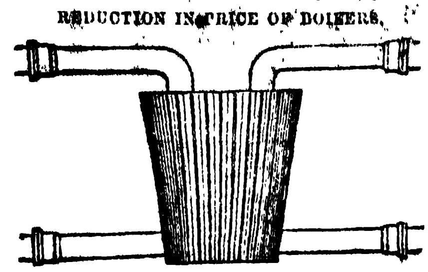
PAUL'S EVERY MAN'S FRIEND, Patronised by the Royal Family, Nobility, &c.

PAUL'S EVERY MAN'S FRIEND, which gives relief on the first application. Paul's Every Man's Friend (Corn Plaister) is generally admitted to be the best emollient application for Corns and Bunions, and is worthy of a trial on the part of those who are afflicted with such unpleasant companions. Testimonials have been received from upwards of 100 Physicians and Surgeons of the greatest eminence, as well as from many officers of both Army and Navy, and nearly 1000 private letters from the gentry in town and country, speaking in high terms of this valuable remedy.

Prepared by John Fox, in boxes, at 1*s.* 1½*d.*, or three small boxes in one for 2*s* 9*d*; and to be had, with full directions for use, of all wholesale and retail Medicine Vendors in Town and Country. The genuine has the name of "JOHN FOX" on the Government Stamp. A 2*s.* 9*d.* box cures the most obdurate corns. Ask for "Paul's Every Man's Friend."

Sold by Barclay and Sons, Farringdon-street; Edwards, 67, St. Paul's Churchyard; Butler and Harding, 4, Cheapside; Newberry, St. Paul's; Sutton, Bow Church-yard; Johnston, 68, Cornhill; Sanger, 150, Oxford-street; Willoughby and Co., 61, Bishopsgate-street Without; Eade, 39, Goswell-street; Prout, 229, Strand; Hannay and Co., 63, Oxford-street; Proctis, 64, Edgware-road; and retail by all respectable Chemists and Medicine Venders in every town in England. Wholesale Agents for Ireland and Scotland, Messrs. J. and R. Raimes and Co., Druggists, Edinburgh.

REDUCTION IN PRICE OF BOILERS.

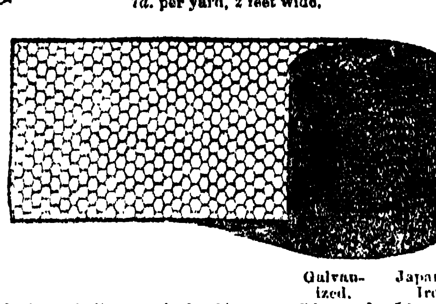


BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in.	will warm	50 ft. 4 in. pipe	... £1 15 0
12 in.	do.	75 ft. 4 in. do. ...	... 2 5 0
14 in.	do.	100 ft. 4 in. do. ..	... 2 15 0
16 in.	do.	150 ft. 4 in. do ...	... 3 10 0
18 in.	do.	250 ft. 4 in. do. ...	.. 4 10 0
21 in.	do.	350 ft. 4 in. do. ...	... 5 10 0
24 in.	do.	450 ft. 4 in. do. ...	... 7 0 0
	NEW PATTERN BOILERS.		
30 in.	will warm	800 ft. 4 in. pipe	.. 15 15 0
36 in.	do.	1500 ft 4 in. do. ...	... 25 0 0

All Boilers with double arms, up to 18 in., 5s. extra, to 24 in., 10s. extra; all above, the same price.
130, Fleet-street, London, May 26.

GALVANISED WIRE GAME NETTING.—
7d. per yard, 2 feet wide.



	Galvanized.	Japanned Iron.
2-inch mesh, light, 24-inch wide ..	7d. per yd.	5d. per yd
2-inch ,, strong ,, ..	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, .	10 ,,	8 ,,
1½-inch ,, extra strong ,, ..	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.
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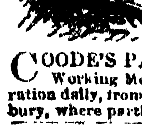

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For each Person.		Chief Cabin Guineas.	Fore Cabin. Guineas.	Steerage. Guineas.
14 Years old, and upwards	...	45	25	18
7 Years old, and under 14	..	27	15	10
1 Year old, and under 7	...	18	10	8
Under 1 Year old	...	0	0	0

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New Zealand House, 9, Broad-street-buildings,
London, April 27, 1849.

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MANUFACTURED AND SOLD BY
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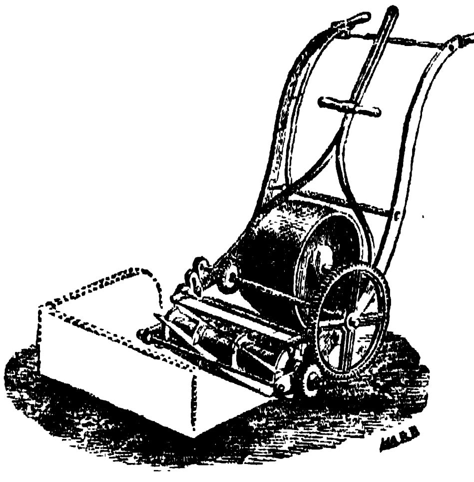

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THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 22—1849.] SATURDAY, JUNE 2. [PRICE 6d.

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25 for ...	2	2	0
50 for ...	3	11	6
100 for ...	6	0	0

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ECLIPSE, delicate pink, with stripes of deep rose.
PSYCHE, rosy purple, centre crimson, eye yellow.
QUEEN OF THE FRENCH, pale blush, dark rose centre.
ANNA, beautiful flesh colour, eye green.
BURGUNDY, light purple.
NAPIER, bright crimson, white eye, splendid.
MONARCH, rose, white eye, surrounded with scarlet.
GIANTESS, very large, blush white.
WAR EAGLE, dark scarlet, centre dark maroon.
OPTIMUS, glossy blush, extra size.
DUVAL, mulberry, very large, white eye.
PAINTED LADY, pink, scarlet centre.
ROYAL PURPLE, deep purple, very fine.
JOHN SALTER, scarlet orange, crimson centre.
LADY RUSSELL, corolla white, pink centre.
ADVANCER, rosy purple, shaded with lake.

The above are strongly recommended and are second to none. The set of Eighteen for 1l. 2s.; Twelve for 16s.; or Six for 9s. 6d. All other varieties at the same prices.

The following superb PETUNIAS of 1849, at 2s. 6d. each; or the set for 16s. All other varieties at the same pri[illegible]. Elegantissima, Brilliant, Beauty of Suffolk, Renown, Telegraph, Spotted Beauty, Hesperus, and Nymph.

SCARLET PELARGONIUMS.—The following set [illegible] 6s.: Conway's Royalist, Compactum, Smith's Scarlet, Pi[illegible] Nosegay, Barthonia, Frogmore. (Royalist, extra large, 5s.

Heliotropium, Souvenir de Liege, 3s 6d. each; I[illegible]pressa, 2s. 6d.; Salvia azurea compacta, 2s. 6d.; S. [illegible]flora, 1s.; S. patens alba, 2s. 6d.; Calceolaria ampl[illegible] 1s. each, 9s. per dozen; C. Kentish Hero, 1s. each [illegible] per dozen; Zauschneria californica, 1s. each; Jasmin[illegible]nudiflorum, 1s.; Gaillardia splendidissima, 7s 6d.; Mim[illegible]s Harlequin (good), 1s 6d.; Viola lutea, 3s. 6d.; Pentstemon cordifolia, 3s 6d.; Lobelia azurea grandiflora, 2s.; Chimney Campanula, extra large blooming plants, 4s. per dozen; also the Cucumber and Vegetable Marrow Plants.

All the plants, except Scarlet Pelargoniums and Campanulas, can be sent per post. A remittance must accompany the order, without which plants cannot be sent.

ROBERT WHIBLEY, Chester Nursery, near Walcot-place, Kennington-road, London.

GEORGE BAKER begs to announce his collection of AMERICAN PLANTS is now in bloom, and may be seen Gratis. He has also an Exhibition at the Botanic Gardens, Regent's Park, which may be seen Gratis by orders from Fellows of the Society.—Wendlesham Nursery, Bagshot, Surrey, near Staines Station, Windsor Railway, June 2.

CHOICE BEDDING PLANTS at 3s. per dozen.—Scarlet and other Geraniums, Verbenas, Petunias, Fuchsias, Cupheas, Mimulus, Mesembryanthemums, Heliotropes, Dahlias, &c. Strong established plants in pots at 3s. per dozen.

THOMAS WATTS, Camden Nursery, Camberwell, Surrey.

SEED POTATOES, NON-DISEASED.

MR. WARINGTON, of the New Corn Exchange, London, has a few Sacks left of "WHITE BLOSSOMS" SEED POTATOES, which have been grown some years by a gentleman of wealth in the county of Norfolk, and they have never exhibited the slightest symptom of disease, the grower has always planted them during the first and second week in June, and they have yielded excellent crops. The price is 7s. per cwt., including bag; and will be forwarded on receipt of post-office order, or cash, for the amount.

NATURAL GRASS SEEDS FOR PERMANENT PASTURE.

JOHN SUTTON AND SONS having for many years paid especial attention to the collecting of the most suitable GRASS SEEDS for laying down land to Permanent Pasture, can supply excellent seeds to form a fine rich pasture, at 25s. per acre, mixed expressly to suit the soil, or a good mixture of sorts proper to lay down Bog or Waste Lands at 21s. per acre.

*** Carriage free to London, Bristol, or Basingstoke.

Reading Seed Warehouse, Reading, Berks.

PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER, AND CELERY.

JOHN CATTELL, SEEDSMAN and NURSERYMAN, Westerham, Kent, begs respectfully to inform the public that plants of his superior true sorts of the above will be forwarded to order on receipt of postage stamps or post-office order, at the undernamed prices, mat and package included.

All the sorts of early Cabbage, Savoy and Kale, including Brussels Sprouts, 4s. 6d. per 1000. All the sorts of autumn and spring Broccoli, and red and white Celery, 6s. per 1000—6d. per 1000 less when no mat or package is required. Packages of 1000 and upwards delivered free of carriage to the Edenbridge station.

NURSERYMEN AND FLORISTS TO HER MAJESTY, THE QUEEN.

SELECT PLANTS, VERY STRONG FOR BEDDING, comprising the finest varieties of Verbena, Anagallis, Antirrhinums, Calceolarias, Cupheas, Campanulas, Fuchsias, Geraniums, Heliotropes, Mesembryanthemums, Pentstemons, Petunias, Potentillas, Double Rockets, Tree Violets, &c. &c., 30s. to 50s. per 100, or 6s. per dozen.

THE FINEST SHOW CARNATIONS, PICOTEES, PINKS, PANSIES, FUCHSIAS, VERBENAS, CINERARIAS, GLOXINIAS, &c.

YOUELL AND Co. are now also executing orders for the above, in strong healthy plants, at the following prices.

CARNATIONS AND PICOTEES.

	£	s.	d.
12 pairs of very fine show flowers, by name, 1l. 4s. and	1	10	0
25 ditto ditto ditto 2l. 10s. and	3	0	0
12 pairs of newest and finest first class show flowers ...	2	10	0
25 ditto ditto ditto ditto	5	0	0

Fine mixed border Carnations, 12s. per dozen pairs.

PINKS.—Finest first class show varieties, 12s. and 18s. per dozen pairs.

PANSIES.—Finest first class show flowers, 10s. and 18s. per dozen.

FUCHSIAS.—The newest and most beautiful varieties out, 9s., 12s., and 18s. per dozen.

VERBENAS.—The most select and beautiful varieties sent out this year, 6s. to 12s. per dozen.

CINERARIAS.—Fine flowering plants of the best show varieties, 9s. to 18s. per dozen.

CHRYSANTHEMUMS.—The most select of the new and beautiful varieties, 9s. to 12s. per dozen, per post, free.

GLOXINIAS.—A most splendid collection of new varieties, including Teuchlerii, Griffinii, carminata splendens, Fyfiana, alba sanguinea, cerina, rosea elegans, rubra superba, Passinghamii, pulchella, with many other fine varieties in strong flowering plants, 12s., 18s., and 24s. per dozen.

NEW HELIOTROPES.—"Souvenir de Liege," (Makoy), and "Gr[illegible]an" (Salter), 2s. 6d. each.

ERICAS.—Fine bushy plants of the best free flowering sorts, 9s. per dozen.

Catalogues of the above, with an extensive variety of highly ornamental plants, will be forwarded by enclosing two postage stamps.—Great Yarmouth Nursery.

RHODODENDRON JAVANICUM, OF BLUME, OR THE BEAUTIFUL ORANGE-COLOURED RHODODENDRON FROM JAVA.

WILLIAM ROLLISSON AND SONS beg respectfully to inform the Nobility, Gentry, and trade, that they intend sending out, on and after Monday the 18th June, fine healthy plants of the truly magnificent Rhododendron Javanicum at 21s. per plant, the variety with beautiful orange-coloured flowers, as advertised in the *Gardeners' Chronicle* last autumn.

W. R. and SONS beg to remark that their Collector in Java gathered the seed from which their stock was raised, off plants of the orange-coloured variety, spotted with red, which he had seen in flower some time previously, and on this account W. R. and SONS can positively warrant them to be the genuine plant, as above described. This most beautiful, interesting, and dwarf-growing shrub is admirably adapted for planting out in a conservatory, or growing in pots in a greenhouse or cold frame, and our Collector having found it upon the volcanic range of mountains in Java, 9,700 feet above the level of the sea, there is every reason to believe that it will prove a hardy plant, at least in some part of this country.—Tooting Nursery, near London.

COMPETITOR STRAWBERRY.—This excellent variety will be found a valuable addition to those already in cultivation, being a great bearer, of delicious flavour, and beautiful appearance. It is a first-rate early forcer, each plant producing 12 to 14 well ripened fruit. Established plants are now ready, at 20s per score, from which a stock may be obtained for next season's forcing. Apply to J. and C. LEE, Vineyard Nursery, Hammersmith. A remittance required from unknown correspondents. The usual allowance to the Trade.

FLOWERS OF ALL HUES.

BENJAMIN W. KNIGHT, FLORIST, &c., Tivoli, near St. Leonard's-on-Sea, Sussex, begs to call attention to his select Plants, which he is sending out, securely packed, post free at the annexed prices per dozen, fine distinct varieties:—Verbenas, 2s. 6d.; Fuchsias, 3s. 6d.; Antirrhinums, 2s. 6d.; Pansies, 4s. to 6s.; Petunias, 3s.; Dahlias, Show or Fancy Flowers, 6s.; Chrysanthemums, 4s.; Cuphea platycentra and strigillosa, 3s.; Heliotropium Peruvianum, 3s.; H. Voltairianum, 4s.; Salvias, various, 2s 6d.; Pentstemons, for bedding, 6s.; Anagallis, blue and scarlet, 3s.; Calceolarias, for bedding, 4s. Also the following choice new kinds, sent out in 1848, distinct varieties, per dozen: Verbenas, 6s.; Fuchsias, 6s. to 9s.; Antirrhinums, 6s.; Petunias, 6s.; Heliotropium Triumph de Liege, 9d. each. Printed directions for treatment will be sent with each lot of plants. Catalogues of his select plants may be obtained on prepaid application, enclosing a postage stamp. A remittance or reference is respectfully requested from unknown correspondents.

SELECT PLANTS.—The following are now sending out, strong plants; any may be had free by post without extra charge, except those marked p. Packages delivered carriage free to London, or with orders of 40s. and upwards plants sent gratis for expense of distance. Particular attention is paid that all plants are true to colour and name, and sent carefully and securely packed for travelling to any distance.

BEDDING PLANTS.

ANAGALLIS COCCINEA SPLENDENS, 6s. per dozen.
BOUVARDIA SPLENDENS, 6s. per doz., Flava 9s. per doz.
p. BALSAMINA LATIFOLIA, 6s. to 9s. per dozen.
p. CALCEOLARIA, in 6 fine shrubby varieties, 9s. per dozen.
CHELONOSTOMA POLYANTHA, 6s. per dozen.
CUPHEA, in 3 fine varieties, 6s. per dozen.
GAILLARDIA, in 5 varieties, 6s. per dozen.
HELIOTROPIUM VOLTAIREANUM, 6s. to 9s. per dozen.
„ „ PERUVIANUM, 6s.
„ „ TRIOMPHE DE LIEGE, 9s. per dozen.
LANTANA CROCEA, 6s. to 9s. per dozen.
LOBELIA ERINUS GRANDIFLORA and COMPACTA ALBA, 4s. to 6s. per dozen.
PLUMBAGO LARPENTÆ, 18s. per doz., or 2s. 6d. each.
„ CAPENSIS, 6s. to 9s. per dozen.
SALVIA, in 6 fine vars., 6s. per doz.; Patens alba, 2s. each.
„ OPPOSITIFOLIA, 12s. to 18s. per doz., each, 2s. 6d.
ZAUSCHNERIA CALIFORNICA, 1s. 6d. each.
FUCHSIAS, in fine select assortment, 6s. and 9s. per dozen.
„ superior new vars. of 1848, 15s. per dozen.
VERBENAS and PETUNIAS, fine and select, 4s. to 7s. 6d. per dozen.
Ditto ditto superior new of 1848, 12s. per doz.
CHRYSANTHEMUMS, fine and select, 6s. to 9s. 6d. per doz.
Ditto, superior new varieties, 15s. per dozen.
p. GERANIUMS, fine and select vars., 6s. and 9s. per dozen.
p. „ superb show varieties, 12s. per dozen.
p. DAHLIAS, fine and select, 5s. and 9s. per dozen.

HARDY BEDDING PLANTS.

ANTIRRHINUM, in fine select vars., 6s. per dozen.
ANEMONE JAPONICA, 5s. per dozen.
CAMPANULA NOBILIS, 9s. per dozen.
LOBELIA, in 4 fine varieties, 9s. per dozen.
PENTSTEMON, in 8 fine vars., 7s. 6d. per dozen.
PHLOX, in fine assortment, 9s. per dozen.
„ 20 varieties, 12s. 6d.
p. ROCK PLANTS, 25 vars. 12s.; 12 vars., 7s. 6d.

SELECT GREENHOUSE AND STOVE PLANTS.

12 ACHIMENES, fine and select, 7s. 6d.; 6 fine new	15s	0d
p. 6 GLOXINIA, in 6 fine varieties	6	0
p. 50 vars. fine and select GREENHOUSE PLANTS	50	0
p. 25 ditto, 28s.; 12 vars	15	0
p. 12 Select GREENHOUSE CLIMBERS	12	6

Our Priced Descriptive Plant Catalogue will be sent free by post, on application.

Post-office orders may be made payable to either BASS and BROWN or to STEPHEN BROWN. Remittances requested from unknown correspondents.

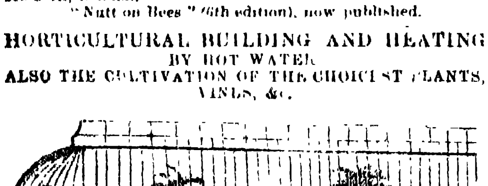
Seed and Horticultural Establishment, Sudbury, Suffolk.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—GEORGE NEIGHBOUR and SON, 127, High Holborn, London.

"Nutt on Bees" (6th edition), now published.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

SEEDS. — MEADOW AND PASTURE GRASS SEEDS, in mixtures suited to various soils, &c., at 32s. per acre, allowing 2 bushels and 12 lbs. to each acre. Directions for sowing and treatment will accompany the seeds. Mixed sorts for improving old Grass Lands, 1s. 3d. per lb. Fine sorts for forming Lawns, &c., 1s 4d. per lb.

GEORGE GIBBS & Co. beg to notice that their Agricultural List, with prices, for the ensuing season, is ready, and will be forwarded on application, as well as their Catalogue of Kitchen Garden and Flower Seeds.—Address GEORGE GIBBS and Co., Seedsmen, &c., to the Royal Agricultural Department of Belgium, &c. &c., 26, Down-street, Piccadilly, London.

FLOWER POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford-street, near Hyde-park, London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert. ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, bernacle, brent, and laughing geese, sheldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs; and at 2, Half-moon-passage, Gracechurch street.

TO HORTICULTURAL AND FLORICULTURAL SOCIETIES.

BENJAMIN EDGINGTON, Manufacturer to the Horticultural Society, Chiswick, and the Royal Botanic Society, Regent's Park, solicits attention to his stock of MARQUEES and TENTS of every variety, and suitable for all climates. Orders, per post, duly attended to.—Address, BENJAMIN EDGINGTON, 2, Duke-street, Southwark. A Warehouse, 208, Piccadilly.

PRIZE POULTRY AND THEIR EGGS.

NOLAN, of the Noah's Ark, 33, Bachelor's-walk, Dublin, now offers for sale some superb Cochin China, Malay, Dorking, Spanish, Spangled Hamburgh, and Polish Poultry, and their eggs; Carolina and other Ducks; Chinese, Toulouse, and other Geese; Swans; Pea and Guinea Fowl; American and Norfolk Turkeys, which he has had to weigh 37 lbs.; Patagonian Rabbits; with superb Speaking and Song Birds, German Canaries, Piping Bullfinches, &c., &c.

HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the Kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes, and Lights of all sizes, kept ready for use, packed and sent to all parts of the Kingdom, warranted best material. Garden-lights of every description, at JAMES WATTS', Hothouse Builder, Claremont-place, Old Kent-road. Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. DEANE's extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

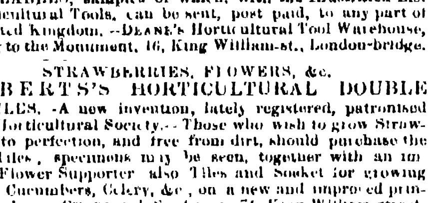
Averruncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	„ Knives, various
Borders, various patterns	Hammers	„ Saws
Botanical Boxes	Hand-glass Frames	„ Scissors
Cases of Pruning Instruments	Hay Knives	„ Shears [riety.
Chaff Engines	Hoes of every pattern	Rakes in great variety
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Daisy Rakes	Hotbed Handles	Scythes
Dibbles	Ladies' Set of Tools	Scythe Stones
Dock Spuds	Labels, various patterns, in zinc, porcelain, &c.	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
„ Stands in Wires and Iron	Menographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanic Borders and Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
„ Loops	Mowing Machine	Trowels
„ Rollers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extractors and Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. DEANE are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—DEANE's Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

STRAWBERRIES, FLOWERS, &c.

ROBERTS'S HORTICULTURAL DOUBLE TILES.—A new invention, lately registered, patronised by the Horticultural Society.—Those who wish to grow Strawberries to perfection, and free from dirt, should purchase the above Tiles; specimens may be seen, together with an improved Flower Supporter; also Tiles and Socket for growing Melons, Cucumbers, Celery, &c., on a new and improved principle, at JAMES CHARTERS', Seedsman, 71, King William-street, London, who is appointed Agent for the sale of them.

GLASS.



GLASS MILK PAN.

THOMAS MILLINGTON is supplying Foreign Sheet Glass, very superior to any other Glass in the market, in 100-ft. and 200-ft. cases, of large dimensions, 16-oz., at 3d. per ft., or cut to size in ranges, not exceeding 40 inches, at 3½d. per foot. British Plate Glass for Windows as well as for Horticultural purposes, from 1s. 2d. to 2s. per foot. No gentlemen should be without this great additional improvement to their residences.

CUCUMBER TUBE.

Estimates and List of Prices forwarded on application at the Warehouse, 87, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, have the pleasure to hand their New List of Prices of SHEET GLASS for Cash.

HORTICULTURAL GLASS.

CUT TO SIZE UP TO 40 INCHES LONG.				SHEET SQUARES. In boxes of 100 feet.	
16 oz.	from 3d.	to 3½d.	per foot.	Under 6 by 4	12s. 6d.
21 „	3½	5	„	6 by 4 and 6½ by 4½	15 0
26 „	3½	7½	„	7 by 5 and 7½ by 5½	17 6
32 „	4	9½	„	8 by 6 and 10 by 8	20 0

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS, in sizes not exceeding 5 feet superficial.

¼ thick per foot	1s. 0d.	¾-inch per foot	2s. 0d.
⅜-inch	1 2	1 inch	3 0
½-inch	1 6		

PATENT ROUGH PLATE TILES.

¼ thick each	0s. 11d.	⅜-inch each	1s. 7d.
½-inch	1 3	¾-inch	2 0

SHEET GLASS TILES AND SLATES.

	16-oz.	21-oz.	26 oz.	32-oz.
Tiles made of Sheet Glass	8d.	10d.	1s.	1s 1d.
Slates, 20 ins. by 10	10d.	1s.	1s. 3d.	1s. 8d.

Slates are kept in stock of the usual sizes, and made to any dimensions.

GLASS MILK-PANS, PROPAGATING AND BEE GLASSES, Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, Lamp Shades, and Lactometers for trying the quality of Milk, 4 tubes 7s. 6d., 6 tubes, 10s. Self Registering Thermometers for Greenhouses.

HARTLEY'S PATENT ROUGH PLATE GLASS.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—The readers of the *Gardeners' Chronicle* of Saturday, Feb. 24th, must have observed the high terms in which this Glass was spoken of by Dr. LINDLEY. We have re-arranged our list of prices to correspond precisely with those of the Patentee, to which we would beg the attention of the Nobility, Clergymen, Gentry, and others.

In squares under 8 by 6 4d. per foot

8 by 6 under 10 by 8	4½d.	10 by 8 under 14 by 10	5d.
14 by 10 „ 1½ foot.	5½d.	1½ foot „ 3 feet	6d.
3 feet „ 4 feet	6½d.	4 feet „ 5 feet	7d.

A full List of Prices and every information may be had by applying to JAMES PHILLIPS and Co., Horticultural Glass Warehouse, 116, Bishopsgate street Without, London.

APSLEY PELLATT AND Co. (late PELLATT and GREEN), Falcon Glass Works, Holland-street, Blackfriars, have always on hand, Bee Glasses, 1s. 2d. per lb.; Cucumber Glasses, 1s. 6d. per lb.; Milk Pans, 18in., white glass, 5s. 6d. each; Propagating Glasses, white, 1s. per lb.; do., green, 10d.; do., cordon ring, 2d. per lb. extra; Grape Shades, 1s. 6d. to 2s. each; Fish-bowls, from 1s. 6d. each; Wasp and Fly traps, 10s. per gross or 3s. 6d. per dozen. By the use of these traps fruit may be preserved from otherwise certain destruction.

BLUE PROPAGATING GLASSES—

3 in. diameter,	2s. per doz.	6 in. diameter,	3s. 6d. per doz.
4 in. „	2s. 6d. „	7-in. „	4s. „
5 in. „	3s. „	8-in. „	4s. 6d. „

It being proved both theoretically and practically that blue glass is by far the most effective in propagating plants and in germinating seed, the above are offered at prices which must insure their general adoption.—To be had of EDWARD LACEY, Glass Merchant, 57, Broad street, Birmingham.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16 oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes. Inches.		Inches.		Per foot.	Per 100 feet.
	Under	6 by 4	at	1½d.	is £0 12 6
From 6 „ 4	„	7 „ 5	„	2d.	„ 0 16 8
7 „ 5	„	8 „ 6	„	2¼d.	„ 0 18 9
8 „ 6	„	10 „ 8	„	2½d.	„ 1 0 10
10 „ 8	„	12 „ 9	„	2¾d.	„ 1 2 11

Larger sizes, not exceeding 40 inches long.
16 oz. from 3d. to 4½d. per square foot, according to size.
21 oz. „ 3½d. 5d. „ „ „
26 oz. „ 3¾d. 7½d. „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

PERUVIAN AND BOLIVIAN GUANO ON SALE
BY THE ONLY IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WILLIAM JOSEPH MYERS AND CO., LIVERPOOL;
And by their Agents,
GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
COTESWORTH, POWELL, AND PRYOR, LONDON.

To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

HORTICULTURAL SOCIETY OF LONDON.—EXHIBITIONS AT THE GARDEN.

The Second Meeting will take place on SATURDAY, the 9th of June Subjects for Exhibition must be at this Office on Friday the 8th, or at the Garden before half-past Eight o'clock, A.M., on the day of Exhibition.

The Gates will be open to visitors at One, P.M. Tickets are issued to Fellows at this Office, price 5s. each, or at the Garden in the afternoon of the days of Exhibition, at 7s. 6d. each; but then only to orders from Fellows of the Society.

N B. No Tickets will be issued in Regent-street on the days of Exhibition. 21, Regent street.

HORTICULTURAL SOCIETY OF LONDON.

LECTURES ON HORTICULTURE.—TUESDAY, JUNE 12th, at 3 P.M.—"The LEAVES and their importance in the general economy of the plant."

No one can be admitted to the Meeting Room except Honorary Members and Fellows of the Society, their wives or sisters, and visitors specially introduced by them, or the Foreign and Corresponding Members of the Society.

21, Regent-street, May 25 1849.

NEW SCARLET PELARGONIUM, "PERPETUAL SCARLET."

R. GLENDINNING has plants ready to send out of this new and splendid scarlet Pelargonium, of which he possesses the entire stock. It was awarded a Certificate of Merit last January, when exhibited before the Horticultural Society of London It stands forcing admirably, flowers in profusion, and may be obtained the whole winter, when grown in pots as well adapted for the greenhouse, and it is also a first-rate bedding variety. R. G. feels convinced this Pelargonium will give perfect satisfaction, and therefore can confidently recommend it Plants 7s. 6d each, and one added to the trade for every three ordered.—Chiswick Nursery, near London.

BEAUTIFUL NEW FUCHSIA, "SAPPHIRE."

LUCOMBE, PINCE, AND CO., having purchased the whole stock of this highly-desirable new Fuchsia from Mr. Denham, of Birmingham, by whom it was raised, will send out, on the 20th of June next, strong healthy plants (which will flower freely this summer), at 10s. 6d each, with one over upon every three ordered by the trade. The brilliant coral colour of the finely reflexing sepals, which are broad, and of such a waxy substance that they retain their fully-recurved position to the last, thereby displaying to great advantage the dark blue purple corolla, combined with the neat foliage and graceful free flowering habit induce L., P., and Co strongly to recommend "Sapphire" as the finest Fuchsia of its class. It will be a general favourite, and ought to be in every collection.

L., P., & Co beg leave to call attention to the following high testimonials of its merits. Blooms having been sent by Mr. Denham last autumn, to the Editor of the Gardener's Journal, the following is his opinion of them.

Extract from the Gardeners' Journal, October 28, 1848 "Fuchsias.—W D Your seedling is a first-rate flower in its class, form excellent, tube short but well proportioned, of bright coral colour, sepals the same tint both inside and out, broad, obtuse, and beautifully expanded, the texture of this flower surpasses anything of the kind we have seen in the class to which it belongs, corolla is beautiful, being crimson at the base, shaded into a magnificent tint of purple at the extremity, shape highly desirable."

Copy of Letter from Charles James Perry, Esq, dated Handsworth, May 1, 1849.—"Gentlemen, I have repeatedly seen blooms of Mr. Denham's seedling Fuchsia 'Sapphire,' both on and off the plants, in colour it is a bright coral red, the sepals broad, beautifully reflexed, and of a thick waxy appearance, the corolla is a deep blue purple and very bright, I consider it one of the best dark varieties, the foliage is very neat, and the whole habit of the plant exceedingly good, it blooms profusely, producing its flowers in threes from every eye. It cannot fail to give satisfaction. (Signed) CHARLES JAMES PERRY."

"Hon. Sec. to the Handsworth and Lozells Horticultural Society."

"To Messrs. Lucombe, Pince, & Co., Exeter Nursery, Exeter"

BEDDING PLANTS.—An extensive variety, very fine and strong. BASS AND BROWN'S Stock of their Collections of VERBENAS, FUCHSIAS, PETUNIAS, GERANIUMS, CHRYSANTHEMUMS, and other varieties of Bedding Plants, in this season particularly strong and fine. Priced Descriptive Catalogues sent free by post on application.

Seed and Horticultural Establishment, Sudbury, Suffolk,

The Gardeners' Chronicle.

SATURDAY, JUNE 2, 1849.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	June	4	Entomological	8 P.M.
			Chemical	8 P.M.
			British Architects	8 P.M.
TUESDAY,	—	5	Linnean	8 P.M.
			Civil Engineers	8 P.M.
THURSDAY,	—	7	Zoological	3 P.M.
			Antiquarian	8 P.M.
			Astronomical	8 P.M.
FRIDAY,	—	8	Philological	8 P.M.
			Royal Institution	8½ P.M.
SATURDAY,	—	9	Horticultural Gardens	1 P.M.
			Royal Botanic	3½ P.M.

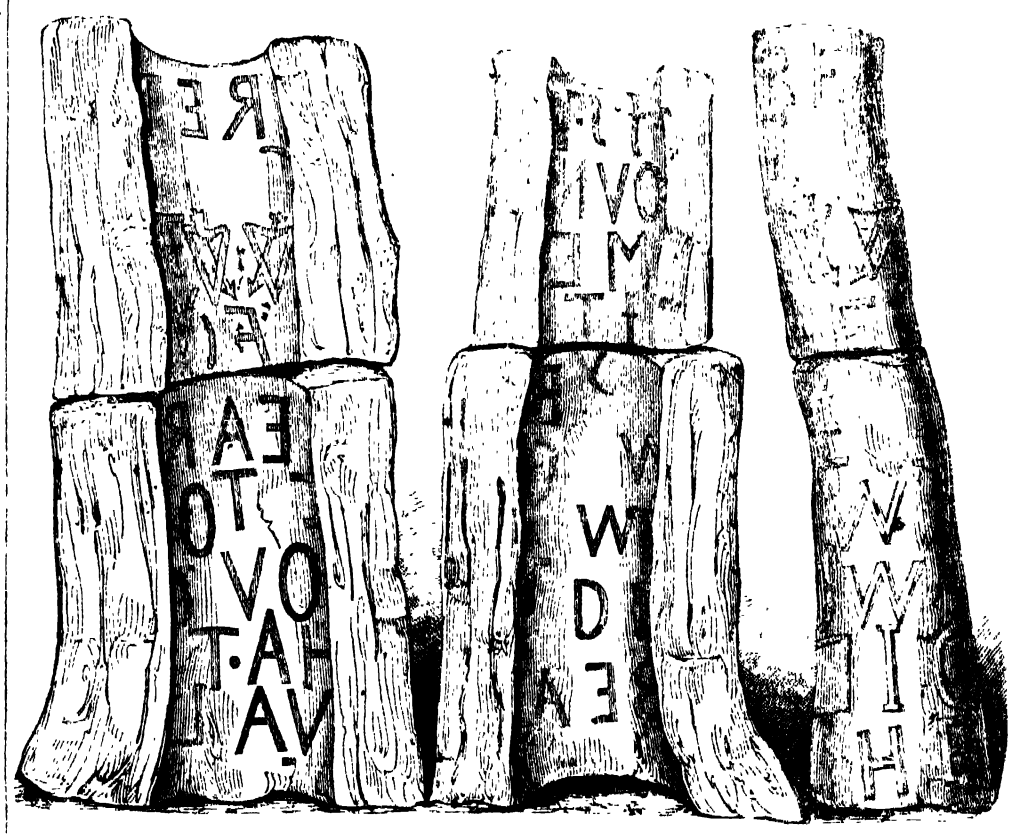
THE introduction of a dissertation on the AGE OF TREES into the new edition of so popular a book as MRS. SOMERVILLE'S "Physical Geography,"* obliges us to draw attention to the extremely loose and inaccurate manner in which statements upon this curious subject are often made, by those whose names give them an authority which ordinary readers will not venture to dispute. No doubt trees are in some cases the most ancient living monuments of former ages; no doubt they really do, in many instances, possess an antiquity which must appear marvellous to those who are unacquainted with the means by which their vitality is maintained. But it is equally certain that much which is said upon the subject belongs more to the literature of imagination than of science, and might have been engendered in the heated brain of an ALEXANDRE DUMAS, or a FOUQUÉ.

In the pages now referred to, the writer has, we regret to say, introduced all the extravagance of apocryphal physiology, without even an intimation of the existence of doubts concerning the accuracy of the statements given in the name of Mrs. SOMERVILLE. To be sure, they are put together in a manner which must show any intelligent person, at a glance, that they are not to be trusted; as, for example, when the Cedars of Lebanon in the Physic Garden, Chelsea, planted in 1683, are pronounced to have been "mentioned 600 years ago:" when Fountain's Abbey is called *Fountaine*, Fortingal *Fotheryngill*, Welbeck *Welbee*, and Chapultepec *Chapultepee*; all in less than a couple of duodecimo pages Nevertheless, as the public is very apt to put their faith on an author more than on a personal examination of statements made up in a scientific dress, we cannot do otherwise than expose the errors of a work, in some respects of much value, so far as they concern our own readers. At p. 206. of the second volume, will be found the following sentence:

"The antiquity of these European vegetables sinks into insignificance when compared with the celebrated Baobab, or Adansonia digitata, in Senegal; taking as a measure the number of concentric rings counted on a transverse incision made for the purpose in the trunk of that enormous tree, it was proved to be 5150 years old; yet Baron Humboldt considers a Cypress in the garden of Chapultepec to be still older; it had already reached a great age when Montezuma was on the throne of Mexico, in 1520."

It would be difficult to find in any modern book such a paragraph as this. First, as to any Baobab having been *proved to be* 5150 years old. This surprising statement, borrowed from ADANSON, the well-known French botanist and traveller, rests on the following evidence In 1555, THEVET saw on the African coast some plants of this species, and described them as fine trees (*beaux arbres*). Two hundred years later ADANSON found that the same plants had obtained a diameter of 6 feet, and he *supposed* that they *must have been* 4 *feet in diameter* when THEVET saw them. Upon this *supposition* ADANSON estimated the age of THEVET'S trees to have been 600 years in 1749. His words are (as translated by Professor HENSLOW) "'Those which I saw in 1749 on the *Isles de la Madeleine*, near Cape Verd, with inscriptions of *Dutch* names, such as Rew, and other *French* names, the former dating from the fourteenth and the latter from the fifteenth century, which inscriptions I renewed, merely adding below them, 'renewed in 1749,' were then about 6 feet in diameter. These same trees were seen in 1555, that is to say, 200 years earlier, by THEVET, who notices them in the account of his *Voyage aux Terres Antarctiques*, describing them merely as 'fine trees,' without mentioning their thickness which must at least have been 3 or 4 feet, judging from the little space occupied by the characters forming the inscriptions; they had, therefore, enlarged about 2 or 3 feet in *two hundred* years.'—*Familles des Plantes*, Preface, p. CCXXI."

Of this statement the late M. DE CANDOLLE gave the following version—"'The Baobab,' says he, 'is the most celebrated instance of extreme longevity which has hitherto been noticed with any degree of accuracy. In its native country it bears a name which signifies 'a thousand years;' and, contrary to what is usual, this name expresses what is in



reality short of the truth. ADANSON has noticed one in the *Cape de Verd Islands* which had been observed by *two English travellers* three centuries earlier: he found *within* its trunk the inscription which *they* had engraved there covered over by *three hundred woody layers*, and thus was enabled to estimate the bulk by which this enormous plant had increased in three centuries.'" The absurdity of this was long ago pointed out by the learned Cambridge Professor to whom we have just alluded, and has since been insisted upon by others, but in vain. The next process was to form, "*en partant de cette donnée*"! as M DE CANDOLLE informs us, a table by which the age of trees of Baobab 30 feet in diameter might be computed; and this being done mathematically by M. DUCHESNE, the number 5150 came out as the result, and has been taken to express the age of the trees in question. Now the only *données* that we are disposed to recognise are facts; and the only facts in ADANSON'S tale, freed from the improvements of DE CANDOLLE, are, that a Baobab becomes, in *one* year, 5 feet high and 1 inch thick; and that he found in 1749 certain French and Dutch inscriptions cut on the trunks, and dating from the 14th and 15th centuries, which inscriptions *he renewed*. We will take the last fact first. It seems never to have occurred to the ingenious Frenchman or his readers that it was not altogether impossible that others might have "renewed" the inscriptions before himself, and that this might have happened on more than one occasion. For ourselves, we entertain no doubt upon the subject. It is physically impossible that in a tree like the Baobab any trace of a superficial inscription should remain legible 200 years; in a quarter of the time it would be covered over by the new growth above it. M. PERROTTET, who was well acquainted with this plant, and who saw on the Isle de Sorr, near St Louis, in Senegal, the very tree spoken of by ADANSON, describes the cortical integument, which in this plant overlies the whole trunk, as "bright green, very thin, and full of life; at the least wound it discharges in abundance a liquor, a kind of nutritive sap, which proceeds from the cortical integument, and performs the office of leaves, it being, so to say, the principal focus of vitality." (*Flore de la Senegambie* p. 77.) It is incredible that any inscription cut on the surface of such a trunk should remain visible for more than a few years. PERROTTET says that ADANSON'S tree is well known, and is covered with inscriptions, but he says not a word of the inscription "renewed" by that traveller being visible even when he was in the Isle de Sorr, only 75 years later. Even in this country, where vegetation is comparatively languid, a very brief space of time is sufficient to deface all such inscriptions, as it is to hide all superficial wounds; every timber merchant and forester knows that. Some years since we had in our hands a specimen of an Oak tree, felled, as we were informed in Windsor forest; when the trunk was broken up it was found that in the interior a date had been cut, apparently in CROMWELL'S time (1649?); but it had been hidden by a new growth above it, and was buried some inches below the surface.

A still more striking example of this was given in our volume for 1841, the woodcut illustrating which we now reproduce.

Such evidence as could be found in the specimen

* "Physical Geography." By MARY SOMERVILLE. New edition, thoroughly revised. 2 vols. 12mo. MURRAY.

referred to, which was an Ash, indicated that it had been 55 years old when the inscription was made, and that about 200 years' growth had been formed over it. According to the proportions in the drawing, the wound had been closed in perhaps 100 years, perhaps in less. Now, if such a rate of healing is observable in our English trees, we may reasonably assume the existence of a much greater rate of healing in a plant like a Baobab, always growing, and filled to bursting with the organisable matter or "*sève nutritive*," from which new wood is incessantly engendered.

The inscriptions proving nothing, let us next see what M. DUCHESNE'S mathematical calculations are worth. As we have already stated, the single fact is that a Baobab 1 year old is 1 inch in diameter. The only inference that can be drawn from this is that if the diameter of a tree is multiplied by 12, the result will be its age. Therefore the trees 6 feet in diameter would be 72 years old, not 210, and those 30 feet in diameter would be 360 years old, not 5150. We admit that this is not to be taken as a precise conclusion, but no reasonable doubt can be entertained about its being near the truth. Possibly the first year's diameter of a Baobab may not be a true representation of the average rate of growth; it may be wrong in excess, or it may be the contrary. Possibly this forest tree may grow faster at first than when old; but we must remember that its timber is of that soft spongy kind which indicates rapid formation; it is by no means compact, like our Ash and Oak; and if we reduce the average rate of growth to half an inch of diameter per annum, we shall still arrive at no greater antiquity than 720 years, instead of 5150.

Another famous instance of supposed antiquity is equally unable to bear the test of severe scrutiny. The deciduous Cypress is well known to acquire in the southern states of the American Union, and in Mexico, colossal dimensions. In the church-yard of SANTA MARIA DE TESLA, 25 leagues west of the city of Oaxaca, there still exists a tree of this kind, which is recorded to have sheltered CORTEZ and his band, during the Spanish conquest of Mexico. When last measured by KARWINSKI, we are assured by ZUCCARINI that the distended base was at least 200 feet in circumference, and that the main trunk, above the butt, rather more than 117 feet, or 39 feet in diameter. This is no doubt a tree of very great antiquity According to M. ALPHONSE DE CANDOLLE it may be estimated to be 6000 years old, or, at all events, to be one of the most ancient, if not the most ancient, specimens of vegetation found on the surface of the globe. He comes to this conclusion by assuming that the plant may have grown at the same rate as his father allows for the Adansonia. But he admits that, although he feels warranted in this *supposition*, yet that *facts* are rather against him. The only fact that he possessed as to this matter was derived from the rate of growth of a deciduous Cypress at Malesherbes, in France, which gained a foot in diameter in 45 years—therefore 45 × 39 should give the age of the Cypress of CORTEZ, viz. 1755 years! This result, however, he rejects, because old trees do not grow so fast as young ones. But in the first place the deciduous Cypress, a native of swamps, in which its wooden anchors hold it down, will grow much faster in a damp climate, like that of Oaxaca, than in a dry one like France; it will also grow incessantly, having no winter to arrest its progress. We find, in a specimen of a deciduous Cypress grown in the grounds of Syon House, for which we are indebted to the kindness of the Duke of NORTHUMBERLAND, that the rate of growth in England is as much as 16 inches in 30 years, and it is probably much less than in Mexico; now if we take the last as any proof of the rate of growth, the Cypress of CORTEZ will be only 870 years old, instead of 6000. We observe that ZUCCARINI thinks 3512 may be its probable age. But he adds, with great truth, in a passage which we must quote, notwithstanding its length:

"The uncertainty, however, of all such computations of age, taken from the measurement of the trunk, without actual counting of the rings, and the differences which in this respect are caused by climate and soil, may be seen from some examples.

"DE CANDOLLE considers the increase of diameter of the Yew, at least in the first 150 years, to be about one line annually. In 120 years, consequently, a tree should be 120 lines, or 10 inches thick. But four sections of the trunks of Taxus of various thickness have been measured in the mountains of Bavaria, and their annual rings counted, with the following results:

	Diameter.	Annual Rings.	Transverse Thickness of Rings.	
			In the Diameter.	In the Semi-Diameter.
1 ...	56 lines	115	0.48 lines	0.24 lines
2 ...	69 lines	214	0.33 lines	0.16 lines
3 ...	132 lines	292	0.42 lines	0.21 lines
4	132 lines	294	0.42 lines	0.21 lines

* We have altered M. ALPH. DE CANDOLLE'S statement a little, so as to agree with KARWINSKI'S latest measurements.

"Thus the thickness of the annual rings amounts to only from one-fifth to nearly half a Bavarian line, a result which, if transferred to the large English specimens mentioned above, would double or treble their age. The thickness of the rings, however, was at the same time so various in the different individuals, that in Nos. 1 and 2, thirteen lines of difference in the diameter corresponded to 99 annual rings; whilst in Nos. 2 and 3, sixty-three lines of difference corresponded to only 78 rings; results which harmonise with the average thickness of the rings stated above, only inasmuch as that the individual rings of the same stem differ considerably among themselves. Four sections of Pinus sylvestris, taken from very different localities, were estimated in the same way.

	Locality.	Diameter.	No. of Annual Rings.	Thickness of Rings.	
1	Place unknown	50 lines	13	3.8 lines	1.10 lines
2	About 5500 feet altitude, dwarf	72 lines	186	0.39 lines	0.19 lines
3	About 5000 feet altitude, tall	84 lines	154	0.54 lines	0.27 lines
4	About 3500 feet altitude, tall	84 lines	56	1.50 lines	0.75 lines

"Thus in these four stems the thickness of the annual rings varied between 3.8 lines and 0.39 lines. At the same time, in Nos. 1 and 2 twenty-two lines of difference in diameter correspond with 173 annual rings, but between Nos. 3 and 4 and No. 2 the proportion is reversed, since in the two latter a greater diameter corresponds with a less number of rings, for whilst in No. 4 the eighty-four lines of diameter correspond with 56 rings, in No. 2, seventy-two lines give more than three times that number, or 186 rings.

"Similar anomalies are presented by the Spruce Fir, Larch, and also by Pinus Cembra. These statements, however, suffice to prove that conclusions as to the age and number of annual rings of a tree cannot, at present, be drawn with any, or with only occasional probability, from the diameter, except in those cases in which the growth has taken place under exactly similar external conditions. The four Yew stems were from the Bavarian Alps, and the altitude of the respective localities at which they grew cannot differ more than 3000 feet; the thickness of the rings varies among them almost one-third; but in comparison with the instances given by DE CANDOLLE, more than the half or even two-thirds. According to this, Yews of the same diameter may be 100, 200, or 300 years old."

The accuracy of such a statement can be borne out by every one conversant with trees, and should be a warning to writers not to indulge in fancies about matters concerning which we have no sufficient data, in almost all the prodigious cases that we read of in books. It is a waste of time to speculate with VON MARTIUS whether the colossal Locust trees which he saw in Brazil were of the age of HOMER, and 332 years old in the days of PYTHAGORAS, or whether they may not have been born with our SAVIOUR. It is sufficient to know that the antiquity of trees may be, and often is, immeasurably beyond that of any other living thing.

WE are constantly applied to for remedies against the attacks of PARASITIC FUNGI. We know of one case only, that of bunt, in which there is any tolerably certain prospect of success; with smut it is very problematic; and with mildew, except so far as thin sowing and a not over-manured soil may be efficient, all remedial measures, in an inauspicious season, are found to be wholly useless. It, however, there is so much difficulty in the case of annuals, it is immensely increased with plants of longer duration, where the disease pervades, like cancer, every part of the structure; and its effects recur year after year till the struggle ends in destruction. A double yellow Rose, which was last year almost destroyed by the orange-coloured rust, sent up some apparently healthy shoots after Midsummer, but these are now attacked, and the whole plant must shortly fall a sacrifice to the disease. A tuft of Grass affected by Uredo Hypodytes was brought into our garden last July, with the view of ascertaining what particular species was infested with the fungus. The tuft is now green and seemingly flourishing, but every stem which ought to produce blossom is clearly affected by the Uredo, and not a single panicle of flowers will be produced.

It is all but obvious that, in such cases, any remedy likely to destroy the parasite would be equally destructive to the parent plant. The most probable prospect of success would be to water the diseased plant with a weak solution of some mineral poison, such as arsenic or corrosive sublimate; but though in the human frame certain cutaneous disorders, where we have reason to believe that a parasitic fungus is the cause of the disease, yield to an analogous treatment, it does not follow that where two antagonist vegetable tissues are concerned, the parasitic tissue should yield to a smaller dose of the poison than what would prove fatal to that of the parent stock. We have been induced to make these observations in consequence of the transmission of specimens of a Pine infested with Æcidium Pini—a fungus which sometimes prevails to a great extent, and not only attacks the leaves, but occurs in the young shoots of a very large size, and is in consequence very injurious. It is often extremely prevalent, not only in Europe but also in America, and we have never heard of any remedy. It is generally confined to younger trees. An allied species is very common in Germany, giving a peculiar aspect to the trees which are attacked, and which are in consequence known under the name of Hexenbesen (Witches' besoms.)

To return, however, to the trees attacked by Æcidium Pini, which had probably been infested by the disease before they were planted, for there is nothing in the peculiar treatment adopted in this particular instance suggestive of evil, we would recommend a certain quantity of the young trees, the greater number the better, to be accurately numbered. Of these a portion, in as various positions as possible, should be left without any further treatment; the remaindor of the registered trees should be divided into equal portions, each of which should be watered with mineral solutions of various strengths, the times of watering and every particular being accurately noted. Observations of this kind, carefully conducted, might lead to valuable results, and the larger the scale on which they were conducted the better, as in this case any incidental error would be thrown over a wide space, and would not materially affect the result. We should rejoice much to have an opportunity of recording a series of experiments of this kind well conducted. It would be well, perhaps, not to attempt any report till the second year. The present moment would be a very proper one for commencing the observations. *M. J. B.*

DISEASES OF PLANTS.

(*Continued from page 325.*)

GENUS III. PETALOMANIA, *or excess of petals, vulgarly called flower-leaves.*—Corollas should all have either one or more petals. It sometimes happens that those which should consist of but one increase immoderately in size, or experience a great multiplication in their number, and a similar increase happens to those naturally consisting of several petals. This disease happens to almost all vegetables, excepting Labiates and Personates* Sometimes it fatally interferes with the economy of the plant, by taking from it all power of reproduction, at other times it does not. Thence may be distinguished several kinds.

First Species. UNIVERSAL PETALOMANIA, *or double flower.*—Those flowers are called double which have neither anthers nor pistil, but are entirely formed of leaves. These are of two kinds. In the greater number there are only to be seen petals very similar to those natural to the flower, and of the same colour and form, but also in the centre are to be found the vestiges at least of the female organs. In this case the flower is simply called a double one. But when from the centre of the flower is seen to rise a tuft of green leaves, and the female organs are entirely wanting, then more especially do we give it the name of extra double (*stradoppio*). I now speak only of the double flower, as the other belongs to *phyllomania*, of which I shall treat further on. It is the opinion of most physiologists that the double flower arises from a dilatation of the filaments of the stamens, which take the form of petals, as it appears clearly in the double Cherry, where the stamen may be seen adhering to the petal. In examining a number of flowers of the Cabbage Rose, I have observed in the centre the place of the stamens occupied by lamina, differing in form and size from the true petals, and bearing at their top small bodies with a good deal of the appearance of anthers, although I have never found in them a single grain of pollen. Monopetalous flowers collected in heads or bunches, like the Gueldres Rose (Viburnum Opulus), for instance, only increase the size of their corolla, at the expense of the stamens, which disappear. Other monopetalous flowers increase the number in becoming double, as for instance the Hyacinth we call *Grambrettagna*. I have explained in the introduction why I place amongst maladies these and similar phenomena which are usually classed among monstrosities. Even the rudest gardener is obliged to admit that a plant with double flowers is in a state of infirmity, as it cannot perfect its seeds, and he runs the risk of losing the species.

Second Species. PARTIAL PETALOMANIA.—Sometimes flowers preserve their pistil entire, as in the Rose and many Pinks, and also a few stamina, which, however, are sterile. This disease is in a less degree than the last, because the pistil can be fertilised by some other individual of the same species, and furnish seeds tolerably well developed, though I doubt their being always perfect. A Pink without stamina, of which the pistil remained intact, gave me several seeds, but though sown at several different times not one of them germinated.

Third Species. INNOCENT PETALOMANIA.—The flowers which gardeners call semi-double, from some of which they get good seeds, such as, not to speak of so many others, all those varieties of Ranunculus called by gardeners *Roselline d'Olanda*, are of this species. The pistil remains intact, the stamens are diminished, and

* It occurs also in these tribes, although less frequently. —*Translator's Note.*

the petals increased in number. The flower nevertheless is fertile, and ensures the reproduction of the species. I have examined many semi-double flowers, and the anthers which remain perfect have appeared to me more voluminous and better filled than usual. These flowers, if removed from a rich to a poorer soil, and from a low to an elevated position, will often return to their primitive state, but not unfrequently become languid and die. What I have said specially of the Ranunculus may be observed in many other plants.

Fourth Species. PETALOMANIA OF THE NECTARY.—In some flowers even the nectary is changed into petals. Here, I would observe, that I take the nectary in its limited sense, applied to those parts of the flower which some persons suppose to distil honey, and not extending it, with some botanists, to any appendages not strictly belonging to the flower. The red variety of the Columbine has a spur-shaped appendage to the petals. This is sometimes wanting, and the number of petals increases. The nectary of the Balsam is often doubled or tripled. If the observations of our Pontedera, that the seeds of Aconitum luteum do not ripen if the nectaries are cut out, should be verified, we might conclude that alterations in the nectaries would occasion some disturbance in the process of fertilisation. But authentic conclusions on this head are as yet wanting. I regret not having seen Sprengel's work on the use of nectaries.

Even the least theoretical among writers on rural affairs admit that double or semi-double flowers become so by some means in consequence of an increased quantity of aliment, most frequently applied by art, but sometimes also by accident, in which case it is owing to the quality of the atmosphere, to the nature of the soil, and the exposure. Our own flowers are indebted for it to the gardener's skill. In Holland the enormous number of splendid double and extra-double flowers raised may be owing partly to the peculiarities of the climate, of which they know how to take advantage. There are some, however, who would attribute this phenomenon solely to the nature of the seed. For how is it, say they, that in a bed sown of Ranunculuses or Hyacinths, the seed being all taken from the same plant, do we see only a few double among the great number of individuals? But how is it, would I ask in reply, that every gardener has the power of bringing these double-flowered plants back to their original single state? Why do the Hyacinths imported among us from Flanders, so beautiful the first year, degenerate into single ones, so as to be worth no more than the worst of our own? If we admit, I should say with Sennebier, monstrous germs, these should produce peculiar species. These should be permanent, unless you would believe that one thing can convert itself into another. The flowers they bear should always preserve their peculiar physiognomy, if I may so express it. But experience shows that although it be an exceedingly difficult task artificially to make a single flowering plant produce even semi-double flowers, it is a very easy matter to bring back double flowers to their natural state. Nature always lends her assistance to him who would enable her to reclaim her rights.

HINTS TO FLORISTS.

AURICULAS.—This is a good time for repotting collections of these plants; if it be advisable to add to your collection, do so without loss of time. If they be carefully tied up and well packed, I find that they travel admirably at this season, and quickly conform themselves to their new quarters under the ordinary treatment given to the repotted collection.

PINKS will this season hardly repay those who cultivate them for exhibition for their time and attention, at least so far as the metropolitan meetings are concerned; the 9th and 12th of June (show days) are too early, even in a favourable season, and on the 20th the contention is unequal, inasmuch as the amateur and dealer are compelled to exhibit in the same class. *E., May 23.*

VILLA AND SUBURBAN GARDENING.

GARDENING may be taken as the barometer of civilisation. Its progress indicates the diffusion of wealth, and marks most surely the amount of social refinement which characterises any particular age or country. In feudal times it was chiefly limited to baronial halls and priories, where we occasionally meet with evidences of its remote existence as an art, which was alone cultivated by the lettered of the times. The social and moral condition, not only of individuals, but of villages, nay, of vast communities, may be determined by the advance which horticulture has made among them. It diffuses peace, contentment, and happiness amongst all classes. It stimulates and invigorates the mental and bodily powers of the man of business who prosecutes it in his hours of relaxation. It promotes habits of industry and domestic frugality amongst the humbler classes, and places within their reach an amount of luxury which was known to and obtainable by the wealthy alone a few years ago. The *Gardeners' Chronicle*, by diffusing scientific and practical papers, has brought a new light to shine upon the gardening world, the effect of which has not been lost even on the humble cottager. But it appears that another class of cultivators, and a very numerous and important one, has been in some measure overlooked by it. I mean the countless numbers who are immured during the hours of business in our densely populated cities, and who seek in retirement that rational recreation and that intellectual amusement which a garden alone can afford. It is to aid this class in its praiseworthy employment that I have ventured to take up my pen, and before I proceed further it may be well to define the limits of my task.

One description of villa garden possesses a little stove and greenhouse, a few frames and hand-glasses, with a limited amount of flower and kitchen-garden. Usually one man is kept on such a place; this man wears a blue apron, and is dubbed "the gardener," although he knows in reality little about horticulture; he therefore requires my advice, and he shall have it. Other villa gardens can only boast of a small greenhouse, or what Londoners style "the conservatory," which is attached to the dwelling-house, a Cucumber-frame, with the usual garden accommodation furnished for such residences. The occupier of a garden of this sort employs his spare hours in cultivating his plants, but he finds it necessary to call in assistance, in the shape of a jobbing gardener, to prune the trees and shrubs, dig and scrub, and make all things what he calls tidy. This pseudo-gardener is, however, not overburdened with skill in his profession, his employer therefore also requires my services, and I willingly tender them. A third class of amateurs, well described by "E. O.," have very small gardens, and cultivate them entirely themselves. These shall also have my care. I, however, beg that all will minutely describe their wants, in order that I may prescribe the proper remedy. Let me know whether or not Vines produce only leaves, fruit trees Crabs; whether Hyacinths flower badly, Tulips rot in the ground, Cabbages club, or Cucumbers curl, or whether the garden is pestered with vermin. Do not begrudge the time required in detailing the different ills which rob you of nearly all the pleasures you so industriously seek for in your favourite pursuit, and I will endeavour to secure your success. *Pharo.*

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

HIVING A SWARM OF BEES.—The writer having met with an adventure in connection with bees, feels disposed to communicate it to the readers of the *Chronicle*, who may be as inexperienced as himself in the management of this curious and useful insect. By withholding information, from the fear of being commonplace, we often keep back precisely that kind of matter which the majority of readers need, and therefore, after much hesitation, it has been determined to commit to paper the following simple recital. Many more persons would keep bees if they knew how to make them profitable, or even to manage them with anything like success. What follows being the result of personal experience, may be relied on as an example, as far as it goes.

We have kept a few hives for some years, having unadvisedly bought most expensively a lot of wooden boxes with glass doors and other paraphernalia, professing to be on Nutt's principle, but of which we never could make more use than of common straw hives, for which they have been used as substitutes. Every spring, our man has amused us with a most elaborate metamorphosis of his person when the bees swarmed; his head being enveloped in crape or muslin, his sleeves and trousers' legs tied tightly, to prevent the ingress of a bee, and his hands covered with hedgers' gloves. Then came certain cabalistic rites with brass kettles, tongs, &c., the ding-dong of which was believed to produce most important effects in quieting the bees. All this, combined with the manifest fear of the man, notwithstanding all his precautions, and with the fact, that our bees more often than not swarmed on Sunday, has associated the process of hiving a new colony with noise and confusion and a sort of undefined witchery, partly laughable and partly romantic. However, the result was in all cases that the stock was safely got in, and the matter then rested, until another season brought about the same excitement and din.

Now it so happened that last week we had no servant man on the premises, and our thoughts never had recurred to bees, or the necessity, in such hot weather, of being prepared for their swarming; when, all unprepared as we were, our little daughter came running in and exclaimed, "O Papa, there is a large swarm of bees on the Apple tree by the old hive." Sure enough, there was a grand collection hanging like an inverted cone from a branch of the said tree, about 7 feet from the ground, and now, what to do was the pressing question. We sent to all the neighbouring farm-buildings, but no man could be found. In the interim I rummaged an outhouse for a wooden hive and found one full of cobwebs and dirt, with the old combs sticking to it on all sides. While the man was being looked for I cleaned this spider's den, and well rubbed the inside with beer and sugar, made thick like syrup. This was the extent of my knowledge, and what to do further I could not tell. But being left to my own resources, I took down the "Encyclopædia Perthensis" (which, by the way, I always find superior to most others in practical information), and there I read that the bees should be swept off the tree on which they hung into a hive, or, if the branch was small, it might be cut off and laid on a cloth on the ground, the hive being put over the swarm. There being a chance of the bees flying away if not speedily attended to, I determined to grapple with the difficulty myself. My wife protected my face with crape, and I put on hedger's gloves; but having always found I could go into the midst of bees without being molested, I confess I did not fear so much being bitten as losing the swarm by unskilfulness. I then sawed off the branch about 3 feet from the bees, and my wife, without the least protection on hands or face, supported the other end, and when the cut was complete we together laid it on a cloth on the Grass. The hive was put *above* the swarm, the position and shape of the branch forbidding a very near approach. Over the whole was placed a tablecloth, and before 5 o'clock every bee had ascended into the hive. As soon as it was dusk, the hive was placed in its destination, and the colony has been hard at work ever since.

The experienced will say there is nothing new in all this. Granted: but the knowledge of another man is of no use to me unless I know how to act upon it. "Necessity is the mother of invention," and while if I had had help at hand I might never have known how to get a swarm into a hive, my necessities compelled me to be prompt and self reliant. Others may be situated as I was, and by telling them how I acted, with success, I may embolden them to do the same. It is certain that bees are less disposed to sting than they are popularly thought to be; and if no unnecessary noise or disturbance is made they may be even handled with safety. Not a bee rested on us while we were removing the branch, and my armour, put on for defence, proved a source of annoyance instead of being of any advantage. Virgil's account of having a swarm is worth reading (Georg. 2, 50). In his day the pots and pans were in use—

"Tinnitusque cie, et Matris quate cymbala circum."

H. B.

Home Correspondence.

Culture of Tobacco in England.—I have no doubt that you are right in your opinion that if Tobacco became a universal crop in the United Kingdom it would fall so much in price that the quantity of manure and labour which would be required before it could be brought to market would eat up all the profits. But I assure you that in this country for, I believe, nearly a century, and up to the recent period when, for the sake of distant colonies, an English Government thought it right to deprive Ireland of the privilege of growing it, the culture of Tobacco was well understood, and was practised by rich and poor with success and profit. The amount of produce of an Irish plantation acre was considered so high as 100*l.*, from which, of course, was to be deducted the various expenses, in which the item of labour was a heavy one, if the cultivator used hired labour; but in the case of small farmers and cottiers, whose own family and children performed it, the labour cost them nothing, and the profit was larger. To show you that I do not exaggerate the price of the crop, I say I was present at the hearing of two suits for tithe for Tobacco, brought against a farmer in the ecclesiastical court of this diocese, where the tithe demanded was 10*l.* for the acre, being the full tenth of the presumed amount of 100*l.*; this would have been decreed, but the parties compromised for 8*l.* Almost all the Tobacco sown here was from home saved seed, so that the plant in a manner became naturalised to this climate; foreign seed was by no means so successful. *Wexford.* [Yes; but what was the amount of import duty on Tobacco of foreign growth?]

Ants.—Boiling water will kill them without any expense; but it may, as well as turpentine, injure the Grass. *W. R., Beverley.*

Adders.—I have no inclination at present to enter upon the question whether young adders or vipers leap down their mother's throat or not; but I wish to state that old vipers leap out of their own mouths. This may seem a startling assertion; but it is nevertheless true, for when these reptiles cast their skins, they appear to creep out of their mouths, and that so completely, that even the scaly covering quits the eyes in the old coats. I cannot say how often vipers renew their skins during the period of their life, nor can I state with precision the manner in which the operation is accomplished. However, from the appearance of the old skins which I have examined, it would seem that they begin to put off at the mouth or lips, and that the reptile clears itself by having previously fixed itself between two twigs in a bush. The empty skins of vipers being met with in June in such places, may have given rise to the belief, which is especially entertained in the north, that the females burst in the act of producing young. Some have imagined that vipers creep out of their skins by the opening below the belly, but this is improbable; for the opening is too small, besides the tapering form of the reptile must prevent its backing out, if I may so term it. The operation is affected by the mouth, and it is really astonishing to see how perfect the skins are when left off by the reptiles. Some of them are said to be 3 feet long, but about half that length is nearer the common size of those of adders. Lately however, there was one killed here, Cossy Park, which measured 2 feet 1 inch long and 3 inches round the middle. The head was very small—contrary to the description of vipers' heads by some writers—and the neck long and narrow. I was a little surprised at finding in it about two dozen eggs, some in a forward state, for the time of hatching is not till July. These were white, and some of them as large as Kidney Beans, of an oblong shape; others were like Barleycorns. From the irregularity in size we may conjecture that they would not be all hatched in the body of the mother at one time. And if it is true that each egg contains from one to five young ones, the destruction of this large viper prevented, of course, a great increase of her kind. *J. Wighton.*

A Mixed Flower-garden.—I like Mr. Cuthill's view of flower-gardening. The Dutch system of massing flowers of the same colour, in one bed, is but the patch-work quilts of our grandmothers removed from the bed to the Grass-plat. I agree with Mr. Bailey that the

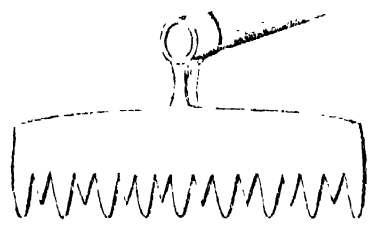
laying out, or rather the properly filling up, flower-beds near the mansion is a work of art; but I never yet heard a picture which consisted of here a patch of blue, there a dab of yellow, yonder a dot of pink, and just under your eye a mass of scarlet, much admired. In all good pictures the colours are so blended as not to offend the eye. [Consider the admirers of the famous red and yellow Royal Academician.] A tastefully arranged bouquet is not a mass of red or yellow, but a mixture of different coloured flowers effectively disposed; and a flower-bed ought to represent a bouquet on a large scale. The carpet whose colours are well-disposed helps much to set off the furniture of a room; but who would choose a carpet with a blotch of red in one corner, another of black in a second, and a patch of blue in a third? For my opinion is that there can be no prettier pattern for a flower-garden than a bed of mixed flowers; and, by a little attention, something may be had in bloom, in beds of this kind, nearly all the year round. If massing must be practised, I would recommend it to be done in large clumps, at a distance from the house, on islands or on the opposite side of water. Those who have a fancy for massing on a grand scale should visit the cyder districts just now; though they are very beautiful, yet I would not wish a garden of mine to have exactly the appearance they present. *E. N., Braintree, Essex.*

Substitutes for the Potato.—What a pity it is that prejudice so influences the minds of people, especially of the lower orders, that they will often suffer from the want of a real comfort, simply because they will not abandon some foolish prejudice or break through their usual habits. This has been, and is especially seen, since the failure in the Potato crop, in the difficulty that exists in endeavouring to persuade the people to try some novelties in food. A pauper Englishman will turn up his nose at a basin of Oatmeal porridge, which a sturdy Scot or north countryman of the higher ranks, and I have been told even royalty itself, will eat with a hearty relish. Indian meal (the staple food in Madeira, some parts of America, &c.) has had but a few admirers, even when its price was half that of Wheat; and the white Haricot Beans, which are used in so many dishes on the Continent, are now quite a drug in the market. I do not know if you are aware of an excellent mode of dressing these Beans. Let them be put in boiling water for a few minutes, until you can readily slip off the outer coat, then let the Beans simmer in water for two or three hours, until quite soft, when you must rub them through a sieve and mash them up like Turnips, with a little milk. This forms an excellent dish, and takes up the gravy like mashed Potatoes. Haricot Beans are also excellent placed under the meat and browned. They contain, I believe, a great deal of nourishment, and should be tried to be known. *Northwood.* [This receipt is important, because the skins of the Haricots render them indigestible.]

Hedaroa sinensis.—On each of the rafters of the principal roof of the conservatory here, is trained a single shoot of this plant, the flowers of which are usually produced in great prodigality, more especially at the first period of blossoming, when it exhibits a magnificent appearance. Viewed from either end of the house, the whole roof presents an unbroken mass of large bluish purple clusters, of the softest tints, which are rendered even more delicate by their being produced under glass. The bunches of flowers have been unusually fine with us this season, and from absence of much sunlight they have been in beauty since the beginning of April. When trained on walls or buildings in the open air, on different aspects, the season of flowering is in consequence of longer continuation. On a southern aspect here it has been in flower about a fortnight; whilst on an eastern exposure, the blossoms are only just expanding, and they will remain in flower for a long time, in consequence of being shaded from the fierce rays of the mid-day and afternoon sun. It is worthy of remark, that whilst the blossoms on a southern exposure have suffered very considerably from the effects of the severe weather of *last month*, those on an eastern aspect have sustained no damage whatever. Grown on arches in particular situations, or trained to imitate a shrub on a nicely kept lawn, the effect in either case is pleasing, or if it is allowed to ramble over a specimen of Laburnum, its delicate flowers mingling with the brilliant yellow of the Laburnum produce at once variety and contrast. *James Duncan, Basing park.*

Ireland's Regeneration.—The infusion of new blood into Ireland, as proved by that well cultivated district in the south near Newcastle, and inhabited by some German settlers called Palatines, I feel confident would do much to bring out the real value of that magnificent country, so blessed by nature yet so cursed by man. People talk of want of employment, and the benefits of emigration. Why do not the industrious respectable and intelligent of the peasantry of England and Scotland emigrate to Ireland under Government protection and patronage? There is plenty of fine land which wants cultivating, and plenty of estates that Government could buy. The principle thing for the emigrants is to be guaranteed security of life, that is what Mr. Blacker, no mean authority, has forcibly urged. They must go in strong bodies sufficiently powerful to protect themselves, or Government must find means to protect them. British industry, skilfully applied, would convert that deserted land into a productive garden—would tend to civilise and render industrious the aborigines by force of example, and would I take it, raise such a supply as would make us well complete with the foreigner, and would strengthen the ties of the United Kingdom. Had the money squandered uselessly in the time of famine been applied to some of the improvements pointed out by the *Times* commissioner, Ireland would have told another tale ere this. *Northwood.* [This strikes us as being the same as Sir Robert Peel's plan, the merits of which dispassionate men are pretty well agreed upon.]

The Rake Hoe.—I beg to hand you a new description of draw-hoe, whose origin is as follows. A few weeks ago I was anxious to have a piece of ground cleared of weeds, and the draw-hoes being all in use I assisted with a short toothed rake. It occurred to me when using the rake that a tool having something of the properties of both a hoe and a rake would be more effectual than either the one or the other separately. Accordingly I had a hoe made with teeth the length of the short teeth, represented in the woodcut. It answered where the weeds were small, but amongst large weeds it was not superior to the common draw-hoe. I had a second made with teeth the length of the long teeth shown in the sketch; this acted very well where the weeds were large, but left the small ones untouched. Hence the idea of the present tool, in which both sizes of teeth are combined. We have had four such hoes in use in this place for the last two or three weeks, and all of us are of opinion that they are decidedly superior to the common draw-hoe. In weedy ground it pulls the weeds up by the roots, brings them better on the surface, and leaves the ground more level. In the absence of weeds, in dry weather it will also more effectually stir the soil amongst crops. In earthing up it answers quite as well as the common hoe; it breaks the ground well, when crusty on the surface after heavy rains in summer, and in all operations it possesses the good property of leaving the soil at bottom as well as at top open and porous. I will only add that this description of hoe could be made



of any size or consistence, so as to suit the different sorts of soil and purposes to which it might be applied. Should you think it worthy of being recommended it will be registered. *Charles Berry, Foreman to Messrs. Knight and Perry, Brooklands Nursery, Battersea.* [We will try it and report.]

Bees.—If some apiarians were to study the habits of bees, their pasturage, and our fickle seasons more closely, they would see less reason to complain of their industry. It should be known that perhaps the half of the cells in a hive are not made for the purpose of storing honey in; they are of a peculiar construction, for rearing brood and holding nourishment, in which is pollen. Schemes adopted, therefore, with the view of diverting bees from the usual manner of constructing their cells, will be in a great measure fruitless. Indeed they must be so, for the prosperity of a colony depends on an equal proportion of brood and honeycombs. As a rule, a hive short of pollen and brood is equally deficient in honey. Nevertheless, in the face, not only of these facts, but also contrary to the experience of good bee-keepers, "An Essex Man," p. 22, states that he never found brood in his "caps or end boxes." To confute this would be loss of time; let it suffice that small caps seldom contain brood, but combs in the end boxes differ but little in construction from those in common hives; that is, the honeycombs are the outside structures, while the brood occupies the heart of the inner combs, whose tops always contain honey, if there be any in the hive. This arrangement, though of course good on part of the bees, by placing their eggs to be hatched in the warmest place of the hive, is an obstacle to extracting their honey without injury to the future progeny, whatever plan may be adopted. The common storifying system, however, has an advantage in this respect; by it a part of the honeycomb is cut off at the top of the hive without disturbing the combs below. "An Essex Man" surely cannot "have looked into many books on the subject," or he must have found better advice than that of "driving bees" about midsummer, a plan only fit to be adopted "among the heathen." It would have been better to have left the brood in the hive than to have put it into a box beside the bees in an empty home. But as regards the new and old plan in managing bees, I may observe that "union is strength," and without it little produce will be obtained by either plan. The writer under consideration seems to overlook the fact, that a strong colony of bees, of course under one queen, will produce more progeny and store than three or four weak ones under separate queens; on the other hand, however, he very clearly shows the evil effects of bad seasons on the latter. The same, however, happens to bees in modern hives, even supposing they had not swarmed, that is, they cease to work in the additional room where the extra honey is expected. When he speaks of cottagers losing their stocks in bad seasons, he must mean their late worthless swarms. I should have mentioned before that the collecting of honey goes on quite independently of the necessary attendance on the young bees, which are bred, more or less, at all times in strong colonies, according to the state of the weather. And new colonies, which have all the combs to make, as well as to attend to the brood, begin immediately to store up honey in the first-formed cells; and if the weather and pasturage are good, they may fill the hives with store within a month or six weeks after their settlement. *J. Wighton.*

Tar Paint.—Two gallons of gas tar, mixed with 6 lbs. of lime and 1 lb. of black resin, boiled for 20 minutes, kept constantly stirred, and applied hot, forms an admirable paint for iron hurdles, palings, &c., and is cheaper (from the absence of Stockholm tar, not found necessary) than Mr. Fleming's paint. The same composition, without the resin, and boiled half an hour or more, is capital for fencing, with grit or cinder-ashes sifted into it. *Northwood.*

Silver Beet a Substitute for Spinach.—The leaves of Silver Beet surpasses in flavour those of Spinach. This Beet is very hardy and easily grown; a row or two of it may still be sown. I have found 50 plants, occupying the margin of a walk, supply a family much better than 5 rods of Spinach, and I was always sure of a crop. In Switzerland Spinach is considered rubbish compared with the leaves of Silver Beet. I hope gardeners who have not hitherto grown it will give it a trial. *James Cuthill.* [This is, we presume, white Chard Beet, and, if so, *we* do not find it to our taste; but tastes differ.]

Verbena Pegs.—The following plan may be found a less troublesome mode of procuring pegs for Verbenas, &c., than the ordinary custom of cutting hooked pegs out of old besoms or bundles of Fern. Get a bundle of the unpeeled thin ends of the Willow twigs, about from 1 to 2 feet long, from the basket maker's, and cut them into lengths from 4 to 6 inches. When your plants require pegging you have only to take your basket full of these little sticks, and bending them in the middle they will be found to answer perfectly. Keep the bundle of twigs with the thick end in water, to preserve their toughness, until they are wanted to be cut up. Any basket-maker will furnish a bundle of those ends, enough for a large garden, for about 6*d.*; and if you make it 1*s.* he will probably add a quantity of nice white peeled sticks for tying up plants to. *R. C.*

Oxalis floribunda yields to no plant we have for open garden culture. I think, however, that "A. D.'s" directions for its winter treatment are unnecessary, for it has been growing in the garden here for the last 10 years at least, without any protection, and in positions at a distance from a wall or shelter of any kind. With us it flowers from the earliest spring to the winter without any interruption, and attracts the notice of every one who enters the garden. The above fact may save considerable trouble, and encourage that numerous class who have no means of keeping tender things through the winter, to purchase this delightful plant. *J. G. Nelson, Winterton Rectory, Great Yarmouth.* [We presume this garden to be sandy, and thoroughly drained.]

Potato Disease.—A crop under favourable treatment having been found sound, and another crop exposed to injurious influences having been almost annihilated, although the seed for both crops was selected promiscuously from the same stock, it is evident that the disease is not constitutional to the plant, but induced by circumstances. The question to be solved is, what these circumstances are. The following explanation has occured to me: after the growth has been luxuriant, and the haulms have covered the ground, so as to exclude the evaporating powers of the air, and the sun and rain have fallen in considerable quantities, or fogs or mists have passed over the district, symptoms of this disease have occurred. These symptoms are merely the effect of moisture acting upon a rank vegetation, so peculiarly constituted as to be incapable of resisting dampness. In confirmation of this view of the case, it may be observed, that dry soils have been more free from the disease than wet ones. The crop on part of a field well drained by natural or artificial means has escaped the disease, but the crop on another part of the same field has been destroyed. It has been imagined that excessive manuring has been a contributing cause, but this has not been the fact, except in so far as the manuring has increased the density of the haulms, and thereby prevented the drying of the ground and crop. In a diseased crop of Potatoes, intermixed with Cabbages, after the removal of a portion of the leaves of the Cabbages, it was found that the progress of the rot amongst the Potatoes was arrested. From this it was inferred that the entire removal of the haulms would be efficacious. The partial success of this method corroborates my opinion. Light crops on dry soils have, in the majority of instances, been preserved intact; but heavy crops on similar soils, and crops of both kinds on heavy soils, have generally suffered. A retention of moisture was common to all the injured crops, and the same consequence attended it in all. In like manner in those districts in which large quantities of rain did not fall at a critical period, that is about the maturity of the haulm, the disease has not been severely felt. The effect will be the same in every stage of the plant under similar circumstances, but the danger is the greatest when the crop is approaching ripeness. Plants under glasses, or in forcing houses, will be deteriorated from the exclusion of air equally as much as if they had been placed elsewhere. Symptoms of the disease having occurred after a mist or a fog, accompanied with a putrifying smell, it has been imagined that the disease was atmospheric. The real connection of the fog with the disease has been in the first place the production of moisture causing decomposition, and afterwards, through its non-conducting powers, the retention on the spot of the odour occasioned by the de-

composition. The exhalations from the mouths or inlets of sewers are, for the same cause, more perceptible in damp or foggy weather than in dry weather The antiseptic qualities of bog counteract the spread of the disease, and crops grown on moss lands have, on that account, been exempted from it, notwithstanding the wetness of the soil. The obvious remedy seems to be a proper regard to drainage, and the prevention of rankness in or thinning of the haulms. *D., Preston, May* 29. [But you do not explain why moisture did not exercise its baneful influence before 1845. Of that main point you have quite lost sight.]

Societies.

AMATEUR TULIP, *May* 26.—The sixth annual exhibition of this Society took place at the Horns Tavern, Kennington. Eighteen stands of nine blooms each were placed for competition, and though the season has been most unpropitious, the effect of such a large assemblage of flowers was highly attractive and interesting. The following is the award of the judges:—1st, to Mr. Edwards, of Holloway, with Primo bien du Noir, Aglaia, Alexander Magnus, Dutch Ponceau, Ophir, Astonishing, Albion, Ambassador, and Marshal Soult; 2d, to Mr. King, of Canterbury, with Hogarth, Triumph Royal, Abercrombie, Rose Brilliant, Alcon, Princess Charlotte Cenotaph, Violet Superb, Polyphemus, and Cerise Blanche: 3d, to Mr. Crook, of Peckham, with Vivid, Crook's Emma, Strong's King, Lachesis, Memnon, Lalla Rookh, Lewald, Roi de Siam, and Crook's Princess Helena; 4th, Mr. J. Venables, of Kennington, with Triumph Royal, Ali Pacha, Pelopidas, Favorite de Viscours, Rose Brilliant, Gloria Mundi, Polyphemus, Reine de Sheba, and Aglaia. The Society's seedling prize was awarded to Mr. Crook, for an elegant rose, broke this season, named May Queen.

Country Show.

NORTHAMPTON TULIP SHOW, *May* 24.—At this meeting about 300 Tulips were staged for exhibition, together with a beautiful display of greenhouse plants For the best pan of 12 Tulips 1st, Mr. Martin, with surpasse Catafalque, Charbonnier, Trafalgar, Capt. White, Bienfait, Incomparable, Alexander Magnus, Roi de Siam, Holmes's King, Triumph Royal, Comte de Vergennes, Cerises, Belle Tonna, and Hebe, 2d, Mr. H. Archer, with Duc de Savoi, Albion, Garrick, Catafalque, Gadsby's Magnificent, Sable Rex, Violet au fond Noir, Bishop of York, Bohosa, Lady Crewe, Roi de Cerises, and Adelaide 3d, Rev W Taylon, with Charbonnier, Catafalque, Captain Black, Earl Stanhope Abd-dominus, Algiers Flag, Wade's King, Washington, Violet Alexander, Matilda, Georgius Tertius Extra, and Lady Crewe. For the best pan of 6 1st, Mr H Archer, with Albion, Alfred, Pluto, Socrates, Perle Brilliant, and Lord Hill, 2d, Mr Martin, with Polyphemus, Alfred, Cleopatra, Washington, Cerise Blanche, and Calypso, 3d, Rev W. Taylon, with Magnifique, Woolstenholme, Holmes's King, Reine des Beautés, Matilda, and Comte de Vergennes.—For the best three. 1st Mr. Martin, with Charbonnier Baguet, and Adelaide, 2d, Mr. Archer, with Abercrombie, Bienfait, and Walworth 3d, Rev. W. Taylon, with Black Prince, Laura, and Pretiosa. For the best Bizarre 1st, Mr Holliday, with Magnum Bonum; 2d, Mr. Martin, with Sovereign; 3d, Rev W. Taylon, with Lord Mansfield. For the best Bybloemen. 1st, Mr. Hill, Black baguet: 2d, Mr. Martin with Vulcan, 3d, Mr Archer, with Sable Rex. For the best Rose 1st, Mr Martin, with Triumph Royal, 2d, Mr. Holliday, with Thunderbolt; and 3d, Rev W. Taylon, with Cerise Haut.

Reviews.

Zur Entwickelungs-Geschichte der Farrnkräuter vom Grafen Leszczyc-Suminski. Berlin. 1848. 4to; pp. 26. Tab. 6.

SEVERAL attempts have been made to discover the male organs of Ferns, as by Hedwig, Bernhardi, Link, and others, but with no colour of success till Nägeli published his discovery of certain cells on the under side of the hepaticoid fronds of young Ferns, which contain spiral filaments endowed with an active motion, like those which occur in Mosses and Jungermanniæ. The existence of these bodies and of their peculiar contents has been confirmed by subsequent observers, but Munter was the first to point out in the "Botanische Zeitung" of January, 1848, that Count Suminski had not only confirmed the observations of Nageli, as published in the first part of Schleiden and Nägeli's "Zeitschrift für wissenschaftliche Botanik," 1844, but had detected other organs which had escaped the notice of the botanist of Zurich, situated higher on the frond, which he regards as ovules, and in which he had observed the mode of origination of the embryo, the correctness of his observations being confirmed by the testimony of Ehrenberg, Link, and others.

The work itself has now appeared, with every embellishment that paper, type, and lithograph can give; the figures are very clear and distinct, and the description not ambiguous, yet the whole seems so evidently the result of prejudice in favour of Schleiden's peculiar theory of the development of the embryo in Phænogams, and of the warmth of fancy of a man celebrated for his artistic powers, that in spite of the high authority with which he is supported, we cannot satisfy ourselves as to the propriety of considering his conclusions as ascertained facts; more especially since the elaborate, though somewhat imperfect series of observations which have since been instituted by Wigand, and lately published in the journal of Mohl and Schlechtendahl, which by no means confirm the Count's most startling indications.

His notions are briefly as follows. The underside of the young Fern, previous to all appearance of frond, is more or less covered with slime, which, in conjunction with the moisture consequent on the place of growth, favours the diffusion of the seminal animalcules. One or more enter by the micropyle of the ovule, but one only is perfectly developed; the rest after a time wither. The privileged animalcule or pollen-grain soon changes its form; the broader end swells, as does also the narrower end, but in a less degree. This comes in contact with the embryo sac seated at the base of the ovule, and gradually penetrates it, whether by absorption of the membrane or by intussusception is not clearly explained. The portion which has penetrated increases in size, and soon loses all connection with the broader part, the intermediate part withering away and separating. The end of the pollen grain has now become the embryo, and, after it has been completely amalgamated with the embryo sac, sends out a root from below and a frond from above. It will be observed that, contrary to all observations in Phænogams, the radicle end of the embryo is in every stage directed towards the base of the embryo sac, and not towards the micropyle. This alone would cause one to hesitate; but Wigand's observations make it very doubtful whether the young frond is really developed from within the so-called ovule. The subject, at any rate, demands fresh inquiry. The theory of Schleiden itself has met with so many rude shocks from various quarters, that this still more marvellous form of it will not and ought not very readily be received without the exercise of all due caution. The question need not, indeed, be regarded with suspicion because it comes from the hand of one who is no professed botanist, but because of its precise accordance with the views of Schleiden—views which are themselves viewed with more than doubt by many of the best botanists of Europe.

Since the above was written, M. Thuret's paper on the Antheridia of Ferns has appeared in the "Annales des Sciences Naturelles." He seems to have been wholly unacquainted with the German Count's discoveries, as well as the more recent observations in the "Botanische Zeitung," and has not met with the ovules. He has, however, extended his researches to Equisetaceæ, on the Cotyledonoids of which he has detected Antheridia. His examination of Ophioglosseæ and Lycopodiaceæ was prevented by his being unable to get their spores to germinate. We are not aware that any one has yet been able to raise the former from seed, though they frequently come up in houses where they are cultivated. It is possible that they are parasitic when young.

Garden Memoranda.

EXHIBITION OF AMERICAN PLANTS, BOTANIC GARDEN, REGENT'S PARK.—The Botanic Society having announced, by advertisement and otherwise, that there would be an exhibition of American plants in their garden on the 20th ult., we proceeded to examine them, but found that, with *one or two exceptions, none* of the plants were in flower. The exceptions alluded to, worthy of remark, consisted of a brilliant deep crimson Rhododendron, named Blandyanum, from Messrs. Standish and Noble, of Bagshot, and another Rhododendron, named Brayanum, from Mr. H. Waterer, of Knap Hill. The latter has dense conical heads of lively rose-coloured blossoms, and is evidently a late-flowering and valuable hardy kind. We apprehend this will be very inferior as an exhibition to the admirable collection next to be noticed.

MR. H. WATERER'S EXHIBITION of AMERICAN PLANTS, KING'S-ROAD, CHELSEA.—This exhibition is now open, and we cordially recommend all lovers of gay-flowering hardy plants not to miss the opportunity of inspecting it. Under a large canvas tent, Mr. Waterer has formed a temporary garden in three compartments, with turf margined gravel-walks winding among splendid bushes of Rhododendrons, Azaleas, and broad leaved Kalmias, in such a manner as to form them into clumps, the effect of which, when viewed from a raised stage at one end of the tent, is at once striking and delightful. Besides the enormous mass of flower of various colours, which is here assembled, the most prominent feature is the extremely large plants of Rhododendrons, which form the subject of admiration of all who see them. We remarked a specimen of the old and still favourite R. catawbiense splendens, than which we have never seen its equal either as regards size or quantity of blossom. Then some of the Azaleas quite form little trees, gaily dressed in orange, yellow, and pink; and there are a few magnificent bushes of Kalmia latifolia. To this fine assemblage of gay-flowering plants Mr. Waterer has also added a small Pinetum. This is neatly turfed, so as to represent a lawn in miniature planted with the most fashionable kinds of Conifers. Among these we remarked Cryptomerias, between 7 and 8 feet high; a "well-furnished" Pinus excelsa, at least 10 feet high, a pretty P. Webbiana, 5 feet high; together with P. macrocarpa, Hartwegii, and Douglasii; Abies Deodara, the dwarf A. pumila, Araucaria imbricata, Taxodium sempervirens, the compact Thuja aurea, and others. These, as well as the other plants gathered together here, are part of Mr. H. Waterer's extensive collection at Knap-hill, which, we may add, is well worthy of a visit, especially at present, when the Rhododendrons, &c., are in blossom.

Miscellaneous.

Sale of Orchids.—A collection, consisting of 233 lots, was brought to the hammer the other day by Mr. Stevens. The highest price realised on the occasion was 5*l.* 5*s.* for a nice specimen of Dendrobium Devonianum. Other lots, with one or two exceptions, fetched from 10*s.* to 30*s.* per lot.

Grape Refuse.—M. Renaudot has sent a paper to the Academy of Sciences in Paris, relating to the means by which the mark of Grapes may be employed much more usefully than it is at present. M. Renaudot gives the details of a process by which he expects to obtain a spirituous liquid free from any unpleasant taste or smell, in the place of the ordinary brandy obtained from the distillation of the mark, which is often tainted and never free from an empyreumatic taste, which greatly diminishes its value. Instead, too, of using the remains of the distillation as manure, M. Renaudot proposes to obtain potash from them by calcination, *Comptes Rendus, No.* 11, 1849.

Calendar of Operations.

(For the ensuing week)

PLANT DEPARTMENT.

Now that the general potting is over, the principal operations in this department will for sometime consist in watering and trimming the plants, and in destroying insects. Plants in flower should now be kept in a cooler atmosphere, or removed to cooler quarters than those in which they have been grown, and carefully shaded from gleamy sunshine. Strong currents of dry air, unavoidable in hot weather, should be counteracted by keeping the floors and walls moist, or both plants and flowers will flag in spite of the shading; much, however, may be done by hanging a thin bunting before the openings, and occasionally syringing it; this breaks and cools the current of air as it passes through it. In dull or damp weather, however, a very different mode of proceeding must be pursued; moisture is then dangerous, and must be carefully avoided, and the plants should stand sufficiently far apart to secure a full and free circulation of air amongst them. Let all blossoms be removed as soon as they fade; never allow the energies of a plant to be exhausted in producing seed unless it is positively required. Plants of which it is desired to make large specimens in the shortest possible time, should not even be allowed to produce flowers; the latter should be picked off upon their first appearance. All specimen plants should have plenty of room, and should be occasionally turned round, in order to prevent them growing one-sided.

FORCING DEPARTMENT.

PINERIES.—Plants just showing or swelling their fruit will be considerably benefited by receiving liquid manure every alternate watering till the fruit begins to ripen. If the plants which are just on the point of showing, are in pots, it will be an advantage to shift them immediately into larger pots, or to top-dress them with some rich turfy loam, unless they can be turned out entirely into the soil, which of course would be the most preferable method. Where the pot system is pursued, many of the plants, especially of the young stock, will require repotting, giving a good large shift, for their most active growing season is now approaching. After potting they will require a closer and moister atmosphere for a few days till they begin to root into the new soil. No plant stands in greater need of shading during bright sunshine than the Pine-apple; the canvas, however, should be so adjusted by means of rollers that it can be applied or removed at pleasure.

FLORISTS' FLOWERS.

As the bloom of Tulips is now fairly over, the awning may be removed, though in the case of much injury having been sustained, it will be advisable to retain it till the roots are taken up. We hope that amateurs have made up their minds to discard all inferior shaped flowers, as well as those which are disfigured with a discoloured base. We are advocates for perfect purity in this beautiful flower, and we are glad to find that the judges at the great York exhibition have taken the initiative in disallowing as much as possible all flowers with stained or discoloured stamens. Tulip seedlings should be kept growing as long as possible, the larger the foliage the more bulky will be the root. RANUNCULUSES.—These beautiful flowers have been seriously damaged this season Our reports from various growers announce considerable loss. We are confident that the fewer nostrums that are tried, confining the compost as much as possible to decayed vegetable matter, with sand, will be found by far the better plan. The stems of the plants should be examined—a long green caterpillar, the exact colour of the stalk, will often be found immediately under the bud; the Cicada spumaria, with its frothy envelope, is also very troublesome, and should be destroyed.—Attend to directions given last week as to Pinks, which, should the weather prove dry, ought to have abundance of water, or the lacing, so necessary a point in their beauty, will be defective.—Keep Auriculas and Polyanthuses from drought, and cover from the sun with light awnings.

HARDY FRUIT GARDEN.

Strawberries will now require mulching with some clean material, for the double purpose of keeping the fruit free from dirt in wet weather and of preventing excessive evaporation in a dry or parching summer. The old-fashioned practice was to lay clean, straight straw between the rows, and from this the fruit derived its name; the unsightliness of the plan, however, has long since condemned it. The material most generally used, and which answers the purpose very well, is the short Grass cut from the lawns; but where this is not sufficient for the purpose, and even in preference to it, we would recommend a row of plain, dark coloured roofing tiles, to be laid on each side of the plants. Owing to their colour, these absorb heat, and thereby facilitate the swelling and ripening of the fruit; if laid with the slightly hollowed side downwards, they will keep the fruit clean and dry. Before the mulching or other covering is put on, the ground between the rows should be loosened with a fork, and if of a dry nature it should be well watered with liquid manure, which, by the use

of the mulching, will generally be all that is required during the season. At the same time a good dressing of dry soot under the leaves and amongst the stems of the plants will stimulate the growth of the fruit, and render the sleeping quarters of snails and other vermin very uncomfortable. Thin out the young shoots from Raspberry stools, leaving three or four of the best where the shoots are only of moderate strength, but where they are stronger, as many as eight may be left; these will form fine strong canes for tying into arches at the next winter pruning. Any young shoots coming up at a distance from the old stools may be left to furnish plants for new plantations if required. Gooseberry caterpillars should be destroyed; hand picking is the most effectual remedy.

KITCHEN GARDEN.

Ridge Cucumbers, Gourds, and Vegetable Marrows should now be planted out; the former in the usual way, on prepared beds of rich soil, with the temporary protection of hand-lights, and the latter in vacant places on the fruit walls or espalier trellises. In preparing the beds for ridge Cucumbers, some pieces of Mushroom spawn may be laid on a stratum of half-rotted dung, a few inches from the surface; by the time that the leaves of the Cucumbers have extended themselves over the bed, the Mushrooms will appear beneath them, and be screened from the heat of the summer sun. In the Mushroom-house or sheds let the old beds be examined as soon as they begin to go out of bearing. If, upon removing the soil, the dung appears decayed or exhausted, the bed should be immediately renovated; but if, as often happens, the beds are found in good order, solid, and teeming with spawn, they should be watered moderately with tepid water, if they are found to require it, and in a day or two afterwards the surface should be covered with 2 or 3 inches of fresh loamy soil In hot weather the house should be kept as cool as possible, without throwing it open; in order to assist in effecting this, the paths and walls should be sprinkled frequently with cold water, and the evaporation allowed to escape at the top. Let all the horse-droppings produced be carefully collected and stored up to renovate exhausted beds. Advantage should be taken of all dull and showery weather to prick out young seedlings of Celery and the Brassica tribe into nursery beds, and to transplant the strongest plants of early sowings into their proper places. Basil, Savory, Tomatoes, and other things raised in hotbeds, and Onions and Leeks, should now be transplanted. Continue to sow Peas, Broad and Kidney Beans in succession, as soon as those of the last sowing appear above ground. Stick Peas of former sowings and stop them as soon as they have grown within a few inches of the tops of the stakes. The first sowing of Endive should now be made—the white Batavian is the best for early use. Sow thinly in pots for transplanting, as the borders designed for its cultivation are seldom at liberty at this season. Sowings of Turnips, Spinach, Lettuces, and other salads should be regularly made once in two or three weeks; a sowing should also be made of Carrots and Onions for using in a young state, and also of Beet to produce small roots, which are generally preferred. A sowing should now be made of the Vanack, or early dwarf Sugar-loaf Cabbage, for late summer and autumn use, and of Broccoli and Knight's Protecting Broccoli for late spring use. No crops after this time should be sown so thickly as to require much thinning, for in hot dry weather considerable injury is thereby done to the plants which are retained. Plants sown now for future transplanting should be sown much thinner than would have been thought necessary a month or six weeks back; this is to allow them a longer period to grow before they will need to be removed, and in order that they may then be carefully lifted with larger balls of earth. Do not consider it too much trouble to employ head and hands to prevent or destroy birds and insects, which are now very actively at work robbing you of seeds and plants, and unless timely checked will give you a barren wilderness instead of a fruitful garden. Any old spare roots of Carrots or Parsnips may be turned to a very good account by planting them in beds which are infested with wireworms; these will attract the enemy from other plants, and if daily examined will in time rid your ground of this nuisance. It is some satisfaction to know that they are only larvæ, and therefore do not breed, and that the perfect beetle does not deposit her eggs in earth which is frequently stirred. All crops which you are anxious to bring to a high state of perfection in a short space of time, as early Peas, Cauliflowers, &c., will be considerably benefited by being watered with liquid manure. After the late rains, the soil between all kitchen garden crops should be loosened with a fork, in order to allow a freer action of sun and air, and with a view to prevent the too rapid evaporation of the moisture accumulated beneath the surface; this operation will proceed simultaneously with the destruction of weeds. As the earthing up of Celery will soon require attention, let all the fine coal ashes be carefully preserved for this purpose. We will say more on this subject in a future number.

State of the Weather near London, for the week ending May 31, 1849, as observed at the Horticultural Gardens, Chiswick.

May.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday .. 25	1	29.971	29.945	72	50	61.0	N.W.	.00
Satur.. 26	4	30.013	30.000	73	48	60.5	S.W.	.00
Sunday . 27	5	30.185	29.910	77	50	63.5	S.W.	.01
Monday 28	D	30.173	30.141	58	50	54.0	N.E.	.97
Tues. .. 29	7	30.208	30.176	75	46	60.5	W.	.00
Wed. .. 30	8	30.184	30.076	77	53	65.0	S.W.	.00
Thurs.... 31	9	30.000	29.970	79	46	62.0	S.W.	.00
Average....		30.104	30.053	73.0	49.8	61.9		1.01

May 26—Cloudy; very fine; densely overcast.
— 26—Overcast; very fine; overcast.
— 27—Very fine; cloudy; rain at night.
— 28—Thunder early A.M.; overcast; constant heavy rain.
— 29—Overcast; very fine; clear and mild.
— 30—Fine, very fine; overcast.
— 31—Dry haze; overcast; very fine, clear at night.

Mean temperature of the week, 4¼ deg. above the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending June 9, 1849

June.	Average Highest Temp.	Average Lowest Temp	Mean Temp.	No of Years in which it Rained.	Greatest Quantity of Rain	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 3	70.9	46.3	58.6	8	0.91 in.	1	1	2	1	0	7	3	4
Mon 4	70.8	46.9	58.9	10	0.76	1	3	1	2	3	6	4	3
Tues 5	70.2	46.4	58.3	12	0.64	2	3	2	1	3	5	5	3
Wed. 6	69.0	47.2	58.1	11	0.28	4	3	1	2	5	5	2	3
Thurs. 7	68.5	47.5	58.0	8	0.68	3	5	1	2	4	4	3	2
Friday 8	70.0	46.7	58.4	8	0.10	3	4	1	1	4	5	4	2
Satur 9	71.5	48.7	60.1	10	0.00	2	3	1	1	3	8	3	2

The highest temperature during the above period occurred on the 7th, 1846—therm. 90 deg., and the lowest on the 3d, 1847, and 8th, 1838, therm. 35 deg.

Notices to Correspondents.

MAY we beg our CORRESPONDENTS to bear in mind that we cannot undertake to make chemical analyses, and that it is foreign to the purposes which this journal endeavours to serve to reply to questions having no relation whatever to gardening. One gentleman begs to know what metal he finds in a grave-pit, another is anxious to know whether he is bound to pay his seedsman's bill, a third asks for the names of a bundle of sea-weeds, mosses and lichens. For the future we *must* decline noticing all such inquiries.

ANTS: *N E M.* See last week's Number, p. 328, and also a paragraph in our "Home Correspondence" of to-day. A toad or two on your border will assist much in clearing it of woodlice. ‡

BEES. *Dogo* Catch the large ground bees which injure your greenhouse and hothouse flowers with a pair of entomological forceps—or poison them with honey and arsenic.

BOOKS. *M P.* There is no book specially on grafting.—*C C.* Parnell's "British Grasses". *R M, Waterford.* Neill's "Fruit, Flower, and Kitchen Garden" ‡

CANARY BIRDS. *Northwood.* No doubt Millet is as wholesome a food for Canary birds as Canary seed; the former being worth 5*s.* or 6*s* per bushel, and the latter about 20*s.* to 22*s.* per bushel, shows that bird *fanciers* have not received their name for nothing.

CINERARIAS. *Justice.* Permit us to acquaint you that neither the matter nor manner of your communications suit the readers of the *Gardeners' Chronicle*.

CONIFERS. *Ballandine.* Never prune Conifers when the sap is running, any other time will do; non resinous evergreens are quite different April or early in May is the best season Fill up the chasms in the trunk of your Yucca with a mixture of equal parts fine charcoal dust, clay, and cow-dung, and then bind up the wound with a piece of tarred sacking. You will propagate these things by suckers.

CURL. *D L.* A wet border or bottom, and exposure to nocturnal radiation when young, cause this disease Pruning Thorns will diminish their power of flowering, by increasing their vigour.

FRUIT TREES: *Constant Reader.* With the exception of stone fruit we think it better not to shorten back the branches of any orchard tree until the year after planting. ‡

GOLD FISH: *Sub.* They like gravel in the bottom of the cistern in which they are kept, and, if possible, water plants to shelter under. ‡

GOOSEBERRIES. *C E C* states that Gooseberries are going to be quite a failure this year, and asks whether Rhubarb cannot be made to take their place as far as bottling goes. Perhaps some of our correspondents will be kind enough to give their experience in the matter.

INSECTS: *Lady A.* If you will be kind enough to favour us with specimens of the insect in question, we will name it for you, and we may then be able to instruct you how best to get rid of it ‡—*Tylde.* The insects at the base of the Gooseberry are aphides. Syringe the plants well several times with tobacco-water, washing them a short time after each operation with clean water. *W.*—*Omega.* In the absence of the webs of caterpillars or slime of snails, we apprehend your Raspberry-shoots are gnawed by the omnivorous Otiorhynchus sulcatus, or striped weevil, for remedies against which see Answers to Correspondents in the last two numbers of the *Chronicle*. *W*—*E M.* The shoot of Pinus insignis is burrowed into by a small beetle named Hylurgus piniperda, an account of which will be found in the *Gardeners' Chronicle*, 1846, p. 740 *W.*—*Este.* The Raspberry buds are gnawed off by a small beetle (Byturus tomentosus). They should be caught by shaking the plants when the insects are most active in the sunshine over a pot or bag. It will be well to take this trouble, for if left unchecked they will lay their eggs in the fruit remaining on the plants, and the young grubs will be found in a few weeks' time spoiling the ripe fruit. *W.*

IRELAND: *Milk of Roses.* We cannot publish your very injudicious letter, the only effect would be to increase that strong and strengthening, though erroneous opinion, now generally formed in England, that Irishmen left to themselves are more like frantic women than sober-minded reflecting men. For ourselves we can assure you with great sincerity that nothing less than a sense of imperative public duty would ever lead us to concern ourselves with the affairs of persons unacquainted with the simplest elements of self government. Your letter, if it means anything, signifies that nobody has a right to form an opinion on an Irish question, even though it be the cultivation of a Cabbage garden, except an Irishman. You are probably not aware that such is the true purport of your communication, and no man capable of reasoning would draw any other conclusion from it. Ireland is rather conspicuous for the eagerness with which all public bodies are there attacked *without* cause; and it surpasses even Hibernian coolness to say that Englishmen are not to presume to do the same thing *with* cause?

MANURE: *J Abell.* To disinfect your fresh slaughter-house manure, mix it with bog earth, fine charcoal, cinder ashes, or animal charcoal; but not with lime of any kind. ‡ *W P.* No kind of lime ought ever to be mixed with any kind of manure. A tank from a scullery sink will be highly useful, but you should add to it, from time to time, charcoal dust, peat earth, gypsum, leaves, sawdust, or such substances. A little vitriol now and then will improve it much.

NAMES OF PLANTS. *A Constant Reader.* Lantana Camara.—*D L.* An Acacia probably, but such plants cannot be named without flowers.—*Mac I.* Apparently Ilex magellanica.—*R S Y.* Ouchillum hastatum.—*J G.* Too much bruised when received to enable us to say whether it is Watercress or not, we are rather inclined to think, however, that it is some other plant. Such specimens are quite unfit to ask questions about.—*W G.* 1. Apparently the yellow Horse-Chestnut; 2. The flowering Ash.—*J C M.* Armeria maritima, common Thrift.

NETS. *E F L.* The best way is to send them to the nearest tan yard. The proportion will depend on the quality of the tan.

PAXTON'S COTTAGER'S CALENDAR. The reprint is now ready, price 8*d.* each copy. Parties wishing to have copies for distribution among their tenantry, can be supplied at the rate of 25 copies for 5*s.*

PEACH TREES: *C H.* The curl is more unsightly than permanently mischievous. If the blistered leaves become infested with aphides syringe them well and powerfully, if with a water engine so much the better. The leaves will drop off and be succeeded by better.

PELARGONIUMS: *T D.* Pelargoniums have irregular flowers, Geraniums regular ones. ‡

QUINCE PRESERVE: *C E C.* You will find the receipt you seek for at p. 732, 1847.

RANUNCULUSES: *C H.* Their flowers may be gathered for bouquets, &c., with advantage to the roots. Picking off the blossoms before they expand would be likely to insure a better and stronger bloom next year.

REPLIES OF CORRESPONDENTS: *Harcourt.* Pray explain your meaning, for we do not know what you allude to.

SUMMER PRUNING: *R M.* The most forward shoots, and generally those on the upper parts of Pear and Plum trees, may now be stopped by pinching off their points. The shoots of Gooseberries and Currants are yet too tender for being thinned and stopped. The shoots likely to be over-luxuriant in Peach and Nectarine trees may now be checked. With regard to stripping the leaves off shoots hereafter intended to be cut back, in the case of Pear-trees, you may do so if you wish to reduce the general vigour of the tree; but if you want roots to support a heavy crop, then every leaf that can be left will contribute to the formation of roots necessary for that purpose. ‖

THERMOMETER. *H Whatford.* Much obliged: but will not trouble you.

THRIPS. *Sub.* See p. 200 of the current year's volume. ‡

VINES. *R M.* Your old cut-back Vine has doubtless grown too vigorously for bearing when limited to Mr. Hoare's system of training. The best thing you can do is to give it more scope. Permit leaders to extend without stopping at present. Other shoots may be stopped when between 2 and 3 feet in length. ‖—*A Sub.* Probably your Vine-border has been drenched by the late rains, and your house has been very hot and dry: the two together have brought on a fit of honey-dew, which is as much a disease as a fit of gout.

WORMS ON LAWNS: *Sub.* Lime-water will kill them ‡

MISC. *A B.* We are unacquainted with the cement in question. Torenia asiatica does not make a good bedding plant. Daphne odora might stand the winter in South Wales, we should think, under favourable circumstances, and protected in the way you mention. ‡—*R F.* The price should have been 4*s.*, we have only charged you 3*s.*

SEEDLING FLOWERS.

AQUILEGIAS: *J T.* Striped varieties of Aquilegia like yours are by no means uncommon, and particularly brown and white striped double ones.*

AURICULAS. *J B.* Your Alpines are very pretty. Select the larger flowered kinds, and those with entire petals, and reject the pin-eyed ones.*

AZALEAS: *E M M.* Your yellow semi-double hardy Azalea is very pretty and sweet-scented, and a novelty in its colour; but the flowers are, we fear, too small to be attractive.*

CALCEOLARIAS. *I and J Gaitskell.* No. 1, chocolate, irregularly marked with yellow, bad in shape. 2, crimson, marbled with yellow, good in shape and outline, and bright in colour, one of the best 3, yellow and crimson, good in shape and colour, but rather small. 4, pale buff ground, irregularly marbled with dull purple; size good, but outline bad, and rather flat. 5, pale yellow ground, spotted with crimson, pretty, but inferior in shape and outline. 6, chocolate, slightly marked with bright yellow near the outside; tolerably good in outline and colours, but rather flat. 7, shaded purple, with a few irregular pale buff marks, tolerably good in shape, outline, and colours. 8, crimson, marked slightly with yellow; good in colour and size, but imperfect in outline. 9, chocolate brown, with a few yellow marks; good in size, shape, and colours, but a little indented in the outline one of the best 10, chocolate and yellow; bad in shape. 11, pale buff, marbled with purple, defective in outline, and flat. 12, yellow ground, irregularly marbled with crimson; very pretty, but bad in outline and shape. 13, crimson, with a few pale yellow marks; defective in outline, and flat. 14, yellow, irregularly spotted with brown; tolerably good in shape, but a little indented in the outline, marking very pretty. 15, pale yellow ground, spotted with dark crimson; small, and not round enough. 16, pale yellow, thinly spotted with shaded purple, small, and bad in outline. 17, yellow, marbled with crimson; markings good, outline irregular. 18, pale yellow ground, spotted with crimson; bad in shape and outline. 19, yellow, spotted, prettily marked, but bad in outline and shape. 20, pale buff, irregularly spotted with shaded purple; pretty in colours, but bad in shape.*—*M L.* No. 1, flowers bright yellow, marbled irregularly with dark shaded crimson; good in shape, but rather flat; a pretty flower. 2, flowers decayed. 3, straw-coloured ground, marbled thickly in the centre with deep purple; tolerably good in shape, but rather flat. 4, flowers spotted. 5, flowers very large, chocolate brown, irregularly marbled with orange yellow; a showy kind, but too flat and irregular in outline.*—*C T P.* 4, chocolate brown, marbled with deep yellow; good in shape, but slight, indented in outline near the bottom, and rather small for a show variety. 5, pale straw ground, spotted or marbled with crimson; very pretty, but much too small and slightly indented in outline. 6, yellow, thickly marked with irregular-shaped, light brown spots; eye too large, and flowers small, but very pretty.*—*W H H.* 1, shaded crimson, irregularly marked with bright yellow, slightly indented in outline, and the eye rather large; otherwise a very handsome variety. 3, dark crimson ground, faintly marked with straw colour; shape good, but flower too small. 4, shaded purple and crimson, irregularly marked with straw colour, outline hardly round enough, and eye large; markings pretty and size large. 5, purple, with straw coloured patches; good in shape, size, and outline; a very handsome and showy variety. 6, pale brown, thickly marbled or spotted with dark crimson, shape, size, and outline good; a very distinctly coloured variety. 36, dark purple, with pale straw-coloured markings; good in shape, size, and outline; a nice variety.*

CINERARIAS. *T P.* Not worth growing, they are small and very inferior in shape.*—*J and J Gaitskell.* Lilac shaded with violet; good in colours but very imperfect in shape and filling up.*

HEARTSEASE. *Y Z.* 16, tolerably good in texture and marking, but irregular in outline; 15, crumply, and also irregular in outline. Alpha, deep purple, with a yellow eye shaded with blue, good in texture, outline, and size. 2, dark purple with yellow eye, good in substance, shape, and size. 4, shaded purple with white and yellow centre; good in substance and shape, but the edges are slightly jagged. 1, 1848, crumply and defective in outline. 3, 1848, shaded purple, centre yellow, marked with dark crimson; good in texture and marking, but defective in shape.*—*M E.* No. 14, purple with a white centre and yellow eye; tolerably good in shape and markings. 12, dark, with yellow centre; a rather coarse flower.*—*W F.* 26, dark purple, with violet centre and yellow eye; a fine, large, well-formed flower, of good substance. 38, upper petals purple centre, and lower ones pale yellow, margined with violet-purple; eye yellow, good in size, shape, and substance, but slightly crumpled round the edge.*

PELARGONIUMS: *R C.* Upper petals rosy purple, with two large dark crimson feathery spots in the centre; lower ones rosy lilac; shape good, texture thin.*—*G S.* Pride of Jersey, upper petals dark crimson, margined with deep rose colour; lower ones bright rose, faintly veined, with a deeper shade, and white near the centre; petals broad, with a well defined edge; texture and colours good.*

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HEATING BY HOT WATER.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND is desirous of receiving Tenders from Innkeepers or others, to contract for either or both of the following supplies, at the ensuing Annual Country Meeting of the Society, to be held at Norwich, in July next.

1. A Hot Dinner, with Dessert, for 300 Persons, in St. Andrew's Hall, at Norwich, on Wednesday, the 18th of July, 1849.
2. A Cold Dinner for 900 Persons, in St. Andrew's Hall, at Norwich, on Thursday, the 19th of July, 1849.

Printed forms of Tender will be forwarded to parties applying to the Secretary, and must be returned to him filled up, on or before Saturday, the 16th of June, to the Office of the Society, No. 12, Hanover-square, London; the Society not binding itself to take the lowest Tender.

By Order of the Council, JAMES HUDSON, Secretary.

London, 29th May, 1849.

The Agricultural Gazette.

SATURDAY, JUNE 2, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, June 5—Agricultural Society of England.
THURSDAY, " 7—Agricultural Imp. Society of Ireland.

FARMERS' CLUBS.—June 4: London, Great Oakley.—June 5 Framlingham, South Devon.—June 7: Ottery St. Mary, Clyst.—June 8: Halesworth, Hadleigh.—June 9 Peterborough.—June 11: Claydon.—June 13 Furness.

WE are continually receiving specimens of MORBID VEGETATION, and we may expect that diseased affections of the tissues of plants will be extremely prevalent, if great changes of temperature, and an almost total absence of direct solar light for some weeks, may be conceived as likely to affect vegetation. Early in the spring every energy was called into premature action, which was as suddenly checked by a course of dull cold wet weather, attended frequently with frost. The wonder is, under such circumstances, that at present most crops should look so well, than that there should be an occasional failure. A very peculiar and apparently serious case has been reported to us this week by Mr. W. SHAW, jun., from the neighbourhood of Northampton. Every one in passing from Northampton to Blisworth, must have observed the peculiar forwardness and luxuriance of the winter Beans, which were beginning to flower the first week in May. In some cases, however, all is now changed. The plants, though covered with flower, exhibit a mass of disease, which is rapidly spreading, and threatens to destroy the whole crop. The worst is that there is no possibility of checking these maladies, for not only is the task as hopeless as that of a physician who is called in to a patient in the last stage of confluent small-pox, but there is every reason to believe that they arise from changes of temperature and conditions over which the agriculturist has no control. This, at least, is no case of disease arising from an attack of parasitic fungi, but a deprivation of the exterior tissue of the plant, resembling very much in many of its phenomena a disease in Tares, noticed in our volume for 1843, but, unlike that, neither consequent on the attacks of insects nor arising from fungi.

The whole external surface of the plant is more or less affected, the blossoms even being spotted, and the root itself more or less attacked. The first appearance is that of oblong-elliptic specks, pretty clearly defined, of a rich sienna brown, but paler in the centre, in consequence of a tendency of the cuticle to separate itself even at first from the subjacent tissue. The spots soon increase in number, and rapidly become confluent, the cuticle separating in large patches, and exposing the cellular tissue, which has acquired a deep ferruginous tint, and has a rough, slightly mealy appearance. This is especially manifest at the crown of the root, and on the thicker portions of the stem; and the leaves, meanwhile, being greatly impeded in their functions by the diseased state of the greater portion of their tissues (the spots, in this instance, penetrating from one surface to the other), it is clear that the juices cannot be properly elaborated in the leaves, and that their downward course must be materially impeded; in consequence of which, the shoots are now to a great extent perishing, though the disease is quite superficial. If a section be made through the spots, the cells of the two or three first layers, but not more, are found to be affected; they are unaltered in form, the chlorophyl is for the most part absorbed or changed into a gummy mass, but sometimes adheres to the walls in the shape of brownish granules; the disease, however, appears mainly to affect the cellular substance itself, which appears under the microscope of a deep ruby red, the colour gradually creeping from one side of the cell to the other, and exhibiting every shade, according to the progress of the disease. An inspection of the leaves alone would have induced an opinion that they were affected by an abortive state of Uredo Fabæ, but not only is there not the slightest trace of any mycelium, but the appearance of the stem is quite different from anything observable in the case of the fungus.

It has been observed that where plants are attacked by parasitic fungi, the tissues in the neighbourhood assume the same tint which the leaves themselves do in decay, or when they are injured by insects. A disease of the chlorophyl and cell membranes is induced, which, in consequence, decay and exhibit the usual appearances of languishing vegetation. The same ruby tint was observed in the case of Tares alluded to above, but it does not follow that the diseases are therefore identical. The great point is now to observe whether all winter Bean crops are similarly affected, and if not, to ascertain the peculiar circumstances which might be supposed to make a difference. The late sown Beans, as far as we have been able to ascertain, exhibit at present no such appearance, but are peculiarly strong and healthy, and the farmers hope once more, after three years' disappointment, to see a good Bean harvest. *M. J. B.*

IT is evident that the Potato is too precarious a crop to be relied on as a staple article of food. It must descend to the rank of a garden luxury; but what shall we substitute for it? How are the millions in these islands who have hitherto subsisted chiefly on that root to be fed without it? The answer is thus far obvious, that they must be fed either with imported food or with increased produce raised from our own soil by means of improved cultivation. That our own soil is capable, under an improved system, of yielding such an increased quantity of grain and animal food as would more than compensate for the loss of the Potato, may be treated as an admitted fact; and if that loss shall stimulate such improved cultivation, it may be hailed as one of the greatest blessings which could have been bestowed upon us. From the Potato have flowed the larger portion of those evils which are now desolating Ireland. The same evils would have resulted in England from the adoption of the Potato as the sole food of the labouring classes, a state of things to which we were rapidly tending. In England, the evil has been arrested before it had reached its height, by that mysterious visitation which baffles the skill and eludes the science of man, and by which a wise and good Providence is working out his designs. In Ireland the change, though good will ultimately arise from it, is attended with intense present suffering, aggravated and prolonged by the desperate fidelity with which the population of all classes cling to that treacherous root.

We have before us a letter from a correspondent on whom we can rely, who says, "In Donegal, every available acre is planted with Potatoes. In Roscommon the old pasture is being broken up, and let on the con-acre system." A daily contemporary has stated, on the authority of Lord Clarendon's Agricultural Instructors, that in other districts the small farmers are pledging their last resources to plant as large a breadth as possible with Potatoes; and that when asked what will be their position in the event of another failure of that crop, the answer is, "*In that case, we can do nothing but lie down and die!*" When it was suggested to them that a better and safer return from the land might be obtained by means of Oats, Beans, Peas, and Turnips, the reply was that they had no seed. If seed were given them, they would try those crops. As if the same resources which procured the high-priced Potato sets would not have procured the seed of other crops, if there had been the inclination and the energy to resort to them. This is the old cry, the impossibility of cropping the land without the assistance of the Government or some other extraneous aid, of which the inspecting officers under the Temporary Relief Act heard so much during the famine of 1846-7, a cry which proved to be utterly unfounded when it was seen that such aid was not forthcoming.

If the cultivators of the Irish soil will persist in gambling in Potatoes, and if the landowners will make no efforts to restrain it, and to introduce a safer and more rational system of cultivation, both parties must abide by the consequences. The former must not be surprised if they are overwhelmed with poor's-rates, nor the latter if their estates pass into other hands. One thing is certain, that to pay the stakes for them in case of failure by grants from the Imperial Treasury, tends only to encourage this recklessness, and that the sooner all classes in Ireland are convinced that they will be left to their own resources, the sooner they will learn the necessity of self-exertion.

In that part of England which comes under our observation, we are happy to observe among the cottagers a greater disinclination for the Potato culture this season, and a more extensive planting of Beans and Peas. These, however, and more particularly the former, are mere summer substitutes. A winter substitute for the Potato is still a desideratum. The best we have seen on the table is the Haricot or White Kidney Bean. Well boiled, a little butter stirred among them while hot, and sprinkled with pepper, they form a delicious dish. They have been hitherto chiefly imported from France, and cost about 6*s.* the bushel. We are not recommending the cultivation of them in Ireland or the north of England. We fear they are too tender for field culture, even in our southern counties, but in the cottage gardens wherever French Beans can be cultivated for their green pods, there seems no reason against their cultivation for their ripe seeds. They have the advantage of being a crop which does not occupy the ground long, and they can be easily stored. It is even yet not too late to plant them, and we would urge all who have any influence with the cultivators of cottage gardens to induce the trial of experiments in cultivating them on a small scale, and to introduce a taste for them as an article of food, by distributing some of the imported Haricots, with directions for cooking them.

ON THICK AND THIN SEEDING.

(TO THE SOCIETY OF ARTS.)

I WOULD bring to the notice of the Society the result of many experiments that have been made by me during the last 14 years, for ascertaining the right proportions of corn seed which are necessary to produce the largest returns, for from these experiments and my example there has already resulted to the nation a saving of food, growing to be of important consequence to the community; and I have the further gratification of knowing that the attention I have called to the subject has been the means, in many instances, of introducing an improved practice of farming.

The importance of an inquiry into the comparative merits of thick and thin sowing (the difference between the proportions of seed commonly used, and those I advocate, being so termed) will be but partially understood by my explaining that the difference between the quantity of corn seed which I have shown by my practice should be sown, and that which is at present deposited, amounts in Great Britain yearly to more than the foreign supply of corn which this country, on an average of the importation of the last 20 years, has annually required,

amounting in money to 10*s.* per acre, or a total of 5 or 6 million pounds per annum.* Were I to rest the importance of this inquiry upon the saving of seed, I have said enough to show an occasion for some positive rule on the subject, but I fear a very low appreciation of the present state of farming science will be formed, when I farther acquaint you that it was with no view to a saving of seed my reductions first commenced, but they resulted from close observation in an extensive practice of the injury done to corn in its growth from sowing too much seed, and from this view, and this alone, I have gradually been led to reduce the quantity of seed I sow to one-fourth of what was my practice, and of that which continues to be sown over the greater part of Britain. It is now upwards of 14 years since I commenced reducing the proportions of corn seed which I used in my farming, and during that time I have generally had in cultivation five or six farms in different situations, or from 1000 to 2000 acres of land, including a great variety of soils, and upon the whole one uniform practice has been in operation; and in stating that my thinner seeding has been successful in producing larger crops than are commonly grown on better land, and by a more expensive system, I affirm no more than the public testimony affords that hundreds have given me.

To avoid the confusion which allusions to various descriptions of grain would occasion, I will confine my observations and figures to Wheat, although from my experiments and practice I have found that these principles apply alike to every description of corn, and that a reduced quantity of seed in all grain sowing has produced the same advantageous results. And that I may comply with the conditions of the Society as a candidate for the Gold Isis Medal, I will allude only to my experiments and practice, as carried out on the Spring Park farm, near Croydon. In the Royal Agricultural Society's *Journal*, Vol. VII., Part 2, I have given some account of that farm. I should trespass too far were I here to repeat what I have there said respecting it, and I refer to it only for the purpose of better explaining the more than ordinary difficulties I have had to contend with in obtaining the crops there grown, and still more to meet the common, but very erroneous idea generally entertained that whilst rich land will do with a little seed poor land requires very much more.† Having alluded to that work, if what I am about to say should be considered of sufficient weight to induce any one to inquire further into the facts I bring forward, I will refer them to it and to my little book on "The Injury and Waste of Corn by the Present Practice of Too Thickly Sowing," and as I would support theory by practice, I will also refer to the crops that may be seen upon any of my farms from thin sowing, the system I advocate. I hope to sufficiently comply with the conditions of the Society by saying that the Spring Park Farm comprises about 220 acres of arable land, the soil over the greater portion is a mixture of gravel and sand of the poorest nature, with a hard conglomerate substratum of ferruginous gravel; the larger part has been reclaimed within the last 40 years from heath. To bring this land into a condition to support corn I have had to drain and trench plough it, and it has been only by a careful carrying out of the system I have more fully adduced in the works alluded to that it has been made at all capable of growing grain. The remainder is a clay varying in stiffness, but also of a very ordinary quality. The arable land I annually divide into five portions, of which three-fifths are appropriated to corn. The seed is all drilled, the Wheat in rows at 12 inches apart, and the quantity of seed I have for some years adopted is 3 pecks per acre. The ground is prepared only by broad shearing, one ploughing and harrowing, and this crop is taken after Peas or Beans, and grown in the fifth year since the application of manure.‡ In this way I have annually raised from 30 to 40 bushels of Wheat per acre, on the poorest land I know in cultivation, and at a cost that does not amount to 35*s.* per quarter.

My attention was first attracted to the mischief which arises from sowing too much seed, from noticing that at the turnup, where the drill deposits double seed, the young plants in the spring acquired a yellow shade and grew slower, with a starved spiry appearance, very different from the dark green and spreading growth where each individual plant found room to tiller out. I likewise always noticed that where the wireworm had left the ground thinly covered, the aftergrowth of the thinned plants was far more vigorous, producing ears of corn of a comparatively giant character. These observations led me in 1834 to lessen by half a bushel per acre the quantity of seed I had been accustomed to sow, when noting at harvest time that my crops were larger than I had ever before had them, and still fancying I saw symptoms of having sown too much, the next year I further reduced the quantity, and in this way, year after year, have I gone on gradually diminishing my sowings of seed, until in 1840, when I was advocating 1 bushel per acre, a casualty convinced me that I was still using too much. In sowing a field of 8 acres, for which I had appropriated 7 bushels of seed, the drillman made a mistake and sowed upon half the field less than 3 bushels, then discovering his error, and being anxious to hide it by disposing of the whole of the seed, he sowed the remainder twice as thick, so that one half of the field had only about 2½ pecks per acre, whilst the other had 4. I was not informed of this difference, and in the winter was surprised and alarmed for the crop by finding one part so very thin and inferior; and had the whole looked equally bad I should have resown the field. In the spring the thin sown grew very fast, thickening so as to get together and cover the ground, and on coming into ear became the best. Up to harvest I did not hear of the mistake which had been made, but then the difference in the two portions was so marked as to induce my drillman to make it known to me, and it was so convincing of the better yield from thinner sowing, that I have ever since confined my allowance of seed to 3 pecks per acre. For many years my farms have been opened to farmers, that they might view the crops grown with so little expenditure of seed; and that they might contrast thicker sowings, I have frequently had double allowances sown in the fields aside the thinner sowings, and the difference was always very apparent; the thickest generally looked best in the winter, but in April the thinner came on faster, looked greener, and at harvest was taller, stronger, and finer headed; at the same time the ground was equally covered, the greater tillering of the thin sown having filled all the intermediate space.

Having thus shown what has resulted in my practice from diminishing the quantities of my sowings of seed, I will endeavour to explain why 3 pecks of Wheat per acre may be expected to yield more than a larger quantity. An ordinary ear of Wheat, that is to say, one taken from where the usual allowance of 3 or 2½ bushels of seed per acre have been sown seldom yields more than about 30 grains. It therefore follows that if one grain produce but one ear, 30 times the seed should be returned at harvest; and it likewise follows that if an acre of Wheat produces only 30 bushels when more than 1 bushel has been sown, a greater number of plants will at first have been created than will have attained maturity, and after growing through the winter, when there was ample space for all, a period before harvest must have arrived when the whole has become too crowded, and only by the death of a portion can the remainder have acquired room to grow. That all this must occur when more than a bushel of seed per acre has been sown seems to me unanswerable, and that it does occur and occasions much mischief will be seen by looking at the sickly appearance in the spring, and the large proportion of dwarf ears and barren straws at harvest which are ever found in thickly sown Wheat.

I am aware that I may be said to have made no allowance for the loss of plant by birds, insects, and the many enemies young plants have to contend with; but that objection applies only while we are considering a grain to yield but one ear, and the yield to be no more than 30-fold. Did the single grain throw up but one stem, and the ear from it afford but 30 grains, certainly a bushel of seed sown with a view to raise 30 bushels at harvest would be insufficient. But such is not the datum we have to reckon on, for an extraordinary power has been given to all cereal grasses to stock out, and multiply in proportion to the room afforded to do so, so that a single grain of Wheat having space will throw up 30 stems with ears from each stem, containing 70 or 80 grains, and a return of 2000-fold may be realised,* and hence it is that to provide against the ordinary casualties seed is exposed to, no provision beyond this self power to multiply can be necessary when so much as 3 pecks per acre are sown. The closer observation which vegetable growth undergoes in gardening has long since taught gardeners the mischief of having too crowded a plant, and notwithstanding the higher rent they pay, and the occasion to make the most of their ground, their practice differs widely from farmers' in the thinner seeding they adopt. Foresters, too, are well aware of the injury that attends too thickly planting; to these the necessity for giving each seedling room to grow, is too evident to be mistaken; but farmers, blinded by their fears of losing from too thin a crop, do not see the serious mischief that too much plant occasions, and to provide for an uncertain and partial loss, commence with an excess of seed that is certain to do damage to the whole crop. Having, I trust, said enough to induce a consideration of the waste of seed, not with a view to the saving of seed, but rather to the ill consequences that must ensue from sowing too much, I shall be pleased to have my theory tested by the results of my practice. I would offer encouragement to give thin sowing a fair trial; at the same time I would caution that thin sowing is not a specific against failure, and to express my hope that when failures result, and they will occur under every system, care will be taken to trace them to their right causes; and no one will forget that with thick sowing the plant is often too thin, and as a provision against wireworm, even 4 bushels of seed per acre has often been found inadequate. *Hewitt Davis*, 3, *Frederick's place, Old Jewry, London.*

* The consumption of seed corn in Britain is lowly estimated at 4 million quarters per annum, whereas my practice shows that less than 1 million and a half should be used. One tenth of the crop grown is required for seed.

† If there be any force in my argument that no more plants should be generated than there will be space and nutriment to carry to maturity, it follows that on poorer soils there should be sown less seed.

‡ The practice very general in Britain in preparing for Wheat is to make a year's fallow, or to grow a previous green crop, the ground having three or four ploughings, with proportionate harrowings, rollings, hand weedings, &c., and a dressing of manure. Thus preparing for the crop by the previous expenditure of 6*l.* or 7*l.* per acre.

* Notwithstanding this fact, the present return raised from the seed sown in Britain is only about 10-fold. The Flemish farmers, who are far more exact in their practice, are thin seeders, and realise about 30-fold.

A WINTER'S TOUR IN SOUTH WALES.—No. II.

In projecting a trip into South Wales, the traveller will do well to bear in mind, that he must not look for any help to his progress by means of railroads. A rough, mountainous, and secluded region is before him; and the means of exploration not always certain: sometimes not overly safe, as our Scotch friends have it. It is true that certain roads are dotted out upon the maps, a sort of embryo lines, destined one day to astonish the Cambro-Britons by threading their mountains, bridging their valleys, and cutting all manner of engineering capers; and that when all this comes to pass, then, and not till then, will Gloucester be the master key to that extensive and important district lying north of the Severn, comprising the Forest of Dean, the entire mineral basin of South Wales, and in short every town and port between Hereford and Milford Haven. True, but little has as yet been done towards completing this mighty work, yet it is nevertheless progressing. Traces of the intended line are ever and anon visible along its course; but the only part in actual operation is the branch called the Taaf Vale Railway, extending from Cardiff to Merthyr (24 miles). Meantime the stage-coach proprietors, with a laudable perseverance, are doing their utmost to make hay while the sun shines. Gloucester just now is the very head quarters of mail and stage-coaches; its railway terminus being in a manner the focus of passenger traffic from Aberystwith, Pembroke, Caermarthen, Swansea, Hereford, and the numerous intervening towns. All transit therefore to these places being by coach, it follows as a natural consequence that high fares should be the order of the day. An appeal to your Bradshaw will avail you nothing. All that your time-tables will teach you is, that for less than one-third of the money, you may be whisked along an equal distance in about one-fourth of the time, the announcement of which fact in any coach office will be received by the clerks with a sort of half-chuckle, followed by a significant "wish that you may get it!" Finding that there was nothing for it, but a patient resignation to the will and pleasure of the whips that be, we committed ourselves to the custody and guidance of one of the Hereford day coachmen, a very quiet, steady, respectable driver, and were soon bowling along the road to Ross (16 miles).

With the exception of the orchards which line the road sides, there is, in this stage, little to interest the mere farmer, for the general management of the land does not tell much for the skill of the Gloucestershire farmer: but as you draw nearer Ross there is a marked improvement in the culture and general farm management. A good loamy soil exhibits some very fair specimens of Turnips, which were being fed off by sheep. The ploughing is done in a workmanlike manner with pair horse ploughs—no drivers—and much of the corn is under the drill system of husbandry. In short, the traveller perceives that he is among people who are up to their business, and the change from Gloucestershire to Herefordshire is highly refreshing, and augurs well for the superiority of the latter in the science of practical agriculture. I must not here omit, to the honour of Suffolk, the accidental discovery of one of my friend Garrett's corn drills, on a farm near Ross, the owner of which told me that though it had cost him 5*l.* he would not be without it for 100*l.*! The avowal is alike honourable to the mechanist and to the farmer who could so well appreciate the merits of the machine. The circumstance in itself is but trifling, yet how strongly it argues in favour of those great national exhibitions, by which the most valuable inventions are brought from the remotest distances, and thus made subservient to the improvement of practical agriculture!

Ross is a neat, lively little market town; but independent of the beauties of its locality, and its many and great natural advantages, the stranger cannot approach it without feelings of reverence, as once the abode of the benevolent John Kyrle, so well known to every schoolboy as "The Man of Ross." This was the chief scene of his philanthropic labours

> "Richer than miser o'er his countless hoards,
> Nobler than kings, or ling-polluted lords,
> Here dwelt the Man of Ross! O traveller, hear!
> Departed merit claims a reverent tear.
> Friend to the friendless, to the sick man health,
> With generous joy he viewed his modest wealth.
> He heard the widow's heav'n-breath'd prayer of praise,
> He mark'd the shelter'd orphan's tearful gaze,
> Or, where the sorrow shiver'd captive lay,
> Pour'd the bright blaze of Freedom's noontide ray."*

Nor were his benevolent exertions confined to acts of private charity, and mere almsgiving. The health and amusement of the general inhabitants were promoted by his philanthropy and elegant taste; as witness to this day, the grounds he enclosed, the plantations he reared, and the numerous paths by which the environs were intersected; all appropriated to the use of the public! And the lapse of 150 years has still left them the enjoyment of "The Man of Ross's Walk!"

But to resume our journey. The high road to Hereford, though crossing the Wye both there and at Ross, seldom approaches very near its banks, in the intervening 15 miles between the two places—indeed the course of the river is so strangely devious and winding, as to render the frequent proximity of the road thereto neither desirable nor possible. The general features of the country are somewhat tamer than I had expected; of course, none the worse for farm purposes. Here, and indeed throughout this fine county, the traveller's attention is attracted by the splendid breed of cattle for which Herefordshire is so deservedly famed; and which of late years I have observed, with pleasure, is duly appreciated in all our best farming districts. For quality of meat, none can excel, very few equal them; and its veiny, marbled appearance, fully indicates their kindness and general aptitude to fatten. They

* S. T. Coleridge.

seem to lay on the fat in the right place, a result not always attending even the best Scotch beasts.

The writer of this had once the honour of an introduction to the late Thos. Andrew Knight, and in the course of conversation, during a farming ride in his own neighbourhood, succeeded in eliciting the opinion of that eminent agriculturist and shrewd observer, on the relative merits of Herefords and Galloways. It was decidedly in favour of the former in every point of importance in the eye of the grazier. Nor was Mr. Knight a man to be biassed by an undue preference for the productions of his own county. Nothing could be fairer than his experiment, as detailed to me. From two yards of beasts, the one consisting of 30 Herefords, the other a like number of Scots, of similar age, and all of first rate quality, he selected 10 of each; I hardly need add, the best he could pick. The two lots were then placed in separate feeding sheds, their food (of similar quality), carefully weighed out to them, the beasts themselves weighed from time to time, and, not to enter into all the details of the experiment, the result was completely in favour of the Herefords in the three great requisites, time, weight, and quality. With Hereford as a city I have little to do, and less to say; for, arriving at dusk, and leaving next morning at dark or nearly so, it was not in human nature to see much about. Indeed, the comforts of the Green Dragon, just then, were more to us than any lion we were likely to meet with out of doors.

Next morning away for Builth, our intended head-quarters for a time; but how to get there was as yet a point unsettled and unknown. In summer, all would have been plain sailing, but in mid-winter, chance seemed the only dependence; for the solitary three-day week coach between Brecon and Builth had been withdrawn, till the return of summer and summer visitors should once more drag it into light and usefulness. So our only hope was the Brecon mail through Hay, or so much of it as would set us down at some roadside hostel, indistinctly described as the point most likely to furnish a conveyance thence to Builth (14 miles). This hostel rejoiced in the name of "The Three Cocks," Aberllunvi, and fortunately for us, coach-office information was, for once, correct. A commodious phaeton soon made its appearance, and off we set, along one of the most picturesque roads I have travelled for many a day. Our course lay for nearly the whole distance along the beautiful and rapid Wye; from the sides of which arose thickly-wooded hills and rocks more or less precipitous. The day was fine, mild, and sunny, and altogether it was a ride not soon to be forgotten, augurring well for the landscape scenery of Breconshire. I ought not to omit notice of a beautiful estate, belonging to Joseph Bailey, Esq., M.P.,* through which we passed for many miles; but the mansion, though cosey and well sheltered, might, I think, have been more advantageously planted, both for comfort and landscape effect, somewhat above the level of the valley.

Installed in comfortable quarters, the exploration of Builth was soon accomplished. Like many other Welsh towns, the reality does not come up to the imagination. The situation is unexceptionable, what many would style imposing, but its anatomy is wofully defective. It is all outside show; the houses, with few exceptions, mean, and every third house an inn or beer shop. One of the public buildings of the place I ought in gratitude to make honourable mention of here, the "Mechanics' Institute," to which, through the kindness of the Committee, I was allowed to subscribe, and became a frequent visitor. They take in the *Times*, and several other newspapers, which, together with the leading periodicals and a library—as yet almost in embryo, but which, through the liberality of the Bishop of the diocese (St. David's) has lately received a considerable addition—form altogether an object of attraction to many of the inhabitants, especially the younger, some of whom I always found either reading or pursuing their studies in mathematics or arithmetic, with the kind assistance of Mr. Poole, the principal secretary, and most regular attendant and active supporter of the Institution. The reading of the books was at that time confined to the room; but a plan was in contemplation, which I believe has since been carried into effect, of allowing at least a portion of them to be circulated among the members. Who shall say what good may not ensue from this "Diffusion of Useful Knowledge!"

As may be imagined, "The Wells" formed a main point of attraction with me; and I was somewhat alarmed to find them 1½ mile from the town, and the approach to them, at the best, wet, filthy, and forbidding in the extreme. The weather, too, about this time, set in very rainy, and did not mend matters at all. The springs are three in number; purporting to be "saline," "sulphurous," and "chalybeate," as indicated in print hand on three pumps standing in a room kept carefully locked. The saline I believe to be pure, but I shrewdly suspect that, by some hocus pocus, the water of this spring has found its way to the other two, and, in modern phraseology, fraternised therewith. This "Meeting of the Waters" may be harmless enough, still like the late Mr. Liston, who answered his milkman with a jug in each hand, one for the milk, the other for the water, "I prefer them separate."

I have frequently expressed a wish during a summer's excursion in these fine mountain districts, to see the shallow rivers, and meagre, drought-stricken falls, in their rough winter dresses, and I have had my wish! I have seen the clear mountain stream, which in summer might be said to trickle its way as best it could along its rocky bed, foaming and tumbling, a turbid, formidable winter torrent. The puny infant has become a mighty giant, and that often in the space of a single night! For unlike your tame, sluggish, fenny rivers, which take days and weeks in which to rise and fall, the effects of a flood are immediately visible in such rapid streams as the Wye, the Irvon, the Towey, and many others of similar character. Every little mountain rill, too, in such a season is swelled to a respectable cataract: in short, the softness of summer is more than compensated by the rude grandeur of winter: and most thoroughly did I enjoy the many delightful walks with which the neighbourhood of Builth is surrounded. Of these I need only point to the first two or three miles of the road to Llandrindod. As a specimen of splendid scenery, I know of nothing to excel, very little to equal it. It is the county of Wicklow, but infinitely grander and more beautiful. The same remark applies to many other parts of Brecon, Radnor, and Caermarthen-shires; a contemplation of the beauties of which, all and sundry, I scruple not to confess did, to a certain extent, shake my long cherished faith in the picturesque supremacy of North Wales. What, for instance, can be finer than the Beacons of Brecon as seen at even-tide from the road from that town to Abergavenny? Englishmen but too often cross the seas "in search of the picturesque," in utter ignorance of the beauties they have never deigned to explore at home, and of which a very few hours would present to them the full enjoyment.

But, though perfectly ready to accord to the Principality its full share of praise for its innumerable and ever varying gems of mountain scenery, I am obliged to confess that these are sometimes balanced by discomforts and inconveniences, which to the English visitor are often not a little annoying, and dispose him, naturally enough, to wish for more of the comforts of home, even at the sacrifice of some of the rural advantages by which he is surrounded. Take, for instance, the town of Builth, already alluded to. It is ambitious of shining as a watering place; but what has it done, what likely to do, to attain this object? Its Wells, already inconvenient enough by their distance from the town, are, as I have stated, rendered still more so by the filthy and neglected state of the different thoroughfares leading thereto, amounting at certain times to an actual prohibition to any, but especially to invalid, pedestrians; and carriage road there is none! I attribute the partial failure of the waters in my own case, to the countervailing ills inseparable from roads ankle-deep in mud and mire.*

But it is not alone of these locomotive miseries that the stranger will have cause to complain; and here I am about to touch upon a question strictly and legitimately agricultural. The excellence and game flavour of Welsh mountain mutton had long and loudly been, I might almost say indelibly, impressed on my imagination from my youth upwards—so had that of their fowls, aquatic and otherwise; insomuch that I fancied I was going to an El Dorado of epicurism, where the mutton was all venison, and the commonest poultry but another word for game. I soon found, however, that all is not gold that glitters. Excellence does not consist in Lilliputian editions of either birds or beasts, especially when such are produced by downright starvation and want of proper management, and such I verily believe to be the case but too often with Welsh farm produce of this description. It is never properly fattened. The mutton is therefore always leaner than it might be, the poultry both leaner and tougher than it ought to be. I can say of a truth that I never met with a goose or a duck, and I tried divers, that was in what we should call marketable condition. They do not put them up a fatting.

It is, I admit, somewhat ungallant thus to interfere with, and censure what is so peculiarly the province of the ladies; but I trust they will take my strictures in good part, seeing that they may rely on their being uttered for no other end than their ultimate advantage. And now for a few words on field management. Great allowance must be made for the difficulties inseparable from a hilly surface to operate upon. Still, wherever practicable, I found the ploughing very tolerable, always with a pair of horses, strong, active, plucky animals, and without a driver. The pleaching and general management of old fences is no where better understood. The most is made of the live stuff, and I often wished some of our English labourers could see and take pattern by these Welshmen. Of drainage in all its forms they are completely ignorant; and the only notion they have of relieving the surface of water, is by channels or grips, some 9 to 12 inches deep instead of one bold ditch 6 or 8 feet deep, which would effectually cut off the supply from the hills above. Many and many a field did I see completely water slain; chilling the very heart of the soil, and I have no doubt, lowering the general temperature many degrees; for this is an inevitable consequence of saturating the soil with moisture. But then comes the question, how are these and other improvements to be carried out with the limited capital possessed by the Welsh tenantry? Talk to them of the 10*l.* an acre required as the capital of a Norfolk farmer, they will think you crazy. I wonder if nine-tenths of them have a fifth of the amount! As to drainage, they would consider the money sunk—thrown away—whereas, in skilful hands, no improvement is so soon repaid; the first corn crop would repay the whole outlay. They might, perhaps, tolerate it if the landlord were to bear the whole of the burthen; but what inducement has a landlord to do this? Where is his security for such an outlay? If he can be induced to assist in such a work, well and good; but, after all, it is a tenant's rather than a landlord's question; and until the former has the spirit to recognise this principle, one may look in vain for the general adoption of the practice.

After a month's residence at Builth I removed, by the advice of a medical friend, to Llanwrtid, the sulphur springs of which are in considerable repute for their purity and strength. The place itself is romantically miserable*; but some of the neighbouring valleys "beautiful exceedingly." It is a miniature Switzerland. The inhabitants a hardy, industrious, inoffensive race—features often recognisable amongst the peasantry of mountain districts. Still I do not hold them up as models of perfection to the men of their own class; for, so far as my own observation extends, they are deficient in the enterprize and skill necessary to form the ingredients of good husbandmen; and how can this be otherwise when one considers the training they have received under such employers as the present inefficient, and, too often, prejudiced race of occupiers! Good masters alone will make good servants; and these, as I have elsewhere said, are of rare occurrence among mountain farmers.

It had been determined to proceed home by way of Llandovery; and the road thence was wild, barren, and often precipitous in the extreme. The passage over the sugar-loaf (not the mountain of that name near Abergavenny) is frightfully bleak, and could but remind one of the Sierra Moreno, so graphically described in Don Quixote; but from this point, the descent towards Llandovery is marked by spots of peculiar and striking beauty. A considerable extent of the road passes the demesne of — Jones, Esq., distinguished for the lovely variety of its scenery, and by its noble and venerable Oaks; a sight of which, alone, will amply repay the trouble of a journey. By the bye the picturesque effect of this magnificent display of forest scenery was much enhanced by the multitude of beautiful Ferns, with which many of the trees were studded. Every joint and intersection of the branches with the main trunk, seemed to form so many receptacles for the seeds; which, doubtless favoured by the general moisture of the climate, had there taken root, and formed an addition not less novel than interesting, to the sylvan beauty of the scene. As an ornament to our banks, and way-side paths, the Fern is always a pleasing object to the botanist, but as a parasite, in connection with these splendid reliques of antiquity, many of which I regretted to notice were in different stages of decay, they were doubly curious and interesting. What a beautiful illustration of the truth of the maxim, that in nature nothing is lost! The ruins of one plant furnish life and sustenance to another, and vegetation thrives upon vegetable decay.

Before quitting Breconshire, I cannot but notice my surprise at the high price of coals. We are apt to associate with the "mineral basin" of South Wales the idea of a cheap and inexhaustible supply of this most valuable necessary of life; a position quite correct as applied to all within reach of its productions, but not so to those beyond a certain radius from the centre thereof. The cost of transit raising the price from 5*s.* or 6*s.* a ton at the pit's mouth, to 30*s.* and 40*s.* at the distance of Builth and Llanwrtid. The various railways now in progress will, if ever completed, effect a great reduction in the value of this article; but it is difficult to conceive of the possibility in such a district of an adequate remuneration for so heavy an outlay. Meantime this scarcity of fuel will explain the cause of the many tracts of peat abounding in the neighbourhood of Llanwrtid and other places in our route, great quantities of which are annually cut for home consumption. In truth the land is good for little else. I have dwelt so long on the beauties of Welsh scenery, that whatever I may henceforth add, will appear but as a repetition of what has already been advanced. I shall therefore merely state in conclusion, that passing by Abergavenny, England and Monmouth, we completed the circle at Ross, by rejoining the road which we had used on our journey out; and finally reached Gloucester with a gratifying remembrance of even a winter's tour in Wales. *T.*

Home Correspondence.

Action of Lime on the Soil.—In a recent Number of your journal "Aliquis" endeavours to prove that the sole action of this substance is to render the morganic materials of the soil more capable of being assimulated

* Glanbrane, I think, is its name.

* Apropos of these Builth Springs, it may not be generally known, that the late eccentric Lady Hester Stanhope made the apartment over the pump-room for a considerable time her place of abode. She divided the chamber into a sitting and sleeping-room, stopping out several of the windows in the original hexagonal building, and retaining as her only means of exit and entrance the outside broad-staved ladder, which still remains.

* "Romantically miserable," a phrase somewhat bordering on the absurd, yet not so much so as it appears, for a town or village may be very romantically situated, yet very miserable withal, as Wales can testify in but too many instances. By the bye one is often amused at the conflicting opinions expressed by travellers and visitors, on the merits or demerits of particular places. The townsman, for instance, who misses the comforts of well-stored shops, and the "smokey" at his favourite tavern, exclaims against poor Builth, Llanwrtid, or Llandrindod, as dull and execrable in the extreme. His fellow-traveller, to whom these things are of no account, is all for the natural beauties of the place; and so as he can enjoy his rambles over rugged rocks, and along the banks of some picturesque mountain stream, cares not a straw for what the other deems essential to his very existence.

by the roots of plants, and even goes so far as to assert that it cannot benefit the organic portion further than by a process of oxidation reducing the compound bodies to their ultimate constituents, which compound bodies could not be used by the plant, because, he affirms, they are insoluble in water. But is this correct? Has "Alkali" any positive grounds for thinking all the salts of organic acid incapable of solution? Mulder, a celebrated Dutch chemist, has discovered, or rather worked out, the history of seven organic acids, in the soil, derived from humus, or vegetable mould, by various stages of oxidation; and this action is much increased, and in some cases entirely brought about, by quicklime. The bodies thus formed are all of them, more or less, insoluble, and consequently useless to vegetation; but they have the power of uniting with certain bases, of which ammonia is one of the chief, and becoming thereby more or less soluble salts, just in proportion as the base contains much or little of the latter ingredient. And this circumstance is very possibly dependent on the presence of carbonate of lime; for when one of these, and the humus for each is formed, a partial oxidation of the woody fibre takes place; carbonic acid, water, humic acid, and a large excess of nascent hydrogen (that is hydrogen just liberated from combination), are formed. This nascent hydrogen has the power of uniting with the nitrogen of the air, thus forming ammonia, than which a more valuable manuring substance does not exist. The reaction just described has been proved by experiment, as far as it were possible to do so, by decomposing water with the purest zinc, in which case a piece of red litmus paper suspended over the liquid detected the presence of an alkaline body, which could have been nothing but ammonia. Thus it is evident that the presence of lime in soils containing organic matter causes the formation of a very valuable series of salts soluble in water, and which must therefore be absorbed by the spongioles of plants, since the latter possess no discriminating power. There is no doubt but the lime acts very advantageously upon mineral masses, but its office is not entirely restricted to this point. As a practical proof of the above, we see farmers choose very often that portion of the rotation immediately preceding the Wheat crop for the application of lime, for then all the soluble portions of the farm-yard dung applied with the Turnips is exhausted, and nothing remains but a brown mass of insoluble humus, which is only capable of being roused into life and energy by the presence of quicklime. *J. C., Fenty Cottage, Berkshire.*

What is a Ton of Turnips worth?—Farming is a strange trade, and there are very few following it out that do not think themselves wondrous wise in some particular department of it, but somehow or other the individual experience of each does not always agree with that of others, and in no department does there seem to be a greater diversity of results than in the returns from feeding cattle on Turnips. We have Mr. Mechi, after making a searching investigation into his farm accounts, finding that his root crops had left him little else than the manure. Then we have your Galloway correspondent in the *Gazette* of the 10th June, 1848, stating that he had, after deducting the value of the Linseed, Beans, and Oats, with the cost of attendance, the sum of 3*s.* 2½*d.* per ton for the Swedish Turnips consumed by his cattle, 30 in number, during the preceding season. And in the *Gazette* of the 24th June, 1848, your North Lincolnshire correspondent, detailing his experience, which, however, after deducting the actual outlay for Linseed-cake, &c., and the manure, which was also done in the former case, the sum of only 2*s.* 11½*d.* per ton for Swedes and Mangold Wurzel, and this too from the feeding of 60 cattle from the 12th of October preceding, and in the most approved manner of the day in boxes. Here, then, we have three instances, two of them in England and one in Scotland, where there was no desire manifested by any of the parties to make out a case of small return; for, as regards the statement of your North Lincolnshire correspondent, when including the value of the manure made, he held it forth as being so considerable that it was worth endeavouring to imitate. Now I must confess that with no higher returns from feeding cattle than the above hold forth, there is little inducement to strive greatly for the increase of the cultivation of Turnips; but I am rather inclined to think that the actual average value of a ton of Turnips is more than 3*s.* The state of the market when the cattle were bought, and the change that took place in it when they came to be sold, may in a great degree account for such a small price; but just similar results to these has happened to most feeders again this season, for the cattle when bought in during October last, were bought at such a price that to allow a fair sum for the expence of feeding them, nigh 6*d.* per lb., sinking offal, would have been required to have done so, instead of which 4½*d.* has been only obtained. Any one who is practically engaged in the trade must at once admit that at that price 3*s.* per ton for the Turnips consumed would be as much as could be made from cattle, even had they received but a small quantity of other food, and where much other food was used, I have no doubt that Mr. Mechi's experience would most undoubtedly be felt. Nothing therefore can be more injurious to the interests of the farmer than when landed proprietors and agents form high and unfair notions of the actual sum that is generally produced by any particular crop. In the *Agricultural Gazette* of May 12, Mr. Tuke, when treating of high farming as a remedy for the present depression, seems to have picked up uncommonly high ideas as to the sum which a ton of Turnips leaves the farmer. He estimates an acre of, say 20 tons, as worth 10*l.*, or 10*s.* per ton, Mr. Mechi's experience being *nil*, the Lincoln farmer 2*s.* 11½*d.*, and the Galloway man 3*s.* 2½*d.* (exclusive in all cases of the manure). This is, indeed, good news to all engaged in growing Turnips; and certainly the plan by which this can be realised one year with another would be worth knowing; and if it did succeed would do more to shut the mouths of all those bawling about agricultural distress than anything Government could do for them. My own experience, so far as it goes, is that from 6*s.* to 7*s.* per ton is the usual average received from them during a series of years; particular seasons, owing to the way the markets go, less may be had, and on some occasions, more. The feeding qualities of a given weight of Turnips varying in different situations from quality of land, manure, or climate, may account for the sum stated by Mr. Tuke; there are also various ways of making out the sum left. The cattle may just have been valued when put on them, in an easy way, and sold out at a full price, or perhaps just weighed at the commencement of the trial and then again at its close, and the increase in the time all attributed to the food given during that period, whereas any one that has had much experience in feeding must have observed that cattle after being for a time on one description of food, when that is changed make a rapid progress for some time, and again seem, as it were, to remain in a stationary condition. Cattle are often seen to thrive unequally during a given period, although still consuming the same amount. Now when observations are made on two or three animals, as seems to have been the case in the trials adverted to by Mr. Tuke, the result is not so trustworthy as when a large lot is taken, and these carefully attended to during a long time, as seems to have been the case in the other instances stated. It would be exceedingly interesting, and would tend much to the diffusion of just views as to the actual worth of a ton of Turnips when consumed by a feeding animal, were some of your numerous correspondents to state their experience of not only the past season but of several by-gone years, so that landlords may not have their opinions of the worth of land unduly magnified, or farmers, where Turnips are not much raised, be deterred, by hearing of such low returns, of adopting the readiest available means of improving the condition of their farms, and giving food and labour to a greater number of people. *J. M., Ratho.*

Practice with Science.—The culture and application of green crops, to the extent to which it is now carried in most parts of the kingdom, is one of the greatest improvements in modern husbandry. It may not be desirable that the whole of a farm or district be under the plough, as is the case in Scotland from Edinburgh to Berwick, and round by Dunse, for a distance of about 100 miles, but in the mixed husbandry which is more common with us, a large proportion of the land ought to be arable. Mr. Stephens, with all his Scotch prepossessions, says ("New Husbandry," p. 105) that the mixed husbandry possesses advantages over every other. It will never disappoint the farmer's hopes. His reasons for the preference are then well described. The proportion of arable for a farm of this kind he considers to be three-fourths. It is certainly the most agreeable style of farming, being the least laborious, and liable to the least risk, as being not so entirely dependent on the seasons. The arable system involves, however, a consideration how far a milk or a cheese farm is compatible with the whole land under the plough, or whether the natural grasses are not necessary for bestowing on the yield of a milch cow that richness and exuberance which is required. Certain it is that in the cheese-making counties the natural pastures are preferred. The rich Stilton cheese seems to require the rich fields around Stapleford and Melton Mowbray; and in Cheshire the large dairy farms are composed chiefly of land that has lain for ages in Grass. But whether the mixed or the totally arable system is to be pursued, the same art and enterprise is required for preparing the ploughed land for a succession of cropping, through the means of thorough draining and continued tillage. This tillage can in no ways be properly and effectually performed, unless it is accompanied by the drill system; a system invented by Tull more than a century ago, in many parts little practised, in others not at all, and not even understood. It is certainly a most beautiful method of growing crops, most efficient in its results, and without it there can be no pretension to the highest order of farming. The description given by Mr. Tull of his invention, the idea of which was taken from the barrel of an organ, is so interesting, that it may be well to refer to the work itself, edited by Mr. Cobbett, who further says, that it was not the mere putting of plants in rows that was taught by Mr. Tull, but the reasons for doing this, and in the stating of these reasons he has developed all the great principles of vegetation. He was indeed the inventor of the first drill machine; but that which entitles him to our admiration and gratitude is, that he discovered and explained to us the reasons for inventing the drill machine. The reasons for drilling may be named as follows ("New Husbandry," p. 169):—1, that the seed may be deposited in the soil with greater exactness as to depth, regularity, and proportion, than in the broadcast method; 2, that drilling gives the grain a good hold of the ground, and gives all the seed the same depth of soil; 3, that the plants protect each other, and by the freer admission of sun and air, the crop is forwarded and better ripened; 4, that the manure is brought better in contact with the roots of the plants, and thus less is required; 5, that the ground is better cleaned; 6, that, by the scarifier being used, the soil is loosened and ameliorated; 7, that the crop gains strength by being drilled, and, if a corn crop, is not so easily laid; and 8, that the crop is more equally grown, and thus a better sample is produced for the market. Innumerable instances might be brought forward of heavy crops having been produced by the drill system; but to have the work well executed, intelligence, perseverance, and capital are required, and it will not succeed unless the soil be well pulverised. Facilities for this pulverisation being obtained by the crops being drawn into rows, proper use is to be made of this by the frequent application of the horse and hand hoe; and thus not only are weeds killed and extirpated, but the soil is brought into a friable mould for the roots of plants to expatiate in, which, as has been shown, extend much further than is generally supposed, often from 3 to 4 feet or more. By hoeing a plant, the additional nourishment thereby given enables it to send out innumerable additional fibres and roots, and, by the new pasture it raises, furnishes both food and mouths to plants; and it is for want of hoeing that so few are brought to their full growth and perfection. Such being the advantages of the drill system, if properly carried out, it cannot but seem extraordinary that it has not been brought into more general use. The Scotch, with all their admirable farming, with their splendid fields of Turnips almost without a weed, are still very backward in this branch of husbandry. As a proof of it, there was only one implement of the kind shown at the great Edinburgh agricultural meeting last year. On inspecting the East Barnes farm, I found only one field drilled, which had not been horse hoed, and which had a very indifferent crop of Wheat. In addition to the advantages already described, from the ground being treated in the manner mentioned, the thin sowing system may be adopted. This has lately been brought into much notice by the practice of Mr. Mechi and Mr. Hewitt Davis, and also by a publication of the latter in favour of it, and by Mr. Mechi in his series of letters. The principle on which it is founded is the same as that laid down by Tull, Liebig, and other high authorities, but as these have been quoted in the "New Husbandry," it is unnecessary to enter here on the question further than to say that it can never succeed with bad farming; and where it has failed, the fault has rested more with the undertaker than the system. To carry it out to advantage certain requisites are indispensably necessary, viz., to have the ground in a fine state of pulverisation, to sow early, and to keep the ground perfectly clean and friable by horse-hoeing, followed by the hand hoe. Tull has established beyond all doubt that the horse-hoe, being a more powerful instrument than the hand-hoe, and penetrating deeper into the soil, is more efficient than the other; and that, even though many of the roots may be broken off by it, yet this is no damage, for they send out a greater number of roots than before. And these new, young, multiplied roots are fuller of lacteal mouths than the older ones, which makes it no wonder that plants should thrive faster by having some of their roots broken off by the hoe, for as roots do not enter every pore of the earth, but miss great part of the pasture, which is left unexhausted, so, when new roots strike out from the broken parts of the old, they meet with that pasture which their predecessors missed, besides that new pasture which the hoe raises for them; and those roots which the hoe pulls out without breaking and covers again, are turned into a fresh pasture, some broken and some unbroken, all together invigorate the plants. *Law. Rawstorne.*

Management of Manure.—The farmers in this part of the country (Warwickshire), have a practice of turning over the manure heap in the yard; after that it is usually carted out and made into a dung-hill in any field for which manuring is required, sustaining thereby two more turnings over into and out of the carts; even after that they frequently turn it over again while in the field. The reason they give for it is "that the straw may rot," and I suppose it has this advantage; but at the same time, what was a heap of rich black manure becomes, to all appearance, little better than a heap of dried straw. Now, if the manure be applied straight to the land from the yard, without the straw being rotted, and the land be immediately ploughed, I can conceive that the straw being long and comparatively strong the plough might be much impeded thereby; but, would not this be obviated by the straw being cut up into certain lengths before applied as bedding to the animals, and when once the straw was covered in the ground it would surely rot fast enough then. There is another practice (a very common one, as you probably are aware), connected with this exposing of manure to the influence of the atmosphere; it is that of top-dressing pastures and meadows. The top-dressing is applied to the land of course tolerably moist, but is dried up by the action of the air and sun in a very few days, and then, to all appearance, is no better than dried straw. Now, there is a fact that I have often heard observed upon, and have myself observed in connection with this, viz., that you can seldom in any crop, by observation, tell where the manure heap has lain in the field (though it frequently lies a considerable time), and the patch of land where the manure heap has lain has surely been top-dressed pretty heavily. This certainly seems against top-dressing altogether, but without going so far as that, the effects of top-dressing, as compared with liquid manure, when applied to Grass

land, have never, I think, been sufficiently tested. I have never seen it mentioned either by you or by any of your correspondents, and the importance of the subject to those who either hold old Grass land, or who intend chiefly depending henceforth for their summer keep on artificial Grasses, is sufficiently manifest. That much good manure is used most uneconomically in top-dressing, could, I think, by properly conducted experiments be proved; in some cases that have come under my own observation, the effects of it, though profusely applied, have been hardly if at all visible. Whereas, let anyone who doubts the efficacy of liquid manure read Mr. Caird's never sufficiently to be commended pamphlet, where he will find that 18 acres of land (three in Italian Rye-grass, the rest in red Clover and common Rye-grass, of which five on sandy land gave a very poor crop), with the assistance of 1¼ acre of early Turnips; 280 bushels of Bean-meal boiled with chaff, the horses also having their Oats and straw, kept 67 two-year-old cattle and 10 horses for five months—from the 10th of May to 14th of October. The way it was done was by mowing enough for the day's consumption every morning, and immediately watering the mown part with liquid manure diluted with water or not, as the weather was rainy or the reverse; of course the land was in high condition previously, but allowing for that, does not this prove the inestimable value of liquid manure? I have been too diffuse already, but if you think the subject worth consideration a word from you would cause experiments to be made, or call forth perhaps accounts of already conducted ones, which would, I hope, tend to do away with the very strong prejudices entertained by many farmers against liquid manure. *P. S.* [It is necessary in the practice of the farm to have the manure partially rotten before its application, and there is no way of perfectly avoiding waste in the process. All manure made before winter may be ploughed under in its long and strawy condition provided the land be clean, but spring made manure must be at least twice turned, first, in the operation of removing it from the yards to heaps, and secondly once in the heap a fortnight or so before use. The economical farmer will endeavour to diminish the loss during the rotting process by covering the heaps with earth so far as that is possible. The use of cut litter is not economical of straw.]

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House, in Hanover-Square, on Tuesday last, the 29th of May; present, Mr. Raymond Barker, Vice-President, in the Chair, Hon. Capt. Dudley Pelham, R N., Sir Matthew White Ridley, Bart., Sir James Ramsay, Bart., Mr. J. Alliston, Mr. F. Brown, Mr. D. Burton, jun., Colonel Challoner, Mr. H. Colman, Mr. Capel Cure, Mr. G. Dyer, Rev. Philip Gurdon, Mr. Gurdon Rebow, Mr. Hillyard, Mr. Kinder, Mr. W. Matchett, Mr. Mullward, Mr. C. E. Overman, Mr. Parkins, Mr. Chandos Pole, Professor Sewell, Mr. Tweed, and Professor Way. The Baron Hoeufft de Velsen, Secretary to the Royal Agricultural Society of Amsterdam, was present at this meeting, on an introduction from Sir William Jackson Hooker, of the Royal Gardens at Kew.

The following new members were elected:

Spinks, Abraham, West Bilney, Lynn, Norfolk
Mayhew, Joshua, Holly Cottage, Ridge Road, Enfield, Middlesex
Ridgway, Thomas, Lymm, Warrington, Lancashire
De Winton, J. Jeffreys, Priory Hill, Brecon
Harvey, Sir Robert John, Moushold House, Norwich
Marryat, Frank, Lingham Manor, Norfolk
Birkbeck, Henry, Norwich
Hotson, John, Long Stratton, Norfolk
Harvey, Robert John, Bracondale, Norwich
Palmer, Arthur, Birmingham Lodge, East Dereham, Norfolk
Campbell, Robert, Fakenham, Norfolk
Muskett, Alfred, Raynham, Fakenham
Gowing, George, Trowse, Norwich
Scott, J. B., Bungay, Suffolk
Box, Philip, Radcleive, Buckingham
Bolleau, John Elliot, Ketteringham Park, Wymondham, Norfolk
Haydon, Samuel, Guildford, Surrey
Golding, William, jun., Leavers, East Peckham, Kent
Tompsett, James, Hextall Court, East Peckham
Mercer, William, Grove House, Hunton, Maidstone, Kent.

The names of 26 candidates for election at the next meeting were then read.

Prize Essays.—Mr. Pusey, M.P., Chairman of the Journal Committee, reported the following awards made by the Judges of Essays:

I. The Society's Prize of 50*l.* for the best Essay on the construction of Labourers' Cottages, awarded to Henry Goddard, Architect and Surveyor, Lincoln.

II. The Society's Prize of 20*l.* for the second-best Essay on the construction of Labourers' Cottages, awarded to John Young Macvicar, of Barkwith House, Wragby, Lincolnshire.

Mr. Pusey also reported that the Judges had commended the Essay, on the same subject, bearing the motto "Omega."

Communications on the Forty-day Maize and the vegetable fibre impeding the flow of drains, were received, and formed the subject of interesting discussion. Sir James Ramsay presented a private copy of Professor Ramsay's article on the agriculture of the ancients, separately reprinted from the "Dictionary of Classical Literature and Antiquities," published by Messrs. John Taylor and Co., Publishers to University College, London. Mr. Colman presented a copy of his "European Agriculture." Mr. Bullen, Sec. to the R.A.I. Society of Ireland, presented a copy of the volume of the Agricultural and Industrial Journal of Ireland for 1848. Mr. Jephson Rowley, of Rawthorne, near Chesterfield, presented a copy of his Essay on the Farming of Derbyshire, to which the prize of Mr. Thompson, President of the North Derbyshire Agricultural Society had been awarded.

The Council ordered their best thanks for the favour of these communications, and adjourned to Tuesday next.

Calendar of Operations.

MAY.

Fen Farm, *May* 14.—The inclemency of April weather so much retarded the growth of Tares and Clover that they were scarcely fit to cut when our Turnips and Mangold were eaten; we began a few Tares on the 4th to cut into chaff with Oat straw and Clover-hay, and an immediate improvement was perceptible in the coats, appetites, and condition of our working horses. The continued rain of Thursday last and subsequent mild weather has doubled the bulk of the Tares, and a moderate portion will be henceforth given regularly to horses and cows, with a sufficiency of corn and cake. We shall soon be able to cut Clover also for fodder as an addition or a change; at four intervals of time we sowed 2 acres of Tares broadcast and drilled 2 acres; present appearances are decidedly in favour of the broadcast, which were the first and the last lots sown. Our Clover was drilled and is good, but authorities differ here about the best method of putting it in; some hoe in their seeds, others harrow them, some merely roll them, others drill them, and again we are recommended to sow them broadcast and leave them without any other process to facilitate their growth (would some of your correspondents have the kindness to state their opinion of the best mode). The rains have not much retarded the cleaning of land intended for Turnips, which has been well scuffled, harrowed, and rolled on high land. The thin Wheats on good land have much improved, and as warm moist weather seems likely to prevail, the ravages of the slugs will not be felt so severely as was expected. All the cropping looks well, and the Grass "laid" for hay is assuming a dark colour and luxuriant aspect. Hay has slightly advanced in price (good to be had at 3*l.* 10*s.* per ton), and Oats of fine quality, irrespective of London markets, obtain more money and meet with a brisk sale. The farmers about here certainly complain of the prices of corn and cattle, and occasionally indulge in gloomy apprehensions, but they do not feel disposed to take the field under Protection colours like our neighbours in Rutland, at Boston, and other places, where they seem determined to get the steam up, but the worst of it is that scarcely half a dozen together can agree where to drive to; some talk wildly about a fixed duty, others are rational on rent, gama is voted a nuisance, want of security oppressive, and taxation a dead weight. Two things seem requisite to improvement among farmers all over the kingdom, viz., ability to form opinions and full liberty to exercise them, against which there appear to be two formidable barriers; first, in the attachment to old habits and customs by the tenantry, and secondly in the love of power and privilege on the part of the landlords, who in too many instances impose such restrictions, exact so much homage, show such distrust, and do so resent the least spark of independence, that to be the little gods of their little patrimony they cannot treat their tenantry and dependents as men, lest they themselves should be regarded as men also. *J. W., Peterborough*

South Hampshire Farm, *May* 18.—In our last report allusion was made to the then wet weather which prevailed, and the great hindrance to the completion of Barley sowing, &c. Since which period, however, the weather has proved everything which could be desired for finishing the season for Lent corn. The general appearance of the Wheat, and early sown Barley, is very good, the Oat in general look badly, and large tracts of land sown to this crop have been ploughed and resown, the plant having been completely destroyed by the slug. We have also noticed that the slug has done great damage to the young Clover plant, just after coming up, but more particularly where the seeds had been sown amongst Wheat. The autumn-sown Wheat in this county generally wears a most promising appearance, very much like the appearance of the plant in the years of 1835 and 1842 at this time of the year, which seasons were the most productive within our recollection. The growth of pasture and field Grasses, although rather late, are good, the Grass being very thick and strong at bottom, and the rains of the past week are likely to prevent injury to the crop should dry weather succeed, as we are now within three weeks of the mowing season. The crops of Swedish Turnips were generally exhausted about a week in the month, which is a fortnight or three weeks earlier than usual, in consequence of which, and the lateness of the Grass, the sheep flocks will feed more Grass land than usual, and diminish very materially the produce of hay in the ensuing season. The labour of the farm since our last report has been chiefly preparing for the Turnip crop, sowing Oats and Barley, which was finished May 7th. Drilling Carrots May 11th, both on ridge and flat, we being desirous of ascertaining which is the best mode, as we cannot make up the ridges nearer than 2 feet with advantage, but on the flat we can, of course, drill at any distance between the rows which may be found desirable. We use as manure for Carrots 20 bushels of night-soil and ashes mixed, and 6 bushels of superphosphate per acre applied by the drill, which we found answer well last year. We drilled a piece of Swedes on May 4th, for the purpose of early feeding cattle, &c.; they are come up well, and the present rainy weather seems likely to preserve them from the fly. We have also been engaged horse hoeing Beans and Peas, Potatoes, &c., and rolling pasture land up for mowing after being fed by sheep. Our fatting sheep are now all shorn, yielding a strong heavy fleece. We shall delay shearing our flocks of breeding ewes for some time longer, we derive an advantage by so doing more particularly with our Somerset horned ewes, as we find they offer to the ram much earlier in their wool. Our rams were turned with the ewes April 26th, which has been our custom for many years past, up to this time we have a good number likely to prove with lamb. Our Somerset lambs have all been sold for a month past, we are now making considerable progress with the sale of Southdown lambs, which are making a better price than of late, we are also looking for a somewhat higher price for mutton than during some months past. The work of the farm likely to engage our attention during the next fortnight will be preparing the land for Swede Turnips, and drilling them as fast as the land can be got ready, the crops of Beans, Peas, Potatoes, &c., will require horse and hand hoeing when the weather is suitable. *J. B.*

Sussex Farm, *May* 21.—At present the weather is very growing, with fine showers of rain, which will be of great benefit to the hay and corn crops, as the land is too wet to be worked. We are engaged carying trees to saw mill, bushes to mend hedges, and tiles to drains; but as soon as the land is dry enough, all our strength will be engaged with preparing the land for and sowing Swedes; the Potatoes have come up very well, Mangold Wurzel and Carrots also begin to come up. We have sown some Flax seed and some Golden Pleasure this year for trial, the latter is very much recommended for the fattening of cattle; they have both come up and look well. A great many of our neighbour farmers complain of having their Peas and Beans eat off with the snail, the cottagers also have suffered very much, many of them have had their vegetables in their gardens entirely eat up, but our Peas and Beans look very well, and we have had the good fortune not to be troubled with the snail. Some say this is because we plough our land up deep before the winter; the opinion of some others is, because we keep a large flock of sheep. Lime has been applied, but as the weather has been showery, it has had very little effect. Could any other thing be applied to destroy them without injuring the crop. *J. L.*

Notices to Correspondents.

Bacon: *P A H.* The subject has been exhausted; see late numbers of the Paper.

Beans: *A B.* It is believed to be advantageous to cut the tops off, after they are fully flowered.—*J R Pearson.* No crop leaves potash in the land in the shape of positively increasing the quantity which the soil contains. But those crops which take the least from the land of course leave it the richest for their successors; and it may have been in this sense that Mr. Heywood's remark was intended.

Bean Weevils: *P A H* says, "Can any of your correspondents inform me of the best means of insuring Beans against the ravages of the weevil? My Beans last year were much injured by them, and I tried soot, which seemed disagreeable to them for the time, and gave the Beans a chance of growing. This year two farmers in this neighbourhood complain of its ravages, and my Beans are also attacked. I suppose the beetle to be Curculio lineatus, as described in the Royal Agricultural Society's Journal, where it says that the only means of getting rid of them is by rendering their food unpalatable by soot, or being sprinkled on the plants when the dew is on."

Bones and Acid: *J R Pearson.* The smell is more in the case of fresh bones, and is owing to the decomposition of the animal part.

Buttercups: *E B.* Geese are *said* to eat them down. If not, you must break up the land to remove them; but we would try hard pasturing for a year or two first.

Charcoal Powder: *C J L M.* It is a good manure for any crop, but you will not succeed in growing Turnips on it alone. Mix 3 cwt. of guano with double its bulk of the powder, and you will have a good dressing per acre.

Chicory: *Rusticus.* It must be slowly kiln dried. You will find the whole details of its cultivation and preparation in past numbers of the Paper.

Churns: *C B, Rutland.* Rowan's churn is something like the grinding machine in a paper mill; it occupies one-half of a tub, round which it sends the milk, beating it as it passes the paddles. About prices, you must apply to the makers: any of them of any standing know the implement well enough. [We are asked where the fine crystalline clear butter salt, recommended by Mr. Skilling in his work on Agriculture, is to be obtained.] About the Suffolk box churn, you may apply at the address given by our correspondent, or to Stratton's, Bristol.

Hay: *W C.* Having some 2-year-old hay, not very good, and but a small quantity of Grass to mow this year, you will do right to carry some hay rather green, and mix it in the stack with the old.

Lime: *R C.* You will at all events do no harm to the Turnip crop, and it will be as good a plan for applying lime for the succeeding grain crop as any you could adopt.

Maize: *H, Hants.* Will you be kind enough to give your address.

On Purging: *D S.* The best food you can give the cow is Beans, or rather, Bean meal, which will both act as an astringent, and also increase the production of milk. The green food may then be continued. If this does not succeed, give sweet hay in addition, and if the purging continues, give the following: Tincture of opium, 1 oz.; prepared chalk, 3 oz., in thick Wheat-flour gruel once a day. *W. C. S.*

Rural Chemistry, 2d Edition, revised and enlarged; by Edward Solly, Esq., may be had at the office of this Paper, and of all Booksellers. Price 4*s.* 6*d.*

Wheat: *J R Pearson.* The idea you allude to is a very common one, and if true it may be owing to the greater shelter which the land has received, and the greater growth of the roots in consequence.

*** Communications reaching town after Wednesday cannot be answered the same week.

Markets.

COVENT GARDEN, June 2.

The weather being very favourable, Vegetables are plentiful. Fruit has altered but little since our last account. A few Cherries have made their appearance. Pine-apples fetch from 6*s.* to 10*s.* per pound. Hothouse Grapes are good and plentiful. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, young Turnips may be obtained at from 9*d.* to 2*s.* 6*d.* a bunch, and Carrots at from 6*d.* to 1*s.* 6*d.* Cauliflowers are sufficient for the demand. Rhubarb and Asparagus are plentiful. Green Peas fetch from 6*s.* to 10*s.* per half sieve. Potatoes are cheaper. New Potatoes realise from 6*d.* to 1*s.* 6*d.* per lb. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Lily of the Valley, Cinerarias, Tropæolums, Carnations, Pinks, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 6*s* to 10*s*	Lemons, per doz., 1*s* to 2*s*
Grapes, hothouse, p.lb, 5*s*. to 10*s*	— per 100, 7*s* to 14*s*
Strawberries, p. oz., 4*d* to 1*s*	Almonds, per peck, 6*s*
Apples, dessert, p. bsh., 8*s* to 12*s*	— sweet, per lb., 2*s* to 3*s*
— kitchen, p. bsh., 4*s* to 8*s*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
Gooseberries, green, p. hf. sieve, 5*s* to 8*s*	— p. bush., 16*s* to 24*s*
Currants, do., do., 5*s* to 6*s*	Nuts, Bar, p. bush., 20*s* to 22*s*
Oranges, per doz., 1*s* to 2*s*	— Filb., p. 100 lbs., 60*s* to 100*s*
— per 100, 6*s* to 16*s*	— Cob, p. 100 lbs., 90*s* to 150*s*
	— Brazil, p. bsh., 12*s* to 16*s*

VEGETABLES.

Cabbages, p. doz., 9*d* to 1*s* 6*d*	Onions, p. bunch, 2*d* to 6*d*
— red, p. doz., 6*s* to 12*s*	— p. bush, 7*s* to 10*s*
Greens, p. doz bunches, 1*s* to 2*s*	— Spanish, p. doz., 1*s* 6*d* to 4*s*
Cauliflowers, p. doz., 3*s* to 12*s*	— pickling, p. hf. sieve, 1*s* 6*d* to 3*s*
Sorrel, p. hf. sieve, 9*d* to 1*s*	Shallots, per lb., 10*d* to 1*s*
Potatoes, per ton, 60*s* to 180*s*	Garlic, per lb., 6*d* to 1*s*
— per cwt., 5*s* to 14*s*	Artichokes, Jerusalem, p. half sieve, 9*d* to 1*s*
— per bush., 4*s* to 7*s*	Lettuce, Cab., p. sc., 4*d* to 9*d*
Turnips, per bunch, 6*d* to 2*s* 6*d*	— Cos, do., 6*d* to 1*s*
Red Beet, per doz, 2*s* to 4*s*	Mushrooms, per pottle, 6*d* to 2*s*
Horse Radish, p. bdl., 1*s* to 6*s*	Small Salads, p. pun., 2*d* to 8*d*
Asparagus, p. 100, 6*d* to 4*s*	Fennel, per bunch, 2*d* to 3*d*
Rhubarb, p. bundle, 4*d* to 1*s* 6*d*	Savory, per bunch, 2*d* to 3*d*
French Beans, p. 100, 1*s* 6*d* to 3*s*	Thyme, per bunch, 2*d* to 3*d*
Cucumbers, each, 4*d* to 1*s* 6*d*	Parsley, p. hf. seive, 1*s* to 2*s*
Leeks, per doz., 1*s* to 2*s*	— Roots, p. bdle., 1*s* to 1*s*
Celery, p. bundle, 1*s* to 2*s*	Marjoram, green, p. bun., 2*d* to 1*s*
Radishes, p. 12 hands, 4*d* to 8*d*	Mint, green, per bunch, 3*d* to 4*d*
Watercress, per doz. bunches, 4*d* to 6*d*	Basil, green, p. bunch, 6*d* to 8*d*
Carrots, p. doz. bun., 5*s* to 6*s*	
Spinach p. sieve, 9*d* to 1*s*	

HAY.—Per Load of 36 Trusses.

Smithfield, May 31.

Prime Meadow Hay	68*s*	to 75*s*	Clover	60*s*	to 95*s*
Inferior ditto	50	63	New Clover	—	—
Rowen	50	60	Straw	26	30
New Hay	—	—		J. Cooper.	

Trade still heavy.

Cumberland Market, May 31.

Prime Meadow Hay	72*s*	to 78*s*	Inferior	50*s*	to 80*s*
Inferior ditto	50	60	New Clover	—	—
New Hay	—	—	Straw	28	32
Old Clover	88	95		Joshua Baker.	

Whitechapel, May 31.

Fine Old Hay	68*s*	to 72*s*	New Clover	80*s*	to 88*s*
Inferior ditto	45	55	Inferior ditto	50	60
New Hay	65	70	Straw	26	30
Old Clover	90	100			

HOPS.—FRIDAY, June 1.

Messrs. PATTENDEN and SMITH report that the accounts from the Hop plantations are worse this morning, and there is every appearance of a severe blight. Prices have advanced considerably since Monday last. Fine Weald of Kent and Sussex Hops realising 5l. per cwt. Duty has been done at 100,000l.

POTATOES.—SOUTHWARK, WATERSIDE, May 28.

The Committee report that our market continues to be well supplied with foreign Potatoes, which are quite equal to the demand, and with most samples less prices have been submitted to. The following are this day's quotations:—Yorkshire Regents, 180s. to 220s.; Scotch Whites, 80s. to 90s.; French do., 60s. to 90s.

SMITHFIELD, MONDAY, May 28.

Our supply of Beasts is tolerably good, although there is a considerable falling off in weight. All kinds are rather dearer, and a choice Scot in some instances has made 3s. 10d. The number of Sheep is rather larger, the demand has also increased, and prices have advanced about 2d. per 8 lbs. There now being very few in the wool we only quote shorn Sheep. Lamb is in demand at rather advanced rates. Trade is still very bad for Calves; 4s. is quite the top price. From Holland and Germany there are 280 Beasts, 1060 Sheep, and 105 Calves; from Denmark, 5 Beasts; and from Scotland, 200.

Per st. of 8 lbs.—	s	d	s	d	Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	6	to 3	8	Best Long-wools				
Best Short-horns	3	4	— 3	6	Ditto Shorn	3	4	to 3	8
2d quality Beasts	2	6	— 3	0	Ewes & 2d quality				
Best Downs and Half-breds					Ditto Shorn	2	8	— 3	2
Ditto Shorn	3	8	— 4	0	Lambs	5	4	— 6	0
					Calves	3	0	— 4	0
					Pigs	3	8	— 4	6

Beasts, 3199; Sheep and Lambs, 25,360; Calves, 212; Pigs, 230

FRIDAY, June 1.

We have a fair average supply of Beasts, and the demand is small; consequently our top quotation of Monday is not so generally realised. We are well supplied with Sheep, but the butchers not having much on hand, they are nearly all sold at about Monday's rates. Lamb is largely in request; choice ones being scarce, are the turn dearer, although a quotable advance cannot be obtained. Trade is rather more active for Calves, and the very best make a little more money, but the number being large there is not an average improvement. From Holland and Germany we have 41 Beasts, 400 Sheep, and 153 Calves; from Scotland, 400 Beasts; and 139 Milch Cows from the home counties.

Best Scots, Herefords, &c	3	6	to 3	8	Best Long-wools			to	
Best Short-horns	3	4	— 3	6	Ditto Shorn	3	4	— 3	8
2d quality Beasts	2	6	— 3	0	Ewes & 2d quahty			—	
Best Downs and Half-breds			—		Ditto Shorn	2	8	— 3	2
Ditto Shorn	3	8	— 4	0	Lambs	5	4	— 6	0
					Calves	3	0	— 4	0
					Pigs	3	4	— 4	6

Beasts, 993; Sheep and Lambs, 12,110; Calves, 445, Pigs, 285.

MARK LANE.

MONDAY, MAY 28.—The supply of English Wheat by land carriage samples this morning was exceedingly small, which enabled factors to realise 1s. per qr. advance upon a few picked samples, but upon the ordinary qualities no improvement could be obtained. Foreign is held firmly at fully last week's quotations, but the demand is quite in retail.—Barley is unaltered in value.—Beans, owing to large arrivals from Egypt, are the turn lower.—White Peas are 2s. per qr. cheaper; other qualities unaltered.—The Oat trade is dull, at late rates.

FRIDAY, JUNE 1.—Since Monday the arrivals of English Wheat have been small, those of foreign moderate. There was a fair attendance at market this morning, and some inquiry for Wheat at reduced prices, to which factors were disinclined to submit, and little business resulted.—The show of foreign Barley and Oats being large, both articles met a slow sale at a trifling decline.—Beans and Peas are unaltered in value.—Maize afloat or arrived on the coast is much inquired after at 33s. to 36s. 6d. per qr., cost, freight, and insurance, for fine Galatz, according to its position.—The corn trade since the 25th ult. has been inanimate throughout the kingdom, and although the scarcity of English Wheat has enabled holders in solitary instances to realise a trifling advance, foreign, nevertheless, has been a slow sale, barely maintaining its former value. In spring corn or Flour no alteration of moment has occurred. The French markets for Wheat are firm, and purchases at late rates difficult. In Holland, prices have declined 1s. to 2s. per qr.; 61—62 lbs. Red, 32s. to 40s., f. o. b. At Antwerp, 62—63 lbs. Louvain, 42s. 6d. to 43s Prices in the blockaded ports are unaltered, and supplies have apparently ceased.

LIVERPOOL, FRIDAY, JUNE 1.—We have had only small supplies since Tuesday, but the trade has been dull, and having a poor attendance of dealers at this day's market, the transactions were of limited extent at barely former prices. Indian Corn was 6d. per quarter cheaper, the demand being less active.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
April 14	44s 8d	28s 6d	17s 0d	23s 1d	28s 5d	30s 11d
— 21	44 5	28 8	16 8	22 4	28 11	28 9
— 28	46 0	28 10	17 2	27 5	29 3	29 9
May 5	46 9	28 11	17 6	25 4	29 8	30 1
— 19	44 9	28 0	17 8	25 9	30 7	29 11
— 26	44 6	27 9	17 9	26 0	31 3	32 4
Aggreg. Aver.	45 3	28 6	17 4	25 2	29 10	30 8
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	APR. 14.	APR. 21.	APR. 28.	MAY 5.	MAY 19.	MAY 26.
46s 9d	...	...	...	...	...	...
46 0	.	.	.	...	...	...
44 9	.	.	...	...	...	...
44 6	...	.	...	...	...	...
44 5	...	...	...	...	...	...
44 3	...	...	...	...	...	...

PRICES CURRENT.	London. May 21 qr.	London. May 28 qr.	Liverpool. May 22 70 lbs.	Liverpool. May 29. 70 lbs.	Wakefield. May 18 qr.	Wakefield. May 25 qr.	Boston. May 23 qr.	Boston. May 30 qr.	Birmingham. May 17. 62 lbs.	Birmingham. May 31. 62 lbs.
	s. s.	s. s.	s. d. s. d	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d	s. d. s. d
Wheat—										
New, red ...	40 to42	40 to42	6 4 6 9	6 4 6 9	43 to47	11 to46	38 to46	38 to46	5 10 6 3	5 8 6 2
„ white ...	45—46	45—46	6 10 7 4	6 10 7 4	43—51	43—50	42—49	42—49	6 3 6 8	6 0 6 6
Old, red ...	42—46	42—46	6 7 6 10	6 7 6 10	42—44	42—44	—	—	6 0 6 4	5 10 6 2
„ white ...	48—52	48—52	7 0 7 7	7 0 7 7	—50	—50	—	—	6 2 6 9	5 11 6 7
Foreign	36—55	36—55	1 6 8 0	5 3 8 3	39—51	39—51	—	—	5 2 7 2	5 4 7 0
			480 lbs.	barrel						
Rye—New ...	22—24	22—24	—	—	—	—	—	—	—	—
Foreign...	22—23	22—23	—	—	—	—	—	—	—	—
Foreign meal	6l.—7l.	6l.—7l.	—	—	—	—	—	—	—	—
			qr.	qr. e					qr.	qr.
Barley—										
Grinding ...	22—25	22—25	—	—	22—23	22—23	24—26	24—26	20—25	23—25
Malting... ...	25—29	25—29	30s—32s	30s—32s	27—32	27—32	28—30	28—30	29—33	29—32
Foreign... ...	19—29	19—29	—	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush				
Malt—Ship ...	—	—	—	—	—	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	19—26	19—26	2s10d 3s 3d	2s10d 3s 3d	—	—	14—20	14—20	18—30	19—30
Black...	16—22	16—22	2 5 2 8	2 5 2 8	—	—	—	—	17—18	18—20
Foreign	15—20	15—20	2 4 2 7	2 4 2 7	—	—	—	—	—	—
			qr.	qr.		qr.				
Peas—Boilers	26—32	25—30	34s—	34s—	28—32	28—32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—26	23—25	27 —28s	27 —28s	—	—	—	—	11—12	11—12
Foreign ...	24—33	24—32	30 —33	30 —33	—	—	—	—	—	—
Beans—										
New, small ...	22—28	22—32	30 —33	30 —33	29—32	29—32	30—33	30—33	11—14	12—14
Old	—	—	32 —34	32 —34	35—36	35—36	34—36	34—36	14—16	14—16
Foreign ...	21—36	21—36	24 —32	23 —32	26—28	26—28	—	—	10—13	10—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	37—42	37—42	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9l. 7s	9l. 7s	7l. 12s	7l. 12s	—	—	—	—	—	—
Foreign ...	6l.—7l.	6l.—7l.	—	—	—	—	—	—	—	—
Indian Corn—	26—32	26—32	32s—36s	34s—37s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	36—44	36—44	32—37	34—35	—	—	32—38	30—36	32—36	31—37

Weekly Averages and Imports.	Aver. May 29	Impts.	Averages.	Imports.	Aver.	Impts	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs	s. d.	qrs.	s. d.	qrs.
WHEAT ...	45 10	7810	45 3	10252	44 11	10700	43 11	1570	41 3	8496
BARLEY ...	30 0	8829	28 8	36	26 10	369	—	—	—	—
OATS... ...	18 2	38050	17 3	1987	18 4	1869	14 9	344	21 6½	626
RYE	24 0	—	24 8	—	—	—	—	—	—	—
BEANS ...	30 2	—	—	8941	29 3	193	31 7	352	—	—
PEAS... ...	29 10	—	—	—	—	173	—	—	—	—
SIGNED {	KINGSFORD and LAY.		SEGAR and TUNNICLIFFE.		SANDARS and DUNNS		THOMAS WRIGHT.		J. and C. STURGE.	

TURNIP SOWING.

THE LONDON MANURE COMPANY, having adapted the "URATE" more particularly for Turnips and all Root Crops can recommend it with the greatest confidence. It seldom fails, in the driest season, to secure a good plant, and to produce a heavy weight per acre. They would call attention to their Superphosphate of Lime, which is prepared with the greatest care, and sent out in a very fine, dry state, perfectly ready for use. The London Manure Company have made arrangements for a constant supply of Peruvian Guano, from the best cargoes, which they will deliver direct from the ship or importer's stores. Corn Manure, Nitrate of Soda, Fishery and Agricultural Salt, and every other Artificial Manure, on the lowest terms for a genuine article.

EDWARD PURSER, Secretary, 40, Bridge-street, Blackfriars.

STATUES, VASES, FOUNTAINS, Garden Ornaments, Coats of Arms, and Architectural Embellishments in Imperishable Stone, by VAUGHAN and Company, 60, Stones-end, Borough, London.

CROGGON, late of COADE'S, Superintendent.

PORTLAND CEMENT.—Testimonials received from all quarters, prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

MESSRS. CHURCHILL AND BEANE, of Tonbridge Wells, Kent, beg to inform the public they have been appointed Superintending Agents for the Sale of Dr. NEWINGTON'S Hand Drill Hoes, Cultivators, and Scarifiers, with which a man can hoe and stir from 4 to 5 inches deep, two acres of land daily. Price 30s. A prospectus sent on application. The Dibbles and Hand-Drills as before. Notice is hereby given that actions have been instituted against those persons who have imitated the above implements.

TODD'S PATENT PROTOXIDE PAINT at a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it. Manufactured by CHARLES FRANCIS and SONS, Cement Works, Nine Elms, London.

SMITHFIELD CLUB, 1849.—The Prize Sheet and Conditions of Exhibition in December next can now be had on application to B. T. BRANDRETH GIBBS, Hon Sec., Corner of Half-moon-street, Piccadilly, London.

THE ASHCROFT SWEDE TURNIP.—This is decidedly the best of all the Swedes; it is very large, and a better shape than the Liverpool Swede, from which it was originally selected, it is perfectly hardy, having stood the last two winters in one of the coldest parts of England where several other kinds were destroyed, and being of a quick and strong growth, it is found to thrive better on poorer soils than other Swedes, and is so soon in rough leaf as to be much less subject to suffer from attacks of the fly. If sown immediately it will be ready for feeding before any other sort, and it may also be sown later than others, as would appear from the fact that a large field of this sort, sown after Peas, was decided by competent judges to be the best piece of Swedes in the district, though in competition with other very fine crops sown much earlier. This sort will also succeed well after Vetches. The colour is yellow with purple top. Price 1s. 6d. per lb., or 8s. per gallon. Carriage free to London, Bristol, or Basingstoke.

SKIRVING'S LIVERPOOL SWEDE, 1s. 3d. per lb., or 7s. per gallon.

EARLY SIX-WEEKS TURNIP.—The best White Turnip for early sowing to feed off for Wheat, forming a large solid bulb; it is also excellent for table use within six weeks from the time of sowing. Price 6s. per gallon, or 1s. per lb.

Priced Catalogues of Turnip and other Agricultural Seeds may be had by post. Address, JOHN SUTTON and SONS, Reading, Berkshire.

SHETLAND PONIES AND CATTLE.—Just landed, direct from Shetland, a quantity of very handsome small PONIES; size, from 8½ to 12 hands high. Also some very handsome small COWS and HEIFERS, down Calving, some with Calf by side, and in milk; also some small OXEN and SHEEP, for feeding. These Cows give a large quantity of milk for their size, which is very rich, similar to the Alderney, and they are very hardy and suitable to this climate. To be seen at THOMAS OATON'S, Salesman and Importer to her Majesty, 69, Wapping.

CLARK'S METALLIC HOTHOUSE WORKS, 55, Lionel-street, Birmingham.—Proprietor, Mr. THOMAS CLARK; Manager, Mr. JOHN JONES.

Mr. CLARK presents his grateful thanks to the Nobility and Gentry for their liberal patronage of the above Establishment, during a period of thirty years, and begs to state that the repeal of the duty on Glass enables him to offer his METALLIC HOTHOUSES at a greatly reduced price. These Houses are glazed with British Sheet Glass, in panes of from 24 to 30 inches in length, and of such thickness as to preclude all danger of accidental breakage, whilst that which arises from the action of frost is effectually prevented by the peculiar mode of glazing adopted. As a sample of his Metallic Hothouses, in which all the most recent improvements are happily combined, Mr. CLARK refers to the magnificent range erected by him in the new Royal Gardens at Windsor, admitted by competent judges to be the most complete of its kind in the world.

BURBIDGE AND HEALY'S NEW BOILER.—The above is a modification of their Boiler (before published), modelled expressly for the large Conservatory, Chiswick Gardens, where it is now at work. From the observations B. and H. have been able to make, they are warranted in stating it to be the "Ne plus ultra" for warming large plant structures. As a proof, one charge of fuel has been kept burning for 48 hours without any addition, and one boiler of the size used is equal to warm 1500 feet of 4-inch pipe. They are also extensively put up at the Royal Botanic Gardens, Kew. Smaller boilers upon the same plan.

BURBIDGE and HEALY, 130, Fleet-street, London.

TO ORCHIDEA GROWERS.

BURBIDGE AND HEALY, 130, Fleet-street, respectfully call attention to their method of warming Orchidea Houses. They have had the honour of warming the Orchidea Houses at the undermentioned places:

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick, additions to the House.
Also the Orchidea Houses of the following distinguished growers of this interesting class of plants.
The Bishop of Winchester, Farnham Castle.
A. Lyons, Esq., Ladiston.
J. Warner, Esq., Hoddesdon.
Messrs. Henderson, Pine-apple Place.
J. Schroder, Esq., Stratford.
R. Hanbury, Esq., Poles, near Ware.
W. Webb, Esq., Clapham.

Sales by Auction.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, at the Auction Mart, Bartholomew-lane, on THURSDAY, June 7, 1849, at 12 o'clock, a first-rate collection of DAHLIAS, FUCHSIAS, VERBENAS, HEARTSEASE; also a choice assortment of GERANIUMS and other Plants in bloom, and a variety of Ornamental Plants for Bedding.—May be viewed the morning of Sale, Catalogues had at the Mart, and of the Auctioneers, Leytonstone.

TO BE SOLD, A FREEHOLD ESTATE, Land-tax Redeemed, in the county of Surrey, 27 miles from town, and near a station on the South Eastern Railway, containing between 400 and 500 acres, with Homesteads and Cottages, and a Gentleman's Residence, capable of accommodating a large family. On the house, with portions of the Land, will be Sold or Let, furnished, by the year, from the 25th June next.—Enquire of S. C., Henry Thompson and Co.'s, 2, Cowper's-court, Cornhill, London.

NURSERY AND SEED TRADE.

TO BE SOLD, with immediate possession, in consequence of the proprietor retiring from the business, an Old-established Concern, near London.—For particulars, apply (only by letter, prepaid), stating real name and address, to A. HOWCROFT, Bow-road, London.

FARM TO BE LET.

TO BE LET, in the neighbourhood of London, a FARM. No one need apply who cannot command in Stock and Money 2500*l*.—Address, by letter, Alpha, care of the Publisher of the *Gardeners' Chronicle*, 5, Upper Wellington-street, Strand, London.

TURNIPS.

POTTER'S GUANO.—Very large crops of TURNIPS and MANGOLD WURZEL have been obtained by the use of this celebrated Manure. Price, 7*l*. per ton. Also,

GYPSUM, first quality, 15*s*. per ton, an excellent Manure for Turnips and other root-crops, either used alone or mixed with Guano or Bone-dust.

SUPERPHOSPHATE OF LIME.—Farmers may effect a great saving in making their own, and will have the satisfaction of knowing that they use a pure article.

Mr. POTTER supplies Bone-phosphate (containing about 65 per cent. of pure Phosphate of Lime) for this purpose, and gives plain and practical directions for making the Superphosphate. Price, 6*l*. per ton. Also, FOSSIL PHOSPHATE, for the same purpose (containing about 60 per cent. of pure), in fine powder, at 4*l*. 10*s*. per ton.—W. H. POTTER, 28, Clapham-road-place, London.

GUANO AND OTHER MANURES.

PERUVIAN GUANO, of the finest quality, direct from import warehouse.
NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SULPHURIC ACID AND COPROLITE.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of

MARK FOTHERGILL, 201 A, Upper Thames-street, London.

A Treatise on Guano, Superphosphate of Lime, &c., will be forwarded on receipt of 8 postage stamps. Free to purchasers of Guano, &c.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:

CORN AND GRASS MANURE, ... per ton	£9	10	0
CLOVER MANURE ... ... ,,	8	0	0
TURNIP MANURE ... ... ,,	7	0	0
SUPERPHOSPHATE OF LIME ... ,,	7	0	0
SULPHURIC ACID AND COPROLITES ,,	5	0	0

N.B.—PERUVIAN GUANO, from selected cargoes (in Dock).
SULPHATE OF AMMONIA, &c.
Office, 69, King William-street, City, London.

MANURE IS MONEY.

Most important to Land Proprietors, Farmers, Graziers, Gardeners, and others.

A NEW AND EXCELLENT TREATISE, "THE FARMER'S FRIEND AND COMPANION;" showing how to Farm to meet the Times, and save Money, by introducing, for the benefit of the Agriculturists, a new and most valuable Receipt for the Manufacturing of the New Patent Manure, which will be sent gratis, and can be manufactured without a License by every Farmer, as the preparation is most simple and cheap, and suitable for all seasons, soils, and crops, at the trifling expense of 1*l*. per acre, warranted equal to 12 loads of farmyard manure, and a perfect substitute for all foreign manures. Also showing how to Fatten every description of Stock and Poultry, at one-third the cost now adopted, the best and cheapest method of Draining, &c. This valuable Treatise on Farming and Grazing, registered and entered at Stationers' Hall, contains also a collection of 150 of the most valuable Receipts ever discovered in Agriculture for profit, &c., with full directions for use, by the late celebrated agriculturist, Mr. ELLMAN, and others, and patronised and highly recommended by H. R. H. Prince Albert, at Windsor Farm, the Royal Agricultural Society of England, their Graces the Dukes of Richmond, Portland, and Bedford, &c. &c., and will be forwarded without fail, by return of post, free, to any part of the country, by enclosing 1*s*., or 13 postage stamps, addressed, prepaid, to Messrs. TAYLOR and Co., 49, Exeter-street, Liason-grove, London. Mind the address.

HAYMAKING SEASON.—Haymaking Machines, with back or reversing action.—MARY WEDLAKE, the Widow of the Inventor and Patentee, begs to acquaint the nobility, gentry, and the public generally, that those HAYMAKING MACHINES, under the name of WEDLAKE'S Patent, are not manufactured by MARY WEDLAKE and Co., but are imitations only, and, although somewhat like in appearance, cannot compare with the genuine ones in durability.

118, Fenchurch-street, opposite Mark-lane.

HYDRAULIC ENGINES, WATER RAMS, &c., on improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LAGG, Cheltenham.

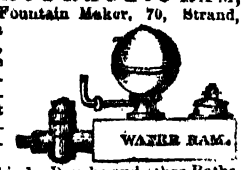
FOR AGRICULTURAL AND ROCK SALT, apply to JOHN MEREDITH, Salt Merchant, No. 10 Wharf, City-road Basin, London.

PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, CHARLES FRANCIS and SONS, Nine Elms, London.

DO YOU BRUISE THE OATS YOU GIVE YOUR HORSES? No. Then you lose one bushel out of every three, and your Cattle do not do half so well.—MARY WEDLAKE AND CO.'S OAT BRUISING MILLS; superior Chaff Engines, simple in construction, doing from 30 to 300 bushels daily, and more. All respectable Coachmasters and Brewers use these Implements.—To be seen at 118, Fenchurch-street, opposite Mark-lane, close to the Blackwall Railway.

N.B. Linseed Mills, Bean Mills, and Malt Mills, in great variety.

THE IMPROVED HYDRAULIC RAM, fixed by FREEMAN ROE, Fountain Maker, 70, Strand, London, can be worked by a small stream of half-an-inch, where a fall of 2 feet can be obtained. The same RAM, without the aid of a Tank or Cistern, arranged to throw a Jet of Water constituting a Fountain with the head of water beneath.

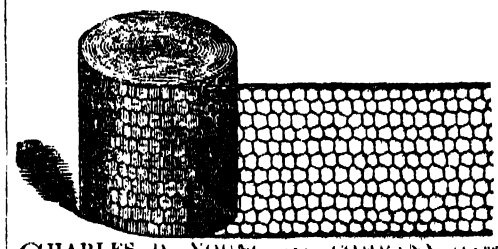


Engines for deep wells of all kinds, Douche and other Baths, Buildings heated by hot water. Water wheels to work small pumps, from 15*l*. Estimates given for the supply of towns, &c.

A newly-invented Portable Vapour Bath, all complete for 4*l*.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 400 and 500) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a copy of the testimonials, will be sent on application to WALTER CARSON, 15, Tokenhouse Yard, back of the Bank of England.—No Agents.—All orders are particularly requested to be sent direct.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c., 22, PARLIAMENT STREET, WESTMINSTER, LONDON; CASTLE-BUILDINGS, DERBY-SQUARE, LIVERPOOL; 128, HIGH-STREET, EDINBURGH; and 32, ST. ENOCH-SQUARE, GLASGOW, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9*d*.; 24 ins., 1*s*.; 30 ins., 1*s*. 3*d*.; and 36 ins., 1*s*. 6*d*. per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3	15	0
Do. of 100 yards, 24 ins. wide	.. ..	5	0	0
Do. of 100 yards, 30 ins. wide	.. ..	6	5	0
Do. of 100 yards, 36 ins. wide	.. ..	7	10	0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s*. is equal to 2¼ yards of another article in the market, the same width, at 9*d*. per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flowerpots, &c., in boxes, of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole agents in London, G. and J. DEANE, Horticultural Implement Warehouse, 46, King William-street, London bridge.

METCALFE'S ALKALINE TOOTH-POWDER will be found to be the best that has yet been produced; it contains no acids, nor anything that can injure the finest enamel; it thoroughly removes the tartar and all impurities, produces that beautiful white appearance so much to be desired, and its fragrant perfume tends to sweeten and purify the breath. M. and Co., from the many years they have been celebrated as Tooth-brush Makers, have had opportunities (that occur to few) of testing the relative merits of those powders that have been brought before the public. They have now succeeded in procuring the receipt from which the above Powder is prepared, and confidently recommend its universal adoption. Wholesale and retail at METCALFE, BINGLEY, & Co.'s, Brush-makers to H.R.H. Prince Albert, 2*s*. per box. Caution.—The genuine powder will have the Royal Arms, combined with those of H.R.H. Prince Albert, on the lid of the box, and the signature and address of the firm, thus: "METCALFE, BINGLEY, and Co. 130, m. Oxford-street, London."

FORD'S EUREKA SHIRTS.—"A comfortable fitting Shirt is a desideratum long wished for. The Public only require to be made acquainted with the Establishment of Mr. FORD, of 185, Strand, and try his Eurekas, to be convinced of the many advantages gained in appearance and comfort by wearing those made at this celebrated Establishment."—*Musical Gazette*, May 26, 1849.

Six very superior Shirts for 30*s*.; also all the new Patterns in Coloured Shirts, six for 27*s*. Detailed Catalogue, with Patterns and Directions for Self-measurement, sent post free.—RICHARD FORD, 185, Strand, London.

A CLEAR COMPLEXION.

GODFREY'S EXTRACT OF ELDER FLOWERS is strongly recommended for softening, improving, beautifying, and preserving the Skin, and in giving it a blooming and charming appearance, being at once a most fragrant perfume and delightful cosmetic. It will completely remove the sunburn, redness, &c., and by its balsamic and healing qualities render the skin soft, pliable, and free from dryness, scurf, &c., clear it from every humour, pimple, or eruption; and, by continuing its use only a short time, the skin will become and continue soft and smooth, and the complexion perfectly clear and beautiful. Sold in bottles, price 2*s*. 9*d*., with directions for using it, by all medicine vendors and perfumers.

THE UNFAILING SUCCESS OF HOLLOWAY'S PILLS AND OINTMENT IN THE CURE OF RINGWORM AND ALL DISEASES OF THE SKIN.—A medical gentleman, residing at Lima, whose child had been severely afflicted with ringworm for upwards of six years, tried every known remedy to cure this dreadful disease, but in vain, as it was of so inveterate a character that it baffled the skill of himself and other practitioners. As a last resource he was persuaded to use HOLLOWAY'S Pills and Ointment, these medicines having obtained much celebrity in South America, and they had the happy effect of soundly curing the child and perfectly eradicating the disease from the system.—Sold by all Druggists, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

ASCOT RACES.—Great Western Railway.—Extra Trains will run between Paddington and Slough. Conveyances are provided to convey Passengers between Slough and the Race-course. In addition to the Booking offices at Paddington, tickets may be procured on and after the 1st of June (Sunday excepted), at Messrs. Tattersall's, Hyde-park Corner, and at the Company's Offices, 29, Gresham street, Bank, and 449, West-strand. Full particulars of the trains, &c., are given in separate hand-bills, which may be had on application at the Railway Stations.—Paddington Station, May 29, 1849.

DISTINGUISHED SUCCESS.—It is the accession of really useful knowledge which has enabled the public to discriminate between the valuable and the worthless preparations that lay claim to their notice. Three or four seasons will, in most cases, adequately test the merits of any article offered to the public. In the instance of one very popular article, the BALM OF COLUMBIA, discovered in America, and introduced into this country by the OLDRIDGES, an unequivocal success of upwards of 25 years has clearly shown its extraordinary virtues; and that for the renovation and strengthening of the Hair, it is pre-eminently esteemed. "Newport, Isle of Wight, Sept. 6, 1848.—Gentlemen, Some three months since, finding my hair falling off by nearly handsful, and my head approaching baldness, in fact, being quite bald at the crown and on the sides, I was induced, through my hairdresser, Mr. Beach, of this place, to try your BALM OF COLUMBIA, and after persevering with four bottles, according to your directions, I found a new crop produced, which has now restored my head to its former appearance. As I had apprehended a total loss of my hair, I feel it due to the virtues of your Balm of Columbia, thus publicly to bear my testimony. Mr. Beach, who recommended me, is the same person who used it successfully in Mr. Wilson's case, whose testimony you lately published. Mr. B. is a Lymington man; I am also a native of that place, though for the last 10 years in practice here as a solicitor. Yours, &c., H. RICE. To Messrs. C. and A. Oldridge." Sold by all respectable Chemists, Perfumers, and Stationers. Price 3*s*. 6*d*.; 6*s*.; and 11*s*. per bottle. No other prices are genuine. Ask for OLDRIDGE'S BALM, 1, Wellington-street, or 13, Wellington-street, North, Strand, London; and never let the Shopkeepers persuade you to use any other article as a substitute for the Balm.

COMFORT FOR TENDER FEET, AND A CERTAIN CURE FOR CORNS AND BUNIONS.

PAUL'S EVERY MAN'S FRIEND,

Patronised by the Royal Family, Nobility, &c.

PAUL'S EVERY MAN'S FRIEND, which gives relief on the first application. Paul's Every Man's Friend (Corn Plaister) is generally admitted to be the best emollient application for Corns and Bunions, and is worthy of a trial on the part of those who are afflicted with such unpleasant companions. Testimonials have been received from upwards of 100 Physicians and Surgeons of the greatest eminence, as well as from many officers of both Army and Navy, and nearly 1000 private letters from the gentry in town and country, speaking in high terms of this valuable remedy.

Prepared by John Fox, in boxes, at 1*s*. 1½*d*., or three small boxes in one for 2*s*. 9*d*.; and to be had, with full directions for use, of all wholesale and retail Medicine Vendors in Town and Country. The genuine has the name of "JOHN FOX" on the Government Stamp. A 2*s*. 9*d*. box cures the most obdurate corns.

Ask for "Paul's Every Man's Friend."

Sold by Barclay and Sons, Farringdon-street; Edwards, 67, St. Paul's Churchyard; Butler and Harding, 4, Cheapside; Newberry, St. Paul's; Sutton, Bow Church-yard; Johnston, 68, Cornhill; Sanger, 150, Oxford street; Willoughby and Co., 61, Bishopsgate-street Without; Eade, 39, Goswell-street; Prout, 229, Strand; Hannay and Co., 63, Oxford-street; Prentis, 84, Edgware-road; and retail by all respectable Chemists and Medicine Vendors in every town in England. Wholesale Agents for Ireland and Scotland, Messrs. J. and R. RAIMES and Co., Druggists, Edinburgh.

TOOTHACHE PERMANENTLY CURED.

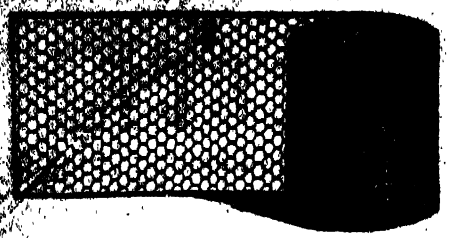
DO YOU SUFFER TOOTHACHE? If so, use BRANDE'S ENAMEL, for filling decaying teeth, and rendering them sound and painless. Sold by Chemists everywhere, price 1*s*. per packet. *An Author's Testimonial.*—"The Bryn, near Newtown, Montgomeryshire, December 25th, 1848. SIR,—Having had a hollow tooth, of some years' standing, which was periodically giving me those excruciating paroxysms of torture which scarce the firm philosopher can scorn, I, by chance, a few weeks back, purchased of my Newtown druggist (Mr. Moore) a box of your valuable Enamel, and subsequently, I have not been distressed with that tearing, tormenting, ache of aches, the tooth-ache. I am, Sir, your obedient servant, G. R. Wythen Baxter." Author of "Hammar and Pathos," "The Book of the Battles," &c., &c.

CAUTION.—The great success of this preparation has induced numerous unskilful persons to produce spurious imitations, and to copy "Brande's Enamel" Advertisements. It is needful therefore to guard against such impositions, by seeing that the name of "JOHN WILLIS" accompanies every packet.

London: Manufactured only by JOHN WILLIS, 25, East Temple Chambers, Whitefriars, Fleet-street, and sold wholesale by all the large Medicine Houses.

Should there be any difficulty in obtaining it, enclose thirteen stamps to JOHN WILLIS (as above), and you will receive the GENUINE ARTICLE BY RETURN OF POST. Twenty authentic Testimonials, with full Directions for Use, accompany each packet, which contains enough of Enamel to fill several Teeth.—AGENTS WANTED.

GALVANISED WIRE GAME NETTING.— [illegible] yard, 2 feet wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d. per yd.
2-inch ,, strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ...	10 ,,	8 ,,
1½-inch ,, extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

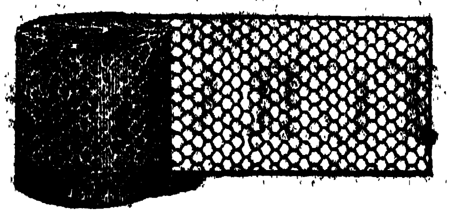
Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

GERMAN SPRING MATTRESSES, permanently elastic, very durable and cheap.

3 feet wide	£2 8 0	4 feet 6 in. wide	£3 3 0
3 feet 6 in. wide	2 13 0	5 feet ditto	3 10 0
4 feet ditto	2 18 0	5 feet 6 in. ditto	3 18 0

One of these, with a French Mattress on it, is a most excellent and soft bed. HEAL and SON'S LIST of BEDDING, with full particulars of weight, size, and prices, of every description of Bedding, sent free by post.—HEAL and SON, Bedding-manufacturers, 196 (opposite the Chapel), Tottenham-court-road.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised, requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock; of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3d. per yard		30 inches wide	7½d.	per yard
18 ,, ,,	4½d. ,, ,,		36 ,, ,,	9d.	,, ,,
24 ,, ,,	6d. ,, ,,		48 ,, ,,	1s.	,, ,,

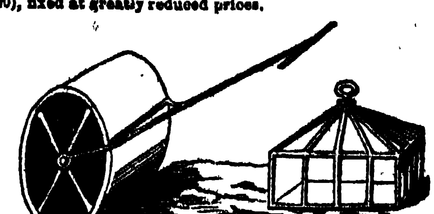
Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden arches, 20s. each; Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 63, Snow-hill, London.

COTTAM & HALLEN, ENGINEERS, IRON FOUNDERS, &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON.

COTTAM and HALLEN having had experience in the erection of HOTHOUSES and CONSERVATORIES (made of Iron or of Iron and Wood combined), and from many improvements they have made during that time, can with confidence undertake to erect such buildings with economy and dispatch.

HOT WATER APPARATUS for heating the above and other buildings (of which they have constructed upwards of 3000), fixed at greatly reduced prices.



COTTAM and HALLEN have on show at their repository, No. 2, Winsley-street, Oxford-street, a great variety of the following articles, for GARDENS, &c., at Greatly REDUCED PRICES, viz.:

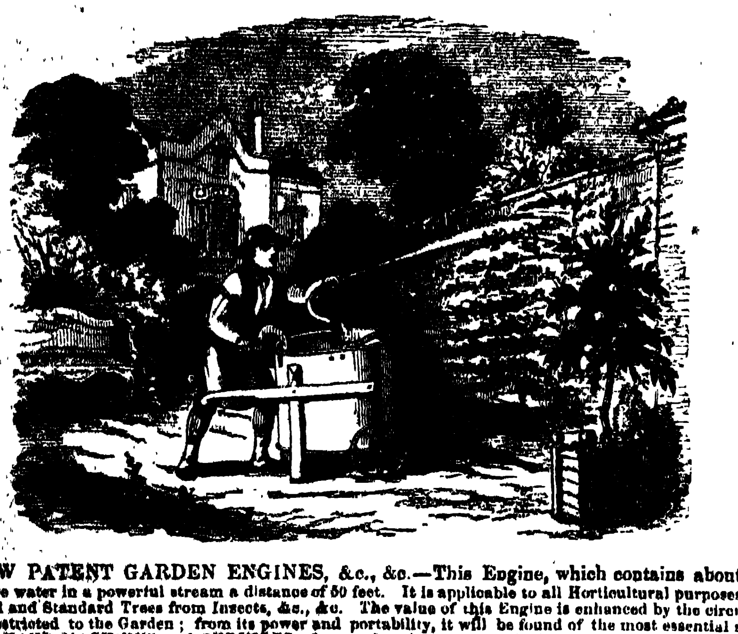
Garden Rollers,	Hand-glass Frames,
Garden Engines,	Flower Stakes,
Garden Syringes,	Flower-bordering,
Watering Pots,	Flower Stands,
Garden Vases,	Garden Arches,
Mowing Machines,	Garden Chairs.

Every description of Work, both plain and Ornamental in wrought and cast iron, for Gardens, &c. &c.

HORTICULTURAL TOOLS and AGRICULTURAL IMPLEMENTS of all kinds.

STRONG IRON HURDLES, strained Wire Fencing, &c.

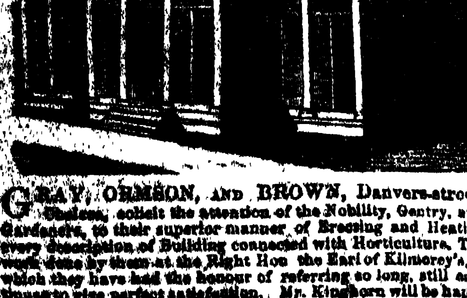
Show Rooms at the MANUFACTORY, 2, Winsley-street, and 76, Oxford-street, three doors West of the Princess's Theatre.



READ'S NEW PATENT GARDEN ENGINES, &c., &c.—This Engine, which contains about 28 gallons, will discharge water in a powerful stream a distance of 50 feet. It is applicable to all Horticultural purposes, particularly for cleansing Wall and Standard Trees from Insects, &c., &c. The value of this Engine is enhanced by the circumstance that its utility is not restricted to the Garden; from its power and portability, it will be found of the most essential service in case of fire. Likewise HAND MACHINES and SYRINGES of every description, upon the last improved principle. Manufactured only by RICHARD READ, 35, REGENT CIRCUS, PICCADILLY.

LAND DRAINAGE.—An experienced Agriculturist (disengaged for a few months), who has had 16 years' extensive practice in Draining and improving Estates, offers his services to lay out and superintend, daily, the Drainage of Land. Testimonials first-rate. Terms moderate.—Address (prepaid), L. A., 14, Great Portland-street, London.

FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark-lane, on MONDAY, June 11, 1849, at 2 o'clock precisely, about 250 Tons damaged PERUVIAN GUANO, imported by Messrs. ANTONY GIBBS and SONS.—Catalogues, and further particulars, in due time, from J. A. RHODES and BANCROFT, Brokers, 26, Commercial Sale Rooms, Mincing-lane, London.



GRAY, ORMSON, AND BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

GRAY, ORMSON, and BROWN, have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

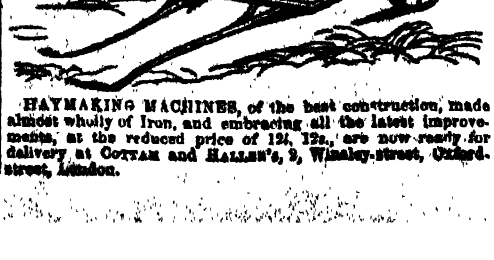
N.B. Plans and Estimates furnished free.

Price 7s. 6d., cloth,

THE HISTORY OF FRANCE, from the Earliest Period. By EMILE DE BONNECHOSE. The two volumes of the French edition comprised in the one of the translation. This work is the history approved of by the Minister of Public Education in France, where it has already passed through five editions. London: D. BOGUE, 86, Fleet-street.

GOODE'S PATENT IRRIGATOR & CATARACT. Working Models of these Implements may be seen in operation daily, from 9 A.M. till 2 P.M., at 478, Oxford-street, Bloomsbury, where particulars may be had.

COTTAM AND HALLEN, 2, Winsley-street, Oxford-street, London.



HAYMAKING MACHINES, of the best construction, made almost wholly of Iron, and embracing all the latest improvements, at the reduced price of 12l. 12s., are now ready for delivery at COTTAM and HALLEN'S, 2, Winsley-street, Oxford-street, London.

FLEXIBLE INDIA-RUBBER HOSE, PIPES, AND TUBING.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER TUBING. These articles are made all sizes, from ¼-inch bore and upwards, are not injured by hot liquors and acids, are permanently flexible in all temperatures, and are well adapted for Watering Gardens, Breweries, Liquid Manure Pumps, Gas, and Chemical Purposes; they require no application of oil or dressing, and do not become leaky from remaining out of use, rendering them particularly suitable for Fire Engines, and all purposes where a permanently sound and flexible pipe is required.

VULCANISED INDIA-RUBBER GARDEN HOSE fitted with copper branch, roses, and jets, complete, for attaching to Pumps, Cisterns, &c.

A, represents the Union-joint, for effecting the communication between the Hose-reel and the Tank, or Reservoir.

B, the Box, for containing any small tools required.

J. L. HANCOCK invites attention of parties using long lengths of the Flexible Garden Hose to his SELF-ACTING HOSE-PIPE REEL, which is found a most convenient machine for winding up and conveying away the Hose when out of use.

Manufactory and Warehouse, Goswell-mews, Goswell-road, London. All Orders and Letters addressed as above will receive immediate attention.

TO THE LADIES.—The powerful influence of the sun on the skin at this period of the year calls for increased attention in preserving its delicacy and beauty. The most pleasing and effectual specific for this desirable object is ROWLAND'S KALYDOR, so deservedly established in royal and public favour and estimation. Its application neutralises the effects of the atmosphere, and induces that healthy action of the microscopic vessels of the skin, by which its delicacy and beauty are so essentially promoted. Freckles, Tan, Spots, Pimples, and Discolorations fly before the application of the KALYDOR, and give place to a healthy smoothness and transparency of complexion. Ladies travelling or taking out-door exercise will find it to diffuse a grateful and refreshing feeling. In cases of Sunburn or Stings of Insects its virtues have long been acknowledged.

** Beware of spurious KALYDORS for sale, containing mineral astringents utterly ruinous to the complexion, and by their repellent action endangering health. The words "ROWLANDS' KALYDOR" are on the wrapper of the genuine article; and the words "A. ROWLAND and SON, 20, Hatton-garden," are also engraved on the Government Stamp affixed on each bottle. Price 4s. 6d. and 8s. 6d. Sold by the proprietors and by Chemists and Perfumers.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JUNE 2, 1849.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 23—1849.] SATURDAY, JUNE 9. [Price 6d.

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ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The Second Exhibition this season of PLANTS AND FLOWERS for competition, will take place on Wednesday, June 20. Tickets to be obtained at the Gardens, by orders from Fellows of the Society, price 5s. each, or on the day of Exhibition 7s. 6d. each.

The AMERICAN portion of the Garden, where the Rhododendrons, Azaleas, and Kalmias, are still in great perfection, remains open to the Fellows and their friends. The Promenades on Wednesdays as usual.

TO THE SUBSCRIBERS TO THE GARDENERS' BENEVOLENT INSTITUTION.—The friends of JOHN SHEPHERD, No. 14 on the List of Candidates for admission at the approaching Election, desire earnestly to recommend his case to the kind consideration of the subscribers, and respectfully request they will be pleased to forward their polling papers to T. Grissell, Esq., New Palace-yard, London, who has kindly undertaken the case.

GARDENERS' BENEVOLENT INSTITUTION.—Subscriptions and Donations at the Annual Dinner.

	Donations £ s.	Annual Subs. £ s.
Capt. Lamont, R.N., in addition to 21l.	5 5	1 1
The Duke of Northumberland	10 10	
Earl of Carlisle	10 10	
Oswald Smith, Esq.	10 10	
J. Ma'colm, Esq.	10 10	
Dr. Lindley, in addition to 21l.	5 0	
Dr. Henderson	5 0	
J. Neild, Esq., M.P.	10 10	
John Laurie, Esq.	10 10	
C. Wentworth Dilke, Esq.	10 10	
C. Baring Wall, Esq., M.P.	10 10	
Mr. T. B. Brandreth Gibbs	10 10	
Sigismund Rucker, Esq., jun.	21 0	
Boyd Miller, Esq.	5 0	
Viscount Brackley	5 0	
J. E. Davies, Esq.	5 5	
E. Tattersall, Esq.	5 0	
W. F. G. Farmer, Esq., in addition	5 5	
T. Grissell, Esq.	5 5	
Messrs. Noble, in addition to 21l.	2 2	
Proprietors of the [illegible]	5 5	
Charles Palmer, Esq., in addition	2 2	1 1
Hon. W. B. Grey	2 2	
Baron Goldsmid		2 2
Rev. C. Annesley		2 2
G. W. Lennox, Esq.		1 1
R. Allan, Esq.	5 5	
T. Jones, Esq.		1 1
T. Clarke, Esq.		1 1
J. Thorne, Esq.		1 1
Countess of Mansfield		1 1
Rev. H. Causton		1 1
G. W. Johnson, Esq.		1 1
Wm. S. Orr, Esq.		1 1
J. Edwards, Esq.		1 1
Mr. C. Turner		1 1

These are the principal subscriptions, but there were more small donations, amounting in all to upwards of 200l.

GARDENERS' BENEVOLENT INSTITUTION.—Notice is hereby given, that a SPECIAL GENERAL MEETING of the Subscribers to this Institution will be holden at the London Coffee-house, Ludgate-hill, on Wednesday the 20th June next, to consider a Report from the Committee as to one of the Pensioners who is in the receipt of parochial relief; also for the purpose of Electing TWO PENSIONERS on the Funds of the Charity from among the following Candidates, whose testimonials have been examined and approved of by the Committee:

Name.	Age.	Residence.	Application.
Edward Marshall	69	London	7th
Mary Browne	82	London	5th
John Skeates	69	Brixton	5th
Thomas Mills	72	Dulwich	4th
Charles Ainslie	83	Leyton	3d
John Appleby	57	Clapham	3d
Robert Duncan	80	Highgate	3d
[illegible]	80	Scone, N.B.	3d
Humphrey Taylor	70	Clapham	3d
James Battey	65	London	2d
Edward Beach	74	Quedgley, Gloucester	2d
John Cooke	62	Clapham	2d
Richard Rudland	76	Dartford	2d
John Shepherd	70	Clapham	2d
William Browne	71	Andover	1st
Rich. Evans	71	London	1st
John Hurden	65	Bath	1st
Cornelius Robinson	70	Blackheath	1st
John Snow	83	Farnborough	1st

The chair will be taken at half-past 11 o'clock. The ballot will commence at 12, and close at 2 o'clock, precisely. No person will be allowed to vote whose subscription is unpaid on the day of election.

By order, Edward R. Cutler, Secretary, 97, Farringdon-street.
June 9, 1849.

A SEEDLING PELARGONIUM EXHIBITION will be held on Friday, June the 15th, in UPTON PARK, midway between the Slough Station on the Great Western Railway and the Datchett Station on the South Western and Windsor line, being but a short distance from either. Four prizes will be awarded: the first, 5l.; second, 3l. 10s.; third, 2l. 10s.; and the fourth, 1l. 10s., to be paid in cash immediately after the award is made.

Two years old Seedlings, or those of greater age, but which have not been sent out, will alone be allowed to compete for the above prizes. Yearlings may be exhibited, but for them no prizes will be offered.

In addition to the Seedling Pelargonium Exhibition, there will be a general Show for any other Flowers, viz., Pansies, for amateurs showing, Roses in pots and 24 bunches; 6 Pelargoniums, in flowers and plants, in collections, Pinks, &c. Any production worthy of merit will be rewarded. All Flowers to be in the tents by 11, and ready for the judges by 12, and remain till 6.—Particulars can be had on application to C. Turner, Royal Nursery, or W. Bragg, Star Nursery, Slough; E. Foster, Esq., Clewer Manor, Windsor; or E. Beck, Esq., Isleworth.

WARWICKSHIRE HORTICULTURAL EXHIBITION.—THE SECOND GRAND HORTICULTURAL EXHIBITION is fixed to take place on Thursday, the 30th Aug. next, in the Jephson Gardens, Leamington, under the special patronage of the High Sheriff and many of the resident nobility and gentry of the county of Warwick, when Prizes (highest 15l.) will be awarded on the most liberal scale for Stove and Greenhouse Plants, Heaths, Balsams, Cockscombs, Annuals, Specimen Plants, Cut Flowers, Verbenas, Roses, New Plants, and Flowers, and miscellaneous subjects, Melons, Pines, Grapes, and other fruits. Full particulars in the "Horticultural Magazine" for July, and Schedules to be obtained from Owen White, Esq., Hon. Sec., Jephson Gardens and Parade, Leamington.

TO SEEDSMEN.

A MEETING will be held in the George Hotel, George Square, Glasgow, on Thursday, the 14th of June current, at 1 o'clock, P.M., for the purpose of forming an Association for the Protection of the Seed Trade, and to prevent the Mixing and Adulteration of Seeds, which, it is believed, is carried on to a great extent, to the injury of the consumer, and to the detriment of the fair trader. All Seedsmen are respectfully invited to attend.—Glasgow, June 9.

NEW VERBENAS OF THIS SEASON, at reduced prices. Any six of the following for 2s. each, or 21s. per dozen, sent free by post, or carriage paid in hamper to London.

Smith's Napier	Wynes's Princess Alice
" Burgundy	Young's Royal Purple
" Psyche	" Brilliant
" Lady Russell	Epps's Eclipse
" War Eagle	" Eppsii
Barker's Cardinal	Ivery's Attraction
" Eyebright	" Union Jack
" Junius	Barnes' Exquisite
" Lord of the Isles	" Beauty of Stowe
" Miss Thorold	" Queen of Summer

Plumbago Larpentæ, Zauschneria Californica, and an extensive collection of all the best BEDDING PLANTS, strong and well adapted for immediate turning out, for which, see our Advertisement of last and previous weeks. [illegible] bury, Suffolk.

RANUNCULUSES IN BLOOM.

CAREY TYSO begs to inform the lovers of this flower that a fine collection of cut blossoms of his Seedlings and other named varieties, may be seen at the shop of Mr. F. Warner, 28, Cornhill, London, on Monday, June 11, and during the ensuing week; of whom also may be had descriptive Catalogues, gratis.—Wallingford, Berks.

PELARGONIUMS.—The unrivalled GERANIUM, "HOYLE'S CRUSADER," may be obtained of J. Whomes for 21s. cash. Fine strong plant, last year's struck, established in 32-sized pots, carrying at the present time a fine head of bloom. Also strong plants of all the best sorts now out at moderate prices.—J. Whomes, Pelargonium Nursery, Windsor.

NEW VERBENAS.—Smith's Psyche, Beauty of Hornsey, Burgundy, Duval, Queen of the French, Princess, Painted Lady, Advancer, Napier, Captivation, Desirable, Gem, and Champion. Gill's Gilmaniana, Robinson's Defiance, Bell's Edmondiana, and Joulson's Best. The 17 for 12s.; 12 for 9s.; 6 for 5s.; 1 for 1s. 3d. Free by post.

Smith's singular MIMULUS, "Harlequin," for 1s.; others low. PETUNIAS.—Brilliant, Minerva, and Admiration for 2s. 6d. FUCHSIAS, as Veitch's Elegantissima, &c., low. Seedling Calceolarias, &c. Catalogues will be sent on application. Orders, with prepayment, made payable at Burnley, will oblige.—Wm. Walker Bottomley, Lob-lane, Marsden, near Burnley, Lancashire.

NEW VERBENAS sent out in April, 1849.—Smith's Anne, Advancer, Beauty of Hornsey, Burgundy, Duval, Deveare, Duchess, Giantess, Lady Russell, Monarch, Napier, Optimus, Psyche, Painted Lady, Princess, Queen of the French, War Eagle, Village Maid, Wynne's Princess Alice, Young's Brilliant, and Royal Purple. The following six of Barker's for 10s.—Bride, Duchess of Northumberland, Eyebright, Junius, Lord of the Isles, and Miss Thorold. The above are highly recommended, and can be supplied in strong plants at 15s. per dozen, purchaser's selection; or six for 10s., and a single one for 2s. 6d., post free. Robinson's Defiance and Barker's Lady of the Lake, two of the best for bedding, 4s. 6d. per dozen, with every other new variety, strong plants, post free.

MIMULUS—"HARLEQUIN" (Smith's), the best out, 2s.

The following three splendid new PETUNIAS for 4s. 6d.:—Brilliant, Lady of the Lake, and Minerva.

A remittance is requested with orders, payable at Burnley.

Henry Walton, Edgend, Marsden, near Burnley, Lancashire, June 9.

FLOWER POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford-street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford-street, near Hyde-park, London.

JAMES CUTHILL, Florist, Camberwell, London, will be glad to show the "BLACK PRINCE" STRAWBERRY, with from 200 to 300 fruit upon each Plant, and many now quite ripe, to any one who may be disposed to pay him a visit; showing that it is the very earliest Strawberry in this country. Ripe Fruit of it can be sent any distance by rail, it stands travelling so well. They are now 6d. per ounce, but in 10 days will be much cheaper.

A FLORAL AND FANCY FETE will be held at the Hanover-square Rooms, on THURSDAY and FRIDAY, the 21st and 22d of June, 1849, in aid of the ROYAL ASYLUM of ST. ANN'S SOCIETY, which, by voluntary contributions, affords Home, Clothing, Maintenance, and Education to Children of those once in prosperity.

PRESENT PATRONAGE.

Her Most Gracious Majesty the QUEEN.
Her Majesty QUEEN ADELAIDE.
Her Royal Highness the Duchess of GLOUCESTER.
Her Royal Highness the Duchess of KENT.
His Royal Highness the Duke of CAMBRIDGE.
Her Royal Highness the Duchess of CAMBRIDGE.

Her Grace the Duchess of Norfolk
Her Grace the Duchess of Buccleuch
Her Grace the Duchess of Leeds
Her Grace the Duchess of Marlborough
Her Grace the Duchess (Dow.) of Northumberland
Her Grace the Duchess of Sutherland
Her Excellency Madame Van De Weyer
The Most Hon. the Marchioness of Queensberry
The Most Hon. the Marchioness of Abercorn
The Most Hon. the Marchioness of Drogheda
The Most Hon. the Marchioness of Londonderry
The Most Hon. the Marchioness of Westmeath
The Most Hon. the Marchioness of Blandford
The Right Hon. the Lady Charlotte Denison
The Right Hon. the Countess of Jersey
The Right Hon. the Countess of Delawarr
The Right Hon. the Countess Grey
The Right Hon. the Countess of Harrowby
The Right Hon. the Countess of Morley
The Right Hon. the Countess of Lichfield
The Right Hon. the Countess of Effingham
The Right Hon. the Countess of Antrim
The Right Hon. the Countess of Portarlington
The Right Hon. the Countess of Rutland
The Right Hon. the Lady Blanche Balfour
The Rt. Hon. the Viscountess Palmerston
The Rt. Hon. the Viscountess Dungannon
The Rt. Hon. the Viscountess Beresford
The Rt. Hon. the Viscountess Combermere
The Rt. Hon. the Lady Stanley
The Rt. Hon. the Lady Ashley
The Right Hon. the Lady Frances Bouverie
The Rt. Hon. the Viscountess Milton
The Rt. Hon. the Viscountess Jocelyn
The Rt. Hon. the Viscountess Camden
The Right Hon. the Lady Charlotte Guest
The Right Hon. the Lady Frances Hope
The Right Hon. the Lady Caroline Bathurst
The Right Hon. the Lady Sherborne
The Right Hon. the Lady Cottenham
The Rt. Hon. the Lady Selsea
The Hon. the Lady Pearson
The Hon. Mrs. Wm. Ashley
The Hon. Mrs. G. Anson
The Lady Fitz Wygram
The Lady Gardiner
The Lady Shelley
The Lady Strange
Mrs. Matheson
Mrs. Colonel Oakes
Mrs. G. Combes
Mrs. Marryat
Mrs. Robert Montgomery
Miss Rowland

FLOWER SHOW.—Prizes will be awarded in certain classes. FANCY SALE.—Contributions of rare and ornamental work, botanical specimens, and new manufacture, will be most gratefully received. Donations in money, or contributions of goods which may be sold and realise money, to the Charity, will entitle the donors to votes at the Society's next election. The names of the Patronesses kindly holding stalls, with detailed programmes, will be published in a few days. Tickets, 2s. 6d. each (Children, 1s.), may be had at the Committee Room, Royal Asylum, Streatham-hill; or at the Offices, 2, Charlotte-row, Mansion House, of EDWD. FRED. LEEKS, Secretary.

Annual Subscription, 1l. 1s.; Life ditto, 10l. 10s.

SELECT BEDDING PLANTS.—100 CHOICE BEDDING PLANTS for 1l., suitable for planting out in the open border during summer, such as Antirrhinums, Verbenas, Petunias, Salvias, Senecias, Ageratums, Lantanas, Cupheas, Heliotropiums, Anagallis, Alonsoas, Scutellarias, Agathæas, Veronicas, Chænostomas, Calceolarias, Fuchsias, &c., too numerous to enumerate, securely packed in damp moss, carriage paid to London; smaller quantities may be had at 2s. 6d. to 3s. 6d. per dozen, post free, on receipt of the amount with the order, from Benjamin W. Knight, Florist, &c., Tivoli, near St Leonard's-on-Sea, Sussex. Printed directions for treatment will be sent with each lot of plants.

V. SCHERTZER and SONS, Florists and Seedsmen, Haarlem, in Holland, beg to inform their friends and the Trade that their Catalogue of Dutch Flower-Bulbs is now sent out, and can be had, on prepaid application. They give the assurance that all orders they may be favoured with will meet their strict attention. A reference or remittance is requested from unknown correspondents.—V. Schertzer and Sons, Haarlem, in Holland.

MIMULUS RUBINUS.

JOHN CARTER, Jun., Nurseryman, Keighley, Yorkshire, has been kindly presented by Mr. Clapham with plants of the above unrivalled MIMULUS, which was so highly spoken of by Professor Lindley, in the *Gardeners' Chronicle* of May 19, page 313, in the following terms:

"A. Clapham and Co.—Your seedling has flowered, and proves to be a very fine thing. It has by far the largest and handsomest flowers we have ever seen on any Mimulus."

J. C. will have a few plants to dispose of at [illegible] each in a short time, of which due notice will be given. As the number [illegible] will be very limited, an early application is necessary. [illegible] will be executed in the rotation in which they are received. A remittance is requested from unknown correspondents, [illegible] usual trade allowance of one plant over for every three ordered.

COMPETITOR STRAWBERRY.—This excellent variety will be found a valuable addition to those already in cultivation, being a great bearer, of delicious flavour, and beautiful appearance. It is a first-rate early forcer, each plant producing 12 to 14 well ripened fruit. Established plants are now ready, at 20s. per score, from which a stock may be obtained for next season's forcing.—Apply to J. and C. Lee, Vineyard Nursery, Hammersmith. A remittance required from unknown correspondents. The usual allowance to the Trade.

SEED POTATOES, NON DISEASED.

MR. THOMAS WARINGTON, of the New Corn Exchange, London, has a few sacks left of "WHITE BLOSSOMS" SEED POTATOES, which have been grown some years by a gentleman of wealth in the county of Norfolk, and they have never exhibited the slightest symptom of disease; the grower has always planted them during the first and second week in June, and they have yielded excellent crops. The price is now 14s. per cwt., including bag, in quantities of not less than 2 cwt., and will be forwarded on receipt of post-office order or cash for the amount, or satisfactory London reference.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. Deane's extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	,, Knives, various
Borders, various patterns	Hammers	,, Saws
Botanical Boxes	Hand-glass Frames	,, Scissors
Cases of Pruning Instruments	Hay Knives	,, Shears [riety.
Chaff Engines	Hoes of every pattern	Rakes in great variety
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Daisy Rakes	Hotbed Handles	Scythes
Dibbles	Ladies' Set of Tools	Scythe Stones
Dock Spuds	Labels, various patterns, in zinc, porcelain, &c.	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
,, Stands in Wires and Iron	Monographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanic Borders and Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
,, Loops	Mowing Machine	Trowels
,, Rollers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extractors and Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. Deane are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with the Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—Deane's Horticultural Tool Warehouse, opening to the Monument, 46, King William-st., London-bridge.

BEAUTIFUL NEW FUCHSIA, "SAPPHIRE."

LUCOMBE, PINCE, and CO., having purchased the whole stock of this highly-desirable new Fuchsia from Mr. Denham, of Birmingham, by whom it was raised, will send out, on the 20th of June next, strong healthy plants (which will flower freely this summer), at 10s. 6d. each, with one over upon every three ordered by the trade. The brilliant coral colour of the finely reflexing sepals, which are broad, and of such a waxy substance that they retain their fully-recurved position to the last, thereby displaying to great advantage the dark blue purple corolla, combined with the neat foliage and graceful free flowering habit induce L., P., and Co. strongly to recommend "Sapphire" as the finest Fuchsia of its class. It will be a general favourite, and ought to be in every collection.

L., P., & Co. beg leave to call attention to the following high testimonials of its merits. Blooms having been sent by Mr. Denham, last autumn, to the Editor of the Gardeners' Journal, the following is his opinion of them.

Extract from the Gardeners' Journal, October 28, 1848.—"Fuchsias—W. D.—Your seedling is a first-rate flower in its stature, and beautifully expanded, the texture of this flower surpasses anything of the kind we have seen in the class to which it belongs; corolla is beautiful, being crimson at the base, shaded into a magnificent tint of purple at the extremity; shape highly desirable."

Copy of Letter from Charles James Perry, Esq., dated Handsworth, May 1, 1849.—"Gentlemen, I have repeatedly seen blooms of Mr. Denham's seedling Fuchsia 'Sapphire,' both on and off the plants; in colour it is a bright coral red, the sepals broad, beautifully reflexed, and of a thick waxy appearance; the corolla is a deep blue purple and very bright; I consider it one of the best dark varieties, the foliage is very neat, and the whole habit of the plant exceedingly good; it blooms profusely, producing its flowers in threes from every eye. It cannot fail to give satisfaction. (Signed) Charles James Perry."

"Hon. Sec. to the Handsworth and Lozells Horticultural Society."

"To Messrs. Lucombe, Pince, & Co., Exeter Nursery, Exeter."

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.

J. WEEKS and Co., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. Weeks and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

FLOWERS OF ALL HUES.

BENJAMIN W. KNIGHT, Florist, &c., Tivoli, near St. Leonard's-on-Sea, Sussex, begs to call attention to his select Plants, which he is sending out, securely packed, post free, at the annexed prices per dozen, fine distinct varieties: Verbenas, 2s. 6d.; Fuchsias, 3s. 6d.; Antirrhinums, 2s. 6d.; Pansies, 4s. to 6s.; Petunias, 3s.; Dahlias, Show or Fancy Flowers, 6s.; Chrysanthemums, 4s.; Cuphea platycentra and strigillosa, 3s.; Heliotropium Peruvianum, 3s.; H. Voltairianum, 4s.; Salvias, various, 3s. 6d.; Pentstemons, for bedding, 6s.; Anagallis, blue and scarlet, 3s.; Calceolarias, for bedding, 4s. Also the following choice new kinds, sent out in 1848, distinct varieties, per dozen: Verbenas, 6s.; Fuchsias, 6s. to 9s.; Antirrhinums, 6s.; Petunias, 8s.; Heliotropium Triumph de Liege, 6d. each. Printed directions for treatment will be sent with each lot of plants. Catalogues of his select plants may be obtained on prepaid application, enclosing a postage stamp. A remittance or reference is respectfully requested from unknown correspondents.

TURNIP SOWING.

THE LONDON MANURE COMPANY, having adapted the "URATE" more particularly for Turnips and all Root Crops, can recommend it with the greatest confidence. It seldom fails, in the driest season, to secure a good plant, and to produce a heavy weight per acre. They would call attention to their Superphosphate of Lime, which is prepared with the greatest care, and sent out in a very fine, dry state, perfectly ready for use. The London Manure Company have made arrangements for a constant supply of Peruvian Guano, from the best cargoes, which they will deliver direct from the ship or importer's stores. Corn Manure, Nitrate of Soda, Fishery and Agricultural Salt, and every other Artificial Manure, on the lowest terms for a genuine article.

Edward Purser, Secretary, 40, Bridge-street, Blackfriars.

SLATE WORKS, ISLEWORTH.—The following articles manufactured in Slate for Horticultural Purposes, by Edward Beck, may be seen in use at WORTON COTTAGE, upon application to the Gardener, Sundays excepted: Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot-water Tank Covers, Flower-beds for Balconies, Shelves fitted to hold Water for Orchidaceous Houses, &c.—Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

BEE HIVES.

GEORGE NEIGHBOUR and SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—George Neighbour and Son, 127, High Holborn, London.

"Nutt on Bees" (6th edition), now published.

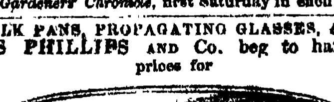
GLASS FOR CONSERVATORIES, &c.

HETLEY and CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

MILK PANS, PROPAGATING GLASSES, &c.

JAMES PHILLIPS and Co. beg to hand their prices for



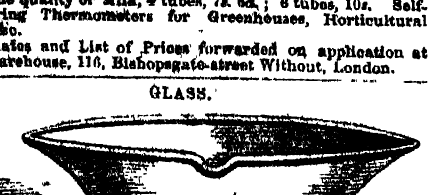
MILK PANS.

12 inches diameter, each	2s.	0d.	20 inches diameter, each	4s.	0d.
14 ,, ,, ,,	2	6	22 ,, ,, ,,	4	6
16 ,, ,, ,,	3	0	24 ,, ,, ,,	5	0
18 ,, ,, ,,	3	6	26 ,, ,, ,,	6	0

Propagating and Bee Glasses from 2d. each, Cucumber Tubes 1s. per inch, Peach Glasses 10d. each, Wasp Traps 3s. 6d. per dozen, Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d.; 6 tubes, 10s. Self-Registering Thermometers for Greenhouses, Horticultural Glass, &c.

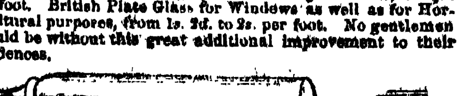
Estimates and List of Prices forwarded on application at their Warehouse, 116, Bishopsgate-street Without, London.

GLASS.



GLASS MILK PAN.

THOMAS MILLINGTON is supplying Foreign Sheet Glass, very superior to any other Glass in the market, in 100-ft. and 200-ft. cases, of large dimensions, 16-oz., at 3d. per ft., or cut to size in ranges, not exceeding 40 inches, at 3½d. per foot. British Plate Glass for Windows as well as for Horticultural purposes, from 1s. 2d. to 2s. per foot. No gentlemen should be without this great additional improvement to their residences.



CUCUMBER TUBE.

Estimates and List of Prices forwarded on application at the Warehouse, 87, Bishopsgate-street Without, London.

BLUE PROPAGATING GLASSES.—

3-in. diameter, 2s. per doz.		6-in. diameter, 3s. 6d. per doz.	
4-in. ,, 2s. 6d. ,,		7-in. ,, 4s. ,,	
5-in. ,, 3s. ,,		8-in. ,, 4s. 6d. ,,	

It being proved both theoretically and practically that blue glass is by far the most effective in propagating plants and in germinating seed, the above are offered at prices which must insure their general adoption.—To be had of Edward Lacey, Glass Merchant, 57, Broad-street, Birmingham.

CROWN, SHEET, AND HORTICULTURAL GLASS.—Consumers of the above descriptions of GLASS will find a large stock and very reduced scale of prices at the Soho Plate, Crown, Sheet, and Ornamental Glass Company, 26, Soho-square, London.

HARTLEY'S PATENT ROUGH PLATE GLASS.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—The readers of the *Gardeners' Chronicle* of Saturday, Feb. 24th, must have observed the high terms in which this Glass was spoken of by Dr. Lindley. We have re-arranged our list of prices to correspond precisely with those of the Patentee, to which we would beg the attention of the Nobility, Clergymen, Gentry, and others.

In squares under 8 by 6 ...... 4d. per foot.

8 by 6 under 10 by 8	4½d.	10 by 8 under 14 by 10	5d.
14 by 10 ,, 1½ foot	5½d.	1½ foot ,, 3 feet	6d.
3 feet ,, 4 feet	6½d.	4 feet ,, 5 feet	7d.

A full List of Prices and every information may be had by applying to James Phillips and Co., Horticultural Glass Warehouse, 116, Bishopsgate-street Without, London.

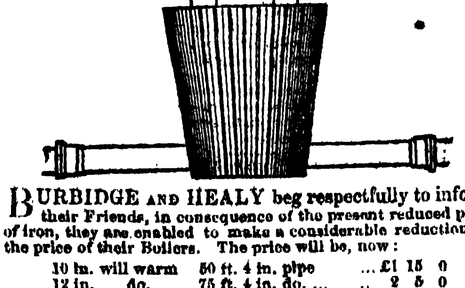
APSLEY PELLATT and Co. (late Pellatt and Green), Falcon Glass Works, Holland-street, Blackfriars, have always on hand, Bee Glasses, 1s. 2d. per lb.; Cucumber Glasses, 1s. 6d. per lb.; Milk Pans, 18-in., white glass, 5s. 6d. each; Propagating Glasses, white, 1s. per lb; do., green, 10d.; do. condensing, 2d. per lb. extra; Grape Shades, 1s. 6d. to 2s. each; Fish-bowls, from 1s. 6d. each; Wasp and Fly-traps, 40s. per gross, or 3s. 6d. per dozen. By the use of these traps fruit may be preserved from (otherwise certain) destruction.

BURBIDGE and HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Duke of Devonshire's, Chatsworth Gardens.
Earl of Gainsborough's, Oakham, Rutlandshire.
Earl of Zetland's, Upleatham, Yorkshire.
Robert Hanbury, Esq., Poles, near Ware, Herts.
Mr. Glendinning's Nursery, Turnham-green.
And at least 500 other important places.

Burbidge and Healy, 130, Fleet-street, London.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE and HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in. will warm	50 ft. 4 in. pipe	...	£1	15	0
12 in. do.	75 ft. 4 in. do. ...	..	2	5	0
14 in. do.	100 ft. 4 in. do. ...	...	2	15	0
16 in. do.	150 ft. 4 in. do. ...	...	3	10	0
18 in. do.	250 ft. 4 in. do. ...	...	4	10	0
21 in. do.	350 ft. 4 in. do. ...	...	5	10	0
24 in. do.	450 ft. 4 in. do. ...	...	7	0	0
New Pattern Boilers.					
30 in. will warm	800 ft. 4 in. pipe	...	15	15	0
36 in. do.	1500 ft. 4 in. do. ...	...	25	0	0

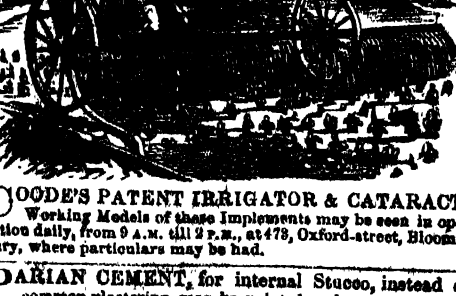
All Boilers with double arms, up to 18 in., 5s. extra; to 24 in., 10s. extra; all above, the same price.

130, Fleet-street, London, May 30.

STEPHENSON and CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.



GOODE'S PATENT IRRIGATOR & CATARACT. Working Models of these Implements may be seen in operation daily, from 9 A.M. till 2 P.M., at 478, Oxford-street, Bloomsbury, where particulars may be had.

PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, Charles Francis and Sons, Nine Elms, London.

HORTICULTURAL SOCIETY OF LONDON.

LECTURES ON HORTICULTURE.—On TUESDAY, JUNE 12th, at 3 P.M.—"The LEAVES and their importance in the general economy of the plant."

No one can be admitted to the Meeting Room except Honorary Members and Fellows of the Society, their wives or sisters, and visitors specially introduced by them; or the Foreign and Corresponding Members of the Society.

21, Regent-street, May 23, 1849.

NEW SCARLET PELARGONIUM, "PERFECTUAL SCARLET."

R. GLENDINNING has plants ready to send out of this new and splendid scarlet Pelargonium, of which he possesses the entire stock. It was awarded a Certificate of Merit last January, when exhibited before the Horticultural Society of London. It stands forcing admirably, flowers in profusion, and may be obtained the whole winter; when grown in pots it is well adapted for the greenhouse, and it is also a first-rate bedding variety. R. G. feels convinced this Pelargonium will give perfect satisfaction, and therefore can confidently recommend it. Plants 7s. 6d. each, and one added to the trade for every three ordered.—Chiswick Nursery, near London.

HOSEA WATERER'S EXHIBITION OF FLOWERING AMERICAN PLANTS, OAKLEY-SQUARE, KING'S-ROAD, CHELSEA.—This Exhibition will be in high perfection during the ensuing week. Admission One Shilling.

The Exhibition this year contains some magnificent specimens of the now justly admired PINUS TRIBE; these of themselves will amply repay a visit to any one who is anxious to obtain some of the finest plants that can be purchased. HOSEA WATERER is also a principal contributor to the Show in the Regent's Park.

*** The Knap Hill Nursery is within an hour's ride of London, being near the Woking Station, South Western Railway. The American Plants there are now at their best, and may be seen daily, Sundays excepted, gratis.

CRYPTOMERIA JAPONICA SEEDLINGS.

MESSRS. STANDISH AND NOBLE having still the largest stock in Europe of the above splendid tree, beg to offer fine strong plants at the annexed low prices:—6 to 9 inches high, 3s. 6d. each, 36s. per dozen, 12l. 10s. per 100; 12 to 18 inches, 5s. each; 18 to 24 inches, 7s. 6d.; 24 to 36 inches, 10s. 6d., and upwards, according to size.

The present is the most suitable time for planting out, and every plant sent out by Messrs. S. and N. will be handsome, well-grown specimens.—Bagshot, Surrey, June 9.

RHODODENDRON JAVANICUM, OF BLUME; OR THE BEAUTIFUL ORANGE-COLOURED RHODODENDRON FROM JAVA.

WILLIAM ROLLISSON AND SONS beg respectfully to inform the Nobility, Gentry, and trade, that they intend sending out, on and after Monday the 18th June, fine healthy plants of the truly magnificent Rhododendron Javanicum, at 21s. per plant, the variety with beautiful orange-coloured flowers, as advertised in the *Gardeners' Chronicle* last autumn.

W. R. and Sons beg to remark that their Collector in Java gathered the seed from which their stock was raised, off plants of the orange-coloured variety, spotted with red, which he had seen in flower some time previously, and on this account W. R. and Sons can positively warrant them to be the genuine plant, as above described. This most beautiful, interesting, and dwarf-growing shrub is admirably adapted for planting out in a conservatory, or growing in pots in a greenhouse or cold frame, and our Collector having found it upon the volcanic range of mountains in Java, 9,700 feet above the level of the sea, there is every reason to believe that it will prove a hardy plant, at least in some part of this country.—Tooting Nursery, near London.

The Gardeners' Chronicle.

SATURDAY, JUNE 9, 1849.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	June 11	Geographical		8½ P.M.
TUESDAY,	— 12	Royal South London		1 P.M.
		Horticultural (Lecture)		3 P.M.
		Syro Egyptian		7½ P.M.
		Civil Engineers		8 P.M.
		Medical and Chirurgical		8½ P.M.
WEDNESDAY,	— 13	Zoological		9 P.M.
		Literary Fund		3 P.M.
		Geological		8½ P.M.
THURSDAY,	— 14	Royal Society of Literature		4 P.M.
		Numismatic (Anniversary)		7 P.M.
		Antiquarian		8 P.M.
		Royal		8½ P.M.
SATURDAY,	— 16	Asiatic		2 P.M.

COUNTRY SHOW.—Monday, June 11: Liverpool Horticultural.

As was to be anticipated, from the excessive wetness of the spring, the POTATO DISEASE has once again appeared both in England and Ireland. We have already mentioned it as having occurred slightly in Sligo and Carlow and Kent and Anglesea. We can now add of our personal knowledge that it has certainly broken out in the Skibbereen Union in as bad a form as ever. An intelligent correspondent, from Carrick-on-Suir, upon whom we can entirely rely, describes it as also ravaging that district; and reports are rife of its having attacked other places. In the Irish midland counties we believe there is no doubt* of its visit having been made. Such Potatoes as we have seen near London are yellow, and look as if they too were about to become sick. At Amport, in Hampshire, they are already attacked as much as ever. So many sets have "missed" in some places near London, that great patches are empty in the fields; and, as will be seen from a letter in another column, the same fact has been observed near Tenby, and elsewhere. In all cases the owners have found a number of young ones forming under-ground: and so they would if the mother Potatoes had been left in a box of dry carpenter's chips. But what will such a brood of abortions be good for?

It is much to be feared that terrible distress will again visit the desperate and unwarnable Irish gamblers in food. It is pretty certain that earnest appeals will once more be made to England for sympathy with the "unfortunate" peasantry thus living in a state of starvation which only ends with expatriation or the grave; and it is impossible not to commiserate the wretched state of such a popula-

* "Potatoes and tenants going, one to America with the rent, the other to the d—l." *Irish Correspondence, June 4.*

tion. At the same time we cannot avoid asking whether the man who wilfully and needlessly fires a powder magazine, and perishes in the explosion, is really "unfortunate," or simply mad?

It must never be forgotten by the Irish that (to alter slightly the words of the most noble of modern poets)—

"The thorns which they have reaped are of the tree
They planted,—they have torn them,—and they bleed:
They should have known what fruit would spring from such a seed."*

We observe in a Belgian newspaper that, in a circular despatch which has been lately addressed by the Minister of the Interior to governors of provinces in that country, it is recommended that "when the haulm is full grown, that is to say, shortly after flowering, the stems should be cut down to the ground carefully, so as not to disturb the tubers, and the soil then covered about 3 centimetres deep with earth, so as to keep them from contact with the air. This layer to remain till the tubers are ripe." A M. TORREILLE-LOMNA, a farmer of Namur, asserts that, by adopting this plan, his Potatoes are every year as good as they were before the appearance of the disease.

THERE are those who believe that no other "CONNECTION BETWEEN CLIMATE AND VEGETATION"† exists than what consists in the healthy growth of a plant in a given country. Provided healthy growth can be obtained, climate is assumed to be well suited to a plant; and there the question is thought to end. But this is one of the greatest of all mistakes. The healthy growth of a plant is by no means an indication of its suiting a particular climate. Thus, in some of the uplands of Mexico, Wheat is said to grow with great luxuriance, but never to produce its ears; can such places be said to have a climate fit for Wheat? Certainly not, if corn instead of hay is the object sought for.

A climate can only be said to suit a plant when that plant not only retains its general health, but is capable of producing its flowers, fruit, and peculiar secretions in the most perfect state of which its nature is capable. If any part of these conditions remains unfulfilled, climate cannot be said to suit a plant. They are entirely fulfilled in the situations where plants were originally placed by the CREATOR: and they will be equally fulfilled elsewhere under the same circumstances; that is to say where soil and atmospherical influences, especially the latter, are the same; but not otherwise. The influences which are most important consist of solar light having a certain intensity, of heat distributed in a peculiar manner, of air having a certain weight, and of moisture present in the atmosphere at certain times to a particular amount. Places in which solar light, heat, atmospheric pressure, and atmospheric moisture are identical, will have a climate identical also, so far as vegetation is concerned, and in proportion as any one of these forces alters will the climate cease to be equally suitable for the growth of a given plant. Instead of dwelling on these facts, which are perfectly understood by vegetable physiologists, let us further explain our meaning by a few examples.

Rhubarb grows in the most healthy manner in England; and therefore our climate is said to suit it. And so it does if the object is merely to procure leaves, flowers, and fruit. But the real value of Rhubarb consists in the presence of certain secretions which render it a potent medicine. In the plains of Siberia and Chinese Tartary, where the sun is far brighter and the summers far more hot, and the winters much more cold than ours, it is able to produce those secretions. But in England it forms them so feebly and imperfectly that the roots have little medical value. The climate of England is therefore unsuited to the growth of Rhubarb, except for the service of the cook.

In like manner the Hemp plant thrives perfectly in England, producing seeds in abundance; and therefore the climate is said to be suited to it. And, as the object for which Hemp is cultivated with us is merely the fibre contained in its stems, or the seed, both which are formed abundantly, the statement may be acquiesced in—so far as we have any purpose to serve in growing it. But we could not say that the climate of England is at all fit for Hemp-growing, if we desired to procure those other matters which the plant yields in hotter countries. Under the dry, warm, sunny skies of the East, Hemp forms a powerful, peculiar resinous matter, in universal employment as an agreeable stimulating narcotic; no such effects can be obtained from English-grown Hemp. Therefore the climate of England cannot be said to be, upon the whole, such as that plant requires.

Considerations of this kind have led us to express an opinion unfavourable to the projects of those well-meaning people who would persuade cultivators to spend time, money, and unavailing skill in attempts to grow Maize and Tobacco, and tropical roots, such as the Tara, Tanfers, Coco, and Sweet Potato, in the cold, sunless fields of England and Ireland. If the object is merely to obtain foliage, such plants might possibly in all cases, as they certainly can in some, be introduced among our outdoor crops; but seeing that one is cultivated for its corn, another for its narcotic principle, and others for their leaves and tubers, we feel bound to point out the great improbability of any success attending attempts at their introduction. As to Tobacco, the valuable properties of which depend upon a constantly damp but pervious soil of inexhaustible fertility, full of alkaline matter, and upon excessive warmth conveyed by an ardent sun during the formation of its leaves, we should be glad to know where, in the United Kingdom, any such place is to be met with. Leaves may indeed be had, and fetor enough—the worst part of the plant; but as to the grateful narcotic and delicate fragrance of the weed, they are wholly unattainable. The hopelessness of the attempt at cultivating Tobacco profitably in this country, even if climate were favourable, is sufficiently shown by the fact that excellent American Tobacco may be bought *retail* in London at 3s. 6d. per lb., out of which sum 3s. 2d. is paid to Government for duty.

On a future occasion we shall endeavour to demonstrate in another way the undoubted fact that, in the presence of sufficient data, the physiologist can state with certainty what the result of cultivating a given plant in a given place must necessarily be. For that purpose we shall select a most remarkable example of the entirely successful cultivation of an exotic on an imperial scale, in a climate which some persons, not physiologists, pronounced to wholly unsuited to it.

* Childe Harold, iv., 10.

† See *Gardeners' Chronicle* for the present year, p. 308 a.

WARMING FRUIT TREE BORDERS.

"DODMAN" (see p. 230), is anxious to elicit information as to the best and cheapest mode of giving a slight heat to the soil, and, in reference to a plan for warming the borders of early Vineries, described by me in last year's Journal of the Horticultural Society, states it as his opinion that the working of the plan in question requires a good deal of labour, with a large quantity of manure, and that the heat produced is somewhat uncertain.

To make the matter clear to those who have not seen the article referred to by "Dodman," it is necessary to state that the border described is that of an early forcing Vinery. The soil of the outside border is supported upon chequered brick arches, having a chamber beneath them 2 feet 9 inches deep; and in front of the border, a trench in connection with these chambers is built up to the surface of the ground, and covered with slate slabs. The chambers extend beneath the border to the front wall of the house, through which air drains, in the shape of 6-inch pipes, enter and pass under the whole or a portion of the inside boiler, their ends being turned up to the level of the soil. The trench and chambers are filled with stable litter and tree leaves, and the heat and gases evolved during the fermentation of this material rise through the open brickwork of the arches, and are absorbed by the soil and roots and by means of the pipe air drains; a portion of the gases can be admitted into the house at pleasure, to circulate amongst the foliage. The slate covering over the trench prevents the escape of heat or ammonia, excludes rain, conceals the littery manure, and gives a neat and tidy appearance to that part of the garden.

In reply to "Dodman's" doubts, I beg to say, from experience, that the system does not require any considerable amount of labour; that the quantity of manure used is very small in proportion to the work it performs; and, lastly, that the heat is sufficient and under perfect control, and with proper attention can be regulated with the utmost exactitude. I wish further to observe that it is the cheapest and most efficient, indeed the most generally economical method that I have practised myself, or seen or heard of others practising. I should here state that I have only used it for warming Vine borders. I do not consider it necessary to apply artificial heat to the roots of hardy fruit trees; but if any of your readers wish to try the experiment, they will find this system answer their purpose effectually. Since I forwarded the article referred to by "Dodman," I have had another year's experience of forcing Vines whose roots are warmed in the manner described, and although the season has been a very precarious one for early forcing, the result is so satisfactory as to give me still greater confidence in recommending the plan to others.

Our method of proceeding is to fill the trenches and chambers, when we collect the tree leaves in autumn; these are ready to be mixed with a small quantity of litter as soon as it is desired to commence forcing. We mix in the proportion of one load of litter to eight or ten loads of leaves, and if these are properly shaken together a mild gentle heat will be produced, just such as is required for the early excitement of Vines. In about a fortnight, and again in about a month, the mass requires shaking up, but without the addition of any fresh material. At the end of six weeks it again requires stirring, when a portion of the decayed leaves is removed, and a couple of loads of litter added to the

remaining portion, as by this time the Vines will be so far advanced as to require an increased amount of bottom heat. After this renovation nothing is required for the next six weeks except turning the manure about once in ten days or a fortnight, and occasionally adding a few barrowsful of fresh material; at the end of this time it is again necessary to remove the most decomposed part, and to substitute for it some fresh leaves and litter, which must be well mixed through the mass. This course is persevered in as long as it is considered necessary to supply the plants with artificial bottom heat, and with Vines this should be continued till the sun is sufficiently powerful to keep the temperature of the outside soil proportionate to that of the atmosphere inside. With very early forced Vines, even after the fruit is ripe, it is necessary to keep up a moderate warmth to the roots, or they are liable to receive a check; but if this be prevented, they will continue longer in an active state, the leaves will be preserved and continue to perform their functions to a later period, and the young wood will have the advantage of being ripened under the more favourable influence of a spring or early summer, rather than under a winter's sun. Many may be inclined to object to the leaves being placed in the trench some time before the forcing commences, from the supposition that they would ferment and exhaust themselves prematurely. A slight fermentation will undoubtedly take place, but if the leaves have been collected and placed in the chambers in a dry state, this action will not take place to any extent; and even this slight expenditure of their strength, instead of being lost, is a decided advantage, as it will be just sufficient to set the roots gently into motion, and as the branches are at the same time in too cool an atmosphere to be induced to burst their buds, the roots will get in advance of the tops, and consequently the latter, when they are excited, will commence their growth with extra vigour.

It will be seen from this statement that the amount of labour required is not considerable, being merely that employed in filling the trench with leaves in the first instance, mixing litter with these when the Vines are about to be started, and occasionally turning and shaking up the mass, and adding a little fresh material. Frequent and punctual attention is necessary in examining the temperature of the soil, in order that upon the first indications of a decline immediate preventive measures may be taken. The entire labour during a season will not exceed that which ought, in a manure yard, to be expended upon the same quantity of material to convert it into solid manure without allowing it to lose any of its valuable ingredients.

The same statement shows that it is a mistake to suppose that a great quantity of manure is required, as the leaves from the trees, which must of necessity be cleaned off the walks and turf in the pleasure-ground, are mixed up with it, and are thus converted into excellent manure. And as decomposed manure must be had for the vegetable ground, it is far more rational to procure the manure in an unfermented state, and appropriate the heat and ammonia to some useful purpose, than to allow these useful agents to escape into the atmosphere without benefiting anything. If the supply of litter obtainable from the proprietor's own stable-yard is insufficient for the purpose, it will pay well to procure it from extraneous sources, as it will be worth at least all it cost after it is converted into manure; and the fruit trees will have been benefited by the genial warmth and ammoniacal evaporation from it without any cost, save the interest on the capital expended in building the arches, &c.

As the old-fashioned Melon ground, with its lofty linings and attendant ladders, is now so rapidly and so deservedly growing into disrepute, and as neatness and order are now expected to reign over this department, the abandonment or entire concealment of fermenting materials, used for supplying artificial heat, is of course indispensable; and something like the plan I have attempted to describe will be found particularly useful in every garden, if only for the purpose of preparing the manure for the vegetable ground. To effect this, many would be inclined to convert the Melon and Cucumber frames into manure manufactories, by constructing chambers beneath them, and covering the side trenches with wood or slates, and by heating the fruit tree borders with hot water; against this I have two reasons; 1st. It is an established fact that the advantage, in an economical sense, of using hot water, is greatest where the highest artificial temperature is required, and is comparatively small where only a moderate heat is produced. In the question as to whether the Melon-ground, or the fruit tree borders, should be heated by means of hot water, reason will decide in favour of the former, as the greatest saving will be thereby effected; 2d. From their liability to get out of order, pipes or tanks should only be used when they can be readily got at in case of accident, or at least where they can be examined once in two or three years. It will be readily conceived that if they are used beneath the roots of Vines, Peaches, or other permanent fruit trees, they cannot be reached in case of an accident, without destroying or seriously injuring the trees; unless the apparatus is constructed in a chamber running the whole length of the border, and sufficiently large to allow a man to pass along within it. It will not be out of place to mention that although we have at present only applied the system to a Vine border 66 feet long, we find the manure made in its trenches very serviceable, as from its situation in the centre of the vegetable garden, it is a handy reserve from which we can, at any time, procure a few barrowsful of good manure for immediate use without bringing carts on to the walks at inconvenient hours.

"Dodman" proposes using hot water tanks to warm his borders, and asks for information as to the most economical mode of constructing such a tank, or else for reasons against the adoption of the plan. I have stated above my reasons against the adoption of hot water in any shape as a means of warming fruit-tree borders; but if its use be determined on, either with or without chambers, I should unhesitatingly recommend pipes in preference to tanks, as the latter are most costly, less durable, and less efficient. If, for the sake of cheapness, the pipes are used without chambers, and the liability of leakage disregarded, they need not be more than 3 inches in diameter, and require nothing more than fixing on the hard prepared bottom of the border, and covering with a few inches of gravel, on which the soil is placed. To prevent as much as possible their liability to get out of order, they should be cast of extra strength; this will increase the expence, but it will still be less than that of constructing tanks. The latter are very liable to crack, and, to allow the water to escape, and are much more difficult to repair than pipes; and as the water circulates more freely in pipes than in tanks, they are in every way preferable. In either case the expence of the chamber would be the same. No danger need be apprehended from the drying effects of pipes, on the soil. The bottom-heat pipes of our Pine-pits are arranged in the manner described above, and we frequently find the roots of the Pines quite fresh and healthy in the little ridge of gravel placed over the pipes. It must, however, be remembered that if hot water is adopted a fire must be lighted more or less several times a week, to maintain a regular even temperature, and this would involve an expense in fuel and labour, besides the nuisance of smoke from an additional chimney, of which there is generally a disagreeable abundance in every garden. For such a border as "Dodman" mentions, viz., 150 to 200 feet long, and 6 feet wide, taking for granted that it is level from end to end, one small boiler placed near the centre, with a single 3-inch flow and return pipe branching towards each end, would be sufficient to warm it slightly, and taking the first expense only into consideration, and omitting the chamber, this would be the cheapest way of accomplishing his purpose. The cost of such an apparatus in this part of the country would be as follows:

Wrought iron saddle boiler, 2 cwt., 56s....	£5	12	0		
Furnace-door, fire-bars, &c.	1	8	0		
Brick work, fixing boiler, &c.	1	15	0		
				£8	10 0
Extra strong 3-inch hot-water pipes, 220 feet, at 1s. 4d.	£14	13	4		
Elbows, cement, fixing, &c.	4	7	0		
				19	0 0
Excavation and cartage not included.				£27	10 0

In the case of heating a Vine border in this way, the pipes might be connected with the boiler provided for heating the atmosphere, which would further reduce the expense of the first construction. *G. Fleming.*

FRENCH BOUQUETS.

THE Marchands de Bouquets are a very numerous and thriving fraternity in Paris. In all the principal streets, and particularly in the arcades and passages near the theatres and places of public amusement are to be found their attractive shops, where nosegays may be procured at from 10 sous to 20 francs throughout every day of the year; a still more numerous, yet humbler class, sell in the public streets, and at the railway stations, Roses, Violets, Carnations, Camellias, in fact, every flower in its natural season from January to December at from 1 to 5 sous (½*d.* to 2½*d*) The amount spent by the Parisians in this way is almost incredible; thousands of persons obtain a living by selling these halfpenny bouquets; to understand this, it must be borne in mind that the manners of the continent are different from those in England, that in catholic countries almost every day is the "Jour de fête" of some saint, and that in France it is the custom for everyone to present flowers, either growing or cut, to their friends on their birth-day or "jour de fête;" so universal is this, that a Duchess gladly accepts the friendly homage, and the meanest inhabitant of a garret feels neglected if not insulted without it.

To meet this demand, there is a distinct and numerous class of florists, occupying small gardens from a quarter to one acre of ground, adjoining the city walls in the Faubourgs St. Denis, Menilmontant, Charonne, Marceau, and St. Jacques, whose sole occupation is the cultivation of these flowers; each has his "specialité" which he grows upon a large scale and can afford to sell at a cheap rate. Everything is done upon the most economical plan; to save expense, the plant-houses are built 2, 3, or 4 feet below the surface, exactly like span-roofed pits, the front or south lights are glass, the back or north is generally covered over with deal boards, this enables them to cover the whole thickly over with leaves in winter, and effectually prevents the frost from entering; there is not one in fifty of these houses ever warmed by any other means; fuel is very expensive in Paris, and it would not answer their purpose to be at the expense of fire heat. Tan is abundant, and procured at a reasonable price, it is everywhere used in these gardens for bottom heat.

With these florists you do not find any large collections or general stock; few grow more than 10 or 15 kinds of plants to bloom in succession, that their energies may be concentrated upon one thing at a time, and, as might be expected, what they do is done well. The "specialité" of one consists of Camellias, Azaleas, Roses, Orange trees, and hard-wooded plants; another of Ericas, Epacris, Pelargoniums, &c.; another of Violets, Pansies, Carnations, &c. Thus an immense quantity is raised. It is no uncommon thing to find in one of these little gardens 10,000 or 15,000 Camellias; in another, as many Roses or Crassulas. I am quite sure that for Midsummer-day (Fête de St. Jean), there are not less than 60,000 or 70,000 plants of Crassula coccinea cultivated about Paris. The white Chrysanthemum, especially the new white Anemone flowering varieties, are now largely cultivated for cut flowers in December. The Rose du Roi (crimson perpetual), is almost the only one sold in the markets. I have seen it in bloom during every month of the year; its delicious fragrance, fine colour, form, and habit, render it decidedly more useful than any of the China and Provence kinds. The Indica minor, alba, and coccinea, are also extensively grown for the Marchands de Bouquets; they are, with the Violet, Chrysanthemum, and Camellia, their grand resort for the winter.

I have often been struck with the difference between the bouquets of London, Paris, and Brussels; in London, it is no uncommon thing to see beautiful Stanhopeas, Oncidiums, and other Orchids, forming part of a bouquet; in Brussels, also, you see some fine rare flowers, but nothing of the kind is to be seen in Paris. In the latter town, in general, they are composed of the common flowers of the season; they are, however, nevertheless very pretty—the secret lies in the grouping. Most decidedly the French understand harmony of colour and tasteful arrangement better than any other people; it is thus that they make up an elegant nosegay for a mere trifle; even in November, December, and January, you may always procure them at a moderate price; this is no doubt, in part, owing to the climate, but in no little degree to the means used in retarding or prolonging the bloom. During those months there is a plentiful supply of Violets, Cyclamens, Epacris, Laurustinus, white Chrysanthemums, fairy Roses, Chinese Primulas, Oranges, Ericas, and Camellias; and as the national colours are ever dominant with the Parisians, they make up very pretty tricolor bouquets of fairy Roses, Violets, and Primula sinensis or white Chrysanthemums. *Paris Correspondent.*

DISEASES OF PLANTS.

(*Continued from p.* 341.)

GENUS IV. PROLIFEROUSNESS.—This is the production of a flower proceeding from the centre of another flower, of a fruit or a branch issuing from a flower or fruit below it. Thus, from a Rose we see another Rose shooting forth; a fruit sends out another, or from the one or the other springs a tuft of leaves, a little branch, or sometimes some strange compound of flower, branch, and fruit. We may thus distinguish four species.

First Species. FLORAL PROLIFEROUSNESS.—A flower shoots out from its centre another flower. This is a very frequent phenomenon. I shall not attempt to enumerate all the instances recorded by writers, as I only mention a few of the most remarkable cases wherever I speak of things not seen by myself. The literary journals of Germany and France, and the transactions of scientific societies, will be enough to satisfy the curiosity of every amateur in this respect. Roses and Ranunculi have the most frequently furnished me with examples of *floral proliferousness.* I remember that when a boy of eight or nine years, I never could satiate myself in admiring this prodigy in some deep yellow Ranunculi from Holland. But the phenomenon was not to be seen the second year after they were planted.

Another variety of floral proliferousness occurs in monopetalous flowers, of which Jessamines, and our garden varieties of Primula veris, give frequent examples. They have two complete corollas, one within the other, but have not any repetition of the sexual organs, as in the case before mentioned. Some other flowers, such as the Datura, have three or four corollas, one within the other. These are termed by botanists *multiplex* corollas. It is rare that in floral proliferousness both flowers are fertile. The lower one is almost always thus rendered sterile. In the case of the Ranunculus the upper flower has sometimes given me instances of fertility. But I cannot well believe that the seeds if sown would germinate, as they did not externally appear to be very well conditioned. It is true, however, that seeds of multiplex corollas do germinate.

Second Species. FRUIT PROLIFEROUSNESS. — This kind of double fructification has always been wondered at and described with great care by physiologists. Two varieties may be distinguished. The first is when a fruit is formed upon another fruit, that is, when its pedunele issues forth from another fruit of its own kind. I only once observed it myself in the case of a wild Pear. The second, which is much more frequent, is when a fruit is formed within inside of another. This phenomenon is very common in the Orange tribe. Inside of an Orange or Lemon a small fruit of the same kind is often met with, but not usually as perfectly formed. I have never seen an inner one perfect with its rind. I once saw one in the centre of another Orange, consisting of nothing but five cells without rind or seeds; the Orange which contained it had only four seeds. Preuss assures us that he has seen instances of this proliferousness in Walnuts.

Third Species. FRUCTIFERO-FLORAL PROLIFEROUSNESS.—Flowers have been seen to form at the extremity of a fruit. This happens sometimes in autumn, especially when it is damp and hot. A curious instance is related by Balfinger, in the sixth volume of the "Novi

Commentarii Academiæ Scientiarum Imperialis Petropolitanæ," of some Apples which were already stored up for winter; flowers were seen issuing from their centre. On examination it was found that a bud had formed in the middle of their calyx, which, on expanding, produced two leaves and five peduncles of about 2 inches long each, and bearing five perfect flowers. On opening the Apples, a branch was found in their centre, from which the bud had proceeded. This is probably the case with those fruits that produce flowers. The humidity communicated by the juice of the Apple had, together with the action of heat, assisted the development of the bud.

Fourth Species. Anomalous Proliferousness.—It happens sometimes that there issues from the centre of a flower a simple tuft of leaves, or a deformed branch unlike those of the plant itself in appearance, and terminated with a few leaf-like expansions, of irregular shapes. Roses afford frequent instances of these anomalies. Occasionally also a flower will proceed laterally from the calyx of another, or is otherwise deformed. Gleditsch describes a very singular proliferousness of the *Iris*. We know also that in August, 1734, a large wild Pear having shot forth a number of fresh flowers from the tops of the fruits with which it was loaded, the country people were very much alarmed, thinking that a general reversal of the laws of nature was at hand. These phenomena have been the subject of many close investigations. For my part I adhere fully to the opinion of those who, with the above-mentioned Berlin botanist, attribute them to excess of vigour in the plant. A few observations may serve to convince the sceptical. Proliferousness occurs much more frequently in those years when the spring is early, warm, and lasting, with a sufficiency of moisture, and more especially when it follows a short but sharp winter; and this fact is generally admitted. It may also happen when some accident has prevented the ordinary development of the flowers at their natural season. Gardeners who wish to make Roses bear double flowers succeed sometimes by pruning their roots, thinning out their branches, and transplanting them frequently towards the end of winter into rich soils. It is true that by this process they often lose the plants altogether. Fruit proliferousness only occurs in a very few species. It is only observed in rich soils, and is most frequent amongst those plants which require the best nutriment. We may thus account for the case before quoted of the large Dutch Ranunculi which, removed to our country, cease, for the most part, after the first year, their proliferous habit. In Flanders, besides the art of the gardener, much influence is derived from the humidity of the atmosphere, not so easy a thing to be met with in Italy. I can indeed assert that these flowers, introduced from the above-mentioned countries, may be maintained much more vigorous and luxuriant than our own for several years, by growing them in low damp situations near rivers, provided however they do not suffer from the irregular fogs of our climate. An ultramontane writer, after having related various instances of proliferousness, adds that it is the special privilege of Italy to give birth to such productions, which prove the natural fertility of the soil and the soft quality of her climate. But the Dutch Ranunculi at least show a remarkable exception to such a rule.

VILLA AND SUBURBAN GARDENING.

Liquid manure, a few years ago, was unknown to gardeners, and in agriculture, at present, almost entirely so; few even now believe in the great virtue it possesses in promoting a healthy and vigorous development. Let any one take two beds of Cabbages, or two rows of Roses, and feed the one liberally with liquid manure, and let the other have ordinary care. It will soon be found that the manured Cabbages will be twice the size of the unmanured, and at the same time crisp and delicious, while the others will be tough and stringy; and the Roses fed with liquid manure will scarcely be recognised as the same kinds.

Liquid manure is within the reach of every small gardener who possesses a supply of water and a common watering-pot, or an old barrel. Idle boys are plentiful enough near London, and will gladly pick off any adjacent common a bushel of sheep's dung for a shilling, which is all that is required. If this cannot be procured, guano can be had, which is excellent; 1 lb. of guano to 6 gallons of water may be applied with impunity to the roots of most plants, and to much advantage. Annuals, Pelargoniums, Verbenas, Calceolarias, and similar ornamental plants, will be astonishingly improved by a watering twice a week, especially in dry weather, when these things suffer, and flower in consequence weakly. The culinary department will also repay the cultivator for similar attention. Cauliflowers, Celery, Cabbage, &c., can scarcely have too much liquid manure. Twice every week will, however, do immense service. There is no better prevention of mildew on Peas than this—the crop will be greatly increased by its application, and the quality infinitely raised.

To apply liquid manure with advantage, a little ordinary care is required. It should always be borne in mind that during warm and dry weather plants absorb fluids faster than when it is dull and cool, and that they perspire most in a dry warm atmosphere. If the supply at the root, therefore, is not kept up, then they become deteriorated in quality, and the produce is considerably lessened. The common practice of pouring manure-water immediately around the stem of a plant should be avoided, for two reasons, first, the roots which absorb most are in or are approaching the centres of the spaces between the rows, therefore to be benefited by it the liquid should be distributed there; another and very important matter, in common with vegetable culture, should not be lost sight of—by applying the liquid in a limited circle round the plants individually, the roots have less inducement to travel far in search of food, hence they are fewer in number; but if their food is placed at a greater yet reasonable distance from them, they will seek it out, fresh roots will be emitted, and they will have a much larger field to feed in. It is by attention to such trivial matters as these that one man's Turnips are worthy of his mutton, while another's are unworthy of his hog-tub. *Pharo.*

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

Fungi in Garden Frames.—If there is nothing new under the sun, when great natural principles are considered, this is far from being the case in the subjective experience of individuals. In horticulture new phenomena are continually being developed to the practical gardener, known probably to others, yet entirely novel to him. For instance, the writer has for 12 years had garden frames under his management all the year round, yet a result entirely unheard of by him has this week, to his great annoyance, been brought under his notice. A crop of fungi springing up in the frame, has disfigured all his plants, and if they are not destroyed, which he fears is the case with some, they are at least retarded in their growth, and injured.

The bed on which this frame rests was made up a month ago, and consisted of about three parts of Grass mowings and weeds, and one part of stable dung. When a right heat was obtained the frame was filled with cuttings of Chrysanthemums, scarlet Pelargoniums, Fuchsias, Roses, &c., with some Vegetable Marrow seeds, and sundry other plants. All went on prosperously, and a larger number of cuttings than usual was rooted. Last week it was observed that some fungi came up rather thickly in the centre of the bed, but as this is invariably the case, more or less, no attention was given to them. One day the writer left home, and all was right; but the next day, on looking into the frame, a most extraordinary change had taken place in the appearance of the plants. The whole collection had a dull heavy look, strangely contrasted with the vigorous healthy foliage of the day before. It is impossible to describe exactly the nature of the deterioration in the bulk of the plants, but the case of those in the immediate vicinity of the fungi was more distinctly marked. The scarlet Pelargoniums were of the darkest green possible, approaching to black; the Fuchsias and Chrysanthemums were not quite so bad, but yet much altered. The fungi were immediately pulled up, and the plants received a good syringing, but as it was found the infection still spread, the whole stock was removed, some into the beds intended for them, and the remainder into another frame.

The fungus which has occasioned all this mischief was the Agaricus comatus. It is presumed that the spores of the fungi are the cause of the altered appearance of the leaves of the Pelargoniums, &c.; but whatever is the explanation, the effect produced has been most rapid and vexatious. The infected plants put out into the open air have a miserable colour and are disposed to droop, although the young shoots are coming apparently healthy. Probably what has been described is well known to gardeners of larger experience, but as the writer has never met with such a misfortune before, and it would not have occurred if the fungi had been pulled up as they appeared, the recital may be of service by protecting amateurs from a similar catastrophe.

The mention which has been made of hot-beds reminds us that it may be of some use to inform the reader how we proceed in making those slight ones which are often wanted even in the summer months. All weeds—root, branch, and seeds, as the case may be—are thrown together until a considerable quantity is obtained, none being allowed to remain on the land after hoeing. With this the mowings of the lawn are well mixed, and the whole ferments sufficiently to destroy all vegetable life in the shape of roots and seeds. This alone amply repays the labour; but besides the advantage of preventing an after sowing of weeds in the garden, which is the case when refuse is allowed to rot, a gentle hot-bed is always ready at hand. When a large amount of unfermenting material is collected, as the turf cut off from the verges of the Grass plots, &c., a few barrow loads of stable manure may be added. In this way a good supply of the very best compost for all gardening purposes is provided at the smallest possible expense. *H. B.*

Home Correspondence.

Villa and Suburban Gardens.—It may be of service to some of your readers, who have neither frames nor forcing-houses, to know, that if they now cut off the strong leading shoots of the Fuchsias, such as Eppsii, &c., and put them into the open border, well mulched with water, they will flower all the season, and by the autumn be well rooted; if kept moist, and covered with cinder-dust during winter, next year will exhibit healthy young plants. If, again, at the end of the year and the leaf is fallen, they cut off the strong shoots, previous to covering in the plants for the winter, and set the shoots into the open ground, covering them with cinder-dust, many will strike root, and supply good plants for bedding, &c., next year. I have succeeded in protecting the night-scented Stock during the winter, out of doors, simply with cinder-dust, and now have my plants in full bloom, in the open border. It is safest, with such plants, not to use the knife in the autumn to cut off flower-stalks or shoots of any kind. I can quite enter into the objects of your correspondent "E. O." (page 323), and shall be much pleased to find he is aided by you; and I presume "Pharo" is your man. Amongst others, I hope to get information from him myself, as a "little gardener." But, perhaps, we practical "little gardeners" may help each other. And I fancy "E. O.," and the like of him, who are now seeing their first annuals just peeping above the surface, would be glad to see mine in full flower; such as Collinsia bicolor, Chrysæis crocea, Limnanthes Douglasii, and the different varieties of Gilia; and close on their heels are Œnotheras, Campanula pentagonia, Larkspurs, Poppies, &c. These may be always had in flower at this time, if the borders are not too much disturbed in the autumn. In the spring these self-sown annuals appear, and may be used according to pleasure—left where they are or transplanted. And now is the time to strike cuttings of Alyssum saxatile, Cheiranthus, Wallflowers, and the like. And "E. O." may know that he will be able to keep up a display of golden gaiety in his garden, from the beginning of May to the end of June, by a succession of such plants in their course as Wallflowers, Alyssum saxatile, Cheiranthus, Mimulus, Golden Moss. These will present patches of yellow that he will soon learn to appreciate in his parterre, if cultivated "secundum naturam." Only let him eschew the "ars Baileyi," beyond all things, if he would be satisfied with the fruits of his labour (see the letter of "E. X." page 342). The old-fashioned Pheasant's Eye should not be discarded from the flower-garden, especially as it sows itself and keeps up its own stock; and I would advise "E. O." to get some plants of the varieties of Double Daisy for edgings to his oval and circular borders. They require dividing and fresh planting in the autumn, but they compensate that little trouble richly. And let me exhort him to supply himself with such plants as may be easily propagated in his own garden, and in the open air; for there is no end of the 12*s.*, 9*s.*, 8*s.*, 6*s*, and 4*s.* per dozen for bedding plants from nursery gardens. And by mutual interchange with his neighbours and friends he need not go far or pay much for new varieties. *Addio; "An Ancient Sub.," Harlow.*

Tar Paint.—I am glad to see that "Northwood" is interested in finding out a cheaper method than mine of protecting fencing and other iron work exposed to the weather, a matter of considerable importance where that metal is extensively used. At the same time, I must beg leave to ask him if he has tried my composition in such a manner as to enable him to compare it with his. As, however, I may not have hit upon the best and cheapest paint for iron, I shall therefore give "Northwood's" receipt and mine an impartial comparative trial, and whatever the result may be, I will not fail to communicate it. However, as many gentlemen are extensively adopting my method, I consider it necessary to state that my confidence in it is not shaken in the least. The proportions I use (viz., ⅔ gas tar and ⅓ Stockholm tar) were decided by a series of experiments, the object of which was to discover an anti-corrosive material, which should combine the advantages of being very durable, equal in appearance to oil-paint, easy of application, and extremely cheap. Gas tar alone will not stand the weather. It partakes too much of the nature of lamp-black, and requires something of a more oily, unctuous nature than itself. This want is supplied by Stockholm tar, and I do not think it likely that lime and black resin can form an adequate substitute for the latter. The effect of lime on iron is highly injurious, as it produces corrosion, the very thing we are anxious to prevent; and black resin is the last residuum, the lowest dregs of the Pine juice, after all the better matter has been extracted from it. The composition I recommend is very durable: we have a fence which was tarred about seven years since; the application looks as well as ever, and seems likely to last as much longer. The colour is a good glossy black, equal if not superior to black paint, and it becomes so thoroughly hardened as to be equally clean and inodorous. It is easy of application, and is ready for use the moment it boils; in this considerable time and consequently fuel is saved. As "Northwood's" mixture requires boiling 20 minutes, and as the cost of application in either case is much greater than the cost of the material, the slight saving in the cost of the latter seems to be more than counterbalanced by the additional expense of time and fuel required in allowing the mixture to boil a longer time before using. As I feel particularly interested in the matter, allow me to ask "Northwood" to favour me, publicly or privately, with his name and address. *G. Fleming.*

Tar Paint.—The second paragraph in my note, page 342, about tar paint, is wrong. The composition of lime and tar without resin is for flooring, not fencing, as it is printed. *Northwood.*

Destroying Slugs.—Knowing that sulphuric acid is a violent caustic, producing an instantaneous heat of 300° F., if one part is mixed with four of water, I was led to apply it the other day to the killing of slugs, by dipping a pointed stick into a little oil of vitriol, and then rubbing it over them. The operation does not occupy a second of time, and if the head is touched with the acid, and the stick then drawn along the body, instantaneous death is effected; such is the quick chemical union of the acid with the aqueous matter of the slug, and the corrosion consequent. The large grey slug required nearly a drop of the vitriol rubbed over it, ere it ceased to

struggle, and the most immediate effect followed when the head was touched. I offer this suggestion as being much less cruel than clipping in two, &c., and as offering less trouble in keeping down the number of these pests. The stick once dipped about an inch deep into the acid suffices for at least 6 or 8 small slugs. It does not appear to have any injurious consequence upon the plants, except at the small dot or space where it touches them; it is not volatile like turpentine, but, like quicklime, is a violent caustic, having such an attraction for water, that if suffered to remain in an open vessel, it will imbibe one-third of its weight from the atmosphere in 24 hours. *Wissinggam, June* 1.

Preserving Rhubarb.—If "C. E. C." will have his Rhubarb prepared exactly as for tarts, and bottled like Gooseberries, the bottles placed in a kettle of cold water, the water raised to boiling, and boiled for a quarter of an hour, then the bottles corked as speedily as possible, and when cold tied with double bladder, or cemented over, and kept in an inverted position, in a cool dry place, he will find the Rhubarb at Christmas quite as good as it is at present. *Lusor.*—For some years I have been in the habit of preserving Rhubarb for winter use, and I find that it keeps better than Gooseberries. Cut the Rhubarb (which ought to be young), after stripping the stringy part off, into pieces about 2 inches long, and pack them closely into Gooseberry bottles; scald them like Gooseberries, taking care to fill up as they shrink, from other bottles, and when cold, cork and rosin them. *Susan, June* 5.—Take the Rhubarb when young; peel and string and cut into lengths; put it into a pan, with a very little water, just sufficient to keep it from burning; take off and strain the liquid from it before it becomes too soft; then to every pint of Rhubarb add 1 pound of sugar, put it into the pan again, and boil gently half an hour, or till it becomes the thickness of jam. When done, put it into small pots, as other preserves, tie down, &c., and keep in a dry place. *Addio.*—Fill the bottles and bung them slightly, to keep the water from getting in; put them in a pan of cold water, with a little tray at the bottom; as soon as the water is scalding hot take them out, and immediately fill them up with boiling water; put them by till next day, and fill them up with cold boiled water: tie them up with bladders. The Rhubarb must be cut and peeled, as for tarts. *M. de C. E., June* 5.—If the following directions are attended to it will be found scarcely distinguishable from the fresh gathered stalks. Skin and cut up into pieces that will go into the bottles; fill them and put in the corks lightly, then place the bottles in a boiler of cold water and simmer them until the Rhubarb is shrunk to nearly half, which will take about half an hour; then remove the bottles from the boiler and drive the corks tightly in, and when the bottles are dry, cover the corks with rosin. Should any one of the corks fly during the operation of simmering, that bottle will not be likely to keep. *D. O., near Truro, June* 5.

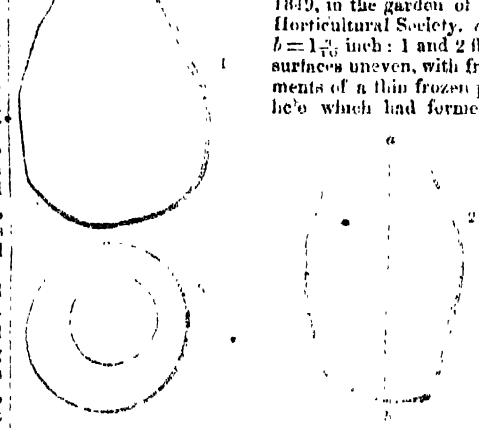
Cloth of Gold Rose.—I have a Rose of this kind which has been a subject of admiration to my neighbours, and a favourite with myself. It has bloomed freely and opened fully for these three last years, being always my first Rose in flower; but this season it seems likely to fail altogether. Has the sap been injured, think you, by the late frosts? or have I exhausted it by making it bloom (as I have done) twice in each year? I use the knife pretty freely with my Roses. *C. E. C., Croydon, May* 28. [You have been more fortunate than many in blooming your Cloth of Gold Rose so freely. Your failure this season is, we apprehend, not owing to the spring frosts, nor to exhaustion, but to a too free use of the knife in pruning. It will most probably bloom in the autumn, and, if the wood is well ripened, and the pruning moderated, you may expect a fine display of flowers next year.]

Felling Resinous Timber: The Larch.—I send you a quotation from the "British Cyclopædia," which (if some of your readers who may be able to complete the facts will do so) may tend to throw some light on the best mode of cutting this timber, with respect to durability: "In 1809, Larch timber, grown by the Duke of Athol, at Dunkeld, was first used in the British navy at Woolwich, in the building of the Serapis, store ship, the Sybille frigate, the bottom of a lighter, and for piles driven into the mud alternately wet and dry; and in all these stations proved a durable wood. The Athol, of 28 guns, was also built entirely of Larch timber from his Grace's estates, and at the same time the Niemen of the best Riga. After their first course of service, on being examined, the Niemen was found in a decayed state and condemned accordingly, whilst the Athol was again put into commission, and it is at this time (Dec 1832) on a voyage to the West Indies. It was also remarked that during the time this Larch timber lay at Woolwich dockyard exposed to the weather, neither the heart or sapwood was in the least decomposed, nor was there the slightest appearance of fungi growing upon it." A very few years ago, I believe, the Athol was still in service as a transport: but the question of durability would be much elucidated by a short history of the Niemen, and when condemned, with the cause of the Athol, and how the timber was felled, with an account of the term of its growth, nature, and elevation of the plantation at Dunkeld. *Wissinggam, May* 28.

Felling Larch.—In December last I had some Larch trees cut down, and about a fortnight ago I found them to peel well. Might not this be a good plan to prevent the wood from warping? The sap must have been descending through the vessels of the inner bark, and, in the absence of a fresh supply, the vessels of the wood would, in a great measure, be gradually unloaded. *H. F., Yorkshire.* [We cannot acquiesce in this view.]

Arum maculatum a Food Plant.—I procured some tubers of this, boiled them and dried them till they were quite dry and mealy; indeed I boiled them 20 minutes, poured the water from them, placed them again on the fire for about five minutes, and shook them well in the saucepan. My employer happening to be in the way when I was taking them out of the saucepan, and wishing to try them, took them all up to the hall, unfortunately, as it happened, leaving me no opportunity of tasting them first. He soon returned to the garden, very much alarmed; he had eaten some, which had affected his tongue and throat. On referring to a medical work he found Arum maculatum stated to be a deadly poison, and he was experiencing all the symptoms which were described in the book. Now this placed me in an awkward position; would you therefore kindly state whether it is a poison or not. *E. H., Coventry.* [No doubt it is, unless carefully cooked. Mr. Forsyth particularly pointed that out.]—With reference to Arum maculatum, the large tubers of which are delicious, I shall be very grateful for information on the following material points:—In what way is it to be propagated as a garden esculent? Is it likely to thrive better in a good soil under a shady north wall, in a garden, or will you advise me to grow it away from any wall, fully exposed to light and solar heat? How deep in the ground should I plant the tubers? In their natural state I find them very deeply seated. Are full sized tubers yielded the first year in the natural state? Is there more than one variety? It appears to me that the leaves in some of the plants are maculated, in others immaculate. I have abundant plants of it near my house, and time, leisure, garden space, and the will to try to cultivate it largely. If attention is not paid to the propagation of the plant, in a very few years it will be extirpated. *G. & O.* [Perhaps Mr. Forsyth, whose subject this has become, will shortly answer these inquries. In the meanwhile, it is desirable to save all the berries for sowing.]

Size and Figure of Pieces of Ice, which fell during a thunder storm, between 2 and 3 P.M., June 5th, 1849, in the garden of the Horticultural Society. *a* to *b* = 1 5/16 inch: 1 and 2 flat; surfaces uneven, with fragments of a thin frozen pellicle which had formed a



partially hollow casing: 3, lens-shaped; compact, uniformly transparent ice, surrounding a nucleus of frozen snow. Resembled in appearance the glass eyes made for some birds. *R. T.*

Lamb's Lettuce or Corn Salad (Valerianella olitoria).—I apprehend that the merits of this homely plant are not so well known as they should be. It forms a first-rate ingredient in a salad, and is, I believe, an excellent purifier of the blood. Being a native of Britain it is very hardy, and, if sown in July, August, and September, an excellent succession of it will be kept up during the winter. Then sow again in spring. If a large frame can be spared the best plants might be taken up with balls and planted thickly in it. The cultivator could then have it at command. I have never blanched it, and therefore cannot say whether that would improve it or not. Sow in beds or rows 6 inches apart; thin out afterwards to 6 inches in the row. It will afford many cuttings, if not cut down too closely. *James Cuthill, Florist, Camberwell.*

New Potatoes produced without Haulm.—On looking at my Potato field this week, I found that there was a great deficiency of plants in the ridges in which one kind of Potato was planted, and, taking it for granted that the Potato was decayed, I desired my man to examine some of them, when to my surprise I found that the tubers had never shot up stalks, but were producing Potatoes in considerable quantities, and which will come to maturity I dare say a month before those of which the plants have made their appearance, and I expect a good crop. It would be a matter of great moment if those young Potatoes would produce a crop without their shoots appearing above ground, as the produce would then be perfectly secure from disease, as far as atmospheric causes affect them. *John L. Puxley.* [And would be almost worthless.]

Weeds used for Food in Ireland.—I enclose you a plant they here call Briskane, which the starving people eat. I am no botanist, and know not its name. I have had it boiled, it tastes like Parsnip; it is best in March and April, before the top is grown. I can well understand its improving under cultivation, like Asparagus, Seakale, and Celery. *O., Mayo.* [The plant is our Potentilla anserina, or Gooseweed, a sad substitute for bread, but perhaps as nutritious as a Potato. It is eaten by boys in the Scotch Highlands, and ranks, perhaps, with pig-nuts.]

Asparagus.—A correspondent states that his beds, when he took to them 26 years since, were in a very bad condition, but that instead of destroying them, he treated them liberally, and allowed the weak shoots to grow up undisturbed, instead of cutting them off, and that they have continued to produce better crops ever since. I consider the improvement of the crops ascribable more to the liberal manner in which he has treated them than to the non-cutting of the weak shoots, which he imagines is the cause of the improvement of his beds. As a matter of course, by leaving any of the earlier young growths undisturbed, the plants are benefited thereby, because they sooner commence the elaboration of sap, and have a longer season before them, than those which only commence growing after cutting is discontinued; but at the same time they weaken the present crop, and the object of removing them is to prevent this. At the commencement of spring, the crown of an Asparagus plant is studded over with buds, some of which indicate greater strength than others. It does not however always happen that the strongest embryos first make their appearance above ground; but it is reasonable to suppose that those which spring first, whether large or small, if allowed to proceed, draw to a considerable extent on the stored up sap, by which the supply that would otherwise be appropriated by the remaining bud, is considerably diminished, and the latter come up weaker than they otherwise would have done. For this reason I consider it better to take every shoot, strong and weak, until cutting is discontinued altogether; and especially as the smaller shoots need not be lost, but may be used for soups, &c., for which purpose they are as good as larger heads. It is a common practice to continue cutting as long as the beds will produce heads strong enough for table; but by this plan more damage is done to Asparagus beds than by any other species of mismanagement. With regard to the comparative value of strong and weak shoots, the former are preferable, as the strongest buds next year will be found at the base of the most luxuriant shoots of this year. Cutting should be discontinued altogether about the middle or end of June. Beds are rendered gappy, by continuing to cut too late. By this practice sufficient eyes are not left on the plants to produce shoots to renew or increase their vigour; also, where salt is not used, the roots are frequently attacked by wireworm and other insects, by which the plants are weakened and gradually disappear. This is an excellent time to apply salt, which will, of course, prevent this evil, and will very much assist in keeping down weeds. The best method of applying it is in a liquid state, or if this is inconvenient it may be scattered over the ground in showery weather; in either way a moderate dressing, equal to about 1 lb. to a square yard, may be applied with advantage, at intervals of two or three weeks during the summer. It is a very cheap material, and as it answers at the same time the double purposes of a manure and a destroyer of weeds, I consider that it pays well for the outlay. The beds should be covered in autumn with farm-yard manure, which should be rich, well rotted, and 2 or 3 inches in thickness; but it is not advisable to dig mould out of the paths for any purpose, as many of the best roots are there and are liable to be damaged: a little soil may be laid over the dung, for the sake of neatness, but it should be cautiously obtained. During winter the rains will wash the rich particles of the manure into the soil beneath, and in spring the greater part of the residue should be drawn off and carefully forked into the paths. Heaping material upon the beds is a waste of labour, as 3 or 4 inches of rich soil on the crowns is ample. Frequently stirring the surface to keep it open is highly beneficial; the operation must, however, be very carefully performed, or considerable injury may be done to the crowns of the plants. Late as it is, new beds may still be made, but no more time should be lost. The most convenient width is 3 feet, to contain two rows of plants 12 inches apart; the paths between the beds should be 18 inches wide. The beds should contain at least 2 feet deep of very good soil, and if that of the garden does not deserve the name, it would be better to remove it and replace it with really good material, for an Asparagus bed, if well made in the first instance, and properly managed afterwards, will last a lifetime. The best compost for Asparagus is two parts turfy loam, of a sandy nature, and one part of well reduced farm-yard manure. Stagnant moisture is injurious to Asparagus; it is essential, therefore, that the beds be well drained. If two-year old plants can be obtained, have them carefully lifted, planted with the crowns 3 inches deep, watered well, and shaded with evergreen prunings; they will yet have time to make a good growth this season, and will bear cutting from the year after next. Or if it is more convenient to procure seeds, they may be sown immediately, in drills 2 inches deep; these will come into use when three or four years old. *G. Fleming.*

Reviews.

Nanna oder über das Seelenleben der Pflanzen. Von G. T. Fechner. Leipzig, 1848; pp. xii and 396.

This is not, as might at first be supposed, a treatise merely on the irritability of plants, but a grave attempt to prove that they are endowed with consciousness, at least so far as the perception of pleasurable impressions, and of existence in common with the tribes associated with them; and this not in any Pantheistic notion of

the divine essence penetrating every part of the creation, and thus endowing the very stones beneath our feet with a sort of vital energy; nor simply as a poetic fancy of analogy, such as without straining the words too far, we may conceive to be implied by our honoured sage, when he says,

"Where will they stay, those breathing powers,
The spirits of the new-born flowers?"

But rather in fuller accordance with his views when he distinctly affirms his faith,

"that every flower
Enjoys the air it breathes."

Or, again—

"The budding twigs spread out their fan
To catch the breezy air;
And I must think, do all I can,
That there was pleasure there."

In attempting to prove this, the learned author goes through a vast variety of matter without striking out anything very new or interesting. Some of his chapters indeed may be read with pleasure, but those will be found the most attractive which are the least argumentative. It is to be observed, however, that he keeps tolerably clear of the mysterious analogical language which is so common amongst German writers, whose glimmerings of light often become palpable darkness when tricked out in the shadowy terms of metaphysics, the most obscure and fanciful analogies meanwhile being brought forward with all the gravity of solid argument. The author justly enough denounces all such methods as self-deceptive, while they aim at enlightening others; though, after all, he lays more stress on analogy than we are wont to do as a legitimate medium of argument. As illustration analogy is often valuable and interesting, and leads the mind into new and often profitable trains of thought, but if pushed beyond its proper province it becomes a dangerous weapon.

The following summary of the argument will at once give some notion of the author's views, and of what is to be expected by those who may be inclined to examine the fountain head for themselves.

1. Man's original conceptions of Nature, as well as the characteristic and æsthetic impression made immediately by plants, are far more in favour of their being endowed with perception* than of the popular notion, derived from the prejudices of education, now prevalent against this position.

2. Plants on the whole resemble us less than beasts, but agree with us so directly in their principal traits, that though there may be a great difference in the nature of the soul with which they are endowed and ours, we are not justified in denying them altogether the possession of a perceptive principle. The relative proportions on either side are such as that the affirmation of such possession fills up the gap which the consideration of the perceptive faculties of man and beasts evidently leaves.

3. The fact that plants have not, like beasts, nerves or similar organs of sensation, does not prove that they are without perception, since this may be effected without such organs, though requisite for animals. The notion indeed of sensation requiring absolutely the peculiar form of animal nerves and organs of sense, rests on untenable grounds.

4. Nature considered as a whole is much more satisfactory when perception is granted to vegetables than when it is altogether denied, since many relative proportions and arrangements exhibit in such a case a lively and instructive meaning, which otherwise lie dead and idle, or appear mere sport.

5. The fact that the vegetable kingdom is subservient to man and beast is not decisive against the existence of some proper object of its own, since in Nature itself two consistent objects are not irreconcilable, and indeed the animal kingdom is subservient in its turn to the vegetable.

6. If plants, considered as perceptive beings, seem to lead a sorry life, since they are forced to bear much injustice from man and beast without being able to defend themselves, though such may appear to be the case when considered from our own point of view, the difficulty ceases when we regard vegetable life in accordance with its own intimate relations. More stress however is laid on this than it deserves.

7. If we suppose that plants have no perceptive powers, because they have no freedom or voluntary motion, we either imperfectly appreciate the facts which enable us to recognise such freedom in plants, though in the same sense as in animals, or we expect something from the former which is not to be found in the latter; for, as for freedom, strictly speaking, it exists no more in the one than the other.

8. Inasmuch as the vegetable and animal kingdoms are connected with one another by an intermediate kingdom, where the differences of both are ambiguous, this intermediate kingdom moreover containing the most imperfect plants as well as animals, we cannot consider the vegetable as positively lower than the animal kingdom; for, on the contrary, it begins to rise again from the intermediate kingdom through the higher plants. This, and the circumstance that the animal and vegetable kingdom have a contemporary origin in the history of creation, is a proof that in respect of being gifted with perceptive powers the one is not subordinate to the other.

9. If we overlook the signs of centralisation, intimate union, or independent conclusion, in the vegetable organism, as the condition or expression of unity and individuality of soul, we either do not take the right point of view, or we expect from plants what we do not find in animals.

10. It is probable that the perceptions of plants are far more purely sensual than those of animals which, though void of reason and self-knowledge, have yet remembrance of the past, and foresight, whereas the perception of plants probably is confined to the present, without, however, being comprised in the more general pervasion of the universal by the divine essence. The sensual perceptions meanwhile of plants, instead of being less developed than those of animals, are probably still more energetic.

The title of the book may seem obscure to some of our readers, but those who are acquainted with the Scandinavian mythology will recognise Nanna (the blossom, daughter of Nep the bud*), as the wife of Balduz, the God of light. *B.*

* It should be observed that the German word "seele" is used by our author not in the sense conveyed by the popular use of the word soul, but in the sense in which it is used in the scriptural expression, "body, soul, and spirit."

* Nep is the same with the German Knopf and with the English Knop, which occurs several times in the Bible in the description of Solomon's temple.

Garden Memoranda.

Horticultural Society's Garden.—This is perhaps the best time of all the year for paying this garden a visit. The grounds are in excellent order, the large Wistaria (Glycine) sinensis, on the conservative wall, is in full blossom, as well as a pretty tree of it, some 6 feet high, with a stout gnarled stem, on the lawn. Then the Rhododendrons form quite a treat. They are beautifully in flower, as are also the different kinds of Crataegusses and Horse Chestnuts. The red one (*Æsculus carnea*) forms one of the handsomest lawn trees of its season which our gardens possess, and yet it is but now and then that one meets with it. It is certainly not so well known as it should be. The Orchid-house, at all times worthy of inspection, is especially so now, when many of this interesting tribe are in bloom. The shelves of the adjacent greenhouse were gay with plants of the Many flowered Oxalis (O. floribunda), not the plant which some of our correspondents have recommended for bedding, but an annual, one producing a profusion of loose bunches of rose-coloured flowers on the end of peduncles branching off the main stem, and paler than those of the O. floribunda alluded to by our correspondents. Two species of Oxalis, very different in aspect and habit, appear to be known by this name. Gardenia Rothmanni has been in flower in the large stove, as has also Mr. Fortune's Gardenia, which proves to be a distinct and fine thing. The pretty cream-coloured bell flowered Hoya (H. campanulata), was also in blossom here, together with the now pretty well known Hoya imperialis. Among Mr. Fortune's Pæonies, which have again flowered, some more new ones have been discovered. One of them has been named atrosanguinea, on account of its colour, which is a very dark red. In the flower garden we remarked a bed of the little white starry-flowered winter Violet-grass, figured at p. 239, 1848. It forms an interesting bed, and is in flower nearly the whole year round. In the small conservatory in the experimental garden we met with a bush of Philadelphus mexicanus, a comparatively new half hardy shrub, with white rose-shaped flowers, which smell as sweetly as Sweet Peas, and even sweeter. In this house was also the female Garrya elliptica; but the greatest novelty it contained was a new Californian Mimulus named tricolor. The flowers of this charming species are small, but exceedingly pretty—pink, with five round deep crimson spots placed at equal distances round the mouth of the corolla, part of the lower lobe of which is yellow, giving the flower altogether a striking and interesting appearance. It is a valuable acquisition. The little greenhouse adjoining this conservatory was gay with Cape and other Pelargoniums, among which was a beautiful specimen of Tom Thumb. Among other things we remarked here the sweet-smelling Aquilegia fragrans, a hardy Indian species, and Hehophila trifida, a pretty blue-flowered half-hardy annual, whose only fault is that of shutting up its flowers early in the afternoon, and in dull weather. In pits in front of this house a new white blossomed Californian Limnanthes has flowered, together with a pretty, bluish purple Pentstemon named azureum, also one of Mr. Hartweg's introductions from California. The Sweet Bay of that country, Evergreen Plum, and other evergreens, together with various Pinuses, have all been raised in the garden. Among the latter may be mentioned P. Benthamiana, a noble Pine, stated to attain in California a height of 200 feet, with a stem 28 feet in circumference. P. radiata, a pretty species somewhat resembling P. insignis. It is said to reach a height of 100 feet, with a straight stem branched to the ground. P. muricata; this has been named P. Edgariana by Mr. Hartweg, but it has been found to agree with the P. muricata of Don, and therefore Mr. Hartweg's name must be relinquished. It is a distinct looking Pine, and Mr. Hartweg supposed that it had not been previously described. Associated with the above were also P. tuberculata, stated to be a slow-growing species, seldom attaining more than 25 or 30 feet in height; also a pretty little Californian Cypress named Goveniana, in compliment to Mr. Gowen, the Society's secretary. It has something of the aspect of C. Lamberti; but is stated not to attain a height of more than 8 or 10 feet. In the large conservatory the huge bushes, or rather trees of the red and white varieties of Brugmansia were beautifully in blossom. The white one is sweet scented.

Miscellaneous.

Gardeners' Benevolent Institution.—We are happy to announce that at the late anniversary of this Institution the donations at the dinner reached upwards of 200*l*. The chair was taken by Captain Lamont, R.N., Vice-President, in the absence of W. F. G. Farmer, Esq. He was supported by Dr. Henderson, Henry Pownall, Esq., and many other influential persons. A list of the principal subscriptions, handed in on the occasion, will be found in our advertising columns of to-day.

Atmosphere of Orchid houses.—The most obvious defects in the present management of Orchid-houses consist in the want of attention to their atmosphere, particularly as regards moisture, for the plants in such structures derive the greater part of their subsistence from the vapour of the house. When the plants are exposed to every change of temperature and humidity, they are liable to suffer, and this in proportion to their luxuriance. Great attention, therefore, should be paid to the state of the atmosphere, and to having at command ample means of producing an abundance of heat or moisture, the one to counteract the other whenever either may be in excess. When an excess of moisture takes place, admit external air freely, raising the temperature at the same time; when dryness prevails, reduce the temperature and increase moisture by evaporation; for the amount of exhalation from the foliage depends upon two circumstances, the saturation of the air and the velocity of its motion when dry. Damp air, or floating moisture of long continuance, would be detrimental to the plants, for it is absolutely necessary to health that the process of transpiration should proceed freely under all circumstances. In a confined atmosphere like that in which Orchids grow, it might be found beneficial to the health of the plants if a small quantity of ammonia or carbonic acid were set free in the air, or dissolved in the water used in syringing the plants, both these substances being very soluble. The latter might be applied to the air, by placing large pieces of fresh chalk or limestone on the shelves, and pouring sulphuric acid, diluted, over them; shallow pans, filled with Oats or Barley beginning to vegetate, are also beneficial to plants confined in a warm damp atmosphere. *From Mr. Gordon's Paper in the Journal of the Horticultural Society.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Particular attention should at all times be paid to the preparation of winter flowering plants, and first and foremost of these is the Azalea. Those plants which were forced early, and which have completed their growth, should be gradually exposed to a cooler temperature, and when their bloom buds are set they should be set out in an open airy situation. As habit becomes a second nature, these earliest forced plants of last season will of course come in for the same purpose this year. After they are fairly set, if those which have filled their pots with roots are favoured with a slight shift, according to the recommendation given a month since, it will be found particularly serviceable to those varieties of a half deciduous habit, like A. indica alba; for the consequent activity of the roots tends very considerably to preserve their foliage under cool treatment in autumn, besides giving additional splendour to the flowers. Euphorbias, Eranthemums, Poinsettias, Franciscea, Gardenias, Gesneras, Begonias, Justicias, &c., should have their wants promptly attended to. Vincas, Gesneras, Justicias, Eranthemums, &c., should now be propagated, for flowering in small pots during autumn and winter. Aphelandras, Vincas, Thunbergias, &c., should be encouraged with a watering of liquid manure once or twice a week, according to the progress which their roots have made towards the sides of the pots. Leaves of Gloxinias should now be inserted into pots of sand; well managed, these will form strong young bulbs this season, and, after a partial rest in December, may be started again, and will flower in February in 6-inch pots. The forcing pits should now be actively employed in forwarding Achimenes, Gloxinias, Balsams, Cockscombs, Globe Amaranths, and other plants for immediate and autumnal display. Shading and ventilating must now be attended to with a watchful anxiety. Do not habituate the plants to an excess of the former, use it only in strong sunshine.

FLOWER GARDEN AND SHRUBBERY.

No flower gardener can be dissatisfied with the beautiful weather which we are at present experiencing, except it be that he finds weeds and lawn Grass to grow too fast for him. We may, however, be thankful to see the season so favourable for the growth of plants; and to keep things in order we must not object to a little extra exertion. Independent of the general cleaning and mowing, it will be an advantage to stir the soil between the plants, wherever it is caked over by the late rains. The operation will destroy weeds, and the ground will keep clean twice as long as it will with merely hoeing and raking. Peg plants down and tie others up; for the former purpose small birch hooks are most substantial, but many of our bedding plants, if once fixed in their position, retain it either by emitting roots or by the natural inflexibility acquired by their stems. For the fastening down of such plants we reserve all the roughest and coarsest of our bass matting, and cut it into pieces about 6 or 8 inches long. These we form into hoops which clip the shoots, and the ends are fastened into the ground with a blunt dibble. In performing this operation the heads of the plants should be turned towards the north, by which means

the beds will appear well filled from all sides. Blight, caterpillars, and other pests have been exceedingly troublesome, but the late frequent showers have been very beneficial in cleansing the plants, and particularly Rose trees. Caterpillars, however, are very numerous, and, unless active measures are taken to destroy them, they will soon do material injury to the flower-buds. Pinks should be propagated immediately; it should not on any account be put off after the expanding of the first flower in each plant, and the only good reasons for waiting so long are to secure the correct labelling of the young plants and the selection of cuttings from the best varieties. If slippings are taken from the plants now they will strike with much greater facility than either slippings or cuttings taken a month hence, besides having the advantage of a longer season to form well-established plants in before winter.

FORCING DEPARTMENT.

VINERIES.—If the fruit is all cut in the earliest house, the Vines should again be treated with a moderately warm atmosphere, and syringed daily, to destroy insects, and to keep the foliage in a healthy state as long as possible. Grapes just colouring should be assisted by a high temperature in fine weather, accompanied, however, with abundance of air, and with a moderate fire heat in dull or cold weather. The greater part of the litter may now be removed from the front borders, leaving a little of the most decayed to prevent too sudden a check, and to be forked into the soil a week or two hence. In the late houses where the fruit is just set, the moist atmosphere, which was discontinued while the flowers were setting, should now be revived, and pains should be taken, by the frequent use of sulphur, to destroy red spider and other insects, so as to ensure the health of the foliage till the fruit is all cut. If no plants are grown beneath the Vines, the laterals may be allowed to extend themselves as long as they do not shade the principal leaves. PEACH-HOUSES.—In the earliest house, as soon as the crop is gathered, the trees should be well washed with the engine, and syringed daily; the hot-water pipes, and any part of the house which is affected with red spider, should be sulphured, and if the soil is dry it should be well watered; these directions are given with a view to preserve the leaves, and to keep the plants in a healthy steady growing state as long as possible. By this means the plants accumulate an extra quantity of elaborated sap, and avoid the injury arising from the alternate checks and excitements which are generally experienced during autumn in our variable climate by plants which are allowed to go early to rest. FIG-HOUSE.—In the early house the second crop will now be advancing. Abundance of water must be supplied to the plants, and, to keep them free from insects, they must be regularly syringed.

KITCHEN GARDEN.

As weeds are advancing rapidly, and must by some means be destroyed, and as forking or stirring the soil among the growing crops is highly beneficial to them, let this method be practised. Cutting should now be discontinued entirely from a portion of the Asparagus beds, especially from those intended for forcing early next winter. A few rows of Cauliflowers, Cabbages, and autumn Broccoli should now be planted at intervals of from 10 days to a fortnight, by which they will come into bearing in similar succession. The strongest plants should be selected from the nursery beds, and should be lifted and transferred with as much earth as will hang to their roots. Continue to transplant from seed to nursery beds as soon as the plants are large enough to handle. A small crop of Celery for early use may now be planted, selecting the strongest plants. The early sown crops of Parsley now require thinning; for the present it will be sufficient to leave them about 4 inches asunder, retaining the finest curled ones; as the plants increase in size, the intermediate ones may be cut away as they are required for use. Radishes and Lettuces should now be sown on very rich moist ground; but, if the soil is of a hot and sandy nature, it will be better to cultivate these salads under the shade of a north wall during the summer months.

State of the Weather near London, for the week ending June 7, 1849, as observed at the Horticultural Gardens, Chiswick.

June.	Moon's Age.	Barometer. Max.	Barometer. Min	Thermometer Max	Thermometer Min	Thermometer Mean	Wind	Rain.
Friday . 1	10	30.088	29.940	78	48	63.0	S W.	.00
Satur. . 2	11	30.162	30.076	75	47	61.0	W	.00
Sunday . 3	12	30.222	30.117	75	51	63.0	E	.00
Monday . 4	13	30.101	29.939	81	57	69.0	W	.00
Tues. . 5	[illegible]	29.987	29.786	85	57	71.0	W	.20
Wed. . . 6	15	30.109	30.080	66	51	58.5	N.E	.07
Thurs. . . .	16	30.157	29.920	71	50	60.5	N W.	.00
Average . .		30.11 .	29.997	75.8	51.5	63.7		0.27

June 1—Fine; overcast and fine, clear at night.
— 2—Fine; overcast, clear.
— 3—Fine; hazy, clear at night
— 4—Fine; very fine, partially overcast.
— 5—Thunder early A.M.; very fine, hot and sultry, between 2 and 3, P.M., thunder, lightning, rain, hail, and large pieces of ice, showery.
— 6—Overcast throughout.
— 7—Partially overcast; fine; overcast; light clouds.
Mean temperature of the week, 5 deg. above the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending June 16, 1849.

June.	Average Highest Temp	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 10	72.0	49.2	60.6	10	0.93 in.	1	4	1	1	2	7	4	3
Mon. 11	72.8	50.1	61.4	7	0.17	—	6	1	1	3	6	7	—
Tues 12	73.4	51.1	62.3	9	0.73	—	5	3	1	3	6	3	1
Wed. 13	74.0	50.9	62.5	9	0.46	1	4	3	1	2	6	4	2
Thurs. 14	74.8	50.9	62.8	8	0.98	1	1	4	1	4	6	5	1
Friday 15	74.7	51.1	62.9	9	0.90	1	3	3	2	4	4	2	4
Satur. 16	75.0	50.3	61.6	5	0.17	1	2	4	1	6	5	2	2

The highest temperature during the above period occurred on the 12th and 13th, 1843—therm. 90 deg.; and the lowest on the 16th, 1841, therm. 36 deg.

Notices to Correspondents.

ANEMONES: *A S W.* We have sown single Anemone seeds as soon as they were ripe, and with the greatest success. The young plants come up immediately, and bloom beautifully the succeeding spring. It is by far the best plan. Single varieties are not usually named.—*E D S.* In dry and well drained situations Anemones may be planted in October; these will flower early. They may again be planted in the latter end of January, and will bloom well in succession. As soon as the roots are removed from Ranunculus beds they should be dressed with lime, throwing them up in small ridges, and frequently turning them during the autumn months. *W.*

ANTS: *Q.* There is a great difficulty in getting rid of these insects. If you can reach their runs and nests *boiling* water will kill them; if not, turpentine poured into the nest or placed in the runs will answer the purpose. But you must be content to have some damage done to your Grass by either appliance. Use *spirits of turpentine*, and cover the nest closely down with turves, &c., for a few hours after it is administered.

APHIDES ON ROSES: *J T* Get rid of them by means of Tobacco smoke and the parapetticoat, described at p. 459 of our volume for 1846.‡

ASPARAGUS *F J and Subs.* See a paragraph in our "Home Correspondence" of to-day.†

BACK NUMBERS OF THE GARDENERS' CHRONICLE: The publisher begs to say that any of the following back Numbers may be had. Any subscriber who will forward postage stamps equivalent to as many numbers as are required, will have them sent free by post. A few copies of the volume for 1847 are still on hand, price 30*s.* each, also the volume for 1848, price 30*s.* 6*d.* each The volumes of former years are out of print.

1841—1, 8, 13, 14, 15, 16, 17, 18, 20, 22, 23, 24, 26, 27, 28, 29, 30, 31, 32, 34, 45, 46, 47, 48, 51.

1842—1, 6, 8, 11, 12, 16, 18, 20, 22, 31, 32, 34, 39, 41, 42, 45, 49, 50, 51, 52, 53.

1843—13, 16, 17, 18, 20, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38, 40, 41, 42, 43, 48.

1844—1, 2, 3, 4, 5, 6, 7, 8, 9, 10 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 34, 35, 37, 38, 39, 40, 41, 42, 43, 44, 45, 48, 49, 51, 52.

1845—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 17, 18, 19, 20, 21, 23, 25, 27, 28, 31, 33, 39, 40, 41, 44, 45, 50, 51, 52.

1846—4, 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 22, 23, 26, 28, 42, 43, 46.

1847 1, 2, 3, 4, 5, 8, 10, 11, 13, 14, 15, 19, 21, 22, 26, 27, 32, 33, 36, 37, 41, 42, 43, 44, 46, 47, 48, 51, 52.

1848—1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 30, 32, 33, 34, 35, 36, 37, 39, 40, 41, 44, 45, 51, 52, 53.

BAROMETER. *C Parsons.* We do not recommend tradesmen. Apply to philosophical instrument makers.

BEDDING PLANTS FOR NOSEGAY. *R W B* The different kinds of Pelargonium, Verbena, Fuchsia, Calceolaria, Anemone japonica, Ten-week Stocks, Asters, Heliotropes, Bouvardias, Salvias, Phlox Drummondi and perennial Phloxes, Lobelias, and Pentstemons.

BEES. *A E H.* You must shade your bell-glass by some sort of covering, a small hive or cap will do very well. It is not necessary for the cap to be upon your hive except when you expect the bees to occupy it. Protect them from rain by some better means than by the cap. *W.*

GARDEN WALLS *J C L.* To be of real use the coping should be 9 inches deep.

HIBISCUS ESCULENTUS *P T O.* It is not worth cultivating in this country. If you want to amuse yourself with it, treat it exactly like a garden Balsam, giving it plenty of heat and moisture. It is called Bamian not Balmia. Strike double Furze from cuttings of the half ripe wood under a bell glass. Propagate hardy Azaleas by layering. Plants are usually raised from layers, they may be raised from seeds, like other plants, if the seeds are ripe and perfect.

INSECTS *G S W, Gloucester.* The Tipulidan is Ctenophora pectunicornis. The red spotted one, Cercopis vulnerata; the bronzed and blue ones are *Donacia Proteus*, and the sawfly is Cephus pygmæus, all common. We shall be obliged for living specimens of the larvæ from the wine corks. *W.* ——?. The excrescences on the twig are scale insects, and the ants with which they were surrounded were sucking up the saccharine fluid which they emit. The appearance of the Laurel leaves was probably caused by atmospheric influence before they were bruised. *W.*—*W M.* We found some specimens of the red spider on the leaves sent, and would recommend you to fumigate well with bruised Laurel leaves, first closely shutting the glasses and doors. *W.*—*J G* The insects found at the roots of the Ranunculuses are a species of Millepede, which we do not regard as the primary cause of the mischief, as they prefer decaying to sound vegetable food *W.* —*G S W.* We have never heard of slugs emitting a strong sulphureous smell, as described in your letter. *W.*—*H B P.* The Raspberry buds are infested by a small beetle, Byturus tomentosus See last week's Answers to Correspondents. *W.*

LAPAGERIA: *G P.* You are misinformed. This plant has not flowered in England. It is true that it is figured in the "Botanical Magazine," but the flowers there are drawn from dried specimens, and coloured from drawings made abroad. It is, no doubt, a marvellously fine thing.

LEGAL QUESTIONS *Alpha.* For obvious reasons we invariably decline to reply to inquiries concerning the law of anything. It is not our business to satisfy mere curiosity; and if any real purpose is to be served by such inquiries they should be addressed to a professional adviser in the usual professional way. All we can do with reference to your inquiries is to repeat, for your information, certain admitted legal maxims. —Annual roots and flowers planted in a garden may be removed by any tenant, and so may young fruit trees and shrubs in the garden or nursery of a person to whom the same has been let for the purpose of sale or trade.—2 East's Reports, p. 88. But unless a garden, or orchard, or other land has been so let as nursery ground, no tenant can, as between him and the landlord, remove any flower, root, tree, or shrub, not strictly an annual, or not usually taken up at one season of the year and replanted at another; and if without authority he should remove the same, he would be liable to an action for the waste. And if a tenant, of any description, has made Strawberry beds, he cannot, either before or at the expiration of his tenancy, and "whilst they are likely to continue productive, remove or destroy the same, without being liable to an action for injury to the landlord or succeeding tenant."—1 Campbell's Reports, p. 227. "It is illegal for a tenant to remove roots or other (perennial) plants growing in the soil, or to take away greenhouses, without the consent of the landlord; unless some special agreement shall have been made when the occupancy began." *G. C.*, 1842, p. 681.

LIME-WATER *Sub.* Take a quantity of fresh burnt lime; pour over it 20 or 30 times its measure of water. Stir them well together; then let the lime settle, and pour off the clear fluid, which is lime-water. It kills slugs and worms, and does not injure plants.‡

MICROSCOPES: *M J.* The most useful simple microscope is that called Ellis's—provided it is fitted with good lenses. We cannot recommend dealers publicly, but if you will send your name and address we will put you into good hands.

NAMES OF PLANTS. *J A.* Pancratium maritimum.—*W D F.* Your Portugal Laurel leaves are overrun by Lepraria viridis. —*C L.* Species of Cereus and other Cacti cannot be determined by mere flowers; yours is perhaps C. Eyriesii.—*J B L* 1. Montia fontana. 2. Lathyrus palustris, with very narrow leaves.—*Joseph Ellis,* Asclias? not determinable by a single flower, probably virens; Erica mediterranea. — *Uckfield.* Medicago maculata.—*J R M.* The Watercress producing its flowers. Syringe your blighted Roses with lime water every evening; if that will not cure them you must dust them with sulphur. We suppose by blighted you mean attacked by parasitical fungi.—*J E T.* Anthriscus sylvestris.—*F H F.* They seem to be fragments of the leaves of Lovage, a carminative plant said to be "good physic for calves."—*T U V Z.* Geum urbanum and Anthriscus sylvestris.—*Rusticus.* 1 and 2 right. 3. Sisymbrium Thalianum. 4. Poa trivialis attacked by Uredo candida. 5. Galls on the leaves of Acer campestre.—*J W.* We will tell you next week, if we can.—*J Moore.* It is Gardenia Stanleyana.

ORNAMENTAL LATE-FLOWERING SHRUBS: *Lady M.* Spiræa ariæfolia, Philadelphus Gordonianus, Pavia macrostachya, Buddleya globosa and Lindleyana, Hibiscus syriacus and varieties, Hydrangea japonica, and Magnolia grandiflora.¶

PAULOWNIA IMPERIALIS: *Lady M.* It is perfectly hardy, and may with safety be planted out now.¶—*Claremont.* Many thanks; we are preparing some remarks upon it, and had hoped to have done so ere now.

PEGGING DOWN BEDDING PLANTS WITH MATTING: *Amateur.* Many thanks. The plan has been recommended at p. 575 of our volume for 1848, and again to-day in our "Calendar of Operations."‡

PELARGONIUMS: *A Z.* You will flower them better in your brick frame near the glass than in your old-fashioned greenhouse under Vines. Of that there can be no doubt. There is no advantage in plunging the pots except that in that case the roots would be less apt to suffer from drought ‡

POTATOES: *R C Harding.* Your leaves look as if they had been injured by cold at night rather than attacked by disease. The symptoms are not those of the latter, so far as we can see in the morsels you have sent.—*J T.* Unless something really new and important can be stated about the Potato we are not disposed to occupy our columns further with the subject, which is perfectly threadbare. New facts or new views are alone acceptable to the weary public.—*Preston.* We are so unfortunate as not to see how your explanation explains anything. Do you mean to say that during the last 100 years we never had such a conjuncture of circumstances as has occurred in every year from 1845 to 1849 inclusive? Indeed you are wrong in offering conjectures as a substitute for a rational explanation of a great mystery.

PROTECTING TRELLIS. *T.* We should remove them in the summer and put them on again in autumn, when the nights are becoming cold and damp. The border will not need protection, as far as we at present understand the action of these contrivances.

RHUBARB: *Sub.* Ask for Mitchell's Prince Albert. We cannot recommend dealers.

SPORTS: *Eboracensis.* The Gleditschia is new to us; the other is common.

TARA: *J H.* This is a kind of Arum. It cannot be cultivated in the open air in this country.

TREE ROSE. The price of this work is reduced to 3*s.* 6*d.* (post free), to be had at the Office of this Paper, or of any bookseller.

VINES: *F E.* Stop the leader, but not the lateral immediately below.‖

MISC: *Sub, Crewe.* See p. 34, 1847. Mr. Cattell, Westerham.‡ *D R.* An advertisement, perhaps. The cost would be 5*s.*—*P T O* asks if any correspondent can oblige him with a receipt for making spruce beer from fresh Pine branches. He also begs to say that salad sown as recommended, at 6 inches apart, must be excellent for second or later crops, but in Rome, in the early season, the thinnings are used as an excellent salad.—*O S.* Seakale and Rhubarb plants are strengthened by cutting off the blossoms before they seed.‡

SEEDLING FLOWERS.

ALSTRŒMERIAS: *W L G.* Your seedling is like those raised by Mr. Van Houtte, and of which some account has been given by the late Dean of Manchester. There is nothing remarkable about it.

AQUILEGIAS: *Norvic.* There is nothing remarkable in your double striped Columbine. The Bean appears to be the seed of some Phaseolus, and no doubt tender.*

CALCEOLARIAS *M W.* No. 2, dark shaded purple, marbled with pale yellow, particularly near the outside, shape, outline, and size good, but slightly crumpled near the eye, a nice variety. 13, deep yellow, beautifully and regularly spotted with crimson; shape and outline good, a pretty variety, but too small. 14, purple, marked with pale yellow near the outer edge; shape flat, outline tolerably good, size rather small. 15, purple, irregularly marbled with pale yellow; shape and outline good, size medium, eye rather large. 16, dark crimson, marked with pale yellow near the outer edge, shape and outline tolerably good, but too small, and dull in colour. 17, dark purple, marked with pale yellow near the outer edge, outline good, shape rather flat, crumply near the eye, size small. 18, pale lemon, spotted with shaded crimson, pretty, but very small. 19, dark crimson, pale straw near the outer edge, shape and outline good, but too small. 20, bright crimson, pale straw near the outer edge, shape and outline tolerably good, but too small.*—*F B.* 1, bright yellow, prettily mottled, with irregular shaped brown spots; outline and size good, rather crumply near the eye, and flat. 2, pale yellow, marked with somewhat large blotches of shaded brown; outline bad, shape flat, very large. 3, bright yellow, irregularly marbled or striped with chocolate; outline tolerably good, shape rather flat; a fine large flower. 4, dark crimson, irregularly marbled with bright yellow; outline and size tolerably good, shape rather flat, and eye rather large.* *C J.* 1, crimson, slightly marbled with yellow; good in outline and shape, medium size; the best. 2, brown purple, faintly marbled with pale yellow; shape and outline tolerable, but crumply near the eye. 3, bright yellow, irregularly spotted and striped with chocolate; pretty, but too small. 4, yellow, spotted with dull brown; too small, and eye large. 5, chocolate brown, thickly spotted or marbled with bright yellow; shape tolerably good, but much too small. 6, monster flower, chocolate, marbled with buff; outline bad, size large, shape singular. 7, bright yellow, with a few crimson spots in the centre; colours well contrasted, but flowers much too small. 8, pale lemon, spotted with pale purple; shape, size, and outline tolerably good. 9, yellow ground, spotted with light brown; small, rather flat, and bad in outline. 10, light brown, minutely dotted, neat, but very small. 11, pale yellow, with numerous small dots in the centre; good in shape and outline, but much too small. 12, bright yellow, marbled and spotted with brown; shape good, outline a little defective and flowers small.*

HEARTSEASE: *Ebor.* Upper petals of Forget-me-not, purple; lower ones, deep violet; centre, pale yellow, with dark feathery markings round the eye, which is bright yellow; shape and substance good, with a nice even edge. Ahasueras is purplish crimson, with a deep golden-yellow centre, slightly veined with dark lines; shape and size good, substance middling, rather rough at the edge.*—*S W H.* Both too much faded to judge of their merits.* .

HEATHS: *M T.* Your seedling is not different from E. baccans.*

PELARGONIUMS: *R.* The petals were all detached from the stalks when the flowers reached us, and were all mixed with each other in such a manner that nothing could be said respecting them. Flowers sent for examination should be packed in damp moss or damp brown paper, and each sort should be kept by itself.*

RHODODENDRONS: *J Law.* A fine high coloured variety, and being a late flowerer, is a desirable kind.*

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TURNIP MANURE ... ... ,,	7	0 0
SUPERPHOSPHATE OF LIME ... ,,	7	0 0
SULPHURIC ACID AND COPROLITES ,,	5	0 0

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HEATING BY HOT WATER.

The Agricultural Gazette.

SATURDAY, JUNE 9, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
TUESDAY, June 12—Agricultural Society of England.
THURSDAY, 14—Agricultural Inqr. Society of Ireland.
FARMERS' CLUBS.—June 11 Claydon.—June 13 Furness.

WE have more than once illustrated the need of FARM ACCOUNTS to the economy of farm management Farming is just like any other business, so far as this is concerned: no one can be expected to succeed in it who does not keep such a record of his transactions as may enable him to ascertain, at any time, where he is gaining and where he is losing But it is extremely desirable, in order to the direction of more general attention to this subject, that forms of book-keeping be devised which shall involve a minimum of time and of skill in their efficient working. The day-book, journal, and ledger, must, if possible, be combined in some way, and the accounts to be opened in the last must be few and distinct in their nature.

We must first endeavour to classify actual money payments and receipts, and to keep a distinct record of them in connection with the different branches of the farm business; and for the present we should leave such refined distinctions as shall bring out the actual cost of every field, or it may be every crop, in horse labour, and rent, and interest of capital, as well as in actual money outlay, to those already well versed in the subject, who, indeed, do not need our assistance.

Messrs. FULLARTON, of Edinburgh, have lately published a thin quarto volume in explanation of a system of books which they are prepared to issue, on the plans of Mr. EDWARD POND. This writer prefaces the specimen given of his books with remarks on the different branches of farm management of which he opens accounts.

The following is a specimen on the feeding of cattle.

"The opinions prevailing among practical farmers—theoretical agriculturists and scientific men—as to the feeding of fattening cattle, are so varied and so extraordinarily opposite in many respects, that it would indeed be a bold step to lay down anything like a standard rule. As the subject is, however, one of deep interest, not only to the farmer but to the community, the following Tables have been compiled, with the view of exhibiting, in 40 different modes, the proportions which each bears (according to the nutritious matter contained, and as derived from analysis) to 200 lbs. weight of Swedish Turnips, being about the quantity which an ox weighing 60 stones imperial will consume per day, exclusive of an allowance of straw, chaff, or other refuse of crops required to assist and promote digestion, which allowance must of course be regulated by any other mode of feeding adopted, and the manner in which the food is prepared. Over feeding is, no doubt, extravagance and loss—liberal and judiciously regulated feeding, economy and profit—and stinted feeding, ruin.

TABLES OF COMPARATIVE FEEDING OF FATTENING CATTLE.

Modes of Feeding.	Turnips		Oilcake		Bean-meal.		Barley-Dust.		Bean.		Barley.		Oats.		Beans.		Wheat.		Carrots		Potatoes.		Mangold Wurzel.	
	Stones.	lbs.	Stones.	lbs.	Stones.	lbs.	Stones.	lbs.	Stones.	lbs.	Stones.	lbs.	Stones.	lbs.	Stones.	lbs.	Stones.	lbs.	Stones.	lbs.	Stones.	lbs.	Stones.	lbs.
1	6			6																				
2	3	7		8																				
3	5					6																		
4	8							4																
5	6								1	4														
6	3			4								4												
7	3	7												5		3								
8	5											4						2						
9	8																		3					
10	8																						2	
11	6	7										5				6								
12	5																							
13	8													5										
14	8																			7	1			
15				3															4	7				
16				7															2					
17														6					3					
18																5			3					
19												7							1	7				
20																			3				2	
21				4								4							1					
22														5		3			1	7				
23												4						2	2	2				
24																								
25				5																			2	
26				7																			1	4
27														5									2	4
28																7							1	
29																							2	
30				3								4											1	2
31														4		2							1	4
32												6						2						7
33				6																				
34				3								5								7	1			
35												1				3				7				
36														4		4				7				
37				4								4								7				
38	6			2										6		3								
39				4								5		2		3		2						
40												5		4				1						
	89	7	4	10		6		4	1	4	4	10	3	4	2	12		9	21	9	4		15	7

N. B. The Weights Imperial—Pounds Avoirdupois—Stones of 14 lbs.

"The average weight of food per day of the foregoing Tables is 53$\frac{5}{6}$ lbs., containing of nutritive matter 8$\frac{3}{4}$ lbs., or about one-sixth of the weight of the food. Supposing the cardinal numbers to represent 40 oxen consuming the quantities of the several descriptions of food stated, and estimating the cost at average prices, the value of food supplied would be 1*l.* 11*s.* 9*d.*, or about 9$\frac{1}{2}$*d.* per day per ox, or 5*s.* 6$\frac{1}{2}$*d.* a week.

"The weight (60 imperial stones, or 52$\frac{1}{2}$ stones Dutch) is, perhaps, more than the average at which Scotch farmers in general stall, or, if the term may be used, court-yard their oxen, but it is not above the average to which they feed them. Supposing, however, an ox weighing 40 imperial stones to be stalled or put in the court-yard for feeding, it would become a simple case of proportion, and it would be for the farmer to judge, from the breed and condition of the animal, or other circumstances, at what rate of feeding he should commence. Say that the ox is in such condition that he can be put upon two-thirds the allowance of an ox weighing 60 stones, for the first month—three-fourths for the second—five-sixths the third month, and the full allowance the fourth month, he will consume (taking the average of the Tables) 348 stones weight of food, yielding of nutritive matter 56 stones. Estimating that one-third of the nutriment is converted into beef and *fat*, the weight of the ox would then be, by four months' feeding, 58$\frac{2}{3}$ stones, being an increase of 18$\frac{2}{3}$ stones, which, at 6*s.* 6*d.* a stone, would allow about 7*s.* 4*d.* a week for feeding, outlay of capital, risks, and other expenses, being about 33$\frac{1}{3}$ per cent. beyond the actual cost of feeding, as estimated from the Tables, and little enough, considering the hazards to which farmers are exposed from disease and deaths among their cattle—the fluctuation of markets—failure in crop, and atmospheric influence.

"It is said that an ox weighing from 50 to 60 stones will consume a ton of Turnips per week, and, if thriving well, will add 14 lbs. to its weight in that period. Now, if that be the case, what farmer can say that he has any profit from feeding stock for the butcher? For the sake of testing the accuracy of this assertion, take, for example, the following statement of the cost of producing an acre of Turnips, 20 tons to the acre, the rent being 30*s.* per acre, exclusive of public burdens, and throwing aside interest on capital, and remuneration for professional skill.

Cost of working land	£2	18	6
12 tons manure at 5*s.*	3	0	0
2 lbs. seed at 9*d.* ...	0	1	6
Rent	1	10	0
20 tons to the acre)	£7	10	0 (7*s.* 6*d.* per ton.

"The inference to be drawn from this statement is, that 12$\frac{1}{2}$ cwt. per week, or 200 lbs. per day, which, according to the above calculation, would cost 4*s.* 8$\frac{1}{4}$*d.* per week, is more like the quantity than a ton per week, if the farmer is to have any profit at all from his investment of capital in feeding cattle, when for no other purpose than converting the straw of the farm into manure, which is absolutely necessary, in the case of most farmers.

"The question then comes to be, how is this conversion to be most profitably accomplished? Certainly not by supplying a ton of Turnip per week, when 12$\frac{1}{2}$ cwt. would be sufficient; and this can only be ascertained by keeping a pretty correct account of the supplies issued, preventing waste, and observing the improvement of the stock."

We venture to say that very few farmers make, by the meat manufactured, so much as 7*s.* 6*d.* per ton for their roots, excepting when these and straw alone are given to their stock. When high feeding is adopted, and Bean-meal and Linseed are used in quantity, we believe that about 4*s* per ton, besides the cost of the bought food, is all that in general is realised. But to admit this does not necessarily require us to prefer the former method, as in the one case manure of a poor quality, and in the other manure of a rich quality is manufactured—so that to raise the value of the one to that of the other, the money returns from the former would have to be largely drawn upon for the purchase of guano, and other concentrated fertilisers.

But we must not forget that it is with Mr. POND'S system of book-keeping, rather than with his ideas of cattle feeding, that we have now to do And our opinion of it shortly is, that too large a demand is made by it on the time and skill of those who would adopt it. He follows the good plan of arranging the different accounts, in which he would classify receipts and expenditure in parallel columns instead of on different pages; but there are so many of them, and so many supplementary books are spoken of besides, that the work of keeping them appears more than farmers severally would like to engage in.

It is surely possible to devise a method of arranging all the expenditure in labour and cash, and all the receipts among two or three different accounts, such as grain, live stock, and landlord, and to keep an account by means of cheque books against all goods delivered or received but not yet paid for, without any such complication or variety of records as Mr. POND suggests. We shall endeavour hereafter to point out such a method.

CONDITION OF IRELAND.

In reviewing our proceedings for the two years and half which have elapsed since the formation of this association, and in contemplating the present unhappy condition of our country, the conviction is painfully forced on us, that the

public bounty distributed through us, as well as the relief afforded from other sources, whatever may have been their value in affording a temporary alleviation of wide-spread misery, have produced scarcely any permanently useful result. Our original circular appealed to our brethren in religious profession in this country and in Great Britain It was responded to, not merely by those to whom it was addressed, but by many unconnected with our religious society in these countries, and also by the citizens of the United States, to an extent and with a munificence unparalleled in the history of benevolent exertions. The contributions confided to us, in money, food, and clothing, amounted to about 200,000*l.*, of which more than one-half was sent from America.

The means placed at our disposal have indeed been large. We have felt the responsibility thus imposed on us, and our best exertions have been given for their judicious application Several of our members have from time to time visited the more distressed parts of the south and west, in order, by obtaining a fuller knowledge of their condition, to be enabled better to administer to their relief. We sought for, and obtained the cooperation of benevolent persons in all parts of the country Wherever it appeared judicious to form local committees, we endeavoured to work through such means but in the great number of cases in which the isolation of the parties rendered united action impracticable, we trusted to individual exertion. In carrying out our objects, an extensive correspondence has been kept up. More than 40,000 letters have been received or written by the committee in Dublin, and a proportionate number by auxiliary committees in the country. We have also been brought into personal communication with men of all ranks and all classes, whether soliciting our assistance on behalf of the poor around them, or engaged in similar endeavours to alleviate the prevalent distress. Gratuitous issues of food have been made to the value of 130,000*l.*, clothing has been distributed exceeding 10,000*l.* in value; and grants of money have been made to the amount of 20,000*l.* The total number of grants has exceeded 11,000. Feeling the demoralising tendency of such extensive alms giving, we have endeavoured to encourage industry. We have made grants in aid of local manufactures have supported industrial schools, have advanced money in loans for the assistance of fisheries, and in a few cases with highly gratifying results. In order to encourage the culture of green crops, which might prove some substitute for the Potato we have distributed nearly 200,000 lbs. weight of Turnip, Carrot Parsnip, Cabbage, and other such seeds, and we also undertook the temporary cultivation of about 800 statute acres of land in green crops, by spade labour. But the contributions entrusted to us have borne but a small proportion to the whole expenditure for the relief of the country. Money has been expended to an unprecedented amount The British Relief Association dispensed about 400,000*l.* The distribution by other relief associations may be estimated at fully 200,000*l.* The collections by local committees in Ireland exceeded 300,000*l.* If we add to these the numberless contributions of private benevolence, and the remittances from emigrants for the relief of their friends at home, the aggregate may be safely estimated at one million and a half sterling. The advances by Government were on a gigantic scale, amounting to nearly 10 millions sterling.

From these various sources a large amount of relief was afforded at a period of great distress, and many persons were preserved, for a time at least, from that starvation which, without such assistance, appeared inevitable. But we are saddened by the conviction, that, with a very few exceptions, no permanent good has been done. We feel that the condition of our country is not improved, that her prospects are even worse, because her people have less hope. Many of those who were most active in administering to the relief of their neighbours, have fallen victims to exertions of mind and body beyond their capability to sustain. Others have withdrawn from the work, in despair of effecting any good. The pressure of private affairs, and, in many cases of pecuniary difficulty, has forced others to discontinue their efforts Thus, voluntary exertions have almost ceased, and even for the administration of the legal relief, paid agents are necessary throughout a large part of the country. The calamity fell first on the lowest class, especially the labouring population of the south and west. In losing their crop of Potatoes, they lost all, and sunk at once into helpless and hopeless pauperism. The small farmers still preserved hope. With great exertions, and submitting in many cases to extreme privations, they again cropped their ground. A second failure of the Potatoes pauperised those also. Then came the increased poor-rates, heaviest in those districts which were least able to bear them, weighing down many who without this last burden might have stood their ground, alarming all by the unaccustomed pressure of an undefined taxation, and greatly reducing the small amount of capital applicable to the employment of labour. The landed proprietor, in order to provide for the payment of rates, has been obliged to leave much useful work undone, thus lessening the number of labourers employed In many cases, his chief effort has been to diminish the population by a frightful system of wholesale evictions, and thus get rid of a tenantry, who, under happier circumstances, would have been a source of wealth, but whom his inability to employ, after the failure of the Potato, had converted into a heavy burden Despair of succeeding at home has driven, and is still driving, vast numbers of the most industrious of the middle classes to transfer their energy, and a considerable amount of capital, to other countries, which offer a freer scope for exertion. The paupers are merely kept alive, either in the crowded workhouses, or, in starving numbers, depending on out-door relief, but their health is not maintained. Their physical strength is weakened, their mental capacity is lowered, their moral character is degraded. They are hopeless themselves, and they offer no hope to their country, except in the prospect, so abhorrent to humanity and Christian feeling, of their gradual extinction by death. Many families are now suffering extreme distress, who, three years since, enjoyed the comforts and refinements of life, and administered to the necessities of those around them. Thus we have seen the flood of pauperism widening more and more, engulfing one class after another rising higher in its effects on society, until it threatens, in some of the worst districts, to swallow up all ranks and all classes within its fatal vortex.

Meanwhile, there is much land lying waste which was formerly cultivated, while the strength of the country is standing by idle, anxiously asking for work, and willing to accept the lowest wages; but finding no one to employ them, because the owners of the ground have not money to pay them, and the dread of undefined taxation, and uncertainty as to the future, prevent others from taking the land on lease

Residing, as we do, for the most part, in the large cities, or in the comparatively prosperous districts of the East and North, we see little more of the extreme distress of our countrymen than the people of England. But we find our poor rates increased by the influx of country paupers; we see them begging in our streets; we witness the effects of the gradual reduction of the means of the country in the diminution of its trade, our constant intercourse with various parts of Ireland makes us acquainted with the progress of destitution, and the question involuntarily arises, "When and how is the end to come?" To trust to the Poor-law and do nothing—to wait until pauperism is extinguished by the death of the paupers—is to wait until our country is stripped of her strength by the loss of her people. To form Ireland into one large Union is to bind the living to the dead.

In alluding to the course pursued by us in the administration of our trust, our object is to show the extensive intercourse we have had with all parts of the country, and the opportunity thus afforded us of forming a correct opinion of its present state, and of the means most likely to contribute to its improvement. The propriety of making such a statement of our views has on several occasions been urged upon us, but we have hitherto been unwilling to obtrude ourselves on the public attention. Our conviction of the urgency of the present crisis must plead our apology—a crisis which affects not Ireland alone, but the whole empire. Paupers from our western districts crowd the cities of Great Britain as they do those of Ireland, and are even now depressing their labouring population by an undue competition. The distress moves onward day by day, and unless checked in time, threatens ultimately to involve both countries in one common calamity.

We have long felt that the chief ground of hope, the main source of improvement, is the improved cultivation of the soil, and that the surest means of effecting this object is by affording security to the cultivator. That this security does not generally exist in Ireland is admitted. On this point there is scarcely a second opinion among thinking men in this country. The laws which regulate the title to, and the conveyance of land, require to be changed, so as to give the utmost freedom to its sale and transfer—so as to pass those estates, whose proprietors are irretrievably ruined, into other hands—and to enable those who are partially encumbered to free themselves from their difficulties, by disposing of part of their landed property. Until this be effected; until the soil of Ireland be held by a clear and marketable title; until the owners be enabled to sell the whole or any part of their property without the ruinous delays and the heavy costs which now prevent them, until the creditors of a landowner have those facilities for enforcing payment of their debts by the sale of his property, to which justice entitles them we are convinced, and we feel ourselves bound thus publicly to state our decided conviction, that it is in vain to hope that Ireland can raise itself from a state of poverty and degradation. The Potato may grow again, and by its assistance our country may be enabled to escape from the immediate pressure of its difficulties, but without those changes in the laws relating to the tenure and conveyance of land, which shall open a free scope for the employment of its capital and its industry, and give ample security to the cultivators of the soil, we cannot hope for general and permanent improvement.

An enormous expenditure of money has failed to relieve us. It could not do so unless free scope were opened to the energies of the country. The partial remedies which have been applied have served but to tighten the net which trammels the exertions of the great mass of our population. Measures of a much more decided character are necessary to produce any permanently useful effect. The situation of the country is daily becoming worse. There is no time to lose, if those now suffering are to be saved. Money must still be advanced for temporary purposes, during the interval which will elapse before efficient measures can be brought into general and active operation But our paramount want is not money; it is the removal of those legal difficulties which prevent the capital of Ireland from being applied to the improved cultivation of its soil, and thus supporting its poor by the wages of honest and useful labour.

We believe these views to be founded in justice and sound policy, and therefore essential to the social regeneration of our country, but we do not propose them as a panacea for all her evils. It is not for us to attempt to penetrate the secret designs of the Most High; but we may without presumption regard the mysterious dispensation with which we have been visited, in the blight of the Potato, as a means permitted by an all-wise Providence to exhibit more strikingly the unsound state of our social condition. The momentous events which have been passing around us, have drawn public attention to some of those evils which have long weighed down the energies of our population; and hence we are encouraged to hope that this awful visitation may, in the Divine mercy, be over-ruled for good, and that the darkness which now surrounds us may be but the prelude to the dawning of a brighter day on our suffering country. But whilst adverting to the necessity of legislative and social changes, may it ever be reverently borne in mind that all human means will be unavailing without the blessing of Him who ruleth in the kingdoms of men.

Signed by direction of the Relief Association of the Society of Friends in Ireland, JOSEPH BEWLEY, JONATHAN PIM, *Secretaries. Dublin, 8th of Fifth month, 1849.*

Note.—The foregoing address was drawn up before we were aware of the proposed measures of the Government for facilitating the sale of encumbered estates, but was held over in order that it should obtain the consideration of the country members of this association

ON PRISON FARMS.—No. II.

AT the close of my last paper on Mr. Pearson's scheme of prison discipline, I said I would enter into the quantity and distribution of the labour of a prison farm on the mixed culture system; I will now attempt to redeem my pledge. To meet Mr. Pearson's view I have to find daily employment for 500 men, which for 24 days in the month would amount to 12,000 monthly.

As the basis of my calculations, I have supposed that each man will be able to wheel or carry 1 cwt. over highly pulverised tillage land a distance of 2¼ miles in the day, returning the same distance empty, and allowing time for cutting or raising the crop and its roots, filling the barrows, &c.; the same calculation holding good in the carriage of manures.

As I propose my parallelograms to be 360 yards wide, and to be cleared from the centres to the strips or headlands on each side, the medium length of carriage will be 90 yards, which, multiplied by 50, the number of hundred weights to be carried will give a little more than 2½ miles. The medium length of transit, from where the produce or manure is lodged on the headlands to the yard, may be about 5-8ths of a mile, the distance then to be travelled over each trip will be 1¼ mile, which may be performed in about an hour, allowing time for loading the trucks, depositing, heaping, &c I have supposed each truck to carry 3 cwt, and taking the average working time through the year at 9 hours a day, 27 cwt. would be carried, say 1¼ less in the day; but I have reckoned that a man will wheel or carry from the ground to the headlands 2½ tons in the same time; thus it will demand double the number of men to wheel, in these hand-trucks, the same amount of produce to the yard.

I propose to carry by hand or wheel in barrows, with high and broad wheels, as may answer the crop to be carried, the crops to the headlands, from whence they are to be taken up in two-wheeled hand-trucks, and so taken to the yards, the manure to be carried from the yards and on the parallelograms in the same manner. I will now, having premised thus much, give an estimate, which I think will be found to approximate to the truth of the monthly amount and distribution of labour through the year, first, however, observing that the labour of one month will frequently run into the succeeding one, as will also the consumption of the produce, and these will depend very much on soil, climate, and weather.

	Men.	Monthly total
JANUARY—75 acres Rape, at 12 tons, stems and roots at 4 tons = 1200 tons carried to headlands, 2½ tons each man	480	
Drawing ditto to yard in trucks	960	
Digging the above rows and leaving drills open for Potatoes; 6 men to an acre	450	
Bringing from headlands to yards, and storing 75 acres of Parsnips, and 225 acres of Turnips, 15 tons an acre, in all 4500 tons, 1¼ ton each man	5625	
Ordinary work in yards and houses	500	
Threshing, &c.	1500	
Drawing manure to headlands	1000	
		10,515
FEBRUARY—75 acres Rape to headlands	480	
Ditto to yards	960	
Forking rows for Parsnips and working them	650	
Planting and covering Potatoes	450	
Hoeing Bere and Wheat	3600	
Carrying and digging part Rape of No. 7	945	
Drawing manure to headlands, making up heaps, &c.	2000	
Threshing, &c.	1500	
Ordinary work in yards and houses	500	
		10,985
MARCH—75 acres Borecole to headlands	480	
Ditto to yards	960	
Digging rows ditto for Swedes	450	
Sowing Parsnips	300	
Digging for Drumhead Cabbages, Nos. 3 and 4	900	
Planting ditto, 800,000 plants	1200	
Hoeing Bere and Wheat	3600	
Carrying and digging remainder of Rape of No. 7	945	
Drawing manure to headlands, &c.	2000	
Ordinary work in yards and houses	500	
		11,335
APRIL—75 acres Borecole to headlands	480	
Ditto to yards	960	
Digging rows ditto for Swedes	450	
Preparing for and sowing Mangold Wurzel	450	
Working rows dug last month for Swedes	300	
Hoeing Bere and Wheat	3600	
Drawing manure to headlands, &c.	3000	
Threshing, &c.	1000	
Ordinary work in yards and houses	500	
		10,740
MAY—150 acres Early Cabbage to headlands	900	
Ditto to yard, draught diminished from dryness of ground 4th	1680	
Digging rows for Drumhead Cabbages	900	
Sowing Swedes in Nos. 1 and 2, this includes a previous stirring of the ground	600	
Hoeing Wheat and digging Bere at intervals	4200	
Carrying 240 tons Grass	150	
Planting 100 acres Drumhead Cab., 540,000	860	
Drawing manure to headlands	1000	
Ordinary yard and house labour	500	
		10,790
JUNE—125 acres Cabbages to headlands	960	
Ditto to yards	1500	
Digging rows of ditto for Turnips	750	
Preparing for and sowing ditto	375	
Carrying 240 tons Grass	150	
Shovelling or hoeing clay to Bere	450	
Digging between Wheat	7200	
Planting 50 acres Drumhead Cab., 200,000 plts.	400	
Ordinary house and yard works	500	
		12,285
JULY—100 acres Cabbages to headlands (Early Wellingtons)	960	
Ditto to yard	1500	
Digging rows ditto for Turnips	600	
Preparing for and sowing ditto	300	
Cutting, binding, and carrying to headlands 350 acres Bere, 1200 tons	1000	
Carrying to yard and stacking ditto	1200	
Manuring 300 acres of Bere stubbles, digging the same, 40 tons manure per acre	3000	
Planting 150 acres Borecole, 1,500,000 plants	1500	
Shovelling or hoeing Wheat	900	
Carrying 240 tons Grass	150	
Ordinary house and yard work	500	
		11,610
AUGUST—100 acres Cab. to headland (Drumheads)	960	
Ditto to yard	1500	
Digging the rows for Bere	600	
Sowing ditto	200	
Reaping, binding, and carrying to headlands, 100 acres of Wheat	1600	
Carrying to yard and stacking ditto	1100	
Manuring 300 acres Wheat stubbles	1200	
Digging ditto	1500	
Planting 300 acres Rape, 3,000,000 plants	3000	
Bringing in 240 tons Grass	150	
Ordinary house and yard work	500	
		12,310
SEPTEMBER—100 acres Cabbages drawing to headlands	960	
Ditto to yard	1500	
Digging above rows for Bere	600	
Sowing 100 acres Bere	200	
Reaping, &c., and carrying to headlands 200 acres of Wheat	650	
Carrying ditto to yard, and stacking	550	
Manuring 200 acres Wheat stubbles	1200	
Digging ditto	1600	
Planting 75 acres Rape, 750,000 plants, and 225 acres Early Cabbages, 4,000,000 plants	3750	
Bringing in 240 tons Grass	150	
Ordinary house and yard work	500	
		11,660
OCTOBER—100 acres Cabbages, drawing to headlands	960	
Ditto, to yard	1500	
Digging above rows for Bere	600	
Digging and carrying to storehouse 75 acres of Potatoes	1100	
Breaking off Mangold Wurzel tops and raising and carrying them to yard, with the Mangold Wurzel	1780	
Raising 150 acres Swedes, carrying them to headlands, and heaping there	1200	
Digging the above rows	900	
Sowing 100 acres Bere	200	
Sowing 225 acres Wheat	450	
Stirring 150 acres dug stubbles for Cabbages	600	
Planting ditto, with Early Wellington Cabbages or Paignton, 975,000 plants	1000	
Ordinary house and yard work	500	
		11,090
NOVEMBER—75 acres Rape carried to yard	1440	
75 acres Turnips, ditto	1400	
75 acres Parsnips raised and pitted in headlands	400	
150 acres Turnips, ditto	1200	
Digging 475 acres for Wheat	2450	
Sowing 375 acres of Wheat	750	
Digging intervals in Bere, 300 acres	3600	
Ordinary house and yard work	500	
		11,740

	Men	Monthly total
DECEMBER—75 acres Rape, drawing to headlands...	480	
Ditto to yards	960	
Drawing 75 acres Turnips from headlands to yard	960	
Digging 150 acres Rape ground	1000	
Digging intervals of Wheat, 600 acres ...	7200	
Ordinary house and yard work ...	500	
		11,100

By the above Tables it appears that the labour may be distributed through the year at from 10,000 to 12,000 men a month, or 500 a day from 20 to 24 days in the month. From the shortness of the days, and the general state of the weather in November, December, January, and February, greater numbers of labourers will be required than these indicated in the Tables for these months, but as the threshing, preparing, grinding, &c., of the grain, and the carrying the manure from the yards and houses to the headlands, have very wide limits of employment, these operations will afford facilities for equalising the distribution of labour. I would propose that the whole manufacture of the grain should take place in the gaol, which will afford the means, by the tread-mill, or other machinery capable of rendering labour compulsory, of compelling the idle to work, and of chastising offenders; but as I have found through life that hope of reward, and the withholding of punishment, are more effectual stimulants to amendment than the dread of punishment, I would apply the funds obtained by the surplus produce to the reward of good conduct, and to provide the means of gaining a livelihood by the prisoners when the periods of their confinements shall have expired; and as, if the experiment answers, it may become the rule of our future prison discipline, as a further inducement to good conduct, I would hold out the expectation of appointments to office in the new gaols to the best behaved and steadiest of the prisoners; and, indeed, they would be most eligible for such situations. *J. M. Goodiff, Granard, May 4.*

Home Correspondence.

Maize.—I observe that Mr. Reeve is anxious to know whom he is about to answer; it being a straightforward question, I imagined that he would have had the answer at his fingers' ends. I asked from what varieties he had raised his new hybrids, and at the same time I stated that they exactly resembled sorts already in cultivation. No reply being made, I conclude that my question cannot be answered in a satisfactory manner. I should have asked for the same information the first week of the introduction of the hybrids, but I feared that it might prevent people from trying them. My address is not essential to the subject. *H., Hants.* [We quite agree with "H." in the opinion he has expressed.]

How one man may shift the dibble line.—By the following simple method a workman may be taught in a few minutes to shift the line without going backwards and forwards to do so, whether the line be used as a guide for the simple hand dibble, or the lever dibble on wheels, it is immaterial. I take two lines, say 10 yards long, I stump down an end of each at the required distance of the rows, I then walk straight up or down the field, and stump down the other two ends at the same distance apart. A B C D are the four stumps with the lines stretched.

A ... B
C ... D
E ... F
G

I begin at A and dibble to B, I then shift the stump B to F, I go on and dibble from D to C. I now shift the stump A to E which brings the line straight from F to E, I also remove the stump C and set it at G; this may all be learnt in two minutes, and a labourer would feel thankful for the information. *S. N.*

Newberry's One-rowed Hand-dibble.—In reference to the commendation bestowed in your last number, p. 301, by "G. S.," on Newberry's one-rowed hand-dibbling machine, I beg to add a line in confirmation of his praises of it, as the most convenient, speedy, and economical mode of sowing Mangold Wurzel on the ridge. It is held by a man, and drawn by a donkey, under the care of a small boy; the donkey walks between the ridges, which therefore may be set up at any distance, independently of the width between the drill wheels. A man, small boy, and donkey will dibble faster than the drill can travel, which requires two men a boy, and two horses, costing more than double the outlay on the dibbled work, yet not doing twice the amount of work, nor so well. It would be wasting your valuable space to no purpose were I to enforce by arguments what every one admits—the great importance of the root crop, and more especially of the Mangold Wurzel. The thinnings for pigs during the summer, the leaves for milch cattle in the autumn, and the bulb for the grazier, when everything else has failed, render this root invaluable. Whatever then facilitates the prompt, regular, and economical growth of it deserves encouragement, and I know of nothing to compare with Newberry's machine. *F. F. B. M.*

To put in Turnips.—I may mention one mode of putting in Turnips, which I have found to be occasionally of great advantage, when special manures are used, viz., to use a double mould-board plough, with a marker affixed to the beam, in order to guide the sower, so as to have the manure precisely in the middle of the drill when made up; in this way a great deal of work can be done in a short time, when the weather is most propitious. *J. B.*

Box-feeding of Horses.—I have seen, in the *Agricultural Gazette* the last few weeks, requests that those who had experience of the box-feeding system would furnish some particulars as to its success to the Editor. I cannot exactly answer all the questions propounded in your paper, as I have not used them much for fatting cattle. I have kept my horses in boxes now for two seasons, and I can truly state I never had my teams in such good condition, or so free from sickness, as since they have lived only in boxes. I have a double range of horse-boxes, 10 in number, with a gangway down the middle, well ventilated at the top; the sizes are 10 feet by 9, and sunk 2 feet deep. I find it necessary to clean them out about once in six or seven weeks, as when kept longer the dung, which is of so pungent a nature, heats. I have never, however, found the slightest injury occur to any of the horses from this cause; the stable is sweeter than one in 50 will usually be found where as many horses are kept. I have 11 cattle boxes which I usually devote to my young stock, as I find this system suits them beyond all others I have tried; the boxes are 10 feet by 8, and I have this winter thrown two together and put five of last year's calves in the two. I have just turned 12 of these to Grass, and I wish anyone who doubts the healthiness of the system could see them, as their condition has been the admiration of all beholders, considering they have lived on straw, hay, and roots only, and of the latter sparingly of late. I find the combining warmth and protection, with liberty and good ventilation, of essential advantage to young stock, which this system eminently affords. *Hector Hayward, Quedgely Gloucestershire.*

Twin-headed Wheat.—The specimen I now send you, and of which I have prepared the accompanying sketch, was given to me the other day by Mr. Henry Trevaseus, of Carsawsen farm, adjoining this place. I consider it a remarkable production, and the only instance in which I remember to have seen two distinct ears of Wheat grown on a single stem. It would be a valuable discovery if this peculiarity were to remain. I have sown some of the grain by way of experiment, but I am very doubtful of the result being anything else than the common variety of Wheat from which it originated, and of which it can only be regarded as a sort of *lusus naturæ*. Old Gerarde, in speaking of "Corne," mentions a kind of double eared Wheat, which he calls "Triticum multiplici spica," and says "it is like the bearded Wheat, but differeth from it, in that this kind hath many short, small ears comming forth of one great eare, and the beards hereof be shorter than of the former kind." This I suspect to be the Triticum compositum, or Egyptian Wheat, a very different thing from the variety above noticed. *W. R. Booth, Carclew.*

Allotments.—The following are the results of allotment cultivation, reported to the Scottish Patriotic Society at the last meeting of the Inverness branch. Mr. Gibson said he had found the two lots, consisting of 20 poles, which he held, prove very remunerating. He estimated the labour at 1*l.* 7*s.*: manure, seed, and rent, at 1*l.* 19*s.* 8*d.*; making together 3*l.* 6*s.* 8*d.* His produce, consisting of Potatoes, Onions, Carrots, Peas, Beans, Cabbage, Turnips, &c., with the value of crop, &c., in the ground at present, he estimated at 4*l.* 12*s* 2*d.*, leaving a profit of at least 1*l.* 10*s.*, as he had only valued 2 bolls 4 stone of excellent early Potatoes at 16*s.* per boll, which was considerably under the market price. In order to save the season, which was advanced when he got possession of his lot, he was obliged to employ a labourer to trench the ground, at an expense of 27*s.*, which would be so much of additional profit to him or to any person who cultivated a lot during leisure hours. The secretary read a statement of debtor and creditor as regarded a lot cultivated by Mr. T. Mackenzie, teacher, from which it appeared that 2*l.* 0*s.* 3*d.* had been expended in seed, manure, rent, and labour, and a profit at least of 10*s.* derived from the produce. Mr. Mackenzie also observed that a labourer, who cultivated his own lot at spare hours, would thereby have saved 18*s* 6*d.* more, and that he had not, in the above calculation, taken into account the proportion of manure, and the improvement effected by deep digging, which would become a source of profit during the ensuing year. He thought his neighbours would do well to rent a lot, and thereby improve their health, their pockets, and their kitchen pot. Mr. William Munro said he had only taken possession of his plot of garden after the former occupant, who had gone to Glasgow, had taken up a crop of Potatoes. He was, however, well satisfied with the crop of Cabbage, greens, Leeks, &c., which it supplied him with. He had paid this year, before he obtained an allotment, the sum of 15*s.* for Potato drills on a neighbouring farm, and although he had a good crop, he found that Mr. Gibson had grown fully more on 10 poles in the Society's ground, which only cost 8*s.* 6*d.*, from which he was also obtaining a second crop, and in which he would have the benefit of the manure and improvement effected in the soil. Two years before, he (Mr. Munro) had planted his Potatoes on a farmer's land, and in consequence of the blight, he lost seed, labour, manure, and rent, without any possibility of redeeming the matter by obtaining a winter crop, and there were numbers of very poor persons who had been equally unfortunate, but who might, by taking gardens of the Society, in future place themselves in a better position.

Live and Dead Weights of Pigs, Martin Farm, East Langdon, near Dover.

1849.		Live Weight. Cwt. qrs. lbs.	Dead Weight. Scores lbs.
April 23.	Four Pigs ...	3 1 9	12 11
,, 26.	Ten Ditto ...	5 1 8	29 17
,, 26.	Four Ditto ...	2 1 7	8 3
May 2.	Six Ditto ...	5 0 14	18 18

M. Sandford.

On the Use of Lime.—Lime may be said to have six important uses in its application by the agriculturist. 1. In being taken up as a constituent of the plant; 2. In hastening the decomposition of vegetable matter; 3. In neutralising acids which may collect in the soil; 4. In decomposing various aluminous compounds, bone manure, &c, also injurious salts of iron, forming an inert oxide of that metal; 5. Frequently it acts the part of "farmers' friend," when a grub has been destroying a portion of his crop, or if applied previously in preventing such an untoward disaster; and lastly, though by no means least in importance, it acts mechanically upon "clay" lands by materially assisting to diminish their tenacity. To effect the whole of these objects the lime must be burnt; thus driving off its carbonic acid; then it is "slaked," when it immediately enters into combination with the water forming a "hydrate." Now comes the point which the "Isle of Man Farmer" wishes to discuss in your Number of March 3. He evidently is not altogether ignorant of correct scientific principles, but on one or two points appears to have made a blunder. To be as brief as the subject admits, I will give my own experience. Having examined my soil and found a small per centage of lime, I calculated what proportion ought to be applied per acre; this quantity is put on the land in the shape of quicklime, and spread over the Clover brush for two reasons; 1. Because I wish to decompose the Clover roots, that they may have a beneficial effect upon the Wheat crop which follows; and 2dly. to destroy any slugs a Clover ley is likely to harbour. It must be mentioned, in passing, that the 4-course rotation is adopted, and thus the lime is applied at as distant a period as possible from the farm-yard manure, which it would of course decompose much too rapidly were they brought into immediate contact, although I have actually seen brother farmers of the "old school" put a good dressing of quicklime and manure on the land at the same time. But why do I plough the lime in hot? For this simple reason, I wish to reap the benefit of it in every possible manner, and I know that in spite of my ploughing it in, it will soon become converted into carbonate; and, besides this, from the water which the soil contains, another equivalent of carbonic acid will be added to a portion of it; it is then immediately dissolved, and henceforth can, if needed, be taken up as food by the plants, bicarbonate of lime being soluble in water. Another flaw (as I believe) in the "Isle of Man Farmer's" notions is this: He mixes his weeds with quicklime, and appears to glory in a real combustion taking place. Now this I consider very extravagant, for you thus lose all the organic matter which the weeds contained, a part of it extracted from your soil. My plan is to cart these weeds to the lowest part of the straw-yard (which is in the form of a basin), here they become saturated with concentrated urine, and, when taken out, are found a most valuable mass of manure. I admit that Couch-grass, if not properly dried upon the land, does vegetate after this progress, but not otherwise. One other point connected with lime, which is not brought before our notice by the "Isle of Man Farmer," and then I conclude. It is this: Should lime be applied to land in small quantities, and frequently; or in large quantities, and at long intervals? I am an advocate for the former, and why? 1. Because (reasoning from analogy between plants and animals) we do not find, in most cases, that the larger the dose a patient takes the better he is after it, or that a man who (supposing such a thing could happen), having eaten two dinners at the same hour, is quite as free from dyspepsia as one who has taken a moderate meal. 2. Every practical man knows that lime has a tendency to descend in the soil, and get out of the reach of the plough; therefore it follows that if you get a large layer of lime upon the soil, say once in 12 years, it is not likely to afford such an even supply to the plants as if the amount you then applied had been divided into three portions, and one of these laid on every four years. *Science with Practice.*

Guardian Society for the Protection of Trade.—I feel called upon, in common gratitude, to bear my testimony to the benefits of these institutions, a knowledge of whose existence I first learned from your Paper; and believe me, it is a species of knowledge I wish on

no account to underrate, particularly in these days of small things, when money can ill be afforded for the maintenance of rogues and swindlers. A most liberal and tempting order was lately sent me from the neighbourhood of Manchester, for a quantity of wire netting. In reply to my request for a reference, the name of a certain party was given me, who, not proving exactly of the sort I wanted, of course the order remains unexecuted. In plain English, the swindle did not take. And for this escape I hold myself mainly indebted to the Manchester Society. Surely the least one can do, under such circumstances, is to recommend it to the attention of one's friends, whether commercial, manufacturing, or agricultural. All who incur the risk of loss by plunderers, whether open or concealed, ought, on principle, to contribute to its funds. The moderate subscription required from members is but another name for insurance against losses whether by fraud, fire, or storms, no matter. Address, the Secretary of the Society for the Protection of Trade, 10, Hilton-street, Manchester, to whose prompt exertions no one is more disposed to bear willing testimony than *Samuel Taylor, Barnwood, Gloucester, May* 21.

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A MONTHLY COUNCIL was held at the Society's house, in Hanover-square, on Tuesday last, the 5th of June. The following members of Council and Governors were present: The Right Hon. Lord PORTMAN, Trustee, in the chair; Lord Henniker, Hon. R. H. Clive, M.P., Hon. Capt. Pelham, R.N., Sir M. W. Ridley, Bart., Sir C. Lemon, Bart., M.P., Sir J. V. B. Johnstone, Bart., M.P., Sir R. Price, Bart., M.P., Colonel Austen, Mr. Raymond Barker, Mr. Barnett, Mr. H. Blaushard, Mr. Bramston, M. P., Mr. Brandreth, Mr. Burke, Captain Stanley Carr, Mr. F. C. Cherry, Mr. E. Denison, M.P., Mr. Garrett, Mr. Brandreth Gibbs, Mr. Hillyard, Mr. Fisher Hobbs, Mr. Hudson (Castleacre), Mr. Lawes, Mr. Miles, M.P., Mr. Milward, Mr. Pendarves, M.P., Mr. Pusey, M.P., Prof. Sewell, Mr. Shaw (London), Prof Simonds, Mr. Stansfield, M P., Mr. G. Turner, Mr. T. Turner, and Mr. Henry Wilson.

The following new members were elected:

Pellew, Hon. and Very Rev. George, D.D., Deanery, Norwich
Hardy, W. H. Cozens, Letheringsett Hall, Holt, Norfolk
Punchard, Charles, Blunt's Hall, Haverhill, Suffolk
Newman, Matthew, Hayes Court, Uxbridge, Middlesex
Whistler, John, Brancaster, Norfolk
Rews, Richard Scott, Hoo Hall, Rivenhall Witham, Essex
Gall, John, New Buckenham, Norfolk
Farlell, Wm. Frederick, Bakeham House, Egham, Surrey
Holmes, Frederick, Tibbenham, Norfolk
Steward, R., The Armory, Southtown, Yarmouth, Norfolk
Smith, Richard, Kimberley, Norfolk
Ebbetts, John, Witchingham, Reepham, Norfolk
Hudson, John, jun., Lower Swell, Stow-on-the-Wold, Gloucestershire
Nunn, E. C., Diss, Norfolk
Bayes, T. H., Hope Farm, Ittringham, Aylsham, Norfolk
White, Thomas, Elly Hill, Houghton-le-Skern, Darlington, Durham
Copeman, George, Aylsham, Norfolk
Vickers, Samuel, Sprotborough, Doncaster
Belding, George, Newmarket road, Norwich
Witt, Edward, Fornham All-Saints Hall, Bury St. Edmund's
Belding, George, jun., Newmarket-road, Norwich
Bulwer, Rev. James, Aylsham, Norfolk
Cockell, Charles, Bridgham, East Harling, Norfolk
Patchett, Rev. Wm. Henry, Dishforth, Thirsk, Yorkshire
Culley, John, jun., Guton Hall, Norwich
Spurling, William, Grange Farm, Woolingworth, Suffolk
Lovick, James J., Thorpe, Norwich.

The names of 21 candidates for election at the next meeting were then read.

FINANCES.—Mr. RAYMOND BARKER presented to the Council the report of the Finance Committee on the accounts during the past month, from which it appeared that, on the 31st of May last, the current cash-balance in the hands of the bankers was 1743*l.* (including the Norwich subscription, and life compositions for investment). This report, and the report of the House Committee, transmitted by Colonel Challoner, were adopted by the Council.

AGRICULTURAL CHEMISTRY.—Mr. PUSEY, M.P., Chairman of the Chemical Committee, presented the following report of that Committee, which was also adopted by the Council:

"The Chemical Committee have considered the charges for the different subjects of analysis, and have seen no reason for any material alteration in the scale, which stands as follows:

"*No.* 1. An opinion as to the genuineness of a manure in the market—7*s.* 6*d.* By this is meant such an opinion as could be formed by a scientific person by inspection, with a few simple confirmatory experiments. It will protect from fraud, but is not calculated to assist materially in the choice of the *best* specimens, where all are *genuine*. It will inform the applicant whether a specimen of guano, or oilcake for instance, be adulterated or not; but will not touch the question of its relative value as a pure specimen. Such an opinion will only apply to ordinary market articles, as guano, oilcake, superphosphate of lime, sulphate of ammonia, gypsum, common salt, &c.] No. 2. Guano. A determination of nitrogen (ammonia), and of the earthy phosphates, &c.—1*l.* No. 3. Limestone. The proportion of lime—7*s.* 6*d.*; the proportion of magnesia—10*s.*, the proportion of lime and magnesia—15*s.* This analysis is sufficient for many purposes, but in most limestones the phosphate and sulphate of lime and magnesia are present, though in small proportions; and inasmuch as it is impossible to say how much of the effect may be due to other minute ingredients, it is recommended that their quantity should always be determined. No. 4. Limestone, or Marls, including carbonate, phosphate, and sulphate of lime, and magnesia, with sand and clay—1*l.* No. 5. Partial analysis of a soil, including sand, clay, organic matter, and carbonate of lime—1*l.* No. 6. Complete analysis of a soil—3*l.* No. 7. Letter asking advice, *one* topic, 7*s.* 6*d.* On more than one topic, 10*s.* No. 8. Oilcake, or dung, or any animal products, nitrogen, and phosphoric acid—1*l.* Oilcake, including nitrogen, oil, and phosphoric acid—1*l.* 10*s.* They have also added a ninth subject, namely: No. 9. A determination of the quantity of carbonate and sulphate of lime in any specimen of water—1*l.*;

"They recommend a grant of 300*l.* for the ensuing year, to be apportioned in the following manner

"1. A sum not exceeding 100*l.*, for an account of analyses of guano (a paper on which subject is nearly completed). 2. A sum not exceeding 100*l.*, for an account of analyses of oilcake and Linseed, with reference to the nutritive qualities of different specimens. 3. A sum not exceeding 100*l.*, for an account of analyses of chalk and marls used in top dressings.

"The committee further recommend, That when Mr. Way is applied to for an analysis, he shall inform the applicant of the cost of such analysis, together with the cost of carriage of any specimen sent up, and shall not be authorised to make such analysis until the amount due shall be sent him.

"That a printed copy of this resolution be sent to every member applying for an analysis."

DISEASES OF CATTLE.—Mr. RAYMOND BARKER, Chairman of the Veterinary Committee, presented the following report of that Committee, which was adopted by the Council:

"The Veterinary Committee have had under their consideration the suggestion of the Hon. R. H. Clive, referred to them by the Council at their last monthly meeting, namely: That a first-rate veterinary surgeon should be sent, on the part of the Society, into districts of the country where disease of any kind may prevail extensively among the live stock of farmers; with an instruction to such veterinary surgeon that he should report to the Council the result of his personal examination into the circumstances of such disease, and into the local cause of its occurrence or aggravation, as well as the measures he would recommend for arresting its progress, and preventing its further outbreak in other districts.

"The Committee have agreed to recommend to the Council the adoption of this measure so far, that a sum not exceeding 200*l.* be placed at the disposal of the Committee, who shall carry out the proposed plan after reporting, at a future meeting, the detail of their further proceedings for the confirmation of the Council."

NORWICH MEETING.—The CHAIRMAN reported the satisfactory progress of the arrangements for the ensuing country meeting of the Society, at Norwich, in the week commencing Monday, July 16.

JUDGES.—The CHAIRMAN also reported the progress made by the Judges' Committee in their selection of Judges for the Norwich meeting.

IMPLEMENT PRIZES.—The Council agreed to a preliminary arrangement of the schedule of Prizes for Implements, to be offered by the Society for competition at the Exeter meeting in 1850; and ordered its final settlement to be made by the Council at their monthly meeting in August next, agreeably with their resolution of March, 1847. Mr. Garrett gave notice that, at the next monthly Council, in July, he should move the appointment of a committee, "to take into consideration the recommendation of implement makers, generally, exhibiting at the annual meetings, as regards discontinuing the prizes for implements; and to determine whether an improved system of showing them to the public may not be adopted."

EXETER MEETING.—The following General Exeter Committee was appointed:—Earl of CHICHESTER, Chairman; Mr. Sillifant, Vice-Chairman; Mr. Raymond Barker, Mr. Brandreth, Mr. Shaw (London), Mr. Fisher Hobbs, Mr. Milward, Mr. G. Turner, Mr. Brandreth Gibbs, Mr. Fulford, Sir T. D. Acland, Bart., M.P., Colonel Challoner, Sir C. Lemon, Bart., M.P., Mr. Pendarves, M.P., Lord Portman, Hon. Capt. Pelham, and Mr. Buller, of Downes.

COMMITTEES.—The names of Mr. Burke and Mr. T. R. Tweed were added to the Farming Accounts Committee, and that of Mr. E. Denison, M.P., to the Veterinary Committee.

DRAINING.—Lord PORTMAN, the Hon. R. H. CLIVE, Sir M. W. RIDLEY and Mr. MILWARD, favoured the Council with their experience of the effects of water of different quality on turf and stone drains; and the cases in which the earthy matter impregnating the water in certain districts impeded, on deposition, the action of stone drains, while turf drains on Lord Portman's property, under such circumstances, had remained uninjured during a period of 40 years, his stone drains having become completely stopped up. Mr. Clive's stone drains had remained perfectly free, and he would inform the Council of the quality of the water flowing through them. The complete details connected with Lord Portman's results would be given to the members in the ensuing number of the Journal of the Society.

TUSSAC GRASS.—The Hon. R. H. CLIVE apprised the Council that Capt. Moody, late Governor of the Falkland Islands, intended to be present at the Council weekly meeting that day fortnight (June 19), for the purpose of giving to the members his personal experience of the cultivation of the Tussac Grass in those islands.

VEGETABLE FIBRE IN DRAINS.—Sir M. W. RIDLEY, Bart., presented a copy of the Journal of the Northumberland Agricultural Society, for the current year, containing information on the stoppage of drains by vegetable fibres.

The Council then adjourned to Tuesday next.

Farmers' Clubs.

COACHFORD: *Irrigation.*—The following is a report of a meeting which took place some time ago here, in order to make known the results of Mr. Colthurst's experiments in irrigation. A model was exhibited, representing the surface of the land, its levels, inclines, and undulations; the several canals which had been constructed at such expense by the intelligent owner; the drains and cuts through which the water passes and irrigates the land; and the various sluices to back up, or allow the water to pass off. Two water cocks were in the top of the model, and on these being turned, in poured the water, and instantly the upper portion of the farm, consisting of 200 acres of ground, was irrigated. In the centre canal was a sluice; on Mr. Hill lifting this, the lower part, consisting of 50 acres, was irrigated. The model resembled a long strip of land terminating in an angle. The two angles of the upper portion of the land were entered by two rivers—the Sullane and Loomans. Originally, as described on the model, these formed one stream, which ran a tortuous course through the land, completely separating communication with either side, except by a bridge running through the land on a road leading to Macroom. The object contemplated by Mr. Colthurst, and which he effected so successfully, was to run a canal 20 feet wide and 2½ feet deep, from the entry of these rivers around the land, exactly at the boundary. His next object was to run a canal down the centre of the land 30 feet wide and 8 feet deep. These are the main drains, which water the lower ground, 50 acres. Into these canals the other drains, pipe drainage and cuts, empty themselves.

MR. COLTHURST said:—I shall proceed now to describe my large bog improvement, a model of which you now see before you, and I shall come at once to the results of my enterprise. The entire contains 250 statute acres of bog land, averaging 12 feet deep. It was taken at 2*s.* an acre, or 20*l.* a year, and the following are the entire cost, and the results likely to arise from this improvement.

	£	s.	d.
Entire cost of canals, water-gates, surface drainage, and irrigating carriers, including deep drainage, at 2*l.* 10*s.* per acre	600	0	0
Homestead for premises	400	0	0
	1000	0	0
Estimated cost of reclaiming the entire and laid down under irrigation, say 5*l.* per acre, to be reproduced in three years by crops	1250	0	0
	£2250	0	0
Interest on capital sunk, the 600*l.* and 400*l.*—1000*l.* at 5 per cent.	50	0	0
Original rent	25	0	0
	75	0	0
Interest on capital of 1250*l.* to be repaid by 3 crops	62	10	0
	£137	10	0

I now proceed to give the probable value from the expenditure, and I call upon Mr. John O'Connell, if he does not agree with me in thinking the farm will be worth, when finished, 2*l.* the acre.—Mr. O'Connell quite agreed with Mr. Colthurst on the subject, and was corroborated by Mr. Keogh, the Government valuator, that the improvement, if finished like the part he had inspected, he had no doubt upon the matter, stated that he probed the bog reclaimed, and found it at least 12 feet deep.

—Under these circumstances I think—	£	s.	d.
These 250 acres will be worth, per year . .	500	0	0
Deduct head-rent and capital laid out ..	137	0	0
	363	0	0
Which leaves a profit of over 400 per cent.	62	10	0
	£425	10	0

The entire bog can be traversed and made available for the carriage of produce by a flat-bottomed boat.

Comparison between the cost of carriage by boat, horses, &c.

Price of a common flat boat, to carry 5 tons . .	£5	0	0
Price of bullock collar, and towing rope ..	5	0	0
	£10	0	0
Annual repair of boat, say with pitch and tar .	1	0	0
Interest on 10*l.*	0	10	0
	£11	10	0

To convey 5 tons on a common road it will require five horses.

Cost of 5 horses, at 12*l.* each 60	0	0	
Cost of 5 carts, harness, &c. 40	0	0	
£100	0	0	
Annual expenses of 5 horses' keep . 60	0	0	
Repairs carts and harness ... 5	0	0	
Interest on 100*l.* sunk for horses . 8	0	0	
— —	173	0	0
Four men at 10*l.* a year, saved	40	0	0
Total	£202	0	0

Now I go to the cost of making navigable canals through peat by the perch, 8 feet wide, 2½ feet deep, and will require little or no repairs if carefully cut out of the solid—these canals can be cut for about 2*s.* 6*d.* the perch—cost of making a road through deep bog, gravel at any distance will cost say 15*s.* the perch, and requires constant repairs. On reference to page 32 of Sir Robert Kane's book, I find the total area of bog to be 2,880,000 acres—of these bogs there are 1,576,000 acres of flat bog, and if ever this great tract is undertaken by spirited companies to improve them, I am of opinion that nothing will facilitate their operations more than navigable canals. From the calculations Mr. Hill will now lay before you, and I cannot conclude without calling your attention to as splendid a subject for improvement in our union, which, if drained and made available, would employ all the surplus labour in the union for 20 years to come. I allude to a great part of wet, but rich land between Kilcrea Abbey to the west end of Inchageela lake, on the banks of the Bride and the Lee, which, if improved, would add much to the produce and health of the country, and be the means of diminishing a crushing poor rate that is swamping the enterprise of Ireland.—Mr. HILL had seen a great many works in England, Wales, Ireland, and France, both public and private, but he never saw a work of the kind of such an extent carried on by a private individual which would be more likely to repay tenfold the capital expended on it. He was borne out in this opinion by one of the most scientific and clever agriculturists in the county of Cork, Mr. Jeffreyes, of Blarney, who, in speaking of it to him, said it was "a majestic undertaking." To a professional man the work at Milleens was peculiarly interesting, and he did not know whether to admire most, the thought it required to place what he considered the most complete system of bog draining and irrigation he had ever seen, the nerve to commence, or the energy and perseverance to carry it out. He would now lay before them the result of some calculations he had made, and if they gave the meeting half as much pleasure as it gave him in calculating them, it would be very great indeed. The farms at Milleens, Mr. Colthurst had informed them, contains 250 statute acres, 225 of which are capable of being irrigated. This land has two rivers running into it from the west (the Sullane and the Loomans), both of which together are capable of discharging in winter 1800 tons, and in summer 750 tons of water. The carriers around and through the farm are capable of containing, when full, 36,000 tons of water, consequently these carriers can be filled in summer, in say, 48, and in winter in 20 hours. The entire of the land to be irrigated would contain, when covered 1 inch deep, 39,000 cubic feet of water, and the waters enclosed in the canals would nearly cover the whole surface. The pressure against the hatches, of which there are four principal ones across one part of the main carrier, would be about 1¼ ton or 1½ ton on each. Independently of having water for agricultural purposes, Mr. Colthurst also had a quantity of water equal to 76 horse power, capable of being applied to a mill or manufactory at the farm, should such be deemed desirable. The great advantage of canals running through the lands instead of common tram roads, might be shown by the following calculations: a horse at a velocity of 2½ miles an hour would carry 14 tons one mile in a day of 12 hours on a level road, whilst on a canal he would move at the same velocity and distance 520 tons. He would not detain the

meeting longer, except merely to say that if works of the same nature were universally carried out throughout the country, such employment would be given that instead of having 50 new poor-houses built, they would have 60 taken away from them. The proprietors of soil would be enriched, the farmers and labourers would be made prosperous and happy, and that we, Irishmen, would not be what we are now, "a reproach to our neighbours, and a scorn and derision to those that are round about us."

HADLEIGH: *Annual Meeting.*—Mr. MECHI, in the course of a speech on this occasion, said:

He spoke from his own experience when he said that thin sowing showed a good face this year. He had continued the experiment between 1 bushel and 2 bushels for five years, and with one exception the advantage was in favour of the 1 bushel over the 2. He thought they could not lay down a general rule for all soils, for he was quite sure that the quantity of seed which would be proper on a rich, deep, luxuriant soil, would be very improper for a light, poor, sandy, blowing soil; on the other hand he thought there was a great deal of prejudice (he trusted they would excuse the word) in favour of the old custom of thick sowing. He was sure that that prejudice, like all others, was attended with great inconvenience and loss to the holder—he was sure that too much seed was sown, to the injury of the produce. He spoke guardedly on this subject, for he often met good farmers who, when he asked them why they did not feed their Turnips off, and give oilcake too, replied "Oh! we should have all our Barley laid down." One farmer told him he did not put in more than from 6 to 7 pecks of Barley per acre, or at most eight, for if he did it would be spoiled; he managed to get an excellent crop, very little laid; but those who put in much more grew an immense quantity of light straw, and of that sort of Barley which he was obliged to buy this year to feed his pigs with. He (Mr. Mechi) was sure that land never could be too rich for a grain crop, provided the quantity of seed was properly adapted to the soil. This was a subject which he hoped would be taken up in the course of the year by the Hadleigh Farmers' Club. With respect to draining, he was happy to see some persons present who had expressed opinions in opposition to his own on this point. He must say that his own opinions upon draining had undergone some modifications. He began first with shallow and close draining, 2 feet 8 deep, and 12 feet apart, and that answered admirably; then he went as far as 50 feet apart, with very deep draining; and he had come to the conclusion that the drains could not well be too deep, but they must not be too far apart. He had drained 30, 40, 50 feet upon very strong clays, with inch pipes, but he found 30 feet the best distance, and he was not sure that 25 were not better still. He was satisfied where he had drained 30 feet apart, and 4 to 5 feet deep. It was impossible for an observer of nature to take up a plant of Beans, or corn of any sort, at this time of the year, without being struck with the great depth the roots already went; he believed the faintness of the crop in the spring arose from the desire to go deeper in search of food; but they found their progress obstructed by stagnant water, and the result was a stoppage in their growth. This took place at various times, according to the cultivation and the amount of manure, but it certainly took place when there was a wet spring; it was only when Nature stepped in and effected drainage by great cracks and copious evaporations that the plant flourished. They know when there was a dry season, with great cracks in the land, heavy lands succeeded in having good crops, but in wet seasons, where the land was not drained, they suffered from a superabundance of water. As regarded his own farm, he could tell them his crops never looked so well since he had had the farm, if they would come and judge for themselves by and by he should be very happy to see any of them. Like all young beginners he had had something to learn and to amend. He had a notion formerly that they could draw off their root crops, and that it was good to depend on artificial manure; but he had come to the conclusion from practice in the £. s. d., so powerful a remembrancer to them whether they were doing right or wrong, that a great amount of stock, together with purchased food, was advantageous to the land and very profitable. He meant that they should not remove the root crop, but consume it on the land; he was for their never carting all the roots off the land, which was an expensive proceeding, but for making all the manure they could with oilcake or purchased food. They ought to consider that when they carried off 100 tons of roots, they absolutely carted off 88 tons of water, for he believed the proportion was from 88 to 90 tons of water in 100 tons of roots. It was quite clear that consuming 10 tons of hay, or 15 tons of oilcake, would be more advantageous than carting this quantity of water off the land, and carting it on again, and so injuring the future crop. He was sure they could by prudent measures make farming on the average profitable, he did not say this year, for this year was a losing one to farmers. But when a man had his lands thoroughly drained—his fences removed, so that he could grow crops on all the land he paid rent for—when he had convenient buildings for his stock—when he ploughed deep, and subsoiled deeply—kept plenty of stock, and bought plenty of food for them—farming might be made profitable on an average of years. He could say that. He would not occupy their time any longer, but would remark that he was very glad to see the great change that had come over the public mind in regard to some agricultural questions. Formerly the man who talked about tenant-right was considered an enemy to the landlords of the country; he was also generally looked on with disfavour, and it was thought that in asking for it he was asking for something which was wrong for the landlord, and that he wanted to be taking something out of his pocket; but they had seen a committee of the House of Commons come to the unanimous decision that the question was a most vital one for the country, for the interests of the tenant as well as the landlord. They were aware that a bill was now progressing in the House of Commons which would certainly secure to every tenant his just rights; and no doubt the effect of that measure would be to draw out a vast amount of capital locked up and hitherto not employed in agriculture. It was impossible not to see that a great deal of money was accumulating in trade, manufactures, and commerce, and that there was a difficulty in employing it; they knew also that practical agriculture was craving more capital. This bill, no doubt, would bring the superfluous capital of trade, commerce, and manufactures into agriculture. Though they cried out about distress, he believed it to be an admitted fact that the annual accumulated profits of this country were somewhere about 50 millions, and he should be happy to see a little of this accumulation employed in agriculture. (Applause.) *Essex Standard.*

Miscellaneous.

Size of Farms.—If we look at large farms in Great Britain—I mean farms of hundreds of acres, with the exception of some of the best cultivated districts, such as the Lothians in Scotland, for example, or the counties of Northumberland, Lincoln, and Norfolk, and only some farms in these counties, we shall find that even these are by no means always fully cultivated; and that, either for want of skill, or enterprise, or capital, large portions of them are wholly unproductive. This is far less frequently the case with small farms, for the simple reason that the owners cannot afford to neglect their land, and that the management is much more easy It is to be added likewise, that in very small holdings of 6, or 10, or 20 acres, the great expense of a team, and of costly implement is dispensed with. In some parts of England, though very rarely, but in many parts of the Continent, and especially in Switzerland, the small farmers use their milch-cows for work, thus getting a double advantage from them; and a milch-cow used tenderly, and treated liberally, may be worked from four to six hours a day without injury to her milk. This saving is a great circumstance. On large arable farms it may be calculated, that from a fourth to a third of the produce must be counted for the support, and equipments, and cost of the teams. The saving of this expense is a great affair; and this is accomplished on small holdings where cows are kept, which pay the expense of their keeping by their labour and their calf; or where, as in many cases, the whole cultivation is performed by human instead of brute labour—by the spade instead of the plough. I believe, therefore, it will be found, that in a fair comparison, the small farms are in fact more productive than the large ones; that they are managed at less comparative expense, and, in proportion, leave more for human consumption. If thus much may be said of the economical results, still more may be said of the beneficial moral influences of such a system. Of all the influences which operate to promote exertion, industry, and good conduct, none certainly is more powerful than the hope of bettering our condition; and I may add, without undertaking to give a reason for it, as an established truth, that nothing inspires more self-respect, as connected with a feeling of independence, than the possession of property, and especially the possession of a fixed property in house or land. This effect is constantly seen in the labouring classes among the French. They are extremely ambitious of getting a piece of land; and perhaps too much so, after once coming into possession, of extending their possessions. This stimulates them to industry, and induces the most rigid economy. The subdivision of property or of land in France renders this practicable, which, in other countries, where the right of entail prevails, or where property is held in large masses, and guarded with extreme jealousy, is out of the question. There is a wise foresight likewise in this matter in respect to the security of public order and the peace of the country. The persons of all others least likely to engage in projects of revolution certainly are those whose property must in every case be endangered by such revolution; whose possessions are fixed, and not transferable from one place to another at pleasure. Their estates constitute the strongest pledge of their loyalty and patriotism. The more property is divided, the more equally it is held, or rather, that it should be attainable by all on equal conditions, the greater security is there for the rights of property; the more are concerned in the preservation of the public peace. The humblest agricultural labourer in France may look forward, by industry, sobriety, and economy, to become a proprietor and a holder in fee-simple of some portion of the soil which he cultivates. There is, therefore, the strongest inducement held out to good conduct; and the beneficial influence of this condition of things upon the character of the French peasantry cannot be doubted; *Colman's European Agriculture.*

Saccharine Pumpkin.—Prince Albert commanded experiments to be made by Mr. Cansdell, at the Flemish farm, Windsor. It appears the proper time for planting Indian corn, &c. in America, is in April or by the 1st of May, but the wet spring, and other circumstances, prevented Mr. Cansdell from commencing operations until the latter end of May, six weeks later than usual; yet, notwithstanding this delay and a season unusually cold and wet, he has had the satisfaction of harvesting a crop of Indian corn, a large proportion of which was fully ripe, and an under crop of the saccharine Pumpkin, exceeding in quality and quantity any he had ever seen in the States, a large portion of which has been consumed by the ox which has won for his Royal Highness the highest prize at the cattle show in Baker-street, where a variety, weighing from 40 lbs. to 60 lbs, with samples of the Maize, have been exhibited by Mr. Cansdell, together with several specimens of his other plantations at Hadleigh, in Suffolk, and at Tolleshunt D'Arcy, in Essex, where, on a very heavy-land farm, he has just grown on one acre a good crop of corn and upwards of 20 tons of Pumpkins, on which two heifers have been fattened with decided advantage over two others put up at the same time on Mangold Wurzel, and a large quantity fed out to pigs and cows has been eaten by them with an eagerness that showed they were a natural and agreeable food. Mr. Cansdell states that the growth of the joint crops, if kept free from weeds, entirely prevents the necessity of a clean or long fallow, and that in any ordinary season a good Wheat crop may be expected to follow.

Town Sewage.—Instead of a subscription to help the best and most enterprising working men (for these are the men that go) of Newcastle to the Antipodes,—why not get up a system of emigration to the Town Moor? Instead of permitting the fluid manure to run at separate openings into the Tyne, why might it not be collected in reservoirs, and be thence, by means of barges and force-pumps, distributed on the fields adjacent to the river? If this system is found to pay at Manchester and at London, where the obstacles are greater, why not on the Tyne? So far from its being true that the fluid could not be profitably thus employed on the fields capable of being reached by a few hundred feet of hose from barges on the river, we believe there is evidence to prove that it can be conveyed profitably to very considerable distances, and we have no doubt whatever that the railways which intersect the farms north and south of the Tyne, will sooner or later help to distribute the fertilising streams for miles round the country, enriching at once the landlord, the tenant, and the public. A beginning has already been made in this work at Newcastle, and considerable quantities of ashes, we believe, have been, and continue to be, transported northward. This was one of the measures strongly advocated by the late enterprising and public spirited Mr. Brandling,—a man who worked, and suffered, and died, like so many of those who labour for the advancement of the public good. The material, however, which is carried from Newcastle, is the solid portion of the town refuse, by far the least valuable. Erroneous ideas exist on this subject, even in the minds of all but the more enlightened and scientific farmers themselves:—the solid refuse is alone carried off, and being found not to produce the results expected, a good deal of doubt as to the profitableness of transporting it to any distance is expressed by those who have tried it. As the liquids containing the soluble fertilisers are the most valuable, so they are the most easily transported portion of the refuse of towns. We would fain hope that the Newcastle Farmers' Club, which has already earned for itself a very enviable station among provincial agricultural associations, will make this subject a topic of lecture and discussion at one of their meetings, and that thus all the necessary local, practical, and scientific knowledge may be brought to bear upon it. *North and South Shields Gazette.*

Bad Pasture Land.—In travelling into the north from Birmingham, there are to be seen whole districts that may fairly come under this denomination; and indeed it may be remarked with truth, that there is scarcely a single field to be seen there which *is in* the state it should be, when compared with the rich luxuriant Grass fields in the midland counties. To improve it upon the surface would be almost a hopeless task. Much, no doubt, might be done by draining and a plentiful supply of manure; yet the land in general lies ill formed for draining, and from having been over-ploughed, and then ill laid down, it has become so adhesive and inert, that the manure would scarcely penetrate below, and much of it would be lost. The only way of making a thorough renovation of it would be to break it up, and after its being first thorough drained, to stir it well and deeply with the plough; to have a large mass of manure both of a stimulating and enriching quality incorporated in the very heart of the soil; and then, should it be necessary to have it restored to its former state, it should be well laid down again with the most choice Grass seeds; *The New Husbandry, by Law. Rawstorne.*

Calendar of Operations.

MAY.

GALLOWAY FARM, *May 20.* — *Stall or Box feeding.* A correspondent, in your columns of May 5, disputes my statement, of April 14, as to the greater cheapness of a house for stall-feeding than for boxes; and he gives the dimensions of a shed, constructed on the best principles he can devise, for the economical accommodation of 20 cattle, in two rows of boxes, with a feeding passage up the centre. The inside dimensions of such a shed he describes as 102 feet 3 inches in length, by 21 feet 6 inches wide, which is equal to 110 square feet for each animal it contains. It is quite a common thing to construct a house for stall-feeding with two rows of cattle and a feeding passage up the centre, and in such a house, 45 square feet will afford ample room for an animal of from 50 to 70 stones imperial. That such accommodation is sufficient may be seen in almost every feeding house in this district. One to contain 70 cattle would be 111 feet long and 28½ feet wide inside, the cattle in two rows, with feeding passage; each row would be divided into 17 double stalls and one single one. The double stalls are 6 feet 4 from centre to centre, which gives about 3 feet for each animal, exclusive of the stall post. The width is divided thus: Cleaning passage, 3½ feet; Grip, 1½ feet; Bed with feeding crib, 7½ feet; Feeding passage in centre, 3½ feet; Bed with feeding crib, 7½ feet, Grip, 1½ feet; and Cleaning passage, 3½ feet. Total, 28½ feet inside. An air drain, with openings by gratings to the surface, should pass from end to end of the byre under the centre feeding passage. The roof will have considerably more span and elevation than that described by your correspondent for the boxes; but this additional expense is cheaply purchased by the superior ventilation thereby afforded to the cattle. In such a byre, the space occupied by each animal, inclusive of feeding and cleaning passages, is 45 square feet. This certainly corroborates my former statement that "a building with a feeding passage in front, constructed for the accommodation of 50 cattle in boxes, would contain 100 tied up in stalls." Your correspondent will also probably now admit that taking a house with a double row of boxes, each box 10 feet wide, more than three times the space must be traversed by the feeder in comparison with what he would have to do in a double row of stalls where each animal *only* occupied 3 feet in width. So much for the relative expense of construction, which, however, is not the main part of the question. I stated that in my own experiments the difference in the progress of the stall and box-fed cattle, and in the quantity of food they consumed, was scarcely appreciable; if anything, it was in favour of the stall-fed oxen. The only points to consider, therefore, are economy in construction, and the supply of litter which the farm affords. I repeat that box-feeding may be a good way of using up the straw where straw is superabundant; but looking forward, as in my opinion we must do, to a great extension of green crops, I think the time will come when we must hoard every particle of straw, and use it in the most economical way we can, and that, in respect of economy of litter, box-feeding will bear no comparison with stall-feeding. Several experienced feeders in this district have tried box-feeding in comparison with stall-feeding. Some consider it the preferable mode for fattening, whilst others have found no advantage from it; but all concur in saying that animals in boxes consume more food and much more litter than in stalls. *J. C.*

Notices to Correspondents.

AMMONIA: *Sub.* Quicklime will detach it from any of its combinations. It should not be added to dungheaps, however the ammonia in them may have been "fixed."

BARLEY AND CARROTS: *J W.* They are never grown together. In Belgium they grow Carrots and Flax together; but no English farmer is likely to copy the practice.

DISEASES OF CATTLE, &c: *F J C.* The publications by the Society for the Diffusion of Useful Knowledge.

EARLY GREEN FOOD FOR HORSES: *Const. Reader.* We have no difficulty in England. Carrots and hay, Rye and hay, Italian Rye-grass, and then Clover, form the gradation from winter to summer keep. Italian Rye-grass will be at its best here in the last week of May. It should be sown in spring, but will often answer well enough in our climate if put in on a corn stubble in the autumn.

GREEN HAY: *C M.* We have had no experience. But we know the practice is often followed of mixing imperfectly dried hay with old hay or straw in the rick, and see no reason why it should not answer with Vetches.

LIME: *G Ward.* You ought not to have applied the lime and the dung so near one another. We would have applied the latter on the stubble in autumn and the dung in spring, or *vice versâ*, if you could have had the latter at the former period.

LIQUID MANURE: *T S.* Apply it diluted in *wet weather*, on your Grass land.

MANGOLD WURZEL: *G P.* It will not be safe to sow so late as the 29th of May; but you may transplant in June with the certainty of a good crop, from well cultivated land, in a wet season. Turnips and Rape are almost your only other crops after May. Fresh bones, allowed to ferment and sprinkled with dilute sulphuric acid, will be found to contain both phosphorus and ammonia.

ON POTATOES: *W D.* The best food you can give the cow is Beans, or rather, Bean-meal, which will both act as an astringent, and also increase the production of milk. The green food may then be continued. If this does not succeed, give sweet hay in addition, and if the purging continues, give the following. Tincture of opium, 1 oz., prepared chalk, 8 oz., in thick Wheat-flour gruel once a day.

POND MUD: *A Sub.* We should be disposed to let it dry in a heap, and before quite dry, turn it over, along with lime, in such quantity as would give 30 or 40 bushels per acre on the land to which you apply the compost. Add 3 or 4 cwt. of gypsum per acre, and apply the whole in autumn, on your pasture land.

THE HORSE: *A F.* The work by the Society for the Diffusion of Useful knowledge is as good as any.

THRASHING MACHINE: *E B C.* Mr. Clyburn, Uley, Gloucestershire; Messrs. Ferrabee, Stroud, Ditto; Messrs. Barrett and Exall, Reading, Mr. Hornsby, Grantham, Lincolnshire; Messrs. Garrett, Leiston Works, Suffolk, and many other makers of established reputation will, no doubt, answer enquiries and furnish estimates.

TOP-DRESSING FOR CLOVER: *A Farmer.* Apply some 40 bushels of lime, mixed with earth and 10 or 20 bushels of coal ashes, in autumn, and 3 cwt. of guano per acre in April next year, and the probability is that you will have a good crop of Clover again.

TOP DRESSING FOR WHEAT: *J Barton.* One cwt. of nitrate of soda, and 1 cwt. of sulphate of ammonia per acre, sown broadcast, in wet weather, have given to our own Wheat a most luxuriant foliage and promise of yield.

TURNIP SEED: *A L R.* No doubt you may reproduce any well-established variety, such as Skirving's, equally well from the seed of bulbs selected from your own fields. You will find the matter to require a good deal of attention in detail; more, perhaps, than large farmers generally will give.

WHITE MUSTARD: *W F J.* 8lbs. or 12 lbs. of seed per acre, broadcast, are generally sown. The smaller quantity, with 2 lbs. of Rape, would answer your purpose; though we doubt if the latter, in the midst of so rapidly-growing a plant, will ever come to anything.

YOUNG STOCK: *W S.* Turn them into a good pasture, you can do nothing better for them than that at present. In autumn, you can begin to give them Turnips, and then Swedes and Mangold Wurzel, along with a mash of hay-chaff, wetted with salt, linseed soup, and dusted over with Bean-meal. If you have no Turnips, then they must be satisfied in winter with the hay alone, *i. e.* without green food in addition.

Markets.

COVENT GARDEN, JUNE 9,

The weather being favourable, Vegetables are very plentiful. Fruit has altered but little since our last account. Pine-apples continue to fetch from 6s. to 10s. per lb. Hothouse Grapes are cheaper. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, young Turnips may be obtained at from 9d. to 1s. a bunch, and Carrots at from 6d. to 1s. 6d. Cauliflowers are sufficient for the demand. Rhubarb and Asparagus are plentiful. Green Peas fetch from 6s. to 10s. per bushel. Potatoes are a trifle cheaper. New Potatoes realise from 6d. to 1s. 6d. per lb. Lettuces and other salading are sufficient for the demand. Mushrooms are plentiful. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Lily of the Valley, Cinerarias, Tropæolums, Carnations, Pinks, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Oranges, per 100, 6s to 16s
Grapes, hothouse, p. lb, 5s. to 8s	Lemons, per doz., 1s to 2s
Strawberries, p. oz., 4d to 1s	— per 100, 7s to 14s
Cherries, per lb., 6s to 10s	Almonds, per peck, 6s
Apples, dessert, p. bsh., 6s to 12s	— sweet, per lb., 2s to 3s
— kitchen, p. bsh., 4s to 8s	Walnuts, p. 100, 1s 6d to 2s
Gooseberries, green, p. hf. sieve, 4s to 6s	— p. bush., 16s to 24s
Currants, do., do., 5s to 6s	Nuts, Bar., p. bush., 20s to 22s
Oranges, per doz., 1s to 2s	— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 4d to 1s 6d	Onions, p. bunch, 2d to 6d
— red, p. doz., 6s to 12s	— p. bush., 7s to 10s
Greens, p. doz. bunches, 1s to 2s	— Spanish, p. doz., 1s 6d to 4s
Cauliflowers, p. doz., 2s to 6s	— pickling, p. hf. sieve, 1s 6d to 3s
Sorrel, p. hf. sieve, 9d to 1s	Shallots, per lb., 10d to 1s
Potatoes, per ton, 60s to 130s	Garlic, per lb., 6d to 1s
— per cwt., 5s to 14s	Artichokes, Jerusalem, p. half sieve, 3d to 1s
— per bush., 4s to 7s	Lettuce, Cab., p. sc., 4d to 9d
Turnips, per bunch, 6d to 1s	— Cos, do., 6d to 1s
Red Beet, per doz., 2s to 4s	Mushrooms, per pottle, 6d to 1s
Horse Radish, p. bdl., 1s to 6s	Small Salads, p. pun., 2d to 3d
Asparagus, p. 100, 4d to 4s	Fennel, per bunch, 2d to 3d
Rhubarb, p. bundle, 4d to 1s 6d	Savory, per bunch, 2d to 3d
French Beans, p. 100, 1s 6d to 2s 6d	Thyme, per bunch, 2d to 3d
Cucumbers, each, 4d to 1s 6d	Parsley, p. hf. sieve, 1s to 2s
Leeks, per doz., 1s to 2s	— Roots, p. bdle., 1s to 1s
Celery, p. bundle, 1s to 2s	Marjoram, green, p. bun., 9d to 1s
Radishes, p. 12 bunds, 4d to 8d	Mint, green, per bunch, 3d to 4d
Watercress, per doz. bunches, 4d to 6d	Basil, green, p. bunch, 6d to
Carrots, p. doz. bun., 6s to 8s	
Spinach, p. sieve, 9d to 1s	

HAY.—Per Load of 36 Trusses.

SMITHFIELD, June 7.

Prime Meadow Hay	68s to 78s	Clover	90s to 95s
Inferior ditto ...	50 65	New Clover	— —
Rowen	50 60	Straw	28 32
New Hay	— —		J. COOPER.

Trade heavy.

CUMBERLAND MARKET, June 7.

Prime Meadow Hay	70s to 78s	Inferior	50s to 80s
Inferior ditto ...	50 68	New Clover	— —
New Hay	— —	Straw	28 32
Old Clover	90 98		JOSHUA BAKER.

WHITECHAPEL, June 7.

Fine Old Hay	68s to 78s	New Clover	80s to 88s
Inferior ditto	45 55	Inferior ditto ...	60 70
New Hay	62 68	Straw	26 30
Old Clover	95 100		

HOPS.—FRIDAY, June 8.

MESSRS. PATTENDEN and SMITH report that the accounts from the plantations generally are as bad as possible, and there remains but little hope for the safety of the crop. Prices are still advancing, and the duty is at 90,000*l.* to 100,000*l.*

POTATOES.—SOUTHWARK, WATERSIDE, June 4.

The Committee report that our market continues to be supplied with foreign Potatoes more than equal to the demand, which has caused a considerable reduction to be submitted to. The few Yorks here still command a high figure. The following are this day's quotations:—Yorkshire Regents, 160s. to 220s.; Scotch Whites, 80s. to 90s.; Foreign do., 80s. to 90s.

SMITHFIELD, MONDAY, June 4.

The supply of Beasts is larger and of improved quality. Trade is very slow, and Friday's prices are scarcely maintained. The number of Sheep is also larger; small selling ones make about the same as of late, but big fat sheep are rather lower. Lamb meets with ready sale at fully late rates. Trade is still heavy for Calves, but a choice one is more freely purchased at a little advance. From Holland and Germany there are 287 Beasts, 960 Sheep, and 113 Calves; and from Scotland, 350 Beasts.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	8	4 to 3	6
Best Short-horns	3	2	— 3	4
2d quality Beasts	2	6	— 3	0
Best Downs and Half-breds	...	...	...	...
Ditto Sheep	3	8	— 4	0
Ditto Lambs	4	0	— 4	8
Best Long-wools	...	...	...	...
Ditto Sheep	3	4	to 3	8
Ewes & 2d quality	...	...	...	...
Ditto Sheep	2	8	— 3	2
Lambs	...	5	4 — 6	0
Calves	...	3	4 — 4	4
Pigs	...	3	8 — 4	8

Beasts, 3366; Sheep and Lambs, 26,440; Calves, 276; Pigs, 210.

FRIDAY, June 5.

The supply of Beasts is large, and trade dull. Monday's rates are with difficulty obtained. The number of Sheep and Lambs is very large, but the average quality indifferent; consequently the choicest are not much lower, but other kinds are with difficulty disposed of. There is an extraordinary supply of Calves; a large proportion are of middling quality; these are much lower, and the choicest suffer a reduction of 4d. per 8 lbs. Several remain unsold. From Holland and Germany we have 77 Beasts, 460 Sheep, and 276 Calves; from Scotland, 350 Beasts; and 139 Milch Cows from the home counties.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	4 to 3	6	
Best Short-horns	3	2	— 3	4
2d quality Beasts	2	6	— 3	0
Best Downs and Half-breds	...	...	—	
Ditto Sheep	3	8	— 3	10
Best Long-wools	...	...	to ...	
Ditto Sheep	3	4	— 3	8
Ewes & 2d quality	...	...	—	
Ditto Sheep	2	8	— 3	0
Lambs	...	5	0 — 5	10
Calves	...	3	8 — 4	0
Pigs	...	3	4 — 4	6

Beasts, 927; Sheep and Lambs, 13,890; Calves, 762; Pigs, 270.

MARK LANE.

MONDAY, JUNE 4.—The supply of English Wheat by land carriage samples this morning was again small, and met a dull sale at about the prices of this day week. The attendance was not large, and the demand for foreign Wheat limited; fine qualities, particularly white, fully maintained late rates, but out of conditioned and interior descriptions were difficult of disposal at a decline of 1s. per qr.; Polish Odessa afloat was inquired after at 38s. per qr., cost, freight, and insurance.—Barley must be written 1s. per qr. lower.—Beans and Peas are unaltered in value.—Oats are 6d. to 1s. per qr. cheaper.

FRIDAY, JUNE 8.—The supply of English Wheat since Monday has been small, and commanded the full prices of that day; the foreign arrivals are less than for several months past. This morning's market was very poorly attended, and the amount of business transacted trifling; holders generally were not disposed to give way in price, but where it was necessary to clear vessels, the greatest difficulty was experienced in obtaining late rates.—Barley is unaltered in value.—Beans and Peas support our quotations.—The quantity of Oats offering being considerable, the trade is exceedingly heavy, and sales can only be effected at a reduction of fully 6d. per qr.—We observe no variation in the price of Flour.—Indian Corn is much wanted, and fine Galatz would command 37s. per qr., cost, freight, and insurance.—Although in a few exceptional instances the paucity of English supplies in the provincial markets has enabled sellers to realise 1s. per qr. advance for Wheat, the fine weather, combined probably with its assumed productiveness and good appearance of the growing crops (excepting on the clay soils), have this week produced a very inanimate trade, and foreign Wheat, unless of superior quality or old, has with difficulty realised former prices.

LIVERPOOL, FRIDAY, JUNE 8.—The wind has been easterly, and we have had very small supplies since Tuesday. The weather could not be finer, and having a poor attendance of dealers at this day's market, the business was confined to retail transactions. Wheat declined 1d. per bushel, but there was no change in the value of Flour, Oats, Oatmeal, or Beans. The scanty supply of Indian Corn met a fair sale at Tuesday's prices.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
April 21	44s 5d	28s 8d	16s 8d	22s 4d	28s 11d	28s 9d
— 28	46 0	28 10	16 2	27 5	29 3	29 9
May 5	46 9	29 11	17 6	25 4	29 8	30 1
— 19	44 9	28 0	17 8	25 9	30 7	28 11
— 26	44 6	28 9	17 9	20 0	31 2	32 4
June 2	44 9	27 10	17 7	26 8	31 7	33 4
Aggreg. Aver.	45 4	28 5	17 6	25 10	30 2	31 1
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	APR. 21.	APR. 28.	MAY 5.	MAY 19.	MAY 26.	JUNE 2.
46s 9d	...	...	...	...	...	...
46 0	...	...	...	...	...	...
44 9	...	...	...	...	...	...
44 9	...	...	...	...	...	...
44 6	...	...	...	...	...	...
44 5	...	...	...	...	...	...

PRICES CURRENT.	London.		Liverpool.		Wakefield.		Boston.		Birmingham.	
	May 28 qr.	June 4 qr.	May 29 70 lbs.	June 5. 70 lbs.	May 25 qr.	June 1 qr.	May 30 qr.	June 6 qr.	May 31. 62 lbs.	June 7. 62 lbs.
	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
Wheat—										
New, red ...	40 to 42	40 to 42	6 4 6 9	6 4 6 9	41 to 46	43 to 46	38 to 46	38 to 45	5 8 6 2	5 6 6 2
„ white ...	45—46	45—46	6 10 7 4	6 10 7 4	43—50	43—50	42—49	40—48	6 0 6 6	6 0 6 4
Old, red ...	42—46	42—46	6 7 6 10	6 7 6 10	42—44	42—44	—	—	5 10 6 2	5 8 6 1
„ white ...	48—52	48—52	7 0 7 7	7 0 7 6	—50	—50	—	—	5 11 6 7	5 11 6 6
Foreign	36—55	36—55	5 3 8 3	4 4 8 2	39—51	39—45	—	—	5 4 7 0	5 0 7 0
			480 lbs.	480 lbs.						
Rye—New ...	22—24	22—24	—	—	—	—	—	—	—	—
Foreign...	22—23	22—23	—	—	—	—	—	—	—	—
Foreign meal	6*l.*—7*l.*	6*l.*—7*l.*	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley—										
Grinding ...	22—25	21—24	—	—	22—23	22—23	24—26	24—26	23—25	23—25
Malting... ...	25—29	22—27	30s—32s	30s—32s	27—32	27—32	28—30	28—30	29—32	29—32
Foreign... ...	19—29	18—27	—	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	19—26	19—25	2s 10d 3s 3d	2s 10d 3s 3d	—	—	14—20	14—20	19—30	20—28
Black...	16—22	15—20	2 5 2 8	2 4 2 8	—	—	—	—	18—20	18—20
Foreign	15—20	14—20	2 4 2 7	2 4 2 7	—	—	—	—	—	—
			qr.	qr.		qr.				qr.
Peas—Boilers	25—30	25—30	34s—	34s—	28—32	28—32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—25	23—25	27 —28s	27 —28s	—	—	—	—	11—12	11—12
Foreign ...	24—32	24—32	30 —33	30 —33	—	—	—	—	—	—
Beans—										
New, small ...	22—32	22—32	30 —33	30 —33	29—32	29—32	30—33	30—33	12—14	12—14
Old	—	—	32 —34	32 —34	35—36	35—36	34—36	34—36	14—16	15—16
Foreign ...	21—36	21—36	23 —32	23 — 32	26—28	26—28	—	—	10—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	37—42	37—42	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9*l.* 7*s*	9*l.* 7*s*	7*l.* 12*s*	7*l.* 12*s*	—	—	—	—	—	—
Foreign ...	6*l.*—7*l.*	6*l.*—7*l.*	—	—	—	—	—	—	—	—
			280 lbs.	280 lbs.			p. sack	p. sack	p. sack	p. sack
Indian Corn—	26—32	26—32	34s—37s	35s—37s*	—	—	—	—	13—14	13—14
Flour—	p. sack 36—44	p. sack 36—44	280 lbs. 34—35	280 lbs. 34—35	—	—	30—36	30—36	per sack 31—37	per sack 32—37
Weekly Averages and Imports.	Aver. June 5	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	46 3	2950	44 6	9279	46 1	9941	43 7	1488	41 6	2048
BARLEY ...	28 6	3160	27 9	28	28 10	1449	—	—	24 0	79
OATS... ...	20 0	22410	17 7	1936	18 7	1539	15 2	1008	20 11½	144
RYE	25 0	—	26 0	—	—	—	—	—	—	—
BEANS ...	29 4	—	31 3	1640	31 8	1488	31 0	48	—	—
PEAS... ...	29 10	—	32 4	8	—	307	—	—	—	—
Signed	KINGSFORD and LAY.		SEGAR and TUNNICLIFFE.		SANDARS and DUNNS.		THOMAS WRIGHT.		J. and C. STURGE.	

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS will submit to public competition, by Auction, at the Mart, Bartholomew-lane, on TUESDAY, June 12th, and THURSDAY, June 14th, at 12 o'clock, a first-rate Collection of DAHLIAS, consisting of all the newest and most approved kinds; also FUCHSIAS, VERBENAS, HEARTSEASE, choice GERANIUMS, and other Plants, in bloom. May be viewed the morning of Sale, and Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, AND NURSERYMEN.

MR. J. C. STEVENS is instructed to announce for Sale by Auction, at his Great Room, 38, King-street, Covent-garden, on THURSDAY, the 14th June, at 12 for 1 o'clock, the COLLECTION OF PLANTS of a Nobleman, deceased; removed from the mansion for convenience of sale. It comprises a General Collection of Orchids, and other Stove and Greenhouse Plants, mostly in good health.—May be viewed the day prior and morning of sale, and Catalogues had.

NEAR YORK.—The important MANORIAL DOMAIN of SCOREBY, nearly all freehold, and tithe free, splendidly wooded, and full of game, only five miles from York, and eight from Pocklington, upon the rich bank of the Derwent, which forms its fine picturesque boundary for nearly three miles between Kexby and Stamford Bridges, with a railway station, bringing this valuable and improving property within seven hours' journey of London.

MESSRS. DANIEL SMITH AND SON will offer for Public Sale, at the George Hotel, at York, on SATURDAY, June 30, at 1 o'clock (unless previously disposed of by Private Treaty), by direction of the executors of the late Ottiwell Wood, Esq., the very valuable, compact, and attractive ESTATE OF SCOREBY, offering a capital landed investment, and upon which very considerable sums have been expended for several years past in draining and planting, in the formation of roads and pleasure drives, in new buildings, and otherwise improving and embellishing the estate, with a view to its becoming a residence, comprising about 1310 acres of highly-cultivated land, tithe-free, richly timbered, and admirably enclosed, and lying in a perfect ring fence, between the Burlington and Hull roads, and the river Derwent; divided into six superior farms, with neat, substantial, brick-built houses and homesteads; also several lodges and cottages for keepers and woodmen, including beautiful woodlands stored with thriving timber, several ornamental and interesting plantations full of the most rare and valuable plants and shrubs, intersected by diversified walks and drives, commanding extensive scenery, and embracing a bold mountainous range of the distant wolds. The estate may be viewed by application to Mr. Johnson, at Scoreby; and descriptive particulars, with plans, may be had on the premises; of Messrs. Lightfoot, Robson, and Lightfoot, Solicitors, Castle-street, Leicester-square, London; of Mr. Charles Howard, York; and of Messrs. DANIEL SMITH and SON, Land Agents, Waterloo-place, Pall-mall, London.

FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark-lane, on MONDAY, June 11, 1849, at 1 o'clock precisely, about 250 Tons damaged PERUVIAN GUANO, imported by Messrs. ANTONY GIBBS and SONS.—Catalogues, and further particulars from J. A. RUCKER and BENCROFT, Brokers, 26, Commercial Sale Rooms, Mincing-lane, London.

TO GENTLEMEN, AMATEURS, &c.

CACTI.—TO BE SOLD, an entire and really splendid collection of CACTI and other succulents, consisting of from 600 to 700 pots, and including upwards of 400 species, among which are, say 40 sp. Echinocactus, 40 sp. Mammillaria, 26 sp. Cereus, 28 sp. Opuntia, 76 sp. Aloe, Gasteria, and Haworthea, Bonaparteas, Tamuses, Dyckias, &c., &c. The whole are well-grown, healthy plants, and may be had upon truly moderate terms. As the increase remains upon the plants, the collection might be greatly multiplied. Many of them are rare, and the whole have been collected at considerable expense. Any gentleman commencing the cultivation of these interesting tribes would find this to be an opportunity rarely occurring, and not to be neglected.—Address, S. SHALDERS, All Saints, Norwich.

SUSSEX.

TO BE SOLD, OR LET ON LEASE.—Marshfoot Farm, within one mile of railway station to Brighton, Hastings, &c. About 100 acres Arable, and 50 acres Pasture Land, with Farm house, Barn, &c., mostly free of great tithe, (rent charge only 17l. 16s. per year). To view, apply on the Farm; for rent, &c., to J. F. STURGE and SON, Land Surveyors, Bristol.

SOMERSETSHIRE.

TO BE LET, from Michaelmas next, with convenient entries previously to prepare for Wheat crop, an excellent CORN, DAIRY, and SHEEP FARM, within a ring fence; containing about 250 acres (statute measure), of which 120 acres are arable; with a good FARM-HOUSE, detached DAIRY-HOUSE, convenient FARM BUILDINGS, and several Labourers' Cottages.—Apply to M. T. O. BENNETT, Land-Agent, Bruton, Somerset.

HORTICULTURAL SOCIETY OF LONDON.—EXHIBITION at the GARDENS.—BENJAMIN EDGINGTON, Manufacturer to the Horticultural Society and the Royal Botanic Society, Regent's Park, solicits attention to the NEW MARQUEE which will be erected in the Gardens at Chiswick on Saturday next, with others of various dimensions. Marquees and Tents for sale or hire.—Orders per post directed to BENJAMIN EDGINGTON, 2, Duke-street, Southwark. A warehouse, 408, Piccadilly.

HAY-MAKING SEASON.—Scythes, Forks, Rakes, and Drags, at wholesale prices.—E. and C. KITCHEN, 533, Oxford-street (Holborn end). Every description of Garden Tools.

TODD'S PATENT PROTOXIDE PAINT at a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it. Manufactured by CHARLES FRANCIS and SONS, Cement Works, Nine Elms, London.

THE ANEROID BAROMETER, price 2l. 15s. and 3l. 3s. Wheel Barometers, 1l. 8s., 1l. 16s., 2l., 2l. 10s., to 4l. Pediment or Upright Barometers, 1l. 10s., 2l., to 3l. 3s. This Barometer is decidedly the best construction that is made, being less liable to error than any other, and is also more portable. Thermometers for Greenhouses, 2s., 2s. 6d., 3s., and 3s. 6d. each. Ditto, for Baths or Hot Water, in Japan or Copper cases, 3s. 6d., 4s. 6d., to 7s. 6d. Self-registering Thermometers for Heat and Cold, of the best construction, and not liable to get out of order, 18s. and 21s. Thermometer for registering the extreme of heat, 7s. 6d., Ditto for Cold, 6s. 6d. Hydrometers for Sulphuric Acid, 5s. and upwards. Lactometers for showing the quality of milk, with instructions, 5s. Microscopes of superior manufacture, the lenses are strictly achromatic, No. 1, 3l. 12s.; No. 2, 5l. 15s.; No. 3, 9l 10s. A book, giving the description and prices of Microscopes, Telescopes, and other instruments, sent free by post on receipt of two postage stamps. Persons ordering from the country or abroad may rely on the same care and attention being paid as if they were personally present to select for themselves.

HENRY BAKER, Instrument Manufacturer to the Board of Admiralty, 90, Hatton-garden, London.

PORTLAND CEMENT.—Testimonials received from all quarters, prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

FLEXIBLE INDIA-RUBBER HOSE, PIPES, AND TUBING.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER TUBING. These articles are made all sizes, from ¼-inch bore and upwards, are not injured by hot liquors and acids, are permanently flexible in all temperatures, and are well adapted for Watering Gardens, Breweries, Liquid Manure Pumps, Gas, and Chemical Purposes; they require no application of oil or dressing, and do not become leaky from remaining out of use, rendering them particularly suitable for Fire Engines, and all purposes where a permanently round and flexible pipe is required.

VULCANISED INDIA RUBBER GARDEN HOSE fitted with copper branch, roses, and jets, complete, for attaching to Pumps, Cisterns, &c.

J. L. HANCOCK invites attention of parties using long lengths of the Flexible Garden Hose to his SELF-ACTING HOSE-PIPE REEL, which is found a most convenient machine for winding up and conveying away the Hose when out of use.

Manufactory and Warehouse, Goswell-mews, Goswell-road, London. All Orders and Letters addressed as above will receive immediate attention.

CHEAP AND EFFECTIVE FENCE AGAINST HARES AND RABBITS.—Iron Wire Netting of various patterns, to exclude the smallest rabbits, in coils of 50, 100, or any given number of yards, at prices varying from 4d. to 1s. per yard run. Aviary net at proportionate prices. None sent out without at least two coats of the best anti-corrosive paint. Testimonials of the highest and most respectable character, received during the last 18 years, enable the advertiser to speak with confidence as to the excellence of the article. Apply to Mr. SAMUEL TAYLOR, Barnwood, near Gloucester, or to Robert Woodcock, at the Manufactory, Stoke Ferry, Norfolk.

SHETLAND PONIES AND CATTLE.—Just landed, direct from Shetland, a quantity of very handsome small PONIES; also, from 8 to 12 hands high. Also some very handsome small COWS and HEIFERS, down Calving, some with Calf by side, and in milk; also some small OXEN and BREED, for feeding. These Cows give a large quantity of milk for their size, which is very rich, similar to the Alderney, and they are very hardy and suitable to this climate To be seen at THOMAS OSTON'S, Salesman and Importer to her Majesty, 82, Wapping.

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flowerpots, &c., in Boxes, of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole agents in London, G. and J. DEANE, Horticultural Implement Warehouse, 46, King William-street, London bridge.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Sheading, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronized and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry; and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt

METCALFE AND CO.'S NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose—1s. An improved Clothes Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes of improved graduated and powerful friction. Velvet Brushes which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BRADLEY, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

CAUTION.—Beware of the words "From METCALFE'S" adopted by some houses.

HAYMAKING SEASON.—Haymaking Machines, with back or reversing action.—MARY WEDLAKE, the Widow of the Inventor and Patentee, begs to acquaint the nobility, gentry, and the public generally, that those HAYMAKING MACHINES, under the name of WEDLAKE'S Patent, are not manufactured by MARY WEDLAKE and Co., but are limitations only, and, although somewhat like in appearance, cannot compare with the genuine ones in durability.

118, Fenchurch-street, opposite Mark-lane.

LOCOCK'S FEMALE PILLS, Price 1s. 1½d., prepared expressly for Ladies, and sold by all the London Wholesale Houses, viz., Barclay's, Sutton's, Drew's, Sanger's, Dietrichsen and Co.'s, Proat's, Pedlar's, &c., at LOCOCK'S Female Pill Warehouse, 16, King-street, Covent Garden, and by all established Medicine Vendors.

N.B. To prevent imposition and disappointment, purchasers must observe "LOCOCK'S FEMALE PILLS" engraved on the stamp, by authority, outside each box.

THE BEST REMEDY FOR INDIGESTION.

NORTON'S CAMOMILE PILLS are confidently recommended as a simple but certain remedy, to all who suffer from Indigestion, Sick Headache, Bilious and Liver complaints; they act as a powerful tonic and gentle aperient, imparting strength to the stomach and composure to the nervous system. Sold in boxes, at 1s. 1½d. or 2s. 9d. each, by A. WILLOUGHBY and Co. (late B. G. Windus), 61, Bishopsgate-street Without, and nearly all Medicine Vendors. Be sure to ask for NORTON'S PILLS, and do not be persuaded to purchase an imitation.

PARR'S LIFE PILLS are acknowledged to be the best Medicine in the world. This Medicine has been before the British public only a few years, and perhaps in the annals of the world was never seen success equal to their progress; the virtues of this Medicine were at once acknowledged wherever tried, and recommendation followed recommendation; hundreds had soon to acknowledge that PARR'S LIFE PILLS had saved them, and were loud in their praise. The startling facts that were continually brought before the public at once removed any prejudice which some may have felt, the continual good which resulted from their use spread their fame far and wide, at this moment there is scarcely a country on the face of the globe which has not heard of their benefits, and have sought for supplies, whatever might be the cost of transmission. The United States, Canada, India, and even China, have had immense quantities shipped to their respective countries, with the same result as in England—universal good.

The sale of PARR'S LIFE PILLS amounts to upwards of 30,000 boxes weekly, more than all other patent medicines put together. This simple fact needs no further comment; it tells plainly that the Pills of Old Parr are the best medicine in the world.

BEWARE OF SPURIOUS IMITATIONS.—None are genuine unless the words "PARR'S LIFE PILLS" are in White Letters on a Red Ground, on the Government stamp, pasted round each box; also, the fac-simile of the signature of the proprietors, "T. ROBERTS and Co., Crane-court, Fleet-street, London," on the Directions.

Sold in boxes at 1s. 1½d., 2s. 9d., and family packets at 11s. each, by all respectable medicine vendors throughout the world. Full directions are given with each box.

BEAUTIFUL TEETH.

ROWLAND'S ODONTO, OR PEARL DENTIFRICE. A white Powder, compounded of the choicest and most recherché ingredients of the Oriental Herbal, of inestimable value in preserving and beautifying the Teeth, strengthening the Gums, and in giving sweetness and perfume to the Breath. It extirpates all tartarous adherions to the Teeth and ensures a pearl-like whiteness to the enamelled surface. Its Anti-Septic and Anti-Scorbutic properties exercise a highly beneficial and salutary influence; they arrest the further progress of decay of the Teeth, induce a healthy action of the Gums, and cause them to assume the brightness and colour indicative of perfect soundness, while, by confirming their adhesion to the Teeth, they give unlimited enjoyment and fresh zest to appetite, by perpetuating effective and complete mastication. The Proprietors of this Dentifrice pledge themselves that its efficacy in preserving and embellishing the Teeth far surpasses anything of the kind ever yet offered to the public, and has, in consequence, obtained its selection by Her Majesty the Queen, the Court and Royal Family of Great Britain, and the Sovereigns and Nobility throughout Europe.—Price 2s. 9d. per box.

CAUTION.—To protect the public from fraud, the Hon. Commissioners have directed the Proprietors' Name and Address, thus—"A. ROWLAND and SON, 20, HATTON GARDEN," to be engraved on the Government Stamp, which is affixed on each box. Sold by the Proprietors and by Chemists and Perfumers.

HEAL AND SON'S LIST OF BEDDING, containing a full description of Weights, Sizes, and Prices, by which purchasers are enabled to judge the articles best suited to make a good set of Bedding, sent free by post, on application to their Factory, 196 (opposite the Chapel), Tottenham-court-road, London.

NEW ZEALAND COMPANY.—EMIGRATION.—The Court of Directors of the New Zealand Company will receive applications until WEDNESDAY, the 20th inst., from Shepherds, Domestic Servants, and Labourers, for assisted passages to the Company's Settlements in New Zealand, in the ship KELSO, 560 tons, appointed by the Company to sail from London on MONDAY, the 2d of July.

Further particulars and forms of application may be obtained at the New Zealand House. By order of the Court,

THOMAS CUDBERT HARINGTON

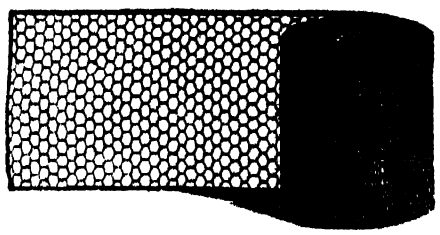
New Zealand House, 9, Broad-street Buildings, London, June 7.

DREADFUL WOUNDS IN A LEG SOUNDLY CURED BY HOLLOWAY'S OINTMENT AND PILLS.—Mr. HENRY GRAY, Typographer, residing at No 6, Temple-lane, City, states that he suffered the most excruciating pains in his leg for a considerable time, occasioned by an accident which he unfortunately met with; two deep wounds formed in his leg in consequence of it, and although he tried various lotions and ointments, yet all were found perfectly useless. He was then recommended by a friend to use some of HOLLOWAY'S Ointment and Pills, which he did, and in six hours he was greatly relieved, and in about eight days the wounds were soundly healed.—Sold by all Druggists, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

DR. LOCOCK'S FEMALE WAFERS have no fault of Medicine, and are the only remedy recommended to Females. Price 1s. 1½d., 2s. 9d., and 11s. per box. BEWARE OF IMITATIONS.—Unprincipled persons counterfeit this Medicine in the form of "Pills," &c. Purchasers must therefore observe that none are genuine but "Wafers," and that the words "Dr. Locock's Wafers," are on the Stamp outside each box. OBSERVE.—The counterfeit Medicines have words on the stamp so nearly resembling these, as to mislead the unwary. Purchasers must therefore strictly observe the above caution. Agents.—DA SILVA and Co., 1, Bride-lane, Fleet-street, London; who are also Sole Agents for Dr. LOCOCK'S PULMONIC WAFERS for Asthma, Consumption, Coughs, and Colds. Price 1s. 1½d., 2s. 9d., and 11s. per box. Sold by all respectable Medicine Vendors.

READ'S NEW PATENT GARDEN ENGINES, &c., &c.—This Engine, which contains about 28 gallons, will discharge water in a powerful stream a distance of 50 feet. It is applicable to all Horticultural purposes, particularly for cleansing Wall and Standard Trees from Insects, &c., &c. The value of this Engine is enhanced by the circumstance that its utility is not restricted to the Garden; from its power and portability, it will be found of the most essential service in case of fire. Likewise HAND MACHINES and SYRINGES of every description, upon the last improved principle. Manufactured only by RICHARD READ, 35, REGENT CIRCUS, PICCADILLY.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.

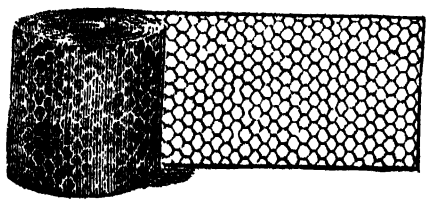


	Galvanized.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7d per yd.	5d. per yd.
2-inch ,, strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ...	10 ,,	8 ,,
1½-inch ,, extra strong ,,	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



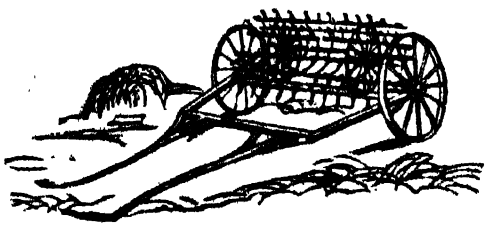
GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3d. per yard	30 inches wide	7½d. per yard
18 ,, ,,	4½d. ,, ,,	36 ,, ,,	9d. ,, ,,
24 ,, ,,	6d. ,, ,,	48 ,, ,,	1s. ,, ,,

Galvanised do., 1d. per foot extra.

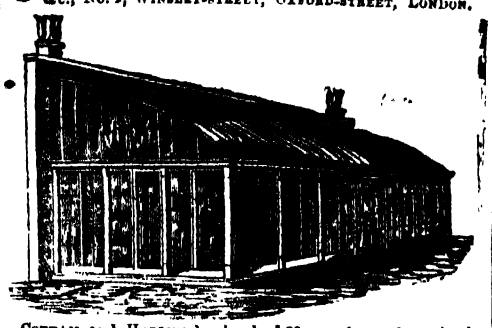
Extra strong Imperial Wire Sheep Netting, 5 feet, 1s. 6d. per running yard, if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden arches, 20s. each; Flower Stands, from 3s. 9d. each, Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 65, Snow-hill, London.

COTTAM AND HALLEN, 2, Winsley-street, Oxford-street, London.



HAYMAKING MACHINES, of the best construction, made almost wholly of Iron, and embracing all the latest improvements, at the reduced price of 12l. 12s., are now ready for delivery at COTTAM and HALLEN'S, 2, Winsley-street, Oxford-street, London.

COTTAM & HALLEN, ENGINEERS, IRON FOUNDERS, &c., No. 2, WINSLEY-STREET, OXFORD-STREET, LONDON.



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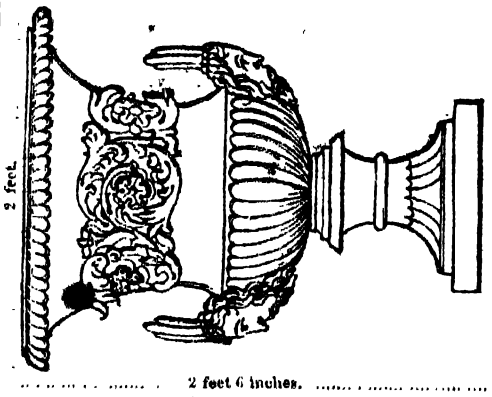

2 feet 6 inches.

Price 35s. each.

A great variety of Cast-Iron Ornamental Vases on show at their Repository, 2, Winsley-street, Oxford-street, also a great variety of the following articles for gardens, &c., at greatly reduced prices, viz.:

Garden Rollers,	Hand-glass Frames,
Garden Engines,	Flower Stakes,
Garden Syringes,	Flower-borders,
Watering Pots,	Flower Stands,
Irrigators,	Garden Arches,
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Every description of Work, both plain and Ornamental in wrought and cast iron, for Gardens, &c. &c.

HORTICULTURAL TOOLS and AGRICULTURAL IMPLEMENTS of all kinds.

STRONG IRON HURDLES, strained Wire Fencing, &c.

Show Rooms at the MANUFACTORY, 2, Winsley-street, and 76, Oxford-street, three doors West of the Princess's Theatre.

METROPOLITAN SEWERS.

SEWER FLUID IRRIGATION.—The Commissioners of Metropolitan Sewers proposing by means of powerful steam engines and appropriate pipes or channels to convey to a considerable distance from the metropolis all the Sewage of that district, and being now engaged in various preparatory surveys and trials, and intending also that this large amount of Sewage shall be so delivered as to be most conveniently and permanently employed for the purpose of irrigating arable soils and meads; they are now desirous of receiving proposals from the owners or occupiers of lands situated within say 50 miles of London, who are willing to contract for a supply of the liquid Sewage, say in quantities per acre if for water meadows equal to 250 tons for each irrigation, and at the rate of 18 irrigations per annum; at this rate of supply it is calculated that the Sewage of the Metropolitan districts is fully equal to the irrigation of 15,000 acres of water meads; it is proposed to give the preference to those districts where (as in neighbourhood of Newmarket, or the Valley of the river Crouch, in Essex, or that of the river Darenth, in Kent, or of that of the river Itchen, in Hampshire) the population is widely dispersed, and the natural drainage, if into the Thames, falls into it below London. Papers explanatory of the value of Sewer-water may be had by application to L. C. HERTSLET, Esq., Sewers' Office, 1, Greek-street, Soho, London, to whom all communications must be addressed.

GRAY, ORMSON, AND BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

GRAY, ORMSON, and BROWN, have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.

Just published, Second Edition, price 2s. 6d.,

THE GARDENERS' RECEIPT BOOK, containing methods for destroying all kinds of Vermin and Insects injurious to the Garden; with preventatives and cures for the different diseases of plants, and directions for the preservation of flowers, fruit trees, &c. By WILLIAM JONES.

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HORTICULTURAL SOCIETY'S SHOW AT CHISWICK, this day, will be fully reported in the COTTAGE GARDENER of JUNE the 14th.

The COTTAGE GARDENER is issued every Thursday, price 2d., or stamped for post 3d.

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ILLUSTRATIONS OF THE NATURAL ORDERS OF PLANTS, arranged in Groups, with Descriptions drawn and lithographed by ELIZABETH TWINING. Part 1, containing four coloured plates, folio, price 10s. 6d. Specimens of the plates may be now seen.

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Parts I., II., and III. are published, containing the following Maps:—I. Geological Structure of the Globe. II. Physical Chart of the Atlantic Ocean. III. Mountain Chains of Europe and Asia. IV Glacier Systems. V. Mountain Chains of America. VI. Phenomena of Volcanic Action.

Extract from the new edition of Mrs. Somerville's "Physical Geography":—"It was the Author's wish, and her Publisher's intention, that the present edition should be accompanied by a collection of Maps to illustrate the more important questions treated of in it; but Mr. A. Keith Johnston having announced the publication of a new edition of his 'Physical Atlas,' in a reduced size, at a low price, the first two numbers of which have already appeared, the project was relinquished, in the belief that Mr. A. K. Johnston's smaller Atlas will furnish suitable Illustrations to this work."

WILLIAM BLACKWOOD and SONS, Edinburgh and London; orders received by all booksellers.

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A TREATISE ON LAND SURVEYING. By JOHN AINSLIE. A new and enlarged Edition, embracing Railway, Military, Marine, and Geodetical Surveying. By WILLIAM GALBRAITH, M.A., F.R.A.S. With Thirty-two Engravings on Steel, by W. and A. K. Johnston, and One Hundred and Sixty-seven on Wood, by Branston.

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Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JUNE 9, 1849.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 24—1849.] SATURDAY, JUNE 16. [Price 6d.

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MIMULUS RUBINUS.

JOHN CARTER, Jun., Nurseryman, Keighley, has the pleasure of announcing that he will be prepared to send out good healthy plants of the above unrivalled MIMULUS, on and after the 21st June inst., at 7s 6d each. Mimulus rubinus is of very vigorous habit, 3 feet high, the flowers of fine form and very brilliant and showy, and J. C. has no doubt that it will supersede all other Mimuli yet grown. Professor Lindley, in the *Gardeners' Chronicle* for May 19th, p. 302, speaks of it in the following high terms: "Your seedling has flowered, and proves to be a very fine thing. It has by far the largest and handsomest flowers we have ever seen on any Mimulus." As the number of plants is very limited, an early application is necessary. A remittance is respectfully requested from unknown correspondents.

The usual allowance to the Trade.

GARDENERS' BENEVOLENT INSTITUTION.—Notice is hereby given, that a SPECIAL GENERAL MEETING of the Subscribers to this Institution will be holden at the London Coffee-house, Ludgate-hill, on Wednesday the 20th June next, to consider a Report from the Committee as to one of the Pensioners who is in the receipt of parochial relief; also for the purpose of Electing TWO PENSIONERS on the Funds of the Charity from among the following Candidates, whose testimonials have been examined and approved of by the Committee:

Name.	Age.	Residence.	Application.
Edward Marshall	69	London	7th
Mary Browne	82	London	5th
John Skeates	69	Brixton	5th
Thomas Mills	72	Dulwich	4th
Charles Ainslie	67	Leyton	3d
John Appleby	57	Clapham	3d
Robert Duncan	70	Highgate	3d
Ogilvie Neil	80	Scone, N. B.	3d
Humphrey Taylor	70	Clapham	3d
James Battey	65	London	2d
Edward Beach	74	Quedgley, Gloucester	2d
John Cocks	62	Clapham	2d
Richard Rudland	76	Dartford	2d
John Shepherd	70	Clapham	2d
William Browne	71	Andover	1st
Rice Evans	71	London	1st
John Hurden	65	Bath	1st
Cornelius Robinson	70	Blackheath	1st
John Snow	65	Farnborough	1st

The chair will be taken at half past 11 o'clock. The ballot will commence at 12, and close at 2 o'clock, precisely. No person will be allowed to vote whose subscription is unpaid on the day of election.

By order, Edward R. Cutler, Secretary,
June 16 1849. 97, Farringdon street.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The Second Exhibition this season of PLANTS AND FLOWERS for competition, will take place on Wednesday next, June 20. Tickets to be obtained at the Gardens, by orders from Fellows of the Society, price 5s. each, or on the day of Exhibition 7s. 6d. each.

The AMERICAN GARDEN, where the Rhododendrons, Azaleas, and Kalmias, are still in great perfection, remains open to the Fellows and their friends.

BEDDING PLANTS.

JOHN HAYES, Florist, Farnham, Surrey, begs to say he has a few Scarlet and other bedding kinds of Geraniums left, from 2s. to 2s 6d per dozen. Verbenas, Blue Anagallis, Blue Lobelia, Nolana atriplicifolia, Cuphea platycentra, Double dark Grunsell, Ageratum alba, and Mexican Scarlet Salvias, from 1s. to 1s. 6d. per doz., out of pots.

GRASTEA FALCATA.

RENÉ LANGELIER, Nurseryman, St. Helier, Jersey, begs to offer extraordinarily fine plants of the above, showing large trusses of beautiful orange-coloured bloom, at the low price of per dozen. It is a plant that requires very little trouble, keeps in bloom for a very long time. Well adapted for s' toilette tables. Also a very large kind called GRANDIFLORA, which has been in bloom with R. L. for five months, much larger in every respect than the Falcata. Plants 10s. 6d. each.

*** A remittance or reference from unknown correspondents.

TO THE ADMIRERS OF ROSES.

A. PAUL and SON beg to inform their patrons and lovers of ROSES in general, that the extensive Collection cultivated at the Cheshunt Nurseries, will be in full bloom from the end of June to the middle of July. They will be very happy to show them to any lovers of this flower, whether purchasers or not. Every novelty that could be obtained has been added to the collection. Cheshunt is on the Cambridge Line of the Eastern Counties Railway, one mile from the Cheshunt, two miles from the Waltham, and three miles from the Broxbourn Stations. An Omnibus meets the trains at Waltham, and passes the Nurseries.—Cheshunt, Herts.

CEDRUS AFRICANUS; OR, SILVER CEDAR OF MOUNT ATLAS.

R. GLENDINNING having raised, in the spring of 1848, a number of seedlings of this new and beautiful species of hardy CEDAR, from cones imported direct from Mount Atlas, offers them to the trade at the following reduced rates. Strong plants, in 60 sized pots,

25 for	...	£2	2 0
50 for	...	3	11 6
100 for	...	6	0 0

Chiswick Nursery, near London, June 16.

TRUE DRUMHEADS FOR CATTLE, at THOMAS WELLAND'S, Wheeler-street Gardens, near Godalming, Surrey, at 4s. per 1000, crates included. Delivered to the Guildford station.

S. JOHNSON begs to announce that he has just received a small quantity of CINERARIA SEED, saved from a first-rate collection grown by a private gentleman, which he can with confidence recommend. 1s. per packet.

S. J. has also a quantity of Sweet William Seed, saved from a fine dwarf dark collection. 1s. per packet. Also a quantity of first-rate Antirrhinum Seed, saved from named varieties. 1s. per packet. A packet of each of the above, 2s. 6d., in postage stamps or otherwise.—Mutson Dieu Nursery, Dover.

FLOWER SEEDS.—Choice Biennial and Perennial Flower Seeds, for sowing in June and July, to flower the following season, sent, post free, at the following prices: 12 varieties for 1s. 2d., 30 ditto for 2s. 6d., 70 ditto for 5s., on receipt of the amount with the order. Also the best varieties of Early Cabbage Seed, at 3d. and 6d. per packet, post free, from Benjamin W. Knight, Florist, &c., Tivoli, near St. Leonard's-on-Sea, Sussex. Catalogues may be obtained on prepaid application, inclosing a postage stamp.

HERTFORDSHIRE ROSES.—On and after June the 18th, E. P. Francis's extensive Collection of ROSES will be in bloom, and will continue for the season. An early inspection is respectfully solicited. Trains direct to Hertford. Hertford Nurseries, June 16.

TILEY'S EARLY MARROW CABBAGE.

EDWARD TILEY begs respectfully to inform the gentry, nobility, and the public generally, that he is now ready to send out his EARLY MARROW CABBAGE SEED, which has proved the best yet in cultivation, and five weeks earlier than any other sort fit for table, and equal to young Asparagus for tender eating and flavour. The advantages of this over other Cabbages are, it grows very quick, with scarcely any rib to it, and is very suitable for rocky or windy situations, as it is very short in the leg, and has none of the large coarse outside leaves to it. A large number of the plants have been grown in different situations, and have thoroughly proved the character given of it, and also given the greatest satisfaction to all parties who have grown it.

E. T. warrants the plants not to run for a twelvemonth. One trial will be sufficient to prove to the grower the superior quality of his Cabbage over all others. Sold in packets containing 1 oz. 2s. 6d., ½ oz. packets 1s. 6d. The above will be sent, postage free, on the remittance of a post office order, or the amount in 1d. postage stamps.

Sold by Edward Tiley, at his General Seed Shop, 16, Pulteney-bridge, Bath.

ULLUCUS TUBEROSUS AND NEW ACHIMENES.

JOHN SALTER (from Versailles) can furnish a few plants of the new Brazilian Esculent ULLUCUS TUBEROSUS, at 5s each. Its capabilities as an article of food, in lieu of the Potato, were partially tested in Paris, Brussels, and Vienna during last season, and more extensive experiments are now in progress in various parts of the Continent. He can also supply the following new ACHIMENES: A. atrosanguinea, 1s. 6d.; Baumannii, 5s.; Bodmerii, 5s.; Escherii, 5s.; Ghiesbrechtii nova, 2s. 6d.; Knightii, 2s. 6d.; Ignescens coccinea grandiflora, 2s. 6d.; Longiflora superba, 1s 6d. Also the new Pompon and other Chrysanthemums of M. Bonamy, at 3s. each. His new Fuchsia "Corymbiflora alba," and Heliotrope "Grisau," are now in bloom, and those who may favour him with a visit will be convinced of their superior merit.—Versailles Nursery, William-street, near Hammersmith Turnpike.

NEW AND CHOICE PLANTS.

BENJAMIN R. CANT, St. John-street Nursery, Colchester, begs to offer the following select plants, at considerably reduced prices.

Achimenes Knightii, each	1s. 6d	Fuchsia spectabilis, each	7s. 6d
,, patens major	1 6	Lobelia azurea grandiflora	1 0
,, Ghiesbrechtii	1 6	Plumbago Larpentæ	1 0
Browallia Jamesoni	1 6	Phlox imbricata	1 0
Calceolaria, new shrubby species from California	1s. 6d. and 2 6	Pentstemon cordifolium	1 0
Chironia glutinosa	1 0	Statice puberula, p. doz.	6 0
Cytisus filipes (strong grafted)	1 0	Salvia oppositifolia, each	1 0
Cryptomeria japonica, strong plants, 1 ft. high	3 6	Do. per dozen	9 0
Do., per doz., 36s.		,, azurea compacta, ea.	1 6
Cedrus africanus	2 6	Spiræa prunifolia pleno, per dozen	6 0
Daphne indica odorata rubra, strong	2 6	Tropæolum speciosum, ea.	1 0
Æschynanthus speciosissimus.		Do. per dozen	9 0
		Weigela rosea, per dozen.	6s. and 9 0
		Zauschneria californica, each	1 0

DESTRUCTIVE ANIMALCULÆ.

READ'S GARDEN ENGINES AND MACHINES.—As summer approaches the larvæ of destructive insects are propagated in infinite multitudes, and impregnate with millions of insects the very air we breathe, to the great injury of the young shoots of trees, Vines, plants, and every species of vegetation put into motion and growth by the genial influence of the season.—Richard Read, Instrument Maker (by special appointment) to her Majesty, begs to inform Amateur and Practical Gardeners, &c., that he has made considerable improvements in his Garden Engines and Machines, which are now so perfect that he will warrant the valves to keep in repair during the term of the patent. Manufactured only at 35, Regent-circus, Piccadilly.—Established 20 years.

NEW SCARLET PELARGONIUM, "PERFETUAL SCARLET."

R. GLENDINNING has plants ready to send out of this new and splendid scarlet Pelargonium, of which he possesses the entire stock. It was awarded a Certificate of Merit last January, when exhibited before the Horticultural Society of London. It stands forcing admirably, flowers in profusion may be obtained the whole winter; when grown in pots it is well adapted for the greenhouse, and it is also a first-rate bedding variety. R. G. feels convinced this Pelargonium will give perfect satisfaction, and therefore can confidently recommend it. Plants 7s 6d each, and one added to the trade for every three ordered.—Chiswick Nursery, near London.

NEW AND DESIRABLE PLANTS.

YOUELL and CO. are now sending out the undermentioned in strong healthy plants:

NEW FUCHSIA, "THE PRESIDENT."—Youell and Co. have much pleasure in offering the above fine variety to the notice of growers of this elegant tribe, being a flower of extraordinary size and beauty. The tube and sepals are finely reflexed, and of a delicate transparent pink, contrasted with a deep rose-coloured corolla, the plant is of fine habit and most profuse bloomer, and can be confidently recommended as being the best of its class. Price 7s. 6d. per plant Also the newest and most beautiful varieties out, 9s., 12s, and 18s per dozen.

NEW VERBENAS OF 1849, at 12s. per doz n, comprising Young's Royal Purple, Wyness's Princess Alice, Morning Star, Young's Brilliant, Gray's Roses, Epps's Eclipse, Barker's Junius, Duchess of Northumberland, Eyebright, Lord of the Isles, Mi s Thorold, Cardinal, Venus de Canova, Clotilde, Vicomte de Jouval, with many other new continental varieties, at the above price, per post free.

NEW CHRYSANTHEMUMS.—Fine plants for autumnal blooming of all the new and best varieties, per post free, 3s. to 12s. per dozen

PANSIES.—Finest first-class show flowers, including all the best of the new kinds, 10s. to 18s per dozen, per post free.

GLOXINIAS.—A most splendid collection of new varieties, including Teuchleri, Grillini, carminata splendens, Fyhana, alba sanguinea, cerina, rosea elegans, rubra superba, Passingham, pulchella, with many other fine varieties in strong flowering plants, 12s., 18s., and 24s per dozen.

ACHIMENES — patens major, Jayii, venusta, Skinneri grandiflora, pyropæa, with 12 other fine kinds, 18s. per dozen.

ZAUSCHNERIA CALIFORNICA, introduced by the Horticultural Society, one of the most desirable of bedding plants, producing scarlet Fuchsia-like flowers in great abundance from the axils of the leaves when only 9 inches in height, 1s. 6d. each, or 12s per dozen.

PLUMBAGO LARPENTÆ, 1s 6d each, or 12s. per dozen.

NEW HELIOTROPES.—"Souvenir de Liege" (Makoy), and "Grisau" (Salter), 2s. 6d. each.

ERICAS.—Five bushy plants of the best free flowering sorts, 9s. per dozen.

ANEMONE SEED, saved from selected sorts, is now being harvested by Youell and Co. in the finest condition, and can be forwarded, per post free, at 2s. 6d and 5s. per packet, sufficient to sow a bed of 12 or 24 yards. If sown in June to August it will afford a fine display through the autumn and winter months.

Catalogues of the above, with an extensive variety of highly ornamental plants, will be forwarded by enclosing two postage stamps.—Great Yarmouth Nursery.

DEANE'S WARRANTED GARDEN TOOLS—Horticulturists, and all interested in Gardening pursuits, are invited to examine G. and J. Deane's extensive Stock of GARDENING AND PRUNING IMPLEMENTS, best London made Garden Engines, and Syringes, Coalbrookdale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pick Axes
Axes	Grape Gatherers and Scissors	Potato Forks
Bagging Hooks	Gravel Rakes and Sieves	Pruning Bills
Bills	Greenhouse Doors and Frames	,, Knives, various
Borders, various patterns	Hammers	,, Saws
Botanical Boxes	Hand-glass Frames	,, Scissors
Cases of Pruning Instruments	Hay Knives	,, Shears [riety.
Chaff Engines	Hoes, every pattern	Rakes in great va-
Chaff Knives	Horticultural Hammers and Hatchets	Reaping Hooks
Dibbles	Hotbed Handles	Scythes
Dung Rakes	Ladies' Set of Tools	Scythe Stones
Duck Spuds	Labels, various patterns, in zinc, porcelain, &c	Shears, various
Draining Tools	Lines and Reels	Sickles
Edging Irons and Shears	Marking Ink	Sickle Saws
Flower Scissors	Mattocks	Spades and Shovels
,, Stands in Wires and Iron	Monographs	Spuds
Fumigators	Metallic Wire	Switch Hooks
Galvanized Borders and Plant Protectors	Milton Hatchets	Thistle Hooks
Garden Chairs and Seats	Mole Traps	Transplanting Tools
,, Loops	Mowing Machine	Trowels
,, Rollers		Turfing Irons
		Wall Nails
		Watering Pots
		Weed Extractors and Hooks
		Wheelbarrows
		Youths' Set of Tools

G. and J. Deane are sole Agents for Lingham's Permanent Labels, samples of which, with the Illustrated list of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom.—Deane's Horticultural Tool Warehouse, opening to the Monument, 46, King William st., London bridge.

BEE HIVES.

GEORGE NEIGHBOUR and SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety humanity, and profit, by the most timid and unaccustomed to Bee management. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—George Neighbour and Son, 127, High Holborn, London.

"Nutt on Bees" (6th edition), now published.

HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION, JUNE 9, 1849.

AWARD OF THE JUDGES.

THE CERTIFICATE OF HONOUR.

1. To Mr. May, Gardener to Mrs Lawrence, F.H.S., for a collection of 30 Stove and Greenhouse Plants.

THE LARGE GOLD MEDAL.

1. To Mr Cole, Gardener to H Colyer, Esq., of Dartford, for a collection of 90 Stove and Greenhouse Plants
2. To Mr. Mylam Gardener to S. Rucker, Esq., F.H.S., for 20 species of Exotic Orchids.

THE GOLD KNIGHTIAN MEDAL

1. To Mr Green, Gardener to Sir E Antrobus, Bart., F.H.S., for a collection of 15 Stove and Greenhouse Plants.
2. To Messrs Veitch and Son, of Exeter, for 20 species of Exotic Orchids.
3. To Mr Plant, Gardener to J. H. Schroder, Esq, F.H.S., for 10 species of the same
4. To Mr Mylam, for 15 varieties of Cape Heaths.
5. To Messrs. Fairbairn, Clapham, for the same.

THE GOLD BANKSIAN MEDAL.

1. To Mr Taylor, Gardener to J. Coster, Esq, of Streatham, for a collection of 15 Stove and Greenhouse Plants.
2. To Mr. Williams, Gardener to C. B. Warner, Esq, F.H.S., for 20 species of Exotic Orchids.
3. To Mr Dobson, Gardener to Mr. Beck, F.H.S., for 10 species of the same.
4. To Messrs Lane and Son, Great Berkhampstead, for 12 varieties of Roses, in pots.
5. To Mr. Smith, Gardener to W. Quilter, Esq., Norwood, for 15 varieties of Cape Heaths.
6. To Messrs. Rollisson, Tooting, for the same.
7. To Mr. Green, for Tall Cacti, in flower.

THE LARGE SILVER-GILT MEDAL.

1. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S. for a collection of 15 Stove and Greenhouse Plants.
2. To Mr. Kinghorn, Gardener to the Earl of Kilmorey, Twickenham, for a collection of 8 Stove and Greenhouse Plants.
3. To Mr. Rae Gardener to J. J. Blandy, Esq, F.H.S, for 20 species of Exotic Orchids.
4. To Mr. Smith, Gardener to Mrs. Lawrence, F.H.S., for 10 species of the same
5. To Mr Kinghorn, for 6 species of the same.
6. To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, for a collection of Amaryllids.
7. To Mr. Roser, Gardener to J. Bradbury, Esq., of Streatham, for 12 varieties of Roses, in pots.
8. To Messrs Paul, Cheshunt, for the same
9. To Mr Gerrie, Gardener to Sir John Cathcart, Bart, F.H.S., for 15 varieties of Cape Heath.
10. To Messrs. Veitch, Exeter, for the same
11. To Mr May, Gardener to Mrs. Lawrence, F.H.S, for 9 varieties of the same
12. To Mr Stanly, Gardener to H Browne, Esq, F.H.S., for 6 species of Cape Pelargonium.
13. To Mr Cock, F.H.S, for 6 new varieties of Pelargonium in 8 inch pots
14. To Mr. Dobson, for the same.
15. To Mr. Parker, Gardener to J. H. Oughton, Esq, Rochampton, for 6 varieties of old Pelargonium, in 11 inch pots.
16. To Mr. Dobson, for the same
17. To Mr Ambrose Battersea, for a collection of Fancy Pelargoniums.
18. To Mr Falconer, Gardener to A Palmer, Esq., Cheam, for Tall Cacti, in flower.
19. To Messrs Veitch and Son, for Encephalonia macrantha.

THE CERTIFICATE OF EXCELLENCE.

1. To Mr. Bruce, Gardener to Boyd Miller, Esq, Tooting, for a collection of 6 Stove and Greenhouse Plants.
2. To Messr Loddiges, Hackney, for 20 species of Exotic Orchids.
3. To Mr. Carson, for 10 species of the same.
4. To Mr. Gerrie, for 6 species of the same.
5. To Mr Dobson, for a collection of Achimenes.
6. To Mr. Francis, of Hertford, for 12 varieties of Roses, in pots
7. To Messrs Pamplin and Son, Lea bridge road, Essex, for 15 varieties of Cape Heath.
8. To Mr Cole, for 9 varieties of the same
9. To Mr. Parker, for 6 species of Pelargonium
10. To Mr. Gaines, F.H.S., for a collection of Fancy Pelargoniums.
11. To Mr. Robinson, Gardener to J. Simpson, Esq, Thames Bank, Pimlico, for 6 new varieties of Pelargonium in 8 inch pots.
12. To Mr. Gaines for the same.
13. To Mr. Cock, F.H.S, for 6 varieties of Pelargonium, in 11 inch pots
14. To Mr Gaines, for the same
15. To Mr. Green, for a collection of Greenhouse Azaleas, in 6 varieties.
16. To Mr. Cole for Aphelexis purpurea
17. To Mr. Bruce, for the same.
18. To Messrs. Veitch and Son, for Libanotis pulcher.

THE LARGE SILVER MEDAL.

1. To Messrs Pamplin, for a collection of 30 Stove and Greenhouse Plants.
2. To Mr Clarke, Gardener to W Block, Esq, Muswell-Hill, for a collection of 6 Stove and Greenhouse Plants
3. To Mr. Jack, Gardener to R. G Loraine, Esq., Wallingford, for 6 species of Exotic Orchids
4. To Mr May, Gardener to E. Goodheart Esq, Langley Park, Beckenham, for varieties of Cape Heath.
5. To Mr. May, Gardener to Mrs. Lawrence, F.H.S, for Erica vestita coccinea
6. To Mr Staines, of Middlesex-place, New-road, for 6 species of Pelargonium.
7. To the same, for 6 new varieties of the same, in 8-inch pots.
8. To Mr. Wiggins, Gardener to S Saunders, Esq., Staines, for 6 varieties of the same in 11-inch pots.
9. To Mr. Gaines, F.H.S., for a collection of Calceolarias
10. To Mr. Robinson, for a collection of Fancy Pelargoniums.
11. To Mr. Glendinning, F.H.S., for a collection of Statices.
12. To Messrs. Veitch and Son, for Mertensia dilatata.
13. To Mr May, Gardener to Mrs. Lawrence F.H.S, for Portlandia grandiflora.
14. To Mr. Ivison, for Curcuma Roscoeana
15. To Mr. Davis, Oak hill, East Barnet, for Noblesse Peaches
16. To J. Bailey, Esq, Grimsick Park, for Queen Pine apples.

THE SILVER KNIGHTIAN MEDAL.

1. To Mr. Pawley, of Bromley, Kent, for a collection of 15 Stove and Greenhouse Plants.
2. To Mr Jack, for a collection of 6 Stove and Greenhouse Plants.
3. To Mr. Malyon Gardener to I Brandram, Esq., for the same
4. To Mr. Bruce, for Oncidium flexuosum.
5. To Mr Knott, Gardener to the Rev. C Pritchard, F.H.S., for a collection of Achimenes
6. To Mr. Taylor, for 9 species of Cape Heath.
7. To Mr. Staines, for a collection of Fancy Pelargoniums.
8. To Mr May, Gardener to E. Goodheart, Esq., for Erica ventricosa alba
9. To Mr. Ivison, for Echium fruticosum.
10. To Messrs Veitch and Son, for Toxotheca verticillata.
11. To Mr. Smith, Gardener to Mrs Lawrence, F.H.S., for a collection of Nepenthes
12. To Messrs. Henderson, Pine Apple place, for a collection of Calceolarias.
13. To Mr. Jack, for Posoqueria longiflora.
14. To Mr. Graham, Gardener to Mrs. Smith, Bersted Lodge, Bognor, for Violet Hative Nectarines
15. To Mr Stent, Gardener to W. Herbert, Esq, Clapham-common, for Black Hamburgh Grapes.
16. To Messrs. Veitch and Son, for the best-named collection of Plants (no error in 20).

THE SILVER BANKSIAN MEDAL.

1. To Mr Glendinning, F.H.S., for a collection of 15 Stove and Greenhouse Plants.
2. To Mr Stanly, for a collection of 6 Stove and Greenhouse Plants.
3. To A. Rowland, Esq, F.H.S., for 12 varieties of Roses, in pots.
4. To Mr. Roser, for 9 varieties of Cape Heaths
5. To Messrs. Henderson, Pine-apple-place, for Pimelea Hendersonii.
6. To Mr. Epps, F.H.S., for Aphelexis purpurea grandiflora.
7. To Mr Tyso, Wallingford for a collection of Ranunculus.
8. To Mr. Glendinning F.H.S., for Hoya imperialis.
9. To Mr. Cowell, Gardener to F R. Bedwell, Esq., Walthamstow, for Black Hamburgh Grapes. [Figs.
10. To Mr. Foggo, Gardener to the Marquis of Abercorn, for
11. To Messrs. Rollisson, for the second best named collection of Plants (no errors in 15).

THE CERTIFICATE OF MERIT.

1. To A. Rowland, Esq F.H.S, for a collection of Roses, in 25 varieties.
2. To Mr. Green, for 9 varieties of Cape Heath.
3. To Mr Malyon, for Erica ventricosa superba
4. To Mr. Epps, F.H.S., for Erica propendens.
5. To Messrs. Veitch and Son for Hoya bella.
6. To Mr. Costar, Beckon, Otton, for a collection of Ranunculus.
7. To Mr. Gad, Gardener to T. I. Lenox, Esq., Stamford Brook Lodge, New road, for two Seedling Petunias, "Enchantress" and "Prince of Wales."
8. To Mr Mylam, for a new Odontoglossum.
9. To the same, for Phalænopsis rosea.
10. To the same for the third best named collection of Plants (one error in 20).

HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION AT THE GARDEN, ON WEDNESDAY, JULY 11.

The following Flowers *cannot* be shown on this occasion: ROSES IN POTS, AND CALCEOLARIAS.

The Exhibition of Flowers is not otherwise altered

The following are the Rules to be observed in the Great Exhibition of FRUIT:

Three prizes, of the respective value of Fifteen Pounds, Ten Pounds, and Five Pounds, are offered for the finest Exhibitions of Fruits, delivered at the Garden, or in Regent-street, by noon ON THE PREVIOUS DAY. No rules are given for this Exhibition, which is left to the judgment of Exhibitors.

In addition, the following prizes are offered, for which Market Gardeners, or Growers (NOT FRUITERERS), in the habit of supplying the Market, and Private Gardeners, exhibit independently of each other.

FRUITERERS ARE NOT ALLOWED TO EXHIBIT AT ALL.

No duplicate awards can be made in any case whatever, except in **P**. No person can take more than one award in each letter, except in **A, B, E, K, M, O, P.**

N.B All Fruit must be sufficiently ripe for Market, WELL COLOURED, and PROPERLY NAMED by the Exhibitor, as far as practicable; if the contrary, it will be disqualified.

A Uncommon Tropical Fruits. GB—SG—CE
N.B. No Medal higher than SG can be given for Musas or Guavas. Oranges, &c. are excluded.

B Pine Apples, in single specimens:
1. Queens. LS—SK—SB.
2. Enville, Cayennes, Sugarloafs or Trinidads &c LS—SK—SB
3. Black Jamaicas, Otaheites, &c. LS—SK—SB
4. Providences. LS—SK—SB

C Grapes in pots, three specimens to be shown CE—LS SK

D Grapes, the heaviest single bunch of any kind SK

E Grapes, in three bunches for private growers, and six bunches for Market Gardeners
1. Black Hamburgh, Black Prince, &c. LS—SK—SB
2. White Muscadines, Sweetwaters, &c. LS—SK—SB
3. Muscats, LS—SK—SB
4. Frontignans LS—SK SB
5. Other sorts, distinct from the foregoing. LS—SK—SB

F Peaches, in sixes. SK—SB—C

G Nectarines, in sixes. SK—SB—C

H Apricots, in sixes. SK SB—C

I Figs, in sixes. SB—C

K Cherries, in dishes of 1lb. each
1. Black. SB—C 2. White. SB—C

L Strawberries, in pots; six pots to be shown. SK—SB—C
N.B. They must have grown in the pots.

M Strawberries, one dish each.
1. British Queen, &c. SB—C
2. Keens' Seedling, &c. SB—C

N Oranges, Citrons, &c., in pots; no one to show more than one pot. LS SK—SB
N.B This class of Fruits is excluded if gathered.

O Melons, one specimen each:
1 The heaviest. SK
2 The best flavoured SK—SB—C

P Other kinds of fruit, exclusive of Apples and Pears of the previous year SB—C

THE ANEROID BAROMETER, price 2*l.* 15*s.* and 3*l.* 3*s.* Wheel Barometers, 1*l.* 5*s.*, 1*l.* 10*s.*, 2*l.*, 2*l.* 10*s.*, to 4*l.* Pediment or Upright Barometers, 1*l.* 10*s.*, 2*l.*, to 3*l.* 3*s.* This Barometer is decidedly the best construction that is made, being less liable to error than any other, and is also more portable. Thermometers for Greenhouses, 2*s.*, 2*s.* 6*d.*, 3*s.*, and 5*s.* 6*d.* each. Ditto, for Baths or Hot Water, in Japan or Copper cases, 3*s.* 6*d.*, 4*s.* 6*d.*, to 7*s.* 6*d.* Self-registering Thermometers for Heat and Cold, of the best construction, and not liable to get out of order, 18*s.* and 21*s.* Thermometer for registering the extreme of heat, 7*s.* 6*d.* Ditto for Cold, 6*s.* 6*d.* Hydrometers for Sulphuric Acid, 5*s.* and upwards. Lactometers for showing the quality of milk, with instructions, 5*s.* Microscopes of superior manufacture, the lenses are strictly achromatic, No. 1, 3*l.* 12*s.*, No. 2, *at* 15*s.*, No. 3, 9*l.* 10*s.* A book, giving the description and prices of Microscopes, Telescopes, and other instruments, sent free by post on receipt of two postage stamps. Persons ordering from the country or abroad may rely on the same care and attention being paid as if they were personally present to select for themselves.

HENRY BARLOW, Instrument Manufacturer to the Board of Admiralty, 20, Hatton garden, London.

FLOWER POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford-street, near Hyde park, London.

HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the Kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes, and Lights of all sizes, kept ready for use, packed and sent to all parts of the Kingdom, warranted best material. Garden-lights of every description, at JAMES WATTS', Hothouse Builder, Claremont-place, Old Kent-road. References may be had to the Nobility, Gentry, and the Trade, in most of the counties in England

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and Hot-water Apparatus Manufacturer, Triangle, Hackney, near London, begs to call the attention of the gentry to his low prices for cash. Good Substantial-built Greenhouses, fixed complete, 42 ft. long, 13 wide, 9*ft.*, 21 ft. long, 13 wide, 8*ft.*; 12 ft. long, 10 wide, 8*ft.* A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber Boxes, Iron Hand-lights, Summer-houses, Seats, &c. Estimates for any branch in the above line, either in wood or iron, or for park fencing.

FOR AGRICULTURAL AND ROCK SALT, apply to JOHN MEREDITH, Salt Merchant, No. 10 Wharf, City-road Basin, London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea by special appointment to her Majesty and H.R.H. Prince Albert. — ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, bernacle brent and laughing geese, sheldrakes, pintail, widgeon, summer and winter teal, gadwall, labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay Poland, Surrey, and Dorking fowls, white Japan, pied, and common pea-fowl, and pure China pigs, and at 3, Half-moon passage, Gracechurch-street.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, have the pleasure to hand their New List of Prices of SHEET GLASS for Cash.

HORTICULTURAL GLASS,

CUT TO SIZE UP TO 40 INCHES LONG.				SHEET SQUARES. In boxes of 100 feet.	
16 oz	from 3*d.* to 3½*d.*	per foot.		Under 6 by 4	12*s.* 6*d.*
21 ,,	3½	5	,,	6 by 4 and 6½ by 4½	15 0
26 ,,	3½	7½	,,	7 by 5 and 7½ by 5½	17 6
32 ,,	4	9½	,,	8 by 6 and 10 by 8	20 0

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS, in sizes not exceeding 5 feet superficial.

¼ thick	per foot 1*s.* 0*d.*	¼-inch	per foot 2*s.* 0*d.*
⅜-inch	1 2	1 inch	3 0
½-inch	1 6		

PATENT ROUGH PLATE TILES.

¼ thick	each 6*s.* 11*d.*	⅜ inch	each 1*s.* 7*d.*
½-inch	1 3	¾-inch	2 0

SHEET GLASS TILES AND SLATES.

	16-oz.	21-oz.	26 oz.	32-oz.
Tiles made of Sheet Glass	8*d.*	10*d.*	1*s.*	1*s* 4*d.*
Slates, 20 ins. by 10	10*d.*	1*s.*	1*s* 4*d.*	1*s.* 8*d.*

Slates are kept in stock of the usual sizes, and made to any dimensions.

GLASS MILK-PANS, PROPAGATING AND BEE GLASSES, Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Bush Globes, Plate and Window Glass of every description, Lamp Shades, and Lactometers for trying the quality of Milk, 4 tubes 7*s.* 6*d.*, 6 tubes, 10*s.* Self Registering Thermometers for Greenhouses.

HARTLEY'S PATENT ROUGH PLATE GLASS.

Copy of a letter from the Rev. J. Wills, of South Pellott, Somersetshire, to JAMES PHILLIPS, dated April 25, 1849.

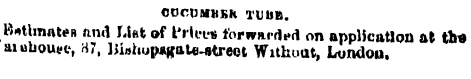
MR. JAMES PHILLIPS: SIR — The 234 panes of Sheet Glass you sent me arrived all safe, and I am decidedly of opinion it cannot be surpassed by any manufacturer, and I have never before seen any so good. The Patent Rough Plate Glass for a verandah is excellent, as it perfectly excludes the sun's rays, and keeps it as cool as you could wish it; and I shall at all times be most happy to bear my testimony to the excellent qualities of your Glass. — I am, Sir, yours faithfully,

(Signed) JOHN WILLS, jun.

GLASS.

GLASS MILK PAN.

THOMAS MILLINGTON is supplying Foreign Sheet Glass, very superior to any other Glass in the market, in 100-ft. and 200 ft. cases, of large dimensions, 16-oz., at 3*d.* per ft., or cut to size in ranges, not exceeding 40 inches, at 3½*d.* per foot. British Plate Glass for Windows as well as for Horticultural purposes, from 1*s.* 2*d.* to 2*s* per foot. No gentlemen should be without this great additional improvement to their residences.



CUCUMBER TUBE.

Estimates and List of Prices forwarded on application at the Warehouse, 37, Bishopsgate-street Without, London.

NEW VERBENAS OF THIS SEASON, at reduced prices. Any six of the following for 2s. each or 21s. per dozen, sent free by post, or carriage paid in hamper to London.

Smith's Napier	Wyness' Princess Alice
„ Burgundy	Young's Royal Purple
„ Psyche	„ Brilliant
„ Lady Russell	Epps's Eclipse
„ War Eagle	Epps's Eclipse
Barker's Cardinal	Ivery's Attraction
„ Eyebright	„ Union Jack
„ Junius	Barnes' Exquisite
„ Lord of the Isles	„ Beauty of Stowa
„ Miss Thorold	„ Queen of Summer

Plumbago Larpentæ, Zauschneria Californica, and an extensive collection of all the best BEDDING PLANTS, strong and well adapted for immediate turning out, for which, see our Advertisement of last and previous weeks.

BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

NEW VERBENAS.—Smith's Psyche, Beauty of Hornsey, Burgundy, Duval, Queen of the French, Princess, Painted Lady, Advancer, Napier Captivation, Desirable, Gem, and Champion. Gill's Gilmaniana, Robinson's Defiance, B... Edmondiana, and Jonlson's Best. The 17 for 12s. 12 for 9s.; 6 for 5s.; 1 for 1s. 3d. Free by post.

Smith's singular MIMULUS, "Harlequin," for 1s. others low. PETUNIAS. Brilliant, Minerva, and Admiration, ... FUCHSIAS, as Veitch's Elegantissima, &c. low.

Seedling Calceolarias, &c. Catalogues will be sent on application. Orders, with prepayment, made payable at Burnley, will oblige.—WM. WALKER BOTTERILL, Lob-lane, Harsden, near Burnley, Lancashire.

PLANTS OF CABBAGE, SAVOY, KALE, ... CAULIFLOWER, AND CELERY.

JOHN CATTELL, SEEDSMAN and NURSERYMAN, Westerham, Kent, begs respectfully to inform the public that plants of his superior true sorts of the above will be forwarded to order on receipt of postage stamps or post-office order, at the undernamed prices, mat and package included.

All the sorts of early Cabbage, Savoy, and Kale, ... Brussels Sprouts, 4s. 6d. per 1000. All the sorts of autumn and spring Broccoli, and red and white Celery, ... per 1000—6d. per 1000 less when no mat or package is required. Packages of 1000 and upwards delivered free of carriage to the ... station.

CRYPTOMERIA JAPONICA SEEDLINGS.

MESSRS. STANDISH AND NOBLE having still the largest stock in Europe of the above ... beg to offer fine strong plants at the annexed low prices:—6 to 9 inches high, 3s. 6d. each, ... per dozen, 12l. ... per 100; 12 to 18 inches, 5s. each; 18 to 24 inches ... to 36 inches, 10s. 6d., and upwards, according to size.

The present is the most suitable time for planting out, ... every plant sent out by Messrs. S. and N. will be handsome, well-grown specimens.—Bagshot, Surrey, June ...

PELARGONIUMS.—The unrivalled GERANIUM, "HOYLE'S CRUSADER," may be obtained of J. WOOMES for 21s. cash. Fine strong plant, last year's struck, established in 32-sized pots, carrying at the present time a fine head of bloom. Also strong plants of all the best sorts now out at moderate prices.—J. WOOMES, Pelargonium Nursery, Wind...

HORTICULTURAL SOCIETY OF LONDON.—HIS GRACE THE DUKE OF DEVONSHIRE, President of the Horticultural Society, has kindly directed the grounds of Chiswick House to be opened for the reception of the visitors to the Society's Gardens at the next Exhibition, on WEDNESDAY, the 11th July. Tickets are issued on the orders of Fellows of the Society only, at this office, price ..., or at the Garden in the afternoon of the 11th July at 7s. 6d. each, but then also only to orders signed by Fellows of the Society. *R... respectable strangers, or residents in the country, ... their addresses in writing to the Vice-Secretary, 21 Regent-street, on or before* **MONDAY,** *the 9th of* **JULY,** *may obtain from that office an authority to procure tickets on this occasion. No other orders for tickets will be issued after that day.*

N.B. No Tickets will be issued in Regent-street on the day of Exhibition.

The Gardeners' Chronicle.

SATURDAY, JUNE 16, 1849.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	June 18	Chemical	8 P.M.
		Statistical	8 P.M.
		British Architects	8 P.M.
TUESDAY,	— 19	Linnean	8 P.M.
		Civil Engineers	8 P.M.
WEDNESDAY,	— 20	Royal Botanic Gardens	P.M.
		Microscopical	8 P.M.
		Literary Fund	8 P.M.
THURSDAY,	— 21	Antiquaries	8 P.M.
		Royal	8½ P.M.
FRIDAY,	—	22—Philological	8 P.M.
SATURDAY,	—	23—Royal Botanic	P.M.

COUNTRY SHOWS. Tuesday, June 19. Hampshire Horticultural. Friday, June 22. Cornwall Horticultural. Saturday, June 23. Newcastle-on-Tyne Botanical and Horticultural.

IT appears from a report in the daily papers of a recent meeting of the Metropolitan Commissioners that an application of the LONDON SEWAGE is about to be made effectually in manuring the land within its reach. We also learn, upon good authority, that measures analogous to those to be put in force near the metropolis will very speedily be adopted in several towns which have petitioned for the application of the Public Health Act. Our limited space prevents the publication of the report itself, but some remarks upon the substance of it are now called for, on account of the great horticultural, as well as public, interest of the question.

That the sewage of a great town is a source of enormous trouble, is not at all more true than that it is an inexhaustible mine of wealth. The means of preventing its waste has therefore, for many years past, occupied serious attention. It can scarcely be less than 20 years ago that Mr. KENDALL projected the formation, at the mouths of all the sewers that deliver themselves into the Thames, of covered tanks, which would receive the offensive fluid, and detain it there, without polluting the river, until covered barges could convey it to waste lands below London-bridge, where it was to be dried for sale. Others have proposed other plans, the main object of which was to get rid of the water, and to secure the sediment. But there are these objections to solidifying the sewage: if the object were attained by artificial drying, it could never be sold for its cost; if by natural evaporation, no neighbourhood could endure so prodigious a nuisance, the effect of which would necessarily be to poison the London atmosphere instead of the London river. In the plans for precipitating the solid matter, and racking off the fluid portion, there was this difficulty, that all the most valuable portion, namely that which is soluble, would be lost by the operation and the residue would be a mass of material so inert as not to be worth its cartage.

It has long been clear to those acquainted with the action of manures that if sewage is to be utilised, it must be done by applying it in its fluid state. In that condition it is a liquid manure of incalculable value, as all good liquid manure is. It may be compared to guano-water, or any other highly nutritious ingredient prepared in a fluid state by gardeners. Liquid manure, applied to plants in a state of growth acts immediately. As soon as it reaches the root it is absorbed and assimilated by the system; so that it is no exaggeration to say that liquid manure, applied over-night, produces a perceptible effect by the succeeding noon. Solid manure is different; its soluble matter must wait till moisture reaches it and dissolves it; the gases which it generates are formed slowly and its action, however important, requires time, during which the growing season slips away.

Cultivators who know nothing of manure except from the action of the solid, and sometimes not very useful, materials produced in farm-yards, cannot believe that half a dozen crops of Grass per annum are possible, each heavier than the preceding. Nevertheless such crops are attained by skilful men, and will one day be common. Liquid manure works the wonder; it operates like the overflow of the Nile or the Indus. When the periodical floods ..., they soak the land within their reach ... ingredients dissolved or suspended in ... combined with the high temperature of the land itself, forces on vegetation ... unknown with us, except where liquid manure ... is applied ... abundantly, ... have the heavy and ... of Mr. H... and others. Grass ... deluged with liquid manure, ... exhausting the land, but rapidly forming ... swathe; ... instantly afterward the exhaustion is made good by a new torrent of liquid manure which restores fertility and something more; in spring the crop again ... yields itself to the scythe, and more abundantly than before. The process of liquid manuring continues to be repeated ... as the season permits, and it may be repeated for ever.

What is true of a Grass field is equally true of a ... garden, of Celery, Peas, Lettuces, Asparagus, and all kinds of garden stuff. Hence the means of economically securing the fertilising nuisances of London or any other great town is a most important horticultural question. The difficulty has been how to get so bulky and unmanageable an article upon the land at a price which could be profitably afforded. The Metropolitan Commissioners appear to have solved that problem. They state that by a machinery similar to that employed by the great water companies the liquid may be brought, at an extremely small price, to all the lands near London and then distributed by a hose, attached to underground pipes. Concerning the real cost of this operation, we quote the words of Mr. CHADWICK, somewhat abridged from the report in the *Times*.

"One of the chief obstacles to the application of "town manures was the expense of removal out of "the town, and of distribution afterwards; the "reduction of the expense of the removal out of the "town must depend on engineering appliances, "which was a subject of consideration by the Survey "Committee—General BURGOYNE, SIR HENRY DE LA "BECHE, Captain VETCH, and Captain DAWSON, of "the Royal Engineers, and himself. In some "respects they must be guided by the direction of "the demand which might arise. Lord EBRINGTON "and Mr. C. JOHNSTON were about to ask the Court "for permission to advertise the offers of supplies "beyond the usual metropolitan boundaries, and it "should be known that for large quantities such "distances as 20 or 30 miles or more would not "present insuperable engineering obstacles to its "conveyance. In respect, however, to the cost of "application or distribution on the field, he would "direct attention to the result of trial works by the "officers of the commission. Mr. DONALDSON stated "that the average quantity supplied was 110 tuns "per acre, and the average time occupied, one hour "and five minutes per acre: The cost of labour in "its application was 1s. 1d., and the cost of pumping 7d., making together 1s. 8d. per acre, exclusive "of the cost of its conveyance. The conveyance "was at present by barges, and comparatively expensive. Of the modes of conveyance by pipe and "steam power more hereafter. To confine themselves to the result of the distribution upon the "field. He might remind Mr. SLANEY, and persons "conversant with agriculture, that the expense of "distributing a top-dressing, say an average top-dressing of 15 loads of stable manure, would be "1l. 7s.; a dressing of 15 loads of liquid manure "(applied not by jet and hose, but by the water-cart) would cost between 12s. and 14s. The "reduction of the expense of distribution to less "than one-sixth of the expense of any former "method would give most important facilities to "the application of manures on a large scale. But "still further reductions might be expected. In "1842 he had obtained the result of some examinations made then; and it was stated in evidence "that, with pipes carried into the field, and properly "arranged, one man might water a space of 20 acres "in a day. Some experiments had been made by "the Liquid Manure Company, and their surveyor "now reported as the result of them that, with a "pressure sufficient to produce a jet of from 45 to "50 feet, and with an apparatus spreading the water "like a shower, a man and a boy could water an "acre of land in about 15 minutes. The quantity "of liquid manure which they applied was about 16 "tuns, and the ground was generally watered three "times a week."

No doubt the right principle of applying the sewage is that which Mr. CHADWICK recommends. The defect in his observations is that he does not state the cost of conveyance; we cannot, however, doubt that he must have satisfied himself upon that point before bringing the project forward officially, and we shall look with much interest to the explanations on that head which he promises hereafter.

If the plan is carried out, the improvement in the productiveness of much of the ground near London, when drained, will be incalculable. We are not disposed even to question the estimate made upon the subject by those who believe that some land may acquire a tenfold value.

It must however be borne in mind, that this is not a mere question of increasing the fertility of the soil; it is founded upon the necessity of diminishing the insalubrity of the air and water of the greatest metropolis in the world. It is, therefore, a question of public health, and it might be desirable that measures should be taken by the parishes to relieve their districts of a terrible nuisance, even although they were obliged to sell it at a loss, which is not probable.

A SUNNY day, cloudless and cool, enabled 8839 visitors from among the higher classes of the London world, to witness and enjoy the SECOND GREAT EXHIBITION of the year in the GARDEN of the HORTICULTURAL SOCIETY. A more delightful day and a more glorious collection of flowers have never been combined; the softness of the turf, the freshness of the foliage—here matured, there coloured with the peculiar tints of spring, or elsewhere gushing forth with all the transparency and delicate texture characteristic of early vegetation—banks of Rhododendrons in blossom, tents filled with an endless profusion of the most admirably varied flowers, together with a crowd of gay costumes, graceful forms, and happy faces, constituted a scene which has often been witnessed in these gardens, and rarely elsewhere.

Of the Exhibition, a full report will be found in another column. The circumstances which struck us as most satisfactory were the greater variety which growers are introducing into their collections, the increased skill manifested by the Epiphyte cultivators, and the continued preservation in perfect health of species which 20 years ago, were thought almost uncultivable by private gardeners. The Pelargoniums, arranged in a new and better position, fully maintained their old reputation, and the "Fancies" gained one step more in public favour.

Some remarkable novelties were produced, especially an Escallonia (*macrantha*) from Patagonia, of great beauty, with rich green firm foliage and glowing ruby flowers, promising to be hardy; together with a scarlet Lisianthus, both from Messrs. VEITCH. We must also class with novelties, because of its great rarity, an exquisitely beautiful Cattleya (marginata) produced by Messrs. LODDIGES; the plant was not in good health, but an intense crimson violet stain which covered all its lip, except the very edge, places it in the highest rank among epiphytes; it will be interesting to watch the improvement of the plant when it gets into the hands of private growers. After the morning two other very remarkable plants found their way to the Garden; one was Tacsonia manicata, a most brilliant thing, with flowers that rival the scarlet of the richest varieties of Anemone; it had been flowered by Mr. ANSELL, gardener to A. F. SLADE, Esq., of Kennal House; the other Gongora Jenischii, a very fine species, of the richest

brown, mottled with yellow, was brought by Mr. MYLAM, gardener to S. RUCKER, Esq.

At the next meeting, on the 11th of July, provision will be made for the exhibition of fruit, which is then expected in considerable quantity, and will probably form the great feature of the day. We venture to request the particular attention of those who intend to enter into competition on that occasion, to the rules which are advertised in another column. These rules have been carefully made with reference to the true interests of exhibitors, and will not be departed from upon any pretence. It would be very advantageous if all were to deliver their fruit by noon on the day before the Exhibition, as well as those who, sending collections of fruit for the highest prizes, are required to do so.

The beautiful grounds of His Grace the Duke of DEVONSHIRE, again opened to the visitors in July, will add greatly to the interest of the scene.

DISEASES OF PLANTS.

(*Continued from page 357.*)

GENUS V. PERIANTHOMANIA, *that is, excess in the parts which compose the calyx; a single species.*—The calyx sometimes produces a number of leaflets forming a series of little calyces, and is itself occasionally developed into large leaves like those of the stem, as has been observed in the Peach and the Medlar. This last variety of *perianthomania* is, indeed, harmless, and I have never observed any impediment to accrue from it to the reproduction of the species. The first instance only occurs in plants which have a double calyx, especially where the outer calyx is in fact a collection of bracts. The variety of Pink is well known, *spicam frumenti referens*, described and figured in the "Ephemerides Naturæ Curiosorum," for the year 1715. This was cultivated in many gardens, and produced but few flowers; instead of them it had a number of luxurious shoots which bore at their extremity nothing but a long abortive calyx, covered with a series of imbricated scales, which gave it a rude resemblance to an ear of corn without beards. This variety was said to have been first produced in France. We read that it required much care, labour, and manure to preserve it, which would induce me to conclude that it was originally owing to excess of nutriment. [It is the Wheat-ear Carnation of the English.]

Cure of the Diseases belonging to the five preceding genera.—The gardener, who makes it a great object of his solicitude to raise flowers which, by the multiplicity of their petals, or by their strange forms should attract the attention of amateurs, will certainly look with little favour on my instructions how to bring them back to their natural state, and if he chances to read this book, will treat me as a madman and an enemy to his art. Yet I will flatter myself that he who has taken the trouble to read my introduction, will see how necessary it is that I should explain the measures to be taken to restore these plants to the state in which Nature had formed them. Let him who treats as extravagant everything which is not written in accordance with authors of the time of good Father Mandirola, reflect upon two things before he condemns me. First he must remember how certain it is that plants which present these splendid deformities cease their existence some time before the ordinary course of the life they would have run *. He must in the next place call to mind the need he may be in of procuring seeds of a plant he cannot otherwise propagate. If, moreover, his trade or his pleasure make it his business to procure double flowers, for instance, he may, even then, derive from these pages hints which may assist him.

In general, as has been mentioned, an over-rich soil is one of the primary causes of these aberrations. It is indeed very seldom that double or proliferous flowers occur in a wild state. By carefully avoiding the application of manures, the plants will generally resume gradually their natural appearance. Prolifications are of themselves not constant, as far as hitherto observed, and occur but in few plants. These also will cease to put forth their anomalous productions, if the working them is neglected, and they are deprived of that superabundant nutriment which has probably been the cause of such productions.

I am aware that no one wishes to deprive himself of double flowers; but if ever that should be the case, let some single ones of the same kind be placed amongst them, and the former will soon be seen to assimilate themselves to the latter †. Thus we see double Neapolitan Violets gradually degenerate into single ones by the negligence of gardeners, who allow the latter to grow up indiscriminately with the others. The same thing happens with the Lily of the Valley, if they are neglected being renewed. A case may often happen where it is desired to obtain seeds from flowers where the female organs alone are unaltered. The gardener may obtain them by observing the time when others of the same species with male organs are in flower, by gathering them and applying them to the double or semi-double flower in question. This process, now common in some countries, has enriched of late years the kingdom of Flora by many most beautiful productions; but with us it is very seldom practised, and we are thus deprived of many excellent varieties which might be introduced into our gardens.

I for many years cultivated extra double Ranunculi and Hyacinths with my own hands. Some gardeners take up the roots every year, as soon as the leaves have faded, after the flowering is over. Others only take them up every alternate year. That was my custom for many years, and my Hyacinths retained their character with tolerable perfection; but having subsequently neglected this practice, and followed the more usual course of taking them up every year, they soon degenerated into single ones.

Let not amateurs rejoice at seeing their Roses show symptoms of producing some proliferousness. If they suffered so to do, they will perish, or at any rate that are part of the bush which is so affected will be much injured by it. The gardener should therefore be careful, if he values his Rose, and does not wish to lose it, not to allow it thus to vegetate, and cut off the affected branch. When these various phenomena are the result of vicissitudes in the seasons, every precaution should be taken to prevent the plants suffering too much from them. Thus in proliferousness some of the upper buds should be taken off, and some of the branches bent back.

* This may be true in many cases, especially of proliferous plants, but those which produce double flowers, instead of ripening seed, have occasionally their individual lives rather prolonged than shortened.—*Translator's Note.*

† Or rather perhaps the single ones, by their greater natural vigour, choke and take the place of the double ones.—*Translator's Note.*

DESCRIPTION OF THE MELON-HOUSE AT CHATSWORTH.

FIG. 1 represents the ground plan (on a scale of one-tenth of an inch to a foot), in which are shown the different pits over the tanks (*a a*); with two small cold-water cisterns at each end, for the supply of water, and to give access to the tanks (*b b*); the trellis wooden pathway (*c*); and boiler (*d*). Between the back range of pits and the back wall, there is a vacuity of 4 or 5 inches, for the free circulation of air; and between the front pits and front wall there is a vacuity of 12 inches, also to admit the free circulation of air from the ventilators shown in the front wall, and to make room for the hot-water pipes, shown in the section. The clear width of the house inside is 10 feet; the length will of course depend on the supply of Melons required. The trellis pathway is constructed of Larch boards, 4½ inches wide, by 2 inches thick, and ½ of an inch apart, resting on sleepers 4 by 5 inches, supported by brick piers. The house has a southern aspect, and is built against a garden wall, 1 foot 10½ inches thick. The front and end walls are built of 9-inch brick, and the pit walls of 4½-inch brick on bed, plastered, with a wooden capping, on the top of the bricks, and finished with a square skirting to the pathway.

Fig. 2 represents a portion of the front elevation (to the same scale as the plan), which shows the ventilators in the front and back walls, and the ridge and furrow roofs. The span of the pediments is 6 feet from centre to centre, and the rise forms an angle of 22½° with the plating. The front ventilators are 2 feet 3 inches, by 1 foot 3 inches in the clear, and are balanced on centres, on the pivot and socket principle. The openings communicating with the ventilators in the back wall, are 2 feet 9 inches long, by 1 foot in height.

Fig. 3 is a transverse section of the house, in which are shown the tanks, pipes, pathway, pits, and the vacuity for ventilation, in the back wall. The front wall is 3 feet high to the top of the plating; and the angle of the rafter is 32° to the plating. The platings are 6 by 3 inches bovelled; the rafters 5½ by 3 inches; and the bars 1¼ inch deep, the whole filled in with sheet glass. The manner of constructing the ventilators in the back wall is as follows: in each bay of the roof there is a ventilator, raking at the top parallel to the pediments, and about 2 feet 9 inches width, and 3 feet in height. These ventilators, or openings, inside, communicate with the vacuity in the back wall (shown in the section), and the air passes out through the openings shown in the front elevation. The ventilators or shutters inside are made to slide up and down in a wooden frame fixed to the wall, and are balanced by a line, pulley, and leaden weight, so that they will rest at any point required. Where neatness is desired, the ventilators may be trellised with fillets of wood; and a wooden trellis is fixed to the back wall, to which the stems of the plants are trained. The house is heated on the tank system, by one of the Burbidge and Healey's ribbed boilers, and 4-inch flange pipes. It will be seen by the section that the tank at the back part of the house is on a higher level than that in front; this is in order that the flow pipes from the top of the boiler may descend from the back tank, pass under the pathway, and proceed along the front tank as a return pipe to the boiler. The four pipes shown in front are the flow and return pipes, from and to the boiler.

Fig. 4 is a section of the tank, &c., on a scale of one-third of an inch to a foot. The water in the tank generally covers the pipe about an inch over its surface, leaving a small space between the surface and the tank cover. *Paxton's Magazine of Gardening and Botany, for June.*

Fig. 1.

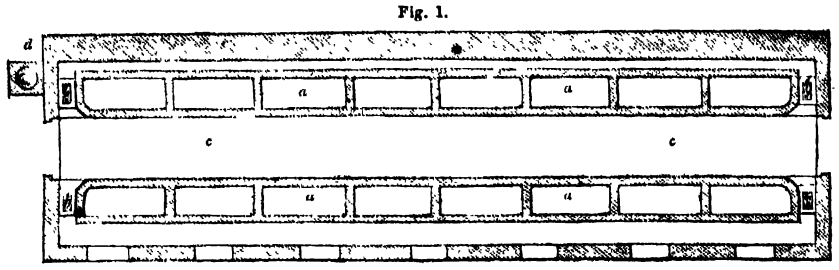


Fig. 2.

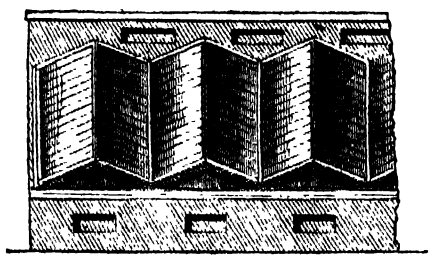


Fig. 4.

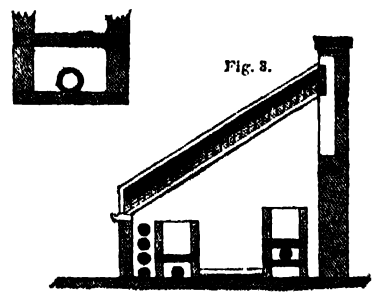


Fig. 3.

SCALE, 1 inch to 10 feet.

VILLA AND SUBURBAN GARDENING.

THE highest degree of beauty which the amateur gardener, under considerable difficulties, can display in his little flower-garden very frequently depends on the success attending the planting out of his annuals and other decorative plants. The failures, the blanks, and other disappointments which mark his early progress, often dishearten him, and occasionally drive him from his favourite pursuit, because he imagines that they are difficulties beyond his control; and that only unlimited means, presided over by eminent professional gardeners, can overcome them. This is, however, not the case. The amateur of smallest means may be equally successful with the gentleman's gardener, provided he possesses a hand-glass or two, or a small frame and a little stable litter, which always abounds near large cities. On the latter let him place his glass or frame, and in this way a great number of plants may be raised or propagated. Having accomplished this, the next difficulty is to get them removed with success to the various beds and borders to be decorated.

Nothing is so common as to see newly moved plants, although watered, languishing and dying. This happens in consequence of the weather being in some measure unfavourable for the operation of transplanting. If the plants are moved during dry weather, and this is sometimes necessary, let it be done in the evening, and let them be well watered afterwards. On the following morning place empty pots over each little patch, or if the plants are grouped in beds, stick in a few short stakes all over the beds and shade with a mat or a piece of canvas. The moment the cultivator returns from his occupation in the afternoon, the shades which have been put on should be removed. This process must be repeated for a few days, until the newly transplanted plants shall have rooted into the fresh soil. Should a dull or moist day occur, this will be a favourable opportunity of exposing them without injury to the weather. Before any attempt, however, is made to remove any plants which have been raised under glass, they should have been previously gradually exposed to the full action of the weather, so as to stiffen and harden them for the operation, and the less water that is given them for a week or so then the better.

Such plants as Verbenas, Phlox Drummondi, Petunias, Heliotropes, Anagallis, and similar prostrate growing plants, should be pegged down immediately on being planted, and others of more erect growth, such as Balsams and Lobelias, of strong growing habits, will require small stakes to hold them in their position; for if left to be blown about in windy weather, the collar of the plant gets bruised before it has attained strength, or has taken sufficient hold of the soil. By this means an immense deal of injury is prevented, which amounts to something where the stock and appliances are limited. These remarks will meet the difficulties of "Amateur," and others similarly circumstanced. *Pharo.*

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

NECESSITY OF EXPERIENCE TO SUCCESS IN GARDENING.—The distinction between theory and practice is recognised in every profession and occupation in life, and it is well known that however well the principles of an art may be understood, this, alone, will not make an artist. Yet this obvious fact is often forgotten in gardening, and men seem to expect that in this department of human industry they are to arrive at perfection by some royal way. Hence the complaints against nurserymen and florists, because people buy plants which perish for want of proper management; hence the numerous instances in which amateurs after a short period of zeal, give up gardening in disgust, because they cannot grow Pines on the first trial, nor compete with grey-headed florists in Orchids or Pelargoniums; hence, finally, the weekly applications to the *Chronicle* for advice, and, sometimes, the disappointment of the party who follows it when given. Something more is needed than books, and theories, and counsel; an apprenticeship must be served at gardening, many flowers spoiled and many disappointments manfully borne, before a man can rely on his own resources, and cultivate a garden with success. The excellence of a weekly paper like this is, that it points out the right method, but it can do no more. Its rules must be applied with skill to be attended with the desired results, and that skill is only acquired by experience. In the article on "Villa and Suburban Gardening" last week, liquid manure is properly recommended as a substitute for more solid composts, when they are not easily procurable. Here is a principle. It is further said that sheep's dung is a good material from which to make the liquid manure; and this is the principle in one of its remote applications. But unless a man repeatedly tries this mode of promoting the fertility of his garden, and watches the results, and profits by his failures, the theory will do him little service. He will find that some soils will not bear liquid manure, but require solid substances to act upon them mechanically; he will further discover that some vegetable productions will be destroyed by the same dose which will diffuse new life into others. A bushel of sheeps' dung may make 20 gallons or a hogshead of liquid, with all the degrees of fluidity between them. When a thick mixture may be applied to the root of a plant, or when it should receive only a slight dose of thin manure water, are questions which experience only can decide, unless writers on gardening are to give exact proportions for every fruit, flower, and vegetable, varying according to soil, climate, and season; a labour to which the toil of Sysiphus alone will furnish a parallel.

The writer expresses himself feelingly on this subject, having met with as many failures as most men, and having acquired any skill he may possess (which he confesses is but little), by devoting his spare hours for many years to the practice of gardening. He began with only a desire to grow plants; he asked advice and read many books, and these counsellors were of essential service to him. But he was often disappointed, and sometimes ready to despair. However, every year enabled him to correct past errors, until he could proceed with that confidence which alone can make the practice of any art a pleasure. He would therefore wish every man who is becoming a gardener to adopt as his motto, *nil desperandum*. No plot of ground exists which can be considered an Utopia. To grow a flower in the best way is an operation of great skill; and as an apprentice to a trade is expected to spoil some of the materials submitted to his manipulations, so the young gardener must not be surprised if he loses plants by his wrong management, however clearly the speculative principles of his pursuit are set before him. *H. B.*

Home Correspondence.

Blistering of Peach-leaves.—That Mr. J. Mundell's theory on this subject is incorrect I think I have now, in my garden, a strong practical proof. In an article in your columns (May 19) he assigns, as the chief cause, "the roots being placed in uncongenial circumstances; damp, cold roots (he says) produce watery, unripened wood, with immature buds," &c. No doubt they do; still, I think, we must look further than this for the cause of blistering. I have on my south wall nine Peach and Nectarine trees, all of which, with the exception of one, have been planted, within the last three or four years, with great care, in good turf loam, and as shallow as they could well be planted, the fibres being very near the top of the ground. The one tree forming the exception is some years older, and had been very injudiciously planted—so deep in the ground that I intend to lift and replant it in a better manner at the proper season. At the present time all the other trees are covered with curl and blister; some to such an extent that I fear they are materially injured; most of the young shoots being swelled and crumpled up, and many branches looking dry and half killed. The deeply-planted tree, unaccountably enough, is comparatively uninjured by the curl. Let it not be supposed that I am hereby advocating the system of deep planting, than which I am persuaded nothing can be worse, or that I in the least degree attribute the comparative healthy condition of this tree to its having been so treated; but I certainly do think that the fact just stated proves, beyond doubt, that deep planting, however bad in its effects, cannot be even "chiefly" the cause of the evil in question. *Omega.*

Water.—As gardeners have much to do with water, will any one have the kindness to tell me whether a body of rain-water of 500 or 600 gallons, which will have to be daily pumped from a small underground tank to a leaden cistern, and thence allowed to flow back again, will keep sweet? From my experience of water in iron tanks in ships, I fear it will get to smell badly. Will charcoal or any other substance in the tank and cistern tend to keep it sweet? Can any one give me the result of his experience in any analogous case? Such information would be doing me the most essential kindness. *C. R. D.*

The Hawthorn.—Although it is not uncommon for the flowers of the common Hawthorn to have a pinkish tinge during their decay, yet this year the colour is much more decided than usual, arriving in one instance (a double white) to the colour of the old-fashioned pink. Can you account for it? The soil is magnesian limestone. *Eboracensis, Doncaster, June* 3.

Felling Larch.—I believe that the best mode of treating Larch for timber is as follows. Cut down in July or August, when the tree is full of turpentine. Entirely submerge the stem, if in running water, so much the better; leave it there for six months or a year. It will be found so hard that the sawyers will cry out, and the carpenters too; the best proof of the wood being full of its preserving juice. Never leave the bark on. *Reperto credite Woglog. Dorset, June* 11.

Mixed Flower-gardens and Flowers in Masses.—I observe that your correspondent "E. X." is an advocate for the mixed flower-garden, which he attempts to vindicate, in preference to the arrangement of flowers in masses of contrasted colours. I do not think he has brought forward any lucid argument, or very cogent reasons in support of his predilection. It has been said, that "there is no accounting for tastes," and certainly every one has a right to enjoy his own opinion. But it is not sufficient, in the present day, to condemn practices and principles which have been adopted and supported by men of profound education and ability, without giving a sufficient reason. Your correspondent speaks of a "carpet," in which the colours are "well disposed;" will he be so kind as to tell your readers definitely what he considers the beau ideal of a good arrangement of colours; does he mean that they should be well mixed? And will he most obligingly define what he considers to be "a tastefully-arranged bouquet," for the edification of your fair readers, who will, I am sure, feel an interest in this matter; and will he, too, kindly explain what is to be understood by "a mixture of different-coloured flowers effectively disposed?" "E. X." prefers large clumps on islands, or on "the other side of the water." Now, as there are many fine places which do not contain a piece of water, and consequently no islands, what are the unfortunate possessors to do to meet the views of "E. X."? He will, I trust, receive my observations in the spirit of courtesy and good-feeling in which they are intended, but I confess that I fear he does not, or has not (perhaps in haste) discriminated between "the beautiful and the picturesque," when he institutes a comparison between a garden of flowers and a picture, by which I presume he means a landscape painting. While I admit that the colours of a carpet, the furniture of rooms, and the dresses of ladies, should be governed by the same principles of design as a well arranged flower garden, as to the distribution of colours, I am at a loss to trace the analogy between a landscape painting and a flower garden. "A beautiful garden," says Mr. Repton, "is not more defective because it would not look well on canvas, than a didactic poem because it neither furnishes a subject for the painter or the musician." In a former paper upon this interesting subject, I endeavoured to explain in what way true variety is produced; demonstrating upon unquestionable authority, that it is a thing apart from mixture. In Mr. Alison's "Essays on Taste," speaking of the sublimity and beauty of the material world, it is remarked:—"In every beautiful work of art, something more than mere design is demanded, viz., elegant or embellished design. The only material sign of this is variety. It is this which distinguishes, in general, beautiful from plain forms, and without this, in some degree, uniformity is only dulness and insipidity." Beautiful forms, therefore, must necessarily be composed both of uniformity and variety. Now as "in whatever relates to man, propriety and convenience are not less objects of good taste than picturesque effect;" and as "beauty and not picturesqueness, is the chief object of modern improvement," I think nothing can be more perfect of its kind than the massing of flowers as carried out at Trentham, Shrubland, and other fine places. It appears to me that your correspondents are retrograding in discussing this very interesting subject. If their propositions can be proved by further and more potent argument, or sanctioned by authority, I shall be glad "to live and learn," and to join them in a triumphant shout of Q. E. D., when the truth of their axioms is by such means established. *Henry Bailey, Nuneham Park.*

Roughed Glass might be cheaply imitated, and the dispersion of the sun's rays be perfectly insured, by means of glaziers' putty. Taking a lump of well-worked putty, and gently dabbing it against the glass, a mark will be left exactly resembling roughing. The exercise of a little skill will enable the operator to cover the whole surface very expeditiously. The process is not expensive, and will not require renewal oftener than once a year. It must be done when the glass is dry. *O. N.*

Preserving Rhubarb.—Cut it into pieces about an inch long, not peeled (which spoils all good things now-a-days), over-night, and to each pound of Rhubarb put over it ¾ lb. of powdered loaf sugar until morning; pour the syrup from it, and boil it till it thickens; then put in the Rhubarb, and let the whole boil gently a quarter of an hour; put it into jars or bottles; when cold tie it down with bladder, or, what is better, tissue paper dipped in white of egg. *R. R. R., Cheshire.*

Paint for Iron.—I have found ½ oz. of aquafortis, ½ pint of spirit of turpentine, and 1 gallon of gas tar, well mixed together, to be an excellent paint for iron hurdles. *A. W., June* 11. [This must be mixed very gradually in an iron pot in the open air, or there will be great risk of a dangerous conflagration.]

Fir Insects.—Inclosed you have specimens of an aphis, which is here a great annoyance, infesting some of the varieties of Conifers very much, especially Abies Menziesii, and A. morinda, which we find it necessary to fumigate several times during the summer. On one occasion a plant of A. Menziesii being at a distance escaped observation, and though in good health when attacked, it was leafless in a fortnight. I find this insect troublesome both early and late in the year—when there have been several degrees of frost, and when there have been no similar insects on garden plants, as Roses, &c. Can you suggest any means of preventing its attacks? *J. H.* [The various species of Fir trees are attacked by several kinds of Aphides, among which some are very remarkable in their habits, and quite different from the ordinary species; those forwarded by "J. H." are, however, of the ordinary character, nor are we able to suggest any more satisfactory remedy for their destruction than the plans in common use. We should think the best plan would be to employ a kind of bag to throw over the tree, and then to burn tobacco beneath it. *W.*]

Blight.—"What a deal of blight there is this morning," said more than a dozen people to me on the morning of the 4th of June. Although it is a common saying that certain conditions of weather blight vegetation, I have been at a loss to discover in what manner such weather acts. I have heard the expression made use of by men of intelligence on other subjects; but in the absence of cold winds or swarms of visible insects, I have always received such doctrines very cautiously, being inclined to class them under the head of popular errors. The day about which I am speaking was a dull one; the atmosphere appeared to be filled with vapour of a smoky kind, which seemed to descend to the earth and to float along its surface. The sun throughout the day (with the exception of a few short intervals), looked like a candle in a room filled with smoke, seen through a window. The clouds were of that murky appearance which indicates a superabundance of electricity. The temperature at 1 P.M. was 74°; at half-past 9 P.M thunder was heard in the distance, and the thermometer indicated 65°. Between 1 and 2 in the morning we had a very heavy thunderstorm, which lasted till about 6. I cannot say whether there was hail or not, but the quantity of rain which fell was great for the time it lasted. I have been on the outlook for blight since, but instead of being blighted everything appears to be greatly invigorated. Perhaps some of your scientific correspondents will state whether such weather is injurious to vegetation or not, and in what way it affects it. *H. S.*

American Pumpkins are recommended to be raised as a field crop for cattle, others to be used in the kitchen in different ways, and they are said to be very good sea stores. Could you collect from your readers the directions for the various modes of dressing them for the table; it would be doing a benefit, and be the means of bringing a new vegetable into use. *W. R.*

The Weather.—On comparing my weather table with the one kept at Chiswick for last week, I find a difference; but such an unusual continuance of a low temperature at this season, as we have had during the past week, I am sure will not be uninteresting to you.

	Wind.	Therm.	Bar.	Rain.
June 7	E.	63 45	30. 8	—
,, 8	N.E.	58.39	29 90	—
,, 9	N.	61.35	29.54	—
,, 10	N.	53.37	29.79	.01
,, 11	N.N E	56 33	29 90	—
,, 12	N.E.	56 84	30. 4	.06
,, 13	N.E.	64.31	30.19	.06 and hail.

On Sunday, after morning church, the thermometer stood at 43°; and on Tuesday, at mid-day, it was only 46°. We had 1.01 inches of rain fall in the month of May last. *T. L. C., Assington, Suffolk, June* 14.

Societies.

HORTICULTURAL, *June* 9 (GARDEN EXHIBITION.)—For some account of the leading features of this magnificent display of gardening skill we must refer our readers to a Leading Article in another column.

In large collections of 30 STOVE and GREENHOUSE PLANTS there were two competitors, viz., Mrs. Lawrence, of Ealing-park, and Mr. Cole, gr. to H. Colyer, Esq., of Dartford, both producing fine groups; but between the two there was no efficient competition, for the plants from Ealing-park were much larger, and, being equally well grown, were of course much finer than those from Dartford. We need hardly say Mrs. Lawrence was first. Among her plants were large and beautiful specimens of Stephanotis floribunda, Polygala acuminata, Epacris grandiflora, the white-blossomed Pavetta caffra, an Ixora coccinea at least 5 feet high, various Francisceas, a splendid Clerodendron Ksempferi, with glossy green leaves, measuring 18 inches across, and bearing two huge panicles of scarlet flowers; a fine bush of Tabernæmontana coronaria, a beautifully-

bloomed and luxuriant Pimelea spectabilis, well-managed specimens of Clerodendron splendens and Dipladenia crassinoda, the latter with not less than 17 fully expanded flowers on it, and many more to open; the blue flowered Leschenaultia, together with Everlastings, Chorozema ovatum, the white-flowered sweet-scented Sphenotoma gracilis, and a few other well-cultivated plants. The finest examples of cultivation in Mr. Cole's collection, which on the whole did him much credit, were perhaps his Everlastings, the best of which is the one called A. purpurea macrantha, also Pimelea Hendersoni and decussata, Clerodendron Kæmpferi, Stephanotis floribunda, Epacris grandiflora, together with an indifferently-bloomed Allamanda cathartica, Tremandra verticillata, a pretty greenhouse plant; Sphenotoma gracilis, Cyrtoceras reflexum, and Ixora crocata.

Collections of 15 STOVE and GREENHOUSE PLANTS were numerous. The best was produced by Mr. Green, gr. to Sir E Antrobus, Bart. It contained a well-flowered Erica Cavendishii, a large Epacris grandiflora, Stephanotis floribunda, trained round an upright cylinder; Azalea Minerva, and two other Azaleas still in perfection; the best variety of Apheloxis purpurea, Polygala cordifolia, two red-flowered Leschenaultias, Rondeletia speciosa, and Sphenotoma gracilis.—Mr. Taylor, gr. to J. Coster, Esq., was second, with well-managed plants of Polygala oppositifolia, a finely blossomed Allamanda cathartica, Phænocoma proliferum, the beautiful small purple-blossomed Erica Bergiana, two Everlastings, a nicely-blossomed Stephanotis floribunda, a well-flowered Epacris miniata, two species of Pimelea, Boronia serrulata, and Rondeletia speciosa.—The next best collection was contributed by Mr. Carson, gr. to W. F. G Farmer, Esq. This somewhat irregular group contained large specimens of Stephanotis floribunda, Clerodendron Kæmpferi, a fine Allamanda cathartica, three varieties of Azalea, a beautiful Epacris miniata, Mussænda frondosa, covered with large white floral leaves and small yellow blossoms; Leschenaultia formosa, Polygala oppositifolia, Franciscea acuminata, and a neat plant not more than 18 inches high of Ixora coccinea, bearing 11 large heads of scarlet flowers.—The Nurserymen who exhibited in this class were Messrs. Pamplin, Pawley, and Glendinning, to whom prizes were awarded in the order in which the names stand. Among Mr. Pamplin's plants were Stephanotis floribunda, two Vincas, Coleonema rubrum, Dillwynia clavata, Erica ventricosa superba, and others Mr. Pawley's most remarkable plants were Aphelexis purpurea macrantha, and Stephanotis floribunda. In Mr. Glendinning's group was a small plant of the pretty Fuchsia-like Abelia floribunda also Erica splendens, Cavendishii, and other Heaths, together with an Oncidium, the blue Leschenaultia, a small Pimelea Hendersonii, an Everlasting, and Azalea Gledstanesii.

Collections of 6 STOVE and GREENHOUSE PLANTS were exhibited by—1, Mr. Kinghorn, gr. to Lord Kilmorey, Twickenham; 2, Mr. Bruce, gr. to B. Miller, Esq., Tooting; 3, Mr. Clarke, gr. to W. Block, Esq., Muswell-hill; 4, Mr. Jack, gr. to R. G. Loraine, Esq., Wallingford; 5, Mr. Malyon, gr. to T. Brandram, Esq, Blackheath; and 6, Mr. Stanly, gr. to H. Borens, Esq., of Sidcup, Kent. The first consisted of a large Pimelea decussata, Epacris grandiflora, Erica Cavendishii, Tetrandra verticillata, Azalea Gledstanesii, and Aphelexis humilis. Mr. Bruce had the white-flowered Epacris heteronema; Phymatanthus tricolor, forming a little globe of red and white flowers; Erica depressa, Pimelea Hendersoni, Epiphyllum speciosum, and Aphelexis humilis. Mr. Clarke had Coleonema rubrum, Aphelexis humilis and purpurea macrantha, a large Erica Humeana, Polygala acuminata, and Erica Cavendishii. Mr. Jack contributed two Everlastings, Erica tricolor, a large and finely flowered Cereus speciosissimus, a bushy Clerodendron affine, and Ixora crocata. From Mr. Malyon came the silvery-flowered Everlasting, Epacris miniata, Erica Cavendishii, a blue Leschenaultia, Phænocoma proliferum, and Phymatanthus tricolor. Mr. Stanly communicated a red Leschenaultia, a Vinca, Chorozema varium nanum, a large white Azalea, the pink-blossomed Aphelexis sesamoides, and a small Erica perspicua nana.

ORCHIDS.—Fine as were the different exhibitions of these in May, the plants produced on the present occasion far surpassed them, both in number and in beauty. They occupied more than the space usually allotted to them, and formed, as they always do, the chief attraction of the exhibition. Mr. Mylam's plants were deservedly placed first; among them were some matchless examples of skilful cultivation; his Saccolabium guttatum was the subject of universal praise, as were also the different species of the fine genus Aerides which his group contained; then he had Angulos Ruckeri, bearing seven large brown spotted yellow blossoms; the beautiful Vanda tricolor, Barkeria spectabilis, a plant which few can manage, a mass of flowers; Dendrobium formosum; Vanda teres; the ever-flowering Phalænopsis grandiflora: Lælia majalis, bearing three beautiful lilac-blossoms: Odontoglossum luteo; the sweet, white-blossomed Aganisia pulchella; and a Cypripedium barbatum, with nine flowers on it. Messrs. Veitch's group was especially remarkable for the wild beauty of its Oncidiums, associated with which were Phalænopsis grandiflora and amabilis; a magnificent Cattleya Mossiæ; Calanthe veratrifolia, producing 10 spikes of snowy blossoms; Vanda teres; Cypripedium barbatum, ornamented with 22 flowers; an inferior variety of Vanda tricolor; and a Sobralia macrantha, with two open blooms on it.—Mr. Williams, gr. to C. B. Warner, Esq., who was third, produced the charming Aerides crispum, in fine condition; also A. maculosum, insufficiently in bloom; a splendid Dendrobium Wallichianum; the much admired Saccolabium guttatum; one of the better varieties of Cattleya Mossiæ; Lælia majalis, with two blossoms; Epidendrum macrochilum; Calanthe veratrifolia, with seven flower spikes; Brassia verrucosa major, the pretty Oncidium divaricatum, and other Oncids.—Mr. Rae, gr. to J. J. Blandy, Esq., sent, among other things, Aerides maculosum, a small Saccolabium præmorsum, Dendrobium Devonianum, Calanthe veratrifolia, a good Aerides crispum, a huge Saccolabium guttatum in a rustic basket and stand, a good Phaius Wallichii, Vanda Roxburghii, and a small Cattleya Mossiæ.—A fifth collection was produced by Messrs. Loddiges, of Hackney; the gem of this group was a very beautiful Brazilian Cattleya, apparently marginata; it also contained C. Mossiæ, Acineta Humboldti, the sweet-smelling Epidendrum selligerum, Saccolabium furcatum, Odontoglossum hastatum, Aerides crispum, the little red-flowered Comparettia falcata, the somewhat scarce Dendrobium Dalhousianum, the clear yellow-blossomed Oncidium bifolium, and Odontoglossum caudatum.

Collections of 10 ORCHIDS were shown by Mr. Plant, gr. to J. H. Schröder, Esq.; Mr. Dobson, gr. to Mr. Beck, Mrs. Lawrence, and Mr. Carson. Mr. Plant had Lacæna bicolor, with two flower spikes, the natural habit of which is to hang down, but in this instance they were tied in an upright position, not with good effect; he also showed Dendrobium moschatum, a luxuriant Aerides crispum and a pale variety of the same, the curious Cirrhæa fusco-lutea; Oncidium intermedium, a handsome brown-flowered kind; Sobralia macrantha, with two open flowers; and Saccolabium guttatum. Mr. Dobson's 10 plants, which were in slate pots, consisted of Barkeria spectabilis; Cattleya Mossiæ; a beautiful Aerides crispum; the violet and brown-flowered Epidendrum phœniceum; a noble plant of the large variety of Oncidium ampliatum, a mass of yellow blossoms; three other Oncids, and Phalænopsis amabilis. Mrs. Lawrence's plants, which were all small, were Saccolabium Blumei, a beautiful species; two plants of Aerides affine, three Cattleyas, Phalænopsis amabilis and grandiflora, and Burlingtonia candida. Mr. Carson had a nice Camarotis purpurea, Acineta Humboldti, the charming Saccolabium præmorsum, Oncidium divaricatum, Aerides Larpentæ, Barkeria spectabilis, a large Acanthophippium bicolor, and a variety of Cattleya Mossiæ.

Collections of 6 ORCHIDS were contributed by Mr. Kinghorn, Mr. Gerrie, gr. to Sir John Cathcart, Bart., and Mr. Jack. Mr. Kinghorn's plants were Saccolabium guttatum, Phalænopsis amabilis, a Stanhopea, and two Oncidiums. Mr. Bruce showed, as a single specimen, Oncidium flexuosum, a mass of small yellow blossoms, and Messrs. Frazer, Cattleya Mossiæ. Mr Mylam had a new Odontoglossum, with a tall branched spike of handsome brown and white blossoms with green-tipped sepals and petals; and Phalænopsis rosea, rather pretty but not striking. Mr. Plant had an Aerides apparently not new.

Two collections of tall CACTI were exhibited, one by Mr. Green, the other by Mr. Falconer, gr. to A. Palmer, Esq, of Cheam. These consisted for the most part of large plants, and made an effective display. Mr. Green had an Epiphyllum Ackermanni, at least 5 feet high; a Cereus speciosissimus of similar height; Epiphyllum rubrum cæruleum, a mass of flowers; E. aurantiacum, E. Jenkinsonii, and E. speciosum elegans, a larger, and therefore finer variety than the old speciosum. Mr. Falconer had Cereus Mallesonii and its pale variety; C. speciosissimus, a seedling, and Epiphyllum Jenkinsonii.

Mr. Green showed a collection of AZALEAS; but their beauty was over. They had evidently suffered from the bright weather which we had in the early part of last week.

Roses were again exhibited in tolerable perfection, notwithstanding the unfavourable weather we have experienced for keeping them in bloom. Messrs. Lane's plants, which were large and finely bloomed, consisted of—*Hybrid China:* Celine, 5 feet high, and 2 feet wide; Madame Plantier, 3 feet 6 ins. high, and 4 feet wide. *Hybrid Bourbon:* Coupe d'Hébe, 4 feet 6 ins. high, and 2 feet 10 ins. wide; Great Western, 2 feet 10 ins. high, and 3 feet wide; Las Casas, 2 feet 2 ins. high, and 2 feet 6 ins. wide; Paul Perras, 4 feet high, and 2 feet 6 ins. wide. *Hybrid Perpetual:* Queen, 5 feet 10 ins. high, and 4 feet 6 ins. wide. *Bourbon:* Souvenir de la Malmaison, 3 feet 6 ins. high, and 3 feet 4 ins. wide. *China:* Abbé Mioland, 3 feet 6 ins. high, and 3 feet 2 ins. wide; Fabvier, 4 feet high, and 2 feet 9 ins wide; Prince Charles, 3 feet high, and 2 feet 6 inches wide. *Tea:* Adam, 2 feet high, and 2 feet wide.—Messrs. Paul had—*Hybrid China:* Madame Plantier, pure white; Belle Marie, rose; Blairii, No. 2, white with pink edges. *Hybrid Bourbon:* Henri Barbet, carmine; Paul Perras, rose, edges blush. *Austrian Briar:* Harrisonii, yellow. *Hybrid Perpetual:* Louis Buonaparte, rosy crimson. *Tea-scented:* Caroline, pink; Princesse Marie, coppery rose. *Noisette:* Aimée Vibert, pure white. *Bourbon:* George Cuvier, cherry red; Coupe d'Hébé, pink changing to silvery blush.—Mr. Francis produced clean looking specimens of—*Hybrid China:* Blairii, No. 2; Flora M'Ivor, Chenédolé. *Hybrid Perpetual:* Madame Laffay, Mrs. Elliot, Marquise Boccella. *China:* Abbé Mioland, Cels multiflora. *Tea:* Devoniensis, Elise Sauvage, *Hybrid Bourbon:* Belle de St. Cyr and Charles Duval.—Among Amateurs, the competition was between Mr. Roser, gr. to J. Bradbury, Esq., of Streatham, and A. Rowland, Esq., of Lewisham, the former gaining the first prize. Mr. Rowland also sent an exhibition of cut Roses, and Mr. Francis showed a boxful of the new Rose Géant des Batailles.

Exhibitions of 15 CAPE HEATHS were contributed by Mr. Mylam, Mr. Smith, gr. to J. Quilter, Esq., of Norwood, and Mr. Gerrie. Mr. Mylam sent capitally grown plants of tricolor and its red variety, ventricosa hirsuta alba, metulæflora, splendens, and Cavendishii. Mr. Smith had a nice variety of ventricosa called magnifica, a large perspicua, elegans, Cavendishii, vestita coccinea, tricolor Lecana, and a neat ventricosa coccinea minor. Mr. Gerrie sent, among others, densa, tricolor alba, ventricosa, a large vestita alba, and moschata.—The Nurserymen who exhibited in this class were Messrs. Fairbairn, Rollisson, Veitch, and Pamplin. In addition to his huge Cavendishii, which was finely flowered, Mr. Fairbairn showed good plants of ventricosa breviflora, v. superba hirsuta, v. Bothwelliana, tricolor elegans, a huge metulæflora bicolor insufficiently in flower, and a neat odora rosea. Messrs. Rollisson sent well-managed plants of ventricosa breviflora, delecta, florida, (a small white kind), a nicely blossomed Cavendishii, and a pyramidal plant of thymifolia. Messrs. Veitch produced Cavendishii, splendens, gemmifera, florida, densa, rubella, a small red sort; ventricosa superba, and metulæflora. And, finally, Mr. Pamplin had small plants of densa, cubica minor, ventricosa, globosa, tricolor elegans, a pretty variety; and Westphalingia.

Collections of 9 CAPE HEATHS were shown by Mrs. Lawrence, Mr. Cole, Mr. May, gr. to E. Goodheart, Esq., Mr. Taylor, Mr. Roser, and Mr. Green. Mrs. Lawrence had a fine plant of the beautiful small round red-flowered E. Bergiana, two large specimens of vestita coccinea, perspicua nana, ventricosa pragnans, and Cavendishii. Mr. Cole sent specimens of Cavendishii, splendens, eximia, tricolor rubra, and elegans. Mr. May had vestita coccinea, daphnoides, Russelliana, a distinct looking sort; flammea, a pretty Heath; depressa, and a neat Massoni. Mr. Taylor sent Bergiana, translucens, retorta major, Westphalingia, elegans, and pulverulenta Mr. Roser, Cavendishii, vestita coccinea, hybrida, and odora rosea; and Mr. Green the small yellow-blossomed campanulata, tricolor, and its varieties Wilsoni and Lecana, and a large Cavendishii. Of specimen Heaths, Mrs. Lawrence produced a beautiful vestita coccinea. Mr. May, gr. to E. Goodheart, Esq., a capitally grown and flowered ventricosa alba. Mr. Malyon, v. superba; and Mr. Epps, of Maidstone, a capital propendens.

SINGLE SPECIMENS — The best were a splendid Aphelexis purpurea, from Mr. Cole; ditto from Mr. Bruce; Mirbelia dilatata, from Messrs. Veitch; Curcuma Roscoeana, and a fine specimen of the old Echium fruticosum, from Mr. Ivison, gr. to the Duchess Dowager of Northumberland; Tremandra verticillata and the pretty little Hoya bella, from Messrs. Veitch; Pimelea Hendersoni, from Messrs. Henderson, of Pine-apple-place; and an Aphelexis purpurea grandiflora, from Mr. Epps. In addition to these, Mrs. Lawrence sent a large Sollya linearis; Mr. Carson, Epacris miniata; Mr. Green, Aphelexis humilis and the red Leschenaultia; Messrs. Rollisson, Pimelea linifolia and a luxuriant Cryptolepis longiflora; Mr. Malyon, Aphelexis humilis; Mr. Cole, a beautiful Pimelea Hendersoni; Mr. May, ditto; Mr. Kempster, P. decussata; Mr. Jack, Cyrtoceras reflexum; Mr. Hill, Leschenaultias; Mr. Jones, the best variety of Aphelexis; and Mr. Maller, of Woodford, Epacris miniata.

NEW PLANTS.—Messrs. Veitch exhibited Escallonia macrantha, a pretty rosy pink flowered shrub, with glossy green leaves, from Patagonia, stated to be hardy; also Lisianthus pulcher—in this instance a tall naked-stemmed plant, with a few brilliant scarlet tubular flowers at its tip. Mrs. Lawrence showed a well-flowered nice specimen of Portlandia grandiflora as a rare plant; Mr. Jack the white-flowered Posoqueria longiflora; and Mr. Glendinning Hoya imperialis, insufficiently in flower. In addition to the above, which were selected by the judges for prizes, were the following:—Abelia floribunda, from Mrs. Lawrence; Posoqueria longiflora, from Messrs. Rollisson; Dillwynia Hugelii, from Mr. Ayres; a blue-flowered Ruellia and Mitraria coccinea, from Messrs. Veitch; Gardenia amœna, from Mr. Jack; and Gompholobium venustum, a small pink-flowered shrub, from Messrs. Henderson.

MISCELLANEOUS SUBJECTS.—An exhibition of Pitcher Plants, consisting of Nepenthes distillatoria, Raffesiana, Jævis, phyllamphora, albomarginata, and Sarracenia purpurea, from Mrs. Lawrence; a collection of Lilium lancifolium punctatum and album, from Mr. Groom, of Clapham; two collections of Achimenes, one from Mr. Dobson, gr. to Mr. Beck, the other from Mr. Knott, gr. to the Rev. C. Pritchard; a group of Amaryllids, from Mr. Ivison, gr. to the Duchess Dowager of Northumberland; and a small collection of Statices, from Mr. Glendinning, of Chiswick Nursery.

PELARGONIUMS. — The Pelargonium tent, as it is called, has been removed from the neighbourhood of the large iron tent, and is now placed on the north side of the conservatory, and parallel with it. It was well filled on Saturday last with florists' and fancy varieties of this deservedly popular flower, the one kind occupying about as much attention as the other. In another tent there were also two or three collections of Cape Pelargoniums, but these, attractive as they are, being

but indifferent specimens of good cultivation, made little display. Pelargoniums in 8-inch pots, 6 dissimilar varieties—Amateurs: 1, Mr. Cock, Chiswick, for Centurion, Salamander, Pearl, Sikh, Rosamund, and Pictum; 2, Mr. Robinson, gr. to J. Simpson, Esq., Pimlico, for Pearl, Sarah, Forget-me-not, Negress, Beauty of Clapham, and Rosette Superb; 3, Mr. Staines, Middlesex-place, New-road, for Pericles, Norah, Miss Holford, Forget-me-not, Pearl, and Chimborazo. Six varieties, in 11-inch pots: 1, Mr. Parker, Roehampton, for Isabella, Zenobia, Sir Robert Peel, Orion, Matilda, and Margaretta; 2, Mr. Cock, for Negress, Bertha, Orion, Hebe's Lip, Forget-me-not, and Sylvia; 3, Mr. Wiggins, gr. to J. Saunders, Esq., Staines, for Augusta, Duke of Cornwall, Rosy Circle, Champion, Mustoe, and Lady Essex. Nurserymen.—Six varieties in 8-inch pots: 1, Mr. Dobson, gr. to Mr. Beck, of Isleworth, for Star, Delicatissima, Princess, Rosamund, Cassandra, and Centurion; 2, Mr. Gaines, of Battersea for Aspasia, Duke of Northumberland, Forget-me-not, Talisman, Salamander, and Marian. Six varieties in 11-inch pots: 1, Mr. Dobson, for Cruenta, Star, Aurora, Gustavus, Cinderella, and Cassandra; 2, Mr. Gaines, for Milo, Negress, Miss Holford, Orion, Xarifa, and Duke of Cornwall. Fancy varieties: 1, Mr. Ambrose, of Battersea, for Empress, Anaias, Jenny Lind, La Belle d' Afrique, Queen Victoria, and Defiance; 2, Mr. Gaines, for Hero of Surrey, Statuiski, Lady Flora, Ibrahim Pacha, Reine de Francais, and Mulatta; 3, Mr. Robinson, for Nosegay, Empress, La Belle d' Afrique, Queen Victoria, Yeatmanianum grandiflorum, and Anaias; 4, Mr. Staines, for Queen, Lady Flora, Madame Miellez, Ibrahim Pacha, Statouiski, Yeatmanianum, and grandiflorum. Cape Pelargoniums: 1, Mr. Stanly, gr. to H. Berens, Esq., for echinatum (spotted purple), tricolor ardens, reniforme, flexuosum, and bicolor; 2, Mr. Barker, for tricolor, flexuosum, erectum, bipinnatifidum, bicolor, and ardens; 3, Mr. Staines, for lacuiatum, ardens, flexuosum, bipinnatifidum, quinquevulnera, and Blandfordianum. Calceolarias: 1, Mr. Gaines for Cavalier, Gustavus, Prima Donna, Bianca, Don Juan, and Eclipse; 2, Messrs. Henderson & Co., Pine-apple-place, Miss Rattray, Duke of Rothsay, Black Agnes, Dr. Neill, Lucy Ashton, and Catherine Seaton.

Ranunculuses: Beautiful exhibitions of these interesting flowers, though in some instances hardly sufficiently blown, were sent by Mr. Tyso, of Wallingford, and Mr. Costar, of Benson; Mr. Tyso showed two stands of 50 blooms each, among which were fine specimens of his seedling varieties named Flaminius, Enchanter, Emerald, Arbitrator, Pleaser, Delectus, Alexis, Exhibitor, Dædalion, and Edwin; Lightbody's Herald and Dr. Channing; Kilgour's Queen and Princess Royal; also Apollo, Eliza, Horatio, and Dido, raisers not stated. Mr. Costar showed 18 blooms, including some good flowers of Napier, Porsenna, Extasy, Moultan, Lancet, and Coronation.

Seedlings.—A number of seedling Pelargoniums was contributed by Messrs. Beck, Hoyle, Gaines, and others. Some of them were remarkable for size, others for brilliancy of colour; of the former description may be mentioned Beck's Major Domo, and of the latter Hoyle's Prince of Orange and Beck's Rosa. Hoyle's Cecil is a good flower of 1849, and Foquette's Magnificent, one of the best of 1848 shown; but we need not enlarge on this portion of the exhibition, as the coming show at Upton Park, which will be duly reported, is expected to decide the merits of seedlings of this class. The best seedling Calceolarias were Baron Eden, shown by Mr. Gaines, a dark mottled variety, dull in colour, and a lively one by Mr. Henderson, named Alboni, orange scarlet, with yellow spots, but deficient in shape. Mr. Gad received a Certificate for two Petunias, named "Enchantress" and "Prince of Wales."

Fruit.—Some was again shown, and was considered worthy of reward. Large Silver Medal to J. Bailey, Esq., M.P., for 9 well-ripened Queen Pine-apples, weighing respectively 4 lbs. 10½ oz., 4 lbs. 11¼ oz., 4 lbs. 10 oz., 4 lbs. 3½ oz., 4 lbs. 5½ oz., 4 lbs. 1½ oz., 3 lbs. 15½ oz., 3 lbs. 15 oz., and 3 lbs. 12½ oz., making in all 38 lbs. 5½ oz. Ditto to Mr. Davis, of Oak Hill, for fine specimens for the season of Noblesse Peaches. Silver Knightian to Mr. Graham, gr., Bersted Lodge, Sussex, for beautiful Violet Hative Nectarines. Ditto to Mr. Stent, gr. to W. Herbert, Esq, Clapham, for well-ripened Black Hamburgh Grapes. Silver Banksian to Mr. Cowell, gr. to F. R. Bedwell, Esq., Walthamstow; also for Black Hamburgh Grapes. Ditto to Mr. Foggo, gr. to the Marquis of Abercorn, for a dish of excellent Figs.—The following fruit, to which no prizes were awarded, was also exhibited: A Queen Pine-apple, weighing 4 lbs. 6 oz., from Mr. Patterson, gr. to the Earl of Chesterfield; ditto, 3 lbs. 10 oz., from Sir John Cathcart's gardener; two long-shaped "Black Prince" Pines well ripened to the very top, which long Pines seldom are, from Mr. Wilcox, gr. to the Earl of Stamford. This is a seedling variety stated to have been raised in the gardens of—Entwisle, Esq., Rochdale, Lancashire, and is considered by Mr. Wilcox to be between the Montserrat and Enville; fair specimens of Bellegarde Peaches came from Mr. Graham; and of Elruge Nectarines from Mr. Foggo; Dutch Sweetwater Grapes from Mr. Chapman; Black Hamburgh from Mr. Davis, and ditto; Black Frontignan, White Muscadine, and Muscat of Alexandria, from Mr. Toy, Oatlands Palace Gardens, Weybridge. Mr. Fleming, gr. to the Duke of Sutherland, at Trentham, sent three hybrid Persian Melons, and a specimen of Snow's Green-fleshed; and examples of Mr. Fleming's Trentham Hybrid Melon were contributed by Mr. Caseou. The latter is an oblong, yellow fruit, stated to be of excellent quality.

Royal South London Floricultural.—The third meeting for the season took place in the Surrey Zoological Gardens on Tuesday last. The exhibition was a good one, as far as stove and greenhouse plants, Heaths, Roses, Calceolarias, and Pelargoniums were concerned,—the latter, indeed, were numerous and excellent; but otherwise, as a florists' flower show, it was a failure. Owing to the unfavourableness of the season, only one or two stands of Pinks were produced, and these not of first-rate character. The best exhibitions of the latter came from Messrs. Norman and Ellis. In Mr. Norman's stand were Beauty of Bath, Captain Tysson, Hodge's Mellona, Jenny Lind, Hardstone's Albert, Reubens, King of Purples, Ellis's Mary, Ovid, Gem, Turner's Beauty, and Legg's Prince Albert. Among others, Mr. Ellis had Beauty of Bath, Bell's Benjamin, Bunkell's Queen, King of Purples, Ellis's Mary, Willmer's Laura, Kerr's Harriett, Winchester Rival, Holmes's Coronation, Hodge's Mellona, Bell's Henry, and Jones's Huntsman. Nice stands of Ranunculuses were communicated by Messrs. Keynes and Betteridge. Among the blooms of the former were Henrietta, Caledonia, Dion, Prince of Wales, Delicata, Reliance, Orpheus, Lord Eldon, Invincible, Hampden, Belmont, Pole, Man of War, Antiquary, Harold, Ellen, Competitor, Patriot, and Captivation. Stove and Greenhouse Plants were exhibited by Messrs. Cole, Bruce, Young, Hamp, Hook, and Pawley. Cape Heaths by Messrs. Fairbairn, Bruce, and Cole; Orchids by Mr. Beck and Mr. Bruce; and Roses in pots by Mr. Francis, of Hertford. There was also a large display of cut Roses and other flowers. Fancy and other Pelargoniums were exhibited by Messrs. Beck, Gaines, Robinson, Foster, Ambrose, and Staines; and Alpines and variegated plants by Mr. Turner and Mr. Wood. Seedlings.—Pelargoniums: First class certificates were awarded Mr. Beck, for "Major Domo," and for "Rosa;" to Mr. Gaines, for "Flying Dutchman" and "Ne Plus Ultra" (fancy); to Mr. Ambrose, for "Donna Inez;" and to Mr. Hine, for "Striata coccinea" (fancy). To Mr. Turner, for a Pansy named "Viceroy," and for a Fuchsia named "Falstaff," a large bold flower, with violet corolla and bright crimson calyx; and to Mr. Gaines for a Calceolaria named "Ne Plus Ultra." Mr. Turner also showed the seedling Pansy "Mrs. Beck," and a Pink named "Forget-me-not."

Miscellaneous.

Horticultural Society's Exhibitions. — If there is one feature of these great exhibitions that is more worthy than another of provincial imitation, it is the strict adherence to the rules and regulations laid down for their conduct. It has often been our lot to witness the bad effects of the contrary practice at country shows: subjects admitted after the hour had passed for their reception; tents not cleared of exhibitors at the time appointed; and everything thrown into disorder, from want of carrying out, at every cost, the printed laws for their regulation. If the committees would but act firmly in every case, those exhibitors who, from indolence or neglect, were properly excluded, would be more careful for the future, and would make their arrangements accordingly. But to our immediate work,—a description of the preliminaries to the Chiswick exhibition. The Gardens are part of the Duke of Devonshire's Chiswick estate, and consist of 33 acres; the portion occupied by the exhibition, and laid down in Grass, planted with an extensive variety of plants and shrubs, is about 9 acres. To the Garden there are three entrances: the principal one from the carriage-road, leading from Turnham Green to the Duke's mansion; another from off the Green itself, leading immediately to the Council-room; and a third, the carter's entrance, by which alone all the objects for exhibition are received. As we enter the Council-room, we pass the great conservatory, as represented in the right of the woodcut (vol. i. p. 180), and then reach a tent, 175 feet long, and 33 feet wide; to the left of that another is erected, 225 feet long and 30 feet wide; and immediately at the end of this is another, known as the iron tent, 100 feet long and 25 wide, running straight for a part of its length, and then expanding into a half-circle, 25 feet radius, for the exhibition of the large collections of miscellaneous plants. At right angles with this is the remaining tent, 75 feet long, and 25 feet wide. All of them are divided down the middle by a sufficiently high partition to make a suitable back for the plants arranged on either side. Our usual time for being at the Gardens is about 6 o'clock A.M., and we enter at the carters' entrance. From the different roads leading on to the Green, vans of various constructions, with as various coverings, are seen wending their way to the general rendezvous. Each exhibitor, as he enters, signs a declaration of what he is intending to exhibit, and in what class; and until he does this, his productions are not allowed to proceed to the place of unloading. Before this rule was established, it was not unfrequent for an exhibitor to make himself acquainted with the strength of an opponent, and then enter the lists accordingly. We will, however, leave the van-road, and taking a footpath through a part of the gardens containing the glass erections, we reach the tents. Here are to be seen plants standing about in all directions; gardeners busy arranging them in places pointed out by one of the Society's officers appointed to this duty; labourers with hand-barrows, carrying the contents of the vans to the different exhibitors; persons are to be seen moving about in all directions, with choice specimens under their arms; and a multitude of gardeners, not exhibitors, walking about and examining the different plants, a privilege granted them upon the understanding that they move amongst them carefully, and keep out of the exhibitors' way. It is a most interesting sight to watch how all the confusion of beauty gradually assumes the most admirable forms of arrangement; no noise, no bustle, nothing to indicate that the smallest difficulty exists. Each exhibitor, as he gets his collection arranged, goes to a place appropriated to this purpose, where several clerks, in answer to his application, supply him with cards on which the necessary letters are written, with which he returns to the tent, where a person who performs this duty tacks them down upon the stage in front of his collection. It is to be remembered that all the plants are secured for travelling safely, and consequently that, as they are arranged, all extra supports have to be removed; cotton-wool, &c., that has been placed to prevent injury to the flowers in their transit, is also taken away, and everything that detracts from their beauty. The litter made in doing this is swept up and removed by persons appointed to the service; and the exhibitor, after arranging all his plants, taking a look to see that all is as it should be, goes in search of 'the Doctor.' Professor Lindley, the Vice Secretary of the Horticultural Society, is early on the ground, and, moving about in all directions, sees that everything is going on properly; he is also at hand to refer to in cases of difficulty respecting the arrangement of plants. As the day advances, he generally takes a place where he is readily found. The exhibitor goes to him and asks for tickets: these are of two kinds,—the one for breakfast, the other for admission when the grounds are thrown open for the visitors at 1 o'clock. Regular and well-known exhibitors are supplied with both forthwith; to others the questions are put, 'What have you brought?' If important enough to merit tickets, the additional question is asked, 'Are they arranged?' If they are, the tickets are given; if not, they are refused until that is done. If the matters brought for exhibition are unimportant, tickets are not granted. By the time all the plants are arranged, it is full half past 9, and men are seen sweeping out all the tents, gathering the litter together and removing it; and before the principal exhibitors have had a look at the general features of the whole, it is 10 o'clock, and a body of policemen, commencing at the further extremity, courteously say as much, requesting everybody to leave the grounds; and scarcely have they done this, ere the judges are seen entering in another direction to perform their important duties. But we will go out with the party with which we entered; and in doing so, outside the garden-wall, but within the Society's gates, we come to a building which was closed at our entrance, but is now filled or filling with gardeners, who, presenting a ticket, sign their names in a book, and then take their place at a long table, where they are at once supplied with tea or coffee and cold provisions, all of the very best quality, and in great abundance. The floor above is provided with water, soap, towels, and all the other requirements for exchanging a working face, hands, and clothes for a holiday suit; and we believe we speak the sense of the whole body of the exhibitors at Chiswick when we say, that this part of the Society's arrangements is valued in no common degree, as having very greatly conduced to their comfort and enjoyment on these interesting occasions. We have also much pleasure in stating, that we understand the Council are entirely satisfied with the results of this arrangement. Let us not forget to record that many of those enjoying this refreshment have been travelling all night after a previous hard day's work, packing and preparing; indeed, some have come as far as from Exeter, and before 12 hours have passed will be returning there again. *The Florist and Garden Miscellany, for June.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

In addition to the ordinary routine of watering, syringing, and giving air, make it a point to enforce thorough cleanliness in the houses and amongst the plants. Nothing conduces more to a disarrangement of the machinery than neglect of this point. The principal operations will be tying and cleaning. In tying or training plants, avoid formality; study in your "mind's eye" the form or habit which the plants would assume in their wild state, and let your training be directed to assist Nature by giving support and symmetry of shape; for instance, the Passionflower never shows itself to such advantage as when allowed to hang down in graceful festoons from the roof of a lofty conservatory, for this is in accordance with the natural habit of the plant. The flowering season of many plants may be retarded by pinching off the earliest flowers, thereby husbanding their strength and inducing them to make a longer season of growth; the same result may be effected by means of liquid manure.

FLOWER GARDEN AND SHRUBBERY.

Cleaning clumps, mowing, sweeping, and rolling will afford full occupation just now in this department, but advantage should be taken of the first opportunity to go over the stock of spare plants, and select some of the best of them to be planted or potted, and plunged in the reserve garden, in order to fill up any gaps which may occur during the early part of summer. Hollyhocks, Dahlias, Delphiniums, Phloxes, and other herbaceous plants, must now be supplied with permanent stakes, and

neatly tied up; by this is not meant bundling up like so many faggots, but tying in such a manner as to support the shoots without depriving them of light and air. In tying the Hollyhock, it is a common practice to bind up six or eight shoots to one stake, in which case the flowers are nearly concealed by the leaves; but if the strongest shoots of each plant are selected and tied to separate stakes, sufficiently distinct to admit light and air, the flowers are seen to advantage, and have a truly noble appearance.

FORCING DEPARTMENT.

PINERIES.—Continue to repot a few plants of different sizes, as opportunities occur for moving them forward, and take off a few of the strongest suckers and pot them, in order to keep up a proper succession. Do not allow too many suckers to remain on the larger plants, for they injure each other's progress and the swelling of the fruit; not more than three should be left on any plant. Gills should always be removed from the fruit as soon as they can be detected, but do not on any account permit the crown to be mutilated. If Pines are abundantly supplied with air in conjunction with heat, the fruit will swell with moderate sized tops; the large cabbage crowns are produced by a close damp atmosphere. VINERIES.—Late crops now require particular attention in tying and thinning; syringing should be discontinued with others which are nearly half swelled. As soon as the Grapes are quite ripe they should be shaded from strong sunshine, in order to prevent them from shrivelling; or, for the sake of the Vine, they may be cut off with a small portion of the old spur, the end of which must be sealed up, to prevent evaporation; they may then be suspended in any cool airy room. MELONS.—Keep up a good bottom-heat of from 80° to 85°, and let the operation of watering be very carefully performed. If the plants are only intended to produce one crop, they should never be watered after the fruit is fairly swelled, as the flavour by that means will be very inferior. Do not allow the temperature to get too cold at night. FIGS.—Water freely those which have produced their first crop, and by a liberal use of the syringe keep the plants free from red spider. Stop young shoots at from three to five eyes as they advance, in order that the wood for producing next crop may have the advantage of a greater amount of light.

FLORISTS' FLOWERS.

TULIPS.—Offsets, and bulbs grown on the side beds, will now be ready to take up. Put them in their respective places in the cabinet or boxes. Thin paper is proper to fold them in, if the amateur has not the conveniences before mentioned; do not divest them now of either roots or loose skins, but allow them gradually to dry in the shade. Breeder Tulips may be allowed to lie exposed to the action of sun, air, and wind in some sheltered and convenient place; this exposure has the singular effect of speedily causing the whole to become rectified, or, technically speaking, to break into their proper or variegated character. One-year seedlings, if the foliage has turned yellow, may be placed on a shelf, out of the way of mice, till the season comes for again starting them. RANUNCULUSES.—Shade with a light calico awning. As seedlings bloom, place neat painted pegs to the roots, on which the character of the flower may be written, or merely a number, having reference to the description in a memorandum book. If water is required (though we are by no means partial to the constant ablutions which some growers bestow on these plants), we would recommend it to be given between the rows, from the spout of a small water-can, taking care that it had been exposed to the action of the sun, as water from a well, applied as soon as pumped, is so cold as to have a prejudicial influence on the plants altogether. PINKS are rapidly coming into flower; the pods should be carefully tied with thread which has been drawn over a piece of bees'-wax; after passing it round the bud several times, if the ends are twisted between the finger and thumb, they will remain secure. Piping or laying the shoots may now be proceeded with; when properly done, very few ought to fail. CARNATIONS AND PICOTEES.—An occasional watering with liquid manure will be beneficial; tie up the elongating stem; ease those which have been previously tied and have become cramped.

HARDY FRUIT GARDEN.

If it is the desire of the cultivator to carry out the principle of pruning with the finger and thumb instead of with the knife, the most strenuous exertions must now be made. To a reflective mind it carries the appearance of very bad management to allow wood to be produced which must not only be cut off, but which, during its growth, is materially damaging the portion which is to remain. The latter also demands particular attention in nailing or tying on the walls, as the beauty of wall trees very much depends upon the shoots being tied in at proper angles while they are young. Continue the exterminating process wherever insects make their appearance, and do not on any account think the smaller bush fruits unworthy of notice. The garden engine should be at work every night and morning upon these and the walls. Early Cherries in particular now require this, as the black fly is making its appearance, and if not destroyed in time will soil the fruit as well as injure the leaves. Continue pinching the points of Gooseberry and Currant shoots, and especially where they are blighted; it is a very quick way of destroying myriads of insects, while at the same time it forms a necessary part of the cultivation of the plant. Where tiles have been adopted as a means of keeping Strawberry fruit clean, they should be occasionally turned up, the soil examined beneath them, and a congregation of snails, beetles, and other injurious insects will be found. This points out another advantage of the tiles over Grass or straw, as the latter materials form harbours for insects, without affording the means of getting at them.

State of the Weather near London, for the week ending June 14, 1849, as observed at the Horticultural Gardens, Chiswick.

June.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday .. 8	18	29.990	29.892	66	42	54.0	N E.	.00
Satur .. 9	19	29.918	29.792	65	43	54.0	N E.	.00
Sunday . 10	20	29.738	29.668	70	42	51.0	N E.	.00
Monday 11	21	29.851	29.797	64	37	51.0	N E	.00
Tues. .. 12	22	29.933	29.923	57	40	48.5	N.W.	.00
Wed. .. 13	23	30.018	29.927	67	34	50.5	N E.	.01
Thurs.... 14	24	30.175	30.116	72	40	56.0	N.E.	.00
Average....		29.959	29.857	61.5	39.7	52.1		0.01

June 8—Fine; overcast throughout.
— 9—Fine, but cold, fine; clear at night.
— 10—Overcast; clear at night.
— 11—Cloudy and cold; overcast; fine; clear.
— 12—Fine; overcast. [some situations.
— 13—Fine; cloudy; slight shower; clear and cold at night; frosty in
— 14—Fine, dry easterly wind; slightly clouded
Mean temperature of the week, 9 deg. below the average.

State of the Weather at Chiswick during the last 21 years, for the ensuing week, ending June 23, 1849.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 17	74.0	51.6	62.8	14	0.86 in.	1	4	7	—	5	6	4	2
Mon. 18	72.2	51.7	61.9	14	0.25	2	2	2	2	3	5	5	2
Tues 19	71.4	50.4	60.8	12	0.37	—	3	1	2	3	—	10	6
Wed. 20	71.1	51.3	62.1	10	0.21	1	4	1	1	4	5	6	1
Thurs. 21	71.1	52.2	63.2	9	0.68	1	3	3	1	1	10	4	—
Friday 22	73.2	49.3	61.3	11	0.59	1	2	2	1	2	4	5	1
Satur. 23	73.0	49.9	61.4	6	0.14	1	1	2	1	3	9	4	1

The highest temperature during the above period occurred on the 19th and 23d, 1846—therm. 93 deg., and the lowest on the 22d, 1830, therm. 39 deg.

Notices to Correspondents.

ASPARAGUS KALE: *M D.* It has various names, as Egyptian, Jerusalem, and Buda Kale. It is a winter vegetable, and should be planted out in July and August, the second plantation being necessary only where late gatherings are required. Its treatment should be the same as that for winter Greens. We cannot recommend dealers.‡

BEANS: *J R M.* The leaves appear to be attacked in the same way as the plants mentioned on June 2.

BOOKS: *A Constant Sub.* We are unacquainted with the book. Herbert on Amaryllids contains good advice, but it is mixed up with much matter of no interest to cultivators. We can find no fungus in the earth contained in your letter. Lime water will do no harm.

BROCCOLI: *H.* Your Broccoli plants are affected by "club." Wood-ashes are largely used against it, and some have recommended nitrate of potash or saltpetre; but we are unacquainted with the effect of the latter, and would advise you to try it first on a small scale experimentally.‡

CAMELLIAS: *J W.* What sorts did we recommend you last? This information is necessary before we can give you a fresh list.‡

EMIGRATION: *J H B.* We should much advise you to take some Australian colony, in preference to the United States, in your state of health. New Zealand would be best in that respect.

FORCING PIT: *Omega.* Pitch the roof at an angle of from 40° to 45°. The pipes may be made to pass through a layer of shingle, if that arrangement suits you best.‡

INSECTS: *C J D.* The beetles which have attacked your Raspberry stems are the omnivorous weevil (Otiorynchus sulcatus), various remedies against which have been suggested in our recent answers to correspondents. The soft species are Polydrusus Mali, another kind of weevil. *W.*—*A Sub.* Your reptile is a Filaria or thread worm, the history of which is very obscure. Besides the vulgar notion that it is only a vivified horsehair, it is believed by many to turn to an eel. It is not poisonous. *W.*—*A Constant Sub.* Neither are wireworms. No. 1 is the larva of a Carabus, and No. 2 that of Staphylinus, and both are serviceable insects, devouring others. *W.*—*E H.* The insects which have attacked the Potato sets are the common millepede (Julus pulchellus). We should be glad to be informed if it really be the same insect which has eaten off the young shoots from the whole Potatoes rather than devouring the tuber. If so, your observation on the superiority of planting cut sets, the shoots of which are allowed by the insects to grow (they being engaged in devouring the set itself), is valuable.

LOBELIA: *Mrs O.* It is difficult to say from such fragments whether it is Erinus grandiflorus or not. It looks small, but it may improve in size as the weather becomes warmer.‡

MELON LEAVES: *J C.* It is impossible to say what ails them, not knowing all the circumstances connected with their growth. Personal inspection of the place in such cases is absolutely necessary.

MILDEW ON GRAPES: *G G.* Sulphur will kill it, if it is only applied early enough—that is the point.‡

MILLET SEED: *V A.* Apply to Messrs. Wrench and Sons, Lower Thames-street, London-bridge. The price given is quite correct if purchases are made wholesale.

MONSTERS: *Ely.* Thanks: we will examine them at leisure. The stamens appear to be replaced by carpels united by their edges.

NAMES OF PLANTS: *F N.* 1, Polystichum lobatum, or it may be P. aculeatum. It cannot be determined by the specimen, which is a young barren frond of the aculeatum group of Polystichum; 2 and 3, Lastrea dilatata. This puts on different appearances according to situation and age of the plant and frond; 4, Indeterminable from such a morsel. It is a young frond of a free veined Fern, and being British may be either a species of Lastrea, or Cyrtopteris, or Asplenium Filix-fœmina. If the plants of this and of No. 1 are in a position favourable to growth, they will be found to assume a very different character in the course of a few years. *S*—*J Moore.* It is Gardenia Stanleyana.—*J A.* All are varieties of Oncidium crispum, with the exception of the pink one, which belongs to O. sanguineum.—*J S*, 1, Some Bouvardia, indeterminable by the specimen; 2, Mimulus roseus.—*A D H.* Terribly withered. 1, Coronilla Emerus; 2, Andromeda axillaris; 3, Past examination; 4, Euonymus europæus; 5 Cratægus punctata.—*Sub.* Apparently Chloranthus brachystachys.—*W L S.* Gomphocarpus fruticosus.—*Amateur.* Such plants cannot be accurately named without flowers; it appears to be Jasminum revolutum, which may be procured anywhere.—32. Trientalis europæa, a very rare plant.—*F W L.* Elymus arenarius, not in flower, and Euphorbia Paralias.—*H J D.* Medicago maculata, an annual by no means a substitute for white Clover. The seeds are not sold in bulk that we know of.—*Inquirer* Cynosurus cristatus, and some indeterminable Sisyrinchium.—*R Vertue.* It is Tussac.—*R P C.* Salvia pratensis. Have you a root to spare?—*H L.* We are sorry to be obliged to say that we cannot undertake to name dried Canadian plants. Time is too valuable for such a task.—*E J H V* Cochlearia anglica and Juncus maritimus.—*P B.* 1, Vanda tricolor; 2, Vanda Roxburghii.—*A Z.* 1, Alopecurus geniculatus; 2, 9, and 10, All apparently Festuca ovina; 5, Poa trivialis; 4 and 5, Alopecurus pratensis; 6, Poa pratensis; 7, Cynosurus cristatus; 8, Anthoxanthemum odoratum.—*H W.* A beautiful variety of Oncidium crispum.—*No name, inclosed in a square paper box.* 1, Libertia formosa; 2, Iris variegata; 3, Iris sambucina; 4, Euphorbia amygdaloides. **** A few enquiries under this head must necessarily wait for an answer till another week.

OAK-APPLES: *A Sub.* This may not "be considered the natural fruit of the tree;" it is a diseased structure of the growing point of the leaf-buds, and is caused by the attack of an insect.

OXALIS: *H W.* It is the perennial one recommended by some of our correspondents for bedding.¶

PAXTON'S COTTAGER'S CALENDAR. The reprint is now ready, price 3*d.* each copy. Parties wishing to have copies for distribution among their tenantry, can be supplied at the rate of 25 copies for 5*s.*

PEACHES: *J B B.* They are attacked by mildew. Probably they are of some kind very liable to it, and had better be removed. All you can do is to dress them with sulphur. It is very curious, but well known, that Peaches have great constitutional differences as regards mildew.

PEACHES AND NECTARINES: *S L.* The following are selected for a succession on a south aspect, in rather a late situation. Peaches: 2 Grosse Mignonne, 2 Royal George, 2 Royal Charlotte, 3 Malta, 3 Noblesse, 3 Bellegarde, 2 Barrington, 1 Late Admirable. Nectarines: 2 Violette Hative, 2 Elruge, 1 Pitmaston Orange, 1 Balgowan.‖

PEAS: *F Z.* To preserve green Peas for winter use they should be dried in a cool oven, and hung up in paper bags.‡

PELARGONIUM LEAVES: *Sub.* We are unable to say what is the matter with them. They look as if they had been scorched. It is not usual to syringe the plants before the house is smoked. Nothing will be gained by cutting them down before the usual time.‡

RHODODENDRONS AND AZALEAS: *Susan.* They should be cut down in spring.‡

ROSES: *A Lady* and *A C.* Roses get into this deformed state every year, especially if there are sudden and excessive heats at the time when the buds are forming.—Calceolarias hereafter.

TOBACCO: *M S H.* English Tobacco, if well cured, will do for fumigation, and is often grown for that purpose. The cheap Tobacco bought in country shops is very often a mixture of Rhubarb leaves, Dock leaves, Safflower, and other rubbish.

VINE LEAVES: *F G H.* They are not diseased. The numerous small, pale green excrescences on their undersides are caused by growing them in a damp close atmosphere. They do no harm.‡

WATER PLANTS: *A S W.* Nymphæa alba, white; N. Kalmiana, yellow; N. cærulea, blue; and Villarsia nymphoides, yellow. Plant the above in the water, and in summer place a few pots of Agapanthus umbellatus round it. Winter the latter in your greenhouse.‡

MISC.: *J P.* We have only one of the Numbers, the others are out of print.—*D B.* We are not in possession of any designs for wicker flower stands. The only way to obtain them is to consult the basket makers—an ingenious race, very capable to act upon clear suggestions. *Peter Marisburgh.* Apricots and Peaches have been introduced into the Cape Colony from Europe. They are natives of Persia and Cashmere.—*X.* The inquiry respecting Pawlownia will be answered in a Leading Article next week.—*Ibor.* We have not before heard of Chanthus puniceus flowering out of doors at the height of 600 feet above the sea. It has frequently flowered in the open air in Cornwall.—*E St. J.* We are sorry to keep you in suspense, but answers although short may be the result of long consideration.—*W B.* Permit us to say you are unreasonable. If we were content to give random answers, you might have a reply instanter. But many enquiries, and your's among them, demand much consideration, for which is required TIME—a material of which we can easily believe that you have more than an abundance, but which is both scarce and valuable in London. You will now find an answer in the proper place.—*G P.* We have purchased the two Numbers you require to complete your set for 1*s.* each.

SEEDLING FLOWERS.

ANAGALLIS: *H W.* Fringed at the edges, but rather small; a pretty bedding variety.*

CALCEOLARIAS: *J B H.* Flowers all withered when received.—*A S.* All the blooms withered up when received, therefore indeterminable.*—*G S H.* No. 1, purple, marbled with pale yellow; size good, shape flat, outline indented. 2, crimson, marbled with yellow; size, shape, and outline only tolerable. 3, bright yellow, irregularly marked with dark crimson; rather small, and bad in outline. 4, yellow, spotted with shaded crimson; shape, outline, and size inferior, colours good. 5, shaded crimson, with a circular band of bright yellow; shape, size, and outline moderately good; eye rather large, colours good. 6, shaded dark purple, with pale yellow; shape flat, outline indented, size good, colours rather dull.*—*A H.* No. 1, yellow marbled with shaded crimson; shape and outline bad. 2, yellow, spotted with dull brown; shape and outline bad.*—*W H M.* No. 1, shaded brown, with an irregularly shaped yellow band near the eye, and otherwise marked with the same colour; outline, size, and colours good, shape rather flat, a very nice variety. 2, pale straw, marbled with deep purplish crimson; size tolerable, shape rather flat, outline indented, eye rather large, colours pretty. 4, bright yellow, thickly marbled with dark crimson; shape and size good, outline indented; a handsome variety. 5, straw colour, spotted with deep purple; shape and outline good, size middling. 6, pale yellow, irregularly spotted with shaded crimson; size and colours good, outline indented, shap rather flat; a good showy variety. 9, pale straw, irregularly marked with purplish crimson spots; shape and size tolerable, outline rather irregular; colours very pretty. 13, pale straw, spotted and speckled with light purple; size and shape middling, outline indented; a very nicely marked variety. 17, shaded brown, irregularly marked with bright yellow; shape flat, outline good, size rather small. 20, shaded deep purple, with a few irregular straw-coloured marks; shape tolerable, outline slightly indented; a very pretty variety, but rather small. 21, purplish crimson, irregularly marbled with straw colour; shape flat, outline bad.*—*J D.* No. 1, bright yellow, marbled with shaded chocolate-brown; a very nice variety. 2, crimson, slightly marbled with yellow; shape and size tolerably good, outline slightly indented. 3, bright yellow, irregularly marked or spotted with shaded brown; shape rather flat, and outline indented at the bottom; flowers large and showy. 4, shaded crimson, nicely marbled with bright yellow; size and shape good, outline slightly indented; a very pretty variety. 5, shaded brown, irregularly marked with yellow; size good, shape and outline defective. 6, flower faded. 7, brown, speckled and marbled with yellow near the outer edge; size good, shape and outline middling. 8, yellow, prettily spotted with shaded brown; shape, size, and outline good. 9, pale yellow, irregularly marbled with shaded crimson; shape and outline good; a nice showy variety. 10, yellow, thickly spotted with crimson; shape and outline defective. 11, white, with a few irregularly shaped purple spots; bad in shape and outline. 12, yellow, with large brown or purplish spots; small, and defective in shape and outline. 13, dark crimson, with irregular pale straw-coloured marks; small, and very interior.*

FUCHSIA: *J C.* Tube very pale blush, with bright rosy purple centre; texture, contrast of colours, and size good; sepals narrow and too pointed; a nice, delicate, waxy-looking variety.*

GLOXINIA: *J B H.* A pretty light purple, nicely marked in the inside.*

HEARTSEASE: *J S S.* Upper petals dark purple; centre ones violet or shaded blue, pale yellow near the centre; lower petals brownish purple with a yellow ring roung a dark crimson centre, and high yellow eye, size and marking good; texture coarse, shape tolerable, margin uneven and jagged.*

TURNIP SOWING.

THE LONDON MANURE COMPANY, having adapted the "URATE" more particularly for Turnips and all Root Crops can recommend it with the greatest confidence. It seldom fails, in the driest season, to secure a good plant, and to produce a heavy weight per acre. They would call attention to their Superphosphate of Lime, which is prepared with the greatest care, and sent out in a very fine, dry state, perfectly ready for use. The London Manure Company have made arrangements for a constant supply of Peruvian Guano, from the best cargoes, which they will deliver direct from the ship or importer's stores. Corn Manure, Nitrate of Soda, Fishery and Agricultural Salt, and every other Artificial Manure, on the lowest terms for a genuine article.

EDWARD PURSER, Secretary, 40, Bridge-street, Blackfriars.

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BY THE ONLY IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
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And by their Agents,
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To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:

CORN AND GRASS MANURE, ... per ton	£9	10	0
CLOVER MANURE ... ... ,,	8	0	0
TURNIP MANURE ... ... ,,	7	0	0
SUPERPHOSPHATE OF LIME ... ,,	7	0	0
SULPHURIC ACID AND COPROLITES ,,	5	0	0

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NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SULPHURIC ACID AND COPROLITE.
SODA ASH (WIREWORM DESTROYER).
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AGRICULTURAL SALT, and all other Manures of known value, may be had of
MARK FOTHERGILL, 201 A, Upper Thames-street, London.
A Treatise on Guano, Superphosphate of Lime, &c., will be forwarded on receipt of 8 postage stamps. Free to purchasers of Guano, &c.

BURBIDGE AND HEALY'S NEW BOILER.—The above is a modification of their Boiler (before published), modelled expressly for the large Conservatory, Chiswick Gardens, where it is now at work. From the observations B. and H. have been able to make, they are warranted in stating it to be the "Ne plus ultra" for warming large plant structures. As a proof, one charge of fuel has been kept burning for 48 hours without any addition, and one boiler of the size used is equal to warm 1500 feet of 4-inch pipe. They are also extensively put up at the Royal Botanic Gardens, Kew. Smaller boilers upon the same plan.
BURBIDGE and HEALY, 130, Fleet-street, London.

TO ORCHIDEA GROWERS.

BURBIDGE AND HEALY, 130, Fleet-street, respectfully call attention to their method of warming Orchidea Houses. They have had the honour of warming the Orchidea Houses at the undermentioned places:
Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick, additions to the House.
Also the Orchidea Houses of the following distinguished growers of this interesting class of plants
The Bishop of Winchester, Farnham Castle.
J. Lyons, Esq., Ladiston.
J. Warner, Esq, Hoddesdon.
Messrs. Henderson, Pine-apple Place.
J. Schroder, Esq, Stratford.
R. Hanbury, Esq, Poles, near Ware.
W. Webb, Esq, Clapham

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

EDENCH offers for sale Patent HOTHOUSES, which he will warrant far superior to all others, in every respect, viz., 1 Span Roof, 28 feet 6 ins. long, 13 feet 6 ins. wide, 40l.; Lean to, 28 feet 6 ins long, 16 feet 6 ins wide, 50l, with best timber and 16-ounce glass of large size Patent Lights for Pits, Frames, &c., requiring no paint, 7d., 8d., and 9d., per superficial foot, according to quantity, &c.
HEATING BY HOT WATER.

DO YOU BRUISE THE OATS YOU GIVE YOUR HORSES? No. Then you lose one bushel out of every three, and your Cattle do not do half so well.—MARY WEDLAKE AND CO.'S OAT BRUISING MILLS; superior Chaff Engines, simple in construction, doing from 30 to 300 bushels daily, and more. All respectable Coachmasters and Brewers use these Implements.—To be seen at 118, Fenchurch-street, opposite Mark-lane, close to the Blackwall Railway.
N.B. Linseed Mills, Bean Mills, and Malt Mills, in great variety.

The Agricultural Gazette.

SATURDAY, JUNE 16, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, June 19—Agricultural Society of England.
THURSDAY, — 21—Agricultural Imp. Society of Ireland.
TUESDAY, — 26—Agricultural Society of England.
THURSDAY, — 28—Agricultural Imp. Society of Ireland.
FARMERS' CLUB.—June 18: W. Hereford.

IN tracing the history of the CORN-TRADE LEGISLATION of this country, we had reached, in a former number, that point in the Third (or '*Im*porting') Period, when, suggested by the 'high' and the 'low' duty named in several former statutes, the idea became entertained of constructing a running scale of duties, rising and falling inversely with the home price of Corn shown by the general average of the kingdom. The failure of the act of 1815, and the equal ill-success of its pretended modification in 1823, through the more and more manifest inapplicability of the standards of Importation-price they had fixed, led naturally to the attempt to devise some method which, without absolutely restricting the trade to the home market, as they had done, (thereby substituting a *home-competition* more fatal than that shut out from abroad, in exact proportion to the more disastrous vicissitudes of Dearth and Superfluity operating in one climate and a confined area), would yet support the home markets at a certain, and, as it was hoped, a *steady* point of elevation above the continental prices. In spite of an unprecedented increase of Population and of Trade, since the termination of the War, the price of Corn, home-grown, had gone on irregularly, yet gradually, falling. The 'Bounty' of the last century had in vain afforded its experience of low prices produced by extended tillage at home. The same policy which had before suggested a premium upon Exportation, was now exemplified in the prohibition of Imports, and with precisely the same results. Land of a less fertile quality, forced into cultivation, added its contingent to the glut of a plentiful harvest, though at the lowest net return to the grower; and the same land was the first to fail, in a bad season. The average of *Profit* therefore *fell at a greater ratio than that of Price:* and the natural alternation of seasons upon a restricted area was further exaggerated by the doubly precarious yield of the inferior soils.

Accumulated elements of agricultural distress were thus inextricably inherent in the very principle of Restriction by which it had been attempted to relieve it. Had the new soil taken into tillage under the stimulant of a prohibitory duty been as fertile as that before in cultivation, uniformity of season and climate would still have been the sure cause of alternate glut and superabundance; but when inferior land is dragged into the conflict, it pulls down the profit of good land without adequate remuneration to its own cultivator, and aggravates the pressure of each vicissitude in turn.

Dimly as this inevitable and eternal principle was perceived, and reluctantly admitted, the necessity of some more lively and elastic medium of operation upon the Corn-trade was forced upon the attention of the Legislature. and a Bill was accordingly brought before Parliament, the details of which were framed by Mr. CANNING, the principle of which was that for every shilling per quarter that the home-price of Corn *rose*, the duty on the foreign article should *fall*, and vice-versâ. Under such a scheme the duty would, of necessity, at some point fall to its lowest, viz.: to the nominal duty of 1*s*. By Mr. CANNING'S Bill this point was the home-price of 70*s*.,—and for every shilling that the price fell below this, the duty was to rise *two* shillings. We shall have occasion presently to observe upon this feature. The Bill was however thrown out, and was the following year superseded by a similar scale compiled by Mr. CHARLES GRANT (Lord GLENELG) differing from the other in that the lowest point of duty did not obtain until the home-price reached 73*s*., and as the price declined from that point, the duty rose at first by steps of three or four shillings at a time, subsiding at last into a regular gradation of *one shilling*.

We subjoin a comparison of the two scales, the latter of which passed both Houses, and became the Corn Law of 1828.

Average Prices of Wheat.	Duty according to Mr. Canning's Bill.	Duty according to Mr. Grant's Bill, (the Corn-law of 1828).
73*s*. 0*d*	1*s* 0*d*.	1*s*. 0*d*.
72 0	1 0	2 8
71 0	1 0	6 8
70 0	1 0	10 8
69 0	2 0	13 8
68 0	4 0	16 8
67 0	6 0	18 8
66 0	8 0	20 8
65 0	10 0	21 8
64 0	12 0	22 8
63 0	14 0	23 8
62 0	16 0	24 8
61 0	18 0	25 8
60 0	20 0	26 8
59 0	22 0	27 8
58 0	24 0	28 8
57 0	26 0	29 8
56 0	28 0	30 8
55 0	30 0	31 8
54 0	32 0	32 8
53 0	34 0	33 8

Nothing could be more captivating, to the eye, than the system here attempted, by an ingenious little piece of mechanism, to fit a *compensation-balance* as it were upon Nature's tricks, and make the Seasons and the Markets keep 'the happy medium' by the very action of their own eternal oscillations! It reminds one of a certain surgical invention, a chair for refractory subjects, in which the more the poor patient struggled under the hands of the operator, the more tightly it fixed and bound him. But alas! for the perfection of human ingenuity,—the chair overdid its awful task, and a little kicking and struggling were after all discovered to be less fatal to the surgeon's skill, than the fit of apoplexy or lock-jaw that carried the sufferer beyond the need of it!

And so it proved with the really ingenious-looking adaptation of the sliding scale of Corn duties. It was soon discovered *in practice*, — but it was long before that large and potent majority of the community who entertain opinions but do not like the trouble of examining the grounds of them,—would understand, or therefore believe—that the sliding scale had 'one fault,'—it *wouldn't slide*. No sooner did the character of the Harvest begin to be known at Mark Lane and prices begin to rise, than every dealer and speculator began to know what *must happen* before another harvest could come round: and the lowering of the duty which 'according to the programme' was to induce him *to sell*, had — very improperly, no doubt, but somewhat naturally,—the exactly opposite effect of inducing him *to hold:* since the falling duty, especially as it rattled down towards the end, three or four shillings at a stride, was a compound premium on waiting—till the price was at its highest point and the duty down at zero. And on the other hand, when prices at home were beginning to *fall*, the increasing duty warned him to get out of stock as quickly as he could, before the evil grew worse, and thus induced him to pour his Corn upon a glutting market.

When the price of an article of limited production (like Wine, Fruits, Corn, and the other *Annuals* of Commerce, as they may be fairly called)—is rising, in a market confined to a certain area,—it is always a question of nice speculation to the dealer, whether to realize *now*, or wait till it gets higher. Loss of interest, warehouse-expense, and perishability of article, are the serious '*per-contras*' by which the native hue of Speculation is sicklied o'er with the pale cast of Prudence, and — under the silent influence of those beautiful Laws which press the action of individual self-interest into the unconscious service of the community—the *early sale* is suggested, and violent and rapid fluctuations of the public market, are as far as possible avoided. But throw into the scale *another* premium on the 'wait-a-little longer' side,—the wholesome equipoise is broken, poor Prudence kicks the beam at once, and the just and legitimate speculation of Trade is fevered into inveterate gambling. The calculation of the dealer, or factor, is now made upon a two-fold motive, the *rise* of the price and the *fall* of the duty, the disposition to *withhold* sales is double-locked; and if the duty fall even at a greater ratio than the price rises, as in Mr. CANNING'S Scale, and more violently still at the *upper end* of Lord GLENELG'S, all chance of intermediate action is paralysed,—the rounds of the ladder become purely fictitious, made to fit the eye, not the foot,—a fourth of the importers' stock might rot in the warehouse, the inducement still remained to 'hold on' to the last: and when at last the relief did come, the dealer and the consumer might each say, in the words of the starved Prelate,—'It comes too late!'

But how fared The Farmer, whose interest might seem to lie on the obverse side of this cruel theory? —for nothing is so cruel as a Theory, and nothing so *theoretic* as the attempt to *re*-regulate Natural Law (of which the laws of Commerce are a part), by the leading-strings—the 'withy-bands'—of financial ingenuity. His tale is briefly told. Under the operation of a law which seemed to promise steadiness and security, and which, it cannot be denied, gave to the eye every promise of such results, and every inducement to extended tillage, a few good harvests, immediately succeeding the passing of the Act, brought down the price of Corn, at the close of the year 1835, to 35*s*. 4*d*. the quarter. The distressed condition of the agriculturists was such as to be twice (in 1833 and 1836) noticed in the Royal Speech on the opening of Parliament, and Select Committees were appointed, in both years, to enquire into their state. The provincial newspapers were crowded with sales of Farming-stock, which found unwilling purchasers at ruinous prices. Nothing was heard *then* of 'quantity making up for price;' nor is it true that quantity can make up for price where it is caused not by reduced cost of production but by the pressure of inferior soils into the scramble, under the prospect of high prices which alone could have left a profit on their cultivation. In three more years, however, (in January, 1839), the price had risen again to 81*s*., making a fluctuation of no less than 129 per cent! Yet such was the extent to which all calculation was baffled by the changing duties, that less than fourteen months previously (Nov. 25th, 1837), 900 quarters of bonded corn were destroyed (being thrown into the Thames by permission of the Board of Customs), the loss of the article being a less sacrifice to the Importer than the payment of the duty.

A further modification of the law now became imminent; with the consideration of which we shall proceed hereafter. *H.*

A SOUTH HAMPSHIRE FARM.

a. Extent, 124 acres.

b. Position.—Labour is generally plentiful at all seasons, although it has been more scarce during the construction of railways. It is well situated with regard to markets, both for corn and cattle, and within an easy distance of a large town.

c. Soil.—The arable land is for the most part hilly, and the soil differs much in every field, the upper levels being sand loam upon brick earth; the brows or hill sides clay loam upon stiff clay; and the lower levels hazel loam, of a good depth, upon brick earth; this land has required a great deal of draining, which has been done during the last 20 years. The pastures are a mixed soil and very poor, but much improved, by draining and otherwise, within the last seven years.

d. Arable and Pasture land.—94 acres arable land, 20 acres permanent meadow and pasture land, and 6 acres salt marsh.

e Grass Land.—About 7 acres of meadow land, mown for hay each year, the produce 1½ tons per acre. The portion of arable land mown for hay yearly is seeded alternately once in eight years, with Trefoil and white Clover, and with white and red Clover, in either case without Rye Grass; the produce being 1½ ton per acre. The red Clover always cut twice, second cut produce, 1 ton per acre.

f. The Rotation adopted on this farm, from the year 1833 to the year 1844, has been strictly the four-course shift, viz., 1st year Wheat, out of Clover lea once ploughed, and manured with farm-yard dung; 2d year Turnips, sometimes manured with town dung, at other times with bones, and ashes saturated with night-soil; 3d year Barley and Oats; 4th year Clover, cut for hay. The average produce, during the above period, being—Wheat, 32 bushels per acre; Barley, 36 ditto; Oats, 50 ditto; Hay 1½ ton per acre: Swedes and Turnips, 16 tons per acre. The hay and Turnips being all consumed by sheep and cattle upon the farm; the corn crops all sold.

This farm, since the year 1844, has been cultivated under a mixed and irregular system, viz.:

Acres.	ROTATION 1845.
20	Wheat after Clover, 30 bushels per acre, much blighted
3	Ditto after Swedes, fed off, 40 bushels per acre
12	Potatoes after Swedes, fed off, 36 bushels per acre
7	Barley after Swedes, fed off, 36 bushels per acre, seeded to White Clover
8	Oats after Swedes, fed off, 52 bushels per acre, seeded to Red Clover
2	Beans after Turnips, fed off, 44 bushels per acre
3	Peas after Turnips, fed off, 12 bushels per acre, much blighted
5	Tares and Trifolium after Wheat, cut for soiling cattle and sheep, and sown with Turnips
13	Clover cut for hay twice, produce 2½ tons per acre, and fed by sheep with Turnip crop on the land
2	Clover fed off and sown with Swedes, 19 tons per acre, fed off
19	Swedes after Wheat fallowed, 21 tons per acre, fed off
94	acres

Acres.	ROTATION 1846.
12	Wheat after Potatoes, 36 bushels per acre, sown to stubble Turnips, good crop
7	Wheat after Beans, Peas, and Swedes, 36 bushels per acre
15	Wheat after Clover and Tares, 36 bushels per acre
5	Wheat after Swedes, spring sown, 30 bushels per acre, and seeded to White Clover
3	Wheat after Turnips, spring sown, 36 bushels per acre, and seeded to Red Clover
4	Barley after Swedes, 38 bushels per acre, seeded to Red Clover
2	Oats after Swedes, 56 bushels per acre, seeded to Red Clover
4½	Turnips after Swedes, fed off with hay
2½	Swede seed much blighted, sown with late Turnip, good crop
3	Tares and Trifolium, cut for soiling cattle, sown with Swedes, 15 tons per acre
15	Clover cut for hay, 1½ ton per acre
20	Swedes after Wheat fallowed, 20 tons per acre, fed off with hay
94	acres

Acres.	ROTATION, 1847.
4½	Wheat, after second crop Turnips, fed off with hay, 41 bushels per acre.
15	Wheat after Clover, estimated at 40 bushels per acre; seeded to Italian Rye-grass.
5½	Wheat after Swedes fed off, spring sown, 41 bushels per acre, seeded to red Clover.
4	Talavera Wheat after Swedes fed off, spring sown, 20 bushels per acre; seeded to red Clover.
7½	Barley after Swedes fed off, 40 bushels per acre; seeded to white Clover.
3	Barley after Wheat, stubble Turnips fed off between, 40 bushels per acre; sown to Tares.
4	Oats after Wheat, stubble Turnips fed off between, 72 bushels per acre; sown to Tares and Trifolium.
5	Peas after Wheat, stubble Turnips fed off between, 28 bushels per acre.
2½	Beans after late Turnips fed off, crop much blighted.
8	Swedes after Swedes fed off, with hay, produce 22 tons per acre, sown to Wheat.
15	Swedes after Wheat fallowed, 22 tons per acre.
15	Clover, mown for hay, produce 1½ tons per acre.
7	Swedes after Tares and Trifolium fed off, and some cut for soiling cattle, crop 15 tons per acre.
94	acres.

Acres.	ROTATION FOR 1848.
15	Wheat after Clover, sown in October.
8	Wheat after Swedes, two successive crops fed off with hay, sown in December and January.
5	Wheat after Peas, sown in October; seeded to red Clover.
2	Wheat after Beans, sown in October.
6	Wheat after Swedes, to be sown in February; seeded to red Clover.
9	Oats after Swedes, to be sown in March; seeded to white Clover.
5	Barley after Wheat, stubble Turnips fed off between, to be sown in March.
5	Swedes after Swedes, fed off with hay, then sown to Wheat.
2	Early Potatoes after Swedes, fed off with hay, late Turnips; then sown to Wheat.
16	Swedes after Wheat, fallowed.
7	Swedes after Tares and Trifolium, some fed and some cut for soiling cattle.
6	Red Clover, to be cut for hay.
9	White Clover, to be cut for hay.
94	acres.

g. The cost of manure purchased, on the average of the last five years, has been 10*l.* per year, over and above the value of straw sold, for which the farm is well situated, selling on the average at 50*s.* per ton, in which case every ton of straw sold manures an acre of land for Turnips.

h. Labour: the quantity of animal and the quantity of manual labour employed, with the wages prevalent in the neighbourhood. Four cart-horses are kept employed, and also a working nag horse; five labourers are employed, including carter and shepherd, four boys, and two women, with two extra labourers in Turnip hoeing and harvest. The wages are, to labourers 10*s.* per week, carter and shepherd, 2*s.* extra, boys and women 4*s.* per week.

i. The rental, 35*s.* per acre.

k. The number and kind of live stock kept.—The number of live stock kept on an average of the last four years has been four milch cows, two heifers, two breeding sows, four store pigs sold fat in December, three southdown rams, 60 horned ewes sold fat, 160 horned ewes to bring lambs, rearing on an average 200 lambs sold fat, 100 of the ewes which bring lambs sold fat immediately after their lambs are sold, the remaining 60 ewes kept for stock to bring lambs the following season. *J. B.*

Home Correspondence.

Twin-headed Wheat (p. 363).—I possess a specimen exactly like the one figured by Mr. Booth. It was grown near Stowmarket two or three years ago, and the person who met with it carefully planted every grain, in the hope of reproducing the monstrosity. As might have been anticipated, he was unsuccessful; though there seems to be no absolute rule why a predisposition to produce twin ears may not be continued through the seed. The monstrosity alluded to as "Triticum multiplici spici" arises from a different cause, viz., from a predisposition to extend the axis of the spikelets, and experience has shown us (from the days of Gerarde to the present hour), that such a predisposition may become hereditary. This latter monstrosity is the well known form called "Egyptian Wheat," or "Ble de Miracle," and has of late years crept into the corn market under the misnomer of "Mummy Wheat," through a misapprehension of its origin, already noticed in the *Gardeners' Chronicle* for 1846, p. 757. *J. S. Henslow, Hitcham, June* 11.

High Farming Profitable.—There is no longer any doubt that farming is most profitably carried on where what is termed high farming is practised, and the foundation of high farming is keeping much live stock, and keeping it well. But the greatest difficulty is to bring up the fertility of a farm to a higher standard than that which exists; and herein the aid afforded by guano and other artificial manures is most important. They give the first start, grow the first good crop of roots, on which the first increase of stock, and the commencement of increased fertility will depend. At the Chulmleigh Agricultural Association, Mr. Turner, of Barton, a first-rate farmer, spoke of his own use of artificial manures as having enabled him to adopt high farming. He said—"In his youth he began to think that if his predecessor grew 18 bushels of Wheat per acre, there was no reason why he should not produce 25; and if he kept 200 sheep on the estate, he had the vanity to think he (the speaker) could keep 300. But how was this to be accomplished? Why by the great secret of all good farming, the grand principle of all good farmers, that of growing a greater quantity of Turnips, Mangold Wurzel, and green crops, and being thus enabled to fatten a greater quantity of sheep and cattle. That was the great secret of farming; and if any one put that into practice and did not turn out a successful farmer, he should be disappointed. Perhaps some would ask how he could grow Turnips, and would tell him they could not be grown on some particular soils. He begged their pardon; Turnips could be grown on 19-20ths of the land in the county, and in 9-10ths they would be a profitable crop. In answer to the question, how they could be grown? he would say, make a good clean early fallow, not stirring it about when they ought to be putting in the Turnips. After they had got in the seed, and by the help of guano and other artificial manures, and by expending 5*l.* an acre, succeeded in raising the plant—for heaven's sake let them not spare another extra 5*s.* in hoeing them. This had come so much within his knowledge during the past season, that he could not help speaking of it; he had seen men expending their 4*l.* or 5*l.* per acre in producing a plant of Turnips, and letting them get to rack and ruin rather than spend 5*s.* in hoeing them. What was the consequence? There was no season too bad, whatever might be said, to clean the Turnips—that having produced the plant, they let the land get full of rubbish, twitch, and weed of all descriptions, and instead of 15 tons of Turnips per acre, they had got 10; added to which the land was full of rubbish and weeds." He thus spoke of his use of guano:—"Guano was a godsend, a blessing conferred on farming. When the Legislature passed that wicked act to rob the farmer of his rights, then in came the guano. He knew its value well, and the facilities of getting it; he had given 30*l.* per ton for it, and the best could now be bought for 19*l.* The best crops of Turnips he had grown for several years he had obtained this year from land manured with 2½ cwt. of Peruvian guano, and a few bags of ashes per acre. The guano must not on any account be all drilled in; he had paid for his experience on this point; they should only drill about 1 cwt. per acre, with a few bags of ashes, sow the remainder broadcast, and harrow it altogether. In his experience, guano was the best manure ever put into the land, except stall dung; and he ought to say a good word for it, he had got a good deal of money by it." *Economist.*

Practice with Science.—Amongst the progressive improvements of modern times, science has displayed its inventive faculties in the dibbling of seed. This mode of sowing used to be chiefly confined to garden culture, as a mere act of necessity, where the plough could not reach. It was, however, even then commonly practised in Norfolk for the sowing of Peas. In Middlesex, the Beans were frequently dibbled in rows, and the Peas put in by hand-hoes. In light sandy soils dibbling may answer well, and in all weathers; but where the land has become consolidated from its natural tenacity, with continued wet superadded, it may be doubted whether the dibbling process will prove successful, as the dibble will form a cup for the water, in which the seed will be liable to rot. The recommendations to dibbling may be thus enumerated:—1. That only one ploughing, in some cases, is necessary. 2. That the seed is regularly deposited in the heart of the flag, where it feeds on the vegetable matter turned underneath, without any assistance from the subsoil. 3. That in common with the other branches of row culture, it may receive all the advantages of hoeing. 4. That there is a great saving of human food from the smaller quantity of seed used. (New Husbandry, p. 175) Although it has been stated that in particular cases one ploughing is only necessary; yet, in no case is it so necessary to have the soil finely pulverised as in dibbling. The advantages named are powerful recommendations in its favour, yet the obstacles to carrying the practice into execution have been so great, that the practice has not corresponded with its merits. The process itself, after the old method, was slow, uncertain, and expensive; women and children were often employed in the work, who performed it hastily or lazily; and thus the business was slighted and imperfectly performed. It is for the present day to overcome these obstacles, and, by the aid of adequate machinery, to obviate the inadequacy and expense of hard labour. The late inventions relating to it are so useful and complete, it may become a question whether even the drill system may not in a great measure be superseded by it. It is by these inventions that Wheat can be grown with greater regularity and exactness than by any other method. There has long been a complaint of a failure in the growing of Mangold. By the newly invented implements much of this difficulty has been mastered. There is also another mode of raising a crop, that of transplanting, which has not as yet been tried extensively, but which is highly deserving of notice. It has long been the custom to raise Swedes in this way, and if the extent be not very great, the method may answer well; as in comparing those grown from being sown on the spot with those transplanted, there appears little difference in their size and quality. The transplanting system may seem more slow and expensive, but if a dibble be used, with a cross bar having four or five prongs at their proper distances, the labour will not be so great. The great advantage of this method is, that the work may be going on at a much later season than the other. If the seeds are sown in a garden or any clean piece of ground the latter part of April, the planting out need not take place until about the end of June, or even later. This is a great advantage, should the weather or other circumstances have thrown the work of the farm backwards. Besides this, there is less danger from the fly, as the seed will generally have been sown before the summer heats will have set in for good. A trial has also been known to have been made, and that a successful one, of growing Wheat by transplanting. This was done by a nobleman not far from town, and the produce from a single peck of seed was from 7 to 8 quarters an acre. All these kinds of experiments by amateur agriculturists do good, as in some cases they show the capabilities of soil, of which we are profoundly ignorant at present, and, in others, they pioneer the way to an improved practice. They will do good, if they be the means of banishing for ever the miserable old broadcasting method, and introduce the Tullian system of tillage. If more proofs were wanting of the difference betwixt the two, they might be visibly obtained by examining two pieces of Wheat in the same field, to which I have already alluded. The drilled part, properly worked with Mr. Garrett's admirable horse-hoe, and followed some time after by Dr. Newington's excellent hoe-cultivator, sends forth a vigorous plant, proudly, as it were, rising aloft; whilst the other, in the month of May, seemed as if it was looking around it, and considering which way it should go. This description may have rather a poetical character about it, and certainly brought me back (no bad recollection at my time of life), to my boyish days, when I used to admire those noble lines of the heathen poet, which compared the difference betwixt the structure of man and that of the brute creation; the one with sublime countenance and head erect looking to heaven, the other stooping to earth or creeping on the ground. *Law Rawstorne.*

High Farming.—I have derived much pleasure in perusing the pamphlet of James Caird, farmer, Baldoon,

upon high farming, and I agree with him generally, that with an extensive manufacture of home animal manure in suitable premises, and with the application of a larger capital, applied with the same intelligence to the growth of corn as to mercantile affairs, tillage ought to give a fair remuneration, and nothing else will keep pace with cheap food and absence of protection. It is folly to talk of reduction of rents to any great extent on the old system of low farming, for many of that class could scarcely live were the freehold given to the occupier of the soil; whereas the landlord, by improving the homestead, to give facilities for housing a larger number of cattle, also by lending the tenant a capital at interest, it would lead to rearing more cattle, purchasing more artificial manure, raising more green crops, and materially enhancing the average yield of Wheat, Barley, and Oats. Mr. Caird gives a plan of the premises, and a lucid description of the general mode of raising green crops, and particularly in the spring of the year, by Mr. Dickenson's system of raising repeated crops of Italian Grass by liquid manure watering, which, with artificial food consumed upon the farm at Auchness, in Wigtonshire, of Mr. David M'Culloch, who, it appears, has fatted 130 cattle and 150 sheep, in one year, upon a farm of about 250 acres by stall feeding, in covered buildings (for cattle and manure), and after detailing the contrast of his high farming with the former tenant's low farming, shows the following results :

Old Farming.				High Farming.			
	For one Year.						
Paid for Labour ..	£142	8	0	Paid for Labour ...	£427	3	8
Rent	152	0	0	Rent	262	0	0
Paid for Manure, none.				Paid for Manure...	526	0	0
	294	8	0		1215	3	8
Total value of the crop, &c., under the old system	642	0	0	Total value of the stock and crop, under high farming	2518	0	0

Thus (upon a lease of 19 years) in high farming, although the capital expended is four times as much in the aggregate for labour, rent, and manure, as under the old system, the produce is quadrupled in proportion, so that both landlord and tenants advantageously profit by these enormously increased returns. I am, however, disappointed (as an amateur farmer of about 100 acres) to find that the cost of cattle, &c., is not stated, without which it is impossible for any one to calculate the profit; and without profit, who would embark capital in high farming? Except remuneration for increased capital and industry, is shown more in detail (especially when the pamphlet has reached its 3d edition), one is too apt uncharitably to assume that there may be a reason for keeping back the essential information, viz., the complete items of all cost, expenditure for animals, artificial food, and the prices which the cattle, grain, &c., have realised. I am quite disposed to follow Mr. M'Culloch's practice, although box-feeding might be substituted (as adopted by the Rev. J. C. Blair Warren, of Horksley Hall, near Colchester; by Mr. Mechi, Mr. Horner, and many other Essex high farmers) when I find his figures supply the incentive to remunerative returns, and without which no tenant of business habits will be led into an extensive outlay of capital. Perhaps the author of this otherwise interesting pamphlet (the extensive perusal of which I strongly recommend) may see these remarks, and supply, through the medium of your columns, the required details. *Apsley Pellatt, Staines, June 7.*

Mangold Wurzel.—I have just put in 2½ acres of Mangold Wurzel in rather a novel way, which I think so good and economical, that it might perhaps suit you to publish it: 6 cwt. of Peruvian guano being sown broadcast, the field was ridged up in the usual way; then having made a mixture of 4 cwt. of superphosphate, 7 wheelbarrows full of coal-ashes, and 7 ditto of old mortar from a stone wall lately pulled down, I set to work to dibble in the seed with the following hands: 2 men to dibble, 2 women to drop the seed, 2 women to drop the mixture, of which I allowed a teacupful to five holes, and 1 man to cover all with a garden rake. This would not have been necessary, but a good deal of rain having fallen, the ground was too wet to roll. The dibbles I used were of blunt form, about the size of a small flower-pot at bottom. The 2½ acres were thus sown and manured in one day, using 5½ lbs. of seed, at the following expence :

3 men, at 1*s.* 6*d.*	...	4*s.* 6*d.*
4 women, at 6*d.*	...	2 0
1 gallon of beer, at 1*s.* 4*d.*	...	1 4
Total	...	7 10

I intend to put in my Swedes the same way. *W. C., Mawgar, Cornwall.*

A Small Dairy Farm.—The article of "J. M." (in May 19) on this subject, does not convey any satisfactory information beyond the gross amount of milk produced, and the rent paid, which with the taxes appear to amount to more than 5*l.* per acre. Are we to assume that 20 cows in profit (or in a milking state) is the average number kept, some calves surely were produced, and some young stock purchased; deductions ought also to be made for accidents, as well as allowance for old stock sold, or expense of fattening them stated. So with horses; do they eat no corn, or is their keep and litter furnished out of the produce of "not 40 acres?" And again, with the labourers, as we may presume there is no arable land, do the two men perform all the mowing, hay-making, repairing, marketing, doctoring, and other operations required? Does the manure pay for the sawdust, and have the cattle no other food than grains, meal, and hay? What range of Grass have they, and what becomes of the cream, butter, and cheese, which must occasionally be made, unless this dairy farm is confined to a wholesale supply of milk only? I may be wrong, but I imagine if the details were complete, they would only show how necessary to the profitable occupation of such a farm, it would be to have a portion of it arable. Eight acres might be sufficient, half for grain and straw, the other half for a variety of roots. How valuable then would be the manure, how much lighter would be the expence of horses, how much better would the labourers (and a greater number) be employed! *J. W., Peterborough.*

The case of Ireland.—A circumstance connected with the famine in Ireland, and noticed in the *Times* newspaper of the 23d of May, is of such a revolting nature, it would be impossible to believe it, was it not authenticated by a clergyman of the church of England. I will not shock your readers by a repetition of the horrid recital, but call their attention to a remedy which may be the means (by the blessing of God) of saving hundreds of lives during the next winter. In England we can sow Turnips and Cabbages till the end of June, with the prospect of a crop; in Ireland they might be put in later with every chance of success, the climate being milder. The value of all sorts of Turnips is well known; raw they will feed cattle, sheep, and pigs, and when boiled and mixed with any description of meal, they become excellent food for human beings; and so do Cabbages. If advantage is not taken of this glorious weather to cultivate the idle land, those who neglect their duty must not say that Providence has brought the affliction upon them, without adding, it is a just judgment for their neglect of warnings and utter disregard of His commands, who says, "Man must till the ground." To witness men bringing certain destruction upon themselves, when it is in their power to alleviate a visitation, desolating a luxuriant country, is beyond the comprehension of any sentient being. Flagrant instances of idleness come under daily observation, but then there is a prospect, where the great majority are well off, of scraping sufficient together to allay the cravings of hunger. The case of the Irish is different, they will not put a hand to the spade, although their obstinacy and folly call down upon their devoted heads inevitable destruction. The Potato disease has existed for some years, and will in all probability continue, but no other grain or vegetable has failed. Is it not therefore tempting a beneficent God, still to rely for subsistence on a root which He in His wisdom has smitten with decay? The want of sense and common prudence as a guide to those who are suffering in Ireland seems something marvellous. In this country if a crop fails we immediately substitute another, so as not to allow the land to lie idle. However, in some districts of our sister country there exists not the slightest idea of deviating from the usual routine, although the practice of it brings death in its most excruciating form—starvation. The Parsnip is more nutritious than the Potato, and more hardy. The former may remain in the ground during the severest weather, and may be dug up as required for use, the latter must be stored in October. Again, raw Parsnips will fatten all animals, and make excellent bacon and pork. I speak from experience. What hundreds of acres of Turnips might be sown in Ireland during the next six weeks, and what thousands and tens of thousands of Cabbages might be planted out before August! With these facts before their eyes will men refuse to assist themselves? If they do, they can hope for no aid from above. *Falcon.*

Steep v. Level Land.—In a lecture on land surveying by a French professor of mathematics, at the college of Blois, the lecturer informed his audience that in the purchase of hilly or uneven land, its extent is estimated or measured, not according to the area of the surface, but according to the area of its horizontal base; because, he added, "it is a well known fact in agriculture, that no more can be grown on a hill or slope than on a horizontal piece of land equal to its base." Now, as this "well-known fact" is not only not well known, but even strongly, though in my opinion absurdly disputed amongst many of our Yorkshire farmers, perhaps you will be kind enough to give it publicity in your next number. Perhaps of moss and other low or creeping plants, a greater quantity may be grown on a slope than on a horizontal piece of land equal to its base; but with regard to vertically growing plants, such as high hay-grass, corn, or trees, it appears to me that the French professor was perfectly correct. [And so it does to us.] *Agricola.*

Small Farm.—I have a small farm of 50 acres, half Grass, the remainder arable. On the arable I manage to get three-fourths in white crops by high manuring and the unsparing use of the hoe. My stock consists of six cows, a bull (who does the work of two horses), three horses, three ponies, and three breeding sows. A liquid manure tank, with an old barrel on a pair of old gig wheels drawn by my bull, dresses the greater part of the Grass land in a way that astonishes my neighbours, and gives me four good cuttings of Italian Rye-grass each year. I shall in a day or two begin cutting for the second time a piece which was cut about three weeks since, and immediately well dressed from the tank. My implements consist of a plough, a pair of harrows, Uley cultivator, three carts, iron roller, and plenty of Dr. Yellowley's forks, which I put into the hands of my poor neighbours when work is scarce, and I then use my plough horses in my car or carriage to visit friends. This plan I shall adopt with my Vetches. As fast as they come off, the bull takes on manure, which is dug in, and Turnips dibbled in at wide intervals, first making for each a snug bed to lie on of a pinch of guano mixed with ashes soaked in tank liquid. What I want most is a small drill for general purposes, which will sow Wheat or Beans at wide intervals, to allow of the free use of the hoe. Can you recommend me anything of the sort, or tell me where to look at one? *Tyro.* [The publication of your request may probably help you.]

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House, in Hanover-square, on Tuesday last, the 12th of June; present, the Earl of CHICHESTER, President, in the Chair; Lord Camoys, Hon. R. H. Clive, M. P., Hon. E. Lawley, Sir M. W. Ridley, Bart., Sir Francis Lawley, Bart., Mr. Raymond Barker, Mr. Freuch Burke, Mr. Burton, jun., Dr. Calvert, Capt. Stanley Carr, Colonel Challoner, Mr. Copeman, Mr. G. Dean, Mr. Dyer, Mr. Foley, M.P., Mr. Fuller, M.P., Mr. Brandreth Gibbs, Mr. Hillyard, Mr. Hyett, Rev. C. E. Keene, Mr. Kinder, Mr. Marshall, M.P., Mr. Milward, Mr. C. E. Overman, Mr. Rodwell, Prof. Sewell, Mr. Shelley, Mr. Slaney, M.P., Mr. Stansfield, M.P., Mr. T. Turner, Prof. Way, Mr. B. Webster, and Mr. Woolryche Whitmore.

Lord William Pawlett, of Downham Hall, near Brandon, was elected a Governor of the Society.

The following new members were elected :

Buller, Sir J. B. Yarde, Bt., M.P., Lupton, Torquay, Devon
Winthrop, Rev. Benjamin, Clifton, Bristol
Hughes, Alfred, Stowe Park, Bungay, Suffolk
Buller, John Yarde, Churston Court, Torquay, Devon
Allen, B. Haigh, Longcroftz Hall, Lichfield, Staffordshire
Dewing, Augustus, Ash Wicken, Lynn Regis
Domett, Samuel, Westhay, Axminster, Devon
Curl, Jacob, East Winch, Lynn Regis
Hole, William, Haunaford, Barnstaple, Devon
Brandford, W. W., Gedwick, Litcham, Norfolk
Pitman, James S., Dunchideock House, Exeter
Freeman, W., Helgham Grove, Norwich
Fulford, Baldwin, Great Fulford, Exeter
Ingle, Thomas, M.D., Wood Hall, Bungay, Norfolk
Sillifant, John, Coombe, Crediton, Devon
Parkinson, Thomas, Ley Fields, Newark, Nottinghamshire
Boyd, Thomas, Holt, Norfolk
Woodcock, John G., Briston, Dereham, Norfolk
Davy, Joseph, Kelling, Holt, Norfolk [Melton, Dav.
Loveband, John, Parsonage, Bishop's-nympton, South Pane, John Denton, Risby, Bury St. Edmund's

The names of 16 candidates for election at the next meeting were then read.

WHEAT AND MAIZE.—The Hon. H. W. WILSON, of Keythorpe Hall, Leicestershire, transmitted to the Council his gardener's report of the trial he had made of the last Australian Wheat, presented to the Society by Lady Franklin and Lieut. Simpkinson. The Wheat was sown on the 21st of May in two seed pans, and placed in a Melon-house. They came up on the 25th, and were planted out on the 30th. The height of the plants was 7 inches, and their number 478. One half of the seed was steeped in warm water, but did not come up so early as the unsteeped seed by a day. Mr. Rodwell had obtained most beautiful Wheat directly from Australia, and had cultivated it on his estate in Suffolk for two years with success; but he found it not to be adapted to our climate, but to be subject to gradual deterioration in quality.—Sir M. W. Ridley had grown Van Dieman's Land Wheat in Northumberland on strong flat clay land near the coast; and as the crops had proved fine ones and the seed might be regarded in some measure as acclimatised, he would take an opportunity, at a future Council, of presenting a supply of it for distribution among the members.—Dr. Calvert had cultivated the Adelaide Wheat for two years in the North Riding of Yorkshire, but, although it came early to maturity, the ears were short, the crop scanty, and the quality was found to become deteriorated, as in the case of Mr. Rodwell's.—Colonel Challoner had this year the finest crop of spring Talavera Wheat that he had ever seen, from seed which had been grown at the Horticultural Society's Gardens under treatment with sulphate of ammonia, and sown in the second week in February.—Mr. Rodwell had been a cultivator of Talavera Wheat for 25 years; he had found the present season more favourable to spring Wheats than any former one within his experience, especially to the Talavera variety.—Mr. Slaney, M.P., took that opportunity of remarking, that all the instances he had heard of the trial of the Forty-day Maize, which formed the subject of discussion at a former meeting of the Council, were successful. The seed, in every case, was growing and doing well, and giving a fair promise of fulfilling what had been predicated of it. He particularly alluded to one of the trials made in St. James's Park.—Mr. Raymond Barker had planted his Forty-day Maize on the 22d of May, on a chalk bank, and found that it vegetated almost immediately.—The Hon. R. H. Clive, M.P., thought the whole question of the successful cultivation of this variety of grain was one of economy, and that it was most essential to ascertain, whether, if found susceptible of cultivation in this country, it would furnish a cheaper and better crop than other grain.—The Earl of Chichester had spent two summers in the valleys of the Pyrenees, in which this variety of Maize was stated to have been raised, and introduced from thence for trial in the southern districts of England. At the time of his sojourn in that part of the Continent, he was not aware that the variety of Maize in question was grown there, having been subsequently, he believed, cultivated by Mr. Keene, who had brought it under the notice of the Council. He had himself found the climate of the Pyrenees anything but a cold one, or similar to our own; and the soil, in all the valleys he had visited, was most fertile. Until the introduction of

this Forty-day Maize, the Indian Corn of Cobbett was the variety with which his Lordship was best acquainted; and he had never found any difficulty in ripening it, nor was there any trouble in making it do well in the garden; the difficulty he had found was to get soil on the farm that would prove sufficiently good for it.

AMERICAN PLOUGHS.—Mr. LOVE, of Naseby Manor, Northamptonshire, transmitted to the Council the report of his trials of the American ploughs presented to the Society, in comparison with the best ploughs of our own country. On the motion of Mr. Shelley, the thanks of the Council were ordered to Mr. Love for the favour of this report, and Colonel Challoner, as Steward of the department of Field Implements, at the Norwich meeting, was requested to take measures for the further trial of these ploughs on that occasion, provided proper shares could be found adapted to their use.

POTATOES.—Mr. PENTLAND, a member of the Society residing at Black Hall, Drogheda, Ireland, informed the Council that the crops in that district looked most promising, no Potato disease having, at the date of his communication (June 8), made its appearance; but that a curious insect had attacked the Beech leaves. The Earl of Chichester remarked that his Vines had become diseased in the same manner as in former years, previous to the occurrence of the Potato blight.—Prof. Way reported the opinion of Prof. Lindley that there was no doubt, from external premonitory evidences, that the Potato disease would again prevail this year.—Mr. Wolryche Whitmore, of Dudmaston, near Bridgenorth, Shropshire, related to the Council the success with which he had grown Potatoes on very poor light land, that had never under any management produced a good crop of corn. The first trial in 1847 was so decidedly successful, that in 1848, he was induced to plant 28 acres of the same land with Potatoes in the same way. The Potatoes were a mixture of various sorts, the small ones being planted whole, and the larger one cut up into sets. They were planted about the end of February or the beginning of March, and manured in the drills with half-inch bone, applied in different doses to different parts of the land, the smallest quantity being at the rate of about three quarters per acre. The difference in the crop, in consequence of this difference in the application of bone-manure, was very striking; the highly manured land yielding 125 bags of Potatoes, the other portions only 80 bags. The tops of the Potato plants were affected in July with disease; but, upon taking up the crop, not above 5 per cent. were found to be seriously affected. The whole crop when sold realised 600*l*. An opinion was entertained, that the light nature and poor quality of the soil, and the gradual manner in which the powerful bone-manure would be supplied to the tubers, were circumstances that might probably account for this successful mode of cultivation.—The Hon. R. H. Clive, M.P., was last autumn in Mr. Whitmore's neighbourhood when he inspected the crop of Potatoes to which he had referred, and he never saw a more luxuriant growth, or a finer produce, than on that occasion. That instance of successful cultivation on bad light soil, and the result of the example set, by the Guardians of the Poor near Mr. Whitmore's residence, of the industrial employment of the children of the poor in farming occupations, clearly proved to him, that there was no knowing to what an extent the poorest land of this county may be made to be productive when its cultivation is attempted under the influence of active industry and intelligence.

INDUSTRIAL SCHOOL FARMS.—Mr. WHITMORE had much pleasure in detailing to the Council the particulars of the industrial employment of children in farming occupations, to which the Hon. Mr. Clive had made reference. The school-farm is situate at Quatt, and belongs to the Bridgenorth Union, the children being separated from the workhouse at Bridgenorth. It is managed by a master, acting in the double capacity of master of the house and schoolmaster, and his wife is matron. Their united salary is 50*l*., with rations. The house is capable of accommodating 49 children: there are now (March 25th, 1849), 32 boys and 17 girls; of these 19 boys are above 10, and 13 from 5 to 10; of the girls 5 only are above 10, and 12 under 10 years of age, many of them under 7 years. Of the 19 boys above 10, one is a cripple, and unable to use the spade. The school is industrial; the boys being employed in the cultivation of 4½ acres of land, and in the management of cows, pigs, and pony. Three, and occasionally four, cows are kept, and from four to eight pigs. The girls are employed in the house and dairy work, in washing, ironing, and baking, together with sewing, knitting, and making their own clothes, &c., &c. The produce is disposed of—first, in supplying the inmates of the school with what skim milk and Potatoes are required for their consumption, charged at market prices, and the rest, such as butter, pigs, and calves, are sold at Bridgenorth. The children, like all others in a workhouse, are clothed and fed by the union. Their time is usually thus employed: they rise at half-past 5 in the summer, and at a quarter before 7 in the winter; they work till 8; school from 9 till 12; dine at 1; and at 2 P.M. they go to their work—the boys to their field and garden, and the girls to their sewing, knitting, &c. They leave work at 5, and sup at 6, after which they play an hour or more, if the weather permit; and, as they sing in the church, they practise the psalms and chants for the following Sunday, and the day is closed with prayers. The profits of the farm are carried to the account of the union; they amount to from 60*l*. to 70*l*. per annum on an average, after paying rent and taxes, together with a per centage on the buildings, draining, &c. This profit is attributable chiefly to the labour being performed by the boys, and not charged, and from the abundance of liquid manure, arising from all the drainage of the house, cow-house, and pigsties, being preserved in a tank, and constantly applied to the land; sometimes to the growing vegetables. The crops grown are Carrots, Cabbage, Mangold Wurzel, Potatoes, Turnips, Rape, Italian Rye Grass, and Vetches; following in quick succession, so that the land is never allowed to lie idle, except in the dead of winter, at which time a plentiful supply of liquid manure is given to all the land not having a crop upon it, and being thus prepared it requires but little in the spring to enable it to bear the next crop. The implements used are the spade, fork, rake, hoe, liquid manure barrel, and cart, the two latter shift and go upon the same wheels.

The following is a copy of the leger account for the year ending Lady Day, 1849.

QUATT SCHOOL FARM IN ACCOUNT WITH CASH.

Receipts from Lady-day, 1848, to Lady-day, 1849.

	£	s.	d.
To cash from sale of Potatoes	220	3	6
To cash from sale of Milk	49	13	8½
To cash from sale of Butter	41	4	6½
To cash from sale of Live Stock	90	1	6
To cash from sale of Cabbage Plants ...	0	7	0
To Stock in hand on Lady-day, 1849 (as per valuation)	66	0	6
	£276	10	9

Expenditure from Lady-day, 1848, to Lady-day, 1849.

	£	s.	d.
By purchase of Food	36	0	10
By purchase of Seeds	4	15	5½
By purchase of Live Stock	61	14	7
By purchase of Tools, Implements, &c.	3	0	8½
By purchase of Manure	0	11	11
By purchase of Straw	6	0	0
By purchase of Sundries	2	9	11
By cash, a Year's Rent, including Interest expended in the erection of Building, Draining, Rates, &c.	19	6	0
By Stock in hand on Lady-day, 1848 (as per valuation)	75	7	6
By Profit and Loss	67	17	10
	£276	10	9

LIQUID MANURE.—Mr. SLANEY, M.P., in fully corroborating the statements made by Mr. Clive and Mr. Whitmore, on the successful working of the industrial schools attached to workhouses, dwelt on the peculiar connexion between the plan by which their utility was evidenced, and the system of applying liquid manure to agricultural crops. Experiments were going on, under the superintendence of the Sanitary Commissioners, which would most satisfactorily prove the mutual advantage to be derived by all parties from the economical use of town sewerage. By such removal of the outcasts of towns, the fertility of the country round was increased; and a boon was created for the agriculturist, at the same time that the health of the people was promoted.—The Earl of Chichester regarded these instances of the successful employment of liquid manure, as confirming Mr. Chadwick's report, presented to the Council by his lordship (on the part of the Earl of Carlisle), at a former meeting.—Mr. Whitmore thought the greatest step that could be taken at the present time for the promotion of agriculture, would be the devising of means for the application of liquid manure, at all times, to crops, as occasion might require. He alluded to an instance in which Mr. Huxtable's plan had been adopted, of laying down wooden bored tubes for distributing liquid manure to a field of Italian Rye Grass, by which a wonderful crop was obtained, computed to amount to 118 tons per acre. It had been cut five times in the course of the summer, and would have kept 5 cows during that period. These tubes could be laid down at from 2*l*. to 3*l*. per acre: and seeing the difficulty of managing the distribution of liquid manure by hose, inasmuch as they are very apt to get out of order, and not distribute evenly, he was inclined to believe that its distribution by tubes under-ground, and water carts, is the best mode of application. He did not depend solely on urine, but also on the solid manure mixed with it in the dissolving tank. This tank was separated from the lower tank by means of a perforated division, which acted as a percolator, seive, or grating, allowing the dissolved manure to pass through its interstices, as the solution proceeded into the lower tank, from which it was pumped as required, by means of a forcing-pump into an upright pipe, ∩ (similar in form to an arch, or inverted ∪), of which the top of the curve was somewhat above the highest level on which the manure would have to be applied to the land, and formed a kind of high level reservoir.—Colonel Challoner had found the liquid manure applied on a sunny day to burn the crop. He generally mixed his pig manure with three times its bulk of water. In the case of Italian Rye Grass, he followed Mr. Dickenson's directions. In general he found it a safe practical rule to test the strength of his liquid manure by a previous trial on seeds in a garden-pot.—Mr. Rodwell thought that much depended on the nature of the soil in reference to adjusting the strength of liquid manure.—Sir Francis Lawley remarked that as no ordinary application to vegetable matter was more caustic than strong liquid manure, especially on a hot day, it was important that the proper strength, in all cases, should be duly attended to.—Mr. Whitmore adopted Mr. Huxtable's rule, which was, not to confine himself simply to the urine of his stock, but to dissolve in it all things in his farms of a manuring nature, and then so to adjust the strength of his liquid manure by dilution with water as to render it most suitable to the plant.—The Earl of Chichester had known the use of diluted gas-water turn a Clover crop brown, early in its growth, which afterwards proved most abundant and profitable. He always employed such manures in a highly diluted state.—Mr. Hillyard said his system was to have no liquid manure: he thought it best to have all the urine of the cattle absorbed by the straw. This year he had 74 oxen in the the stall, and about 20 store-steers in his farm-yard, feeding on straw. He considered that all excess of rain-water ought to be conveyed away from the buildings by open conduits or gutters placed under the eaves; and that a portion of the yard ought to be made of a concave form. He allowed that liquid manure might answer to others, who bred cattle as well as fed them, though not to himself. His great object had been to make all the manure he possibly could on his farm. He applied the stall-feeding manure, when trodden down by the cattle in the yard, to his land; but that made near the barn-door, generally containing a quantity of seeds of weeds, he always had thrown up into a heap for the purpose of undergoing sufficient fermentation to destroy the vegetative power of such weed-seeds. He applied all the manure to his root-crops; and that part of them which he drew off for stall-feeding he sowed with Wheat.—Dr. Calvert, Mr. Whitmore, Mr. Milward, Mr. Brandreth Gibbs, Mr. Foley, M.P., Sir F. Lawley, Earl of Chichester, and Prof. Way, then discussed the questions of the exhausting nature of Italian Rye-Grass as a crop, the particular variety best adapted for culture, the proposal for sowing it with each Barley crop, and the substitution of a Swede Turnip for a Potato crop.—Prof. Way thought the great advantage of liquid manure was its constant readiness for use whenever required. The proper place for manure was in the soil, where no loss or deterioration could take place, whatever was the quantity so deposited.—Mr. Rodwell remarked that his own example in not having manure heaps on his farms had induced the greater part of his neighbours to adopt the same plan.—The Earl of Chichester observed that such management of the manure was part of the Holkham system.—Mr. Raymond Barker cited the authority of Arthur Young and Sir H. Davy for the practice of taking away the manure immediately.—Mr. Hyett thought it important that it should be clearly defined what was meant by "liquid manure" and whether it was assumed that liquid manure resulting from the treatment of the solid with the liquid excrements contained all the manuring elements originally present under those two forms. He would ask, for instance, whether any silica was returned to the soil in the state of urine?—Professor Way agreed that it was not, but that all manure, properly so called, might be applied in the liquid state.—Mr. Milward always mixed the dung and urine together in his tanks.—Dr. Calvert thought it advisable to have all tanks at a higher elevation than that of the green crops to which their contents were to be applied.—The Earl of Chichester remarked that if all manure can be reduced into a liquid state, assumed to contain the same ingredients, and be got on the land at a moderate expense, it would seem the most desirable course to employ only liquid manure on arable land. If his own tanks were 100 feet higher, he should certainly adopt that course.—Colonel Challoner alluded to the operation pointed out to him by Lord Camoys, by which all the liquid manure on a farm was pumped into a reservoir 60 feet high.—Professor Way thought such simple elevation of the liquid manure was preferable to an arrangement in which the homestead was above the level of the farm; for, in such case, all the produce to be housed, would have to come up-hill homeward.—Mr. Slaney, M.P., remarked that the cost of conveying liquid manure on the land was the main thing. Wooden pipes bored, had been referred to, but earthenware pipes burnt, glazed and unglazed, were now made for the purpose, and at daily reduced prices. Earthenware conduits could now be made cheaper than brick drains, the pipes having lipped orifices, fitting each other accurately.—The Earl of Chichester thought there was no difficulty in getting cheap earthenware pipes, nor in employing them, if there was sufficient fall from the level to carry away their contents. He doubted whether earthenware pipes would bear a high pressure.—Mr. Slaney replied that the subject was a most interesting one, and that experiments were in progress on the point referred to by his lordship.—Sir Francis Lawley suggested that a prize should be offered by the Society for an essay or report on the most advantageous modes of applying liquid manure under different circumstances.

NORWICH MEETING.—Mr. Brandreth Gibbs, Director of the Show at the Norwich Meeting, reported that, having examined the certificates of Stock entered for that Show, the number of animals equalled those entered for the Society's prizes at any former Meeting.

Mr. John Martin, K.L., (the celebrated artist), presented a series of his reports and plans on Metropolitan Improvements; the Royal College of Chemistry, the first Volume of their Reports and Researches.—Mr. Rodwell, a copy of Mr. Welton's lecture on the Mutual Relation of Landlord and Tenant.—Mr. Davies, a copy of the Regulations of the Ludlow Agricultural Society.—Mr. Bullen, a copy of the Premium of the R.A.I. Soc. of Ireland. And Mr. Colchester, a copy of his Hints on the Employment of Agricultural Labourers; for all which the Council ordered their usual thanks.

The Council then adjourned to Tuesday next, the 19th of June.

Farmers' Clubs.

DARLINGTON: *Tenant Right.*—This club lately passed the following resolutions on the subject:—1. That legislative enactments recognising the capital of the tenant, and which will facilitate his recovery of just

claims for compensation or damage to be settled by arbitration, and which will enable him to remove buildings of whatever description, of his own erection, are, in the present advanced state of husbandry, absolutely necessary to the national welfare.—2. That a more minute interference by the legislature with details, further than to settle the general principles on which compensation shall be awarded, is not desirable.—3. That whereas no system of tenant-right will entirely supersede the advantages of leases, and as landlords and tenants have, in general, the power to grant and demand them, that no enactment on this point is desirable except to enable all landowners at present without such powers to grant leases as far as 21 years, as there is reason to hope and believe that the spread of knowledge will enable parties to discern and act upon their true interests by private contract.

Reviews.

Sporting Review. No. CXXVI. 24, Norfolk-st., Strand.

We continue to receive this interesting and admirably illustrated monthly periodical. The present number contains the usual quantity of amusing and instructive matter, with sporting information proper to to the season.

Miscellaneous.

As to the use of Sawdust, it is more or less easy according as it is the sawings of hard wood or Pine-trees. That of the former is more absorbent, more easily fermented, and more easily charred. With this premised, 1. Saw-dust may be charred with quick-lime by being made into a compost with it alone. 2. It may be smother-burned, as it is called, with earth or sods, as clay is done in some of our English counties. This, however, is a difficult process, and a workman will make several failures before he gets into the way of burning the heap regularly black. 3. It may be most effectually, certainly, and easily charred in an oven, at a heat below redness, and which does not cause it to take fire. When thus charred, it may be laid on the ground directly, may be mixed with manure of all or any kind, or may be used as an absorbent for liquid manure—the drainings of the stable or the fold-yard. 4. But saw-dust may also be fermented. For this purpose it may be mixed with earth, with or without lime, and in this way made into a compost, which, upon light soils, or such as are deficient in vegetable matter, will be very valuable. Or, it may be previously employed as an absorbent for liquid manure by spreading in stables, byres, or piggeries, or in the neighbourhood of the fold-yard, and then mixed with earth, when it will ferment into a rich compost. Or it may at once be mixed with the fold-yard manure, to as large an extent as it can be thoroughly moistened, when the whole will ferment together and form a valuable manure. Whether any of the above methods can be adopted so as to be largely useful, will depend upon circumstances; but the method of mixing with earth into a compost with more or less lime, and with or without liquid manure, can be easily adopted, and there are very few soils indeed which would not be in some degree benefited by such a compost. *Report of Agricultural Chemistry Association.*

Impromptu Butter.—We yesterday saw, says the *New York Mirror*, sweet milk converted into butter in four minutes; probably a dash of iced-water would have brought the butter in less time. This wonderful effect was produced by one of the most simple churning machines that we have ever seen. It consists of a square box, having a hollow perpendicular shaft with two hollow arms or tubes at the lower end. The shaft rests on a pivot and is turned by a small crank and cog wheel, the motion causes the air to rush down the tube into the milk and produces a commotion like boiling water. The butter began to come immediately, and after it was made the milk was as sweet as new. By this process good churn butter may be made for breakfast by any family after the milkman has come in the morning, and the luxury of pure fresh butter enjoyed the year round. While the cakes are baking or the muffins toasting, the head of the family may be amusing himself by churning the butter to eat with them. [!] *Philadelphia Courier.*

Calendar of Operations.

JUNE.

Bedfordshire Farm, *June 5.*—The weather for several weeks past has been highly propitious for the growing crops, which have now a most beautiful and promising appearance. The winter and spring Wheats, where previously thin and sickly, have thickened and grown unprecedentedly fast; while the thickly planted has gone on proportionably well, and is only in danger of becoming too large to maintain its erect position. Barley, Beans, and Peas all present a most satisfactory appearance. Potatoes, Carrots, and the early planted Mangold Wurzel have also thriven well. Indeed the whole face of Nature is bedecked with a robe of emerald hue, which pleases the eye and delights the fancy to contemplate, the more especially so while remembering the aspect of the crops at the corresponding period of last year. Our horses have lately been employed in preparing the fallows and sowing Turnips. The first sowing was Tankards, to come in early. The second sowing, last week, was Yellow Bullock, to succeed the Tankards, and last until the Swedes become fit for use. Swede sowing commenced but yesterday, and will continue daily, weather permitting, for nearly a month to come. The land being prepared, we can accomplish rather better than 3 acres a day, with 8 horses and 18 hands, appointed as follows: Two ploughs, two men, and four horses throwing up ridges and covering in duug; four horses and four carts laying on dung, four men filling, four spreading and one man emptying dung, two boys driving carts, and one man and one horse part of day sowing seed by machine. About 30 cart-loads of dung, weighing from 22 to 25 tons, are applied per acre. Turnips sown on the flat by drill are manured with about 15 tons of dung per acre, with the addition of 4 cwt. of Rape-cake, mixed with 10 bushels of burnt ashes, drilled in along with the seed. We usually continue sowing Swedes to the end of June. If any land remains unsown then, quicker growing Turnips are preferred. Our horses are now living on Tares, with half a bushel of Beans, and a bushel of Rice-meal each per week. 12 oxen are soiled in yards with Grass and Tares. The fatting oxen receive a portion of green food, with about 6 lbs. of meal per day. The fatting sheep live chiefly on Tares, with nearly 1 lb. of corn per day. We sow salt over the Tares, before the stock, to prevent hove and promote the health of the animals. We have had no hoven sheep this season, nor any diseased, from thriving too fast on green succulent food. A neighbour of ours, however, lost 22 sheep from inflammation, proceeding from eating too freely of Tares, and caution is always necessary in changing stock from dry to succulent food, or *vice versa*. Our labourers have been lately employed in hoeing corn and sowing Turnips, and similar will be their employment, with hay-making, for some time prospectively. We purpose commencing Clover about the early part of next week: 3*s.* an acre for mowing will be about the usual price hereabouts, with beer, and 3*s.* 6*d.* per acre without. We generally keep Clover in the swathe, and make it by repeated turning. The natural Grasses are thrown out daily by machine, and afterwards turned and made by the machine and boys together. We seldom employ any men in making hay. Wages for men now range from 10*s.* to 12*s* per week. For a month at hay time an advance of 2*s.* or 3*s.* per week usually takes place. There are few hands out of employment hereabouts at the present time. *R. V.*

Dorset Farm, *June* 3.—Since last report we have got in our Carrots and remainder of Mangold Wurzel, the latter of which shows well above ground, and would put up very well with a slight shower, which would be beneficial to many other things; but after such a season as the last, we shall be almost afraid at the appearance of rain. Some of the land is getting very hard now that the weather has set in dry, and the roller has to be used unsparingly. We use it both before and after the drill. We have got in a few acres of Swedes, which are drilled on the flat 18 inches apart, with 3 bushels of dissolved bones and 2½ cwt. ammoniacal phosphate, the whole made up with ashes to 30 bushels per acre. We have got some Rape now hoeing, which looks very well; it is done at 5*s.* per acre, but the ground is very light, and few weeds in it, or it would not be done at so small cost. Hay-making has began with us. A piece of trifolium incarnatum being the first, it was sown in the autumn, after Wheat, and has stood the winter very well; it looks at present a heavy crop, but I fear it will shrink very much in the making. Our other Clovers are a very fair crop. We have had our Potatoes cleaned, which has been done partly by forking out the weeds where they were strong, and hoeing them. They look very healthy, and, so far as I can ascertain, there is yet no cause for fearing a return of the Potato disease. There has, no doubt, been unsound seed planted, which cannot be expected to do very well. Our sheep were shorn last week. We shall be busily employed for some time cleaning and preparing the land for the Turnips and making hay, clearing weeds from the hedges and from among the corn. *G. S.*

Sussex Farm, *June* 4.—With the fine weather of last week, crops of all kinds improve very much. We have sown about 8 acres of Swedes, and with the fine showers of rain of this morning they will very soon be up. We are all still engaged preparing the land and sowing more. As our teams are busy, and still a considerable breadth of land not cross-ploughed, we have turned part of our labourers on to do the part of the plough, that is, to break and turn over the furrows with spud hoes or hocks. The weather being so tempting and so much land wanting turning up, and the horses engaged sowing, I think this plan will be of great advantage We shall pay for it per acre, and shall, I think, not exceed the cost of ploughing. *J. B.*

West Somersetshire Farm, *June* 10.—We began dibbling Mangold Wurzel the latter part of April, and by ridging our land up 27 inches apart were enabled to perform the work more rapidly, and with greater regularity, than last year, at a cost of 8*s.* an acre. In other respects the same plan was pursued as given in my last year's spring report, each plant receiving half a pint of manure, composed of superphosphate of lime, rotten dung, and burnt ashes, and they are now being hoed. Nothing can be finer than the present appearance of the plant; where any are missing (which is the fault of the children not putting down the seed), we transplant; a light roller was passed over the drills after the dibbling was completed, which keeps the manure moist, and gives a good finish to the work. Drilling Swedes next occupied our attention; hitherto we have not been so successful in the growth of this valuable root as with Mangold Wurzel; the land on which we hope to succeed this season was a Wheat stubble ploughed up before Christmas, cross-ploughed in spring, then worked about with the drags, clod-crusher, and scarifier, and, when fine, ploughed up in ridges, the dung laid in the furrows and immediately covered in. The seed (Skirving's) was drilled by Hornsby's manure drill, with about 2½ cwt. superphosphate, and 80 bushels of fine black ashes per acre, making very good work. We are now preparing land for purple-top bullock Turnips and Decanters, after Vetches fed off with sheep. Our artificial Grasses are heavy. We commenced cutting the Sainfoin last week (for which work we give 2*s.* an acre), but at present the weather, though favourable for the root crops, is much against hay-making. Nothing could exceed the luxuriance of the winter Beans in this neighbourhood until the last few days, and though full of blossom they now exhibit disease, which is spreading, particularly on the heavy soils; ours (which are on the dry stony land, and which soil we consider most adapted for this particular Bean), are as yet not much affected, and retain a healthier appearance. Our Pea crop, which was sown in January, looks most beautiful, and will be fit to cut early. The autumn-sown Wheats are very fine, and the spring Wheats continue to improve, a portion of which we top-dressed with soot and salt; if we are blessed with a good season there is every prospect of an abundant harvest. Owing to the immense quantity of feed, stock of all descriptions is selling better, sheep in particular, but the corn trade still remains in a most languid state, and it is with difficulty we can turn Wheat into money. *H. E.*

Notices to Correspondents.

A Ton of Hay: *Inquirer.* It was ascertained to remove in the case of the meadow-land of Durrenbach (Alsace)—Acids: carbonic, 163 lbs; phosphoric, 121 lbs; sulphuric, 60 lbs. Chlorine, 58 lbs; Lime, 401 lbs; Magnesia, 161 lbs; Potash, 486 lbs; Soda, 40 lbs; Silica, 706 lbs; Oxide of Iron, 20 lbs. As to the relative values of a ton of straw and a ton of guano, their influence does generally depend, and may frequently altogether depend, upon such entirely different circumstances, that the question may be as impossible to answer as one would be regarding the relation between a point in space and a point in time. If the thing were put to the test of experiment, the result would depend altogether on the state of the soil which afforded it. If we take the general requirements of farmers in the long run, in connection with these articles of consumption, then their respective market values will furnish the answer required.

Barn-room: *A S b.* There must be about 500 cubic yards of space to 80 quarters of Wheat, when the straw is long.

Bug-Clover: *Constant Reader.* What is it? It is very rarely that methods of extirpating particular weeds occur, other than those which perseverance in the use of ordinary tools supplies. And probably in this case, if hard stocking of the land does not remove this "early" weed, your only hope may lie in the hoe or spud. But we do not know to what you refer under this name.

Cabbages: *A Little Farmer.* The Early York may be followed by the Drumhead: if your soil is loamy and sheltered, you may prick the former out, 2 feet apart every way in autumn, and as they are removed in May, transplant Drumheads into every 4th place, so that they may stand 4 feet apart every way. Sow in seed-beds in August and in February respectively.

Dairy Produce: *Sevenoaks.* A cow will yield from 1 lb. of butter a day upwards, according to size, age, food, season, time of calving, breed, constitution, and health. So many are the circumstances which often render a direct answer to a direct question in farming impossible. Ayrshire cows have been found to yield a considerably large quantity of much poorer milk than those of Kerry.

Embankments: *J C M.* Consult "Loudon's Encyclopædia of Agriculture."

Kohl Rabi: *W.* Sow in rows 12 inches apart, in a seed-bed in March. Prepare your field as for Swedes, and transplant in May, at intervals of about 2 feet, on good Turnip land. [Whether is the green or purple-top preferable?] We know nothing of it as a vegetable for table.

Machines: *Trefoil.* If you wish very long chaff for litter, as well as short for food, some of the chaff-cutters with intermittent cuts, must, we suppose, be employed—such as Ransome's; otherwise, we should prefer Corne's. Either Mr. Hornsby, of Grantham, Lincolnshire, or Mr. Garrett, of Saxmundham, Suffolk, will supply a good corn-drill; and as to grubbers, we do not believe there is anything better than the Uley Cultivator. For horse-hoes you need not leave Scotland. The selection in no case should be between England and Scotland, as if there were any constant distinction between the two, but between this maker and that, according to their respective degrees of ability, whatever their locality.

Meadow-hay: *E Randall.* The best way would be to rick it half dried, in alternate layers with old hay, and failing that with Oat-straw, about half and half of each.

Milk: *J M Carter.* A little carbonate of soda will keep milk sweet, and therefore hinder it from curdling.—*An old Sub.* Certainly, you might churn whole milk with a satisfactory result; the quantity of butter you would obtain will, of course, depend upon the quantity of milk saved in the manner you propose.

Poultry Diseases: *X Y Z.* "Swollen eyes, bladders, discharge of matter from the nostrils, hoarse voice, and difficulty of breathing" All these sad symptoms probably arise from violent catarrhal irritation, or "incipient roup," if of recent origin. It soon becomes "infectious roup," when neglected, and may produce partial blindness. This direful disorder will be found treated at length at page 706 of our vol. for 1848. A warm fomentation (not hot) of poppy-head, very carefully applied, dabbed over the head and parts affected, so as not to touch the eye, which, with the nostrils, should be previously washed and cleansed with a little warm (not hot) water, three or four times a day. Give pellets of rue, bruised garlic, occasionally rolled in moistened Barley meal three times a day. The patient must have a dose of castor-oil occasionally, and be brought in-doors, cooped in a warm place in the kitchen, and fed by hand, if unable to eat by itself. Newly purchased fowls from our markets often show signs of ailment in a few days, which is often previously indicated by sneezing, short-breathing, and dulness. *D. S E.*

Small Farm: *Friend of J W S.* Your recommendations as to saving manure are, of course, right, and lie at the foundation of the improvement desired. Your recommendation to cook the food given, and otherwise to administer it in the most economical manner, is also, of course, just, but lies nearer the other end of the process. Among the intermediate steps are draining (if required) to make the manure applied available for the plants, and the employment of good animals to convert the food into meat for sale or consumption. Pigs, as being the most omnivorous of our domestic animals, will suit your circumstances best; and two or three breeding sows may be kept on the refuse of your cows, house, and garden.

Stable Economy: *L W S.* 6*s.* 6*d.*

Swedes: *J D.* Sow Laing's early and Skirving's late, or the latter will be ripe first. We do not know what is meant by "the purple-top."

Winter Beans: *A Little Farmer.* You can do nothing with them now. We do not know if green Bean haulm has ever been used as food. If harvested before dead, the haulm is good food for horses and cattle.

*** Communications reaching town after Wednesday cannot be answered the same week.

Markets.

SMITHFIELD, Monday, June 11.

We have a good supply of Beasts, both as regards numbers and quality; the weather, however, being cold, trade is active at rather more money than on Friday. The number of Sheep and Lambs has considerably increased. Big Sheep are a heavy sale, but sizeable ones are selling quite as freely as of late. The trade is still very bad for Calves, and prices cannot be quoted higher. From Holland and Germany there are 227 Beasts, 1710 Sheep, and 143 Calves; and from Scotland, 300 Beasts.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	6 to 3	8	
Best Short-horns	3	4 — 3	6	
2d quality Beasts	2	8 — 3	2	
Best Downs and Half-breds	...	..	...	
Ditto Shorn	.. 3	8 — 4	0	

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	...		...	
Ditto Shorn	3	6 to 3	8	
Ewes & 2d quality	...		...	
Ditto Shorn	2	10 — 3	2	
Lambs	... ..	5	2 — 6	0
Calves	... .	2	10 — 4	0
Pigs	.. ..	3	4 — 4	6

Beasts, 3306; Sheep and Lambs, 29,640; Calves, 290; Pigs, 250.

Friday, June 15.

The supply of Beasts is good. Trade is scarcely so active as on Monday, but the weather being favourable there is no quotable difference in price. We have again a large supply of Sheep and Lambs; trade is very heavy at a reduction of about 2d. per 8 lbs. in the former and 4d. in the latter. Many middling Lambs remain unsold. The number of Calves is rather less than on Friday last, it is, however, still very large, and prices cannot be quoted higher. From Holland and Germany we have 74 Beasts, 700 Sheep, and 293 Calves; from Scotland, 200 Beasts; and 127 Milch Cows from the home counties.

Best Scots, Herefords, &c.	.. 3	6 to 3	8
Best Short-horns	3	4 — 3	6
2d quality Beasts	2	8 — 3	2
Best Downs and Half-breds	... ..	—	...
Ditto Shorn	... 3	8 — 3	10

Best Long-wools	. .	to	...
Ditto Shorn	... 3	4 — 3	6
Ewes & 2d quality	...	—	...
Ditto Shorn	... 2	8 — 3	2
Lambs	... ...	4	8 — 5 8
Calves	... ...	2	10 — 4 0
Pigs	... ...	3	4 — 4 6

Beasts, 896; Sheep and Lambs, 12,790; Calves, 609; Pigs, 265.

HAY.—Per Load of 36 Trusses.

Smithfield, June 14.

Prime Meadow Hay	66s to 72s	Clover	60s to 95s
Inferior ditto... ...	50 63	New Clover	— —
Rowen	50 60	Straw	28 32
New Hay ...	— —		J. Cooper.

The supply large and trade very heavy.

Cumberland Market, June 14.

Prime Meadow Hay	70s to 76s	Inferior	75s to 80s
Inferior ditto... ...	50 65	New Clover	— —
New Hay	50 60	Straw	30 32
Old Clover	80 90		Joshua Baker.

Whitechapel, June 14.

Fine Old Hay ...	68s to 72s	New Clover	80s to 90s
Inferior ditto ...	50 55	Inferior ditto... ...	45 60
New Hay	63 68	Straw	26 30
Old Clover	95 103		

COVENT GARDEN, JUNE 16.

The weather being favourable, Vegetables are very plentiful. Fruit has altered but little since our last account. Pine-apples continue to fetch from 6s. to 10s. per lb. Hothouse Grapes are cheaper. Several importations of Strawberries and Cherries have been received during the week; the latter fetch from 6d. to 9d. per lb. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, young Turnips may be obtained at from 9d. to 1s. a bunch, and Carrots at from 6d. to 1s. Cauliflowers are sufficient for the demand. Rhubarb and Asparagus are plentiful. Green Peas fetch from 6s to 10s. per bushel. Potatoes are a trifle cheaper. New Potatoes realise from 3d. to 9d. per lb. New Dutch Potatoes have been sold in considerable quantities at about 18s. per cwt. Lettuces and other salading are sufficient for the demand. Mushrooms are dearer. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Lily of the Valley, Cinerarias, Tropæolums, Carnations, Pinks, Fuchsias, Rhododendrons, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Oranges, per 100, 6s to 16s
Grapes, hothouse, p. lb, 3s. to 8s	Lemons, per doz., 1s to 2s
Strawberries, p. pun., 3s 6d to 5s	— per 100, 7s to 14s
— per pottle, 9d to 1s 6d	Almonds, per peck, 6s
Cherries, per lb., 6s to 10s	— sweet, per lb., 2s to 3s
Apples, kitchen, p. bsh., 4s to 8s	Walnuts, p. 100, 1s 6d to 2s
Gooseberries, green, p. hf. sieve, 3s 6d to 5s	— p. bush., 16s to 24s
Currants, do., do., 5s to 6s	Nuts, Bar., p. bush., 20s to 22s
Oranges, per doz., 1s to 2s	— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 9d to 1s 3d	Spinach p. sieve, 9d to 1s
Greens, p. doz. bunches, 1s to 2s	Onions, p. bunch, 2d to 6d
Cauliflowers, p. doz., 2s to 6s	— Spanish, p. doz., 1s 6d to 4s
Sorrel, p. hf. sieve, 9d to 1s	Shallots, per lb., 10d to 1s
Potatoes, per ton, 60s to 180s	Garlic, per lb., 6d to 1s
— per cwt., 5s to 14s	Artichokes, per doz., 3s to 6s
— per bush., 4s to 7s	— Jerusalem, per half sieve, 9d to 1s
Turnips, per bunch, 6d to 1s	Lettuce, Cab., p. sc., 4d to 9d
Red Beet, per doz., 2s to 4s	— Cos, do., 6d to 1s
Horse Radish, p. bdl., 1s to 6s	Mushrooms, p. pot., 1s to 1s 9d
Asparagus, p. 100, 6d to 4s	Small Salads, p. pun., 2d to 3d
Rhubarb, p. bundle, 4d to 1s	Fennel, per bunch, 2d to 3d
French Beans, p. 100, 1s 6d to 2s 6d	Savory, per bunch, 2d to 3d
Cucumbers, each, 4d to 1s	*Thyme*, per bunch, 2d to 3d
Leeks, per doz., 1s to 2s	Parsley, p. hf. seive, 1s to 2s
Celery, p. bundle, 1s to 2s	— Roots, p. bdls., 1s to 1s
Radishes, per 12 bunds, 9d	Marjoram, green, p. bun., 9d to 1s
Watercress, per doz. bunches, 4d to 6d	Mint, green, per bunch, 3d to 4
Carrots, per bun., 6d to 1s 3d	Basil, green, p. bunch, 4d to 6d

HOPS.—FRIDAY, June 15.

Messrs. PATTENDEN and SMITH report that the accounts from the plantations continue to come unfavourable, and although the market is not brisk, prices remain firm, holders expecting a much greater advance. The duty is thought by many to be much overrated at 100,000*l.*

POTATOES.—SOUTHWARK, WATERSIDE, June 11.

The Committee report that the supply of English Potatoes is all but finished, and those from the Continent are so few that it will not be worth while to give any report after this until next season. The following are this day's quotations:—Yorkshire Regents, 120s. to 200s.; Scotch Whites, 80s. to 90s.; Foreign do., 50s. to 90s.

MARK LANE.

MONDAY, JUNE 11.—The supply of English Wheat by land carriage samples this morning was small, and cleared at the prices of this day se'nnight. Foreign met a fair retail inquiry on fully as good terms.—Barley and Peas are unaltered in value.—Beans are a slow sale at our quotations.—The Oat trade is heavy at a decline of 1s. per qr. from the rates of last Monday, excepting the very finest qualities.

FRIDAY, JUNE 15.—The arrivals of foreign Wheat during the week have been small, of other articles tolerably good. This morning's market was badly attended, and the transactions in all sorts of grain small. Wheat is held firmly at late prices. Snale Barley is much inquired after, and all other descriptions fully as dear.—Beans and Peas are unaltered in value.—Fine fresh Oats are a ready sale; out of conditioned qualities are forced off with difficulty, at something under Monday's rates.—Indian Corn is in less active request, there being no cargoes offering near at hand.—We observe no alteration in Flour.—The weather during the past week has been dry and very cold for the season (frost on the 13th). The crops generally are well spoken of, but complaints of Barley and Wheat increase from particular districts. The trade has been steady throughout the kingdom, without any particular variation in prices, excepting Oats, which have a tendency to decline, owing to large foreign arrivals.

LIVERPOOL, FRIDAY, JUNE 15.—At this day's market the attendance was good, including several millers from a distance, and we had an active demand for Wheat at an advance of 1d. per bushel on the finer qualities; other sorts being fully as dear. Flour was brisk, and 6d. per barrel higher. Oats and Oatmeal were about the same in price, but in very slow request. There was a fair retail demand for Barley and Peas. Indian Corn was taken rather slowly, and fell 1s. per qr. Supplies since Tuesday have been small.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
April 28.....	46s 0d	28s 10d	17s 2d	27s 5d	29s 3d	29s 9d
May 5.....	46 9	28 11	17 6	25 4	29 8	30 1
— 19.....	44 9	28 0	17 8	25 9	30 7	29 11
— 26.....	44 6	28 9	17 9	26 0	31 3	32 4
June 2.....	44 9	27 10	17 7	26 6	31 7	33 4
— 9.....	44 6	25 11	17 7	25 4	31 7	30 4
Aggreg. Aver.	45 1	28 1	17 7	25 6	30 8	31 2
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	APR. 28.	MAY 5.	MAY 19.	MAY 26.	JUNE 2.	JUNE 9.
46s 9d	...		...	...	...	...
46 0		...	...	...	...	...
44 9	..	...	..	...	...	...
44 9	.	...	..	.		..
44 6	...	...	...		...	...
44 6	...	...	...	...	..	

PRICES CURRENT.	London. June 4 qr.	London. June 11 qr.	Liverpool. June 5. 70 lbs.	Liverpool. June 12. 70 lbs.	Wakefield. June 1 qr.	Wakefield. June 8 qr.	Boston. June 6 qr.	Boston. June 13 qr.	Birmingham. June 7. 62 lbs.	Birmingham. June 14. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	40 to 42	40 to 42	6 4 6 9	6 4 6 9	43 to 46	43 to 46	38 to 45	38 to 45	5 6 6 2	5 6 6 2
„ white ...	45—46	45—46	6 10 7 4	6 10 7 4	43—50	43—50	40—48	40—48	6 0 6 4	6 0 6 4
Old, red ...	42—46	42—46	6 7 6 10	6 7 6 10	42—44	42—44	—	—	5 8 6 1	5 8 6 1
„ white ...	48—52	48—52	7 0 7 6	7 0 7 6	—50	—50	—	—	5 11 6 6	5 11 6 6
Foreign... ...	36—55	35—56	4 4 8 2	4 4 8 6	39—45	39—51	—	—	5 0 7 0	5 0 7 0
			480 lbs.	480 lbs.						
Rye—New ...	22—24	22—24	—	—	—	—	—	—	—	—
Foreign...	22—23	22—23	—	—	—	—	—	—	—	—
Foreign meal	6*l.*—7*l.*	6*l.*—7*l.*	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley—										
Grinding ...	21—24	21—24	—	—	22—23	22—23	24—26	24—26	23—25	23—25
Malting... ...	22—27	22—27	30s—32s	30s—32s	27—32	27—32	28—30	28—30	29—32	29—32
Foreign... ...	18—27	18—27	—	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	19—25	19—24	2s 10d 3s 3d	2s 10d 3s 3d	—	—	14—20	14—20	20—28	20—28
Black...	15—20	15—20	2 4 2 8	2 4 2 8	—	—	—	—	18—20	19—21
Foreign	14—20	14—20	2 4 2 7	2 4 2 7	—	—	—	—	—	—
			qr.	qr.		qr.				
Peas—Boilers	25—30	25—30	34s—	34s—	28—32	28—32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—25	23—25	27 —28s	27 —28s	—	—	—	—	11—12	11—12
Foreign ...	24—32	24—32	30 —33	30 —33	—	—	—	—	—	—
Beans—										
New, small ...	22—32	22—32	30 —33	28 —33	29—32	29—32	30—33	30—33	12—14	12—14
Old	—	—	32 —34	32 —34	35—36	35—36	34—36	34—36	15—16	15—16
Foreign ...	21—36	21—36	23 —32	23 —32	26—28	26—28	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ..	37—42	37—42	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9*l.* 7s	9*l.* 7s	7*l.* 12s	7*l.* 12s	—	—	—	—	—	—
Foreign ...	6*l.*—7*l.*	6*l.*—7*l.*	—	—	—	—	—	—	—	—
Indian Corn	26—32	30—32	35s—37s	34s—36s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	36—44	36—44	34—35	34—35	—	—	30—36	30—36	32—37	32—37

Weekly Averages and Imports.	Aver. June 12	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	45 9	3620	44 9	6803	46 0	7983	42 9	1786	—	4103
BARLEY ...	25 10	9020	27 10	58[illegible]	28 6	1078	—	—	24 0	1251
OATS... ...	18 8	17730	17 7	1798	18 9	689	14 3	366	20 7¼	4406
RYE	24 6	—	26 6	—	—	—	—	—	—	—
BEANS ...	28 4	—	31 7	—	30 7	1227	29 0	44	—	782
PEAS... ...	30 3	—	33 4	200	—	179	—	—	—	—
SIGNED	KINGSFORD and LAY.		SEGAR and TUNNICLIFFS.		SANDARS and DUNNS		THOMAS WRIGHT.		J. and C. STURGE.	

LINGHAM BROTHERS, 170, Hampton-street, Birmingham, sole Manufacturers of the improved WOOD and ZINC MENOGRAPH, or Label for Garden Borders, Flower-pots, &c., in boxes, of 100, &c. The Zinc Labels are highly approved of for their lasting durability; can be written upon with the greatest ease, and, when dry, a permanent inscription is secured. Directions for use sent with each box, including bottle of Metallic Ink.

Sole agents in London, G. and J. DEANE, Horticultural Implement Warehouse, 46, King William-street, London-bridge.

PORTLAND CEMENT.—Testimonials received from all quarters, prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fishponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

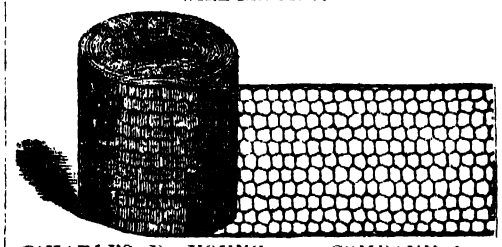
PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, CHARLES FRANCIS and SONS, Nine Elms, London.

LANDOWNERS' WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY. Established 1841. Incorporated by Act of Parliament. This Company is prepared to Contract with Landowners for the Drainage, Inclosure, Irrigation, or Improvement of Lands in any part of England, Ireland, or Scotland. Owners of Settled Estates in England may, through the Company, DRAIN, INCLOSE, BUILD ON, or IMPROVE their Lands, and charge the Inheritance with the permanent value.—Apply to Mr. THOMAS MAY, Secretary, 9, Bedford Circus, Exeter.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LEGG, Cheltenham.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 400 and 500) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a copy of the testimonials, will be sent on application to WALTER CARSON, 15, Tokenhouse Yard, back of the Bank of England.—No Agents.—All orders are particularly requested to be sent direct.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c., 22, PARLIAMENT-STREET, WESTMINSTER, LONDON, CASTLE-BUILDINGS, DERBY-SQUARE, LIVERPOOL; 128, HIGH-STREET, EDINBURGH; and 32, ST. ENOCH-SQUARE, GLASGOW, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost .. £3 15 0
Do. of 100 yards, 24 ins. wide 5 0 0
Do. of 100 yards, 30 ins. wide 6 5 0
Do. of 100 yards, 36 ins. wide 7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. Young and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. T. Streacy to sell by public Auction, on the premises, Church-street, Hackney, on WEDNESDAY, June 20th, the whole of the GREENHOUSE PLANTS, consisting of Geraniums, Myrtles, Acacias, Azalea Indica, Gardenias, Crassulas, Fuchsias, Hydrangeas, Mesembryanthemums, Cacti, &c. Also three capital Greenhouses, 2-light Boxes, Handlights, Brickwork, Hot-water Pipe and Boiler, capital Kitchen Range, Stoves, Fender, Cupboards, Copper, Tubs, Sieves, Waterpots, &c.—May be viewed prior to the sale. Catalogues had on the premises; of the principal Seedsmen, London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.
Winding up Sale for the Season.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, at the Mart, Bartholomew-lane, on THURSDAY, June 21st, at 12 o'clock, a first-rate collection of DAHLIAS, consisting of all the newest and most approved kinds. Also Fuchsias, Verbenas, Heartsease, Petunias, choice Geraniums, and other plants in bloom.—May be viewed the morning of sale; and Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

NEAR YORK.—The important MANORIAL DOMAIN of SCOREBY, nearly all freehold, and tithe free, splendidly wooded, and full of game, only five miles from York, and eight from Pocklington, upon the rich bank of the Derwent, which forms its fine picturesque boundary for nearly three miles between Keasby and Stamford Bridges, with a railway station, bringing this valuable and improving property within seven hours' journey of London.

MESSRS. DANIEL SMITH AND SON will offer for Public Sale, at the George Hotel at York, on SATURDAY, June 30, at 1 o'clock (unless previously disposed of by Private Treaty), by direction of the executors of the late Ottiwell Wood, Esq., the very valuable, compact, and attractive ESTATE OF SCOREBY, offering a capital landed investment, and upon which very considerable sums have been expended for several years past in draining and planting, in the formation of roads and pleasure drives, in new buildings, and otherwise improving and embellishing the estate, with a view to its becoming a residence, comprising about 1310 acres of highly-cultivated land, tithe-free, richly timbered, and admirably enclosed, and lying in a perfect ring fence, between the Burlington and Hull roads, and the river Derwent; divided into six superior farms, with neat, substantial, brick-built houses and homesteads, also several lodges and cottages for keepers and woodmen, including beautiful woodlands stored with thriving timber, several ornamental and interesting plantations full of the most rare and valuable plants and shrubs, intersected by diversified walks and drives, commanding extensive scenery, and embracing a bold mountainous range of the distant wolds. The estate may be viewed by application to Mr. Johnson, at Scoreby; and descriptive particulars, with plans, may be had on the premises, of Messrs. Lightfoot, Robson, and Lightfoot, Solicitors, Castle-street, Leicester-square, London; of Mr. Charles Howard, York; and of Messrs. DANIEL SMITH and SON, Land Agents, Waterloo-place, Pall-mall, London.

NURSERY AND SEED TRADE.

TO BE SOLD, with immediate Possession, in consequence of the Proprietor retiring from the business, an old-established concern near London.—For particulars apply by letter only, prepaid, to Mr. HOWCROFT, Bow-road, London.

TO BE SOLD, A FREEHOLD ESTATE, Land-tax Redeemed, in the county of Surrey, 27 miles from town, and near a station on the South Eastern Railway, containing between 400 and 500 acres, with Homesteads and Cottages, and a Gentleman's Residence capable of accommodating a large family. Or the House, with portions of the Land, will be Sold or Let, furnished, by the year, from 25th June next.—Enquire of S. C., Henry Thompson and Co.'s, 2, Cowper's-court, Cornhill, London.

TO BE DISPOSED OF, for very little more than the amount of value of Stock in hand, Fixtures, &c., a 35 years established SEED BUSINESS, situate near the Brighton Market, Thoroughfare good. Rent only 10s. per week. Apply, by letter, to WIDOW SPELLING, Brighton.

TO NURSERYMEN, GARDENERS, AND OTHERS

TO BE DISPOSED OF, an OLD-ESTABLISHED NURSERY AND SEED BUSINESS, at Bromley, Kent, in consequence of the death of the late Proprietor, in whose possession, and that of the family, it has been many years.—Apply to Mr. BAXTER, Auctioneer, Bromley, Kent.

FARM, MIDDLESEX.

TO BE LET, and entered upon at Michaelmas next, a compact FARM, consisting of about 165 acres of Meadow, Arable, and Pasture Land, in a high state of cultivation, with a House, Garden, &c., and excellent Farm-yard, with all necessary Buildings, &c., about 12 miles from London, and within 1½ mile of a railway station on the Cambridge line. For particulars apply to Mr. KNIGHT, Edmonton, or to Mr. KNIGHT, jun., Enfield-highway. The above is particularly adapted for a gentleman having business in London.

FARM IN SUSSEX.

TO BE LET,—A most desirable FARM, in a high state of cultivation. It is in a ring fence, has a Good Residence thereon, and contains about 453 acres, of which, 246 are arable, 80 Marsh, 72 Meadow and Pasture, 40 Hops, and 15 Orchard, Buildings, Homestead, &c. A Lease of which may be had under advantageous circumstances.—Apply by letter to Messrs. C. and H. HYDE, 33, Ely-place, London.

TO NURSERYMEN AND FLORISTS.

TO BE LET, a COTTAGE and GREENHOUSE, with about Three Acres of good Garden Ground, fronting Brixton Church, with immediate possession.—For particulars apply to Mr. NERMS, Gardener, Effra-road, Brixton.

DYFFRYN HOUSE, NEAR LLANDILO.

TO BE LET, and entered upon immediately, an exceedingly comfortable RESIDENCE, in complete repair, consisting of three Sitting-rooms, five First floor Bed rooms, five Attics, with all requisite Offices and suitable Out-buildings, Walled Garden, and Pleasure Ground. An excellent Trout Stream runs at the foot of the lawn. Swansea, to which the South Wales Railway will be opened in a few months, is within 16 miles.—For particulars, apply to T. W. LAWROAD, Solicitor and Land Agent, Frydael, Llandilo, South Wales.

WANTED, A COTTAGE, with convenient out-offices, and about 10 acres of Grass Land, not more than 40 or 50 miles from London, near a Railway desirable. Rent low.—Address to T. H., Mr. Steventon, 48, Wells-street, Oxford-street.

SHETLAND PONIES AND CATTLE. — Just landed, direct from Shetland, a quantity of very handsome small PONIES; also, from 8½ to 12 hands high. Also some very handsome small COWS and HEIFERS, down Calving, some with Calf by side, and in milk; also some small OXEN and SHEEP, for feeding. These Cows give a large quantity of milk for their size, which is very rich, similar to the Alderney, and they are very hardy and suitable to this climate. To be seen at THOMAS OXTON'S, Salesman and Importer to her Majesty, 69, Wapping.

WINDOW GLASS.

C. JARVIS begs to call the attention of Builders and the Trade generally to the fact, that the manufacturers having made a further reduction of 40 per cent., he is enabled to supply all descriptions of Glass, at prices considerably less than have hitherto been offered. C. J. having a large quantity of small Glass in stock will dispose of it for less than manufacturers' prices. Observe the address, 38, Great Castle-street, Regent-street.

CROWN, SHEET, AND HORTICULTURAL GLASS.—Consumers of the above descriptions of GLASS will find a large stock and very reduced scales of prices at the Soho Plate, Crown, Sheet, and Ornamental Glass Company, 26, Soho-square, London.

APSLEY PELLATT AND Co. (late PELLATT and GREEN), Falcon Glass Works, Holland-street, Blackfriars, have always on hand, Bee Glasses, 1s. 2d. per lb.; Cucumber Glasses, 1s. 6d. per lb.; Milk Pans, 18-in., white glass, 5s. 6d. each, Propagating Glasses, white, 1s. per lb.; do., green, 10d.; do. condensing, 2s per lb. extra; Grape Shades, 1s. 6d. to 2s. each; Fish-bowls, from 1s 6d. each, Wasp and Fly-traps, 40s. per gross, or 8s. 6d. per dozen. By the use of these traps fruit may be preserved from (otherwise certain) destruction.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

HAYMAKING SEASON.—Haymaking Machines, with back or reversing action.—MARY WEDLAKE, the Widow of the Inventor and Patentee, begs to acquaint the nobility, gentry, and the public generally, that those HAYMAKING MACHINES, under the name of WEDLAKE'S Patent, are not manufactured by MARY WEDLAKE and Co., but are imitations only, and, although somewhat like in appearance, cannot compare with the genuine ones in durability.

118, Fenchurch-street, opposite Mark-lane.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

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The terms of the School can be had on application either personally or by letter.

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ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.

J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HORTICULTURAL BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

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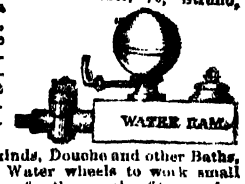

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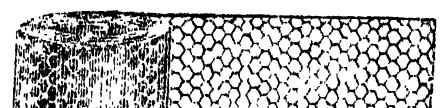
WIRE NETTING, ONE PENNY PER SQUARE FOOT.



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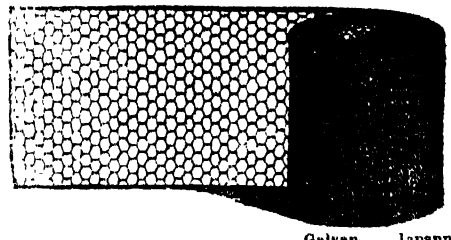
12 inches wide	3d.	per yard	30 inches wide	7½d.	per yard
18 "	4½d.	" "	36 "	9d.	" "
24 "	6d.	" "	48 "	1s.	" "

Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden arches, 20s. each; Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 68, Snow-hill, London.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



	Galvanized.	Japanned Iron.
2-inch mesh, light, 24-inch wide ..	7d. per yd.	5d. per yd.
2-inch " strong " ...	9 "	6½ "
2-inch " extra strong " ...	12 "	9 "
1½-inch " light " ...	8 "	6 "
1½-inch " strong " ...	10 "	8 "
1½-inch " extra strong " ...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

GERMAN SPRING MATTRESSES, permanently elastic, very durable and cheap.

3 feet wide.....	£2	8	0	4 feet 6 in. wide ..	£3	8	0
3 feet 6 in. wide ...	2	13	0	5 feet ditto ..	3	10	0
4 feet ditto	2	18	0	5 feet 6 in. ditto.	3	18	0

One of these, with a French Mattress on it, is a most excellent and soft bed. HEAL and SON'S LIST of BEDDING, with full particulars of weight, size, and prices, of every description of Bedding, sent free by post.—HEAL and SON, Bedding-manufacturers, 196 (opposite the Chapel), Tottenham-court-road.

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FLOWER SHOW FOR THE ROYAL ASYLUM OF ST. ANN'S SOCIETY, at the Hanover-square Rooms, on THURSDAY, June 21, 1849, under the patronage of the Queen, the Queen Dowager, and other members of the Royal Family, and the principal Nobility.

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Will be awarded for the following productions:

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For the best collection of 12 Miscellaneous Plants, in 16-inch pots, or under	2	0	0
For the second best do. do.	1	10	0
For the third best do. do.	1	0	0
For the best collection of Pelargoniums in 8-inch pots, not exceeding 12 pots, in distinct varieties	2	0	0
For the second best do. do.	1	0	0
For the best 12 Roses (dissimilar blooms) in pots	2	0	0
For the second best do. do.	1	0	0
For the best collection of Cut Flowers in Showers' own boxes	1	1	0

The Prizes will be paid at 7 o'clock on the day. All productions to be in the Room and ready for the Censors by 12 o'clock on the day. Exhibitors to affix the proper names to the plants. The flowers, &c., are to remain in the room, untouched, until 7 o'clock, when they will be delivered up to the exhibitors. All persons who intend to exhibit flowers are requested to send notice to JOHN BRIGHT, Esq., F.L.S., Brixton-hill; or to the Secretary, E. F. LEEKS, Esq., F.L.S., 2, Charlotte-row, Mansion-house. Plants will be received at the rooms on the evening of the 20th, if desired.

THE ASHCROFT SWEDE TURNIP. — This is decidedly the best of all the Swedes; it is very large, and a better shape than the Liverpool Swede, from which it was originally selected; it is perfectly hardy, having stood the last two winters in one of the coldest parts of England, where several other kinds were destroyed; and being of a quick and strong growth, it is found to thrive better on poorer soils than other Swedes, and is so soon in rough leaf as to be much less subject to suffer from attacks of the fly. If sown immediately it will be ready for feeding before any other sort, and it may also be sown later than others, as would appear from the fact that a large field of this sort, sown after Peas, was decided by competent judges to be the best piece of Swedes in the district, though in competition with other very fine crops sown much earlier. This sort will also succeed well after Vetches. The colour is yellow with purple-top. Price 1s. 6d. per lb., or 8s. per gallon. Carriage free to London, Bristol, or Basingstoke.

SKIRVING'S LIVERPOOL SWEDE, 1s. 3d. per lb., or 7s. per gallon.

EARLY SIX-WEEKS TURNIP.—The best White Turnip for early sowing to feed off for Wheat, forming a large solid bulb; it is also excellent for table use within six weeks from the time of sowing. Price 6s. per gallon, or 1s. per lb.

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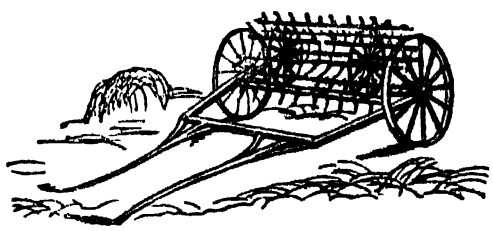

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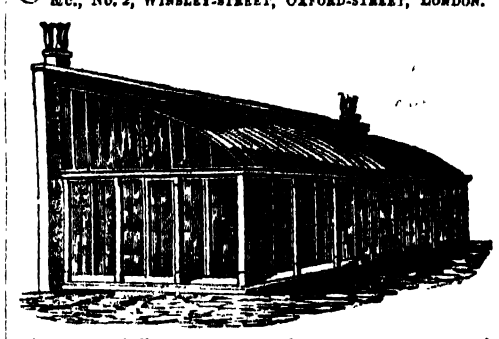

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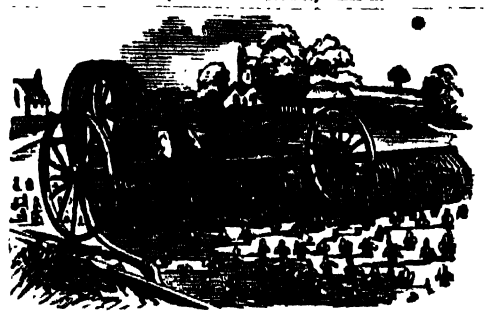

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A, represents the Union-joint, for effecting the communication between the Hose-reel and the Tank, or Reservoir.

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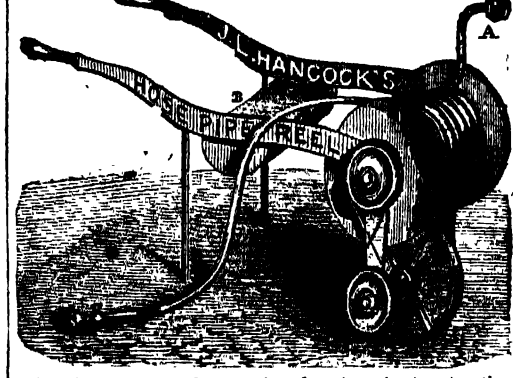

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Rates of Passage, Provisions included:

For each Person.	Chief Cabin. Guineas.	Fore Cabin. Guineas.	Steerage. Guineas.
14 Years old, and upwards ...	45	25	15
7 Years old, and under 14 ...	27	15	10
1 Year old, and under 7 ...	18	10	8
Under 1 Year old	0	0	0

An experienced Surgeon is appointed by the Company, and Medicines, Medical Comforts, and an ample Dietary provided for each Class of Passengers. Steerage Cabins are provided for Persons paying in full for their own Passage in the Steerage.

For Freight, Passage, or further information, apply at the NEW ZEALAND HOUSE; or to Mr. JOSEPH STAYNER, Broker, 110, Fenchurch-street, London. By order of the Court,

THOMAS GUDBERT HARINGTON,

New Zealand House, 9, Broad-street-buildings, London, May 29, 1849.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JUNE 16, 1849.

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A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 25—1849.] SATURDAY, JUNE 23. [PRICE 6*d.*

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TUNBRIDGE WELLS.

A GRAND HORTICULTURAL EXHIBITION will take place on the Grounds of the Colverley Hotel, Tunbridge Wells, on THURSDAY, June 28th, 1849. The Band of the Life Guards will be in attendance during the day.

HANDSWORTH AND LOZELLS FLORAL AND HORTICULTURAL SOCIETY.

Under the Patronage of the Neighbouring Nobility and Gentry.

THE SECOND EXHIBITION this season will (by the permission of Samuel Wilkes, Esq.) be held in the Grounds of Birchfield House, the late residence of Colonel Harkey, on TUESDAY, June 26th. The celebrated Promenade Band, from the Jephson Gardens, Leamington, is engaged, and will perform from 2 until 7 o'clock. Admittance to Non-subscribers, 1*s.*; Children, 6*d.* CHARLES JAMES PERRY, Hon. Sec.

Hamstead-road, near Birmingham, June 23.

NORFOLK AND NORWICH HORTICULTURAL SOCIETY.—Postponement of Rose Show.—The Annual ROSE SHOW will be held, by permission, at the Horticultural Establishment, Bracondale, on WEDNESDAY, July 4th, and not on the 27th inst., as before advertised.—CHARLES S. GILMAN, Hon. Secretary, Bethel-street, Norwich, June 23, 1849.

There will be a GRAND HORTICULTURAL EXHIBITION, upon a more extensive scale than any hitherto held in this county, (open to the United Kingdom), during the Show of the Royal Agricultural Society, on the 18th and 19th July. The profits to be divided with the Hospital and other Charities. The Schedule of Prizes, upwards of 200*l.*, with regulations, may be obtained on application to Mr. C. S. GILMAN, as above.

WARWICKSHIRE HORTICULTURAL EXHIBITION.—THE SECOND GRAND HORTICULTURAL EXHIBITION is fixed to take place on THURSDAY, the 23d Aug. next, in the Jephson Gardens, Leamington, under the special patronage of the High Sheriff and many of the resident nobility and gentry of the county of Warwick, when Prizes (highest 15*l.*) will be awarded on the most liberal scale for Stove and Greenhouse Plants, Heaths, Balsams, Cockscombs, Annuals, Specimen Plants, Cut Flowers, Verbenas, Roses, New Plants, and Flowers, and miscellaneous subjects, Melons, Pines, Grapes, and other fruits. Full particulars in the "Horticultural Magazine" for July, and Schedules to be obtained from OWEN WHITE, Esq., Hon. Sec., Jephson Gardens and Parade, Leamington.

GARDENERS' BENEVOLENT INSTITUTION.—At a SPECIAL GENERAL MEETING of the Members of this Institution, held at the London Coffee-house, Ludgate-hill, on WEDNESDAY, June 20, for the purpose of Electing TWO PENSIONERS on the Funds of the Charity, the following was the result of the Ballot:

Name.	Age.	Residence.	Votes.
EDWARD MARSHALL	69	London	88
MARY BROWNE	82	London	308
JOHN SKEATES	69	Brixton	17
THOMAS MILLS	71	London	160
CHARLES AINSLIE	83	Leyton	478
JOHN APPLEBY	56	Clapham	57
ROBERT DUNCAN	69	Highgate	152
OGILVIE NEIL	80	Scone, Perth	485
HUMPHREY TAYLOR	70	Clapham	21
JAMES BATTEY	65	London	34
EDWARD BEACH	74	Quedgley, Gloucester	74
JOHN COOKE	62	Clapham	82
RICHARD RUDLAND	76	Dartford	46
JOHN SHEPHERD	70	Clapham	303
WILLIAM BROWN	71	Andover	4
RICE EVANS	71	London	10
JOHN HURDEN	65	Bath	2
CORNELIUS ROBINSON	72	Blackheath	26
JOHN SNOW	65	Farnborough	18

The Meeting then declared that OGILVIE NEIL, of Scone, near Perth, and CHARLES AINSLIE, of Leyton, Essex, as having the greatest number of votes, duly elected Pensioners of this Charity. By order, EDWARD R. CUTLER, Secretary,

June 23, 1849. 97, Farringdon street.

WM. DENYER, SEEDSMAN, 52, Gracechurch-street, London, begs to offer the following for present sowing.

ANTIRRHINUMS, choice varieties, mixed, 6*d.* per paper.
AQUILEGIA, best varieties, mixed, ... 1*s.* ,,
EMPEROR, or New Gigantic Stock, splendid, 1*s.* ,,
PANSY, saved from choice show flowers, 6*d.* ,,
SWEET WILLIAM, many colours, named, choice, 6*d.* do.
WALLFLOWERS, mixed, singular colours, 1*s.* ,,

The whole of the above sent post-free upon the receipt of 4*s.*, or each paper separate at the prices affixed.

PELARGONIUMS.—The unrivalled GERANIUM, "HOYLE'S CRUSADER," may be obtained of J. WHOMES for 21*s.* cash. Fine strong plants, last year's stock, established in 32-sized pots, carrying at the present time a fine head of bloom. Also strong plants of all the best sorts now out, at moderate prices.—J. WHOMES, Pelargonium Nursery, Windsor.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON have much pleasure in announcing to their friends and the public, that the superb and extensive collection of ROSES, at Woodlands, is now coming into bloom, and will continue to be very attractive during the Rose season. Maresfield is 12 miles distant from the Edward's Heath Station of the London and South Coast Railway, from whence conveyances to the Nursery may be obtained.—June 23.

ROSES.

H. LANE AND SON, Great Berkhampstead, have the honour of informing those who are interested in this beautiful tribe of plants, that their splendid and extensive collection will be in bloom after the 25th of June, and those who wish to see the whole should devote six or eight hours at the Nurseries, which commence within a few minutes' walk of the Berkhampstead station of the London and North Western Railway. The visitor will not be disappointed in extent and beauty. Ornamental Trees and Shrubs are also in great quantities.

ROSES.—THE COLLECTION AT SAWBRIDGEWORTH will be in bloom on and after the 23d inst. Upwards of a thousand plants of those fine brilliant new autumnal Roses, GEANT DES BATAILLES and GYME D'OR will be in full bloom. In addition to the Roses, a large and complete collection of Hardy Ornamental Trees and Shrubs and Fruit Trees, occupying, with Roses, more than 50 acres, will be found interesting. For the convenience of visitors to the Nursery, an additional up-train will call at the Harlow Station, 1¼ mile distant, at half-past 5 P.M.—T. RIVERS, Sawbridgeworth, Herts.

ROSES.

EDWARD DENYER, NURSERYMAN, Loughborough-road, Brixton, Surrey, three miles from London, informs his Patrons and Admirers of ROSES in general, that his unrivalled collection, consisting of above 800 varieties, is now in bloom, and free to the inspection of all visitors (Sundays excepted). Orders taken for plants now in bloom, and executed in November next.

E. D. is desirous of informing his customers that he has no seed shop in London.

CRYPTOMERIA JAPONICA SEEDLINGS.

MESSRS. STANDISH AND NOBLE having still the largest stock in Europe of the above splendid tree, beg to offer fine strong plants at the annexed low prices:—6 to 9 inches high, 3*s.* 6*d.* each, 36*s.* per dozen, 12*l.* 10*s.* per 100; 12 to 18 inches, 5*s.* each; 18 to 24 inches, 7*s.* 6*d.*; 24 to 36 inches, 10*s.* 6*d.*, and upwards, according to size.

The present is the most suitable time for planting out, and every plant sent out by Messrs. S. and N. will be handsome, well-grown specimens.—Bagshot, Surrey, June 23.

MIMULUS RUBINUS.

JOHN CARTER, JUN., NURSERYMAN, Keighley, has the pleasure of announcing that he is prepared to send out good healthy plants of the above unrivalled MIMULUS, at 7*s.* 6*d.* each. Mimulus rubinus is of vigorous habit, 3 feet high; the flowers of fine form, brilliant, and showy, and J. C. has no doubt that it will supersede all other Mimuli yet grown. Professor LINDLEY, in the *Gardeners' Chronicle* for May 19th, p. 302, speaks of it in the following high terms: "Your seedling has flowered, and proves to be a very fine thing. It has by far the largest and handsomest flowers we have ever seen on any Mimulus." As the number of plants is very limited, an early application is necessary. A remittance is respectfully requested from unknown correspondents.

The usual allowance to the Trade.

TO GENTLEMEN AMATEURS, &c.

CACTI.—TO BE SOLD, an entire and really splendid collection of CACTI and other succulents, consisting of from 600 to 700 pots, and including upwards of 400 species; among which are, say 40 sp. Echinocactus, 40 sp. Mammillaria, 26 sp Cereus, 28 sp. Opuntia, 76 sp. Aloe, Gasteria, and Haworthea, Buonaparteas, Tanuses, Dyckias, &c., &c. The whole are well-grown, healthy plants, and may be had upon truly moderate terms. As the increase remains upon the plants, the collection might be greatly multiplied. Many of them are rare, and the whole have been collected at considerable expense. Any gentleman commencing the cultivation of these interesting tribes would find this to be an opportunity rarely occurring, and not to be neglected.—Address, N. SHALDERS, All Saints, Norwich.

FLOWER SEEDS.—Choice Biennial and Perennial Flower Seeds, for sowing in June and July, to flower the following season, sent, post free, at the following prices: 12 varieties for 1*s.* 2*d.*, 30 ditto for 2*s* 6*d.*, 70 ditto for 5*s.*, on receipt of the amount with the order. Also the best varieties of Early Cabbage Seed, at 3*d.* and 6*d.* per packet, post free, from BENJAMIN W. KNIGHT, Florist, &c., Tivoli, near St Leonard's-on-Sea, Sussex. Catalogues may be obtained on prepaid application, inclosing a postage stamp.

TILEY'S EARLY MARROW CABBAGE.

EDWARD TILEY begs respectfully to inform the gentry, nobility, and the public generally, that he is now ready to send out his EARLY MARROW CABBAGE SEED, which has proved the best yet in cultivation, and five weeks earlier than any other sort fit for table, and equal to young Asparagus for tender eating and flavour. The advantages of this over other Cabbages are, it grows very quickly, with scarcely any rib to it, and is very suitable for rocky or windy situations, as it is very short in the leg, and has none of the large coarse outside leaves to it. A large number of the plants have been grown in different situations, and have thoroughly proved the character given of it, and also given the greatest satisfaction to all parties who have grown it.

E. T. warrants the plants not to run for a twelvemonth. One trial will be sufficient to prove to the grower the superior quality of his Cabbage over all others. Sold in packets containing 1 oz. 2*s.* 6*d.*, ½ oz packets 1*s.* 6*d.* The above will be sent, postage free, on the remittance of a post office order, or the amount in 1*d.* postage stamps.

Sold by EDWARD TILEY, at his General Seed Shop, 16, Pulteney-bridge, Bath.

TURNIPS.—Skirving's Liverpool Swedes, 1*s.* per lb. or 4*s.* per bushel.

Fine Purple-top Swedes, 1*s.* per lb., or 4*s.* per bushel.
Norfolk Green, White, and Red Rounds ..... 6*d.* per lb.
Skirving's Improved Purple-top Scotch . 10*d.* ,,
Large Green-top Yellow Scotch . 10*d.* ,,
Yellow Tankard or Scotch Pudding ..... 10*d.* ,,
Red and White Tankards . 8*d.* ,,
Dale's Hybrid, 10*d.* per lb. Early Stone . 8*d.* ,,

The above may be had of pure and genuine stocks. Prices to the trade, for Agricultural or other Seeds, sent on application.—BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

FLOWER POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford-street, near Hyde-park, London.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and Hot-water Apparatus Manufacturer, Triangle, Hackney, near London, begs to call the attention of the gentry to his low prices for cash. Good Substantial-built Greenhouses, fixed complete, 4 ft. long, 13 wide, 40*l.*; 21 ft. long, 13 wide, 50*l.*; 12½ ft. long, 10 wide, 30*l.* A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber Boxes, Iron Hand-lights, Summer-houses, Seats, &c. Estimates for any branch in the above line, either in wood or iron, or for park fencing.

THE ANEROID BAROMETER, price 2*l.* 15*s.* and 3*l.* 3*s.* Wheel Barometers, 1*l.* 5*s.*, 1*l.* 10*s.*, 2*l.*, 3*l.* 10*s.*, to 4*l.* Pedument or Upright Barometers, 1*l.* 10*s.*, 2*l.*, to 3*l.* 3*s.* This Barometer is decidedly the best construction that is made, being less liable to error than any other, and is also more portable. Thermometers for Greenhouses, 2*s.*, 2*s.* 6*d.*, 3*s.*, and 3*s.* 6*d.* each. Ditto, for Baths or Hot Water, in Japan or Copper cases, 3*s.* 6*d.*, 4*s.* 6*d.*, to 7*s.* 6*d.* Self-registering Thermometers for Heat and Cold, of the best construction, and not liable to get out of order, 18*s.* and 21*s.* Thermometer for registering the extreme of heat, 7*s* 6*d.*, Ditto for Cold, 6*s.* 6*d.* Hydrometers for Sulphuric Acid, 5*s* and upwards. Lactometers for showing the quality of milk, with instructions, 5*s* Microscopes of superior manufacture, the lenses are strictly achromatic, No. 1, 3*l.* 12*s.*; No. 2, 5*l.* 15*s.*; No. 3, 9*l.* 10*s.* A book, giving the description and prices of Microscopes, Telescopes, and other instruments, sent free by post on receipt of two postage stamps. Persons ordering from the country or abroad may rely on the same care and attention being paid as if they were personally present to select for themselves.

HENRY BAKER, Instrument Manufacturer to the Board of Admiralty, 99, Hatton-garden, London.

IMPROVED FLOWER STICKS.—THESE FLOWER STICKS are of a circular form, thereby avoiding angles and sharp edges, which are liable to cut and injure the plants. They may be had stained brown or green to suit the various plants.—To be had of all respectable Nurserymen and Seedsmen, and dealers in Garden Implements, Manufactured and sold Wholesale, at H. MORRELL'S, 149, Fleet-street, London.

N.B. Samples to be seen at the Office of this Paper.

BEE HIVES.

GEORGE NEIGHBOUR AND SON respectfully announce that they have prepared for this season an extensive supply of their various IMPROVED BEE HIVES, which are offered to all who are desirous of cultivating that pleasing and profitable branch of rural economy—the Honey Bee. The collection consists of "Nutt's Collateral Hives," "The Single Box Hive," "The Amateur Bar Hive," "The Improved Cottage Hive," &c., from either of which the honey may be taken at any time without injury to the Bees, and may be worked with safety, humanity, and profit, by the most timid and unaccustomed to Bee manipulation. A descriptive paper, with drawings and prices, will be forwarded on the receipt of two postage stamps.—GEORGE NEIGHBOUR and SON, 127, High Holborn, London.

"Nutt on Bees" (6th edition), now published.

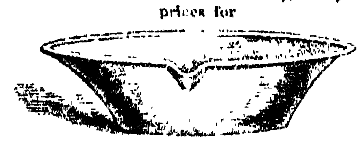
HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.

J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

MILK PANS, PROPAGATING GLASSES, &c.

JAMES PHILLIPS AND Co. beg to hand their prices for



MILK PANS

12 inches diameter, each	2s. 0d		20 inches diameter, each	4s. 0d.	
14 ,,	2	6	22 ,,	4	6
16 ,,	3	0	24 ,,	5	0
18 ,,	3	6	26 ,,	6	0

Propagating and Bee Glasses from 2d each, Cucumber Tubes 1d per inch, Peach Glasses 1½d each, Wasp Traps 3s. 6d per dozen, Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d.; 6 tubes, 10s. Self-Registering Thermometers for Greenhouses, Horticultural Glass, &c.

Estimates and List of Prices forwarded on application at their Warehouse, 116, Bishopsgate street Without, London.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES. The readers of the *Gardeners' Chronicle* of Saturday, Feb. 24th, must have observed the high terms in which this Glass was spoken of by Dr. LINDLEY. We have re arranged our list of prices to correspond precisely with those of the Patentee, to which we would beg the attention of the Nobility, Clergymen, Gentry, and others

In squares under 8 by 6 — 4d per foot

8 by 6	under 10 by 8	4½d.	10 by 8	under 14 by 10	5d.
14 by 10	,, 1½ foot	5½d	1½ foot	,, 3 feet	6d.
3 feet	,, 4 feet	6½d.	4 feet	,, 5 feet	7d.

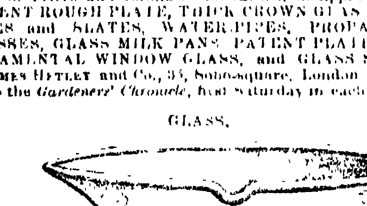
A full List of Prices and every information may be had by applying to JAMES PHILLIPS and Co., Horticultural Glass Warehouse, 116, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO supply 16 oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

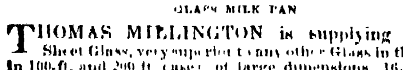
See the *Gardeners' Chronicle*, first Saturday in each month.

GLASS.



GLASS MILK PAN

THOMAS MILLINGTON is supplying Foreign Sheet Glass, very superior to any other Glass in the market, in 100-ft. and 200-ft cases of large dimensions, 16-oz., at 3d per ft., or cut to size in ranges, not exceeding 40 inches, at 3½d. per foot. British Plate Glass for Windows as well as for Horticultural purposes, from 1s 2d to 2s per foot. No gentlemen should be without this great additional improvement to their residences.



CUCUMBER TUBE.

Estimates and List of Prices forwarded on application at the Warehouse, 87, Bishopsgate-street Without, London.

CROWN, SHEET, AND HORTICULTURAL GLASS. Consumers of the above descriptions of GLASS will find a large stock and very reduced scales of prices at the Soho Plate, Crown Sheet, and Ornamental Glass Company, 26, Soho-square, London.

APSLEY PELLATT AND Co (late PELLATT and GREEN), Falcon Glass Works, Holland-street, Blackfriars, have always on hand, Bee Glasses, 1s 2d per lb, Cucumber Glasses 1s. 6d. per lb., Milk Pans, 18-in, white glass, 5s 6d. each, Propagating Glasses, white, 1s per lb, do., green, 10d, do. condensing, 2d per lb. extra, Grape Shades, 1s. 6d to 2s. each, Fish-bowls, from 1s 6d. each, Wasp and Fly traps, 10s. per gross, or 1s. 6d per dozen. By the use of these traps fruit may be preserved from (otherwise certain) destruction.

GUANO AND OTHER MANURES.
PERUVIAN GUANO, of the finest quality, direct from import warehouse.
NITRATES SODA AND POTASH
GYPSUM (SULPHATE OF LIME)
DRIED NIGHT SOIL.
SULPHURIC ACID AND COPROLITE
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of

MARK FOTHERGILL, 20 A, Upper Thames street, London.

A Treatise on Guano, Superphosphate of Lime, &c., will be forwarded on receipt of 8 postage stamps. Free to purchasers of Guano, &c.

PERUVIAN AND BOLIVIAN GUANO ON SALE
BY THE ONLY IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WILLIAM JOSEPH MYERS AND CO., LIVERPOOL;
And by their Agents,
GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
COTESWORTH, POWELL, AND PRYOR, LONDON.

To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek

CORN AND GRASS MANURE, ..	per ton £9	10	0
CLOVER MANURE	,,	8	0	0
TURNIP MANURE	,,	7	0	0
SUPERPHOSPHATE OF LIME	,,	7	0	0
SULPHURIC ACID AND COPROLITES	,,	5	0	0

N B.—PERUVIAN GUANO, from selected cargoes (in Dock). SULPHATE OF AMMONIA, &c.

Office, 69, King William street, City, London.

HOYLE'S NEW PELARGONIUMS.

MESSRS. MAYLE AND Co., FLORISTS, &c., 55, New-street, Birmingham, beg to inform the Nobility, Gentry, and the Trade, that they have purchased the whole stock of Mr. Hoyle's superb new PELARGONIUMS, which have been exhibited through the season at Chiswick and Regent's-park, and have received the highest honours at those exhibitions. The stock being small, early orders are solicited, which will be sent out in strict priority early in October, at the following very low prices. The set of Eight 7l. 10s.—Separately.

*Christabel ...	£1	11s	6d	Nonsuch ..	£1	1s.	0d
*Prince of Orange	1	11	6	Nandee	1	1	0
*Satisfaction	1	11	6	Crespina ..	1	1	0
Lord Gough	1	11	6	Lord Stanley	1	1	0

Those marked thus * were awarded in May, at Regent's-park, first class Certificates and Silver Medals.

J. D. ZOCHER AND VOORHELMSCHNEEVOOGT, FLORISTS and NURSERYMEN, at Haarlem, in Holland, beg to inform the English Nobility, Gentry, Nurserymen, and Florists, that they have been so fortunate as to obtain again the First Gold Medal for the finest and largest collection of Forced HYACINTHS and Early TULIPS at the great exhibition at Amsterdam, in the beginning of March last. They gained, also, a Gold Medal for the finest collection of Forced ROSES in bloom. They assure those who feel inclined to try their Flower Roots, and other Nursery articles, that the utmost attention shall be paid to the execution of any order committed to their care.—Apply to their House at Haarlem, in Holland. Further particulars may be had of their Agent, HENRY CORSTEN, Florist to Her Most Gracious Majesty the Queen, and His Royal Highness Prince Albert, 8, Grand Hall, Hungerford-Market, London.

TURNIP SOWING.

THE LONDON MANURE COMPANY, having adapted the "URATE" more particularly for Turnips and all Root Crops can recommend it with the greatest confidence. It seldom fails, in the driest season, to secure a good plant, and to produce a heavy weight per acre. They would call attention to their Superphosphate of Lime, which is prepared with the greatest care, and sent out in a very fine, dry state, perfectly ready for use. The London Manure Company have made arrangements for a constant supply of Peruvian Guano, from the best cargoes, which they will deliver direct from the ship or importer's stores. Corn Manure, Nitrate of Soda, Fishery and Agricultural Salt, and every other Artificial Manure, on the lowest terms for a genuine article.

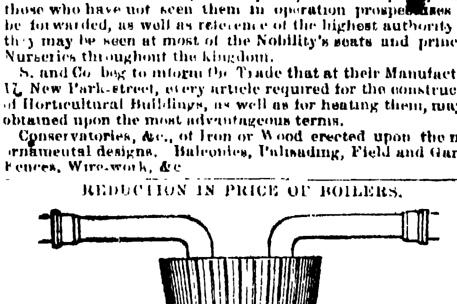
EDWARD PURSER, Secretary, 40, Bridge-street, Blackfriars.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends in consequence of the present reduced price of Iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now

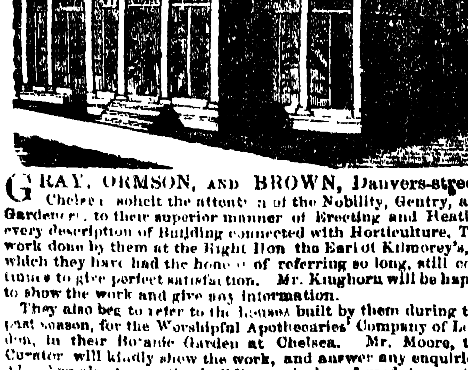
10 in. will warm	50 ft. 4 in. pipe	.. £1	15	0
12 in. do.	75 ft 4 in do.	. 2	5	0
14 in do.	100 ft. 4 in. do. .	. 2	15	0
16 in. do.	150 ft. 4 in. do ...	. 3	10	0
18 in. do	250 ft 4 in. do.	. 4	10	0
21 in do	350 ft 4 in do.	. 5	10	0
24 in. do	450 ft. 4 in. do. .	. 7	0	0

NEW PATTERN BOILERS.

30 in. will warm	800 ft. 4 in. pipe	15	15	0
36 in. do.	1500 ft. 4 in do. ..	. 25	0	0

All Boilers with double arms, up to 18 in., 5s. extra; to 24 in., 10s. extra, all above, the same price.

130, Fleet-street, London, June 23.



GRAY, ORMSON, AND BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

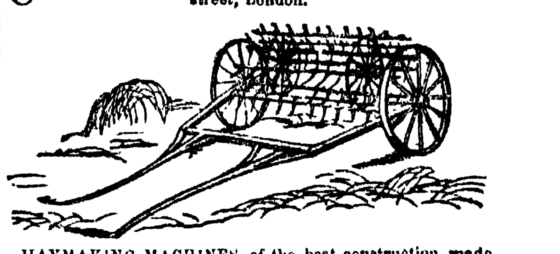
GRAY, ORMSON, and BROWN, have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.

HAYMAKING SEASON.—Haymaking Machines, with back or reversing action.—MARY WEDLAKE, the Widow of the Inventor and Patentee, begs to acquaint the nobility, gentry, and the public generally, that those HAYMAKING MACHINES, under the name of WEDLAKE'S Patent, are not manufactured by MARY WEDLAKE and Co., but are imitations only, and, although somewhat like in appearance, cannot compare with the genuine ones in durability.

118, Fenchurch-street, opposite Mark-lane.

COTTAM AND HALLEN, 2, Winsley-street, Oxford-street, London.



HAYMAKING MACHINES, of the best construction, made almost wholly of Iron, and embracing all the latest improvements, at the reduced price of 12l. 12s., are now ready for delivery at COTTAM and HALLEN'S, 2, Winsley-street, Oxford-street, London.

MESSRS. CHURCHILL AND BEANE beg to inform the public they have on hand some first-rate Agricultural Implements, made after Dr. Newington's inventions. A Prospectus sent on applying to Messrs. C. and B., Tonbridge Wells.

THE PATENT ALKALI COMPANY'S METALLIC BLACK AND PURPLE-BROWN PAINTS are applicable to every kind of Iron and Wood-work, Farm and other Outbuildings, Shipping, &c., and are pre-eminently superior to all the ordinary descriptions of white or red lead, or so-called "Mineral Paints," in point of economy, durability, and preserving quality. Prices: Black, 25l. per ton, Rich Purple-brown, 22l. per ton, delivered in London or Liverpool, exclusive of packages, which are not returnable except to be refilled, free of expense to the Company.

AGENTS: Messrs. Evans Brothers, London; Messrs. Matthews and Leonard, Bristol; Messrs. Evans and Hodgson, Exeter; Mr. Samuel J. Fill, Yarmouth, Norfolk; Mr. D. Sandeman, Glasgow; Mr. G. Sandeman, Dundee; Mr. R. Newby, Bradford, Yorkshire; Mr. R. S. Farr, Edinburgh; Mr. W. Bailey, Wolverhampton; Messrs. Bryant and May, Tooley-street, London; Messrs. Vint and Co., Newcastle-on-Tyne and Sunderland; Mr. Robert Oxland, Plymouth; Mr. Joshua Fox, Tregedna, near Falmouth. To be obtained also, with copies of Testimonials, on application to the Offices of the Company, 20, Fenchurch street, London. JOHN A. WEST, Secretary.

TODD'S PATENT PROTOXIDE PAINT at a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it. Manufactured by CHARLES FRANCIS and SONS, Cement Works, Nine Elms, London.

PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, CHARLES FRANCIS and SONS, Nine Elms, London.

PORTLAND CEMENT.—Testimonials received from all quarters, prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Milbank-street, Westminster.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry; and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

_ Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 21,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

HORTICULTURAL SOCIETY OF LONDON.

LECTURES ON HORTICULTURE.—Tuesday, June 26th, at 3 P.M.—"The STEM, whether regarded as timber, or as a means of propagation; together with the circumstances which hasten or deter its destruction by decay."

No one can be admitted to the Meeting Room except Honorary Members and Fellows of the Society, their wives or sisters, and visitors specially introduced by them; or the Foreign and Corresponding Members of the Society.

21, Regent-street, June 23, 1849.

THE FOLLOWING RARE AND CHOICE SEEDS for Flowering next Season, at Sixpence per packet.

Very large double Emperor Stock, Red	Very large double Emperor Stock, blue
New White Giant Winter do.	Hollyhock, 12 sorts, mixed
Carnation and Picotee (mixed) from stage flowers	Auricula, finest mixed
Wallflower, double blue	Primula sinensis (mixed), pink and white [lhad.
Do., Giant double brown	Calceolaria, better cannot be

These Seeds have lately been received from Germany, and are adapted for the present sowing.

N.B. All kinds of Swedes and other Turnips can be had in any quantities.

CLARKE and Co., Seedsmen, 86, High-street, Borough.

HERTFORDSHIRE ROSES.—E. P. FRANCIS'S extensive Collection of ROSES is now in bloom, and will continue for the season. An early inspection is respectfully solicited. Trains direct to Hertford.

Hertford Nurseries, June 23.

The Gardeners' Chronicle.

SATURDAY, JUNE 23, 1849.

MEETINGS FOR THE ENSUING WEEK.

Monday,	June	25	Geographical ..... 8½ P.M.
Tuesday,	—	26	Horticultural (Lecture) ..... 3 P.M. Civil Engineers ..... 8 P.M. Medical and Chirurgical ..... 8 P.M. Zoological ..... 9 P.M.
Wednesday,	—	27	Society of Arts ..... 8 P.M.
Thursday,	—	28	Royal Society of Literature .... 4 P.M.

COUNTRY SHOWS.—Tuesday, June 26: Handsworth and Lozells Horticultural.—Wednesday, June 27: Meath Horticultural Thursday, June 28: Childwall Floral and Horticultural, Tunbridge Wells Horticultural.

AT last PAULOVNIA has flowered in England, and its bloom is on our table—sweet as Violets—large as a Foxglove—tinted like a Lilac. Mr. MALLESON, the Royal Gardener at Claremont, has had the honour of first compelling this plant to produce its charming flowers, which many have longed, and none been able, to see, except a few who have chanced to be present at its blossoming in some continental gardens.

Possibly our readers do not know what Paulovnia is. It may be described as a tree with huge roundish green leaves like those of a Catalpa. It is hardy, grows with great rapidity, and derives considerable beauty from its foliage; but it is apt to make watery wood, which ripens ill, and its blossoms, formed in the autumn, are liable to be killed by winter, unless protected by Fern leaves, as was the case at Claremont.

It has been introduced to Europe by the Dutch, through Professor SIEBOLD, who has figured it in his work on Japan plants, and who describes it as a tree from 30 to 40 feet high and 2 or 3 feet in diameter, producing a very light white wood. Being "one of the most magnificent plants of Japan," it was named in compliment to Her Imperial and Royal Highness the Hereditary Princess of the Low Countries; and also because "its leaf, ornamented with three flowering branches, formed the armorial bearings of the great hero Taikasama, for which reason it is held in high honour in Japan" We quote from SIEBOLD, who further describes the tree as forming a large head, with numerous stout arms branching from it at right angles. He says that the beautiful fragrant flowers appear (in Japan) at the beginning of April, after the leaves are expanded. In general size they call to mind the noble clusters of our Horse Chesnut, loaded with blossoms resembling the purple Foxglove in form, size, and colour. The tree is reported to grow most commonly in the most southern provinces of Japan, where it thrives in the valleys and on the slopes of hills *fully exposed to the whole force of the sun.* It grows there so fast that suckers 3 feet long became from 10 to 15 feet high in the Botanical Garden of Decima in the first year. Although the plant has been thus brought to notice by von SIEBOLD, it was in reality well described and figured by KÆMPFER, more than a century since, under the name of *Kiri*, which it still bears.

We have been sometimes asked whether this tree will suit an English climate. That it will bear our winters is certain: that it will grow with its natural vigour is sufficiently shown by the specimens now in gardens. But whether or not it will flower freely may be a question. At present it overgrows itself; its coarse rank shoots are unable to ripen in our short and humid summers. Until that bad habit is overcome, we do not anticipate much success with it, although the propensity will no doubt diminish as it advances in age. It is for the English gardener to devise the means of compensating for the sun of Japan; the gardeners of Germany and France have such a sun at their certain command.

The methods of dealing with the plant are not difficult to discover. A dry, poor, gravelly, or sandy soil will check its exuberance; a warm and sheltered corner, or a high exposed place, will aid the wood to ripen. On the contrary, the deep and fertile soil of ordinary English gardens, and a position amidst trees and bushes, as a portion of a shrubbery, can only tend to increase all the evils of its nature. The rule should be to starve it and roast it by such natural means as the climate may furnish. Then it will probably flower freely enough to be worth having; and the singularly agreeable fragrance of its blossoms render it deserving of attention even if they should not all expand with the uniformity required for complete beauty. Whether or not a protection of some kind to these flowers during winter be necessary, other things being right, may be doubted. There is an abundance of fur provided by Nature to guard the young buds, and the frosts of Japan are as severe as those of England.

A better plan perhaps would be to grow it as an Orange-tree, keeping it in a tub, drawing it into a cold conservatory for the winter, and dragging it out again in the beginning of March. By that means it would be more under control, especially in bad summers; and the ripening process, so essential to its shoots, would be better secured.

This at all events is certain, that success with Paulovnia will amply repay any care that can be bestowed upon it.

THE RELATION BETWEEN VEGETATION AND CLIMATE is a much more important horticultural consideration than many imagine. We learn from its study not only why the Grapes of Fontainebleau and the clingstone Peaches of Italy cannot be obtained in England, but also that with such means as gardeners at present command there is no possibility of obtaining them. Cuttings may be brought trees may be imported, the stocks on which they are grafted may be varied, but the result will still be unsatisfactory. The climate of Great Britain is not that of Paris or Naples. If this were more generally borne in mind gardeners would escape the blame imputed to them by unreasonable persons, for not performing physical impossibilities.

But if the attentive study of this important and most interesting subject teaches us to know what is impossible, it also guides us in determining what may with certainty be accomplished. It would have taught the speculators in Assam Tea to distrust the issue of their enterprise, as it, on the contrary, inspired the scientific advisers of the East India Company with most entire confidence in the success to be anticipated from cultivating Tea in some of the northern provinces under British rule.

The introduction of the cultivation of Tea into the Himalaya is one of the most important events in the social history of British India. Independently of the commercial advantages that must result from it, the preparation of the leaves will of itself afford profitable employment to a peasantry sunk in the lowest and most helpless poverty, not from their own lazy habits, but from the total absence of all remunerating occupations. Dr. HOOKER gives the following example of the condition of the peasantry in the north of India. A youth had been eaten by an alligator, and this is the state of his parents:

"The poor woman earns a scanty maintenance by making catechu. She inhabits a little cottage, and has no property but two bhiles (oxen) to bring wood from the hills, and a very few household chattels; and how few these are is known only to persons who have seen the meagre furniture of Dangha hovels. Her husband cuts the trees in the forest, and drags them to the hut; but he is now sick; and her only son, her future stay, was he whose end I have just related Her daily food is rice, with beans from the beautiful blue-flowered Dolichos, trailing round the cottage; and she is in debt to the contractor, who has advanced her two rupees (about 4*s.*) to be worked off in three months, by the preparation of 240 lbs. of catechu. Rent to the Rajah, tax to the police, and rates to the Brahmince priest, are all paid from an acre of land, yielding so wretched a crop of Barley, that it more resembled a fallow-field than a harvest-field. All day long she is boiling down the catechu wood, cut into chips, and pouring the decoction into large wooden troughs, where it is inspissated. This Zillah is famous for the quantity of catechu its dry forests yield. The plant is a little thorny tree, erect, and spreading a rounded coma of well-remembered prickly branches. Its wood is yellow, with a dark brick-red heart: it is most productive in January, and useless in June."

To provide employment for people like these is the first duty of a civilised government, and was no doubt the cause of Lord HARDINGE's earnest advice to the Court of Directors that the Tea plantations should be aided by the whole power of the Indian Government.

A highly interesting account of the "progress of the culture of the China Tea Plant in the Himalayas, from 1835 to 1847," has been given by Dr. ROYLE, to whose judicious counsels its establishment there has been mainly owing. The following facts, which we borrow from his pages, will explain briefly the history of the experiment, and the highly satisfactory results which have attended it.

"It was in the early part of the year 1827 that I first mentioned to the Earl AMHERST, then Governor-General of India, the probability of a successful cultivation of Tea in the Himalayan Mountains, and included it specifically in a report which was presented to the Indian Government at the latter end of that year, stating that 'It does not appear by any means so delicate, or so limited in geographical distribution, as is generally supposed, and although it appears to attain the greatest perfection in the mild climate about Nankin, yet it flourishes in the northern latitudes of Pekin and of Japan.' On Lord WILLIAM BENTINCK visiting the Saharunpore Botanic Garden, in 1831, I again mentioned the subject, and included it in the report which was presented to his lordship, in which I stated my wish 'to attempt the cultivation of the Tea plant, of which the geographical distribution is extended, and the natural sites sufficiently varied, to warrant its being easily cultivated.'"—"Though unacquainted with the fact, I was in the year 1839 informed by Mr. GREEN, that Sir JOSEPH BANKS had many years previously recommended the cultivation of Tea in the Himalayan Mountains, and that Dr. GOVAN had also done so at a later period. Dr. WALLICH also, in the year 1832, presented a paper to the Committee of the House of Commons, recommending the cultivation of Tea in the districts of Kemaon, Gurhwal, and Sirmore. Not having had an opportunity of detailing my reasons for the opinions which I had so long entertained, I did so in my 'Illustrations of Himalayan Botany,' pp. 107 to 127, published in 1844."—"At the time that the above paper was printing in this country, Lord W. BENTINCK, with the sanction of the Court of Directors, had determined upon attempting the cultivation of Tea in India. A Tea Committee was appointed, who reported that, 'the experiment may be made with great probability of success in the lower hills and valleys of the Himalayan range.' To this they say they were led by a 'very able and interesting letter of Dr. FALCONER on the subject.' This letter, or report, is remarkable for coincidence in argument and in opinion with what I was at the same time writing and printing in England; and this without any communication of ideas, for the two essays must have crossed each other at sea."—"Tea seeds arrived in Calcutta in January, 1835, and produced numerous plants, which were dispatched to the districts where it had been determined to establish Tea nurseries, that is, to Assam, and to the Kemaon and Gurhwal portions of the Himalayan Mountains. I had recommended several situations, as Bheemtal, Hawulbagh, Deyra Doon, and Pinjore, in valleys elevated from 2000 to 2500 feet; Almora, Jurreepanee, Nahn, and Sabathoo, at elevations of from 4000 to 5000 feet; and one locality, Mussooree, at 6500 feet of elevation, in 30° of north latitude. Dr. FALCONER, without any communication, selected Chejooree, Rama Serai, and Koth, at elevations of 4000, 5000, and 5300 feet; with two situations, Rurroo and Berhur-bagh, in Sirmore, at 5100 and 5100 feet. He subsequently selected the valley called Deyra Doon, elevated 2500 feet, as a favourable site, especially after irrigation had been facilitated by the establishment of canals. Sites were at the same time selected in Kemaon by the Commissioner, Mr. TRAILL, and placed under the charge of Mr. BLINKWORTH, a plant collector of the Calcutta Botanic Garden, until October 1, 1839, when he was placed under the general superintendence of Dr. FALCONER. One nursery was established at Bhurtpore, between Bheemtal and the Ghagur range, at an elevation of 4500 feet; and a second nursery at Luchmasur, near Almorah, at 5200 feet of elevation. The general directions given by the Calcutta Tea Committee were, that 'a decided winter climate of six weeks or two months' duration, with frost as well as snow, is essential to ensure final success with really good sorts of Tea."

The plantations were thus established, and immediately began to grow with all the vigour that had been anticipated. The next step was to obtain some Chinamen who understood the art of preparing Tea; not an easy task The men first engaged refused to proceed to Kemaon; Dr. WALLICH, however, succeeded in engaging nine others, who reached their destination in April, 1842. In January, 1843, the first sample of Himalayan Tea was received in England, and 'reported on by members of the Chamber of Commerce, who pronounced the Tea to be a very good marketable article, and worth in London about 2*s.* 6*d.* per lb. The specimen sent to London was reported on by Messrs. THOMPSON, of Mincing-lane, and pronounced to be 'of the Oolong Souchong fine kind, flavoured and strong This is equal to the superior black Tea generally sent as present, and better, for the most part, than the China Tea imported for mercantile purposes.'"

Dr. JAMESON, then in charge of the Tea plantations, and from whom this sample was received, "having proceeded to visit the Kemaon Tea nurseries, reached them in April, 1843, when he found them 'looking admirably, and the Chinamen employed in manufacturing black (Pouchong) Tea;' which, he states, 'appears to be of a much superior quality.' On the 30th August there were forwarded by the overland route 16 small canisters of the above Tea, covered with wax-cloth to protect it from wet. The wax, unfortunately, gave a little of its flavour to the Tea, as the canisters got injured, and did not arrive at the India-house before the month of December."

These Teas, notwithstanding the injury they had

sustained from unskilful packing, were reported by the brokers to be worth from 1*s.* 2*d.* to 3*s.* 6*d.* per lb.

Since 1843 various other plantations have been established. "The latest report of Dr. JAMESON shows the quantity of land under Tea cultivation, in the districts of Kemaon and Gurhwal, including the Deyra, to be 176 acres, and the total number of plants, 322,579. The plant is stated to be thriving in different localities, extending over four degrees of latitude and three of longitude, and that 100,000 acres are available in the Deyra only, for the purpose of Tea cultivation."

In July, 1846, a sale of Tea took place at Almorah, "with considerable increase in the prices. The average price was 6 rupees 14 a., and some of it sold as high as 7 rupees 7 a., that is, something more than 7*s.* per lb., without any duty; and it was a further gratifying fact that most of the Tea had been purchased by natives."

In August, 1847, "Dr. JAMESON wrote from Paoree that another sale of Tea had taken place on the 9th August at Almorah. 'The amount realised for green Tea varied from 10 rupees 8 a. to 9 rupees 1 a. (that is, more than 9*s.* and 10*s.* per lb.) For black Tea the amount realised was 7 rupees 8 a., the maximum, and 4 rupees the minimum.' On the 4th October he states, 'I have just received orders from Government to form Tea plantations on the whole of the hilly districts of the North-west frontier, from the Sutledge and new country lately acquired west of that river, to the Ravi;' and that he proceeds immediately towards Kangra to inspect and select sites. The GOVERNOR GENERAL pronounces the Tea to be as fine as any Chinese Tea he had ever drank. Dr. JAMESON concludes by stating his conviction that Tea will shortly become a most important article of production from the North-west provinces."

This amount of success is the more remarkable when it is considered that only the inferior species of Thea is as yet cultivated in India, and that the *art* of manufacturing Tea, like the art of wine making or tobacco making, can only be acquired by much experience. The samples of the Teas which we have tasted, both black and green, although not equal to the finest Chinese samples, were quite as good as the Tea usually consumed in the houses of the middle class; and leave no possible room for doubt that, with experience, and a better description of Tea-plant (which Mr. FORTUNE is now specially engaged in China in obtaining), the Tea trade of India will be a most formidable rival to that of the Celestial Empire. It is already a matter of official record "that, though the Pouchong (black) Tea sold at an average rate of 6 rupees 8 a. 8 p. per seer, and that at least half the quantity sold was bought by natives, the coarse Bohea Tea was reserved and sold to the Bhoteahs at a price varying from 2 rupees to 2 rupees 4 a. per seer. 'It has been purchased by them, in order to carry it across the passes into Thibet. Nor will it be long, if the importation of Kemaon Tea into Chinese Tartary is not prohibited, before that market is wholly supplied from the British provinces.'"

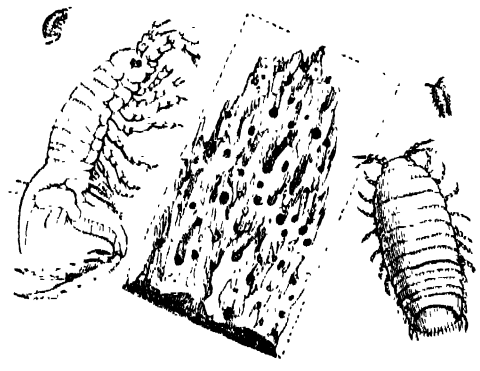
The quantity of Tea manufactured in 1848 is officially reported to be 2656 lbs. Dr. JAMESON states "that, of this, he had just despatched 600 lbs. of black and green Tea to this country, and that 'it was finer looking than any sent in former years;' also that, 'by the end of this season, there will be 400 acres under cultivation at Kolaghu in the Doon;' and 'at Paoree I expect to have 200 to 300 acres;' and that he has 'about 250,000 seedling plants ready to transplant.' 'Last season I sent a lac (100,000) of the plants to the Kangra valley, where most of them are doing well,' while 'the seeds collected from our own plantations this season amount to upwards of 2,000,000. From the plantation of Deyra (Kolaghu) we shall be able, in the course of 8 or 10 years, to raise a sufficient number of plants to plant the whole Doon."

We heartily congratulate Dr. ROYLE and his Indian coadjutors upon the success of their great experiment; and we cannot close these hasty remarks more appropriately than in his own words: "I have been gratified to find that the inferences deduced from scientific data have been fully borne out by the practical results. There is no doubt that if the best kinds of Tea plant are obtained from the northern districts of China, and with them a few manufacturers from the places where the Teas most esteemed in commerce are prepared, and which are consequently those most in use by the British public, that any kind or quality of Tea may be prepared as good and as cheaply in the Himalayas as in China. For we have an equal command of soil and climate, with cheap and abundant labour, unoccupied land at a low rent, with comparatively small expense of carriage even to Calcutta. But India itself, with other parts of Asia, will consume a large quantity of Tea, when it is obtainable at a moderate price, and even if of a quality inferior to what has already been produced in the Himalayan mountains."

ENTOMOLOGY.

THE GRIBBLE, AND OTHER SUBMARINE XYLOPHAGA.

THE destruction of submarine wooden erections, such as piers and jetties, constructed in salt water, has within the last few years been more extensively noticed than heretofore, and its real cause ascertained to be owing to the attacks of myriads of minute insects, scarcely more than an eighth of an inch in length. The destructive powers of the Teredo navalis has been known from very early periods, and in the last century Linnæus, at the request of the King of Sweden, investigated the cause of the destruction of Oak timber in the royal dock-yards of Sweden, when it was found to be produced by the attacks of the larvæ of a beetle, Lymexylon navale, but it has been reserved to our own countrymen to discover a more insidious enemy than these in the shape of a small crustaceous animal, represented in the two figures on the right-hand side of the annexed woodcut, of the natural size and magnified. This is the Limnoria terebrans of Dr. Leach, an Isopod crustacean, known on the south coast of England under the name of the Grabble, belonging to the family Cymothoadæ and having two pairs of short antennæ, and seven pairs of short simple feet; it is when alive of an ashy colour, with black eyes; the terminal segment of the body is transversely oval, and furnished on each side with two small articulated appendages. The abdominal portion of the body beneath is furnished with a double series of delicate membranous plates, which perform the function of breathing, and the female is provided, on the under-side of the body, between the legs, with a kind of pouch, within which the young are developed, which, according to Dr. Leach, are six or seven in number. This species attacks the wooden submarine erections on all our coasts, Fir, Birch, and Oak being nearly equally injured by it. Mr. Hope, who paid some attention to its proceedings at Southend, states, in the Transactions of the Entomological Society, vol. i., p. 119, that Teak wood remains unperforated, and Messrs. Kirby and Spence state that, in order to ascertain how far pure sea water is essential to it, and consequently what danger exists of its being introduced into the woodwork of our docks and piers communicating with our salt water rivers, as of Hull, Liverpool, Bristol, Ipswich, &c., where it might be far more injurious even than on the coast, they experimented on a piece of Oak full of the insects in a living state, commencing on the 15th of December, and pouring a weak solution of common salt over the wood every other day, so as to keep the insects constantly wet. On the 5th of February they were found alive, and, what seemed to prove them to be in as good health as in their natural habitat, numbers had established themselves in a piece of Fir wood which they had nailed to the Oak, and had in that short period, and in winter too, bored many cells in it.



The immense numbers of this insect, and its strong devastating powers, reduce a piece of wood in a very few years to a state of perfect uselessness; since by forming longitudinal burrows in close juxtaposition, the intervening space gradually rots, and is washed away by the action of the sea-water, and thus a piece of three-inch Fir plank has been observed after the short space of three years to have crumbled away to less than an inch in thickness, in fact, deducting the space occupied by the cells, which cover both surfaces as closely as possible, barely half an inch of solid wood was left, and Mr. Hope states that wooden piles become perforated and useless in five years. Our middle figure represents a piece of wood in process of destruction, the dotted lines showing its former size. Various plans have been suggested for the destruction of this insect, such as removing the wood out of the water for a few days, when the insects die; covering the piles with broad-headed or copper nails, the oxydation of which, by impregnating the wood, renders it distasteful to the insect. Copper sheathing has been used, with partial success, and common tar has been found serviceable when daubed over the piles; and at Southend gas-tar has been found even more efficacious than common tar. If it were possible to saturate the piles with the gas-tar, or with strong solutions of corrosive sublimate, we do not doubt that a more certain means of prevention against the attacks of the insects would be obtained. A very valuable paper on Limnoria terebrans has been published by Dr. Coldstream in the "Edinburgh New Philosophical Journal," for April, 1831. A paper by Mr. W. Thompson, in the same Journal, for January, 1831, on the Limnoria and Teredo may also be consulted.

The two figures on the right side of the woodcut represent the Chelura terebrans of Philippi, first described in 1839, in Wiegmann's "Archives," and more recently by Mr. Allman, in the "Annals of Natural History," for June, 1847. This little remarkable animal belongs to the Amphipodous Crustaceans, and to the family Gammaridæ. It has the body not compressed, the upper pair of antennæ short. The seven pairs of legs are of nearly equal length, with the first two pairs terminated by a didactyle claw. The body is terminated above in a large strong curved horn, the abdomen is furnished at the sides with a pair of large foliaceous lobed appendages, and terminated by a pair of very large lamellar angulated appendages used in leaping. Mr. Allman states that it is an active little animal, swimming on its back, and employing its thoracic legs to adhere to the timber which it has selected for its ravages; when removed from the water and placed upon a resisting surface it bends the abdomen under the thorax, brings the terminal appendages between the antennæ, and then suddenly resuming its straight condition, springs to a considerable distance. Its habits are truly xylophagous, as proved by an examination of the contents of its stomach; and timber which has been subjected to its ravages presents a somewhat different appearance from that which has been attacked by the Limnoria. In the latter, we find cylindrical burrows running deep into the interior, while the excavations of the Chelura are considerably larger and more oblique in their direction, so that the surface of the timber thus undermined by these destructive animals is rapidly washed away by the action of the sea, and the excavations are exposed in the greater part of their extent, the wood appearing ploughed up, so to speak, rather than burrowed into. Upon the whole, Mr. Allman considers the Chelura to be a still more destructive animal than the Limnoria.

As a native of the United Kingdom, this animal was first observed in the timber-piles of the jetty in Kingston Harbour, Ireland, by Mr. Robert Ball; specimens had, however, long previously been in Dr. Leach's collection of the British Museum, supposed to have been taken in Devonshire or Cornwall by himself or Montague, and it is introduced into the British Museum catalogue of Crustacea under the name of Nemertes Nœseoides. It has also been found in Ardrossan Harbour near Saltcoat, Ayrshire, by Major Martin and the Rev. D. Lansborough (as we are informed by Mr. A. White), and in Belfast Bay by Mr. Thompson; we have also been favoured by H. Pownall, Esq., with several pieces of wood, perforated by a "new sort of worm" in and round the Southampton Waters, which proves to be the Chelura. Mr Pownall states that it seems to destroy all kinds of piles, piers, wharfs, &c., and is located about one mile above Hampton Quay, in Hampton Water, and from the entrance of the docks opposite Durken's yard at Woolston, and extending a mile up the Itchen river. It is so destructive that it will destroy a piece of Memel timber 13 inches square in about 10 years, or perhaps less. It works into the timber from the mud to nearly the usual flow of the tide at neaps, avoiding, however, the knots of the wood. Specimens of wood taken from a lighter in which a quantity of coal-tar had been used, were found perforated by the Teredo, but not by the Chelura. *J. O. W.*

VILLA AND SUBURBAN GARDENING.

ONE of the first conditions essential to the successful management of a garden, is that of keeping the soil open and porous, in order that water, which may from time to time be administered either naturally or artificially, can reach the roots of the plants, instead of running off into the paths or other lower parts of the ground. Heavy rains especially, as well as the continued application of the watering-pot, soon unite the particles of earth into a solid mass, the surface becomes caked over, so that water is of little use when applied, and the beneficial influence of the atmosphere is completely excluded. Under such conditions it will be apparent that healthy action cannot long be sustained in any plant, not even in a Cabbage. The moving and stirring of the soil, therefore, becomes an important operation, and to accomplish this in an efficient manner, a tool should be used capable of penetrating it to some depth. The Dutch hoe and rake are old lady implements, and are now rarely found in the hands of a good cultivator. Tools can easily be made to penetrate the soil without injuring the roots of plants. A finely raked and smooth surface is anything but a proof of good gardening. High cultivation depends greatly upon keeping the soil in a loose and friable condition, and the maintenance of this condition is quite as important as trenching or digging the ground preparatory to receiving the crops.

It must be observed, however, that the soil is not always in a fit state to be operated upon in the manner I would recommend, and that there are times also when the work can be done to much more advantage than at others. Soils of a light nature admit of being acted upon much more readily than others which are stiffer. The clayey soil of the neighbourhood of London, on account of its obstinate character, requires great care, and much application, to keep it in a productive state. In dry weather it becomes as hard as a highway, and in wet weather its adhesive and unctuous nature renders it equally difficult to cultivate. In consequence of this, it will be necessary to deal with it when between the wet and the dry states, and then every effort should be made to thoroughly work it about and pulverise it. Under no circumstances attempt to meddle with it when saturated with wet, for if handled and trod upon

then, it frequently requires twelve months, and the action of frost, to reduce it into a friable and kindly working order.

In dry weather of some continuance, where it is very desirable to plant out or sow either culinary or flower garden seeds or plants, and where the space is limited, a good watering should be given to the ground, and in the course of a day it will be found to work well. This should also be kept in view when the beds require to be stirred for the purpose of admitting air and water to the roots. Let these conditions be kept constantly in view (they are quite attainable in a small garden), and there will be no cause to regret the extra labour thus expended. *Pharo.*

DISEASES OF PLANTS.

(*Continued from p. 372.*)

Genus VI. Carpomania, *that is, excessive quantity of Fruit; single species.*—Writers on rural economy, in order to adapt their style to the intelligence of their readers, distinguish fruit trees from forest trees. But, strictly speaking, this division is not correct. All trees, as well as herbaceous plants, have their fruit, as indeed the whole of the vegetable kingdom, not even excluding Cryptogamous plants, if we may trust to the most learned botanists. These fruits are frequently what we usually call *seeds.* What we are more especially accustomed to call fruit, is generally only the substance which forms the outer covering, sometimes leathery in appearance, as the shell of the Walnut, or fleshy, like that that of the Peach or the Apple. This preliminary observation was necessary in order to explain that an excessive production of fruit may happen to any plant brought into a state of peculiar vigour, either by the nature of the nutriment given it, or by that of the locality in which it is placed, or by the extraordinary character of the season. This, however, is more especially apparent to the agriculturist in the case of the trees more commonly styled fruit trees. We see frequent examples of it in the Apple and Pear. Now, it is certain that this superabundance is the cause of the fruit being inferior in quality; and often their external conformation is not good. An Apple tree overloaded with fruit has them generally of a very small size.

Cultivators usually care little if the seeds of a large number of plants are well formed or not. As far as concerns them, all they look for is, that the fruit should be externally well formed, and that their flavour should be as rich as possible. Yet it is necessary that they should prevent the evil consequences to the tree of too great a production of these fruits. It is well known that the Apple and Pear give a crop of fruit only in alternate years, remaining much debilitated after having fruited. This appears to me to be owing to a defect in the distribution of the sap; being all drawn towards the nutriment of the fruit, it cannot ensure the robust formation of the buds, the hope of the following year. But even worse evils are to be feared. Gerbezio gives us the history of an Apple tree which, after having produced one autumn an extraordinary quantity of Apples, became in the following month of March almost stripped of its bark, which detached itself from the wood, commencing at the bottom of the trunk and continuing upwards along the branches, and in a short time the tree perished. Last year I observed something of the same kind in an Apple tree, which the farmer assured me had required the support of eight poles to prevent the branches being broken down by the weight of the fruit. It was old, and to its age was attributed the disease in question; but, in my own mind, I was more disposed to ascribe it to the over production of fruit. Peaches, Plums, Apricots, Pears, and almost all fruit trees, are liable to this disease, which it is very necessary to prevent, more especially where the tree is valuable from the quality of the fruit. This is done by depriving it of some of the fruit. The practice becomes necessary at all times when the tree is weak, for the purpose of ensuring the due formation of the new branches, as above stated.

Much caution must be used in this process of thinning; too much haste in the operation must be avoided, as winds and insects cause a great number to fall, thus naturally assisting the tree. We must be careful not to tear off the fruits we thin out, but cut them off with a sharp instrument. The best rule to follow is to choose the time when the fruit has attained about one-half of its size, and then to cut out one wherever three or four grow together. Some amateurs complain that some of the finer kinds of Grapes, which they cultivate on trellises, and reserve for the table at a later season, do not ripen well, on account of the Grapes being too close in the bunch. The remedy is easy: you have only with a pair of scissors to cut out a portion of each bunch, taking it from the part next the trellis and near the stalk, not from the extremity of the bunch, as is sometimes recommended.

I cannot pass over silently a circumstance in the cultivation of the Vine which I have often observed. When the crop has been scanty one year, the Vine is allowed the next year to overload itself with fruit, in order to have a good vintage; but the Grapes are then not of the best quality, and the plant usually suffers considerably from weakness. The evil is then owing to the inexperience and avidity of the cultivator. In the case of tall trees, the above-mentioned methods are not practicable. In their case all that can be done is to counteract the weakness following the over-production of fruit, by working and manuring the roots, not immediately round the trunk, according to the ordinary practice, but over the ultimate fibres of the roots, which are those which suck up the juices. As the roots generally occupy pretty nearly the space of ground which is covered by the branches, that will readily indicate where the manure is to be applied. Herbaceous plants overloaded with flowers require attention to a process important for the insuring the good quality of the seeds which it is wished to gather. I proved it through a long series of years; and, moreover, it is the constant practice of gardeners, with the most beneficial results. Let the main shoot of the plant be stopped, and the lateral branches alone preserved. Even these, when too numerous, should be thinned out. The best established principles of vegetable physiology are in favour of this practice. The sap is always more elaborated in the horizontal branches, and that which, if left at liberty, would go to form the upright shoot, is forced into the lateral branches, is then more elaborated, and adds vigour to the seeds which are formed.

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

Liquid Manure.—All gardeners may read with great advantage a leading article in the *Chronicle* of last week on the proposed employment of the sewage of London for agricultural purposes. The immense benefits derived by growing crops from a discreet application of liquid manure are there placed in a clear light, and we hope our amateur friends will act upon the principle stated in the sentence, "What is true of a Grass field is equally true of a Cabbage garden, of Celery, Peas, Lettuces, Asparagus, and all kinds of garden stuff." The inhabitants of large towns, having no gardens, are obliged to let the sewage made on their premises run away. But those who have any land to cultivate should employ all the refuse of this kind at once, so as at the same time to benefit their crops, and prevent the existence of a nuisance.

What are called the slops of a large family commonly produce a nuisance by being thrown into receptacles with more solid matters, where they are allowed to remain until a still greater pest is created by the necessity for removal; this is the ordinary procedure, except in cases where common sewers or dom-wells carry off such substances. It is obvious that these slops are highly fertilising, and are capable of doing much good, either to fields or gardens, and we have for some time past employed them day by day, as they are produced, upon various horticultural productions. The pails are placed in a fixed spot by the housemaid, and the gardener applies the contents, either unmixed or diluted as the case requires, in the course of the day. All the Roses have had a plentiful supply more than once this season. Asparagus, Peas, and Strawberries, have evidently been benefited by the application, especially the former, our practice being to pour some of the liquid on all the places from which stems have been cut, on the same principle as that indicated in the leading article above referred to, in relation to Grass. We must quote a few lines of the passage, because they are so exactly applicable to our purpose. "Cultivators who know nothing of manure, except from the action of the solid, and sometimes not very useful, materials produced in farm-yards, cannot believe that half-a-dozen crops of Grass per annum are possible, each heavier than the preceding. Nevertheless, such crops are attained by skilful men, and will one day be common. Liquid manure works the wonder." To say the least on the subject, whatever goodness exists in the slops is disposed of in the most expeditious and convenient way, and is made immediately available. The same observations apply to soap-suds made on washing days; these are never allowed by us to run to waste, but are at once applied where they seem to be needed.

The quantity made weekly in our house is about 60 gallons, or about 3000 gallons annually. Perhaps it is necessary to observe that only the slops taken from the bedrooms is intended in this paper. This quantity of liquid manure, if thrown into drains, would be of no service, and would be more or less offensive. It is surely an object worthy a little attention, to get rid of a nuisance, not by any expense, but by conferring an actual benefit on the garden. We have before written on the use of the various fertilising articles which are produced and thrown away in every family, but have only recently adopted the plan just detailed with the liquids. We have found it to be unexceptionable, and therefore can recommend it to all our readers. *H. B.*

Home Correspondence.

Rain-water.—I beg to inform "C. R. D." that I have considerable experience of water falling on the roof of a house being led thence to an underground tank, and pumped up for domestic service, and I have used it for all purposes and have never found it ferment or smell badly, but for drinking it has been passed through a filter as a matter of course, because no water that comes from any roof can be pure, there being filth of all sorts, although on a small scale, deposited there by birds, &c. There may possibly be a very remote danger from the lead cistern, but, after many years' experience, I have found no ill effect. I can speak, however, to a zinc pipe, constantly immersed, being destroyed by rain-water in the course of 7 or 8 years. The tanks, on board ship, would be exposed to a temperature probably much above 60° of heat, and this would necessarily cause fermentation and a bad smell. The tank, being under-ground, would not be at any time of the year so high as 60 degrees; and although the cistern above-ground might in hot weather be above that, the constant motion would probably prevent fermentation; there might, however, be no harm in putting in now and then a lump of fresh charcoal, and if it were animal charcoal, that is, charcoal made from large bones, it would be more effective. I have been told by a friend of mine, a great traveller, that the *beau idcal* of sweet water for drinking is obtained by the natives of India by conducting rain water by a large cotton sheet to an underground tank away from the house and all chance of impurity. *G. P. H., Oxford.*—I can say, from experience, that rain water will keep perfectly sweet under the circumstances your correspondent describes, provided the rain water is made to pass through a filter, before it enters the underground tank. The construction and management of such a filter is very simple, and I shall be happy to supply him with the plan of one I have had in use for several years, if he wishes it. *T. W. T., Cheshire.*

Achimenes.—Few plants are more attractive than the different varieties of Achimenes now in cultivation, but they are seldom seen in that state of excellence which they are capable of attaining. It is customary to grow them in boxes, shallow pans, baskets, and pots, but I prefer the latter; for their bloom is soon over in shallow pans, baskets require too much looking after, and stiff unsightly boxes which always meet the eye when looking at the flower, detract greatly from that imposing effect they create when properly arranged in pots, and trained in the way in which Pelargoniums are shown at Chiswick, only a little higher in the centre than the Pelargoniums, and allowed to drop a little over the edge of the pot. Nothing can exceed the beauty and elegance of A. longiflora and patens grown in this way. Instead of planting the tubers at first in small pots and shifting them into larger ones as they advance in growth, as is commonly done, I use pots 10 inches wide and 12 inches deep. After covering the bottom with a few crocks, I spread a layer of moss over them, on which I place 6 or 7 roots, and cover them slightly with a little leaf-mould or well rotted cow-dung and sand. As the young shoots lengthen, more soil is added until the pot is filled to within 2 inches of the top, which space is afterwards filled up with moss pressed down firmly with the hand; the stems thus buried in the soil soon emit a profusion of roots that are never brought into action when the tubers are planted near the surface. I have had pots of A. longiflora, measuring 2½ feet high, and as much through, covered with bloom from the beginning of May to the end of September, and many of the flowers measured 3 inches in diameter. *W. S., June* 14.

Bees.—My bees are within 100 yards of the cliff. It is not a favourable locality for them. Unless it be a remarkably good season they yield us very little pleasure and less profit. We had no honey last year. After trying various plans, I have come to the conclusion that what may be adapted for one place is useless at another, and that great mistakes are made in supposing that bees will prosper simply as the result of careful management. In good seasons there is no difficulty in obtaining honey, whether in boxes or glasses, or old-fashioned hives. If the weather be unfavourable and the food they delight in scarce, it is vain to hope for success. In describing the economy and habits of bees, I wish people would trust less to imagination and more to common sense. The proceedings of these interesting little creatures are sufficiently wonderful without calling in the aid of exaggeration, or invoking the marvellous. One of their invariable habits, which I have never seen noticed, is, I think, worth recording. After housing a swarm, each bee, on leaving the hives for the first time, turns itself about and hovers near the door, apparently surveying its new lodgings before it takes its departure. In taking swarms, let me confirm the statement of "H. B.," page 341. There is no necessity for gloves, or veils, or any other means of protection. I am accustomed to hive the bees as soon as they have settled without any defence to the hands or face; and in my absence the ladies have performed this duty in the same manner, and quite as well. This is not done because we are not liable to be stung; at various times we have all suffered, chiefly, I believe, through ignorance of the habits of the bees. Their supposed likes and dislikes are not to be much depended on. They are most irritable in thundery weather. In taking a swarm nothing more is necessary than to place a hive over the bees, disturbing them as little as possible, and they soon avail themselves of the shelter it affords. As respects "tinkling," I am not sure that it ought to be dispensed with. We always practise it, although we profess not to believe in its efficacy. On Friday last a swarm came out and was on its way towards the downs, where we had lost one about 10 days before. As soon as the tinkling commenced the bees returned over a high wall into the garden, settled on a shrub, and were hived in a few minutes. To-day another swarm, from the same stock, has come out, which seemed to be going off until the children began tinkling, when they immediately settled, and were hived in 10 minutes. *O. N., Black Rock.*

Pillar Roses.—I last year called the attention of your readers to this desideratum in the nursery gardens near London. Tall standards and short standards are both common enough, whereas Roses budded at the root, and grown in the shape of a pillar or pyramid, are rarely or never seen. No doubt they require rather more trouble; but this is no great objection to amateurs; and that they are infinitely more graceful will be doubted by no one who has ever seen them. If any nurseryman has really turned his attention to this, and can show such specimens as may be

seen in any good private garden (as the Duke of Devonshire's, at Chiswick), it would be worth his while to avail himself of your advertising columns. Your readers, however, do not require to be told that they can get great Boursault bushes, 10 feet high, with half-a-dozen naked stems, or half standards, which look like wigs upon walking sticks, both of which are sometimes sadly misnamed Pillar Roses. *L. I.*

Botanic Garden, Zurich, Switzerland.—Having been on a visit, on May 7, with my employer to the above-mentioned garden, an account of what I saw, although but trifling, may not be uninteresting. The gardens are pleasantly situated to the south-west of the town, and are agreeably laid out in walks and shrubberies, commanding a beautiful view of the town, lake, and distant Alps, now covered with snow. In these gardens is the Cat's Bastion, as it is called, an elevated mound, once part of the ramparts, its sides being now covered with various specimens of the Pine tribe and other hardy ornamental trees; while on its top are some fine Limes, with convenient seats beneath. The gardens are open without restriction to the public—a privilege not abused—a system which I understand is generally adopted on the Continent, and which ought to be in England, as it gives many an opportunity of obtaining and cultivating a taste for flowers which they would not otherwise possess. The curator, Mr. Regel, is allowed by the Government 2000 Swiss francs, about 110*l.* sterling, per annum. The expenses over and above this sum fall upon the curator, who, to meet them, has permission to sell plants. The consequence of this is, that the plants are crowded together without regard to health. In the large stove was a good specimen of Pandanus utilis, a large one of Astrapœa Wallichii, but its fine foliage was comparatively lost; fine plants of Dracæna Brazileensis, Cycas revoluta, and of Rhapis flabelliformis. In the conservatory there are several good Orangea and Rhododendrons, but all too crammed together; a fine Genista Rhodopœa, Acacia ruscifolia, and the beautiful Chamærops humilis, which succeeds well in a conservatory. On a back wall on a small stone I noticed the Ficus repens, which makes a pretty covering for a stone wall, which must be cool and moist. Three feet of the front of the house is partitioned off for striking cuttings. Small clay pipes are brought up through the sawdust on which the cuttings are plunged) from a tank heated by the flues, for the purpose of supplying them with moisture. In a small greenhouse were some healthy young Azaleas and Camellias, and in a frame some very fair Calceolarias. In a small house of stove and orchidaceous plants is Zygopetalum maxillare in flower, and in an adjoining greenhouse is a good Araucaria imbricata and Pinus Cunninghami, but all the small plants are miserably grown. All the trees and shrubs have their names written distinctly on zinc labels attached to them. The herbaceous plants are arranged in beds with their names attached along the sides of the walls. There is a piece of rock work not very tastefully arranged, and at present without water. There is a room adjoining the curator's house where lectures on botany are delivered by the Professor. The weather now is very hot, but on the 17th of April we had a heavy fall of snow, and on the morning of the 18th, the thermometer was 21° Fahrenheit. The fruit trees, being rather more backward here than in England, have escaped the bad effects of the cold weather. The Apricots have suffered most. We have a good share of Peaches, Nectarines, Currants, Raspberries, Gooseberries, Cherries, and an abundant promise of Apples and Pears. *Thomas Godfrey, Gardener, Chateau Hard, Constance, May* 20.

Tacsonia manicata.—A plant of this was received from the garden of the Horticultural Society, in the autumn of 1847, and planted in the conservatory at this place, Kennal House, in the spring of 1848, trained up an iron rod, placed for climbers; in this situation it grew with the utmost luxuriance through the whole of the summer and autumn months, and retained its healthy appearance through the winter, at which time it first began to show flower buds, but they did not expand before the beginning of May. The plant has not been pruned, only trained to the rods as it required it. The house in which it grows has been frequently during the winter as low as 35° Fahr. The usual temperature however has generally ranged between 40° and 50° Fahr. I feel no doubt but this valuable plant will be found to thrive in a greenhouse temperature. The soil in which it is planted consists of a strong loam peat, and a sandy soil washed into a pond from the higher land around; these three descriptions of soil are in nearly equal parts. The soil taken from the pond had been exposed to the action of the atmosphere for some time before being used. *J. A., Chiswick.*

Wardian Cases.—I have a Wardian case in which the Ferns, &c., would I believe grow extremely well, but after planting and carefully closing it, I have the vexation of finding that the mould (which is peat earth mixed with sand) is infested by small centipedes, and these intruders have already destroyed two flourishing plants of Anagallis tenella, and Primula farinosa. There are also some slugs in the mould, but I know the centipedes destroyed the two plants mentioned, for on perceiving them withering I opened the case and examined them, and found these destructive creatures at their roots: the slugs are also eating off the leaves of Adiantum Capillus Veneris, and though when I opened the case I destroyed as many of my enemies as I could find, yet I am convinced many more remain which escaped my eyes; there is a good drainage of charcoal under the mould, but no opening in the bottom of the case. *One trying to be Patient.* [You may get rid of slugs with lime-water; but all earth introduced into Wardian cases should be previously baked or scalded, in order to destroy vermin and their eggs.]

As to "Ars contra naturam."—Your correspondent, "Addio," page 357, after giving some advice to those who have small suburban gardens as to the management of their annuals, and telling them to cultivate them "*secundum naturam*," advises them also "to eschew" the "*ars Baileyi*." This of course implies a good natured censure of the opinion which I gave in a former number as to the arrangement of flowers in the garden immediately attached to a mansion, or in a detached formal flower garden. I did not, in that article, intend my remarks to apply at all to the gardens of small villas or suburban houses, because I will at once concede to "Addio" that there would be the difficulty of procuring plants in sufficient quantity without adequate convenience, or the expense of purchasing them, which would not suit the pocket of the small occupier. In discussing general principles, as bearing upon the order and propriety with which the gardens of the nobility and gentry of this country should be arranged, I cannot admit the application of "*secundum naturam*," but think that "*secundum artem*" is much more *apropos*. Far be it from me to depreciate the wild and picturesque beauty of unadorned Nature. I confess myself a devotee at her shrine, but at the same time I should not allow her to reign triumphant in a large or small garden. It, as a great authority has said, "a garden should be an object detached and distinct from the general scenery of a place," and if it is to be an accompaniment to the elegance and luxuries of a modern residence, why should it not bear the impress of order and design, and manifest the beauty of fitness, or "adaptation of means to an end?" Surely there would be an inconsistency in passing at once from the elegant drawing-room to the rugged and romantic paths of natural scenery, or to the lawn which had been treated for some true "*secundum naturam*." It was the opinion of the late Mr. Loudon that every individual plant in a garden should be perfect in its kind, in fact, a specimen of its order, thus showing the presence of art in cultivation, and to indicate this quality he coined an expression, "the gardenesque," in distinction to the picturesque. It is, I fear, from the want of a proper conception of these fundamental principles, that so many absurdities are committed in forming gardens. The whim of the moment is too often acted upon without reflection, forgetful that

> "'Tis just congruity of parts combined,
> Must please the sense and satisfy the mind."
>
> *Henry Bailey.*

Rhubarb Preserve.—Rheum australe or R. Emodi is the proper kind. It makes a most deliciously flavoured preserve, nearly if not quite equal to that of the Wimsour Plum. It may also be made so as to nearly resemble Tamarinds, being a very fine acid. This Rhubarb was many years since distributed to the fellows of the Horticultural Society from Nepal, but owing to its lateness and great acidity, it was generally soon rooted out, and is now seldom seen in gardens. It is however well worthy of a place in all, merely for preserving. A hybrid between it and the common Rhubarb is also very deliciously acid, and now just coming into perfection. The Rheum australe will not be ready to cut for another fortnight. *W. D. Fox.*

Potato Disease in Ireland.—With reference to the leading article on the Potato disease in your Paper of the 9th inst. you may not dislike a report from this district. On the very edge of the Skibbereen Union, within two miles of it, there is no doubt of the appearance of the disease. It appeared in my garden nearly a month ago (just before the wet weather ceased in May), and I have heard of it in half a dozen other places in the neighbourhood besides. It is increasing, but very slowly much more slowly than last year; the plants affected are only touched in parts, and continue to grow, even vigorously, and are beginning to blossom. The black parts seem to shrivel up, some oil or something into the stalk. The fine dry weather we have had for more than three weeks no doubt is in their favour. To all appearance, the crop depends wholly on the weather, and should the next month be as fine as the last, a large part of the crop will be safe. So far, in this district, there is nothing that could be fairly described as the disease "ravaging" the county or even as having broken out in "as bad a form as ever," unless the expression be strictly limited to the nature of the disease, without reference to its extent. My garden crop is affected, a field crop here very slightly (a few plants only), another field crop at my farm five miles off, is quite untouched. From all I can hear, too, in the Skibbereen Union the extent as yet is not more serious. We are much blamed by some for the quantity of Potatoes planted, I believe the extent however, like other things, has been much exaggerated. It is very hard to guess quantities correctly, but in this district, I am confident, the quantity is much below that of the years before the famine, and I doubt if it is not much below last year. The labourers have scarcely any, and I hardly know a farmer who has not less than he used to have. But it is not necessary to suppose the farmers mad in planting as many as they have done. Two causes have produced it.—1. The half ruined farmers have planted them on a last chance, hoping they will set them up again, if they grow, and meaning to run away to America after harvest if they do not. 2. Our harvest last year was miserable, and all the early crops of Potatoes were very fair in spite of the disease, and brought a high price, paying their owners much better than their corn crops. The Potatoes were universally set this year in consequence much earlier than usual, the proportion set in February and March far beyond any former year. I believe fully half the crop was set in those months, and the sort chiefly set, those locally known as Pinks, which throughout have been less affected by the disease than any other kind grown here. You will see, therefore, our course has not been altogether reckless, or pursued from any idea of throwing ourselves on English relief in case of another year of disease. When, too, Scotch farmers like Mr. Caird are found recommending a system in which one-fifth of the entire farm is under Potatoes and speaking of the disease as he does, p. 18 of his pamphlet, sanguine Irishmen may be excused if they hope more than is quite prudent from a crop which, whatever its faults, they have suffered grievously from the want of in late years. [It is very important to bear in mind in this question the great dissimilarity of the climate of Scotland and the south and middle of Ireland.] I am glad to be able to say that the seedsmen both in the small and larger towns report that they are selling more Turnip seed by one-half this year than they did last. Some of my own tenants have as many acres of Turnips sown as of Potatoes, and my bailiff complains that he is quite plagued with labourers begging for small quantities of Turnip seed. It is often asked, as was so in your Paper a few weeks ago, why do not the landlords take care that their tenants plant no more Potatoes than they ought, or insist on their sowing Turnips, &c.? Because the landlords are now much more in the power of their tenants than the contrary. I have been at this work for 10 years, obliging tenants to do what is best for themselves; but now I am powerless, and see things done every day under my eyes which I would stop if I could. Land is more plenty now than tenants, and therefore no exertion can prevent tenants from having their own way, when the law is so weak as it is here. *W. B. J., June* 18.

Societies.

HORTICULTURAL, *June* 12.—R. HUTTON, Esq., in the chair. Dr. Lindley delivered his third Lecture, on "Leaves and their Importance in the general Economy of a Plant," this day. The principal topics discussed on this occasion were, the nature of leaves, their anatomy, vitality and varied forms; the processes of vegetation carried on in them, by exhaustion, absorption, assimilation, and nutrition; the *rationale* of ventilation, and the application of the facts thus explained to various operations in gardening. Specimens were sent from the Society's Garden of the following plants:—Statice mucronata, Abronia umbellata, Philadelphus mexicanus, Mahernia incisa, Wulfenia Amherstiæ, and Pentstemon azureum.

LINNEAN, *June* 5.—Dr. HORSFIELD in the chair. The Rev. J. Yates exhibited flowering specimens, from his garden at Highgate, of Ceanothus thyrsiflorus, Esch. This species was brought by Mr. Menzies from California. It is closely allied to the common Ceanothus azureus of our gardens, but is still unfigured. Captain Tilley exhibited a series of leaves of the Poplar, Sycamore, and other plants in which the parenchyma had been removed by maceration, the vascular bundles alone remaining. Lithographed portraits of John Gould, Esq., the Rev. Professor Henslow, J. Lee, Esq., P. J. Selby, Esq., W. Yarrell, Esq., and Dr. Wallich were presented by George Ransome, Esq., of Ipswich. A paper was read by George Newport, Esq., on the Structure and Habits of Ichneumon atropos. Mr. Varley exhibited a series of drawings illustrative of the structure and circulation of the various species of Chara, and gave an explanation of some of the more interesting points in the morphology of the family Characeæ. Amongst the books presented to the Society was the last part of Von Martius's great work on the Palms.

ENTOMOLOGICAL, *June* 4.—G. R. WATERHOUSE, Esq., President, in the chair. A note was read by Mr. Desvignes on the specific identity of two Ichneumonideous insects, placed by Gravenhorst in the two sub-genera Macrus and Coleocentrus, one of which, C. excitator, is given as British in Curtis's "Guide." Mr. Douglas exhibited specimens of several rare species of minute Lepidoptera, including the real Tortrix strobilana, Linn., recently taken near Sanderstead, and Mr. Shepherd described its habits, and the mode by which the chrysalis make its escape out of the centre of the Fir cone in which it undergoes its changes. Mr. Westwood brought for distribution among the members specimens of Euthyia societa, and exhibited one of the singular masses of cocoons formed by this social species, containing several hundred chrysalids, communicated to him by Mr. Cox, of Bermondsey. He also exhibited specimens of Pinus hololeucus, numbers of which had been found dead in open jars containing fluid preparations, used as a galvanic battery by Mr. Hart, of Knightsbridge. Numerous instances of the occurrence of the same insect in water-jugs, &c., mentioned by the members present, clearly proved that the appearance of these insects in the galvanic apparatus was accidental. Mr. Westwood also read descriptions of two singular exotic species of Coleoptera; one allied to Phyllocharis, and the other a species of Taphroderes from Port Natal, the male of which has one of the mandibles remarkably elongated and distorted. Mr. Waterhouse also read a paper containing descriptions of two exotic species of Coleoptera, one of which, Cryptorhynchus Batatæ, is injurious to the Sweet Potato, and the other, Trichorynus zeæ (a new genus, intermediate between Anobium and Dorcatoma) infests the seeds of the Zea Mays. Mr. Weir exhibited a box of rare Lepidoptera from Tunbridge Wells and Lewes, including an apparently new species of Adela, and specimens of the rare Lobophora polycomata. The death of Frederick Holme, Esq., of Corpus Christi College, Oxford, formerly a member of the Society, and a contributor to its "Transactions," was announced.

ROYAL BOTANIC, REGENT'S PARK, *June* 20.—This exhibition was in many respects not different from that held at Chiswick on the 9th inst. In the following account, therefore, we shall omit all notice of plants reproduced here which were shown on that occasion.

Collections of 30 STOVE AND GREENHOUSE PLANTS were again contributed by Mrs. Lawrence, Mr. Cole, and Mr. Pamplin, of Lea-bridge, and good groups of 20 by Mr. Green and Mr. Taylor, gr. to J. Costar, Esq. Tens were numerous. The best came from Miss Traill, of Bromley. Mr. Jack and Mr. Bruce received equal second prizes, and Mr. May, gr. to E. Goodheart, Esq., a third. Mr. Clark was fourth. If we except the introduction of a few plants of the showy genus Kalosanthes, and the beautiful late-flowering Cape Heath metuliflora bicolor, than which we know of no species more beautiful, these collections were not materially altered since we last saw them.

ORCHIDS occupied one side of a long tent, and were again produced by the usual exhibitors. Besides the exceedingly handsome Angræa Ruckeri and A. uniflora, Mr. Mylam's group contained a lovely Phalænopsis grandiflora; his huge Aerides odoratum, too, was much admired.—Mr. Williams,

gr. to C. B. Warner, Esq., sent several fine Aerides, Peristeria elata, and various Oncidiums, Dendrobiums, Brassias, and Cattleyas. – Messrs. Veitch had the rare Coryanthes macrantha and a very fine Aerides odoratum.—Mr. Rae, gr. to J. J. Blandy, Esq., showed this time in fifteens, and was second. His group contained an immense plant of Aerides odoratum in a wire basket. Large specimens of this kind of Aerides indeed formed the most conspicuous features of this department of the exhibition.—Mr. Plant, gr. to J. H. Schroder, Esq., who was first, sent various Aerides, three Saccolabiums, and a Sobralia macrantha with two blooms on it. — Mr. Beck's gardener (Dobson), produced his large and fine Oncidium amphatum majus again, in good condition, Mr. Bruce the nice yellow flowered Oncidium flexuosum, Mr. Jack, a tall and finely coloured Vanda teres; and Mr. Green, Stanhopea grandiflora, two Epidendrums, and other plants. As new Orchids, Mr. Mylam showed Cologyne Lowii, a pale greenish yellow species with a brown lip; Mr. Warner a handsome purple flowered Cattleya in the way of Skinneri; and Messrs. Veitch a distinct and pretty variety of Cypripedium barbatum.

On the top of a circular stage, surrounded by Cape Heaths, were two collections of tall Cacti, and we remarked elsewhere a group of greenhouse Azaleas; but neither of these exhibitions made much display.

Roses in Pots were again shown by Messrs. Lane, Paul, Francis, Terry, and Rowland; and what were called yellow Roses by Mr. Lane and Mr. Francis. The latter had a nice specimen of Elise Sauvage, and in his other group there was an admirable Coupe d'Hebe, one of the best Roses for pot culture. Large collections of cut Roses were exhibited by Messrs. Paul, Francis, Rowland, Terry, and Parsons, and boxes of new Roses by Messrs. Paul, Lane, and Francis, the three last collections containing nearly the same sorts. Mr. Rivers sent (not for competition) nice boxes of Baronne Prevost, and of the deep crimson Rose Geant des Batailles, one of the best of new Roses. Little if any inferior to it, however, is Soleil d'Austerlitz, which was likewise exhibited; and we also remarked blooms of the following promising sorts: Beauty of Versailles, Duchesse de Gallier, blush; La Florifere, cherry and crimson, Sidonie, peach; Commandant Fornier, crimson, Comte de Rambuteau, blush pink, Marguerite d'Anjou, same colour; General Jacquinot, deep purple, Pourpre Royale, deep purplish crimson; and Philoxene, rose. Finally, Messrs. Lane and Paul had beautiful boxes of the well-known Rose Baronne Prevost, some of whose blooms measured 5½ inches across.

Cape Heaths were plentiful and fine, more especially the exhibitions of Messrs. Epps, of Maidstone, Messrs. Fairbairn, of Clapham; and that from Mr Rucker's gardener at Wandsworth.

Single Specimens.—The best produced was a most beautiful globular plant of Leschenaultia formosa, from Mr. Williams, gr. to Miss Heath, of Bromley. Other single specimens of merit consisted of different kinds of Aphelexis, which deservedly appear to be gaining ground in public estimation.

New Plants.—With the exception of a large-flowered variety of Achimenes longiflora, from Mr. Lane, Agalmyla staminea, from Messrs. Veitch, and the yellow creeping Balsam, these were not different from those shown at Chiswick. Mr. Henderson had a pale purplish blue flowered Pentstemon, not very new.

Pelargoniums, both "fancies" and others, were exhibited in admirable condition. They filled one side of a tent 120 feet long, and formed, perhaps, the most striking feature of the show. For 12 varieties in 8-inch pots, the 1st prize was awarded to Mr John Dobson, gr. to Mr Beck, for Nevitness, Glow worm, Governor, Cassandra, Loveliness, Emilie, Adolphus, Rosalind, Rufus, Star, and Centurion. 2d, to Mr Gaines. Twelve plants, Amateurs: 1st, to Mr. Cock, for Rosamond, Forget me-not, Salamander, Centurion, Paragon, Lord Stafford, Orion, Rachel Juliet, Rebe's Lip, Aurora, Pictum, and Pearl; 2d, to Mr. Foster; 3d, to Mr. Staines, 4th, to Mr. Robinson. Six plants: 1st, to Mr. Parker, for Matilda, Negress, Forget-me-not, and Zoe; to Mr. Parker, for Dobson, for Blanche, Juno, Dorcas, Aurora, Negress, and Cracker, 3d, to Mr Gaines. Fancies: 1st, to Mr. Ambrose; 2d, to Mr. Gaines. There were also two small groups of Cape species.

Seedling Pelargoniums of 1849. Certificates were awarded to Mr. Dobson, gr. to Mr. Beck, for Incomparable, a very bright flower, and to Mr Hoyle, for Canova and Zannetto 1848: To Mr. Foster, for Gipsy Bride, and Constance, and to Mr. Dobson, for Loveliness. Fequet's Magnificent, Prince of Orange, Field Marshal, Major Domo, and others, were also again shown. In addition to the above, there was also produced a large number of seedlings, of more or less merit, of 1849, which did not receive prizes.

Fuchsias.—Collections of these were produced by Messrs. Robinson, Bean, and Gaines. They consisted wholly of well known sorts.

Calceolarias.—The same remark applies to the groups of these which were shown by Messrs. Henderson and Gaines. Several seedlings were produced, but none of them better than sorts already in cultivation.

Pinks.—1st, Mr. Turner, of Royal Nursery, Slough, for Cobah, Diana, Reubens, Morning Star, Mrs Herbert, Harriet, Cleo, Winchester Rival, Young's XX, Alfred Morrison, Harkforward, and Wm. Henley. Mr. Bragg, of Slough, was second, his sorts being the same as Mr Turner's, with the exception of Prince Albert, Blackheath Rival, Warden, Duchess of Kent, Mary, Laura, and Henry Steers. Mr. Norman, of Woolwich, was third. Mr. Turner showed a stand of 12 blooms of Young's XX, a Pink of superior quality; they were finely grown and evenly-laced specimens.

Pansies, 24 blooms: 1st, to Mr. Turner, of Slough, for Duchess of Rutland, Climax, Blooming Girl, Duke of Norfolk, Lucy Neal, Superb, Zahdi, Aurora, Commodore, Polynices, Viceroy, Rainbow White sergeant, Mrs. Beck, Addison, Candidate, Berryer, Marchioness of Lothian, Royal Purple, Supreme, Lord Hardinge, Druid, and two seedlings; 2d, to Mr. Bragg.

Ranunculuses were exhibited in considerable quantity, and fine, by Mr. Costar, Mr. Fyso, and others.

Interesting groups of Hothouse and British Ferns were shown by Mr. Williams, gr. to C. B Warner, Esq., and British species by other growers.—Mr. Williams had a remarkably well cultivated plant of Asplenium alternifolium, a British Fern which few manage well, he had also the rare Woodsia ilvensis.—Mr. Smith also sent, among others, a small Asplenium alternifolium, and a good plant of Trichomanes speciosum. Associated with these were some nice groups of Alpine plants, some large Humea elegans, and a few Gloxinias. Mr. Cuthill, of Camberwell, sent a dish of his Strawberry, called Black Prince, and with it a plant in a pot literally loaded with unripe fruit.

Reviews.

Medical and Economical Botany. By John Lindley, Ph.D. F.R.S. 8vo. Bradbury and Evans, pp. 274, with 363 woodcuts.

The great difficulty experienced by botanical students in acquiring a correct preliminary knowledge of the manner of distinguishing exotic and other plants by descriptions alone, has led to the preparation of the present work, in which a large number of officinal plants is represented by woodcuts, carefully executed, with the express purpose of indicating botanical distinctions. Some extracts from the introductory remarks will show in what spirit the author has executed his task.

"The vegetable kingdom contains, among a large quantity of plants of no known importance to man, various useful species employed in medicine, the arts, or in the many branches of domestic œconomy. The principal part of those which can be brought by teachers in Europe under the notice of students, or which, from their great importance, deserve to be among the earliest subjects of study, are mentioned in the following pages, where they are arranged in the manner proposed in the 'Vegetable Kingdom' of the author, with the sequence of matter departed from in a few instances, when it was believed that the convenience of younger students would be consulted by doing so. The author trusts that this selection will be found to have been made in such a way that all teachers who possess reasonably extensive means of illustrating their lectures, and all Botanic Gardens, may furnish the larger part of the species which are mentioned. A small selection was indispensable; firstly, because a greater work would have been beyond the reach of the majority of purchasers; and secondly, because experience shows us that those who have to study a science of observation, such as Botany, require to concentrate their attention, in the first instance, upon a limited number of objects."

"The plan of the work is similar to that so happily employed by Linnæus in his 'Materia Medica,' a book invaluable in its day, although now forgotten, and better adapted to the objects of medical men than any thing which has since appeared. Each species, placed in its due position in the classification, has its vulgar or officinal name, as well as that which it bears in science, and, in a few words, the country whence it comes, the quality it has been said to possess, and the uses to which it has been found applicable. Very short phrases are also given, for the purpose of showing how the genera or species are to be distinguished from each other. The whole plan of the work is, in fact, to point out *distinctions*: and the fewest possible words are employed with this view. In many instances the distinctions may not be absolute, but they are sufficient for ordinary purposes. Those who wish to become better acquainted with Botany will, of course, make the 'Vegetable Kingdom' of the author the subject of ulterior study. For the convenience of those who may desire to do so, references are made to that work throughout all the following pages."

The main object of the work being to point out distinctions, uses, and properties very briefly, it has been put into a purely technical form, as the following specimens will show.

1. *Mode of analysis.*

"The Classes of plants are seven, viz.:

"I. Thallogens; having no sexes, and no distinct separation of stem and leaves.

"II. Acrogens: having no sexes, and distinct stems.

"III. Rhizogens; having sexes, and a mycelium.

"IV. Endogens; having sexes, a root and stem, endogenous wood, and parallel-veined leaves.

"V. Dictyogens; having sexes, a root and stem, exogenous roots, endogenous stems, and netted leaves.

"VI. Gymnogens; having sexes, a root and stem, exogenous wood, and naked seeds.

"VII. Exogens; having sexes, a root and stem, exogenous wood, and seeds in seed vessels."

2. *Mode of Definition and Description.*

"Origanum. *Linnæus.—Stamens* straight, diverging, 4. *Calyx* 10-ribbed, equally 5-toothed, with a villous orifice. *Spikes* loose, with broad bracts.

"1. O. *vulgare* Linnæus.—(Wild Marjoram.)

Wild Marjoram.

"Leaves ovate, acute; bracts without glands on the upper side.

"*Habitat.* Chalky pastures.

"*Quality.* Tonic, stimulant, fragrant.

"*Uses.* As a seasoning in cookery; powder an errhine; tea for nervousness. This plant yields what is called *oil of thyme* in the shops, a common remedy for the pain of carious teeth. It is frequently used, mixed with olive oil, as a stimulating liniment against baldness, in rheumatic complaints, and against sprains and bruises."

"Mandragora. *Tournefort.—Corolla* campanulate, plaited. *Stigma* capitate. *Stamens* inclosed in the tube of the calyx, spreading. *Berry* 2-celled, surrounded by the enlarged calyx.

"1. M. *officinarum* Miller. *Atropa Mandragora* Linnæus—(Mandrake).

"A stemless plant, with a large forked fleshy perennial root; leaves lanceolate, spreading, grey; flowers hidden among the leaves, pale violet.

"*Habitat.* South of Europe.

"*Quality.* Acro-narcotic, purgative, anæsthetic, aphrodisiac.

"*Uses.* An old ingredient in philtres; dangerous and disused. "Le professeur Fodéré avait cueilli un pied de Mandragore, et l'avait laissé par inadvertence dans un petit cabinet où il se livrait au travail. Au bout d'un quart d'heure il fut pris de vertiges, de faiblesse, et d'une langueur telle qu'il avait peine à se soutenir. Il ne songeait plus à cette plante, et son premier mouvement fut d'ouvrir la fenêtre. S'étant appuyé sur la plante même, il se sortit une odeur fortement nauséabonde qui lui fit apercevoir aussitôt la cause de ces accidens." (*Roques, Medecine Legale*, tom. iv. p. 22.) Dr. T. H. Silvester has shown that the root was formerly employed in the same way as chloroform and other anæsthetic agents now are."

"Asarum. *Linnæus.* – *Stamens* 12, horned, distinct from each other, and from the style. *Calyx* campanulate, 3-lobed.

"2 A. *europæum* Linnæus.—(Asarabacca.) Leaves reniform, obtuse hairy, in pairs.

Asarabacca.

"*Habitat.* Woods of Europe.

"*Quality.* Acrid, emetic, purgative, diuretic? diaphoretic; excites sneezing.

"*Uses.* As a substitute for Ipecacuanha; as a counter-irritant in affections of the eyes, brain, &c., headache, toothache, ophthalmia. Drunkards in the south of France use it to sober themselves by emptying the stomach. Powder said to form the base of Cephalic snuff."

This is understood to be the last of the series of works, for the use of students which the author contemplates. There is now, for *beginners*, "School Botany;" for *more advanced students*, the "Elements of Botany," with the "Medical and Œconomical Botany;" and for the *highest class*, the "Vegetable Kingdom." Those who desire to carry their inquiries into details must, of course, procure very different works from such as are destined for persons satisfied with such general facts as can be included in works of small dimensions.

Garden Memoranda.

Messrs. Booth's Nursery, Flottbeck, Hamburgh.—A correspondent who has lately visited this great establishment speaks of it thus: The Orchids, of which it contains a fine collection, as well as of other plants, now present a brilliant display, more than 100 specimens being in bloom. Amongst the most remarkable are noble plants of Stanhopea tigrina, saccata, and venusta, the latter with 16 spikes of flowers; a Brassia maculata with 12 spikes, and another species with 15 spikes. In addition to beautiful plants of Aerides, among which A. affine is producing 10 lovely racemes of pink and white flowers, the same collection contains flowering specimens of Phalænopsis grandiflora and Saccolabium guttatum; but what perhaps ranks above the rest in interest is Cycnoches Loddigesii purpurea, with two spikes of its curious, swan-like flowers, one spike alone bearing 15 fully expanded blooms. Associated

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with these were also in blossom Lacæna bicolor, the lilac-flowered Barkeria spectabilis, and the almost ever blooming Coryanthes Albertinæ.

Miscellaneous.

Sale of Plants.—176 lots of Orchids, stove, greenhouse, and other plants, stated to have been the property of a lately deceased nobleman, were sold by auction on Thursday last, by Mr Stevens. What sort of prices they realised will be gleaned from the following statement. Cattleya crispa fetched 1*l.* 3*s.*; the beautiful Arpophyllum squarrosum and Stanhopea insignis, 1*l.* 2*s.*; Dendrobium densiflorum, Stanhopea tigrina, and S. saccata, ditto; a fine plant of Lælia superbiens, 5*l.* 10*s.*; a good Lycaste Skinneri, 2*l.* 6*s.*; ditto Cattleya labiata, 3*l.* 3*s.*; C. intermedia, 2*l.* 17*s.* 6*d.*; Phalænopsis grandiflora, 1*l.* 8*s.*; Vanda insignis, 2*l.* 10*s.*; Aerides odoratum, 1*l.* 16*s.*; Acineta Humboldti, 2*l.*; Dendrobium nobile and Epidendrum vitellinum, 1*l.* 2*s.*; Odontoglossum grande, 1*l.* 10*s.*; Vanda Roxburghi, Dendrobium cærulescens, Eria densiflora, and a Catasetum, 2*l.* 2*s.* Among stove plants, a good specimen of the Demerara Theobroma Cacao fetched 1*l.* 2*s.*

Calendar of Operations.

(For the ensuing week.)

FLOWER GARDEN AND SHRUBBERY.

THE most pressing work here at present is that of keeping the place in order. Many of the walks will be considerably improved if the old hard crust be slightly scarified with a rake, and a slight sprinkling of fresh clean gravel spread over the surface; the best time for the operation is when they are in a medium state between wet and dry; the roller is then more effective in restoring the hard smooth surface than when the gravel is too dry. In connection with the repairs of the walks themselves, the edges should be clipped or straightened. *Hyacinths*, Tulips, and other bulbs should now be taken up, dried, cleaned, and stored in an airy room till autumn. It is a common practice to throw away the old bulbs which have been forced, or to stick them into some out-of-the way border, and take no further notice of them. They are, however, well worthy of a greater degree of attention. If, after they are ripened, they are taken out of the soil, carefully stored during their season of rest, and replanted in autumn in beds of light rich soil, a stock will be established in a few years from which the largest and soundest bulbs can each season be selected for forcing. The best of the remainder may be planted in the flower-garden, where they are highly ornamental during the spring months, besides preparing themselves at the same time for pot-culture in future winters; therefore let all the old bulbs you have in or out of the ground be carefully [illegible]

FORCING DEPARTMENT.

PINERIES.—When the bottom heat is declining it may be recruited by surfacing the bed with a few inches of new tan, and even if the pots are already plunged to the rim it may be laid over the surface; for by checking evaporation it will economise labour in watering, and keep the roots in a more equable state during hot weather. Independently of its own fermentative power, it will absorb a considerable quantity of heat from the sun, and will draw the roots to the surface, where they will revel amongst the new material. The syringe must be freely used every fine afternoon, and the pits shut close for an hour or two, in order to compensate for the loss by evaporation during the day. VINERIES.—Let the late Vineries be supplied with a sufficient amount of heat and moisture to keep them growing at a healthy rate; by carrying the retarding system too far, nothing is gained except late, ill-ripened, badly-coloured berries. Grapes intended to be kept through the winter should be perfectly ripe by the end of September; grow them briskly till they are beginning to ripen, and then by giving them plenty of air, accompanied with heat, they will ripen thoroughly, and hang long upon the Vines without shrivelling. PEACH-HOUSE.—Continue to keep insects in check, using the syringe freely for red spider, and tobacco smoke for thrips. The foliage must be kept healthy, to ensure success in the crops of this and future seasons. Should mildew make its appearance in the late house, apply sulphur immediately. MELONS.—Continue a bottom heat of 80°, with a moderately moist atmosphere, to the successional plants, and give occasional waterings. Those plants that are ripening their crops will require less water and a drier atmosphere.

FLORISTS' FLOWERS.

CARNATIONS AND PICOTEES will now require a large portion of the florist's care; if the aphis or green fly infests the buds, it should be brushed off with a camel hair brush; by no means destroy them by crushing on the plant. Remove laterals, and disbud, so as to throw as much strength as possible into those intended for exhibition. Keep the surface of the pots clean, and water occasionally with very weak sheep manure water. PINKS.—Propagate by pipings or layers; the latter is the safest way, but they do not make either so neat or good plants as the former. Wilmer's Laura and Read's Jenny Lind are, as far as we have seen, worthy of all the praises awarded to them; in fact they ought to be in every collection.—TULIPS should be out of the ground without delay.—AURICULAS are apt to get the green fly at this season; the collection should be gone over once in 10 days, with a large camel hair brush.—POLYANTHUSES should be shaded from the sun and kept moist, or they are liable to attacks of red spider.—Attend to DAHLIAS as before directed.

KITCHEN GARDEN.

Continue to plant out successions of the Brassica family on ground which has been richly manured; they may be planted upon land which has already been cleared of its former occupants, or intermediately amongst other crops which will shortly be removed. Plant out also Cardoons, Leeks, and Capsicums. The last sowing of Peas should now be made, selecting varieties which come earliest into bearing, of a hardy constitution, and not liable to mildew. Sow Cabbages for Coleworts, Endive for main crop, and make the usual sowings of Kidney Beans, Radishes, Turnips, Lettuces, Chervil, &c. Do not allow any crops which are cultivated for the sake of their roots or leaves to run into flower or seed, as Onions, Spinach, Parsley, Rhubarb, Lettuce, &c. Let the whole energy of every plant be directed, if possible, to the perfect development of that part for which it is cultivated, whether it be leaf or fruit; and any plants which have passed the stage in which they are useful should be immediately removed. Attention should be paid to the earthing up of Potatoes, using the three-pronged hack instead of the sharp draw hoe, which it is a common practice to use, although it is liable to cut off the young strings which lie near the surface of the ground. The soil for earthing should be drawn from the centre of the space between the ridges. Let the leaves of Garlic be tied in knots, to check the production of flowers, and assist thereby the development of the roots.

State of the Weather near London, for the week ending June 21, 1849, as observed at the Horticultural Gardens, Chiswick.

June		Moon's Age	Barometer Max.	Barometer Min.	Thermometer Max.	Thermometer Min.	Thermometer Mean	Wind.	Rain
Friday	15	21	29.809	29.791	70	45	59.0	E.	.00
Satur.	16	25	29.776	29.720	68	46	57.0	N.	.00
Sunday	17	25	29.971	29.924	7[illegible]	40	56.0	N.W.	.00
Monday	18	27	30.06[illegible]	30.018	7[illegible]	41	55.0	W.	.00
Tues.	19	28	29.90[illegible]	29.822	60	44	51.[illegible]	S.W.	.02
Wed.	20	●	30.189	30.086	[illegible]	50	62.[illegible]	W.	.00
Thurs.	21	1	30.118	30.060	75	42	58.[illegible]	S.W.	.01
Average			29.981	29.923	70.7	44.3	57.5		0.02

June 15—Fine, cloudy, dusky haze, overcast.
— 16—Overcast, fine, cloudy.
— 17—Fine, cloudy, dusky haze, cloudy at night.
— 18—Fine throughout, very dry air, slightly clouded.
— 19—Fine, rain, cloudy and fine.
— 20—Very fine throughout, slightly overcast.
— 21—Very fine, clear, slightly clouded at night.
Mean temperature of the week [illegible] deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week ending June 30, 1849.

June		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain	Prevailing Winds [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sunday	24	72.[illegible]	50.6	61.[illegible]	9	0.39 in.	[illegible]	[illegible]	3	1	[illegible]	9	[illegible]	1
Mon.	25	70.8	50.0	60.4	13	0.52	1	1	5	1	2	7	4	[illegible]
Tues.	26	71.5	50.7	61.1	11	1.00	1	2	1		1	9	6	1
Wed.	27	70.6	49.1	60.4	13	0.40	2	2	1	2	3	7	6	—
Thurs.	28	72.3	50.1	61.3	8	0.66	2	2	3	1	2	5	3	5
Friday	29	[illegible]	49.5	61.3	6	0.20	2	1	2		[illegible]	8	0	2
[illegible]														

[illegible] 1836—therm. 93 deg., and the lowest on the 28th, 1836, and 30th, 1848—therm. 37 deg.

Notices to Correspondents.

APHIDES: *D H.* A para-petticoat (parasol and petticoat) placed over the Rose bush, so as to retain Tobacco smoke, affords the best means of destroying them.†

BOOKS: *Tag.* There is no work specially on the propagation of evergreens. All well-informed gardeners know how to deal with them.—*C K S.* The "Rose Garden," by Mr. Paul.‡

CONIFERS: *Aumens.* If you will consult previous numbers you will find that they contain the information now sought for. More especially see pp. 72 and 104, for 1847.

FIG TREES: *J B.* Close pruning does not suit the Fig-tree. The principal branches should be laid in rather thinly, in order that the lateral shoots proceeding from them may not be overcrowded. These laterals may be stopped when they are likely to grow too long, but otherwise it is better not to meddle with them. Remove the first formed fruit from the young shoots; it will not ripen in the present season, and it will be too far advanced for standing over the winter. Straw forms the best protection against severe frost; but early and late frosts should also be guarded against, by some slighter covering.‖

FRUIT TREES: *Cavanensis.* We much doubt the wisdom of placing their pruning in the hands of an occasional jobbing gardener. It is a nice operation, requiring much skill and experience. You had better do it yourself. If you must have him, it had better be in midwinter and at midsummer.

FUCHSIAS: *H C.* A good Fuchsia should possess—1st, size without coarseness; 2d, brilliancy and contrast of colours; 3d, broad, well expanded sepals, with a large and regularly bell-shaped corolla, and tube round in proportion to its length; 4th, abundance of flowers.¶

GARDENS: *Alpha.* We consider the Tulip, Anemone, Ranunculus, and some Narcissi, as coming under the description of plants "usually taken up at one season of the year, and replanted at another."

GOLD FISH: *A Sub.* It is better to change the water occasionally, but it must be river or pond water. You may feed them with bread crumbs or flies; but if plants are in the tank, and it is supplied with proper water, it will breed food enough for them.

HARICOT BEANS: *A Connaught Guarawan.* We know of no reason why these should not be grown in Connaught, in WARM, *thoroughly drained* land.

INSECTS: *H K.* Your enemy is the Otiorhynchus sulcatus, a night-feeder, the manner of dealing with which is stated almost weekly. It is a great enemy of the gardener, and can only be kept in check by nightly care and much perseverance.

LABELS: We have received from Mr. George F. Morrell specimens of his registered flower-labels; they are capable of being put on sticks of different lengths, by which means the name of the plant can be read without having the annoyance of stooping down to read the label, and prepared canvas is substituted for card or paper, in order to obviate the inconvenience to which common labels are exposed of becoming defaced by the action of water. These labels are cheap and readily used; but they are not so good looking as is desirable in such contrivances.

NAMES OF PLANTS: *Umbellifera.* Common Coriander.—*C Bar.* The moss is some hypnum; the other is Carex recurva.—*JK.* Genista hispanica.—*I R M.* Aubrietia deltoidea, escaped from a garden.—*C L.* Coburgia fulva.—*R S Yates.* Epidendrum virens, a species very near E. aromaticum.—*J B.* It is [illegible] nonne we did not recognise the wretch in its shrivelled state.—*E H T.* 1, Gladiolus communis; 2, G. byzantinus; 3, Polemonium cæruleum; Sweet William is Dianthus barbatus.—*A M.* Your request is not reasonable. The nearest gardener's apprentice could tell you the names of such common things. 1, Gnaphalium arenarium; 2, Veratrum album; 3, Centaurea montana; 4, Allium Moly; 5, Geranium pratense; 6, Some Thalictrum; 7, Asphodelus ramosus; 8, Orobus niger; 9, Symphytum officinale; 10, Lithospermum atropurpureum; 11, Stachys Betonica; 12, Cerastium incanum; 13, Escholtzia californica; 14, Corydalis lutea; 15, Linaria cymbalaria; 16, Adonis autumnalis. Pray do not again send such an inquiry.—*Redwood.* Your Irises were withered up when they reached us; they should be sent just before they open, otherwise they curl up. 3 is probably I. sibirica.¶—*E T B.* Apparently Convolvulus Soldanella.—*T H B.* Poa rigida.—*H J D.* Alopecurus pratensis or Foxtail and Poa trivialis.—*Lady C L.* Cynanchum Vincetoxicum.—*W P.* 1, Oncidium divaricatum; 2, Cymbidium aloifolium.—*J R M.* Muscari monstrosum.—*A C.* Cerastium incanum.

NEPENTHES: *P L D.* The water in the cups was analysed formerly, at the desire of the late Dr. Graham, and is probably recorded in some Scotch philosophical periodical. As far as we remember, it was pure, with the exception of a small quantity of some oxalate.

PARSNIP TREE: *Hardy and Son.* We know no such plant. Your description reads like that of Heracleum sibiricum, a fine showy perennial.

PINE-APPLES: *Thomas Blacker.* The statement made was taken from that sent with the Pines. If it was wrong the blame lies with the sender, not with the Society. We cannot now refer to it further.

POTATOES: *G J.* Many thanks. The disease is very prevalent: but it is uncertain how far it will go. Our fears are greater than our hopes. As to Ireland, it would be better that the crop should again fail than that it should succeed. Success will only annihilate the wisdom which the last four years have been instilling into the people there. Men are flattering themselves that there is no danger, and the daily press repeats their hopes as truths. We hope they may be right. If the weather remains *dry* and *cool* there is hope. It is perfectly true that some have fancied discolourations of leaves, caused by cold or otherwise, to be disease. Of course *we* take no account of such cases.—*J H M.* The leaves sent are not diseased.

PRESERVING PEAS: *M A.* It was only last week (p. 376) that the mode of preserving green Peas was given.

RAIN: *T L C.* The average amount of rain which falls at Chiswick in May is 1.82 inch. The quantity which fell last May was 3.53 inches.‖

MISC.: *Montrose.* If by Spiræa japonica you mean Hoteia japonica—then it is a half hardy herbaceous plant.—*W H O G.* Apply to the Secretary of the Linnean Society in Soho-square.

SEEDLING FLOWERS.

CALCEOLARIAS: *C T P.* 1, yellow, nicely spotted with dark crimson; outline, shape, and marking good; size rather small. 2, light yellow, irregularly marked and dotted with crimson; shape and outline good, size rather small. 5, like No. 1, except a shade or two darker in its colours, a nice variety. 7, dark crimson, irregularly marbled with pale yellow; shape and colours good, size small, outline indented. 8, bright crimson, irregularly marked with bright yellow; shape and outline good, size tolerable; a nice variety. 11, yellow, irregularly marked with crimson; size, shape, and outline tolerable; eye rather large. 14, pale yellow, spotted and dotted with shaded purple; shape, outline and eye very defective, marking pretty. 16, yellow, marbled with crimson; shape, size, and outline tolerable; eye large, colours good. 17, pale straw, self-coloured; outline indented, shape flat, and fluted, size small, colour rather novel. 18, dark crimson, with irregular yellow markings; too small.*—*J. W.* 1, yellow, with a few dull brown spots and dots; size tolerable, [illegible] very defective. 2, bright yellow, marbled in the centre with crimson; shape and outline bad. 3, shaded crimson, marbled with yellow; size good, shape and outline very defective. 6, pale yellow, with rosy purple centre; size very large, outline indented, shape flat. 9, a brilliant crimson self; size, outline, and colour good; shape a little fluted. 7, yellow, dotted or spotted with brown; shape and outline very defective.*—*A S.* 2, pale straw, irregularly marked with pale purple spots; shape and outline tolerably good, size small. 8, shaded dark crimson, marbled with yellow; shape, size, and outline very good; colours bright and well contrasted; a nice variety. 22, shaded purple and crimson; size small, outline and shape tolerable. 36, flowers withered when received. 58, shaded chocolate brown, irregularly marbled with yellow; shape, size, and outline tolerably good. 30, pale yellow, spotted with shaded crimson; outline and shape defective, size small. 101, pale yellow, irregularly marked with crimson; shape and outline middling, size small, colours pretty.*—*G S H.* All Calceolarias received by us have been duly noticed. From what you state we are of opinion that yours have never reached us.*—*B H.* 1, pale yellow, spotted with shaded brown; shape and size inferior, outline indented. 2, crimson, irregularly marked with yellow; small, and indented in outline. 3, shaded brown, speckled with yellow; small, and bad in shape and outline. 4, yellow, spotted with brown; bad in outline.*—*J B D.* 1, bright yellow, irregularly striped or blotched with crimson; shape and colour good, outline tolerable. 2, yellow, blotched with dull brown; shape, size, and outline tolerably good. 3, bright yellow, marbled with bright crimson; outline and colours good, size rather small, crumply. 4, pale straw, prettily spotted with crimson; shape and outline pretty good, size middling, a nice variety. 5, bright crimson, irregularly marked with deep yellow; shape flat, outline and colours good, size middling. 6, bright crimson, irregularly marked with deep yellow; shape flat, outline and colours good, size middling. 7, pale yellow, spotted with dull purple; shape and outline bad, eye large, size rather small. 8, pale yellow, spotted with dull purple; size good, shape flat, outline bad. 9, dull brown, speckled with yellow; shape bad. 10, brown purple, with a few irregular pale yellow marks; size, shape, and outline inferior. 11, brownish purple, self-coloured; shape, size, and outline very inferior. 12, pale straw, blotched or spotted with purple; shape and outline tolerably good, but rather small. 13, pale yellow, spotted with dull purple; size good, outline tolerable, shape flat. 14, bright yellow, irregularly marked with brown; size, outline, and colours good; shape flat, and rather crumply.*

FUCHSIAS: *Cavanensis.* There is nothing strikingly distinct in any of your Fuchsias, either in colour or size of flowers; 1 seems to be the most distinct in colour.*—*A S.* Flower bruised, and not in a fit state for examination when it reached us.*

PELARGONIUMS: *Elizabeth.* Flowers large, upper petals purplish, shaded with orange, and having two dark maroon spots, lower petals bright rose; texture, colours, and shape good, but rather crumply in the upper petals.*—*R C.* Flowers large, shape, and substance good; upper petals rosy purple, with two dark feathery blotches, crumply, and uneven at the edges, lower petals rosy lilac; good in outline.—*C W T.* Countess, centre of upper petals dark crimson, shaded with violet at the outer side, and surrounded with a white margin, feathery at the base, with purple veins; lower petals pure white, substance and shape good, size small, colours well contrasted; a very pretty and delicate looking variety.*—*H Chester.* 1, very inferior in shape, texture, and marking to many of the older kinds in cultivation; 2 is the best.*—*J W.* Your seedlings, Tricolor and Elegans, appear to be very pretty varieties, but their petals had shed and were mixed together when received. 3, with lilac flowers, is like Elegans; 2 is the best of the tricolors.*

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

BENCH offers for sale Patent HOTHOUSES, which he will warrant far superior to all others, in every respect, viz., 1 Span Roof, 28 feet 6 ins. long, 13 feet 6 ins. wide, 40*l.*; Lean-to, 28 feet 6 ins. long, 10 feet 6 ins wide, 30*l.*, with best timber and 16-ounce glass of large size. Patent Lights for Pits, Frames, &c., requiring no paint, 7*d.*, 8*d.*, and 9*d.*, per superficial foot, according to quantity, &c.

HEATING BY HOT WATER.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Duke of Devonshire's, Chatsworth Gardens.
Earl of Gainsborough's, Oakham, Rutlandshire.
Earl of Zetland's, Upleatham, Yorkshire.
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And at least 500 other important places.

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The Agricultural Gazette.

SATURDAY, JUNE 23, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, June 26—Agricultural Society of England.
THURSDAY, — 28—Agricultural Imp. Society of Ireland.
TUESDAY, July 3—Agricultural Society of England.
THURSDAY, — 5—Agricultural Imp. Society of Ireland.

FARMERS' CLUBS.—July 2: Great Oakley. July 4: South Devon, Ardleigh, Framlingham.—July 6: Debenham, Halesworth.—July 7: Newcastle, York.

In some minds the selection of any existing excellence as illustrative of a principle of action extensively applicable is, at the outset, too frequently provocative of hostility, or, at least, it is criticised in a spirit of ironical incredulity which confirms the preference of any system, however bad, because sanctioned by custom, and leads to the rejection of advantages which a better could confer. This *animus*, bad in its origin, and disastrous in its consequences, has reared a hydra-headed opposition to the progress of improvement in all ages, and although different in degree now, it is still the same in kind. Of all employments agriculture has suffered the most deeply from clinging to the customs and practices of the past—not necessarily bad because they belong to the past, but because better ones are now available—while commerce, through its peripatetic and cosmopolitan character has ever strode boldly abreast with the discoveries of the age. The more practical part of farming is now, however, less a matter of controversy than it was some years ago, and many points are now settled and many principles established which formerly constituted the subjects of agricultural discussion. With regard, however, to the system or systems under which land is occupied—the proper relation between landlord and tenant—there still exists a wide diversity of opinion and practice, and a multiplicity and complexity of arrangements and misarrangements which it would be well for all parties to have reduced to some common, controlling, principle of guidance. Scotland has prospered in her agriculture mainly through the operation of 19 years' leases, while, on the contrary, a large proportion of England and Ireland—where tenant-right and tenancy-at-will prevail—has remained unimproved to this hour, and will continue so until some better system be adopted. It is quite true, and may be readily admitted without affecting the relevancy of the argument, that to reason analogically on the subject of letting land in different districts is not always safe or satisfactory, still it is scarcely possible to make even the most cursory comparison between the several systems under which land is occupied in England, Scotland, and Ireland, without coming to a conclusion favourable to that under which agriculture flourishes and farmers prosper. When a series of results are constantly recurring upon certain causes, the connection is too obvious to be disputed; and were the minds of men sufficiently unprejudiced they would easily discover in the past, and observe in the present, a large ground-work of experience upon which to rear securely a precedent for future guidance. The age of leading-strings has passed away, and the period of self-reliance should now commence; and surely farmers, of all men, must have seen that it is but pursuing a phantom to search everlastingly among political causes and Acts of Parliament for props upon which to lean their hopes of prosperity. The real cause of agricultural depression is nearer home, and is in a great measure referable to the fact that owners of land have too frequently been disposed to make occupancy a *boon* rather than a *bargain*, while tenants have as often been slavish enough to accept it on these humiliating terms. Until landlords and tenants come to view their relation to each other as that of contracting parties bound by obligations which neither is at liberty to infringe to the injury of the other, and from which political considerations are totally excluded, agriculture can never possess the same expansive power that has given to commerce her present imposing position.

In England the existence of leases, or something equivalent to them, is not now rare, and the principle is every year gaining ground, so that although there is still much to be done, its ultimate and general recognition may be regarded as only a matter of time, and, what is so far good in the tenant-at-will system, its provisions are so temporary that little impediment is presented to the introduction of a better. If, however, we turn to Ireland, "a chaos of confusion worse confounded" presents itself, where neither centre nor circumference can be discovered from which to expand or condense a more orderly system. The relation between landlord and tenant is, to use an Irishism, too frequently one of violent antagonism, where there is neither confidence on the one side, nor capital or industry on the other. They appear to act as opposing rather than as coincident forces, while the middleman, by his intervention, effectually paralyses every effort they make to approach each other, or to draw in the same direction. He, Jew-like, rigorously exacts his "pound of flesh" from both, and has not the fear of SHYLOCK'S punishment before his eyes. No system can be productive of peace or prosperity where a proprietor lets his land with power to subset to the highest bidder, who in his turn assuming the privileges of a lessor, draws both his own and his superior's rent from the pockets of some more necessitous individual. A more unhappy or pernicious system could scarcely be devised by the most wicked invention—fruitful as it has been, and ever will continue to be, of the greatest miseries and the blackest crimes. It may be useless now to speculate upon what might have been the present condition of Ireland had a system of letting land similar to that of Scotland been introduced a century ago; the contrast is painful; but in any future attempt to reduce the chaos of Irish agricultural matters to something like order, it cannot be altogether useless to take a leaf from the history of Scotland, not so much from the practical farming as the comparatively excellent system under which land is occupied in that country.

In agriculture, as in other arts and employments, it is of the greatest importance to establish some grand leading principle around which subordinate corollaries may arrange themselves by the natural law of consequence. A false start is sufficient to retard the whole course of subsequent proceedings; a wrong principle vitiates and renders nugatory the operations of the wisest practice.

We would not wish in these remarks to be understood as implying that the Scotch system of letting land is a perfect model in all its parts, but simply to affirm that Scotch landlords and farmers have hit upon a mode of letting and occupying land that has worked well for both, and which has conduced, in no small degree, to the wealth and general prosperity of a country not naturally blessed with the advantages of a good climate or a fertile soil. Since the introduction of free-trade the errors of the Scotch lease are thrusting themselves more prominently before the eyes of the public and among the farmers themselves, especially, a reaction is taking place, the object of which is to obtain a better security for capital than what the present form of lease affords. The 19 years' lease, as generally drawn, provides only for a given period of occupancy, during which it is usually considered that the tenant has ample opportunity, both to improve his land and obtain an adequate profit. A moment's reflection, however, will show that in the event of his leaving his farm at the expiry of the lease, he cannot derive the full return for improvements made during the latter years of his occupancy. If he continue his improvements and high farming to the end of the lease, either the landlord or in-coming tenant reaps what justly belongs to another, whereas, on the other hand, if he cease to improve, and merely ploughs, sows, and harrows his land in accordance with that very loosely defined and mythical abstraction yclept the "rules of good husbandry," he runs no small risk of sacrificing his reputation as a good farmer. Again, if a farmer should, by any unforeseen casualty, such as a sudden depreciation of the value of agricultural produce, or a series of bad years, be unable duly to pay his rent, and obliged, in consequence, to give up his farm, not only does his interest in it cease, but, which is more unjust, he is forced to forfeit the capital which, in the shape of draining, liming, claying, &c., he has literally sunk in the soil. Neither he nor his creditors, excepting the landlord, can touch it, although it belongs to one or other of them by the strongest of all claims, the law of moral right. The term permanent improvement, when applied in its absolute sense to any agricultural operation, is a misnomer; but, comparatively speaking, there are some improvements of a more permanent character than others: thus, draining is more lasting in its effects than liming, and this again more so than an application of farm-yard manure, while the ordinary operations of the farm which require to be repeated at shorter intervals do not come under the category of permanent improvements at all. In every instance, however, where the effects of an improvement are traceable through a series of years, he who made that improvement has surely a just claim to every farthing of underived advantage which it is calculated to yield, whatever may be the period at which he is necessitated to leave his farm. This demand is so obviously just as to require neither illustration nor argument; it is, in fact, a postulate founded upon the immutable laws of common sense and common equity.

The want of an equitably adjusted tenant-right, founded upon the principle of compensation for unrealised improvements, has always been felt as a great hardship by enterprising farmers, who would willingly carry on improvements, had they the ordinary security of a commercial transaction for their expenditure of time and capital; for it has frequently happened, even under the full and unfettered operation of the Corn-laws, when any continued depression in the value of agricultural produce occurred, that many farmers have been stopped in the midst of their improvements, and forced to give up their farms for want of capital or credit to carry them safely over the crisis. Farms so relinquished have invariably brought higher rents than the former tenants paid, and why? Simply because the new tenant entered with fresh capital, and in the confident expectation of reaping abundantly where another had sowed so liberally. But his, too, is often but a brief harvest time, for as certainly as he lets go his capital without a guarantee on what are admitted as permanent improvements, as surely will he be compelled to relinquish his interest in them when the day of adversity cometh. The present is undoubtedly a crisis in the agricultural world, and certainly it should not be permitted to pass, carrying along with it its many victims, without some measures being adopted to prevent a recurrence of the more prominent evils which are so loudly and justly complained of. The effect of a properly constructed contract between landlord and tenant would quickly be felt for good through the length and breadth of the land, capital would flow freely where its repayment depended on the skill and industry of the farmer, and where the value of an improvement was guaranteed to the improver by a written agreement, clearly defining the terms upon which compensation would be made in the event of his being dispossessed of his land, either at the end of a lease or at any intermediate period. Under such a system land would let at its true value, which would depend upon the improvement of which it was capable and the price of agricultural produce, and not, as is the case at present, upon the expectation which an in-coming tenant has of reaping the fruits of his predecessor's industry and outlay. The occupation of farming is too pleasant ever to be extremely profitable, and land can never be underlet so long as there continue to be so many candidates, merchants as well as farmers, desirous of occupying it. Landlords need not be alarmed at the agitation for tenant-right, and they may look forward with confidence to a full equivalent for their land: any more they have no claim to, and any less can only be the result of an unwise and illiberal mode of letting.

But who is to effect this important change, and how is it to be accomplished? It can scarcely be expected that the landlords, of Scotland especially, will do so of their own accord, when it is a matter of notoriety that offers of higher rents are literally thrust upon them by a whole host of excited candidates every time a farm is advertised. The chief difficulty which landlord and agents have to deal with is to select one out of the many who can longest stand the run upon his purse. The establishment of a tenant-right, although for the general good of the country, is essentially a farmer's question. The farmers ought, therefore, to define their claims, and the various points upon which compensation is fairly exigible, and thereafter steadily to refuse renting land where the proper guarantees are not vouchsafed. The proposal is by no means new, neither is the system itself untried. Tenant-right, on a broad and equitable principle, equally conservative of the just claims of landlord and tenant, has long formed a topic of discussion in our columns, and the system itself is at present in full operation in several counties in England, where, under its influence, agriculture is flourishing—the landlords receiving good rents, and the tenants thriving and contented. In these counties the occupancy is terminable upon a six months' warning, but the tenant, secure in his

right to compensation, goes on improving with the most perfect confidence in his final repayment, either by the land, the landlord, or the incoming tenant.

In attempting to establish a custom, upon which so many important interests must depend, the safer course to pursue would be to retain the best features of existing systems, and incorporate with them such other conditions as will tend to give them greater practical effect and permanency. For instance, the tenant-right of Lincolnshire might be superadded to the lease of Scotland, and the union be productive of all the ultimate and at any time available compensation of the one with the perpetuity of possession which, comparatively speaking, the other affords. If these views be correct, all that Scotland appears to require (in addition to the existing 19 years' lease), to make her farmers prosperous, is a generally admitted tenant-right; and what England must get quit of as speedily as possible is the old system of tenants-at-will; while, at the same time, some legislative ST. PATRICK must exorcise the middlemen who have so long infested the Irish soil, and depressed the energies of her farmers. True, all this is much more easily said than done, and no doubt Ireland will be, as she has ever been, the "chief difficulty;" still it is not beyond the province of legislation either to compel middlemen, who are mortgagees, to become *bona fide* proprietors by purchase, or to empower the present landlords to sell as much of their encumbered estates as will be sufficient to liquidate the claims of these individuals. With respect to those middlemen who have no lien on property, but are merely tenants, with a power to subset, of which they have availed themselves (a system the most pernicious of any), the difficulty is considerably increased, as their right to subset the land to under tenants is guaranteed by written agreements; still the evil is not insurmountable, and would, in all likelihood, quickly cure itself under a better system, from which this permission was withdrawn. No farmer would voluntarily make choice of an under-tenancy if it were in his power to hold directly from the real proprietor.

In order to effect some such changes, the farmers of the United Kingdom should bestir themselves to give utterance to their opinions in some legitimate and definite propositions that may serve as a groundwork upon which the details of a better system than the present may be founded. The "Gordian knot" of protection has been severed by a *friendly* hand, and now no longer forms a subject of dispute. Let us agree then in the effort to place agriculture in its true position, neither to be deluded by false hopes from without nor trammelled by antiquated customs from within. *I.*

A NOTTINGHAMSHIRE FARM.

THE following is an account of the produce of two or three fields on my farm for 20 years, as far as I have it. I have the produce of each field in one book, which I can easily give; but the particulars of management are dispersed over 20 years of daily memoranda; however I give it as near as I can, but I am afraid you will think me tedious, as my system has not been altogether regular, and the rotation so long compared with your's (the alternate one), that I fear you will think me an old-fashioned bad farmer. My plan, in general, has been—Turnips, Barley, two years seeds grazed, Wheat, and last Barley, lightly manured for; and I generally get as much Barley after Wheat as after Turnips. The field I have selected is nine acres, one of five in a range from the house. Soil, deep good Turnip land, very full of gravel: one end rather wet, but drained many years since. I have given you the best account I can of this one field.

1827. Wheat when I entered, after two years seeds—27 qrs., or 3 qrs. per acre.

1828. 7 acres Barley—25 qrs.; 1 acre Mangold Wurzel, light crop; 1 acre Potatoes, good root crops always well manured; Barley stubble sown with Rye for spring cut, and 1 acre Tares.

1829. White-top Turnips and Swedes, very good crops; but I have never weighed the Turnip crops to know how many tons per acre.

1830. Barley fine crop, very wet time to get it, produce not down.

1831. 6 acres blue Peas, short straw, could not keep the weeds down, very poor crop, very wet season, nearly all spoiled; 3 acres Oats, good cut up for horses; this ought to have been seeds after the Barley; I have never repeated this.

1832. Wheat ploughed three times, and well cleaned and slightly manured; produce not quite 4 qrs. per acre.

1833. 1½ acres Swedes, 5½ white-top, both good; 1 acre each Mangold Wurzel and Potatoes, only middling.

1834. Barley fair crop, 45 qrs.

1835. Seeds; never had a piece kept so much stock.

1836. Dry season, not so good.

1837. Wheat ploughed and pressed, 3 bushels per acre sown, great crop of straw, 42 qrs.

1838. 4¼ acres Barley, light manured, 22 qrs.; 1 acre Peas, very great bulk of straw, only 2½ qrs.; remainder Potatoes, Mangold Wurzel, and Tares, all good; Tare stubble sown Turnips, a good crop.

1839. 1 acre that was Turnips set with Potatoes and Mangold Wurzel, good; 3 acres Swedes, good; remainder, white-top, very poor indeed; it was manured with farm-yard manure, and the Turnips drilled with a mixture of night-soil, ashes, and lime, which I then thought very fine stuff, but have since found it a great mistake; have never repeated the plan.

1840. Barley very good, 4 bushels per acre drilled; 70 qrs.

1841-42. Seeds good both years (grazed).

1843. Wheat, part drilled part pressed and sown 3 bushels per acre; very great crop, straw much down; 48½ qrs.; grain very fair, but rather coarse.

1844. Barley, once ploughed; a little manure, say seven one-horse cart-loads; never manure heavy for this crop; drilled 3¼ bushels per acre; produce, 62 qrs.; during summer patches all over the field, very short, only a foot long; other parts very strong, not much down; the field burns in patches in dry time. Near half the field was well cleaned, and drilled with 1 qr. Tares; got a nice stack of fodder, besides mowing what was wanted green.

1845. White-top Turnips, the fallows very good, Tare stubble very fair.

1846. Barley, 56½ qrs.; 3 bushels per acre drilled. Barley a general failure in this neighbourhood this year.

1847. Seeds good, and to be grazed another year. The first 10 or 12 years I fetched a great deal of night-soil; one year 100 loads, all sorts, ashes, &c.; have used a good deal of lime, burning it on the farm; bought a good deal of cake, malt-coom, bran, Oats, &c., and soot. About one-third of the Turnips has generally been carried off the land. I have never used any guano, and only once or twice a few bones, having 14 acres good meadow land I now can make plenty of manure for most purposes, except to set the Turnips going and to top dress the Wheat.

In addition to the above, as to what has been returned to the soil, I beg to say that I have never sold any straw or roots, except 50 or 60 sacks of Potatoes, in those years when they have been dear, otherwise all have been consumed on the farm. About two-thirds of the Turnips have been eaten on the land, chiefly by lambs bred on the farm, put on at six months old and continued on all the winter, with about 4 bushels of malt coom and a small quantity of cake, and the ewes about a month on Turnips before lambing, when I had them to spare; the remainder of the Turnips and the other roots given to the cattle at home, of all ages; five or six calves reared annually till the year 1842, when the farm was enlarged, then eight or nine annually, which, with the same number of yearlings, have been kept on hay and straw and Mangold Wurzel, with from 1 to 2 lbs. of cake each per day during the winter; the two-year-olds entirely on straw and 3 to 4 lbs. of cake each, in the yard with a shed; and at 3 to 3½ years old, fed on Turnips and straw, with a small portion of hay and cake or Barley-meal. I now use the Linseed compound, and sometimes I have bought two or three to feed; also three or four milch cows on hay and Mangold Wurzel and 3 lbs. of cake each, and five or six pigs fed on steamed Potatoes and Barley-meal. While the farm was only 100 acres (15 years), the quantity of cake was about 4 tons per annum, as near as I can tell, now eight or ten. All the tail corn is ground and used on the farm (I cannot say the quantity), and a good deal of Oats and bran have been bought for the cart horses. As to the manures, what I have bought has been chiefly night-soil mixed with ashes, obtained from Newark, and mixed with the yard dung, sometimes spread in the yards during winter, and sometimes mixed in the heaps in the fields and covered with soil. As to how much and how often, I can hardly answer correctly; but as I said in my last, I always think I manure well for the root crops, say 12 to 15 one-horse cart-loads, and six or seven on the Wheat stubble for Barley, which is twice in the six years; this has been the general plan with some exceptions. I must also mention that I have generally a large heap of compost, composed of road-scrapings, ditchings, Couch, and everything I can get fit for the purpose, mixed with lime and salt (for which idea and many others I am indebted to the *Gazette*), which, after laying two years and having repeated turnings, is spread on the first year's seeds. I have also used 100 bushels of lime per acre every other fallow, and sometimes a slight dressing for Wheat.

The following is the account of another field of 8½ acres, adjoining (south side) the last, and is of much the same quality, but not quite so good:

1827. Wheat stubble, 5 acres drilled with Barley, 21 qrs.; 3½ acres Oats, cut for horses; 1 ton Rape-dust drilled in.

1828. White Turnips, fair crop, limed.

1829. Barley, 46 qrs.

1830. 5½ acres Wheat, 18 qrs.; 3 acres Oats, light, cut; Wheat, half pressed and sown, half drilled, the pressed part much the best.

1831 and 1832. Seeds, grazed, good.

1833. 6 acres Barley (16 st. 20 per st.), 5½ qrs. per acre: 2½ Oats, cut up.

1834. Red Wheat, ploughed, dragged, cleaned, and manured, 3 qrs. 2 b. 2 p., sown and ploughed in 25 waggons loads, 4 qrs. per acre; stubble sown with Turnips, 16th to 20th August, fair crop.

1835. White Turnip and Swedes, light crop; 1 acre Potatoes, 100 sacks, only manured with yard-dung.

1836. Barley very good, 58 qrs. 5 bushels, near 7 qrs. per acre, 16-stone net per sack.

1837 and 1838. Seeds, grazed, only middling.

1839. Wheat, 41 qrs.

1840. 6½ acres Barley, manured, 52½ qrs., 8 qrs. per acre; 2 acres Mangold Wurzel and Carrots, both good.

1841. White Turnips and Swedes, good for season.

1842. 3½ acres drilled with 11 bushels white Wheat, 5th March, 6 qrs. 2 bushels per acre, no top-dressing, hoeing, or rolling; 4½ acres Barley, great crop of straw, 30 qrs.

1843. Seeds, grazed, good.

1844. Red Wheat, November 28, 2 qrs. 7 b., part drilled, part sown, 5 qrs. per acre.

1845. Red Clover, on one side very poor, other side Tares, very good.

1846. White Turnips, very great crop, manured with yard manure and a heap of compost, and drilled with Couch ashes.

1847. Barley, drilled 19 bushels, 19th and 20th March, very great crop, 44 waggon loads, sheaves 60 qrs. dressed up, besides two loads cut for horses, grain slender, 15 stone 3 lbs. per sack net.

1848. Seeds, only thin in spots, sowed a few small seeds and Italian Rye-grass in September.

This field adjoins the first (north side) on the other side, 9½ acres. Soil much the same, but not so deep; naturally dry and very gravelly, just on the edge of the moors.

1827. White Turnips and 1 acre Swedes, very good, manured, and 100 bushels of lime per acre; the whole farm was limed at the same rate as it came fallow.

1828. Barley 45 qrs. 3 bushels.

1829 and 1830. Seeds grazed, very good, always with, chiefly, ewes and lambs; 4 per acre.

1831. Wheat pressed and sown, 3 bushels per acre; mildewed; 23 waggon loads mown, 4 qrs. per acre.

1832. 8½ acres Barley dragged and cleaned; only part of it manured; 5 qrs. per acre; 1 acre Potatoes good.

1833. White Wheat, part manured, 31 qrs.; stubble sown with Turnips, very small.

1834. 7½ acres white-top, and Swedes, capital crop; 1 acre early Potatoes and Mangold Wurzel, good; Turnip land only manured; nothing drilled in. Swedes, 13th to 16th June, white-top 17th July.

1835. Barley 5½ qrs. per acre.

1836 and 1837. Seeds not good.

1838. Chevalier White Wheat, deal of straw, 37½ qrs.

1839. 4 acres Barley, manured; 18½ qrs. rest red Clover; 1½ acre Potatoes, 125 sacks of 10 pecks; 1000 square yards red Carrots, 5½ tons.

1840. 3 acres Swedes manured, and 10 stones bones and 20 ashes per acre, very good; 5½ acres yellow and white-top manured, and drilled in ridges, with 20 or 30 bushels Couch ashes, very large crop; 1½ acre; Potatoes 130 sacks of 10 pecks each; 100 bushels of lime per acre.

1841. Barley, too much straw, 59½ qrs.

1842 and 1843. Seeds, grazed, good.

1844. White Wheat, drilled 16th to 18th November, 23½ bushels, 5 qrs. per acre; very dry summer; much burnt in patches.

1845. Barley, manured; near 24 bushels, drilled 15th and 17th April; 6 qrs. per acre.

1846. 7 acres Swedes, well manured; nothing drilled with seed, 11th and 13th June, very good; 2½ acres Potatoes, Mangold Wurzel, and Carrots, all good.

1847. Barley 19½ bushels drilled 27th and 29th March, 33 loads (sheaves), 63 qrs., many tailings.

1848. Seeds good. *J. P.*

CONDITION OF IRELAND.

[WE make the following extract from a letter to G. Poulett Scrope, Esq., M.P., by Mr. Hamilton, of St. Ernan's, to whose efforts we called the attention of our readers at pages 153 and 169.]

At first the result of the operation of the present system of Poor-laws in my neighbourhood (one on the west coast, where great exertion and expenditure by a few proprietors had kept off those fearful scenes which have been witnessed farther south), was, as I stated in the evidence quoted by you, to prevent the taking of improved farms by solvent tenants, as they dreaded the poor-rates, which threatened to absorb everything. The farmers lost courage, and seemed early in this year determined not to crop the land.

There is now a very marked alteration. I can let my land, even at the present depressed prices of agricultural produce, at fair rents; and the extent of ground cropped by the industry of the people exceeds what I have ever seen in this part of the country. There has been no favourable change in the law to produce this effect; on the contrary, the late alterations have materially tended to check this tendency to take courage. But an effect of the system of Poor-law has caused this favourable move, it must be allowed.

In a letter written to Lord John Russell, published 20th March, 1849, I said, "I am among those who have hope for Ireland, and this is my hope—that in two or three years those who survive the crisis, and are able to float through the surge, will see Ireland's condition wonderfully changed, and her pauperism nearly removed. There are two means by which this will be brought to pass—1, by the salvation of the poor from pauperism; 2, by the destruction of the poor in pauperism. My only remaining resource," under the present system, "is to desert my property for a time; and as a naked fallow returns no actual profit, but is cleared of weeds by the operation of harrowing and exposure, so will the land I leave be, perhaps, quite unprofitable for a time. The Poor-law will do the harrowing, &c. The weeds will perish. The paupers will be no more, and their pauperism will be gone with them."

My prophecy has not required two or three years to fulfil it. The harrowing and exposure have been so effectual, that already the weeds are becoming scarce on the land—they are harrowed into heaps (those not quite destroyed at once), and are withering and wasting so manifestly, that the cultivator of the soil has the sad comfort of knowing that there cannot be so many paupers as there has been; and in that hope (obtained for him by the perpetrators of the Poor-law in its present shape) he takes land, and works it with energy. A medical gentleman, who lives hard by, assured me, within these few days, that the mortality among the lower class of farmers and their families, out of the poor-house, is much more fearful than it is in the poor-house. These poor industrious persons have, in numerous instances, put in the crop of their land, leaving themselves barely sufficient to live on till harvest. Their last cow, their last cask of corn, their very Potato-gar-

and the crook it hangs by in the chimney, has often been since sold by the poor-rate collector. If these go to the poor-house they give up all hope of future independence, and they face starvation and death rather than do so. Many proprietors who gave employment during these three last seasons to all tenants, or dwellers on their lands requiring aid, are now, on account of the Poor-law in its present form, unable to continue this method of relief. The Poor-law takes money to keep the poor in pauperism, without giving them the option of keeping them from it; and the frequent irregularities and injustice in the administration of the law for the improvement of landed property (by which I among others have suffered severely) deter many from risking their property by coming under the operation of that act.

I think these facts, laid before the people of England, may have a good effect in mitigating the hostility with which they often are incited to regard the people of Ireland, and may lead them to see that however many may be to blame, here, those who are not to blame cannot under the present system advance in the career of improvement, except on the fallow system above mentioned. If the English understood our position, they would insist on that which would, under Providence, save us—not great grants of money to be thrown away in making roads that are not needed while the land lies uncultivated, and to be repaid while yet the famine is sore in the land—not immense sums lavished in gratuitous relief so as to be a premium to the landlord who neglects his tenantry, and to the labourer who neglects his work, and also to be repaid already by the industrious men who in these days of trial persevere. That which would save us would be such a modification of Poor-law as should save the poor from pauperism, or at least leave that rescue possible, and such a modification would be both easy and effectual.

But in the mean time the harrowing is going on, the exposure to withering winds, and the cutting off from genial nourishment is doing its work. The poor, turned by law into the weeds of the land, are being extirpated, and few voices are raised to save them. They themselves see their fate, and yield in hopeless despair when they see that the law condemns them them to it. They die, and they consider themselves sacrificed to a bad law, to use no harsher expression. God grant that this exposure may stir up the feelings and energy of some to strive for them.

"Blessed is the man that considereth the poor."

If the case be so here, in our comparatively comfortable district, what must it be in the more southern parts of the west?

In conclusion, I will only say we have in this extensive district every means of improvement, and the mass of the people are found very industrious when they have an opportunity regularly to exert themselves profitably. Our condition as a district is improving; but it is by the destruction of the poor. It can only be so under the present system. It need not be thus, the present system alone causes the fatal necessity. *J. Hamilton.*

A SUBSTITUTE DUNG-HEAP.

Although long hindered, by a variety of interruptions, the subject of cheap manuring has never been forgotten by me; and I avail myself of the first leisure to draw it towards a termination. My last concluded with promising a cheap substitute for the dung-heap, and suggestions for green manuring.

In No. 1 was shown how the dung-heap may be tripled, so as to get 27 tons from an acre. But this produce appears to be exceeded, in practice, on a Scotch farm, of which the account is just printed. This farm consists of 260 acres, all arable, and, all but 65 acres, poor land. On this are kept 5 dairy cows, 130 feeding cattle, 150 sheep, and 15 horses! Eighteen acres of Clover and Rye-grass, and 1¼ acre of Turnips (19¼ acres), fed 67 cattle and 10 horses five months, from May to October; except the Oats and straw allowed to the horses, and 280 bushels of Beans, boiled with chaff, for the cattle. In the whole there are 105 acres in Wheat and Potatoes; and 30 acres in Oats, of which one-half may be consumed on the land: thus growing 120 acres for the market, and leaving 140 for the stock, to make manure. To this we must add, 270*l.* per annum laid out in Linseed, Beans, &c.; say 40 tons, capable of producing 120 tons of manure: and 500 loads of sea-weed are brought up from the beach. With these additions the 140 acres produce 5000 loads of mixed dung yearly, under cover, so as to be free from rain soaking; and independent of what is dropped in the fields, at pasture, against which, however, may be set the chaff and straw given with the cooked food and Oats. Hence, deducting the 500 loads of sea-weed, and 180 loads (the 120 tons) produced from the purchased food, we have 4320 loads, or in round numbers 2900 tons (taking a load at two-thirds of a ton), from 140 acres: besides urine, enough to water the greater part of 55 acres of Rye-grass, and Clover, four times a year, will be 2000 gallons; and take 50 acres (as there was not quite enough for the 55), this gives 100,000 gallons or 1,000,000 lbs. of urine, which would soak one-third of its weight of litter, say 333,000 lbs. making 1,333,000 lbs. or nearly 600 tons. This, added to the 2900 above, amounts to 3500 tons, from 140 acres (or 25 tons per acre), of very rich manure; containing only 2000 loads, or less than half peat; and if two-thirds had been added (as suggested in my No. 1) would have made more than 40 tons per acre.

Thus my estimate is exceeded, from a practical authority, which appears well worth the farmers' attention: the pamphlet being clear and concise, and not costly. Title, "High Farming under Liberal Covenants the best Substitute for Protection," by James Caird, Farmer, Baldoon, published by Blackwood and Co., price 1*s.* I only wish I could see, with him, any prospect of British agriculture flourishing without protection; but better times appear to be coming, if farmers are firm to their own interests.

But while such effects are produced, as farmers will hardly believe, by a good proportion of green crops and economising the essence of the manure, instead of allowing it to run waste and be washed out by the rain: still dung is heavy carriage; and there are out-lying distant fields, hilly and rough roads, and a variety of other cases, where it would be convenient to the farmer to have a cheap compost made on the spot capable of answering the purposes of the dung-heap, without the charge of carting from the homestead; and of helping out where deficient. 1. The basis of such a compost must of course be vegetables collected on the ground; but as vegetables ferment sour, there must be lime to correct the acid; and as there will be roots and seeds of weeds, they must be killed by salt. 2. Soils and turf, from hedges, ditches, and headlands, will also carry in vermin; but they and their eggs will be killed by the salt and lime. 3. The potass and salts required for vegetable growth will be well supplied in the vegetable matter; but the phosphates, for encouraging seeding and bulbing, will be deficient, and must be supplied by bones, either in the compost, or at the time of sowing. 4. And while the substance of the heap is constructed of these materials, ammonia, or nitrogen in some form, is necessary, to give it the activity of good dung; and the great point is to effect this by the cheapest and readiest means.

1. Of the vegetable matters, to form the basis, it may not be altogether superfluous to remind the farmer of roots harrowed up, hedge clippings, fallen leaves, weeds, fern, heath, moss, rushes, vegetables growing in and on the banks of pools and streams, and sea-weed when at hand; in fine, every sort of vegetable substance, leaves, stalks, or roots, burning none, except in extraordinary cases.

2. Then sods and turf from hedges, ditches, and headlands, and paring of the soil; sawdust, spent bark from the tan pit, peat turf and bog earth, mud from ponds, ditches, cess-pools, rivers, or the sea, and oven way soil where at hand; coal tar in small quantity (say 3 or 4 gallons to a ton), has been found useful in vegetable compost; and may be mixed with coal ashes or sawdust, for loose cartage (where not too far), or carried out in tar barrels, and mixed with saw-dust, leaves, spent bark, or any of the ingredients on the spot, or oven with earth, to disperse it through the heap, and prevent its clotting together.

3. When there is plenty of fish the phosphates will be sufficient without bone; but whenever bone is required it will generally be better applied to the soil, at the time of sowing.

4. If refuse fish is to be had cheap (say 1*s.* to 2*s.* per ton), it is the cheapest and readiest supply of ammonia; and carrion, or any animal offal, is little inferior. Or if a gas work is at hand, the gas liquor is excellent for the purpose, and may be carried in casks, or loose, absorbed in saw-dust, and next to these are woollen rags, which are light carriage; but work slowly unless steeped in urine or night soil. And if ammonia is still deficient, it may be made up at any time by sulphate of ammonia or nitrate of soda, dissolved and sprinkled in when turning over the heap.

The compost should be made in a part of the ground the most sheltered, by trees or walls, from both rain and sun; and a bed of earth, a foot or more deep, laid down: upon this a layer of green vegetables and sea-weed (1), dusted with slaked lime (say ½ cwt. to a ton), then a layer of stalks, roots, spent bark, sawdust sods, turf, and mud (2) with salt (also about ½ cwt. to the ton, less rather than more); and so on limed vegetables, and salted stalks, roots, sods, &c., until as high as convenient, say 4 or 5 feet.

The heap can be made up by degrees as the materials are procurable; and the thickness of the layers must depend, more or less, upon the abundance of each kind, perhaps 6 to 9 inches for the green layer, and 3 to 5 inches for that of roots, turf and mud, &c., would be about the best for equal fermentation. The fish, woollen rags, gas tar, or gas liquor, soaked in sawdust (4) should be applied in thin layers between the others, but always covered by the turf and mud, to save the ammonia. The heap will need turning over a few times, to finish the fermentation, and make it alike all through; and may then be used as dung, with the addition of nitrate of soda or sulphate of ammonia, as above said, if needed. But perhaps a still easier and cheaper method of enriching outlying lands is green manuring, of which more in our next. *J. Prideaux.*

Home Correspondence.

Produce of Guernsey Cows.—I beg to draw attention to an account of the produce in one year of five Guernsey cows, inserted in the last annual report of the proceedings of the Royal Agricultural Society of Guernsey, which has been just sent to you. It is as follows:

Butter, 1310 lbs., sold, on an average, at 1*s.* 3½*d.* per lb.	£86	10	10
Milk sold	4	3	3
One fat bull calf	2	8	10
Four heifer calves, valued 15*s.* each	3	0	0
Churned milk, valued 1*d.* per gallon	11	3	0
	£107	5	11

In drawing your notice to this handsome produce, I feel a deeper interest than mere local gratification; it is the returns of this branch of industry alone now that enables us pay the high rate at which land had risen here, chiefly in consequence of the Potato culture. No less than 18,000*l.* worth have been exported in one year from our small island. The knowledge of the value of our cattle as milk cows in England is the more necessary to us, as repeated attempts to pass poor Brittany cows as Channel Island cows have, since the opening of the ports, taken place; a caution to the English purchaser to that effect was published in your Paper some time since, advising to exact a certificate of breed with each cow. It is nevertheless to be feared that sufficient care has not been taken in this respect, and that many frauds have been committed; and it is in consequence that I beg you to insert, and your respected contemporaries, particularly of the south of England, to reproduce this article, not alone in the interest of the Guernsey breeders, but also in that of the English purchasers, who know the richness imparted to the milk by the introduction of our cows, of the purity of the breed of which we are very jealous; indeed, we are advised to that effect by our English friends. "Bounded by the sea," they say, "in a small locality like yours, be particular about the breed, and if we want crossings, we can make them at will." Such is their opinion, and it is most important to us in that branch of our exports. As to the accuracy of the report as above, not only is it given by one of the first gentlemen of the island, Mr. Thomas Priaulx, but it is put beyond all cavil by the fact that his farm, consisting of 40 Guernsey vergées, equal to 16 English acres, or 10 acres Irish, is worked on the metayer system, by an intelligent Englishman, who must give him of course correct returns of the produce, the sale of all which fetches about 200*l.* a year on an average of years, half, as above, the produce of five cows, who are tethered according to the custom of the island, and in every respect well kept. To show that this is not a solitary instance, I beg to add a report of the produce of one cow, belonging to Sir William Collings, of this island, which from the 14th of July, 1843, to the same date in 1845, in two years, gave 804 lbs., English weight, of very rich and handsome butter. *N. Le Beir, Hon. Sec., R.A.S.G., May* 21.

Wages.—To attempt to regulate agricultural wages by legislative enactment is quite out of the question, and would only lead to discontent and confusion, without in the slightest degree benefiting either master or servant. The price of labour must in a great measure depend upon the supply in the market; if there are many hands in search of employment wages will be low, on the contrary, if there is a want of hands, wages will rise. Although the price of bone and sinew comes under the denomination of a marketable commodity, and liable to fluctuation, something in the same manner as commercial produce; yet it is doubtful whether, in the case of requiring strength for the tillage of land and the usual domestic economy of the farm, it is the wisest plan to go to the cheapest market, thus grinding down the workman to the lowest farthing who prefers toiling for small remuneration to trusting himself and family to the tender mercies of the workhouse. There are two points to be considered. Are we doing justice to those dependent upon us?—are we consulting our own interest? With regard to the first question, it can hardly be said to be an act of justice to take advantage of the misfortunes of our fellow-creatures. It is folly to say we live in a free land, and a man is not compelled to toil unless he pleases, if he dislikes the remuneration offered; he may decline accepting it, and suit himself better. This is adding insult to injury, as it is well known that in a country like the United Kingdom, where territory is limited in extent, there is not much choice left to the poor man; if he changes his locality, he probably jumps "out of the frying-pan into the fire;" he must either be content to receive a daily pittance, for 10 hours' toil, not sufficient to provide for his family respectably, starvation, or the workhouse. A thickly-populated country will always be liable to times of distress, but the extent to which such misery may extend depends very much upon the social economy in practice. If there exists a kind feeling between the various branches of the community, the different classes taking an interest in each other's welfare, those moving in the highest circles evincing a kindliness of spirit to those in an inferior position, without unnecessary familiarity, thus gaining their respect and esteem. Many projects may and will be set on foot to guard against and alleviate periodical want; on the other hand, if men with money only think of increasing their substance, with the view of self gratification, and forget those whose health and strength they only use when an enormous per centage is to be gained on the inadequate wages paid, a gradual change in the feelings and dispositions of the lower orders must be anticipated, till, from bad to worse, they become alienated from the grades above them. If active measures are not adopted to provide profitable employment for the poor, a few years will cause landlords, farmers, merchants, manufacturers, small tradesmen, and all above want to rue the day they refused to listen to the voice of warning. Under the second head, it must be allowed the screwing system is bad policy, and such parsimony brings its own punishment. It has been proved what quantity of food is requisite to keep a healthy man in good working condition. Now it is obvious if he cannot obtain the necessary supply, he must either reduce the amount of his exertion, or he will injure his health. He will probably thus reason with himself—I should like honestly to perform what may be considered a fair day's work, but on 8*s.* per week I cannot preserve my own vigour without depriving my wife and children of their share of my earnings, I must therefore relax in my efforts, as my master will not enable me to put out my whole force. Thus indolence is engendered amongst our peasantry by a fancied economy, which after all proves most expensive, introducing a habit most difficult to overcome, and producing distrust amongst masters and men. In my limited experience, I have always found it advisable not to cut down wages to the lowest figure for able bodied men. The addition of a couple of shillings per week is amply repaid by the energy and spirit it infuses into the frame of the labourer; he appears to dig and delve with pleasure, compared to the man who is continually pulling against the stream, and knows that at the end of the day his task has neither been profitable to himself nor his master. It is painful to witness the efforts of the labourer to keep his head above water, and how many of them struggle through

misery and wretchedness, without complaining. The free trade measure which was to fill every cottage with food, has at present had a contrary effect; as what does it signify of the quartern loaf is to be had for two-pence, if two-pence are not forthcoming. What labour might be well expended on the land, if men were not "penny wise and pound foolish!" Let me recommend those who have idle time on their hands, to take half a dozen acres of land, and cultivate them by spade husbandry—I mean gentlemen who are often heard to ask how they shall kill time; they will find it both an amusement and a means of doing good in their immediate neighbourhood, by giving employment, and with prudence and common management, although they may not make their fortunes by the speculation, they will lose nothing, and have the satisfaction of knowing they are adding to the comforts of the labouring classes, by merely giving up a few spare houses, which would otherwise be idled away. Allotment rents are in many instances far too high, which deters many men of substance from embarking in a little spade tillage, as a recreation. I cannot understand on what principle land, not accommodation, is let to the farmer at half the sum per acre that is paid by the labourer or artisan. *Falcon.*

On the Use of Lime.—We have now arrived at the third question, "what is the best method of applying lime?" If it is to be applied alone, I should prefer it laid in a heap or heaps some time previous to its application, thoroughly slaked in the first place, and afterwards saturated with water, or as it is called in Scotland "drackit." It may be difficult to assign a reason why lime applied in this wet or "drackit" state should be more efficacious, than if applied when quick or when a dry hydrate, if the expression is allowable; but I know that the experience of many intelligent and eminently practical men will bear me out in saying that it is more efficacious, especially in regard to durability of effect. Happening to be in Edinburgh while the Scottish Chemistry Association existed, and on one of the days on which it met, I went to the meeting in company with one of the members. Professor Johnston lectured on the lime formations of the north of England and south of Scotland; and after the lecture a conversation arose as to whether lime ought to be applied in a dry or "drackit" state. The learned Professor read a communication from a gentleman in Dumfriesshire, advocating its being allowed to become wet, and giving proofs from experiment of the benefit derived from so treating it. This certainly coincided with my own opinion, and seemed also to coincide with the general opinion of the meeting and of the Professor himself, though he did not attempt to account for the fact. It is probably more permanently efficacious, from its not being so completely pulverised and comminuted as to lose too soon its power of decomposing those substances on which it acts beneficially. When in a finely powdered state, it must almost immediately assume the form of a carbonate, and so become nearly insoluble; but when it exists in small masses, it attracts carbonic acid more slowly, and therefore longer retains its active and passive powers or properties of decomposing and being dissolved. This is the condition then in which I would apply lime; and for pasture land, autumn, when the pasturage is over for the season, is the best time for doing so. When the soil is under cultivation it ought to be applied in the same condition, but by no means immmediately ploughed in, for though it would in that case have a good opportunity of acting on the soil, it would be too far below the surface, so that whatever it rendered soluble would in a great measure be lost. Lime, it is well known, sinks always deeper and deeper in soils, and ploughing in only fosters a tendency already too strong. In order, however, that it may be mixed with a portion of soil on which to act, it should be well harrowed, for by this means is secured the advantages without the disadvantages of ploughing. Besides, when it is no longer capable of decomposing minerals, then, if it is near the surface, by the disintegration of the particles of the soil, which even carbonate of lime is of great service in producing, the joint actions of the air and water more easily effect their decomposition. If however a compost can be made, it is undoubtedly preferable. It may be formed by a mixture of well slaked lime with roots of weeds which have a pretty large admixture of earth adhering to them; for though part of the salts produced will, in my opinion, be insoluble, undoubtedly the greater part will, in such a case, remain soluble. But green vegetable matter should not be used. Sir Humphrey Davy says, "Green crops, pond weeds, the parings of hedges and ditches, or any fresh vegetable matter, require no preparation to fit them for manure." Another excellent compost for clay, slate, granitic, and such like soils, may be formed with lime, peat, and soil, in the proportion of one quantity of lime, one of soil, and two of peat. If peat cannot be got, damped straw chaff in pretty large quantity is good with a double portion of soil. All such composts should be formed six months previously to their being required for the land. It is almost superfluous to add that they ought to be turned at intervals, so that they may be intimately mixed together. They should likewise be earthed over in something like the form of a Potato pit, so as to prevent the salts produced from being washed away by rain, and to shut out the carbonic acid of the atmosphere, that the lime may not become inactive before producing its full effect on the substances with which it is mixed. Composts ought to be treated, as regards mode of application, in the same way as before recommended for lime. *Aliquis.*

The Agricultural Labourer.—There are few subjects that deserve more attention than the condition of the agricultural labourers. Let a farmer be provided with the most improved implements of the day, and possessed of the most perfect practical and scientific knowledge of his calling, he cannot turn either the one or the other to good account unless he possesses active, faithful, and intelligent labourers; and if he is provided with such, there can be little doubt of his success. His work will proceed steadily, without requiring that unceasing trouble and anxiety necessary among a set of ignorant hands, no better than mere machines, who are ever requiring an impelling power, and only do their work because they cannot help it. That the farmer is often kept back by the want of interestedness in his labourers, is, I fear, a fact too strong to require any proof, every practical man will have had himself satisfied on this point. But then, as it must be granted that the evil exists, and as there is no evil without a cause, we would do well to inquire into the source whence it arises. And this will not require much trouble. One of the chief is the little encouragement that is given to those that are really deserving. Suppose a labourer marries, and has a family of some half-dozen children, he gets perhaps 9*s.* a week, with some other privileges, such as a cottage and garden, with an allowance of fuel, and this all perhaps little enough to support him with any degree of comfort. But then he is a slow and careless workman, requires constant looking after and keeping at his work. And another works on the same farm, is not married, requires no cottage, &c., and is not supposed to require so much wages; he is an active and industrious young man, and wishes to prove himself superior to his fellow-labourers (an ambition that ought to be stimulated). But the system is too general of paying not according to merit, but according to the necessity, of the person, and those that would render themselves active and trustworthy, are not rewarded as they deserve. It may be said this is an evil that, under present circumstances, cannot be overcome, because the married labourer and his family must be supported some way or other, and as well give it to him in the shape of wages as otherwise. But this degrades the labourer from the condition of a free and independent being, disposing of goods (his service) on honourable terms, to that of a mean and despicable serf, dependent on the alms of those that employ him; and for these he is bound to render, not value for value, but what he can, or what he may be compelled to do. But not only is such a system a barrier to the progress of exertion among the labouring class, but it is positively productive of evil; for, small as it may be in the eyes of the acute and intelligent, yet it is in too many cases an inducement to young men to contract improvident marriages. For they know that they must be kept from actual starvation whichever state they live in, and they are certain that no exertion on their own part can raise them above their present condition, or at least, from the view that they take, no chance is perceptible. This I take to be one of the chief causes of that careless and uninterested disposition so common among agricultural labourers. And can we expect it ever to be better so long as it is persisted in; for it is nothing less than taxing one part (the active and industrious) for the support of the slothful and indolent, and, in too many cases, improvident. There ought to be an end put to such a practice. Let each for himself have that which he earns, and let those who cannot earn sufficient get that support which by law is allowed, but let it not be taken off those who are certainly among the least able to bear it (the unmarried labourer), thus depriving him of the means of setting himself up in the world with any fair chance of comfort, damping his energies so that he will only follow the same stiff and careless course that his predecessors did. *S.*

One of the advantages from clean farming is the possibility of well harvesting Wheat in wet seasons.—Among the advantages that arise from clean farming is the facility with which Wheat that is free of weeds is to be well harvested in bad seasons. The ordinary practice of exposing this grain for six or seven days, after it has been cut, for the purpose of preparing it for housing or stacking, I have long found to be unnecessary; or necessary only either when the Wheat has been cut green, or when weeds have been gathered in the shocks. In a word, my practice for many years has frequently been to carry much of my Wheat the same day it was cut, and bad as the season proved last year, in this way all my crop was secured without damage; so that, notwithstanding the general averages are only 46*s.* per quarter, the whole of mine at this moment is worth 54*s.* (I have sold none so low, but this price I refused last week for a sample that is no better than the rest). When I contrast the lower prices that have been generally realised through the south of England, in consequence of the injury done at harvest, and further take to account the loss that arises from moving the shocks after wet, I feel I am justified in instancing my practice as an example, and the more so that there were instances in my immediate neighbourhood where the loss from not understanding this was a fourth or more of the entire crop. Let me, therefore, say that my practice in doubtful seasons is to leave my Wheat uncut until quite ripe; then, taking advantage of fine days, I muster all the hands I can and proceed to cut as fast as possible. The shocks that are cut before dinner are not set up, but are laid with the butt-ends to the wind, and after dinner these are taken up in the order they have been cut. In this way, comparatively little of my Wheat lies out 24 hours; but I must not omit to strongly impress that to be able to do this it must be clean and ripe. This is a good occasion for my calling attention to Garrett's horse hoe. The facility with which weeds between the drills of corn may be destroyed by its use, makes this implement of so much value, that when it comes into more general use, those who are without it will be farming at a disadvantage. By it all grain drilled at intervals of not less than 9 inches, may be hoed at a cost of 1*s.* per acre. I believe I am indebted to this hoe for a larger return in quantity as well as for a better quality, than any hand hoeing, at ten times the cost, would have given me; for no hoeing done by hand is so perfect or so effectual. But to be justly appreciated this machine must be seen in use, and its work examined: and then the knowledge that additional space for the corn to spread, and nutriment to feed it, are given by its means, at a cost of only 1*s.* an acre, will bring it into general use; and the cornfields of Britain will lose their adornment of wild flowers, that yet in too many instances are to be seen garnishing them. The green of the Oats and Barley will no longer at this season be hidden by the yellow of the flowering Charlock, nor the modesty of the Wheat but to blush by the crimson Poppy. *Hewitt Davis,* 3, *Frederick's-place, Old Jewry, London.*

Farming in Cumberland.—I am glad to see our small hilly county noticed in a late No. of the *Gazette* in a communication from a correspondent, expressing satisfaction with our one-horse carts. From the establishment of your interesting and instructive paper, I have observed the good people to the north of us have been industriously filling its columns with accounts of their superior farming; and southward, the men of Lincoln and Norfolk also put in their claim for notice, whilst such humble hill and dale people as are our farmers are never noticed. A little praise, as the approval of our one-horse carts, comes therefore to us with additional pleasure. It is true strangers in shoals visit our mountains and lakes, but their pursuit is gaiety and pleasure, not examining the operations of the plough, the drill, or the harrow, nor ever inquiring into the benefits arising from the liquid manure cart, or the excellencies of bone-dust or guano. Nor do the public roads, passing as they do over barren districts, allow the passing stranger to see the rich valleys and well cultivated districts, that are not few, in the county. Following up the notice of our one-horse carts, I will, with your sanction, notice facts connected with my earliest recollections, which extend to a period of 60 years, and add some more recent facts to show what there were and now are going on in the county. My father, like a great number of his neighbours, farmed his own land, consisting of 70 acres, all arable. Sixty years ago, and how long previously I know not, he followed the five-shift course of husbandry as is now practised in the Lothians. Oats out of lea; Turnips or Potatoes always on drills. At that time, I never knew any of the farmers sow Turnips broadcast. The drill husbandry had been long practised, and, I believe, first introduced into the East of Cumberland by Mr. Howard of Corby Castle, grandfather to the present member for Carlisle. After Turnips, Barley with Rye-grass and Clover generally follow, the land being light and sandy. Sometimes, however, Wheat was substituted, but not generally. The following year was hay, and the fifth Grass. And as is now the practice, great care was then taken in cleaning the land and preparing for the green crop, and in the after-culture of weeding, singling, and ploughing. In short, with the exception of bone-dust and guano, and new varieties of Turnips, the practice there was exactly similar to the present most approved mode of culture. In those days two-horse ploughs were in universal use. I never saw any other in the county, nor do I remember any other than one-horse carts. Sixty years ago one or two in a district might be seen, with the wheels and axles in one, revolving together; these were called tumble carts. I fancy none of these have existed for the last 50 years. About 50 years ago I remember a field of ours being what would now be called thorough drained, the drains running from top to bottom; the drains were shallow, and brushwood and branches of trees were used, instead of the present day tiles and pipes. And in noticing draining, I believe the first tile kiln erected in Cumberland would be some 30 years ago, and at the present time, I am told, there are more than 100 such works in the county. This fact will rather surprise those who, in your paper, have been putting forth extra claims for their advancement in agriculture. You will be thinking I have said enough; allow me to state another fact, and I am done. At the last Highland Society's meeting held at Dumfries, a great proportion of the head premiums were awarded to Cumberland farmers for horses, bulls, and pigs; and at the previous show held there, the head premium for Turnips was awarded to a Cumberland farmer, a Mr. Hodgson of Low Walton, near Whitehaven. Having named this enterprising farmer, I am tempted to invite agriculturists visiting the west of Cumberland, to spend a few hours on the farms in the immediate neighbourhood of St. Bees, the farms of Hodgson, of Low Walton; Bell's, of High Walton; Mossops, of Rottington; and Fox's, of St. Bees Abbey; farms of considerable extent, from 200 to 600 acres each of arable land, and all in the first state of high farming. I am no farmer, but a farmer's son; and an habitual observer of what is going on around me. *A Cumbrian, Cockermouth.*

What is a ton of Turnips worth?—In the *Agricultural Gazette* of May 12th, I wrote that I had taken much pains to compare the different statements which

have been made of the results of stall-feeding by agriculturists in Yorkshire, and that I had found those statements to differ but slightly in minor detail from each other, either as regards the quantity of food allowed to each beast, or as to the increase of weight, &c.; and I therefore only instanced two experiments made in the feeding of beasts by H. S. Thompson, Esq., showing that, in 31 days, four bullocks gained in weight, on the average, about 6 stones each. Upon this statement of (what I believe to be) a fact, I founded the calculation which appeared, under the head of "High Farming," on the 12th of May. Your correspondent of the 2d inst., "J. M.," is pleased to be rather sarcastic in his remarks upon the value which (founded upon calculations and figures) I put upon a ton of Turnips, and he instances Mr. Mechi as estimating a crop of Turnips at *nil!* A Lincolnshire farmer, he says, reckons the value of the crop at 2*s.* 11½*d.* per ton, and a Galloway man 3*s.* 2½*d.*; in each case, of course, over and above the value of the manure, whilst he admits that his own experience gives 6*s.* to 7*s.* as the average value of a ton of Turnips. Now I maintain that "J. M.," so far from weakening, by his criticism, goes to strengthen my position; for inasmuch as he, by his own statement of 6*s.* to 7*s.*, implies that Mr. Mechi, who makes *nil*, and the Lincolnshire and Galloway men, who only make about 3*s.* per ton, are ignorant of the best method of appropriating the Turnip crop to cattle feeding, is it not fair to infer (unless all improvement be supposed to come to a stand still with "J. M.'s" conclusion) that where, between two parties, so great a discrepancy as from *nil* to 7*s.* per ton exists, there is still room for a further advance, and that the amount at which I take my stand (10*s.* per ton) is a sum which may within the bounds of probability be realised. And, in proof that the proportionate weight of which I speak, and more even, can be laid upon a number of beasts together, and that such are not isolated cases, I beg to refer "J. M." to a statement of "Some experiments carried on in the farm-yard at Belmont, Cheshire, in the winters of 1844-45, by James H. Leigh," taken from the Journal of the Royal Agricultural Society. Mr. Leigh there gives the result of feeding 27 beasts for 63 days, and states that the average weight gained by them was 200$\frac{1}{27}$ lbs., or rather more than 7 stones gained in 31 days. The result of a second experiment gives a still greater proportionate increase of weight; for 30 beasts, of mixed kinds, gained in 75 days 9111 lbs., or equal to about 9 stones each, on the average, for the period of 31 days. And my statement as to weight is borne out by Mr. C. Hillyard, who, writing on the subject of practical farming, gives the increase in weight which he considers should be acquired from month to month, by feeding beasts, and this I see gives an average of 6 stones for 31 days. I could easily multiply instances in corroboration of my statements, but think that the foregoing are sufficient to show, that however "J. M.," may be inclined to doubt the possibility, except in very peculiar cases, of the weight to which I have referred being gained by feeding bullocks, still that considerably greater weights have been gained on the average of 30 to 60 beasts together. In conclusion, I may remark, that if the statements of the results of stall-feeding which I have quoted from the Journal of the Royal Agricultural Society, and from that of the Yorkshire Agricultural Society be worthy of credit, then I am not so preposterously high in my ideas as to the sum which a ton of Turnips would leave the farmer (were he to adopt the most judicious and improved method of consuming them), as "J. M." would imply; and my answer to his question, with which this article is headed, is, that a ton of Turnips for stall-feeding, properly applied, is worth 10*s.* *William Tuke, Bradford, Yorkshire.* [We shall be happy to sell all of ours, to any one who will consume them on the land, for much less.]

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House in Hanover square, on Tuesday last, the 19th of June: present, the Earl of Chichester, President, in the Chair; Marquis of Downshire, Lord Camoys, Hon. R. H. Clive, M.P., Sir John V. B. Johnstone, Bart., M.P., Sir Arthur B. de Capell Broke, Bart., Sir Robert Price, Bart., M.P., Sir John P. Boileau, Bart., Mr. Alliston, Mr. Seymour Allen, Mr. John Baines, Mr. Raymond Barker, Mr. Barwell, Mr. Beale Browne, Mr. W. Burroughes, Mr. Burton, Dr. Calvert, Rev. T. Cator, Colonel Challoner, Mr. F. C. Cherry, Mr. Copeman, Mr. Capel Cure, Mr. Evelyn Denison, M.P., Mr. Dyer, Mr. Brandreth Gibbs, Mr. Gurdon Rebow, Mr. Gooch, M.P., Mr. B. Hall, Mr. Fisher Hobbs, Mr. Kinder, Mr. W. Miles, M.P., Mr. Milward, Mr. C. E. Overman, Mr. Parkins, Mr. Chandos Pole, Capt. Randolph, R.N., Prof. Sewell, Mr. Shaw, of London, Prof. Simonds, Mr. Bridgman Simpson, Rev. T. P. Slapp, Mr. A. Smith, Mr. Spencer Stanhope, Mr. Stansfield, M.P., Mr. Hampden Turner, Mr. Thos. Turner, Mr. T. R. Tweed, Prof. Way, Mr. Wolryche Whitmore, Mr. Thos. Williams, and Mr. Edmund Wodehouse, M.P.—Captain Moody, R.E., late Governor of the Falkland Islands, was also present, on the introduction of the Hon. Robert H. Clive, M.P.

The following new Members were elected:

Barberie, John, House Dean Farm, Falmer, Lewes, Sussex
Long, Richard Penruddocke, Rood-Ashton, Trowbridge, Wilts
Cottingham, E., Chunb Farm, Cove-Hythe, Wrantham, Suffolk
Ison, John, Sowe, Coventry, Warwickshire
Ling, Henry, Norwich
Merle, Thomas B., Cannington Park, Bridgwater, Somerset
Trethewy, Henry, Grampound, Cornwall
Parker, George, Bixley, Norwich
Fergusson, Archibald, Dunfallandy, Pitlochry, Perthshire
Trethewy, Henry, jun., Silsoe, Bedfordshire
Copeman, Thomas, Aylsham, Norfolk
Salisbury, Edward Dodson, Middleton Tower, Lancaster
Parmeter, Robert William, Aylsham, Norfolk
Sage, Edward, Furze House, Romford, Essex
Mann, John, Thornage, Dereham, Norfolk
Gay, James, Thurning Hall, Norfolk

The names of 11 candidates for election at the next meeting were then read.

Captain Moody favoured the Council with a highly interesting detail of his personal experience in the cultivation of the Tussac Grass of the Falkland Islands, of which we shall be enabled in our next week's Paper to furnish a complete report.—His Excellency, Sir Harry Smith, transmitted, from the Cape of Good Hope, a communication on improving the breed of horses in that colony, for the purpose of supplying our Indian army with the requisite number of efficient troopers.

Reviews.

The Draining Engineer and General Land Improver; a Practical Work, &c. By John Linehan, C. E. J. M'Glashan, 21, D'Olier-street, Dublin.

This is likely to be a very useful volume. It is full of practical details: it does not advocate theories, but describes practice; and if description is ever able to take the place of experience, it must be in the case of a volume which, like this, gives methods and specifications, and estimates and plans, in detail. But little of the work is proper to be extracted: most of it is in the form of instructions for the workman, such as the superintendent of the works would give; considerable portions are devoted to the rules which guide operations on the large scale, and which guide the correct use of the instruments employed; not much is of a nature to interest any but those of our readers likely to make use of the work. The following extracts are among the more generally interesting passages:

On Natural Drainage.—"With regard to the climate of the United Kingdom, it has been already shown to be, though salubrious, a particularly damp one. We find the moisture that falls annually (about a yard deep on every point of surface) is distributed throughout the greater part of the year, and that a sheet of water 1½ inch thick (on every point of surface) frequently falls in the 24 hours. We see that the rain falls as heavily on the dry, arable, as on the wet land; but perceive it disappear almost immediately from the former, whilst the latter remains constantly drenched. If we ask the question, where the wet that had fallen on the dry, arable land had gone to? the obvious reply will be, that it had disappeared through the naturally porous subsoil or strata on which the active soil happened to be placed. Now, if we inquire farther, we will find this wet is not gone to remain always below the surface; for on meeting with an impervious stratum, as rock or clay (which is always, in some manner or other, inclining to the surface), the farther descent of the water becomes partially or wholly checked, and, accumulating in a body, forces its way to the surface of the land: appearing in the manner of lines of springs (which we see on the sides of slopes) if the impervious stratum leads fully to the surface; oozing through the soils, if the impervious stratum becomes broken or disturbed, or there be a loose mass or covering over the bed; or in the manner of spring wells, should the subterraneous channels (as slits, from dislocation of the strata, &c.) connect the subterraneous reservoirs with the surface. In the various ways just mentioned, does the moisture which has disappeared from the dry upland break out lower down; it disappears again after saturation of the new soils, and again and again breaks out still lower. Thus we see that the great weight of the water fallen on the whole face of a country is, in various ways, directed to particular districts, accounting for their constantly drenched and valueless state. Therefore, to the order of the gratification, and nature and character of the subsoil of a district, is owing the remote and immediate causes of injury to the soils; and these should be fully considered, particularly the character, depths, and relative positions of the beds of clay and gravel, &c, in contact with the surface soil.

"Though we see the saturation of all soils is more or less owing to the order, and dip, or inclination of the strata, with regard to the surface of a country, it is unnecessary to observe that this arrangement should be viewed in far a different light from being intended to damage and rot the crops of the farmer—viz., as a most bountiful provision of the great Creator, for the distribution of that most essential element (water) on the hill's side and top, as well as at its bottom, affording, at the same time, to man, an extensive field for useful employment, from which he can have his bread 'by the sweat of his brow.'"

On Subsoil Ploughing.—"The great benefits resulting from judicious subsoiling may be enumerated as follows:—1. Makes the drains effective almost immediately and permanently; for the soils rarely harden after being once broken up: enables the crop to be put in, and got off, much earlier. 2. Is the first and great step towards increasing the depth, and improving the condition of all light, bad soils. In the subsoils, when improved, will most generally be found most valuable ingredients, which might often be wanting or entirely deficient in the cropping soil. 3. Admits the atmospheric air to penetrate and circulate freely through the soils; the carbonic acid gas—the great food of plants—to the roots of the growing plant; and the oxygen gas, to act on the deleterious, ferruginous compounds and secretions to be found in the soils of most wet lands; will secure to the soils benefit from every drop of rain that passes through the atmosphere. 4. Will be found an important means for keeping down weeds, and also for putting an end to the destructive ravages of insects. The latter, because many of these innumerable tribes of the Turnip fly, for example, are constantly changing from the full-grown, or perfect state in one form, to the embryo state of the next, and if disturbed at the latter period will be prevented coming to maturity. The eggs of the full-grown insect or caterpillar, in one state, are deposited on the soft, pulpy leaf or stem of the plant; then, after a certain time drop to the ground, and intermingle with the surface soil, where generated within atmospheric influence. The winter's cold instinctively drives them to seek shelter in the vegetable mass of the soil (entering through the pores, tuberous rootlets, decayed stems, &c.), where they remain in torpid security, until a rarified atmosphere brings them forth to resume their destructive work; therefore, disturbing their retreats, by upside-down working of the soil, the winter's exposure, together with being enveloped in the subsoil (so new and foreign to their habits and nature), must tend to their annihilation.

"Most subsoils, in their natural state, are more or less impregnated with acids and secretions, which are most obnoxious to all useful plants. We perceive the plant, in favourable seasons, progress beyond our expectations for a time; but no sooner do the tender roots and fibres approach the deleterious matter of the subsoil than they often droop and perish; then mixing such subsoils, suddenly and largely, with the cropping soil must neutralise its action, and be fatal to vegetable life.* Therefore, the proper principle of subsoiling is that which breaks up the subsoil, leaving it still in its place, until prepared to be added in proper quantity to the cropping soil, by subsequent digging or deep working.

"Subsoiling in general should be done some time after the drains are put into stiff, retentive clays; but often may be done previous to or during these operations, as where stones may be had from the subsoil for drainage, and expensive quarrying, cartage, &c., saved, as will be seen. Subsoiling alone to the proper depth (as in soils having a thin, impervious crust of subsoil, resting on a free or porous stratum of sand, gravel, &c.), will be quite enough, without farther drainage."

On the Cost and Profits of Irrigation.—"The cost of forming surface for irrigation will be exceedingly variable, as this will often involve full reclamation and equalising of the surface; but in general, bedwork or catchwork forming—particularly the latter—will be comparatively trifling, if forming be attended to at the time of tillage; that is, the beds and furrows properly laid out, the stones picked and removed, and the surface made even and regular by harrowing, rolling, &c. It will sometimes be more convenient, and a very proper plan, to strip the grassy surface of the meadow or pasture lands early in spring, and to work up and form the ground (into bedwork, &c.) by the stuff from drains, banks, &c, and lay on the surface sod again, which can receive the water immediately, and give a good crop of hay the same year. I found an average case of forming on this plan to cost, per statute acre, as follows:—

	£	s.	d.
Stripping the surface sod, 12 men (per statute acre), at 1s. per ...	£0	12	0
Removing sod in handbarrows half bed to each side, forming drains, &c., 18 men, at 10d. per ..	0	15	0
Ploughing and spade work, forming (1 plough and 16 men) ...	0	19	0
Returning and laying sod, completing open drains, &c., 24 men, at 10d.	1	0	0
Cost per statute acre	£3	6	0
Rate per Irish acre ...	5	7	3

"At the end of the second year the expense was fully returned, and the increase in hay, of a superior quality (the original being coarse), was something over 1¼ ton per statute acre, or value, say, of 2*l.* I have known cases, however, to cost double, and even treble this sum, for reclamation, drainage, &c.; yet, by means of irrigation, found all expenses were returned in three or four years, and the land permanently increased in value, from 2*l.* to 3*l.* per statute acre.

"In the case of Charles Colthurst, Esq., Coachford, county Cork, alluded to (page 169), his drainage, subsoiling, making weirs, irrigating drains, &c, cost the enormous sum of 12*l.* 10*s.* per statute acre; yet all expenses were returned within five years, and the value of the land increased 3*l.* 16*s.* per statute acre, chiefly by irrigation. Hear his own words:

"'To show,' says Mr. Colthurst (in his letter to the *Dublin Evening Post*, December 19, 1848), 'what a great result has arisen out of a small experiment, I shall briefly state it. I commenced reclaiming (as a model farm) 20 statute acres of mountain, valued by the tithe commissioners, in 1828, at 3*s.* 11*d.* per acre. I laid out in permanently reclaiming this piece of land, 334*l.* 2*s.* 10*d.* (see my evidence before Lord Devon's commision, in September, 1844, at Macroom), but was repaid back in five years all this sum, and 19*l.* 17*s.* 2*d.* over:—

	£	s.	d.	£	s.	d.
Balance in favour of C. Colthurst (end of 5th year)				£19	17	2
Annual value of hay sold from 1835 to 1846, 80l. per annum				880	0	
				£899	17	
Deduct head-rent for 11 years, at 7l. 11s. 9d. per an.				89	9	
Net balance ...				£816		
Sir George Colthurst purchased, in 1846, this lot, giving 20 years' purchase ...	£80	0	0			
Deduct head-rent	7	11	9			
	£72	8	3			
				1448	5	0
Net profit on 20 statute acres, in 11 years				£2264	13	2

* "This I have seen in numerous instances to be the case, from bringing up suddenly too large a quantity of the sterile subsoil: such lands did not recover for several years."

"'In the year 1845 Sir George Colthurst's steward sold the hay for 104*l.* The profit and sale of this small lot of land have formed a fund that will reclaim 250 acres of deep bog, and, if it please God to spare me till the year 1851, I have no doubt but I shall make this farm worth 400*l.* a year, clear of head-rent and expenditure.'"

Calendar of Operations.

JUNE.

East Lothian Farm, *June* 16.—We have finished sowing the hand ridges with Globe Turnips, noticed last report. We have likewise, with the paring and grubber ploughs, been employed amongst the early sown Swedes, hand weeding Wheat and Oats, threshing Wheat and carting the same to market. The weather for the past ten days has been ungenial, and rather low temperature for the season. Early sown Swedes, in consequence, have made but little progress, being partially attacked with the fly. *M.*

Sussex Farm.—*June* 18.—The weather still continues favourable for the workings of the fallows, but part of last week we had cold winds with frost at nights, which has in some parts blackened the haulm of the Potatoes. Our main work is still preparing the land and sowing various sorts of Turnips. We drill all with the swing plough; the drill is made up hill, and the dung is covered in over hill. We make our drills 27 inches apart, and apply about 30 loads of dung per acre, with a little guano and ashes mixed, sown by hand in the drills on the top of the dung. I find that guano has more effect in this way than sown by itself. We have now finished planting about 1½ acre of Drumhead Cabbages, and to-day we shall finish mowing seeds; a good crop of Rye-grass, but the Clover is thin. Our first sown Swedes, a field of 13 acres, have come up regularly, and look well. We have now limed part of them, to prevent the ravages of the fly. Our mode of applying quick-lime: six men, with each a tray-basket, walk between the drills and sow the lime by hand along the top of the Turnips. We are also engaged thinning Carrots and hoeing Potatoes, &c. *J. B.*

Notices to Correspondents.

High Farming: *A Cornish Subscriber* should not have written anonymously. Mr. Caird cannot be expected to answer anonymous inquiries.

Lime: *Cris.* 60 bushels per acre is a moderate, and would generally be called a short dressing of lime.

Poultry Medicines: *Anon.* The enquiry respecting soot and red brickdust is reasonable, and I thought I had exhibited in one of my articles in this Paper, their "modus operandi." Soot is a very ancient remedy among old-fashioned housewives. I never intended to recommend either as a mere vehicle, but for their absolutely medicinal or active properties. Soot acts as an aperient. Our fowls have had for years the cinders of the household sifted continually for them to cleanse in, and whenever much soot falls down the chimneys, they are invariably scoured. Red brick-dust has peculiar effects, as also sand, which they will sometimes devour eagerly, as well as small pebbles, which act as triturents in the œsophagus; secondly, in aiding the quicker dispersion of bile amongst the crude matters this kind of animal consumes. Calcareous matters are required for the formation and excretion of the material composing the egg-shell; if deprived of these, birds pine away and die. *D.S.E.*

Rabbits, &c: *E Hulme.* We do not know. Such information is only to be obtained by advertising, or from advertisements. About Dartmoor, you have been preceded by a gentleman who is cultivating successfully. We hope to obtain his system of management for you.

Stable Ventilation: *Northwood.* The foul air being heated, and therefore lighter, should pass out at the highest point, and as the pure air, being heavier, will often enter at the same place, a draught will be created, which should be removed as far as possible from the horses' heads. If admission is given to the pure air, some 3 or 4 feet from the ground in another part of the stable, it will tend to prevent the downward draught. Your proposal in carrying the pipe through the loft, with a cap at the top, is free from objection. *W. C. S.*

Sowing Machines: *H M.* We use a Turnip double row drill, made by Mr. Moodie, of Denholm, near Hawick, and we believe there is no better. Its price is 7*l.* Mangold Wurzel we plant by hand, using blunt hand dibbles for the purpose. We have had no experience of Newberry's for that purpose; and do not suppose it to be suitable for Turnips.

Markets.

SMITHFIELD, Monday, June 18.

The number of Beasts being less than on Monday last, salesmen make considerable effort to advance prices, but only succeed in few instances. A slow trade is the consequence, but late rates are freely offered. The supply of Sheep and Lambs is large, and the demand very limited; a reduction of about 2d. per 8 lbs. is submitted to. Calves are plentiful, and but few wanted; it is difficult to maintain late quotations for the choicest, and middling ones are lower. From Holland and Germany there are 290 Beasts, 2100 Sheep, and 136 Calves; from Norfolk and Suffolk, 1800 Beasts; and from Scotland, 200.

Per st. of 8 lbs.—s d s d	Per st. of 8 lbs.—s d s d
Best Scots, Here-	Best Long-wools ... ...
fords, &c. ... 3 6 to 3 8	Ditto Shorn ... 3 4 to 3 6
Best Short-horns 3 4 — 3 6	Ewes & 2d quality ...
2d quality Beasts 2 8 — 3 2	Ditto Shorn ... 2 8 — 3 2
Best Downs and	Lambs ... ... 5 0 — 5 8
Half-breds	Calves ... ... 2 8 — 4 0
Ditto Shorn ... 3 8 — 3 10	Pigs ... ... 3 4 — 4 8

Beasts, 3114; Sheep and Lambs, 20,000; Calves, 282; Pigs, 230.

Friday, June 22.

The supply of Beasts is small, but quite equal to the demand. We have a slow trade at Monday's prices. The number of Sheep and Lambs is large, and trade very heavy. A large proportion of the latter are of middling quality; in these there is a considerable reduction, and many remain unsold. The best descriptions are rather lower. We have again a plentiful supply of Calves, and late rates are with difficulty obtained. Pigs are lower. From Holland and Germany we have 57 Beasts, 560 Sheep, and 257 Calves; from Scotland, 170 Beasts; and 131 Milch Cows from the home counties.

Best Scots, Here-	Best Long-wools . ... to ...
fords, &c. ... 3 6 to 3 8	Ditto Shorn ... 3 2 — 3 6
Best Short-horns 3 4 — 3 6	Ewes & 2d quality ... — ..
2d quality Beasts 2 8 — 3 2	Ditto Shorn ... 2 8 — 3 2
Best Downs and	Lambs ... ... 4 8 — 5 6
Half-breds ... ... — ...	Calves ... . 2 8 — 4 0
Ditto Shorn ... 3 6 — 3 8	Pigs ... . 3 4 — 4 4

Beasts, 742; Sheep and Lambs, 13,920; Calves, 634; Pigs, 250.

HAY.—Per Load of 36 Trusses.

Smithfield, June 21.

Prime Meadow Hay	68s to 75s		Clover	60s to 95s	
Inferior ditto... ...	50	65	New Clover	—	—
Rowen	50	60	Straw	28	33
New Hay	56	65			J. Cooper.

Cumberland Market, June 21.

Prime Meadow Hay	73s to 77s		Inferior	50s to 75s	
Inferior ditto... ...	60	65	New Clover	—	—
New Hay	50	63	Straw	32	34
Old Clover	84	92			Joshua Baker.

HOPS.—Friday, June 22.

Messrs. Pattenden and Smith report that the accounts from the plantations continue daily to come worse and worse. Duty, 80,000*l.* Market improving.

COVENT GARDEN, June 22.

The weather continuing favourable, Vegetables are plentiful. Fruit has altered but little since our last account. Pine-apples continue to fetch from 6s. to 10s. per lb. Hothouse Grapes are cheaper. Strawberries and foreign Cherries are plentiful and cheap. A few Peaches and Nectarines have made their appearance. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, young Turnips may be obtained at from 6d. to 1s. a bunch. Carrots the same. Cauliflowers are sufficient for the demand. Rhubarb and Asparagus are plentiful. Green Peas fetch from 2s. to 4s. per bushel. Potatoes are a trifle cheaper. New Potatoes realise from 3d. to 9d. per lb. New Dutch Potatoes have been sold in considerable quantities at about 12s. per cwt. Lettuces and other salading are sufficient for the demand. Mushrooms are cheaper. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Lily of the Valley, Cinerarias, Tropæolums, Carnations, Pinks, Fuchsias, Rhododendrons, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Oranges, per doz., 1s to 2s
Grapes, hothouse, p. lb, 3s. to 8s	— per 100, 6s to 16s
Peaches, per doz., 10s to 24s	Lemons, per doz., 1s to 2s
Nectarines, per doz., 10s to 24s	— per 100, 7s to 14s
Strawberries, p. pun., 9d to 2s	Almonds, per peck, 6s
— per pottle, 4d to 1s	— sweet, per lb., 2s to 3s
Cherries, per lb., 4s to 9s	Walnuts, p. 100, 1s 6d to 2s
Apples, kitchen, p. bsh., 4s to 8s	— p. bush., 16s to 24s
Gooseberries, green, p. hf. sieve, 2s 6d to 5s	Nuts, Bar., p. bush., 20s to 22s
Currants, do., do., 3s to 4s	— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 9d to 1s 6d	Spinach p. sieve, 1s to 1s 6d
Cauliflowers, p. doz., 2s to 6s	Onions, p. bunch, 2d to 6d
Peas, per bush., 2s to 4s	— Spanish, p. doz., 1s 6d to 4s
Sorrel, p. hf. sieve, 9d to 1s	Shallots, per lb., 10d to 1s
Potatoes, per ton, 60s to 180s	Garlic, per lb., 6d to 1s
— per cwt., 5s to 14s	Artichokes, p. doz., 2s6d to 3s6d
— per bush., 4s to 7s	— Jerusalem, per half
Turnips, per bunch, 6d to 1s	sieve, 9d to 1s
Red Beet, per doz., 2s to 4s	Lettuce, Cab., p. sc., 4d to 9d
Horse Radish, p. bdl., 2s to 6s	— Cos, do., 6d to 1s
Asparagus, p. 100, 1s to 4s	Mushrooms, p. pot., 6d to 1s 3d
Rhubarb, p. bundle, 4d to 1s	Small Salads, p. pun., 2d to 3d
French Beans, p. 100, 2s to 3s6d	Fenuel, per bunch, 2d to 3d
Cucumbers, each, 4d to 1s	Savory, per bunch, 2d to 3d
Leeks, per doz., 1s to 2s	Thyme, per bunch, 2d to 3d
Celery, p. bundle, 1s to 2s	Parsley, p. doz. bun., 3s to 4s
Radishes, per 12 hands, 9d	— Roots, p. bdle., 1s to 1s
Watercress, per doz. bunches, 8d to 1s	Marjoram, green, p. bun., 4d to 6d
Carrots, per bun., 6d to 1s	Mint, green, per bunch, 3d to
	Basil, green, p. bunch, 4d to 6d

MARK LANE.

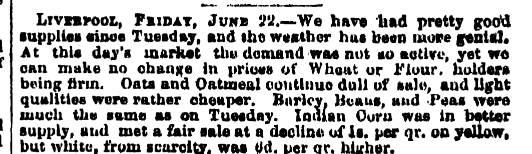
Monday, June 18.—The supply of English Wheat by land carriage samples this morning was exceedingly small, and quickly disposed of, fine qualities commanding an advance of 1s. per qr. Foreign met a moderate sale at the extreme rates of this day week.—Barley is in good demand, and fully supports our quotations.—Beans and Peas are nominally unaltered in value.—Oats met a better sale than at the close of last week, and particularly fine qualities realise the rates of this day se'nnight, but out of conditioned parcels barely support the prices of that day.

Friday, June 22.—The supply of Grain, both English and foreign, this week, has been smaller than for many months past. English Wheat fully maintains the prices of Monday, and foreign is generally held for an advance, but purchasers confine themselves to retail quantities, and the extreme prices of that day are not generally exceeded.—Barley is in fair request at our quotations.—Beans and Peas are unaltered in value.—Oats meet an improved demand, at an advance of 6d. per qr.—Barrel Flour must be written 6d. to 1s. dearer.—Maize is less inquired after, and is sold on rather reduced terms.—The weather during the last few days has been fine, and somewhat warmer; the appearance of the crops is improving, and Wheat is now pretty generally coming into ear. Shortness of supplies in the agricultural markets, and also from the Continent, is giving a firmer tone to the trade, and prices of Wheat have advanced 1s. to 2s. throughout the kingdom; f. o. b. sales have also been made to some extent at 44s. 6d. to 47s. per qr, cost and freight to the east coast, for 61-62 lbs. Louvain Wheat; the latter, however, is an extreme price. Barley, 53 lbs. Danish, has been in request at 21s. to 22s., cost and freight for the west coast. Oats have slightly improved from the extreme depression of last week.

Liverpool, Friday, June 22.—We have had pretty good supplies since Tuesday, and the weather has been more genial. At this day's market the demand was not so active, yet we can make no change in prices of Wheat or Flour, holders being firm. Oats and Oatmeal continue dull of sale, and light qualities were rather cheaper. Barley, Beans, and Peas were much the same as on Tuesday. Indian Corn was in better supply, and met a fair sale at a decline of 1s. per qr. on yellow, but white, from scarcity, was 6d. per qr. higher.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
May 5.........	46s 9d	28s 11d	17s 6d	25s 4d	29s 8d	30s 1d
— 19	44 9	28 0	17 8	25 9	30 7	29 11
— 26	44 6	28 9	17 9	26 0	31 8	32 4
June 2.........	44 9	27 10	17 7	26 6	31 7	33 4
— 9.........	44 6	26 11	17 7	25 4	31 7	30 4
— 16.........	44 2	26 5	18 0	26 3	30 3	30 4
Aggreg. Aver.	44 8	27 8	17 8	25 8	30 9	31 2
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.



PRICES CURRENT.	London. June 11 qr.	London. June 18 qr.	Liverpool. June 12. 70 lbs.	Liverpool. June 19. 70 lbs.	Wakefield. June 8 qr.	Wakefield. June 15 qr.	Boston. June 13 qr.	Boston. June 20 qr.	Birmingham. June 14. 62 lbs.	Birmingham. June 21. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	40 to 42	40 to 42	6 4 6 9	6 6 6 10	43 to 46	43 to 48	38 to 45	44 to 46	5 6 6 2	5 8 6 3
„ white ...	45—46	45—46	6 10 7 4	7 0 7 6	43—50	43—50	40—48	44—50	6 0 6 4	6 1 6 5
Old, red ...	42—46	42—46	6 7 6 10	6 8 7 0	42—44	42—44	—	—	5 8 6 1	5 9 6 2
„ white ...	48—52	48—52	7 0 7 6	7 3 7 8	—50	—50	—	—	5 11 6 6	6 0 6 7
Foreign... ...	35—56	35—56	4 4 8 6	4 4 8 6	39—51	39—51	—	—	5 0 7 0	5 0 7 0
			480 lbs.	480 lbs.						
Rye—New ...	22—24	22—24	—	—	—	—	—	—	—	—
Foreign...	22—23	22—23	—	—	—	—	—	—	—	—
Foreign meal	6*l.*—7*l*	6*l.*—7*l*	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	21—24	21—24	—	—	22—23	22—23	24—26	24—26	23—25	23—25
Malting... ...	22—27	22—27	30s—32s	30s—32s	27—32	27—32	28—30	28—30	20—32	29—32
Foreign... ...	18—27	18—27	—	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	19—24	19—24	2s 10d 3s 3d	2s 10d 3s 2d	—	—	14—20	14—20	20—28	20—28
Black...	15—20	15—20	2 4 2 8	2 4 2 7	—	—	—	—	19—21	19—20
Foreign	14—20	14—20	2 4 2 7	2 4 2 6	—	—	—	—	—	—
			qr.	qr.		qr.				
Peas—Boilers	25—30	25—30	34s—	34s—	28—32	28—32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—25	23—25	27—28s	29—31s	—	—	—	—	11—12	11—12
Foreign ...	24—32	24—32	30—33	32—34	—	—	—	—	—	—
Beans—										
New, small ...	22—32	22—32	28—33	30—33	29—32	29—32	30—33	30—33	12—14	12—14
Old	—	—	32—34	32—34	35—36	35—36	34—36	34—36	15—16	15—16
Foreign ...	21—36	21—36	23—32	23—32	26—28	26—28	—	—	11—13	11—13
Linseed—Feed	—	—	40—42	40—42	32—40	32—40	—	—	—	—
Foreign ...	37—42	37—42	—	—	—	—	—	—	—	—
LinseedCakes										
British ...	9*l.* 7s	9*l.* 7s	7*l.* 12s	7*l.* 12s	—	—	—	—	—	—
Foreign ...	6*l.*—7*l*	6*l.*—7*l*	—	—	—	—	—	—	—	—
Indian Corn—	30—32	30—32	34s—36s	35s—36s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	36—44	36—44	34—35	34—35	—	—	30—36	36—40	32—37	32—37

Weekly Averages and Imports.	London Aver. June 19	London Impts.	Liverpool Averages.	Liverpool Imports.	Wakefield Aver.	Wakefield Impts.	Boston Aver.	Boston Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	46 4	2410	44 6	4037	44 6	6562	43 9	1268	41 1½	2940
BARLEY ...	26 7	1080	26 11	202	26 11	454	—	—	—	1813
OATS... ...	19 11	4950	17 7	6005	17 7	462	12 6	117	20 9	1622
RYE	24 0	—	25 4	—	25 4	—	—	—	—	—
BEANS ...	29 4	—	31 7	2255	31 7	1252	29 0	7	—	—
PEAS... ...	30 9	—	30 4	550	30 4	119	—	—	—	—
Signed	*Kingsford and Lay.*		*Segar and Tunnicliffe.*		*Sandars and Dunns.*		*Thomas Wright.*		*J. and C. Sturge.*	

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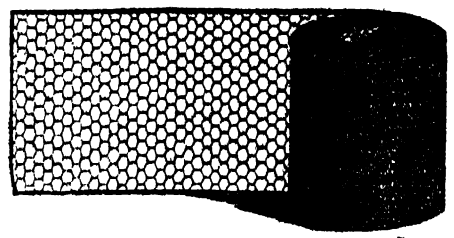

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2-inch ,, strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ...	10 ,,	8 ,,
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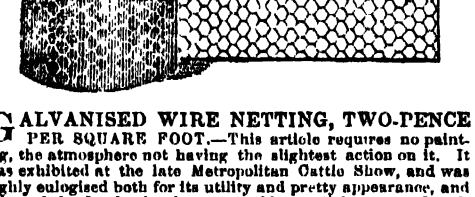

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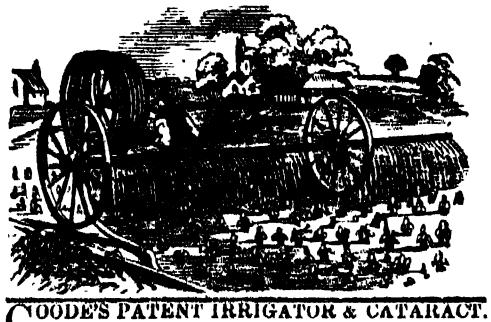

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 26—1849.] SATURDAY, JUNE 30. [PRICE 6d.

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A GRAND HORTICULTURAL AND FLORAL FETE, during the holding of the Yorkshire Agricultural Meeting, open to all England, will be held in Leeds on TUESDAY, July 31st, and WEDNESDAY, August 1st, when Prizes will be awarded to the amount of upwards of ONE HUNDRED GUINEAS. Schedules may be had of Mr. JOSEPH BUCKTON, Honorary Secretary, 50, Briggate, Leeds.

WARWICKSHIRE HORTICULTURAL EXHIBITION.—THE SECOND GRAND HORTICULTURAL EXHIBITION is fixed to take place on THURSDAY, the 23d Aug. next, in the Jephson Gardens, Leamington, under the special patronage of the High Sheriff and many of the resident nobility and gentry of the county of Warwick, when Prizes (highest 15l.) will be awarded on the most liberal scale for Stove and Greenhouse Plants, Heaths, Balsams, Cockscombs, Annuals, Specimen Plants, Cut Flowers, Verbenas, Roses, New Plants, and Flowers, and miscellaneous subjects, Melons, Pines, Grapes, and other fruits. Full particulars in the "Horticultural Magazine" for July, and Schedules to be obtained from OWEN WHITE, Esq., Hon Sec., Jephson Gardens and Parade, Leamington.

CARNATIONS AND PICOTEES.—The following PRIZES, open to all England, will be given on TUESDAY, July 17, 1849, at Salisbury.

CARNATIONS (NURSERYMEN)—The best 24	£2	10	0
Second Ditto	1	10	0
Third ditto	1	0	0
Fourth Ditto	0	10	0
PICOTEES—The best 24	2	10	0
Second ditto	1	10	0
Third ditto	1	0	0
Fourth ditto	0	10	0
CARNATIONS (AMATEURS)—The best 12	2	10	0
Second ditto	1	10	0
Third ditto	1	0	0
Fourth ditto	0	10	0
PICOTEES—The best 12	2	10	0
Second ditto	1	10	0
Third ditto	1	0	0
Fourth ditto	0	10	0

To be shown in Cards on the Exhibitors' own Boxes. Entrance to each Class, 10s. each. The first Down Train will be waited for, to allow Exhibitors from London. The Flowers exhibited will be subject to the most minute examination, and must abide the decision of the Censors as to disqualifications. Certificates will be awarded to Seedlings. Three blooms of a sort required. Three days' notice also required.—J. KEYNES, Salisbury.

A GRAND HORTICULTURAL EXHIBITION will take place in the Spacious Grounds of the Erith Arboretum, on TUESDAY, July 31, 1849, when upwards of Fifty Pounds in Prizes will be distributed Parties wishing to exhibit, may obtain a List of Prizes by applying to Mr. MACLURE, Erith, Kent.

NORTH BRITISH SEEDSMEN'S ASSOCIATION.—A Meeting of Persons carrying on business in Edinburgh, Glasgow, and other towns in Scotland, as Seedsmen, was held in the George Hotel, George-square, Glasgow, on the 14th day of June, 1849, called by advertisement and circular. The Meeting was respectably attended.

ANDREW FOWLER, Esq, was called to the Chair.

The Meeting formed themselves into an Association, to be called "The North British Seedsmen's Association," for the purposes generally of affording information and protection to each other in all questions of commercial and legal difficulty connected with their business, of developing the resources of the trade, and especially to maintain the purity and prevent the adulteration of seeds.

A Committee was appointed to prepare Rules and Regulations for the government of the Society, and to take measures for getting members enrolled.

Persons favourable to the objects of the Association, and desirous of becoming Members, are requested to communicate with the Treasurer, WILLIAM CROSS, Esq., 17, Gallowgate-street, or to the Secretary, GEORGE SMITH, Esq., 5, St. Vincent-place, Glasgow. ANDREW FOWLER, Chairman.

FLOWER SEEDS.—Choice Biennial and Perennial Flower Seeds, for sowing in June and July, to flower the following season, sent, post free, at the following prices: 12 varieties for 1s. 2d., 30 ditto for 2s. 6d, 70 ditto for 5s., on receipt of the amount with the order. Also the best varieties of Early Cabbage Seed, at 3d. and 6d. per packet, post free, from BENJAMIN W. KNIGHT, Florist, &c., Tivoli, near St. Leonard's-on-Sea, Sussex. Catalogues may be obtained on prepaid application enclosing a postage stamp.

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TO ADMIRERS OF ROSES.

A. PAUL AND SON beg to inform their patrons and lovers of ROSES in general, that the EXTENSIVE COLLECTION cultivated at the Cheshunt Nurseries is now in perfection, and will continue till the end of July; after which, the Autumnals will continue in bloom till November.

They will be very happy to show them to any lovers of this flower, whether purchasers or not. Every novelty that could be obtained has been added to the collection.

Cheshunt is on the Cambridge Line of the Eastern Counties Railway, one mile from the Cheshunt, two miles from the Waltham, and three miles from the Broxbourne Stations.

An Omnibus meets the trains at Waltham, and passes the Nurseries.—Cheshunt, Herts, June 30.

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ROSES.

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E. D. is desirous of informing his customers that he has no seed shop in London.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON have much pleasure in announcing to their friends and the public, that the superb and extensive collection of ROSES, at Woodlands, is now coming into bloom, and will continue to be very attractive during the Rose season. Maresfield is 12 miles distant from the Hayward's Heath Station of the London and South Coast Railway, from whence conveyances to the Nursery may be obtained.—June 30.

ROSES.

H. LANE AND SON, Great Berkhampstead, have the honour of informing those who are interested in this beautiful tribe of plants, that their splendid and extensive collection is now in bloom, and those who wish to see the whole should devote six or eight hours at the Nurseries, which commence within a few minutes' walk of the Berkhampstead station of the London and North-Western Railway. The visitor will not be disappointed in extent and beauty. Ornamental Trees and Shrubs are also in great quantities.

ROSES.—THE COLLECTION AT SAWBRIDGEWORTH will be in bloom on and after the 23d inst. Upwards of a thousand plants of those fine brilliant new autumnal Roses, GEANT DES BATAILLES and CYME D'OR will be in full bloom. In addition to the Roses, a large and complete collection of Hardy Ornamental Trees and Shrubs and Fruit Trees, occupying, with Roses, more than 50 acres, will be found interesting. For the convenience of visitors to the Nursery, an additional up-train will call at the Harlow Station, 1½ mile distant, at half past 5 P.M.—T. RIVERS, Sawbridgeworth, Herts.

EDWARD GEORGE HENDERSON, Wellington-Nursery, St John's Wood, London, can now supply CINERARIA SEED saved this season from his best varieties at 2s 6d and 5s. per packet; and he would strongly recommend immediate sowing to those who wish to have their greenhouse gay during the winter months.

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LUCOMBE, PINCE, AND CO. are now ready to send out strong healthy plants of this fine new FUCHSIA, at 10s. 6d. each (with one over upon every two ordered by the trade). They beg to refer to their Advertisement in the Gardeners' Journal, and in the *Gardeners' Chronicle*, of the 2d and 9th of this month, for a description of it. SAPPHIRE will be a general favourite, and ought to be in every collection.

Exeter Nursery, June 30.

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PLANTS OF CABBAGE, SAVOY, KALE BROCCOLI, CAULIFLOWER, AND CELERY.

JOHN CATTELL, SEEDSMAN and NURSERYMAN, Westerham, Kent, begs respectfully to inform the public that plants of his superior true sorts of the above will be forwarded to order on receipt of postage stamps or post-office order, at the undernamed prices, mat and package included.

All the sorts of early Cabbage, Savoy, and Kale, including Brussels Sprouts, etc. 6d. per 1000. All the sorts of Autumn and spring Broccoli, and red and white Celery, 4s. per 1000. Cauliflower (early & late), and red Cabbage, 10d. per [illegible] or Cattle Cabbage, 3s. 6d. per 1000. 6d. per 1000 [illegible] when no mat or package is required. Packages of 1000 and upwards delivered free of carriage to the Edenbridge station of the South-Eastern Railway.

FIRST-CLASS PELARGONIUMS FOR EXHIBITION, FOR PREPAYMENT ONLY.—Twelve of the following varieties, including the box and carriage to London, will be sent out for Two Guineas, well-rooted in 3-inch pots, and ready for an immediate shift into a larger size. Orders addressed to JOHN DOBSON, Worton Cottage, Isleworth, will be booked, and correspondents informed when the plants are ready, when remittances may be made by Post-office order on Brentford. Priority of payment to ensure first selection. Aurora, Blanche, Centurion, Cracker, Forget-me-not, Ariel, Cassandra, Cavalier, Cruenta, Gustavus, Gulielma, Grandiflora, Junii, Negress, Rosamund, Sundown. Or, Nine of the above, and Hoyle's Crusader, Topping's Brilliant, or Foster's Victory. N.B.—J. DOBSON has commenced his propagation. All the above varieties, except the three latter, have appeared in his winning collections. E. BECK's descriptive catalogue of new varieties is in course of preparation, and will be ready for issuing immediately after the exhibitions are closed.

NEW PETUNIA, CONWAY'S "BEAUTY SUPREME."—This splendid variety must be seen before a true estimate can be formed of its real value. The habit of the plant is perfection itself, forming a compact, close bush, studded all over from the ground upwards with a dense mass of the most showy deep purplish crimson flowers, each measuring 4 inches in diameter, and of a good substance. Strong plants, in bloom, 3s. 6d each, free by post, 4s; the usual discount to the trade, when three plants are taken. A few plants, in pots, of the above are intended for exhibition at the next Chiswick meeting.

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HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the Kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes, and Lights of all sizes, kept ready for use, packed and sent to all parts of the Kingdom; warranted best material. Garden-lights of every description, at JAMES WATTS', Hothouse Builder, Claremont-place, Old Kent-road. Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and Hot-water Apparatus Manufacturer, Triangle, Hackney, near London, begs to call the attention of the gentry to his low prices for cash. Good Substantial-built Greenhouses, fixed complete, 42 ft. long, 13 wide, 90l, 21 ft long, 13 wide, 50l., 12½ ft. long, 10 wide, 30l. A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber Boxes, Iron Hand-lights, Summer-houses, Seats, &c. Estimates for any branch in the above line, either in wood or iron, or for park fencing.

CRYPTOMERIA JAPONICA SEEDLINGS.

MESSRS STANDISH AND NOBLE having still the largest stock in Europe of the above splendid tree, beg to offer fine strong plants at the annexed low prices — 6 to 9 inches high, 3s. 6d. each, 30s. per dozen, 12l. 10s. per 100; 12 to 18 inches, 5s. each, 18 to 24 inches, 7s. 6d., 24 to 36 inches, 10s. 6d., and upwards, according to size.

The present is the most suitable time for planting out, and every plant sent out by Messrs. S. and N. will be handsome, well-grown specimens.—Bagshot, Surrey, June 30.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, bernacle, brent, and laughing geese, sheldrakes, [illegible], widgeon, summer and winter teal, gadwall, [illegible], shovellers, gold-eyed and dun divers, Carolina, [illegible], domesticated and pinioned; also Spanish, [illegible], Malay, Poland, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs [illegible] at 2, Half-moon-passage, Gracechurch-street.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.

EXHIBITION, JUNE 20, 1849.

AWARD OF THE JUDGES.

THE EXTRA GOLD MEDAL.

1. To Mr. May, Gardener to Mrs. Lawrence, Ealing Park, for 30 Stove and Greenhouse Plants.
2. To Mr. Mylam, Gardener to S. Rucker, Esq., Wandsworth, for 25 Orchids.

THE MEDIUM GOLD MEDAL.

1. To Mr. Cole, Gardener to H. Collyer, Esq., Dartford, for 30 Stove and Greenhouse Plants.
2. To Mr. Green, Gardener to Sir Edmund Antrobus, Bart., Cheam, for 20 Stove and Greenhouse Plants.
3. To Mr. Mylam, Gardener to S. Rucker, Esq., Wandsworth, for 15 Heaths.
4. To Mr. Williams, Gardener to C. B. Warner, Esq., Hoddesdon, for 25 Orchids.
5. To Mr. Plant, Gardener to J. H. Schroder, Esq., Stratford-green, for 15 Orchids.

THE GOLD MEDAL.

1. To Mr. Taylor, Gardener to J. Coster, Esq., Streatham, for 25 Stove and Greenhouse Plants.
2. To Mr. Cole, Gardener to H. Collyer, Esq., Dartford, for 15 Heaths.
3. To Mr. Epps, Nurseryman, Maidstone, for 12 Heaths.
4. To Mr. Cock, Chiswick, for 12 Pelargoniums, in 8-inch pots.
5. To Mr. Dobson, Gardener to Mr. Beck, Slate Works, Isleworth, for 12 Pelargoniums, in 8-inch pots.
6. To Messrs. Lane and Son, Nurserymen, Great Berkhampstead, for 12 Roses, in pots.

THE LARGE SILVER-GILT MEDAL.

1. To Messrs. Pamplin and Son, Nurserymen, Lea-bridge-road, for 30 Stove and Greenhouse Plants.
2. To Mr. T. Williams, Gardener to Miss Traill, Hayes-place, Kent, for 10 Stove and Greenhouse Plants.
3. To Mr. Green, Gardener to Sir E. Antrobus, Bart, for 6 Tall Cacti.
4. To Messrs. Veitch and Son, Nurserymen, Exeter, for 25 Orchids.
5. To Mr. Rae, Gardener to J. J. Blandy, Esq., Reading, for 15 Orchids.
6. To Mr. Dobson, Gardener to Mr. Beck, Isleworth, for 6 Orchids.
7. To Messrs. Paul and Sons, Nurserymen, Cheshunt, for 12 Roses, in pots.
8. To Mr. Terry, Gardener to Lady Puller, Youngsbury, for 8 Roses, in pots.

THE LARGE SILVER MEDAL.

1. To Messrs. Fairbairn, Nurserymen, Clapham, for 12 Heaths.
2. To Mr. Bruce, Gardener to Boyd Miller, Esq, Collyer Wood, for 6 Orchids.
3. To Mr. Black, Gardener to E. Foster, Esq., Clewer Manor, near Windsor, for 12 Pelargoniums, in 8-inch pots.
4. To Mr. Gaines, Nurseryman, Battersea, for 12 Pelargoniums, in 8-inch pots.
5. To Mr. Parker, Gardener to J. H. Oughton, Esq, Roehampton, for 6 Pelargoniums, in 11-inch pots.

THE SILVER GILT MEDAL.

1. To Mr. Jack, Gardener to R. G. Loraine, Esq., Wallington Lodge, for 10 Stove and Greenhouse Plants.
2. To Mr. Bruce, Gardener to Boyd Miller, Esq., Collyer Wood, for 20 Stove and Greenhouse Plants.
3. To Mr. Clarke, Gardener to W. Block, Esq, Muswell-hill, for 6 Tall Cacti.
4. To Mr. Parker, Gardener to J. H. Oughton, Esq., Roehampton, for 6 Cape Pelargoniums.
5. To Mr. T. Williams, Gardener to Miss Traill, Hayes-place, Kent, for 6 Heaths.
6. To Mr. Green, Gardener to Sir E. Antrobus, Bart., for 4 Azaleas.
7. To Mr. Dobson, Gardener to Mr. Beck, Isleworth, for 6 Pelargoniums, in 11-inch pots.
8. To R. Moseley, Esq., Pine-apple-place, for 6 fancy Pelargoniums
9. To Mr. Ambrose, Battersea, for 6 Fancy Pelargoniums
10. To Messrs. Henderson and Co., Nurserymen, Pine-apple-place, for 6 Calceolarias.
11. To Alexander Rowland, Esq, Lewisham, for 8 Roses, in pots
12. To Messrs. Lane and Son, Nurserymen, Great Berkhampstead, for 6 Yellow Roses, in pots.

THE SILVER MEDAL.

1. To Mr. Pawley, Bromley, Kent, for 20 Stove and Greenhouse Plants.
2. To Mr. May, Gardener to E. Goodheart, Esq., Beckenham, for 10 Stove and Greenhouse Plants.
3. To Mr. T. Williams, Gardener to Miss Traill, for a specimen plant of Leschenaultia formosa.
4. To Mr. Cole, Gardener to H. Collyer, Esq., for a specimen plant of Aphelexis spectabilis grandiflora.
5. To Mr. Mylam, Gardener to S. Rucker, Esq, for Cœlogyne Lowi.
6. To Messrs. Veitch and Son, Exeter, for Escallonia macrantha.
7. To Mr. Taylor, Gardener to J. Coster, Esq, Streatham, for 6 Heaths.
8. To Mr. Jack, Gardener to R. G. Loraine, Esq., for 6 Orchids.
9. To Mr. Staines, New-road, for 12 Pelargoniums, in 8-inch pots.
10. To Mr. Gaines, Nurseryman, Battersea, for 6 Pelargoniums, in 11-inch pots
11. To Mr. Robinson, Gardener to J. Simpson, Esq., Pimlico, for 6 Fancy Pelargoniums.
12. To Mr. Gaines, Battersea, for 6 Fancy Pelargoniums.
13. To Mr. Gaines, for 6 Calceolarias.
14. To Mr. Robinson, Gardener to J. Simpson, Esq., Pimlico, for 6 Fuchsias.
15. To Mr. Francis, Nurseryman, Hertford, for 12 Roses, in pots.
16. To Messrs. Paul and Sons, Cheshunt, for 100 Roses.
17. To Alexander Rowland, Esq., Lewisham, for 50 Roses.
18. To Mr. Terry, Gardener to Lady Puller, Youngsbury, for 50 Roses.

THE SMALL SILVER MEDAL.

1. To Mr. Clarke, for 10 Stove and Greenhouse Plants.
2. To Mr. J. Crossford, Gardener to H. H. Barnes, Esq., of Stamford-hill.
3. To Mr. Epps, for a specimen plant of Aphelexis purpurea grandiflora.
4. To Mr. J. Bruce, for a specimen plant of Aphelexis sesamoides.
5. To Mr. May, Gardener to Mrs. Lawrence, for Sollya linearis.
6. To Messrs. Veitch and Son, for Cypripedium nova sp., from Mount Ophir.
7. To Mr. May, Gardener to Mrs. Lawrence, for Phalænopsis rosea.
8. To Mr. Williams, Gardener to C. B. Warner, Esq., for Cattleya sp.
9. To Messrs. Veitch and Son, for Nepenthes phyllomphora.
10. To Mr. Smith, Gardener to Joseph Anderson, Esq., the Holme, Regent's-park, for 12 Alpine plants.
11. To Mr. Staines, New-road, for 6 Cape Pelargoniums.
12. To Mr. May, Gardener to E. Goodheart, Esq., for 6 Heaths.
13. To Mr. Williams, Gardener to C. B. Warner, Esq., for 12 Exotic Ferns.
14. To Mr. Williams, Gardener to C. B. Warner, Esq., for 30 British Ferns.
15. To Mr. Robinson, Gardener to J. Simpson, Esq., for 12 Pelargoniums, in 8-inch pots.
16. To Mr. Turner, Florist, Slough, for 12 Pinks.
17. To Mr. Turner, for 24 Pansies.
18. To Mr. Brag, Gardener to Baron de Goldsmid, St. John's Lodge, Regent's-park, for 6 Fuchsias.
19. To Mr. Francis, for 6 yellow Roses, in pots.
20. To Mr. Francis, for 100 Roses.
21. To Mr. A. Parsons, Gardener to A. George, Esq, Enfield, for 50 Roses.
22. To Messrs. Paul and Sons, for 12 new Roses.
23. To Mr. May, Gardener to Mrs. Lawrence, for 4 Clerodendrons.
24. To Mr. Taylor, for correct Labels (1st class).
25. To Mr. Plant, for correct Labels (2d class).

THE BRONZE MEDAL.

1. To Messrs. Veitch, for Mirbelia Meisneri.
2. To Messrs. Veitch, for Agalmyla staminea.
3. To Messrs. Veitch, for Balsamina repens.
4. To Messrs. Lane and Son, for Achimenes longiflora major.
5. To Mr. Turner, Gardener to C. Williams, Esq., Upper Holloway, for 12 Alpine Plants.
6. To Mr. May, Gardener to Mrs. Lawrence, for 6 Heaths.
7. To Mr. Green, for 6 Heaths.
8. To Mr. Smith, Gardener to J. Anderson, Esq., for 30 British Ferns.
9. To Mr. Bragg, Florist, Slough, for 12 Pinks.
10. To Mr. Bragg, for 24 Pansies.
11. To Mr. Gaines, for 6 Fuchsias.
12. To Messrs. Lane and Son, for 12 new Roses.
13. To Mr. Francis, for 12 Roses, with single blooms.
14. To Mr. Tyso, Wallingford, for 48 Ranunculuses.
15. To Mr. Little, Nurseryman, Chelsea, for 6 Humea elegans.
16. To Mr. Chitty, Gardener to J. Oldham, Esq., Stamford-hill, for a tub of Clintonia pulchella.
17. To John Moxon Clabon, Esq., 6, Albert-terrace, Regent's-park, for 50 British Plants.
18. To Mr. Cole, for correct Labels (1st class).
19. To Messrs. Pamplin, for correct Labels (2d class).

THE CERTIFICATE OF MERIT.

1. To Mr. E. G. Henderson, Nurseryman, St. John's-wood, for Pentstemon sp.
2. To Messrs. J. and C. Lee, Hammersmith Nursery, for Arthropodium serratum.
3. To R. Tongue, Esq., Forton Cottage, Garstang, for Lonicera sp.
4. To R. Tongue, Esq., for Lonicera sp.
5. To Mr. Taylor, for 20 British Ferns.
6. To Mr. Black, for Seedling Pelargonium, "Gipsy Bride."
7. To Mr. Black, for Seedling Pelargonium, "Constance."
8. To Mr. Dobson, for Seedling Pelargonium, "Loveliness."
9. To Mr. Hoyle, Reading, for Seedling Pelargonium, "Zanetta"
10. To Mr. Hoyle, for Seedling Pelargonium, "Canova."
11. To Mr. Dobson, for a Seedling Pelargonium, with scarlet flowers, named "Incomparable."
12. To Messrs. Norman, Woolwich, for 12 Pinks.
13. To Mr. Francis, for 12 new Roses.
14. To Mr. Turner, for seedling Fuchsia, "Falstaff.".
15. To Mr. Turner, for Seedling Pansy, "Mrs. Beck."
16. To Mr. Ambrose, for Fancy Pelargonium, "Belle Marie."
17. To Mr. Cuthill, Camberwell, for a basket of Strawberries.
18. To Mr. Taylor, for correct Labels (1st class).
19. To Mr. Smith, for correct Labels (1st class).
20. To Mr. Smith, for correct Labels (2d class).

APSLEY PELLATT AND Co. (late PELLATT and GREEN), Falcon Glass Works, Holland-street, Blackfriars, have always on hand, Bee Glasses, 1s. 2d. per lb.; Cucumber Glasses, 1s. 6d. per lb.; Milk Pans, 18-in., white glass, 5s. 6d. each; Propagating Glasses, white, 1s. per lb; do., green, 10d.; do, condensing, 2d. per lb. extra, Grape Shades, 1s. 6d. to 2s. each; Fish-bowls, from 1s 6d. each; Wasp and Fly-traps, 40s. per gross, or 3s. 6d. per dozen. By the use of these traps fruit may be preserved from (otherwise certain) destruction.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—The readers of the *Gardeners' Chronicle* of Saturday, Feb. 24th, must have observed the high terms in which this Glass was spoken of by Dr. LINDLEY. We have re-arranged our list of prices to correspond precisely with those of the Patentee, to which we would beg the attention of the Nobility, Clergymen, Gentry, and others.

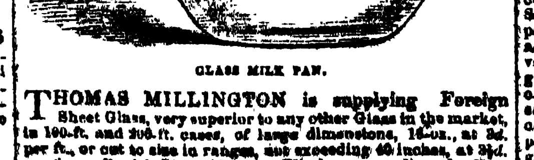
In squares under 8 by 6 ...... 4d. per foot.

8 by 6 under 16 by 8	...4½d.	16 by 8 under 14 by 10	...5d.
14 by 10 ,,	1½ feet...5½d.	1½ foot ,,	3 feet...6d.
3 feet ,,	4 feet...6½d.	4 feet ,,	5 feet...7d.

A full List of Prices and every information may be had by applying to JAMES PHILLIPS and Co., Horticultural Glass Warehouse, 116, Bishopsgate-street Without, London.

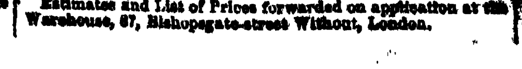
DRUMHEADS FOR CATTLE, AT THOMAS [illegible], Wheeler-street Gardens, near Godalming, Surrey, at 4s. per 1000, crates included, and delivered to the Guildford Station. Money orders payable at Godalming.

GLASS.



GLASS MILK PAN.

THOMAS MILLINGTON is supplying Foreign Sheet Glass, very superior to any other Glass in the market, in 100-ft. and 200-ft. cases, of large dimensions, 16-oz., at 3d. per ft., or cut to size in ranges, not exceeding 40 inches, at 3½d. per foot. British Plate Glass for Windows as well as for Horticultural purposes, from 1s. 2d. to 2s. per foot. No gentleman should be without this great additional improvement to their residences.



CUCUMBER TUBE.

Estimates and List of Prices forwarded on application at the Warehouse, 87, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO., 116, Bishopsgate-street Without, have the pleasure to hand their New List of Prices of SHEET GLASS for Cash.

HORTICULTURAL GLASS.

CUT TO SIZE UP TO 40 INCHES LONG.	SHEET SQUARES. In boxes of 100 feet.
16 oz. from 3d. to 3½d. per foot.	Under 6 by 4 ...... 12s. 6d.
21 ,, 3½ 5 ,,	6 by 4 and 6½ by 4½ 15 0
26 ,, 3½ 7½ ,,	7 by 5 and 7½ by 5½ 17 6
32 ,, 4 8½ ,,	8 by 6 and 10 by 8 ...... 20 0

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS, in sizes not exceeding 5 feet superficial.

⅛ thick ... per foot 1s. 0d.	⅝-inch per foot 2s. 0d.
¼-inch 1 2	1 inch 3 0
½-inch 1 6	

PATENT ROUGH PLATE TILES.

⅛ thick ......each 0s. 11d.	½-inch ....each 1s. 7d.
¼-inch.............. 1 3	¾-inch 2 0

SHEET GLASS TILES AND SLATES.

	16-oz.	21-oz.	26-oz.	32-oz.
Tiles made of Sheet Glass ...	8d.	10d.	1s.	1s. 4d.
Slates, 20 ins. by 10	10d.	1s.	1s. 4d.	1s. 8d.

Slates are kept in stock of the usual sizes, and made to any dimensions.

GLASS MILK-PANS, PROPAGATING AND BEE GLASSES, Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, Lamp Shades, and Lactometers for trying the quality of Milk, 4 tubes 7s. 6d.; 6 tubes, 10s. Self Registering Thermometers for Greenhouses.

HARTLEY'S PATENT ROUGH PLATE GLASS.

CROWN, SHEET, AND HORTICULTURAL GLASS.—Consumers of the above descriptions of GLASS will find a large stock and very reduced scales of prices at the Soho Plate, Crown, Sheet, and Ornamental Glass Company, 26, Soho-square, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

TO THE LOVERS OF FLOWERS.

CARBONISED ANIMAL MANURE.—If anything will make your seeds and plants grow, display a luxuriance of foliage, and blossom in perfection, this Manure assuredly will. To be had of H. COLES, Seedsman, &c. (Agent for the sale by special appointment), 32, Cranbourne-street, Leicester-square, in tin canisters, at 1s., 1s. 9d., and 2s. 6d. each. Also supplied for Vegetables, Pleasure Grounds, Grass Plots, &c., at 12s. per cwt.; and prepared, by a different process, for Agriculture, to suit any kind of crop or soil, at 6l. per ton, half a ton 3l. 10s., five cwt. 2l., and one cwt. 10s. (net cash, and packages charged extra). Six cwt. is an amply sufficient application for an acre of land. Full directions for use accompany each canister and package.

GUANO AND OTHER MANURES.
PERUVIAN GUANO, of the finest quality, direct from import warehouse.
NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SULPHURIC ACID AND COPROLITE.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of

MARK FOTHERGILL, 201 A, Upper Thames-street, London.

A Treatise on Guano, Superphosphate of Lime, &c., will be forwarded on receipt of 8 postage stamps. Free to purchasers of Guano, &c.

TURNIP SOWING.

THE LONDON MANURE COMPANY, having adapted the "URATE" more particularly for Turnips and all Root Crops, can recommend it with the greatest confidence. It seldom fails, in the driest season, to secure a good plant, and to produce a heavy weight per acre. They would call attention to their Superphosphate of Lime, which is prepared with the greatest care, and sent out in a very fine, dry state, perfectly ready for use. The London Manure Company have made arrangements for a constant supply of Peruvian Guano, from the best cargoes, which they will deliver direct from the ship or importer's stores. Corn Manure, Nitrate of Soda, Fishery and Agricultural Salt, and every other Artificial Manure, on the lowest terms for a genuine article.

EDWARD PURSER, Secretary, 40, Bridge-street, Blackfriars.

PERUVIAN AND BOLIVIAN GUANO ON SALE
BY THE ONLY IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WILLIAM JOSEPH MYERS AND CO., LIVERPOOL;
And by their Agents,
GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
COTESWORTH, POWELL, AND PRYOR, LONDON.

To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

METROPOLITAN SEWERS.

SEWER FLUID IRRIGATION.—The Commissioners of Metropolitan Sewers proposing by means of powerful steam engines and appropriate pipes or channels to convey to a considerable distance from the metropolis all the Sewage of that district, and being now engaged in various preparatory surveys and trials, and intending also that this large amount of Sewage shall be so delivered as to be most conveniently and permanently employed for the purpose of irrigating arable soils and meads; they are now desirous of receiving proposals from the owners or occupiers of lands situated within say 50 miles of London, who are willing to contract for a supply of the Liquid Sewage, say in quantities per acre if for water meadows equal to 250 tons for each irrigation, and at the rate of 18 irrigations per annum; at this rate of supply it is calculated that the Sewage of the Metropolitan districts is fully equal to the irrigation of 14,000 acres of water meads; it is proposed to give the preference to those districts where (as in the neighbourhood of Newmarket, or the Valley of the river Crouch, in Essex, or that of the river [illegible], in Kent, or of that of the river Itchen, in Hampshire) the population is widely dispersed, and the natural drainage, if into the Thames, falls into it below London.

Papers explanatory of the value of Sewer-water may be had on application to [illegible], Esq., Sewers-office, 1, Greek-street, Soho, London, to whom all communications must be addressed.

HORTICULTURAL SOCIETY OF LONDON.—HIS GRACE THE DUKE OF DEVONSHIRE, President of the Horticultural Society, has kindly directed the grounds of Chiswick House to be opened for the reception of the visitors to the Society's Gardens at the next Exhibition, on WEDNESDAY, the 11th July. Tickets are issued to the orders of Fellows of the Society only, at this office, price 5s., or at the Garden in the afternoon of the 11th July at 7s. 6d. each, but these also only to orders signed by Fellows of the Society. *But respectable strangers, or residents in the country, who will forward their addresses in writing to the Vice-Secretary, 21, Regent-street, on or before* MONDAY, *the 9th of* JULY, *may obtain from that officer an authority to procure tickets on this occasion. No official orders for tickets will be issued after that day.*

N.B. No Tickets will be issued in Regent-street on the day of Exhibition.

HORTICULTURAL SOCIETY OF LONDON.

LECTURES ON HORTICULTURE.—TUESDAY, JULY 3d, at 3 P.M.—"The FLOWER and FRUIT of plants, the circumstances which most contribute to their perfection or imperfection."

No one can be admitted to the Meeting Room except Honorary Members and Fellows of the Society, their wives or sisters, and visitors specially introduced by them; or the Foreign and Corresponding Members of the Society.

21, Regent-street, June 30, 1849.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The Last Exhibition for the season in the Gardens of this Society will include FRUIT, as well as PLANTS AND FLOWERS for competition, and will take place on WEDNESDAY next, July 4. Tickets may be obtained at the Gardens, by orders from Fellows of the Society, price 5s., or on the day of Exhibition 7s. 6d each.

MIMULUS RUBINUS.

JOHN CARTER, JUN., NURSERYMAN, Keighley, has the pleasure of announcing that he is prepared to send out good healthy plants of the above unrivalled MIMULUS, at 7s 6d. each. Mimulus rubinus is of vigorous habit, 3 feet high; the flowers of fine form, brilliant, and showy, and J. C. has no doubt that it will supersede all other Mimuli yet grown. Professor LINDLEY, in the *Gardeners' Chronicle* for May 19th, p. 332, speaks of it in the following high terms: "Your seedling has flowered, and proves to be a very fine thing. It has by far the largest and handsomest flowers we have ever seen on any Mimulus." As the number of plants is very limited, an early application is necessary. A remittance is respectfully requested from unknown correspondents.

The usual allowance to the Trade.

The Gardeners' Chronicle.

SATURDAY, JUNE 30, 1849.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	July	2—British Architects	8 P.M.
TUESDAY,	—	3—Horticultural (Lecture)	3 P.M.
WEDNESDAY,	—	4—Royal Botanic Gardens	3 P.M.
FRIDAY,	—	6—Botanical	8 P.M.

COUNTRY SHOWS.—Wednesday, July 4: Norfolk and Norwich Horticultural.—Thursday, July 5: Liverpool Floral and Horticultural.

INQUIRIES as to the cause of DECAY IN TIMBER have lately been made in our columns, but have met with no reply. Since we have referred the matter to our correspondents without success, we must now endeavour to deal with it personally, not in the expectation that our views will be adopted by everybody, but in the hope that those who may happen to differ from us will give their reasons for doing so, and that others, who possess evidence which may help to elucidate so great a national question, will have the kindness to furnish it. Considering the magnitude of the interests involved in the preservation of timber, it is surely a disgrace to us that, to this day, doubts should be strong as ever concerning the true causes of its decay. In an absence of certainty as to these, attention has for many years been turned away from the essential part of the inquiry, and directed upon merely secondary points. The problem to be solved is, what causes the decay of timber? and this has been answered by the production of empirical rules for preventing it, or trying to prevent it.

Our forefathers knew nothing of bichlorides of mercury, or sulphate of iron, or chloride of zinc, or creasote; there were no KYANS and BURNETTS in their days, and yet they perfectly understood the art of rendering wood imperishable, as is sufficiently attested by what remains of their works. The great, though forgotten, architects who fixed the wooden roof of Westminster Hall in the time of RICHARD II., and those others under whose directions country churches and border castles were constructed, must have known much better than we do how to prepare their timber; or their wood-work would not be at the present day as sound as when it was put together by the carpenters.

We presume that no one will dispute the fact that ancient timber lasted longer than modern. That being granted, we have to ascertain what can have caused the difference. Things in their nature are now as then; no change has occurred in the mutual relation of forms of matter; what caused decay in the reign of GEORGE IV. would have equally produced it at the Conquest. The operations of Nature are unchanged and unchangeable; inquiry must therefore be directed to the work of man.

We are not aware whether antiquaries possess information concerning the manner and time in which wood was felled, stacked, and prepared in ancient times. The books on forest law throw no light upon this, nor do we find the question adverted to elsewhere, except in one part of the "Saxon Chronicle," where it would appear that, in the month of July, lopping and felling were practised. But whether this was not a mere provision for fuel is not clear, and, for reasons hereafter to be given, it is improbable that timber for building purposes would have been cut down in the summer. Perhaps some antiquarian reader may be able to turn to places of authority on this subject.

Ancient practice not being sufficiently recorded, we can only look to the nature of timber and to the known causes which hasten its decay. Foremost among those causes is *moisture*. Timber absolutely dry would be unable to undergo decomposition at any appreciable rate. We have now before us a piece of wood found at the back of one of the friezes which Lord ELGIN removed from Athens. It is as sound as it could have been in the days of PHIDIAS. Even animal matters, rapidly as they putrify, are preserved for centuries in the absence of moisture. Travellers assure us that in the arid plains that stretch northwards beyond the Himalayan range, the corpses of men and the carcases of animals dry up instead of rotting. The Gaucho hangs his beef in the sun, and in the dry climate of the Pampas it hardens as so much hide, like which it may be kept for use.

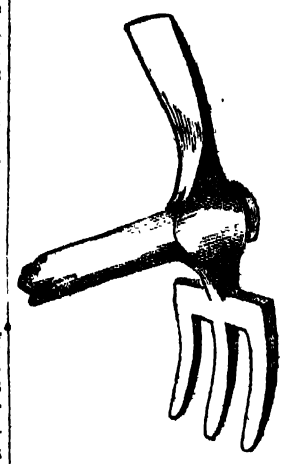
If then mere dryness is sufficient to arrest the decay of animal matter, how much more effectual must be its action upon vegetable substances in which a natural tendency to rot is infinitely less inherent. Sawdust is but timber broken to pieces; damp sawdust rots rapidly; dry sawdust will all but last for ever. Charcoal, one of the most unchangeable forms of vegetable matter, is only timber from which the last trace of water has been expelled by heat. Absence of moisture is therefore the great cause of preservation, as its presence is that of decay.

Complete dryness may be assumed to have been the cause of the durability of ancient timber. At least, in the present state of our information, we can refer it to nothing else; and dryness is amply sufficient to account for it. In the opinion of one of the most experienced and philosophical of modern writers, the late Sir SAMUEL BENTHAM, dryness was the great object to be attained in preparing timber for naval purposes. Drying houses were recommended by him; and during all the period of his employment as civil architect and engineer of the navy, this distinguished officer never ceased to point out the indispensable necessity of securing the dryness of timber before all other things. To the artificial methods available for this purpose we need not here allude. What we have to deal with is the natural means of bringing it about. Those natural means are much more effectual than any others, and it is a question whether they can be superseded by any artificial method whatsoever. The means which trees possess of relieving themselves from moisture are their leaves; their foliage is a very powerful pumping apparatus, incessantly drawing moisture from their interior, and giving it off to space. It is true that the same action which produces a discharge of fluid from the surface of leaves has at certain seasons the counter effect of again charging the apparatus with more fluid, to replace that which is thrown off; but this happens only at certain seasons. In the spring it is in full force; the roots then draw fluid from the soil, the trunk draws it from the roots, leaves draw it from the trunk—and waste it; and this goes on so long as the soil is filled with the rains of winter—so long as vitality is active. But as the summer advances the earth becomes dry, refuses the same abundant supply as before, and all vegetation slackens. The leaves however still go on, pump, pump, pump; till at last, the roots becoming torpid, the leaves draw off all the free fluid that the trunk contains; and when the last supply that it can yield is exhausted they perish. At that time the trunk, by natural means, is dried to a great degree; the free water lying in its cavities is gone; and the whole fabric acquires a hardness it did not know before. Until the leaves are renewed in the succeeding spring but small internal change occurs; the roots are torpid and will scarcely act; the pumps are broken; and little more fluid is introduced into the wood. Hence it is obvious that the period when the timber of a tree is naturally free from moisture, and therefore least prone to decay, is between the fall of the leaf in autumn, and the renewal of vegetation in the spring; and the nearer the fall of the leaf the most free.

In this point of view, timber which is intended to be durable should be felled late in the autumn or in mid-winter. No artificial processes will relieve it of its moisture so economically and well as the means which Nature has provided. On the other hand, if it is felled when the tissue is full of fluid, it is much to be doubted whether any artificial methods of exhaustion are capable of seasoning it properly. We say season, because the removal of water, great as is its importance, is not the only object to be attained. There are other circumstances to be considered, but they require more space than can be given them to-day.

OUR correspondent "PHANO" insisted the other day upon the greater importance of keeping the surface of the ground rough at this time of year than of raking it fine and smooth. Of course his advice applied to the effect of a rough surface upon the health of plants, and not upon the eye of the looker on. That he was right wherever heavy land is in question there is no doubt; it is only by maintaining a rough surface during dry weather that air can find its way freely to the roots, or that water can run through the earth; the surface being neat and smooth all fluids will run off, not in.

But it is not easy with the common implements of a garden to secure a rugged surface, without injury to the plants that grow upon it. Hoes, whether Dutch or English, may shave the ground, but are incapable of breaking it up, rakes are still more useless; the common three-pronged fork is better, but a man can make but little progress with it when heavy ground is hardened by the sun. The most useful tool for the purpose is one which we saw in use the other day in Mr. GLENDINNING'S nursery, and of which the following is a representation. As it bears no name we may call it the PICK-FORK; because it is in reality a combination of the pick or mattock and the three-pronged fork. Like the former it is fitted to a handle about feet long, and is used in the same manner; but in place of the pick or sharp end of the mattock a fork is welded on, and this, allowed to drop on the ground, is forced by its own weight as far into the soil as is necessary for breaking up a surface. Now and then it forces up a clod, and then the mattock end is brought into play and crushes the clod. By the varied application of the two ends of the implement a border may be broken up and brought to the requisite degree of roughness, without being left so unsightly as to be unsuited to a flower garden. In doing this a little practice is requisite, and but a little.



We have placed the tool in the hands of an active handy man, and we find that he can do his work not only better and quicker, but with much less fatigue to himself than with any other tool. He prefers it much to a fork, or spade, or any such implement; and this is an important fact, for a tool, however good, will never be well or much employed unless a workman takes to it, which he will only do when it proves to be convenient in practice.

It is also a capital contrivance for breaking up the surface of roadways or old paths, when they require to be re-levelled. But for this, as indeed for a lighter purpose, the instrument, especially the forked part, should be perfectly well steeled, or it will rapidly wear away. It should, in fact, be made upon the same principle as those best of spades which bear the name of LYNDON. The weight, too, requires to be varied according to the work to be done; ours weighs about 6¼ lbs., the handle included; the mattock end is 7 inches long, and 3 broad at the point; the fork is 6 inches long, and 6 wide next the shank. All these details will, however, be easily settled by the tool-makers, whenever the PICK-FORK comes into general use, as it must when its utility is appreciated.

DISEASES OF PLANTS.

(Continued from page 389.)

GENUS VII. SPHACOSAPANTHESIS,* *that is, excess of vigour in a plant, which, in consequence of it, produces neither fruit nor flowers; a single species.*—Theophrastus, Book ii. cap. xiv. "De Causis Plantarum," already pointed out that there are plants which set no fruit, and are indeed sterile from a superabundance of vigour. We may often observe it in the case of trees of a remarkably luxuriant growth; and this is not confined to fruit trees, but occurs to all indiscriminately, and it has been more especially observed on the Stone Pine, as already stated by Gmanni. A richer green than that of other individuals of the same species, the large size of all the parts of the plant, its greater elevation, accompanied usually with a premature vigour of vegetation, are the signs of this disease. Buds lengthen out rapidly, and produce nothing but woody branches; the occasion must be sought in the superabundance of sap, and of the stimulants which cause it to rush with too much force into the shoots. It is necessary that the master himself should ascertain why a tree does not bear fruit, and not leave it to the cultivator; for it is often adjudged to be sterile from age, or because, as it is said, it is by nature incapable of bearing. I know of a case of a Cherry tree, which was condemned to the axe as old, when, as far as I could see, its complaint was that I am now treating of.

* A shocking word, by no means to be adopted.—ED.

There are various methods for compelling the trees in them once to cover themselves with flowers and fruit. The most certain is the withdrawing from them as much as possible the over-substantial nutriment. Plants suffering from excess of vigour are generally to be found on rich and deep soils. When these are manured, care must be taken to avoid those trees which, by the incipient scarcity of their flowers, show that the mischief has already reached them in part. Sometimes the roots are uncovered at the commencement of winter, the soil which covered them removed, and replaced by some other less fertile, though still congenial to the nature of the tree. Another mode of rendering a tree fertile is to take it up and replant it, shortening a little the roots which may have suffered in the operation, and thinning out a few of the branches. In most cases, however, this method is too costly, too long, and too difficult in execution to be put in practice. Sometimes the effect may be produced by uncovering the roots with a hoe for a given time, when the tree does not grow in too clayey a soil, or simply by lightening the earth that covers them.

The above remedies are specially applicable to standard trees. For those which are trained to espaliers or kept pruned, the effect may be produced by leaving a greater length to the upper branches. Many of the wood-making branches are then pruned out, so as to force the sap into the fruit-bearing ones. But in cutting them out, the upper ones must be spared, otherwise, following the common practice of those who think they can bring a tree into bearing by depriving it of the greater part of its branches, we should have nothing but an increased number of barren shoots, and the tree itself, tormented by over-pruning, would only perish the sooner.

Some of the most experienced cultivators force trees to bear by delaying the pruning them till they have shot out all their branches for the year, at the close of spring thinning out a moiety of these young branches. In general everything which tends to check the force of the sap is of use. Thus for trees on espaliers, the curving the branches is a sure means of producing the effect. Sometimes this malady particularly affects fruit trees, well nourished in their youth, grafted on their own stocks, but trained for dwarfs. In this case the cure is difficult. There seems to be but one course; that is, where these trees are not to be allowed to grow out of their dwarf habit, to transplant them repeatedly till they begin to show for fruit. Then they may be removed to their permanent station.

The ancients had a peculiar remedy for these trees, which tends to show that in many things they were more advanced in knowledge than we give them credit for. They made in the stems some incisions called *scarifications*. Some traces of this advantageous operation seem to have been constantly kept up. But in the latest times it seems to have been brought into vogue again with considerable success; therefore as I myself have several times performed it with advantage, it may be well on this occasion to speak of it with more detail. Indeed I am of opinion that the previously mentioned methods in most cases can either not be readily applied, or fail in producing the desired effects. By scarification, applied with judgment, the cultivator's expectations will be more surely realised.

With a well sharpened pruning-knife make some incisions into the bark in an upward diagonal direction, so as to penetrate through the whole thickness of the bark to the wood. Let these incisions be 2 or 3 inches long, 5 or 6 inches apart, and always opposite to each other. Round these wounds callosities are formed, which intercept in a great measure the sap; a smaller quantity rises into the branch and its flow is slackened. Thus the fruit buds are more easily nourished. This operation, however, should not be practised equally in all cases. It is most advantageous with fruit trees that are not gummy, such as Apples, Pears, and such like. It requires much caution in applying it to gummy trees, such as Plums, Peaches, Cherries, &c. It is necessary every day to clear the wound of any gum that may have formed there, and which might cause ulcerated tumours. It is even better not to have recourse to scarification upon those trees. The best time for scarification is the autumn, and from thence to the beginning of spring, except in the case of a severe winter. This applies to gumless trees; the gummy ones, if at all, will only bear it in spring. Insects introduce themselves very readily into these wounds and cause much injury; they must be kept away from them. The best mode is by rubbing the surrounding parts with a little cow-dung. Attention must be paid to the making the incisions diagonally, in order that the sap, being forced into an oblique direction, may flow the slower. I knew a cultivator who had a very fine Apple-tree, but it was barren and doomed to be cut down. By accident he made in the autumn some incisions into the bark with his axe. In the spring, to his great but welcome surprise, he saw it covered with flowers, and in due time it became loaded with fruit.

Root-pruning, the amputation of branches, the abstraction of a ring of bark, and cauterisation, may be useful remedies to the disease now treated of, but as they are more frequently employed for other disorders, I refer to what I shall say hereafter on the subject.

ON THE CONDITIONS ESSENTIAL TO THE MOST PERFECT CULTIVATION.—No. VII.

PLANT cultivation may, I think, be appropriately divided into two distinct branches, each branch demanding for its successful carrying out a distinct mode of treatment. The two divisions are these: cultivation in reference to a general mixed collection of plants, and that which relates to the production of specimens exhibiting more than ordinary development. Now it needs no demonstration to show that a line of treatment which would result successfully in one case would not be applicable in the other. For the production of "specimen" plants we generally seize upon some remarkable indication of luxuriance in a young plant, some promise of excellence of more than ordinary character; this the practised eye can easily detect, and then by means of every auxiliary to development, we reach some point of excellence, which, however, may fall short, very short, of our ideas of perfection, or of the real capabilities of the plant. For who shall dare, in the face of the rapid advances in plant cultivation which are every day exhibited to us—I say who shall dare to set limits to the capabilities of vegetable life? Human ideas upon any given subject are never stationary. No sooner have we grasped one idea than the regions of imagination are rifled for a more exalted one, and that which we had considered as the *acme* of perfection to-day is supplanted by something superior on the morrow.

At the close of my last paper I intimated that the treatment which a plant received in its infancy necessarily exercised a corresponding influence upon its after existence.

It has appeared to me that there is a greater amount of care, of perseverance, of never ceasing watchfulness required in successfully treating a miscellaneous collection of plants, than in producing large and well-grown specimens. In the former case we have to follow nature retrogressively, if I may so term it. We have to cramp and confine her efforts within a prescribed limit, to thwart her designs, and withal to preserve health. In the latter case we may possibly have to bring a more extensive, a more liberal amount of skill into the field, but in so doing we necessarily discard many of the harassing details, the application of which involves so much unwearied application. Of course I am here speaking of the very highest success in both departments. The amount of knowledge to be practically applied must in either case be great. To be perfect in either (a prodigy which has never yet presented himself), a man must have an extensive theoretical knowledge and an aptness of application, uncontaminated by a trace of procrastination. His application must be unwearied, his energy great. He must be able to see into the future in all that relates to his business. And while he is bound to no system of another's setting up, while he recognises no rule in manner or time of his applications, he must pursue his labours systematically. The system of his operations must be a progressive working out of a preconceived arrangement.

No matter how we intend to develope a plant, whether as a "specimen," or in the more humble capacity of a member of a general collection, the principle of our operations must be the same. We can never reach success by any fortuitous circumstance; we must ever bear in mind that results never exist without causes, and that whether we fail or succeed in any one undertaking, that certain causes, understood or not as the case may be, have combined to produce those results. The first great point in plant cultivation is a knowledge of the plant which we intend to develope; the native country, peculiarities, modes of growth, and influence; and, above all, the nature of the localities which they naturally inhabit. And, besides this, we must have some knowledge of the climatic relations in heat, moisture, and atmospheric phenomena, and of their influence on vegetation; not only their natural influence in the geographical distribution of plants, but also in their artificial combination, and their influence on the individual constitution of vegetables. And in plant culture, as in many other pursuits, it will be well to recollect, that between failure and success there is often but a mere shade of difference in the means employed. It will be well for us not to overlook the fact, that it is the multiplication of trifles which constitutes success. The elements by which the vegetable fabric is built up, and of which it is composed, are few, and for the most part invisible to our eyes. At least they are so in the forms they assume previously to their combinations in the plant. And we should also do well to recollect that all the paraphernalia of garden matters, of pots, of plant-houses, and soil, are only so many aids—so many media by which the constituents of vegetable life are to be combined; that, for the most part, they are mere artificial auxiliaries by which we attempt to produce improved editions of Nature. They are like the retorts and crucibles in the laboratory of the chemist, indispensable for his operations no doubt; but it will be borne in mind that perfection in the means does not necessarily constitute such in the results.

To look upon soil, in connection with the pot culture of plants, in any other light than that as being a medium for the roots—to dwell too much upon its chemical constituents—is, I shall attempt to prove in a subsequent paper, a fallacy. Attention to this point I conceive to be necessary, because we hear upon all sides discussions upon the virtues supposed to be contained in this or that soil, and that such virtues are necessary for the development of some particular plant. The proper criterion to be observed in its relation, as to fitness of employment in any particular case, is not so much its chemical constituents as its mechanical texture. *G.*

VILLA AND SUBURBAN GARDENING.

IT must not be imagined that the bedding out alone of plants intended for the decoration of our gardens, and the supplying them abundantly with water, are the only operations that are necessary in order to accomplish the highest degree of floral development. By means of a little extra management, every plant, as well as every group of plants, may be induced to grow and flower better than they would if no care had been bestowed on them. Plants which are disposed to produce too much leaf and little bloom should be planted in the poorest parts of the garden, or places should be made poor for them; while others, again, having a contrary tendency, should have rich and deep soil to grow in.

Then as growth advances, training and thinning the shoots must be attended to, not only as regards individual plants scattered over borders, but also with those which constitute groups in geometrical parterres. This important item has been but too much neglected, not more in small than in gardens of greater pretensions. Tying the plants up round the edges of the beds is all the care they generally receive. The magnificent Dahlias, Carnations, and Pinks, of our best florists, are not left to struggle on thus unheeded; neither are the fine large Pears we see imported from Guernsey and other parts, nor the large Gooseberries of Lancashire, allowed to grow all but unaided by artificial means. The eager cultivator soon discovers that thinning of his Rose-buds gives him finer blooms, he tries the experiment with other things, and is equally successful. His aim is high cultivation, fine flowers, and delicious fruit; he strains every nerve to effect the end he has in view, and he succeeds. Every plant under his care, from a Violet to a Pine-apple, owns his power and yields to it; planting and watering are, therefore, not all that is required. Our "wits" must be brought into action, in conjunction with the knife, and a little experience will soon enable the operator to proceed successfully. Be cautious in the commencement, thinning a little at a time, and regulate the shoots as may appear necessary, in order that the desired object, whether it be to cover a bed or a trellis, may be attained. By timely thinning and training a much longer bloom will be secured; and, beyond a doubt, not only flowers, but fruit of superior quality will be the result. *Pharo.*

HINTS TO FLORISTS.

PINKS.—The propagation of these had better be proceeded with; commence with the scarce varieties, such as Criterion, X X., Jenny Lind (Read's), Laura, Harkforward, the Hon. Mrs. Herbert, Mr. Edwards, Norborough Buck, Morning Star, Bob Tickler, &c.; and by the time the general collection shall have been gone through, the plants first operated upon will be producing a good second crop of Grass, which in due time may be cut and again propagated; for, happy is he who finds himself in possession of a goodly stock of plants in his store or nursery beds from which to select at planting out time. In addition to the varieties mentioned above, the following have done duty well this season, viz., Blackheath Rival, Diana, Great Britain, Harriet, Lady Mildmay, Lord Valentia, Masterpiece, Melona, Prince Albert (Kirkland's), Pride, Queen of England, Rubens, Omega, and Warden of Winchester.

TULIPS.—Generally speaking these may now be stored. The cabinet in which they are kept should occupy a cool airy situation, and the bulbs should not be exposed to bright sunshine after they are up.

CARNATIONS AND PICOTEES.—Cultivators will be anxiously awaiting the issue of the Horticultural Society's Exhibition on the 11th, at which these interesting flowers generally make a splendid display. From present appearances a fine bloom may be expected, although about the 20th may be set down as the height of the Carnation season. See that the growth is not stunted for want of moisture; it will be benefited by a little weak liquid manure now and then. Take care to destroy green fly, which abounds both on the foliage and pods, while the blooms afford a comfortable home to earwigs.

DAHLIAS are growing quickly; let their side branches be tied out, not up. If they set too many bloom buds thin the latter out. Do not allow the plants to suffer for want of water at the root; slightly sprinkle or syringe over head every evening during hot dry weather. If for want of time any of the plants must be neglected in watering, let it be the fancy varieties, for when too vigorous these come less tipped, and as selfs they make but a sorry appearance, on account of their want of form. *E., June* 30.

PRACTICAL HINTS FOR AMATEURS AND SMALL GARDENS.

PROPAGATING ROSES BY CUTTINGS.—This is the best season for increasing this beautiful tribe of flowers, both by budding, layering, and striking cuttings. Of the latter mode we propose now to treat, and amateurs who give their attention to the pursuit will be interested in the work itself, and repaid abundantly for their pains. All kinds of Roses may be increased in this manner, although some varieties form roots with much greater facility than others. A common hand-glass in the open ground will be attended with some success, but we wish to prescribe a more scientific and therefore more sure method of proceeding. At the same time the principles of the method we are about to recommend may be applied in various circumstances, according to the inclination or the available means of the reader.

Two small frames will be needed, which should be scrupulously clean and well glazed. The point of cleanliness is too little thought of here, but in France much

stress is laid upon it, and it is certain that dirt and bad smells engender diseases in many plants. One frame is to hold the cuttings as soon as they are made; the other is to receive them in two or three weeks, when they have formed a callus, and are ready to emit their roots. The first is a cold frame, and may stand on the ground, or on an exhausted Melon or Cucumber bed, according to convenience, care being taken to exclude the air as much as possible. In fact, this frame is to stand in the place of a hand-glass, and should only a few cuttings be required, a hand-glass will supply its place. A sufficient number of pots, or seed pans, are next to be filled with soil, composed of equal parts of white sand, leaf mould, and turfy loam. Around these pots the cuttings are to be inserted, and so firmly fixed that they do not shake about in their holes, the close application of the soil to the cut part being indispensable to success. The cuttings must be of this year's growth, taken off with a portion of the juncture with the wood of the old stem, commonly called a heel. About three or four joints make a good cutting, and about an inch should be inserted in the soil. Give a gentle watering, and place each pot as it is filled in the cold frame. The whole must be kept close, and shaded from the sun. A calico covering to the frame is adopted by us; but perhaps if the glass was dulled with putty gently dabbed all over it, it would answer the purpose better, the object not being to exclude light, but only the direct solar rays. The frame must be examined daily, and all leaves which fall removed, or they will generate mildew, and a moderate moisture must be maintained.

In about three weeks the cuttings will have formed a callus, that is, a collection of elaborated sap will be perceptible at the cut part, and it is from this the young roots will protrude. This result will take place if the pots are allowed to remain where they are, but the operation will be slow, and therefore the second frame will now be required to complete the process. This should be placed on a gentle hotbed, and when ready, the pots may be removed into it. More light may now be admitted, and roots will be quickly formed, so that by August the young plants will be fit for potting off. By proper management the greater part of the shoots put in will be rooted; but if only half the number succeed, the labour will not have been thrown away. *H. B.*

Home Correspondence.

Blistering of Peach Leaves.—I will not presume to affirm that the direct cause of blister is uncongenial soil, still I maintain that if the roots are properly situated, and protection afforded to the stem and branches in winter and spring, there will be no blister or curl. In proof of this I may state, that in the last week in November, last year, I planted and transplanted upwards of two dozen Peach and Nectarine trees, giving the border plenty of drainage, and mixing with the soil (a turfy loam) brickbats and old lime rubbish. As soon as the trees were planted, they were covered with Spruce Fir branches, and the ground received a coating of rotten leaves as far as the roots extended. When the season arrived for pruning and nailing, the top covering was removed, but it was replaced as soon as the trees were nailed. By the time they required disbudding, nothing remained of the covering except the spineless branches, which admitted sufficient light and air, and at the same time afforded a slight protection from spring frosts. The trees that were transplanted have had no blistered leaves upon them, while those not transplanted have had none but blistered and curled leaves, until within the last week or two. To keep Peach and Nectarine trees in a healthy condition, it is evident, therefore, that they must not only have a good border, but protection to both roots and branches during the cold months of winter and spring. *G. Thomson, Stansted Park, Sussex.*

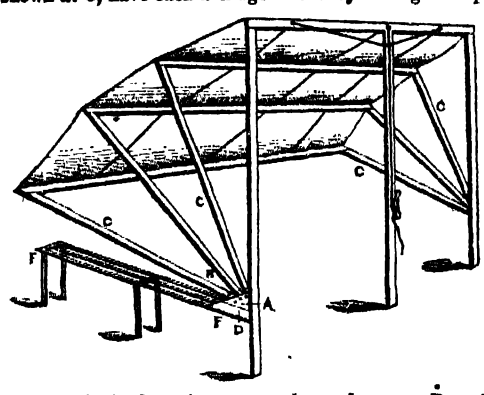
Paulownia imperialis.—In a leading article, p. 387, you mentioned that Mr. Mallison, of Claremont, had blossomed the first Paulownia in this country. This is a mistake; the plant was blossomed two or three years ago by Mr. Johnson, the superintendent of the Royal Pleasure Gardens at Hampton Court. *Edward Jesse, Richmond.*

Roses.—Green centres appear in all or nearly all my Roses. Standards that have been carefully pruned according to Mr. Paul's directions (see his book), and afterwards manured around the stems, the manure in spring forked into the ground—three out of four of these show green centres. Baronne Prevost and some few others are free from it; in beds of dwarf Roses where the growth appears to have been weak, and the plants delicate, the green centre again appears; in borders where the Roses are not much looked after, merely cut in and the borders dug, without manure, the Roses having been planted and remaining in the same place for years, again the green centre, as a brand on a galley slave, still appears—not merely on one or two kinds, but as I may safely say on the majority. What do you recommend, or how do you account for this disfiguring disease? Paul, in his appendix, says that too much manure is the cause; in my case, those manured or those not looked after, are equally bad. *Pat, Meath, Ireland.* [This is a very obscure subject. The green centres cannot be prevented by artificial means; their appearance is constitutional, and is much favoured by wet springs, with occasional hot days.]

Rain Water.—I have a large rain-water tank made of slate, holding about 1400 gallons, collected from the slate roofs of a quadrangle of offices. It falls from the roofs into iron troughs, thence is conducted into iron pipes, which communicate with earthenware pipes under-ground. These pipes all meet in the centre of the quadrangle in a small slate well, about 3 feet square, and 4 deep, and thence one main earthenware pipe conducts the water into the large tank. All deposits are therefore left in the small well or cistern, which is carefully cleaned out, from time to time, and thus the water flows pretty pure into the tank. I use it chiefly for brewing, for which it is excellent, and I have never observed any impurity in it. The leaden pipe of the pump is the only metal which touches the water, and to so large a body of water cannot be injurious. *Woglog, Dorset, June* 26.

Cut Flowers.—It is commonly said that Sweet Briar and Mignonette, when mixed with other cut flowers in water, are detrimental, and hasten the fading and decay of the others. Stocks also bear the same blame; do any of them deserve it? and what is the best thing to put into water, when flowers are first placed in it, to preserve them and the purity of the water. *Subscriber.* [We have no reason to believe it. Clean water is the best; but if you are desirous to try experiments, add a little nitrate of soda or carbonate of ammonia.]

Shade for a Greenhouse.—I have just finished a shade, of which the accompanying is a representation, for a building which acts both as a greenhouse and a hothouse. It is placed over the whole of the stage on which the flowers stand, and drawn up and down by means of three ropes, which are represented in the sketch. The stage is 20 feet long, and the shade covers the whole of it. The strips of wood or laths are 3 ins. deep, and were sawn out $\frac{3}{4}$ inch thick, but were well reduced by planing. There is a splice in the middle of each, which is made on the principle termed by carpenters "halving together," but I did not venture to take quite half the substance from each piece; they are therefore a little thicker at the splice. The joint is 4 feet long. The radii, which are placed flatwise, as shown at C, have each a hinge made by nailing a strip



of galvanised sheet iron over the end, as at B, and running a pin through it made of stout wire. A triangular deal box, open in front, as at A, with holes bored through both sides for the pin, completes the hinge. This is nailed on a block, D, and the block is placed on one of the shelves of the stand, as at F. It raises the lowest radius over the heads of short flowers, and prevents the loss of one shelf. I have about equally divided the space above head between the Grapes and the flowers. Nothing can be more handy. It goes up and down with the greatest ease. The laths are placed edgewise against the canvas, and the canvas (being nailed to them at short intervals) prevents their drooping in the other direction. The uppermost piece, which goes upon the upright bearers, may be made of greater substance. I have myself made it of the same, and stiffened it against lateral pressure by a capping of the same nailed along the top, so as to give a section in the form of the letter T. The holes for the cords should be burnt after they are bored; and if those through which they lead for the purpose of being brought to one point at the central upright be reinforced with a piece of hard wood, and the hole through the latter be carefully chamfered off, there need be but one block of a revolving kind. The side cords, by being about a yard from the ends, part the shade and save head room. The uprights at the end are secured to the back wall by long hooks and staples. The canvas is 6*d.* a yard, and three breadths of seven yards cost 10*s.* 6*d.* It took my carpenter about three days to make the shade, at 3*s.* 6*d.* a day = 10*s.* 6*d.* The precise quantity of deal used I cannot give: it was a little more than one 13-foot deal, worth about 7*s.*; so that I lay the cost of the whole at from 30*s.* to a guinea and half. If any of your subscribers should be disposed to construct a shade of this description, and should find any difficulty, I shall be happy to answer any questions. *C. W. M.*

Potato Crops.—I am sorry to mention that I never before saw Potato crops, both in garden and fields, looking so bad at this season. But, what is worse, the rot has begun, and I fear will soon take off the whole, for the crops are backward; so much so, indeed, that the disease must have the evil effect it would have had, had it appeared three weeks sooner than usual in general crops. *J. Wighton, Cossey, Norwich.*

Bees.—In this part of Lancashire (Garstang), a good many bees are kept, and principally in straw hives and hives made with willows plastered over with cow-dung. When a swarm is about to be put into a hive, after sticking it, it is smeared with a mixture of Bean juice, cream, and sugar. It is then held under the hanging swarm which is shaken into it, put for a time upon a table, and covered with a sheet or table cloth. The usual time for a swarm or hive to stand in this part of the country is three years; at the end of which time it is believed to contain the greatest amount of honey, which is taken by smoking with brimstone, the whole colony being killed in the operation. The honey, obtained in this way, is sold for 8*d.*, 10*d.*, and 1*s.* a pound. Many of my neighbours pay my hives, which are upon the collateral plan, a visit. They admire them, and taste the honey, which is obtained without destroying the bees, and for which they know I get from 1*s.* 6*d.*, 2*s.*, and 2*s.* 6*d.* a pound, according to the season, yet many of them go on the same way from year to year, burning and smothering the poor bees with brimstone, and selling the produce for half price, and on account of its taste of sulphur it deserves no more. Few hives have swarmed hereabouts as yet, many stocks being very weak this spring; we have had very heavy honey dews lately. In many places the ground, as well as the trees, has been literally covered with it, and instead of swarming, bees appear to have been storing up honey. *R. H. W.*

Lime v. the Potato Disease.—I received a letter last month from the party I referred to in my note to you, in the autumn of last year, respecting the liming of his Potato crop as a preventive of disease. He says: "I have just got in my remaining stock of Potatoes from the pies in the field; all remain quite sound." It will be recollected that he recommended liming three times during their growth, viz., first when just out of the ground, when half-grown, and when apparently full grown. I believe his case to be the only instance of a sound crop having been saved in this neighbourhood last season. *William May, Hope Nursery, Bedale.*

Foreign Correspondence.

Gardens about Lisbon.—As you inserted a few notes on the Lisbon gardens, I send you some more. To those who have not seen Orange groves, and are not used to pay garden visits in our January climate, these may be amusing. *Dodman.*—"*Lisbon, Jan.* 14: On Saturday I went to see an Orange grove beyond Belem and a little in the interior. Such a road through the quinta! that even (bold as I am, and used to bad roads) I thought of getting out of the carriage. The day was like one of the loveliest of May. The best thing I saw on turning round a corner was a group of Almond trees in full flower; but the flower is not like that of our Almonds. It looked like beautiful Codlin bloom, though larger and more open. The Orange trees in the groves, or rather plantations, are not picturesque; not being allowed to grow large, and they are pruned—not forest trees like those near Seville; but the walk through them and the getting out of stuffy Lisbon was very refreshing. The place was a pretty quinta once, but now quite wild and neglected. I had the pleasure of gathering myself a nosegay—China Roses, Paper Narcissus, the orange-coloured Bignonia, and Cineraria, from such a bush. The ground under the Orange trees in parts was covered with the pretty yellow large-flowered Oxalis, which we grow in pots, and the pretty dark purple and green-striped Arum. Altogether the excursion gave me an intense longing for Cintra, and if the weather of to-day were to last, I do think I should be tempted to go for a day; but it will be wiser to wait till a few wild flowers come out. The young Orange trees are planted in squares, protected by hedges of high reed, especially the Tangerines. *Jan.* 17.—Again a splendid day, though the first of the morning was foggy—window open, and my room perfumed with the flowers which Madame de M. sent me, and those I brought yesterday from Pombal, where, as the boat was ordered and the day very favourable, we went. We set out at 10 o'clock, that we might be home by sunset, as it is cold after that time (that is, what is called cold here). The row down the river was very delightful; the bands on board her Majesty's ships playing, and marines tumbling into boats to go ashore to be exercised under Sir C. Napier. The ships very fine. Presently a Brazilian brig, that had been exchanging salutes with the guard ship at the mouth of the river, begins banging away right and left in honour of the British ships in the river. We see flash, smoke, and hear report, the echoes on each side of the river repeating every sound. Her English Majesty's ships not behind-hand in returning compliments. We intended to land close to the quinta which we were to visit, but before we got there the boatman (that fine fellow who rowed us to Casilis when you were here), says No; that there were breakers in the river, which, with the tide and wind, would make our journey unpleasant, and so we put into a little dirty village a mile and a half on this side the quinta, and I had a donkey to ride and a boy to drive it (the latter brute had eaten so much garlic that though he was always behind the donkey I always smelt it, and thought he had the power of breathing round a corner). The quinta is situated at the mouth of the Tagus, beyond the convent on the right bank. It was given by the King to the great Marquis de Pombal, and again I longed for you to have seen it, and could not help reproaching my conductor, but he says truly the time of your stay was short, and that there were two or three days lost by rain; indeed the weather is finer than when you were here, I think, in October. We were not allowed to see the house, because the Marquis was there. The house and gardens are much in the Italian style, the only things Portuguese consisting in parts of flights of stairs and fountains and seats and the coloured tiles we so much admired at Seville. Nothing can be better than the gardens for their size, the beauty of them

consisting in their formality; those near the house are laid out with low Box edgings, those distant with high Box hedges I call them, and double ones sometimes. They are so designed that, like those of the Junquera, which you saw near Belem, winter or summer, with or without flowers, the effect is good; but they are better than the Junquera, for they have on every side splendid trees and Orange groves of great extent, and here the Orange trees were of large size, and especially when seen from on high are really very beautiful; long walks, shady, and in the hottest days of summer impervious to the sun's rays, are to be enjoyed on one side of the formal gardens; very fine deciduous trees edge a small stream, over which several bridges are thrown, and walks like those of Ramalhao are not wanting; this stream separates the gardens in two parts, and the style of each is the formal, as I have said before, but different. In the lower one, which appears the oldest, and in which are the high Box edgings and a beautiful fountain, there is a Dragon tree, finer than that at the Botanical Garden. I measured the trunk of this one, it is more than 2 yards round; the limbs look like great snakes, the head had been covered with great spikes of flowers; it was, I suppose, 20 feet high. Charming stone columns supporting busts are placed at the entrance of each great walk, the offices at the end of the garden are made ornamental and a finish to it, by a beautiful architectural wall; there are stone flights of steps, with carved balustrades, highly finished; busts, vases, and every sort of ornament. But the whole scene is spoiled—by what? The most total neglect; weeds grow in every path, choke up the hedges, force the stones out of their places. All that is done is to cut the Box square, and shape the corner Box trees of the parterres. A more neglected place I never saw. A more enjoyable one could not be desired, and I should prefer it to Cintra, as being close to the sea, and because the climate is so fine you might live there both winter and summer. We crossed the road and went down a walk more than half a mile long (Grass), hedged with tall Laurustinus, breaking into flower, while the tall blue Periwinkle in full blossom, but pale, was climbing up them. On each side of the hedge were vast groves of Orange trees loaded with ripe fruit, which perfumed the air. On one side, at the end of this, we found a great blue wall (semicircular), encrusted with the above-mentioned tiles, and a high fountain in the centre, with the water trickling through great masses of Maiden-hair Fern into a basin below. We ascended a flight of steps near the fountain, and returned to the gardens along a high terrace that overlooked the great Orange groves, real gardens of the Hesperides, for their fruit brings gold. The day was so lovely that I walked about. Again sat down on the stone steps under the Dragon tree, gathered Violets, and was sorry when the time for the tide to turn obliged me to return to my donkey. The road back gave us beautiful views of sea and land, &c."

Societies.

HORTICULTURAL, *June* 26.—E. BRANDE, Esq., in the chair. Sir J. W. Ramsden, Bt., G. Harcourt, Esq., M.P., R. B. Byass, Esq., W. W. Saunders, Esq., and Mr. Hurst, of Leadenhall street, were elected Fellows. Dr. Lindley delivered a lecture on "The Stem, whether regarded as timber, or as a means of propagation; together with the circumstances which hasten or defer its destruction by decay." The importance of the stem as a source of food to the young organs, and as the seat of buds through whose agency alone propagation by the stem can be effected, was discussed. The true principles of propagation were also explained, together with a variety of questions relating to the decay of timber and the proper season for felling it. Numerous instructive specimens in illustration of the effects upon timber of barbarous pruning were placed before the meeting.

LINNEAN, *June* 19.—The Bishop of NORWICH in the chair. F. Gould, Esq., was elected a Fellow. Mr. Bell exhibited specimens of several species of British Orchidaceæ, gathered near Selbourne; they excited attention from being covered with a minute fungus, which consisted of a sporangium containing numerous large spores seated on a slender stipes. Mr. J. O. Westwood read a paper on the family Paussidæ. In this paper the author described several new species from the collection sent by Mr. Bowring from Hong Kong to the British Museum, and those of Captain Boys from India, and gave a survey of what was known with regard to this interesting family of coleopterous insects. The Assistant Secretary read a continuation of Mr. Huxley's paper on the Anatomy of the Diphyidæ and the unity of organisation of the Diphyidæ and Physophoridæ. This was the last meeting of the session.

BOTANICAL, OF LONDON, *May* 4.—The Treasurer in the chair.—Mr. Thomas Moore communicated some remarks on a form of the sweet Violet (Viola odorata), with mottled, pale lilac flowers, found in the neighbourhood of Guildford, Surrey. This form was stated to be larger and more hairy than the common sweet Violets (blue) of the same neighbourhood, and showed, besides, the constant difference of having its sepals fringed with short hairs or cilia. In respect to this latter character, the author stated that, in all the white sweet Violets he had had opportunities of examining, he had found similarly ciliated sepals, whilst in the blue sweet Violets, and in another form, with flowers of a reddish purple hue, he had as uniformly found the sepals to be quite entire. From these observations, the author suggested that the white sweet Violet, usually regarded as a mere variation of colour, might, perhaps, prove a *bona fide* variety, assuming the blue sweet Violet, with entire sepals, to be the typical form of Viola odorata. In this view of the relations of the native sweet Violets, the white and the lilac-flowered fringed sepalled plants would be considered as forms of a variety to which the name ciliata would be appropriate; whilst the blue entire sepalled plant would be regarded as the type of the species. It was mentioned that the white sweet Violet had been set up by some botanists as a species distinct from V. odorata. Specimens of both forms were exhibited.

ROYAL CALEDONIAN HORTICULTURAL.—The summer quarterly meeting was held in the Society's garden, Inverleith, on the 7th inst. The weather was most propitious, and the company numerous. The Hall and the New Conservatory were both filled with flowers, sent partly for competition and partly for exhibition only. After a careful inspection by the committee, the following prizes were awarded:—For the best 12 varieties of Double Anemones—to Mr. Young, gr. to T. Oliver, Esq. For the best 12 Ranunculuses—also to Mr. Young, the varieties being Queen Victoria, Prince Albert, Grand Monarque, Waterston's Burns, Flower of Dunblane, Earl Grey, Mrs. Fergus, Beauty Supreme, Kilgower's Yellow-spotted, Purple Mottled, Ramsay, and Finlayson's Light Purple Mottled. For the premium offered for the best 24 Pansies, there was a keen competition. The Society's Silver Medal was awarded, as a first prize, to Mr. King, for fine flowers of the following varieties:—Rainbow, Optimus, Supreme, Lord Hardinge, Pliny, Nulli-secundus, Sir Robert Peel, Duchess of Rutland, Mrs. Bragg, Verax, Superb, Blooming Girl, Argus, Satirist, Douglas, Marchioness of Ailsa, Ovata, Almanzor, Potentate, Cypress, Model of Perfection, Ophir, British Queen, and Berryer. A second premium was awarded to Mr. Rutherford, and a third to Mr. Young. For the best 12 Tulips (Roses, Byblœmens, and Bizarres, 4 flowers of each class), a first prize was awarded to Mr. Young, for Grand Monarque, Black Baguet, Margrave de Baden, Rose Camuse de Cray, Athœlia, Triumph Royal, Duchess of Newcastle, Duke of Sussex, Lord Nelson, Stray's Seedling, and Godfrey's Earl St. Vincent: and a second premium was voted to Mr. King. The display of Stocks was of a splendid description, there being no fewer than 17 competitors for the prizes offered for these flowers. For the best 4 White Stocks, the Silver Medal was awarded, as first prize, to Mr. Munro, and a second premium to Mr. Lauder. For the 4 best Red Stocks, the Silver Medal was awarded, as first premium, to Mr. King; and a second prize was voted to Mr. Gordon, gr to J. H. Mackenzie, Esq. For the best 8 varieties of Ghent Azaleas, a prize was voted to Mr. Sleigh, gr. to the Lord Advocate, for Ne plus ultra, Cruenta, Paniculata picta, Lateritia striata, Sulphurea picta, Pontica grandissima, Aurantia major, and Splendens. For the best Cactus, the prize was awarded to Mr. Gemmell, gr. Hermitage Park, for a large and finely flowered plant of C. speciosissimus, trained on a flat trellis. For the best 6 Alpine Plants, a first prize was voted to Mr. M'Lauchlan, gr. to W. R. Ramsay, Esq., for Saponaria ocymoides, Antennaria dioica rosea, Alyssum olympicum, Dianthus cæsius, and Sedum ternatum; a second premium was voted to Mr. Thomson, gr. to Dr. Neill, who produced Saxifraga orientalis, S. paniculata, Erinus alpinus, Myosotis alpestris, Primula Scotica, and P. involucrata. For the best 24 heads of Asparagus, a first prize was awarded to Mr. Pousty, gr. to W. M. Innes, Esq.; and a second to Mr. Goodall, gr, Newbattle Abbey. The prize of One Guinea, offered by Messrs. Dickson and Co. (through the medium of the Society), for the 6 finest varieties of Calceolaria, was awarded to Mr. Ritchie, gr., Parson's-green, for Mrs. T. Carmichael, Princess Adelaide, Prince of Wales, Hebe, Tam O'Shanter, and Aurora. Besides the plants sent for competition there were, as usual, large collections for exhibition only. Messrs. Dickson and Co. sent a great variety of greenhouse plants and Pansy blooms, all of a superior description. The collection of plants from Messrs. J. Dickson and Sons was likewise admirable, comprising Pelargoniums, Ericas, &c. That from Messrs. P. Lawson and Son contained Dillwynia speciosa and other plants of interest. Mr. Stark furnished some excellent greenhouse plants. The collection sent by Mr. Carstairs included fine Cape Heaths, &c., and a bunch of remarkably large Asparagus, grown near London, as well as some of his own growth of excellent quality. Mr. Handasyde produced a basket of Alpines, with fine Pansies and Azaleas. Messrs. Downie and Laird exhibited some pretty Pansies; and Mr. Purdie cut flowers of several beautiful hardy Azaleas. Two Palms and some Cape Heaths from the Royal Botanic Garden were much admired. Professor Dunbar sent several fine Heaths and a double-flowered Rhododendron, with cut flowers of Weigela rosea from the open ground. From the garden of J. Cameron, Esq., were two fine specimens of Clerodendron Kæmpferi. From A. Symington, Esq., there was a tray of beautiful Ranunculuses. Dr. Neill's garden furnished some interesting plants, including Cnicus Casabonæ and Trichopilia tortilis. There were beautiful Ranunculuses from Mr. Hunt; also select Irises and Pæonies from Captain Falconar's garden. C. K. Sievewright, Esq., sent fine Cinerarias; Mr. R. Veitch produced a rare and interesting collection of Ferns and British Mosses, in pots; and from Lady Harvey were two baskets of interesting Alpines, including the rare Fly-Orchis in flower. Mr. R. Livingston produced beautiful Pansies and Tulips; and Mr. Sleigh a fine specimen of Gardenia Stanleyana in flower; Mr. Weir, some fine seedling Calceolaria blooms; and Mr. Marshall, a beautiful and distinct seedling Cheiranthus. I. Anderson, Esq., produced some pretty seedling Calceolarias, one of which was grown wholly in hypnum moss; also a hybrid Veronica and striped Aquilegia. Mr. Edwards, gr., Balbirnie, sent five excellent Melons, raised in a glazed structure heated on the Polmaise system; and Mr. M'Lachlan a brace of well-grown Cucumbers. Mr. Laing, gr. to the Earl of Rosslyn, exhibited some fine seedling Rhododendrons; and Mr. H. Munro a stand of double Aquilegias. Mr. Burns produced several fine Azaleas and Rhododendrons; and Mr. Samuel a well-grown plant of Eriostemon buxifolium. Mr. Anderson exhibited some vigorous-growing Cape Heaths, and a beautiful specimen of Pimelea decussata; and from the garden of Miss Baird were some large Stocks. Mr. Lauder sent several heads of a fine late Broccoli; and Mr. Logan contributed some early Potatoes, from the open ground, of a variety named "Logan's Improved Ash-leaved Kidney," which sort, it was stated, had hitherto resisted disease in any form. At this meeting no fewer than 51 new members were added to the Society.

ROYAL HORTICULTURAL IMPROVEMENT, OF IRELAND.—The summer show of this Society was held in the Rotunda on the 14th inst. The day was favourable, and the attendance numerous. The exhibition itself was an excellent one, its principal features being Cape Heaths and Orchids. Of the former Mr. Mathews, gr. to G. Burns, Esq., sent a fine plant of Erica Cavendishii, it measured about 3 feet in diameter, and was not more than 2 feet high; E. ventricosa superba, in the same group, measured 2½ feet in diameter by 2 feet high. So evenly were Mr. Mathews's Heaths balanced with Mr. Toole's, that the judges awarded first prizes to both. Mr. Toole had E. ventricosa superba, and E. gemmifera. The former about 2½ feet high, and fully 3 feet in diameter, clothed from the pot to the top with bloom. Among Mr. Mathews's greenhouse plants, which were first, there were the blue-flowered Leschenaultia, about 18 inches high, and 2 feet in diameter; Statice puberula, 1 foot high, and 18 inches in diameter; Aphelexis humilis, 2½ feet in diameter, and Polygala cordata, in fine condition. Among Mr. Toole's, which obtained the 2d prize, was the beautiful Tetratheca verticillata, it measured fully 18 inches in diameter, and was covered with bloom. In stove plants, Mr. Gannon, gr. to W. J. Hamilton, Esq., exhibited Hoya Pottsii in good bloom, along with a small specimen of Henfreya scandens. Judge Crampton's gr., Mr. Bruce, exhibited one of the finest bloomed plants of Russellia juncea that ever graced the stages of the Rotunda. The finest single specimens of greenhouse plants were Pimelea decussata and spectabilis; the former 4 feet high, and fully 6 feet in diameter. The finest stove plant was Clerodendron Kæmpferi, from Mr. Mathews. The exhibitors of Orchids were, Messrs. Gannon, Balfe, and Humphries. The former had some rare and beautifully-grown plants, both in the group he showed for the prize and that which was sent marked "not for competition." In the former group were Lælia majalis; Cattleya Mossiæ, with nine fully-expanded blooms; Brassia verrucosa, and an Odontoglossum. The same exhibitor had also fine plants of Oncidium crispum, and Aerides Brookii, with many more.—Among Mr. Balfe's collection were good specimens of Oncidium Papilio, and Stanhopea tigrina. Mr. Humphreys had an Oncidium divaricatum, the flower stem of which measured 5 feet long, with numerous side branches covered with hundreds of beautiful blooms. He had also many plants "not for competition." Pelargoniums, Fuchsias, Cinerarias, Verbenas, Calceolarias, Pinks, Anemones, Ranunculuses, Pansies, and Roses were also exhibited. The principal winners in these classes being Messrs. Gannon, Bruce, Corrigan, Hodgins, M'Laine, Livingston, Kane, Donohue, Macken, and Jenkins. Mr. Dunlop sent the best seedling Pelargonium, and Mr. Jenkins the best seedling Fuchsia. The vegetables and fruit were neither so abundant, nor, with few exceptions, of that fine quality which might have been expected. *Abridged from the Dublin Advocate of June* 20.

ROYAL HORTICULTURAL, OF DUBLIN.—The *Freeman's Journal* states that at the last meeting of this Society, on the 21st of June, "it not only put forth its own splendid resources, but also brought to bear the extraneous wealth, in exotic and floral contributions, which it alone, as the Royal Horticultural Society of Dublin, can command. Nothing could possibly be more splendid than the varied beauty of the exotics presented in full flower"!!! We should be curious to see how an adept in the Irish language would translate these grand phrases into sober English.

Country Show.

EXHIBITION AT UPTON PARK, *June* 15.—The chief feature of this meeting was the seedling Pelargonium Exhibition, got up by the principal raisers and amateur growers of this popular flower. There was a considerable gathering of plants, and as a whole, of very fine character. Of course on these occasions the object is to select those which possess in combination the greatest amount of the various merits constituting a first-rate flower in the eyes of the critical judge. Now there is at present no general understanding upon the subject, and one great object of the meeting was for an interchange of opinion, which we think was too much lost sight of. The plants exhibited for prizes were obliged to be not less than two years old, and not yet let out to the public. They were received and arranged upon tables, each plant with a number attached to it. The

undertaken from the judges. They examined the whole, and then placed upon cards the number of the plant to which they awarded the first prize, the majority of votes deciding the point; that settled, they placed the next, and in the same manner the remaining two prizes. The 1st prize of 3l. was given, by a considerable majority, to Foster's Gipsy Bride, the only flower of that gentleman's, except Constance, that stood the slightest chance of receiving any notice. The flower in question possessed very great merits in general form and colour of top-petals; the lower ones were cold and veined too much to please us. The edge was excellent, and on the upper part set off to the greatest advantage by the bright termination to the deep blotch that covers the upper petals, and terminates in a waxy thread. It is a profuse blooming variety, and of good habit, but it is too small for general cultivators; at least we heard the fear expressed by several growers in the after part of the day. Foquett's Magnificent is a very rich variety, and took the 2d prize of 2l. 10s. It is smooth and constant, and a most desirable high coloured sort; yet the severe critic saw at once that colour was its greatest merit, for had that been absent it had few points of recommendation; the petals are too long and by no means stout: but it is a beautiful flower. So with the 3d prize of 2l. 10s., awarded to a plant exhibited by Messrs. Veitch and Son, called Symond's Field Marshal; had a rule existed and been acted upon, that such points as constitute a first-rate variety were indispensable, this flower must have been passed over; for although it is of a remarkably high collar, with dark blotch veining off to the margin, of good strong habit, and profuse bloomer, it has a crumple on the upper petal, wants refinement, and is rough; still it will be a brilliant addition to any stage and collection. Of the fourth winner we must say that we think Aurora's Beam was surpassed in points of excellence by some other varieties of Mr. Beck's and Mr. Hoyle's. Stout large capital flower as it is at its best, we saw trusses which were sadly crumpled, and evidences of sportiveness also. This raiser's flowers always seem to us to shine less as seedlings than in his collections, where they eclipse all brought against them, a fact we have observed particularly this season.—Nor must we pass over Mr. Hoyle's productions. His beautifully orange-coloured flower, Prince of Orange, his Christabel and its models of loose petals, and his plant (now let out) "Crusader;" all told that, though they passed unrewarded, it was not for want of excellences.—Many others were exhibited, but we cannot find space to notice them; yet we must not pass away without saying that, in our opinion, the promoters of the exhibition fund should have a meeting for the purpose of laying down some fixed points which a flower must possess before it can receive a prize, and there must be also an absence of faults, such as we have enumerated, or it should be at once rejected. Had such a standard been laid down, and strictly adhered to, not a flower present on this occasion would have received a prize, beautiful as they undoubtedly were, and greatly in advance of their predecessors. Gipsy Bride would have failed for want of size, Magnificent for want of form, Field Marshal for its crumpled petals, &c., and Aurora's Beam for the same fault and sportiveness, &c. This meeting was a step in the right direction, and we augur well for the future; for we learned that fresh subscriptions were entered into for another season.—Pinks and Pansies were shown by Mr. Edwards, of Holloway, who was first in both classes. Mr. Ingram, gr. to her Majesty, sent a noble specimen of Stanhopea tigrina; also a seedling Geranium from Lucca roses, which it resembles in habit, but is somewhat different in shade of colour.—Plants, cut flowers, Roses, Pinks, Dahlias in pots, Pelargoniums, &c., were sent by the Rev. E. Coleridge, E. Foster, Esq., — Bond, Esq., J. Gould, Esq., Mr. Brass, and Mr. Dobson; and a fine collection of Ranunculuses from Mr. Tyso, of Wallingford.

ERRATUM.—In our account of the Royal Botanic Society's last Exhibition, we omitted to state that Messrs. Lane showed nice specimens of their new Moss Rose Lanei.

Reviews.

The Sea side Book; by W. H. Harvey, M.D. 12mo, pp. 247, with many woodcuts. — *Ornithological Rambles in Sussex*; by A. E. Knox, M.A. 8vo, pp. 250, with four lithographs. Van Voorst.

ALTHOUGH we put these books together it is less because of a similarity in their contents, which indeed are perfectly distinct, than for the sake of drawing attention to two excellent works of the same class. Both Dr. Harvey and Mr. Knox have the same end in view, that of blending amusement and sound knowledge; both have executed their task like men of true science; and both will be studied by the same class of readers; the difference lies in their subject and its scope. While Dr. Harvey initiates the reader into the elementary knowledge required to enjoy the natural history of our long line of seaboard, in many departments, especially those of its birds, mollusca, and plants, Mr. Knox confines himself to the birds of a small district. Dr. Harvey's book will therefore be most acceptable to those who search everywhere after general knowledge—Mr. Knox's will have most attraction for the visitors to Sussex.

For ourselves, we have never been able to comprehend how the visitors to our watering places contrive to kill their time during the long and listless days of summer. To be sure, there is bathing, and walking on the shore, and riding, and rowing, and lounging, and visiting, and eating, with drinking, and peeping at nothing through telescopes. Still, people cannot be always engaged in pursuits so interesting as even these, and a few days can hardly fail to bring tedium in their train. Such a book as Dr. Harvey's must then become to any intelligent being invaluable; for it contains a fund of information, admirably conveyed, simple yet accurate, and applicable to all seasons and circumstances. Nowhere can natural history be more profitably and agreeably studied than on the sea coast. To use Dr. Harvey's words,

"The sheltered bay—the open strand—the bald rocky barrier against which breakers constantly roll—each has its peculiar animal and vegetable inhabitant; and each variety of shore is more or less perfectly represented in one or other of our watering-places. By visiting different parts, therefore, of the coast in succession, year by year, we may investigate to the greatest advantage the productions of the sea. These are never exhausted; and once that an interest in the pursuit is awakened, it never flags. There is no need to import the winter resources of cities—balls, parties, and theatrical representations—to the watering-place. Half the year ought to suffice for these amusements. Let the summer and sea-side preserve their native pleasures undisturbed. There is so much to be enjoyed on the sea-shore when the mind is once opened to the pleasure afforded by the study of natural history, that no other stimulus is wanted to keep the interest of the visitor constantly awake. Instead of finding his time hang heavily, he will often wonder how rapidly the long summer-day has flown by, while he has been occupied with some investigation in the midst of which darkness overtakes him. When visiting the sea, to seek relaxation from business, it is astonishing with what zest a person will enter on the pursuit of natural history, and how invigorating and refreshing he will find it. After a short time, the mind of an habitually busy man finds no relief in complete idleness. He must occupy himself in some manner. He is removed from his ordinary business—perhaps forbidden by a physician from receiving letters that require thought; his mind is too active to rest unemployed, and there is nothing in the neighbourhood to rouse him. If on the sea-shore, and happily possessing a turn for natural history, he is at once supplied with occupation of the most healthful character. His pursuits lead him to take exercise of body, and, without fatiguing the mind, give it that pleasurable excitement which rapidly restores its tone when suffering from having been over-wrought. It matters little to which of the natural history sciences he devotes his attention, or whether each in turn engages it. Probably a valetudinarian will find most relief in variety."

Those who think thus and feel thus, can never know the distress of nothing-to-do. Their walks, unlike those of the idle crowd, will be for a definite and reasonable purpose — their excursions with some special object in view. To dredge for marine animals, which they may examine and admire on their return, to watch the growth of marine plants, to search for what is rare, to study what is common, to witness the marvellous structures and instincts which are provided by the Almighty for the humblest and meanest of his works—these are real sources of permanent enjoyment, having this peculiar fascination, that every fact which is revealed by the inquiry of to-day, leads of necessity to some other fact to be sought for on the morrow, and that the farther the observer advances in his acquaintance with the wonders of the creation, the more anxious does he become to extend that acquaintance, and the more able is he to enjoy it when found.

To those who think as we do, there is no work that we can recommend with more satisfaction than the "Sea-side Book" of Dr. Harvey.

Garden Memoranda.

TEDWORTH HOUSE, THE SEAT OF T. A. SMITH, ESQ., is situated in an interesting valley on the borders of Hants and Wilts. It has few striking natural features to boast of, but the grounds are well wooded, and Tedworth, under many disadvantages, has risen to the rank of a first class country seat, an evidence of what wealth and skill can achieve. The mansion is characterised by internal comfort and convenience rather than by external display, and it is situated too low and retired to afford extensive views. The grounds are well kept, and are interspersed with walks of considerable extent and interest. At the western extremity of the mansion is a conservatory, corresponding in architecture with that of the building; from this the large conservatory is approached by a colonnade, which forms an agreeable promenade either in summer or winter, and by a dry walk connects the principal departments of the establishment. This colonnade is near 1000 feet in length, and is wide enough for four or five persons to walk abreast in. It is ventilated by sliding glass doors at the sides, and, when necessary, it can be heated by means of hot water in pipes. The principal conservatory is upwards of 300 feet long by 40 feet wide, and is 15 feet high. It contains a fine display of plants, more remarkable for high cultivation than rarity. The principal pathway is through the centre; part of the plants are on stages and part planted out, others occupy conical-shaped stands; various creepers are trained over-head from one support to another; the different varieties of Passiflora looked well managed in this manner, and Abutilon striatum trained in the same way blooms profusely. In the new span-roofed stove adjoining the conservatory was an immense Ipomœa Learii, also a large Stephanotus floribundus. There is an extensive range of glass houses here, used principally for forcing fruit in. The house devoted to Grapes in pots, in the culture of which Mr. Sanders is celebrated, is worthy of remark, as well for fine colour as for an abundant crop. Muscats and Black Hamburghs are the sorts grown, and this place usually affords Grapes for table every day in the year. The Peaches in the early house were partly gathered. Cherries, Apricots, and Plums are extensively cultivated under glass here. One Vinery is entirely appropriated to the cultivation of the different kinds of Muscat Grapes, which are planted inside the house. This, as well as another house of Hamburgh Grapes, evinced the best of management. The Pines are grown here in pots. Among Strawberries we observed a new variety called Competitor, which promises to be first-rate in quality; it is a cross between the Alpine and Keens' Seedling; the fruit is the size of Keens' Seedling, but in shape it is more ovate. The fruit trees in the kitchen garden are grown in the form of dwarf pyramids by the sides of the principal walks.

J. H., June 1.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

THE climax of day-light and sunshine for this season having now arrived, stove plants which are in a growing state should be supplied with the maximum amount of heat and moisture, in order that they may the sooner complete their growth, and have a longer period to ripen it in. Water should be freely and frequently sprinkled on all evaporating surfaces, with a view to counteract the drying effects of the abundant ventilation which is indispensable in hot weather. Houses which are not so situated as to receive the first rays of the morning sun, should be assisted with fire-heat if necessary early in the day, in order that the plants may have the advantage of a growing temperature in conjunction with the strong day-light of these summer mornings. Incessant exertions must be made to keep insects in check, particularly red spider; syringing and washing the walls and hot-water pipes with lime and sulphur will have the desired effect, if the means are perseveringly used. This is an excellent time for the grafting or inarching of Oranges, Camellias, Azaleas, choice Rhododendrons, &c. For grafting, forward ripe shoots of this year's growth are generally selected, but with respect to small weakly growing kinds, it is preferable to take a portion of two year-old wood along with the shoot. The plants should be plunged in a close moist heat, rather stronger than that required for growing them in. Many other weak, puny growing, fine rooted, stove and greenhouse plants may with great advantage be grafted on stronger-growing species of the same kinds; amongst these we may mention Gardenia radicans, Ixoras, Chorozema Henchmanni, Pimeleas, Leschenaultias, &c. Seedling Cinerarias, for autumn and winter-flowering, should be potted as soon as they require it, using light rich soil, containing about one fourth of loam. The plants obtained by dividing the old ones of approved sorts should be stimulated into vigorous growth, with a view to produce fine specimens for late flowering; for this latter purpose all the plants should be repotted as they require it. It will, however, be advisable to retain a portion of the plants in small pots, for flowering during autumn and early winter. Old plants of Chinese Primroses should now, after their partial repose, be shaken carefully out of the old soil, repotted in light sweet compost, moderately rich, and placed in a frame for a few days, till they have begun to produce roots into the new soil, after which they must be removed near the glass in a cold frame, and kept close till the plants are thoroughly re-established. These plants succeed best and are most useful in moderate-sized pots.

HARDY FRUIT GARDEN.

The stopping, thinning, and training of the young Peach and Nectarine shoots must receive the most careful and judicious attention, in order to secure an adequate supply of well ripened fruitful wood of moderate strength. Continue to stop any exuberant shoots, not only on account of the uselessness of the wood they produce, but also that they may not, by monopolising the sap, deprive the fruit of its necessary sustenance. Gross shoots stopped, according to directions given in former Calendars, will have produced several laterals, of which as many should be selected as are required for laying in, and the rest removed. The stronger of the more moderate sized shoots should also be stopped, at lengths varying from 12 to 18 inches, according to their strength, and the weaker shoots at from 8 to 12 inches; this stopping will cause many laterals to be produced, but of these one only should be allowed to grow at or near the point of each shoot, with a view to maintain a healthy activity at the roots, and to secure an escape for any superabundant sap. This practice is always beneficial, and in late cold localities particularly so, by causing the energy of the plant to be early directed to the maturing of the wood, and the formation of fruit buds for another season. When shoots are allowed to grow forward unchecked, their points intrude very unceremoniously upon the shoots above them. The most important point is to allow no more to remain than will be required to fill up the portion of wall allotted to each tree.

FORCING DEPARTMENT.

VINERIES.—It is no uncommon thing to see the foliage of Vines scorched, an evil not only injurious to the present crop, but also to future produce. It generally arises from inefficient ventilation, and not unfrequently from the sun's rays striking the leaves in the morning, while they are yet moist with the condensed vapour which has settled on them during the night. To prevent the mischief, a small portion of back air should be left on every house at night, very windy weather only excepted. After every precaution has been taken, there are some varieties, however, the foliage of which is too tender to bear exposure to the midday sun at the ordinary distance from the glass; as soon as this is observed, the wires to which the Vines are trained should be lowered a few inches; indeed it is better that the wires of all the rafters should be so constructed that they may be lowered at pleasure. During the early part of the season it is an advantage to train Vines close to the glass, but as the footstalks of the leaves increase in length, and the obliquity of the sun's rays decreases, it will be an advantage to lower the wire a few inches, by which means the circulation of air between the glass and the foliage will be considerably increased.

FLOWER GARDEN AND SHRUBBERY.

Perhaps no plants are more generally useful than the hardier kinds of Carnations, Picotees, and Cloves. Their beauty and fragrance not only recommend them to a prominent place in flower beds, but render them

invaluable for glasses or bouquets. If pipings of them are taken off about this season they sometimes strike as freely as Pinks, but if handlights are set on a slight hotbed, or the pots plunged in a frame with a slight bottom heat, success is rendered more certain. The latter, however, need not be hoped for unless shading is carefully attended to, and the cuttings taken very early, not later on any account than the expanding of the first flower. The easiest and quickest method of propagating them is by cuttings, but the most certain method is by layers. If the latter plan is adopted, it is equally important that it should be done early, as the plants root and are fit for transplanting sooner, and thereby become better established before winter. Late sown annuals intended for autumn flowering should now be thinned out or transplanted, choosing moist weather for the operation. As much time as possible should now be devoted to staking and tying plants, which, if not early attended to in this respect, soon grow so much out of shape as to spoil their appearance for the season. Edgings and hedges of Box and Privet should be clipped; by doing it now they have time to make and mature a second growth, which they will do without growing out of shape. Watch the different annuals as they come into flower, and mark those which, from the superior habit of growth, size of flower, or brilliancy of colour, it is desirable to procure seed from. As fancy Pelargoniums are admirably adapted for planting in masses, attention should be directed to their propagation; and by commencing at once, the possessor of a few plants will be able to furnish some of his beds, while those who already possess a quantity ought to make a splendid display next season.

FLORISTS' FLOWERS.

CARNATIONS AND PICOTEES.—Continue to disbud, that is to say if the flowers are required of a large size they had better be reduced. The upper or crown bud generally produces the finest flower. Water abundantly, choosing the evening for the application. Pipings may now be put in, and if carefully managed they make good and compact plants, and are generally preferable to layers; they do not emit roots so readily as the Pink, requiring more time. PINKS.—In looking over seedlings it will sometimes happen that some which are not very double have, nevertheless, other good and desirable properties, and which, though too thin for exhibition, might still be an acquisition to get pollen or farina from to impregnate others with. We have seen several of this character this season, having large and finely formed petals, perfectly smooth on the margins, and the lacing beautifully defined; and those of our readers who may chance to possess Pinks of this description, should carefully preserve them for the purpose we have alluded to. DAHLIAS.—Some will now be showing early buds; these should be removed, so that the energies of the plant may not be unnecessarily taxed. Give abundance of water in dry weather, and trap earwigs by small pots, with some moss placed in them, inverted on the top of the stakes. RANUNCULUSES.—The foliage of those which have in any way suffered may now be assuming a yellow tinge; these should be taken up (even though the other part of the collection is in vigorous growth), it will do them no good to remain in the ground. Endeavour to combine the properties of the best flowers by cross fertilisation; large semi-double varieties will often give abundance of pollen. Messrs Tyso, Waterstone, Kilgour, Reid, Lightbody, and others, have done very much of late years in this way, and have raised seminal varieties of singular beauty.

KITCHEN GARDEN.

Leeks should now be transplanted. The method of growing them, which we find eminently successful, is to trench the ground 18 inches deep, to stir up the bottom of the trench with a fork, lay 4 inches of good rotten manure upon it, and over the manure the whole of the soil from the next trench. If the ground has not been prepared previously, it is most convenient to carry on the planting and trenching together, as by that means compression of the soil is in a great measure prevented; and it is the more necessary in the method about to be described, as raking or forking about the plants is for some time objectionable. The plants should be about 6 inches apart and 9 inches from row to row. Premising that the soil is sufficiently moist to prevent its falling in, the holes for the plants should be made 14 inches deep with a dibber 2 inches in diameter, and into each of these a plant should be dropped and watered. The plants are thus placed in the most favourable position for growing, which they will continue to do till Christmas. By that time they will have filled the holes in which they were planted, and the stems will be 12 or 14 inches long and 2 inches thick, tender and beautifully blanched; and from the close order in which they may be planted, it forms one of the cheapest crops produced in a kitchen garden. Brussels Sprouts, Cabbage Savoys, and winter Broccoli: fail not to plant, on well manured ground, good breadths of these excellent vegetables, as their produce comes in at a season when garden stuff is particularly useful. Let there be no idle ground in this department. Plant all vacant beds immediately with autumn and winter crops, and as the quarters are gradually cleared of their summer occupants, let them be immediately succeeded by something else. Cardoons should now be transplanted from the frames or pots, and if the ground is rich and moderately moist, Celery planting may proceed without delay. Sow Chicory, Endive, Parsley, American Cress, &c., for winter, and Lamb Lettuce or Corn Salad for late autumn use. Kidney Beans, Peas, and other crops with weak collars should be earthed up before they get blown aside, and Carrots, Parsley, &c., should be thinned, as the perfection of such plants greatly depends on the space allotted to them individually. This is the weather and time of year to make the best use of liquid manure, by liberally applying it to every plant which it is desirable to stimulate into very vigorous growth. This, of course, particularly applies to those crops which are cultivated for the sake of their roots, stems, or leaves, as it is the object in the cultivation of such plants, by exciting a luxuriant growth, to prevent or retard the production of flowers or seeds.

State of the Weather near London, for the week ending June 28, 1849, as observed at the Horticultural Gardens, Chiswick.

June.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday .. 22	1	30.165	30.011	78	48	63.0	W.	.00
Saturday.. 23	2	29.911	29.832	81	52	64.5	S.W.	.00
Sunday . 24	3	29.904	29.840	69	44	67.5	N.E.	.00
Monday 25	4	29.979	29.907	79	53	66.0	S.	.00
Tues. .. 26	5	29.980	29.919	73	51	63.0	W.	.00
Wed. .. 27	6	29.969	29.943	78	47	62.5	S.W.	.00
Thurs.... 28	7	30.076	29.992	76	48	62.0	N.W.	.00
Average....		30.002	29.924	80.0	49.3	64.6		0.00

June 22—Fine; very fine; clear at night.
— 23—Very fine throughout; slightly clouded.
— 24—Cloudless and very fine; very hot; clear and fine.
— 25—Overcast; very fine; clear at night.
— 26—Very fine; slightly clouded.
— 27—Cloudy; very fine; clear and fine at night.
— 28—Very fine throughout.
Mean temperature of the week, 3½ deg. above the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending July 7, 1849.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Raised.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 1	72.9	50.6	61.8	9	0.80 in.	—	4	3	1	4	8	4	2
Mon. 2	71.7	52.1	62.1	12	0.38	1	2	4	—	4	5	5	2
Tues 3	73 2	52.6	62.9	10	0.18	1	3	2	—	4	6	7	1
Wed. 4	75.3	52.1	63.7	10	0.78	—	3	2	1	1	9	6	1
Thurs. 5	77.3	53.4	65.4	5	0.24	—	1	4	1	4	7	6	—
Friday 6	78.4	52.9	65.7	9	0.59	—	3	—	4	5	8	5	1
Satur. 7	76.5	52.7	64.6	9	0.45	—	1	3	1	4	8	4	2

The highest temperature during the above period occurred on the 5th 1846—therm. 95 deg.; and the lowest on the 1st, 1837—therm. 37 deg.

Notices to Correspondents.

ASPARAGUS: *A Q.* You will find good practical directions for the management of Asparagus beds at p. 389 of our current year's volume. ‡—*H W.* Give your weak beds now and then good soakings of diluted manure water and, in the intervals, salt and water, the latter about the strength of sea-water. †

BACK NUMBERS. 1s. each will be given for Nos. 48, 49, and 50, for 1848.—*L M V.* We have not a copy of the Number.

BEES: *Rus.* There is no practical plan of preventing bees from breeding in bell glasses, especially in the heart of large ones, in which they arrange their combs as in the hive. It is not usual, however, for bees to breed in glasses, and when it happens, the brood should be allowed to hatch off, trusting that the cells will be afterwards filled with honey. The brood and honey cells are readily recognised in Huber's leaf-hive; but, unfortunately, it often happens that both are contained in one leaf or comb. The taking away one of these is not a more difficult and dangerous operation than the extracting a comb from a bar-hive, or even placing an eke under a common one; the timid apiarian, however, may blow a whiff or two of tobacco smoke amongst the bees. *W.*

CROPS: *W R T.* We really are obliged to adhere to the rule of not giving answers upon legal subjects; even although relating to gardens. A solicitor is the only person whose opinion can be safely taken.

CAMELLIA CUTTINGS: *P T O.* August is perhaps the best time for striking them. They should consist of well ripened shoots of this year's wood, and should be struck in silver sand. Place them at first in a cold frame for five or six weeks and then start them on a gentle bottom-heat. Layer hardy Azaleas in autumn. ‡

CONSERVATIVE WALLS: *A B.* To comply with your request would be to write a treatise. The subject has been often illustrated in former volumes, to which we must beg to refer you. As to the border, make it 3 feet deep, thoroughly drained. Cover the bottom with a foot of pieces of brick, or fragments of sandstone, and fill it up with good loam and turf from a pasture; if the latter is *burnt* so much the better. Keep it loose, and you will not want manure.

DEODARS: *R T P.* One is dying, the other is unhealthy. It is impossible to say what the cause is; but it is to be suspected that the roots have forced their way into some uncongenial soil—wet heavy clay. We have seen no similar case. If circumstances will permit you, it would be desirable to dig down by the side of the plant and ascertain the situation and condition of the *lowest roots*.

EFTS: *Clio* will thank some of our readers to inform him of the best means of destroying efts, which now infest his kitchen and cellars.

EXHIBITIONS: *Eboracensis.* The plants were shown entirely wrong. Hydrangea quercifolia is a hardy shrub, and Nerium splendens a greenhouse plant. Such mistakes ought to disqualify an exhibitor. The Winchester or Royal Cornwall Horticultural Society. No shows will prosper unless there is authority somewhere to put down disputes. The names of gardeners ought always to be announced, if they can be ascertained.

FLUES: *A B C.* Clay pipes will draw very well, and if well made will stand heat; but if they are broken it is difficult to repair them without disturbing all the joints, and some precaution must be taken to secure cleaning them without pulling them to pieces.

GRAPES: *J K.* They are mildewed, and that very badly; but they may yet recover. Try the effect of sulphur on them. Sulphur kills the fungus if it is applied *early* enough; that is the point. †

HYDRANGEA JAPONICA: *Anon.* Its treatment is not different from that of the common Hydrangea. ‡

INSECTS: *J J Draper.* The sponge cake is burrowed into in every direction, to the middle, by workers and wingless females of the minute domestic ant (Myrmica domestica); one of the best modes of destroying it by thousands is to put small bits of liver into phials and lay them in its tracks, plunging the phial into hot water when the insects have congregated on the flesh. *W.—T C.* The black grub is the larva of a Carabus, and the pale one is that of a large Staphylinus; both should be encouraged, as they destroy other hurtful species. *W.—G F.* The little blue beetle is the Curculio (or Rhynchites) Alliariæ. Its habits are such as you describe It will be well to shake the trees over a white cloth, and then destroy the insects which fall from them. *W.—Durorvensis.* The early history and development of the Gordius aquaticus is not known. *W.—Cavanensis.* The insect you have sent is not a moth but the perfect fly produced from a Caddice worm (Phryganea grandis). It creeps under water to deposit its eggs there. *W.—G A.* No. 1 is a real wireworm or larva of Elater segetis, and No. 2 is the large black Millepede or Julus. *W.—Henry.* The climbers are infested with the mealy bug, a species of Coccidæ, which we intend shortly to illustrate in our Entomological articles. Wash the plants with a solution of lime, black sulphur, and water in the proportions ½ pint of lime, ½ ounce sulphur, and two gallons of water. *W.—M W K.* Mix corrosive sublimate with soft soap, and with it fill all the crevices of all the woodwork, floor, furniture, and the joints of beds. Strip off all loose paper and burn it. Fill all crevices in the plaster with plaster of Paris and corrosive sublimate. If well done you will see no more of either fleas or bugs.—*A J B.* Your insects are the larvæ of a two-winged fly, like a house fly (Anthomyia brassicæ.) The diseased plants ought to be pulled up and burnt, and the ground well saturated with lime or salt. *W.—L B S.* The Zinnia leaves appear eaten by minute slugs. Try a good dose of lime-water. *W.—H B S.* A gauze bag net, like an angler's landing-net, with a fishing-rod handle, the pieces short to go into the pocket, will answer your purpose. The hoop should be slender and jointed, so as to fold up into four pieces, which may be had made at any fishing-rod shop, by giving a description of what is wanted. *W.*

MONSTERS: *A Lynch.* Your Cucumber, growing upon the face of a leaf, is a fine specimen of a curious but not very uncommon monster. It is caused by the flower-stalk of the Cucumber having, while both were very young, grown to the face of the stalk and midrib of a leaf; and belongs to the class of anomalies caused by adhesions.

NAMES OF PLANTS: *Agricola.* 1, Glyceria fluitans; 2, Lotus corniculatus, the variety major; 3, Spiræa bella.—*L B W.* The Chu-lan or Chloranthus inconspicuus, with which the Chinese flavour their tea; and Bletia hyacinthoides.—*P B.* Cynosurus barbata.—*J S G.* Anthyllis Vulneraria.—*Rusticus.* 1, 2, 3, Bromus mollis; 4, Poa compressa; 5, Kœleria cristata; 6, Festuca duriuscula; 7, Carex muricata.—*Tauntoniensis.* Catasetum maculatum, some trifling variety.—*Whitburn.* 1, Anagyris (Piptanthus) nepalensis; 2, Lonicera Diervilla. The acorns belong to Quercus Ilex; we are not acquainted with any particular method of pruning Spiræas and Deutzias, they merely require shortening back; fivesais comes from Ilva (Elba), where the species was first noticed. —*Devonian.* 1, Pernettya mucronata; 2, Anagallis tenella.—*H R J.* Astrantia major; with it, Anchusa italica; as to it, it is not determinable without leaves.—*R B.* The rhizomes and roots of some sort of Grass.

POTATOES: *B.* Your diseased tubers are the worst we have yet seen. Lancashire seems a very unfortunate district.

RURAL CHEMISTRY, 2d Edition, revised and enlarged; by Edward Solly, Esq., may be had at the office of this Paper, and of all Booksellers. Price 4*s.* 6*d.*

SILVER SAND: *J Lelievre.* This may be had from Alum Bay in the Isle of Wight, but it is too heavy an article to carry far. All that you want for gardens is that the sand shall be siliceous, not calcareous, tolerably white and not too fine.

STRAWBERRIES: *H W.* Cutting off the runners as they appear neither does good nor harm, except that it will deprive you of young plants should you require them. ‡—*Anon.* Plant out the plants forced last season, and obtain a fresh stock from runners. You will be more successful with the latter than with plants forced two seasons successively. ‡

TREE ROSE. The price of this work is reduced to 3*s.* 6*d.* (post free), to be had at the Office of this Paper, or of any bookseller.

VINE LEAVES: *Magistratic.* The small pale green excrescences on their under sides will not harm them. It results from keeping them in a warm damp atmosphere ‡

SEEDLING FLOWERS.

CACTUS: *W S.* Flower large, with good broad petals; the inner ones bright violet, the outer ones deep orange scarlet; a nice showy kind with bright colours.*

CALCEOLARIAS: *D D.* 1, light brown, with a crimson centre; size good, outline tolerable, shape flat. 2, yellow, irregularly marked with brown; shape and outline bad. 3, crimson, with a few irregular yellow marks; shape and outline defective, colours good. 4, shaded crimson self; shape flat, outline bad. 5, lilac, shaded and mottled with deep purple; shape and size tolerably good, outline indented, colours pretty and rather novel. 6, yellow, irregularly marbled with dull chocolate brown; shape, outline, and size good, colours rather dull. 7, purple self; size rather small, outline indented, shape flat and fluted, colour good. 8, pale straw, irregularly striped or spotted with shaded purple; shape flat and fluted, outline indented, marking and colours very pretty. 9, pale yellow, thinly spotted with brown; shape rather flat, outline indented, size small, colours pretty. 10, pale straw, spotted and stained with purple; shape and outline bad. 11, pale straw, spotted with dull purple; shape flat, outline irregular, size middling. 12, yellow, spotted or stained with shaded brown; shape, size, and outline bad. 13, pale yellow, marbled with dark crimson; shape and outline middling, size rather small, colours good, and very pretty. 14, shaded brown purple, irregularly marked with yellow; size, shape, and outline only middling.*—*W H H.* 7, dark crimson, marbled with yellow; shape and outline good, size rather small. 12, pale lemon, irregularly spotted and blotched with deep purple; shape, size, and outline good. 18, pale straw, spotted with dark crimson in the centre, and marbled with purple near the outer edge; size, shape, and outline only middling. 20, shaded brown and yellow, irregularly spotted with crimson; size, shape, and outline only middling. 22, shaded purple, irregularly marbled with a few yellow marks; size large, shape and outline good, marking and colours rather novel but dull. 26, pale yellow, thickly set with irregular-shaped dark purple spots; shape and outline defective, size rather small. 27, pale yellow, irregularly marbled with shaded crimson; size, shape, and outline good; a nice variety. 28, pale buff, marbled and spotted with dull purple; size and shape tolerably good, outline slightly indented.*—*W W R.* 15, bright yellow, prettily spotted with crimson; shape and outline good; a very nice variety, but under-sized. 17, bright yellow, with centre pale brown, speckled with crimson; shape tolerable, size small, outline indented. 18, purple centre, pale straw-coloured margin; size small, outline indented. 20, pale yellow, irregularly spotted with shaded crimson; shape and outline tolerably good, size small. The other six had their numbers detached when received; their shapes, colours, and outlines, with one exception, are very passable, but all are under-sized.*—*G S H.* It is possible that your initials may have been misplaced; it is too late to correct it now.*

FUCHSIAS: *M K.* A very nice kind, but not sufficiently distinct from others now in cultivation.*

PELARGONIUMS: *Cantium.* Upper petals rosy purple, feathered with shaded crimson and dark crimson spots edged with white; lower petals pale pink near the outer edge; substance and margin good; shape middling; colours common.*—*N Giles.* Some Pelargoniums, producing as you state such very distinct coloured flowers in separate trusses on the same plant constantly for three years, is novel and interesting, although in other varieties flowers are to be frequently found of different colours upon the same truss. The colours of your flowers sent are very distinct; it looks as if two very distinct kinds were growing upon the same plant.*—*W W R.* 1, Colours good, texture rather coarse and a little uneven at the edge. 2, texture tolerable, colours not distinct, rather crumply in the upper petals.*

PETUNIA: *J W.* Colour bright violet purple; size good, but rather flabby.*

RHODODENDRONS: *H C.* Pretty, but not distinct from many now in cultivation.—*T H.* 21 inches round is a fine head of flowers, but what are their colour and size individually? upon these points much of its beauty and value depend. Young plants produce larger heads of flowers than old ones.*

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

NORWICH: 1849.

PROGRAMME.

THURSDAY, JULY 12.—Last day of receiving Implements, Seeds, &c., to be exhibited in the Implement Yard, and arranged by the Stewards for the Judges' Inspection.

TUESDAY, JULY 17.—Stock received in the Show Yard from Eight in the Morning till Four in the Afternoon.

WEDNESDAY, JULY 18.—The Implement Yard open to the Public from Eight in the Morning till Six in the Evening; admission, 2s. 6d.

The Judges to inspect the Stock and award the Prizes.

In the evening, after all the Judges have delivered in their awards, the public to be admitted into the Cattle Yard, on the payment of 1l. each person, at the Special Entrance; Members of Council and Governors being admitted by Tickets, to be purchased at the Finance Department of the Society, in the Guildhall. N.B.—Notice will be posted up over such entrance when the Judges have completed their awards.

At 12 o'clock at noon, the Rev. Edwin Sidney, M.A., to deliver a Lecture in the County Court, "On the Parasitic Fungi of the British Farm;" and at Four o'clock in the afternoon, Professor Simonds, of the Royal Veterinary College, London, to deliver a Lecture in the same place, "On the Anatomy, Physiology, and Diseases of the Organs of Respiration of Domesticated Animals, with particular reference to Pleuro-Pneumonia in the Ox." Members and their friends admitted to these Lectures by free tickets, to be obtained of the Secretary, at the Guildhall. Doors open half an hour previously to each lecture.

At Six o'clock the Council Dinner in St. Andrew's Hall, at which will be read the Judges' Award of Prizes, with the exception of the awards of Prizes for Horses, which will not be announced till the following day.

THURSDAY, JULY 19.—The Cattle and Implement Yards open to the Public from Six o'clock in the Morning till Two in the Afternoon; admission 2s. 6d.; and from Two till Six in the Evening, at 1s.

The Great Dinner of the Society in St. Andrew's Hall, at Four o'clock; doors open at half-past Three.

FRIDAY, JULY 20.—General Meeting of the Members in the Guildhall at Ten o'clock, in the forenoon.

* The Cattle and Implement Show Yards are situate on the Old Heath Field, about one mile South-West of Norwich, on the Ipswich Turnpike Road.

PRESIDENT, THE EARL OF CHICHESTER.
STEWARDS OF DEPARTMENTS.
Cattle—Mr. KINDER, Mr. HUDSON, Mr. STOKES.
Implements—Mr. THOMPSON, Colonel CHALLONER, Hon. Capt. DUDLEY PELHAM.
Finance—Colonel AUSTEN.
Sale of Tickets—Mr. HENRY WILSON.
Receipts and Admission to Show Yards—Mr. RAYMOND BARKER.
Council and Pavilion Dinners—Hon. ROBERT HENRY CLIVE, M.P.
General Arrangement of Show—Mr. BRANDRETH GIBBS.
By Order of the Council, JAMES HUDSON, Secretary.
London, June 5, 1849.

By the Regulations of the Society—
All Persons admitted into the Show Yards, or other places in the temporary occupation of the Society during the Meeting, shall be subject to the Rules, Orders, and Regulations of the Council.

N.B.—Sale of Tickets for the Great Dinner, to Members of the Society, at the Guildhall, from Twelve to Four o'clock on Wednesday, the 18th of July, and from Eight to Eleven o'clock on Thursday, the 19th of July; and to Members or their friends, from Twelve to Three on the latter day, price (including a pint of wine), 10s. each. The sale of Cattle Yard Tickets, at 2s. 6d. each, for Wednesday Evening, to Members of Council and Governors, at the Guildhall, on Wednesday the 18th of July, between the hours of Twelve and Four.

FOR AGRICULTURAL AND ROCK SALT, apply to JOHN MEREDITH, Salt Merchant, No. 10 Wharf, City-road Basin, London.

The Agricultural Gazette.

SATURDAY, JUNE 30, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, July 5—Agricultural Imp. Society of Ireland.
TUESDAY, — 10—Agricultural Society of England.
THURSDAY, — 12—Agricultural Imp. Society of Ireland.
FARMERS' CLUBS.—July 13: Hadleigh.—July 14: Peterborough.

THE London Farmers' Club have again refused to admit that THE EMPLOYMENT OF MACHINERY IN AGRICULTURE is for the advantage of the farm labourer. This subject had once before engaged their attention, and a most interesting discussion upon it has again lately taken place in their rooms. It terminated in the passing of a resolution, very similar to that of the previous year, of which none can complain except in so far as it is a so-called 'amendment' of one that was much more worthy of adoption. It is very true as they have said that "steam-power may be introduced to a much greater extent than it is at present with much advantage into the operations of agriculture in England, and that steam-power is far more economical than horse-power"—but it is, as we believe, also true, though they have refused to admit it, "that such introduction of steam-power would not eventually displace any amount of the manual labour now employed in agriculture, but direct it into a more profitable channel."

And among the reasons why this omitted clause should have been retained are the following:—The steam-engine as a substitute for hand-power in threshing, grinding, cutting, pumping, &c., is very rarely adopted, except as part of an altogether new system of farming. A farm or an estate hitherto cultivated with little energy is taken in hand—drained, subsoil-ploughed, limed, and cultivated on the alternate system of husbandry: the land is highly manured and large crops are produced—buildings are erected for their security or consumption—and a steam-engine is employed to diminish the cost of the additional labour which has become necessary. It diminishes a cost which would have rendered all these improvements unprofitable: but there are instances enough to prove that so far from diminishing it below the amount of the small expenditure that used to be incurred, the labour bill of the farm in question will have been permanently doubled during the period of these alterations—alterations, we repeat, which frequently could not be profitably effected were it not for the acknowledged greater cheapness of the steam-power subsequently employed to develope their results.

And even in instances where no such entire renovation of system in farming is to take place, the interests of the labourer will not suffer by the substitution of steam-driven threshing machines for flails—the diminished cost involves a saving which, in the case of a man energetic enough to take such a step, is not likely to lie idle in the bank:—a more thorough cultivation of the land—a better drainage—better crops—more cattle—all involving additions to the weekly labour bill—are the natural consequences here, just as in the other instance.

But the truth of the resolution refused by the Club may be fairly inferred from that of the resolution which they accepted. Everything which cheapens any of the processes, and therefore the products of any business, tends, by increasing the demands for those products, to attract capital to their manufacture, and the invariable result of that is to give increased scope for the employment of labour. This is a real chain of cause and effect, and it is worthy of more confidence than it generally receives. Steam-power and machinery having cheapened cotton goods, have gathered together a Manchester and a Glasgow of labourers to meet the enormously increased demand for these manufactures: and what is true of dress is true of food: for though a nation, like an individual, when fully fed does not ask for *more*, it may ask for *better* food: and we have thus two distinct grounds on which to expect that, by cheapening the cost of food, we shall increase the labour of its manufacture. There is more labour employed in the ultimate than in the immediate products of agriculture—a shilling's worth of beef or bacon represents more labour than a shilling's worth of Carrots or Potatoes; and while the ill-fed portion of our population will meet the cheaper food with a demand for increased quantity, those who are already well fed will meet it with a demand for better quality. Both, through the agency of machine-made cheapness, give occasion for the larger labour bills of an increased manufacture.

SEVERAL parties having expressed a wish to see a detailed account of the Annual Average Produce of the Stock and Crop on the FARM OF AUCHNESS, as mentioned at page 24 of Mr. CAIRD'S pamphlet on "High Farming," it is here subjoined.

CORN CROPS.					
1350 bushels of Oats, at 2s. 6d.	...	£168	15	0	
1980 bushels of Wheat, at 6s.	...	594	0	0	
					£762 15 0
GREEN CROPS AND GRASS.					
378 tons Potatoes, at 40s.	... ...	756	0	0	
Difference of price paid and price received for 130 cattle, fed off during the year, at an average advance of 6l. 10s. each	... ...	815	0	0	
Produce of 5 cows	... ...	50	0	0	
150 sheep, at 12s. each, for winter feeding	... ...	90	0	0	
3 young horses, at 5l. each, per ann.		15	0	0	
					1,756 0 0
					£2,518 15 0

In reference to questions put regarding any peculiar advantage possessed by the farm of Auchness, which might render the plans of its tenant unfit for general adoption, Mr. CAIRD has furnished the following information, which we take from the "Agricultural Journal."

"Port Logan is a small fishing village, with a harbour, distant 120 miles from Glasgow or Liverpool. The farm possesses no advantage in its proximity to this village, which is not shared by most farms within a few miles from the coast in any part of the island, and in this respect its situation is not to be compared with localities affording railway accommodation. The amount of the landlord's expenditure in improvements, other than drainage, was about 900*l.*, laid out in the erection and improvement of farm buildings."

FARM ACCOUNTS.

I AM glad to find that whilst on the one hand the eyes of practical men are fully awake to the importance of agricultural improvements, and to the judicious union of science with general farm management, yet on the other they are not closed against the question of the cost of such improvements. There is such a thing as paying too dear for one's whistle, and in no case, perhaps, is the truth of the axiom more apparent than in farm matters. Often when riding over the farms of our modern improvers, and hearing their marvellous tales of fathom-deep drains, peck per acre seed Wheat, and other agricultural extravaganzas, I have longed for a sight of the balance sheet at the year's end—no "cooking of accounts," remember! for unless such improvements will stand the £ *s. d.* test, they are worse than useless to the many who farm for a living, and not for mere show. Agricultural experiments must be based on utility. Show me the man who, by his industry, ingenuity and carefulness, contrives to fill instead of to empty the purse. He is the mentor for me. His experiments may be safely followed, because they lead to profit and have their origin in something better than mere vain glory. Far be it from me to condemn the use but only the abuse of experimental farming. No one is a warmer advocate of the Royal Agricultural Society, nor a firmer believer in the good it has done and will do. The benefit it has conferred, by improved agricultural mechanism alone, justly entitles it to the gratitude of the farming community. I would by no means discourage high farming, provided always that the high farmer keep a tight rein on his favourite hobby, and not suffer it to get the upper hand of him. A judicious system of high farming I consider the best and only legitimate remedy for low prices, but of course this implies command of an adequate capital; for I am afraid the assertion of Mr. Tuke (see *Agri. Gazette*, May 12), is too true, that "nine out of ten of the farmers are not possessed of more than half the capital required for properly stocking and cultivating their farms." This is sad silly work; and where is the good of it? Why should a man having enough, and not more than enough, to take 100 acres grasp at 200? Be the times ever so good, he cannot farm half so well as he ought. But in the event of bad times he is sure to go to the wall. Then comes the question, what is an adequate capital? Whilst some contend for 10*l.* an acre (and I confess myself of this class), as not too high a sum to stock and carry on a farm, others are content to wriggle on with half; and your real muddler with perhaps a fourth of the money: making a given sum, say 1000*l.*, serve for each of the following sized farms:

Capital.		Per acre.	Extent.
£1000	...	£10 0*s.* 0*d.*	100 acres.
	...	5 0 0	200 ,,
	...	2 10 0	400 ,,
	...	2 0 0	500 ,,

Nay, instances have occurred of adventurers of more than ordinary pig-headedness diluting their capital over a still larger surface; and what is the result? Much about the same as if I, having manure enough to dress one acre, were to dribble it over five acres. In both these cases my returns would probably correspond with the outlay, whether of money or muck. In other words, 400 acres on the Starving system would yield but little, if any, more than 100 acres well fed and made the most of.

These observations are preliminary to the main object of this article, which is intended to exhibit and enforce the necessity of a proper system of farm accounts, but especially such a system as will show at a glance the balance at the end of each year of profit or loss on the undertaking. I admit that to look such a statement coolly and dispassionately in the face requires some nerve, but no prudent man will hesitate as to the propriety of doing so. In prosperous times it will be satisfactory to know the speculation is answering; and surely in a reverse of times it is not less essential to ascertain the amount of loss, preparatory to relinquishing a ruinous concern. But if there is all this reluctance to look into one's own affairs, how much greater will there be to exhibit them to others? This, indeed, amply explains the cause of the scarcity of authentic statements of farm accounts. At best farmers are but sorry accountants. Those who have the will may want the power; and *vice versa*, those who have the power may lack the will to submit their private affairs to public inspection. Whenever, therefore, an instance does occur of a true and unvarnished statement of farm profit and loss, it cannot fail to command attention; for, be the balance on which side it may, it must do good, either by inciting to imitation by its excellence, or deterring by its inefficiency.

I have been fortunate enough to obtain possession of two such statements, copies of which I am enabled, through the kindness of their authors, to submit to you for publication. I will vouch for the accuracy of their details, and the strict regard to truth which pervades them. The first is that of a gentleman farming his own estate in the county of Norfolk. It comprises 263 acres under the plough, and about 87 acres of pasture, plantations, yards, &c.—total 350 acres. Of this farm there are three balance sheets, numbered as under. I take them in the order in which they were handed to me:

No. I.—STATEMENT of the yearly average out-goings and income of a farm for the period of 11 years, from Michaelmas 1826, to Michaelmas 1837. Entry at Michaelmas 1825.

OUT-GOINGS.	£	*s.*	*d.*
To Seeds bought	49	2	3
Bullocks, 238*l.* 15*s.* 5*d.*; Sheep, 253*l.* 1*s.* 8*d.*	491	17	1
Cow stock, 5*l.* 2*s.* 5*d.*; Pigs, 1*l.* 8*s.* 2*d.*	6	10	7
Horses bought	66	0	3
Hay, Oilcake, and Straw ditto	52	17	0
Horse, Cattle, and Pig corn ditto	47	10	6
Manure ditto...	16	6	8
Tithes, 91*l.* 12*s.* 10*d.*; Poor-rates, 98*l.* 11*s.* 10*d.* ...	190	4	8
Church-rates, 1*l.* 14*s.* 10*d.*; Surveyor's, 8*l.* 4*s.* 9*d.* ...	9	19	7
Insurance	2	8	1
Implements (new)	15	6	4
Labour on land, less 100*l.* as landlord...	510	16	0
Thatching	7	19	0
Salesman, Drover, Farrier, and Miller	30	11	2
Wheelwright, 15*l.* 8*s.* 0*d.*; Harness, 9*l.* 11*s.* 5*d.* ...	24	19	10
Blacksmith, 36*l.* 16*s.* 6*d.*; Carpenter, 10*l.*	46	16	6
Small Tradesmen, 16*l.* 0*s.* 5*d.*; and Sundries, 27*l.* 16*s.* 10*d.*	43	17	3
	£1613	2	11
Balance for Rent	79	0	3
	£1692	3	2

11 years' average growth.	Income.	£	s.	d.
9 a. 1 b. = 29 bushels	Wheat sold (11 years' average price, 19s. 2d.)	571	18	0
6 a. 1 b. = 31 bushels	Barley sold (average price, 10s.)	370	8	10
Beans, 6l. 3s. 7d.; Peas, 1l. 18s. 9d.		31	2	4
Bullocks sold, 412l. 1s. 8d.; Sheep ditto, 317l. 18s. 7d.		735	19	10
Dow stock sold, 28l. 10s. 3d.; Pigs, 50l. 10s. 4d.		74	0	7
Wool		86	2	4
Horses sold		46	0	8
Milk, Butter, Fowls, and Eggs		74	3	6
Harvest, 2l. 18s 2d.; Sundries, 5l. 16s. ...		8	16	2
Straw, 1l. 6s. 4d; Wood, 2l. 8s 11d.		3	15	5
Allowance for keep of extra pleasure horse ...		40	0	0
		£2042	3	2
Deduct 10 per cent. interest of capital, 3500l. out of which tenant's housekeeping and family expenses are to be paid		350	0	0
		£1692	3	2

No. II.—STATEMENT of the yearly average out-goings and income of a Farm for the period of 11 years from Michaelmas 1837 to Michaelmas 1848.

Out-goings.	£	s.	d.
Out-goings as per No. I.	1882	6	5
Balance for rent	222	7	6
	£2104	7	11

11 years' average growth.	Income.	£	s.	d.
8 c. 0 b. 3 pks. = 32½ bushels	Wheat sold (11 years' average price, 30s. 8d.)	782	18	2
30 c. 0 b. 2 pks. = 40½ bushels	Barley sold (average price, 17s 1d.)	423	5	1
Sundry other receipts, as per No. I.		1398	4	8
		2504	7	11
Deduct 10 per cent. interest of capital (4000l.), out of which tenant's housekeeping and family expenses are to be paid		400	0	0
		£2104	7	11

No. III. STATEMENT of the yearly average out-goings and income of a Farm for the period of 22 years from Michaelmas 1826 to Michaelmas 1848.

Out-goings.	£	s.	d.
Out-goings, as per Nos. I. and II.	1743	2	0
Balance for rent	157	13	7
	£1900	15	7

22 years' average growth.	Income.	£	s.	d.
7 a. 3 b. 0 pks. = 31 bushels	Wheat sold (22 years' average price, 29s 3d.)	652	8	4
9 c. 3 b 1 pk. = 39½ bushels,	Barley sold (average price, 16s 8½d.)	401	17	0
Sundry other receipts, as per Nos. I. and II. ...		1221	10	3
		2275	15	7
Deduct 10 per cent interest on tenant's capital (3750l.) out of which housekeeping and family expenses are to be paid		375	0	0
		£1900	15	7

In Nos. II. and III. I have not thought it necessary to repeat the items of expenditure and income, but simply to refer to No. I. for the different heads, which are pretty much the same in name, though not in amount, in each of the three statements. The grand totals I have every reason to believe are correct. One fact in connection with these accounts cannot but attract the attention of all practical men, and that is the small amount, after paying all expenses, which is left for rent. I have no doubt that this farm would readily fetch in the tenant market 25*s.* an acre, and surely one might suppose that so marketable a commodity must be a safe speculation; for, calling to mind the old couplet,

"The real value of a thing
Is just as much as it will bring,"

We straightway proceed to act upon the maxim, and give, or agree to give, a rent, not exactly based upon our own judgment, but upon that of our fellow competitors; and because, if we do not give the price, "Smith, Jones, or Robinson" will. Well, the farm is hired; and, for a time at least, the rent is paid, on the terms agreed upon; but how? Not out of the real, legitimate proceeds of the concern, but by some *hocus pocus*, not exactly comprehensible to ourselves, and totally incomprehensible to every one beside. It is neither more nor less than filched out of capital—here a little and there a little; till, in the long run, we realise the woeful truth of another sage maxim, that

"Many a little makes a mickle."

And we quit the concern with a dreadful hole in the bottom of our pocket, through which has oozed a pretty considerable modicum of the capital aforesaid; and, strange to say, right into the pockets of the landlord! He, good man, grieves to part with a tenant who always forked out "not wisely, but too well;" but is soon consoled by the appearance of another, who is equally ready to enact the part of his predecessor, and "the last fool is bigger than the former." Instead of 25*s.* an acre, about 10*s.* would appear to be nearer the mark; and even at that the thing is no great catch. I will now exhibit the balance-sheet of a tenant farmer. This farm is also in the county of Norfolk—part strong clay and part lightish loam and gravel; quality, hardly an average.

STATEMENT of the yearly average out-goings and income of a *farm* of 300 acres arable, 60 acres upland pasture, and 52 acres of marshes, for the period of 7 years from Michaelmas 1813 to Michaelmas 1820. The entry took place at Michaelmas 1813.

Out-goings.	£	s.	d.
Labour and servants' wages	403	2	5
(1) Tradesmen's bills, house and market expenses...	271	4	5
Manure bought	11	4	9
Poor-rates, surveyor's and parish expenses	57	12	6
Tithes	61	17	8
Property and assessed taxes	41	12	9
Seed, horse corn, and Wheat for family	228	10	10
(2) Rent	471	8	7
Interest of capital, 5 per cent.	175	0	0
	£1721	14	1

(2) The farm so full of game, that reckoning the damage at only 1 coomb an acre of Wheat, Barley, and Oats, the average loss would be 28*s.* 9*d.* per acre at the then prices, on the lands under those crops. Turnips also much injured. The farm in a bad state, from want of draining and ditching. Labour 2*s.* 6*d.* to 3*s.* a day. Seed Wheat (1812) averaged 55*s.* per coomb, Barley 35*s.*, and Clover 84*s.* a bushel. A mare and foal bought at this farm auction Michaelmas 1812 cost 75*l.*

(1) Wheelwright's, blacksmith's, carpenter's, harness, coals, malt, meat, and insurance.

(2) Rent the first two years was 525*l.*, or 35*s.* 3*d.* an acre, but afterwards reduced by valuation to 450*l.*, or about 30*s.* 10*d.* an acre.

7 years' average growth.	Income.	£	s.	d.
6 c. 3 b. 2 pks. = 27½ bushels	of Wheat (7 years' average, 34*s.* 1½*d.* per coomb)	805	19	3
8 c. 2 b = 34 bushels	of Barley (7 years' average, 17*s.* 4½*d.* per coomb) ...e	281	8	0
Oats		69	5	7
Beans 36*l.* 18*s.* 9*d.*, Peas 11*l.* 7*s.* 7*d.*		48	6	4
Potatoes 24*l.* 5*s.* 8*d.*, seeds 17*l.* 5*s.* 9*d.*		41	11	5
Dairy, fowls, &c.		84	2	2
Rent of marsh lands		12	14	8
Farm pupil		117	17	2
Grazing (beast) account		138	1	1
Sheep ditto		138	8	0
Pigs		40	13	7
Horses		18	15	5
		1368	0	3
Balance — yearly loss for 7 years, or nearly 10*s.* 6*d.* per acre		163	13	10
		£1731	14	1

The above statement includes the household expenses and maintenance of the tenant and his family; the whole being so interwoven with the other charges on the farm as scarcely to be separable therefrom. Nor is there is anything unfair in this; the servants are employed on the farm, and must be paid by its produce; their maintenance, therefore, is a legitimate item in the farm account. I am aware that accounts like the above may be cavilled at, as indicating defective management, that the 30 bushels an acre of Wheat ought to be 40, the cattle and sheep accounts nearly doubled; and, in short, every item of farm produce very considerably increased. I do not pretend to assert that the receipts from each and all of these several sources have reached their maximum; but I do mean to say that any material increase in the produce of such land, will require a corresponding increase of capital, and where, in these times, is such to come from? "Oh," say the advocates for high farming, "borrow of the landlord; 'tis his interest to uphold the system. He cannot do otherwise than assist in a work obviously so much to his own advantage." With deference, this is but sorry advice. Admitting that the landlord has the means (the probability being entirely the other way), does it follow that the tenant ought, in common prudence, to avail himself of those means? At all events the matter requires serious consideration. Every pound borrowed must in due course be repaid, and whether to the landlord or to an utter stranger, matters not a single farthing. It is so much added to the rent, and of course to the risk, of the undertaking. All such additions to capital ought to be shunned as a pestilence. To illustrate this in a familiar manner: I have a given capital, say 2000*l.*, which I fancy I can employ to advantage on 100 acres of land; in other words, to devote 20*l.* an acre to stocking and cultivating it. My neighbour takes another hundred acres, with a capital of 1000*l.*, or 10*l.* an acre only; but, impelled by a spirit of emulation, he too must needs try *his* hand at high farming; and if my stock and crop amount to 20*l.* an acre, why should not his? Simply because my stock is all my own, and one-half of his belongs to some one else; he has run in debt for it; and he has this additional 1000*l.*, principal and interest, hanging over him to the end of his term. The sum of what has been here said is this: Rents are higher than figures will justify; for if paid in full, they are paid out of capital. The modern system of high farming is no doubt working well; but it implies an adequate capital of one's own. No borrowing. To recommend increased expenditure to a person of diminished and still diminishing means, appears little short of cruelty. Much on a par with an injunction to a poor famishing labourer to take all the port wine and nourishing things he can swallow; the *modus operandi* as to how he is to come by them being studiously kept in the back-ground. Still the system of high farming judiciously begun, and carefully persisted in, will in time tell its tale; and, as water poured down a pump raises a supply from the spring, so will money, distributed freely, yet with discretion over a farm, produce a corresponding profit to the distributor. But this implies time; not the mere whim of the moment, indulged in for a year or two and then laid aside, from a sudden fit of economy, perhaps as ill judged and mischievous as the opposite extreme; but a regular, systematic course of good husbandry, implying a liberal, and what by some may be called a lavish expenditure; always proportioning the amount invested to the nature and quality of the soil; so that, barring accidents of season or other uncontrollable causes, the returns may be reckoned upon with tolerable confidence, and that from the first to the last year of a long lease. T.

ON THE VENTILATION OF STABLES.

AT a late meeting of the Highland Society Mr. Neil Ballingal, Farmer, Seggie, Kinross-shire, read the following paper on this subject:—The experience of modern times, both as respects man and cattle, proves that nothing has greater influence upon health and longevity than the nature of the air which is ordinarily breathed. The air expired from the lungs is naturally and necessarily impure, and to breathe the same air continuously is to inhale what acts on the system as a poison. More especially as regards my immediate subject, there can be given no more convincing proof of the imperfection of the system at present generally pursued than the effect produced by the various agents in operation, even on the timber and roofing of stables and byres. Every one acquainted with the subject knows that from imperfect ventilation, the plastering and lathing of roofs fall away in flakes, and are reduced to rottenness by the constant action of the condensed steam. So much is this the case, that it is no unusual thing, in the course of a 19 years' lease, for it to be necessary to re-roof a byre, if home timber has been employed. Now, this action indicates a want of power to carry off the impure air yielding the condensed steam, that must prove deleterious, in the highest degree, to the cattle; and we need not wonder, in these circumstances, that pulmonary complaints among cattle are alarmingly on the increase. It is with a view to lead others to contribute their experience on a subject so important to the agriculturist, that I venture to submit what has occurred to myself regarding ventilation. The problem to be solved seems to be, how shall we, at least expense, both with regard to the housing for cattle at present constructed, and to future erections, introduce a system of ventilation that shall produce a sufficient quantity of wholesome air, without throwing in so much as shall act injuriously on the bestial? As to future erections, I leave that for after discussion, and for the investigation of men who shall, to practical acquaintance with agricultural subjects, add a scientific knowledge of the properties of air and the due requisites of ventilation. My humble aim is to give an account of what I have done successfully in my own case, and to add a suggestion or two which I think may be useful to others.

The subject of my experiment was a byre, about 40 feet long by 16 broad, the height of the side walls being 8 feet, and the roof being tiled, with lath and plaster under the tiles. I found it in a state of complete disrepair in the roof, the wood falling, which had been rendered rotten by the condensed breath of the cattle in continual operation on it. I first raised the side walls 2 feet. At the head of each animal, I placed an air slit 2 inches deep, with 1 foot of horizontal length externally, and widening till internally it had a horizontal length of 18 inches. Externally, this slit was about 8 feet from the ground, and it rose gradually till, in the inside, it was 10 feet. Under the ridge rows of tiles on both sides of the roof, the tile lath alone was put on, leaving these rows uncovered with lath and plaster from end to end of the byre. The well known property of heated air to dilate and ascend, and that of cold air to descend, sufficiently accounts for both my reasoning and adopting this process, and for its effects. The gradual rise of the cool air through the slit provided for its subsequent ascent, for a brief space, so as to cool the heated air passing from the animals' lungs, before it should strike the roof, and prevent it from depositing the moisture which it contained. By the slit being gradually widened, I aimed at spreading the air over as large a surface as possible, and without introducing too much cold air, giving the most extensive effect to what was introduced. The removal of the plaster has provided for the egress of that portion of the heated air which ascended to the ridge of the roof.

Whether I was scientifically correct in my reasoning or not, I will not pretend to say. But the result has been most successful; my cattle have, since that time, been uniformly strong and healthy. The air of the byre is cool and refreshing in all weathers; and, what affords a palpable proof of the excellent effect of the system, the wood of the roof which, as has been mentioned, gives way soon in all ordinary cases, is, at this moment, as clean, white, and sound as it was on the day in which it was put up two years ago. What strengthens my belief of the working of the process is an apparent exception. If a perpendicular line be drawn from the side wall to the couples, the wood in the small triangular space between the point where that line would strike the roof and the side wall, is evidently discoloured, thus proving that no sufficient current of air acts upon the spot, and is wanting on that spot only. Still, it is desirable to attend to this, small as the discoloured spot is, and I beg leave humbly to submit a remedial plan, on which I intend to act myself, and which has been tested by Mr. Bryson, factor on the estate of Ballochmyle. I may mention that I submitted a model of the plan so tested at the Highland Society's Agricultural Show, at Edinburgh, in August last. One great advantage it appears to me to possess is, that it is applicable to all existing buildings, whether slated or tiled, and that the expense will be very inconsiderable. The simplicity of the plan consists of:—1st. In the case of a slate roof, I propose as the most economical plan, to raise the lower edge of the slating by means of a board laid on blocks on the outer edge of the wall, leaving apertures of about an inch high between the board and the wall, which will admit a free current of air. The air will pass under the outer board and lower edge of the sarking, in which a horizontal slit is to be cut of about 1 inch wide, so as to admit its free ingress. To the whole scheme double apertures are necessary. The second or upper aperture, in the case of slate roofs, is thus provided underneath the second row of slates; on both sides let the sarking be removed for the space of about 4 inches from end to end. This leaves board enough to which to nail the slates; and the aperture allows the heated air to escape

gently through the centre of the stalls. In cases where cattle are tied with their heads to the gable ends, slit openings up the gable, leaving sufficient strength of walling to stiffen the roof, will answer the same end. 2d. In the case of a tile roof. In the lowest row of tiles take off the under lip of plaster lath. This will admit a sufficiency of the external and wholesome air through the curved recesses of the tiles. Then for the second aperture—under the ridge or topmost row of tiles on each side, leave that row, as in my experiment, free from lath and plaster, from end to end of the byre: there is thus provided a sufficient aperture for the escape of the heated air.

It is surely unnecessary to say one word of the great economy of this plan. It provides, be it noticed, two apertures. I do not think it necessary to enlarge on the importance or indispensability of this. The principal error of our present mode of ventilating is the neglect of the principle, that we must leave a space for the heated air to have egress as well as a space for the cold air to have ingress. If this is not provided for, at the best the two currents meet, and there is nothing done. The unwholesome air is only diluted, and it depends on circumstances to what extent the dilution is carried. In our ordinary system, the shutting of a hole or door confines the heated air, and all is at the mercy of caprice. The present temperature of a byre, I can say from experience, is by my method kept up, so as to promote the comfort and health of the cattle; and I now submit it as the result of experience, and as my contribution to the improvement of a branch of agricultural science which has hitherto been too much neglected.

Home Correspondence.

The Steam Engine is destined to be one of the most important agents in the hands of the British farmer to enable him to meet foreign competition, so that every improvement that will simplify it and make it more effective must of course be valuable. Your knowledge of the steam-engine induces me to make you acquainted with improvements I got possession of whilst encountering the difficulties I met with in a non-condensing one I have erected here. When I commenced working, I found my engine consumed more fuel at 14*s.* per ton than would pay; the fault I found belonged to the slide valve which had barely a quarter of an inch lap; it would not do its work without the steam being too high to be safe, and the back pressure was so great, that when the steam was high, it required two at the fly-wheel to pull it over the centres. Whilst contemplating what had best be done, I met with a paper read before the Polytechnic Society of Liverpool by Mr. E. Woods, C.E., from which I learnt that, previous to 1838, all the locomotives of the Liverpool and Manchester railway had slide valves with only $\frac{1}{16}$ of an inch lap, and the consumption of coke for a train was 49 lbs. per mile; since then the lap has been gradually increased to an inch, with an increased saving of fuel each time, so that in 1845 when every engine belonging to the company had an inch lap given to the valves, the exhaust passage put an inch open at the end of the stroke, and all the passages greatly enlarged to exhaust quick, the consumption was reduced from 49 lbs. of coke with the first valve, to 15 lbs. with the last when the last alteration took place; and supposing the stroke of the piston to be divided into 100 parts, the steam was cut off at 79, it expanded from 79 to 95, when it began to escape into the atmosphere from 95 to 100, which entirely did away with all back pressure. After that method I altered my valve, it then worked much stronger with a great deal less pressure of steam, using less than half the quantity of fuel. I afterwards learnt that at Messrs. Beale's flour mills in Bradford-street, Birmingham, there was one of Mr. Remond's patent non-condensing steam-engines, of only 10 inch cylinder, working with a pressure of 38 lbs. on the square inch, making 75 revolutions per minute and 2 feet stroke, and consuming only one ton of slack per day, which costs them only 3*s.* per ton, which drives four pairs of 4 feet mill-stones 120 revolutions per minute, the dressing-mill, and a steel nibbling mill at the same time; that it was tested by the Indicator, and gave 25-horse power, which agrees with the work it does. On my way to London, last September, I saw the engine doing all the above work; it is a plain beam one, and it appeared to do its work very smoothly. The great power of this engine is gained by adopting ports and passages about four times larger than is generally used, and giving as much lap to the valve as possible. Mr. Beale's engine had Mr. Remond's independent slide valves, but he states that the common slide valve has nearly the same effect. My attention was called to another engine by reading the report of the proceedings of the British Association last summer at Swansea, wherein I found a statement of Mr. Price, one of the Neath Abbey Company, of their having built a vessel called the Neath Abbey, which plies between Bristol and Neath, whose engines work with a pressure of 45 lbs. on the inch, but, in the place of discharging its waste steam into the atmosphere, it is made to go into a condenser, and pumps the condensed water back again into the boiler. Mr. Price stated that the Neath Abbey could work round the Devonford, a large steamboat out of Bristol. To see the Neath Abbey at Bristol, induced me when in London to go round by Bristol to Birmingham, instead of going direct to the latter place. I found the boat to be an iron one propelled by the screw, which was worked by two 12-inch cylinders, with a condenser for each, placed inside the vessel, having free ingress and egress for the sea water (as the boat went along) to go through the pipes of the condenser. There were 62 brass pipes, 64 inches long, and 1¼ inch diameter, open at both ends, put into a steam-tight circular sheet-iron condenser, and instead of the steam puffing away into the air, was conveyed hither and fully condensed by coming in contact with the pipes, kept constantly cold by the sea-water running through them. The condensed water was pumped back into the boiler by a pump with a 4-inch working barrel, and 6-inch stroke, and thus the water was kept perfectly sweet. There were two boilers, each having 104 tubes of 5 feet long, and 2 inches diameter; they consumed 5 cwt. of coals per hour, and the engineer called them two 30-horse engines. When in London I particularly examined the engine that is driving all the machinery at the Polytechnic; it is one that uses high steam in the first cylinder, it is then expanded into the second cylinder, after which the steam is condensed in the usual manner. the maker guarantees them to work with 3 lbs. of coal per horse power per hour. This is certainly very economical, but I am sadly afraid it is too complicated to put into the hands of a farm labourer, but if a direct acting non-condensing engine with a condenser placed in a running stream, or where water could be pumped to supply the pipes of the condenser, it would be more suitable for the farmer; but it should have large ports and passages, and as much lap as could be gotten for the valve. *Richard Nicklin.* [The middle port should be of the same length but double the breadth of either of the others, which will enable the engine to exhaust as much as possible.]

Transmutation of Grain.—Last July, in the Isle of Wight, near Ventnor, the enclosed ear of Wheat was gathered with an ear of Oats attached, which was then perfect, but from having travelled about in my writing-case, part has been rubbed off; enough remains to show this curious sport of the Wheat. [It is a very curious case.]

Wheat ricks on a Rail.—Mr. Arthur Young, in his "Farmer's Calendar," published in 1804, says (p. 232), that he cannot suppose any person will now go to the heavy charge of barns and capped stones, when less money will give him greater conveniences. He recommends "a railway;" that each rick should be placed on wheels, fitting "a circular railway," and be brought by horses (he says four), as each rick is wanted, under a cover to a threshing machine. See also his "Annals of Agriculture," vol. xxxiii., p. 488. As all railway designs, wheels and other things, are better understood and are much cheaper now than in 1804, how is it we have no designs for erecting ricks on wheels and rails—or do you know of any instance of the practical application of Mr. Young's very ingenious, and, apparently, very useful and convenient suggestion? *T. F.*

Practice with Science.—Of all the inventions of science, there is perhaps none greater than what has been displayed in the construction of agricultural implements. Our mechanical contrivances were for a long time confined to our manufacturing operations. The Royal Agricultural Society gave a new impulse to economising the labours of the farm, by offering prizes for implements of husbandry. The incentive thus held out has been the reverse of a failure. On the first meeting of the society at Oxford, there were only about 50 implements shown; on the last at York, 1500. The spirit of improvement exhibited in this line has kept pace with the scientific movement now going forward in every department of farming practice. Increased facilities have been given for the timely preparation of the land for depositing the seed in a well pulverised seed-bed, with exactness as to depth and regularity, with a measured quantity, be it desired more or less, on the flat or on the ridge, with manure or without manure, all by the same machine. These fertile inventions have left no excuse for a continuance in the old worn-out ways of antiquated imbecility. The prices of agricultural produce are daily lowering, from our having been placed on a footing of equality with those countries that can grow their corn at such an immensely cheaper rate than we can possibly do. It therefore becomes us to take advantage of all the means within our reach, to improve the sources from which profits spring, and to multiply the return of corn on our land. In the southern parts of the kingdom, and in Scotland, agriculture may have reached a higher standard than with us. In the more northern districts there cannot be a question that the produce from land may be infinitely increased, and thus the present amount of rent maintained. To those who are inclined to take a more gloomy view of things than perhaps circumstances warrant, some prospect of a more cheering description may be held out. We should not forget that about the close of the last war, prices were forced up to an extraordinary, and what may be considered an unnatural height. A change came on not suddenly, but gradually. Wheat fell from 120*s.* the quarter, to Sir Robert Peel's pivot price, 56*s.* Yet did landed proprietors suffer so much from this as might have been expected? On the contrary they may be said to be as well off now as they were in the time of the high prices. They set their wits to work in improving their estates. If from the fall of prices they were obliged to lower their rents, the decline in the different articles of life made them some amends for this. The necessaries and even luxuries of life were to be had for one-half the money. This may not be the place to enter into a political discussion on free trade; but it may be of use to consider some alleviating circumstances, some counteracting expedients, by which the evils so much dreaded by some may be avoided. First and foremost is to improve the soil. Let those who have landed property introduce a better system upon it, by procuring tenants of a higher class, men of education, capital and skill. Let them set a good example in their own persons, by taking in hand a model farm. On this they may experimentise by trying all the best improvements of the present day. Let them begin by obtaining the most improved implements, and do this not hastily nor inconsiderately, but after consulting those who have had more knowledge and experience than themselves. These implements are no doubt expensive in the first instance, and it is a common notion that an amateur farmer will never make large gains. It is very probable he may, in the early part, farm to a loss, but if he is an opulent man, it will have afforded him one of the most noble, and it may be said moral recreations, which man, so restless in his pursuits, can enjoy; if he is a poor man, it may be expected that by persevering, labour, and attention, he will make his improvements pay, and his larger produce on his improved system bring a larger profit. The variety, ingenuity, and effectiveness of the implements of the present day greatly facilitate farming operations. Go back to the times of Lord Kames (New Husbandry, p. 22) and see what they were then. At a later period see the difference betwixt the old wooden plough and the iron one now used. We may then rise higher in the scale, and out of the 1500 implements exhibited at York, make a proper selection; this will enable a judicious cultivator to carry on a farming of the highest order. In these days low farming will never answer. It must be exploded or the owner must sacrifice his interests as well as his reputation amidst the forward movement of the times. Land undrained, with the ever reverting triennial fallow, is more a burlesque upon the art than an embelishment. Let the two methods be compared, and the result will be apparent and convincing. The expense of draining, being a permanent improvement, is not to be taken into the account; but when this is done, there is almost as much cost and labour in raising a bad crop of any kind as there is a good one. If the land is once made thoroughly clean, there is no great difficulty in keeping it so. It is allowing the weeds to grow, to shed their seeds, to multiply, as the Couch-Grass does, when it is cut into two by the plough, that does the mischief. Again, if the land be properly worked and brought into a fine state of pulverisation by the Tullian system, less manure will suffice. The great man alluded to, who may be justly called the father of tillage, raised good crops without any manure at all. What would he not have done, if he had all the advantages we possess! If instead of his rude implement, as it probably was, he had one of Messrs. Garrett's improved ones, if he had the cultivators, the scarifiers, the clod-crushers, and such various other instruments to work with, as the workshops of the present day would supply. Instead of his having his 35 bushels of Wheat on his unmanured acre, he would probably have had 60 or a great deal more. We are still quite in the dark as to the extreme capacity of the soil. Mr. M'Arthur talks of going for 100 tons of Turnips per acre, we should not think of less; Mr. Mechi mentions a few plants of Wheat grown in a garden, which at the same rate per acre, would yield 140 bushels. The common average per acre in many parts of the country is not more than 20 bushels. Is the difference betwixt the two to be accounted for from the established principles of cultivation, or from the common notions of the capacity of soils? *Law. Rawstorne.*

Forty-day Maize.—I have sown two plots with the seed Mr. Keene sent me; the first was sown on the 9th of May, in rich half-burnt sandy loam, with a good quantity of charcoal in it; well rotted manure was put on some of the seed previous to its being covered over, and leaf-mould over the rest. This seed did not show itself above ground until the 22d of May. The second quantity of seed was sown in two rods of stiff clay land, one rod being burnt with wood; the latter came up in about the same time as that first sown, the former is only just appearing, being 3 to 4 days later than that sown in the burnt earth. This latter sowing took place on the 11th of May, when the weather had become warmer, and a soft rain had fallen. I intend to put in some more; and I hope Mr. Keene's promise of its coming up in eight days will be fulfilled, as the cock-chafer has made his appearance. I feel much obliged to Mr. Jas. Cobbett for his communication, and since I cannot but think that my crop is an experiment, I should be very glad to put in practice any plan, short of glazing it, which "H." of Hants can suggest for forwarding it, if not too late. *T. A.*

Heart Clover.—I have often wondered why the Heart Clover—Medicago polymorpha, Linn., M. maculata, Smith—has not been more cultivated as spring feed for cattle and sheep, as it requires so little care. Nearly 30 years ago, I met with a small patch of it in a pasture, which is sometimes mown and sometimes grazed. It has continued flourishing and extending ever since, and at this time is in the highest luxuriance, and would afford a heavy crop if kept separately. Cattle are so fond of it that they will eat it as closely as possible, in preference to the sweetest Grass; but horses will not touch it, either green or as hay. It is very early, and will soon be in seed. It seems partial to a dry, rocky soil. I am satisfied that its value as an early feed is very much superior to the M. lupulina, and that any one who once tried it would not readily give it up. It is so remarkably tenacious of the space it occupies, that it entirely prevents the growth of every other plant. Not being an occupier of land, I have no means of proving its excellence on a larger scale; and can

therefore, I recommend it to those who have an opportunity, and I am certain they will not repent doing so. *Lambrook, June 4.*

Bruised Oats.—I am now giving bruised Oats to my horses. Will it be sufficient to give them the same measure of bruised Oats as heretofore of whole Oats; the weight is between one-third and one-fourth less. When moderately, but not hardly worked, I used to give them 8 feeds per diem, of 4 lbs. each feed of whole Oats. I now heap the measure a little, and it gives them 3 lbs. of bruised Oats at each feed. I am inclined to believe they will derive more nourishment, and thrive better on 9 lbs. of bruised Oats in the day, than on 12 lbs. of whole Oats. [We should think they would do as well.] That horses pass a considerable quantity of Oats undigested when given to them whole, I have a convincing proof at the present moment, having manured a row of Potatoes in the garden with horse-dung alone, picked so as to have no straw with it, and there is at this time a thick and even crop of Oats, coming up the whole way along the row. *C.*

Hoeing Tools.—This subject, opened by your intelligent correspondent Mr. Charles Berry, is a very important one, both horticulturally and agriculturally considered; but it is with the latter object that my present communication has more immediately to do. Horse hoes have of late been very greatly improved, and the excellent one of the Messrs. Garrett of Leiston, has achieved nearly all that can be required of that class of implements. Still they are all objectionable, by reason of their leaving an even and polished subsoil, beneath the cutting edge, instead of a broken and porous one. And they have this further disadvantage, that they only partially hoe the land on which they may be operating, that is to say, they only hoe the intervals between the drills, leaving the drills themselves, and of course a portion on each side of them (and unless the drilling be very admirably executed, a very considerable portion) untouched. Now I have contrived, and had a rake hoe at work throughout this spring, which admirably answers every purpose, for which the horse hoe is designed (I mean on flat work), and which, besides, does away with the disadvantages to which it is ordinarily subject; it is made thus: take any of the common lever horse rakes, take out the single tine which is inserted near the end of each lever, and substitute for it something like a three-pronged fork, whose three tines shall stand in angles of an equilateral triangle. Let every alternate lever have its fork inserted 12 inches in advance of the one next to it (by this means it is prevented from carrying the soil along with it, and stones &c. escape freely through it), so that the prongs of the hind fork work in the intervals between the prongs of the fore ones, and by this means every portion of the surface of the land is stirred without injury to the plant, and to what depth you please, by putting weights or not on the levers. A man with a single horse can thus hoe 10 acres in a day's work, and do it better than I ever saw it executed by any other means, leaving the subsoil broken and porous, and the surface in remarkably fine tilth. And by repeating the operation several times during the winter and spring, every weed may be eradicated, both between and along the drills. I need hardly say, that this occasional stirring of the surface is of great benefit to the crop. Thus you have an implement performing three very useful purposes. 1st. By re-inserting the single tines, a corn and swathe rake. 2nd. A rake hoe. 3rd. A very excellent, I may say unrivalled, seed harrow. I have another description of hoe for ridge work, which I reserve to another opportunity. *Frederick Phillips, Hall Farm, Brandon.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House, in Hanover-square, on Tuesday last, the 26th June. Present: The Earl of Chichester, President, in the chair; Hon. R. H. Clive, M.P., Hon. H. W. Wilson, Sir Francis Lawley, Bart., Sir M. W. Ridley, Bart., Sir J. P. Boileau, Bart., Mr. Baines, Mr. Raymond Barker, Mr. Bastard, Mr. Blanshard, Mr. Brandreth, Mr. Beale Brown, Mr. T. P. Browne, Mr. French Burke, Mr. W. Burroughes, Mr. Burton, Colonel Challoner, Mr. F. C. Cherry, Mr. Capel Cure, Mr. S. Druce, Mr. Foley, M.P., Mr. Kinder, Mr. Milward, Mr. C. E. Overman, Mr. Parkins, Prof. Sewell, Mr. Shaw (Northampton), Mr. Villiers Shelley, Mr. Slaney, M.P., Rev. T. P. Slapp, Mr. T. Turner, Mr. T. R. Tweed, Dr. Walker, Professor Way, Mr. Henry Wilson, and Mr. G. Wood.

The following new members were elected:

Paver, William, Peckfield, Ferrybridge, Yorkshire
Ives, Ferdinand, St. Catherine's House, Norwich
Jones, Sir Willoughby, Bart., Cranmer Hall, Fakenham, Norf.
Fletcher, Josiah, Norwich
Morant, George, Holme, Wareham, Dorset
Girdlestone, Robert, Kelling Hall, Holt, Norfolk
Batley, Benj. James, Lee-road, Blackheath, Kent
Roper, Samuel, Croxton, Thetford, Norfolk
Wright, Thomas, North Runcton, Lynn, Norfolk
Curtis, Rev. John, East Dereham, Norfolk
Freeman, Joshua, Dersingham, Lynn, Norfolk.

The names of 20 candidates for election at the next meeting were then read.

Fibres in Drains.—Professor Way having suggested at a former meeting that application should be made to the Rev. M. J. Berkeley, the distinguished philosophical investigator of the lower orders of vegetation, the Council were favoured on this occasion with the following reply from that gentleman, in reference to the nature of the vegetable fibre transmitted to him, and which had been taken by Mr. Little, of Llanvair, from a drain adjoining to a Mangold Wurzel crop:

"King's Cliff, June 25, 1849.

"There is not the least doubt that the fibrous substance you have communicated to me is the root of some phœnogamous plant, as the spiral and other vascular tissue most clearly indicates. It is quite certain that it is no fungus, or of the nature of the root-like bodies which are so common in mines. It is impossible, without an opportunity of inspecting the matter *in situ*, to say to what phœnogamous plant it is attributable; but I see no objection to its being the fibre of Mangold Wurzel, though a fibre of Beet-root from my garden exhibits rather annular than scalariform tissue. The one, however, is but a modification of the other, and the fibres growing in running water may be expected to show some slight difference. I received, not long since, a somewhat similar fibrous substance, doing great injury to draining pipes in South Wales. It came from Mr. Dillwyn Llewellyn, and a substance identical with the last from Mr. Moggridge, of Swansea. In both cases it was clearly the fibrous roots of some phœnogam which had found its way into the pipes."

The Council ordered their thanks to the Rev. M. J. Berkeley for the favour of this communication.

Maize.—Mr. Keene transmitted a specimen of the Forty-day Maize, grown in the open ground on the western side of the lake in St. James's Park. The seed was sown without manure, on the 21st of May, the whole of which, after germination, had suffered much in the first 20 days of its growth, from the daily nibbling of the first tender leaves by the pheasants kept within that enclosure, but is now rapidly recovering, as the pheasants had a week ago ceased to injure it. No rain had fallen since it was sown, and it could not properly be earthed up till after rain. The plants had risen an inch in height daily since appearing through soil. The continued east winds had been prejudicial to the growth of the Maize, but Mr. Keene considered the present weather so like that in the Pyrenees at the same season, that he had no doubt of ripe and valuable crops being obtained of the Forty-day Maize this year in England.—Mr. Burke and Mr. Slaney, M.P., reported favourably of their trials of the Forty-day Maize in this country.

Mr. Blanshard stated to the Council the successful result of his sowing Wheat and Rye mixed together, in the manner practised in the south of France, the crop yielding one quarter more of each grain than would have been obtained if separately sown.—Sir Francis Lawley mentioned that the same practice was adopted in some parts of Yorkshire, and that he had himself tried it with satisfactory results.—The Hon. R. H. Clive, M.P., presented a supply of water from his drains in Shropshire for analysis. Mr. Green communicated a statement on the application of bones as manure.—Mr. Marston addressed the Council on suggested improvements in threshing machines (on which the Council directed that Mr. Garrett should be requested to report).

The Council then adjourned (it being understood that the next Weekly Council would be held on the 10th of July, from 12 to 1; and a Special Council on the same day, at the latter hour. It was thought probable that no Council would be held on Tuesday next, in consequence of the holding of Quarter Sessions, throughout the county, on that day).

Farmers' Clubs.

London, *June 4*: *The uses of Machinery as applied to agriculture, and the advantages which would follow from its more general adoption.*—Mr. James Thomas, of Lidlington Park, Bedfordshire, said:

Exertion and economy may often carry an enterprising tradesman through difficulties; and in our profession, economy of time, economy of labour, and, I believe, a much more extensive introduction of machinery, may do much. Every doctor has his favourite remedy, and many have been prescribed for the present diseased state of British agriculture. Those who are ignorant of its practice or of its details tell you to buy more cake, to import more guano, to dissolve more coprolites, and thus to obtain greater crops. Sir, where all these resources prove remunerative, none can be more willing to apply to them than ourselves; but we all know that where the amount which is raised by such extraneous expenditure does not cover the outlay, such expenditure cannot continue; besides, were we to take a lesson from those who profess to be our guides—I mean the manufacturers—we shall find them, whenever the market is so glutted with their ware as to cause stagnation in their trade, not doing as they recommend us to do, work double time and produce more than ever, but prudently work short time until the market is relieved from its superfluous burden. But what has given these enterprising men such extraordinary success, which has enabled them to stock the markets of almost every country and city of this habitable globe, has been the wonderful economy which they have been able to introduce into their mills and their workshops by the ingenuity of their machinery, and by the cheap power of steam as applied to it; and so continuous is this thirst for improvement in this essential point, that every day leads to some new invention by which manual labour is saved, and the article produced at a yet lower rate. So far let us see whether we cannot copy from them alike in ingenuity and economy. The rare skill which the last 20 years has drawn forth from the makers of agricultural implements, must be alike a source of admiration and congratulation to all who have witnessed it. The stubborn clay receives the tilth of Turnip land under the persuasive power of a Crosskill's roller; and the wild sands of Norfolk and Lincoln heath find their enormous esculent crops under the influence of the manure drill and the cleansing of the horse-hoe. The science of mechanism amongst us is still making rapid strides; we no longer see in the best cultivated districts the tedious, wasteful, and laborious mode of separating the corn from the straw by the use of the flail, a mode attended with every disadvantage, subject at least to constant pilfering, and liable by lying long on the floor to become raw to the touch and musty to the smell; added to which, however honest and industrious the labourer might be, it was impossible for him to extract all the corn. By the abandonment of this tedious process and the substitution of the threshing mill, one great piece of economy was achieved. The work was better and more speedily performed, the sample was drier, advantage could be taken of the markets, and that drudgery which was once the fate of the labourer performed far better, either by horse or water power. How cheaply, by the means mentioned, can threshing be performed let the following statements show: "Steam threshing machines (to the editor of *Bell's Weekly Messenger*), Ury, N. B., Nov. 28, 1812.—Sir, observing in your *Messenger* of the 16th that a Derbyshire farmer is puzzled to understand how grain can be threshed with steam power at 6d., 9d., or 1s. per quarter, I beg to give him the following statement, taking a rick of 20 qrs. of Barley, as proposed by him, although he has fixed upon the most tedious grain to thresh. I have had two steam power threshing mills on my farm for some years, of nominally six-horse power, but in reality far beyond such nominal power. I have also on a farm a threshing mill worked by six horses. The inclosed is drawn up by my bailiff, who has had long experience of threshing mills, and all agricultural operations. By this it appears, which I have no doubt is correct, that grain of every description can be threshed by steam power at something less than 6d. per qr., being one-third of the cost by horse power, to say nothing of the tear and wear of horses—for no work on a farm is so severe for them. My men receive 10s. per week, with a free cottage and garden, besides many other little advantages of fuel, milk, &c.; the women 5s. per week. The day's work is calculated at 10 hours, including an hour for breakfast and another for dinner. Of course when the threshing is finished they go to other work. As regards the horses, the eight hours are a *quantum suffit* for that day. Water power is no doubt the cheapest, but few homesteads or farm steadings, as we call them, are placed in situations to have command of sufficient water. I am, &c., R. Barclay Allardice. P.S.—I have no doubt my steam-power, if pushed, would thresh 10 quarters per hour. The inclosed is the usual rate of speed." Note of expenses in threshing 20 quarters of grain by steam; one man employed as fireman, engaged 1½ hour before the steam is up, and three hours to complete the 20 quarters: Fireman, engaged 4½ hours, 1s. 6d.; one man engaged feeding, 3 hours, 6d.; two men forking the straw, 3 hours, 1s.; three women handing the sheaves, 3 hours, 9d.; two women riddling the grain, 3 hours, 6d.; one woman tramping the straw, 3 hours, 3d.; six cwt. coals at 10d. per cwt., 5s. Leaving the total cost only 9s. 6d. for threshing out 20 qrs. of Barley. I should add that since Capt. Barclay wrote this letter he had added to his machinery the winnowing machines and the separators, by which the whole expense of winnowing is saved, and the cost of threshing Barley is reduced to about 4½d. per quarter. The following is also added to the letter: Note of expenses in threshing the above quantity with horses: Three pairs of horses, 8 hours to thresh 20 quarters:

	£	s.	d.
At the rate of 1s. per hour for each pair ...	1	4	0
One man, 8 hours driving	0	1	4
One man feeding, 8 hours	0	1	4
One man forking the straw, 8 hours ...	0	1	4
One woman riddling the straw, 8 hours ...	0	0	8
One woman tramping the straw, 8 hours ...	0	0	8
Two women handing the sheaves to the feeder	0	1	4
Total	£1	10	8

During an interesting visit which I paid a short time since to a talented member of this club, I learned that in one day of about 10 hours he succeeded, in the presence of many friends, by means of his engine and machinery, in threshing and perfectly winnowing, screening and sacking, at one and the same time, 112 sacks of best Wheat, 14 sacks of tail, and passed through the machine upwards of 16 tons of straw. This was effected with but few hands, and a consumption of about 11 cwt. of coal, making the expense even less than that named by Capt. Barclay. To those who feel interested in the examination of machinery, I would strongly recommend a visit to that at Lambrook, and I am confident that its hospitable proprietor would not only allow of its inspection, but cheerfully afford any information which might further be required. It is only justice to add that the whole of this splendid machinery has been erected by the indefatigable Mr. Clyburn, of Uley. Such examples might be multiplied to a great length, but I trust that I have already proved the first proposition which I wish to establish, that steam or water power is far cheaper, as applied to threshing, than that of horses—that that of horses is cheaper than that of man; and I can come to no other conclusion than, that as each of these powers can be made with profit to supersede each other, so should they be applied. It now remains for me to allude to those difficulties and discouragements which a skilful and reflecting agriculturist has to contend with in the introduction of those improvements in his general machinery, which the force of circumstances, the desire for progress, and the proper attention to economy in time and capital points out to him not only as correct but as indispensable. The great prejudices which obtain amongst farm labourers against all improvements are known to most of us, and have existed since their first introduction. Perseverance on the part of the employers, combined with kindness and explanation to his men, will soon remove their prejudices. But among many of the uneducated class of farmers, prejudice and ignorance prevail even more than with their men. Upon these I will not dwell, because I feel as confident that in the present state of rivalry with the farmers of all the world, they can have but one of two alternatives—either to improve their pace, or, losing their all, be banished from the stage. Another difficulty arises from the idea which is entertained by many well disposed and charitable persons that the introduction of machinery is tantamount to displacing an equal amount of hand labour, not recollecting that its object is simply to diminish labour in the specific work accomplished by the machine, and that the result is the increase of human labour in general, and a more profitable application of it. Did you wish in agriculture for examples, examine the state of cultivation of those farmers where machinery is most extensively used; survey the beautiful state of Mr. Lawrence's land at Cirencester, or the adjoining farms at the college; admire the unsurpassable cultivation of Mr. Hudson, at Castle Acre, where there are two steam engines; ride over the farms in the Lothians and Roxburghshire; and in one and all you will learn, from their superior state, how beneficial has been the introduction of machinery, and how, by having freed the labourer from the constant drudges of the barn, you have placed him at liberty to attend to that all-important matter the proper tillage of the soil, and the cultivation of its crops. Machinery has raised this country and her manufactures to an eminence which, without it, they never could have attained. And are not we to share in such a triumph, and participate in such advantages? Believing, as I do, that its greater introduction into agriculture would increase employment instead of diminishing it, I will yet say that if in some rare cases the latter should be the result, it must not be allowed to act as an impediment. I speak now as a man of business, and I cannot connect eleemosynary aid with business—I am willing to keep two purses; the one shall open only to the proper, legitimate, and economical calls of business; the strings of the other shall be loosed for the purposes of charity; but I will never consent to connect the two. The principle I am now stating may be illustrated by a conversation which I had a few weeks ago in a railway train, with a gentleman who happened to be a Manchester manufacturer. I found it difficult to make that gentleman comprehend that a farmer ever took a person into his employ for the sake of charity. He said, "I employ about 600 pairs of hands in my manufactory; but if, through my own skill, or that of my machine maker, I could make 400 pairs of hands do the same amount of work, 200 would immediately have notice to quit; and why," he added, "don't you act in the same manner?" I pointed out the difficulties under which we laboured in respect of the poor rate; he replied that the same evil existed to a certain extent in Manchester; but although distress might exist for a time in consequence of the course described being pursued, yet the saving of capital effected by doing with 200 hands less would facilitate the erection of a new engine, and parties dismissed under such circumstances often found superior employment elsewhere. I will now, sir, read the resolution which I have prepared, and leave it in the hands of the meeting either for alteration or adoption—"That this meeting is of opinion that steam power may be introduced to a much greater extent than it is at present, with much advantage, into the operations

of agriculture in England; that such introduction of steam power would not eventually displace any amount of manual labour now employed in agriculture, but divert it into a more profitable channel; and that steam power is far more economical than horse power."—Mr. Mechi said, I do not think that the effect of using the steam-engine is to displace labour, for nearly the whole expense is expense of labour. If we consider the iron as taken from the mine, the coal employed in working the engine, and all the other processes which attend its completion, we cannot doubt that when a man has expended 500*l.* in the erection of a steam-engine, and in providing its necessary accompaniments, the greater part of the amount has been expended in human labour. I am quite sure that the application of steam to agriculture is a profitable application, and I shall endeavour to give you a few facts in connection with the matter, which may be useful to those who may read this discussion, and who being possessed of steam-engines are interested in their cost and management. But before I do so, allow me to say that I have but faint hopes of the use of steam extensively in agriculture, unless very great change be made in the system of letting farms in this kingdom. Our friend Mr. Thomas has alluded to Scotland. Gentlemen, why is it that steam-engines are found there almost invariably? Because the tenants have 19 years' leases. It is quite impossible that any man can safely erect machinery involving a very large expenditure unless he has either a tenant-right, enabling him to remove what he has constructed, or a long term of occupation on sure grounds, so as to be capable of remunerating himself for his outlay. If it be true that three-fourths, if not more, of the land of the United Kingdom, or of England in particular, is held by tenants at will, who are liable to removal through a change of temper, through accident, or through the death of other persons, I do say that under such circumstances there can be no difficulty in understanding why we are comparatively so backward in our agriculture. I feel strongly on this point. It comes home to the man who, while employing his capital on his own land, looks around him and feels that his neighbours cannot imitate his example with their present tenancies, without evincing an utter disregard for the welfare of themselves and their families. Gentlemen, my steam-engine, which is of six-horse power, has cost me 150*l.* There is then an expense of 40*l.* for fixing; there are also required a pair of mill-stones, a Linseed-crusher, pumps, a threshing-machine, a dressing and winnowing-machine, chaff-cutters, and all the apparatus incidental to the working. You cannot safely calculate the whole expense at less than 500*l.* I have known instances—for example, there is the case of Mr. Bateson, of Hertfordshire—in which the cost has not exceeded 400*l.*; but from 400*l.* to 600*l.* is the average amount invested in the engine. Now, gentlemen, to come to the working or daily expenses. I find in practice that 5 cwt. of coals per day is the average consumption of 10 hours' working; and that is confirmed by the statement of our friend Mr. Thomas. That gentleman says that 6 cwt. will do in his part of the country with the best sort of boiler and flue; 5 cwt. is amply sufficient for ordinary work; and with the price of coals in Essex at 20*s.* per ton, including cartage, that is 5*s.* a day for coals. Then you have to pay half-a-crown a day for a man. I have a boy at 6*d.* per day. I allow 1*s.* for wear and tear and deterioration. I also allow 1*s.* a day, and 4 per cent. as interest of money. The total expense of working the engine, for 10 years, is 10*s.* per day. Now, gentlemen, what will the engine do? She will grind, as the minimum quantity, her 10 sacks of corn per day; if I said 15 I should not be stating an impossibility. We pay, in our neighbourhood, 1*s.* 6*d.* a sack for grinding, or 3*s.* qr.; she therefore earns 15*s.* a day in grinding. But in addition to which grinding she will cut up any quantity of chaff that I may require; she will drive a chaff-cutter, which required, under the old system, three horses; and at the same time pump water for the requirements of 200 head of stock in the yard — pigs and bullocks; crush the Linseed, and work the sack tackling; and as I purchase 2000 sacks of corn annually for the consumption of my stock, it is essential that the engine should be made to take that up to the second floor without any cost for labour. I have a strong opinion, that in addition to what she is now doing, I could render her exceedingly available for the irrigation of land. When I first had my steam-engine I encountered what may be called the miseries of such an engine. We started remarkably well, but by-and-by we found that more coals were required, that more stoking was necessary to keep up the proper power. The coals, instead of being converted into gas, were converted into smoke. I opened the back of the breastwork, supposing that there was something wrong, where I found two barrowfuls of fine, very heavy material like sand; it was, in fact, the mineral particles of the coal which had been carried along by the draught until they came to a corner, where they were deposited, and the consequence was that they obstructed the free action of the chimney. I would recommend all who have engines to pay a bricklayer 2*s.* 6*d.* a month to have the bricks removed from the back of the furnace, and all foreign matters taken away, so that there may be a perfectly free draught. Mr. Thomas, in his able paper, has shown that steam-power is much more economical than horse-power. That is borne out by my own experience. I employed horse power before I had formed any opinion as to the engine. I now find that the engine will do more work in 10 hours, at a cost of 10*s.*, than two relays of nine horses will accomplish during the same period. Eighteen horses can scarcely be kept at mill work for 2*s.* a day each; and we now perform the whole operation for 10*s.* a day. But I must say I do not think that corn can be threshed quite so cheaply as Mr. T. has stated it can.—Mr. Garrett (of Leiston), had found, from his own experience, that the great difficulty which stood in the way of the introduction of machinery, was the apprehension that it would issue in the displacement of manual labour. When he introduced the horse-saw, he had found a feeling of opposition to it prevailing amongst employers and labourers, because both apprehended that it would displace manual labour. Now, he contended that steam, instead of displacing, eventually increased manual labour. Horse power decreased, but the employment of manual labour was augmented.—Mr. Smith, of Deaneton, said allusion had been made to the competition which this country had entered into with foreign countries. He was sure every intelligent farmer would admit that it had become more and more his duty—that, in fact, he was bound by necessity—to introduce machinery by every means in his power, in order to cheapen the articles which he had to sell. There was a great struggle before them, and they might depend upon it, that they must call mechanism to their aid. A better arrangement of farms was necessary; but even under the present arrangement it was in their power to make great use of machinery. It might be employed very beneficially in pumping out manure—a subject which, though new perhaps to some present, was certainly not new to himself, and the result of his experience was, a firm conviction that not many years would elapse before all the good farmers in the country would, by means of machinery, send out the whole of their manure in a liquid form. He believed that at a future period there would be no solid manure put on the ground. He could demonstrate that one-half of the manure put on the land in a solid state was lost, in consequence of being used in that form; and that, if it were brought to a fluid state, and in that condition applied to the land, it would produce double its present effect; and while the manure itself would produce a greater effect on the land, of course a smaller proportion would be lost. The steam-engine might be applied in that way with great advantage. The same engine that was used for threshing, chaff-cutting, and other agricultural operations, might be advantageously employed in pumping out manure. But this involved the question of a new arrangement of farming. Instead of being placed on a hill, as it hitherto been the case, the farmstead ought to be placed on the lowest point; so that, as regarded the carrying out of manure, they need not mind its being situated on the lowest part of the farm. When the farmstead was thus situated, their grain crops might be improved, and they might expect to be able to compete with foreigners. Another point of importance, but which he could only touch upon cursorily, was this: if they placed the farmstead at the lowest point, they ought to have there an extensive reservoir to receive all the water which was drained from the farm. That water would remain by their side till the day of need, and in weather in which the farm was apt to suffer from drought, they might make use of it by means of the steam-engine. He had calculated to his own satisfaction, and to the satisfaction of many experienced and judicious agriculturists, that it would well pay a farmer to lay down pipes and have a steam-engine, if for no other purpose than that of watering the crops in dry seasons, altogether independently of the advantages which it would afford in distributing manures. The pumping of this water for the nourishment of the plants, and the supplying them with moisture, was a subject which deserved more attention perhaps on the part of the agriculturists of Great Britain than almost any other; and he felt sure that, if properly managed, the operation would do more even to raise the rent of land than anything else. ("Oh, oh!" and laughter.) He wanted to encourage proprietors as well as farmers, and he felt confident that the introduction of machinery in agriculture, and its proper application, would at the same time raise the rent of the proprietor, increase the profits of the farmer, and give better and more constant employment to the labourer. He had there a plan of a farmstead which he had drawn up for a Scotch gentlemen, who foreseeing what was coming, was making preparations for it. He was going to erect a house for 768 bullocks—a house which was to be heated and ventilated in the most perfect manner. He was laying down pipes over the whole of a farm of 700 acres, and he intended to raise nothing but food for the cattle on those acres which were near to him. He might, perhaps, take an occasional crop of grain when the land was getting too strong; but after making careful and minute calculations, he expected to be able to feed at least two bullocks per acre on that ground, and to manure the whole of the land with the liquid and solid manure which came from the animals. The bullocks were to be tied up in the usual way, not placed in boxes, and were to have no litter. The whole of the litter was, in fact, to be cut up and passed through the animal. In the passage Nature took up what good matter there was in the straw; and if there was none at all that was good, why in that case they had the best cutting machine in the animal itself, which thus converted the straw into manure in the best possible way for the land. They then let both the liquid and the solid manure go into the tank, and, after stirring it up by means of the steam-engine, the whole would be sent to the land, liquid and solid together; and thus they had the best manure that they could possibly desire. This was not a new thing; it was done in Belgium and perhaps in London. Another peculiarity of the plan to which he referred was an inclosed square, arched over without windows; a tunnel was brought into the bottom between the heads of every row of animals, and a wall, 2 inches in diameter, came up to the nose of each bullock, and gave him at all times a plentiful supply of fresh air.—Mr. Bennett: In the event of a wet harvest, when the straw is not fit for food in any shape, how could you make it pass through the animal?—Mr. Smith: A small quantity might be destroyed in that way, but the difficulty is one that might be remedied by steaming and washing.—Mr Boddington said that with respect to the application of machinery to agriculture, he thought that some of the speakers were rather led away by their preconceived ideas on the subject of machinery in factories. The machinery used in factories was under cover, and was always within the space of 100 yards; whereas the machinery of a farm was scattered, and had reference to many operations. In a factory where a machine had been once fitted up for a particular purpose, there was no variation. The other day he had seen about 200 machines in a factory, all doing the same thing; in farming there was one machine required for drilling, another for threshing, another for winnowing, another for ploughing, and so on. He did not mean to deny that steam-engines, if properly worked, on farms would prove very useful; but he considered it questionable whether the use of them would be more economical than that of horse-power. Having himself tried steam-engines, he had found an objection on the part of the fire insurance offices to the employment of them, and he had, in fact, understood that an insurance could not be effected in such cases. He thought the most useful improvements in machinery were those which had been made in drills. The depositing of the seed in an equable manner all over the field, and on the same level, was a point of vast importance in farming. They now had drills of all sorts and sizes, to drill for almost anything, except the light seeds, such as Carrots and Mangold Wurzel; and a drill applicable to the exceptional cases mentioned would be very beneficial. As for the statement that agriculturists had scarcely any machinery, so far from that being correct, the machinery employed in agriculture was a hundred-fold more extensive than that employed in manufactures. (Cries of "Oh.") Why, the farmer had scores of machines—(Hear, hear, and laughter)—and it was a mistake to suppose that farming was now carried on without the aid of machinery.—Mr. Mechi wished to observe that though he had a steam engine, and was insured, he paid no additional premium for the insurance on account of the engine. His buildings were bricked and slated.—The Chairman remarked that Mr. Mechi would be required to do so if he had a portable engine.—Mr. Shaw congratulated the club on the very able introduction of this subject by Mr. Thomas, and also on the good effect which that circumstance is likely to produce, inasmuch as he is a practical farmer on an extensive scale. He recollected that three years ago, when the subject of agricultural machinery was under dicussion, there was great difficulty in getting the club to agree to a resolution that it was desirable to employ machinery extensively in agriculture. An apprehension existed that it might go forth to the world that the club had negatived the proposition that an extension of the application of machinery to agriculture would be beneficial. And recollecting the state of feeling which existed at that period, he could not but regard this as marking great advancement, and evidencing the march of intelligence.—Mr. Bennett: I wish to direct attention for a few moments to the latter part of the resolution moved by Mr. Thomas. It may be perfectly true that by the use of steam-engines you do not materially lessen the employment of manual labour, looking at the country as a whole; but the prejudices of labourers on the subject are not always groundless, and they are generally better acquainted with such matters than they are supposed to be. I think the case of the steam-engine has been put too strongly. Every person who has had much to do with machinery must know that there is a great expense connected with it, an expense which often runs up to nearly one-third of its original cost. I admit that the steam-engine may be used with advantage on a fair-sized farm, where the labour is not dense. I have considerable doubts as to its affording great benefit to the agricultural districts generally. I cannot for a moment entertain or tolerate the idea that it does not displace a great amount of manual labour. If you can get a national rate, and throw the support of the poor on the entire property of the country, then you might be right in carrying machinery to the fullest extent; but under the present system, which compels you either to employ the poor or keep them in the workhouse, anything which tends to lessen their employment in their own neighbourhood is to a certain extent an evil, and such an evil I consider machinery.—Mr. Mechi: Allow me to say that within the recollection of the present bailiff, 2*l.* per week is the amount which has been paid for wages on my farm; at present, with steam-power, the payment for wages amounts to 8*l.* per week. (Hear, hear) —Mr. Turner said he happened to have very good water-power for the threshing of corn; and as for the statement that Wheat might be threshed for 6*d.* a quarter, he had no hesitation in saying that the thing could not be done for three times that sum. If it could not be done by water-power, it certainly could not by steam.—Mr. Mechi: I beg to say that I over-estimated the cost of threshing, dressing, and cooking Wheat when I stated it at 1*s.* per quarter.—Mr. Garrett said they must not forget the smallness of the power of the engine required. In the case of a six or eight horse-power engine, he would be happy to do the repairing for 1*s.* a day, or about 15*l.* a-year.—Mr. Thomas then replied. With regard to the difficulty of inducing farmers to lay out their money in improvements, under the present uncertain tenancies, he conceived that agriculture must now take such a rapid stride that the tenantry must become more secure; and co-equal with the increase of security would be the rate at which machinery was introduced into agriculture. With regard to the employment of labour on farms, whenever he had made enquiries on that subject, he had invariably found that the rate of labour employed was very much larger after than before the introduction of steam-engines. In a letter which he had received from Mr. Lawrence of Cirencester, that gentleman assured him that the labour employed on his farm since the use of machinery was three times as great in amount as it had been previously. On the subject of the law of settlement, he would observe, that in a parish of 300 acres, in Hertfordshire—Baldock—there were from 2000 to 3000 inhabitants; in a neighbouring parish—Bigmore—on 100 acres there were only 10 individuals; while in Letchworth, consisting of 1200 acres, the population was only 1500. Was it not clear that Baldock could not employ the labouring population within it to the same advantage as the other parishes. The faster they introduced machinery throughout England the sooner would they compel the state to make some alteration in the law of settlement. He concluded by again reading the resolution given at the close of his introductory address.—Mr. Bennett proposed an amendment, so that the resolution should read as follows: "That this meeting is of opinion that steam power may be introduced to a much greater extent than it is at present, with much advantage, into the operations of agriculture in England; and that steam power is far more economical than horse power." He was by no means convinced that one immediate effect of introducing machinery for agricultural purposes was not the displacement of labour. The Club then divided on the question, and the Chairman declared the amendment to have been carried. *Abridged from the Agricultural Journal.*

Calendar of Operations.

JUNE.

Dorset Farm, *June* 25.—With a continuance of fine weather, which we have had lately, all farm operations have gone on as well as could have been wished. The making of Clover hay is now all but completed, and in the best order; and we may say that both quantity and quality are satisfactory. We are now busy making our meadow hay, which is also a good crop; and although the meadows have cost a good deal lately, yet there is little doubt, from their appearance, that the money will prove to have been well laid out. We have about 70 acres of water-meadow hay to make, of which we have now about 20 cut, but not any carried. It might not be out of place to give an account of our method of hay-making, but there are so many circumstances arise to change our plans that I do not think that would be possible; for instance, what relation is there between the *modus operandi* which we were obliged to pursue last year and that which we can practise this? And although many lay down theories that look well on paper, yet in nine cases out of ten they are worse than useless in the field; and the utmost that can be done is to lay down a few general rules, such as the following: Cut it before it gets yellow at the root; turn it up to the sun as soon as the top of the swathe is a little dead-ened, spreading it over the ground for a short time at an equal thickness; and, if the ground is not all occupied with it, let it be raked clean, so that it shall all make alike, and as it makes, work it together by degrees. But the exact number of turnings can only be ascertained by experience; it depends on the state of the atmosphere, the nature of the land, and the weight of crop. Then put it together as soon as it is fit to keep in ricks, which can only be known by close inspection. Any other rules for hay-making can only apply in particular cases, and are of no use to the general farmer who has to regulate his movements in accordance with the weather. We are pushing on with Turnip sowing, but not with such speed as we could wish; the land requires so much working to get out the many weeds that got themselves established last year. Those that we have sown are doing very well, and are not at all hurt by the fly: but in some places they are a little damaged. But a little more artificial manure drilled in with the seed would go a great way to check its progress, for if the plant comes up vigorously it will soon get out of its reach, and thus not only secure a better crop, but save a good deal of after trouble. We have some of our labourers hoeing the Mangold Wurzel and Carrots; and the other hands are making hay and gathering weeds as weather and time permit, and this will be our general work for some time to come. *G. S.*

Lammermuir Sheep Farm, *June* 26.—Since our last report, the weather has been dry, but considerably colder than usual at this season, with a want of sun; indeed, for a fortnight past, a night has seldom passed during which the greater part of the ground was not covered with hoar-frost at sunrise. This has necessarily had an injurious effect upon the pastures, and as a consequence, upon the sheep also, in some measure. This is most observable upon the lambs, which are not generally so forward in condition as they were last year. The lambing has been finished about a month, and we have now to report a very full crop of lambs in the border counties, with an unusually small loss of either lambs or ewes. Those who keep wedders are now beginning to shear them, and in the course of the next fortnight most of the sheep on the hills will be without their fleeces. Our Turnip sowing was finished on the 21st. They are brairding well, and we hope to begin thinning during the first week in July. We have seen nothing of fly this summer. Now that the Turnips are sown, the horses are resting at Grass for a few days, and the workers are busy weeding corn and hoeing Potatoes, some of which are not so forward as might have been expected, though as yet there are no symptoms of disease. *A Lammermuir Farmer.*

Notices to Correspondents.

Agricultural Gazette: *A Country Gentleman.* Many thanks. It was thought that the subject of those articles if treated historically might be usefully discussed just now. The series is, we believe, now complete.

Barley and Carrots: *C F D.* They are never grown together. In Belgium they grow Flax and Carrots together; but no English farmer is likely to copy the practice.

Beans: *P P.* Yes, it is a common practice to dibble Beans in the furrow slice of a ploughed Clover-lea. For Wheat, under the circumstances named, apply 3 cwt. of guano and 3 cwt. of salt per acre early in April, broadcast, during wet weather.

Boar: *Cork.* Apply to Mr. Hannam, St. Mark's, Kirk-Deighton, Wetherby, Yorkshire.

Breeding Stock: *D S.* Four or five sheep per acre will be a sufficient stock. One ram, purchased or hired, each year, will be requisite. Try the "Long-woolled" breed. Apply 1 cwt. per acre of guano to Grass land during the first wet weather. The general practice is to mark with pitch and tar, and the numbers of the sheep, and other marks, are often made with red paint.

Boys: *A Z.* No doubt their labour is worth their wages, if they are looked after. The question of loss or gain by employing them wholly depends upon whether they are efficiently superintended. The old story, that every boy on a farm requires

a man to look after him, tells the same sort of truth as the following, in which a fair estimate is made of their value when not superintended. "One boy is a boy, two boys are half a boy, and three boys are ne'er a boy at all."

[illegible]: *A Constant Reader.* In your answer to a correspondent, who enquires how to extirpate this weed, you say that you do not know it under that name. Nor do I. Yet I have no doubt but that he refers to "Centaurea nigra," or "Black Knapweed," (a common name in Essex for the plant is "hard-head," whose head resembles red Clover.) At this moment, a boy under my study window, who is paid 4d. a day, is pulling up by the hand this troublesome weed, and can clear a considerable breadth of land in a day. I am very attentive to the weeding of my pastures, in this and all other respects, and find that every year the trouble is perceptibly less. *A Botanist.*

Carcase Weight of Cattle: *C C.* A slide scale is sold by philosophical instrument makers, by which the weight in imperial stones (W) is indicated with reference to the girth (G), and length (L) of the animal. $\frac{G^2 \times 5L}{21} = W$.

Dartmoor Farming: *E Hulme.* Drain dry. Work the land deep. Apply 4 tons of lime per acre, and afterwards manure freely. Your best plan is to visit those there who are farming successfully.

English Agricultural Society: *E M D.* A list of the members of the Royal Agricultural Society is published in the 6th or 8th volume of their Journal.

Heart Clover: *Lasor.* The paragraph has been in type ever since it was received. The delay of short pieces is sometimes forced by the necessities of the printer.

Jerusalem Artichokes: *C R S.* They make good pig food—when once pigs have "taken" to them.

Kohl Rabi: *W.* The purple we believe to be the more common sort, and it is a good one. It will grow in stiffer ground, and likes stiffer ground than is suitable for common Turnips.

Poultry Diseases: *Evesham's* sample of feathers elucidates little; but the facts stated in accompaniment speak for themselves. The question is important, and its answer confirms what has already been enforced in the articles on Diseases of Poultry in our columns. The evident cause is, their food being given very hot to induce laying. It is unnatural, and highly detrimental to health. When a fowl has once acquired a propensity for plucking feathers from others, it should be separated, or got rid of altogether. There is no other cure, when a fowl has a morbid appetite for blood-feathers. Fowls plucked in this way constantly, acquire a sort of distemper, infecting the blood, sometimes generating a peculiar insect, which infects the roots of the feathers, the new feathers become diseased, grow irregularly, and often rotten, or surrounded by matter from a sort of tumour or eruption on the part. There are several other causes for these infections and the consequent propensity and falling of the feathers. Dirty diet picked up in the streets, dirty water infected with dung or decayed vegetables, &c., long since pointed out. These acrid matters destroy the stomach and generate many disorders, so will food when given very hot. *D.S.E.*

Seeds: *Bradwell Wharf.* Italian Rye-grass should be sown just before the latest time at which you can safely get among your Wheat to hoe it—that is late in April. Or it may be sown, but not with such certainty of success, after harvest. Sainfoin is sown early in April among Barley. They will be ready for use in May and June of the following year. They are as good food, or better for milch cows, than Vetches and Cabbage. You may safely feed cows on this green food without hay.

Stilton Cheese: *S W.* See page 214, 1845. If you cannot, we will republish the paragraph.

Sugar Refining Refuse: *W T A.* It is capital stuff; chiefly animal charcoal or bone-dust, with all its animal matter dissipated except the charcoal. Whether it is worth 33s. 6d. per ton on the field depends on the quantity of water it contains.

Twins: *A Friend to the Dairy.* Though twins of different sexes are the exception rather than the rule, they are more likely to be reproductive than otherwise. *W. C. S.*

Markets.

SMITHFIELD, Monday, June 25.

The number of Beasts is not large; prices are rather higher, although trade is slow. We have a large supply of Sheep, and the demand is very limited. Prices are about the same as of late, with a slow trade. There are but few choice Lambs on offer, the majority of the supply being of very inferior quality; the former maintain late rates, but the latter are scarcely saleable. Calves are still plentiful, and prices remain unaltered. From Holland and Germany there are 290 Beasts, 2030 Sheep, and 204 Calves; from Norfolk and Suffolk, 1800 Beasts; and from Scotland, 100.

Per st. of 8 lbs.—	s d	s d	Per st. of 8 lbs.—	s d	s d
Best Scots, Herefords, &c. ...	3 8 to	3 10	Best Long-wools ...	...	...
			Ditto Shorn ...	3 4 to	3 6
Best Short-horns	3 4 —	3 8	Ewes & 2d quality ...		
2d quality Beasts	2 8 —	3 2	Ditto Shorn ...	2 8 —	3 2
Best Downs and			Lambs	4 8 —	5 8
Half-breds	...		Calves	2 8 —	3 10
Ditto Shorn ...	3 8 —	3 10	Pigs	3 4 —	4 4

Beasts, 3017; Sheep and Lambs, 30,420; Calves, 309; Pigs, 240.

Friday, June 29.

We have a large supply of Beasts, and the demand is very limited. Monday's rates are scarcely supported, except for the choicest. The number of Sheep and Lambs is about the same as of late, but the quality of the supply is worse; in consequence the best kinds are pretty freely disposed of, but second-rate cannot all be sold. We have again a large number of Calves, and prices are still very good. From Holland and Germany we have 124 Beasts, 940 Sheep, and 239 Calves; from Spain, 10 Beasts; from Scotland, 300; and 134 Milch Cows from the home counties.

	s d	s d		s d	s d
Best Scots, Herefords, &c. ...	3 8 to	3 10	Best Long-wools ...	... to	...
			Ditto Shorn ...	3 4 —	3 6
Best Short-horns	3 4 —	3 6	Ewes & 2d quality ...	—	..
2d quality Beasts	2 8 —	3 2	Ditto Shorn ...	2 8 —	3 2
Best Downs and			Lambs	4 6 —	5 6
Half-breds	—	...	Calves	2 6 —	3 8
Ditto Shorn ...	3 8 —	3 10	Pigs	3 4 —	4 4

Beasts, 1067; Sheep and Lambs, 12,960; Calves, 671; Pigs, 260.

HAY.—Per Load of 36 Trusses.

Smithfield, June 28.

Prime Meadow Hay	60s to	74s	Clover	60s to	95s
Inferior ditto ...	50	60	New Clover ...	—	—
Rowen ...	50	60	Straw	30	36
New Hay ...	50	60		J. Cooper.	

Cumberland Market, June 28.

Prime Meadow Hay	70s to	70s	Inferior	60s to	80s
Inferior ditto ...	50	66	New Clover ...	—	—
New Hay ...	50	68	Straw	30	36
Old Clover ...	80	90		Joshua Baker.	

Whitechapel, June 28.

Fine Old Hay ...	68s to	72s	New Clover ...	68s to	75s
Inferior ditto ...	45	65	Inferior ditto ...	50	60
New Hay ...	55	63	Straw	32	34
Old Clover ...	90	100			

HOPS.—Friday, June 29.

Messrs. Pattenden and Smith report that the letters received this morning are very unfavourable from the Hop plantations generally. The market continues steady at late prices, and the duty is estimated at about the same amount as for some time past.

COVENT GARDEN, June 30.

Vegetables and Fruit continue plentiful. Pine-apples fetch from 6s. to 10s. per lb. Hothouse Grapes remain unaltered. Strawberries and Cherries are very plentiful and cheap. A few Peaches and Nectarines have made their appearance. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, young Turnips may be obtained at from 6d. to 9d. a bunch. Carrots the same. Cauliflowers are very plentiful. Rhubarb and Asparagus the same. Green Peas fetch from 2s. to 4s. per bushel. Potatoes are cheaper. New Potatoes realise from 3d. to 9d. per lb. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 6d. to 1s. 3d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Lily of the Valley, Cinerarias, Tropæolums, Carnations, Pinks, Fuchsias, Rhododendrons, and Roses.

FRUITS.

Pine-apples, per lb., 6s to 10s	Apples, kitchen, p. bsh., 4s to 8s
Grapes, hothouse, p. lb, 3s to 8s	Oranges, per doz., 1s to 2s
Peaches, per doz., 10s to 24s	— per 100, 6s to 16s
Nectarines, per doz., 10s to 24s	Lemons, per doz., 1s to 2s
Strawberries, p. pun., 9d to 2s	— per 100, 7s to 14s
— per pottle, 6d to 1s	Almonds, per peck, 6s
Cherries, wall, per lb., 4s to 9s	— sweet, per lb., 2s to 3s
— standard, p. lb., 6d to 1s	Walnuts, p. 100, 1s 6d to 2s
Gooseberries, green, p. hf. sieve, 3s 6d to 5s	— p. bush., 16s to 24s
	Nuts, Bar., p. bush., 20s to 22s
Currants, do., do., 3s to 4s	— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 9d to 1s 6d	Spinach p. sieve, 1s to 1s 6d
Cauliflowers, p. doz., 2s to 6s	Onions, p. bunch, 2d to 6d
Peas, per bush., 2s to 4s	— Spanish, p. doz., 1s 6d to 4s
Sorrel, p. hf. sieve, 9d to 1s	Shallots, per lb., 10d to 1s
Potatoes, per ton, 60s to 180s	Garlic, per lb., 6d to 1s
— per cwt., 5s to 14s	Artichokes, p. doz., 2s6d to 3s6d
— per bush., 4s to 7s	— Jerusalem, per half sieve, 9d to 1s
Turnips, per bunch, 6d to 1s	Lettuce, Cab., p. sc., 4d to 9d
Red Beet, per doz., 2s to 4s	— Cos, do., 6d to 1s
Horse Radish, p. bdl., 2s to 6s	Mushrooms, p. pot., 6d to 1s 3d
Asparagus, p. 100, 1s to 4s	Small Salads, p. pun., 2d to 3d
Rhubarb, p. bundle, 4d to 1s	Fennel, per bunch, 2d to 3d
French Beans, p. 100, 2s to 3s6d	Savory, per bunch, 2d to 3d
Cucumbers, each, 4d to 1s	Thyme, per bunch, 2d to 3d
Leeks, per doz., 1s to 2s	Parsley, p. doz. bun., 3s to 4s
Celery, p. bundle, 1s to 2s	— Roots, p. bdle., 1s to 1s
Radishes, per 12 hands, 9d	Marjoram, green, p. bun., 4d to 6d
Watercress, per doz. bunches, 8d to 1s	Mint, green, per bunch, 3d to
Carrots, per bun., 6d to 1s	Basil, green, p. bunch, 4d to 6d

MARK LANE.

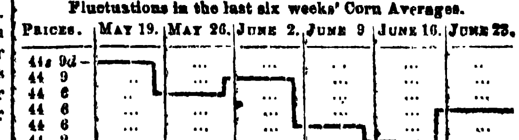
Monday, June 25.—The supply of English Wheat by land carriage samples this morning was very small, and the arrivals from abroad continuing moderate, the former was cleared at an advance of 2s. to 3s. per qr. on the prices of this day se'nnight. Foreign was taken at an improvement of 1s. to 2s. per qr., but the latter being reluctantly complied with, a moderate business only resulted.—Barley, Beans, and Peas support our quotations.—Oats are in fair request, and 6d. to 1s. per qr. dearer.

Friday, June 29.—The arrivals of all grain, both English and foreign, since Monday, have been moderate. To-day's market, although not largely attended, was visited by several country buyers from a distance; trade was dull during the greater part of the morning, but towards the close a fair business was transacted in Wheat at Monday's prices.—Grinding Barley is inquired after at late rates.—Beans and Peas are unaltered in value.—The Oat trade is rather heavy at our quotations.—Foreign Flour is in request at improving prices.—Floating cargoes of Indian Corn are held at 32s. to 34s., cost, freight, and insurance.—Since the 22d instant rain appears to have been partial in various parts of the country, but the weather generally dry, and the temperature, for the season of the year, low. Country markets have been badly supplied with grain, and the arrivals at the sea ports moderate. The crops are generally well spoken of, although we still hear complaints of the appearance of the Wheat and Barley on the clay soils. Prices of Wheat have risen throughout the kingdom 1s. to 3s. per qr. Barley is inquired for, and its value slightly improving. Beans and Peas have not undergone any alteration in value. Oats have recovered about 6d. to 1s. per qr. from their extreme depression.

Liverpool, Friday, June 29.—We have had good supplies and highly favourable weather since Tuesday. There was not so much activity in the trade this morning, yet prices were supported for both Wheat and Flour, and in the low qualities of former a good fair business was done. Oats and Oatmeal were dull at Tuesday's prices, and there was no change in Barley, Beans, or Peas. Indian Corn was in fair request at a decline of 6d. to 1s. per quarter on yellow; white very scarce and quite as dear.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas
May 19 ...	44s 9d	28s 0d	17s 8d	25s 9d	30s 7d	29s 11d
— 26 ...	44 6	28 9	17 9	26 0	31 8	32 4
June 2 ...	44 9	27 10	17 7	26 6	31 7	33 4
— 9 ...	44 6	28 11	17 7	25 4	31 7	30 4
— 16 ...	44 2	26 5	18 0	26 3	30 8	30 4
— 23 ...	44 6	26 5	18 9	25 9	30 10	31 5
Aggreg. Aver.	44 6	27 3	17 11	25 11	31 0	31 3
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.



PRICES CURRENT.	London. June 18 qr.	London. Jun. 25 qr.	Liverpool. June 19. 70 lbs.	Liverpool. June 26. 70 lbs.	Wakefield. June 15 qr.	Wakefield. Jun. 22 qr.	Boston. Jun. 20 qr.	Boston. Jun. 27 qr.	Birmingham. June 21. 62 lbs.	Birmingham. June 28. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	40 to 42	42 to 44	6 4 6 10	6 9 7 0	43 to 48	44 to 50	44 to 46	43 to 49	5 8 6 3	5 10 6 8
„ white ...	45—46	47—50	7 0 7 6	7 2 7 6	43—50	44—52	44—50	46—52	6 1 6 5	6 3 6 7
Old, red ...	42—46	42—48	6 8 7 0	6 10 7 2	42—44	43—45	—	—	5 9 6 2	5 9 6 4
„ white ...	48—52	50—54	7 3 7 8	7 6 7 10	—50	—52	—	—	6 0 6 7	6 2 6 9
Foreign	35—56	36—58	4 4 8 6	4 6 8 6	39—51	43—53	—	—	5 0 7 0	5 2 7 0
			480 lbs.	480 lbs.						
Rye—New ...	22—24	22—24	—	—	—	—	—	—	—	—
Foreign...	22—23	22—23	—	—	—	—	—	—	—	—
Foreign meal	6l.—7l	6l.—7l	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	21—24	21—24	—	—	22—23	22—23	24—26	24—26	23—25	23—25
Malting... ...	22—27	22—27	30s—32s	30s—32s	27—32	—	28—30	28—30	29—32	29—32
Foreign... ...	18—27	18—27	—	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	19—24	19—24	2s 10d 3s 3d	2s 10d 3s 2d	—	—	14—20	14—20	20—28	20—28
Black...	15—20	15—20	2 4 2 7	2 5 2 8	—	—	—	—	19—20	19—20
Foreign	14—20	14—21	2 4 2 6	2 4 2 6	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	25—30	25—30	34s—	34s—	28—32	28—32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—25	23—25	29—31s	29—31s	—	—	—	—	11—12	11—12
Foreign ...	24—32	25—32	32—34	32—34	—	—	—	—	—	—
Beans—										
New, small ...	22—32	22—32	30—33	30—33	29—32	29—33	30—33	30—33	12—14	12—14
Old	—	—	32—34	32—34	35—36	35—36	34—36	34—36	15—16	15—16
Foreign ...	21—36	21—36	23—32	24—32	26—28	26—29	—	—	11—13	11—13
Linseed—Feed	—	—	40—42	40—42	32—40	32—40	—	—	—	—
Foreign ...	37—42	37—42	—	—	—	—	—	—	—	—
Linseed Cakes British ...	9l. 7s	9l. 7s	7l. 12s	7l. 12s	—	—	—	—	—	—
Foreign ...	6l.—7l.	6l.—7l	—	—	—	—	—	—	—	—
Indian Corn—	30—32	30—34	34s—36s	35s—36s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack.
Flour—	36—44	36—44	34—35	34—36	—	—	36—40	36—40	32—37	32—37

Weekly Averages and Imports.	London. Aver. Jun. 26	London. Impts.	Liverpool. Averages.	Liverpool. Imports.	Wakefield. Aver.	Wakefield. Impts.	Boston. Aver.	Boston. Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	45 11	5260	44 9	14314	46 6	9072	47 0	1644	42 0	6757
BARLEY ...	—	5940	27 8	2106	—	1230	—	—	—	2237
OATS... ...	19 5	14120	17 8	382	16 10	719	17 5	41	20 2½	961
RYE	—	—	25 8	783	—	—	—	—	—	—
BEANS ...	30 7	—	—	6757	—	662	30 6	40	32 6	—
PEAS... ...	—	—	—	—	—	285	—	—	—	—
Signed {	*Kingsford and Lay.*		*Begar and Tunnicliffe.*		*Sandars and Dunns.*		*Thomas Wright.*		*J. and C. Sturge.*	

HIGHLY IMPORTANT AND VALUABLE FREEHOLD ESTATE IN GLOUCESTERSHIRE, containing 1694 acres, with Two Advowsons and Three Manors.

MESSRS. DICKSON and BELL have been favoured with instructions to offer for Sale by Public Auction, at Garraway's, in July next (unless previously disposed of by private contract), the highly important, valuable, and picturesque FREEHOLD ESTATE, called Orchardleigh-park, with the adjoining farms of rich arable, pasture, and meadow lands surrounding the same, together with three fulling mills, and a flour mill, within a mile of Frome, driven by water-power; the whole of which are in the occupation of highly respectable tenants from year to year, with the exception of one fulling mill held on lease for one old life, at extremely moderate rents, with the very valuable thriving woods and underwoods, comprising the whole of the two parishes of Orchardleigh and Lullington, and portions of the adjoining parishes of Frome, Buckland-Denham, and Laverton, the whole lying within a ring fence, and containing 1,664 acres, or thereabouts, of which 668a. 1r. 36p., being the whole of Lullington parish, are tithe-free; the whole of which, if let on leases, would produce a rental of about 4000l. per annum, with the manors of Orchardleigh, Lullington, and Frome, the advowsons of Orchardleigh and Lullington, and the perpetual sextonship of the large and important parish of Frome. The park contains within its own boundaries upwards of 600 acres, of which about 80 acres are wood and underwood, full of very superior thriving Oak timber. The remainder is rich grazing land, beautifully undulating, and studded with large and noble Oak, Elm, and other timber trees of the most valuable description; in the centre is a large serpentine lake, of about 25 acres, abounding with fish, and on the margin of which there is an elegant erection, designated the "Temple," intended as a retreat for the enjoyment of fishing, and commanding singularly rich and enchanting views of the adjoining lovely scenery. The park on each side of the lake rises in bold relief, and is studded with clumps of ornamental trees and shrubs, planted with the most refined taste and judgment. On an elevation in the woods is erected with great taste a highly ornamental and delightful summer retreat, called the Wood Lodge. The park is approached on the north east by two handsome double lodges, with groined arches thrown across the road, and on the south-west by two light and elegant lodges. The drive through the park extends to three miles, and is so laid out as to command at every bend and turn of its serpentine course the most rich and varied scenery of hill and dale, wood and water, that can well be conceived. In addition to the two entrance lodges are three other handsome lodges, with iron gates, within the park, placed in convenient positions for ornament and usefulness. At the head of the lake stands the mansions and out-offices, with coach-houses and stabling detached; and near thereto, on an island approached by a bridge thrown over a small branch of lake, stands the parish church, a small but elegant structure, fitted up regardless of expense. At a short distance from the mansions are three large gardens, surrounded by high and substantial brick walls. The woods and plantations altogether contain about 234 acres, and are well stocked with game. The south and east sides of the estates are bounded by the river Frome, and on its banks are several very valuable irrigated meadows. A considerable portion of the farm-buildings are of recent erection, and the whole are in good substantial repair. To a gentleman wishing to possess a seat in Parliament, this property offers unusual advantages, as, from its proximity to Frome, the resident proprietor must always command a moral weight and influence with the electors of that borough as well as with those of the eastern division of the county of Somerset. In addition to the above property may be had, if desired, a very valuable Farm, containing 81a. 2r. 5p. of rich old pasture land, with good farm-houses and premises, lying close to the town of Frome, on which are several very beautiful sites, admirably adapted for building purposes; also two good Farms in the parish of Laverton, containing 243 acres of arable and pasture land, with suitable farm-house and buildings thereon, adjoining the Orchardleigh Estate on the north and west; together with the exclusive right of sporting over the Manor of Laverton, containing about 1050 acres, held on lease from the Duchy of Cornwall, 13 years of which are unexpired, at the nominal rent of 23l. 4s. 10d per annum. Orchardleigh is 10 miles distant from Bath, 1 mile from Frome, and 10 from Warminster, and there is a railway from London to Weymouth now in progress, and will be opened to Frome in a few months, which will bring this property within three hours' ride of London. The particulars of sale are in course of preparation, and will be ready about the end of June, of which due notice will be given, and may then be had by applying to Messrs. CLARKE, FINMORE, and FLADGATE, Solicitors, 43, Craven-street, Strand; J. W. D. WICKHAM, Esq., Solicitor, Frome; and Messrs. DICKSON and BELL, 32, Bucklersbury, London. The estate can only be viewed by cards of admission from Messrs. DICKSON and BELL.

TO BE DISPOSED OF, in a first-rate position in the best part of London, a NURSERY GROUND, with Residence, doing a good business. Any one with a small capital, from 1000l. to 2000l., will find this worthy of notice.—Particulars of Q. R., 32, Holborn Hill, London.

TO NURSERYMEN, FLORISTS, AND OTHERS.

TO BE DISPOSED OF, by Private Contract, the LEA BRIDGE NURSERY.—For Particulars, apply on the Premises, or of Messrs. PROTHEROE and MORRIS, Leytonstone.

TO FLORISTS, NURSERYMEN, AND OTHERS.

TO BE DISPOSED OF, an old-established business in the above line, which the present occupier is about to relinquish for reasons which may be fully and satisfactorily explained. It is healthfully and beautifully situated in a fashionable watering-place on the south-east coast. There is a respectable connexion attached to it, which might be greatly increased with ordinary attention and activity. It has at all times yielded a considerable income above all expenses, outlay, and interest. To any party understanding the seed business it would be a great acquisition, as this could be added with certain success, there being no business of that kind within 16 miles of the place. There is a compact and convenient Cottage on the premises, and the whole is surrounded with good brick walls, covered with fruit trees. There are three large Greenhouses, with water laid on from the water-works, together with several brick pits, and every other convenience essential for a first-rate nursery business. It is well stocked with trees and plants of rare and excellent kinds.—Address W. J. S., Post-office, Leicester.

SURREY.

TO BE LET for a term of years, and entered upon at Michaelmas next, the Farm of WOTTON, in the Parish of Pollington, at present in the occupation of Mr. Shoesmith. It consists of about 402 acres of Meadow, Pasture, and Arable land: the Arable land is most productive of Beans and Wheat: most of the Pasture and Meadow land is of the richest fattening quality. There is an excellent Farm-house, with every convenience, and the Farm-buildings are large and commodious, and economically fitted up and arranged for fattening a large number of beasts in feeding-houses, stalls, sheds, and yards. The Farm is about four miles from Hailsham and Eastbourne, 10 miles from Lewes, market town, and one mile from the Polegate station on the Lewes and Hastings Railway. For particulars, apply to Mr. JOHN MANNING, Whitfield, Berkeley, Gloucestershire. A person at Pollington Place will show the Farm.

FARM TO LET, South of London; size, about 140 acres; rent, 200l. a year; house and buildings large, and in good order.—Address, for particulars, to E., *Gardeners' Chronicle* Office, 5, Upper Wellington-street, Strand, London.

TO GARDENERS, FLORISTS, &c.

TO BE LET, a small NURSERY, near Maida-hill, Paddington, consisting of three large Greenhouses, a Forcing House, several pairs of Pits and Frames, with about one acre of productive Ground. The Stock, which is small and select, to be taken at a valuation, or at a fixed sum to be agreed upon.—Apply to Mr. WATT, Florist and Seedsman, Lyon-place, Maida-hill, near London.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

BURBIDGE AND HEALY'S NEW BOILER.—The above is a modification of their Boiler (before published), modelled expressly for the large Conservatory, Chiswick Gardens, where it is now at work. From the observations B. and H. have been able to make, they are warranted in stating it to be the "Ne plus ultra" for warming large plant structures. As a proof, one charge of fuel has been kept burning for 48 hours without any addition, and one boiler of the size used is equal to warm 1500 feet of 4-inch pipe. They are also extensively put up at the Royal Botanic Gardens, Kew. Smaller boilers upon the same plan.

BURBIDGE and HEALY, 130, Fleet-street, London.

TO ORCHIDEA GROWERS.

BURBIDGE AND HEALY, 130, Fleet-street, respectfully call attention to their method of warming Orchidea Houses. They have had the honour of warming the Orchidea Houses at the undermentioned places:

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick, additions to the House.

Also the Orchidea Houses of the following distinguished growers of this interesting class of plants.

The Bishop of Winchester, Farnham Castle.
J. Lyons, Esq., Ladbroke.
J. Warner, Esq., Hoddesdon.
Messrs. Henderson, Pine-apple Place.
J. Schroder, Esq., Stratford.
R. Hanbury, Esq., Poles, near Ware.
W. Webb, Esq., Clapham.

THE PATENT ALKALI COMPANY'S METALLIC BLACK AND PURPLE-BROWN PAINTS are applicable to every kind of Iron and Wood-work, Farm and other Outbuildings, Shipping, &c., and are pre eminently superior to all the ordinary descriptions of white or red lead, or so-called "Mineral Paints," in point of economy, durability, and preserving quality. Prices: Black, 25l. per ton; Rich Purple-brown, 22l. per ton, delivered in London or Liverpool, exclusive of packages, which are not returnable except to be refilled, free of expense to the Company.

AGENTS: Messrs. Evans Brothers, London; Messrs. Matthews and Leonard, Bristol; Messrs. Evans and Hodgson, Exeter; Mr. Samuel J. Fill, Yarmouth, Norfolk; Mr. D. Sandeman, Glasgow; Mr. G. Sandeman, Dundee; Mr. R. Newby, Bradford, Yorkshire; Mr. R. S. Farr, Edinburgh; Mr. W. Bailey, Wolverhampton; Messrs. Bryant and May, Tooley-street, London; Messrs. Vint and Co., Newcastle-on-Tyne and Sunderland; Mr. Robert Oxland, Plymouth; Mr. Joshua Fox, Tregedna, near Falmouth. To be obtained also, with copies of Testimonials, on application to the Offices of the Company, 20, Fenchurch-street, London. JOHN A. WEST, Secretary.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 400 and 500) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a copy of the testimonials, will be sent on application to WALTER CARSON, 15, Tokenhouse Yard, back of the Bank of England.—No Agents.—All orders are particularly requested to be sent direct.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm-servants, or unpractised persons. Price 1d. per square foot. CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel. Samples and Testimonials sent by post on application to CROGGON and Co., 2, Dowgate-hill, London.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

EDENCH offers for sale Patent HOTHOUSES, which he will warrant far superior to all others, in every respect, viz., 1 Span Roof, 28 feet 6 ins. long, 13 feet 3 ins. wide, 40l.; Lean-to, 28 feet 6 ins. long, 16 feet 6 ins. wide, 50l., with best timber and 16-ounce glass of large size. Patent Lights for Pits, Frames, &c., requiring no paint, 7d., 8d., and 9d., per superficial foot, according to quantity, &c.

HEATING BY HOT WATER.

TODD'S PATENT PROTOXIDE PAINT at a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it. Manufactured by CHARMAN FRANCIS and SONS, Cement Works, Nine Elms, London.

AGRICULTURAL TRAINING SCHOOL, established for General, Practical, and Scientific Education, Hoddesdon, Herts.

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This Institution has been established on the largest scale of efficiency, and will be found complete in every department.

Applications for the admission of Pupils to be addressed to the "Head Master of the Scientific School, Hoddesdon, Herts," of whom every information may be obtained.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

MR. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

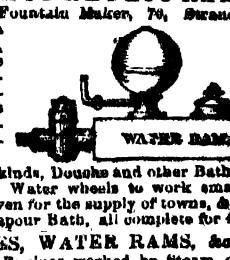
The terms of the School can be had on application either personally or by letter.

PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, CHARLES FRANCIS and SONS, Nine Elms, London.

PORTLAND CEMENT.—Testimonials received from all quarters, prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Milbank-street, Westminster.

THE IMPROVED HYDRAULIC RAM, fixed by FREEMAN ROE, Fountain Maker, 79, Strand, London, can be worked by a small stream of half-an-inch, where a fall of 2 feet can be obtained. The same RAM, without the aid of a Tank or Cistern, arranged to throw a Jet of Water constituting a Fountain with the head of water beneath.



Engines for deep wells of all kinds, Douche and other Baths, Buildings heated by hot water. Water wheels to work small pumps, from 15l. Estimates given for the supply of towns, &c.

A newly-invented Portable Vapour Bath, all complete for 4l.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LEGG, Cheltenham.

DO YOU BRUISE THE OATS YOU GIVE YOUR HORSES? No. Then you lose one bushel out of every three, and your Cattle do not do half so well.—MARY WEBLAKE AND CO.'S OAT BRUISING MILLS; superior Chaff Engines, simple in construction, doing from 20 to 30 bushels daily, and more. All respectable Coachmasters and Brewers use these Implements.—To be seen at 115, Fenchurch-street, opposite Mark-lane, close to the Blackwall Railway.

N.B. Linseed Mills, Bean Mills, and Malt Mills, in great variety.

WIRE-WORK, HOT-WATER APPARATUS, GREENHOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS on improved and economical principles.

Parties waited on in Town and Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.

J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

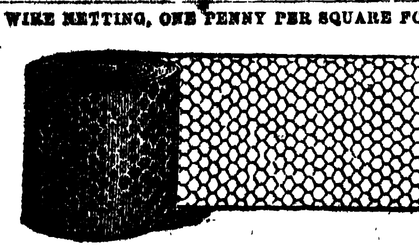
GALVANISED WIRE GAME NETTING.— [illegible] per yard, [illegible] wide.

		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7d. per yd.	5d. per yd.
2-inch " strong "	...	9 "	6½ "
2-inch " extra strong "	...	12 "	9 "
1½-inch " light "	...	8 "	6 "
1½-inch " strong "	...	10 "	8 "
1½-inch " extra strong "	...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.

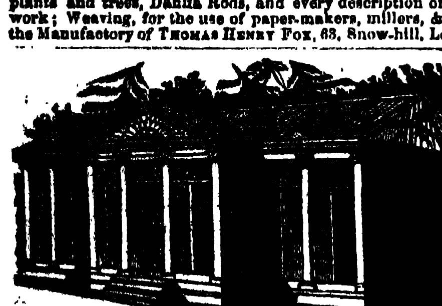


GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3d.	per yard		30 inches wide	7½d.	per yard
18 " "	4½d.	" "		36 " "	9d.	" "
24 " "	6d.	" "		48 " "	1s.	" "

Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden arches, 20s. each; Flower Stands, from 8s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of Thomas Henry Fox, 63, Snow-hill, London.

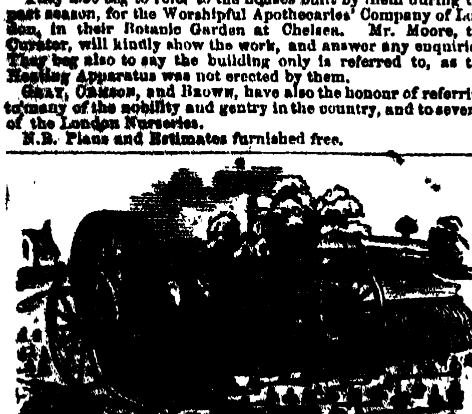


GRAY, ORMSON, and BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

Gray, Ormson, and Brown, have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.



GOODE'S PATENT IRRIGATOR & CATARACT. Working Models of these Implements may be seen in operation daily, from 9 A.M. till [illegible], at 476, Oxford-street, Bloomsbury, where particulars may be had.

COTTAM and HALLEN, 2, Winsley-street, Oxford-street, London.

HAYMAKING MACHINES, of the best construction, made almost wholly of Iron, and embracing all the latest improvements, at the reduced price of 12l. 12s., are now ready for delivery at Cottam and Hallen's, 2, Winsley-street, Oxford-street, London.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.

CHARLES D. YOUNG and COMPANY (late W. and C. Young), MANUFACTURERS OF IRON AND WIRE WORK, &c., 22, Parliament-street, Westminster, London; Castle-Buildings, Derby-square, Liverpool; 128, High-street, Edinburgh; and 32, St. Enoch-square, Glasgow, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

Prices.—18 ins. high, 9d.; 24 ins., 1s.; 30 ins., 1s. 3d.; and 36 ins., 1s. 6d per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3 15 0
Do. of 100 yards, 24 ins. wide	..	5 0 0
Do. of 100 yards, 30 ins. wide	..	6 5 0
Do. of 100 yards, 36 ins. wide	..	7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. Young and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s. is equal to 2½ yards of another article in the market, the same width, at 9d. per yard. Samples for inspection sent free of expense.

C. D. Young & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

SHETLAND PONIES AND CATTLE. — Just landed, direct from Shetland, a quantity of very handsome small PONIES; size, from 8½ to 12 hands high. Also some very handsome small COWS and HEIFERS, down Calving, some with Calf by side, and in milk; also some small OXEN and SHEEP, for feeding. These Cows give a large quantity of milk for their size, which is very rich, similar to the Alderney, and they are very hardy and suitable to this climate. To be seen at Thomas Orton's, Salesman and Importer to her Majesty, 69, Wapping.

DR. LOCOCK'S FEMALE WAFERS have no taste of Medicine, and are the only remedy recommended to Females. Price 1s. 1½d., 2s. 9d., and 11s. per box. Beware of Imitations.—Unprincipled persons counterfeit this Medicine in the form of "Pills," &c. Purchasers must therefore observe that none are genuine but "Wafers," and that the words "Dr. Locock's Wafers," are in the Stamp outside each box. Observe.—The counterfeit Medicines have words on the stamp so nearly resembling these, as to mislead the unwary. Purchasers must therefore strictly observe the above caution. Agents.—Da Silva and Co., 1, Bride-lane, Fleet-street, London; who are also Sole Agents for Dr. Locock's PULMONIC WAFERS for Asthma, Consumption, Coughs, and Colds. Price 1s. 1½d., 2s. 9d., and 11s. per box. Sold by all respectable Medicine Vendors.

GERMAN SPRING MATTRESSES, permanently elastic, very durable and cheap.

3 feet wide........	£2 8 0	4 feet 6 in. wide ...	£3 3 0
3 feet 6 in. wide	2 13 0	5 feet ditto......	3 10 0
4 feet ditto	2 18 0	5 feet 6 in. ditto......	3 18 0

One of these, with a French Mattress on it, is a most excellent and soft bed. HEAL and SON'S LIST of BEDDING, with full particulars of weight, size, and prices, of every description of Bedding, sent free by post.—Heal and Son, Bedding-manufacturers, 196 (opposite the Chapel), Tottenham-court-road.

A CLEAR COMPLEXION.

GODFREY'S EXTRACT OF ELDER FLOWERS is strongly recommended for softening, improving, beautifying, and preserving the Skin, and in giving it a blooming and charming appearance, being at once a most fragrant perfume and delightful cosmetic. It will completely remove tan, sunburn, redness, &c., and by its balsamic and healing qualities render the skin soft, pliable, and free from dryness, scurf, &c., clear it from every humour, pimple, or eruption; and, by continuing its use only a short time, the skin will become and continue soft and smooth, and the complexion perfectly clear and beautiful.—Sold in bottles, price 2s. 9d., with directions for using it, by all medicine vendors and perfumers.

NEW WORK BY MR. CHARLES DICKENS.

This day is published, the Third Number, price 1s., of

DAVID COPPERFIELD THE YOUNGER, OF BLUNDERSTONE ROOKERY. By Charles Dickens. With Illustrations by Hablot K. Browne. To be completed in Twenty Monthly Numbers.

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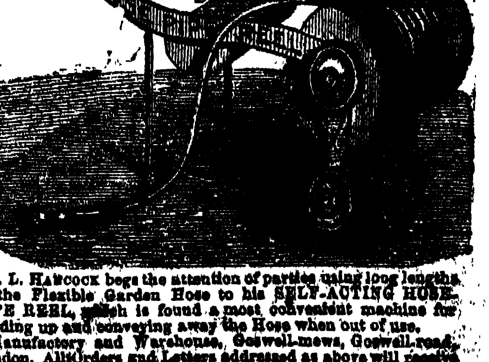

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Manufactory and Warehouse, Goswell-mews, Goswell-road, London. All Orders and Letters addressed as above will receive immediate attention.

Printed by William Bradbury, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London, [illegible] at the Office, No. 5, [illegible] parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, June 30, 1849.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 27—1849.] SATURDAY, JULY 7. [Price 6d.

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ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.

Under the Patronage of HER MOST GRACIOUS MAJESTY, THE QUEEN.

The Fourth Exhibition this season, of the above Society, will take place at the ROYAL SURREY ZOOLOGICAL GARDENS, on WEDNESDAY, July 25th, 1849, open to all exhibitors, when Prizes will be awarded for the following productions, viz.:—Miscellaneous Specimen Plants, Cape Heaths, Fuchsias, Roses, Pinotees, Carnations, Cut Flowers, Fruit, Grapes, Pines, and Honey. Extra Prizes offered by Members will also be awarded, viz., by J. Edwards, Esq., 5l. 5s., for 6 yellow-ground Picotees. The Woolwich Subscription Cup, value 5l. 5s., for 12 white-ground Picotees. By Messrs. Paul and Son and Mr. E. Denyer, for Roses; Mr. W. Ambrose, for Fancy Pelargoniums; Mr. T. Pawsey, Mr. John Fowle, and J. Chapman, Esq., for Antirrhinums and Seedlings of 1848; and Cut Indigenous Plants, by N. T. Iliff, Esq. List of Prizes and Regulations for Exhibiting may be obtained from JOHN TAYLOR NEVILLE, Secretary, Ebenezer House, Peckham, Surrey.

ROYAL AGRICULTURAL SHOW AT NORWICH.

GRAND HORTICULTURAL FETE, Open to all England, on the 18th and 19th of July. The Profits to be divided with the Hospital and other Charities. The Schedule of Prizes (upwards of 200l.), with Regulations, may be obtained of C. S. GILMAN, Esq., Honorary Secretary of the Norfolk and Norwich Horticultural Society, at Norwich. The first down train will be waited for, to allow Exhibitors of Picotees and Carnations to compete in these classes; but all entrances (free) to be made on or before the 14th. The Fête will be on Mr. Mackie's grounds, near the Agricultural Show. Productions sent on the 17th will be carefully preserved.

WARWICKSHIRE HORTICULTURAL EXHIBITION.—THE SECOND GRAND HORTICULTURAL EXHIBITION is fixed to take place on THURSDAY, the 23d Aug. next, in the Jephson Gardens, Leamington, under the special patronage of the High Sheriff and many of the resident nobility and gentry of the county of Warwick, when Prizes (highest 15l.) will be awarded on the most liberal scale for Stove and Greenhouse Plants, Heaths, Balsams, Cockscombs, Annuals, Specimen Plants, Cut Flowers, Verbenas, Roses, New Plants, and Flowers, and miscellaneous subjects, Melons, Pines, Grapes, and other fruits. Full particulars in the "Horticultural Magazine" for July, and Schedules to be obtained from OWEN WHITE, Esq., Hon. Sec., Jephson Gardens and Parade, Leamington.

A GRAND HORTICULTURAL AND FLORAL FETE, during the holding of the Yorkshire Agricultural Meeting, open to all England, will be held in Leeds on TUESDAY, July 31st, and WEDNESDAY, August 1st, when Prizes will be awarded to the amount of upwards of ONE HUNDRED GUINEAS. Schedules may be had of Mr. JOSEPH BUCKTON, Honorary Secretary, 50, Briggate, Leeds.

TILEY'S EARLY MARROW CABBAGE.

EDWARD TILEY begs respectfully to inform the gentry, nobility, and the public generally, that he is now ready to send out his EARLY MARROW CABBAGE SEED, which has proved the best yet in cultivation, and five weeks earlier than any other sort fit for table, and equal to young Asparagus for tender eating and flavour. The advantages of this over other Cabbages are, it grows very quickly, with scarcely any run to it, and is very suitable for rocky or windy situations, as it is very short in the leg, and has none of the large coarse outside leaves to it. A large number of the plants have been grown in different situations, and have thoroughly proved the character given of it, and also given the greatest satisfaction to all parties who have grown it.

E. T. warrants the plants not to run for a twelvemonth. One trial will be sufficient to prove to the grower the superior quality of his Cabbage over all others. Sold in packets containing 1 oz. 2s. 6d., ½ oz. packets 1s. 6d. The above will be sent, postage free, on the remittance of a post-office order, or the amount in 1d. postage stamps.

Sold by EDWARD TILEY, at his General Seed Shop, 10, Pulteney-bridge, Bath.

CRYPTOMERIA JAPONICA SEEDLINGS.

MESSRS. STANDISH AND NOBLE having still the largest stock in Europe of the above splendid tree, beg to offer fine strong plants at the annexed low prices:—6 to 9 inches high, 2s. 6d. each, 24s. per dozen, 12l. 10s. per 100; 12 to 18 inches, 5s. each; 18 to 24 inches, 7s. 6d.; 24 to 30 inches, 10s. 6d., and upwards, according to size.

The present is the most suitable time for planting out, and every plant sent out by Messrs. S. and N. will be handsome, well-grown specimens.—Bagshot, Surrey, July 7.

PELARGONIUMS.—The unrivalled GERANIUM, "HOYLE'S CRUSADER," may be had of JAMES WHOOLEY, for 21s. each. Fine strong plants, last year's struck, established in 48-sized pots, carrying at the present time a fine head of blooms. Also strong plants of all the best sorts now out, at moderate prices. Pelargonium seed, saved from the best varieties, 1s. to 10s. per packet.

Address WHOOLEY, Pelargonium Nursery, Windsor.

TO ORNAMENTAL PLANTERS.

WHITLEY AND OSBORN, of FULHAM, near LONDON, respectfully solicit attention to their Extensive Collection of HARDY TREES AND SHRUBS, indicated by their Catalogue, the nomenclature of which corresponds as far as practicable with that of Loudon's "Arboretum Britannicum." Their stock on sale is healthy and well grown, and for collections, the advertisers submit the following rate of prices.

1500 species and varieties for the sum of		£150
1000 ditto	ditto	65
500 ditto	ditto	27
200 ditto	ditto	12
100 ditto	ditto	7

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N.B. The prices above quoted are upon the assumption that the selection be left to WHITLEY and OSBORN; but if the purchaser desire to make the selection, the prices will vary in proportion to the sorts required.

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And a collection of the best varieties of ROSES—Standards, Climbers, and Dwarfs.

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Catalogues of the above may be had on application, and WHITLEY and OSBORN think it due to themselves to say that every article enumerated therein is in their possession, and may be seen at their establishment.

Men of first-rate ability and character are waiting in this establishment for appointments as Gardeners, or as Gardener and Bailiff.

CARNATIONS AND PICOTEES.—The following PRIZES, open to all England, will be given on TUESDAY, July 17, 1849, at Salisbury.

CARNATIONS (NURSERYMEN)—The best 24	£2	10	0
Second Ditto	1	10	0
Third ditto	1	0	0
Fourth Ditto	0	10	0
PICOTEES—The best 24	2	10	0
Second ditto	1	10	0
Third ditto	1	0	0
Fourth ditto	0	10	0
CARNATIONS (AMATEURS)—The best 12	2	10	0
Second ditto	1	10	0
Third ditto	1	0	0
Fourth ditto	0	10	0
PICOTEES—The best 12	2	10	0
Second ditto	1	10	0
Third ditto	1	0	0
Fourth ditto	0	10	0

To be shown in Cards on the Exhibitors' own Boxes. Entrance to each Class, 10s. each. The first Down Train will be waited for, to allow Exhibitors from London. The Flowers exhibited will be subject to the most minute examination, and must abide the decision of the Censors as to disqualifications. Certificates will be awarded to Seedlings. Three blooms of a sort required. Three days' notice also required.—J. KEYNES, Salisbury.

TO ADMIRERS OF ROSES.

A. PAUL AND SON beg to inform their patrons and lovers of ROSES in general, that the Extensive Collection cultivated at the Cheshunt Nurseries is now in perfection, and will continue till the end of July; after which, the Autumnals will continue in bloom till November. They will be very happy to show them to any lovers of this flower, whether purchasers or not. Every novelty that could be obtained has been added to the collection. Cheshunt is on the Cambridge Line of the Eastern Counties Railway, one mile from the Cheshunt, two miles from the Waltham, and three miles from the Broxbourne Stations. An Omnibus meets the trains at Waltham, and passes the Nurseries.—Cheshunt, Herts, July 7.

TO THE ADMIRERS OF THAT SPLENDID AUTUMNAL FLOWER, THE CHRYSANTHEMUM.

YOUELL AND CO. are now prepared to execute orders from their extensive and very select collection of the above, comprising all the new and fine continental varieties, at the following prices.

50 best new sorts	.....	25s.
25 ditto	.....	15s.
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Well established in small pots, or per post free, with all orders (if requested), directions will be sent for a successful and easy mode of culture for exhibitions.

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ROSES.

EDWARD DENYER, NURSERYMAN, Loughborough-road, Brixton, Surrey, three miles from London, informs his Patrons and Admirers of ROSES in general, that his unrivalled collection, consisting of above 800 varieties, is now in bloom, and free to the inspection of all visitors (Sundays excepted). Orders taken for plants now in bloom, and executed in November next.

E. D. is desirous of informing his customers that he has no seed shop in London.

ROBERT WHIBLEY has for sale fine Plants of FUCHSIA SPECTABILIS, at 7s. 6d. each. The unrivalled collection of Fuchsias, Verbenas, &c., are now in bloom, and as every novelty, both English and Continental, has been added to the stock, a visit to the Nursery will greatly assist purchasers in their selections for the present and coming year. The plants are free to the inspection of all visitors daily, except Sunday; and R. W. will have much pleasure in showing his very extensive collection to those who may honour him with their visits.—Chester Nursery, near Walcot-place, Kennington-road, London.

FIRST-CLASS PELARGONIUMS FOR EXHIBITION, FOR PREPAYMENT ONLY.—Twelve of the following varieties, including he box and carriage to London, will be sent out for Two Guineas, well-rooted in 3-inch pots, and ready for an immediate shift into a larger size. Orders addressed to JOHN DOBSON, Worton Cottage, Isleworth, will be booked, and correspondents informed when the plants are ready, when remittances may be made by Post-office order on Brentford. Priority of payment to ensure first selection. Aurora, Blanche, Centurion, Cracker, Forget-me-not, Ariel, Cassandra, Cavalier, Cruenta, Gustavus, Guilelma, Grandiflora, Junit, Negress, Rosamund, Sundown. Or, Nine of the above, and Hoyle's Crusader, Topping's Brilliant, or Foster's Victory. N.B.—J. DOBSON has commenced his propagation. All the above varieties, except the three latter, have appeared in his winning collections. E. BECK'S descriptive catalogue of new varieties is in course of preparation, and will be ready for issuing immediately after the exhibitions are closed.

NEW AND VERY CHOICE PLANTS.

YOUELL AND Co. have the pleasure to announce that they have received from the establishment of that well-known Florist, M. A. MIELLEZ, of Lille (France), the following highly desirable plants. They may be confidently relied upon as being distinct to any yet offered, and, from their great beauty, invaluable to any collection.

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GAZELLE (Mielles).—Large bloom; tube rosy lilac, outside of the sepals blush white, the inside rosy lilac, lilac corolla; good fancy variety. Price 5s.

JULIA GRISI (Mielles).—Large bloom; tube blush, sepals tipped with green, rosy scarlet corolla. Price 5s.

When the set is taken, they will be charged 30s.

CHRYSANTHEMUMS.

MADAME MIELLEZ.—Pale rose, large petals, very full and large bloom, extra fine. Price 3s. 6d.

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LOUIS NAPOLEON BONAPARTE.—Beautiful dark crimson with black eye, large trusses. Price 2s. 6d.

The above can be sent per post, free, to any part of the Kingdom. Post-office orders are respectfully requested from unknown correspondents.—Nursery, Great Yarmouth.

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CARBONISED ANIMAL MANURE.—If anything will make your seeds and plants grow, display a luxuriance of foliage, and blossom in perfection, this Manure assuredly will. To be had of H. GILES, Seedsman, &c. (Agent for the sale by special appointment), 82, Cranbourne-street, Leicester-square, in tin canisters, at 1s., 1s. 9d., and 2s. 6d. each. Also supplied for Vegetables, Pleasure Grounds, Grass Plots, &c., at 12s. per cwt.; and prepared, by a different process, for Agriculture, to suit any kind of crop or soil, at 5l. per ton, half a ton 3l. 10s. five cwt. 2l., and one cwt. 10s. (not cash, and packages charged extra). Six cwt. is an amply sufficient application for an acre of land. Full directions for use accompany each canister and package.

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JOHN MORTLOCK, 250, Oxford-street, respectfully announces that he has a very large assortment of the above articles in various patterns, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible prices for cash.

250, Oxford-street, near Hyde-park, London.

IMPORTANT TO HORTICULTURISTS.

PRACTICAL RESULTS OF REGISTERED IMPROVEMENTS.—The following is extracted from the *Morning Chronicle*, July 6th:

"EXHIBITION OF THE ROYAL BOTANIC SOCIETY.—The Fruits exhibited on Wednesday last by the Society were very splendid, especially the Strawberries. Those exhibited by Mr. SKEPPARD, of Deptford, called British Queens, were truly superb, as were also those by Mr. MYATT, of Camberwell, and the Messrs. MYATT and Sons, of Deptford. The four punnets contributed by the latter were all from new seedlings, and gained the prize of Merit, which is the highest reward the Society's rules allow for Strawberries raised from seedlings. These prize Strawberries were all reared upon the NEWLY-REGISTERED STRAWBERRY TILES of Mr. ROBERTS, of 36, Eastcheap, City. The splendour of the specimens exhibited on Wednesday fully attest the value of this invention, as the exhibitors attributed their success in producing such fine fruit principally to their having adopted these Tiles, which by absorbing the heat of the sun, and preventing the root of the plant being robbed of its moisture, greatly accelerate the ripening and growth of the fruit. They also effectually prevent any injury being done to the fruit by dirt and heavy rains."

These TILES can only be had at the Inventor's Depôt, 34, Eastcheap, City, London.

MILK PANS, PROPAGATING GLASSES, &c.

JAMES PHILLIPS AND Co. beg to hand their prices for

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16 " " "	3 0		24 " " "	5 0			
18 " " "	3 6		26 " " "	6 0			

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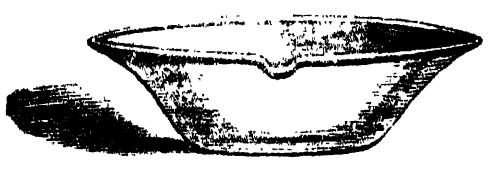
Estimates and List of Prices forwarded on application at their Warehouse, 116, Bishopsgate-street Without, London.

GLASS.



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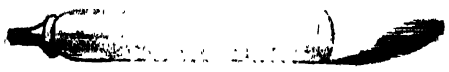

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From	6 " 4	"	7	"	5	" 2d.	" 0	16 8
	7 " 5	"	8	"	6	" 2½d.	" 0	18 9
	8 " 6	"	10	"	8	" 2½d.	" 1	0 10
	10 " 8	"	12	"	9	" 2½d.	" 1	2 11

Larger sizes, not exceeding 10 inches long.

16 oz. from 8d. to 3½d.	per square foot, according to size.			
21 oz. " 3½d.	5d.	"	"	"
26 oz. " 5½d.	7½d.	"	"	"

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental as, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and Hot-water Apparatus Manufacturer, Triangle, Hackney, near London, begs to call the attention of the gentry to his low prices for cash. Good Substantial-built Greenhouses, fixed complete, 6 ft. long, 7s wide, 90s.; 21 ft. long, 12 wide, 90s.; 12½ ft. long, 10 wide, 80s. A large assortment of Conservatories, Hothouses, Pits, Melon and Cucumber Boxes, Iron Hand-lights, Summer-houses, Seats, &c. Estimates for any branch in the above line, either in wood or iron, or for park fencing.

IMPROVED FLOWER STICKS.—THESE FLOWER STICKS are of a circular form, thereby avoiding angles and sharp edges, which are liable to cut and injure the plants. They may be had painted brown or green to suit the various plants.—To be had of all respectable Nurserymen and Seedsmen, and dealers in Garden Implements. Manufactured and sold Wholesale, at E. MORGAN'S, 149, Fleet-street, London.

N.B. Samples to be seen at the Office of this Paper.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—The readers of the *Gardeners' Chronicle* of Saturday, Feb. 24th, must have observed the high terms in which this Glass was spoken of by Dr. LINDLEY. We have re-arranged our list of prices to correspond precisely with those of the Patentee, to which we would beg the attention of the Nobility, Clergymen, Gentry, and others.

In squares under 8 by 6 ... ... 4d. per foot.

8 by 6	under 10 by 8	4½d.	10 by 8	under 14 by 10	5d.		
14 by 10	"	14 foot	5½d.	14 foot	"	8 feet	6d.
8 feet	"	4 feet	6½d.	4 feet	"	6 feet	7d.

A full List of Prices and every information may be had by applying to JAMES PHILLIPS and Co., Horticultural Glass Warehouse, 116, Bishopsgate-street Without, London.

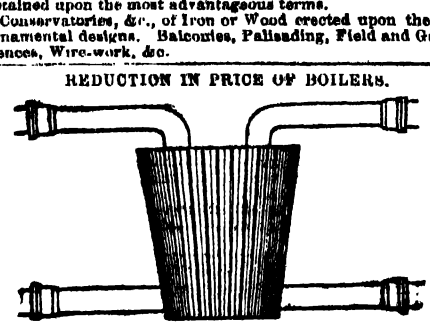
APSLEY PELLATT AND Co. (late PELLATT and GREEN), Falcon Glass Works, Holland-street, Blackfriars, have always on hand, Bee Glasses, 1s. 2d. per lb.; Cucumber Glasses, 1s. 6d. per lb.; Milk Pans, 12-in., white glass, 5s. 6d. each; Propagating Glasses, white, 1s. per lb; do., green, 10d.; do. condensing, 2d per lb. extra; Grape Shades, 1s. 6d. to 2s. each; Fish-bowls, from 1s. 6d. each; Wasp and Fly-traps, 40s. per gross, or 5s. 6d. per dozen. By the use of these traps fruit may be preserved from (otherwise certain) destruction.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in.	will warm	50 ft. 4 in. pipe		£1 15	0
12 in.	do.	75 ft. 4 in. do.	...	2 5	0
14 in.	do.	100 ft. 4 in. do.	...	2 15	0
16 in.	do.	150 ft. 4 in. do.	...	3 10	0
18 in.	do.	250 ft. 4 in. do.	...	4 10	0
21 in.	do.	350 ft. 4 in. do.	...	5 10	0
24 in.	do.	450 ft. 4 in. do.	...	7 0	0

NEW PATTERN BOILERS.

30 in.	will warm	800 ft. 4 in. pipe	...	15 15	0
36 in.	do.	1500 ft. 4 in. do.	...	25 0	0

All Boilers with double arms, up to 18 in., 5s. extra; to 24 in., 10s. extra; all above, the same price.

120, Fleet-street, London, June 28.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

EDENCH offers for sale Patent HOTHOUSES, which he will warrant far superior to all others, in every respect, viz., 1 Span Roof, 28 feet 6 ins. long, 13 feet 6 ins. wide, 40l.; Lean-to, 28 feet 6 ins. long, 16 feet 6 ins. wide, 50l., with best timber and 16-ounce glass of large size. Patent Lights for Pits, Frames, &c., requiring no paint, 7d., 8d., and 9d., per superficial foot, according to quantity, &c.

HEATING BY HOT WATER.

CLARK'S METALLIC HOTHOUSE WORKS, 55, Lionel-street, Birmingham.—Proprietor, Mr. THOMAS CLARK; Manager, Mr. JOHN JONES.

Mr. CLARK presents his grateful thanks to the Nobility and Gentry for their liberal patronage of the above Establishment, during a period of thirty years, and begs to state that the repeal of the duty on Glass enables him to offer his METALLIC HOTHOUSES at a greatly reduced price. These Houses are glazed with British Sheet Glass, in panes of from 24 to 30 inches in length, and of such thickness as to preclude all danger of accidental breakage, whilst that which arises from the action of frost is effectually prevented by the peculiar mode of glazing adopted. As a sample of his Metallic Hothouses, in which all the most recent improvements are happily combined, Mr. CLARK refers to the magnificent range erected by him in the new Royal Gardens at Windsor, admitted by competent judges to be the most complete of its kind in the world.

FLEXIBLE INDIA-RUBBER HOSE, PIPES, AND TUBING.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER TUBING. These articles are made all sizes, from ¼-inch bore and upwards, are not injured by hot liquors and acids, are permanently flexible in all temperatures, and are well adapted for Watering Gardens, Breweries, Liquid Manure Pumps, Gas, and Chemical Purposes; they require no application of oil or dressing, and do not become leaky from remaining out of use, rendering them particularly suitable for Fire Engines, and all purposes where a permanently sound and flexible pipe is required.

VULCANISED INDIA-RUBBER GARDEN HOSE fitted with copper branch, roses, and jets, complete, for attaching to Pumps, Cisterns, &c.

J. L. HANCOCK begs the attention of parties using long lengths of the Flexible Garden Hose to his SELF-ACTING HOSE-PIPE REEL, which is found a most convenient machine for winding up and conveying away the Hose when out of use.

Manufactory and Warehouse, Goswell-mews, Goswell-road, London. All Orders and Letters addressed as above will receive immediate attention.

THE PATENT ALKALI COMPANY'S METAL-LIC BLACK AND PURPLE-BROWN PAINTS are applicable to every kind of Iron and Wood-work, Farm and other Outbuildings, Shipping, &c., and are pre-eminently superior to all the ordinary descriptions of white or red lead, or so-called "Mineral Paints," in point of economy, durability, and preserving quality. Prices: Black, 25l. per ton; Rich Purple-brown, 22l. per ton, delivered in London or Liverpool, exclusive of packages, which are not returnable except to be refilled, free of expense to the Company.

AGENTS: Messrs. Evans Brothers, London; Messrs. Matthews and Lapnard, Bristol; Messrs. Evans and Hodgson, Exeter; Mr. Samuel J. Pitt, Yarmouth, Norfolk; Mr. D. Sandeman, Glasgow; Mr. G. Sandeman, Dundee; Mr. S. Newby, Bradford, Yorkshire; Mr. R. S. Farr, Edinburgh; Mr. W. Bailey, Wolverhampton; Messrs. Bryant and May, Tooley-street, London; Messrs. Vint and Co., Newcastle-on-Tyne and Sunderland; Mr. Robert Oxland, Plymouth; Mr. Joshua Fox, Tregedna, near Falmouth. To be obtained also, with copies of Testimonials, on application to the Offices of the Company, 20, Fenchurch-street, London. JAMES A. WEST, Secretary.

GRAY, ORMSON, AND BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

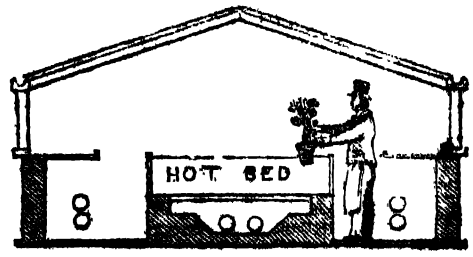
They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

GRAY, ORMSON, and BROWN, have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

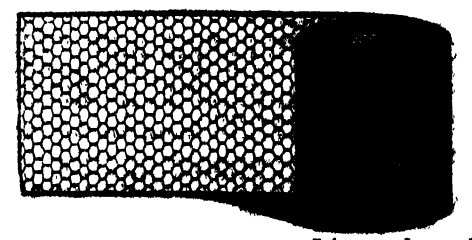
ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

SHETLAND PONIES AND CATTLE. — Just landed, direct from Shetland, a quantity of very handsome small PONIES; size, from 8½ to 12 hands high. Also some very handsome small COWS and HEIFERS, down Calving, some with Calf by side, and in milk; also some small OXEN and SHEEP, for feeding. These Cows give a large quantity of milk for their size, which is very rich, similar to the Alderney, and they are very hardy and suitable to this climate. To be seen at THOMAS CARTER'S, Salesman and Importer to her Majesty, 69, Wapping.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7d. per yd.	5d. per yd.
2-inch " strong "	...	9 "	6½ "
2-inch " extra strong "	...	12 "	8 "
1½-inch " light "	...	8 "	6 "
1½-inch " strong "	...	10 "	8 "
1½-inch " extra strong "	...	14 "	12 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for greenhouses, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Rosemary-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

HORTICULTURAL SOCIETY OF LONDON.—HIS GRACE THE DUKE OF DEVONSHIRE, President of the Horticultural Society, has kindly directed the Grounds of Chiswick House to be opened for the reception of the visitors to the Society's Gardens at the next Exhibition, on WEDNESDAY, the 11th July. Tickets are issued to the orders of Fellows of the Society only, at this office, price 5s., or at the Garden in the afternoon of the 11th July at 7s. 6d. each, but then also only to orders signed by Fellows of the Society. *But respectable strangers, or residents in the country, who will forward their addresses in writing to the Vice-Secretary, 21, Regent-street, on or before* MONDAY, *the 9th of* JULY, *may obtain from that officer an authority to procure tickets on this occasion. No official orders for tickets will be issued after that day.*

N.B. No Tickets will be issued in Regent-street on the day of Exhibition.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON have much pleasure in announcing to their friends and the public, that the superb and extensive collection of ROSES, at Woodlands, is now coming into bloom, and will continue to be very attractive during the Rose season. Maresfield is 12 miles distant from the Hayward's Heath Station of the London and South Coast Railway, from whence conveyances to the Nursery may be obtained.—July 7.

The Gardeners' Chronicle.

SATURDAY, JULY 7, 1849.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, July 10—Zoological ..... 9 P.M.
WEDNESDAY, — 11 { Horticultural Gardens ..... 1 P.M. / Literary Fund ..... 3 P.M.
SATURDAY, — 14—Royal Botanic ..... 3½ P.M.

COUNTRY SHOWS.—Monday, July 9: Liverpool Horticultural.—Thursday, July 12: Tunbury Wells Horticultural and Floral.

THE dry cool weather which we have enjoyed for the last few weeks will have saved the POTATO CROP from destruction, if anything can. But as all is still uncertain, and as appearances are becoming every week more unfavourable, it is desirable that the attention of cultivators should again be directed to a statement made in our columns of the 9th of June. It is there mentioned that Mr. TOMBELLE LOMBA, of Namur, had saved his crop every year by cutting off the stems, *after flowering*, and while yet fresh and green, and then covering the ground with earth to the depth of about 1½ inch; the top-dressing thus applied not being disturbed till the Potatoes were ripe.

This proceeding appeared to have the disadvantage of seriously diminishing the amount of the crop, even though it preserved the Potatoes; but it would seem, from a recent despatch from Lord HOWARD DE WALDEN to Viscount PALMERSTON, that this has not proved to be the case. The English minister at Brussels having caused some inquiries to be addressed to Mr. TOMBELLE LOMBA, that gentleman has returned a reply, from which the following is an extract:

"I can state, in the most formal manner, that when the Potato stems are cut off with a sickle properly sharpened (*avec une faucille dont le tranchant est convenable*) the tubers are not at all interrupted in their growth; that they remain attached to the stem until they are ripe, just as if the haulm had not been removed; and that *they acquire as large a relative size as Potatoes which have not undergone the operation*. I have so often observed this continuation of growth that I can speak positively to its going on without the slightest interruption, and that the treatment which I have recommended *is not attended by any loss whatever of size or quality*. I can offer the most positive assurance as to this; it is only necessary to take great care that the implement employed in cutting off the haulm shall be so sharp that the stems may be separated without disturbing the roots (*sans les soulever, afin de ne pas les détacher des fruits*). It is also proper that the stems should be removed from the ground immediately after being cut off; and especially that no time be lost in covering the surface of the ground with a layer of earth at least half an inch thick."

We earnestly beg our friends in all parts of the country to try the experiment in the manner so clearly pointed out by this Belgian gentleman. Should it prove, as he confidently predicts, that the crop is thus to be saved, not only will a most difficult problem in cultivation have been solved, but some physiological questions will arise, to which attention has never been sufficiently directed. It is certain that Potatoes cannot be perfectly formed without the agency of leaves. Leafless aborticns indeed will appear and feed upon their parent tuber till they have exhausted it, but they are mere aborticns, and of no account. If leaves are thus necessary to the production of Potatoes, it would seem at first sight that to remove the branches can only result in the loss or great injury of the crop. But it may be that Potatoes, after having arrived at a certain condition, possess the power of continuing their growth by their own proper and unassisted vitality; and this is rendered the more probable by the well-known fact that the flour which gives them their principal value does not descend directly from the leaves, as flour, but is in the first instance of the nature of gum, or some other fluid organisable matter, formed in the leaves and sent downwards into the tubers. Having reached the tubers it undergoes its final change, and from a soluble substance is gradually converted by their vital force into insoluble flour. To that final operation we have no reason to suppose that the leaves contribute; all that they do is to produce the matter out of which the tubers generate their flour.

It must be observed that Mr. TOMBELLE LOMBA does not cut off the stems *till after flowering*. It is possible that at that time the leaves of the Potato have done their work, so far as tubers are concerned, and that their further duty is to nourish the fruit. If so, we have an explanation of the result of which that gentleman so positively speaks. At all events, since we have a reasonable assurance of his practice having proved successful in Belgium, and as there is nothing in it at variance with possibility, or even probability, it is certainly one that has strong claims upon the attention of practical men.

AN inquiry or rather requirement of one of our correspondents respecting the ARRANGEMENT OF FLOWERS in a group or "bouquet" has proved so suggestive to us of general principles applicable to gardening, when considered in the light of fine art, that we trust the following attempt to expound them will not prove altogether useless, as regards their bearing on such questions as that under discussion in our pages by Mr. BAILEY and other correspondents.

Although a "bouquet" is obviously one of those things which do not admit of adequately definite verbal representation, there are, nevertheless, certain principles which are as requisite to the satisfactory arrangement of lines, forms, and colours in a nosegay, as to the right disposal of the lines, forms, and colours in a picture—no matter whether it be a picture of flowers by RACHEL RUYSCH, of a landscape by CLAUDE, or of a battle scene by RUBENS—(Sir JOSHUA REYNOLDS, indeed, speaking of one of the grandest compositions of RUBENS says, "the works of this great man remind me of a beautiful nosegay.") In all cases where the pleasure of the mind through the eye is affected by means of forms and colours, it will be found that the actuating feeling and governing principles have been in every instance the same.

The most important, because most comprehensive, principle of fine art is technically expressed by the word "*breadth*," a term significant enough of that quality which results from such an "*artful*" management of the parts as shall make them subserve the required simplicity of the general effect. This is a most important quality, for it depends upon the general effect of an object, whether it shall command attention or whether it is doomed to be passed by unnoticed. Practically considered (especially with reference to our present purpose), "breadth" has the most obvious and most important relations with *light*. Our first object, then, in the "composition" of our bouquet must be to secure a sufficient breadth or mass of light; but with this we must have *variety* also—variety in the tints of the component parts, and variety in the outline of the general form; but in aiming at variety, we must beware of "spottiness" and confusion as qualities destructive of breadth.

Having secured an agreeable mass of attractive light, we must next attend to what we may call our "middle tints" and "tones." It is in them chiefly that the beauty of our colouring materials is to be found; and as light is always subdued by the presence of colour, it is here that we may most safely luxuriate, and those who possess that not very common faculty "feeling for colour" may let their feeling satisfy itself. Then come our *deep* "tones" even to the full depth of our colouring materials whether "hot or cold," and it is with these that our rich green foliage should have its most immediate relations. This mention of foliage reminds us that those beautiful pale, cool greys, such as are seen in the "Grass" of Pinks and Carnations, enter agreeably into composition with such light tints as those of the Blush Rose, or more sweetly still with the rich creamy white of the Gardenia, &c.

Although we have divided the consideration of our "composition" or arrangement into three, viz., light, middle tone, and dark; the result we aim at is "one-ness," and that, be it remembered, with the utmost possible degree of *variety*—variety of a kind, moreover, which may fairly be considered infinite by reason of its *suggestiveness*. (That word suggestiveness is the key to the secret spell with which men's minds are bound by certain works of art. TURNER works with it more perfectly, and therefore more potently than any who ever dealt in the magic of art.) As with colour so also must it be with form, both must be so managed that the result shall be equally remote from formality and confusedness.

In order to connect, reconcile, and balance, separated and opposed masses of hot and cold colour, or of light and dark, we may take a portion from each and transpose them. But in this, as in all cases of artistic arrangement, we must bear in mind that *equal quantities* are ever to be avoided. In fine art it is by no means necessary that things should be of the same size, in order to their balancing each other. We must use the steelyard rather than the *scales*, for a small thing may make up for its want of quantity not only by its relative intensity of colour or light, but by its *position* also; *gaining* in value in proportion as it is farther removed from the mass which it is intended to influence. It becomes attractive by isolation.

There is another point which we must by no means overlook—we require not only attractive masses and breadth or "unity," but centres or foci of attraction. By the word *centre, however*, neither the middle of our composition nor even of the masses of light or dark is intended, for in these and many other respects genius and *right feeling* have almost boundless liberty. But there should be a point or climax somewhere, in which the extreme power of our means and materials is concentrated. Let us for instance suppose that we have the whitest possible of white flowers as the strongest point of our mass of light. It may be thought that having exhausted the light side of our "pallette" we have done our utmost—not quite, for we shall find that by opposing a *small* quantity of dark to our extreme light we greatly enhance its brilliancy—we obtain vivacity—we do in fact what nature does in the way of animation to the countenance by means of the piquant opposition of light and dark in the eye. On the same principle may the value of masses of colour also be either enhanced or reduced at pleasure. For instance, nothing is gained by opposing a mass of vivid orange to a like mass of brilliant blue. The result is simply a conflict between the two colours, perplexing and painful to the eye; for although the orange is rendered more positively intense by being opposed to blue, the blue is in the same proportion intensified by the influence of the orange. Notwithstanding this, blue is the right colour to use for the purpose of enhancing the power and value of orange, and *vice versa*. A good colourist, whether painter or bouquetier, exemplifies this knowledge or feeling either by throwing the *enhancing* colour into shadow, or by the employment of materials in which the power of colour is subdued by neutral tones equivalent to shadow, which tones are commonly denominated *shades* of colour, in contradistinction to *tints*. It moreover obviously follows, from what we have said with regard to conflicting colours, that whenever a mass of colour is too preponderant, it may be dealt with by introducing in another part of the composition a portion of *counteracting* colour, taking care, however, that its mass be duly proportioned to the degree of influence it is required to exert.

A considerable degree of knowledge of one of the most important principles on which the proper arrangement of colours depends, may be obtained from any modern Encyclopædia, or from several popular treatises on Natural Philosophy, under the head of "Complementary Colours." It may not, however, be useless to some of our readers to observe that the term complementary signifies that which *completes*. Thus green, or its components yellow and blue, requires red to complete the elements of colourless light in the prismatic spectrum; and any colours are said to be complementary to one another which produce white when combined.

We are quite aware that these observations do not give our correspondent, Mr. BAILEY, what he asks for; they comprise neither the "definition of a tastefully arranged bouquet," nor what Mr. B. evidently intends by "an explanation of what is to be understood by a mixture of colours effectively disposed;" but we have attempted to assert principles which will, if rightly applied, prove more useful than attempts at defining things in their nature indefinite, or at describing that which is capable of infinite variety, and altogether dependant upon circumstances. The *success*, whether of a bouquet, or of that *chef d'œuvre* of art and nature, a well-dressed lady, depends much upon the circumstances of their position. A nosegay or a dress which would show to advantage in the white-and-gold drawing-room would look poor and weak, and prove worse than ineffective, amid the rich appointments of the boudoir or dining-room. He who paints a picture can suit his background to his "models," but in the case of bouquets and costume, the process must be reversed; the background being a "settled thing," the artist or artiste, however humiliating the necessity, must needs "work up" to it.

As every art which has beauty for its object is so far entitled to be regarded a *fine art*, it needs no argument to show that the principles of fine art are as applicable to gardening as to architecture, or even painting. But it is by no means necessary, or even desirable, that the garden artist should devote himself to the bewildering study of the abstractions re-

presented by the terms Beautiful, Picturesque, Sublime, &c. The *practical* inquirer may take comfort in the assurance that all works of really fine art, whether they give rise in the beholder to the emotions of the Beautiful, of the Picturesque, or of the Sublime, are constructed and wrought out on the same general principles.

An agreeably varied surface of ground, judiciously divided and appropriately disposed, furnished moreover with aquatic and architectural embellishments, as well as with beautiful and interesting plants, constitutes the general idea of a Garden or Pleasure-ground. It will rarely be seen that beautiful objects beautifully arranged can fail not merely to suggest but to supply models; for the painter and the garden artist will find it of practical utility to regard the word "picturesque" in its literal sense, viz., as that which includes the requirements of a picture, and he may take this generally as a test of success in his attempts at composition or tasteful arrangement. Let him ask himself, "Is this artistically and pictorially perfect?" If not, "Wherein is it defective or redundant?" and this he must do in all cases, whether with reference to a few cut flowers, the training of a single plant, the ordering of groups of growing plants, of a combination of such groups with shrubs and trees, or of the total design, including house and grounds, in which consists the comprehensive idea of a fine place.

We may possibly return to this subject. *M.*

IT may be convenient to the growers of CARNATIONS and PICOTEES to be made aware that, at the Horticultural Exhibition advertised to take place at Norwich on the 18th and 19th of the present month, the Carnations and Picotees will not be staged until after the arrival of the first down train from London on the 18th. We observe that any profit that may attend this exhibition will be divided among the various charitable institutions of the city of Norwich. Those who are desirous of obtaining further information should communicate with Mr. C. S. GILMAN, of Bethel-street, Norwich, on or before the 14th of July.

ANCIENT TREES.

THE TANK OAK, *Chêne dit la Cuve*.—This Oak is situated in the Commune of Guerbaville, in the part of the forest of Brotonne known by the name of Val-aux-Louvetiers. It consisted, in 1831, of five stems, nearly 100 feet high, springing from the same bole, at 4 feet from the ground. The bole, at a foot from the ground, is 19 feet 8 6/10 inches in circumference. In 1832, some marauders, aggrieved by the strict and active surveillance of the keepers entrusted with the preservation of that part of the forest, out of revenge, mutilated this fine tree by cutting over by its base the strongest of its stems, so that only four now remain.

It is a circumstance worthy of remark, that at the bases of these four stems there is a regular, deep hollow, forming a sort of tub or tank in the bole, in which water remains, even in the greatest heat of summer. This cavity is 2 feet 9 inches deep, and has doubtless given rise to the name which the tree now bears. The fame of this tree, in the country, does not appear to rest entirely on its large dimensions, and the peculiarity which it presents; we have been informed, that the water retained in the cavity has the property of curing certain cutaneous diseases. We leave to the disciples of Æsculapius the task of deciding whether, in reality, this water, always of a brown colour, and containing a notable quantity of tannin, does possess the properties ascribed to it.

Its age cannot be precisely stated, but a satisfactory degree of exactness may be obtained by the application of a formula derived from observations of the average annual thickness of woody layers in trees of the same species, known to be upwards of 100 years old, grown in the same sort of soil. This was found to be 20 millimetres, or 0.0787 inch. The circumference of the tree being 6 metres, the distance from the centre to the circumference, or radius of the transverse section is 0.9549 metres, or 37.59524 inches, and this divided by the thickness of the annual layer, gives 477; therefore, according to this calculation, the tree is at least 477 years old. *Extract from Notes sur l'Accroissement des Arbres Exogènes, par M. A. Dubreuil.* ||

ENTOMOLOGY.

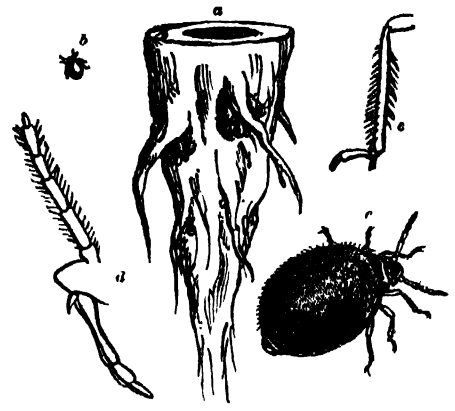
WINGLESS SUBTERRANEAN PLANT LICE.

WE fear that there is scarcely one of our readers (whose gardens have doubtless at one time or another suffered from the attacks of the well known species of plant lice) who will thank us for informing them that there is a peculiar tribe of these insects which, instead of seeking their nourishment from the leaves and shoots of different plants (where of course they are easily perceived), attack their roots, thereby committing their depredations unseen and unsuspected. Such is, however, the case, and, entomologically speaking, these underground species are some of the most singular of the numerous tribe to which they belong, affording in their economy several singular problems which are not very easily solved.

As these underground insects are but little known, and as there is reason to believe that their number is more considerable than has been hitherto supposed, we purpose in the present article to give a short monograph of the known species, with a more detailed notice of a new genus belonging to the group which we have recently found in our own garden at Hammersmith.

The first and most striking character by which these insects are distinguished consists in their entire want of wings in the perfect state—a peculiarity which seems dependant on their underground habits; wings, as we may easily conceive, being more likely to prove an incumbrance than otherwise to an underground insect. Still, however, one cannot but wonder at this want of wings in insects, which must be to a certain extent erratic, since, feeding on particular species of plants, they must travel in quest of them in cases where the ground where they have been bred is required for other kinds of crops. In fact, the occurrence of colonies of these wingless insects in situations where they have never been before noticed is a very instructive circumstance, showing that notwithstanding the apparent physical difficulties of the case, numbers of these insects may be found in new or hitherto unexpected situations, whilst at the same time our knowledge of the peculiar modes of propagation among the Aphidæ completely prevents us from ascribing their appearance to any other equivocal means of development.

Another character of these underground species consists in their being generally covered with a fine whitish powder, which comes off upon the fingers when they are handled. They generally live upon the roots of plants, in small colonies, individuals of all sizes being found together, even in the middle of winter. The senator Van Heyden, of Frankfort, was the first author who particularly examined these insects; and his three genera, described in the memoirs of the Frankfort museum (Seckenbergianum, vol. ii., 1837), with several additional ones since discovered, are characterised as follows:



The woodcut represents, fig. *a*, portion of the root of Beet, with several colonies in situ; fig. *b*, one of the largest specimens of the insect; fig. *c*, the same magnified; fig. *d*, the front of the head, with one of the antennæ and the jointed sucker; and fig. *e*, one of the hind legs.

PARACLETUS, Van H., Kaltenbach.—Antennæ short, 7-jointed, the last joint small; wings wanting; abdomen flat, without appendages secreting honey; legs long, tarsi 2-jointed, with two claws.

Paracletus cimiciformis, V. H.—One-eighth of an inch long. Found in the nest of the red ant, Formica rufa, in April.

TRAMA, Van H.—Antennæ short, indistinctly 7-jointed, the last joint very small; wings wanting; legs long, hind tarsi very long, without joints, and with two claws.

Trama Troglodytes, V. H. (Radicis, Kalt.)—Nearly one-eighth of an inch long. Found at the roots of Leontodon Taraxicum, Cnicus arvensis, Sonchus oleraceus,* Lactuca sativa, Hieracium pilosella, and also found by Van Heyden in ants' nests.

FORDA, Van H.; Rhizoterus Hartig in Germar Zeitschrift, f. d; Entomol. vol. iii., p. 363.—Antennæ nearly half the length of the body, 6-jointed, the second joint very short, third longest, last joint very minute; abdomen robust, convex, destitute of honey appendages; legs moderate, tarsi two-jointed, with two claws.†

Forda formicaria, V. Heyd. Kalt.—One-fifteenth of an inch long. Found in the nests of small ants.

Forda vacca, Hartig (Rhizoterus V.)—Also found in the nests of Formica rufa; possibly identical with the former.

Here probably also belongs the Aphis radicum mentioned but not described by Kirby and Spence (Introd. vol. ii., p. 73), "which derives its nourishment from the roots of Grass and other plants," and which is imprisoned by Formica flava in its nest, where it and its eggs share the care and solicitude of the latter insects with their own offspring.*

Here also probably belongs the Coccus Zeæ Maïdis of Léon Dufour, Ann. Sc. Nat., vol. ii., p. 204, found on the roots of Zea Mays.

RHIZOBIUS, Burmeister, Kalt.—Antennæ 6-jointed, last joint swollen and obtuse, longer than the preceding; wings wanting; body short, thick, and destitute of the honey-appendages.

Rhizobius Pilosellæ, Burm.—Length one-twelfth of an inch, found on the roots of Hieracium pilosella, and under stones.

Rhizobius Pini, Burm.—One-twentyfourth of an inch long. At the roots of Pinus Sylvestris.

Rhizobius subterraneus, Kalt.—One-twentyfourth of an inch long; also found under stones, and in company with ants.

Rhizobius Helianthemi, Westw.—Described by us in the preceding volume of this work (p. 399), and found at the roots of the Jerusalem Artichoke.

Here probably also belongs another species, "found in October on the roots of Carrots, and being of an ochreous or pale yellow colour, it is not easily detected. The only specimens I have seen were small, apterous, and mealy, as such subterranean species generally are. They had two short horns [antennæ? or saccharine filaments?], and six short, stoutish legs."—*Curtis in Journ. Roy. Agri. Soc.*, vol. ix. pt. 1.

SMYNTHURODES, J. O. W.—This is a new genus, nearly allied to Forda, but differing in its very short antennæ, which are not one-fourth of the length of the entire body, with the first joint short, the second and third of equal length, the second being rather the thickest, the fourth about half the length of the third, and the fifth rather longer, with a very minute joint at the tip. The body short and subglobose, finely pilose, and covered with fine white powder. It is destitute of saccharine appendages. The legs are short, with two-jointed tarsi and two claws.

Smynthurodes Betæ, J. O. W.—Length one-twelfth of an inch; colour greyish, covered with white powder, with the articulations of the body scarcely visible on the dorsal surface. Found on the 1st of January, 1849, and subsequently on the roots of the common Beet, in a garden at Hammersmith, in small colonies, consisting of individuals of different sizes, generally clustered together beneath the spurs of the root. They are extremely sluggish in their movements. *J. O. W.*

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* It is probably to this species that "Rusticus" alludes in his letters on the natural history of Godalming, where he notices the roots of plants as an odd station for aphides, having found them by hundreds on a Thistle root closely packed together, and almost as white as snow. On one occasion he pulled up a large Thistle that grew on an ant-hill, and thus brought to light a whole colony of these white aphides. He had been long aware of the great value which ants set on these little beasts, so he shook down some dozens of them from the Thistle root among the ants, which were all a-swarm at the damage done to their dwelling. No sooner were the ants aware of the presence of the aphides than they began to fondle them with their legs—sometimes positively taking them round the neck—to tap them on the back with their antennæ, and to lick them with their tongues; they then took hold of them with their jaws and lifted them from the ground, and carried them with the greatest care one by one into the recesses of the nest. In three hours the nest was found quiet and orderly, and not an aphis was to be seen; but on scraping down the side of the hill he soon came to the aphides, which were clustered together on little bits of Thistle root, which had been broken off in the ground, and were attended by numbers of ants. When the ants found their cattle were again in jeopardy, they drew them gently from the root and carried them still further into the nest.

† Our corrections of the characters of this genus are made from a specimen furnished to us by Van Heyden himself.

DISEASES OF PLANTS.

(*Continued from p. 404.*)

GENUS VIII. POLYANTHESIA, *that is, extraordinary abundance of flowers, of which none remain fertile.*—This disease appears to be generally confounded with another, by which the flowers at the moment of expanding, or shortly after they are open, fall off. In *Polyanthesia*, the flowers are not only excessively abundant, but remain some time, till at length their peduncle dries up. The vegetation of the plant itself is most vigorous. Apples, Pears, and similar trees, afford frequent instances of it. Cultivators are well aware that those individuals which are overloaded with flowers bear the best fruit. But this is not the case with trees only. I have observed it with many herbaceous plants, especially of the family of Cruciferæ. Excessive vigour and superabundance of nutriment produce this phenomenon, which appears to me to occur most frequently when a hot autumn has been succeeded by a temperate winter and early summer. The remedies for this disease in trees are the same as those given for *Sphacelosapanthesia*. Changing the soil, both for trees and for herbs, will have the desired effect.

Sometimes Polyanthesia, as well as the allied disorder above alluded to, will only attack a portion of the individual, the remainder being in a natural state and bearing its fruit. In such case a partial remedy will suffice. It will be confined to the bending back the over-luxuriant branches, which can be easily done in an espalier tree. An able gardener will commence by uncovering that part of the roots which correspond to the diseased branch, and examine it carefully. He may thus discover that the luxuriance in question comes from some root having penetrated into an over-rich soil, and will conclude upon the necessity of amputating a portion of it. In this case he will proceed under some of the instructions hereafter given under the class of *Wounds*. He will then remove the rich soil and substitute a poorer. If he finds no extraordinary qualities in the soil, the amputation of the root will suffice. Sometimes a partial scarification of the affected branch will produce the desired effect. The ability of the gardener, and his prudent choice of the treatment best suited to the case, will insure to his efforts the best recompense as he sees his tree cover itself with fruit.

GENUS IX. PHYLLOMANIA, *or excessive abundance of leaves.*

First Species. UNIVERSAL PHYLLOMANIA.—Writers on agriculture have considered the superabundance of foliage more in reference to trees than to herbs. But I can vouch for having repeatedly seen annuals, especially in those years when the seasons have been neither very hot nor very dry, cover themselves with an unusual quantity of leaves, and then die without

* It is another remarkable circumstance connected with these insects that so many of them should be found in ants' nests, and yet they are destitute of the appendages which secrete the honey so eagerly sought after by the ants.

having horne flowers or fruit. To the careful observer the tree thus affected will appear to have produced an excessive quantity of small branchlets. In this it is different from Genus VII., as in that case the tree does not shoot out any unusual number of branches. Even the ancients speak of this luxuriance of leaves. All agree that it is owing to an excess in nutriment. Some of the methods recommended for the preceding diseases will be good also for this one. Roses are often subject to it, especially when too much manured. In these cases I have been accustomed to prune them in spring, and have often had flowers even the same autumn.

Cultivators of the Orange tribe, and of some other garden plants kept in pots or tubs, have a sure means, when they are barren, to compel them to bear fruit, that is, to place them in smaller pots. An Orange or Lemon tree in too large a tub will luxuriate in foliage. Remove it to a smaller one, and it will soon load itself with fruit. All botanists, even the least experienced, know that the lesser Periwinkle (Vinca minor), with variegated leaves, will bear no flowers if left in the ground; to make it flower it must be put in a pot, and not a large one. From this may be deduced the rule not to give too much room to plants, especially to those from a warm climate.

Second Species. PARTIAL PHYLLOMANIA.—It sometimes happens that plants have a larger number of leaves than they ought to have, without nevertheless, their general economy being disturbed by it, at least in appearance. Thus Haller observed the herb Paris (Paris quadrifolia) with five or six leaves, when it ought only to have four. I, myself, have often observed plants with compound, or with verticillate leaves, vary in their number; those for instance, which ought to have only three add a fourth, as in the Verbena citriodora. Some others, instead of a flowering branch, will shoot out a tuft of trees. It appears that these phenomena again are all attributable to the richness of the soil; although we must not exclude from the number of promoting causes the peculiar nature of the seasons. The more the weather is favourable to vegetation, the more does it promote partial phyllomania.

Third Species. PISTILLARY PHYLLOMANIA.—It has been already said that in the so-called *extra-double* flowers, as in the Ranunculus for instance, the pistil is changed into green leaves, and that the flower is therefore barren. This disease is owing to the same causes as petalomania, and requires the same treatment.

VILLA AND SUBURBAN GARDENING.

A CORRESPONDENT seems to think that my papers under this head will not meet the views, or rather supply the wants, of villa gardeners. I shall explain their object, and then appeal to your subscribers as to their practical application. In the columns of the *Gardeners' Chronicle* there are copious weekly calendars from which valuable instruction may be gathered, not only for those whose gardens rank high in the scale, but also for places lower than the villa garden. Men of understanding will apply these instructions either qualified or otherwise, as the case may be. It is not my intention to give a weekly calendar. In the body of the Paper are constantly to be found good practical expositions of the principal subjects connected with gardening. Under the head of "Notices to Correspondents" will also be found useful hints to supply immediate information. My object, therefore, shall be to steer clear of these contributions—to infringe on no one's province. In attempting to do this, I shall explain as I go on those subjects which your correspondents have found it difficult to deal with; where they have failed I will try to point out the proper mode to pursue in order to ensure success in their future attempts. They will themselves, by comparing the course here recommended with their own practice, detect where they have erred. In the absence of personal inspection, it is scarcely possible to comprehend the cause of all the failures that occur, especially when these failures are communicated by persons little acquainted with gardening, and whose explanations of them on that account must obviously be defective. I again repeat that the observations under the above head are to be read and applied as opportunities and circumstances admit; they are not to be scanned over, and then cast aside like a weekly calendar. I invite villa gardeners to make known their wants, and I shall do my best to remove the cause of their disappointments.

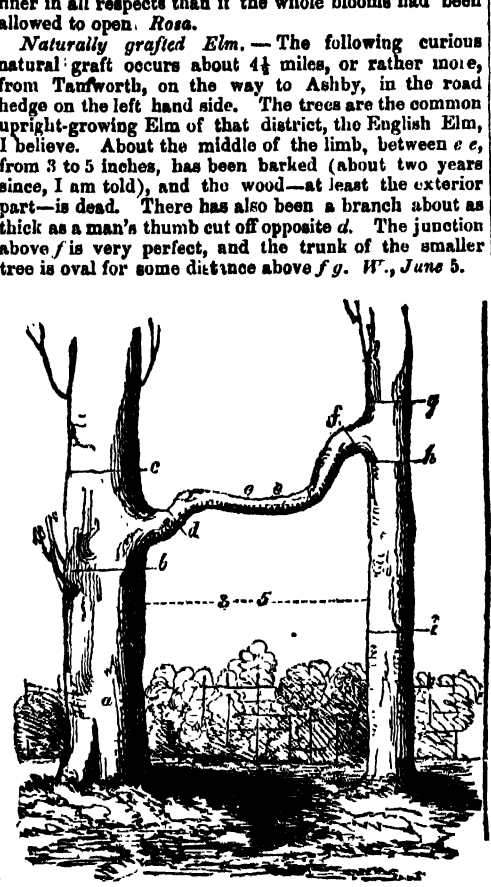
The mode of cultivating the Dahlia, from the cutting state to the flowering plant, may at some future time occupy my attention. All that "E. O." can now do, is to cut out the leading stem about 2 or 2½ feet from the ground, support the laterals with about four stakes, and fasten them securely to these as they grow. Supported in this manner they are not liable to be broken by a storm. Each of the laterals must be occasionally thinned; but it is scarcely possible to say to what extent this should be done, that will depend upon their luxuriance. His own judgment in this operation must in some measure be exercised. To obtain fine blooms, let the soil be well forked up, and a few inches of rotten manure spread over the surface of the soil for at least 2 feet all round from the stems. Let this assume a concave form, in order that when water is applied it may benefit the plant and not the path. The plants thus treated will grow away with great luxuriance. Three or four buds at a time will be ample for each lateral. Select such as are round, plump, and prominent, with advanced footstalks; and as they begin to burst into bloom, fasten them with a ligature, allowing them sufficient room, however, to develope their petals in. *Pharo.*

P.S.—"E. O." should have sent the insects with his Cucumber plant. Is it wireworm? Heartsease, if exposed to the full action of the sun, are extremely liable to die off during June and July near the atmosphere of London. Florists find it necessary to plant them in cool situations, and to protect them from scorching sunshine. Lime-water, or a weak solution of salt in water, will destroy worms; but then it must be applied in damp weather when they are near the surface, and frequently.

Home Correspondence.

Green Centres in Roses are more prevalent this year than usual. The moisture of the season appears to have caused an abundance of sap, which the cold, damp nights have checked in the leaves, many having fallen off, whilst the absence of the sun has also prevented the flower-buds from maturing the extra quantity into petals, and the unsightly excrescence has grown under their shelter before the calyx is disclosed. I know of no prevention, and adopt the plan of cutting off, as soon as the green protrusion is visible, all the buds so disfigured. Sometimes half those on a tree must be sacrificed, when the blot in the remainder is generally so much reduced as to be no longer a deformity, and indeed disappears entirely. The flowers retained, as all Rose-growers are aware, are then much larger and finer in all respects than if the whole blooms had been allowed to open. *Rosa.*

Naturally grafted Elm.—The following curious natural graft occurs about 4¼ miles, or rather more, from Tamworth, on the way to Ashby, in the road hedge on the left hand side. The trees are the common upright-growing Elm of that district, the English Elm, I believe. About the middle of the limb, between *e e*, from 3 to 5 inches, has been barked (about two years since, I am told), and the wood—at least the exterior part—is dead. There has also been a branch about as thick as a man's thumb cut off opposite *d*. The junction above *f* is very perfect, and the trunk of the smaller tree is oval for some distance above *f g*. *W.*, *June* 5.



	Circumference.	Feet	Ins.		Circumference.	Feet	Ins.
at *a*	... ...	4	2	at *g*	... ...	1	11
at *b*	... ...	4	0	at *h*	... ...	1	7
at *c*	... ...	3	9	Height from ground			
at *d*	... ...	1	4	at *b*	... ...	4	0
at *e e*	... ...	1	0	Height at junction			
at *f*	... ...	1	5	above *h*	... ...	6	0

Mixed Beds v. Masses.—The difference between the beautiful and picturesque, according to my idea, is this; the beautiful takes one's attention at first sight, and the more you examine the more beauty you discover. The picturesque takes one's attention like the beautiful, but on further observation the eye becomes tired; it pleases in the distance, but will not bear close examination—a remark which applies to massing. Let Mr. Bailey take half-a-dozen vases and fill each with one of the most favourite flowers he is fond of massing, and arrange the vases on a table as he pleases; then fill another half-dozen vases with flowers of different shades of colour and form, and arrange them in the same manner as in the former case, and if he does not prefer the latter arrangement, I shall give up all hope of making a convert of him. I admit that the massing of bright and gaudy coloured flowers is "fine," and so is the Lord Mayor's Show; but who shall say that either the one or the other is beautiful? Massing is followed by many not as a matter of taste, but because it is fashionable. But tastes differ, and so do opinions. Few writers on the beautiful and picturesque agree, and therefore when doctors disagree it is no wonder that their patients should do the same. What I want to see in flower-gardening is every one following out his own taste. We should not do this because Lord So-and-So's gardens are planted in that way; for what is suitable in a large garden and grounds often becomes ridiculous on a smaller scale. Mr. Bailey quotes Mr. Repton in support of his opinion; but, as I understand the passage, it rather bears out mine than Mr. B.'s views; and as it requires the talent of all the judges of the land, with the assistance of magistrates, counsel, &c., to define what the gentlemen in the enlightened House of Commons mean when they pass an act of Parliament, I hope Mr. B. will not be over severe upon me if my opinion is at issue with his on this point. He asks me "to define what I consider to be a tastefully-arranged bouquet;" but this is a task which cannot be well accomplished on paper. I may, however, mention one or two things which make a neat bouquet. Take one scarlet Geranium: I say one, for all bright colours should be few in proportion to the more chaste and neat ones, which are required in quantity to give tone sufficient to form the beautiful; then take two white Geraniums with a dark eye, a pink one, or in fact any colour you have; a Pink, a Carnation, a Heartsease, a small Rose, and one or two Sweet Peas of different shades of colours, and you have a bouquet fit for a duchess. My ideas respecting the proper distribution of colours was beautifully exemplified in Mrs. Lawrence's magnificent group of plants shown at the last Horticultural exhibition at Chiswick. With florists, massing may answer, for by that means the merits of different kinds of plants are more easily ascertained; but it can never have the effect of mixed beds, where the object is to "set off" the mansion and grounds to the best advantage; and for this purpose I may add that many or expensive flowers are not required. Every separate flower-bed should possess individual interest, and if the minor details are well carried out, the whole will express both uniformity and variety. Mr. Bailey appears to imagine that no further improvement can be effected in gardening; but this is a point on which I should again differ from him. This is the age of progress, and whatever old school gardeners and farmers may think, improvement will continue to advance every year. Of the authority Mr. B speaks of, I know nothing. Matters of taste are often as well understood by the peasant as by the philosopher. I do not consider that great men are the best persons to recommend things in every day life. There is generally too much enthusiasm in their nature in favour of their own particular views. *E. X., Braintree, Essex.*

Rain Water.—I shall feel much indebted to "T.W.T." for a description of the plan and contents of his filter. I have had considerable experience in catching rain water, and using it, both from the cistern where it was caught, on the roof of the house, and from the tank. I found a filter unnecessary in both cases for keeping the water sweet, so long as there was a regular circulation kept up; but having gone to town one winter, after breaking the pump, which was not mended, and of course the tank water allowed to remain stagnant till my return, the tank in the interval contracted a smell so rank and foul that I found it impossible ever after to cleanse it, though I scrubbed it with lime and other cleansing materials. If "C. R. D." therefore maintains a continual circulation, I think he will keep the water fresh without a filter; but if he wishes to purify the water he will find a filter indispensable. The difficulty I have experienced has been to purify the water, not from the sediment it contains, but from what it dissolves and holds in solution. Soot, it is well known, when swept from the roof into the cistern, carries with it a quantity of salt, and it is no easy matter to extract this from the water. From the want of a spring near my house, I am obliged to act on the fact that every man's roof, if properly managed, will supply all beneath it with abundance of water; I have accordingly erected, close under the roof, a cistern 10 feet by 6, and 3 feet deep. Across the centre, and dividing its length into two equal compartments, two thin wooden boards, perforated with holes, are placed about 6 inches apart, the outsides of which are to be covered with fleecy cotton (to act as the sponge in Robins's filter), and the inside I mean to pack with animal charcoal, sand, and gravel, well mixed. The water is caught from the spouts, as it comes from the roof, in the one side of the filter, through which it passes, to the other, and from the latter compartment all the supply pipes issue. I shall be obliged to "T. W. T." if he can give me any better mixture for my filter. *R. S.*—A thin stratum of charcoal will preserve water sweet for years, as the author has experienced in circumnavigating the globe, and in many other voyages. *B.*

Efts.—If "Clio" will strew two or three handfuls of common salt over the floors of his cellars and kitchen infested by efts, he will find it a ready and simple means of getting rid of them. The efficacy of this application he can easily test by shaking a pinch of salt over one of the reptiles, which it will kill in about two minutes. Salt will also kill toads and frogs. *A. D., Dale Park.*

Rhubarb Preserve, if made according to the following directions, is almost equal to Scotch marmalade. Procure six Oranges, peel them, and take away the white rind, and the kernels, then slice the pulp into the stew-pan, along with the peel cut very small; add thereto 1 quart of Rhubarb cut fine, and from 1 lb. to 1½ lb. of loaf sugar. Boil the whole down in the usual way, as for other preserves. *J. Carlton.*

How to grow fine Broccoli.—In May prick from the seed-beds the best plants 9 inches asunder, and by July they will have acquired a full size for final transplanting, with nice "bushy" roots. Those of doubtful appearance should be then eradicated and rejected. Planting wide on well dunged ground, in open compartments, deeply dug, and repeated in dry weather, is the main requisite. Then on a dry day, with a dibble or spade, mark one yard asunder from their destined places, or about 30 in a square rod. Take all the mould from each successive place, 1 foot wide and 1 foot deep, and

pass it through a coarse sieve along with a teaspoonful of genuine Peruvian guano, or a cupful of horse-dung. The rubbish, bricks, stones, &c., should be put in the bottom of the hole well broken up, and gently pressed with the foot, for the purpose of drainage, keeping the sifted mould at top. Then at any convenient time previous to August put in the plants with their roots entire, and give them a little water. In autumn a dressing of guano should be forked in at the rate of 1 lb. to a square rod, and in this way very fine heads will be obtained. This plan of culture is applicable to all the green tribe. *Hardy and Son, Malden.*

Preservation of Microscopic Objects.—I shall be glad if such of your correspondents as are in the habit of preparing objects in Canada balsam, would assist in giving a fair trial to a solution of copal as a substitute. In the autumn of last year I put up specimen 1 in Canada balsam, and specimen 3 in copal, and the result is equally satisfactory. The advantage of the copal over the Canada balsam consists in the latter not requiring the application of heat. A thick solution can be made by dissolving it in alcohol, but this process is tedious, and apparently unpromising from its becoming at first opake. The solution, however, is finally effected, and the transparency returns. When the specimen is immersed, numerous bubbles are apt to appear, and the whole becomes opake during the process of drying. The bubbles, however, gradually collect, and for the most part are squeezed out during the progress of consolidation, or settle away from the specimen towards the outer part of the cell in which it is placed, and the whole gradually becomes transparent. In specimen 2 (put up two or three weeks ago), I purposely retained a large supply of bubbles round the object, and you will see they have collected into five large ones away from it. If I had given a little assistance, by slightly elevating the glass over the specimens on one side, those bubbles would have escaped. Thus far I had ascertained that copal might be employed with success as a substitute for Canada balsam, when I found that it might be just as readily dissolved in rectified naphtha as gum arabic can be in water. I cannot find any mention of this fact in Ure's Dictionary, or in any other work that I have at hand. Quekett makes no mention of copal in his directions for the use of Canada balsam. I have now put up a few seeds and part of a capsule in a mass of the copal dissolved in naphtha, in order to watch the result. At present all is opake, but the clarifying process seems to be advancing, as in the former examples; and I therefore call attention to these facts that others may assist in testing the utility or otherwise of this process. I had put up a pollen mass in mastic dissolved in rectified turpentine, but the result was curious. The turpentine, as I presume, dissolved the fibrous matter to which the massulæ are attached, and thus effected a sort of dissection of the mass itself. The dissolved copal is remarkably clammy and tenacious, and, when drawn out into very fine threads, suggests the idea that should spiders ever become scarce, it may be found a useful substitute for cobwebs in micrometers! *J. S. Henslow, Hitcham, July 3.* [The preparations with which we have been favoured were quite as good as those in Canada balsam.]

Layering the Common Laurel (Cerasus Laurocerasus).—The common Laurel is one of the most valuable of our evergreens for shrubberies; its uniform and agreeable colour at all seasons of the year, the comparative ease with which it may be propagated, its many uses in garden scenery, whether for coppice, lawn, shrubbery, dressed or undressed grounds, must ever render the Laurel a general favourite, especially in soils adapted to its cultivation, such as sandy or gravelly loam. I have an old shrubbery of considerable extent, consisting principally of Laurels, which three years ago were quite unsightly and naked at bottom, and from its proximity to a principal walk, this shrubbery had become an annoyance, especially in wet weather, owing to its overhanging the walk. Cutting in had for some time been adopted as a palliative, but this only increased the evil; ultimately, however, it was resolved to layer or relay the whole shrubbery, and since that time it has been all that could be desired, being densely thick from the ground, and lowest next the walk, gradually rising to the outside, where growth upward is encouraged as much as possible, so as to mix with the branches of the timber trees. Commencing at one end of the shrubbery, all useless branches were cut away, i. e., any that were too woody or naked, together with dead wood. From this superfluous wood pegs were made for fastening down the branches intended to be layered. A party of workmen followed the cutters, slitting the base of each of the stronger remaining stems an inch or two, so as to cause them to be easily let into the ground, previous to which each branch was slightly cut or twisted at the most convenient part; a little soil was taken out, the branch pegged down, and the soil replaced, and, if necessary, a portion of the top was cut off. Layering in this manner about every 10 or 12 years will have the effect of completely renewing shrubberies, and at any time after layering a good supply of plants may be obtained for other places. Laurels flanking rides or drives in plantations, thus managed, have a fine effect, greatly surpassing in beauty of appearance anything else in the way of underwood, and, in suitable places, forming the [illegible]ver for game. I have layered Laurels in mid- [illegible] autumn, and winter, with equal success, but [illegible] the best time for the operation. *J. H.*

[illegible] preparatory to taking Honey.—Put [illegible] of ether in a small flask of about two ounces capacity, and connect it with the hive by a piece of glass tube 15 or 18 inches long, bent in the middle at a right angle; place the flask in a basin of hot water, the ether will then pass through the tube into the hive in a state of vapour. The glass tube should be fixed air-tight in the flask with a cork, in the usual way, and the entrance hole of the hive should also be closed with glaziers' putty, linseed-meal, dough, or any similar substance, after the other end of the tube has been inserted into it. If a flask be not at hand, a thin phial may be used instead of it. The operation must be performed in the evening. *Subscriber, Barnstaple.*

Foreign Correspondence.

St. Petersburgh, *June* 18, 1849.—*Rate of growth in Trees.*—Having just read the chapter on the age of Exogens in the 4th edition of Dr. Lindley's excellent "Introduction to Botany," I am enabled to furnish a few supplementary observations, which may be not deprived of all interest. The museum of the Botanic Garden is in possession of a transverse cut of Taxodium sempervirens (Sequoya Endl.) measuring 42″ in diameter, cut in the neighbourhood of the late Russian colony Ross on Bodega, and having 1008 very distinct zones. At the time of a late Mr. Khebnikoff's residence at Ross, there was felled another Sequoya, which had stood in the very colony, measuring 15 feet at the place above the ground where it had been cut; Admiral Wrangell has seen himself the basis of this giant, and has stated to me the truth of the size which had been indicated to me; he had ordered a segment of this stump to be cut out for me, in order to ascertain the number of zones; but unfortunately the sailors, when not surveyed, took this precious document for a common log and burnt it! A small board of 7″ 5‴ breadth, probably from this very tree, has 286 very distinct and well marked zones. A trunk of Larix microcarpa, in the same museum, from the island of Sitka, measuring 59″ in diameter, shows 330 zones, the interior ones being of considerable width. A trunk of Pinus sylvestris, grown in Finland on stony ground, measuring 25″ in diameter, offers 412 zones (the tubus medullaris is very near the real centre of the tree); whilst another tree of the same kind, grown near the first one, but on a moist and low spot, measured 28 inches, and showed but 100 zones. *F. E. L. Fischer, M.D.*

Societies.

Horticultural, *July* 3.—Sir P. de Malpas Grey Egerton, Bt., M.P., in the chair. The Lecture to-day, the fifth of the series, was principally confined to the structure and use of the organs which constitute the flower, and to the circumstances which are most favourable or unfavourable to its complete formation, its alteration, its colour, and the production of fruit, which production is the great end of the existence of a flower. The cause of fruit being blind, of Grapes not setting, of flowers falling from the branches, and of similar accidents, together with the history of monstrous or double fruits, were among the questions discussed on this occasion. Specimens of Acropera Batemanni and another species of the genus were exhibited by Mr. H. Lane, jun.

Royal Botanic, *July* 4.—This was the last exhibition for the season. The day was fine and the show a good one, although, as might be expected, fewer plants were present than on former occasions. One side, together with the ends, of the first tent we entered was filled with fancy and other Pelargoniums; while the other side, with the exception of some 4 or 5 yards (which contained Conifers in pots from the Society's grounds), was occupied with Orchids. The principal collections of the latter were contributed by Mr. Mylam, gr. to S. Rucker, Esq., and Mr. Williams, gr. to C. B. Warner, Esq.—Mr. Mylam had a magnificent Aerides odoratum of large size, and covered with racemes of the most lovely blossoms; a nicely-flowered A affine; a good Sobralia, with five open blossoms on it; the curious Cirrhæa fusco-lutea; Odontoglossum grande; a strong plant of the small yellow-flowered Oncidium Batemanni; a small Barkeria spectabilis; Vanda Batemanni, with a tall spike of beautiful blossoms, not all expanded; the rare Aerides maculosum in fine condition; and Coryanthes macrantha.—In Mr. Williams's group we remarked Aerides maculosum; the Barkeria-like Epidendrum verrucosum; a large and fine Phaius albus; Barkeria spectabilis, with six flower spikes; a huge Aerides odoratum; three nice Brassias; and the Holy Ghost Plant (Peristeria elata).—Collections of 15 Orchids were contributed by Mr. Plant, gr. to J. H. Schröder, Esq., and Mrs. Lawrence. The former had a plant of Aerides odoratum in the most luxuriant health. Indeed, large plants of this kind of Aerides and of Sobralia macrantha formed the more prominent features of the Orchid exhibition. The same exhibitor had also a nicely-flowered Saccolabium guttatum. Mrs. Lawrence sent a large and fine Sobralia macrantha with 10 open flowers on it and many more about to expand; the rare Phalænopsis rosea, and Aerides quinquevulnera, the latter with a charming spike of pink and white flowers; and Cyrtochilum Lindleyanum.—In groups of sixes the competition lay between Mr. Dobson, gr. to Mr. Beck, and Mr. Jack, gr. to R. G. Loraine, Esq., the former being first with the orange blossomed Epidendrum vitellinum, the chaste white-flowered Cattleya candida, a variety of Aerides odoratum, and Barkeria spectabilis. Mr. Jack sent the same Vanda teres formerly shown, still in good condition, and with it Oncidium altissimum, and a nice Aerides odoratum.—Messrs. Henderson, of Pine-apple-place, sent a specimen of the dark variety of Stanhopea tigrina, literally a mass of flowers. As new Orchids, Mr. Mylam had an Epidendrum with flowers somewhat resembling those of Barkeria spectabilis and E. erubescens. In his collection Mr. Williams had the beautiful purple flowered Cattleya tuberculata; and Messrs. Lane sent Acropera Batemanni, a species of no beauty, though not without interest.

Pelargoniums.—The best collections of "fancies" were shown by Messrs. Gaines and Staines; but there were also good groups from Messrs Ambrose, Robinson, Mosley, and Henderson. Among these the most conspicuous varieties for profusion of bloom and other qualities were Anais, Queen Victoria, Mr. Gaines' seedling "Hero of Surrey," and as a dark sort, perhaps, Defiance. The Queen and Anais formed perfect nosegays of themselves, so crowded were they with flowers.—Of other Pelargoniums, the best collections of twelves were sent by Mr. Dobson, gr. to Mr. Beck, and Mr. Black, gr. to [illegible], Esq. Mr. Dobson had Governor, Rosalind, Dowager, Nancy, Pet, Star, some seedlings, and other sorts. Mr. Foster, Undine, Lamartine, Constance, Norah, Narcissus, Lalla Rookh, Ariel, Alonzo, Conspicua, Marian, and Phyllis. Excellent groups of twelves also came from Messrs. Cock, Gaines, Staines, and Robinson; and Mr. Parker and Mr. Gaines showed capital groups of sixes. Mr. Parker's sorts were Acbar, Camilla, Hector, Rosy Circle, Louisa, and Manchester.

The tent next this one, and parallel with it, contained the different exhibitions of Stove and Greenhouse Plants, and Cape Heaths. The collections of 20 Miscellaneous Plants were again contributed by Mrs. Lawrence, of Ealing Park, and by Mr. Cole, gr. to H. Collyer, Esq., of Dartford. They were arranged so as to face each other, and if we are not mistaken, there was less difference in merit between the two groups this time than formerly. True Mrs. Lawrence's noble specimens of Stephanotis floribunda, Sollya linearis, Ixora coccinea, and Dipladenia crassinoda, had no equals on the other side; for Mr. Cole's Schubertia graveolens, although a fine plant, was unfit to compete with Mrs. Lawrence's Stephanotis, than which perhaps a better plant was never shown; but then in other respects he more nearly approached the Ealing group, though still considerably behind it. In addition to the plant just mentioned, he had a good Clerodendron, two species of Allamanda, Stephanotis floribunda, various Kalosanthes, Aphelexis, Cape Heaths, and Dipladenia splendens and crassinoda. Mrs. Lawrence sent good bushes of Tabernæmontana coronaria, Kalosanthes coccinea, Clerodendron paniculatum (with two noble panicles of flowers), a blue Leschenaultia — a good bush, well flowered, and other well managed plants. — Collections of 20 Stove and Greenhouse Plants were shown by Mr. Green, gr. to Sir E. Antrobus, Bart., Mr. Taylor, gr. to J. Coster, Esq., and Mr. Pamplin, of Lea-bridge. Mr. Green had considerably the best group. It comprised a nice Dipladenia atropurpurea, well ornamented with chocolate-coloured blossoms, two beautiful Allamandas, a good Stephanotis floribunda, the purple-flowered Pharbitis ostrina, Æschynanthus pulcher, a showy plant when well managed as this was; two handsome Leschenaultias; Dipladenia crassinoda, and Sphenotoma gracilis. Mr. Taylor produced a neat plant of Calystegia pubescens, a beautifully coloured and well-flowered Dipladenia crassinoda, a luxuriant Allamanda cathartica, a small but very neat Ixora coccinea, and a beautiful Erica metulæflora bicolor. Mr. Pamplin sent, in addition to other things, some good plants of Kalosanthes, Allamanda, and Stephanotis.—Exhibitions of 10 Stove and Greenhouse Plants came from Mr. Williams, gr. to Miss Traill, of Bromley, Mr. Bruce, gr. B. Miller, Esq., of Tooting, and Mr. Jack. The best plants in Miss Traill's group were Aphelexis purpurea grandiflora, Leschenaultia formosa, and Roella ciliata. Mr. Bruce had a nice variety of Kalosanthes, Stephanotis floribunda, Aphelexis humilis, Torenia asiatica, Sollya linearis, and Phymatanthus bicolor; and Mr. Jack, Cactus Foxii, a good Clerodendron affine, a Kalosanthes insufficiently bloomed, and Roella ciliata.

Cape Heaths.—In the Amateur's class, the best group came from Mr. Mylam, gr. to S. Rucker, Esq. Among them were well-flowered and capitally-managed plants of inflata, tricolor Wilsonii, ventricosa hirsuta alba, metulæflora bicolor, ventricosa Bothwelliana, tricolor speciosa, obbata, and Parmentieri rosea, the latter a pretty variety. Mr. Cole was second.—In the Nurserymen's class, Mr. Epps, of Maidstone, was first. His plants were better bloomed than Mr. Fairbairn's, who was second; but the latter had some remarkable specimens of good cultivation; his metulæflora bicolor, ventricosa Bothwelliana, and one or two others, were matchless in this respect. Mr. Epps sent beautiful plants of Jackson's tricolor, inflata, retorta major, tricolor dumosa, Parmentieri rosea, Lee's tricolor, and others.—Of specimen Heaths, Mr. Williams, gr. to Miss Traill, sent a magnificent Massoni; and Mr. Epps, a promising seedling named "Maidstoniensis."

One side of the next tent, which stands at some distance from the two we have just visited, was more than half filled with Ferns, contributed chiefly by Mr. Williams, gr. to C. B. Warner, Esq., and with alpine plants. Turning the corner, a bank of Fuchsias, among which there was nothing new, served as a background for the exhibition of Carnations, Pinks, and Seedling Pelargoniums. In Carnations, Mr. Turner, of Slough, was first, with Martin's President, Puxley's Prince Albert, S. B., 1846, and S. F., 1848, seedlings, and Queen Victoria; Conquering Hero, Paul Pry, Taylor's Lord Byron, Kirke White, and H. Wright; and Ashworth's King.—Pinks: 1, Mr. Norman, with Lord Valentia, Berkshire Hero, Norborough Buck, Great Britain, Matilda, Queen of England, Achilles, Omega, Alfred Morrison, Criterion, Mr. Edwards, and Beatrice; 2d, Mr. Weeden; 3d, Mr. Keynes.—Picotees: 1st, J. Edwards, Esq., with Mrs. Barnard, Ne Plus Ultra, Prince Albert, Emma, Isabella, Agitator, Constance, Fanny, Lady Chesterfield, General Jackson, Beauty, and Seedling; 2d, Mr. Norman, Woolwich. Mr Costar, of Benson, sent two seedling Pinks, of which Juliet was the best, and very promising. Mr. Turner showed a promising Pink, "Bizarre Carnation."—Some Pansies were shown but not in good condition, it being too late for them.—Next the Pink exhibitions were the Seedling Pelargoniums, of which the best to our taste was "Scarlet Gem," from Mr. Hoyle, an intense crimson medium-sized flower, with a black blotch on the two upper petals; then there was a promising fancy kind from Mr. Gaines, called Madame Rosati, having rosy upper petals and light under ones, and apparently a profuse bloomer. Mr. Gaines had also a scarlet named Cerise Unique (1848), for which he received an award.—We remarked a seedling Fuchsia "Wonder" very large, but not distinct in colour; and a red Verbena, "War Eagle," to which the same remarks are applicable.—Passing some Petunias, Cape Pelargoniums, and Calceolarias, we come to New Plants, which were few. Messrs. Rollisson sent Barringtonia racemosa, and Mr. Jack Brunsfelsia gracilis. We also observed a purple-flowered Maurandya, named Emeryana; the pale yellow Gloriosa virescens; Scutellaria ventenatii; and a small purplish-lilac Gardoquia. Mr. Williams, gr. to C. B. Warner, Esq., had a strong growing Indian Lycopod, of the colour of L. cæsium.—As Single Specimens Mr. Green showed Rondeletia speciosa; Mrs. Lawrence Elæocarpus cyaneus; and Mr. Cole Echites discolor, with six flower-spikes on it. Some tall Cacti were also shown in this tent; but the season for such exhibitions is now over.

One side of the last or fourth tent was filled with Cut Roses, in all the classes of which Messrs. Lane were 1st; Messrs. Paul, 2d; and Mr. Francis, 3d; and among amateurs', prizes were awarded to Messrs. Terry, Parsons, and Rowland, in the order in which the names stand. The other side of this tent was filled with Fruit, about which it is now our business to give some account, and in commencing to do this we may safely state that, with a few exceptions, it was more remarkable for quantity than for quality. Grapes were largely exhibited; but instead of Black Hamburghs we had in many cases red Hamburghs, so badly were they coloured; and as for Muscats, there was not one dish above half ripe. It is too early for them. Pine-apples, of which there were in all some 35, were good, and there was a capital exhibition of Strawberries. Mr. Myatt had some Seedlings to which the old adage of "two bites to a Cherry" could scarcely apply, so large were they, and they were stated to be well flavoured. Mr. Lydiard, of Bath, had two exhibitions of four dishes each, and took first and second prizes in the same class. [!] Keens' Seedling was shown by Mr. Elphinstone and Mr. Parsons. Good samples were also shown by Mr. Cockburn.

Pine-apples.—Mr. Bray, gr. to E. Lousada, Esq., obtained a prize for a collection, consisting of two Moscow Queens, weighing 3 lbs. each; a handsome Providence, 7 lbs. 8 oz.; two old Queens, 4 lbs. and 4 lbs. 7 oz; and a Black Antigua,

3 lbs. Ripley Queen Pines were numerous. For fruits of this sort prizes were awarded to Mr. Jones, gr. to J. J. Gunst, Esq., for one weighing 5 lbs. 2 oz.; for two others, 4 lbs. 14 oz. and 4 lbs. 1½ oz., with which was a fourth, 3 lbs. 14 oz. Mr. Drummond, Pontypool-park, had a fruit 3 lbs. 3 oz., and two others, 3 lbs. 1½ oz. and 4 lbs. 14 oz. Mr. Bray sent one, 4 lbs., and Mr. Fleming, one 4 lbs. 9½ oz. Mr. Spencer, fruits of Moscow Queen, 3 lbs. 11½ oz.; three Ripley Queens, two 4 lbs. 3 oz. and one 4 lbs. 2½ oz. Of Queen Pines, Mr. Drummond had a good fruit, 6 lbs. 6 oz., and Mr. Bray, one 4 lbs. 6 oz. In the same class prizes were also awarded to Mr. Spencer, and to Mr. Fleming. For Providence Pines, Mr. Spencer was awarded a prize for one weighing 11 lbs. 2 oz., and for another of 9 lbs. 14 oz. Good fruit of the same sort were shown by Mr. Drummond, Mr. Turnbull, Mr. Bray, and Mr. Jackson: Mr. Drummond had a Cayenne, 7 lbs.; Mr. Bray, an Enville, 4 lbs. 5 oz.; and Mr. Elphinstone, a Ripley Queen.

Melons.—Several were shown. Among the best were a hybrid netted greenflesh, from Mr. Fleming, and a variety, said to be Cuthill's Scarlet-fleshed, from Mr. Bruce.

Grapes.—Baskets of Black Hamburgh and other sorts, weighing 12 lbs., were sent by Mr. Turnbull (1st) and Mr. Fleming (2d). Among Mr. Fleming's bunches we remarked Josling's St. Alban's Grape somewhat cracked. A similar collection was sent by Mr. Bray, consisting of Black Hamburgh, Muscat of Alexandria, and Sweetwater. Single dishes of Black Hamburgh were numerous. Mr. Thomson had some good Muscats and Hamburghs. We also observed some capital bunches of Black Prince. For dishes of white varieties, prizes were awarded to Mr. Davis, Mr. Turnbull, and Mr. Toy.

Peaches and Nectarines.—Four dishes were contributed by Mr. Parker (1st) and Mr. Munroe (2d). These lots comprised Violet Hative and Noblesse Peaches, and Elruge, Tawny, and Red Roman Nectarines. Two dishes were shown by Mr. Parker (1st) and Mr. Turnbull (2d). Some good Cherries were sent by Mr. Bray (1st), and Mr. Grimsford (2d).

Of Miscellaneous Fruits, a prize was awarded to Mr. Nortcote, gr. to Miss Wigram, Wanstead, for three handsome Vines in pots, about 5 feet high; two of Black Hamburgh and one of Sweetwater, with about eight bunches on each. A Peach tree in a pot, well fruited, came from Mr. Cole. Finally, Mr. Ivison, gr. to the Duchess Dowager of Northumberland, sent fruit of the Vanilla, the Papaw, Nutmeg, Gamboge, Clove, and Allspice.

We cannot conclude this account of the fruit without stating that it is a very imperfect one; for, owing to the crowded state of the tent, it was with difficulty that we could get near it.

Australasian Botanical and Horticultural.—This Society was established in Sydney in 1848, chiefly through the instrumentality of Mr. Charles Moore, who was about two years since appointed Director of the Botanic Garden there. Its first exhibition was held in October, 1848. The summer exhibition occured in December, and the autumnal one on the 1st of March, 1849. These exhibitions have been very successful, and the progression of the Society in importance and utility is confidently anticipated. The exhibitions are held in the Botanic Gardens, and are well attended. At the autumnal show there were 3000 persons present, as gay and hilarious as are to be seen at the London horticultural fetes. The matters exhibited were flowers and plants, fruits, vegetables, wines, and "articles of commerce," and the following are notes of some of the best productions: Miscellaneous Plants (12), Mr. Higgins, gr. to T. W. Smart, Esq., well grown, and containing Passiflora kermesina, Vallota purpurea, Erica vestita purpurea, the "wax plant," and a Zephyranthes, all attractive objects. Fuchsias (8), Mr. Woods, gr. to T. S. Mort, Esq. The gem of this collection was a gorgeous Fuchsia corallina, and there were fine plants of Dr. Jephson, Desdemona, and Exquisite. Fuchsias had never before been exhibited in the colony in such perfection. Achimenes (8), T. S. Mort, Esq.; very fair plants. Annuals (6), T. S. Mort, Esq.; pretty and carefully grown, containing some beautiful Phloxes, and the rare Ipomopsis picta. Balsams (12), Mr. Eccleston, gr. to Capt. Brown; gorgeously beautiful both as to perfection of growth, and richness and variety of colouring. Petunias (6), T. S. Mort, Esq.; very pretty. Verbenas (6), T. S. Mort, Esq.; brilliant. These plants grow with great luxuriance in the soil and climate of Sydney, and this was the first time so many varieties had been exhibited. New or rare plant, T. S. Mort, Esq.; an interesting specimen exhibited as "Beyrichia villosa." Zinnias (12), Mr. J. Saxby; a pretty collection, brilliant and varied. Roses (8), Mr. J. Baptist; good specimens, but soon in a drooping condition. Neriums (6), Mr. J. Baptist; beautiful and much admired. Passifloras, T. S. Mort, Esq.; exquisitely beautiful, but too fragile to bear the exposure. Best hybrid, Messrs. J. and W. McArthur; a beautiful Amaryllis, called Amelia, from A. belladonna and A. Josephinæ. Mr. Mort had a beautiful miscellaneous group, containing Torenia asiatica, Begonia argyrostigma, Columnea scandens, Thunbergia alata Bakerii, Cuphea platycentra, &c. There were some tolerable Gloxinias; one, caulescens major, a seedling raised by Messrs. McArthur, was very fine. Besides these there were exhibited Dahlias, Pansies, flowering shrubs, cut flowers, and bouquets. Mr. Moore contributed a large number of interesting plants, from the collection in the Botanic Gardens. Among the fruits were Grapes, Melons, Apples, Pears—fine luscious fruit. A special prize was awarded to Sir T. Mitchell for a fine collection of Grapes and for some superior Melons, recently introduced by him into the colony. Messrs. McArthur obtained a medal for the Zante Grape, from which the dried currant is prepared. This was the first time it had been exhibited; it appeared very luxuriant, and if it can be brought into extensive cultivation will probably become a valuable article of commerce. The whole of the vegetables exhibited might be envied by any market gardener in England. They comprised Potatoes, Chillies, Vegetable Marrows, Pumpkins, American Squash, French Beans, Nopaul Turnips, Cucumbers, Cabbages, Leeks, Globe Onions, Tomatoes, Red Beet, Jerusalem Artichokes, Celery, and Rhubarb. The samples of wine exhibited greater excellence and variety than had been before exposed to public competition. The Camden wines were principally of vintage 1845, and many of the samples were excellent. The first prize was given to a white wine manufactured from the Gromelo and Frontignan Grapes of the vintage 1845 (Messrs. McArthur). The judges also reported approvingly of two samples of red wines, made from Garbonet-Bouvignot, Malbec, and Verdot, and from the Seyras, both of the vintage 1845. Mr. T. Hall exhibited some Raisins made from the Muscat Grape, which obtained a medal; they were not very sightly, but excellent in flavour. There were also some samples of silk exhibited. Two specimens of reeled silk in hanks, from the Experimental Silk Company, were said to be of very superior quality; the thread consisted of six fibres, and was perfectly clear and round. Six months of burning sun, without a drop of rain, are circumstances not very favourable to floral display, yet we are informed that at the time of this exhibition (March, 1849), Verbenas, Petunias, and the Vinca roses and alba were in beautiful flower in the Botanic Garden. These plants are found to stand better than any others.

Garden Memoranda.

Messrs. A. Paul and Son's Nursery, Cheshunt.—Half an hour's ride from London, by a fast train on the Eastern Counties Railway, brings us to the pleasantly situated village of Cheshunt, at the north-east end of which are Messrs. Paul's Nurseries, so celebrated for their Roses. Looking from the high road there is nothing to lead one to anticipate the existence of such rare beauties within, for seldom have we seen less outward show; and some little surprise is created on entering, to find oneself suddenly in the midst of "a garden of Roses." A broad gravel walk leads from the entrance to the middle of the nurseries, and on either side of this, a row of standard Roses, planted about 15 years since, presents a very striking effect. The kinds are the finest growing of the hybrid Chinese, and a few of the Noisettes. The size of some of the trees is truly remarkable; the heads are of a conical form, very symmetrical, and quite covered with flowers. Among others we noted Fulgens, 25 feet in circumference; Belle Thurette, 17 feet; Coccinea superba, 20 feet; Rivers, 17 feet; Blush Hip, 20 feet; Duc d'Orleans, 18 feet; Jaune Desprez, 20 feet; La Nymphe, 15 feet; and many of nearly equal dimensions which, as the newspapers say, "must be seen to be fully appreciated." These are all old and well-known Roses; as, of course, time is required to produce plants of so large a size. Leaving this walk we passed through an avenue of pillar Roses, 50 yards long, formed of vigorous growers from various sections, the most ambitious of which had risen to the height of about 12 feet. The finest specimens were—*Ayrshire*: Ruga, Splendens, Dundee Rambler, Thoresbyana. *Hybrid*: Wells' Garland, crowned with myriads of flowers. *Hybrid Chinese*: Belle de Rosny, Belle Marie. *Alba*: Blush Hip. *Noisette*: La Biche. From this spot we caught a glimpse of a brilliant crimson Rose, drooping from a stem 11 feet clear; it was the Beauty of Billiard, a standard of uncommon appearance. Entering the Rosetum, which was re-formed and newly planted last autumn, and where one plant of a sort of the gems of the collection are brought together, we observed, among new Roses—*Provence*: Adrienne de Cardoville, rosy crimson, large, full, and of good form. *Moss*: Princess Royale (Portemer), flesh colour, of medium size, full, and of fine form; Lanei, rosy purple, large, and full. *French*: Perle des Panaches, white, with clear red stripes, very pretty; Œillet Flamand, white, with broader rose and lilac stripes, and more striking, but less double than the preceding; Je me Maintiendrai, rose, large and double, distinct and good; Ohl, crimson, very large and full, fine. *Hybrid Provence*: Hebe, flesh colour, large and full; Comtesse de Segur, flesh colour, clear, and of fine form, but not so full as the former. *Hybrid China*: Juno, pale rose, very large, a little coarse; L'Attrayante, flesh colour, large and full, good; Anna de Rivoli, clear pink, of beautiful effect on the tree, but not very double; Fritz Dukerr, deep crimson, in the way of Fulgens; General Lamoricière, lilac, of good form, distinct; General Jacqueminot, purplish crimson, large and full, very good. *Hybrid Bourbon*: Paul Ricaut, vivid crimson, striking and fine. These are all summer Roses. Among the autumnals, we noted *Damask Perpetual*: Julie de Krudner, pink, a free bloomer, and good; Pourpre Royale, a fine rose, but of an objectionable colour; Duchesse de Praslin, pink, pale edges, possessing the characteristics of the Alba Rose. *Hybrid Perpetual*: Louise Bourdillion, pink, distinct and pretty; Reine des Fleurs, rosy pink, dull now, but said to be fine in the autumn; Cymedor, brilliant red, striking, but not too double; Madame Pepin, pale rose, large and full, and of good form; Gloire d'Angers, lively rose, rather small; Comte de Montalivet, violet, very large and showy, but not very double; Géant des Batailles, brilliant crimson, a real gem; Duchesse de Galliera, pale rose, full, very good; General Negrier, similar to the last in colour, but larger; Pius IX., crimson, large, and of good form; and last but not least, Soleil d'Austerlitz, as good a Rose, though not so brilliant in colour, as Géant des Batailles. *Bourbon*: Charlemagne, silvery blush, large and full. *Noisette*: Caroline Marniesse, creamy white, like Felicité Perpetuelle. *Tea-scented*: Vicomtesse de Cazes, buff and yellow, variable.

Of kinds less novel, but apparently not sufficiently known, we noticed the following.—*French*: Surpasse tout, Latour d Auvergne, Schrymaker, Comtesse Edouard, Couronne d'Amour, La Fille de l'air, Dido, Belle Alsindor, Belle Portugoise. *Moss*: Presque partout. *Hybrid Provence*: Aiette, Devigne. *Hybrid China*: Gloire de Coulins. *Noisette*: Mrs. Siddons. *Hybrid Perpetual*: Vicomtesse de Bellevall. *Bourbon*: Sydonie Darley, Julie de Fontenelle, Jastine, Vicomté de Cassy. *Tea-scented*: Madame Roussell, Madame de St. Joseph. Indeed there was no lack of the popular varieties, but their names are so familiar to the public that there is no need to repeat them here. Beautiful as are some of the new Roses, we are still of opinion that raisers of seedlings have yet labour in store for many years. As we viewed Cristata, Madame Hardy, Felicité Parmentier, Brennus, and others, we could not help wishing that the time had come when these kinds, conquered of their stubborn transitoriness, should prolong their season of flowering throughout the autumn; and, doubtless, kinds their equal in form, colour, and fulness will decorate our gardens in September and October ere many autumn suns return. Among seedling Roses here, we observed a good pale moss, a brilliant and well-formed hybrid Bourbon, and a very curious and distinctly spotted French Rose. Green centres, which are so abundant in many places, are but little known at Cheshunt this year. Mr. Paul considers one cause of their production (though not the only one), to be giving the plants manure in too fresh a state. (See Appendix to "The Rose Garden.") Passing from the Rosetum to the examination of the young plants—the nursery—where acres are set apart for Roses exclusively, we had an opportunity of seeing the effect produced by Roses of different colours planted *en masse*, and we are certainly of opinion that in this case beds of one colour make a more brilliant display than mixed ones. Masses of the following autumnal Roses nicely managed, from the contrast they would form, could not fail to be both striking and attractive:—*China*: Rubivier, crimson scarlet; Mrs. Bosanquet, flesh colour; Augustine Hersent, pink. *Hybrid Perpetual*: Madame Laffay, purplish crimson. *Noisette*: Miss Glegg, white; Le Pactole, pale yellow.

The pot Roses which figured at the metropolitan exhibitions in May and June have been transferred from the house in which they were grown to the open air, where they are plunged nearly level with the ground, and it is intended to cover the pots with well-pulverised manure. A description of the house in which the pot Roses are cultivated for exhibition may not prove uninteresting, as it was built expressly for the purpose. It is a span-roofed house. The dimensions, measured outside, are: height, 10 feet; length, 30 feet; width, 18 feet. A tank, 3 feet wide, runs round the inside, and over this the plants stand; there is also a stage in the centre, adapted for the arrangement of three rows of plants. This house is now filled with Coniferous plants, among which we noticed quantities of Abies Deodara, Africana, and Douglasii; Araucaria imbricata, Cephalotaxus brevifolia, Cryptomeria japonica, and other rare and useful kinds. The nurseries embrace nearly 40 acres of ground, and, as may be supposed, Roses are not the only plants cultivated. Contiguous to the Rose-house is an interesting little spot, containing single specimens of various hardy ornamental trees collected to grow here for a few years, when it is intended to arrange them in an Arboretum. There was Abies Deodara, 14 feet; handsome Pinus insignis, 7 ft.; Cryptomeria japonica, 5 feet; Taxodium sempervirens, 5 feet (which had stood two winters unprotected); Ilex latispina, and smaller specimens of kinds too numerous to mention. There were also quantities of young fruit trees, some of the new kinds of which have not yet fruited in England. Among Pelargoniums, to the culture of which one house is devoted, a fancy kind named Bouquet tout fait, of fine form, was especially attractive. On rockwork were various Helianthemums, Ferns, and Genista tinctoria pleno, an admirable plant for this purpose. Before we leave this establishment we must take a peep at the manufactory of pot Roses, where it is stated that above 30,000 autumnals are struck every spring. These are put in as cuttings throughout the spring months, several round a large pot, placed in a pit, and potted singly into small pots during summer. When well rooted they are plunged in the open ground.

Miscellaneous.

On a new Test for the Proteine Compounds.—The very acid liquid which is obtained by di solving mercury in its weight of nitric acid with 4½ equivs. water is an extremely delicate reagent for all albuminous substances, and for a large number of the secondary products related to them. This liquid communicates to these substances a very deep red colour; and in this manner a one-hundred-thousandth part of albumen in water, and even less, may readily be detected. To give an idea of the delicacy of this test, and also of its probable use in the study of vegetable productions, I may state that cotton, starch, and gum-arabic acquire a very distinct rose-colour in contact with it. Urines are nearly all of them coloured red after the nitro-mercurial liquid has been mixed with them, and the mixture heated, to destroy the gelatine. The albumen of the blood and of vegetables, fibrine, caseine, gluten, legumine, silk, wool, feathers, horn, epidermis, gelatine, chondrine, proteine, crystalline, the well-washed buffy coat of the blood, both the soluble product which it parts with to boiling water, as well as the insoluble portion, are all of them coloured more or less deep red. *E. Millon, in Chemical Gazette.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Discontinue stopping the shoots of Vincas, Euphorbias, Poinsettias, Gesnerus, Eranthemums, and other

plants of greenhouse habit, which are designed for autumn or winter flowering; and, by due attention to potting, watering, and regulating the heat and moisture, assist them as much as possible in the production of healthy and properly-matured shoots. Assist plants which have filled their pots with roots, but have not yet completed their growth, with occasional waterings of liquid manure; the same treatment will apply to plants in flower of Thunbergias, Achimenes, Gloxinias, Geraniums, Fuchsias, &c, the beauty of which it is desirable to preserve as long as possible. Pelargoniums of the forcing kinds, which were cut down some time since and are now commencing their growth, should be shaken out of the old soil, and, after having their roots trimmed, should be repotted in sandy soil moderately rich, placed in a close frame, and sparingly watered, till they have made some progress in their new growth. None of the sorts form more beautiful objects, or are better adapted for forcing, than the fancy varieties; and for this purpose a quantity of healthy plants should be expressly prepared. Potting and tying of Chrysanthemums, large and small, must be regularly attended to; any neglect in the watering of them should be carefully avoided, or they will lose their lower leaves, by which the appearance of the plant will be spoiled, and the production of useless suckers encouraged. Old plants which were planted out for the purpose of layering, should now have the points of the shoots pegged down, preparatory to their being layered in small pots a week or 10 days hence. The propagating by cuttings and offsets of choice Calceolarias should be no longer deferred, and another succession of Chinese Primulas should be sown. As the various greenhouse plants complete their growth, they may be set by themselves in houses or frames, of which the sashes can be easily put on or removed. The plants should be freely exposed to the sun and air, and should remain uncovered except when the weather is excessively wet. In staging the plants they should be so arranged as to shade the pots, and only the pots, of those behind them. After their growth is completed, the generality of greenhouse plants are much better without any kind of shading; it is therefore an error to place them behind a north wall during any portion of their natural summer, but, on the other hand, it is essential that the pots should be protected from the rays of the sun. For this reason it is better when the plants are necessarily put out of doors during this season, to plunge them in beds of sifted coal ashes, taking care always to place them at sufficient distances to ensure a free circulation of air amongst them.

FLOWER GARDEN AND SHRUBBERY.

Many greenhouse plants, and others from intermediate houses, of a sub-shrubby or herbaceous character, as Salvias, Cinerarias, Begonias, Primulas, Calceolarias, Veronicas, &c, may now be planted out on warm borders in rich soil. These will form handsome plants by the beginning of September, when they will be in nice order for taking up and repotting. Remove suckers from Rose trees, and stop all gross shoots which are not likely to flower during summer. By mulching Roses and other choice shrubs with leaf-mould, rotten dung, or short Grass, they will be considerably benefited; evaporation will be in a great measure prevented in dry weather, and the soluble ingredients contained in the mulching will be washed downwards in showery weather. After finishing the propagation of Pinks and Carnations by pipings and layers, proceed with other hardy herbaceous plants, as Phloxes, Pansies, Wallflowers, Antirrhinums, Pentstemons, &c.; the old Linum flavum makes a good yellow bed, continuing in flower during the whole of the summer, and is perfectly hardy; it will strike freely if the cuttings are taken before the wood gets too hard. Sow Brompton and Queen Stocks for spring flowering, and Intermediate Stocks for autumn. A sowing may also be made of some of the hardier annuals for late autumn flowering; sorts should be selected for this purpose which come very quickly into a flowering state. Very much may be done towards stimulating the growth of weakly plants, and assisting the flowering of healthier ones by frequent waterings of liquid manure. It is an expeditious and immediately effective mode of increasing the fertility of the soil.

FORCING DEPARTMENT.

PINERIES.—If the heating apparatuses of these structures are in any way defective, this is the season when artificial heat can with the least risk be dispensed with, and therefore the most proper for making the necessary alterations. It is very annoying to have an old boiler or a set of pipes or tanks give way in the middle of winter, and with due forethought and careful observation such unpleasant circumstances may generally be prevented. From plants which are ripening their fruit water must be withheld; the soil should also be frequently examined, to see that the constant syringings do not make it too wet, thereby endangering the health of the roots. Let the plants which are now flowering or showing be supplied with a steady bottom-heat of 85° to 88°, and pay careful attention to the watering and syringing. These will be the fruits to meet the demand during the late autumn and early winter months.

VINERIES.—The most important thing to be attended to in these houses is to keep the red spider in check; where this has been properly attended to during the last three months, and where syringing was not continued too long the bloom will be uninjured, and the appearance of the fruit will by this be considerably enhanced; besides which the plants are in a much better condition to perform the functions necessary for ensuring a good crop next season. Let this be kept in view during the rest of the autumn, as it is still more essential that the foliage of late Vines should be kept in the highest health to the latest period possible. Attend, when necessary, to the watering of inside borders, and of those on the outside which are covered with tarpaulin or other material. A slight mulching of decayed leaves or dung is very useful during summer in preventing excessive or sudden variation in the state or temperature of the soil, and the cracking of the ground, and consequent injury to the roots in hot, dry weather.

STRAWBERRIES for next year's forcing: a portion of the healthiest plants of those which have been forced during the past season, should be immediately shaken out of the old soil, and after their roots have been soaked in water, re-potted in rather larger pots, and set on beds of coal ashes in an open situation. The soil should consist two-thirds of strong, turfy loam which approaches marl, not clay, in quality, and one-third of well-rotted cow-dung, or such other convenient materials as are similar to these in character; a little soot should be sprinkled into the compost, to destroy insects, and the whole should be well incorporated some time before wanted for use. During summer the runners must be regularly removed, and the growth of the plants encouraged by occasional waterings of liquid manure. As habit becomes a second nature to plants, these Strawberries will complete their growth much earlier than those raised from the present year's runners, and will of course be better prepared for an early excitement.

KITCHEN GARDEN.

Proceed with the planting out of the various autumn and winter crops, selecting the most favourable weather for the purpose, and taking care that the ground has plenty of manure; and if there is any doubt about the quantity already dug in being sufficient, let an additional portion of manure, and a good sprinkling of soot, be forked in as the planting proceeds. We have a quantity of Potatoes, of first-rate kinds, planted early, without manure, on new ground, and which do not at present exhibit the slightest indication of disease. Their tubers are now about the size of Beans; and to stimulate the growth of the tuber, the ground being moist, we are laying a ring of hen-dung mixed with charcoal dust round each plant, a few inches from the stem, and, after sprinkling a little quicklime about the base of the plant, the earth is drawn up round it, to cover the manure; the additional earthing up will be useful in preserving the stems and tubers more effectually against any injurious atmospheric influence, while the stimulus afforded by the manure will force the tubers to attain a larger size before we are visited by frost. We have no doubt but this slight trouble will be repaid by a crop at least one-fourth heavier. Asparagus seedlings should be thinned and transplanted into very rich nursery beds. Once a week we sprinkle all our Asparagus beds with salt, at the rate of about three-quarters of a pound to a square yard, and water them immediately with soapsuds and manure water; the effect is visible to the most casual observer in the extraordinary vigour of the tops, many of which are already more than 6 feet high, and the strongest growths will be much higher. Sow Cabbages in a frame for transplanting thick to draw as Coleworts for autumn use; and a bed of Parsley, on ground richly manured and sprinkled with soot, for late autumn and early winter use.

State of the Weather near London, for the week ending July 5, 1849, as observed at the Horticultural Gardens, Chiswick

June and July.	Moon's Age	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday .. 29	8	30.079	29.919	74	55	64.5	S.	.02
Satur.. 30	9	30.138	29.916	64	35	49.5	N.E.	.00
Sunday . 1	10	30.160	29.921	72	57	64.5	S.W.	.00
Monday . 2	11	29.999	29.944	73	55	64.0	W.	.00
Tues. .. 3	12	29.741	29.667	73	58	65.5	W.	.01
Wed .. 4	13	29.702	29.597	67	43	55.0	W.	.00
Thurs. .. 5	14	29.973	29.772	76	49	62.5	W.	.00
Average .		29.971	29.822	72.0	49.7	60.8		0.03

June 29.—Very fine; cloudy; rain.
— 30.—Cloudy and cold; clear at night; unusually cold for the period of the season.
July 1.—Clear; quite cloudless; fine, cloudy.
— 2.—Light clouds; very fine; slightly clouded
— 3.—Cloudy; boisterous; slight shower, cloudy and windy.
— 4.—Overcast; cloudy; fine, clear at night.
— 5.—Clear; very fine throughout; slightly overcast at night.
Mean temperature of the week, 2½ deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending July 14, 1849.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 8	73.6	51.7	62.7	13	0.16 in.	—	—	3	1	1	9	6	3
Mon. 9	73.0	51.2	62.1	7	0.57	3	1	—	2	7	7	5	4
Tues 10	74.2	52.1	63.1	6	0.36	1	—	1	1	5	11	5	3
Wed. 11	74.7	52.4	63.6	6	0.71	3	—	2	—	4	5	5	4
Thurs. 12	74.1	51.8	63.1	10	1.10	—	1	2	—	3	6	6	5
Friday 13	74.7	51.9	63.3	9	0.80	—	2	1	—	3	8	9	1
Satur. 14	76.4	51.7	64.0	9	1.46	1	2	2	—	3	8	7	1

The highest temperature during the above period occurred on the 14th 1847—therm. 93½ deg.; and the lowest on the 13th, 1840—therm. 41 deg.

Notices to Correspondents.

BOOKS: *Alpha.* Mackintosh's work on the forcing and flower-garden will probably answer your purpose best.—*T T.* The "Medical and Economical Botany" contains an account of most of the plants used by gardeners.—*C C.* There is a translation of some of Sprengel the botanist's works into the English language, but not of those of Sprengel the chemist. The former can only be found in the second-hand book-shops.

CACTI: *J P.* There are no such colours as blue or grey among Cacti; but some of the whites approach towards yellow.‡

EMIGRATION: *J C.* We uniformly decline giving *advice* as to the places where emigrants can best thrive. If we had your capital we should go to Canada or to New Zealand—rather than to the United States.

FERNS: *Sub.* None of the Maiden-hair Ferns are hardier than A. Capillus-Veneris.‡

FOXGLOVE: *Constant Reader.* A large part of your seed is unripe, but some should have grown. Perhaps it was covered too deep. It should be scattered on the ground and merely raked in. All wild flowers liking calcareous soil will grow. Try Pinks, Sweet Williams, Horned Poppy, and the refuse seeds of the seed-shops.

INSECTS: *E G.* The Rose leaves are eaten by the larvæ of the saw-fly, Tenthredo Æthiops (see *Gard. Chronicle*, 1848, p. 542, for figures and description). As the grubs feed on the under side of the leaves, syringing the leaves will scarcely reach them; but we think it would be useful to envelope the trees in a parapetticoat or bag open at the bottom, where damp Tobacco should be burnt, and then the bottom fastened close to the stem, so as to keep in the smoke. *W—A M.* We will answer your query next week. *W.*

MELONS: *A Villa Gardener.* If you leave the sashes off your Melon beds the fruit will be set by insects. If you keep the lights on you must set them yourself. Sixty-five degrees at night are far too high; 50° are quite enough, and they will take no harm at 45°. Have no concern with the coddling school, which produces nothing but abortions. Do not attempt to set your fruit till the Vines are able to feed it. If they are not strong enough the fruit will all turn yellow and drop off. We believe the best way of growing good summer Melons is to keep the lights off at night and to put them partly on by day. Air, air, air, is everything.

NAMES OF PLANTS: *A C.* Cerastium incanum is the Hoary Mouse-ear Chickweed.—*Inquirer.* Gladiolus of course. Anemones should be taken up after the leaves have died. In dry sandy or very dry loamy land they will, however, live all the year in the ground.—*C K.* Leptospermum obovatum and Maxillaria rufescens.—*D Davies.* Aerides maculosum.—*An Original Sub.* A Fern! It is a leaf of Betony or some such plant, attacked by Uredo Labiatarum.—*G Wheeler.* Some Odontoglossum, out of health and indeterminable, perhaps maculatum, perhaps different.—*W Y.* The Anastatica is some miserable Tetragonia; Carex vesicaria, and Oxothamnus thyrsoideus.—*H M.* 1, Oncidium divaricatum; 2, a variety of Oncid. carthagineuse.—*G M* Many thanks; we will now examine and report, as well as on the other two.—*J H C.* 1 and 4 and 9, Holcus lanatus; 2, Trisetum flavescens; 3, Bromus mollis; 5 and 7, Cynosurus cristatus; 6, Alopecurus pratensis; 8, Dactylis glomerata; 10, Lolium perenne; 11, Poa pratensis.—*O W.* 1 and 2, both Poa pratensis.—*H P.* 15, Cynosurus cristatus; 16, Festuca pratensis; 10, Bromus mollis; 9 and 12, Dactylis glomerata; 11, Holcus lanatus; 1, Lolium perenne; 4 and 7, Alopecurus pratensis; 5, Holcus mollis; 2 and 3 and 8, Poa pratensis; 6, a glaucous variety of do.; 14, Ranunculus hederaceus, 18, Carex intermedia; 13, Carex muricata; 17, Carex tomentosa.—*A G M M.* It is so considered, but we have never examined into the point, and cannot answer for the common opinion. Send us some Cow-grass, and we will tell you positively.—*F P Card.* Juncus bufonius and Atriplex Halimus.

PEACH AND APRICOT TREES: *Constant Reader.* Shoots that are too vigorous may be checked by stopping; but in doing this you must allow the laterals on the upper part to go on, otherwise the lower buds will also, most likely, burst into laterals. You had better not meddle with two-year-old wood, or more, in either Peach or Apricot trees at this season; if you do, gumming will doubtless be the consequence ‖

PELARGONIUMS: *R C.* They sometimes come semi-double, and yours is, we presume, a case of the sort.

RHUBARB STALK WINE: *A C.* If any pamphlet has been published on this subject your bookseller can procure it for you if he chooses. We are not acquainted with such a book.†

ROSES: *Inquirer.* The following are suitable for planting in a triangle, to be trained up together on pillars, so as to give a handsome mixture of colours: Eclair de Jupiter, crimson; Madame Desprez, pink; and Madame Lacharme, white. For bedding Roses suitable for pegging down, see "Garden Memoranda" of to-day. Ground bones and guano are both good manures for Roses ‡

TREE ROSE. The price of this work is reduced to 3*s.* 6*d.* (post free), to be had at the Office of this Paper, or of any bookseller.

MISC.: *J A Clarke.* The Sempervivum majus is the common Houseleek.

WALLS: *D K.* A sandstone wall is as good as one of brick; all that is necessary is to build studs into the joints. The studs should be long enough and close enough to allow the branches to be tied to them. Wires are unnecessary; see Mr. Fleming's recent remarks upon that subject. Do not point the wall at all.

SEEDLING FLOWERS.

CALCEOLARIAS: *G W H.* Sorry to say your flowers were all dried up, and not in an examinable state when they reached us.*

GLADIOLUS: *H.* A large variety, with bright scarlet flowers, the upper petals of which have a broad streak of white in the centre; certainly a very handsome sort.*

HEARTSEASE: *W R.* Upper petals, purplish crimson, shaded towards the outer edge. Lower petals dark bronze, with a bright yellow centre, and a dark feathery circle within the yellow. Substance and marking good; size and outline middling; its greatest fault lies in the bottom petal, which is not round enough; in other respects a nice variety.*

HELIOTROPES: *W J W.* So withered when received that no opinion could be formed of their merits.*

IRIS: *J. C.* A very fine deep blue variety of the Spanish Iris, Xiphioides, of which there are numerous different coloured kinds.*

PELARGONIUMS: *Torquay Amateur.* "Euphrosyne," upper petals shaded, dark crimson, fading to a rosy purple at the outer edge, and slightly veined near the base; lower petals pale rose or blush, slightly veined; shape and substance good, a nice flower, but rather common in colours. "The Hero," upper petals dark crimson, fading to a deep purplish orange near the outer edge, and slightly stained with violet at the base; lower petals deep rose, with a darker spot or stain in the centre, and pale lilac at the base; shape and colours good, texture middling, petals a little crumply; a pretty variety. "Jenny Lind," upper petals shaded orange scarlet, with a shaded dark crimson centre, and feathery violet near the base; lower petals pale pink, white in the centre, texture, shape, and size good, but rather crumply in the upper petals. "Dulcinea," upper petals shaded crimson in the centre, fading to an orange scarlet near the outer edge, and deep rose at the margin, lower petals bright rose; shape and texture tolerably good, colours bright but confused. "Effulgent," upper petals shaded dark crimson, with a rosy violet edge, and feathery near the base; lower ones deep rose, stained with a darker colour; shape, size, and texture tolerably good, colours bright; a nice variety. "Galatea," upper petals reddish purple, with dark crimson centre, feathered at the base, and rather crumply; lower ones pale rose; shape middling, size and substance good.*—*T E.* Upper petals of "Vicar" dark crimson, edged with bright rosy purple, and feathery veined near the base. Lower ones deep rose, fading to white in the centre. Substance, shape, and colours good; petals broad, well rounded, and even at the edges; a very nice middle-sized flower, with bright colours.*

PENTSTEMONS: *A Tait.* 1 is not different from one of the many forms of P. speciosum from the north-west coast of America. The flowers of this kind vary much in colours, size, and shape. 2 is evidently a stunted, pale-coloured variety of the same; but distinct both in colours and striping; as you observe, it is paler than it otherwise would be if it had been grown in the open air. A distinct and pretty variety, well worth increasing.*

ROSES: *C* A very fine large flower, with broad rosy-lilac petals; well filled in the centre, and deliciously sweet-scented, but not very distinct in colour from many others in cultivation.*

GUANO AND OTHER MANURES.
PERUVIAN GUANO, of the finest quality, direct from import warehouses.
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GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SULPHURIC ACID AND COPROLITE.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
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TURNIP SOWING.
THE LONDON MANURE COMPANY, having adapted the "URATE" more particularly for Turnips and all Root Crops, can recommend it with the greatest confidence. It seldom fails, in the driest season, to secure a good plant, and to produce a heavy weight per acre. They would call attention to their Superphosphate of Lime, which is prepared with the greatest care, and sent out in a very fine, dry state, perfectly ready for use. The London Manure Company have made arrangements for a constant supply of Peruvian Guano, from the best cargoes, which they will deliver direct from the ship or importer's stores. Corn Manure, Nitrate of Soda, Fishery and Agricultural Salt, and every other Artificial Manure, on the lowest terms for a genuine article.
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To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

METROPOLITAN SEWERS.

SEWER FLUID IRRIGATION.—The Commissioners of Metropolitan Sewers proposing by means of powerful steam engines and appropriate pipes or channels to convey to a considerable distance from the metropolis all the Sewage of that district, and being now engaged in various preparatory surveys and trials, and intending also that this large amount of Sewage shall be so delivered as to be most conveniently and permanently employed for the purpose of irrigating arable soils and meads; they are now desirous of receiving proposals from the owners or occupiers of lands situated within say 50 miles of London, who are willing to contract for a supply of the Liquid Sewage, say in quantities per acre if for water meadows equal to 250 tons for each irrigation, and at the rate of 18 irrigations per annum; at this rate of supply it is calculated that the Sewage of the Metropolitan districts is fully equal to the irrigation of 15,000 acres of water meads; it is proposed to give the preference to those districts where (as in the neighbourhood of Newmarket, or the Valley of the river Crouch, in Essex, or that of the river Darenth, in Kent, or of that of the river Itchen, in Hampshire) the population is widely dispersed, and the natural drainage, if into the Thames, falls into it below London.

Papers explanatory of the value of Sewer-water may be had by application to L. C. HERTSLET, Esq., Sewers'-office, 1, Greek-street, Soho, London, to whom all communications must be addressed.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.
Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Duke of Devonshire's, Chatsworth Gardens.
Earl of Galnsborough's, Oakham, Rutlandshire.
Earl of Zetland's, Upleatham, Yorkshire.
Robert Hanbury, Esq., Poles, near Ware, Herts.
Mr. Glendinning's Nursery, Turnham-green.
And at least 500 other important places.
BURBIDGE and HEALY, 130, Fleet-street, London.

The Agricultural Gazette.
SATURDAY, JULY 7, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
TUESDAY, July 10—Agricultural Society of England.
THURSDAY, — 12—Agricultural Imp. Society of Ireland.
THURSDAY, — 19—Agricultural Imp. Society of Ireland.
FARMERS' CLUBS.—July 13: Hadleigh July 14. Peterborough.

It is difficult to reconcile with the ordinary laws of vegetation the sudden growth of certain classes of plants in soils wherein their seeds have had, apparently, no previous existence. We see clearly that every herb yields seed after its kind, but to what cause is the first appearance of plants, unsown by the hand of man, to be attributed? The problem is sometimes got rid of (we cannot say solved) by assuming that, under favouring circumstances of climate and soil, the earth will *spontaneously* produce certain plants. It would be presumptuous to deny that He whose creative power first formed the earth, and clothed it with vegetation in all its stages, from the Acorn to the full-grown Oak, may not still perform the original work. But looking to the *natural* rise and ordinary progress of vegetation, we are not compelled either to adopt the theory of new acts of direct creation, or to take refuge in that of spontaneous production, in order to escape from the difficulties of the question. Let us take, for the purpose of illustration, the familiar and undoubtedly perplexing instance of the springing up of Clover on a peat moss (which from time immemorial, we will suppose, had produced only the MOSSES, aquatic plants, and coarse Grasses peculiar to such soil while in a state of Nature), after the operation of burning the surface, or the application of lime or other substances to it.

Incinerated applications could not have contained the seeds of the Clover; the farmer did not sow them, nor could the combinations of the soil and lime, or of the soil with the ashes, or any other such combinations, have directly produced them. The coarse pre-existing plants could not have produced them, because it is an acknowledged law in Nature that all plants must have had progenitors of the same kind. Whence, then, did the Clover plants originate? It may be said that cattle and birds voided the seeds there, and that seeds adhering to the feet of men and women passing from stables or rick-yards, had been deposited upon the bog, where they grew on finding the soil favourable to their growth. And this, to some extent, would be true, and sufficient to account for the vegetation of weeds and Grasses in many cases; as on gravel walks or paved streets left untrodden; but will those causes alone account for the *close and even distribution* of the Clover plants which arise on the moss or moor for the first time, and for the contemporaneous introduction of plants of other kinds in place of the preceding occupiers? May we not rather suppose the seeds to have been previously in the ground, and to have vegetated by means of the alterative substances administered to the soil on the removal of other plants, which, through some antagonist qualities, prevented their growth; or might they not have germinated in consequence of the recombination of some vegetative principles unknown to us—but necessary to them?

This is not very improbable, when it is considered that there are trees which will not permit plants to establish themselves under their shade, one or two only excepted. The Poppy exercises a baneful influence on other plants; if it be removed from their vicinity, they will reappear, revive, and flourish. Plants will also show themselves for the first time after the Poppies have been destroyed. Where were their seeds previously but in the soil; asleep, as it were, through the peculiar influence exercised over them by the Poppy plant?

It may be objected that seeds could not remain undecomposed in the earth, surrounded by excessive moisture or other dissolving agencies. But is it not possible that seeds may be preserved even in water by certain chemical combinations? The *tannin* which abounds in peat has the property of preserving the fibrous parts of plants, and even of animal substances, for a very long period; and is it not possible that some analogous cause may not only tend to preserve seeds, but prevent them from germinating until they be acted upon by particular substances, such as the lime or the ashes, after which they are found to spring up? We may hazard the following exemplification of our meaning. Ships, after long voyages, used to lose their copper sheathing from the corroding effects of sea-water; but it was discovered that this tendency to rust and decay in the copper could be prevented by driving nails made of zinc through it at certain distances. Each portion of this other metal, where in contact with the copper, forms with it and the surrounding sea-water a galvanic battery, in which the more oxidisable and, as it happens, the cheaper metal wastes, while the copper is preserved. We hear much of analogies between mineral and vegetable productions; and may not one plant, by contiguity with another in a somewhat analagous manner, protect it from decomposition, or save the vital parts of dormant seed from destruction by external agents? And, on the other hand, may not the lime or ashes applied free this seed from the chemical powers which had kept it alike from vegetation and decay?

We know, too, that seeds are wonderfully furnished with the means of self-preservation until the proper time and circumstances for their germination arrive. "Beans, Peas, Grass seeds, and grain fruits, are so fenced on all sides—so shut up and protected, that (whilst the seed itself is rudely handled, tossed into sacks, shovelled into heaps) the sacred particle, the miniature plant, remains unhurt. It is wonderful also how long many kinds of seeds, by the help of their integuments, and perhaps of their oils, stand out against decay. A grain of Mustard seed has been known to lie in the earth for a hundred years, and, as soon as it had acquired a favourable situation, to shoot out as vigorously as if just gathered from the plant." * Grains of Wheat, preserved in mummies for thousands of years, are said to have preserved their vitality.

But let us allude to a more extreme case, that of the origin of vegetation on soils of new creation, such as coral islands or rocks of volcanic origin. May we not suppose that as soon as the air has reduced the upper crust to an earthy consistence, or even sooner, the rootless lichen takes hold of it; for this lichen has the property of secreting an acid which is able to soften stone sufficiently to render it a suitable bed for its growth. Having discharged its office of precursor in vegetation, the lichen gives place at the appointed time to the moss tribe, which is of a higher order; then comes a gradual succession of Grasses and other plants, whose seeds find a sufficiency of earth from the decay of preceding plants, and the island rock becomes clothed with a verdant coverlid of plants; their seeds, formed for such a purpose, having been wafted thither on downy pinions through the air, or floated from distant islands by currents of water; and instances of seeds transported from one place to another by birds, are notorious matters of fact. The seeds on which birds have fed will retain their powers of germination during a long period. Birds that feed on the seeds of the Castor-oil plant, have been known to bear them in their bodies from one country to another, where they have grown and multiplied. Birds are supposed to carry the seeds of the Misletoe from one tree to another. The seeds possessing an adhesive quality glue themselves to the bark of a tree, and the roots springing from the seed insinuate their fibres into the woody substance, and the plant is produced.

Vegetation on newly-born islands may also be partly produced by seed contained in particles of soil borne to them by eddying currents. If a bit of cork be put into a basin of water, the water if then agitated revolves rapidly in circles round the floating cork, converging towards it continually, and drawing towards it in its eddies every other portion of matter within the sphere of its attraction. In the same manner the newly-created island thus mechanically drawing towards it the floating particles with which air and water are loaded, become their common depository, and they there afford in their decomposition elements of food to the new vegetation, which in the warm moist latitudes where new islands are so frequently discovered, runs such a rapid course of decay, recombination, and reproduction.

We often see on our shores fresh accumulations of sand held together by particular tribes of plants (in the manner related by Mr. MITCHELL in his "History of Australia)," whose office it is to bind and consolidate by their long entwining roots those plants which grow only in such beds. May we not conclude, as in the preceding cases, that the seeds of those plants find their way to those sands by means of birds, or by the waves which beat upon the beach? And even admitting our inability to account by such natural means for the first appearance of plants in such localities, and in others where they have hitherto been unknown, are we necessarily to conclude that they spring up spontaneously from any accidental combination of inert atoms?

* PALEY.

ON CATTLE FEEDING.

In looking over the "Tables of Comparative Feeding of Fattening Cattle," in a late number of the *Gazette* (June 9), some points strike me so strongly as worthy of notice, that I will just put down and send to you what occurs to me on the subject, derived from my own practice and that of some of my neighbours.

In the first place, whatever may be said about the expense of high feeding, Linseed is practically cheaper than oil-cake. A fair price for good oil-cake is 10*l.* per ton, or 10*s.* per cwt.; that is 12*d.* for 112 lbs., a trifle above 1*d.* per lb. The price of Linseed certainly varies considerably; it has been to be bought, of good quality, within these two years, as low as 43*s.*, and as high as 56*s.*, but if we set it at 50*s.* a quarter it is a full average price for good Linseed. Such Linseed should weigh not less than 50 lbs. a bushel. I have grown it for the last two years, and the first year it weighed upwards of 60 lbs. per bushel, and the second year 55 lbs.; but bought Linseed may be considered fair if it weighs 50 lbs.; thus the weight of a quarter of Linseed will be 400 lbs.; 400 lbs. of Linseed for 50*s.* (or 600*d.*) makes our Linseed cost 1½*d.* per lb.

Now, as Linseed contains the whole of the oil produced by the plant, and which has been driven out of the materials which compose the oil-cake by severe pressure, it can hardly be too much to say that 3 lbs. of Linseed contain nourishment equal to 6 lbs. of oil cake; oil-cake being, in fact, a mere refuse, consisting principally of the husks of the Linseed. And as 3 lbs. of Linseed will cost only 4½*d.* whilst 6 lbs. of oil-cake will cost something above 6*d.*, there will be at least 1½*d.* per day saved in this department (in example No. 1.), which may advantageously be expended in the purchase of some food which will assist in distending the stomach of the animal, and the same wherever oil-cake is used in the other examples.

It appears to me that, in all the instances given in the "Tables," artificial food (and I consider Swede Turnips, sliced, and given at intervals in moderate quantities, as artificial food) is too sparingly applied. I have a strong impression that the consequence of feeding upon this scale would be that the animals would require so much hay or straw to fill up their stomachs and assist digestion, that they would be too long upon their legs, and could not enjoy all the repose that is desirable in order to promote to the utmost the process of fattening; and, judging from my own experience, the nutrition received would still be insufficient for an animal of 60 stones; especially if the animal should happen to be growing as well as fatting, which is not

unfrequently the case with the short-horns when they are put up at 2 years or 2½ years old. I would suggest the following method, as superior in practice to any of those named in the "Tables;" whether or not it represents the exact amount of nutrition contained in 200 lbs. of Turnips (for which amount, by the way, I think 2 cwt. should be substituted, unless box or stall-feeding is intended; for in an open court, in coarse and wet weather, a bullock of 60 stones will eat fully 2 cwt. of Swedes, and a good deal of straw or coarse hay besides). I recommend, per day, 8 stones Swedes, sliced, and given at four times; 2 lbs. Linseed-meal and 4 lbs. of Barley meal, mixed up together, and given at twice; 4 lbs. hay chaff, also mixed up with the Linseed-meal and Barley-meal. The cost per week will be as follows:

7 cwt. of Swedes, at 7s. 6d. per ton	2s. 7½d.
14 lbs. Linseed-meal, at 8s. 8d. per bushel *	1 0
28 lbs. Barley-meal, at 24s. per quarter	1 7
28 lbs. Hay-chaff, at 2s. 6d. per cwt.	0 7½
	6 7
Add grinding and attendance on each beast, per week, where a number are kept	0 5
	7 0

Though this amount may appear great at first, I am persuaded that if taken together with the results produced, it will be found to be very nearly the cheapest of all modes of feeding cattle. That it is far cheaper than the ordinary method of giving unlimited quantities of Swedes and hay or straw to a certain number of animals, fed without separation in a court-yard, there cannot be a reasonable doubt. In the use of the method I recommend, and which I have myself practised (and of the results of which I will give you some means of forming an opinion), the increase of 14 lbs. per week in weight may (using an average of weeks) be taken as the *minimum* increase of an animal, instead of the *maximum*. The increase of 11 beasts put up by me in January last, and weighed at intervals, some being sold and some going on, till the 25th of May, taking the amount of all their increased weights together, and taking also their several numbers of weeks together, is 148 stones of increased weight in 121 weeks and 4 days. It is very true that a very unusual fall having taken place in the price of meat since the animals were bought, and since the Turnips and other things with which they were fed were valued, there is not much room for profit this year, excepting what arises from the accumulation of an immense quantity of the best kind of manure. But this is an accidental circumstance, and probably will not happen to the same extent again.

Comparing this method with that of feeding with an unlimited amount of Swedes and hay in an open court, I am persuaded that, in the latter method, 2 cwt. of Swedes a day is the least that will content a bullock of 60 stones, and that besides that amount he will eat a good deal of coarse hay; and with that consumption I am fully persuaded that he cannot reasonably be expected to gain upon an average 14 lbs. per week through the whole period of fatting; if we consider the number of days in the winter and early spring in which he is exposed to cold, perishing winds, and must also stand in wet straw and half-rotten manure it will surely be a very ample allowance if in the 17 weeks and 4 days from the 23d Jan. to the 25th of May, the period during which the animals I have alluded to above were going on, we give him 13 stones of increase. The value of his keep per week,

14 cwt. Swedes, at 7s. 6d. per ton	5s. 3d.
5 stones coarse hay, at 2s 6d per cwt.	1 10½
	7 1½

I should be really glad of information if there be any error in my calculation; but it appears to me that the expense of ordinary feeding is greater than the expense of that which is called high feeding, and the result not nearly so satisfactory. I am well aware that farmers do not generally give their fatting cattle hay in the yards, but when they do not they consume a vast deal of straw, and will exceed 2 cwt. of Swedes per day.

I believe it is very clear to all who have tried it that when a bullock is taken away from exposure to severe cold and wet feet, and kept warm, dry, and quiet, he will consume one-third less food, and lay on fat nearly twice as fast, therefore the first point of economical feeding is to keep the animals thoroughly sheltered, in well drained stalls or boxes, and free from the possibility of interruption in the taking of their food; and this is of course totally irrespective of the materials with which they are to be fed. And the second point of economy is so to divide the amount of food to be given, and to put such intervals between the periods of delivering each portion of it, as to render waste on the part of the animal almost impossible, and very materially to diminish the chances of it on the part of the farm servants. Now both of these points have hitherto been most attended to by those who have adopted the system of what is called "high feeding;" though it is evident that the advantages to be derived from attention to them are quite irrespective of the quality and quantity of the food to be allowed; or rather their direct tendency is to diminish instead of to increase the amount of nutrition necessary to keep up the fattening process.

I subjoin a table of the weights of the 11 beasts I have alluded to as put up in January last; only observing, with regard to Turnips, that a full crop is here from 25 to 30 tons per acre, worth from 10*l.* to 12*l.*, according to the season; that we manure with 24 to 28 tons of farm-yard manure of good quality, and sometimes put a little guano besides; and that, in ordinary seasons we may reasonably expect to make 8*s.* per ton by feeding our cattle with them.

* But, by watching the markets, good Linseed may be had far cheaper than this.

TABLE of increased weights of 11 Beasts, weighed at intervals, from Jan. 23d to May 25th, 1849.

No.	Jan 23	Mar. 7	Apr. 5	Ap. 27	May25	No. of stones of increased weight, and in what time gained.
	st. lb	st. lb.	st. lb	st. lb	st. lb.	st. lb. weeks days.
3	80 2	90 0	96 10	100 0	Sold.	19 12 in 13 4
4	60 3	67 0	72 0	77 0	80 12	20 9 ... 17 3
5	75 0	84 7	Sold	..	..	9 7 .. 6 1
6	76 0	84 7	88 0	92 0	Sold.	17 6 ... 15 4
7	82 0	91 1	98 0	Sold.	.	11 0 ... 10 3
8	72 0	78 7	83 0	88 0	Sold	16 0 ... 13 4
9	64 7	70 0	74 0	79 0	82 0	17 7 .. 17 3
10	68 0	75 7	Sold.	..	.	7 7 ... 6 1
11	67 0	73 4	77 5	80 0	Sold.	13 0 ... 13 4
12	71 4	78 0	Sold.	..	.	6 10 .. 6 1
13	A Steer that had distemper in autumn and winter.		70 7	76 6	80 0	9 7 . 7 1

The weights are, of course, the live weights of the respective animals. These 11 animals were a portion of the second set fatted off in the season; the first set were put up in November and sold principally in the first week in January; and Nos. 1 and 2, which are wanting in this set, were put up in December and went on till March, and were weighed by themselves.

I will only add, that the sole difference between the mode of feeding which I have recommended and that which these animals experienced is, that the latter had 2 lbs. of Barley-meal a day more than I have mentioned as necessary. The Barley-meal not being given with a view to nutrition so much as with the view of qualifying the Linseed, I have thought that this retrenchment might safely be made, especially as hay chaff is to be mixed with the meal; and we sometimes gave equal parts of Bean-meal and Barley-meal, instead of all Barley-meal, as it contains much more of the fattening properties; and this was of course some additional expense, but then none of the beasts put up weighed so little as 60 stones.

We find, practically, that it is no object to boil the meal when the animals are fed with Swedes, as they do not thrive any better when that course is pursued.

R. W. B., Alnwick, June 15.

GREEN MANURES.

The base or bulk of the substitute dung heap, for outlying fields, must consist of vegetable matters grown or obtained near the spot. But there are places where the quantity of such matters at hand is not enough, and would require considerable expence of cartage to collect a sufficient heap. In these cases, the cheaper way may be, to cultivate cheap and quick growing vegetables for the purpose; or even for ploughing under, without working in heap at all, thus saving all expense of carriage. This is now commonly called "green manuring;" the principle being to enrich the soil, by setting a quick growing plant to draw organic matters from the air, and inorganic from the subsoil; and then ploughing it into the soil. Peaty soils do not require it, being already full of vegetable matter (and wanting chiefly lime to neutralise the acid; and nitrate of soda or sulphate of ammonia to supply nitrogen). For poor, light, and sandy soils, these green manures do well; and also for poor clays, which, however, are much improved by having the subsoil burnt (or rather charred) with peat, spent bark, sawdust, or any other cheap fuel. And as vegetable matters work sour, the land should be limed before, or soon after ploughing them under; and the cheap inorganic dressings, as lime, salt, and gypsum, may be added to help their growth, and so promote their drawing other matters from the air and soil.

The vegetables grown for this purpose should have the following properties, namely, they should

1. Flourish on poor soils;
2. Require little labour of cultivation;
3. Have cheap seed;
4. Be of quick and sure growth;
5. Stand all weathers and vermin;
6. Run their roots deep;
7. Bring up what the following crops require;
8. Smother weeds; and
9. Produce a great quantity of foliage, which decays easily in the soil, and leaves no hurtful residue.

The plants best known for this purpose may be most concisely and clearly described and compared when thrown together in a table.

TABLE OF GREEN MANURES.

Plant.	Soil required.	Labour in Culture.	Cost of seed.	How bear vermin, &c.	How stand the weather.	Months of growth.	Tons per acre.	Depth of roots.	1000 parts contain Potass.	Phosphoric acid.	Nitrogen.	Rate of Decay.	Observations.
Spurry, eatable, 3 crops a year.	poor and dry	little	cheap	...	..	2	3	15 in.	9	1.5	1	quick	May be sown on stubble, or 3 times a year, March, May, and July.
Tare, eatable, 2 crops a year	good	...	dear	badly	tender	3	6 or more	not deep	3.4	2	4.3	quick	Gypsum will often forward it.
Buckwheat, 2 crops.	poor peaty	little	dear	well	not wet	2	3 or 4	not deep	1.5	0.7	2		Sown on stubble, grows rapidly with gypsum and nitre.
Rape, eatable, 1 or 1½ crops.	good	..	cheap	suffers	..	5	6 to 12*	deep	4	1	3.5	roots slow	* 12 tons per acre, if left to blossom, the roots thick and hard.
Rye, eatable.	poor	little	dear	well	well	6	.	not deep	very little	little	4	...	Sow after harvest, to eat or plough down in spring.
White Lupin, uneatable.	all except. limy		dear	well	well	4	12	24 in.	1	1.8	4.3	stalks slow	The best of green manures; equal to yard dung. Sow in May, to plough down in autumn; lasts 2 years.
Red Clover, eatable.	good	..	che ap		..		8	2½ ft.	4	1.3	3.4	quick	The roots about equal to half the stalk and leaves.
White Clover, eatable	..	...	cheap	...	...	..	3 or 4	15 in.	6	1	3.5	quick	Produce about one-third that of red Clover.

Here we see at one view that Spurry will produce 2 or 3 crops a year; is eatable; will thrive on poor dry soil, with little labour, and little cost of seed. How it stands weather and vermin does not appear. That it requires two months' growth, and yields about 3 tons per acre; its roots running 15 inches deep. That every 1000 lbs. contain 9 of potass, 1½ of phosphoric acid, and 4 of nitrogen. That it decays quickly in the soil; and that it may be sown on stubble, after harvest, or (to enrich a poor soil) three times in succession; ploughing down the March crop, in May, and sowing another upon it, and the same again in July; and so of the others, helping the farmer to judge, at a glance, which may most likely suit his purpose. Besides these, Tansey and Mugwort together are strongly recommended by Sprengel, as possessing the properties above enumerated. Borage is said to throw up a heavy mass of foliage; and so does the Bokhara Clover, which, however, seems liable to suffer from the slug. The Prickly Comfrey has been said to produce 90 tons of green foliage on an acre, but I cannot lay my hand on the particulars. These green vegetable manures may be divided into three classes.

1. Those which are to be ploughed down where they grow; generally rapid growing annuals.

2. Those which are grown on rough or poor spots not worth other cultivation, for cutting and carting to the better soil adjoining; in which hardiness and weight of produce are chiefly looked for, and perennials best esteemed.

3. Those which are to be eaten down by animals; and the latter growth and roots only turned over by the plough, to rot in the soil; which must of course be wholesome and palatable, and require further considerations, beyond our present limited subject of "Cheap Manuring."

1. Of the first class, Spurry is extensively used in Belgium, and upon poor dry soils probably answers best; but on peaty ground Buckwheat is said to do better. Tares and Vetches produce much heavier crops than either; but require better soil, and more cost and care, and are more liable to vermin. Rape and Rye can be sown after harvest, and will grow the winter through; but Rape must have good land, and does not so well bear vermin as Rye.

The white Lupin has been recently introduced into this country; with what success, in our climate, I have not yet seen. But in Italy it has been extensively used, down from the time of ancient Rome, and has been adopted with great success in Germany. This, or Vetch, or Mustard, or even quick-growing Turnips, may be grown, and ploughed down between crops, not on poor outlying lands only, but also on soils in high cultivation, instead of dung: especially when helped on by the requisite inorganic dressings. And I have long since given, in your columns, my reasons for believing, that by such a system land may be kept in high condition, under pure vegetable culture (for the market), without cattle, or live stock, or other dung than night soil in the return carts. A good set of comparative experiments on green manures, their respective produce and effects, would supply a valuable addition to our agricultural knowledge.

2. Of the 2d class, grown on rough or waste spots, to cut for manuring the adjoining fields, none promises better for poor outlying lands than the mixture of Tansey and Mugwort. Both are perennials, satisfied with poor hungry soils, stand all weathers, suffer little from vermin, and grow through the winter; produce a great mass of foliage, say 24 tons an acre, rich in potass; their roots, running 2 to 4 feet deep into the subsoil; are easily cultivated; last 10 years without further expense, and will sow themselves again; may be cut twice a year. One acre of them will green manure 2 acres for

two years; or keep 4 acres of hungry soil in fertile condition. But this acre they require to themselves, not growing like Spurry upon the stubble, between harvest and seed time. Or any other quick growing plants, which flourish naturally upon the waste places, may be extended by cultivation, and helped by the cheap dressings above named. They should be cut when in blossom, as they then yield the heaviest and richest produce; but before seeding, that they may not be carried into the tillage land as weeds. If the land is under crop at the time, they can be heaped in compost, for the substitute dung heap; or, if it is bare, they can be ploughed in at once. But this will, of course, be a question for the farmer's convenience.

3. The third class, which are to be cut for fodder, or eaten down, and the roots and latter growth only used for manure, will, of course, be regulated by the character of the farm and the nature of the stock.

Of Grass, from two to three years' growth, the roots may run from 2 to 3 tons an acre. Of Lucerne and Sainfoin, five to ten years' growth, they may amount to 5 or 6 tons. Rape gives stout and heavy roots, but I have no estimates of their weight per acre; they form a very powerful and productive manure.

These few letters are not the mere result of my own reflections, upon chemical theory, but comprise a very concise summary, of an attentive comparison, of the numerous practical experiments published, during the last five to seven years, in the royal English and Scotch agricultural journals, the *Gardeners' Chronicle* and *Mark-Lane Express*, and several other agricultural periodicals. In the course of another year (unless anything to the purpose comes out in the mean time), I may probably publish them in a fuller and more systematic form, in six or eight plain practical lectures for farmers' clubs, to be read by their own secretaries; with chemical and explanatory notes and references at the end, to lay open the principles on which the practice is founded, and supply materials for profitable discussion after each lecture. Meanwhile I shall be glad of any practical objections, in your columns or any other periodical; but not in private letters, to answer which individually would occupy much more time than I have to spare. *J. Prideaux.*

AN EAST SUFFOLK FARM.

a. Extent.—200 acres.

b. Position.—In an agricultural district, the population purely agricultural; 12 miles distant from market.

c. The character of the soil. Heavy with clay subsoil, except a few acres which fall on a small river.

d. Of the whole, 170 acres are arable, and 30 acres permanent low meadow and upland pasture.

e. About 12 acres mown each alternate year, generally feed the low meadows until the last day of April, before they are reserved for mowing. The quantity (about 1 ton) somewhat lessened by feeding to that time, but the quality decidedly improved; uplands yield about the same quantity, 1 ton per acre.

f. The rotation.—Four-course system. Wheat 4 quarters per acre, all for sale except seed (I consider that used by the family the same as sold), Barley about 5½ quarters per acre. The Barley crop on this farm depends very much on the seasons, excessive wet or excessive drought are alike unpropitious. The harvest of 1841 yielded between 6¼ and 7½ quarters; 1842, 43, 44, 45 and 46, from 3½ to 4½ quarters; 1847 not less than 7 quarters on good land, and 6 quarters on poor land. The greater part of the Barley I generally sell for malting purposes, the remainder I use for seed and feeding pigs. When Barley is cheap I use it for feeding horses, bullocks, cows, &c. &c. When so used it is steeped for 48 hours, then spread out about 1 foot thick for 96 hours (turned over once in that time, viz., at the end of 48 hours), it is then fit for use, and if only allowed to have it dried on a kiln without duty, would be the best fattening and feeding that could be produced. This year I am using 1 coomb per day, feeding pigs, also half Barley and half linseed, for bullocks, sheep, calves and year-olds. Oats scarcely ever exceed 4 or 5 acres, about 7 quarters per acre. For home consumption, Beans and Peas ⅓, 4 quarters per acre, all used on farm. Clover ⅓; in a favourable season the two crops yield 3 tons per acre, all consumed on the farm.

g. I purchase but little manure, about 10*l.* per annum is the utmost average for Rape cake, guano, or some other kind of artificial manure for Turnips.

h. Labour.—Eight cart horses with a useful hackney for busy times, and jobbing work; 9 labourers and 3 lads constant, beside women and children for weeding, hoeing, hay and corn harvest, and many other kinds of employ. Wages in this district 18*d.* and 20*d.* per day for men, for women 6*d.* and 7*d.*, except in harvest, then 18*d.* and beer.

i. The rental, 25*s.* per acre.

Home Correspondence.

Use of Lime in Agriculture.—In viewing the two articles on the subject of lime and its application, the chemist will scarcely fail to admit the correctness of the remark in the first article by "Aliquis," p. 283, col. *c*, that "Oxalic acid and lime form oxalate of lime, an almost insoluble compound (except in nitric acid) which can do good to nothing." If indeed oxalic acid be produced during the decay of vegetables, hastened by lime in the soil, then we may safely reject the agency of lime as a meliorator; but there is one acid which lime, even in its simple form of lime-water, at once neutralises, and fixes in the form of a slowly soluble compound, that gradually and progressively can be dissolved and absorbed by the roots of those plants which constitutionally require it. I allude to the humic acid, the product of that slow decomposition of vegetable and animal remains which converts them into humours. Let any one collect the brown drainage from a dung mixen, and either filter a quantity or permit it to remain at rest till the fluid become of a clear, transparent brown. By adding to this small portions of clear lime-water, or some powdered lime, it will speedily appear that the fluid becomes paler, loses transparency, and finally deposits a quantity of dingy grey flocks, leaving the supernatent fluid almost devoid of brown tint: the lime-water forms the best and most conclusive experiment, as it is free from doubt or ambiguity. The deposition of humic acid in the form of humate of lime is, therefore, one of the most valuable results of liming the soil. And it is not in peat land only that acid humus superabounds, for all old gardens glutted with black manure are thus vitiated to a certain extent. "Aliquis," in his second paper in col. *a*, p. 284, has announced another great chemical fact, when he says that the silicates (*i. e.* silex or flint in chemical union with the alkalies) "cannot enter a plant till they be dissolved in water," and he adds "there then is the key to the benefit derived from lime. It acts on the rocks (or on the loam) containing the mineral ingredients, decomposes them, and renders them soluble in water." In doing this it produces a double benefit; for while it liberates the alkali from its vitrious union with silex, it also acts upon the acid humus indirectly, or by secondary affinity. If lime be only applied as a rapid decomposer of vegetable matter, its action is, at best, questionable, or very limited. But viewed as the powerful agent which we now have found it to be, few persons will question its real value in agriculture. *J. Towers.*

ACCOUNTS OF CORN GROWN ON —— FARM,
From Michaelmas 1828.

	Total Produce.		Extent.		Acreable Produce.		
	qrs.	bush.	A.	R.	qrs.	bsh.	gals.
1829	70	1¼	24	0	2	7	3
1830	170	0	44	3	3	6	0
1831	Ground not measrd.						
1832	140	4	33	1	4	2	6
1833	434	1	117	2	3	5	4
1834	210	7	55	0	3	6	0
1835	358	6¼	75	2	4	6	0
1836	171	1¼	36	3	4	5	0
1847	307	1¼	68	2	4	4	6
1848	208	0	67	2	4	0	0
1839	433	5	104	1	4	1	2
	2566	4	627	0			

Average of the 10 years, 32 bushels 6 galls.

ACCOUNTS OF CORN GROWN ON —— FARM.

	Total quantity.		Extent in Acres.			Average growth.		
1840.	qrs.	bush.	A.	R.	P.	qrs.	bsh.	gals.
Wheat	250	0	55	3	0	4	4	0
Barley	86	1	7	2	0	4	6	0
Oats	25	0	4	3	0	5	2	0
Beans	52	2	10	0	0	5	1	0
Peas	19	6	10	0	0	2	0	0
Seed Turnip	3	0						
1841.								
Wheat	413	2	109	2	0	3	6	1
Barley	110	3	21	0	0	5	2	0
Beans	21	0	4	1	0	5	0	0
Peas	14	4	3	1	0	2	6	0
Oats	13	5	2	1	0	6	0	0
1842.								
Wheat	323	1	71	1	20	4	5	5
1843.								
Wheat	456	5	138	0	0	3	2	4
1844.								
Wheat	480	4	101	3	0	4	5	1
1845.								
Wheat	456	4	118	0	0	3	6	6
Barley	29	4	4	1	15	6	6	2
1846.								
Wheat	541	6	117	2	0	4	4	7
1847.								
Wheat	476	0	96	1	0	5	0	0
Barley	113	0	18	0	18	6	0	0
Oats	45	0	6	1	27	7	0	0
Peas	0	0	6	2	27	2	1	0

It is rather singular that the last year of the second term should be the only one that the average reached 5 qrs. of Wheat, and one of the fields that had grown Wheat the most frequently produced nearly 8 qrs. per acre. *A Kentish Farmer.*

Pigs' Tails.—About a month ago, one of my brood sows dropped her young. In the course of two or three days, I noticed the tails of all but one affected with a disease which in the end caused them to drop off, so the creatures are minus their elegant curled appendage. I had narrowly watched the progress of the disease, but did not think of attempting to cure it, not knowing the nature or cause of it. On Thursday, the 3d ult., a sister of that sow, of the same litter, and which had been sent to the same hog, also dropped her young; and in the same time after, I noticed their tails similarly affected. The former litter was the first I had seen in the state of losing their tails, though I had often before seen pigs tailless. On inspecting the latter litter, it occurred to me that the disease was of a scorbutic nature, arising from the constitution being weakened by too near or too fine breeding, and that a scorbutic ointment might be beneficial. I therefore dressed them with mercurial ointment, diluted with a considerable quantity of lard. They were exactly a week old when they got the first dressing, and I feared that the cure would be tried too late, as on two of the little animals the tails seemed to have lost all vitality, while the others were very bad. On the 12*th*, they seemed a little better, and I dressed them again. On the 14th they were almost well, but I dressed them slightly, to perfect the cure. I am happy to say I succeeded, and not a tail is lost. It is my opinion that had they been slightly dressed when the disease first showed itself, no more dressings would have been necessary. The ointment was applied round the base of the tail only where it was affected. Probably no one who tries it will ever have to complain of tailless pigs, and it is more easily procured than the boarded floors which "C. W." suggests. *Aliquis.*

Wheat Growing.—I once saw a report in the *Bell's Messenger* of Lord Western's growth of Wheat, and as I had always failed in getting my neighbours to come to book with me, I took the pains to take it out and compare with my own; and I must say that it was a satisfaction to me to find how near my growth was to his, particularly as my farm had been considered too light to grow Wheat. I now inclose it, and will make up the account to 1847. I have lately grown a quantity of the Belgian Carrot, which I like much for feeding, but the cultivation is expensive. I am now feeding 120 pigs and my 4 teams (16) of horses on them, boiled. I find stock of every description like the food better than anything I can give them, and the pork produced from it is delicious, but whether it will be firm and boil well I cannot say. I have a team of 4 horses for each 60 acres, this is more considerably than is usually kept in the neighbourhood, but I have made scarcely any clear fallow: my Turnips are chiefly grown after Trefoil, some after Tares, Trifolium, Rye-Grass, &c.; part of my Carrots and Mangold I grew after Rye-Grass, and had a fair crop. For my Turnips, I apply town manure 6 cart-loads, mixed with turf or field ashes, having dissolved a month or six weeks before using 3 or 4 bushels of bones in the compost per acre; this I sift and apply by the drills, and find it succeeds well; with the heat and moisture of the dung it soon dissolves. Previous to the Duke of Richmond, Mr. Pusey, and others, having spoken of using dissolved bones, I had found great advantage by applying them as I have stated.

LORD WESTERN'S GROWTH OF CORN.
From "Bell's Weekly Messenger," Jan. 5, 1841.

	Extent.		Total Produce		Acreable Produce.		
	A.	R.	Qrs.	Bush.	Qrs.	Bush.	Pecks.
1832—1833	101	0	485	0	4	6	1
1834—1834	88	0	306	7	3	3	3
1834—1835	105	1	414	3	4	0	1
1835—1836	88	0	395	3	4	2	3
				Average	4	1	1
1836—1837	94	0	497	0	5	2	3
1837—1838	75	0	376	2	5	0	0
1838—1839	103	2	525	0	5	0	2
1839—1840	109	2	544	6	4	7	2
Average during the last 4 years					5	0	2

M. Sandford.

Thick and Thin Sowing.—This subject has been so often argued, and so much has been said for and against it, that probably most of your readers by this time are heartily tired of it; and did I not attach far more importance than the mere saving of seed, to what is termed thin seeding (although that amounts to 50*l.* a year on every 100 acres of arable land), I should be silent; but as I am about leaving Spring Park, and in farming, although it is very well to support by reasoning departures from old practices, results after all must govern, I would give to farmers the opportunity of judging how far it has answered in my practice, by saying, my corn crops are open to their inspection. They are at liberty when they please to come and see the corn grown from a third or less of the ordinary sowings of seed. Spring Park is three miles from Croydon, which may be reached by railway in half an hour, at each hour in the day. I cannot be supposed to have taken any extra pains, or gone to any non-paying expenditure, for my interest in the farm is too limited to admit this; my last crops there are now on it, and whatever they are, they are due to the system that my "Farming Essays" lay down, and which, at any rate, beyond a considerable expense in the first instance, in draining, trench-ploughing, and cleaning the land, advocates no extraordinary expenditure, calls for no provision of manure that every farm may not of itself supply. *Hewitt Davis*, 3, *Frederick's-place, Old Jewry, London.*

Disease in the Pig.—I have had a pig about nine months old attacked by the prevailing distemper (which I understand has been very fatal), which affects the head and limbs, with every appearance of approaching paralysis—head sunk and shaking, eyes nearly closed, and very cold. I discovered the unfortunate condition of my pig late in the evening; it was immediately bled in the ears and tail; on the following morning, not being any better, and being at a loss what to do with the animal, I tried an experiment, and dosed it with 6 grains of calomel, and two hours after with 2 oz. of castor, and *one drop* of croton oil. The next day I gave more castor oil, and on the third day I again administered calomel, castor, and *one drop* of croton oil. The pig is recovering rapidly; and as this (I believe) novel mode of treatment may be of use to others, I lose no time in sending the account to the *Gazette. Tom Tit.*

Agricultural Tenant Right.—It now appears pretty evident that the "Landlord and Tenant Bill" brought before Parliament this session is not likely to be moulded into anything generally and permanently useful, at least during the present session. The subject is (to say the least of it)

very difficult to deal with, and it might possibly happen, supposing the bill were passed into a law, that instead of proving a boon to agriculture, it might, on the contrary, prove a fruitful source of litigation; as we not unfrequently find such to be the case, in matters less complicated than the subject of tenant right. Now, although there may be difficulties to contend with in framing a general act of parliament to suit all localities, all descriptions of soil, and all circumstances; and although we may for the present be disappointed in obtaining an act of parliament, which many of us anticipated would most effectually have secured our interests, so far as security of tenure was concerned, without taking any further care about those interests ourselves, yet as we have been disappointed, it would ill become either the British landlord or the tenant farmer to uselessly lament the miscarriage of the embryo bill, which might, after all, had it arrived at mature birth, have turned out but a spoilt child, disappointing the hopes and marring the expectations of its warmest supporters. There can be no doubt that the present general system of occupying farms, under yearly tenancies, is very defective; under such a system the tenant farmer has neither encouragement nor inducement to improve his farm, nor security for the investment of his capital therein; he has in fact no interest or security in it beyond the current, or at most the succeeding year; and, therefore, although he might feel convinced that by a judicious outlay, in bringing his farm into a higher and better state of cultivation, he would, in course of time, be amply repaid, and the land also permanently improved; yet, in numerous instances, he is deterred from making such improvements from the want of that security. It is therefore highly desirable that a better system of holding should be brought about, by which more capital and labour would be brought to bear upon the land, thereby fully developing its capabilities; which would unquestionably (taking into account the increased produce), prove a benefit not only to the landlord, tenant farmer, and labourer, but also to the nation at large. Now, let us consider if there is no other mode of remedying this evil except by an act of parliament. There is an old phrase often made use of, "God help them who cannot help themselves," which may not be inappropriate here; and I must confess, that in this case, I see no very substantial reason why we should not endeavour to help ourselves out of the present difficulty. Surely intelligent British landlords and honest tenant farmers can so far perceive what belongs to their own interest, as to manage their own affairs without the interference of the legislature; in making a fair and honest agreement one with the other, by which the interests of both parties might be protected, more particularly when it is considered that such an agreement ought to be for their mutual benefit. From long experience and observation as an agriculturist, I am fully persuaded that a lease, extending to 14 or 21 years, with covenants suitable to the locality, soil, circumstances, views, and interests of the parties concerned, is far superior to any yearly tenancy in which the parties are to be bound down under an act of parliament; which may perhaps be expensive in its working, and unsatisfactory in its application. Some tenant farmers however say (and very justly) that the present are very unsafe times for taking a long lease of a farm, as prices are uncertain and may get ruinously low; but I think that difficulty may also be overcome by the adoption of the corn rent principle, which has long been found to answer well in Scotland, and which no doubt might be applied with equal benefit here. In naming a lease on the corn rent principle, I am aware that many will look upon me with some degree of jealousy and distrust, because in many parts of the kingdom the system has not been tried; it will, however, have this advantage, viz., the farm being taken at a times price in the first instance, and the corn rent principle adopted in the lease, the rent will then fluctuate from year to year, and will accommodate itself to times prices, agreeably to the average price of corn. It appears to me quite evident that a tenant holding a farm under a lease for a number of years certain has greater inducements to cultivate well than a tenant-at-will can have under any circumstances; the tenant holding under a lease for a term of years has a certainty of holding the farm for a sufficient length of time to enable him to reap the full advantage that may accrue from the judicious application of his skill and capital to the land; whilst, on the other hand, the tenant-at-will, if even protected by a tenant right act of parliament, should he receive a notice to quit, after having expended his capital in the land, he might, it is true, under such act of parliament, be entitled to receive back a great portion of his outlay, but the profits arising from that outlay must inevitably go to his successor. In times like the present it behoves both landlords, tenant farmers, and all parties interested in the prosperity of agriculture, to unite their efforts in counteracting the injurious effects resulting to the British farmer from the free importation of provisions, corn, and cattle, into this country; and in order to effect this, landlord and tenant must join together in protecting interests which are in reality inseparable. To accomplish this desirable end, one of the most likely and also one of the most legitimate means is, a superior and improved cultivation, whereby more abundant crops than heretofore may be produced, in order to meet as far as possible the deterioration in price. This, however, must be the result of a proper and complete understanding between landlord and tenant, so that each may have full confidence that his interest is secured, all which, I think, may be done quite as effectually, without the interference of the legislature, by a mutual agreement for a lease, with such protecting clauses as meet the views of the parties concerned. Let then the landlord and tenant farmer consider their interests inseparable, let them mutually try to protect each other's interest along with their own, and there will be no need of a "landlord and tenant bill." *Thos. Dixon, Land Agent, Darlington, June* 25.

What is a Ton of Turnips Worth?—After the remarks in your Paper of the 9th June, as to the value of root crops, and the offer of your own Turnips at much less than 10*s.* per ton to be consumed on the land, it may be superfluous to take further notice of the reply of Mr. Tuke in the *Gazette* of the 25th, but as it seems he belongs to a class in whose keeping much power for good or evil to the tenantry exists, and as his remarks may fall into the hands of many not practically versant in the actual receipts from the consumption of Turnip, it may be proper shortly to again advert to them. Mr. Tuke then reiterates his opinion that a ton of Turnips for stall feeding properly applied is worth 10*s*, and to support this statement (not apparently possessing any practical experience of his own), he resorts to that of others, but instead of founding on results which had been obtained from experiments complete in themselves, he calls out those only which show a large return, besides being incomplete. In none of the examples quoted does he give the actual amount of money left between the buying and selling of the animal, with the quantity of the food consumed, but states that so many cattle in a given period gained a certain increase of weight, and asserts what I never denied, viz, that some cattle may gain upwards of 6 stones in 31 days. Now as I presume this increase of weight is the total amount gained in that period, as he says nothing to the contrary, it is reasonable to conclude that the weight of the offal must be included in this return; now no one will venture to assert that when a healthy thriving animal increases in weight it is the beef and tallow alone that does so, some allowance must certainly be made for the intestines, for the whole system participating in the change. What proportion they may bear to the whole I do not pretend to say—it is the duty of those adopting these methods of valuing the food consumed to determine—but as some allowance must be made for this, it is perfectly evident that even Mr. Tuke's calculation will have to be revised. It would have served the cause of truth much better had Mr. Tuke pointed to any report of experiments over several years, showing that 10*s.* per ton had been made for Turnips consumed on the land, after deducting all expenses; and until he does so, I must believe that his sum of 10*s.* per ton "founded on calculations and figures," is quite hypothetical, and that the candid, truthful, and unanswered communications of the experience of Mr. Mechi, your Galloway and Lincolnshire correspondents, in unfortunate seasons, did not deserve to be so lightly spoken of; but as Mr. Tuke appears to have every confidence in his views, and may not be unwilling to prove practically their correctness, I will be exceedingly happy to sell him 1000 tons of Turnips to be consumed on the farm at somewhat less than his own valuation of them; and as he states that straw should leave 2½*d.* per stone, I will give him what he needs for the requirements of his cattle to the bargain. But of course binding him to adopt "the most judicious and approved method of consuming them," that the example may not be lost to myself and neighbours with the exhibition of his balance sheet at the close. *J. M. P.*

Societies.

HIGHLAND AND AGRICULTURAL, *June* 13. — At a monthly meeting of the Society, held this day, the Secretary read a Paper "*On Stone Fences, with Iron and Wire*," communicated by Mr. Forsyth, of Dunach, Argyleshire, of which the following are extracts.

In the year 1845, having had some outhouses paved with asphalte, by a Glasgow company, it occurred to me that it might be used with advantage for fixing small iron uprights into stones, to receive wires along the top of stone dykes. I had men employed at the time in the repair of an old march stone dyke with the turf coping which is so common in this country, and at my request they readily undertook, without any additional charge, to place good sized stones, at intervals of 10 feet, along the top of the dyke, the turf forming the remainder of the coping. I had the stones bored 3 inches deep, and fixed into the holes with melted asphalte, ½-round iron uprights, 15 inches long, with two holes punched in them. Two wires of No. 6 gauge were then strained through the holes in the usual manner, on wooden posts placed against the ends of the dyke. The experiment answered perfectly, for the fences effectually kept out black-faced sheep, and it has never required repair since. I was told at the time, that one knowing old sheep, accustomed to go over the dyke when surmounted by a hazel wattling, tried the wire for a whole day, but could make nothing of it. I afterwards built several stone dykes with stone coping and two wires, but as the stone here is bad, and the dykes were not built quite to my mind (although they answered well), and, moreover, I kept no exact account of the cost of them, I think it better to describe three fences that I made more recently on Craigdarrock, a high sheep farm in the parish of New Cumnock, Ayrshire. The first fence, No. I., was one of 224 falls, to defend a plantation which was finished at the end of 1847, the next, No. II., was a march fence of 229 falls, between the Marquis of Bute and myself, completed last spring; and during last summer another march fence of 185 falls, No. III., was made with Lord Bute. All these were new stone dykes done by contract, and the general plan of the whole was the following, viz.: A single stone dyke, (wherever practicable, but with liberty to build double where the stones were small), 3 feet high to the top of the coping, having large stones for boring placed at intervals of 12 feet; the top of the large stones to range 8 inches above the general line of the coping, the ordinary stones of the coping being firmly jammed between the large stones. I saw that by thus rising the large stones, the iron standards need not be more than 13 inches long, and yet carry two wires about 9 inches apart, and together with the dyke, form a fence 4½ feet high. The standards are sunk 3 inches in the stone, having the first hole one inch above, so that the wire may clear the stone, and the second hole as near the top as is consistent with strength. The holes in the stones are an inch in diameter, to allow the asphalte to get round the ⅝ iron, and in boring them the contractor should have a few straight sticks placed in the last two or three holes he has done, in order to bore his holes so that the standards will range well. Indeed the dyke builder should also have an eye to this in placing the large stones, especially where there are inequalities of ground or curves. In both these cases, the stones may also require to be placed closer to each other, but I find 12 feet distance a good general average. A good dyke builder will readily attend to this, nor have I ever had any extra demand made on me for the trouble of placing the stones. A straining post will be necessary at every very decided corner (although the standards will carry round a curve with a tolerable radius), and sometimes, also, in abrupt hollows. Wood is best for these, and they make excellent gate-posts, when required; for the lever power of a long and heavy gate is counteracted by the strain of the wire on the top of the post. The holes having been bored, and the wire and standards provided, all the implements required are, the usual wire stretcher, a pair of pincers and file, an auger to bore the wooden posts, a fire-pail to contain a fire on the spot, a small pot to heat the asphalte in, and an iron ladle to pour it out with. The standards should be fixed in dry weather, for unless the holes are dry the asphalte will not adhere properly. For this reason, the depth of winter is an unfavourable season, and the greater proportional cost in labour of the fence No. I. arose chiefly from its having been completed in the month of December. A slight degree of damp, however, in the holes is got rid of by heating the lower end of the standards in the fire-pail, and in cold weather this is at all times a useful precaution (if done to a moderate degree), and does not at all hinder the rapid execution of the work. While one man is pouring the hot asphalte into the hole, another holds the standard in its proper position, and as the stuff rapidly gets stiff, he easily props it up with a stone or piece of stick, and both men proceed to the next hole, and so on, until the ladle is empty. Before the asphalte is quite hard, the man who attends to the placing of the standards should go over them again, to see that the holes for the wires range properly in line. When all the standards and posts are ready, the wire is run carefully through the holes and strained. When the fence is completed, I have the iron-work painted with a mixture of coal-tar and rosin heated together, and applied by means of a woollen rag. The rough rosin gives a better body and a gloss to the coal-tar. It is right to add that all my wire fences here are put up by a Highland labourer, and I sent him at first to Ayrshire to show how these new fences are done. It is perfectly effectual against the most active black-faced sheep, turning even strong tups. I subjoin a note of the cost of fixing the wire on the three fences to which I have alluded. I have not included the contract price of the stone dyke, which in No. I. was 8*s* 6*d.* per fall; in No. II., 4*s.* 6*d.* per fall; and in No. III., 4*s.* per fall, according to the facilities of procuring stone at each, nor the cost of carriage of the wire, &c., because that will necessarily vary according to circumstances:

No. I.—PLANTATION FENCE, 224 FALLS OF 18½ FEET.

Materials—	£	s.	d.
322⅜ iron standards, cut and bored, 13 inches long, 3 cwt 1 qr. 9 lbs., at 12*s.* 6*d.* per cwt. and bags ...	2	3	2
No. 11 wire, 1 cwt. 2 qrs., at 12*s.* per bundle of 63 lbs. £1 12 0			
No. 6 wire, 3 cwt. 2 qrs. 16 lbs., at 9*s.* per bundle of 63 lbs., 58*s.* 4*d.* and wrapper . 2 19 8			
	4	11	8
Asphalte, at 5*s.* per cwt.	0	4	6
Coals for fire, coal-tar, and rosin for painting, say ...	0	2	6
A few rough wooden posts.			
Labour—			
Boring stones by contract, 322 holes of 3 inches deep, 804 feet, at 10*d.* per foot	3	7	1
Fixing standards in holes, placing straining posts, stretching wire, and painting the whole iron work	3	3	4
Cost per fall of 18½ feet, at 1*s.* 2½*d.* ...	£13	12	3

No. II.—UPPER MARCH FENCE, 249 FALLS.

Materials—			
352⅝ iron standards, cut and bored, 13 inches long, 3 cwt. 2 qrs. 16 lbs., at 12*s.* 6*d.* per cwt. and bags .	2	7	0
No. 11 wire, 1 cwt. 1 qr. 7 lbs., at 12*s.* per bundle of 63 lbs. £1 8 0			
No. 6 wire, 4 cwt. 2 qrs. 9 lbs., at 9*s.* per bundle of 63 lbs., 73*s.* 4*d.* and bags . . 3 14 9			
	5	2	9
Asphalte	0	4	7
Coals, coal-tar, and rosin, say	0	3	0
Wooden posts.			
Labour—			
Boring stones, 352 holes 3 inches deep, 88 feet, at 1*s.*	4	8	0
Fixing standards, &c., as above	2	6	4
Cost per fall of 18½ feet, at 1*s.* 2½*d.*	£14	11	8

No. III.—LOWER MARCH FENCE, 185½ FALLS.

Materials—			
274⅝ iron standards, 13 inches long, 2 cwt. 3 qrs. 5 lbs., at 7*s.* 6*d.* per cwt. £1 0 11			
Paid blacksmith punching holes, at 2*s.* per 100 standards 0 5 6			
	1	6	5
No 6 wire, 3 cwt. 2 qrs. 9 lbs., at 9*s.* per bundle of 63 lbs., 2*l.* 17*s.* 3*d.*, and wrapper	2	18	7
No. 6 do., 2 cwt. 2 qrs. 3 lbs., at 15*s.* per cwt.	1	17	11
	4	16	6
Asphalte	0	4	0
Coals, coal-tar, and rosin, say	0	2	0
Wooden posts.			
Labour—			
Boring stones, 274 holes of 3 inches, 68½ feet, at 10*d.* per foot	2	17	1
Fixing standards, &c., as above	2	12	2
Cost per fall of 18½ feet, at 1*s.* 3½*d.*	£11	18	2

The stones bored were difficult to do, especially those on No. II, which were chiefly of a rock locally termed "bottle whinstone." They were all done by contract. I find that the granite boulders, which are common in Argyleshire, are much more easily bored. The standards used in Nos. I. and II. were procured from an ironmonger in Glasgow, ready for use, at 12*s.* 6*d.* per cwt., but the holes were badly made, and gave trouble, and he said the contract did not pay him. Those used in No. III. were part of a quantity (200) furnished to me by the Muirkirk Iron Company, and delivered, at New Cumnock, ready cut in lengths of 13 inches (but not bored), for 7*l.* 10*s.* per ton. The holes were punched in them by a blacksmith at New Cumnock, for 2*s.* per 100 standards. If the iron had been flat instead of round, the charge for the holes would have been less. Still, these standards complete cost only about 9*s.* 8½*d.* per 100; a cwt. making nearly 98 of them. In Argyleshire I pay a village blacksmith 2*d.* per lb., or 18*s.* 8*d.* per cwt. for small quantities; and on one occasion, an iron company gave me an estimate for a ton of them at 23*s.* per cwt., so much does the price of anything out of the usual routine depend upon a little management. I find that the establishments which manufacture bar iron will readily cut it into lengths to suit the purpose, but will not undertake to bore the holes, and this is best done by the next blacksmith. The holes should be comparatively large, to let the wire run freely. The upper wire of No. I. was of No. 6, and the lower of No. 11 gauge. It was intended that No. II. should have been wholly of No. 6, but by a mistake of the labourers all that remained of No. 11 gauge was used in it as a lower wire, and it was completed with No. 6. No. III. was

made wholly of No. 6 gauge. The wire charged in No. III. at 15*s.* per cwt. was annealed, but all the rest was highly tempered, and required the fire to soften the ends. For this reason, and as all these fences were put up by comparatively unpractised hands, and under unfavourable circumstances (No. III. for instance, following the windings of a stream), I think the cost of day's labour in these statements higher than need be in general. The cost of the asphalte is roughly estimated; but as a lump of 2½ cwt., at 5*s.* per cwt, was more than sufficient for all the fences (about 4000 yards), that item is not of much importance. *Turf Fences with Iron and Wire.*—Part of No. II., march fence (about 88 falls), running through a bog, was made of turf dyke instead of stone. The contractor was not *au fait* at turf dykes, and built it 4 feet high from the ground contrary to the specification made out for him by Mr. Girdwood (Lord Bute's land-steward) and myself. Still it was finished along with the rest, with bored stones, iron standards, and wire, and has answered very well, although I do not think it will be so durable as one I afterwards put up, according to the specification, on the same property, which I shall now describe. It was made last autumn by a man accustomed to that sort of work, for 1*s.* 4*d.* per fall of 18½ feet, and I believe he made good wages at it. The object was to have as much of it as possible solid, and therefore the building of turf is only 2 feet 10 inches high from the natural ground line to the top of the cope, the base of the dyke, after leaving a scarcement of 2 inches, being carried down on each side into a ditch 2 feet deep, the two ditches in good bonty sward, just providing the materials for the dyke, which is formed with the Grassy side of the sods out, to resist frost. I ought to mention, however, that the contractor was allowed to cut the coping out of the centre base of the dyke, to insure both a good solid turf for it, and also sufficient sward for facing the sides. The stones for boring rest on a firm turf, laid below the general coping of turf, and rise 8 inches above it, and they ought to have a larger base than is necessary for those used in stone dykes. The fence I have alluded to is not completed yet, but the standards and wire will be fixed and strained on wooden posts, exactly as described for stone dykes. I have stated that the cost of building, including the two ditches, was 1*s.* 4*d.* per fall; but the bored stones were laid down to the contractor on the spot, and therefore this dyke cost 2½*d.* per fall in addition for collecting and carting them, a charge which will vary according to circumstances. If 1*s.* 3*d.* per fall for the standards, boring, wire, and labour, including painting, be added to this, the total cost will be about 2*s.* 9*d.* per fall. The whole, when completed, will form a fence 4 feet 4 inches high from the ground level, and 6 feet 4 inches high from the bottom of the ditch, and will, I think, be durable, because there is so little height of turf building, and besides the ditches will prevent rubbing against it. These ditches are also of use in checking the run of sheep when meditating a leap. For a rough sheep farm I think this a very excellent fence; indeed, in some positions, turf is the only material, in any quantity, which is at command, and therefore the importance of making it as durable and efficient as possible. But I have my doubts how far any turf fence will endure against cattle, if they can get at it with their heads, unless faced with stone. Since writing the above, I have completed two fences here, one of 64 falls and the other of 33 falls, and having kept a particular account of the expense, I find my anticipations realised. The average cost of boring at Craigdarroch was 11*d.* per foot, or very nearly 4*d.* per fall of fence; the average cost here, by day's wages, was only 4½*d.* per foot, not quite 1½*d.* per fall. The average cost of other labour at Craigdarroch was as high as 8*d* per fall, here it was only 4½*d.* per fall These two items would reduce the total cost to about 11*d.* per fall. *Garrett's Horse-hoe.*—Mr. Dickson, of Saughton Mains, remarked that, when in the county of Essex last year, he had an opportunity of seeing Mr. Garrett's horse-hoe at work in a field of Wheat, and he was so much pleased with its mode of working that he ordered one of them from Messrs. Garrett's, of a size capable of hoeing 10 drills at a time, and having used it this spring for all his grain crops, he was so satisfied with the result that he had much pleasure in stating to the meeting his opinion of its merits, as he believed it only required to be known to come into general use. It was an implement the want of which had been felt by himself and other agriculturists. He had for many years been in the habit of drilling nearly the whole of his crops, but the extent of crops which he was able to hoe was always limited, partly from the great expense of hand labour, and partly from the impossibility of getting a sufficient number of hands capable of doing the work during the short period of the year when the hoeing was required to be done, being the time when the farmer was so much occupied with other work. With this implement, a man, a boy, and a powerful steady horse, he could hoe 12 acres per day, being the same extent of land that 40 women could accomplish with the Dutch hoe, and at the same time the work with the horse-hoe was much more efficiently executed than when done with the hand; and by increasing or diminishing the weights on the levers of each hoe, they work more or less deeply as the condition of the land or crop may seem to require. Therefore, after making due allowance for interest of outlay, and tear and wear of the implement, the expense of hoeing by Garrett's horse-hoe is reduced to one-fourth of that of hand-labour, independent of the superiority of the execution of the work. And although it was rather an expensive implement, he considered that the advantages which he had derived from the use of it this season would fully compensate him for the price he had paid for the implement.

Farmers' Clubs.

Newcastle: *March.*—Mr. Edward Martinson, of Stella (Steward of the Towneley estates), read a paper on "*Fences.*"

"The first fence to which I shall call your attention is one with which the pleasing recollections of my childhood are associated. It is a sod fence, made with a good batter on each side, and raised to the height of about 4 feet; and to prevent the sheep from jumping over it, its height is increased by hazel or other pliable rods bent in semicircular form and stuck into the uppermost sod. These bows, when well warped, and executed in a workmanlike manner, look extremely well. This fence, or rather the finished part of it, is technically and appropriately called a "hang-live fence." This fence is peculiar to elevated situations, and to districts where stones are not in abundance. The next fence which I shall bring under your notice is the dry stone wall. In high situations, where the Thorn and other plants cannot be reared with any certainty of success, and where stones are plentiful, this fence is the readiest found, the cheapest, and the most substantial; and, besides, it affords excellent shelter to both sheep and cattle. With stone walls, I always imagine that the idea of a cold, barren, and bleak district is associated. This fence, however, has its advantages. It occupies very little space upon which to erect it; when built it requires no more attention, or at least very little; and if a piece of it does by accident or misfortune fall down, the material still remains with which to repair it. It neither engenders nor promotes weeds or other rubbish, which so much infest live fences, and prove so obnoxious to their growth, and to the adjoining crops. The stone walls ought not to be less than 30 inches wide at the bottom, about 15 inches at the top, and 6 quarters, or 4½ feet high, including the coping. I should certainly advise that the coping should always be laid on with lime. Such a stone wall as this described may be built for about 6*s.* a rod of 7 yards, stones included, provided such stones are pretty easily obtained. Nothing in dry stone wall fencing adds more to its strength and durability than fitting the middle of the wall well, and throughing it effectually. When this precaution is neglected, you very soon see the walls bulge and lose the erect appearance which they at first exhibited. But now, from the dead to the live fence, I shall turn your attention, as I hope, to the more pleasing part of this paper; and to no living fence am I more attached than to that of the Thorn. In fact, to the rearing of this plant I shall confine nearly the whole of my observations. I shall begin with the mode of planting the Thorn or Quickset fence; and I would here observe, that in nine cases out of ten far too little care is taken in the preparation of the land for the reception of this useful plant. I have often thought that the ground intended for a line of new fence should undergo deep ploughing or trenching at least 12 months previous to planting, and have all the weeds and rubbish as nearly as possible eradicated; and I do think that a little lime might be very advantageously employed in decomposing any vegetable matter which may remain, and consequently promote and accelerate the growth of the Thorn when planted, by immediate nutriment being afforded to the plant. The most general mode of planting this useful fence is in a cast or mound, artificially thrown up. The first operation is turning up and placing the sod and soil for what is called the Thorn bed. The front margin of the bed I have always thought advisable to be 12 to 15 inches from the edge of the ditch in front of the quicksets. I have met with many who object to this plan on account of the space, or what is commonly called a scarcement, being more apt to encourage the production of weeds than in that which is planted immediately upon the edge of the ditch. It may do so, but I think the disadvantage is completely cancelled by the greater security of the plant itself, and by the prevention of the mould falling into the ditch, and thereby obstructing the course of the water. I think, also, that all will admit this scarcement referred to facilitates very materially the scouring of the fence when that operation becomes necessary. But to return to the depositing of the Quickset in the Thorn bed. The stem of each plant, before being so deposited, is cut through to about 6 or 8 inches long, and then these plants are placed as firmly as possible in their bed, covered with earth, and compressed by the foot or the spade; and, when thus deposited, the top of the plant is even with the face of the cast. I have generally planted 50 to a rod, or about seven to the yard. A considerable portion of the ditch is then thrown behind the Thorn bed and upon the roots of the plants, in order to secure them from draught, or from any other danger. The ditch is now to be cleared out to its intended depth. The ditch I always like to see narrowed at the bottom to about a spade's breadth; and I think it is pretty generally agreed that the sides should slope at an angle of 45 degrees. It is very essential that the ditch be properly adapted for the unobstructed descent of the water. Another mode of planting the Quickset, which I have tried on a small scale with success, is by trenching or digging moderately deep the ground on the line of the intended new fence; then making a sort of angular furrow with the spade, in which the plants are inserted; and the roots, after being covered with soil, and that soil compressed by the foot, more mould applied to fill the furrow. A sharp knife is used in cutting off the stems close by the surface, and covering these cuts with a very light sprinkling of earth, merely to preserve them from frost. They come away beautifully in the spring after being planted. One advantage of this mode of planting is that much less room is required, as you dispense with your cast or mound, and you can cultivate and crop your land much nearer to the fences. This mode may be objected to on moderately damp land, or even on what we may reasonably call wet land. But even this description of land, when properly prepared, as before recommended, and a drain cut at a moderate distance from the new line of fence, to carry off the water, the Quicksets may be planted without any fear of their failure. The soil and other earth taken out of this open ditch will form an excellent compost, of great advantage to the land. In dry situations I do think this is the best mode of planting the Thorn, as a sufficient quantity of moisture is retained to promote the growth of the plant. In this mode of planting, the roots are put into, and remain in, the earth, instead of being raised out of it. The proper season for planting is from about the middle of October to the end of March, or during the inertness of the sap. The Thorns being now planted, it is desirable, and highly necessary, that they should be protected from injury by the trespass of cattle and sheep. The best protection I have always considered is that of railing; I mean wooden railing. This precaution should be taken immediately on the completion of the fence, or, at least, before any animals have access to it. Another mode of protection is by stake and rise fencing. These stakes being generally placed upon the top of the cast (or, in most cases, too near the hedge), and filled with brushwood, I have always considered prejudicial to the growth of the plant, by the exclusion of the air, by the continual dropping in wet weather from the brushwood, and in snow storms, by collecting such an immense quantity of snow, which, falling down upon the young plants, causes considerable injury to the hedges, by breaking off their tops and twigs in no small degree. I acknowledge that the protection of these young hedges by railing is expensive, but yet I am certain that the young hedges come to perfection much sooner when thus protected. The hedge being now planted and protected, I will proceed to describe the manner in which it is to be managed. Great care is to be exercised in opening out those thorns which have been covered up. This is best done by loosening the earth with the hand, or with a small stick, and least injury is done in this way to the buds. Neither a spade nor any other sharp instrument ought ever to be used in this operation. The most essential point is now to keep the plants clean and free from weeds. This is pretty easily done if commenced in good time. The best mode of weeding the plants the first year is by the hand. The weeding and otherwise cleaning the hedges should be done twice every year, until the hedge has surmounted every obstacle to its growth. The hedge should be carefully pruned the second year, in order that it may get thick and bushy. This is a very easy operation, and performed with a hedge-knife, familiar, I dare say, to you all. I would not have much hesitation to perform this operation at any time of the year. I would, in fact, recommend the pruning to be done twice a year—once in winter, and again in the latter end of July or in the beginning of August. In fact I would follow the advice of a very intelligent and respectable gardener and nurseryman in Scotland, who, when asked this question, "When is the best time of the year to prune Thorn hedges?" answered, "Whenever your knife is sharpest." It is of great importance to have a sharp instrument with which to perform this operation, which must always be done by an upright stroke of the hand. I do not like the principle of cutting or dressing hedges with shears. The cut is not so smoothly made; the surface is therefore more liable to be injured by wet; besides, a man with a good switch knife, who is an expert workman, will do double the quantity in a day that he would do with the hedge shears. When two men are employed at one time in switching the same hedge, viz., one on each side of the fence, they ought to begin at different ends, the one cutting up the hill and the other down. The Thorn hedges I would continue to prune once a year, after they have attained the height of about 4½ feet. Indeed I do not see much necessity for having them higher than that at any time. They ought to be about 2 feet wide at the bottom, and taper away to a point at the top, at the height above stated. For want of attention to the pruning and dressing of hedges, we are called upon repeatedly to look upon naked, stunted, open, and unsightly fences. If some of those have got any dressing at all, it has been performed on a principle which cannot be too highly denounced, I mean that of cutting off the under twigs, whilst the higher branches are left to overhang the roots of the hedge, and ultimately ruin the fence. This is what farmers call the dressing up of the dyke-side. It is certainly more like dressing out the dyke's heart. The operation of scouring should be commenced about the third year after planting the hedge. This will be found requisite, as the continual clipping has a tendency to bare the roots early close. The [illegible] their growth. This open way open, at their Gal[illegible] formed. Too much earth should mission 1*s.* Catalogue neither should the mould be built too otherwise the hedge will be retarded in its [illegible] the cutting of hedges, an operation which I hope will be the pass into oblivion. If new hedges are made, and after been properly, prizes for hedge-cutting will rank among the things that have been. In the present state of hedges in general, that is certainly a very useful art, without the execution of which most of our old hedges would cease to be fences at all. It is also an art in which great competition has been exhibited. Many of you, gentlemen, cannot but have admired the dexterous and scientific way in which that cutting has been done, and the very great advantage which has been effected by the method now adopted. The upward and clean stroke of the knife or axe, the uniform and straight surface of the remaining stems after the cutting, is certainly a great improvement on the downward and uncertain blow, the jagged cuts, the varied and zigzag form of the old method of cutting. I have endeavoured by experience to ascertain the best time for cutting old hedges, in order to secure the quickest growth, which is a very desirable object. I have found that those cut from about the middle of February to the end of March have shot away again most vigorously, whilst those cut from November to the beginning of February have been much more tardy in shooting forth, and those shoots neither so strong nor so numerous. In those cases the hedges were much the same in appearance and age previous to cutting. I am therefore determined to confine the time of cutting, in future, from the beginning of February to the end of March, or to cut as nearly as possible to the rising of the sap, and then the cuts or wounds have not so long to struggle with the inclemency of winter storms. For the introduction of what I may term the new and improved system of hedge-cutting in my locality, we are much indebted to the Shotley and Derwent Agricultural Society, of which I have the honour to be a member. Since the formation of that Society it has held its annual days for competition in hedge-cutting, and awarded suitable premiums to those persons who exhibited most skill on the day of the trial. I attended one of those meetings a few days ago, and was certainly much pleased with the performance of the work. The hedge to be cut was a very strong one, and certainly much out of order. In all these old and neglected hedges there are often gaps. These openings may take place in one competitor's length and not in another. This was the case in the hedge alluded to. The competitors, however, it appeared, were to make a fence. Now, a fence was only to be made by the insertion of branches where roots were wanting. The fence was thus made by several of the party. The idea struck me, "This is not hedge-cutting alone, but fencing." Now, I think it would be better to confine the trial of skill to cutting alone, and allow the tenant to complete the fence with upright stakes or with rails, but certainly not with dead thorns or brushwood of any description. A great many hedges have been ruined by dead thorns having been stuck into gaps or openings; they have rotted twice the quantity of fence they were intended to cure. I have also often witnessed the twigs or clippings of a hedge raked together, and put into partial openings of the hedges, and thus proving ruinous to a fence which the workman had just been professing to improve. This is a most pernicious system. The question now arises, Who is to make the new fences referred to, and to nurse and prune them until they are matured? This question, I suppose, must be settled between landlord and tenant. I would certainly recommend landlords to make the fences themselves, and charge the tenants a reasonable per centage on the outlay. Those fences are great acquisitions to landed property, and will ultimately pay the landlord well. When a farm is let, a judicious tenant examines the fences, which, if he finds in a bad state, he immediately makes his calculations accordingly, and takes from his offer an annual sum which he thinks will be required for the maintenance of those fences. In recommending this measure I am not acting from profession, but from practice; because I have raised during the last seven years between 3000 and 4000 Quickset fence, and cut and renewed a very great quantity also. However partially I may have spoken of those hedges, there is one particular place on the farm where they should never be planted; that is, around the stack yard. This fence ought always be a stone wall. Hedgerow trees ought never to be planted in Thorn fences. Nothing is more destructive to their growth; neither is anything more prejudicial to the adjoining crops. (Mr. Martinson resumed his seat amidst marks of general approbation.)

Calendar of Operations.

JUNE AND JULY.

Bedfordshire Farm, *July* 3.—The weather of late has been highly favourable for field operations in general, especially for hay-making, which is nearly over, and the greatest part stacked in excellent condition. Our crops of Grass were generally good, especially where liquid manure from common dung and ammoniacal water from the gas-house were applied. The strength of the liquid was so great as to make the Grass look brown in the spring; but this was soon afterwards changed into a deep dark green. We believe that manure can never be more beneficially applied to Grass land than in wet weather, as soon as possible after the first crop of Grass is mown, that is about this time. We finished sowing Swedish Turnips last week; these were sown after Tares and Trifolium, fed off by sheep. The seed was drilled on the flat in rows 2 feet apart, to admit of horse-hoeing. The ground was only once ploughed; but being rather light, clean, and in good condition, a tilth was easily obtained by ordinary harrowing and rolling. We do not think Tares, or any other similar description of crop, can be grown to advantage preparatory to Turnips, unless under special circumstances just mentioned. The value of a crop of Tares is by no means to be compared to that of Turnips, and, therefore, should not be grown where they are likely to prevent the due preparation of the land. The early sown Turnips are now being thinned out, and are doing well. The Mangolds have also brairded very regularly, and promise remarkably well at present. Carrots look well also, and have generally received their second hoeing. Ours have cost 16*s.* per acre for hoeing, and will require another looking over, at a cost of about 4*s.* more per acre. Potatoes are as yet free from the complaint, and at no corresponding period ever looked better. Wheat, Barley, Peas, and Beans all promise well at present. A little rain would, however, be serviceable for some of the crops, which have got rather prematurely brown. We shall have some Peas ready for cutting very soon; but to all appearance the general corn harvest cannot commence for five or six weeks. We make every preparation for harvest which can be foreseen, so that nothing may interfere with the cutting and carrying of the corn. Wages hereabouts are generally doubled in harvest, so that whatever can be done previously costs much less for labour, and is far better disposed of. *F. B. V.*

Berwickshire Merse Farm, *June* 29.—Since last report we have finished sowing Turnips, ploughing and scuffling Beans, and will finish hoeing to-morrow, if the weather is dry; the Swedish and yellow Turnips are looking well; the white are later. We are busy ploughing, harrowing, and rolling the fallow land, to get it cleaned for Wheat; two men cleaning hedges, cutting Thistles, &c. We have had a gentle rain this afternoon, which was much wanted for the Grass and Turnips. *J. B.*

East Lothian Farm, *June* 30.—Most of our employment during the week has been singling Turnips, also in working the land between the drills with the paring and grubber ploughs, and in earthing Potatoes with the double-moulded plough; likewise in threshing the remainder of our Wheat, and carting the same to market. Although we have had several showers of

very difficult to deal with, and it might peatle progress, supposing the bill were passed into season during the of proving a boon to agriculture ... June 30.—We have finished the ... prove a fruitful ... with a plough, drawn by three ... unfrequently ... as we generally do at this season of the year, ... of deepening the soil a little, which is of great ... Wheat as well as the after crops, until it comes ... allowed again, and we consider this deep furrow costs very little more than one given with a two-horse plough, as well-trained horses will not require a driver, although yoked three abreast, more than two, and from the breadth required to get 10 or 11 inches of depth, you will nearly plough as much in a day at fallow land, with two ploughs drawn by three horses each, as you will do with three ploughs drawn by two horses, and thus you have a ploughman saved, and after ploughing the land as above described, we have been employed grubbing it with a heavy five or six-horse grubber across the ridges, and this tends not only to bring any weeds that are in the land to the surface, but also mixes the new soil which is turned up from the deep furrows with the soil you had before, which is of great advantage. *W. F.*

SUSSEX FARM, *July* 2.—The dry weather of late has been favourable for hay making; and we have now got all our seed hay into stack in excellent order. We are now busily engaged in making meadow hay; the crop in general is good, and our teams are ploughing and preparing the land for, and sowing, Turnips, and in horse-hoeing and carrying hay. The men are engaged in thinning Swedes, making hay, threshing Wheat, and cleaning hedges. As soon as we have some rain we shall plant out Mangold and Marl Cabbage; our first sown seed grows fast, but the later sown are very much in want of rain. Crops of all kinds look well, but the dry weather will make Oats short. *J.B.*

Notices to Correspondents.

FLAX: *Craven.* Can any of our correspondents give some information about dew retting? When and how long is the Flax to be laid on the Grass land for that process? How thick upon the land? Is dew retting a complete substitute for, or only an auxiliary to, steeping? Is the Flax rippled before or after dew retting? Does it require breaking and scutching earlier than Flax which has been steeped?

HORSE KEEP: *W H Potter.* You cannot make 700 square yards of ground support a horse: unless it be by growing more valuable articles than horse keep upon it, and selling them to buy Oats, hay, Clover, and Carrots. If this will not do, you had better lay it down to Lucerne, and farm it well. This will keep your horse during summer, in a great measure, and you must buy Oats and winter food.

ORNAMENTAL AND DOMESTIC POULTRY, by the Rev. E. S. Dixon, price 5s. 6d., is now ready, and may be had at the Office of this Paper, and of all booksellers.

RELATIONS BETWEEN FOOD AND GROWTH: *Constant Reader.* We have little experience in fattening either ewes or cows, and cannot say whether their more rapid fattening compensates for the larger quantity of food they eat.

*** Communications reaching town after Wednesday, cannot be answered before the following week.

Markets.

SMITHFIELD, MONDAY, July 2.

The number of Beasts is much larger, and trade is exceedingly dull; prices are not much lower, but the warm weather makes buyers very cautious. The supply of Sheep is shorter; trade is more cheerful, and in some instances rather more money is obtained. The quality of Lamb is very inferior; trade on the whole is worse, 5s. 6d. being an extreme price. Calves are still plentiful; they are no dearer. From Holland and Germany there are 307 Beasts, 2360 Sheep, and 157 Calves; from Leicester and Northampton 1700 Beasts, and from Scotland, 300.

Per st. of 8 lbs.—	s d s d	Per st. of 8 lbs.—	s d s d
Best Scots, Herefords, &c. ...	3 8 to 3 10	Best Long-wools ...	...
Best Short-horns	3 4 — 3 6	Ditto Shorn ...	3 6 to 3 8
2d quality Beasts	2 8 — 3 2	Ewes & 2d quality	
Best Downs and Half-breds ...	...	Ditto Shorn	2 10 — 3 4
		Lambs ...	4 0 — 5 0
		Calves ...	2 8 — 3 10
Ditto Shorn ...	3 8 — 4 0	Pigs ...	3 4 — 4 4

Beasts, 3508; Sheep and Lambs, 27,690; Calves, 319; Pigs, 245.

FRIDAY, July 6.

The supply of Beasts is by no means large, yet they are quite sufficient for the demand; indeed, it is exceedingly difficult to realise Monday's quotations. The improved rates of Monday last have much increased our supply of Sheep, and the weather being warm, trade is exceedingly heavy, especially for large Sheep. Prices are rather lower for all kinds. Lambs are plentiful, and the quality of them very indifferent, prices remain about the same. There are again a great many Calves; trade is very dull, at late rates. From Holland and Germany we have 159 Beasts, 710 Sheep, and 232 Calves; from Spain, 10 Beasts; from Scotland, 300; and 125 Milch Cows from the home counties.

	s d s d		s d s d
Best Scots, Herefords, &c. ...	3 8 to 3 10	Best Long-wools ...	to
Best Short-horns	3 4 — 3 6	Ditto Shorn ..	3 4 — 3 6
2d quality Beasts	2 8 — 3 2	Ewes & 2d quality	—
Best Downs and Half-breds ...	...	Ditto Shorn ...	2 8 — 3 2
		Lambs ...	4 6 — 5 6
		Calves ...	2 8 — 3 10
Ditto Shorn ...	3 6 — 3 10	Pigs ...	3 4 — 4 4

Beasts, 893; Sheep and Lambs, 13,800; Calves, 647; Pigs, 218.

ENGLISH TIMBER AND BARK.—JULY 7.

	Round Timber. Per Load.	Plank. Per Foot Cube.	Inch Board. Per Foot Superf.
Oak ...	£5 10 0 to £8 0 0	3s. 0d. to 5s. 0d.	0s. 4½d. to 0s. 6d.
Ash ...	4 10 0 — 7 0 0	2 6 — 4 0	0 3 — 0 4
Elm ...	3 0 0 — 4 10 0	1 9 — 2 6	0 2 — 0 3½
Beech ...	2 10 0 — 3 10 0	1 6 — 2 3	0 2 — 0 2½
Lime ...	3 10 0 — 4 0 0	2 0 — 2 6	0 3½ — 0 5

Large contracts for new English Bark have recently been entered into by the London tanners at from 15*l.* to 16*l.* per load for timber, and 16*l.* to 18*l.* for coppice, but is fast declining in value, and is now worth from 13*l.* to 15*l.* per load of 45 cwt., hatched. J. S.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, July 6.

Prime Meadow Hay	60s to 75s		Clover ...	60s to 95s	
Inferior ditto ...	55	65	New Clover ...	—	—
Rowen ...	50	60	Straw ...	28	30
New Hay ...	50	68			

J. COOPER.

CUMBERLAND MARKET, July 5.

Prime Meadow Hay	72s to 77s		Inferior ...	50s to 78s	
Inferior ditto ...	50	65	New Clover ...	—	—
New Hay ...	50	70	Straw ...	26	33
Old Clover ...	90	96			

JOSHUA BAKER.

WHITECHAPEL, July 5.

Fine Old Hay ...	68s to 72s		New Clover ...	63s to 70s	
Inferior ditto ...	45	50	Inferior ditto ...	60	70
New Hay ...	55	63	Straw ...	32	36
Old Clover ...	95	100			

HOPS.—FRIDAY, July 6.

Messrs. PATTENDEN and SMITH report that there is more activity in the market this morning. The accounts come very much worse from all parts of the plantations, and the duty has been done as low as 50,000*l.*; but since it has fluctuated to 60,000*l.*

COVENT GARDEN, JULY 7.

In consequence of the warm sunny weather we have just experienced, the supply of Hothouse Grapes, Peaches, and Nectarines has much increased during the last few days. Pine-apples, too, are cheaper. Strawberries and Cherries are very plentiful. A few Apricots have made their appearance, as well as ripe Gooseberries and Currants. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, young Turnips may be obtained at from 3d. to 6d. a bunch. Carrots the same. Cauliflowers are very plentiful. The season for Rhubarb and Asparagus is nearly over. Green Peas fetch from 1s 6d. to 4s. per bushel. Potatoes are cheaper. New Potatoes realise from 1d. to 4d. per lb. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1s 6d. to 3s. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Lily of the Valley, Cinerarias, Tropæolums, Carnations, Pinks, Fuchsias, Rhododendrons, and Roses.

FRUITS.

Pine-apples, per lb., 5s to 8s	Apples, kitchen, p. bsh., 4s to 8s
Grapes, hothouse, p. lb., 2s to 6s	Oranges, per doz., 1s to 2s
Peaches, per doz., 6s to 20s	— per 100, 6s to 10s
Nectarines, per doz., 6s to 20s	Lemons, per doz., 1s to 2s
Strawberries, p. pun., 9d to 2s	— per 100, 7s to 14s
— per pottle, 4d to 1s	Almonds, per peck, 6s
Cherries, wall, per lb., 2s to 5s	— sweet, per lb., 2s to 3s
— standard, p. lb., 4d to 6d	Walnuts, p. 100, 1s 6d to 2s
Gooseberries, green, p. hf. sieve, 3s 6d to 5s	— p bush., 16s to 24s
	Nuts, Bar., p. bush., 20s to 22s
Currants, do., 5s to 8s	— Brasil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 6d to 1s	Carrots, per bun., 4d to 6d
Cauliflowers, p. doz., 6d to 3s	Spinach p. sieve, 1s to 1s 6d
Peas, per bush., 1s 6d to 4s	Onions, p. bunch, 2d to 6d
Beans, p. bush., 1s 6d to 2s 6d	— Spanish, p. doz., 1s 6d to 4s
Sorrel, p. hf. sieve, 6d to 9d	Shallots, per lb., 6d to 8d
Potatoes, per ton, 60s to 180s	Garlic, per lb., 6d to 1s
— per cwt., 5s to 14s	Artichokes, p. doz., 1s 6d to 3s
— per bush., 4s to 7s	Vegetable Marrows, doz., 6d to 1s
Turnips, per bunch, 3d to 6d	Lettuce, Cab., p. sc., 4d to 9d
Red Beet, per doz., 2s to 1s	— Cos, do., 6d to 1s
Horse Radish, p. bdl., 2s to 6s	Mushrooms, p. pot, 1s 6d to 3s
Asparagus, p. 100, 1s to 4s	Small Salads, p. pun., 2d to 3d
Rhubarb, p. bundle, 3d to 4d	Fennel, per bunch, 2d to 3d
French Beans, p. 100, 6d to 1s	Savory, per bunch, 2d to 3d
Cucumbers, each, 4d to 1s	Thyme, per bunch, 2d to 3d
Leeks, per bunch, 4d to 6d	Parsley, p. doz bun., 3s to 4s
Celery, p. bundle, 1s to 2s	— Roots, p. bdle., 1s to 1s
Radishes, per 12 hands, 9d	Marjoram, green, p. bun., 4d to 6d
Watercress, per doz. bunches, 4d to 6d	Mint, green, per bunch, 3d to
	Basil, green, p. bunch, 4d to 6d

MARK LANE.

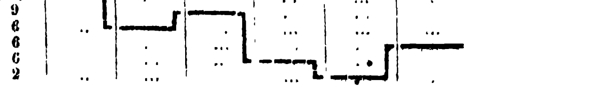
MONDAY, JULY 2.—The supply of English Wheat by land carriage samples to this morning's market was exceedingly small; the prices of this day se'nnight were exceeded in very few instances. Foreign was held firmly at late rates, but business confined to retail quantities.—Some descriptions of Barley realised an advance of 1s. per qr.—Beans must be written 1s. per qr. dearer.—Peas are unaltered in value.—The Oat trade is steady, and for fine qualities a slight improvement in price is obtained.

FRIDAY, JULY 6.—The supply of foreign Wheat since Monday has been to a fair extent, but moderate of all other articles. This morning's market was thinly attended, and business limited, but excepting for Polish Odessa, of which the late arrivals chiefly consist, our quotations are fully supported; this quality, however, is the turn cheaper.—Barley is inquired after at rather more money.—Beans and Peas are unaltered in value.—Oats are held for a slight advance.—Maize is flat, and more freely offered, even at a trifling decline.—The value of Flour remains as last quoted.—Since the 29th ultimo there have been several days of cloudy boisterous weather, but rain has been partial. The crops generally are represented as looking well; the principal complaints are from the east coast, and the harvest must apparently be a late one. The Wheat trade has been very firm, although not large; the scarcity of supplies has nevertheless enabled the holders in some markets to obtain 1s. per qr. advance. Barley has generally commanded rather more money, also Beans, and in some instances Oats and Peas; the last, however is confined to one or two markets. No alteration of moment has occurred in the French, Dutch, or Belgian markets. In the last mentioned Wheat is obtainable 1s. per qr. below the extreme rates lately paid.

LIVERPOOL, FRIDAY, JULY 6.—We have had a lively demand for Wheat, especially the Mediterranean qualities, which were fully 2d. per bushel dearer; prime white was scarce and in request at the same advance, and all other sorts were 1d. per bush. higher. Flour, at 6d. per barrel advance, did not go freely. Oats were firm at Tuesday's rates, and there was no change in good Oatmeal. Indian Corn declined after Tuesday 1s. to 1s. 6d. per quarter, which was nearly recovered to-day, good Yellow being readily cleared off at 34s., White not so brisk, and bought at 33s. 9d. to 34s. 6d. for good.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
May 19 ...	44s 9d	28s 0d	17s 8d	25s 9d	30s 7d	29s 11d
— 26 ...	44 6	28 9	17 9	26 0	31 8	32 4
June 2 ...	44 9	27 10	17 7	26 6	31 7	33 4
— 9 ...	44 6	26 11	17 7	25 4	31 7	30 4
— 16 ...	44 2	26 5	18 0	26 3	30 3	30 4
— 23 ...	44 0	26 5	18 9	25 9	30 10	31 5
Aggreg. Aver.	44 6	27 3	17 11	25 11	31 0	31 3
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.



PRICES CURRENT.	London. Jun. 25 qr.	London. July 2. qr.	Liverpool. June 26. 70 lbs.	Liverpool. July 3. 70 lbs.	Wakefield. Jun. 22 qr.	Wakefield. Jun. 29 qr.	Boston. Jun. 27 qr.	Boston. July 4. qr.	Birmingham. June 28. 62 lbs.	Birmingham. July 5. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	40 to 44	42 to 44	6 9 7 0	6 9 7 0	44 to 50	44 to 50	43 to 49	45 to 50	5 10 6 8	5 11 6 5
,, white ...	47—50	47—50	7 2 7 6	7 2 7 6	44—52	44—52	46—52	46—52	6 3 6 7	6 4 6 8
Old, red ...	42—48	42—48	6 10 7 2	6 10 7 2	43—45	43—45	—	—	5 9 6 4	5 10 6 5
,, white ...	50—54	50—54	7 6 7 10	7 6 7 10	—52	—52	—	—	6 2 6 9	6 3 6 10
Foreign	36—58	36—58	4 6 8 6	4 6 8 6	43—53	40—53	—	—	5 2 7 0	5 3 7 10
			480 lbs.	480 lbs.						
Rye—New ...	22—24	22—24	—	—	—	—	—	—	—	—
Foreign...	22—23	22—23	—	—	—	—	—	—	—	—
Foreign meal	6l.—7l.	6l.—7l.	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	21—24	21—24	—	—	22—23	22—23	24—26	24—26	23—25	23—25
Malting... ...	22—27	22—27	30s—32s	30s—32s	—	—	28—30	28—30	29—32	29—32
Foreign... ...	18—27	18—27	—	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	19—24	19—24	2s 10d 3s 2d	2s 10d 3s 2d	—	—	14—20	14—21	20—28	20—28
Black...	15—20	15—22	2 5 2 8	2 5 2 9	—	—	—	—	19—20	19—20
Foreign	14—21	14—21	2 4 2 6	2 4 2 6	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	25—30	25—30	34s—	34s—	28—32	28—32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—25	23—25	29—31s	29—31s	—	—	—	—	11—12	11—12
Foreign ...	25—32	25—32	32—34	32—34	—	—	—	—	—	—
Beans—										
New, small ...	22—32	23—33	30—33	30—33	29—33	29—33	30—33	30—33	12—14	12—14
Old	—	—	32—34	32—34	35—36	35—36	34—36	34—36	15—16	15—16
Foreign ...	21—36	21—36	24—32	21—32	26—29	26—29	—	—	11—13	11—13
Linseed—Feed	—	—	40—42	40—42	32—40	32—40	—	—	—	—
Foreign ...	37—42	37—42	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9l. 7s	9l. 7s	7l. 12s	7l. 12s	—	—	—	—	—	—
Foreign ...	6l.—7l.	6l.—7l.	—	—	—	—	—	—	—	—
Indian Corn—	30—34	30—34	35s—36s	33s—35s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack.
Flour—	36—44	36—44	34—36	35—36	—	—	36—40	36—40	32—37	36—38

Weekly Averages and Imports.	London. Aver. July 3. s. d.	London. Impts. qrs.	Liverpool. Averages. s. d.	Liverpool. Imports. qrs.	Wakefield. Aver. s. d.	Wakefield. Impts. qrs.	Boston. Aver. s. d.	Boston. Aver. qrs.	Gloucester. Averages. s. d.	Gloucester. Imports. qrs.
WHEAT ...	50 4	11130	44 6	17557	46 4	10950	47 6	1667	51 5½	52
BARLEY ...	25 0	1550	27 3	5	—	665	—	—	—	—
OATS... ...	19 7	4660	17 11	1356	18 6	700	14 11	376	19 1¼	192
RYE	—	—	25 11	600	—	—	—	—	—	—
BEANS ...	30 5	—	—	6956	33 4	655	31 3	156	—	—
PEAS... ...	34 3	—	—	57	—	—	—	—	—	—
SIGNED	*KINGSFORD and LAY.*		*SEGAR and TUNNICLIFFE.*		*SANDARS and DUNNS.*		*THOMAS WRIGHT.*		*J. and C. STURGE.*	

SUSSEX.

TO BE LET for a term of years, and entered upon at Michaelmas next, the Farm of WOTTON, in the Parish of Folkington, at present in the occupation of Mr. Shoesmith. It consists of about 409 acres of Meadow, Pasture, and Arable land: the Arable land is most productive of Beans and Wheat: most of the Pasture and Meadow land is of the richest fattening quality. There is an excellent Farm-house, with every convenience, and the Farm-buildings are large and commodious, and economically fitted up and arranged for fattening a large number of beasts in feeding-houses, stalls, sheds, and yards. The Farm is about four miles from Hailsham and Eastbourne, 10 miles from Lewes, market town, and one mile from the Polegate station on the Lewes and Hastings Railway. For particulars, apply to Mr. JOHN MEARON, Whitfield, Berkeley, Gloucestershire. A person at Folkington Place will show the Farm.

TO GENTLEMEN, FLORISTS, AND OTHERS.

TO BE DISPOSED OF, about 200 large pots of CARNATIONS AND PICOTEES, by name, of the leading varieties, now coming into bloom.—For particulars, apply to R. PARKER, Florist, Mayfield-road, Dalston.

WANTED, TO RENT.—A Gentleman, with an independent income, wishes to rent A GOOD FAMILY RESIDENCE in a southern county, and a SMALL FARM of about 150 acres, the cultivation of which would be upon the highest system. Good neighbourhood indispensable.—Address to E. T., Post-office, Winchester.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm-servants, or unpractised persons. Price 1*d.* per square foot. CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel. Samples and Testimonials sent by post on application to CROGGON and Co., 2, Dowgate-hill, London.

PORTLAND CEMENT.—Testimonials received from all quarters, prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, CHARLES FRANCIS and SONS, Nine Elms, London.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND CO., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

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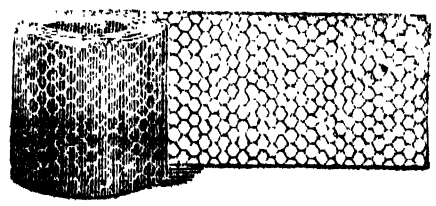

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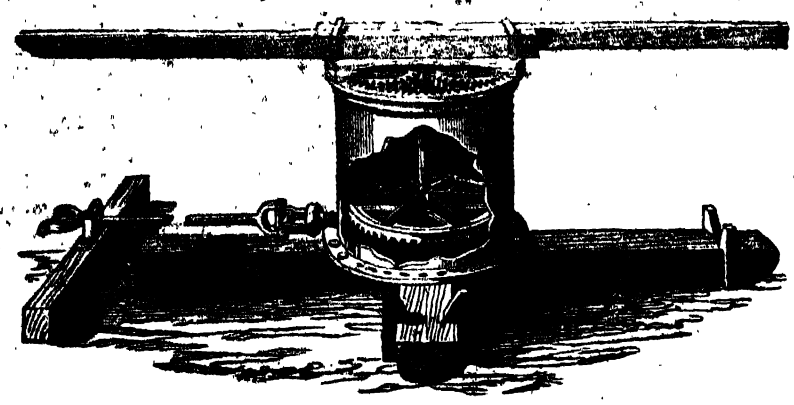

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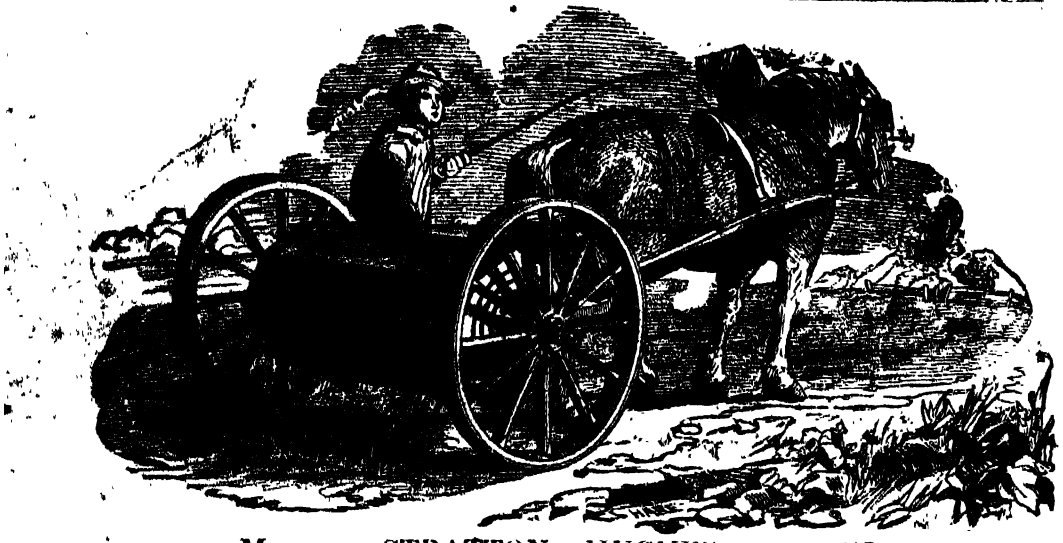

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THE TREE ROSE.—Practical Instructions for its Formation and Culture. Illustrated by 200 Woodcuts. Reprinted from the GARDENERS' CHRONICLE, with additions.

Price 3d., or 5s. for 25 copies for distribution amongst Cottage Tenantry, (delivered anywhere in London, on a Post-office order being sent to the Publisher, JAMES MATTHEWS, at the Office of the *Gardeners' Chronicle*, and made payable at the Post-office, 180, Strand, London.)

THE COTTAGERS' CALENDAR OF GARDEN OPERATIONS.

By JOSEPH PAXTON, Gardener to His Grace the Duke of Devonshire, &c. &c.

Reprinted from the *Gardeners' Chronicle*. Above 40,000 have already been sold. Illustrated with several woodcuts.

London: J. MATTHEWS, 5, Upper Wellington-street, Strand.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office of Mr. Gardner, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—SATURDAY, JULY 7, 1849.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 28—1849.] SATURDAY, JULY 14. [Price 6d.

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ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.
Under the Patronage of HER MOST GRACIOUS MAJESTY, THE QUEEN.
The Fourth Exhibition this season, of the above Society, will take place at the ROYAL SURREY ZOOLOGICAL GARDENS, Wednesday, July 25th, 1849, open to all exhibitors, when prizes will be awarded for the following productions, viz.:—Miscellaneous Specimen Plants, Cape Heaths, Fuchsias, Roses, Picotees, Carnations, Cut Flowers, Fruit, Grapes, Cone and Honey. Extra Prizes offered by Members will also be awarded, by J. Edwards, Esq., 5l. 5s., for 6 yellow-ground Picotees. The Woolwich Subscription Cup, value 5l. 5s., for 12 white-ground Picotees. By Messrs. Paul and Son and Mr. E. Denyer, for Roses. Mr. W. Ambrose, for Fancy Pelargoniums. [illegible] T. [illegible], Mr. John Fowle, and J. Chapman, Esq. [illegible] and Seedlings of 1848 and Cut Indigenous Plants, by [illegible], Esq. List of Prizes and Regulations for Exhibition to be obtained from John Taylor Neville, Secretary, [illegible] House, Peckham, Surrey.

BIRMINGHAM BOTANICAL SOCIETY. The Second EXHIBITION will be held at the Garden, on [illegible]day, July 19th. All specimens for Exhibition must be [in the] Garden before half-past 9 a.m. on the day of Exhibition. [The] gates will be open at 2 o'clock.
[Edg]baston, July 14. G. B. Knowles, F.L.S., Sec.

SLOUGH CARNATION AND PICOTEE EXHIBITION (originally fixed for the 20th), is postponed to Tuesday, the 24th day of July, 1849. Schedules of Prizes, and any information in reference to this Annual Meeting of the Provincial and Metropolitan growers, may be had of C. Turner, Royal Nursery, Slough.

ROSES.
EDWARD DENYER, Nurseryman, Loughborough, [Roa]d, Brixton, Surrey, three miles from London, informs [the Amateur]s and Admirers of ROSES in general, that his [ext]ensive [co]llection, consisting of above 800 varieties, is now in [bloom, a]nd free to the inspection of all visitors (Sundays excepted). Orders taken for plants now in bloom and executed in November next.
E. D. is desirous of informing his customers that he has no seed shop in London.

CRYPTOMERIA JAPONICA SEEDLINGS.
MESSRS. STANDISH and NOBLE having still the largest stock in Europe of the above splendid tree, beg to offer fine strong plants at the annexed low prices.—6 to 9 inches high, 3s. 6d. each, 36s. per dozen, 12l. 10s. per 100, 12 to 18 inches, 5s. each; 18 to 24 inches, 7s. 6d.; 24 to 36 inches, 10s. 6d., and upwards, according to size.
The present is the most suitable time for planting out, and every plant sent out by Messrs. S. and N. will be handsome, well-grown specimens.—Bagshot, Surrey, July 14.

PLANTS OF CABBAGE, SAVOY, KALE BROCCOLI, CAULIFLOWER, AND CELERY.
JOHN CATTELL, Seedsman and Nurseryman, Westerham, Kent, begs respectfully to inform the public that plants of his superior true sorts of the above will be forwarded on order on receipt of postage stamps or post-office order, of the undernamed prices, mat and package included.
All the sorts of early Cabbage, Savoy, and Kale, including Brussels Sprouts, 4s. 6d. per 1000. All the sorts of autumn and spring Broccoli, and red and white Celery, 8s. per 1000. Cauliflower (early & late), and red Cabbage, 10d. per 100. Drumhead or Cattle Cabbage, 3s. 6d. per 1000. 6d. per 1000 less when no mat or package is required. Packages of 1000 and upwards delivered free of carriage to the Edenbridge station of the South-Eastern Railway.

TILEY'S EARLY MARROW CABBAGE.
EDWARD TILEY begs respectfully to inform the gentry, nobility, and the public generally, that he is now ready to send out his EARLY MARROW CABBAGE SEED, which has proved the best yet in cultivation, and five weeks earlier than any other sort fit for table, and equal to young Asparagus for tender eating and flavour. The advantages of this over other Cabbages are, it grows very quickly, with scarcely any rib to it, and is very suitable for rocky or windy situations, as it is very short in the leg, and has none of the large coarse outside leaves to it. A large number of the plants have been grown in different situations, and have thoroughly proved the character of it, and also given the greatest satisfaction to all parties who have grown it.
E. T. warrants the plants not to run for a twelvemonth. One trial will be sufficient to prove to the grower the superior quality of his Cabbage over all others. Sold in packets containing 1 oz. 2s. 6d., ½ oz. packets 1s. 6d. The above will be sent, postage free, on the remittance of a post-office order, or the amount in 1d. postage stamps.
Sold by Edward Tiley, at his General Seed Shop, 16, Pulteney-bridge, Bath.

ROSES.
J. COLE has much pleasure in announcing to his Friends and the Public that his superb collection of ROSES is now in full bloom, and will continue till the end of July, after which the autumnals will continue in bloom till November.—Rugby, Warwickshire, July 14.

CARNATIONS AND PICOTEES.
C. TURNER'S Extensive Collection of these interesting flowers, including some beautiful seedlings raised by the Rev. J. Burroughes, J. L. Puxley, Esq., Morgan May, Esq., and other successful growers, are now in fine bloom, and will continue so throughout the month. An inspection of the above will repay a visit; the Nursery being within five minutes' walk of the Slough Station on the Great Western Railway, and not more than two miles distant from the Datchet Station on the South Western line.
Royal Nursery, Slough, July 14.

PELARGONIUM—"FOQUETT'S MAGNIFICENT."—The raiser intends sending out plants of the above, well established in 4-inch pots, in the middle of October next, price 2l. 2s. each, hamper and package included. Terms, prepayment, and as the stock is limited, no discount can be allowed. Orders will be executed in strict rotation. Post-office orders payable on the Post-office, Newport, Isle of Wight.
The well merited encomiums passed on this flower by "The Florist," "Floricultural Cabinet," and *Gardeners' Chronicle*, render any further comments unnecessary.—Address, Major William Foquett, Shide House, near Newport, Isle of Wight.

BECK'S SEEDLING PELARGONIUMS of 1848, and older Varieties. A DESCRIPTIVE CATALOGUE of the above will be ready next week, and may be had on prepaid application, enclosing one postage stamp.
Worton Cottage, Isleworth, July 14.

HARDY and SON, Seed Growers, Maldon, Essex, beg to offer, for July and August sowing, A NEW YELLOW STONE TURNIP, raised from a limited supply, favoured by a friend in Van Diemen's Land, 1843, who warranted it not to run, nor to eat strong, in the hottest and long-continued drought of that country. It has proved so with us; and Mr. Thomas Langford, of Philberd's House, Maidenhead, Berks, who received a portion of the stock from us, thus describes it. "I tried your Turnip against six other sorts, at the end of August, and none is to be compared to it in excellence for winter use." Half-ounce packets 6d., or postage stamps.
N. B. 4 best varieties of Cabbages, large packets, each
2 ditto [illegible] ,, ... 6d.
12 choice biennial flower seeds, ,, ... 2s.
[illegible] ,, ,, ... 6d.
[illegible] post free.

NEW AND VERY CHOICE PLANTS.
YOUELL and Co. have the pleasure to announce that they have received from the establishment of that well known Florist, M. A. Miellez, of Lille (France), the following highly desirable plants. They may be confidently relied upon as being distinct to any yet offered, and, from their great beauty, invaluable to any collection.

FUCHSIAS.
PERFECTION (Miellez).—The largest bloom known, and perfect, very good habit; inside of the calyx crimson, outside rosy red, corolla red and lilac. Price 7s. 6d.
MODEL (Miellez).—Large perfect bloom, calyx of a fine blush white, orange scarlet [illegible]. Price 7s. 6d.
CHATEAUBRIAND (M.).—Very large and perfect bloom, tube of a fine rose, sepals rose tipped with yellow, orange scarlet corolla. Price [illegible] 6d.
GENERAL NEGRIER (Miellez).—Very large and perfect bloom; outside of the calyx rose edged with white, inside orange, rosy scarlet corolla. Price 7s. 6d.
GAZELLE (Miellez).—Large bloom; tube rosy lilac, outside of the sepals blush white, the inside rosy lilac, lilac corolla; good fancy variety. Price 5s.
JULIA GRISI (Miellez).—Large bloom; tube blush, sepals tipped with green, rosy scarlet corolla. Price 5s.
When the set is taken, they will be charged 30s.

CHRYSANTHEMUMS.
MADAME MIELLEZ.—Pale rose, large petals, very full and large bloom, extra fine. Price 3s. 6d.
SATURNE.—Bronze yellow, perfect shape and habit, the outside of the petals carmine, very beautiful. Price 3s. 6d.
POMPONETTE.—Bright yellow, the centre peach colour, very full bloom, spherical shape, good habit. Price 3s. 6d.
TRILBY.—Bright crimson scarlet, good habit, spherical shape, very full bloom. Price 3s. 6d.
When the set is taken, they will be charged 15s.

PETUNIAS.
LOUIS NAPOLEON BONAPARTE.—Very large bloom, perfect shape and habit, blue lilac striped and tipped with black; the finest Petunia known. Price 2s. 6d.
STRIATA PERFECTA.—Very large bloom, perfect shape and habit, lilac striped and mottled with violet and rose, blue and black throat. Price 2s.
LAMARTINE.—Very large and perfect bloom, fine habit, lilac striped and mottled with violet. Price 2s.
BERRYER.—Very large and perfect bloom, fine habit, rose striped and mottled with red, violet throat. Price 2s.
AMÆNA.—Very large and perfect bloom, purplish lilac striped and mottled. Price 2s.
CONSPICUA.—Large bloom, perfect shape and habit, rose striped and spotted with carmine. Price 2s.
When the set is taken, they will be charged 10s.

PENTSTEMONS.
GENTIANOIDES FORMOSUS.—Crimson scarlet mottled with vermilion and spotted with violet. Price 3s. 6d.
GENTIANOIDES SPLENDIDUS.—Carmine crimson, the inside pure white, large and perfect bloom. Price 3s. 6d.
GENTIANOIDES PFELIERI.—A beautiful hybrid of P. Mac Euwersi, large bloom, light scarlet, the inside blush white, robust and dwarf habit. Price 5s.

VERBENA.
LOUIS NAPOLEON BONAPARTE.—Beautiful dark crimson with black eye, large trusses. Price 2s. 6d.
The above will be sent per post, free, to any part of the Kingdom. Post-office orders are respectfully requested from unknown correspondents.—Nursery, Great Yarmouth.

WARWICKSHIRE HORTICULTURAL EXHIBITION.—THE SECOND GRAND HORTICULTURAL EXHIBITION is fixed to take place on Thursday, the 23d Aug. next, in the Jephson Gardens, Leamington, under the special patronage of the High Sheriff and many of the resident nobility and gentry of the county of Warwick, when Prizes (highest 15l.) will be awarded on the most liberal scale for Stove and Greenhouse Plants, Heaths, Balsams, Cockscombs, Annuals, Specimen Plants, Cut Flowers, Verbenas, Roses, New Plants and Flowers, and miscellaneous subjects, Melons, Pines, Grapes, and other fruits. Full particulars in the "Horticultural Magazine" for July, and Schedules to be obtained from Owen White, Esq., Hon. Sec., Jephson Gardens and Parade, Leamington.

NOTICE.
ROBERT WHIBLEY cannot supply any more Plants of FUCHSIA SPECTABILIS at 7s. 6d. each. For the future they will be 15s. each.
Chester Nursery, Kennington, London.

TO THE ADMIRERS OF THAT SPLENDID AUTUMNAL FLOWER, THE CHRYSANTHEMUM.
YOUELL and CO. are now prepared to execute orders from their extensive and very select collection of the above, comprising all the new and fine continental varieties, at the following prices.

50 best new sorts	...	25s.
25 ditto	...	15s.
12 ditto	...	9s.

Well established in small pots, or per post free, with all orders (if requested), directions will be sent for a successful and easy mode of culture for exhibitions.

CAMELLIAS,
Comprising the finest varieties, well set with flower buds, 30s. to 42s. per dozen.
ANEMONE SEED, saved from selected sorts, is now being harvested by Youell and Co. in the finest condition, and can be forwarded, per post free, at 2s. 6d. and 5s. per packet, sufficient to sow a bed of 12 or 24 yards. Sown at the present time, it will afford a fine display through the autumn and winter months.
Catalogues of the above, with an extensive variety of highly ornamental plants, will be forwarded by enclosing two postage stamps.—Great Yarmouth Nursery.

THE LONDON ASSOCIATION FOR THE PROTECTION OF TRADE. 10, John-street, Oxford-street. Established in 1842.
To aid in preventing the numerous Frauds and Deceptions to which trade is liable, to collect debts due to members, by means of applications from the Secretary, and if necessary, by an application from the Solicitor, free of charge to members. Likewise to afford general information and legal advice to its subscribers on matters referring to their trading interests.
Annual Subscription, London Members, 1l. 1s.; Country Members, [illegible], which entitles them to receive a Monthly Report.
The Association interchanges communications with the principal Trade Protection Societies throughout the kingdom, and is under the management of a Committee, whose services are gratuitous. The attention of Seedsmen, Nurserymen, and Florists, and of traders generally, is directed to the advantages it is capable of affording. A prospectus will be forwarded, per post, on application to the Secretary.
July 14. Thomas Blakeman, Secretary.

THE COLLEGE, MAIDSTONE.
Visitor.—His Grace the Archbishop of Canterbury.
President.—The Rt. Hon. the Earl of Romney.
Head Master.—Daniel Walker, Esq., M.A., F.G.S., &c.
This Institution has been established for the purpose of preparing Youths for Agricultural, Commercial, or Engineering pursuits. The Moral and Religious training of the Pupils is in accordance with the doctrines of the Established Church. The terms for the Half-yearly Session are 17l., and they include the charges for Books, Stationery, and Washing.—Further information on application to the Head Master.

DRUMMOND'S REAPING SCYTHE.
W. DRUMMOND and SON beg to call the attention of Farmers to their REAPING SCYTHE, which continues to give complete satisfaction. With this Scythe one man can cut down from 1½ to 2 acres per day, laying the swathe so that it can be easily gathered into evenly sheaves and without any waste whatever. Price 9s. 6d. each. When three or more go together, the cost for carriage to many of the railway stations throughout the kingdom will not be more than from 1s. to 1s. 6d. each. N. B. Orders from unknown correspondents without a remittance will not be attended to.
W. Drummond and Sons, Agricultural Museum, Stirling, N.B.

PRACTICAL RESULTS OF REGISTERED INVENTIONS.
ROBERTS'S HORTICULTURAL TILES.—The following is extracted from the *Morning Post*, Thursday, July 12th:
"Horticultural Society's Exhibition, Chiswick Gardens.—A great deal of curiosity was excited at the exhibition, held yesterday, about a very novel Tile, which the Council of the Society have caused to be adopted in their grounds for the cultivation of Strawberries. By this ingenious invention, growers of Strawberries may now secure with certainty the requisite conditions to bring this delicious fruit to perfection, in a far shorter time than usual. Some specimens were exhibited yesterday, cultivated upon this contrivance by Mr. Shepherd, of Deptford, for which the Council awarded the 3d Certificate of Merit. Messrs. Myatt and Sons, of Deptford, also exhibited a delicious dish of this fruit, also raised upon these Tiles, which gained them the 3d Certificate of Merit. The Strawberries were in each case denominated the Eleanor. [illegible] prizes were also gained by the same growers from the Royal Botanic Society, at their exhibition last week, for some [illegible] Seedlings exhibited by them, which were reared upon these Tiles. The growers very candidly admitted that their success was mainly attributable to the properties possessed by these Tiles in facilitating the growth and ripening of the fruit."
An Illustrated Circular will be forwarded on application, containing full particulars of this and other [illegible] by John Roberts, 31, Eastcheap, City. [illegible] Tile, [illegible] Tile, and Celery Sockets, are [illegible] the attention of gardeners.

HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION AT THE GARDEN, JULY 11, 1849.

AWARD OF THE JUDGES.

THE CERTIFICATE OF HONOUR.

1 To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for a collection of 20 Stove and Greenhouse Plants

THE LARGE GOLD MEDAL.

1 To Mr. Cole, Gardener to H. Colyer, Esq., Dartford, for a collection of 20 Stove and Greenhouse Plants
2 To Mr. Mylam, Gardener to S. Rucker, Esq., jun., F.H.S., for 20 species of Exotic Orchids
3 To Mr. Dobson, Gardener to Mr. Beck, F.H.S., for 6 new varieties of Pelargonium, in 8-inch pots

THE GOLD KNIGHTIAN MEDAL.

1 To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for a collection of 15 Stove and Greenhouse Plants
2 To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for 20 species of Exotic Orchids
3 To Mr. Plant, Gardener to J. H. Schröder, Esq., F.H.S., for 16 species of the same
4 To Mr. Mylam, Gardener to S. Rucker, Esq., jun., F.H.S., for 15 varieties of Cape Heath
5 To Mr. Epps, F.H.S., for the same

THE GOLD BANKSIAN MEDAL.

1 To Mr. Taylor, Gardener to J. Coster, Esq., Streatham, for a collection of 15 Stove and Greenhouse Plants
2 To Mr. Dobson, Gardener to Mr. Beck, F.H.S., for 10 species of Exotic Orchids
3 To Mr. Smith, Gardener to W. Quilter, Esq., Norwood, for 15 varieties of Cape Heath
4 To Messrs. Fairbairn, Clapham, for the same

THE LARGE SILVER-GILT MEDAL.

1 To Mr. Pawley, Bromley, Kent, for a collection of 15 Stove and Greenhouse Plants
2 To Mr. Jack, Gardener to R. G. Loraine, Esq., of Wallington, Surrey, for a collection of 6 Stove and Greenhouse Plants
3 To Messrs. Rollisson, of Tooting, for 10 species of Exotic Orchids
4 To Mr. Jack, for 6 varieties of Exotic Orchids
5 To Mr. Cole, Gardener to H. Colyer, Esq., for 15 varieties of Cape Heath
6 To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for 9 varieties of the same
7 To Mr. Stanly, Gardener to H. Berens, Esq., F.H.S., for 6 *distinct* species of Pelargonium, exhibiting superior cultivation
8 To the same, for Tall Cacti in flower
9 To Mr. Stains, of Middlesex-place, New-road, for 6 new varieties of Pelargonium, in 8-inch pots
10 To Mr. Parker, Gardener to J. H. Oughton, Esq., Roehampton, for 6 varieties of Pelargonium, in 11-inch pots
11 To Mr. Gaines, F.H.S., for the same
12 To the same, for 6 Fancy Pelargoniums
13 To Messrs. Veitch, Exeter, for Cycnoches barbatum
14 To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, F.H.S., for a collection of Uncommon Tropical Fruits

THE CERTIFICATE OF EXCELLENCE.

1 To Mr. Bruce, Gardener to Boyd Miller, Esq., Tooting, for a collection of 6 Stove and Greenhouse Plants
2 To the same, for six species of Exotic Orchids
3 To Mr. Dobson, Gardener to Mr. Beck, F.H.S., for a collection of Achimenes
4 To Messrs. Lane and Son, Great Berkhampstead, for a collection of Roses, in 50 varieties
5 To Mr. Taylor, Gardener to J. Coster, Esq., for 9 varieties of Cape Heath
6 To Mr. Stains, of Middlesex-place, New-road, for 6 *distinct* species of Pelargonium, exhibiting superior cultivation
7 To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for Tall Cacti, in flower
8 To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, F.H.S., for Leschenaultia splendens
9 To Mr. Robinson, Gardener to J. Simpson, Esq., Thames-bank, Pimlico, for 6 new varieties of Pelargonium, in 8-inch pots
10 To Mr. Bragg, Slough, for the same
11 To Mr. Riddell, Gardener to F. Ashby, Esq., Staines, for 6 varieties of Pelargonium, in 11-inch pots
12 To Mr. Stains, for 6 Fancy Pelargoniums
13 To Messrs. Rollisson, Tooting, for Metrosideros polymorpha
14 To Mr. Elliott, Gardener to J. B. Boothby, Esq., F.H.S., for a Plant of the Musa Cavendishii

THE LARGE SILVER MEDAL.

1 To Mr. Glendinning, F.H.S., for a collection of 6 Stove and Greenhouse Plants
2 To Messrs. Henderson, Pine-apple-place, Edgware-road, for 10 species of Exotic Orchids
3 To Mr. Knott, Gardener to The Rev. C. Pritchard, F.H.S., for a collection of Achimenes
4 To Messrs. Veitch and Son, for Saccolabium Blumei
5 To Mr. Parker, Gardener to J. H. Oughton, Esq., for 6 distinct species of Pelargonium, exhibiting superior cultivation
6 To Mr. May, Gardener to Mrs. Lawrence, F.H.S., for Fuchsia "Corallina"
7 To Messrs. Paul, Cheshunt, for a collection of Roses in 50 varieties
8 To Mr. Parsons, Gardener to A. George, Esq., Enfield, for the same, in 25 varieties
9 To Mr. May, Gardener to E. Goodhart, Esq., of Beckenham, for 9 species of Cape Heath
10 To Mr. Gaines, F.H.S., for 6 new varieties of Pelargonium, in 8-inch pots
11 To Mr. Robinson, Gardener to J. Simpson, Esq., for 6 fancy Pelargoniums
12 To Mr. Glendinning, F.H.S., for a collection of Statices
13 To Mr. May, Gardener to E. Goodhart, Esq., for Roella ciliata
14 To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for a collection of Ferns
15 To Messrs. Veitch and Son, Exeter, for a variety of Cypripedium barbatum
16 To the same, for a collection of Conifers
17 To Mr. Jones, Gardener to Sir J. J. Guest, Bart., F.H.S., for a Queen Pine-apple
18 To Mr. Fleming, Gardener to his Grace the Duke of Sutherland, F.H.S., for a Providence Pine-apple, weighing 10 lbs. 4½ oz.
19 To Mr. Smith, Gardener to S. Ricardo, Esq., Titness-park, Sunning-hill, for Grapes in pots
20 To Mr. G. Hayward, Gardener to G. Goodman, Esq., Roundhay, near Leeds, for Black Hamburgh Grapes
21 To Mr. Chapman, South Lambeth, for the same
22 To Mr. Fleming, for Muscat Grapes
23 To Mr. Toy, Oatlands Palace Gardens, Weybridge, for the same

THE SILVER KNIGHTIAN MEDAL.

1 To Messrs. Pamplin, of Walthamstow, for a collection of 6 Stove and Greenhouse Plants
2 To Mr. Stanly, Gardener to H. Berens, Esq., F.H.S., for the same
3 To Mr. Smith, Gardener to Mrs. Lawrence, F.H.S., for 10 species of Exotic Orchids
4 To Mr. Francis, of Hertford, for a collection of Roses, in 50 varieties
5 To Mr. Terry, Gardener to Lady Puller, Youngsbury, Herts, for the same, in 25 varieties
6 To the same, for a collection of Yellow Roses
7 To Messrs. Lane, for the same
8 To Messrs. Veitch and Son, for 15 varieties of Cape Heath
9 To W. Gregory, Esq., F.H.S., for a Fuchsia grafted with 15 different sorts
10 To Mr. Green, Gardener to E. Antrobus, Bart., F.H.S., for Leschenaultia formosa
11 To Messrs. Veitch and Son, for Nepenthes sanguinea
12 To Mr. Taylor, Gardener to J. Coster, Esq., for a collection of Ferns
13 To Messrs. Veitch and Son, for a new species of Ruellia from Peru
14 To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, for Oncidium luridum
15 To Messrs. Henderson, for Kalosanthes nitida
16 To Mr. Ward, Woolwich, for a collection of Carnations
17 To Mr. Norman, of the same place, for a collection of Picotees
18 To Mr. Riddell, Gardener to F. Ashby, Esq., of Staines, for a collection of Achimenes
19 To Mr. Cole, Gardener to H. Colyer, Esq., for the best named collection of Plants (no error in 15)
20 To Mr. Spencer, Gardener to the Marquis of Lansdowne, F.H.S., for a Queen Pine-apple
21 To the same, for a Providence Pine-apple, weighing 9 lbs. 9 oz.
22 To Mr. Turnbull, Gardener to his Grace the Duke of Marlborough, F.H.S., for a bunch of West's St. Peter's Grapes, weighing 4 lbs. 7½ oz.
23 To Mr. Toy, of Oatlands Palace Gardens, Weybridge, for a bunch of Muscat of Alexandria Grapes, weighing 1 lb. 6 oz.
24 To Mr. Holmes, Gardener to S. Garrard, Esq., Putney Heath, for Black Hamburgh Grapes
25 To Mr. Toy, for the same
26 To Mr. Rust, Gardener to J. Maclaren, Esq., F.H.S., for Muscat Grapes
27 To Mr. Turnbull, for West's St. Peter's Grapes
28 To Mr. Snow, Gardener to the Earl de Grey, F.H.S., for Violette Hative Peaches
29 To Mr. Parker, Gardener to J. H. Oughton, Esq., Roehampton, for Nectarines
30 To Mr. Monro, Gardener to Mrs. Oddie, for the heaviest Melon, "Hatfield Green-flesh," weighing 7½ lbs.
31 To Mr. Gadd, of Betchworth Castle, for the second heaviest Melon, "Cantaloup," weighing 3½ lbs.
32 To Mr. Bundy, Gardener to Lord Dynevor, for the best flavoured Melon, "Bromhall"

THE SILVER BANKSIAN MEDAL.

1 To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for a collection of 6 Stove and Greenhouse Plants
2 To Mr. Hamp, Gardener to J. A. Thorne, Esq., South Lambeth, for the same
3 To Mr. Foster, Edgeware, for a collection of Roses, in 50 varieties
4 To Mr. Woods, Gardener to F. Wigg, Esq., St. Alban's, for the same, in 25 varieties
5 To Mr. Tivey, Gardener to R. Wiguolin, Esq., of Golding, Herts, for the same
6 To Mr. Francis, Hertford, for a collection of Yellow Roses
7 To Mr. Robinson, Gardener to J. Simpson, Esq., for a Fuchsia, "Sir Robert Peel"
8 To Mr. E. G. Henderson, F.H.S., for six distinct species of Pelargoniums, exhibiting superior cultivation
9 To Mr. W. Ambrose, of Battersea, for new Hybrid Pelargoniums
10 To Mr. Norman, of Woolwich, for a collection of Carnations
11 To Mr. Ward, of the same place, for a collection of Picotees
12 To Mr. Norman, for a collection of Pinks
13 To Mr. Wooley, Gardener to H. B. Ker, Esq., Cheshunt, for Oncidium leucochilum
14 To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for Aerides odoratum
15 To Messrs. Lane, for a collection of Achimenes
16 To Mr. Ivison, Gardener to the Duchess Dowager of Northumberland, F.H.S., for Espeletia argentea
17 To the same, for Balsamina repens
18 To Mr. Thomson, of Hammersmith, for 3 specimens of Kalosanthes coccinea
19 To Messrs. Veitch and Son, for a new Cryptomeria
20 To Mr. Masters, F.H.S., for a collection of Ferns
21 To Mr. Smith, Gardener to Mrs. Lawrence, F.H.S., for the second best named collection of Plants (no error in 15)
22 To Mr. Ogle, Gardener to the Earl of Abergavenny, for a Queen Pine-apple
23 To Mr. Jones, Gardener to Sir J. J. Guest, Bart., F.H.S., for a Providence Pine-apple, weighing 7 lbs. 14 oz
24 To Mr. Dytch, Gardener to James Taylor, Esq., F.H.S., for Black Hamburgh Grapes
25 To Mr. Lushey, Gardener to J. Hill, Esq., Streatham, for Black Prince Grapes
26 To Mr. Turnbull, Gardener to the Duke of Marlborough, F.H.S., for Muscat Grapes
27 To Mr. Spencer, Gardener to the Marquis of Lansdowne, F.H.S., for Peaches
28 To Mr. Ferguson, of Aylesbury, for the same
29 To Mr. Turnbull, for Nectarines
30 To Mr. Ferguson, of Aylesbury, for the same
31 To Mr. Snow, Gardener to the Earl de Grey, F.H.S., for Black Tartarian Cherries
32 To the same, for Elton Cherries
33 To Mr. Meyers, of Brentford, for Black Circassian Cherries
34 To the same, for Bigarreau Cherries
35 To Mr. Elphinstone, Gardener to the Right Hon. the Speaker, for British Queen and Eleanor Strawberries
36 To Mr. Lydiard, of Batheaston, for the same
37 To Mr. Bruce, Gardener to Boyd Miller, Esq., for the second best flavoured Melon, "Cuthill's Improved Scarlet-fleshed"

THE CERTIFICATE OF MERIT.

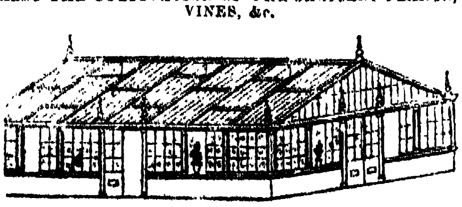
1 To Mr. Herman, Denham, Bucks, for a collection of Roses, in 50 varieties
2 To Mr. Slowe, Gardener to W. R. Baker, Esq., F.H.S., for the same, in 25 varieties
3 To Messrs. Paul, for a collection of yellow Roses
4 To Mr. Bruce, Gardener to Boyd Miller, Esq., of Tooting, for Erica depressa
5 To Mr. Bragg, of Slough, for a collection of Carnations
6 To the same, for a collection of Picotees
7 To Mr. E. G. Henderson, F.H.S., for Abronia umbellata
8 To Messrs. Veitch and Son, for Cephalotus follicularis
9 To Messrs. Henderson, for Achimenes Ghiesbreghtiana
10 To Mr. Glendinning, F.H.S., for Gloxinia Wortleyana
11 To Messrs. Veitch and Son, for Mitraria coccinea
12 To Messrs. Henderson, for a collection of Petunias
13 To Mr. Salter, F.H.S., for a Fuchsia "Corymbiflora alba"
14 To Mr. Epps, F.H.S., for the third best named collection of Plants (no error in 15)
15 To Mr. Taylor, Gardener to J. Coster, Esq., for Black Hamburgh Grapes
16 To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., for the same
17 To Mr. Bassett, Gardener to T. B. Herring, Esq., Finchley, for the same
18 To Mr. Turnbull, Gardener to the Duke of Marlborough, F.H.S., for Peaches
19 To Mr. Monro, Gardener to Mrs. Oddie, for Nectarines
20 To Mr. Whiting, Gardener to H. T. Hope, Esq., F.H.S., for Black Tartarian Cherries
21 To Mr. Woods, Gardener to F. Wigg, Esq., for British Queen Strawberries
22 To Mr. Shepherd, of Deptford, for Myatt's Eleanor Strawberries
23 To Mr. Whiting, for the best-flavoured Melon, "Egyptian Green-fleshed."

*** A prize of the value of 10*l*. was awarded to Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., for the finest collection of Fruit.

GRAY, ORMSON, AND BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.
They also beg to refer to the houses built by them during the last season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the curator, will kindly show the work, and answer any enquiries. [illegible]
[illegible]
Plans and Estimates furnished free.

DR. NEWINGTON'S IMPLEMENTS will be exhibited at the Norwich Show, Stand 16. A prospectus to be obtained from Dr. Newington, Knole-park, Frant, Tunbridge-wells.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.

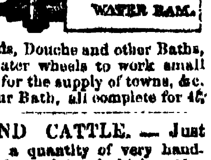


J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

IMPROVED FLOWER STICKS.—THESE FLOWER STICKS are of a circular form, thereby avoiding angles and sharp edges, which are liable to cut and injure the plants. They may be had stained brown or green to suit the various plants.—To be had of all respectable Nurserymen and Seedsmen, and dealers in Garden Implements. Manufactured and sold Wholesale, at H. MORRELL'S, 149, Fleet-street, London.

N.B. Samples to be seen at the Office of this Paper.

THE IMPROVED HYDRAULIC RAM, fixed by FREEMAN ROE, Fountain Maker, 70, Strand, London, can be worked by a small stream of half-an-inch, where a fall of 2 feet can be obtained. The same RAM, without the aid of a Tank or Cistern, arranged to throw a Jet of Water constituting a Fountain with the head of water beneath.



Engines for deep wells of all kinds, Douche and other Baths, Buildings heated by hot water. Water wheels to work small pumps, from 15*l*. Estimates given for the supply of towns, &c.
A newly-invented Portable Vapour Bath, all complete for 4*l*.

SHETLAND PONIES AND CATTLE.—Just landed, direct from Shetland, a quantity of very handsome small PONIES; size, from 8½ to 12 hands high. Also some very handsome small COWS and HEIFERS, down Calving, some with Calf by side, and in milk; also some small OXEN and SHEEP, for feeding. These Cows give a large quantity of milk for their size, which is very rich, similar to the Alderney, and they are very hardy and suitable to this climate. To be seen at THOMAS OXTON'S, Salesman and Importer to her Majesty, 69, Wapping.

HORTICULTURAL SOCIETY OF LONDON.

LECTURES ON HORTICULTURE.

TUESDAY, JULY 17th, at 3 P.M.—"The DISEASES to which Plants are liable, and the mode of alleviating them (so far as existing knowledge offers the means of forming any judgment."

No one can be admitted to the Meeting Room except Honorary Members and Fellows of the Society, their wives or sisters, and visitors specially introduced by them; or the Foreign and Corresponding Members of the Society.

21, Regent-street, July 14, 1849.

The Gardeners' Chronicle.

SATURDAY, JULY 14, 1849.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY. July 17—Horticultural (Lecture). ..... 3 P.M.

COUNTRY SHOWS.—Wednesday and Thursday, July 18 and 19. Norfolk and Norwich Horticultural.

THE LONDON HORTICULTURAL SEASON having now closed with the great Exhibition at Chiswick on Wednesday last, the time has come for making a few general remarks in anticipation of future years. To our minds the evidence of advancing Horticultural skill, afforded by the Chiswick meetings, is most satisfactory. It may be true that nothing has been produced more remarkable, as an example of high cultivation, than has been seen before; perhaps in some things skill can go no further. It is possible that individual cases of better gardening might be pointed out in former years; but what is far more important is the fact that in no season has so little appeared of inferior quality. It has become as rare to find ill-grown plants in the exhibitions at Chiswick as it once was to find them well grown. Things of which a head gardener would have been proud some 20 years ago, his apprentice would be ashamed of now. This alteration must be admitted to be immense gain; it proves that although progress may in some particulars be arrested, it is upon the whole in vigorous and rapid march.

Nor can it now fall back. In the onward flow of the arts of civilisation there is no ebb; there may be eddies, and rapids, and bars, and shallows; and gales may for a moment force back the advancing flood, but such obstacles are soon overcome, and the mighty stream glides on with a force that accumulates as the volume augments. Against the return of gardening to its former state we have this security, that the taste of the public has kept pace with the improvement of the profession. The employers of gardeners have become fastidious; what they would have admired in 1800, and endured in 1820, they now scout. A striking proof of this was afforded on Saturday, by the remarks of the visitors who chanced to spy some unhappy Grapes which an innocent country gardener had produced as a sample of his skill. The Grapes were not so bad: we have seen far worse gain prizes; but the lookers on refused to endure them because they have become accustomed to what is infinitely better. Visitors to these exhibitions come not only from every quarter of the globe, but from every hundred in England, perhaps from every village; they see what gardeners *can* do; they hear that the best results are often obtained by men with no better means than their own; and they return to their homes determined that there also really good gardening shall be introduced. That is the security against the art of horticulture falling back to its ancient level.

The quality of the plants exhibited is not the only matter in which the public taste is changing; and it is as well to point out what direction the change is taking.

What are called large collections of plants have ceased to be popular. Admirable as have been the specimens shown under this denomination, visitors no longer crowd around them. You hear the passers by exclaim, "how fine! how lovely! what a capital garden Mr. —— must have!" and that is all. The tents are deserted for a more attractive display. Nevertheless there are crowds around the "small collections," although made up of similar plants; they have not lost their interest. The reasons of this we take to be several. In the first place there is little or no competition for the "large collections." One or two leviathans swallow all the minnows. In the next place the small collections are more varied, more choice, and are moreover for the most part composed of smaller specimens; to have a chance of winning in them everything must be at least on the borders of perfection. Insufficient competition in the larger groups produces the contrary effect.

A similar indifference is manifested yearly towards Heaths. They are in themselves among the most beautiful objects in the greenhouse; great success in growing them shows great horticultural skill; and the detached branches, or solitary bushes amidst other plants excite everybody's admiration. Nevertheless the Heath tents are generally almost empty. This we take to be caused by the monotony of the forms of Heaths, and the entire absence of a graceful mode of growth. Groups of them have no picturesque effect. The flowers indeed display all tints of red and yellow and white; the foliage is of the purest green; the blossoms are of greatly varied shape; and yet the plants have an uninviting sameness. The flowers are all tubes, the leaves are all narrow, and the general form of the bushes is so round that a person ignorant of their nature might imagine them to be relics of the clipped hedges of our ancestors. In fact a row of finely-grown Hottentot Heaths is like a line of Hottentot Kraals. This is fatal to masses of such plants exciting pleasurable emotions in a crowd of lookers on.

It is because they are so entirely the reverse of this that the Orchids fascinate everybody. Where they are, and where Roses are, the crowd is greatest: it is thither that the earliest visitors invariably resort, and there they linger. You never find the tent of Orchids deserted. Men say that it is because of their singular forms, and their aromatic fragrance; but we believe that the explanation is chiefly to be found in their graceful outlines and infinitely varied aspect. It is as difficult to give sameness to a bank of highly cultivated Orchids as it is to throw variety into a line of Cape Heaths.

New plants are becoming less numerous. They scarcely appear, indeed, except from the great house of the VEITCHES of Exeter, or from the Garden of the Horticultural Society. But, on the other hand, there is the satisfaction of witnessing every now and then the reappearance of some old plant as good as new. Let us hope that we may see many more such cases. When, at the end of the last century and beginning of this, the horticultural *furor* began to tell upon the English mind, people could not grow the plants that merchants brought them. They were flowered, named, indifferently represented in botanical periodicals, starved to death, and forgotten. But among the casualties of those days were many beautiful creations, the names of which stand in our catalogues as so many records of horticultural unskilfulness. Because they flourished anno Domini 1795 they are set down as "old things," and, like other old things, are no longer cared for. From the way in which these plants are treated, one would think they possessed the attributes of humanity. We can, however, give an assurance that plants, at least, are none the worse for being old, and that the public sustains no small damage from entertaining a contrary opinion. This was shown by Mrs. LAWRENCE's charming *Rellania squarrosa*, which, although born near London in the year 1774, was the youngest and prettiest plant in that lady's collection on Wednesday last. For ourselves, we incline to class old plants with old wine and old nobility.

These are points which exhibitors would do well to think upon.

Concerning Wednesday's meeting, to what is formally reported in another column, we shall only add, that the day was beautiful, the Gardens at Chiswick-house delicious, and the exhibition of fruit and flowers the best which has yet been seen in July. The fruit-growers vindicated their claim to rank with the cultivators of flowers; very little was of inferior quality, a great deal was excellent, and some was admirable. As to the Strawberries from the garden of the Right Honourable the SPEAKER, it was admitted by the best judges that no such British Queens and Eleanors had ever been seen before.

The number of visitors was 7338.

We are able to state that the arrangements for next year will be settled in the course of the ensuing month; and Dr. LINDLEY invites all who have suggestions to make, to favour him with them in the course of a week or ten days.

THE progress of FRAUD is much more rapid than that of discovery, and no possibility exists of protecting honest men, unless it is by incessantly calling their attention to the rogues who plunder them. No sooner is one line of trickery cut off than another is formed in a new direction, and the work of plunder recommences with unabated activity. In nothing has this been more conspicuous than in the Guano trade, for in nothing agricultural has the premium upon fraud been so high. To convert 12*s.* worth of loam into 10*l.* worth of Guano was a feat that was sure to invite the dexterity of all those ingenious persons who gain their living by plucking pigeons; to make the attempt was not to be resisted, and it must be confessed that the attempt has been too successful.

We can now assure those who buy this invaluable commodity that a fresh device has been adopted; and that there are persons haunting the places where Guano is collected, offering to supply, at 50*s.* a ton, an article for mixing, so like the finest Peruvian samples that the *most practised eye is unable to detect the difference*. We have formerly seen such preparations, and there is no sort of difficulty in making them. Fifty shillings a ton for a thousand tons of that which is intrinsically worth a crown, is a profit which might be satisfactory even to a Californian gold-digger.

This fraud cannot be detected, except by chemical analysis. But chemical analysis is so troublesome or expensive that no small buyers are likely to adopt it, and experience shows that few great buyers will. Men will rather be cheated out of 50*l.* than pay five guineas to escape the cheat; and the reason given for this folly is, that, if an article is genuine, they have then thrown away their five guineas! Such is the absurdity of human nature, and upon that the fraudulent dealer securely trades; knowing, by experience, that for one instance of detection there are ten of successful imposture.

For this reason, and because we believe that buyers are much too helpless, even when they are on the alert, we renew the recommendation we have so often given before, that no Guano be bought except from persons whose respectability is above suspicion, and who, moreover, can prove that they receive their supplies *direct* from the importers or their recognised agents. All the Peruvian Guano now receivable comes through the house of GIBBS and Co., and no other merchants can, for some years to come, procure the substance, that great firm holding the monopoly. We mention this as a guide to those who do not know how to proceed in their purchases.

It matters nothing in what ship the Guano comes, for the samples are all as nearly alike in quality as is required for practical purposes. The ships are all loaded from the same beds, formed in the same manner, by the same birds, under the same circumstances: and we do not believe that there is the difference of 5*s.* a ton in the value of the cargoes now imported. So long as the white or Angamos Guano from Bolivia continued to arrive the case was different; for that was doubtless of very high quality: in fact it was worth in the market 16*l.* a ton, when the best brown Peruvian was worth only 10*l.* But that supply has ceased, and it is useless to make inquiries about it. It is the more necessary that this should be understood, because some white Guano is of little value. Peruvian (not Patagonian) is what should be secured, and that can be done with no certainty whatever, unless the means are taken which we have so often pointed out.

PERMANENT STUDS AS A MEANS OF TRAINING FRUIT TREES ON WALLS.

HAVING been convinced that disadvantages attended the common method of training fruit trees on walls, I tried the following plan, which I have practised for these last six years, and which I have found to answer perfectly.

The old method consisted in fastening the trees to the walls by means of nails and shreds of cloth. The nails are inserted where they are most useful for the season, but they must be removed every winter when the trees are pruned and fresh trained. In the operation of unfastening, a portion of the mortar is loosened and brought away with the nails; and as the old holes seldom happen to be in the right place for the new arrangement of the branches, the nails are inserted in fresh places every year. The repetition of this process for a number of years causes the walls to look like honeycombs, materially injures them, and affords a permanent harbour for insects. The neat and convenient training of the trees in future years is in a great measure prevented, on account of the difficulty experienced in finding mortar sufficient and sound enough to hold the nails. In flued walls it not unfrequently happens that the nail-holes open a communication with the interior, and allow the smoke to escape amongst the leaves and fruit. In order to render the walls more sightly, in some places they receive a coat of colouring occasionally; but this practice offers considerable annoyance to the trainer, who may often rap his fingers twenty times before he finds a place solid enough to insert a nail in. The difficulty of fixing nails in the joints compels him to drive them into the bricks, and this gives the walls a most unsightly appearance. Another disadvantage connected with drawing cast-iron nails is their liability to break; and if wrought-iron ones are used a much greater expense is incurred.

Placing wire-trainers on walls has been recommended as a substitute for nails and shreds, but there are several objections to this plan; one is the inconvenience occurring from young shoots getting behind the wires, and another is the distance at which the trained shoots are kept from the wall, thereby depriving them in a great measure of its warmth. Wiring walls is also much more expensive than the system I am about to recommend, not a whit more convenient for the trainer, and rather worse for the trees, as the shoots, unless made objectionably fast, are liable to become [illegible] through by rubbing continually against the wi[illegible] wiring is, however, not only useful but necessary [illegible] the lower flues in hot walls, where the the heat [illegible] ally liable to become so great as to make [illegible] to have the shoots in immediate contact with [illegible] of the bricks; but this is the only place in [illegible] be employed with advantage.

The plan which I have adopted, and [illegible] recommend as superior to either of the [illegible] is to drive permanent studs into the wall [illegible]

shoots to or between them with bast. The studs I use for this purpose are common cast-iron nails with square heads, and the expense of furnishing the walls with these is little more than the cost of the new nails required during a few years' training in the ordinary way. For fan-trained trees we place the studs 8 or 9 inches apart in every course of bricks; but for Pear-trees trained horizontally, they are sufficiently close in alternate courses. The studs are prepared by heating them till red hot upon an old shovel, or some such appliance, and then precipitating them into a can of boiled oil; in this way corrosion is prevented and durability insured. As the whole of the wall is at once supplied with studs, a little attention to inserting them in straight lines and at regular distances gives a pleasing appearance to those parts of it to which the branches have not yet extended themselves. The easiest way of proceeding is to procure a straight board, 4½ inches wide, and as long as the wall is high; after the first perpendicular row is inserted in the alternate courses, one edge of the board is placed against them, and a straight line drawn down the other edge as a guide by which to drive the second row in quincunx order, and so on till the work is completed. The upright lines should be proved with the plumb-line once in four or five yards, in order to prevent any deviation from the perpendicular.

By this method the walls are kept good, all harbour for insects is avoided, and the trees are trained at much less expense than they can be with nails and shreds; the cost of the shreds nearly balances that of the bast required for tying, but the labour of cutting them into suitable sizes is saved, as is also that of straightening and pointing old nails, and after the first few years the cost of the nails themselves is saved. A good workman will do twice as much tying as he would of nailing; while the appearance of a tree bandaged with rags of all colours is not to be compared with that of one whose neatly trained shoots form right lines at equally trained angles, and which exhibits no ornaments save leaves and fruit.

The walls at Trentham had become so battered and disfigured that it was necessary to repoint them, and to plaster up the holes in the bricks, in order to bring the whole to an even surface. To conceal this patchwork the walls received a coat of stone-colour, and by this means all insects are effectually smothered; this is repeated once in two or three years, taking care not to let the material fall upon the branches. The proportions of the ingredients used in forming the colour are as follows: 16 lbs. umber, 4 lbs. ochre, 1 lb. lampblack, and 4 quarts of coal tar; these are boiled together in 30 gallons of water, and applied to the walls as hot as possible. To destroy any insects which are on the trees themselves, they are painted with a mixture composed of about ½ lb. of soft soap, and 1¼ lb of sulphur, to 8 gallons of water, with sufficient lime and soot to bring it to the colour and consistency of darkish-coloured paint. The following statement shows the difference in cost between copper-wire, iron-wire, and plain studs:

100 square yards of wall will require, on	£	s.	d.	Cost per sq. yard. s.	d.
The Stud system, 5000 cast-iron studs, wt. 50 lbs. at 1¼d.	0	6	3	0	0½
The Wiring system, with iron wire, 600 drilled studs, 30s.; 1200 yds. iron wire (No. 12), 112 lbs. at 3¼d., 32s. 8d. ...	3	2	8	0	7½
With Copper Wire (No. 15), which is much neater in appearance, but will cost	5	17	6	1	2

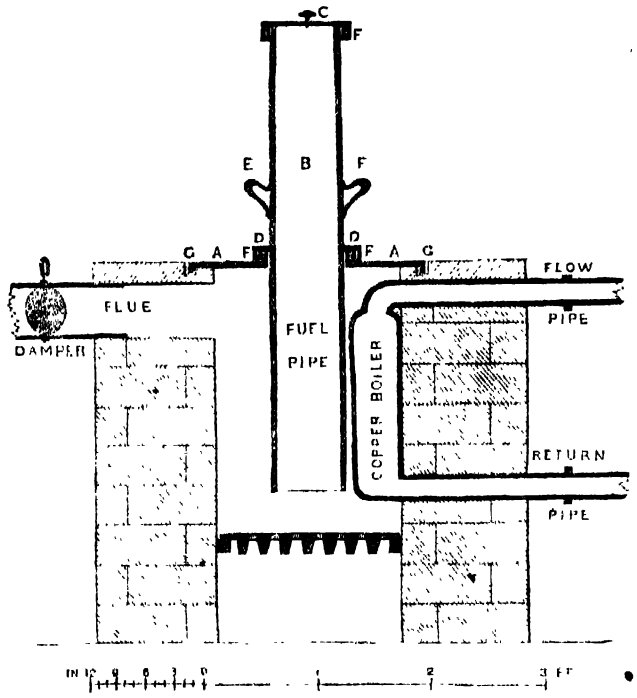
The preservation and improved appearance of the walls, and the saving of labour effected by an outlay which is so soon returned, should be sufficient to induce all who have walls for fruit trees to adopt the plan. I may add that many have already done so, and the advantages connected with it have not fallen short of their expectations. *Mr. Fleming, in Part 3, Vol. IV., of the Journal of the Horticultural Society.*

AN ECONOMICAL PLAN OF UNITING THE POLMAISE AND TANK SYSTEMS OF HEATING.

I VENTURE to hope that the following plan of heating may be considered a little improvement upon that of Mr. Rivers, given at p. 292 of the current year's volume. It is a device of my own, which I had cast last year at a foundry in the neighbourhood, from a model of my own making. It is very simple. The principle is that of uniting the Polmaise and the tank systems. I have given it a trial of a whole season, and it has far surpassed my expectations. It was first lighted in October last, and has continued burning ever since, until within the last week (15th May), except when I have purposely put it out, for clearing the bars of dust and cinders.

It consists of a circular cast-iron plate, A, of 2 feet diameter, with a hole in the centre, of 8 inches diameter. B is a fuel pipe, rather wider at bottom than at top, 4 feet long and 7 inches in diameter. These are separate. When put together, the pipe is let down through the hole, by means of the handles E E. The flange, D, fits into a sand groove, F, which allows of expansion. Around the top of the surface of the plate (A) a half-inch fillet (G) is cast with the plate. The brickwork is lined with Ramsay's fire bricks, and covered over the top with 9-inch paving-stones. In these a circular hollow is cut, of 1 inch larger diameter than the plate. The plate is not set in the brickwork, but simply rests upon it. The space round its edge is filled with silver-sand to the top of the fillet, so that the plate is bedded in sand, and can expand or contract without the danger of cracking.

When the fire is laid, wood and shavings are placed on the furnace-bars, and the fuel-pipe, B, is filled with coke. By means of a damper in the flue and a ventilator in the ash-pit door (which is double), I have the most perfect command over the fire. As soon as the fire is lighted, the heated air ascends from the plate to a low ceiling in the side porch adjoining the greenhouse, into which there is a door from the porch. Over this glass door a head-light of one pane swings upon pivots, and lets the heated air into the greenhouse. Under the threshold of the door is a cast-iron grating, communicating with the air-drain under the floor of the house. This drain has a regular fall of several inches. The fuel-pipe and the copper boiler are over the same furnace-bars. It consumes very little fuel, and requires attention seldom above twice in the four-and-twenty hours. The contents of the fuel-pipe will last 16, 18, 20, or 24 hours, according to the draught given by means of the damper and ventilator. The atmosphere of the house is never quiescent, unless the circulation of the air is purposely stopped by closing the ingress and egress. There is always a beautiful undulation among the leaves of the Vines and plants. I do not know what it is to suffer from mildew or damping off. I have never seen the recently noticed fungus upon Vine leaves, which I am inclined to ascribe to a stagnant atmosphere.



Indeed, my simple and cleanly contrivance does for me what I please. I have never once had the slightest dust, smoke, or escape of coke gas; and I have the means of moistening or drying the atmosphere of my house, which is 13 feet by 13, at pleasure. The copper boiler holds about three pints (?), and is set in the brickwork, suspended, as I have stated, over the same furnace-bars. It is made of the thickest copper that could be procured. By using copper instead of iron there is no sediment in the pipe or tank. *C. P., May* 15.

DISEASES OF PLANTS.

(*Continued from page* 421.)

GENUS X. RANK SHOOTS, *or robbers* (*Succhioni. Branches Gourmandes*).—I thus distinguish those extraordinary luxuriant shoots which may be recognised amongst others of the same tree by the following chief properties. 1. They shoot immediately from the bark, and not from an ordinary bud, and, from the moment they first show themselves, their base occupies the whole breadth of the branch on which they grow. 2. They grow more rapidly than all the other branches. 3. They bear less prominent, smaller, and more remote buds than the generality of the branches. 4. They generally take, in their whole length, a rich coppery red colour. As they feed themselves at the expence of those branches which remain in their natural position on the plant, they are called by some Italians *Succhione*, by others *Poppaione*.* French gardeners call them *Branches gourmandes*. They injure the plant by withdrawing the nourishment from the weaker parts. I have only met with them on trees, but I presume they may also be found upon herbs, or at any rate on shrubs.

First Species. PEACH ROBBERS.—Observing carefully those domestic trees, called fruit-trees, left to grow at full liberty, and in a high state of natural vigour, I have often remarked these robbers. The Wild Plum has also shown them often to me. But as amongst all the trees we cultivate, none is more liable to them than the Peach, it has occurred to me to derive from thence the name of this first species, thus reminding the cultivator that this precious tree is often liable to perish from the emission of these shoots. This may be owing to two causes. In the first place to the overrichness of the soil. In the enclosures, where Peaches are cultivated, it is the custom to be lavish of dung, not so much to favour the growth of the trees, as that of the more lucrative herbaceous crops cultivated with them. The Peach, although delicate, when powerfully stimulated, vegetates with such vigour, that it cannot retain its juices within the prescribed limits. These open to themselves new courses, and carrying with them the germs of new branches, cause them to be developed in a manner contrary to the ordinary laws followed by the plant. The second cause of the evil, and which I believe is the most frequent one with us, is derived from the defective mode of culture of fruit trees, especially of stone fruits. The whole secret is supposed to consist in pruning. But this principle is carried on without the slightest method or measure. They lop off, without mercy, wood-bearing and fruit-bearing branches indiscriminately. The tree suffers, and trying to recover its vigour, shoots forth these robbers. I know very well that in this case the robber becomes the consequence of a *wound*, which class includes amputation, but I have thought it right to allude to it here to avoid repetitions in speaking of the remedy.

Few persons are aware of the importance it is to us (in northern Italy) to prevent the sad consequences resulting to our trees from these robbers. Our Italian writers on Rural Economy in general are either silent on the subject or speak but very superficially on the means of preserving vegetation from certain maladies. We must have recourse to the French for any real instruction on this point. Roger Chabot *Pratique du Jardinage* may be consulted, or Labretonnerie *Ecole du Jardin fruitier*. I will confine myself to the principal points, after having observed that the small number of good varieties of stone fruits which our country possesses, is owing in a great degree to the trees having been allowed to luxuriate in a large number of robbers. This evil is prevented by suiting the soil to the tree, and still more, perhaps, by sparing manures, and by judicious and moderate pruning. On this occasion I strongly recommend cultivators to abandon the habit, if they have acquired it, of watering their young fruit trees, unless compelled to it by absolute necessity.

The robbers should not be all indiscriminately cut off, as is the custom of many persons, nor should they be allowed all to remain as others do, who, seeing these very vigorous shoots, imagine that the tree will be renewed in youthful vigour. In the first case you run the danger of seeing an extraordinary number of little branches shoot out, which would only weaken the tree. It is, therefore, necessary to cut out only those which are plainly injurious in withdrawing the nutriment from the other branches, or which would disturb the symmetry of the tree. In performing this operation, it is a good precaution not to cut off the whole robber at once. The half of their length may be cut off immediately above a bud, in the middle of May. A month later another portion may be cut off, and finally, by a third amputation, nothing should be left beyond the first eye from the main branch. By this method you prevent the robber from depriving the other branches of their nutriment, and at the same time you avoid the general disturbance of the economy of the plant which would take place were you to remove the whole of them at once, by which the juices cut off in their previous course would seek to force their way through other channels, to the great injury of the plant.

It is best to preserve as many of the *gourmands* as possible, training them so as to take the place of the ordinary branches, even of those weakened by the operations of the robbers themselves. The following is, in a few words, the course to be pursued. If the tree is weak but few should be left, and they should be cut short. On the contrary, if the tree is young and vigorous, many more may be spared. "Suppose a robber in the centre of a tree, so placed that it is desirable to retain it in order to give a better form to the tree. Let it be cut to half its length. The buds of the portion left will open and develop as many new branches, which by the month of June will be 7 or 8 inches long. The portion spared the first time must now be again shortened, cutting off three or four of the new shoots. Finally in July a third portion must be amputated, leaving only two of the lowest of the young shoots, which before the fall of the leaves will have lengthened considerably, and have ample time to ripen their wood before the winter." In such manner a branch, in itself dangerous to the welfare of the tree, will be converted into a useful stock for future fruit. It would be desirable that these methods were more known to amateurs. In the culture of fruit trees we Italians have much to learn.

Second Species. ROBBERS OF THE STOCK.—Sometimes these branches will shoot out below the graft. This is owing to the superfluous quantity of sap directed to that part. It is only to be seen in the case of trees of vigorous growth. The best course is to remove them the moment they first appear. If, however, they have been suffered to shoot, they should be cut out as soon as possible, in order that they may not rob the graft of its nutriment.

* Both these words may be literally translated *suckers*, a term however, restricted in our language to shoots, which spring up from the roots of a tree or shrub.

VILLA AND SUBURBAN GARDENING.

THE cultivation of the Cabbage, as practised by the

London market gardeners, may be advantageously studied by the villa gardener. Coleworts, which constitute such an important article in Covent garden, are not so frequently found elsewhere as they deserve to be, being one of the most profitable crops grown. All the great market gardeners grow their own variety, the seed of which is saved with great care. "Atkins's Matchless" is one of the very best varieties in cultivation, and if sown for Coleworts, ought by this time to be coming up; but unless the bed is kept constantly moist and shaded during the dry season, there will be but a poor chance of success, especially if we have a continuance of such excessive dryness as we have had, and are now experiencing. A shady spot should be selected. The ground should be well watered after being dug, and the seed sown thinly when the ground is moist; if possible, never let it be otherwise until the plants are sufficiently strong to plant out.

Ground which has been cropped with early Potatoes and Peas, comes in well for Coleworts. All the Cabbage tribe requires the soil to be in good heart; in fact, an abundant supply of manure is requisite, which should be well dug in; and take advantage, if possible, of showery weather to plant out the crop. This operation being so simple and so well understood, I shall merely state that as much soil ought to be retained at the roots of the plants as possible. The distance from plant to plant should be about 9 inches. This may appear to some rather close, but as soon as they begin to cover the ground every alternate plant may be removed for use; and as they still further advance in growth every other row may also be taken away, so that there remains a crop of Cabbages. During the whole period of growth the ground should be kept free from weeds, and well worked with the "pickfork."

Where early Cabbages are desired, they should be treated in a similar manner, but of course planted at a greater distance from each other—20 inches apart in the row, and two feet between the rows, will at least be required. The first sowing should be made in the beginning of August—these will succeed the Coleworts; the second sowing in September, which may remain in the seed bed until February or March, when about the same season a third sowing may be effected. These three sowings, with the Coleworts, will afford a good supply and succession of Cabbages; and one variety will effect all the purposes required for table, provided that variety be a good one. These remarks will afford an answer to a "Villa Gardener" *Plato.*

STRAWBERRIES FOR FORCING.

Plants intended to be forced next season should be strong, well-rooted, and well-ripened before winter, and no time should be lost in potting the runners. No doubt a month hence would do, but I prefer the present time, or say within the next fortnight. The best runners on plants planted out last year and not permitted to fruit this year, should be selected. The plant produced at the first joint of the runner is the best. All plants on the succeeding joints should be pinched off about a fortnight after potting. My practice is to pot at once into the pots in which they are to remain; I use 6-inch pots for early spring, and 8 inch for late work. If vigilant attention could be given to watering, 6-inch pots would do for both early and late crops; but they require much more water than 8-inch pots, and I dislike the plan of using flower-pans under the pots.

In potting, I use stones to keep the runners fast in the pots, preferring stones to pegs, as the former prevent a rapid evaporation. If the stones be lifted up in the very hottest weather, a nice moisture will be found under them. The soil which I use is three barrowfuls of loam to one of leaf mould, and one of good rotten dung. My practice is to have it prepared in the winter time, and turned two or three times to sweeten; in frosty weather I remove the crust, and thus lay bare another surface for the frost to act upon. I always put a handful of soot in the bottom of the pot over the drainage, and I find this an excellent plan, both for keeping out insects and adding to the luxuriance of the plants. I never pot more than one plant in a pot, as I prefer quality to quantity.

As soon as the plants are rooted I have them cut off, and removed to a shady place; and as soon as the plants will bear the sun without flagging, I place them in a warm sunny situation, using means to prevent the sun's rays from beating on the sides of the pots. I never let them suffer for the want of water, and I keep them free from weeds and runners; as winter approaches I remove them to temporary pits, and plunge the pots up to their rims in ashes. Capital pits for this purpose may be made by driving some stakes down so as to form the outline of a pit, leaving them 2 feet high at back and 18 inches at front. To these, slabs or any old deal may be nailed, and the latter banked round with turf or soil of any description. Rafters should be nailed across to bear covers, which might be made in the shape of lights and covered with painted canvas, but the covers should always be removed in fine weather. After the Strawberries are removed to their forcing quarters, these pits will be found very hardy for hardening off the summer stuff, or to put half-hardy things in that must be removed from the greenhouse about this time. The nearer the plants are to the light in their forcing quarters the more easily will the fruit set and swell off. For this reason, I prefer pits to all other descriptions of houses for forcing them in, and I think them quite worthy of a pit for themselves. If we keep in view that Strawberries delight in plenty of light and air, any one may construct a pit suited to them. I never use liquid manure until the fruit is set; I then give liberal applications of soot, and sometimes a little Peruvian guano, but I discontinue the liquid manure as soon as I see the fruit changing colour. By following the above method of treating Strawberries, I have had some as fine fruit as I have ever seen. *John Middleniss, Bentham Hill, Tunbridge Wells.*

Home Correspondence.

Garden Gossip.—I beg to second Mr. Duncan's recommendation of the gay spring flowering shrub Cytisus canariensis (*vide* the *Gardeners' Chronicle* of May 12), though my experience of its beauty is as a hardy plant, for in my shrubbery it has lived and bloomed for years, and is now 6 or 7 feet high; it grows under the partial shade of some Larch trees, a situation not unsuited to half-hardy shrubs, for near it in the same border are equally vigorous Australian plants, a great number of which can be successfully cultivated in the open air of South Devon. I gained an extra prize for more than a dozen thus grown, at the May exhibition of the Devon and Cornwall Horticultural Society, including some bulbous plants, &c., among them, the old, but shy flowering Iris susiana. My Banksian Roses were also thought worthy of a prize; but alas! the plants have suffered much from the spring frosts, and the blighting green fly, which is absolutely in formidable abundance this year, so that my poor trees are necessarily pruned closer than ever Midsummer saw them before, as the only means of getting rid of these pests. The subject of Roses reminds me of that exquisite new perpetual, Géant des Batailles, which throws every other in my garden into the shade, so brilliant is its hue. William Jesse is with me unusually large this year, but strange to say, I can never get La Reine or Souvenir de la Malmaison to perfect one of their multitude of flowers, the petals of each huge bud being glued together, thus rendering the plants hideous, instead of ornamental: a Noisette which I am told is a very fine one, "Pourpre de Tyre," is in the same condition. Among spring shrubs, I must commend the beauty of Ceanothus divaricatus, which, when 9 or 10 feet high, and bushy in proportion, is highly ornamental, when covered with its thyrses of flowers of a hue so rare among plants; against a wall it is, in my opinion, almost worthless. As a late flowering shrub nothing can be more striking than a large specimen of Ozothamnus multiflorus, which, when in flower, looks as if covered with the finest particles of snow, which gently bend its branches; against a wall this is also valueless. Weigela rosea deserves all the praise that has been bestowed on it, proving, when the plant gets large and bushy, pre eminently lovely. The importations of the Horticultural Society from China and California, and the introductions of the Messrs. Veitch from Patagonia and Chiloe, witness their new Escallonia, the beauty of which can only be properly appreciated by seeing the flowers growing, and Mitraria coccinea, will tend to revolutionise our shrubberies in a few years—would that all revolutions produced such results! Now that the beauty of the American beds is over, it would have been well had all growers of Azaleas followed the advice of the late Dean of Manchester, and planted between the bushes roots of the many hardy varieties of hybrid Gladiolus, which are rapidly advancing in beauty and value; mine are in full bloom, and render the beds as gay as they were two months since, with the certainty of a prolonged display of colour, if the late varieties of Gandavensis flower well. Lilium lancifolium, I conclude, would succeed equally well in a similar situation. In making preparations for the ensuing winter and spring, I would recommend a large quantity of Wallflowers being raised for filling the flower beds, when the Geraniums, Verbenas, and Petunias, &c., are exhausted and injured by frost. A geometric flower garden under my drawing-room windows, though gay enough till the cold destroyed the summer occupants, had a terribly blank appearance during the winter and early spring, till I filled many of the beds with Aucuba japonica in pots, and strong plants of German Wallflowers, which answered admirably, rendering them green through the dark, dead months, and gay and deliciously fragrant till it became time to plant out the gayer exotics, when the plants were thrown away; my gardener, however, has struck a vast number of cuttings, for many of the new varieties sport into all sorts of odd colours of mixtures, which are worth preserving. Next winter I trust to see no more bare circles and parallelograms. For the present I conclude my gossip, trusting that other amateurs will record their experience, by which means we shall all derive benefit. *A Devonian.*

Natural Grafts.—Perhaps the instances of what I may call "Siamese" union in trees, a case of which, communicated by me, you noticed in last week's *Chronicle*, are less rare than I had supposed. At all events, I have one in Holly, not 20 yards from my own door, and of which I was ignorant till I was shown it quite recently by my children. The trees are, I have reason to think, of about 70 years' growth (I can remember them above 50), and from one, about 2 feet from the ground, goes off a branch 4 inches in circumference, diminishing to 3¼ inches, and again increasing to 5 inches near its junction with the other tree, at about 4½ feet from the ground. The junction is as perfect as possible, and the branch, which is without leaf or twig (though I think there have been one or two some time), is 6 feet long, measuring its curvatures. *W., Tamworth, July* 9.

Pelargoniums.—Have any of your readers lost their Pelargoniums in a most unaccountable manner this season? Mine are well grown and healthy, but a few, both in pots and planted out, die off most strangely. In some of them the stem, above ground, looks dark, as if decaying. They really appear as if they had a similar disease to the Potato: others, in the same house, and in the same bed, are healthy and doing well. *A. B.*

Erica Cavendishii.—It may be interesting to know that our noble, and now well known, Erica Cavendishii has produced 15,945 perfect blossoms, which we have gathered, and I am happy to say that it is now in the most robust health, promising yet to do valiant service. *J. and J. Fairbairn, Clapham.*

Newby Park Gardens.—These do much credit to Mr. Paxton, who planned and executed them. Five acres are walled in with a 14 feet wall, the latter well covered with trees bearing good crops. Most of the young Peach-trees are each producing from 4 to 6 dozen fruit. The garden, though only made about two years and four months, is well cropped. The young Gooseberry trees are rendered both useful and ornamental by being trained as standards and summer pruned, and in this way they bear abundantly. Four ranges of glass stand in the centre of the garden, one before the other, and in front a half circular wall runs from one end of the range to the other, inclosing a yard for compost. The gardener's house also stands in front, and commands a view of the whole garden. The Pine-apples are strong, green, and vigorous, and from the appearance of the fruit, which is in great abundance, I am sure Mr. Stuart, the gardener, will cut Providences above 12 lbs., and Queens above 6 lbs. weight. They are all growing on the tank system, and are planted out. I have seen nothing equal to them in Yorkshire or Durham. The Melons and Cucumbers, trained on wire trellis, 5 inches from the glass, are very healthy; many of the leaves measure from 16 to 20 inches across, and there is fruit in abundance. The Peach-house looks healthy and clean, with excellent wood and fruit. The Vines, two years planted, are very strong; many of the leaves measuring from 15 to 18 inches across, and I counted from 12 to 14 bunches on each Vine—bunches from 1½ lb. to 2½ lbs. each, well coloured. All are trained 5 inches from the glass, and no shades are used; on the contrary, they receive all the light and sun they can get, and there is no appearance of scorching or burning; everything looks green and well. *James Wood, Stockton-upon-Tees, Durham, July* 5.

Rate of Growth of Trees.—It may not be uninteresting to your readers to know the yearly growth of a common black Poplar, in a favourable situation. It was measured round yearly at 4 feet from the ground, in the month of June.

		feet.	inches.
1845	Circumference	3	10
1846	" "	4	1½
1847	" "	4	4½
1848	" "	4	8½
1849	" "	4	11½

The tree is 12 or 13 years old, and stands in a moist situation at Rochford. *George Wood, Rochford, July* 10.

Plants hardy in Devonshire.—Perhaps you will have the kindness to inform me how far Habrothamnus fasciculatus is considered hardy. [It is not hardy near London.] I have two plants which have not only stood unprotected through the last two winters in an open shady situation, but are now covered with bloom; every other mode of treatment having failed to throw them into flower. Against a south wall Taconia mollissima not only stood unprotected during the last winter, but a seed-pod which set in the autumn has stood the winter also, and is now ripe. Immediately in front of this is an Olive tree about 12 feet high, which has been planted about 12 years; it blossoms constantly, but has not yet fruited. In the same vicinity Capparis spinosa stood at the foot of a wall, flowering most freely for many years, when it was destroyed by accident. *F. H. S.*

Cape Bulbs.—Perhaps some of your correspondents who have had experience in cultivating Cape bulbs, will be so good as to state whether they have tried the mode of treatment mentioned in page 677 of the *Gardeners' Chronicle* for 1847. Having received a large number of bulbs from the Cape, including Brunsvigias, Crinums, Sparaxis, Hæmanthus, Hesperantha, Ixia, Tritonia, Vallota, Antholyza, Gladiolus, and Amaryllis, and having no room in the greenhouse, I am desirous of raising them in a hotbed, as advised by your Northamptonshire correspondent; and any further information on the subject will be highly acceptable. *K. H., Surrey.*

Cutting off the Stems of Potatoes is a practice that has long existed in the mountains of the county Kerry, and some of the remote parts adjoining the county Cork; it was done for the purpose of giving them to the cows, as an inducement for them to calve early the following season; but I confess I always looked upon the custom as injurious to the crop, and many, as well as myself, thought that the Potatoes never ripened well after. I have often asked the result, and have as often been told that "the Potatoes would answer the pig, and that it was worth doing it for the sake of the cows." To be sure they did not earth them after the operation, but invariably whenever I pulled, or cut the stalks close to the ground, the last dreadful seasons, I suffered accordingly, and find them bleeding faster than ever. Hitherto all has gone on safe here; there has been (I think two) certainly one attack of the disease; but it has gone off, and the Potato has rallied. If, as you say, we have "cool dry weather," we shall escape. On Thursday night we had heavy rain, and quantities o

lightning, which was the cause of many an anxious heart, but the Potatoes looked beautiful next morning, and continue to do so still. *J. B. Warren, Warren's Grove, Cheshunt, July 9.*—Cutting off the Potato haulm certainly deserves notice. I have followed the plan ever since 1845 with success. I had the tops cut off last year quite in a green state, long before the tubers could possibly be either ripe or have finished their growth; and when taken up they were fine in size and of excellent quality. I have a few of them left yet, in a perfectly sound state. The only difference in the plan pursued by Mr. Lomba and mine consists in putting a layer of earth over the surface, a practice in which I can see no value. I usually remove the haulm on the first appearance of Botrytis on the undersides of the leaves; I have already taken it off my early sorts, and I am satisfied, from experience, that if this is strictly attended to no one need fear the disease, either in wet or dry, rich or poor soils. *C. Wood, Wandsworth Common, July* 10.

The Potatoes in this part of the county (the south of Shropshire), have at present a very healthy appearance, and on my referring to the register of my rain gauge, I find that 3·50 inches fell in June 1848, whereas in June 1849, there was only 1·5 inch; added to this, we have had 10 days dry weather during this month, whereas in 1848, at this period, the Potatoes were in full decay. This fact may, I think, lead us to hope for a favourable result. I think that from the inquiries instituted by you at the close of last year, and from the various communications you received on the subject, we may certainly infer that an over degree of moisture of some sort, either of the atmosphere or of the soil, is one of the chief predisposing causes of the disease. *C. Rushout, July* 10.

Societies.

HORTICULTURAL, *July* 11. (GAROLN EXHIBITION).—Three prizes of the respective value of 15*l.*, 10*l.*, and 5*l.* are offered for the finest exhibitions of fruits in July; but notwithstanding this, only one collection was produced; it came from Mr. Fleming, gr. to the Duke of Sutherland at Trentham, and was awarded the middle prize. It consisted of two dishes of Noblesse and Royal George Peaches, fair specimens; four bunches of Black Hamburgh Grapes, two Melons, three Queen Pine-apples, well swelled and good fruit; two Providence ditto, and a dish of ripe Muscat of Alexandria Grapes.

PINE-APPLES.—Among these there were some good fruit. In the class of "private growers," Mr. Jones, gr. to Sir J. Guest, Bt., showed four capital Queens, whose weights were respectively 4 lbs. 12 oz., 4 lbs. 2½ oz., and two 4 lbs. 1½ oz. Then Mr. Spencer, gr. to the Marquis of Lansdowne, had two very good old Queens, one 4 lbs. 10 oz. and another 4 lbs. 8½ oz., and another Queen, a beautiful fruit, 4 lbs. 1½ oz. Of the latter description of Pine-apple, Mr. Ogle, gr. to the Earl of Abergavenny, sent a very nicely swelled fruit weighing 3½ lbs. Queens were also contributed by Mr. Elphinstone, gr. to the Right Hon. the Speaker, weighing 4 lbs 2 oz.; Mr. Brewin, gr. to R. Gunter, Esq., 4 lbs. 2½ oz. and 3 lbs. 11½ oz; and in the market gardeners' class, Mr. Lawrence, of Isleworth, showed a Queen 3 lbs. 6 oz.. Mr Fleming had a Providence beautifully swelled and ripened, weighing 10 lbs. 4½ oz.; Mr. Spencer one 9 lbs. 9 oz., and Mr. Jones another 7 lbs. 14 oz. Mr. Spencer had three other Providence Pines, whose weights were 8 lbs. 11½ oz., 7 lbs. 9½ oz., and 7 lbs. 12½ oz. Mr. Turnbull also showed a good Providence. Mr. Jones sent a small Black Jamaica, 3 lbs. 12 oz.

GRAPES.—Exhibitions of both black and white Grapes were numerous, and, upon the whole, the former were well coloured, and some of the Muscats were ripe. The best specimens of the latter were produced by Mr. Fleming; and Mr. Rust, gr. to J. Maclauren, Esq., sent capital bunches though perhaps hardly ripe enough, a remark which applies to the exhibition of Mr. Turnbull. Mr. Toy, Oatlands Palace Gardens, who was first in the market gardeners' class, sent nice bunches of this kind of Grape, quite ripe. It is but right to mention that perhaps the best bunches of Muscat shown were sent by Mr. Hamp, gr. to J. Thorn, Esq., but they were disqualified, not having been shown separately, if indeed there were really three distinct bunches present, as is asserted. Muscats were also shown by Mr. Turnbull, Mr. Dytch, gr. to J. Taylor Esq., Mr. Brewin, and Mr. Barringer. The best Black Hamburghs came from Mr. Hayward. These were very fine, but a little rubbed. The next best were from Mr. Holmes, gr. to S. Garrard, Esq.; and good specimens of this kind of Grape came from Messrs. Dytch, Taylor, Fleming, and Bassett. Mr. Lushey, gr. to J. Hill, Esq., had three capital bunches of Black Prince. In the market gardeners' class, beautiful Black Hamburghs were shown by Mr. Chapman and Mr. Toy. Mr. Parsons, gr. to A. George, Esq., and Mr. Fraser, gr. to the Earl of Radnor, had good Black Hamburghs; and Mr Dytch had three well-coloured bunches of the same kind of Grape. Mr. Turnbull received the first prize for the heaviest bunch of Grapes, viz, a beautiful bunch of West's St. Peter's, weighing 4 lbs. 7½ oz.; Mr. Fleming sent a bunch named Syrian, but it was apparently White Nice, 4 lbs. 2½ oz. Mr. Toy was first in the market gardeners' class, with a nice bunch of Muscat of Alexandria, perfectly ripe, weighing 1 lb. 6 oz.; he also sent a good bunch of Black Prince.—Grapes in pots were exhibited by Messrs. Wood and Smith. Each specimen had about six bunches on it; but although tolerably well swelled, the black kinds were not well coloured.

PEACHES.—The best dish of six, and a most excellent one it was, was shown by Mr. Snow, gr. to Earl de Grey. They were large and well coloured. Then, Mr. Spencer had fine specimens of Royal George and Noblesse; but they were somewhat spoiled in the travelling. Six good specimens of Early Purple were produced by Mr. Turnbull. Mr. Ferguson, of Aylesbury, sent good Royal Georges; and so did Mr. Fleming, who also sent Noblesse. Samples of the last-named Peach were also shown by Mr. Gold, gr. to Sir W. W. Dixie, Bart.; and by Mr Dodemeade, gr. to Colonel Challoner. Mr. Parker, of Rochampton, had the best six Nectarines. His sorts consisted of Elruge, Violette Hative, and Tawney. Mr. Turnbull was second with Elruge, and Mr Monro, gr. to Mrs. Oddie, third, with Red Roman. These were all well cultivated fruit. Mr. Ferguson showed Elruge.

MELONS were largely shown, but it was stated that they were in general deficient in flavour. The heaviest was shown by Mr. Monro, gr. to Mrs. Oddie; it weighed 7¾ lbs., and was called Hatfield Green-flesh. Mr. Carson, gr. to W. F. G. Farmer, Esq., had Oliver's Hybrid, 6 lbs., and Mr. Gadd, a Cantaloup, 3¾ lbs. The best flavoured Melon was the "Bromhall," sent by Mr. Bundy, gr. to Lord Dynevor; and the next best Cuthill's improved Scarlet-fleshed, from Mr. Broce, gr. to B Miller, Esq. Mr. Whiting, of the Deepdene, had an Egyptian green-fleshed, which ranked third in regard to flavour.

CHERRIES.—The best were Black Tartarian, from Mr Snow. Mr. Whiting also sent a good dish of the same sort. Mr. Meyers had Black Circassian, good. The best white Cherries were Elton and Bigarreau, from Mr. Snow and Mr. Meyers.

STRAWBERRIES were large and fine. Perhaps the best exhibition of Strawberries ever produced was the Eleanor and British Queen of Mr. Elphinstone. They were large and well coloured, and the Eleanor, which was considered by the judges to be too acid last year, was this time tolerably well flavoured, showing, that to be fine, this kind of Strawberry requires a dry sunny season, and to be grown under favourable circumstances. Mr. Lydiard, of Bath, had also capital examples of the same varieties. Mr. Woods sent British Queen, and Mr. Shepherd Eleanor, and Mr Myatt produced a very fine dish of Eleanor; but they were much injured by travelling. Deptford Pine and Old Pine came from Mr. Whiting, and Keens' Seedling from Mr. Monro. Mr. Smith showed six pots of British Queen.

OF TROPICAL FRUITS, Mr. Ivison, gr. to the Duchess Dowager of Northumberland, sent Nutmegs, Gumboge, Cloves, Papaw, Allspice, and Vanilla, and Mr. Elliott, gr. to J. B. Boothby, Esq., Musa Cavendishii, in fruit, but not half ripe.

There were two collections of 30 STOVE and GREENHOUSE PLANTS; one from Mrs. Lawrence, of Ealing Park, who was first; the other from Mr. Cole, gr. to H. Colyer, Esq., of Dartford, second. At the back of the first group stood a luxuriant and well placed Allamanda cathartica; and supporting it on either side noble bushes of Stephanotis floribunda, and Schubertia graveolens; while in front were Dipladenia crassinoda, beautifully bloomed and well coloured; the double-flowered variety of Tabernæmontana coronaria; Clerodendron paniculatum, rather past its best; a large Sollya linearis, two nice plants of the showy genus Kalosanthes; and a huge Cuphea Melvilla, insufficiently in bloom. In front were another fine plant of Allamanda cathartica, two Vincas, Ixora coccinea, a spreading well flowered Roella ciliata, three Cape Heaths, the pale yellow Allamanda grandiflora, and the old-fashioned Cape plant, Bellanina squarrosa, whose yellow blossoms gave this portion of the collection both brightness and contrast. Mr Cole's group consisted of smaller plants than Mrs. Lawrence's, but they were shown in great beauty, and exhibited capital cultivation. At the back stood Schubertia graveolens, and on either side a nice Clerodendron; then in front were Dipladenia crassinoda, in capital condition; two nice Ixoras, an Aphelexis purpurea macrantha, about which too much could hardly be said, so finely was it grown and flowered; two plants of Allamanda—Schottii and cathartica, the same pretty Æchmea fulgens formerly exhibited, the brilliant Kalosanthes coccinea and another species, together with Sollya linearis, and 5 varieties of Cape Heath.

Collections of 15 STOVE and GREENHOUSE PLANTS were contributed by Mr. Green, gr. to Sir E. Antrobus, Bart.; Mr. Taylor, gr. to J. Coster, Esq.; and Mr. Pawley, of Bromley. Mr. Green's group consisted of Dipladenia atropurpurea, Allamanda cathartica, Aphelexis sesamoides, the white Sphenotoma gracilis, Leschenaultia Baxterii, Stephanotis floribunda, Dipladenia crassinoda, Gardenia radicans, past its best; Leschenaultia formosa, the best variety of Aphelexis, Rondeletia speciosa, the pale yellow Allamanda grandiflora, and some Cape Heaths. Mr. Taylor sent Dipladenia crassinoda, Gardenia radicans, nearly out of flower; Boronia serrulata, Ixora coccinea, a Cape Heath, Allamanda cathartica, a species of the useful genus Kalosanthes, Aphelexis humilis, a large Polygala, Phœnocoma prolliferum, the white-blossomed Pimelea linifolia, and an Aphelexis. Mr. Pawley had four Cape Heaths, two Kalosanthes, Stephanotis floribunda, Allamanda cathartica, a Genista, a Vinca, a Leschenaultia, and some Achimenes.

There were seven collections of 6 STOVE and GREENHOUSE PLANTS. The best came from Mr. Jack, gr. to R. G. Loraine, Esq., who sent a large Allamanda cathartica, a capital Kalosanthes coccinea, Franciscea angusta, Justicia carnea, Posoqueria versicolor, and Erica eximia. Mr. Bruce was second, with nice plants of Kalosanthes nitida, a pale Erica metulæflora bicolor, Allamanda cathartica, Stephanotis floribunda, Sollya linearis, and Erica Massoni. Mr. Glendinning, who was third, had Statice arborea, Erica depressa, past its best; E. tricolor speciosa, the new Hoya imperialis, not open; Cyrtoceras reflexum, and Erica Massoni. Groups of sixes were also shown by Messrs. Pamplin, Stanly, Williams, and Hamp. Mr. Pamplin had the green-blossomed Heath, Stephanotis floribunda, Clerodendron nutans, Sollya linearis, Allamanda cathartica, and Kalosanthes coccinea, insufficiently advanced in bloom. In the other groups were a spreading Euthales microphylla, Vinca rosea, Aphelexis purpurea macrantha, Kalosanthes miniata, and other well-managed plants.

ORCHIDS occupied about the usual amount of tent room, and were almost as fine as in May and June. Collections of 20 were contributed by Mr. Mylam, gr. to S. Rucker, Esq., first; and by Mr. Williams, gr. to C. B Warner, Esq., second. Mr. Mylam had a finely-flowered Aerides odoratum, some 5 feet high, in a rustic basket; the glorious Vanda Batemanni; a luxuriant, but somewhat spare flowered Oncidium Lanceanum; Mr. Bateman's Oncid (O. Batemanni); Saccolabium furcatum (?), with a charming raceme of pink and white flowers; the ever-blooming Phalænopsis grandiflora; Calanthe Masuca, with nine spikes of lilac blossoms; Saccolabium guttatum, with four flower-spikes; the rare and charming Cattleya citrina, on a rustic block of wood; the somewhat rare Aerides maculosum, the curious rather than beautiful Lycaste tetragona, an Epidendrum, thought to be new, but apparently only a well grown E. verrucosum; Cattleya Mossiæ, two well-flowered Brassias, Odontoglossum grande, the green-flowered Cycnoches chlorochilon, and two Vandas. Mr. Williams produced a noble Phaius albus, with 16 flower spikes; a pretty Aerides affine, and the large variety of odoratum, a beautiful Barkeria spectabilis, with five flower-spikes; Saccolabium guttatum, in a large wooden basket; the yellow-lipped Cyrtochilum filipes, Epidendrum verrucosum, Aerides roseum, Brassia Wrayæ, and other well-managed plants.

Several groups of 10 ORCHIDS were produced. The best came from Mr. Plant, gr. to J. H. Schröder, Esq., who had two capital plants of Oncidium pulvinatum, and Aerides odoratum; then he had a very pretty Aerides maculosum and A. affine, together with Phalænopsis grandiflora, Vanda Roxburghii, and Aerides odoratum purpurascens.—Mr. Dobson, gr. to Mr. Beck, who was second, sent his noble Oncidium ampliatum majus, still in fine flower; Epidendrum cruciformis, with 13 flower stems, the same Cattleya candida formerly exhibited, the orange Epidendrum vitellinum, Cattleya crispa, with a fine spike of lovely blossoms; Oncidium Harrisonii, the purple Epidendrum phœniceum, the Butterfly Plant (Oncidium Papilio), Phalænopsis amabilis, and a good Barkeria spectabilis.—Messrs Rollisson, who were third, sent a fine bush of Dendrobium nobile, some 3 feet by 3; a great tubful of Miltonia spectabilis, insufficiently advanced in bloom; the variety of Stanhopea tigrina named superba, and S. oculata; Brassia verrucosa, a fine specimen of the green tailed Dendrochilum filiforme, Aerides quinquevulnera; and but indifferently grown plants of Cattleya Mossiæ, Dendrobium chrysanthum, and Calanthe furcata not in flower. Messrs. Henderson, of Pine-apple-place, produced a capitally well-flowered Stanhopea quadricornis, and the dark variety of S. tigrina; the singular Coryanthes speciosa, Saccolabium guttatum, Stanhopea oculata and aurea, Aerides maculosum, and Phalænopsis grandiflora. Mrs. Lawrence had a huge Sobralia macrantha, Oncidium luridum guttatum, with a strong spike of brown and yellow blossoms; Aerides quinquevulnera, rather past its best; Anguloa uniflora, a good Angræcum caudatum, and Phalænopsis rosea.

Collections of 6 ORCHIDS were shown by Mr. Jack and Mr. Bruce. The former sent Aerides odoratum, Oncidium altissimum, the same Vanda teres formerly shown, still in good condition, and Lycaste cruenta. Mr. Bruce had Oncidium flexuosum, which we have seen before, Stanhopea tigrina, Calanthe veratrifolia, Aerides odoratum, and Miltonia spectabilis. Of specimen Orchids, Messrs. Veitch sent a fine Aerides Blumei, Mr. Ivison Oncidium luridum, Mr. Wooley O. leucochilum, and Mr. Green Aerides odoratum. Mr. Warner showed a Cattleya as new, but it was not apparently different from C. bulbosa. Messrs. Veitch had the curious and extremely pretty Cycnoches barbatum, and a new and handsome variety of Cypripodium barbatum; Mr. Carson an unnamed Stanhopea.

Some tall Cacti were shown by Messrs. Stanly and Green, but the season being late for them, they made little display.

CAPE HEATHS were exhibited in capital condition, and had, we are of opinion, more admirers than at either of the two former Shows. The best plants in the Amateurs' Class of 15, were shown by Mr. Mylam, gr. to S. Rucker, Esq. They consisted of tricolor major, t. speciosa, Irbyana, Dunbariana, inflata, the red variety of ampullacea, metulæflora bicolor, Massonii, ventricosa Bothwelliana, Savilliana, the pretty autumn Heath Parmentieri rosea, and Veitch's obbata. Nice

collections were also sent by Mr. Smith and Mr. Cole. In the Nurserymen's Class Mr. Epps was first, his plants being more even and better flowered than those of Messrs. Fairbairn, who were second. Mr. Epps had retorta major, tricolor superba, t. coronata, the large variety of ampullacea, Shannoni, Bergiana covered with small purple bells, the rose-coloured variety of Parmentieri, inflata alba, Lee's tricolor, metulæflora bicolor, a small eximia, Jackson's ferruginea, and Templeana. Messrs. Veitch were third. Groups of 9 varieties were produced by Messrs. Green, Taylor, and May, and Mr. Bruce received an award for depressa, which was shown as a single specimen.

Roses (cut) were shown in abundance, and formed as usual an attractive portion of the exhibition. There was little new among them. Prizes were awarded for 50 sorts to Messrs. Lane, Paul, Francis, Foster, and Hermann, in the order in which the names are mentioned; and for 25 to Messrs. Parsons, Terry, Wood, Tivey, and Slowe. The best yellow Roses were shown by Mr. Terry in the amateurs' class, and by Messrs. Lane, Francis, and Paul in the nurserymen's class. Among yellows we remarked blooms of the old double yellow; it is said to have flowered better this season than usual.

Single Specimens.—The best were Leschenaultia splendens, not very well bloomed, from Mr. Ivison; Roella ciliata, from Mrs. Lawrence; Leschenaultia formosa, from Mr. Green; Kalosanthes uttida, a magnificent plant from Messrs. Henderson; the yellow creeping Balsam, from Mr. Ivison; and the beautiful variety of Gloxinia called Wortleyana, from Mr. Glendinning.

New Plants consisted of Metrosideros polymorpha, from Messrs. Rollisson; a Ruellia with blue flowers more than an inch across, from Messrs. Veitch—a promising plant; Espeletia argentea, a plant possessing no beauty in its flowers, but handsome on account of its habit and its long leaves covered with silvery hairs. This came from Mr Ivison. Messrs. Henderson had Abronia umbellata, and Achimenes Ghiesbreghtana; Messrs. Veitch, Cephalotus follicularis; Mr. Jack, Gesnera albiflora; and Mr. Glendinning, Chelone centranthifolia and Pentstemon heterophyllum. It is necessary to observe that several things shown under this head, such as Gloxinias, &c., were disqualified, because the regulations do not admit as new plants "garden seedlings, hybrids, or domesticated varieties of any kinds."

Miscellaneous Subjects.—The new Nepenthes sanguinea, a very handsome plant, with long chocolate pitchers, from Messrs. Veitch; three plants of Kalosanthes coccinea, from Mr. Thompson, two beautiful specimens of a new variety of Cryptomeria, from Messrs. Veitch; Mittasia coccinea, from the same nurserymen. Mr. Warner sent Anæctochilus argenteus, a pretty species from Borneo, and the same Indian Lycopod formerly shown; Mr. Green, a nice plant of Plumbago Larpentæ; Mr. Fairbairn, a purple Maurandya, in the way of semperflorens, named Emeryana. Mr. Henderson, St. John's Wood, the white variety of Salvia patens; Mr. Chater, seven spikes of Hollyhocks; Mr Gadd, Lilium longiflorum; and finally, under this head, Mr. Ivison showed Caryota urens, and a panicle covered with unripe fruit of Elate sylvestris.

Ferns.—Groups of finely managed Ferns were shown by Mr. Williams and Mr. Taylor. The sorts did not appear to be different from those formerly exhibited by the same growers. We noticed a few specimens from Mr. Masters of Canterbury, including the noble Platycerium grande.

Achimenes were produced in quantity, and the plants were generally well-grown. They consisted of the kinds usually cultivated, with the exception, perhaps, of Backhouse's A. venusta, a pretty sort, not sufficiently known, and A. multiflora, which so few manage well.

Mr. Glendinning had a small group of Statices, among which we did not remark anything new.

New Conifers.—Messrs. Veitch had a group consisting of Pinus Winchesterians, P. Gordoniana, Thuja Doniana, Abies Brunoniana, Taxodium Horsfieldii, and Dacrydium Franklerii, the famous Huon Pine, so much valued in Van Diemen's land for its timber.

New Hardy Hybrid Shrubs.—By some mistake Mr. Glendinning showed as such the following, which are not hybrids, and they were in consequence disqualified. They were Ceanothus dentatus, papillosus, rigidus, a Rhamnus, the Californian Evergreen Plum (Cerasus ilicifolia), and Rhamnus oleæfolius.

Pelargoniums.—Six in 8-inch pots. 1st, Mr. Staines, for Rosamond, Lallah Rookh, Ariel, Pearl, Marion, and Forget-me-not; 2, Mr. Robinson, with Aurora, Oberon, Beauty of Clapham, Negress, Annette, and Pearl. Nurserymen, 1st, Mr. Dobson, gr. to Mr. Beck, with Star, Governor, Seedling 1848, Painter, Princess, and Cassandra; 2, Mr. Bragg, for Ariel, Ondine, Lallah Rookh, Alonza, Grenadier, and Alderman; 3, Mr. Gaines. Six in 11-inch pots, Nurserymen, 1st, Mr. Gaines with Magog, Sarah Jane, Lord Warden, Princeps, and Mary Queen of Scots. Amateurs, 1st, Mr. Parker, with Hector, Isabella, Duke of Cornwall, Camilla, Rosy Circle, and Zenobia; 2, Mr. Riddell, with Sarah Jane, Duke of Cornwall, Desdemona, Arabella, Orion, and Pulcherrima.

Fancy Pelargoniums.—1, Mr. Gaines, with Hero of Surrey, Queen, Jenny Lind, Bouquet tout fait, Virgil, and Mulatto. Mr. Staines, 2, with Anais, Woodsii, Stetinskii, Nymph, Madame Miellez, and Yeatmanniana; 3, Mr. Robinson.

Cape Pelargoniums.—1, Mr. Stanly, with tricolor, reniforme, ardens, bicolor, and elatum; 2, Mr. Staines, with nearly the same sorts; 3, Mr. Parker; and 4, Mr. Henderson, of St. John's-wood.

Fuchsias.—Some were shown, but we cannot say that they were creditable specimens of cultivation. They were of all sizes—some very tall, others very short; and some had few sticks, while others had almost more sticks than branches. The best was a plant about 9 feet high of F. corallina, from Mrs. Lawrence; the next best, a plant grafted with 15 different sorts, from Mr. Gregory; and Mr. Robinson had a middling good plant of Sir Robert Peel. Mr. Salter, of Hammersmith, had a nice plant of F. corymbiflora grafted with its white tubed variety; the red and white flowers producing a good contrast. The same grower had also a luxuriant hybrid in the way of fulgens. Of white kinds, the best were Purity and Dr. Jephson. Mr. Turner had a very desirable dark seedling named Falstaff, a great improvement on the old globosa, which it resembles. Mr. Henderson had also a pretty seedling named Rosamond, in the way of Beauty Supreme, but larger. Mr. Gaines had a large specimen of "Conte de Beaulieu."

Carnations and Picotees were more numerous than we expected; for amateurs being classed with nurserymen are somewhat "backward in coming forward." Carnations: 1st, Mr. Ward, of Woolwich, with Hamlet, Colonel of the Blues, Cartwright's Rainbow, Martin's President, Puxley's Prince Albert, Kay's Majestic, Lady Ely, Earl Grey, Beauty of Woodhouse, Hale's Prince Albert, Lady of the Lake, Conquering Hero, Lydia, Juba, Sarah Payne, Count Paulino, Regular, Millwood's Premier, Earl Spencer, King of Scarlets, Brutus, Village Maid, Sir H. Smith, Barrenger's Premier; 2d, Mr. Norman, of Woolwich, with Puxley's Prince of Wales, Sir J. Reynolds, Frederick Squire's Defiance, Mrs. Burkill, Hector, Brutus, Mrs. Moore, Hale's Prince Albert, Queen of Purples, Bonaparte, Hepworth's Vivid, Sir R. Hill, Lord Ranclife, Simpson's Queen, Count Paulino, Flora's Garland, Princess Royal, Omnium, Princess, William Penn, Cartwright's Rainbow, Jackson's King of Purples, Admiral Curzon, Lady Ely; 3d, Mr. Bragg, Slough. Picotees: 1st, Mr. Norman, with Prince of Wales, Crask's Prince Albert, Mrs. Bevan, Daphne, Ne Plus Ultra, Pride, Lord Chandos, Lady Dacre, Duke of Newcastle, Mrs. Barnard, L'Elegant, Emperor, Princess Royal, Miss Hardinge, Morgiana, Lord Nelson, Wm. Cobbett, Shaw's Beauty, Garratt's Red-edge, Portia, Prince Alfred, Miss Annesley, Seedling, and Elizabeth; 2d, Mr. Ward, with Marris's Prince Albert, Sarah, Purple Perfection, Cray Beauty, Lady Chesterfield, Agitator, Miss Desborough, Vespasian, Mrs. Bevan, Norwich Rival, Ward's 150, Mrs. Barnard, Duke of Newcastle, Crask's Prince Albert, Princess A. of Cambridge, Norman's Beauty, Isabella, Enchantress, President, Lady Dacre, Ward's No. 2 Seedling, Kirtland's Queen, and L'Elegant; 3d, Mr. Bragg.

Pinks.—One collection only was shown, and that by Mr. Norman, whose leading kinds were—Mr. Edwards, Great Britain, Narborough Buck, Lord Valentia, Queen of England, Whipper in, Diana, Surpriser, Pride, and Young's XX. Mr. Turner showed a seedling Picotee (not for competition) named Duchess of Sutherland; certainly a very desirable variety. It was raised by the Rev. J. Burroughes. It is a full flower, pure white, with a well-defined light red edge. We may mention here that the same grower also showed a very pretty Verbena named "Madame Beauazod," a French variety; pale blush, with a rosy eye.

Several Petunias were shown by Messrs. Henderson, Conway, and Salter; many of them very pretty, but none so novel as Count Ziehy, a medium-sized variety, having a white centre surrounded by lively rosy purple. This came from the nursery of Messrs. Henderson. "Splendens" was also a large flower and very showy.

Gloxinias.—Messrs. Henderson had a group consisting of Grandis, like albo-sanguinea, but better; Exquisite, smaller, in the same way, Carminata splendens, a great improvement on rubra; and Passinghami, large rich violet.

Entomological, *July* 1.—G. R. Waterhouse, Esq., President, in the chair. A very extensive collection of Javanese insects was presented to the Society, by Wm. Spence, Esq., F.R.S. Mr. S. Stevens exhibited a fine series of Microlepidotera recently captured at St. Osyth on the Essex coast, including new species of Lozotænia, Glyphipteryx, Agdistes Bonneti, &c.; also the eggs (remarkable for the singular trap door like apparatus by which the enclosed larva escapes), and young of a species of Pentatoma and specimens of the beautiful Psyche retiella recently discovered. Mr. Fortnum exhibited four species of Panssidæ from Port Natal, and a species of Elater from Italy, the males of which possess the "sembling" habits of the Bombycidæ. Mr. Westwood, exhibited an extensive series of insects, artificial representations of which are employed by anglers, from which it appeared that the green and brown drake and the spotted mackerel are only the males and females of the common Ephemera in their different states. He also pointed out the difference between several kinds of flies indiscriminately known under the names of the stone fly. He likewise brought for distribution a number of specimens of the females of Ilithyia sociella, males of which were distributed at the preceding meeting, there being three weeks' difference in the times of appearance of the two sexes. He also exhibited specimens of the minute ant which now infests various parts of the metropolis (Myrmica domestica), which had completely spoiled a sponge cake which he had received from a correspondent of the *Gardeners' Chronicle*. The insects found were the small workers and the wingless females, which latter would doubtless establish fresh colonies, so that their destruction at the present moment was very desirable. He also read a note from a correspondent relative to a swarm of two-winged flies, Atherix Ibis, and extracts from a letter received from Brigadier Hearsey, now in command of the station at Wuzzeerabad. Mr. F. Bond exhibited specimens of the larva and perfect Chrysomela Polygoni, which had destroyed many acres of Tares in Cambridgeshire. Mr. Michael exhibited a fine variety of Deilephila Galii, captured at Caen-wood. Various new and interesting minute Lepidoptera were exhibited by Messrs. Stainton, Weir, and Wing. A note by John Davy, Esq., M.D., was read, containing an account of experiments on the torpidity of Vanessa Urticæ and Io, as affected by changes of temperature.

Botanical, of Edinburgh, *June* 14.—Professor Balfour, President in the chair. The following papers were read:—1. *On Nostochineæ.*—By Messrs. Ralfs and Thwaites. This was a continuation of a former paper, and will appear in the Annals of Natural History and the Society's Transactions. 2 *Remarks on the origin of Plants and the Physical and Geographical Distribution of Species.* By the Rev. Dr. Fleming. The author stated that it had been assumed as a first principle, connected with an extensive series of speculations in botany and geology, that species had sprung from single centres, and that the individuals had "radiated from one point to greater or lesser distances around it," according to Dr. J. Hooker; or that all the individuals of a species could be traced "from a single progenitor, or from two, according as the series might be united or distinct," and hence the origin of the phrase, "specific centres." In opposition to this view, it was stated, that the history of the human race traced to their origin in a single pair, did not furnish an analogical argument of any value, while the dependence of the carnivorous animals on the herbivorous kinds, and the latter, along with man himself, on plants, gave good grounds to conclude that many individuals, of Grasses for example, were requisite in the first instance, and were brought forth abundantly. These considerations rendered the assumption of "specific centres" extremely improbable; but the occurrence of similar species, in localities remote from one another, and even in opposite hemispheres, over which, by no conceivable process, could dispersion from a single plant be reconciled with the phenomena, did, in the opinion of the author, furnish a demonstration of its absurdity. Dr. Hooker, while admitting the identity of the species of opposite hemispheres, acknowledging about 30 antarctic forms as identical with European plants, even after careful comparison and with the ablest coadjutors, is inclined to consider the identity, not as indicating a multitude of progenitors of a species, but as an anomaly, the explanation of which must be sought for "in some natural cause." Professor E. Forbes disposes of the anomaly in a more summary manner, by an assertion, that "species of opposite hemispheres, placed under similar conditions, are representative, not identical. If this opinion be correct, then form and structure are vastly inferior in value in the determination of species, to latitude, a conclusion not likely to be adopted. The author concluded by recommending the abolition of the term "specific centres of distribution," as involving an erroneous hypothesis, and the substitution of the phrase "Patches of Distribution." Dr. Fleming exhibited a specimen of Xanthorhœa hastilis, which had been sent by Assistant-Commissary Neill from St. George's Sound, together with some implements manufactured by the Aborigines, by means of the gum exuded from the bases of the leaves of this plant. Dr. Balfour exhibited flowers of the Sabal umbraculifera from the Palm House in the Botanic Garden, and also some interesting exotic plants, including Stelis atropurpurea, Bilbergia iridifolia, &c. He likewise exhibited a number of interesting native plants, from the garden of Dr. Neill, such as Cotyledon umbilicus, Stenhammera maritima, Myosotis suaveolens, &c. Mr. Stark exhibited a plant of Nemophila maculata, and a specimen of Ectocarpus Mertensii, recently discovered on the coast of East Lothian. Benjamin Carrington, Esq., 2, Lauriston-terrace, was elected a Fellow.

Reviews.

Illustrations of the Natural Orders of Plants, arranged in groups, with Descriptions. By Elizabeth Twining. Part 1. Folio; with four coloured plates.

Miss Twining's object is to effect for botany what Mrs. Loudon has ingeniously done for gardening, in her works on Annuals, &c. By means of groups of figures, the various appearances and modifications of external form which are observable in natural orders are to be represented, so as to convey to the reader some definite idea of the real nature of such important groups.

The drawings have been made by the authoress on stone with taste and exactness; and will probably show that the difficulties which are supposed to surround the acquisition of any scientific knowledge of plants, are much more imaginary than real.

The work is one for the drawing-room table, where we doubt not that it will be often seen.

Miscellaneous.

Orchids on Blocks and in Baskets.—With respect to those kinds which require to be grown upon blocks of wood or in baskets, less danger is likely to accrue from

A slight excess of moisture, when they are in a growing state, than from a want of it; therefore sphagnum or rough fibry peat should be fastened round the blocks, or placed about the roots in the centre of the baskets, in order to retain sufficient moisture when the atmosphere becomes too dry. The blocks on which the plants are grown should be those kinds like the Apple or Pear, with a smooth surface, and in a fresh state when the plants are fastened upon them. The fastenings should be effected by copper wire and nails; old dry blocks, with rough bark, or charred ones, are bad, on account of their easily becoming too dry, particularly the charred ones, whose black surface absorbs heat, which is injurious to the young roots, especially in summer. Blocks or baskets are perhaps, in the majority of cases, best for true Epiphytal Orchids, but on these they require more attention, in regard to moisture, than when grown in pots. In the case of Stanhopeas, however, it is absolutely requisite to grow them upon blocks, as their flowers grow downwards. Again, with Aerides, and all true air plants having thick, fleshy, aerial roots, it is necessary to place them upon blocks or in baskets, and to suspend them from the roof, so that their roots may grow freely in the damp atmosphere, for if confined under the soil they soon perish. Fibry peat, moss, or sphagnum, when used for the purpose of covering the roots, is of no other use than that of retaining moisture. Moss or sphagnum of all kinds is bad, if not fully exposed to the atmosphere, and soon becomes mouldy: it should only be used on blocks or on the outsides of the baskets. In suspending the blocks, always place them perpendicularly, and the baskets quite horizontally; and invariably have them taken down and examined every third day in summer, and once a week in winter, to see if they want watering. This must be done independently of syringing, for some parts of the blocks may be found to be quite moist enough, while other parts are dry. *From Mr. Gordon's Paper in the Journal of the Hort. Society.*

Calendar of Operations.

(For the ensuing week.)

FORCING DEPARTMENT.

PINERIES.—Give every encouragement to those plants which are now showing and swelling, by means of a moist high day temperature and good bottom heat. Shading is indispensable during this excessively warm weather. If the quantity of fruit which has already made its appearance is inadequate to meet your probable requirements during winter, restrict the supply of water for a short time to a portion of those plants which are fittest for fruiting. On the other hand carefully avoid everything like a check to those which you wish to keep on in a growing state. VINERIES.—In the late Vineries the Grapes which are required to hang till the new year should be well thinned, and the shoulders tied out, so as to ensure a free circulation of air amongst the berries, that their skin and footstalks may be better matured, and less liable to decay during winter.

FLOWER GARDEN AND SHRUBBERY.

Strict attention to neatness should prevail in this department, by rolling, sweeping, mowing, &c., and by tying or pegging down half-hardy plants as they advance in growth. Do not allow any of these to extend themselves so far in a lateral direction as to injure the edgings, whether of Box or turf; and in cleaning the shrub masses, where herbaceous plants or annuals have been planted or sown in vacant places, take care that the latter are not injured by the too close proximity of the former. Old plants of Pinks, &c., which have done blooming, and are too much exhausted to prove very ornamental next season, should be immediately destroyed, and their places filled up with something from the reserve garden; taking care, however, to plant considerably thicker than would have been necessary two months ago. The Roses should be again gone over, and all gross shoots that are not likely to flower this season, the dead flowers, and those which have done flowering, should be cut out. Young strong growths of autumn flowering Roses in masses should be pegged down; and those of the summer flowering kinds, as the Moss, Provence, or Gallica varieties, should be layered; the whole surface of the beds should be forked over, and if a good soaking of liquid manure can be given, its effect will be very apparent in the greater permanency of the colours, and in the lengthened period of blooming.

HARDY FRUIT GARDEN.

In a well managed garden, a portion of the Strawberry plantations are destroyed every season, and others made to replace them; and in order that these new beds should bear a good crop, the first season after planting, the ground should be immediately prepared, and planted as soon as the plants, which should be obtained from the earliest runners, are ready. If this is attended to early, they will produce the finest fruit next season which they will do at any time during their existence. In some soils the Strawberries are very liable to go off during the summer; wherever this is the case, the most economical method of growing them is to replant half the quantity every season, placing the plants about 8 to 10 inches apart in rows about 16 to 20 inches asunder. After the fruit is gathered from beds which were so planted last year, every alternate plant should be removed, the runners cut off those remaining, and a good dressing of soot and rotten dung forked into the ground. In preparing for new plantations, the ground should be of a strong loamy nature, well manured, and trenched deeply, and, if possible, should be so situated that an ample supply of water can be conveniently procured. The proper part of the garden for Strawberry beds is between the rows of Gooseberries and other bush fruit, or as marginal rows by the sides of walks; the latter arrangement is very convenient, as the fruit can be gathered without going off the walks. Budding of fruit trees should be immediately performed, and due attention should be paid to netting Cherries, Strawberries, Currants, and other fruits which it is wished to preserve from the ravages of birds.

FLORISTS' FLOWERS.

RANUNCULUSES.—The extreme hot weather will render these roots in a fit state to remove early. And whether the collection is valuable or otherwise, they should be taken up before rain, or they will inevitably make another growth, and should they emit fresh fibres, serious injury will be the result. Take care of the seed, which we trust has been cross impregnated. Cut it off with a small portion of the stalk attached, put a dozen or two together, tying them in bunches; these may be inserted in thin paper bags, and hung up in a dry airy room or shed for a week or 10 days, when they may be stored away in a place of safety, till the period of sowing arrives. CARNATIONS AND PICOTEES.—These, if intended for exhibition, should be carefully covered with hand glasses, and the ligatures round the pod should be examined occasionally, to see that all is right; as the flowers open they must be shaded with muslin caps or boards. Earwigs are at this time excessively mischievous, getting into the pod of the flower and eating off the lower part of the petals; thumb pots, in which is a small quantity of moss, forms the best trap for these marauders. Some people place tobacco pipe heads on the top of the sticks, but if they have been used, the insects will go anywhere rather than lodge in so unsavoury a situation. Take the first opportunity of planting out rooted Pink pipings and Pansy cuttings; after rain will be advisable.

KITCHEN GARDEN.

Some time since we recommended that all the fine coal ashes from the furnaces should be carefully preserved for earthing up Celery; and as the earliest portion of the crop will now need this attention, we fulfil the promise we then made to recur to the subject. Owing to the open, porous nature of the material, it prevents the stems being injured by excessive moisture; it also forms an impenetrable barrier against the approach of snails, and, from its perfect cleanliness, it answers the desired purpose without soiling or disfiguring the outer leaves. Celery earthed up with soil alone is so much damaged by dirt and slugs combined, that more than half the leaves have to be cut away before it is fit to lay upon the table; but by the use of ashes or fine sand, such clean stems are produced that it is never necessary to remove more than the smallest outside leaves. Our method of proceeding is as follows. Of our earliest crop, which is planted in single rows, we tie the leaves up straight with bass matting, and surround the plants with a zinc tube of sufficient calibre to leave a cavity of an inch round between it and the stem; this is packed full of finely sifted ashes, and after the common soil is formed into a breastwork outside, in the ordinary way, the tube is drawn out and moved forward in the row. But the late crops, which are planted in beds, we manage by commencing at one end, and after tying the leaves of the plants, we introduce on each side of the first cross row a stiff sheet of iron; the space between these is packed full of ashes, and the common soil is embanked against the outer plate: the latter is thereby released, drawn out, and placed on the near side of the second row of plants; the space between the two plates is then filled with soil, thereby releasing the remaining plate from the first row: the work proceeds in the same manner till the whole is completed. The plates should be as long as the beds are wide, and about 10 or 12 inches deep, with a sort of handle at each end. About 5 inches at one end of each should be bent inwards at right angles, so that when used to support the ashes it may form a bottomless box enclosing the plants. The tube used in earthing the single rows should be made of a sheet of zinc with the two sides folded over so as to form a loose seam when placed round the plants. The use of ashes is not commendable when the soil is very light or sandy.

State of the Weather near London, for the week ending July 12, 1849, as observed at the Horticultural Gardens, Chiswick.

July.		Moon's Age	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min	Thermometer. Mean	Wind.	Rain.
Friday..	6	15	30.097	30.078	79	45	63.5	S.W.	.00
Satur.	7	16	30.056	29.995	86	52	69.0	S.	.00
Sunday.	8	17	30.199	30.058	88	50	69.0	S.W.	.00
Monday	9	18	30.276	30.223	84	49	66.5	N.W.	.00
Tues.	10	19	30.473	30.331	84	45	65.0	N.E.	.00
Wed.	11	20	30.363	30.325	81	47	64.0	E.	.00
Thurs.	12	21	30.343	30.267	81	[illegible]	66.5	N.E.	.00
Average.			30.232	30.178	83.3	49.1	66.2		0.00

July 6—Fine, very fine; clear at night.
— 7—Quite cloudless; very fine; slightly clouded at night.
— 8—Very fine; hot and sultry; clear.
— 9—Very fine throughout, air exceedingly dry.
— 10—Very fine; dry haze, clear at night.
— 11—Exceedingly fine throughout; clear.
— 12—Very fine, clear at night.
Mean temperature of the week, 3 deg. above the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending July 21, 1849.

July.		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday	15	74.7	50.5	62.6	11	0.18 in.	1	3	3	—	3	6	7	1
Mon.	16	75.8	50.8	63.3	5	0.46	1	4	3	1	5	5	2	8
Tues.	17	76.7	54.3	65.5	6	1.23	1	4	2	—	5	5	4	2
Wed.	18	73.7	52.1	62.9	10	0.40	—	—	1	—	5	7	7	4
Thurs.	19	71.8	51.7	61.8	13	0.60	1	1	1	1	8	5	6	2
Friday	20	71.8	51.3	61.3	11	1.47	1	1	1	—	1	10	8	1
Satur.	21	72.0	51.7	61.9	9	0.54	2	—	1	—	2	8	6	3

The highest temperature during the above period occurred on the 17th, 1836—therm. 94 deg.; and the lowest on the 18th, 1832, and 19th, 1818—therm. 1 deg.

Notices to Correspondents.

BEES: *J W S.* You are not the only one who has been misled by books which state that bees may be prevented from swarming by allowing them more room. We have observed that heat and want of room have caused bees to swarm, but neither being the primary cause, little reliance can be placed in the above statement. In your case, however, the young queen bees were in a forward state before the colony had additional room, consequently the bees followed their own way of swarming. *W.*

BOOKS: *H Cottrell.* Loudon's "Self Instruction for Young Gardeners."—*Beeswing.* Bevan on the Honey Bee.—*E W B.* Mrs. Whitby's pamphlet on Silkworms, rev., at p. 299, 1848.

BOUNDARIES: *A Constant Subscriber.* You may cut off the branches, if the opposite party will not. But you had better settle it between you, for quarrels among near neighbours are always to be avoided.

CAMELLIAS: *C P.* Turn them out of doors to *ripen*; but do not let them be destroyed or injured by dryness. They cannot hurt Vines by standing under them; but Vines will injure Camellias by hanging over them, unless the leaves are confined to rafters or vertical trellises. The plan is safe, engraved, and waits only for an opportunity of inserting it. We like it.

DAHLIAS: *J J C.* Do not water with liquid manure until they are coming into bloom.

GLASS: *A.* Hartley's rough plate glass is fit for Cucumber frames. — Can any correspondent favour us with his experience of this in an *early Vinery*.

GRAPES: *J G C.* They are attacked by the formidable Vine mildew, the nature of which was fully explained in our columns for 1848, p. 523. Sulphur, applied early enough, is a certain remedy.

HERBARIUM: *G L.* By all means use half sheets, loose; nothing can be so bad as a bound book, unless you have one big enough to hold all known plants when you get them, and then it is exceedingly inconvenient. Common foolscap size (13 inches by 8) is large enough for British plants. If you want to economise paper you may put on the same half sheet different *species* of the same *genus*.

INSECTS: *E B.* The insects from Fig trees in Sir G. Little's garden in Teneriffe, are graved females of Coccus. They should be destroyed in that state, to prevent multiplication. The plan adopted seems to us inefficient. *W.*—*Cavanensis.* We can scarcely advise you respecting the Fuchsia shoots without seeing the insects, but dipping the tops in tobacco-water may have a good effect. *W.*—*Alpha.* The insects on the Beech leaf were very young larvæ of Aphis Fagi. *W.*

LAWN: *R W G.* You *cannot* remove Plantains except by perseverance. When you cut off the crown of one put a pinch of salt on the wound. Some say that hedgehogs will extirpate them; but we have no experience as to that—and much doubt.

NAMES OF PLANTS: *P B.* A Phytolacca, and probably icosandra.—*A M M.* Arrhenatherum bulbosum.—*C Z X.* Glyceria fluitans, not Poa maritima.—*F H S.* Plumeria tricolor.—*H B.* Next week.

PAXTON'S COTTAGER'S CALENDAR. The reprint is now ready, price 3d each copy. Parties wishing to have copies for distribution among their tenantry, can be supplied at the rate of 25 copies for 5s.

PLANTATIONS: *Inquirer.* Remove all the Larch and Elms, and as to the others, take away any that interfere with the effect. Thin them gradually, or they may blow over, just so much at first that their branches will not touch and intermingle.

STRAWBERRIES: *J K.* Your seedling Strawberry, Goliah, judging from its size and appearance, is worthy of cultivation.

VENTILATION: *C T E.* Your plan is sufficient; and that part of it which consists in compelling the cold air to travel over the hot pipes is excellent. No inconvenience has been experienced at Chiswick from rough plate glass in long continued dull weather, and we do not anticipate any inconvenience; but we have not seen it tried in an *early* Vinery.

YEWS: *Clericus.* You will probably lose your tree. It should have been removed in October or November. If you think you can save it, you had better cut its branches *in*, not *down*, and wrap it in an old sack or cloth, which must be well wetted every night. When buds begin to appear on the branches, then it must have light; and, for the old sack, you should substitute sphagnum, tied over all the branches, and syringed daily. Aristolochia Sipho is the most hardy species, and very handsome it is.

MISC: *Micklewell.* We have no idea where you can get Thalia dealbata.—*Viper.* What are "Intermediate Stocks"? We do not understand your question.—*L B S.* Stakes placed in a triangle and secured to the plant by some soft material, to prevent rubbing, are the best. Myrtles require much sun and warmth to form their flower-buds—that is all. If the water is made brown by the iron it is not fit for use; if clear it does no harm. October and November are the best months to remove large Hollies and Yews, but any operation upon such plants, 15 to 20 feet high, is of very doubtful success.—*Rus.* Why not try an Apricot? What the merits of the Potato experiment may be, remains to be ascertained; but the reasons that have been assigned to you for not trying it are those of an ill-informed person.

SEEDLING FLOWERS.

ANTIRRHINUMS: *T S A.* A very handsome collection, particularly Nos. 3, 5, 16, 19, 18, 24, 25, 27, 31, 42, but still more particularly Nos. 5 and 42. No. 28 is a very bright self coloured yellow, and 36 is prettily veined in the upper part; but the flower is small. With respect to perpetuating the different varieties there is little chance; for they are very subject to run from one kind to another, and are much influenced by seasons, soils, and situations. Many of your seedlings have their flowers run from dotted to striped on the same spike. You had better select the most distinct striped and spotted ones for seeds. Yours is an excellent breed of Antirrhinum majus for that purpose.*

CALCEOLARIAS: *W H H.* 20, shaded purple marbled with pale yellow or buff, size, shape, and outline good; a nice large flower. 21, pale buff, irregularly spotted or blotched with crimson, and shaded near the outside with dull purple; outline good, size and colours middling, shape rather flat. 28, dark crimson, marbled with light brown, shape and size middling, outline rather irregular. 31, light purple, irregularly marbled with pale straw colour; shape, size, and outline only middling, colours pretty. 33, dark crimson, irregularly marked with pale yellow; size and outline middling, shape flat. 34, pale buff, speckled with crimson; shape and outline tolerably good, size small, colours dull. 35, pale yellow, irregularly marked with dark purple near the centre, and light purple near the outside; outline, size, and colours good, shape flat.*

HEARTSEASE: *A Y Z.* Your flowers were much injured in the carriage, but judging from what remained perfect of them, the size, texture, and outline are good.*

PETUNIAS: *A Y Z.* 1, pale lilac, with light feathery purple veins; size, shape, and texture good, but rather common in colour. 2, blush, stained with purple, and with a darker centre; texture and shape tolerably good, size rather small. 3, blush, stained with violet, and nicely feathered in the centre; size, shape, texture, and marking good. 4, rosy purple; shape tolerably good, size large, texture thin, colour rather common.*

VERBENAS: *C B.* 1. deep rosy purple self; flowers large and showy; a nice variety. 2, pale pink or blush, with a dark eye; flowers moderately large, and in good clusters; a little novel in colour, but not very showy. 3, a rosy lilac self coloured, in no way superior either in size or colour to many of the older kinds.*

GUANO AND OTHER MANURES.
PERUVIAN GUANO, of the finest quality, direct from import warehouse.
NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SULPHURIC ACID AND COPROLITE.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of
MARK FOTHERGILL, 201 A, Upper Thames-street, London.
A Treatise on Guano, Superphosphate of Lime, &c., will be forwarded on receipt of 8 postage stamps. Free to purchasers of Guano, &c.

TURNIP SOWING.
THE LONDON MANURE COMPANY, having adapted the "URATE" more particularly for Turnips and all Root Crops, can recommend it with the greatest confidence. It seldom fails, in the driest season, to secure a good plant, and to produce a heavy weight per acre. They would call attention to their Superphosphate of Lime, which is prepared with the greatest care, and sent out in a very fine, dry state, perfectly ready for use. The London Manure Company have made arrangements for a constant supply of Peruvian Guano, from the best cargoes, which they will deliver direct from the ship or importer's stores. Corn Manure, Nitrate of Soda, Fishery and Agricultural Salt, and every other Artificial Manure, on the lowest terms for a genuine article.
EDWARD PURSER, Secretary, 40, Bridge-street, Blackfriars.

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ANTONY GIBBS AND SONS, LONDON;
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GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
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To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

TO THE LOVERS OF FLOWERS.
CARBONISED ANIMAL MANURE.—If anything will make your seeds and plants grow, display a luxuriance of foliage, and blossom in perfection, this Manure assuredly will. To be had of H. COLES, Seedsman, &c. (Agent for the sale by special appointment), 32, Cranbourne-street Leicester-square, in tin canisters, at 1s., 1s. 9d., and 2s. 6d. each. Also supplied for Vegetables, Pleasure Grounds, Grass Plots, &c., at 12s. per cwt.; and prepared, by a different process, for Agriculture, to suit any kind of crop or soil, at 6l. per ton, half a ton 3l. 10s., five cwt. 2l., and one cwt. 10s. (net cash, and packages charged extra). Six cwt. is an amply sufficient application for an acre of land. Full directions for use accompany each canister and package.

THE PATENT ALKALI COMPANY'S METALLIC BLACK AND PURPLE-BROWN PAINTS are applicable to every kind of Iron and Wood-work, Farm and other Outbuildings, Shipping, &c., and are pre eminently superior to all the ordinary descriptions of white or red lead, or so-called "Mineral Paints," in point of economy, durability, and preserving quality. Prices: Black, 25l. per ton; Rich Purple brown, 22l. per ton, delivered in London or Liverpool, exclusive of packages, which are not returnable except to be refilled, free of expense to the Company.
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EIGHT HUNDRED POUNDS PREMIUMS
TWO HUNDRED POUNDS FOR IMPLEMENTS are offered by the Yorkshire Agricultural Society at its Meeting at Leeds, on the First of August next. The entry closes on the 18th of July. Prize-sheets and Forms may be had, on application to MATTHEW M. MILBURN, Secretary, Sowerby, Thirsk, Yorkshire.

BURBIDGE AND HEALY'S NEW BOILER.—The above is a modification of their Boiler (before published), modelled expressly for the large Conservatory, Chiswick Gardens, where it is now at work. From the observations B. and H. have been able to make, they are warranted in stating it to be the "Ne plus ultra" for warming large plant structures. As a proof, one charge of fuel has been kept burning for 48 hours without any addition, and one boiler of the size used is equal to warm 1500 feet of 4-inch pipe. They are also extensively put up at the Royal Botanic Gardens, Kew. Smaller boilers upon the same plan.
BURBIDGE and HEALY, 130, Fleet-street, London.

TO ORCHIDEA GROWERS.
BURBIDGE AND HEALY, 130, Fleet-street, respectfully call attention to their method of warming Orchidea Houses. They have had the honour of warming the Orchidea Houses at the undermentioned places:
Royal Botanic Gardens, Kew
Horticultural Gardens, Chiswick, additions to the House.
Also the Orchidea Houses of the following distinguished growers of this interesting class of plants.
The Bishop of Winchester, Farnham Castle.
J. Lyons, Esq., Ladbroke.
J. Warner, Esq., Hoddesdon.
Messrs. Henderson, Pine-apple Place.
J. Schroder, Esq., Stratford.
R. Hanbury, Esq., Poles, near Ware.
W. Webb, Esq., Clapham.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.
S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.
Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.
BY HER MAJESTY'S ROYAL LETTERS PATENT.
BENCH offers for sale Patent HOTHOUSES, which he will warrant far superior to all others, in every respect, viz., 1 Span Roof, 28 feet 6 ins. long, 13 feet 6 ins. wide, 40l.; Lean-to, 28 feet 6 ins. long, 16 feet 6 ins. wide, 50l., with best timber and 16-ounce glass of large size. Patent Lights for Pits, Frames, &c., requiring no paint, 7d., 8d., and 9d., per superficial foot, according to quantity, &c.
HEATING BY HOT WATER.
PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, CHARLES FRANCIS and SONS, Nine Elms, London.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.
Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.
The terms of the School can be had on application either personally or by letter.

The Agricultural Gazette.
SATURDAY, JULY 14, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY,	July	17
WEDNESDAY	—	18
THURSDAY,	—	19
THURSDAY,		19—Agricultural Imp. Society of Ireland.
TUESDAY,		24 Agricultural Society of England
THURSDAY,		26 Agricultural Imp. Society of Ireland.

} Meeting of the English Agricultural Society at Norwich.

FARMERS' CLUB—July 27, Needham Market.

WHAT IS A TON OF TURNIPS WORTH? This question has been discussed at some length lately in our columns; the answers it has received differ as nothing but farmers' experiences do. The following appears to be as fair a statement of the matter as can be made. A correspondent, signing "R. B. D., Fifeshire," says:

"It should be distinctly understood, that it is the value which any enterprising farmer in any ordinary country situation can obtain for Turnips consumed on the land, and not what they can be sold for, per cart-load, or even when consumed on the land, in the vicinity of large towns, that is concerned. Another thing requisite to be understood, is the variety of Turnip alluded to, as the yellow is universally allowed to be more valuable than the globe, whilst the Swede is more valuable than the yellow. It appears to me that it would be further necessary that the year should be mentioned, as the value of a ton varies according to the average weight of the crop for the season; whilst, if the value is to be reckoned from the profits derived from consumption with feeding cattle, it will depend wholly upon the state of the markets for fat cattle. For example, I last autumn tied up one lot of four stots, valued then by competent authorities at 14l. per head. They were put up on October 18th, and fed according to Mr. Warnes' system, on Linseed, Beans, light grain, hay, chaff, and Turnips, and were sold on April 20th, for 16l. 10s., yielding a surplus of 2l. 10s. per head. The cost was:

Linseed, Beans, and light grain	£1	19 10
Coals, cooking Linseed	0	1 2
Attendance	0	16 0
	2	17 0
Deduct	2	10 0

Leaving a loss per head, of £0 7 0

Or, as each beast consumed about 5¼ tons of Turnips, partly yellow, and partly Swedes, giving a return of minus 1s. 3d. per ton.

Had I obtained the prices of the previous season, however, viz. 8s per Dutch stone (17½ lbs.) instead of 6s 7d, I would have had an increased return of 3l 10s. per head, the animals averaging fully 50 stones, or a profit of 3l. 3s.; and assuming that this would all have belonged to the Turnips, a return of 11s. 5½d. per ton. Mr. Tuke will thus see how easy it is to jump from *minus nil*, to 11s. 5½d., according to the state of the markets, and that he is hardly justified in reckoning so many stones of beef gained as so much money, as the markets may fall even faster than his animals make beef. I cannot see therefore how a satisfactory answer can be obtained to the original query, from the results of cattle feeding. I think the better way would be to take the returns from sheep, that is, from what the Turnips will let at, to be consumed on the land by sheep, straw being supplied gratis. Now according to Mr. Stephens' estimate in his "Book of the Farm," 16 young sheep consume an acre of 30 tons in 180 days, and the price of average seasons is 3d. a head per week, of deficient seasons, 4d.; this gives average seasons, 3s. 6d. per ton, deficients, 4s. 8d. The ground eaten off is improved beyond the value of the straw consumed, however, to the extent I should think of 1s. per ton; this gives 4s. 6d. and 5s. 8d. If I may be allowed to give a little more of my own experience, I last season let a quantity, partly green top white, but chiefly yellow, averaging 10 tons an acre, at 2l. 5s; this gives a return of 4s. 6d., and adding 1s.

* The manure I reckon little more than equivalent to the market value of the hay and straw consumed, its excellence being attributable rather to the use of the Linseed, &c., than to the consumption of the Turnips.

for improvement of ground, 5s. 6d. per ton, or within 2d. of Mr. Stephens' estimate for deficient seasons, which last season is generally allowed to have been. My conclusion therefore is that the value of a ton of Turnips is from 3s. to 6s., according to the variety and the general crop of the season."

And this agrees with our aggregate experience of four years, for which we can vouch, involving an expenditure of about 6000l. and the consumption of about 4000 tons of green food, to the credit of which there has appeared at the end of that period a balance of about 700l., after the payment of bought food, and expenses of attendance, fuel, &c. This amounts to about 3s. 6d. per ton of the food consumed, a value singularly in accordance with the result of extensive experiments on cattle feeding, reported in our last year's volume. We should be very glad if we could induce those who are able to throw light on this subject to furnish us with the results of their experience. If they would forward to us their names and addresses, we could distribute a series of questions, the answers to which, thus obtained, would no doubt be held conclusive of the whole matter.

A LETTER ON IRISH AGRICULTURAL IMPROVEMENT has lately been published, of a very different character from the "Irish Peer's" of half a year ago, which was referred to in this Journal at the time. This is hopeful and encouraging exertion, while that was hopeless and destructive of effort: this has been written to vindicate and urge another attack on Ireland's social evils—that, to justify the miserable and abject submission which so many have yielded them. It is a fortunate thing that the former has the advantage of authority as well as of intrinsic merit; and that spiritless apologies for things as they are have appeared in such opposition to the well-tried judgment and patriotism of Lord CLARENDON.

His Excellency has had the lives of a population dependent, during successive famines, upon his Government, and he is now endeavouring to remove those obstacles which have hindered the people from maintaining themselves: his agricultural instructors are removing the ignorant prejudices of the tenantry: the Encumbered Estates Bill is likely to facilitate the duties of ownership by enabling competent hands to undertake them; and his Lordship's letter has been written to encourage the proposed purchase of Irish property by the Corporation of London. He says:

"I have long been desirous that English capital should be invested in Irish land, because I think that some change in the proprietary class is indispensable to the progress and prosperity of this country, and will be beneficial to those proprietors who are now in a state of hopeless embarrassment, and struggling against difficulties which it must, I fear, be hopeless for them to overcome. However good the intentions of a landlord may be, he cannot fulfil his duties to himself and to those dependent on him, if, as is too often the case, his property be mortgaged to its full value—that value being frequently calculated on the extravagant rents that a Potato cultivation and the reckless competition for land have produced.

"In fact, the whole social system of Ireland has been based upon the Potato; and the failure of that root has consequently entailed universal distress. Hence so many landed proprietors are now unable to keep down the interest on their mortgages; tenants can no longer pay their rents; and the peasants, for want of employment, are driven upon the rates, of which the collection becomes daily more difficult. Such a state of things contains within itself no germ of amelioration; it cannot even remain stationary; it must go from bad to worse; for the means of improvement are altogether wanting, and the national resources are gradually wasting. And even if the Potato was to revive (and to that all classes are now clinging with desperate hope), it would only bring back the evils under which the country has been so long labouring.

"It is manifest, then, that a complete change of system, as regards agriculture, the tenure of land, the social habits of the people, has become indispensable; and that change can only be effected by the introduction of English capital, enterprise, and skill, applied in the manner contemplated by the meeting at the Mansion-house.

"Desirous though I am, however, that capital should be thus employed, nothing would induce me to recommend it if I did not conscientiously believe that the investment would be remunerative; as it would be worse than useless to expend large sums of money without a fair prospect of return; and if those prospects were not realised, all such speculations must cease for the future. But upon that point I entertain no doubt. For if good land is to be bought at a cheap rate, if secure titles can be obtained at a small expense, and if capital is available for improving the soil and rendering it productive, such an investment cannot fail to be profitable. But it is under these circumstances, when the

Encumbered Estates Bill is passed, that purchasers may come into the market. The moment, too, is eminently auspicious for the undertaking; because political excitement is at an end, agrarian outrage, consequent upon the competition for land, is now very rare, and the only anxiety of the people is to obtain employment or the means of emigrating. With respect to the latter, encouragement should not be given, as a general rule—not without due inquiry; and I was glad to observe that such appeared to be the opinion of the meeting at the Mansion House. For, although there are districts where, owing to the minute subdivision of land and other circumstances, the population has manifestly become redundant, and cannot, in the absence of the Potato, find the means of subsistence, and where in consequence emigration is most desirable, yet there are others where emigration is at this moment looked upon as the only remedy for existing distress, but in which there are actually not able-bodied men enough for the cultivation of the soil under a proper system of agriculture. And it is a mistake to suppose that the Irish people will not work, they are both willing and desirous to work, and when in regular employment are always peaceable and orderly. As they have lost their confidence in the Potato, there will not now be the same difficulty as in former times in inducing the occupant of three or four acres of land to become a labourer for money wages punctually paid; on the contrary, there is every reason to think they would greatly prefer it. I may add to that, the tenant farmers now no longer adhere to their old and vicious system of cultivation, but are eager to learn, and are grateful for instruction. In short, from a concurrence of circumstances, I do not think there is any country on the world where change could be so beneficially and speedily effected as in Ireland, by the judicious application of capital; whilst ordinary attention to the comforts of the people, and the improvement of their habits, would produce contentment and confidence, and render the appeals of selfish agitators innocuous."

We believe that these opinions will exert far wider influence than even so powerful a body as the London corporation is likely to develop. We believe that the art of Agriculture in Ireland, and consequently the value of its land, may be improved beyond the degree attainable in any other part of the country. The true criterion of its status whether as a provider of food or of employment, is its production of animal food; and no where is there a climate better suited to the growth of green crops for the food of cattle. And no where, we believe, is capital likely to be invested in agriculture so profitably as in the purchase and management of the land which the Encumbered Estates Bill is likely soon to bring into the market.

THE FARMERS' PROSPECTS.

The public owe a debt of gratitude to your correspondent "T" for his valuable letter on "Farm Accounts;" he will greatly add to the obligation by giving the details of the outlay as capital on the farms he instances, and which he averages at 1*l.* per acre, an amount of capital few tenant farmers command. In addressing you, I seek to disabuse the farmers' minds of some impressions which are paralysing the exertions of too many of them, namely, that he cannot farm at a profit under free foreign competition, or that those farmers only can do so who command what he calls a large capital. I think he is in error on both points. The capital required must bear some relation to the gross annual produce; and from much enquiry and observation I have come to the conclusion that, in mixed husbandry, one year's average produce is sufficient; this rule would have given as the capital required on the farm of 350 acres, described in the letter of your correspondent "T.," something under 6*l.* an acre instead of 10*l.* Will he show us how the larger capital was employed.

It is the farmer's peculiar privilege that he can borrow his fixed capital, namely, his land with its buildings, divisions, and communications, and that he can borrow it at a very moderate rate of interest. The capital he himself sinks is little more than the cost of his implements, of his horses, and store stock, for which I consider 3*l.* an acre as a liberal provision; his other outgoings are spread over the year, and sale returns are coming in before the whole outlay is incurred—if he buy a lot of beasts to fatten, their cost, with the cost of the food grown or bought for them, is returned in from three to six months—his flock of sheep, in from six to nine months, and his tradesmen's bills, with half of his rent and tithes, are provided for out of the harvest sales. No doubt an abundant capital in the hands of a sagacious farmer can be turned to excellent account, but speaking generally, I believe that a capital equal to one year's produce is sufficient.

Let us assume that free foreign competition has reduced the farmer's capital 20 per cent., by reducing to that extent the value of his stock and other produce, and let us see what the result would be in the case of the farm of 350 acres described by your correspondent. The gross produce, on an average of 11 years, was 2062*l.* 5*s.* 2*d.*, raised at an average cost of 1613*l.* 2*s.* 11*d.*, leaving for rent and profit, 429*l.* 0*s.* 3*d.* The items of cost may be divided into two classes, one class varying exactly with the average price of produce, the other influenced by the average price, but not to the same extent. Under the supposed reduction from free competition of 20 per cent., the gross produce of the farm in question, and the tenant's assumed capital, would be reduced to 1633*l.* 14*s.* 7*d.*, the live and dead stock bought, the seeds, and the tithes, amounting to 801*l.* 10*s.* 8*d.*, would be also reduced 20 per cent, or to 644*l.* 8*s.* 7*d.*; the other items of cost—the rates, labour, and tradesmen's bills, amounting to 807*l.* 12*s.* 3*d.*, would be reduced, say, only 10 per cent., or to 726*l.* 17*s.* 1*d.*, and, deducting these two sums from 1633*l.* 14*s.* 7*d.*; there would remain 262*l.* 8*s.* 11*d.* for rent and profit. The farmer, therefore, would have to make up 166*l.* 11*s.* 4*d.*, something under 10*s.* an acre, in order to have the same surplus as under the old system of "Protection," and can any one doubt his ability to do this. Without pausing to consider what might be done by thinner sowing, deeper ploughing, more frequent horse-hoeing, and such like cheap appliances, let me merely call the farmer's attention to what he may accomplish, at little or no cost, by greater care of his manure.

The farmer is aware that his crops derive the bulk of their nourishment from the atmosphere—that in passing them through his live stock a small portion only of the food goes to increase the animal's weight, and that a larger portion is again returned into the atmosphere by the animal's breathing; he knows that if he exposes the animal to cold or wet, the portion so lost will be vastly increased; that the remainder of the food consumed becomes manure, and when thrown with litter into the farm yard ferments or rots; that is, that chemical action takes place, and the most valuable parts turning into gases, rise into the atmosphere, wafted perhaps by the winds to fertilise the crops of his dreaded rival, the foreigner. The farmer knows also that the most valuable salts in his manure are soluble in water, and are washed with every shower into the neighbouring horse-pond—that the urine, containing as it does the most fertilising elements, is also too frequently allowed to find its way to the horse-pond—or its ammonia to be lost by fermentation in the open air. When he carries to the field those comparatively valueless remains of his manure heap which have escaped both wind and water, he spreads it on the surface under a summer sun; the following plough imperfectly does its work, leaving much still on the surface to enrich the air instead of the land. It thus be at all a true description of the management of manures on the generality of farms, is there not most abundant hope for the farmer? may he not yet look for a larger profit than he has ever hitherto obtained? The more fertilising his manure, the heavier will be the resulting crops, the heavier crops will feed more stock, and the consequent increased quantity of manure will still further add to his crops; the more the land produces, if the products be not wasted, the more it may be made to produce; like the purse in the fairy tale, the more it is drawn upon, the richer it becomes.

The farmer knows these things, but does he consider the necessity for remedying them, and how easily it may be done. He leaves his stock exposed to wet and cold, often when it is in his power to shelter them from both. By spouting his buildings, putting his manure into a pit instead of on a ridge, allowing all urine to flow on to it, catching any excess in a tank, and either returning it from time to time or carrying it on to his Grass or green crops; setting his men occasionally, when not otherwise employed, to collect soil and throw it over his manure, and when he uses it for the root crops burying it in ridges under the crop, instead of broad spreading it, where for two of the hottest months of summer the greater portion is wasted, either on the surface or in forcing forward weeds in the wide intervals between the rows, and so increasing to no purpose the work of the horse-hoe. How few the farms where attention to these little matters would not increase the returns 25 per cent.! And now is the time, when the farm-yards are empty of stock and manure, to make the slight alterations required. "High farming" is not within the power of every farmer; but there is none so poor but he may dig a pit and a tank, cover his manure with occasional layers of soil, and ridge instead of broad-spreading it for his root crops.

Allow me, in conclusion, to observe that the farmer should not be content to cover his mixed, solid, and liquid manures with layers of earth; let him venture on a small outlay in gypsum, which, in London, sells for 1*l.* per ton, and in most counties can be got cheaper; after pounding it, have a thin layer occasionally spread over the soil-coating of his manure, say 1 cwt. to each beast and horse. This would effectually prevent waste from fermentation, and each ton of gypsum would be capable of forming 24 cwt. of sulphate of ammonia, worth, as a manure, upwards of 20*l.* *P.*

FLAX CULTURE AND THE FLAX TRADE.

A correspondent of the *Hereford Journal*, who signs himself "Verax," says:

"I have not the smallest doubt that Flax of very fine quality may be grown in some parts of Herefordshire; but, after being so grown, it is impossible to get it dressed, except by hand which involves an expense too great to be thought of; more, in fact, than the worth of the Flax after it is so dressed. We have not Flax mills established, as they have in Ireland; and I cannot fancy any farmer quite so green as to purchase a portable Flax mill, at a cost of 100*l.*, especially if such mill has not been well tested and recommended. But there is a still more fatal obstacle to the cultivation of Flax, namely, that when properly dressed for the market, there is absolutely no sale for it unless at a price which will not repay the expenses of growing."

Now, I beg to caution the agriculturists of Herefordshire from believing the preposterous statement "there is absolutely no sale for Flax, except," &c., as the firms for whom I bought Flax for 12 years, when my returns were 8000*l.* to 10,000*l.* per month, are still in the trade, and always purchasers, and would rather purchase from 20 to 50 or 100 tons of Flax at once than purchase one ton, their consumption being so great; and as to the superiority of home-grown Flax, in every instance they prefer well prepared English and Irish to the foreign, as the fibre is much stronger, and, as a consequence, less waste takes place in hackling and spinning; and present prices are as follows:

Mill dressed Egyptian, from	35*l.* to 40*l.* per ton.
Hand do., Russian	32*l.* — 45*l.* ,,
Do. do. Dutch	50*l.* — 80*l.* ,,
Mill do., English . ..	35*l.* — 80*l.* ,,
Do. do., Irish	35*l.* — 150*l.* ,,
Hand and scraped Belgian ..	60*l.* — 160*l.* ,,

Let me endeavour to enlighten the understanding of these people who write at random, and of those who have Flax to dispose of, whom they may persuade that for the article there are no purchasers. The following firms are always buyers of Flax from 30*l.* per ton up to 180*l.*, according to quality:

Messrs. Marshall and Co., Leeds	Messrs E. Briggs & Co., Leeds
,, *Hives and Atkinson, do.	*John Brooks, Mr., Bolton
,, *Wilkinson and Co., do.	,, *Hyland & Sons, Wigan
,, *Benyon and Co., do.	,, *German Pilley, and Co., Preston
,, *Houlgsworth & Co., do.	,, *Hinkman, Furness, and Co., do.
,, *Lobbey and Co., do.	Lawrence Spencer, Mr., do.
,, *Tatham and Walker, do.	,, *Jn Dewhurst & Co., do.
,, *M. Walker and Sons, do.	,, *John Buley and Sons, Kirkham
,, Hardgrave Brothers, do.	Thos. Ainsworth, Clayton, Lancashire
John Morfatt, Mr., do.	,, Waithman & Co., Yealand
,, G. Hammond & Son, do.	,, W. Ullathorn and Co., Barnard Castle, Durham
,, *J. Cawood and Son, do	
,, J. Morfatt, jun., & Co., do.	
,, W. Garside and Co., do.	
,, *W. Renshaw and Co., Manchester	
,, *Jas. Key and Son, do.	

I am well known by all the firms marked with *, and parties having Flax to dispose of, if they send me samples to my mills, 35, Skinner-street, Bishopsgate, London, I shall forward them to Leeds, and put them into direct communication with the firms free of any expense. To the above might be added some dozens of spinners of Flax in Knaresborough and Carlisle, and above 60 firms in Belfast and neighbourhood, from which town it appears by the public journals shipments of Irish linen made from home grown Flax to the amount of 100,000*l.* per week are at present going on. Now can "Verax," whose loving regard for "his brother agriculturists" amounts to a desire to keep them in the dark, deny the good results of such a weekly sum coming home direct from America as 100,000*l.* to be distributed amongst the weavers from the hands of the manufacturers, and from them to the shopkeepers and farmers in the north of Ireland; or will he attempt to say that the farmers and labourers in the Province of Ulster—who are as well off as the same classes in Hereford—have any advantage over the farmers and labourers in Connaught, but Flax cultivation and the linen trade? I think he will not, for I defy him to assign any other cause of difference, but the blessing of a good understanding between landowners and manufacturers, and a desire to connect more closely the manufacturing with the agricultural interests. Who will argue that if 100,000*l.* per week could be (by extra exports from the county of Herefordshire) brought into the city of Hereford, that farmers, shopkeepers, and labourers would not benefit, especially if it only required a few hundred acres of the green hills of that county (that are not worth more under natural Grass than 30*s.* per acre) to be ploughed up in order to secure so large an income? How, I ask, can Herefordshire farmers, or any other of our English farmers, increase in wealth if they only produce year after year what they consume of Wheat, Oats, Barley, and cattle over the amount paid for rent and taxes? It is not their exports to the London market that will draw gold to England, therefore their study should be to produce what will keep the machinery of the manufacturer at work, for on him alone England must depend for an increase in the precious metals and circulating medium; for if the manufacturers must continue to send their gold away in millions for the raw material which British farmers should produce, how, let me ask, can they have it at home to procure the beef, mutton, and bread from the tradesmen, the farmers' friends, the butchers and bakers?

As to the two objections which appear to "Verax" to be insurmountable, I cannot imagine that the farmers and labourers in Herefordshire are less apt to learn than the farming and labouring classes in the north of Ireland. A few years since they knew nothing of the Belgian system of growing and preparing Flax, and consequently the article sold for little more than half its real value; but now things are changed, for I have frequently given from 100*l.* to 140*l.* for fine Irish Flax, and as the Belgians dress all their Flax by hand, I cannot fancy how they manage to get such prices and great profit, while the alleged expense in Herefordshire is so great as to be "more in fact than the worth of the Flax when dressed;" there must be gross mismanagement and waste.

Secondly, "Verax" says, "We have not Flax mills established, as they have in Ireland, and I cannot fancy any farmer quite so green as to purchase a portable Flax mill, at a cost of 100*l.*, especially if such mill has not been well tested and recommended."

Here we have a salutary warning for farmers not to

be rash in giving encouragement to the introduction of machinery for agricultural purposes. What opposition "Verax" could give Messrs. Cobden and Bright and the other cotton-spinners and power-loom manufacturers in Manchester, if he would only start all the old women in Herefordshire to spin cotton on the old wheels and weave it by hand; he would make a fortune no doubt in opposing machinery and the steam power. However, he thinks there is "no farmer so green as to risk 100*l.* in a Flax mill," unfortunately for the agricultural profession there are in my opinion too many farmers like "Verax," if not young; still "green," and too many green fields, all of which would be greatly benefited by sound instruction and proper pulverising. The following details refer to machinery of my invention connected with the preparation of Flax.

By the six stock mill I have erected in Skinner-street, Bishopsgate, London, six men have redressed Egyptian hand-dressed Flax at the rate of 10 stones per day each man, or 2¼ tons per week. I bought it for 25*l.* per ton, as it was not half dressed and unsaleable, and I sold it for 38*l.* per ton, the tow and 5*l.* per ton paid the expense of redressing, leaving at the rate of 20*l.* per week clear profit; this fact can be proved by my manager, Mr J. Greanne, as he weighed the Flax before and after it was redressed. This then is my answer to "Verax's" insuperable "objections to Flax cultivation." I consider his ideas of Flax culture as green as Flax is at this moment and unripe.

It is vain for any one to attempt to write Flax into discredit, when it is so evident he has much, may everything to learn on the subject. *J. Hill Dickson, Phœnix Hotel, D'Olier-street, Dublin, June 25.*

A STIRLINGSHIRE CARSE FARM.

a. The extent of the farm is 110 acres, all arable.

b. Position.—It is situated within 2 miles of a very good market town for the sale of grain, where plenty of labourers can readily be had. The climate is pretty good, and lime can be laid down by water carriage on the farm.

c. The character of the soil is good, consisting of reddish and blue clay for the most part, and some parts of fields are more earthy, inclining to loam, but it is all well suited for growing all kinds of grain crops.

d. It is all regularly cropped, except a small slice on a river side, which runs round the one side of the farm, hung over with trees, and kept for a few milk cows for the use of the house.

e. It is cropped with hay each 6th year, and the crop generally runs not far from 200 stone per Scotch acre, and generally there is a good after-growth, in value about 3*l.* per acre, from which a large quantity of dung is made, by cutting and giving it to the work-horses, and some young stock kept in the straw-yard.

f. The rotation of cropping consists of a six-course shift: 1st, fallow or Turnips; 2d, Wheat; 3d, Beans; 4th, Barley; 5th, Hay; 6th, Oats. Wheat about 40 bushels per acre, all sold except what is used for seed. Beans 42 bushels per acre, all sold except seed for the following crop, and a few quarters for meal and horses. Barley 49 bushels per acre, all sold except what is kept and used for seed, and a few bushels for pot Barley. Oats 57 bushels per acre, all used on the farm except about 50 bolls. Eighteen acres Turnip, mostly all used on the farm, partly in feeding stock for the butcher, and partly in feeding young stock in the straw yard, and a considerable quantity given to horses and pigs.

g. The quantity of manure purchased in 1845 was 120 carts of dung, 1500 bushels of lime, 60 cwt. guano, with a few bruised bones, but I find bones are not so well adapted for a carse as for a dry-field soil. This was besides dung made on the farm, which would amount to fully 500 cubic yards.

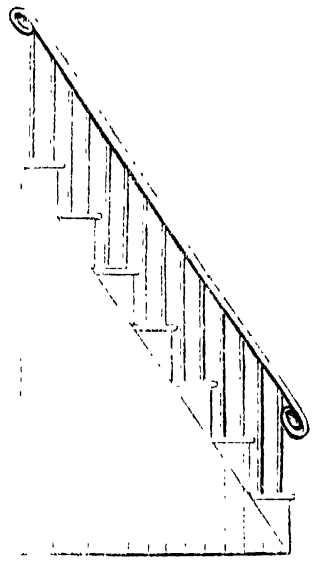
h. The amount of animal and manual labour on the farm in the year 1845, including hired servants for the year, day-labourers, and harvest-reapers, amounted to about 130*l.* sterling. This sum just includes wages, the yearly farm servants had their maintenance besides.

i. The wages given in the district for ploughmen will run from 13*l.* to 18*l.* per annum, with victuals; women and boys employed at Turnip and Bean hoeing, &c &c., 10*d.* and 1*s.* per day, without victuals; harvest-labourers, from 12*s.* to 18*s.* per week, with victuals; and some good hands, fit for "stacking," 20*s.* The rent never falls below 3*l* 9*s.* per Scotch acre, but is sometimes a little higher when grain is dear, as it is regulated by fiars prices.

It may be stated that all the lime, guano, and bones noticed in the queries were put on the Turnip crop, with about 25 carts to the acre of farm-made dung, the rest of the dung was put upon Wheat stubble land in the end of the year, and ploughed in for guano. I may just further state, that I have no doubt whatever, but good Turnips can be grown on the fallow break in this locality, but I am not so sure of its paying well, arising from many casualties. In the first place, it is a good deal of a forced crop, owing to the expense it takes to get strong clay land into a fine tilth, early enough for sowing with Turnip. 2d. The land is often cut considerably in carting them off, which is very injurious to a carse soil. And 3dly, we often get a bad "sidd" for Wheat sowing. But while I state these things, I do not say a carse farmer should give over growing Turnips; it is done rather with an intention of trying to shift the rotation of cropping a little. And if any one who writes in your very useful Paper would point out a cheap and effectual mode for destroying slug and snail, which are very injurious in this district to Wheat in spring, sown after Beans, he would do a great service. Now that the Bean-land is grubbed and hoed, I have an intention of sowing Wheat after Beans, and Barley after Turnip.

Home Correspondence.

Steep v. *Level Land.*—It is not much a matter for surprise that your correspondent, "Agricola," in last week's *Gazette*, should not succeed in convincing his Yorkshire farmer friends, by mere argument alone, that they could not grow more corn on the long slope of a steep hill, than they could on the space occupied by the base of such a hill, which to their eyes appeared to be so much more limited in extent when compared with the very long line visible in the slope. Some people require to be taught, not by elaborate, but by easy lessons, like children, and even then the lesson must be visibly proved before their eyes by some familiar illustration, or they will certainly remain incredulous. That which exists in Yorkshire holds good also in this county, and numbers will and do disbelieve your correspondent's assertion, until it be visibly proved. The best method I can suggest is to request them to examine the staircase, which they descend in the morning and ascend in the evening; and by the bye, this suggestion to examine simply a staircase may effect some good, if it only induces or leads to a habit of thinking, the only downright requisite that is needed by farmers to make them men of substance again. It is thinking alone that will make the farmer now-a-days, not money. The golden age has passed with them, never to return! Sterling money will not always return a profit; sterling thought will, invariably.



This staircase will prove your correspondent's assertion to a nicety, more especially if the stairs have a balustrade, or railing such as I have sketched. Suppose there are one or two rails (which latter number I have represented) resting upon each step of the staircase. These rails may be taken, or supposed to represent two drills or rows of Wheat. If they measure each step (supposed to contain 2 drills of Wheat) with a pair of compasses, and then counting the number of steps composing the whole line of staircase, let them mark on the base or horizontal line, the exact number of widths or steps, and they will find the base line will contain that amount of widths (*alias* drills of Wheat) and no more! Or they may by a more simple method still, prove whether the number of drills grown on a long sloping line, could be also grown on a much shorter horizontal line; let them take a ruler and pencil, and on this engraving continue the lines, indicating the rails or drills of Wheat down to the base lines. The line of ascent in the staircase looks infinitely longer, and is much longer, than the horizontal base line, but nevertheless, however anomalous or contradictory it might appear (at first impression), no more corn can be grown on a long ascending line (like that of the side of a hill) than on a much shorter line in a horizontal or flat position. *C. B., Heacham, Norfolk.*

Raising Turnips on Clay Lands.—The aluminous base of clay imbibes 15 times its own weight of water, and retains it with great obstinacy. The cold cements the particles of the soil, and denies the admission of "caloric;" which would dissever the atoms, and render the land porous and permeable. The viscous tenacity that is thus produced is altogether invincible, and defies the reduction of the soil to the necessary fineness of tilth for the growing of Turnips. The land lies in clods that are beyond the power of being penetrated by the tender roots of young plants, and the vacancies between the clods are open to the drought, which kills every vegetation. During my frequent visits to the Royal Farms, at Windsor, that are under the management of Major-General Wemyss, I was much struck with the methods of raising Turnips on these farms. Sowing on the flat surface is preferred to the drill system, as it does not so much expose the land to drought and evaporation during the processes of being formed into ridgelets and reversed to cover the dung, and the flat surface keeps moisture better than the raised drills. The Turnip lands at Windsor are wrought by ploughing, harrowing, and rolling, in the usual way; the dung is laid down and spread broadcast, and the land is ploughed into ridges of 12 or 14 feet. On these ridges the Turnips are sown in rows, by the corn drill. The scuffling of the intervals, and the hoeing of the rows, are done in the usual way. On the stiff lands on which Turnips are grown, but which are not properly Turnip soils, the land is wrought as fine as possible in the usual way, and the dung spread upon it in broadcast. It is then gathered up into ridges of 6 or 8 feet, harrowed, and the Turnips sown in three or four rows on a ridge. This method does not expose the land to drought and the loss of moisture. A corollary of some importance may be drawn from this very successful practice of General Wemyss. The growing of Turnips on pared and burnt lands, where the seed is sown on the unploughed surface that is covered by the ashes spread upon it, shows that the tap-root of the Turnip does not require a depth of pulverised soil below it, in order to favour or allow its descent, and that the encouragement which the plant receives at the surface of the earth will induce the downward progress. Hence, if clay lands be pulverised at the top, and the manure there applied, the tap root will go downwards, and the bulb will be formed. Clay lands may be wrought in the usual way as finely as possible, say to the middle of June; the dung may be laid down and spread in broadcast, and the land then gathered up by one ploughing into ridges of 6 feet. The surface may then be harrowed fine by means of harrows, attached to a mauntree stretching over the ridge, and drawn by horses walking in the furrows. The Turnip seed may then be sown in three rows, by means of a sower constructed for the purpose. The scuffling of the intervals, and the hoeing of the rows, may be done in the usual way; and as these wet lands do not admit sheep to feed on the ground in winter, and being too soft to allow carts to carry away the Turnips, horses with creels on their backs may walk in the furrows, and carry home the roots in the hampers, or into carts at the gate-way. This method may prove very useful, after clay lands are drained. Every vegetable is best in quality that is raised on clay soils; any farmer is aware of this fact. As I have observed elsewhere, "Some easier process must exist than the present very laborious and costly modes of raising the fruits of the earth." *J.D.*

Practice with Science.—A cursory review of some of the most approved implements of modern construction may be of use in directing attention to them, and in giving a slight insight into their modes of operation. Some remarks on their principles and uses may not be devoid of interest. Pre-eminent for its celebrity and usefulness stands the drill machine, distinguished by the efficiency of its movements; and its complicated machinery seeming, as it were, simplified by the regularity of its practice. Mr. Stephens says that the original invention of it is due to the Hindoos, and that a model of it may be seen in the museum of the Highland Agricultural Society in Edinburgh. Be this as it may, it is very clear it must have become obsolete, like the compass attributed to the Chinese, and it is to Mr. Tull alone may be assigned the merit of originality in this country ("New Husbandry," p. 167). Jethro Tull tells us that, for the purpose of saving seed and depositing it with greater regularity, he examined and compared all the mechanical ideas that had ever entered into his imagination, and at last pitched upon a groove-tongue and spring in the sound board of the organ. It was named a drill; because, when farmers used to sow Beans and Peas into channels or furrows in land, they called that action "drilling." Although this machine was invented so far back as by Tull in 1735, and by his own showing and practice its great efficacy was fully established, not only for making a great saving in the quantity of seed sown, but also in facilitating most essentially the subsequent process of tillage, yet it does not appear that it has ever come much into general practice. The late Mr. Coke, of Norfolk, afterwards Earl of Leicester, to whom agriculture has been so much indebted, was one of the most distinguished disciples of the Tull school, and adopted the drill system, which he said was the foundation of the Norfolk husbandry. One principal cause of the drill system having made so little progress has been the great expense of a proper implement. In the "Book of the Farm" there is one mentioned, "the common or East Lothian drill machine," drawn by one horse for six rows, and costing from 6*l.* to 10*l.* It is best adapted for sowing across the ridges. Another, called the new lever drill machine, for six rows, varying from 10*l.* to 18*l.* This will sow on any kind of surface, on ridges however round, at equal depth in every coulter, and either along or across the ridge with equal facility. These drills, no doubt, deposit the seed in a more regular manner than can possibly be effected by broadcast sowing; but there are no farming implements in which science has made such advances as in the construction of this machine, which will now not only sow seeds of every description, but likewise deposit different sorts of manure along with the seed ("New Husbandry," p. 173). For effecting these objects, the machine of Messrs. Garrett and Sons, though expensive, is a most complete implement, and is thus described by him. It will drill corn or seeds, with or without manure, in any required quantities, and at any distance apart. Corn may be conducted down separate conductors from the manure or through the same pipes. As a Turnip and manure drill, it may be used to suit all methods of cultivation, whether on flat lands or ridges. The price of it, thus complete, with 11 coulters, is 47*l.* 7*s.* 6*d.*, carriage paid to London. The manure generally made use of is guano, mixed either with some other ingredients, such as soot or salt, or with some light substance like sawdust, for the purpose of reducing the strength of so powerful a stimulant; but whatever it may be, it will be required to be brought into a very arid state, or there will be a danger of its not being easily released from the conductors. In growing a crop of Turnips it seems desirable that, if the manure mentioned be used, it should be equally distributed; as perhaps it may be from the want of this, that crops of this kind are in general so very unequal. The fact seems extraordinary, that a crop whose average size is 2½ lbs., each Turnip being 9 inches apart in the row, and the drills 27 inches asunder, will give 25 tons ("New Hus-

boundry," p. 275). This seems an exceedingly low average, and when we consider that a Turnip may be grown to 20 lbs. and upwards, we might naturally enough calculate the average at 7, 8, or 10 lbs. Where guano is used, it should be mixed with ashes, or some sort of dry earth. I have tried it with one-fifth guano, one-fifth salt, and three-fifths soot. Mr. W. C. Spooner says ("Royal Agricultural Society's Journal" vol. vi., p. 72), that experiments which he had made convinced him that this valuable manure can be readily and safely applied with the common drill (without any particular provision being made for covering the manure with earth before the deposition of the seed), by merely mixing the guano with about four times the quantity of fine mould, and adding as much ashes as the drill will deposit. In the case he mentions, the guano was used at the rate of 3 cwt. per acre, and the mould and ashes were added so as to make the whole amount to 30 bushels per acre. As the drill and seed-box are so expensive, it may be a question whether some implement, on the principle of the common Bean drill, would not answer the purpose equally well at a much less expense. I constructed a machine of this kind, which, on the whole, seemed to work well. The box is somewhat similar to that of Mr. Garrett's, on a smaller scale. The wheels are at the sides, and it is pushed forward the same as a common wheelbarrow. At the bottom of the box are three tubes, 18 inches apart, for Carrots, Parsnips, &c., in rows at that distance. There are also two other tubes, at 27 inches apart, for Turnips, Mangold, &c. At the bottom of the box a sliding board draws out, with holes in it, for opening or closing the passage of the manure, at the two different distances. In the interior are four rows of brushes, on a revolving axis, to assist in propelling the manure—perhaps spoons would answer as well. It is, in fact, upon the same principle as Mr. Garrett's, except that it is worked by hand instead of horse power, and it only costs about 3*l.* instead of nearly 20*l. Law. Rawstorne.*

His Royal Highness Prince Albert and the Agricultural Society's Meeting at York.—We have been favoured by Mr. Dixon of Darlington with a letter from a correspondent of his on the above subject, from which we make the following extract. "Feeling sensible that on the prosperity of agriculture we are dependant not only for our own comfort and support, but for that of the entire nation, and believing that Yorkshire, as well as many other parts of the kingdom, are sadly behindhand in the march of improvement, I am inclined to think that the presence of such a distinguished patron of agriculture amongst us must have had a very beneficial effect in stirring up the energies of our farmers, and rousing into active operation that desire for knowledge and yearning for onward progress so significant of the present age. With such an example we may naturally look for the realisation of comparative agricultural perfection, when the earth shall put forth her capabilities, and yield to the deserving farmer a produce at present unknown in the annals or experience of our Yorkshire farmers. The schools which are now established or establishing (for I look upon agricultural associations as so many agricultural schools), will I trust be one means of attaining this desirable end; these may be said to be of three classes, the royal, the county and local, and the practical farmers. To the first or royal, it being favoured with the especial patronage of his Royal Highness Prince Albert, and supported by the majority of the nobility of the British empire, we must look for the highest amount of scientific and useful information. To the second, where landlord and tenant meet on the same footing to promote a mutual interest, we must look for the establishment of that confidence, resulting from a mutual and good understanding, so necessary for the proper carrying out of improved principles of action; also for that combination of science with practice, without which our best practical farmers are at fault, and our most learned professors in uncertainty. To the third or practical farmer we must look for the general extension of all information, connected with the most approved methods of cultivation, and also the establishment of that good feeling towards each other, which must be productive of the very best results Amongst the local schools, I may name the Cleveland Association at Stokesley; this I am led to believe has done and is doing much good, and I trust will long continue to do. This brings to my recollection my reading a report of the last annual meeting, wherein the noble chairman, Lord Feversham, addressing the company then present, gave a clear and impartial statement of the different duties of landlord and tenant; after which he remarked that it was a source of great pride and pleasure to himself in riding over his estates, to find his tenants improving their farms, living comfortably, and appearing respectably; and if he saw any error in their management, he was always ready and glad to assist or correct them. On reading this speech, and perceiving that it had been much applauded, I was forcibly reminded of an incident that occurred to me whilst travelling betwixt Thirsk and Scarborough some time ago, from which I was led to doubt if the noble lord's really excellent speech was supported fully by consistency of action. When on my journey abovenamed, I recollect that on arriving at Rivaulx, and ascending the hill on the road leading along the side of his lordship's park to Hemsley, I was delighted with the surpassing beauty of the country—Nature and art having combined to render it a perfect Paradise—more especially as I had understood on leaving home that I should have a good deal of moor land to pass over. Having passed through Helmsley I arrived at the residence of his lordship's steward, and again was delighted to behold a perfect picture of neatness, comfort, and good management. The fields around corresponding, bounded with neat trimmed Quickwood fences, and from the appearance of the growing crops, the land in a high state of cultivation, likewise beautiful seed fields full stocked with flocks of sheep, grazing and fattening; in fact, the sight was altogether so gratifying that I could not but exclaim, here knowledge and capital have met together, and skill and labour will here meet with their reward. In passing further on the estate, I saw the farms of many of the tenantry, and it was this that caused me to doubt, if the speech delivered by Lord Feversham already alluded to, altogether agreed with what I here saw. Here I beheld spacious seed fields nearly as bare as the road I was travelling upon; not full stocked with flocks of sheep grazing and fattening, but a few sheep scattered over the field, and those few seemed barely to exist on the stunted herbage. From this I was led to think there must be something wrong, as the soil appeared to be the same in nature and quality as the steward's farm, and apparently a good strong bodied soil, perfectly dry and sound, but sufficiently porous and sandy for sheep to graze on the Turnips in winter. The appearance also of the healthy trees and fences, denoted the climate to be equally genial and mild, and consequently the land equally capable of growing full crops every year, if the same course of cropping and means had been used. On inquiring of a person I met with on the road whose estate I was passing through, he replied, 'Lord Feversham's;' I then got into conversation with him, and inquired if he knew the reason of the great failure in the seed fields that I had passed, and his reply was, that his lordship's tenants were bound in their agreements to a regular and permanent course of cropping, and in this course the land has to lay two years in seeds; and the fields that I had noticed, he said, were probably the second year's seeds. In reply to my query as to how long this course of cropping had gone on, he could not state the number of years, but said that it was adopted in the late lord's time, and it then answered so well that he had it inserted in his agreements, and gave instructions to the steward that it was to be continued. I then remarked that this was a strong proof that no matter how good and strong land may be in nature and quality, yet with an injudicious continuance of one course of cropping, it will become completely exhausted, and consequently, in this case, an injury to the tenants, who must have some difficulty in meeting their payments under such a system, unless they have their farms very cheap. I also expressed my surprise that his lordship did not perceive the error, in not allowing proper changes in the green crops, so that the land might be kept in condition, and produce full crops of seeds also, when under that crop; more particularly as the successful and profitable cultivation of land in that locality mainly depended on a good sheep pasturage. In reply my informant said that he had understood of late that his lordship had some reason to complain, but that he left the management of his estates to his steward, who considered he was doing his duty in continuing the rules laid down for his guidance, so that he could not or would not allow of any changes. In conclusion, I inquired if my informant were a tenant of his lordship's, but his reply was in the negative, and so the conversation ended. Now, it was my remembrance of this circumstance solely that for one moment clashed with the general tendency of his lordship's speech above alluded to; and I should not now have mentioned the circumstance, only perhaps there may be many more besides myself who may still be under the same impression, and my object is now to remove it, for I am happy to state that his lordship has now followed the example of his Royal Highness Prince Albert in becoming a practical farmer; that he has abolished the injurious rules and customs from his tenants' agreements, and that he may be seen riding over his estates, and giving instructions to his steward to allow proper and whole some changes in the course of cropping, or in particular cases allowing the deserving tenant to use his own judgment in carrying out his scheme of management. And I have no doubt when these beneficial changes come into full operation, and their merits become fully developed, that it will greatly add to his lordship's gratification when he rides over his estates; as I trust he will then see his tenants improving their farms, living comfortably, and appearing respectably. Now, in looking at the great and commendable change in the cultivation of land of this kingdom which is gradually and generally taking place, I would ask, to what are we to look for the cause of this change but to the operation and beneficial influence of those agricultural schools to which I have already alluded, for the establishment and support of which we have to thank his Royal Highness Prince Albert, as a patron and advocate, as well as for his other attempts to raise agriculture to its proper position amongst the important matters on which national prosperity so much depends." *A Well Wisher to Individual Interest and the Public Good, near Thirsk.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A WEEKLY COUNCIL was held at the Society's House, in Hanover-square, on Tuesday last, the 10th of July: present, the Earl of CHICHESTER, President, in the Chair; Lord Bridport, Hon. R. H. Clive, M.P., Hon. Capt. Howard, Sir Thomas Dyke Acland, Bart., M.P., Sir M. W. Ridley, Bart., Sir John V. B. Johnston, Bart., M.P., Sir Robert Price, Bart., M.P., Col. Austen, Mr. Baines, Mr. Raymond Barker, Mr. Barnett, Mr. Bennett, Mr. Blaisdard, Mr. Bramston, M.P., Mr. Brandreth, Mr. French Burke, Col. Challoner, Mr. F. Davy, Mr. Evelyn Denison, M.P., Mr. Dunne, jun., Mr. Dyer, Mr. W. J. Garnett, Mr. Garrett, Mr. Grantham, Mr. Kinder, Mr. Lawes, Mr. Miles, M.P., Mr. Milward, Mr. C. E. Overman, Prof. Sewell, Mr. Shaw (Lond.), Prof. Simonds, Mr. T. Turner, Prof. Way, Mr. Jonas Webb, and Mr. W. White.

James Brown, Esq., of Rossington, near Bawtry, was elected a Governor of the Society.

The following new Members were elected:

Simmons, John, Messer, Killiganson, Truro, Cornwall
Blomfield, Lieut.-Colonel, Necton Hall, Swaffham, Norfolk
Sandby, Rev. George, Denton Lodge, Harleston, Norfolk
Dowson, B., Quay, Great Yarmouth, Norfolk
Fellowes, Rev. Thomas, Brighton Rectory, Norwich
Chapple, William, Gornhay, Tiverton, Devon
Stark, William, Norwich
Cooke, John, Flemston Hall, Bury St. Edmund's
Ives, George, Norwich
Huddleston, Pureboy, Norton, Woolpit, Suffolk
Cheale, Alexander, jun., Uckfield, Sussex
Long, Kellet, Dunston Hall, Norwich
Thompson, William, M.P., Underly Hall, Kirby-Lonsdale
Tawke, Arthur, M.D., Norwich
Alford, William, Broughton-Astley, Lutterworth, Leicester
Hales, Rev. Robert, Billington, Castle-Rising, Norfolk
Soyer, David, Norwich
Barcham, William, Booton Hall, Reepham, Norfolk
Dalton, Rev. W., Swaffham, Norfolk
Dalton, John, West Bilney, Lynn, Norfolk.

The names of 30 candidates for election at the next meeting were then read.

Communications were received from Mr. Davies on his asphaltine for roofing, with specimens of the manufactured article; from Mr. Keene, on the progress of experiments on the growth of the Forty-day Maize, with specimens of the growing plants; and Mr. Wodehouse, M.P., on a disease in the root of the Oat plant; and from Mr. Hillyard, on Prizes to be offered for a breed of Sheep midway between the South Down and Leicester. The Bishop of Norwich presented a copy of his work, entitled "Heads for the arrangement of Local Information in every department of Parochial and Rural Interest;" the Count de Gourcy, a copy of his "Second Agricultural Tour in England;" Mr. Nesbit, a copy of his "Lecture at Saxmundham on Agricultural Chemistry;" Mr. T. K. Short, a copy of his "Essay on the Farming of Yorkshire;" and Mr. Bullen, a copy of the 6th Number of the "Agricultural and Industrial Journal," for all which the usual thanks of the Council were ordered.

A SPECIAL COUNCIL, for the transaction of the monthly business of the Society, was then held, the Earl of CHICHESTER President, being in the chair.

Garden Memoranda.

LORD HATHERTON'S ESTATE AT TEDDESLEY, STAFFORDSHIRE.—The great advantages resulting from the application of drainage water to mill power is no matter of mere theory. They have been practically illustrated, in a most conclusive manner, upon the estate of Lord Hatherton, at Teddesley, Staffordshire, and the illustration there afforded is so forcible, that a treatise upon the subject of drainage would be incomplete without a description of the highly effective mode in which the greatest enemy upon his Lordship's estate has been converted into one of the most effective agents in its improvement. Having frequently heard of the great simplicity and practical utility of the system adopted upon Lord Hatherton's farm, I visited Teddesley for the purpose of inspecting the whole of the arrangements, and acquiring such information upon all the details, as would enable me to give a concise description of them. Upon my visit, I found that they had been inspected by many scientific agriculturists, and amongst others, by Mr. French Burke, who had noticed them in a pamphlet upon Land Drainage and Irrigation, published in 1841; but as they have been considerably extended and improved since that time, and as they are of greater importance to the illustration of the object to which this chapter is devoted, than to an essay confined to the subject of draining and irrigation, I offer no apology for going into a detailed account of the results now attained, and which are both novel and highly instructive.

A large proportion of Teddesley Hay, which is a manor extending over 2586 acres of land, was originally part of the forest, or chase of Cannock, and covers the height seen to the eastward of the Penkridge station of the London and North-Western Railway. From these heights the lands slope gradually, with slight undulations, to the river Penk, a distance of about three miles. The domain was originally of much smaller dimensions than at present, and comprised two anciently enclosed parks, one containing 589, the other 200 acres. The larger park, previous to Lord Hatherton's coming to the estate, was in the lowest state of cultivation, and much of the smaller was little more than a swamp. The circumjacent common lands were also covered with Heath or Rushes. On his Lordship's entering upon the estate, in 1820, his attention was at once directed to its improvement, and he has since that time been constantly engaged in extending and bringing it into its present high state of cultivation. The old park fences have been thrown down, large plantations made, and the home park laid out in a manner suited to the neighbourhood of a nobleman's residence; an extensive farm has been built, and the lands subjected to a new arrangement. The extent of land which did not require draining was comparatively small; and the whole, which consisted generally of a light soil, rather

inclined to peat, the sub-soil being chiefly clay, has since been subjected to a regular course of thorough draining, and the water collected into two main channels, by which it is first conveyed to an extensive reservoir, which has been constructed for its reception, and from which the water flows underground for a distance of nearly half a mile, in a culvert 15 inches in diameter, to the farm buildings, where it is discharged upon an overshot wheel, and thus furnishes mill power for the various purposes connected with the estate. The wheel originally used was constructed of timber, and was 30 feet in diameter; from the want of sufficient natural fall in the surface of the land, between the reservoir and the farm, no little ingenuity and contrivance were required in the arrangement of the details for using the water in the most efficient manner, and for afterwards getting rid of it. Much talent has been displayed in overcoming these difficulties, which has been done in a way which proves how completely this system of converting the water obtained from the drainage of the land to the purpose of motive power, is applicable to the great majority of estates of any magnitude in the kingdom. The original timber mill wheel has recently been replaced by one built of wrought iron, of 38 feet in diameter, which is a model of lightness, combined with strength. This wheel is let into a chase cut into the red sandstone rock, which here underlies the surface, to the depth of its entire height of 38 feet, by which means, the upper part of the wheel is brought below the level of the bottom of the reservoir, and a sufficient fall to the water, in its course to the mill, is secured. Having performed its work, the tail water is discharged from the bottom of the wheel, by a head way, which is driven through the rock, for a distance of some 500 yards, where it is discharged into a lower level of the estate, and made available for the purposes of irrigation to a large extent of upland water meadows. In the recent alterations, iron has been substituted for wood throughout the whole machinery. The extension of the radius of the wheel would alone have enabled the mill to do more work with the same supply of water; but additional water has also been obtained, and the power of the water-wheel is now equal to 12 horses. A comparatively small portion of the water which is now derived from the drains, is required for the purposes of the mill, but being soft, it is all used for the purpose of irrigation.

The mode by which the additional supply has been obtained is worthy of notice. A piece of bog of 30 acres, covered with Rushes and deep Moss, in the centre of a large plantation, had been left unplanted. It was formerly part of the extensive heath, now inclosed, and had been considered irreclaimable. The surface soil was very poor, and overlaid a bed of clayey gravel of 3 feet thick, the under stratum being a bed of strong clay of 12 feet thick, resting upon a bed of strong gravel; the whole formed part of an inclined plane, which terminated in a deep quaking bog, partially covered and surrounded with Alder; below this spot were farm lands, recently inclosed, imperfectly drained, the bottom being cold, notwithstanding the surface had been dried. The mode adopted in draining these 30 acres, was bringing levels up from the main drains, which fed the mill pool, and which, on reaching the lower part of the land, were 12 feet deep. Drains of the same depth were then cut through the clay, on each side and up the centre of the 30 acres. The bottoms of these drains were bored at distances of 5 or 6 yards apart, the boring rods passing through the clay to the bed of gravel beneath, from which the water in the stratum of gravel gushed in abundance into the drains; by these means the bog in the wood below has been effectually dried, and the cold bottom of the farm lands, still lower down, has been greatly improved. The surface of the 30 acres was afterwards close drained, at distances of 20 feet apart and 3 feet deep. The whole surface, which was originally impassible by man or beast, is now sound and hard, and is valued at 30s. per acre. From the additional supply of water thus obtained, the mill can work night and day during the winter months, and for 16 hours per day in the driest season. Thus, at a comparatively trifling cost, by the application of ordinary skill and judgment, has a noxious waste been converted into valuable land, and furnished water power, which well warrants the saying of Lord Hatherton's agent (Mr. Bright), that "that bog was the best bit of land upon his lordship's estate." A similar application of the same principle would be equally valuable upon every estate where equal facilities exist.

The whole of the work connected with the drainage of the land, and the mill, both in its conception and execution, does infinite credit to all concerned, and Lord Hatherton has been fortunate in having, in Mr. Bright, the assistance of a most intelligent land agent, to whose contrivance he is mainly indebted for the acquisition of this great power, and under whose superintendence the whole was executed. The water wheel works a threshing machine, cuts hay and straw, and kibbles Oats and Barley for a stock consisting of about 250 horses and cattle, grinds Wheat and Malt, and drives circular saws, by which the sawing of all the smaller scantlings for the use of the estate is executed. At my request, Mr. Bright has kindly furnished me with the following tables, showing the cost of the whole of these works, and an estimate of the saving effected by them, and which will at once prove the value of the principle which they have so successfully established.

The following is a statement of the number of acres of land under-drained, the amount expended thereon, and the increase in the annual value produced by the process.

Quantities.			Value of the Lands in their Original State. Per Acre.	Annual Value			Amount expended in under-draining.			Value of the Lands in their Present State. Per Acre.	Annual Value.		
A.	R.	P.	s.	£	s.	d.	£	s.	d.	s.	£	s.	d.
78	1	36	10	39	4	9	262	15	0	27	105	1	9
10	1	2	10	5	14	6	74	9	8	35	34	0	9
38	0	8	16	30	8	3	52	11	2	40	76	0	9
82	2	2	15	61	17	8	346	16	4	30	123	15	4
30	3	24	10	15	9	0	124	5	8	35	54	1	6
81	1	34	8	32	11	8	153	16	4	22	89	12	2
26	3	16	10	18	8	6	142	8	0	30	55	5	6
35	0	0	8	13	4	0	80	5	2	26	42	18	0
10	2	34	..			..	90	8	0	50	26	15	3
10	0	8								21	10	11	0
9	0	0	12	5	8	0	76	9	8	40	13	10	0
16	0	11	16	12	1	0	41	9	4	33	24	17	3
21	2	10	15	16	3	5	66	0	0	30	32	6	10
15	3	14	15	11	17	5	40	2	7	30	23	14	11
39	0	2	11	27	6	0	175	9	4	27	52	13	2
521	3	21		293	14	3	1724	9	3		766	1	2

TOTAL EXPENDITURE.

	£.	s.	d.
Under-draining as per statement	1724	9	3
For erecting water-wheel and machinery	1350	0	0
Irrigation	224	1	10
Total outlay	£3298	14	1

INCREASED REVENUE.

	£	s.	d.			
Present annual value of lands under-drained	766	1	2			
Original value of the same land	293	14	3			
				472	6	11
Estimated annual saving by the mill				550	0	0
Increased annual value of water meadows				178	0	0
Total increased revenue				£1200	6	11

Resulting from the drainage of 521 acres, and the employment of drain water over 80 acres of land, and the saving effected by the employment of mill power, together affording a clear annual interest on the outlay, of upwards of 30 per cent.

The tenants upon Lord Hatherton's estate are, as may be expected, quite alive to the great value of mill power for agricultural purposes, and his Lordship has erected a water mill, similar in most of its leading features to that which has been described, upon one of his farms in the neighbourhood. In this case, the drainage water of the farm is collected into a reservoir, sufficiently above the farm buildings to obviate the necessity of sinking the wheel so deeply below the surface of the ground as was necessary in the former instance, the water is brought from the reservoir in cast-iron pipes, laid underground until they approach the mill wheel, when they rise in a crane neck, and discharge the water upon its upper surface. The tail water is got rid of by a culvert discharging into a lower level as in the former instance. I found on going over the estate that other of his Lordship's tenants were desirous of making arrangements with the agent for similar erections, being evidently anxious to secure to themselves the same advantages as were enjoyed by their neighbours, and quite willing to pay an additional rent, equivalent to the advantages conferred.

The spirit of improvement exhibited on this estate is very gratifying, and presents great inducements to the capitalists and landowners of this kingdom to turn their attention to like improvements. In point of remuneration, the profits to be thus realised throw all other investments with which I am acquainted far into the shade, and the encouragement they afford is most important in a national point of view.

The requirements of the rapidly increasing population of this country, imperatively demand attention to this subject; for it may easily be proved that not only is the soil capable of producing an increase, equivalent to the increase of the population, but also of providing employment for a much greater number of labourers than can be maintained upon poor, undrained, and unimproved estates. With all the greatly increased facilities which the power of Teddesley presents for economy of labour, it will be seen from the following statement that the farm lands in their unproved condition support nearly three time the number of labourers that were ever employed upon the same lands in their original neglected state. The maximum number of hands employed previous to the improvement was, 28 men and 19 women, total 47; the numbers now regularly at work are, 105 men, 20 boys, and 4 women, total 129. Thus the proprietor is enriched, the productive wealth of the district greatly increased, and the poor provided with additional employment, by an outlay perfectly insignificant, when compared with the great and valuable results attained. *Essay on Land Drainage and Irrigation, by E. W. Williams.*

Notices to Correspondents.

AFTER-MATH *R T.* You may use liquid manure in wet weather as much as you please, and with advantage; but in dry weather it must be used as it must be in a very dilute state; apply it in the evening. If you use guano in solution as a liquid manure in dry weather, it ought not, we think, to be in a more concentrated state than the ordinary dressing per acre would be in a good shower of rain, say ¼ of an inch; and this would be after the rate of 1 lb. of guano to 100 lbs. of water.

AMERICAN CHURN: *R S* asks can any of our correspondents favour us with a plan and description of the churn said to have been invented by some Yankee, and who made butter with it in a quarter of an hour by some atmospheric process: or was it only a sea-serpent affair?

BUR CLOVER *Constant Reader.* It is a medick, and the "burrs" are the compact spiral fringed pods characteristic of some species of that genus.

CUMBERLAND ONE-HORSE CARTS: *A B R* says, in reference to inquiries about the Cumberland carts described in the *Agricultural Gazette* for May 12, that a specimen of the common cart of the Cumberland mountain district, made by Mr. Richard Knubly, of Keswick, weighing 6¼ cwt., or with the shelving 6¾, and capable of carrying a ton of coals or lime, may be seen at the Norwich agricultural meeting, the property of Messrs. Ransome and May of Ipswich. It was imported on trial to have it entered among the implements shown for prizes, but outside the ground at Norwich, by Notting to Messrs. Ransome and May, it may be seen. It will carry as much, and last as long, as if it were the usual weight, 8½ or 9 cwt. Our correspondent writes also to mention another implement occasionally used among the Cumberland hills—a clod crusher of the most primitive construction, but which does its work well, some farmers think quite as well as Crosskill's roller. It consists of a number of pieces of wood, oak or ash, about 4 inches square, nailed strongly down to cross beams at each end, and presenting their angles to the clods. A pair of the light horses of the country are just now passing with an easy step over a fallow the second time, and leaving the ground in a fine state of tilth. The driver may stand on the sledge-harrow (to give it a name) so that a boy or old hand might drive.

DR. NEWINGTON'S DIBBLE: *J G N.* How is Wheat planted by this instrument looking? It has been very successful with us in the case of Peas.

EARLY CABBAGES: *A B.* Sow towards the end of this month.

EAST SUFFOLK FARM: *S W.* We believe that the rent stated includes taxes.

FAILING GRASS LAND *J P A.* The continued application of lime and kelp, if nothing else were added, would ultimately occasion the mischief of which you complain. Whether, however, your experience be attributable to that we do not know. You had better apply guano and bone-dust, or superphosphate of lime, early next spring.

KELP: *Marine* Seaweed burned to an ash is a powerful manure. Messrs. Rendle and Co, of Plymouth, sell large quantities annually for that purpose. We shall hereafter be able to state the method of calcination.

KIBBLING MILL: *B F.* It is a mill for crushing Beans, &c.

PIGS ON BOARDS *Sciolist.* The pigs are not wholly covered, we believe. They are purposely left exposed and uncomfortable while feeding, in order that they may immediately retire to rest again. We have made further inquiries.

PIGS *J W Snr.* The pigs, if well grown, at 2 or 3 weeks old may be worth 7*s.* 6*d.* each, and a good sow may be worth perhaps 3*l.* 2*s.* Berkshire pigs may be had of many breeders. You might apply to Mr. Moore, of Coleshill, Farringdon.

PIGS' TAILS. *W Hopper* says, that if you would look closely to the pigs when they are two or three days old, you would discover the inflammation beginning in the upper part of the tail, very similar in appearance to the scratches of a pin. If you wish the pigs to retain their tails, you must then take a pair of scissors and cut about ¼ of an inch off the extreme point of the tail.

SERVANTS *Clackmannan.* We are not acquainted with the society. You should apply by letter addressed to its secretary.

STILTON CHEESE. *S W* The utensils required in its manufacture are the same as those in ordinary use, excepting the cheese-vat, which in this case is a tin plate cylinder, 10 inches high, 25 round it on the outside, without top or bottom, having the sides pierced with holes, to let out the whey. The runnet is made in the same way as usual, only, instead of calves' stomach, that of the lamb is used; and in addition to the ordinary quantity of salt, a Lemon, stuck full of Cloves, is put into the jar amongst it. the Lemon adds to the efficacy of the runnet. About 9 gallons of new milk, and the cream from 2 or 3 gallons of milk (the cream should be warmed before put to the milk), are used in the manufacture of one cheese. If sufficient new milk cannot be obtained, the night's milk and cream are to be used with the morning's milk, as well as the extra cream. The runnet is to be put in, when it is new milk, warm; when it has become curd, it is not broken as in Gloucestershire and elsewhere, but a strainer is laid in a cheese basket, and the curd put into it, breaking it as little as possible, the cross corners are drawn together, and it remains in this way some hours, until sufficiently firm to slice. It is laid in the vat in slices, a layer of curd and a sprinkling of salt alternately; this is continued until the vat is full, then a flat square piece of board is placed at the top of the vat, one having been previously laid at the bottom, placing one hand at the top, and the other underneath. The cheese is then to be turned over very quickly its own weight is a sufficient pressure, keep turning it every two or three hours, and two or three times the next day. It is to be kept in the vat three or four days, according to the firmness of it. When taken out, a thin piece of calico is to be dipped in boiling water and wrung out, and then to be pinned tightly round the cheese. This cloth remains on it until it is thoroughly dry. The cheese should be turned twice a day; it does not require any more salt than that which is put in with the curd.

* Communications reaching town after Wednesday, cannot be answered before the following week.

Markets.

SMITHFIELD, MONDAY, July 9.

The number of Beasts is not so large as of late, and, in consequence, a few of the choicest make rather more money; although 1*s.* is realised for a few of the best sizeable Scots, it is too much to quote as average of best qualities. The supply of Sheep is large, and the demand small. Lower prices are taken, especially for large polled Sheep and Ewes. Lambs are also a heavy trade, and very few make over 5*s.* per 8 lbs. Calves are selling worse than ever, many of them can scarcely be disposed of at all. From Holland and Germany there are 425 Beasts, 1460 Sheep, and 200 Calves; and from Scotland, 200 Beasts.

Per st. of 8 lbs.—	s	d	s	d	Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	8 to 3	10		Best Long-wools				
Best Short-horns	3	6 — 3	8		Ditto Shorn	3	2 to 3	6	
2d quality Beasts	2	10 — 3	4		Ewes & 2d quality				
Best Downs and Half-breds					Ditto Shorn	2	8 — 3	0	
Ditto Shorn	3	8 — 3	10		Lambs	4	0 — 5	6	
					Calves	2	4 — 3	8	
					Pigs	3	4 — 4	4	

Beasts, 3042; Sheep and Lambs, 29,860; Calves, 360; Pigs, 254

FRIDAY, July 13.

The supply of Beasts to-day is small, and owing to the morning being cool, there is more inquiry for best qualities; we are consequently enabled to quote 4*s.* as being generally obtained for choice descriptions. Trade is more cheerful for Sheep, and in most instances rather more money is realised. We are abundantly supplied with Lambs, and the average quality is very middling; trade is very heavy, and late prices with difficulty maintained. The supply of Calves is again very large; they are with difficulty disposed of at rather lower rates. From Holland and Germany we have 161 Beasts, 730 Sheep, and 251 Calves; and 130 Milch Cows from the home counties.

Per st. of 8 lbs.—	s	d	s	d	Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c	3	8 to 4	0		Best Long-wools		to		
Best Short-horns	3	6 — 3	10		Ditto Shorn	3	4 — 3	6	
2d quality Beasts	2	10 — 3	4		Ewes & 2d quality		—		
Best Downs and Half-breds					Ditto Shorn	2	8 — 3	2	
Ditto Shorn	3	8 — 4	0		Lambs	4	0 — 5	0	
					Calves	2	4 — 3	6	
					Pigs	3	4 — 4	4	

Beasts, 843; Sheep and Lambs, 14,310; Calves, 725; Pigs, 260.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, July 12.

Prime Meadow Hay	70s to 80s	Clover		60s to 95s
Inferior ditto	60 68	New Clover		60 75
Rowen	— —	Straw		32 38
New Hay	60 70			J. COOPER.

CUMBERLAND MARKET, July 12.

Prime Meadow Hay	72s to 77s	Inferior	50s to 80s
Inferior ditto	50 65	New Clover	50 80
New Hay	50 75	Straw	32 38
Old Clover	95 100		JOSHUA BAKER.

COVENT GARDEN, July 14.

The supply of Hothouse Grapes, Peaches, and Nectarines is well kept up. Pine-apples are cheaper. A large importation of West India Pines has just arrived. They look tolerably good. Strawberries and Cherries are very plentiful. A few Apricots have made their appearance, as well as ripe Gooseberries and Currants. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, young Turnips may be obtained at from 3d. to 6d. a bunch. Carrots the same. Cauliflowers are very plentiful. The season for Rhubarb and Asparagus is nearly over. Green Peas fetch from 1s. 6d to 4s. per bushel. Potatoes are cheaper. New Potatoes realise from 1d. to 4d. per lb. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1s 6d. to 3s. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Lily of the Valley, Cinerarias, Tropæolums, Carnations, Pinks, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 5s to 8s	Apples, kitchen, p. bsh., 4s to 8s
Grapes, hothouse, p. lb., 2s to 6s	Oranges, per doz., 1s to 2s
Peaches, per doz., 6s to 20s	— per 100, 6s to 16s
Nectarines, per doz., 6s to 20s	Lemons, per doz., 1s to 2s
Strawberries, p. pun., 9d to 2s	— per 100, 7s to 14s
— per pottle, 4d to 1s	Almonds, per peck, 6s
Cherries, wall, per lb., 2s to 3s	— sweet, per lb., 2s to 3s
— standard, p. lb., 4d to 6d	Walnuts, p. 100, 1s 6d to 2s
Gooseberries, green, p. hf. sieve, 3s 6d to 5s	— p. bush., 16s to 24s
Currants, do., 5s to 8s	Nuts Bar., p. bush., 20s to 27s
	— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 6d to 1s	Carrots, per bun., 4d to 6d
Cauliflowers, p. doz., 6d to 3s	Spinach p. sieve, 1s to 1s 6d
Peas, per bush., 1s 6d to 4s	Onions, p. bunch, 2d to 6d
Beans, p. bush., 1s 6d to 2s 6d	— Spanish, p. doz., 1s 6d to 4s
Sorrel, p. hf. sieve, 6d to 9d	Shallots, per lb., 6d to 8d
Potatoes, per ton, 60s to 180s	Garlic, per lb., 6d to 1s
— per cwt., 5s to 14s	Artichokes, p. doz., 1s 6d to 3s
— per bush., 4s to 7s	Vegetable Marrows, doz., 6d to 1s
Turnips, per bunch, 3d to 6d	Lettuce, Cab., p. sc., 4d to 9d
Red Beet, per doz., 2s to 4s	— Cos, do., 6d to 1s
Horse Radish, p. bdl., 2s to 6s	Mushrooms, p. pot., 1s 6d to 3s
Asparagus, p. 100, 1s to 4s	Small Salads, p. pun., 2d to 3d
Rhubarb, p. bundle, 3d to 4d	Fennel, per bunch, 2d to 3d
French Beans, p. 100, 6d to 1s	Savory, per bunch, 2d to 3d
Cucumbers, each, 4d to 1s	Thyme, per bunch, 2d to 3d
Leeks, per bunch, 4d to 6d	Parsley, p. doz. bun., 3s to 4s
Celery, p. bundle, 1s to 2s	— Roots, p. bdle., 1s to 1s
Radishes, per 12 hands, 9d	Marjoram, green, p. bun., 4d to 6d
Watercress, per doz. bunches, 4d to 6d	Mint, green, per bunch, 3d to
	Basil, green, p. bunch, 4d to 6d

HOPS.—Friday, July 13.

Messrs. Pattenden and Smith report that the market is very brisk for all fine coloured Hops. The general accounts from the plantations continue to come worse and worse, with very few exceptions. Duty, 69,000l. The finest Weald of Kent and Sussex Hops are selling freely at from 100s. to 120s. per cwt.

MARK LANE.

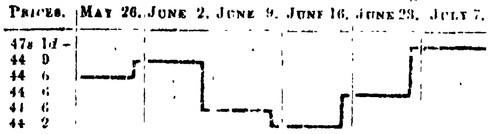
Monday, July 9.—The supply of Wheat from Essex, Kent, and Suffolk, by land carriage samples this morning was very small, and sold at fully the prices of this day se'nnight. The best qualities of foreign also support last week's rates, but more difficulty was experienced in disposing of the inferior.—Barley is inquired after, and commands an advance of 1s. per qr.—Beans and Peas sell more freely.—The Oat trade is firm, and prices 6d. to 1s. per qr. higher.

Friday, July 13.—The arrivals of foreign Wheat since Monday amount to 9680 qrs.; those of all other grain were small. That day's prices for Wheat are fully supported, but the trade is not large.—Barley is in demand, and fully 1s. per qr. dearer.—Beans are held firmly, and Peas are unaltered in value.—Oats improved in price 1s. per qr.—The quotations of Flour are unaltered, and there is little business doing. The same may be said of Indian Corn.—The weather since the 6th instant has been uninterruptedly fine and seasonable, and the crops are consequently making rapid progress towards maturity. Taken as a whole throughout the kingdom, they may be represented as promising, and although complaints as usual are not wanting, particularly as regards the Wheat and Barley, it is yet too early to place much reliance upon them. Continued shortness of supplies has enabled the holders in Scotland and many of the inland markets to establish a further advance of 1s. to 2s. per qr. upon Wheat. Barley has also advanced 1s. per qr., and the value of Oats has an upward tendency. Disease in the Potatoes appears to be of rare occurrence, but the yield of the early crop is very small. In the near Continental markets Wheat has advanced 1s. to 2s per qr. Lucon and Nantes red has been sold at 42s. per qr., cost, freight, and insurance. Dunkirk 60¼ lbs. white is held at 46s. per qr., f.o.b. In Belgium 62 lbs. red Wheat has brought 46s. 6d per qr., f.o.b.; and 61 lbs. in Rotterdam at 45s. per qr., f.o.b.

Imperial Averages.	Wheat.	Barley	Oats.	Rye.	Beans.	Peas.
May 26	44s 6d	27s 9d	17s 9d	26s 0d	31s 9d	32s 4d
June 2	44 9	27 10	17 7	26 6	31 7	33 4
— 9	44 6	26 11	17 7	25 4	31 7	30 4
— 16	44 2	26 5	18 0	26 3	30 3	30 4
— 23	44 6	26 5	18 9	25 9	30 10	31 5
July 7	47 1	25 11	17 11	28 1	32 1	33 10
Aggreg. Aver.	45 1	26 6	18 0	26 7	31 4	31 9
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices. | May 26. | June 2. | June 9. | June 16. | June 23. | July 7.



PRICES CURRENT.	London. July 2. qr.	London. July 9. qr.	Liverpool. July 3. 70 lbs.	Liverpool. July 10. 70 lbs.	Wakefield. Jun. 29 qr.	Wakefield. July 6. qr.	Boston. July 4. qr.	Boston. July 11 qr.	Birmingham. July 5. 62 lbs.	Birmingham. July 12. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	42 to 44	42 to 44	6 9 7 0	6 10 7 2	44 to 50	45 to 51	45 to 50	45 to 50	5 11 6 5	6 1 6 7
" white ...	47—50	47—50	7 2 7 6	7 3 7 8	44—52	45—53	46—53	46 53	6 4 6 8	6 6 10
Old, red ...	42—48	42—48	6 10 7 2	6 11 7 2	43—45	44 46	—		5 10 6 5	6 0 6 6
" white ...	50—54	50—54	7 6 7 10	7 7 7 10	—52	53	—		6 3 6 10	6 4 7 10
Foreign ...	36—58	36—58	4 6 8 6	4 8 8 6	40 53	41 54	—	—	5 3 7 10	5 4 7 0
			480 lbs.	480 lbs.						
Rye—New ...	22—24	22—24	—	—	—	—	—	—	—	—
Foreign ...	22—23	22—23	—	—	—	—	—	—	—	—
Foreign meal	6l.—7l	6l.—7l	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	21—24	21—24	—	—	22—23	22—23	24—26	24—26	23—25	23—25
Malting ...	22—27	22—27	30s—32s	30s—32s	—	—	28—30	28 30	29—32	29—32
Foreign ...	18—27	18—27	—	—	2[illegible]—28	24—28	—		—	—
					6 bush.	6 bush				
Malt—Ship ...	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White ...	19—24	19—25	2s 10d 3s 2d	2s 10d 3s 2d	—	—	14—21	14—21	20—28	20—28
Black ...	15—22	15—23	2 5 2 9	2 5 2 8	—	—	—	—	19—20	19—20
Foreign	14 21	14 21	2 4 2 6	2 4 2 6	—		—		—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	25—30	25—30	31s—	34s—	28—32	28 32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding ...	23—25	23—25	29—31s	29—30s	—	—	—	—	11—12	11—12
Foreign ...	25—32	25—32	32—34	32—34	—	—	—	—	—	—
Beans—										
New, small ...	23—33	23—29	30—33	30 33	29—33	32—35	30—33	30—33	12—14	12—14
Old ...	—	—	32 34	32—34	35—36	—	34—36	31—36	15—16	15—16
Foreign ...	21—36	21—36	21—32	23—32	26—29	30—31	—	—	11—13	11—13
Linseed—Feed	—	—	40—42	40—42	32—40	32—40	—	—	—	—
Foreign ...	37—42	37—42	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9l. 7s	9l. 7s	7l. 12s	7l. 12s	—	—	—	—	—	—
Foreign ...	6l.—7l	6l.—7l	—	—	—	—	—	—	—	—
Indian Corn	30—34	30—34	33s—35s	33s—34s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	36—44	36—44	35—36	35—36	—	—	36 40	36—40	36—38	37—39

Weekly Averages and Imports.	London. Aver. July 10	London. Impts	Liverpool. Averages.	Liverpool. Imports.	Wakefield. Aver.	Wakefield. Impts.	Boston. Aver.	Boston. Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	46 11	9680	45 [illegible]	13,62[illegible]	48 7	9961	49 11	824	48 4½	4295
BARLEY ...	28 2	2790	25 6	[illegible]609	28 0	1493	—	—	—	653
OATS ...	21 0	2300	17 11	1181	18 11	1029	15 4	627	19 9½	—
RYE ...	24 7	—	27 9	—	—	—	—	—	—	3149
BEANS ...	31 0	—	31 9	3516	—	411	34 0	101	—	—
PEAS ...	29 8	—	31 5	2222	—	262	—	—	—	—
Signed	*Kingsford and Lay.*		*Segar and Tunnicliffe.*		*Sandars and Dunns.*		*Thomas Wright.*		*J. and C. Sturge.*	

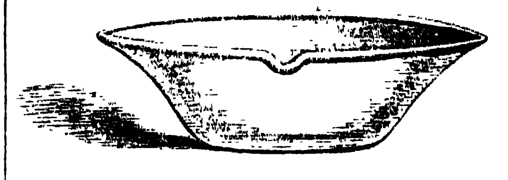
APSLEY PELLATT and Co. (late Pellatt and Green), [illegible] Works, Holland-street, Blackfriars, have always on [illegible] Glasses, 1s. 2d. per lb.; Cucumber Glasses, 1s. 6d. per lb.; Milk Pans, 18 in., white glass, 5s. 6d. each; Propagating Glasses, white, 1s. per lb.; do., green, 10d.; do. condensing, [illegible] per lb. extra; Grape Shades, 1s. 6d. to 2s. each; Fish-bowls, from 1s. 6d. each; Wasp and Fly-traps, 40s. per gross, or 3s. 6d. per dozen. By the use of these traps fruit may be preserved from (otherwise certain) destruction.

GLASS FOR CONSERVATORIES, &c.

HETLEY and CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

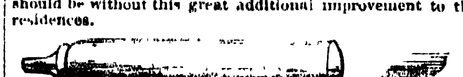
See the *Gardeners' Chronicle*, first Saturday in each month.

GLASS.



GLASS MILK PAN.

THOMAS MILLINGTON is supplying Foreign Sheet Glass, very superior to any other Glass in the market, in 100-ft. and 200-ft. cases, of large dimensions, 16-oz., at 3d. per ft., or cut to size in ranges, not exceeding 40 inches, at 3½d per foot. British Plate Glass for Windows as well as for Horticultural purposes, from 1s 2d. to 2s per foot. No gentlemen should be without this great additional improvement to their residences.



CUCUMBER TUBE.

Estimates and List of Prices forwarded on application at the Warehouse, 87, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS and CO., 116, Bishopsgate street Without, have the pleasure to hand their New List of Prices of SHEET GLASS for Cash.

HORTICULTURAL GLASS,

CUT TO SIZE UP TO 40 INCHES LONG.	SHEET SQUARES. In boxes of 100 feet
16 oz. from 3d. to 3½d. per foot.	Under 6 by 4 — 12s. 0d
21 ,, 3½ 5 ,,	6 by 4 and 6½ by 4½ — 15 0
26 ,, 3½ 7½ ,,	7 by 5 and 7½ by 5½ — 17 6
32 ,, 4 9½ ,,	8 by 6 and 10 by 8 — 20 0

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS, in sizes not exceeding 5 feet superficial

⅛ thick per foot 1s. 0d.	¾ inch per foot 2s. 0d.
¼ inch 1 2	1 inch 3 0
½ inch 1 6	

PATENT ROUGH PLATE TILES.

⅛ thick each 0s. 11d.	⅜-inch each 1s. 7d.
¼-inch 1 3	½-inch 2 0

SHEET GLASS TILES AND SLATES.

	16-oz.	21-oz.	26-oz.	32 oz.
Tiles made of Sheet Glass	8d	10d.	1s.	1s 4d.
Slates, 20 ins. by 10	10d.	1s.	1s 4d.	1s. 8d.

Slates are kept in stock of the usual sizes, and made to any dimensions.

GLASS MILK-PANS, PROPAGATING and BEE GLASSES, Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, Lamp Shades, and Lactometers for trying the quality of Milk, 4 tubes 7s. 6d., 6 tubes, 10s. Self Registering Thermometers for Greenhouses.

HARTLEY'S PATENT ROUGH PLATE GLASS.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—The readers of the *Gardeners' Chronicle* of Saturday, Feb. 24th, must have observed the high terms in which this Glass was spoken of by Dr. Lindley. We have re-arranged our list of prices to correspond precisely with those of the Patentee, to which we would beg the attention of the Nobility, Clergymen, Gentry, and others.

In squares under 8 by 6 — 4d. per foot.
8 by 6 under 10 by 8 — 4½d. — 10 by 8 under 14 by 10 — 5d.
14 by 10 ,, 1½ foot — 5½d. — 1½ foot ,, 3 feet — 6d.
3 feet ,, 4 feet — 6½d. — 4 feet ,, 5 feet — 7d.

A full List of Prices and every information may be had by applying to James Phillips and Co., Horticultural Glass Warehouse, 116, Bishopsgate-street Without, London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert. ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, bernacle, brent, and laughing geese, sheildrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

HOTHOUSES and CONSERVATORIES made and fixed complete in all parts of the Kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes, and Lights of all sizes, kept ready for use, packed and sent to all parts of the Kingdom; warranted best material. Garden-lights of every description, at James Watts', Hothouse Builder, Claremont-place, Old Kent-road. Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

GREENHOUSES.

HENRY FREEMAN, Hothouse Builder and Hot-water Apparatus Manufacturer, Triangle, Hackney, near London, begs to call the attention of the gentry to his low prices for cash. Good Substantial-built Greenhouses, fixed complete, 42 ft. long, 13 wide, 90l. 21 ft. long, 13 wide, 50l., 12½ ft. long, 10 wide, 30l. A large assortment of Conservatories, Hothouses Pits, Melon and Cucumber Boxes, Iron Hand-lights, Summer-houses, Seats, &c. Estimates for any branch in the above line, either in wood or iron, or for park fencing.

FLOWER POTS AND GARDEN SEATS.

JOHN MORTLOCK, 250, Oxford-street, respectfully announces that he has a very large assortment of the above articles in various colours, and solicits an early inspection. Every description of useful CHINA, GLASS, and EARTHENWARE at the lowest possible price, for cash.

250, Oxford-street, near Hyde-park, London.

THE COLLECTION of ORCHIDS of the LATE CHARLES WOOD, Esq.

MR. J. C. STEVENS is instructed to announce for sale by Auction, at his Great Room, 38, King-street, Covent-garden, on FRIDAY, 20th July, at 12 for 1 o'clock, THE ORCHIDS of the late Charles Wood, Esq., of Park-hill House, Clapham (where the Plants may be seen until Tuesday the 17th). In the collection will be found fine specimens in good health of Phalænopsis, Aerides, Vandas, Saccolabiums, Stanhopeas, &c.—On view at the Auction Room the day before the Sale, and Catalogues had.

ENGLEFIELD-GREEN, EGHAM, SURREY.

106 dozen of fine OLD PORT and SHERRY WINES, from 15 to 20 years in bottle, part of the Household FURNITURE, 2 Pianofortes by Broadwood and Tomkinson, a 12-feet Billiard Table by Thurston, 4 In-calf ALDERNEY COWS, Dairy and Brewing utensils, 4 capital 6-light Pine and Melon Pits, with Hot-water Apparatus and Lining Walls with Iron Copings, a Greenhouse, Garden Implements, Box and Hand-lights, Garden-engine, light Dung-cart, Pony Water-cart on 4 wheels, and other effects.

MR. WATERER will sell by Auction, on TUESDAY, July 24, at 11 o'clock, on the premises, at Englefield-green, the property of T. R. Ward, Esq (leaving his residence), 106 dozen of fine old Port and Sherry Wines, from 15 to 20 years in bottle; 10 dozen of Gooseberry and Orange Wines, part of the Household Furniture, comprising Bedsteads, Bedding, Chairs, Tables, and Drawers, fine-toned 6-octave Square Pianoforte by Broadwood, and a Grand ditto by Tomkinson; excellent 12-feet Billiard Table by Thurston, with Cues, Balls, &c., 4 fine young In-calf Alderney Cows, fine young Sow and Pigs; 4 nearly new 6-light Pine and Melon Pits, with Hot-water Apparatus, Pipes, Lining Walls with Iron Coping, and Slate Cistern, 100 Fruiting and Succession Pines, a Greenhouse 18 feet by 9, 300 Greenhouse Plants, Garden Tools, Box and Handlights, with Copper and Iron Frames, Garden-engine, Lead and Iron Pumps, Dairy and Brewing Utensils, 50-gallon Copper, Malt-mill, Hand Corn-mill, Dressing-machine, light Dung-cart, and Harness, quantity of Manure, Firewood, Sprays, and numerous other effects.—The Greenhouse and Pits may be viewed three days prior to the sale, and the remainder on the morning of sale. Catalogues may be had on the premises; the Barley Mow, Englefield-green; and of Mr. WATERER, Auctioneer and Land and Timber Surveyor, Chertsey, Surrey.

FREEHOLD ESTATE, NEAR WEYMOUTH.

TO BE SOLD, by Private Contract, a very attractive and improvable ESTATE, comprising 80 acres of superior Land, within one mile of Weymouth, with ornamental Plantations, adjoining the Dorchester turnpike-road. The land-tax is redeemed. Price 26½ years' purchase on the clear rental. Also a very pretty modern-built VILLA, with Stabling, Walled Garden, Plantation, and about two acres of Rich Pasture Land adjoining. Price 21 years' purchase.—Further particulars to be had of Messrs. HENNING and ANDREWS, Solicitors, Weymouth.

JERSEY BULL.

TO BE SOLD, a remarkably large, handsome animal of this breed. His skin is particularly fine, his disposition gentle, and he is the property of a gentleman who has been making every effort, for the last 25 years, to improve his breed of Jerseys. For further particulars, address to P. P., care of Mr. Maggs, 109, Bond street, London.

TO NURSERYMEN, MARKET GARDENERS, & OTHERS.

TO BE DISPOSED OF, the unexpired Term of 21 years of a very desirable FARM, bounded by the high Dover road, three miles from Woolwich, five from Greenwich, and nine from London, containing 50 acres of rich arable land (11 acres of which are Fruit plantations in full bearing), at a very low rent. The land is in high cultivation and fully cropped. There is a substantial and good Dwelling house, with all suitable Outbuildings. The Live and Dead Stock and Crops to be taken at a valuation, and immediate possession may be had. Situation pleasant and healthy. Roads good. For particulars apply to Messrs. DICKSON and BELL, Surveyors and Land Agents, 22, Bucklersbury, London.

SUSSEX.

TO BE LET for a term of years, and entered upon at Michaelmas next, the Farm of WOTTON, in the Parish of Folkington, at present in the occupation of Mr Shoosmith. It consists of about 409 acres of Meadow, Pasture, and Arable land; the Arable land is most productive of Beans and Wheat; most of the Pasture and Meadow land is of the richest fattening quality. There is an excellent Farm-house, with every convenience, and the Farm-buildings are large and commodious, and economically fitted up and arranged for fattening a large number of beasts in feeding-houses, stalls, sheds, and yards. The Farm is about four miles from Hailsham and Eastbourne, 10 miles from Lewes, market town, and one mile from the Polegate station on the Lewes and Hastings Railway. For particulars, apply to Mr. JOHN MORTON, Whitfield, Berkeley, Gloucestershire. A person at Folkington Place will show the Farm.

STANFIELD HALL.

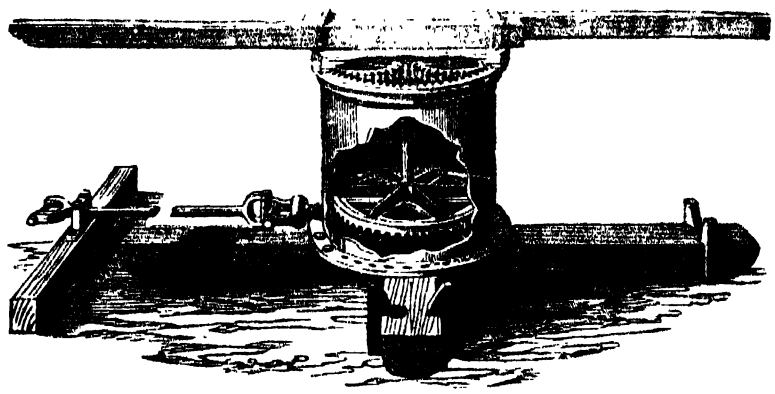
TO BE LET, for a term of years, at a very moderate rental, with immediate possession, the excellent FAMILY MANSION known as Stanfield Hall, Wymondham, Norfolk, within 2 miles of the railway station, and 7 of Norwich. It contains, on the ground floor, a noble entrance hall, and a suite of rooms, consisting of library, dining-room, and drawing-room, communicating with each other by double doors, housekeeper's rooms, butler's pantry, servants' hall, store-room, pantry, larder, two kitchens, laundry, and brewhouse, on the first floor, five principal bed-rooms, three dressing-rooms, nursery, bath-room, and water closet; on the upper floor, eight bed-rooms; in the basement two large cellars. The offices comprise two four-stall stables, double coach house, hay-house, and harness room, visitors' stable for 10 horses, and roomy carriage-house. Several acres of pasture or arable land may be had, if required. For rent and further particulars apply to W. Bracey, Esq., Solicitor, 63, Old Broad-street, London, or to Mr. Butcher, Land Agent and Auctioneer, Norwich.

NORWICH MEETING OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

DEANE, DRAY, and DEANE respectfully announce that the Number of their Stand in the Implement Yard is SIXTY-TWO, where Agriculturists will find a good assortment of Patented and registered Articles both of DEANE, DRAY, and DEANE's own manufacture, and of various distinguished machinists. DEANE, DRAY, and DEANE, Agricultural Implement makers, Swan-lane, Upper Thames-street, near London Bridge.

METCALFE'S ALKALINE TOOTH-POWDER will be found to be the best that has yet been produced, it contains no acids, nor anything that can injure the finest enamel, it thoroughly removes the tartar and all impurities, produces that beautiful white appearance so much to be desired, and its fragrant perfume tends to sweeten and purify the breath. M. and Co., from the many years they have been celebrated as Tooth-brush Makers, have had opportunities (that occur to few) of testing the relative merits of those powders that have been brought before the public. They have now succeeded in procuring the receipt from which the above Powder is prepared, and confidently recommend its universal adoption. Wholesale and retail at METCALFE, BINGLEY, & Co.'s, Brush-makers to H.R.H. Prince Albert, 2s. per box. Caution.—The genuine powder will have the Royal Arms, combined with those of H.R.H. Prince Albert, on the lid of the box, and the signature and address of the firm, thus: "METCALFE, BINGLEY, and Co., 130 s., Oxford-street, London."

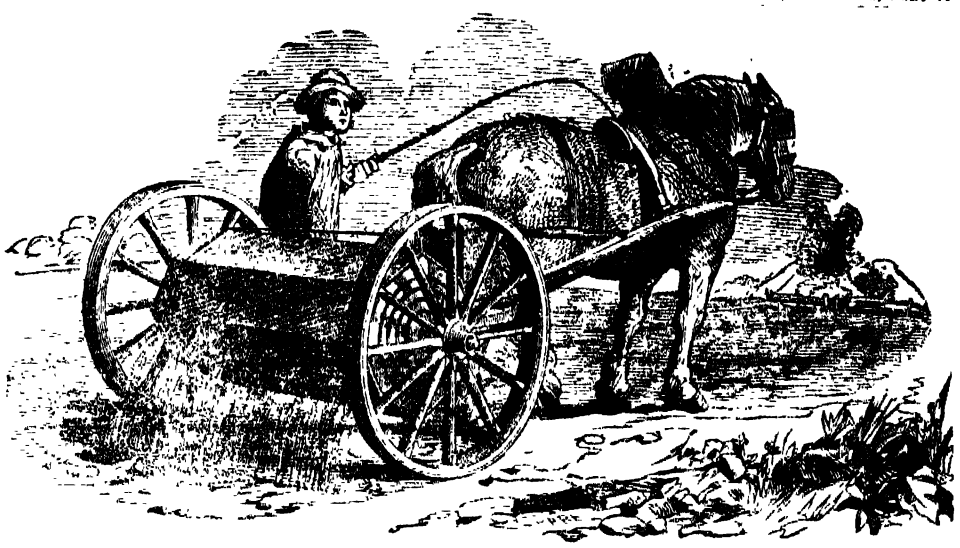
MESSRS. BARRETT, EXALL, AND ANDREWES'



PATENT SAFETY HORSE GEAR.

EIGHTEEN MONTHS' trial of the above REALLY VALUABLE INVENTION, has secured it a standard position as the safest, easiest, and most economical HORSE WORKS extant. Upwards of One Hundred of them have now been sold, and the most flattering Testimonials received of their high character and safety, which, with a Prospectus, may be obtained on application by post, or at the NORWICH MEETING, where a number of them, of every size and power, will be exhibited at Stand 58, together with a large assortment of Patent and other THRESHING MACHINES, CHAFF CUTTERS, GRAIN MILLS, &c.

KATESGROVE IRON WORKS, READING, JULY 14.



MESSRS. STRATTON, HUGHES, AND CO.

Respectfully invite the attention of Agriculturists to their Stand, No. 3, ROYAL AGRICULTURAL SOCIETY'S SHOW YARD, NORWICH, where they purpose exhibiting a Large Collection of

CARTS, WAGGONS, WOOD AND IRON WHEELS, NORWEGIAN HARROWS, &c.

Of the best construction, and at prices adapted to the present depressed state of the markets. They would especially invite attention to their Night-soil Cart, and to their PATENT CART for distributing Liquid Manure (as shown above), which received the high commendation of the Judges at York. The Weight is only 5 cwt., and the Price 12 10.

S. H. and Co.'s NEW ILLUSTRATED CATALOGUE may be had at their Stand, gratis, or will be forwarded to any address on receipt of 12 postage stamps.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles, Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LLOG, Cheltenham.

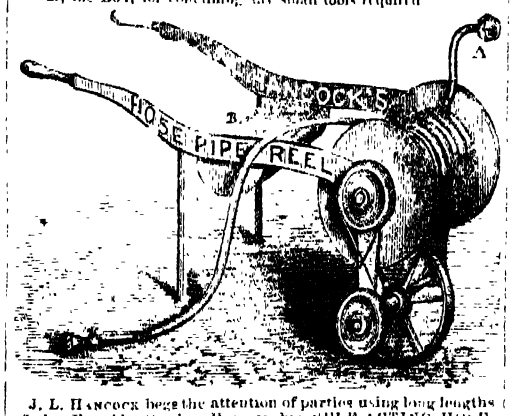
FLEXIBLE INDIA RUBBER HOSE, PIPES, AND TUBING.

JAMES LYNE HANCOCK, Sole Licensee and Manufacturer of the PATENT VULCANISED INDIA-RUBBER TUBING. These articles are made all sizes, from ¼-inch bore and upwards, are not injured by hot liquors and acids, are permanently flexible in all temperatures, and are well adapted for Watering Gardens, Breweries, Liquid Manure Pumps, Gas, and Chemical Purposes, they require no application of oil or dressing, and do not become leaky from remaining out of use, rendering them particularly suitable for Fire Engines, and all purposes where a permanently sound and flexible pipe is required.

VULCANISED INDIA RUBBER GARDEN HOSE fitted with copper branch, roses, and jets, complete, for attaching to Pumps, Cisterns, &c.

A, represents the Union-joint, for effecting the communication between the Hose and the Tank, or Reservoir.

B, the Box, for containing any small tools required.



J. L. HANCOCK begs the attention of parties using long lengths of the Flexible Garden Hose to his SELF-ACTING HOSE-PIPE REEL, which is found a most convenient machine for winding up and conveying away the Hose when out of use.

Manufactory and Warehouse, Goswell-mews, Goswell-road, London. All Orders and Letters addressed as above will receive immediate attention.

PORTLAND CEMENT. Testimonials received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank street, Westminster.

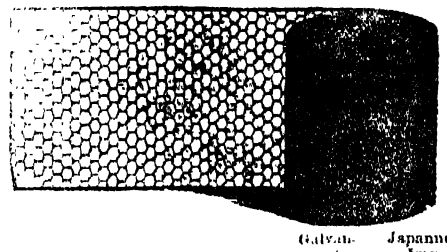
WIRE WORK, HOT-WATER APPARATUS, GRELNHOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK on Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries &c. HORTICULTURAL BUILDINGS, Greenhouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS on improved and economical principles.

Parties waited on in Town and Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Dome for Greenhouses.

GALVANISED WIRE GAME NETTING—7d. per yard, 2 feet wide.



	Galvanised	Japanned Iron.
2-inch mesh, light, 24 inch wide	7d. per yd.	5d. per yd.
2 inch ,, strong ,,	,, ,,	6½ ,,
2-inch ,, extra strong ,,	12 ,,	9 ,,
1½-inch ,, light ,,	8 ,,	6 ,,
1½ inch ,, strong ,,	10 ,,	8 ,,
1½-inch ,, extra strong ,,	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a course mesh, it will reduce the price one-fourth. Galvanized sparrow net of netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.

EXHIBITION, JULY 4, 1849.

AWARD OF THE JUDGES.

THE EXTRA GOLD MEDAL

1 To Mr. May, Gardener to Mrs. Lawrence, Ealing Park, for 30 Stove and Greenhouse Plants
2 To Mr. Mylam, Gardener to S. Rucker, Esq., Wandsworth, for 25 Orchids

THE LARGE GOLD MEDAL

1 To Mr Cole, Gardener to H. Colyer, Esq., Dartford, for 30 Stove and Greenhouse Plants.

THE MEDIUM GOLD MEDAL.

1 To Mr. Green, Gardener to Sir Edmund Antrobus, Bart., Cheam, for 20 Stove and Greenhouse Plants
2 To Mr. Mylam, for 15 Heaths
3 To Mr. Williams, Gardener to C. B. Warner, Esq., Hoddesdon, for 25 Orchids
4 To Mr. Plant, Gardener to J. H. Schroder, Esq, Stratford-green, for 15 Orchids

THE GOLD MEDAL.

1 To Mr. Taylor, Gardener to J. Coster, Esq, Streatham, for 20 Stove and Greenhouse Plants
2 To Mr. Cole, Dartford, for 15 Heaths
3 To Mr. Epps, Nurseryman, Maidstone, for 12 Heaths
4 To Mr. Black, Gardener to E. Foster, Esq., Clower Manor, for 12 Pelargoniums, in 8 inch pots
5 To Mr. Dobson, Gardener to Mr Beck, Isleworth, for 12 Pelargoniums, in 8-inch pots

THE LARGE SILVER GILT MEDAL.

1 To Mr. T. Williams, Gardener to Miss Traill, Hayes place, Kent, for 10 Stove and Greenhouse Plants
2 To Mr. Smith, Gardener to Mrs. Lawrence, Ealing Park, for 15 Orchids
3 To Mr. Dobson, Gardener to Mr. Beck, Isleworth, for 6 Orchids
4 To Mr. T. Bray, Gardener to C. B. Lousada, Esq., Peak House, Sidmouth, for 6 Pine-apples
5 To Mr. Ivison, Gardener to the Duchess Downger of Northumberland, Syon House, for a collection of Tropical Fruits

THE LARGE SILVER MEDAL.

1 To Messrs Fairbairn, Nurserymen, Clapham, for 12 Heaths
2 To Mr Jack, Gardener to R. G. Loraine, Esq, Wallington Lodge, for 6 Orchids
3 To Mr. Cock, Chiswick, for 12 Pelargoniums, in 8-inch pots
4 To Mr. Gaines, Nurseryman, Battersea, for 12 Pelargoniums, in 8-inch pots
5 To Mr. Parker, Gardener to J. H. Oughton, Esq., Roehampton, for 6 Pelargoniums, in 11 inch pots
6 To Mr Thomson, Gardener to Mrs Byng, Wrotham-park, for 3 dishes of Grapes (distinct varieties)

THE SILVER-GILT MEDAL.

1 To Messrs. Pamplin, Nurserymen, Lea-bridge road, for 20 Stove and Greenhouse Plants
2 To Mr. J. Bruce, Gardener to Boyd Miller, Esq, Collyer's-wood, for 10 Stove and Greenhouse Plants
3 To Mr. Jack, Wallington Lodge, for 10 Stove and Greenhouse Plants
4 To Mr. Stains, New road, for 6 Cape Pelargoniums
5 To Messrs. Rollisson and Sons, Nurserymen, Tooting, for 12 Heaths
6 To Mr T. Williams, Gardener to Miss Traill for 6 Heaths
7 To Mr. Gaines, Battersea, for 6 Pelargoniums, in 11-inch pots
8 To Mr. Stains, New-road, for 6 Fancy Pelargoniums
9 To Mr. Gaines, Battersea, for 6 Fancy Pelargoniums
10 To Messrs Henderson and Co., Pine-apple place, for 6 Calceolarias
11 To Mr. Turnbull, Gardener to the Duke of Marlborough, Blenheim, for a Providence Pine apple
12 To Mr. T. Bray, Gardener to C. B. Lousada, Esq, for an Old Queen Pine-apple
13 To Mr Jones, Gardener to Sir J. J. Guest, Bart, Dowlais House, Merthyr Tydvil, Glamorganshire, for a Ripley Queen Pine-apple
14 To Mr. T. Bray, Gardener to C. B. Lousada, Esq., for an Enville Pine-apple
15 To Mr. Henderson, Gardener to Sir George Beaumont, Bt, for three dishes of Grapes (distinct varieties)
16 To Mr. Turnbull, Gardener to the Duke of Marlborough, for a box of Grapes, containing not less than 12 lbs
17 To Mr Fleming, Gardener to the Duke of Sutherland, Trentham, for a single dish of Black Hamburgh Grapes
18 To Mr Turnbull, for a single dish of white Grapes (Muscat of Alexandria)
19 To Mr. Parker, Gardener to J. H Oughton Esq, for four dishes of Peaches and Nectarines

THE SILVER MEDAL.

1 To Mr T. Williams, Gardener to Miss Traill, for a specimen plant of Lucia Massonii
2 To Mr. Dyson, for a specimen plant of Epidendrum sp. from Mexico
3 To Mr. Henderson and Co., for a specimen plant of Stanhopea tigrina
4 To Messrs. Pamplin, Lea-bridge-road, for 12 Heaths
5 To Mr. Bruce, Gardener to Boyd Miller Esq., for 6 Heaths
6 To Mr. Stains, New-road, for 12 Pelargoniums, in 8-inch pots
7 To Mr. Robinson, Gardener to J. Simpson, Esq., Pimlico, for 6 Fancy Pelargoniums
8 To Mr. Ambrose, Battersea, for 6 Fancy Pelargoniums
9 To Mr. Gaines, for 6 Calceolarias
10 To Mr. Bray, Gardener to Baron de Goldsmid, St. John's Lodge, Regent's Park, for 6 Fuchsias
11 To Messrs. Lane and Son, Great Berkhompstead, for 100 Roses
12 To Mr. Terry, Gardener to Lady Puller, Youngsbury, for 50 Roses
13 To Mr Spencer, Gardener to the Marquis of Lansdowne, Bowood, for a Providence Pine apple
14 To Mr. Spencer, for an Old Queen Pine-apple.
15 To Mr Jones, Gardener to Sir J. J. Guest, Bart, for a Ripley Queen Pine apple
16 To Mr. Drummond, Gardener to C. R. Leigh, Esq., for a Cayenne Pine-apple
17 To Mr. Lushey, Gardener to James Hill, Esq., The Rookery, Streatham, for a dish of black Grapes (Black Prince)
18 To Mr Davis, Oak hill, for a dish of white Grapes (Muscat of Alexandria)
19 To Mr. Northcote, Gardener to Miss Wigram, Wanstead, for Vines in pots
20 To Mr Monro, Gardener to Mrs. Oddie, Colney House, for four dishes of Peaches and Nectarines
21 To Mr. Parker, Gardener to J. H. Oughton, Esq, for two dishes of Peaches and Nectarines
22 To Mr. Bassett, Gardener to R. S. Holland, Esq, Westonbirt, for a splendid plant of Camarotis purpurea, overlooked at the first exhibition, on May 16th.

THE SMALL SILVER MEDAL

1 To Mr. Green, Gardener to Sir E. Antrobus, Bart., for a specimen plant of Rondeletia speciosa
2 To Mr. Mylam, for a specimen plant of Epidendrum cernuescens
3 To Messrs. Rollisson and Sons, Tooting, for Barringtonia racemosa
4 To Mr. May, Gardener to Mr. Lawrence for Eleocarpus cyaneus
5 To Mr. Williams, Gardener to C. B Warner, Esq., for Lycopodium sp. from India
6 To Mr Wood, Norwood, for 12 Alpines
7 To Mr. Parker, Gardener to J. H. Oughton, Esq, for 6 Cape Pelargoniums
8 To Mr. Green, for 6 Heaths
9 To Mr. Williams, Gardener to C. B Warner, Esq., for 12 Exotic Ferns
10 To the same, for 30 British Ferns
11 To Mr. Robinson, for 12 Pelargoniums, in 8-inch pots
12 To R. Moseley, Esq., Pine-apple-place, for 6 Fancy Pelargoniums
13 To Mr. E. G. Henderson, Wellington road, St. John's-wood, for 6 Fancy Pelargoniums
14 To Mr. Turner, Slough, for 12 Carnations
15 To Mr Edwards, Holloway, for 12 Picotees
16 To Mr. Norman, Woolwich, for 12 Pinks
17 To Mr. Robinson, for 6 Fuchsias
18 To Messrs Paul and Son Cheshunt, for 100 Roses
19 To Mr Parsons, Gardener to A. George, Esq, Pondersend, for 50 Roses
20 To Messrs Lane and Son, for 12 new Roses
21 To the same, for 12 Roses (single blooms)
22 To Mr. Spencer, for a Providence Pine-apple
23 To Mr. Fleming, Gardener to the Duke of Sutherland, for an Old Queen Pine-apple.
24 To Mr. Spencer, for a Ripley Queen Pine-apple
25 To Mr. Elphinstone, Heckfield Place, for an Antigua Queen Pine-apple
26 To Mr Elliott, Gardener to J. B Boothby, Esq, Twyford Abbey, for a green-fleshed Melon (Fleming's Hybrid Persian)
27 To Mr. Drummond, for a scarlet-fleshed Melon
28 To Mr. Fleming, for a box of Grapes
29 To Mr Parsons, for a dish of Black Hamburgh Grapes
30 To Mr. Toy, Gardener to — Harrison, Esq., for a dish of white Grapes (Muscat of Alexandria)
31 To Mr. Turnbull, for two dishes of Peaches and Nectarines
32 To Mr. P Lydiard Bath, for four dishes of Strawberries
33 To Mr. Bray, Sidmouth, for a dish of Citrons
34 To Mr. Green for 6 Cacti
35 To Mr Cole, Gardener to H Colyer Esq, for a Peach tree in fruit
36 To Mr. Taylor, Gardener to J. Coster, Esq., for correct Labels (1st class)
37 To Mr Plant, Gardener to J. H Schroder, Esq, for correct Labels (2d class)

THE BRONZE MEDAL.

1 To Mr May, Gardener to Mrs Lawrence, for a specimen plant of Kalosanthes grandiflora minuta
2 To Mr. Cole for a specimen plant of Lechenaultia fulgens
3 To Mr Jack, Gardener to R. G Loraine, Esq, for Brunsfelsia gracilis
4 To Messrs. Rollisson and Sons, for Hellcia javanica
5 To Mr. Turner, Holloway, for 12 Alpine Plants
6 To Mr. E. G. Henderson, for 6 Cape Pelargoniums
7 To Mr. Taylor, for 6 Heaths
8 To Mr. Smith, Gardener to Joseph Anderson, Esq, the Holme, Regent's Park, for 30 British Ferns
9 To Mr. Norman, Woolwich, for 12 Picotees
10 To Mr. Edwards, Holloway, for 12 Pinks
11 To Mr. Gaines, for 6 Fuchsias
12 To Mr. Francis, Nurseryman, Hertford, for 100 Roses
13 To A. Rowland, Esq., Lewisham, for 50 Roses
14 To Messrs. Paul and Son, for 12 new Roses
15 To the same, for 12 Roses (single blooms)
16 To Mr. Drummond, for a Ripley Queen Pine-apple
17 To Mr. Jones, for a Ripley Queen Pine-apple
18 To Mr. Spencer, for a Ripley Queen Pine-apple, weighing 4 lbs. 3 oz.
19 To the same, for a Ripley Queen Pine-apple, weighing 4 lbs.
20 To Mr. Fleming, for a hybrid green-fleshed Melon
21 To Mr. Bruce, Gardener to Boyd Miller, Esq., for a scarlet-fleshed Melon (Cuthill's)
22 To Mr. Henderson, Gardener to Sir G. Beaumont, for a dish of Black Hamburgh Grapes
23 To Mr. T Bray, Sidmouth, for the same
24 To Mr. Taylor, Gardener to J. Coster, Esq, for the same
25 To Mr. Gold, Gardener to Sir Wolhaston Dixie, Bart., Bosworth Hall, for the same
26 To Mr. Turnbull, for the same
27 To Mr. Arborough, Gardener to S. Gurney, Esq, Upton Park, for the same
28 To Mr. Thomson, Gardener to Mrs. Byng, Wrotham Park, for the same
29 To Mr Davis, for the same
30 To Mr. Bassett, Gardener to T. B. Herrin, Esq, Finchley, for the same
31 To Mr. Collins, Gardener to E. H. Chapman, Esq., Haringay House, Hornsey, for a dish of Black Frontignan Grapes
32 To Mr Kemp, Gardener to Mrs. Grillion, East Acton, for a dish of white Grapes (Muscat of Alexandria)
33 To Mr. Thompson, Wrotham Park, for a dish of White Frontignan Grapes
34 To Mr. Collins, for two dishes of Peaches and Nectarines
35 To Mr. T. Bray, Sidmouth, for a dish of Guerries
36 To Mr. P. Lydiard, Bath, for four dishes of Strawberries
37 To R. Moseley, Esq, Pine-apple place, for 6 Scarlet Pelargoniums
38 To Mr. Wood, Norwood, for 24 Variegated Plants
39 To Mr. Green, for Acrides odoratum
40 To John Moxon Clabon, Esq, Albert-terrace, Regent's Park, for 50 British Plants
41 To Mr. Cole, for correct Labels (1st class)
42 To Mr. Epps, Maidstone, for correct Labels (2d class)

THE CERTIFICATE OF MERIT.

1 To Messrs. Rollisson and Sons, for Gardoquia sp
2 To Mr Smith, Gardener to Joseph Anderson, Esq., for 12 Alpine Plants
3 To Mr Stanly, Gardener to H Berens, Esq., Sidcup, for 6 Cape Pelargoniums
4 To Mr. Taylor, for 30 British Ferns
5 To Mr. Gaines, for a Seedling Fancy Pelargonium of 1848, named "Cerise Unique"
6 To Mr. Hoyle, Reading, for a deep scarlet Seedling Pelargonium named "Gem"
7 To Mr. Epps, for a seedling Heath, C. Maidstoniensis
8 To Mr. Keynes, Salisbury, for 12 Pinks
9 To Mr Thompson, Iver, for 24 Pansies
10 To Mr. Francis, Hertford, for 12 new Roses
11 To Mr Francis, for 12 Roses (single blooms)
12 To Mr. Woods, Gardener to T. Wigg, Esq, St. Albin's, for a Persian green-fleshed Melon
13 To Mr. Dickinson, Gardener to R Sutton, Esq., Rosaway, near Great Berkhampstead, for a green fleshed Melon
14 To Mr. Stewart, Gardener to R. Durant, Esq, for a scarlet fleshed Melon
15 To Mr. Henderson, Gardener to Sir G. Beaumont, Bart., for a box of Grapes
16 To Mr Davis, Oakhill, for the same
17 To Mr. Morton, Gardener to E. Lyon, Esq., Goring, Sussex, for the same
18 To Mr. J Monro, Gardener to Mrs. Oddie, for two dishes of Peaches and Nectarines
19 To Mr. Gainsford, Brentford, for a dish of Circassian Cherries
20 To Mr Elphinstone, for four dishes of Strawberries
21 To Mr. Parsons, Gardener to A. George, Esq., for four dishes of Strawberries
22 To Mr. Myatt, Deptford, for four dishes of Strawberries
23 To Mr. Turnbull, for six Royal George Peaches
24 To Mr. Collins, Gardener to E. H. Chapman, Esq, for a dish of Violette Hative Peaches
25 To Mr. P. Lydiard, for British Queen Strawberries
26 To Mr. Monro, for eight kinds of Strawberries
27 To Mr. Taylor, for correct Labels (1st class)
28 To Messrs. Pamplin, for correct Labels (2d class)

LIGHT CHEAP AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the number required for slates, can be laid on with great facility by farm servants or unpractised persons. Price 1d. per square foot. CROGGON'S PATENT NON CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel. Samples and Testimonials sent by post on application to Croggon and Co., 2, Bowgate hill, London.

A CLEAR COMPLEXION

GODFREY'S EXTRACT OF ELDER FLOWERS is strongly recommended for softening, improving, beautifying, and preserving the Skin, and in giving it a blooming and charming appearance, being at once a most fragrant perfume and delightful cosmetic. It will completely remove tan, sunburn, redness, &c., and by its balsamic and healing qualities render the skin soft, pliable, and free from dryness, scurf, &c., clear it from every humour, pimple, or eruption, and, by continuing its use only a short time, the skin will become and continue soft and smooth, and the complexion perfectly clear and beautiful. Sold in bottles, price 2s. 9d., with directions for using it, by all medicine vendors and perfumers.

GERMAN SPRING MATTRESSES, permanently elastic, very durable and cheap

3 feet wide	£2	8	0	4 feet 6 in. wide	£3	3	0
3 feet 6 in. wide	2	13	0	5 feet ditto	3	10	0
4 feet ditto	2	18	0	5 feet 6 in ditto	3	18	0

One of these, with a French Mattress on it, is a most excellent and soft bed. HEAL and SON'S LIST of BEDDING, with full particulars of weight, size, and prices, of every description of Bedding, sent free by post.—HEAL and SON, Bedding-manufacturers, 196 (opposite the Chapel), Tottenham-court-road.

SCHOOL FOR GENERAL AND SCIENTIFIC EDUCATION (especially with regard to Agriculture), Wickham Market, Suffolk, under the immediate patronage of the Rt. Hon. LORD RENDLESHAM, M.P., conducted by MR. G. DOWNES. The Classical and Mathematical branches are intrusted to a Gentleman, a Graduate of Cambridge, the Commercial and other departments to efficient Assistant Masters. A Farm, Laboratory, &c, are attached to the School. Terms moderate and inclusive, and may be known on application to Mr. G DOWNES, Wickham Market, Suffolk

NEW ZEALAND COMPANY'S SHIP.—The First-Class Passenger Ship PEKIN, 562 tons, now lying in the London Docks, will be despatched for the Company's Settlements, from the Port of London, on Monday the 6th August next

Rates of Passage, Provisions included:—

For each Person.	Chief Cabin Guineas.	Fore Cabin. Guineas	Steerage Guineas
14 years old, and upwards	45	25	18
7 years old, and under 14	27	15	10
1 year old, and under 7	18	10	8
Under 1 year old	0	0	0

An experienced Surgeon is appointed by the Company, and Medicines, Medical Comforts, and an ample Dietary provided for each Class of Passengers. Steerage-Cabins are provided for Persons paying in full for their own Passage in the Steerage.

For Freight, Passage, or further information, apply at THE NEW ZEALAND HOUSE; or to Mr. JOSEPH STATNER, Broker, 110, Fenchurch-street, London. By order of the Court,

THOMAS CUDBERT HARINGTON.

New Zealand House, 9, Broad-street-buildings, London, July 14, 1849.

LORD'S EUREKA SHIRTS.—"A comfortable fitting Shirt is a desideratum long wished for. The Public only require to be made acquainted with the Establishment of Mr. FORD, of 185, Strand, and try his Eurekas, to be convinced of the many advantages gained in appearance and comfort by wearing those made at this celebrated Establishment."—*Musical Gazette*, May 26, 1849.

Six very superior Shirts for 30s; also all the new Patterns in Coloured Shirts, six for 27s. Detailed Catalogues, with Patterns and Directions for Self-measurement, sent post free.—RICHARD FORD, 185, Strand, London.

CAUTION.—DR. LOCOCK'S FEMALE WAFERS.—A spurious imitation of this Medicine in the shape of Pills is offered by unprincipled shopkeepers, for the sake of greater profit. Purchasers must therefore observe that no Medicine is genuine but "WAFERS," and that "There is no No. 1 and No. 2 of the genuine Medicine." Dr. LOCOCK'S Female Wafers are the only remedy recommended to be taken by Ladies. They fortify the Constitution at all periods of life. They remove Heaviness, Palpitation of the Heart, Lowness of Spirits, Weakness, and allay Pain, create Appetite, and remove Indigestion, Headaches, Giddiness, &c. Full directions are given with every box. They have a pleasant taste.—Prepared only by the Proprietor's Agents, DA SILVA and Co., 1, Bridelane, Fleet-street, London, who are also Agents for "Dr. Locock's Pulmonic Wafers," for Asthma, Consumption, Coughs, and Colds. Sold by all respectable Medicine Vendors, at 1s. 1½d., 2s 9d., and 11s. per Box.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MOLLETT EVANS, of No. 7, Churchrow, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—SATURDAY, JULY 14, 1849.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 29—1849.] SATURDAY, JULY 21. [Price 6*d*.

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ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.
Under the Patronage of HER MOST GRACIOUS MAJESTY, THE QUEEN.

The Fourth Exhibition this season, of the above Society, will take place at the ROYAL SURREY ZOOLOGICAL GARDENS, on WEDNESDAY, July 25th, 1849, open to all exhibitors, when Prizes will be awarded for the following productions, viz — Miscellaneous Specimen Plants, Cape Heaths Fuchsias, Roses, Picotees, Carnations, Cut Flowers, Fruit, Grapes, Pines, and Honey. Extra Prizes offered by Members will also be awarded, viz., by J. Edwards, Esq , 5*l* 5*s*., for 6 yellow ground Picotees. By Messrs. J. and J Fairbairn, of Clapham, to Class the First, Private Growers, for 6 Cape Heaths, Large Silver Victoria Medal. The Woolwich Subscription Cup, value 5*l* 5*s*, for 12 white-ground Picotees. By Messrs. Paul and Son and Mr. E. Denyer, for Roses , Mr. W. Ambrose, for Fancy Pelargoniums ; Mr. T. Pawsey, Mr John Fowle, and J. Chapman, Esq , for Antirrhinums and Seedlings of 1848, and Cut Indigenous Plants, by N. T. Hill, Esq List of Prizes and Regulations for Exhibiting may be obtained from JOHN TAYLOR NEVILLE, Secretary, Ebenezer House, Peckham, Surrey.

SLOUGH CARNATION AND PICOTEE EXHIBITION (originally fixed for the 20th), is postponed to TUESDAY, the 24th day of July, 1849. Schedules of Prizes, and any information in reference to this Annual Meeting of the Provincial and Metropolitan growers, may be had of C. TURNER, Royal Nursery, Slough.

FANCY FAIR AND FLOWER SHOW, in the Prince's Park, Liverpool, in aid of the Infirmary and the Northern and Southern Hospitals, on the 8th, 9th, and 10th of August, 1849. FLORAL AND HORTICULTURAL EXHIBITION.- The Committee give notice that they have determined upon having Three Tents for the following arrangements .

1st.—One for all Plants sent for COMPETITION.
2d. - One for all Plants sent for EXHIBITION.
3d.—One for such Plants as are intended for SALE

Arrangements for the Competition Tent Prizes. First Class. ORCHIDÆ. —1st Prize. For the best collection of Six Plants, 4*l*.; 2d Prize. For the best collection of Four Plants, 2*l*. Second Class. STOVE and GREENHOUSE, exclusive of Orchidæ.—1st Prize. For the best collection of Ten Plants, 4*l* , 2d Prize. For the best collection of Six Plants, 2*l* Third Class, MISCELLANEOUS, not Orchidæ or Stove 1st Prize. For the best collection of 18 Plants, 4*l*. , 2d Prize, for the best collection of 10 Plants, 2*l*. All Plants intended for competition, must be staged before 9 o'clock on Wednesday morning, the 8th of August. The owners of plants in this Tent may remove them after 7o'clock the same evening, if they desire to do so. This Exhibition being entirely for Charitable purposes, it cannot be expected that many Prizes will be distributed, but the Judges will be empowered to award such Extra Prizes as the superior merits of any collection or single specimen may seem to deserve.

Arrangements for the Exhibition Tent.—This Tent is intended for the Exhibition of every description of Plants, Baskets of Plants, and any production that may add ornament or interest , and as the general effect of the Exhibition will greatly depend upon the liberality of contributors, the Committee hope that all will be induced to send whatever may be in their power, and not be deterred by the idea that their plants are not sufficiently good or numerous. It is of the greatest importance, for the convenience of staging, that all plants intended for this Tent should be delivered before 7 o'clock on Tuesday evening the 7th instant, or not later than 8 o'clock the following morning.

Arrangements for the Sale Tent.—All the Plants sent to this Tent are understood to be contributions, and to be sold for the benefit of the Charities, and should be delivered at the same hours as Plants intended for Tent No. 2.

FRUIT and CUT FLOWERS. — Contributions of Pines, Grapes, Peaches, &c., and a fresh supply of Cut Flowers each day, will be of the greatest importance, and are earnestly requested. Fruit from a distance may be sent, addressed to the Floral Committee, Town Hall, Liverpool.

GENERAL REGULATIONS.—Judges will not be Exhibitors. Gardeners will be furnished with Admission Tickets for the Gardens, which will also admit their Assistants, before 9 o'clock in the morning, and after 7 o'clock in the evening, for the purpose of watering and superintending their plants. In order to avoid confusion, and to prevent mistakes in the return of plants, it is necessary that a list should be delivered by each contributor, to the person appointed to receive them. The Committee will give every attention to the security and protection of the plants from injury or exposure, and should additional covering at night be necessary, they will provide it. Water will be provided, and every assistance given to the Gardeners, and any other information may be obtained on application to the Committee or Secretaries.—JAMES MAWDSLEY and THOMAS WHALLEY, Secretaries.

JOHN CATTELL begs to inform the public that New Seed of his Superior BARNES CABBAGE will be ready to send out about the 24th instant, 1 oz. packets of which may be had as usual, by inclosing 12 penny postage stamps, addressed JOHN CATTELL, Seedsman, Westerham, Kent.

PELARGONIUM—"FOQUETT'S MAGNIFICENT."—The raiser in ends sending out plants of the above, well established in 4-inch pots, in the middle of October next, price 2*l* 2*s* each, hamper and package included. Terms, prepayment , and as the stock is limited, no discount can be allowed. Orders will be executed in strict rotation. Post-office orders payable on the Post-office, Newport Isle of Wight

The well merited encomiums passed on this flower by "The Florist," "Floricultural Cabinet," and *Gardeners' Chronicle*, render any further comments unnecessary.—Address, MAJOR WILLIAM FOOTETT, Shide House, near Newport, Isle of Wight.

MESSRS. J. AND H. BROWN will forward the following NEW and CHOICE PLANTS to any part of the kingdom.

		s	*d*
12	Tea scented Roses, superior sorts, one of each ...	9*s*	0*d*
	Devoniensis and Yellow Noisette Roses, per dozen ..	9	0
	China Roses, White, Yellow, and Crimson, ,,	9	0
12	Bourbon Roses, choice sorts, in pots, suitable for planting in a bed	10	6
	Yellow and White Banksian Roses, per dozen	9	0
	Noisette and other Climbing Roses, in pots, ,,	6	0
	New and Choice Chrysanthemums, per dozen	6	0
	Fine New Perennial Phloxes, Belgian varieties, per dozen	8	0
	The newest and most approved Petunias, Verbenas, and Fuchsias, can be sent by post, per doz., 6*s* and	4	0
12	Achimenes, best varieties	6	0
	Camellias, finest sorts, well set with flower buds, per dozen	30	0
24	Choice Ericas, one of a sort	18	0
	Geraniums, 12 superb varieties, for	15	0
	Ditto 6 best fancy varieties, for	10	0
	Ditto new perpetual scarlet, each	2	6

	s	*d*		*s*	*d*
Allamanda Schottii	7*s*	6*d*	Viola lutea	3	6
Erythrina Fulgentissima	5	6	Lilium speciosum rubrum	3	6
Gardenia Fortunii	3	6	Phlox depressa	2	6
Clerodendron microphyllum	5	6	White Salvia and Azurea compacta, each	1	6
Balsamina repens	3	6	Thunbergias of sorts, 1*s* to	1	6
New Yellow Rhododendrons	7	6	Gloxinias, new sorts, 1*s*. 6*d*. to	2	6
Rhododendron Javanicum	21	0			

Choice Geranium, Cineraria, Primula, and Calceolaria seeds, 1*s*. per packet. Also List of Choice Greenhouse Plants, Roses, &c , by post.

Albion Nursery, Stoke Newington London, July 21.

TILEY'S EARLY MARROW CABBAGE.

EDWARD TILEY begs respectfully to inform the Nobility, Gentry, and the Public generally, that he is now ready to send out his Early Marrow Cabbage Seed, which has proved the best yet in cultivation, and five weeks earlier than any other sort yet grown. For further particulars see the advertisement in this Paper of July 14 Sold in packets containing 1 oz., 2*s*. 6*d*., ½ oz. packets, 1*s*. 6*d*. The above will be sent postage free on the remittance of a Post-office order, or the amount in penny postage stamps. Sold by EDWARD TILEY, at his general Seed-shop, 16, Pulteney-bridge, Bath

THE FOLLOWING RARE AND CHOICE SEEDS for Flowering next Season, at Sixpence per packet.

Very large double Emperor Stock, Red	Very large double Emperor Stock, blue
New White Giant Winter do.	Hollyhock, 12 sorts, mixed
Carnation and Picotee (mixed) from stage flowers	Auricula, finest mixed
Wallflower, double blue	Primula sinensis (mixed), pink and white
Do., Giant double brown	Calceolaria , better cannot be [had

Those Seeds have lately been received from Germany, and are adapted for the present sowing.

CLARKE and Co , Seedsmen, 86, High-street, Borough

CRYPTOMERIA JAPONICA SEEDLINGS.

MESSRS STANDISH AND NOBLE having still the largest stock in Europe of the above splendid tree, beg to offer fine strong plants at the annexed low prices :- 6 to 9 inches high, 3*s*. 6*d* each, 36*s*. per dozen. 12*l*. 10*s*. per 100 , 12 to 18 inches, 5*s*. each , 18 to 24 inches, 7*s*. 6*d*.; 24 to 36 inches, 10*s*. 6*d*., and upwards, according to size.

The present is the most suitable time for planting out, and every plant sent out by Messrs. S. and N. will be handsome, well-grown specimens.—Bagshot, Surrey July 21

HARDY AND SON, SEED-GROWERS, Maldon, Essex, beg to offer, for July and August sowing, A NEW YELLOW STONE TURNIP, raised from a limited supply, favoured by a friend in Van Diemen's Land, 1848, who warranted it not to run, nor to eat strong, in the hottest and long-continued drought of that country It has proved so with us ; and Mr. Thomas Langford, of Philberd's House, Maidenhead, Berks, who received a portion of the stock from us, thus describes it " I tried your Turnip against six other sorts, at the end of August, and none is to be compared to it in excellence for winter use." Half-ounce packets 6*d*., or postage stamps.

N. B. 4 best varieties of Cabbages, large packets,	,,	1*s*.
2 ditto	,,	6*d*.
12 choice biennial Flower Seeds,	,,	2*s*.
Scarlet Giant Stock, superior	,,	6*d*.

All post free.

DRUMMOND'S REAPING SCYTHE.

W. DRUMMOND AND SON beg to call the attention of Farmers to their REAPING SCYTHE, which continues to give complete satisfaction. With this Scythe one man can cut down from 1½ to 2 acres per day, laying the swathe so that it can be easily gathered into evenly sheaves and without any waste whatever. Price 9*s*. 6*d*. each. When three or more go together, the cost for carriage to many of the railway stations throughout the kingdom will not be more than from 1*s* to 1*s*. 6*d*. each. N. B. Orders from unknown correspondents without a remittance will not be attended to.

W. DRUMMOND and SONS Agricultural Museum, Stirling, N.B.

IMPROVED FLOWER STICKS.—THESE FLOWER STICKS are of a circular form, thereby avoiding angles and sharp edges, which are liable to cut and injure the plants. They may be had stained brown or green to suit the various plants —To be had of all respectable Nurserymen and Seedsmen, and dealers in Garden Implements. Manufactured and sold Wholesale, at H. MORRELL'S, 149, Fleet-street, London.

N.B. Samples to be seen at the Office of this Paper.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER and Hot-water Apparatus Manufacturer, Triangle, Hackney, near London, begs to call the attention of the gentry to his low prices for cash Good Substantial-built Greenhouses, fixed complete, 42 ft. long, 14 wide, 90*l*. , 21 ft long, 13 wide, 50*l*.; 12½ ft. long, 10 wide, 30*l*. A large assortment of Conservatories, Hothouses, Pits Melon and Cucumber Boxes, Iron Hand-lights, Summer-houses, Seats, &c. Estimates for any branch in the above line, either in wood or iron, or for park fencing.

TO NURSERYMEN AND FLORISTS.

TO BE SOLD, by order of the Trustee, under a Deed of Assignment, in one lot, the Stock in Trade of the old-established SWANSEA NURSERY, Swansea, South Wales, lately carried on by Messrs White and Melville, consisting of Forest and Fruit Trees, Evergreen and Flowering Shrubs, Green and Hothouse Plants, Pits, Frames, &c.—For further particulars, apply to Mr. JOHN WILLIAMS, *Cambrian* Office Swansea

TO BE DISPOSED OF, about 20 CAMELLIAS, of the best kinds, in ornamental tubs, standing from 5 to 7 feet high, and from 3 to 4 feet across ; the plants are in fine healthy condition, and covered with bloom buds.—Further particulars may be had of P. J Rock, Manor Nursery, Shacklewell, where the plants may be seen.

STATUES, VASES, FOUNTAINS, GARDEN ORNAMENTS, COATS OF ARMS, and ARCHITECTURAL EMBELLISHMENTS, in Imperishable Stone, by VAUGHAN and Co , 60 Stones' End, Borough, London.—CROGGON late of COADE'S, Superintendent.

IMPORTANT TO HORTICULTURISTS.

REGISTERED HORTICULTURAL TILES, for increasing the productiveness of Strawberries, Melons, Vines, Celery, Seakale, and to ensure them in perfection, at an earlier season than usual.

The Gardeners Journal of July 14, 1849, contains an editorial article upon these inventions, from which the following remarks are extracted . " The principle of the invention is one about the advantages of which there can be no doubt. By such appliances, and by the aid of such means, vast and important results may reasonably be looked for. As connected, especially with the culture of Strawberries and Melons, the use of these Tiles would undoubtedly add both to earliness and flavour. . . . We shall repeat, that the principle is excellent. All that we ask, on the part of Mr. Roberts, is the thanks of horticulturists for bringing before them in a prominent manner a principle of great practical utility, which, so far as regards the variety of uses and modes of application to which it is susceptible, we hold gardeners to be by far the best judges "

Just ready—Remarks on Improved Methods of Cultivating Strawberries, Grapes, Melons, Celery, Seakale, and Wall Fruit, showing how to secure these delicacies of the garden in perfection with increased productiveness, on a plan which can be practised by the amateur, as well as the professed gardener, with the less amount of labour than is required by the old methods ; to which is appended a full description of the Registered Inventions of J ROBERTS, with numerous engravings on wood.—Forwarded, post free, to applicants, enclosing two penny postage labels, addressed to J. ROBERTS, 34, Eastcheap, City, London.

TO AGRICULTURISTS, GARDENERS, AND FLORISTS.

COMPOUND CARBONISED ANIMAL MANURE. —HENRY COLES, SEEDSMAN, &c., 32, Cranbourn-street, Leicester-square (Agent for the sale, by special appointment), can confidently recommend this INODOROUS DRY MANURE, as possessing very superior, fertilising, augmenting, and retaining properties, which he supplies, either prepared suitable for general application, at 6*l* per ton, or specially for each peculiar kind of crop, at from 5*l* 5*s* to 8*l* per ton, cash on delivery. From three to six cwt , according to circumstances, is an amply sufficient quantity for an acre of land If at the rate of 3 cwt. per acre be now applied as a top-dressing to Grasses, Maize, Turnips, Mangold Wurzel, Cabbages, and other crops that are still in a growing state, it will be attended with very beneficial results, both as regards quality and increase of weight, when the produce is reaped, besides a material improvement of the soil for the succeeding crop, and the land thus manured will only require a similar proportion applied thereto in the ensuing spring, to make it as prolific as with the application of 20 tons or more of stable manure. This assertion is not adduced from vain conjecture, but the experience of parties of discernment, who have already given the manure a fair practical trial in every way.

FOR FLOWERS AND PLANTS IN GARDENS OR POTS, this Manure, prepared expressly, by a separate process is also admirably adapted, and sold in tin canisters of 1*s*., 1*s*. 9*d*., and 2*s*. 6*d*. each, or in compact wooden boxes of 5*s*., by taking which a considerable saving is obtained. Full directions for use accompany each canister and package A Prices Current of the various descriptions of the Manure, Analyses, Circulars, and every requisite information, may be had upon applying to H. COLES.

NOTICE TO AGRICULTURISTS, &c —H. COLES takes this medium of informing the several customers and others who have requested him to let them know " why Agents are not established in the different provincial towns for supplying the Carbonised Manure ?" that the highly respectable and scientific proprietor who has been pleased to confide to him the mode of its preparation, and principal deputation for its sale, being aware of the many tricks in the way of adulteration, &c. that are so frequently practised by these, does not wish to run the risk of its acquired reputation being thus injured. The only authorised agents at present, besides H. COLES, therefore are —IN LONDON : Mr. N. Fothergill, 201A, Upper Thames street , Mr. G. Lawrence, 18, Piccadilly ; Mr G. Charlwood, 14, Tavistock-row, Covent-garden , Mr. G. C. Lewis, opposite Albert-gate, Knightsbridge, Mr Kennedy, Bedford Conservatories, Covent-garden , and—IN HARTLEPOOL : Mr. Stephen Horner. Arrangements are also now being made to appoint one shortly in EDINBURGH and DUBLIN. All orders, consequently, that come direct to H. COLES himself, or to one or other of the above-enumerated parties, to ensure no disappointment in the supply of the genuine commodity. H. C.'s address is, 32, Cranbourn-street, Leicester-square, where applications for the Manure will be duly attended to, and every relative information may be obtained.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 8d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

GLASS.

THOMAS MILLINGTON is supplying Foreign Sheet Glass, very superior to any other Glass in the market, in 100-ft. and 200-ft. cases, of large dimensions, 16-oz., at 8d. per ft., or cut to size in ranges, not exceeding 40 inches, at 3½d. per foot. British Plate Glass for Windows as well as for Horticultural purposes, from 1s 2d. to 2s. per foot. No gentlemen should be without this great additional improvement to their residences.

Estimates and List of Prices forwarded on application at the Warehouse, 87, Bishopsgate-street Without, London.

MILK PANS, PROPAGATING GLASSES, &c.

JAMES PHILLIPS & CO. beg to hand their reduced prices, as follows:

GLASS MILK PANS.

12 inches diameter, each			2s. 0d	20 inches diameter, each			4s. 0d
14	,,	,,	,, 2 6	22	,,	,,	,, 4 6
16	,,	,,	,, 3 0	24	,,	,,	,, 5 0
18	,,	,,	,, 3 6				

PROPAGATING GLASSES.			BEE GLASSES.		CUCUMBER TUBES.		
2 in. diam., each	0s.	2d—0	3d	24 inches long			2s. 0d
3 ,, ,,	0	3—0	4	22 ,,			1 10
4 ,, ,,	0	4—0	5	20 ,,			1 8
5 ,, ,,	0	6—0	7	18 ,,			1 6
6 ,, ,,	0	8—0	10	16 ,,			1 4
7 ,, ,,	0	10—1	1	14 ,,			1 2
8 ,, ,,	1	0—1	4	12 ,,			1 0
9 ,, ,,	1	2—1	8				
10 ,, ,,	1	4—2	0				
11 ,, ,,	1	6—2	8				
12 ,, ,,	2	0—3	6				

Made to any length.

PEACH GLASSES, 10d. each. WASP TRAPS, 3s. 6d. p. doz. LACTOMETERS for trying the quality of Milk, 4 tubes, 7s. 6d. Address, 116, Bishopsgate-street Without, London.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—The readers of the *Gardeners' Chronicle* of Saturday, Feb. 24th, must have observed the high terms in which this Glass was spoken of by Dr. LINDLEY. We have re-arranged our list of prices to correspond precisely with those of the Patentee, to which we would beg the attention of the Nobility, Clergymen, Gentry, and others.

In squares under 8 by 6 4d per foot.

8 by 6 under 10 by 8	4½d.	10 by 8 under 14 by 10	5d.		
14 by 10 ,, 1 foot	5½d.	1½ foot ,, 3 feet	6d.		
3 feet ,, 4 feet	6½d.	4 feet ,, 5 feet	7d.		

A full List of Prices and every information may be had by applying to JAMES PHILLIPS and Co., Horticultural Glass Warehouse, 116, Bishopsgate-street Without, London.

APSLEY PELLATT AND Co. (late PELLATT and GREEN), Falcon Glass Works, Holland-street, Blackfriars, have always on hand, Ice Glasses, 1s. 2d. per lb.; Cucumber Glasses, 1s. 6d per lb.; Milk Pans, 18-in., white glass, 5s 6d each; Propagating Glasses, white, 1s. per lb; do., green, 10d., do. condensing, 2d per lb. extra, Grape Shades, 1s. 6d. to 2s. each; Fish-bowls, from 1s 6d. each; Wasp and Fly-traps, 40s per gross, or 3s. 6d. per dozen. By the use of these traps fruit may be preserved from (otherwise certain) destruction.

GUANO AND OTHER MANURES.

PERUVIAN GUANO, of the finest quality, direct from import warehouse.
NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SULPHURIC ACID AND COPROLITE.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of

MARK FOTHERGILL, 201 A, Upper Thames-street, London.

A Treatise on Guano, Superphosphate of Lime, &c., will be forwarded on receipt of 8 postage stamps. Free to purchasers of Guano, &c.

TURNIP SOWING.

THE LONDON MANURE COMPANY, having adapted the "URATE" more particularly for Turnips and all Root Crops can recommend it with the greatest confidence. It seldom fails, in the driest season, to secure a good plant, and to produce a heavy weight per acre. They would call attention to their Superphosphate of Lime, which is prepared with the greatest care, and sent out in a very fine, dry state, perfectly ready for use. The London Manure Company have made arrangements for a constant supply of Peruvian Guano, from the best cargoes, which they will deliver direct from the ship or importer's stores. Corn Manure, Nitrate of Soda, Fishery and Agricultural Salt, and every other Artificial Manure, on the lowest terms for a genuine article.

EDWARD PULSER, Secretary, 40, Bridge-street, Blackfriars.

PERUVIAN AND BOLIVIAN GUANO ON SALE

BY THE ONLY IMPORTERS,
ANTONY GIBBS AND SONS, LONDON,
WILLIAM JOSEPH MYERS AND CO., LIVERPOOL;
And by their Agents,
GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
COTESWORTH, POWELL, AND PRYOR, LONDON.

To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

THE PATENT ALKALI COMPANY'S METALLIC BLACK AND PURPLE-BROWN PAINTS are applicable to every kind of Iron and Wood-work, Farm and other Outbuildings, Shipping, &c., and are pre eminently superior to all the ordinary descriptions of white or red lead, or so-called "Mineral Paints," in point of economy, durability, and preserving quality. Prices: Black, 25l. per ton; Rich Purple-brown, 22l. per ton, delivered in London or Liverpool, exclusive of packages, which are not returnable except to be refilled, free of expense to the Company.

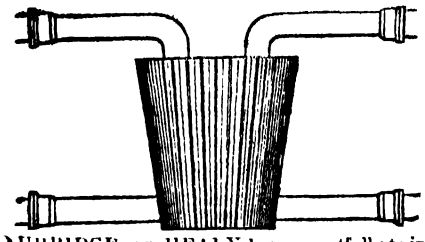
AGENTS: Messrs. Evans Brothers, London; Messrs. Matthews and Leonard, Bristol; Messrs. Evans and Hodgson, Exeter; Mr. Samuel J. Fill, Yarmouth, Norfolk; Mr. D. Sandeman, Glasgow; Mr. G. Sandeman, Dundee; Mr. R. Newby, Bradford, Yorkshire; Mr. R. S. Farr, Edinburgh; Mr. W. Bailey, Wolverhampton; Messrs. Bryant and May, Tooley-street, London; Messrs. Vint and Co., Newcastle-on-Tyne and Sunderland; Mr. Robert Oxland, Plymouth; Mr. Joshua Fox Tregedna, near Falmouth. To be obtained also, with copies of Testimonials, on application to the Offices of the Company, 20, Fenchurch-street, London. JOHN A. WEST, Secretary.

STEPHENSON AND CO., 64, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in. will warm	50 ft. 4 in. pipe	£1	15	0
12 in.	do.	75 ft. 4 in. do.	2	5	0
14 in.	do.	100 ft. 4 in. do.	2	15	0
16 in.	do.	150 ft. 4 in. do.	3	10	0
18 in.	do.	250 ft. 4 in. do.	4	10	0
21 in.	do.	350 ft. 4 in. do.	5	10	0
24 in.	do.	450 ft. 4 in. do.	7	0	0
		NEW PATTERN BOILERS.			
30 in. will warm	800 ft. 4 in. pipe	15	15	0
36 in.	do.	1500 ft. 4 in. do.	25	0	0

All Boilers with double arms, up to 18 in., 5s. extra; to 24 in., 10s. extra; all above, the same price.

130, Fleet-street, London, July 21.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Duke of Devonshire's, Chatsworth Gardens.
Earl of Gainsborough's, Oakham, Rutlandshire.
Earl of Zetland's, Upleatham, Yorkshire.
Robert Hanbury, Esq., Poles, near Ware, Herts.
Mr. Glendinning's Nursery, Turnham-green.
And at least 500 other important places.

BURBIDGE and HEALY, 130, Fleet-street, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, on the Houses when completed, from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity, our principle being formed without wood or putty in the roof.

HEATING BY HOT WATER.

NEAPOLITAN PIGS.

TO BE SOLD, a pure bred NEAPOLITAN SOW, 10 months old; also a Boar and two Sows, two months old, of the same breed.—Apply to Mr. LIDDIARD, Bailiff, Kirkby Mallory, near Hinckley.

GRAY, ORMSON, AND BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

GRAY, ORMSON, and BROWN, have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.

HEAL AND SON'S LIST OF BEDDING, containing a full description of Weights, Sizes, and Prices by which purchasers are enabled to judge the articles best suited to them for good sort of Bedding, sent free by post, on application to their Factory, 196 (opposite the Chapel), Tottenham-court-road, London.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm-servants, or unpractised persons. Price 1d. per square foot. CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel. Samples and Testimonials sent by post on application to CROGGON and Co., 2, Dowgate-hill, London.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF THE COUNCIL—Right Hon. Earl BATHURST.
VICE PRESIDENT—Right Hon. EARL DUCIE.
PRINCIPAL—John Wilson, F.R.S.E., F.G.S., &c.
CHAPLAIN and FIRST MASTER—
SECOND MASTER—J. D. Pemberton, C.E.
RESIDENT PROFESSORS *Agriculture*: John Wilson, F.R.S.E., &c.
Chemistry: John Blyth, M.D.
Natural History, Botany, Geology: James Buckman, F.G.S., &c.
Mathematics and Natural Philosophy:
Veterinary Practice: John Robinson, M.R.C.V.S.
Surveying and Practical Engineering: J. D. Pemberton, C.E.

The object of this Institution is to provide such a course of instruction as will be most useful to the Agriculturist. The benefits to be derived from a judicious application of scientific information are becoming more and more extensively acknowledged, while the means of obtaining that information, if, indeed, it can be obtained at all without for the time sacrificing a due attention to the practical operations of husbandry, are so scattered and costly as to be within the reach of very few.

The College course of instruction is conducted in such a manner that, while the student is well based in the principles of each science, its relations with agriculture are specially touched upon and explained, and their practical application shown as far as possible in the operations of the College farm. The theoretical and practical instruction go hand in hand, and the whole is combined with the advantages of collegiate discipline.

By order of the Council, PHILIP HOWES, Secretary.
London Office, 26, King William-street, West Strand.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by
HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,
And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are F. M'NEILL AND CO.'S Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt

PORTLAND CEMENT.—Testimonials received from all quarters, prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.

J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive and all heated by HOT WATER in various forms showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

BECK'S SEEDLING PELARGONIUMS of 1848, and older Varieties. A DESCRIPTIVE CATALOGUE of the above is now ready, and may be had on prepaid application, enclosing one postage stamp.
Worton Cottage, Isleworth, July 21.

CARNATIONS AND PICOTEES.
C. TURNER'S Extensive Collection of these interesting flowers, including some beautiful seedlings raised by the Rev. J. Burroughes, J. L. Puxley, Esq., Morgan May, Esq., and other successful growers, are now in fine bloom, and will continue so throughout the month. An inspection of the above will repay a visit; the Nursery being within five minutes' walk of the Slough Station on the Great Western Railway, and not more than two miles distant from the Datchet Station on the South Western line.
Royal Nursery, Slough, July 21.

The Gardeners' Chronicle.

SATURDAY, JULY 21, 1849.

MEETINGS FOR THE ENSUING WEEK.
WEDNESDAY, July 25—Royal South London .... 1 P.M.
SATURDAY, — 28—Royal Botanic .... 3½ P.M.
COUNTRY SHOWS.—Tuesday, July 31: Slough Carnation and Picotee.—Thursday, July 26 Derby Midland Horticultural.

IT is now some years since we directed the attention of those who wish to do good in their own parishes to what may be effected by VILLAGE HORTICULTURAL SOCIETIES when managed upon the plan of that of Pytchley. A pamphlet* by the Rev. ARNER BROWN has recalled the subject to our notice, and we earnestly invite the attention of our readers to the interesting, and as we conceive important results which it details. To our minds the maintenance upon sound principles of such little associations as that of Pytchley, is in no degree less important than the support of the greatest horticultural and agricultural institutions. The effects are different, no doubt, but they all tend to the great end of promoting the happiness and wealth of the community. If the cultivation of the soil is the most distinguished of human arts, it is evident that one of the most desirable of all objects is the improvement to the utmost of the instruments by which such an art is to be followed. These instruments are labourers. In comparison with them implements and cattle and machinery are as nothing. To render the labourer industrious and intelligent and emulous, is therefore the plainest duty of all who have a stake in the country, and is a duty dictated not merely by considerations of morality, but by the nearest personal interest.

This is a very different question from that of "local Horticultural Societies" formed in towns among the middle class. Such bodies have, with a few exceptions, continued to decline from year to year, and many have long since disappeared. The elements of speedy destruction were from the beginning inherent in their constitution. They were calculated to excite feelings of envy and jealousy rather than of generous emulation; the competitors for prizes too often converted a race into a collision. The most liberal of the members became disgusted at the examples of meanness and jealousy which every show was certain to bring forth; and the narrow-minded soon abandoned an institution in which they could not always be winners. No such risks need attend little village societies, which ought to be instituted by the gentry for the benefit of the poor. Mr. BROWN'S case shows conclusively that if this is done properly the end is triumphant success.

Pytchley is merely one of the numberless agricultural parishes of England, containing a mixture of good and bad land,—of pasture, tillage, and copse,—of gentle slopes, some towards the sun and some away from it. Its population was 611 at the last census; its extent is 2833 acres: it has no resident squire; no inhabitant who keeps a gardener; nor, until last year, any artificial (garden) heat beyond a few Cucumber frames. The place where the shows are held (the only suitable place in the parish) is the village school-room, 20 feet square by 12 feet high. With these means it has existed for more than 10 years, and every season adds something to its efficiency. We do not judge of its efficiency merely by the improved quality of the produce brought to the shows, though that would be evidence of much value. The real advantage which the people are deriving is more especially manifested by the condition of the little allotments, to encourage which is part of its object.

"The Pytchley Horticultural Society," says Mr. BROWN, "offers prizes for good culture, and excellence of produce among the allotments in the parish. One field of *road* allotments has been let to the poor since 1832, and another has lately been added. There are now, in all, 77. The neatness and cleanness of the farming,—the beauty and excellence of the crops, bear testimony to the good working of the rules, and to the encouragement given by the Society's prizes. The land was by no means of superior quality when first let out; but now it is in very high condition; and several allotments have produced at times 7 bushels of *clean* Wheat on the half-rood, or 56 bushels per acre."

Let us only suppose such a result, or something approaching it, to be obtained in every village in England, and we shall form an idea of the enormous gain it would be to the country in the mere increase of food. Where labourers get 50 bushels of Wheat an acre, farmers will cease to be satisfied with themselves if *their* land yields but a scanty score.

Few, except those who have seen the exhibitions of village societies, would believe how numerous and excellent are the cottage specimens which load their shelves;—specimens of roots, fruits, Broccoli, Cabbage, Rhubarb, Celery, Salad, and every useful garden vegetable; what large and sound Potatoes, Onions, and Apples, *of the preceding year*, are brought by cottagers to the spring shows; thus indicating both goodness of quality in the original crop, and an acquired habit among the poor of keeping winter stores. Mr. BROWN assures us that with regard to the Pytchley Society, persons who remember its commencing shows in 1837 and compare them with those of 1848 (in which many cottage specimens were quite fit for the Covent-garden Market), do not hesitate to acknowledge how much such societies can improve the quantity, weight, and quality of food among the poor; besides providing them with various little luxuries, either for their own use or to sell as a source of gain, and thus to procure a little more animal food than their owners could else afford.

Why, he adds, should not thousands of similar villages have their little societies? Most parishes contain some active young people who take delight in their gardens, and can afford a day or two now and then, and a few shillings yearly (a very few are needed) to promote such innocent and healthful enjoyment, such advantageous means of good, to themselves and others. The clergyman will always be ready to help forward and encourage what is for the welfare and harmless recreation of his parishioners. Nor need the fear of expense prevent the attempt; for it will be seen by the following statement, how small are the subscriptions and sums which have sufficed to make such a society support itself liberally, and go on increasing for 12 years.

"The amount of yearly subscriptions was 2*l.* 13*s.* 9*d.* in 1837; 4*l.* 2*s.* 5*d.* in 1841; 6*l.* 2*s* 4*d.* in 1847. The smallest amount from cottagers was 6*s.* 6*d.* in 1841; the largest was 12*s.* 6*d.* in 1848; and from children was 9*d.* in 1841, and 2*s.* 3*d.* in 1848. The money taken at the door for admissions depends on weather and other casualties; it was 4*s.* 2*d.* in the summer show of 1837, and 2*l.* 2*s.* 6*d.* in the spring show of 1846; it usually includes from 5*s.* to 10*s.* of copper, paid by cottage visitors. The sales of fruit and vegetables, left unclaimed or given by the exhibitors, are seldom more than a few pence, but they have on some occasions reached 12*s.* The whole amount of regular yearly income (subscriptions, admissions, and sales, without reckoning the donations) was 4*l.* 14*s.* 10*d.* in 1837; 7*l.* 9*s* 11*d.* in 1841; and 7*l* 18*s.* 6*d.* in 1848; in 1846, accidental circumstances raised it to 9*l.* 8*s.* 1*d* The outlay for each show consists of the prizes paid, and the necessary allowances and trifling expenses for those who give their time to preparing the show-room, managing the laborious part of the show, and clearing the room after. The amount of allowance and expenses has ranged from 2*s.*, in the autumn show of 1837, to 11*s.* 6*d.*, in the autumn show of 1848. In the spring show of 1837, 16 prizes to ordinary members cost 2*s.* 3*d.*, and 7 to cottagers and children cost 4*s.* 9*d*; in spring show 1848, 25 prizes to ordinary members cost 10*s.* 3*d.*; 80 to cottagers cost 1*l.* 19*s.* 3*d.*, and 29 to children cost 9*s.* In the summer shows the number and amount have been, on the whole, a trifle less. In the autumn show of 1837, the ordinary members received 34 prizes, costing 13*s.*; the cottagers and children 20, costing 15*s.* 9*d.* In that of 1848, the ordinary members received 40 prizes, costing 1*l.* 0*s.* 5*d*; the cottagers 84, costing 3*l.* 8*s.* (including 1*l.* for 6 prizes among the allotments and gardens), and the children 31, costing 9*s.* 3*d.* The whole yearly outlay for prizes and show expenses in 1837 (three shows) was 2*l.* 7*s.* 6*d.*; and in 1841 (three shows), 6*l.* 13*s.* 6*d.*; in 1846 (two shows) it was 7*l.* 16*s.* 7*d.*, and in 1848 (two shows), 8*l.* 19*s.* 1*d.*"

For the sensible rules, by the operation of which such humble means have been made to produce so large a result, we must refer to the pamphlet, with an earnest recommendation that they should be adopted with as little change as possible. Undoubtedly, circumstances may occasionally render some departure from them expedient; but the great principles on which the Pytchley rules are founded can, in no case, be neglected with impunity. We would more especially point out the following, which are entirely conformable to both reason and experience; any neglect of them can only end in failure:

"The circle of neighbourhood should be so restricted that each member may know with whom he will probably have to compete, and that the distance of the show room from each cottage member's home will not require him to lose any part of his day's work in bringing his specimens, or seeing the show. The expressions, 'our parish'—'our village,' comprise so many old English and home ideas, that the expression, 'our society,' may advantageously be made to correspond with them. Whatever be the limits fixed, they should be steadily adhered to; for the advantage of doing so will eventually overbalance any temporary advantage resulting from breaking through them. The judges, especially of cottage specimens, must be entirely raised above the reach of suspicion; and that not only by personal character, but by such regulations as make partiality impossible, or altogether unlikely. The object sought to be gained by village societies is not so much the absolute excellence of specimens, as a relative and growing improvement in the quantity and quality of food raised by cottagers, and in the beauty and variety of their flowers, and the tastefulness of their nosegays. There should, therefore, be some means provided for rewarding evident efforts at improvement, even where the actual quality of the specimens will not allow them to be compared with those of members who have tried longer, or with more tact and ability, and which deserve and receive prizes for their intrinsic excellence. The subscriptions of cottagers should be small; both because their income is very scanty and in order that the unsuccessful should not feel the loss of their subscription very material. Yet some subscription should be required, lest the feeling of independence and self-respect, that jewel of English character, should be injured by the prizes being felt to be alms. A large number of small prizes is more efficacious than a few of a larger amount; for a small sum of money can thus be spread influentially over a larger number of persons, and be made to encourage improvement among a larger variety of produce."

When we state that this last paragraph is given in the words of the Rev. ARNER BROWN, and that the excellent pamphlet from which it is taken costs but twopence, we are sure that we shall have recommended it to everybody who desires to see the cottagers around him prosperous and happy.

THERE once was a time when rules for making a compost heap were as complicated as a Dutch prescription. Our fathers thought it impossible to grow a plant without putting it into an *omnium gatherum* specially contrived for its own separate use.

"If you would grow an Auricula well," said an old gardener, "you will make your compost of ancient cow-dung, fresh sound earth, rotten leaves, coarse sea or river sand, decayed Willow wood, peat, and wood-ashes. You must have half the first, one-sixth of the second, one-eighth of the third, one-twelfth of the fourth, and one-twenty-fourth of each of the three others." This was declared to be of the utmost importance; no departure from the proportions was permitted. A man might as well have thought of planting Tulips on any other day than the 24th of October, or the 25th, if the 24th was a Sunday.

To this day some relics of such superstitions are traceable in gardening operations. A mysterious virtue is ascribed to particular mixtures of peat and loam and leaves and sand, or to each of these separately, or to others. We may one day endeavour to point out what there is of real, and what of unreal, in the evidence upon which such opinions are founded. For to-day we confine ourselves to PEAT.

In the belief of some very good gardeners there are certain kinds of peat possessed of such marvellous qualities that plants have but to get their roots into any one of them, and further care is needless. These qualities are popularly believed to depend upon the peculiar chemical conditions of such soil, upon a particular per centage of iron for instance, or a certain dose of some other unknown matter which chemical analysis might reveal. We believe no such thing. The different qualities of peat depend upon their physical differences and upon them alone. In one a large quantity of fibrous matter exists, in another very little; the former is, therefore, more permeable to air than the other, which may be an advantage. In another sample there is much sand instead of fibrous matter, and this constitutes a material physical difference, for such a sample will be perfectly penetrable by air and moisture without the liability to dry up which belongs to an over-fibrous material. By such differences are the various kinds of peat distinguished, and in general by nothing else of the smallest importance to plants.

It is part of the horticultural faith of many men that peat is for many purposes indispensable: and that for Rhododendrons, Azaleas, and similar "American plants," no substitute can be found. Here we find another piece of superstition. Peat is a mixture of certain decayed matters, and any other mixture of similar decayed matter in the same proportions answers all the purposes of peat. Rotten

* Village Horticultural Societies. The History, Rules, and Details of one Established in 1837, at Pytchley, in Northamptonshire; with remarks on the Formation of similar Institutions, and the Encouragement of Cottage Gardening. By the Rev. ARNER BROWN. London: Wertheim and Macintosh, 1849.

leaves, and branches, roots of wiry Grasses, fibres from the Heather, or such wild plants, and a certain proportion of sand, form the constituents of the peat best suited for gardening purposes. If such a mixture can be made artificially, it will be just as good as if it had been scraped from a moor. It will have the requisite penetrability; it will be as rich in saline and decaying matters; it will as much abound in that humus or black substance from which plants so largely derive their nutriment.

The truth of this assertion will probably be questioned; for men are slow to believe that they have been carting from a distance, under the name of peat, the very substance which is wasted in the wood-yard at their door. We therefore beg to direct attention to a case with which we have been favoured by a correspondent near Devizes, in which it is shown that the decayed woody matter of an old timber yard is in all respects equal to peat for the growth of Rhododendrons. We believe it to be better; because it is just as yielding to the slender roots of those plants, and much more retentive of moisture, in which they greatly delight. If the lovers of gardening would as frequently think for themselves as our correspondent has done, they would, we doubt not, discover that the indispensable necessity of peat is only one of the crop of prejudices which the progress of *knowledge* has to trample down.

DECAYED WOOD A SUBSTITUTE FOR PEAT.

It is because there are many horticulturists and amateurs who, like myself, have met with difficulties in cultivating that beautiful plant the Rhododendron, that I beg the favour of a place in your Journal, to show by what simple means the principal difficulty may be met, viz., the want of suitable soil.

It appearing that the natural habitat of a large portion of these plants is under the shade, or near the margins of vast forests of deciduous trees, which shedding their leaves in winter afford a pure vegetable soil, it seemed to me probable that the disadvantage of my distant removal from any bed of bog earth or peat, might be met by adopting a material accessible almost to all; and accordingly, in 1845, I tried the decayed woody matter of an old timber-yard. That experiment was successful, and in 1847 I made a large bed of this material, in which I planted about 30 American plants of various kinds, and 25 Rhododendrons, a hybrid raised at Exeter, of which the flowers are pink, and occasionally spotted brown and yellow.

The result has been most remarkable, and I cannot do better than enclose you specimens of the leaves of one of the plants. Those marked 1847 were leaves of that year (formed before November in that year, when the bed was made), those marked 1848 were formed last year, and those marked 1849 were plucked from new shoots of this year.

	1849 to 1847.
The lengths of the leaves being as	2 2 ,, 1
Breadths	2 9 ,, 1
Areas	6.38 ,, 1

The excessive wet of last autumn was unfavourable to the ripening of wood, and the profuse luxuriance was principally of leaf-buds—not of flower buds, although some of the plants flowered well. Many of the specimens are now 4 feet 3 inches high, having been sold at 2 feet high in 1847; all are now fine and bushy, sending out the richest green foliage. Pinus excelsa has sent out shoots 20 inches long this year, and Tobacco stood last autumn 6 feet high, covered with fine Bignonia shaped blossoms almost as large as those of that climber, all indicating a just adaptation of circumstances to their several requirements.

As timber yards are plentiful and disappointed horticulturists not few, perhaps your notice of this experiment in your journal may occasion another feeling of thanks due to you, Mr. Editor, for your frequent most valuable communications. *B. B.*

PLUMBAGO LARPENTÆ.

There appears to exist a very decided difference of opinion as to the ornamental qualities of this plant; even within the last few days it has been publicly spoken of by persons of some note in the horticultural world, as a "beautiful new plant," on the one hand; and a "miserable thing, soon to be forgotten," on the other. Under these circumstances, I may perhaps be allowed to state my experience in the matter, and the more so, as this has led me to a very decided conclusion.

On taking charge of this garden something like 12 months since, I was fortunate enough to find here a good plant of the Plumbago, in excellent health. It was at that time upwards of a foot in diameter, about the same in height, compact and bushy, forming a close round mass. In the course of the summer it grew perhaps half as large again, retaining throughout the same dwarf bushy habit, and almost every one of its numerous branches, the laterals as well as the principal ones produced blossoms freely. So far well. The habit is decidedly good, and the first blossom that was developed proved that too much had not been said in respect to the brilliancy of the colour—a rich clear blue, with a slight rosy tinge in the mouth of the narrow tube. From about the end of July onwards for upwards of two months the plant continued to produce its blossoms. Yet notwithstanding its fine habit, its richly-coloured flowers, and the freedom with which they were produced, my plant, in perfect health, and apparently doing its best, never at any period throughout the entire blooming season possessed the least claim to be considered an ornamental plant. It was in fact perpetually shabby, from a cause which can admit of no other result, and that cause is—I say is, for the quality is inherent in the species—the flimsiness of its corolla, which is in fact as delicate as tissue-paper. In consequence of this property, the flowers shrivel up rapidly after they expand; and instead of forming a compact head, as they should do, to be effective, only two or three isolated blooms are seen in perfection at one time, on the same flower-head. Another bad quality is that the dead flowers wither on the plant, instead of falling off, and in this condition they are rather too conspicuous.

In order that those who possess the plant, and hope better things of it than the experience above detailed would seem to justify, may have an opportunity of judging under what conditions these results were obtained, I may state that during the period alluded to, the plant was kept in a light airy greenhouse, where it received the ordinary attention bestowed on greenhouse plants in blossom. It is therefore useless as a pot plant. But the Plumbago is said to be a fine plant for bedding out. I much doubt this; for the blossoms will not bear a moderate breeze without being disarranged, nor will they bear strong sun without curling up, and I have not seen any indications which would lead to the belief that it possesses any merit as a flower-garden plant.

The plant is best treated as a herbaceous perennial; the roots being kept moderately dry and cool in winter, and the remains of the old stems cut away before growth recommences in the spring. It forms long underground stems, which serve for the purpose of extensive propagation, every joint being capable of producing a separate plant under proper treatment. The young growing shoots root freely as cuttings, but autumnal cuttings are rather shy in producing roots. The plant will bear moderate heat in the early part of the growing season without injury, if not with advantage, but a close moist heat scarcely suits it.

The good qualities of the plant are these: Its habit is good, being dwarf and compact; perhaps, however, its stolones may be a little troublesome. Moreover the colour is a very rich and desirable one. These two qualities may render it useful as a breeder, if ever the genus Plumbago should be thought worth hybridising. *T. M., Chelsea.* [Has any one tried it in shade or under a north wall, where Ferns delight to grow?]

CHEAP FLOWERS FOR SMALL GROWERS.

I would advise amateurs and other lovers of flowers, who have only a two-light wooden box or common brick pit, and who have a small flower-garden or borders to supply every year, to procure (which they can do for 10*s.*), seeds of the following plants:

Calceolaria	Nemophila insignis major
Verbena	Erysimum Peroffskianum
Phlox Drummondi	Gilia nivalis
Primulas	Nemesia floribunda
Violets	Aster amelloides
Viscaria oculata	Petunia
Chœnostoma polyantha	Salvia patens
Intermediate Stock (true)	Anagallis Monelli
The Queen Stock (true)	Schizopetalon Walkeri
Polyanthus	Pansy
Picotee and Carnation	Linum monogynum
Gaillardia picta	Œnothera macrocarpa
Mignonette	Pentstemon coccineum
Geranium, scarlet	Sweet Peas
Double Jacobea	Nierembergia intermedia
Lobelia Erinus compacta	Veronica salicifolia
Mimulus	Cineraria
Collinsia grandiflora	Cuphea platycentra
Schizanthus porrigens	

Sow them in pots on the 1st of August (every year if necessary at the same time), they will give interesting varieties, various colours, and successional flowers from April to October. They can be easily kept by means of the protection of a mat over the glass in frosty weather, and they require very little attention, in order to preserve them through the winter; if kept dry, the pots plunged to the rims in coal ashes or sawdust, and placed as near the glass as possible, with abundance of air given in mild weather.

All of them, if desired, will flower well, and make good pot plants. *Cantiuln.*

ON THE CONDITIONS ESSENTIAL TO THE MOST PERFECT CULTIVATION.—No. VIII.

It is much to be regretted, even in the present day (so profuse with the results of the labours of scientific men), that it should be so generally the custom to treat as mere visionary schemes every philosophical deduction bearing upon the ordinary affairs of life; for we cannot be blind to the fact, that any real scientific knowledge—any fruits of philosophical research, in their application to the wants, comforts, and conveniences of the great majority of the "people," are ever received by that majority (if received at all) with suspicion and distrust. Nor can a great amount of blame be fairly laid to their charge on that account; for the fault has not all been theirs. Some of it rests with authors themselves, who, not condescending to become teachers, have mystified their works by high-sounding words, which are ever, by ill-informed minds, considered as the *end*, rather than as the *mere alphabet* of science. The great majority (in modern phraseology, the million) have yet to learn that science and philosophy are but other terms for sound reason and common sense; that knowledge, as a generic term, is a far more expressive word, and that all the jargon which scientific enthusiasts have thought fit to erect as barriers about their several pursuits is but so much refuse to be cleared away in the pursuit of a knowledge of the world in which they live, and of which we all are but so many links in the consentaneous chain of organic life. But to the point: vegetable chemistry is an apt illustration of the premises I have assumed; a noble science, fraught with great social, and, consequently, political advantages, but in its present state such a mass of crude and undigested facts that the great majority cannot possibly deduce any real benefit, from the fact of their not being able to comprehend its details. This is not the place to discuss the question, but I may observe, that my opinion is not singular in believing that the real benefits of the knowledge to be derived from pursuits in vegetable chemistry will be found to come in a different direction from that which its votaries and advocates anticipate.* And to come nearer home in my present enquiry; to attempt to apply vegetable chemistry to the selection of soil in the pot cultivation of plants, can never be of the least practical utility. The perfection of development in a given plant, in the eye of the florist, is a totally different affair from the natural condition of such a plant. The gardener's province, in this department of his profession, is to gratify the eye, and the various "secreted" products which in a natural state would be formed by and deposited in the tissues of the vegetable fabric are of no moment to him. If such were the case, he would perhaps do well to study the relation between such products and the soil most suitable to enable the plant to manufacture them. And supposing, as chemists would have us believe, that every inorganic compound deposited in the tissues of vegetables is obtained, simple or in combination, directly from the soil, there are branches of his operations in which such a knowledge would greatly facilitate and add to the value of his labours.

And on the other hand, the oft reiterated "practical" directions, about "unctuous," "friable," "fibrous," "sandy," "tenacious," and many similar terms, as applied to the different qualities of soil, are equally void of utility to the young gardener, and perplexing to the amateur. Here a few sound principles may suffice for a volume of practical directions, and what is more, are capable of bringing more success in their application.

Perhaps in no department of gardening has this juggle of soil selection been carried to greater heights than in the peculiar pursuits of the "florist." We all know that the mysticism of the matter is fast giving way to a clearer and more rational theory, and that the compositions which were often employed in this department of gardening, and which would not have disgraced the cauldron of the witches of "Macbeth," are, like their originators, fast sinking into oblivion. I knew a lady who had a collection of Auriculas, and, like most florists, she was peculiarly fidgety about the composition of the soil, and the exact weight of the individual ingredients. At a particular period every season her gardener was ordered to procure sheep's paunches, bullocks' livers, the excrements of various animals, and I know not what else, as a preparatory composition for her Auriculas. Now the gardener did very wisely (at least in a practical point of view, I will not argue the subject morally), to discard the whole of the disgusting paraphernalia of such materials, and to substitute a soil more congenial with decency, with common sense, and the requirements of vegetable life; and it is worthy of remark, that the plants were everything she expected from her variously compounded soil.

As far as the gardener is concerned in plant cultivation, he has only to consider soil as a medium; at least so far as that nothing deleterious to vegetable life exists in that medium, it matters little as to its chemical constituents. Every day proves more fully the truth of that assertion. I am willing, ever most willing, to recognise scientific truths in connection with the practical routine of every-day life, and rejoice most heartily as each successive stronghold of opposition, and ignorant prejudice, is swept away, and forgotten amid the debris that is scattered in the wake of the steady and progressive march of mind, toward a more intellectual and better state of things; and I sincerely participate in the pleasure of those who strenuously exert their talents and energies to wed scientific principles to common garden practice but in many cases, as in that of bringing the details of vegetable chemistry to bear upon the pot cultivation of plants, I can see no ultimate good to be accomplished. The merest tyro in scientific horticulture is aware that the chemical constituents of loam and peat are widely different, and they also are perfectly aware of the fact that certain plants may be induced to approach a tolerable state of garden perfection equally in both. Yet, if we were to believe the assertions to which names of honourable mention are appended, such results would never be arrived at. In selecting soil for any given plant we must take into consideration every known circumstance in connection with its natural position, the peculiar construction of its roots, its constitution, its age and health, and the object we have in view. But there is so intimate a connection between soil and drainage that I must take up that relation in another paper. *G.*

DISEASES OF PLANTS.

(*Continued from p.* 436.)

Genus XI. Natural Grafts.—It has often happened to me whilst wandering in the woods, or examining old and thick hedges, or visiting fruit-trees, to see

* Vide Mr. Lawes' pamphlet on "Artificial Manures."

branches so united together in some part of their length as to form one mass, whilst both below and above they are perfectly distinct and separate. Still more frequently are fruits to be seen thus joined together; the Cherry perhaps, more than any other, is liable to this union. The Juniper, the Plum, the Pear, the Oak, and even the Pine, according to Gimanni, afford examples amongst trees; the Water Ranunculus and some others amongst herbs. But these natural grafts are certainly more frequent in fruits.

Having from the first had my doubts whether accident alone could produce such grafts, I turned my attention to the state of the plants. I have always found that it was peculiar to vigorous plants, and not to starved ones, to present such unions, which are certainly not in conformity with the ordinary laws of Nature. Besides, as far as I could observe, it has only taken place in years where the seasons have been most favourable, and only in individuals endowed with the greatest vigour, and specially in the densest parts of the woods. In such places the soil is peculiarly rich, from the greater quantities of vegetable detritus in daily decomposition.

In general, this disorder does not call for the care of the agriculturist, as it does not produce any apparent disturbance of the vegetable economy. I am, however, persuaded that a tree which every year produces branches or fruits naturally joined together may suffer for it, as everything which takes place in plants contrary to the course of Nature must in the end prove prejudicial to their constitution. If the fruits so joined be examined, it will be found in general that both have not seeds, or that, at any rate, some of the seeds remain imperfect, and I should be unwilling to assert that all were ever capable of developing themselves. It once occurred to me to separate two branches of a common Maple which had grown together, and were of a considerable size. I did it with a sharp knife. I covered the wounds with a compost of clay and cowdung. The branches did not suffer. The scars healed over, and the branches continued to grow. I have not succeeded in the separation of joined fruits. The wounds do not heal, and they perish from canker.

Genus XII. Pinguedo.—This disease attacks the roots of some plants. They begin by enlarging to an extraordinary degree; some then cast off the bark which covers them, others rot, and all end by dying. As yet it has only been observed in trees, but there is no reason why herbs also should not be subject to it.

First Species. Pinguedo of the Fig.—Even the most celebrated among modern writers on the cultivation of the Fig, such as Rozier, Labretonnerie, and others, say nothing of the disease of that tree, which Theophrastus so plainly describes in cap. xii. lib. v. "De Causis Plantarum." "The Fig," says he, "is subject to a peculiar infirmity, which attacks the roots, called *pinguedo*, which must surely be attributed to a superabundance of humours." Perhaps this disease may be peculiar to hot countries. I have been unable to find any traces of it, the Fig tree with us appearing to fear nothing but cold, of which it is very sensible.

Second Species. Pinguedo of the Pine, *or Teda.*—It is Theophrastus again who, in speaking of the peculiar evils which attack certain trees, arising from too much vigour, makes known to us that the Pine tree sometimes has its roots converted into *teda*, and that "this arises from the too great quantity of nutriment, and too much stimulus." I have not succeeded in discovering amongst any of the writers on the cultivation of Pine trees, any one who paid any attention to this malady, excepting our Gimanni, in his celebrated work on the Pine forests of Ravenna, where he observed it. He combats the ordinary opinion, that *teda* amongst the ancients designated a peculiar species of Pine, for that they knew perfectly well that it was a malady which rendered the roots of this tree larger than usual, and more combustible, a circumstance since repeated by Chabræus. He points out that the wild Pine,* naturally of a more robust constitution, is more subject to it than the domestic one.† From the roots which, as they increase in size, become white and afterwards reddish, the infection spreads to the trunk, which also becomes excessively inflammable. In the Pine wood of Classe, a few miles from Ravenna, I myself observed this *teda*, and in particular on one tree, which surpassed all the others in vigour. I have made a separate species of it, because it appeared to me to have several characters to distinguish it from the pinguedo of the Fig.

If both these species are derived, as there is little doubt, from a superabundance of nutriment, the mode of prevention will be easily understood, whilst, if once developed, there appears to be no cure. It is from Theophrastus again that we learn the course to be pursued under such circumstances. The trees should, in the first place, be cleared round the roots, or a ditch dug alongside of them, and the roots themselves laid bare, in order to withdraw from the tree the excess of stimulus. Irrigations, also, should not be omitted. It may also be of advantage to reduce the branches and roots, but this should not be done without extreme caution. Some of the superfluous sap may be withdrawn by a peculiar operation, of which I shall speak further on. I have now only given the suggestions of the Greek writer, in order to show that I was not wrong when I said that Theophrastus must be considered the earliest writer extant who has treated of agriculture in a masterly manner.

* Probably P. halepensis, or P. pinaster.
† P. pinea.

VILLA AND SUBURBAN GARDENING.

I have recently visited two gardens, situated close to each other, which come under this head. The Peach-trees in one of them were without curl, blotch, or freckle of any kind; whereas in the other the trees were blistered, cankered, and nearly leafless. My attention was the more drawn to this circumstance because of the position of both gardens being precisely similar. But here is the explanation of the mystery. In the case of the healthy trees I had given instruction to have all the curled leaves picked off, and the young shoots carefully washed with a solution of soft soap and sulphur. This solution was weak, but applied frequently for about a fortnight. The trees were subsequently well syringed with clear water about three times a week, and they now present a vigorous healthy foliage, very different indeed from that in the adjoining garden, the trees in which are in fact totally ruined, having been left to chance and the weather. The Peach is a tree by no means difficult to cultivate on the open wall in the midland and southern counties. The great points are protection in spring from frost, and keeping down green fly as the trees begin to shoot out, and also keeping down red spider in autumn.

To protect the blossoms in spring a piece of worsted netting answers well; but in the absence of that, Fir branches or even Ferns fastened loosely to the walls will do good service; always avoiding too thick a covering, which is more likely to be injurious than beneficial. The sun's rays should not be excluded, and bees should have access to the blossoms, in order to fertilise them and set the fruit. As soon as the fruit is perfectly set, and the young shoots begun their growth, the covering should be removed. The advantage arising from the use of netting is that it can be let down during the day and pulled up at night, and by this means all danger from frost is entirely avoided. Those who have adopted precautionary measures of this kind during the present season will have preserved their crops; those who have not will have to lament its loss.

One pound of soft soap and half a pound of flowers of sulphur, well mixed in two gallons of warm water, will make a good mixture for washing the infected shoots with. It should be applied with a painter's brush, carefully insinuating the wash into every curl and crevice. Alternate washings with clear water, with the syringe, will serve to promote a healthy foliage, and will tend greatly to prevent the increase of the fly. Timely application of these measures is the main point, but they must be assiduously followed up.

"E. C. W." did not name his plant, and when the leaf reached me it was rubbed to powder. Under these circumstances no opinion can be given in the matter. *Pharo.*

Home Correspondence.

Adulteration of Manures.—With reference to the adulteration of guano, I beg to suggest a very simple method, which I have always found sufficient to prove the sample genuine or not. Weigh a small portion (say 50 or 100 grains), burn it to a red heat in an iron ladle, or other utensil that will bear the fire. This may be done in the kitchen or at a blacksmith's forge. If the sample burn to a grey or white ash, very like the ash of a good cigar, but rather more harsh to the touch, and lose two-thirds of its weight under the process, there is a strong probability, if not proof, that it is genuine. If there be loam the ash will be red, if it be adulterated with a substance not destructible by fire the ash will be over weight, and *vice versâ*. It must be a very cunningly devised adulteration which cannot be thus detected. If it be required to carry the test further, it may be done by adding a little muriatic acid to the residue, which will disolve it all but a very small portion; and further a sufficient simple analysis might be effected with little trouble and the expence of a few pence *J. C. C., Long Wittenham, Abingdon.* [If we get hold of any of the new "stuff" you shall see it.]

New Water Lily.—The most extraordinary plant I have yet seen is a Water Lily (Nymphæa), growing in a Lagoon called Boppoo, about 18 miles from this place (Wide Bay, New Holland), Lat. 25° 30′ south, Long. 152° 45′ east. This plant has leaves 18 inches or more in diameter, grows in 15 feet water, and the flowers are 11 inches in diameter in their natural expansion. I doubt if Victoria Regia is a finer plant. *W. Bidwill.*

Cherry Nets.—I enclose a small specimen of an imitation net, which I have had made in the loom at the cost of a farthing per square yard, and half that cost in addition for linseed oil. It answers admirably for protecting my Cherries from the blackbirds and sparrows, but may be much improved, this being the first attempt. It is so economical in protection, that if known I think it would be generally adopted. *T. G., Clitheroe.* [This is not strong enough. It tears readily, and therefore will not be cheap.]

Cape Bulbs.—Absence from home and much preoccupation have prevented my paying the attention I wished to the Amaryllids, which will not stand neglect and the tender mercies of mere gardeners. A. Josephinæ again flowered splendidly, and was the following year disgusted by being set in a cold Melon frame by my gardener, with wet dripping on to the bulb, and has refused since to flower. Ammocharis (Brunsvigia) falcata I found alive and healthy, after two winters in the open air, with slight protection. Aulicum stood in a cold frame this winter, with Cypripedium insigne and venustum and Gardenia radicans, but did not like it. Damp kills or keeps torpid Amaryllids in the open air more than frost. Many, even Hippeastra, will make a good summer growth. Well do I know the sensations, sweet and bitter, of receiving, like "W. H.," a "box of Cape bulbs"—the felonies of custom-house horticultural prigs, the large packages of inferior things, the little ones of the rarer, the desiccated Watsonias, with as many jackets as the transforming horsemen at Astley's. I still find a Melon frame at work best calculated to supply the requisite conditions for treating dormant Amaryllis, Brunsvigia, Nerine, Hæmanthus, and that class, the pots being half plunged, bulb kept hot and dry. Falcata, coranica, and Hæmanthus puniceus are summer growers and greenhouse plants, assisted by a hotbed in August. Crinum revolutum does best suspended in the greenhouse, with a pan of water under it; Cyrtanthus is a difficult tribe, likes a smallish pot, partial shade, and very sandy soil. Vallota I saw flourishing in almost every other window in Scarborough, including cottages. I recommend all Amaryllis to be under-potted the first year. A deep Mignonette box is a good safety valve for the host of Irideæ. Ornithogalums are very pretty, as also Lachenalias, and might occupy another box, but both would be better in the greenhouse. My preceptor was Dean Herbert's elegant work, which leaves little to be desired. "W. H." should ascertain that his bulbs are correctly named—a rare thing with Cape nurserymen. *Micklewell.*

The Sparrow Nuisance.—Will the presence of any of our rapacious birds, hawks or owls, in a garden prevent the plundering and destruction of our crops by sparrows? for at this season it is difficult, in some localities, to save any Peas or fruit from them, except by coverings of net. A false impression is current that sparrows, by their consumption of insects, compensate for the injury which they do to the grain and to garden produce; but that benefit is mainly conferred by the soft-billed birds. Many farmers just now employ boys to watch their corn and to continually fire off pistols charged with powder only, so that the enemy is merely driven on to a neighbour's lands, although a whole parish may sound as if it were in a state of siege; and in thickly-wooded, game-preserving districts, the mischief done by these impudent, chirping, ever-returning pests, must, in trite phraseology, be seen to be believed. As to the whole class of scarecrows, &c., the sparrows very soon find them out to be truly men of straw, and treat them accordingly. It is a pity that the merits of sparrow-pudding, an excellent dish, are not more widely known. Were this *entrée* to become as fashionable as it ought, like quails, larks, and ortolans, to which it is not inferior, we might thus legitimately destroy and get rid of a few detachments of this legion of marauders. On the continent small birds are in too great request for the table, to arrive at the overwhelming power of plaguing to which they attain here. Perhaps some obliging correspondent will mention the species of hawk or owl most likely to act as a sparrow scarer in gardens; unless indeed it may increase the evil, by attracting flocks of them to insult a captive enemy. *D.*

Grapes.—What ails my Damascus Grapes? they make no progress whatever in swelling off; the Vine runs up under the rafter, and has its roots outside only. The leaves under the rafter have constantly an appearance of flagging; while those under the glass look vigorous. The berries are now cracking. The border was made by James Roberts, and is, I think, unexceptionable. Is it of too delicate a sort to have its toes in a different temperature from its head? Do you know of any which come to real perfection in similar circumstances? *G. O. L.* [The Black Damascus is not reckoned a tender sort. Till lately, the ground has this season been colder than usual.]

Killing Scale and Red Spider.—You have frequently stated that water at the temperature of 140° will kill the muscle scale on the bark of fruit trees, but you have not in my opinion sufficiently insisted on the absolute need there is of repeating this hot bath. Every day from the first appearance of the insect in May until the last have come from under the scale, as I have found that even when washed with water from a steam-boiler at work, the water being so hot as to scald and turn brown the leaves of the tree to which it was applied, that these little things (which to the naked eye look like grains of farina), were running about as briskly as possible half an hour after the application of this hot water; on the other hand, those that had become fixed on the bark, as scales, were not at all injured by the application: the scale must, therefore, be an excellent non-conductor of heat. It was owing to this habit of coming out in succession that my former experiment of washing the tree with thin starch failed; all those that could be reached were killed, but as a succession comes out every day for at least 10 days or a fortnight, and, unless all these are killed as they come, there is no hope of being able to touch them afterwards. This washing with thin starch is however a most effectual remedy for the red spider on wall trees, as I have proved many times; the trees begin to thrive again immediately, and the spiders and their eggs remain glued to the leaves. *T. G., Clitheroe.*

Frost in June.—Looking out of my chamber window about 4 o'clock on the morning of the 9th of June, I perceived the whole country white with hoar frost. Upon further examination I found ice nearly one-fourth of an inch thick upon standing water. The effect of this frost upon some of our hardy forest trees was remarkable; the leaves of the young Oak, Ash, and Sycamore were turned black, but the old trees of the same kinds suffered less; the Beeches put on their autumnal livery, and the points of the young shoots of the Larch were turned into a brownish yellow; also

the Potatoes which were above ground, together with Dahlias, were very much blackened and cut down. While this havoc was committed upon our native forest trees, a few half hardy exotic plants remained unscathed; these consisted of Fuchsias and Calceolarias, and were only planted out a week or two previous to the occurrence. A China Rose growing vigorously beside them was killed down to the old wood, but with this exception I could perceive no effect upon Rose trees, not even on those marked "rather tender" in Mr. Paul's catalogue. I was surprised that the Nasturtium and Tropæolum canariense were not injured, for I have often observed that a slight degree of frost in autumn was sufficient to kill these beautiful climbers. At the time this frost occurred the wind was north-east, and I am informed that the gardens about Haydon-bridge and the two Allendales suffered very much, particularly those in low situations and near the rivers. I could perceive no trace of it in Westmoreland, on the east side of the Eden. I think it must have been sheltered by the Penine chain of mountains, for further to the west, about the neighbourhood of Penrith, I am informed vegetation was very much affected. I observed some trace of it at Middleton in Teesdale, and Stanhope in Weardale, but how far it extended to the south I have had no means of ascertaining. *Wm. Wallace, Hillersdon-terrace, Nenthead, Penrith, July* 13.

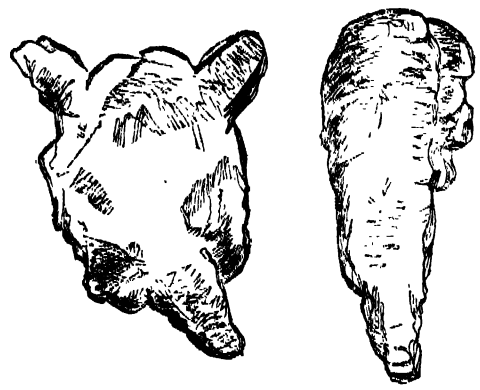
Cutting off the Tops of Potatoes.—Mr. Lomba's report regarding the growth of his Potatoes after the leaves had been cut off, brings to my recollection a circumstance bearing on this point that occurred in my neighbour's garden in 1847. My neighbour planted his early kidney Potatoes at the usual time in the spring, and after being up some of them were killed down by frost, and never recovered their leaves. This produced vacancies in the rows, which from some cause, now forgotten, were examined on the 28th of May, and much to his surprise, he found in each of these vacancies a few large Potatoes I find, on inquiring of him to-day, that they were the usual size of good grown tubers, perhaps 2 inches long. And whilst these topless sets produced this crop, there were few or none formed larger than Peas where the tops had not been injured. I have heard of no disease in the crop in our neighbourhood having made its appearance. *A. B. C., Cockermouth.*—Mr. Lomba's plan should only be tried on a small scale. The tops were cut off by a few farmers in this neighbourhood two or three years ago and abandoned; it totally failed in preserving the crops. The topless plants were ultimately much worse than where the plan had not been adopted. Some pulled up the haulm altogether, but with no better success. In the cases in question, however, a sharp instrument was not used, nor the plan of covering up the ridges with a little fresh soil adopted. I may also state that these experiments were not made until the disease had made its appearance in the fields. The parish in which I reside, and the three surrounding ones, are all famed not only for the quality but also for the quantity of Potatoes grown, being chiefly a light sandy soil; and it is here a generally admitted fact, that those farmers who have had the poorest sandy ground, and have given the Potato the least manure, have been for the last few years the most fortunate. *Cumbrian, Irton, July* 13. [No doubt. As to Mr. Lomba's plan, we have only advised its trial experimentally.]

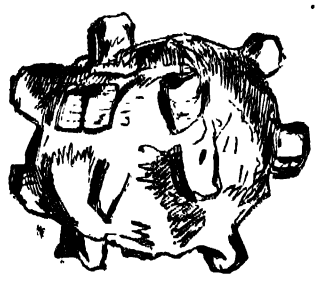
Josling's St. Alban's Grape.—If I may believe nearly all the gardeners who have grown this Grape, it is nothing but our old friend Wilmot's Muscat Muscadine, which I think was sold by him some years ago under that name at a guinea a plant. In France I have long known it under the following names: Muscat Précoce, Chasselas Musqué, Muscat de Jésus; and it has also been extensively cultivated in England, under the name of Chasselas Musqué, a good Grape, but liable to crack. Now, under your notice of the fruit exhibited July 4th at the Royal Botanic Garden, you notice that Josling's St. Alban's Grapes were "cracked." This looks suspicious. If Mr. Thompson was deceived in the appearance of the fruit, when he pronounced his well-known opinion, and it is really nothing but Chasselas Musqué, he must candidly acknowledge it, and those who have paid a guinea, or half a guinea, for a Grape Vine worth only 3*s.* 6*d.*, have the remedy in their own hands, by withholding the extra price. If, on the other hand, it is really and truly a seedling Grape, so like the latter as not to be distinguished from it under ordinary circumstances, it is only to be regretted that too good an opinion was given of it on its first appearance. Under these last-mentioned circumstances no blame can be attached to Mr. Josling; he is merely a fortunate man who has probably made 500*l.* by a Grape Vine which will not be of much benefit to growers; but if it is in reality nothing but our old friend Chasselas Musqué, it may truly be called a fortunate Grape, having been highly honoured by twice having a guinea attached to its value in the course of a few years—a circumstance very much to be regretted, as it tends to destroy the confidence of the public. *Vitis.*

Self-acting Fumigator.—It occurred to me that some simple plan might be discovered by which amateurs could smoke their plant-houses without the inconvenience of remaining in the house while they were doing it, and I have not been mistaken, for I have invented an apparatus which answers admirably. It is a long conical chimney in two halves, having a grate at bottom raised a little from the ground by means of short feet. When the apparatus is to be used, the top half is removed, 3 or 4 small red-hot cinders from the fire are placed on the grate, the Tobacco is shaken lightly and evenly over them, the top is put on, the house is shut up, and the Tobacco is left to burn out. The action of the invention is exactly that of a Pulmaise stove. I intend to name it "Gallier's Fumigator." *Richard Gallier, West Bromwich.* [This is a very good apparatus, when it can be left to burn out without being moved about.]

Daventry Horticultural Society.—You made allusion lately to the increasing taste for horticulture, as evinced by the formation of societies. I have much pleasure in stating that one which I was last spring instrumental in forming in my neighbouring town of Daventry, has proved entirely successful. Our subscribers, at first 150, now number 220; our visitors to the first exhibition 400 or 500, crowding the national school-room, the scene of our humble *debut*. The present show, June 29, was held in the private grounds of a townsman, attended by about 1100 visitors, in two handsome large marquees purchased by voluntary subscription and aid from the society, who have now 50*l.* in hand. I may add that many of us were utterly astonished last autumn at the excellence of the vegetables that we could produce, and particularly those under the head of prizes to cottagers, amongst whom the establishment has already produced a marked effect. The classes of rewards were three, viz., gentlemen and their gardeners, amateurs of the town, and cottagers. *R. T. Clarke, Welton-place, Northamptonshire.*

Hailstones.—The accompanying sketch will give an idea of some of the hailstones which fell at Nettlecombe, Taunton, on the 3d May. The most frequent form was nearly round, with a granulated surface, and most of them were about the size of cob and hazel nuts. The surface was generally transparent, showing an opaque white nucleus; but some were transparent throughout.





Some of them, as represented, were covered with imperfect crystals, projecting so as to give them the appearance of glassy echini. The fall of large hail lasted but a very short time, not more probably than one or two minutes, or it would have been attended with considerable damage. *W. C. Trevelyan.*

Tobacco for Gardening Purposes.—Passing through the bonded warehouses of Liverpool some time ago, I was shown in the Tobacco warehouse a large furnace and chimney, which was called the Queen's Tobacco pipe, and in which the condemned Tobacco was burnt. It struck me then, and the idea has frequently recurred to me, that this Tobacco might be applied to very useful purposes both in gardening and agriculture, if it could be liberated without duty, or by the payment of a nominal one, and that without risk of fraud to the revenue, and to the exceeding satisfaction of the merchant who has paid first cost, freight, and charges upon it, but who finds that a total loss of these is better than the payment of the duty, whereas if this damaged Tobacco could be taken for fumigations, infusions for washing plants, dipping sheep, &c., on the payment of a nominal duty, the merchant would probably at all times be able to sell it for what would pay freight and charges. It would be necessary to mix this Tobacco with something which would totally unfit it for smoking, &c., at the same time that it did not impair its value for the uses I have been suggesting; and this substance should also be very cheap and easily applied. It appears to me that for all infusions nothing could be better than sulphur, which, I think, would effectually prevent any one from smoking the Tobacco; but this would scarcely be suitable for fumigations, as the sulphureous acid which would be produced would probably be injurious to vegetation; but in this case, or perhaps in all cases, powdered resin would probably be effectual, and it is quite as cheap as flour brimstone, and would, I think, be quite as efficient a preventative of fraud on the revenue. There may be other impediments in the way of allowing it to be used as I have suggested, but even if there were not, and it could be proved that the substances I have mentioned would act as complete checks to the fraudulent application of it, it may be that the Tobacco paper, which I have heard of but have not seen, may be quite cheap and abundant enough for all the requirements of both horticulture and agriculture; but the idea of giving 3*s.* or 4*s.* per lb. for Tobacco for such purposes implies the possession of much money or much love for fruits and flowers. *T. G., Clitheroe.*

Polypodium Dryopteris and calcareum, I believe, will prove to be the same species, as affected by difference of soil; the former being, if I am not mistaken, never found on limestone, and the latter never where there is not limestone. I will proceed to mention the fact which has led me to this conclusion. About 15 years ago I took plants of decided P. calcareum from Cheddar cliffs, which it is well known are limestone, and where it grows in great abundance, and planted them in the garden at Nettlecombe, on rockwork, in the construction of which no limestone was used, but principally masses of quartz. Early in the spring of this year (1849), I commenced forming a Fernery, and when returning from a visit to Northumberland, brought with me roots of P. Dryopteris, which had never before been introduced into Nettlecombe garden, and there took from the above-mentioned rockwork plants, as I supposed, of P. calcareum; but when the fronds become developed, I was surprised at finding that all the plants (and they had spread considerably since first introduced from Cheddar), were identical with those from Northumberland. I questioned my gardener, who remembered my bringing the roots from Cheddar, and is satisfied that the present plants are their offspring, P. Dryopteris, as I mentioned before, never having been introduced into the garden until this spring. I lately revisited Cheddar, and procured a supply of P. calcareum, which has been planted at Nettlecombe, and the change shall be carefully watched, as I believe that it is an important fact, and one that, if confirmed, may lead to the discovery of supposed species in other plants, being often only varieties caused by soil or situation. A series of experiments on this subject, which should be accompanied with a chemical analysis of the plants, would be desirable, and might lead to results of much scientific and perhaps economic interest and importance. *W. C. Trevelyan, Taunton.*

Potato Disease.—July, in my opinion, is the critical month in the growth of the Potato. In proportion as the weather of July is warm and dry, there will be less of disease; and the reverse if wet and cold; therefore if this conclusion be correct, the present crop may be expected to be comparatively free from disease, of first-rate quality, but, in consequence of the drought, light in quantity. Should warm rains occur soon, but not in such quantity as to cool down the temperature of the earth, then quantity would be added to quality. Whenever a continuance of heavy rains takes place, accompanied with coldness, as is frequently the case in July, so that the temperature of the earth becomes low, the disease will exist to a considerable extent. Now for the rationale of this. At the commencement of the month the stem and leaves of the plant having attained their full growth, the organs of secretion are in a state of great acuvity, and ready to perform their functions in nurturing the tuber, and when the temperature of the earth is sufficiently warm to permit the tuber to act in concert with what is taking place in the leaves, all is well, and healthy maturation progresses; but when excess of wet and cold has so cooled the soil as to prevent this harmonious action, a check takes place, and the tuber being unable to appropriate the secretions, disease is the consequence, on the same principle as a young animal becomes unhealthy, and which is vulgarly said to be from growing too fast, or from being overgrowing, or, as it may be presumed to be, from one part of the system progressing too rapidly for the other. *A Gardener, Norton, near Stockton-on-Tees, July* 16.

Felling Timber for Building Purposes.—You speak of the beginning of winter as being best suited to ensure sound well seasoned timber; will any one be kind enough to say whether the experiment has been fairly tried of stripping the bark from an Oak tree in the spring, so far as it can be reached without lopping off the branches, and leaving the tree standing for a year or two until the sap ceased to rise through the alburnum. An intelligent friend of mine has been recommending this plan for years without being able to persuade anyone to adopt it, and the advantages ought to be great to cover the loss of interest, and the annoyance of seeing the skeletons of trees standing in land for two or three years. I think Mrs. Marcet mentions this plan in her Vegetable Physiology. *T. G., Clitheroe.*

Societies.

HORTICULTURAL, *July* 17.—E. BRANDE, Esq. in the Chair. J. Brown, Esq., was elected a Fellow. Mr. Jones, gr. to Sir J. J. Guest, Bart., of Dowlais House, Glamorganshire, showed four Queen Pine-apples, nicely swelled, well grown fruit, whose weights were respectively as follows: 4 lbs. 5 oz., 4 lbs. 8 oz., 4 lbs. 9 oz., and 4 lbs. 12 oz. For these a Silver Banksian Medal was awarded. Dr. Lindley then delivered his concluding lecture on the Diseases of Plants, the nature of vegetable affections, their causes, whether constitutional or local, and the remedies that experience had pointed out, or that reason suggested. The nature and mode of action of the mildew plants, by which so much injury is committed, was also explained by drawings and diagrams.

ERRATUM.—In our Report of the Fruit at the Exhibition at Chiswick, on the 11th inst., we omitted to state that Mr. Drummond, gardener to C. H. Leigh, Esq., of Pontypool Park, sent a Queen Pine, weighing 5 lbs. 12½ oz., and a rough-leaved Cayenne Pine, which weighed 7 lbs. 8 oz.; also, that Mr. Elphinstone, gr. to the Speaker, at Heckfield, showed two Trinidads, weighing respectively 4 lbs. 15 oz. and 5 lb. 4 oz.

CALEDONIAN HORTICULTURAL, *July 7.*—On this occasion premiums were awarded as follows:—For the four finest exotic shrubby plants, the highest prize was voted to Mr. Sleigh, gr. to the Lord Advocate, for fine specimens of Pentas carnea, Cuphea platycentra, Cereus speciosissimus, and Pimelea Hendersonii; a second premium was awarded to Mr. White, gr. to Mrs. R. Haig, for Stephanotis floribunda, Tetratheca verticillata, Aphelexis humilis, and Statice mucronata. For the two finest Cape Heaths, a first prize was awarded to Mr. Samuel, gr. to the Hon. H. Coventry, for E. tricolor speciosa, and E. ventricosa prægnans; and a second was voted to Mr. Veitch, gr. to Lord Melville, for a variety of E. tricolor and E. ventricosa prægnans. A premium was awarded to Mr. M'Lachlan, gr. to W. R. Ramsay, Esq., for the two best dark Fuchsias, his kinds being Etoile de Versailles and Comte de Bolleau; Mr. M'Lachlan likewise gained the first prize for the two best light Fuchsias, with Purity and One-in-the-Ring; a second prize was voted to Mr. Ritchie, gr., Parson's Green, for Beauty Supreme and Flavescens; and an additional award was made to Mr. Cameron, gr. to S. Hay, Esq., for Delicata and Dr. Jephson; the plants being good, but the varieties not considered sufficiently distinct. For the two best Orchids, the Society's Silver Medal was awarded to Mr. White, for well-grown specimens of Oncidium flexuosum and Cattleya Mossiæ, the latter very fine; a second prize was voted to Mr. Thomson, gr. to Dr. Neill, for a splendid plant of Oncidium pulvinatum, having a flower stem 10 feet in length, and for another, a variety of the same species. For the six best and most distinct varieties of Pelargoniums, an award was made to Mr. Cameron, for Gulielma, Rosamond, Centurion, Zenobia, Forget-me-not, and Hamlet. For the three finest varieties of fancy Pelargoniums, the Society's Silver Medal was awarded as a first prize to Mr. Cossar, gr. to Lady Hay, for beautifully flowered plants of John Superb, Anais, and Queen Victoria; a second premium was awarded to Mr. Cameron, for La Belle Africaine, Queen Victoria, and Champion of Devon. An award was also made to Mr. Cameron for the two finest dwarf scarlet Geraniums, the varieties being Victoria and Frogmore Scarlet. The prize offered for the finest grown specimen of any recently introduced perennial herbaceous plant was gained by Mr. Thomson, with a very large Myosotis azorica; and a second premium was voted to Mr. Stewart, gr. to Professor Dunbar, for Calystegia pubescens. For the three finest bloomed Achimenes, an award was made to Mr Baxter, gr. to Sir J. Gibson Craig, for well grown plants of A. longiflora, grandiflora, and patens. Mr. White gained the first prize for the two finest flowered Gloxinias, his kinds being G. maxima and rubra; a second was voted to Mr. Baxter, for G. Cartonii and rubra. The prize offered for the two most distinct varieties of dwarf Lobelias was awarded to Mr. M'Lachlan, for a magnificent plant of L. Erinus in full flower, measuring more than 9 feet in circumference and 2 feet in height, and a smaller plant of L. Erinus compacta alba. Mr. M'Lachlan's specimen of L. Erinus being so admirably grown, the committee awarded a certificate of merit in addition to the above prize. A second premium was voted to Mr. Veitch, whose kinds were L. Erinus grandiflora and Erinus compacta alba. In the competition for the best 12 Pinks, an award was made to Mr. Russell, Falkirk, for fine flowers of the following:—Kentish Hero, Smith's Exoniensis, Pilot, Harris's Dauntless, Bates's Number 2, Rubens, Whetstone's Prince Albert, Marchioness of Douglas, Queen Victoria, President, Henley's Beauty, and Joseph Sturge. For the prize of one guinea, offered by Messrs. J. Dickson and Sons, through the Society, to practical gardeners, for the best 24 named Roses (in equal numbers of Moss, Provins, French, Perpetuals, China, and Bourbons), there were several good stands of flowers sent in competition. The prize was gained by Mr. Sleigh, with the following kinds: common Moss, Alice Leroi, Lanei, à Feuilles luisantes, Adeline, Common, Madame L'Abboy, Comtesse de Segur, Surpasse tout, Aurelie Lemaire, Matthieu Mole, Infant de Norce, Duchess of Sutherland, William Jesse, Julie Dupont, Queen Victoria, Charles Duval, Chenedole, Belle Thurette, Triomphe de Laqueue, Mrs. Bosanquet, Nina, Cramoisie Superieure, and Triomphante. A second premium (given by the Society) was voted to Mr. Thompson, Carlowrie. An honorary award was made to Mr. Adamson, gr., Balcarres, for a box of Cactus flowers, amongst which were several seedlings. A certificate of merit was granted to Mr. Scott, gr. to G. H. Newall, Esq., for a fine seedling Gloxinia, named Eliza Newall. Very little fruit was shown on this occasion; but Mr. M'Lachlan produced a basket of well grown Grapes, Peaches, and Nectarines; and Mr. Pender, Moredun, a basket of fine Peaches and Nectarines. Besides the articles sent in for competition, there were many interesting productions for exhibition only, not from nurserymen alone, but also from private growers.

BOTANICAL, OF LONDON, *July* 6.—E. DOUBLEDAY, Esq., V.P., in the Chair, which was afterwards taken by J. Miers, Esq., V.P., F.R.S. Mr. J. W. Rogers read a paper on the Uses and Properties of Peat Moss, an account of which is given at p. 89 of our volume for 1847. Mr. J. Toulmin Smith said, while he did not deny the efficiency of the agent spoken of by Mr. R, he was a strong advocate for the use of liquid manure, as after long practical experience, he had found it best suited for the purposes of vegetation. On his own premises he had a tank, into which the whole of the fluid refuse was conveyed from the house, and which he pumped out and applied for garden purposes in its liquid state, and he had always found it answer well. Mr. Rogers conceived that Mr. S. resided in the country. Mr. T. Smith: at Highgate. Mr. Rogers: Well, your system might do well at Highgate, but how was a man to carry it out in the heart of London? There was no doubt but liquid manure was valuable, but the moment it was pumped out of the tank, and came in contact with the air, that moment the ammonia passed from it, and was lost; but when mixed with charcoal, the moment the ammonia came in contact with the charcoal it was fixed, the charcoal acting as a reservoir for it, and giving it out to the plant when it was required. Mr. T. Smith said into his tank a large quantity of water was run, and this he conceived was the best agent for fixing the refuse matter, and he thought it would also be the best agent for carrying away the refuse of London. Mr. Rogers admitted water to be good enough in its way, but when a drop of it fell on one of those particles of charcoal it was retained, and given out as nourishment to vegetation in due time; whereas, if they poured water on the ground, and a bright sunshine was to follow it, it was all absorbed by the atmosphere, and vegetation got no benefit from it. Mr. Edwin Chadwick said he came there rather to gain information than to make any remarks of his own. He admitted that there were cases where the agent referred to could be applied with propriety, as he had heard of sugar casks being returned to the West Indies filled with manure disinfected by such a process as that to which their attention was now drawn; he did not, however, think that as regarded London, the system could be brought into practical application. The liquid manure, he considered, was quite sufficient for agricultural purposes. It was easy of transmission, and was now sent a considerable way into the country at a cheap rate, so that he saw no reason for a change; at the same time, he did not discourage such investigations as the present, as the more facts they could get brought together on so important a subject the better. Several other gentlemen spoke upon the subject, alluding to the great interest of the question.

Garden Memoranda.

Mr. RIVERS'S NURSERY, SAWBRIDGEWORTH. — An hour's ride by a fast train on the Eastern Counties Railway brings the visitor to the Harlow station, which is scarcely half an hour's walk from this nursery. The latter is situated in a pretty part of Hertfordshire, on gently undulating ground. The turnpike-road to Cambridge and Norwich bounds it to the south-east, and is 12 feet lower than the frontage near Mr. Rivers's house. The latter is approached by three terraces, each laid out in beds of Roses, and the banks on each side planted with climbing Roses pegged to the ground. Standing in front of the house is a lawn sloping to the road, on which are grouped dwarf China and Bourbon Roses on their own roots, also standards; and we noticed here a dome of Roses, 10 feet in diameter, covered with the white flowers of different varieties of Sempervirens. This group receives no pruning beyond what is necessary to keep it within bounds, and certainly nothing could have a better effect than it had. A fine specimen of the Fern-leaved Beech, about 50 years old, grows close to the drawing-room window at the south-west end of the house, and near it several rows of 5 feet Yew hedges, which serve as shelter to the young pot plants. To the right is a steep bank, consisting of hard, white clay, and turfed over. This has been formed into a bank of climbing Roses, and a most beautiful bank it makes. On the top is a row of Ayrshires, Sempervirens, and Boursaults, planted 6 feet apart in a straight line; these are trained to stout Larch poles, about 7 feet in height, and they are never pruned. In front, is a row of climbing Roses, varieties of Sempervirens and Ayrshire, worked on short, stout stems, from 2 to 2½ feet in height. These are also never pruned; the branches are allowed to droop to the ground. In front, again, on the steepest part of the bank, climbing Roses (Ayrshires and Sempervirens) are planted, and left to ramble as they please. Although past their best, these were all in flower, and the effect they produced (looking at them from the road) was really admirable. On the side of a walk, leading from the house into the Nursery, we remarked a row of standard climbing Roses, consisting of Myrianthes, Princess Marie, crimson Boursault (a magnificent tree, with a stem 9 inches in girth), Bennet's Seedling, &c. No form in which the Rose could be trained could have a better effect than these weeping Rose trees, which are never touched with the knife. Immediately behind Mr. Rivers's house were numbers of pans full of seedling Conifers. Mr. R. raises all his seedling Conifers in the open air; they never at any time receive artificial heat. They are sown in pans in loam, a piece of perforated tile is placed over them till they begin to come up; it is then removed, and nothing more than common routine treatment is given them. Near these were two houses full of young Vines, and at the end of one of the houses here we noticed a nice stock of young plants of the Stanwick Nectarine, which has been committed to the care of Mr. Rivers to propagate. They were worked on Peach stocks, and are thriving well. Mr. R. is of opinion that the Peach will prove a valuable stock for both Peaches and Nectarines for pot-culture, as plants can be fruited on it in a very small state. We saw Peaches in 4-inch pots quite healthy, and Mr. R. thinks they might be fruited well in 8-inch pots. Of Roses in pots there were many thousands; quantities of them were plunged in sawdust on the surface of beds in an exposed situation. All were in capital health. In a number of brick beds here, 4 feet wide, we noticed a select collection of Junipers, among which were J. excelsa, J. oblonga pendula, alpina, squamata, and others; and by the side of them were Apples in 6-inch pots, on the true French Paradise stock (Pomme de Paradis), which Mr. Rivers thinks is the same as the dwarf Apple of Armonia. It is very dwarf, and rather tender.

Passing one of Mr. Ker's trellises, figured at p. 827, 1848, on which Peaches, Cherries, Plums, and Pears were growing well, we arrived at a plantation of different kinds of Gooseberries, intermixed with which were Filberts and Nuts, having straight clean stems 4 feet high. Managed in this way they fruit well, look ornamental, and produce no suckers. In order to give young Peaches a better climate than they would otherwise have in the open ground, Mr. Rivers has had a number of dwarf walls put up, about 3 feet high and 4 feet apart, on which the trees are trained, and he finds the plan an excellent one. These dwarf walls or palings consist of the staves of tallow casks, bought of the Russian tallow merchants in London, nailed to upright stakes driven into the ground; they are black in colour, having been painted over with gas-tar and lime. The same contrivance on long stakes has been applied to the training of "rider" Peach trees. Some of the young Peach trees here were stated to have been covered with curled leaves in spring, but they have been perfectly cured by cutting down the shoots; the trees have made new ones, which will ripen well and are perfectly free from curl or speck of any kind. The same kinds of boards as are used for the Peach trees laid against a steep bank, formed a suitable place for training Pear trees on, which are kept in a small state by being on Quince stocks, and by root pruning. In front of these was a plantation of Mr. Rivers's large fruited monthly Raspberry, both in flower and fruit. It produces the latter from lateral shoots, which it puts forth from every joint; and in this respect, as well as in the size and flavour of the berry, it differs from the old variety known as the double bearing Raspberry. This nursery being loam on sand is quite a Vine soil, and Mr. Rivers is trying some important experiments with Vines in the open air, on banks covered with flints, and on pillars, on which the Vine has a very ornamental appearance, even independent of fruit; but Mr. Rivers believes that it will ripen fruit managed in this way, and to that end plants have been procured from the very northernmost parts of the Vine countries for these pillars. Amongst them Picpoule Noir, Moustardie, Raisin de Valentia, and numerous others, were in bloom, and promised to bear well. Mr. Rivers is a strong advocate for the growing of Pears in a pyramidal form, and on Quince stocks. He has them planted all over his nursery in rows running from north-east to south-west. The rows are 24 feet apart, and the trees stand 5 feet apart in the row. By this arrangement an open border, unincumbered by overhanging boughs, is left between the principal rows. Many of the trees were five years old and 8 feet high, well furnished with branches from the base, and bearing fruit. They are all shortened in twice a year, viz., June and August. In order to obtain dwarf Plum trees Mr. Rivers is trying some experiments with the Plum on the Sloe, which is likely to prove a valuable stock for it; and with a view to get dwarf Cherry trees he employs Cerasus Mahaleb, or "Perfumed Cherry," as a stock. His object is to have fruiting trees of all sizes and of all sorts, in order that the purchaser may be enabled to buy a tree just in whatever state he chooses. He has Cherries a foot high that have borne nearly a quart of fruit, and Plums in fruit not more than 18 inches high. Mr. R. is striving to obtain an improved race of hardy late Pears, and in order to prove the seedlings quickly he plants them in rows with a Quince stock between each plant; the top of the seedling is taken off and grafted on the stock, and in this way much time is saved in this important operation. Before leaving the fruit trees, of which Mr. R. has an enormous collection, and he has a quarter for specimen trees of all the sorts cultivated, we should mention that he has found salt applied at the rate of a quarter of a peck to a tree beneficial to the growth of Plum trees.

A quarter is planted with different kinds of Oaks, in order to prove their respective hardiness. Among them was a seedling nearly evergreen, about 15 feet high, having the habit of a Lombardy Poplar. Of hardy lawn trees and shrubs, Mr. Rivers has an extensive collection, and a great many different kinds of weeping trees. We noticed a collection of different sorts of Brooms and Cytisus grafted on the purple Laburnum. He has new weeping Elms, new weeping Birches and Thorns, and a weeping red-flowered Chestnut (Pavia humilis pendula). We observed Mulberry trees 40 years old, and with stems 12 inches in girth, which had been transplanted, and were doing well, showing how retentive of life the Mulberry is. These had been cut well in, root and top. Mr. Rivers has just put up a cheap house for propagating Magnolias in, and growing Vines, &c. It has no back wall except a Beech hedge; the roof is supported by stakes driven into the ground 7 feet high at back, 2 feet high in front, with a 14 feet rafter. There is a sunk path up the middle, and on the right and left beds, which are thus raised up near the glass. The rafters are 20 inches apart, and glazed with sheet glass; and owing to the extreme ventilation no burning is ever experienced.

We now come to the Roses, of which Mr. Rivers has an amazing quantity. We think we understood him to say that he had 10,000 standard Hybrid Perpetuals and Bourbons alone, chiefly worked on the Manetti stock, and all clean and healthy. No aphis or blight was to be seen. Mr. R. informed us that he thought the air too bracing for these pests, which seldom or never trouble him, and when they do their visit is but short. It would be vain to attempt to describe what we saw among Roses; but we cannot pass over unnoticed a plantation of 500 standards of Géant des Batailles. This was truly an interesting sight, the glowing colours of this fine Rose reflected by the rays of the setting sun had a striking effect. It is one of the best of Roses, being both early and late in flower.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

MANY plants which have been grown solely on account of their summer beauty will now have ceased to be useful, and, if not very valuable, had better be discarded. Gloxinias, Achimenes, and other bulbs which require a season of rest, should be placed in a close frame, where they can be ripened off by gradually diminishing the quantity of water. Take care that all plants so treated are correctly labelled before their foliage is destroyed. This will give more room to do justice to those plants which are being grown for autumn and winter, and which should be carefully attended to with regard to tying and watering, and, by a rather free admission of air during the day, gradually inured to a cooler temperature than that in which they have been grown for the last three months. The same course of treatment must be pursued with stove plants in general, and especially with those which have completed a growth for next year's flowering; these may be placed on the spare shelves of a greenhouse, from which the plants have been removed. In this situation they must have abundance of air, except at night, and when the weather is cold or windy. Greenhouse plants require similar attention in everything except temperature, which should be kept as low as possible, unless for plants which it is desirable to bring quickly into flower. On fine afternoons, syringe overhead with a fine rose all plants which are under artificial covering. In fine warm nights it will be an advantage to remove the glass or other covering. It is also of great benefit to remove the covering during warm gentle summer showers. Remove dead flower stalks from bulbous rooted Irises, unless seed is wanted from them; do not however disturb the foliage until it is quite ripe. If any alteration in their arrangement is contemplated, it should be effected as early as possible after that time, as they commence making new roots immediately. White Lilies which are now in beauty should be taken up and replanted once in two years, and as in the case of the Iris, this should be done as soon as the old stems are decayed. The beds for either of these plants should be prepared of rich loamy soil, containing a good portion of sand or burned clay, and charred refuse, with a sufficient admixture of soot to destroy all animal life. And in planting, a little sand should be laid above and below the bulbs.

FORCING DEPARTMENT.

PINERIES.—After making the selection of plants for producing winter and early spring fruit, a portion of the strongest and best rooted of those remaining should be picked out to succeed them; these should be potted immediately if they require it, and grown on steadily without any check; any of the smaller plants which are in immediate need of potting should also be attended to. Omit not to keep up an uninterrupted succession by planting a few suckers occasionally in a brisk bottom-heat. PEACH HOUSES.—Admit a free circulation of air during the day, through all the houses, if the weather is fine; but where the fruit is just ripening only the front ventilators should be left open, and the top sashes closed, to prevent the damp cold dews from settling on the fruit. The foliage in the early houses should be kept in a healthy state as long as possible by syringing, &c. VINERIES.—This excessively hot weather renders it necessary to shade the crops of Black Hamburgh Grapes which are thoroughly ripened, to prevent shrivelling, as this kind is thereby deteriorated in quality, although the Muscat continues to improve in flavour. Where the crops are swelling, examine the state of the borders as regards moisture, and especially those which are covered with tarpauling or other material. If the soil is dry, let the surface be carefully loosened with a fork, and then give them a good watering of liquid manure. Examine the bunches of swelling crops, and remove any small berries. Carefully avoid using the syringe where it can even slightly injure the bloom.

FLOWER GARDEN AND SHRUBBERY.

Those who can spare time for budding Roses, will of course be busy with that operation, selecting moist weather for the purpose. Much may be done to aid the beauty of the flower-garden during future autumns by budding some of the choice varieties of Perpetuals and Bourbons, and their hybrids, upon the strong young shoots of the climbing species, which form such attractive objects at this season. The propagation of hardy plants should now be energetically proceeded with. After the smaller matters, such as Phloxes, Antirrhinums, Pentstemons, &c. are completed, Roses will next demand attention. We never yet saw a pleasure-ground or flower-garden which contained a superabundance of Roses; but we would direct particular attention to the early flowering climbing Roses, than which nothing can be more beautiful when they are tastefully arranged. In selecting the varieties for extensive cultivation, those should be chosen which are found most able to endure the severity of winter unchecked, and which are least liable to be affected with mildew during summer, as there is much difference as to both these points in different varieties; and many are found to succeed much better in some localities than in others.

FLORISTS' FLOWERS.

We have often wished there was a greater unanimity amongst the cultivators of this beautiful family, and that the standards already laid down could be acted upon in every county of England, Ireland, and Scotland. This idea forcibly strikes us just now, because we would plant out our Pink beds, and would advise all who have pipings rooted to do so. But then what suits the metropolitan exhibitions would not do in Lancashire, and many of the best southern flowers are looked on with contempt in the northern counties. Now we think that we can name a few that will suit both parties, and which would be able to compete together. These are Kirtland's Lord Valentia, Lee's Joseph Sturge, Looker's Achilles, Wilmer's Laura, Reed's Marian, Kerr's Harriet, Headley's Duke of Northumberland, Hand's Pilot, Cant's Criterion, Smith's Whipper in, Hodge's Melona, and Hudson's Duke of Devonshire. Now these we believe will win at both north and south country exhibitions. And in planting out beds for next summer's bloom, we would advise these sorts to be amongst them. AURICULAS, in this past dry weather, must have suffered unless well attended. Green-fly is apt to get round the heart; a camel-hair brush swept round each plant, which could be done, even if the collection was large, in half an hour, will keep these pests within bounds. POLYANTHUSES should have plenty of water, and shade. The red spider is their greatest enemy in dry weather, which the above will effectually prevent.

KITCHEN GARDEN.

The water-cart should seldom be allowed to stand still as long as the hot weather lasts. The few slight showers which we have had hitherto are insufficient to moisten the bare ground, still less that which is covered by crops. To some of these, as Asparagus, Celery, Sea-kale, &c., water is almost indispensable; and to many others, particularly if recently planted, assistance of this kind will be found of considerable benefit. If manure water can be made or procured, it is of course preferable to clean water, and the labour of applying it is the same, while the advantage is incomparably greater. Regular successions of Endive, Lettuce, &c., should be sown, and transplanted as soon as they are fit for handling. Chicory also, if not already transplanted, should be immediately attended to. Proceed with the transplanting of Celery, Cauliflowers, Broccoli, Savoys, Brussels Sprouts, &c. Make a small sowing of Flanders Spinach, to succeed the last sowing of round or summer Spinach; also a sowing of York and Vanack Cabbage for winter and early spring use. A sowing of Onions should now be made, rather thick, for spring use. Herbs in flower should be cut and hung up thinly in a dry, airy shed. Pull Shallots, and lay them on a gravel walk, or dry ground, for a few days before removing them to the store room.

State of the Weather near London, for the week ending July 19, 1849, as observed at the Horticultural Gardens, Chiswick

July.	Moon's Age.	Barometer. Max.	Barometer. Min	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain
Friday . 13	☾	30.213	30.202	81	48	64.5	E.	.00
Satur. . 14	23	30.203	30.179	81	52	66.5	N.E.	.00
Sunday . 15	24	30.146	30.125	75	49	62.0	N.E.	.00
Monday 16	25	30.148	29.990	81	51	66.0	N.	.00
Tues. . 17	26	29.864	29.725	69	49	59.0	S.W.	.07
Wed. . 18	27	29.741	29.62	73	50	61.5	S.W.	.06
Thurs 19	●	29.93	29.791	73	44	58.5	S.W.	.22
Average		30.012	29.912	76.1	49.0	62.6		0.35

July 13—Fine, slightly clouded.
— 14—Overcast, very fine, overcast.
— 15—Cloudy, overcast, clear at night.
— 16—Cloudy, very fine, slight haze at night.
— 17—Cloudy, slight rain, heavy shower in the evening.
— 18—Very fine, cloudy; showery.
— 19—Light clouds and fine; towering masses of white clouds; thunder in afternoon, with heavy showers.
Mean temperature of the week, 1 deg below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending July 28, 1849.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No of Years in which it Rained.	Greatest Quantity of Rain	Prevailing Winds. N	NE	E	SE	S	SW	W	NW
Sunday 22	74.8	52.0	61.9	18	1.37 In	2	3	1	—	2	9	4	1
Mon. 24	72.0	52.7	62.4	9	0.40	1	3	3	—	1	6	5	5
Tues 24	72.6	52.1	62.4	6	1.01	—	7	3	1	2	5	3	2
Wed. 25	74.1	51.2	62.6	6	0.22	2	2	—	1	3	7	5	1
Thurs. 26	73.5	52.2	62.8	9	0.70	2	1	2	2	1	7	4	2
Friday 27	72.0	51.8	61.9	7	0.56	1	3	3	1	2	6	4	3
Satur. 28	71.8	53.7	62.8	10	0.92	1	2	2	1	1	7	6	3

The highest temperature during the above period occurred on the 25th 1844—therm. 92 deg; and the lowest on the 24th, 1838—therm. 40 deg.

Notices to Correspondents.

TO CORRESPONDENTS. The Editor begs for the indulgence of any correspondents whose inquiries may not have been answered, in consequence of his absence at York assizes.

ABERDEEN BEEHIVE STRAWBERRY: *R S Y.* Thanks for the samples of this pretended novelty. It is nothing whatever but the old Grove-end Scarlet.

BACK NUMBERS: *J A U.* We have only the two for 1848.

BEES: *W S.* You may take honey from a common hive without destroying the bees, by turning it up and cutting out about two combs from each side, but previously to the operation a few whiffs of Tobacco smoke should be introduced amongst the bees. The operation should be done in the evening, and not later than the middle of this month, in order that the bees may have time to repair the damage. Another plan is to drive the bees into an empty hive by placing it upon the full one, which should be inverted on the ground; the mouths of both hives should fit closely together, then tie a cloth round both where they meet, in order to prevent the bees from escaping. Tap on the under hive, in order to cause the bees to rise into the upper one. Then put the robbed colony in the old place to begin again, as with a fresh swarm. This plan is only suitable in heath countries, where bees have plenty of late pasturage. But you would save both much hazard and trouble by adopting the depriving plan, which is merely cutting a hole at the top of the hive and covering it with a cap put on about the end of April, or later, according to the strength of the colony. *W.*

BOOKS: A new edition of Loudon's "Hortus Britannicus" is, we believe, in course of preparation. Moore's Book on Ferns. We cannot answer your other question. ‡—*H C & Co.* We cannot recommend dealers. ‡—*T R M.* One is just as good as another.

BOTTLED PEAS: *Sub.* See p. 376 of our current year's volume.

CONIFERS: *T G.* Sow them in pans in pure loam, and place them in frames in a very little heat. After they have come up, remove them to a sheltered place out of doors to harden. ‡

EMIGRATION: We cannot, as we have often stated, take upon ourselves the responsibility of recommending colonies to our correspondents. They must judge for themselves; for which purpose they must read the books on Emigration now published at a very low price, and the Colonisation Circular and Commissioners' Report of the Government Board of Emigration, at No. 15, Park-street, Westminster; to be had of all booksellers.

GLASS: *Micklewell.* Rough plate will answer your purpose perfectly. ‡

GRAPES: *Capt J.* The affection which has shown itself in your Grapes has never been traced to its origin. It is evidently some internal malady, and may probably be connected with the roots, although nothing less than personal inspection could point out in what way. Such cases are not rare, and they generally disappear after a year or two, provided the roots are kept warm, in permeable soil, and thoroughly free from stagnant water.

GUANO: *T D H.* We cannot recommend dealers. ‡

INSECTS: *Alpha.* The "louse" from the West India Pine is the Lecanium bromeliæ, common in stoves. *W.—J P.* House crickets will drown themselves in great numbers if pans of water be laid down near their haunts at night. The best remedy against bugs is to fill up all the crevices in the wood-work of beds, and rub them over well in the corners with oil and turpentine, and use iron bedsteads. *W.—F T.* The caterpillars which eat the leaves of the Plum and Pear-trees are the young of the common vapourer moth. We know nothing more effective than hand-picking (their colours rendering them conspicuous enough), and destroying the unwieldy females when hatched from them in a few weeks' time. See *Gardeners' Chronicle*, 1842, p. 541. *W.—J A M G.* The larvæ sent as destructive to garden crops in Inverness-shire, are those of a species of Silpha, generally supposed to feed on carrion. Have these been actually caught in the act of feeding on the plants? If so we would recommend laying traps of decaying vegetables in the places they frequent, which should be looked over every morning. *W.—Richard Dixon.* The insects which have attacked the Mangold Wurzel are the same as those noticed in the last answer to "J A M G." *W.—W M.* The insects on the Achimenes are females of a minute species of scale coccus, which is new to us, and is in all probability peculiar to the Achimenes. They are very difficult to destroy, but try hot water, especially at the time when the young ones creep about, which you must watch for, and then put the plants into an atmosphere saturated with bruised Laurel leaves. *W.—Sir W J.* Thanks for the Fir twigs; but are these the same insects as those sent before, or a different species? *W.*

MILDEW: *Cambrian.* Sulphur will kill it if it be applied early enough; that is the point. ‡

NAMES OF PLANTS. *L and S.* Anagallis tenella.—*J B.* Medicago lupulina. — *C N.* Nuttallia cerasiformis belongs to Rosaceæ § Quillaiæ. It was not published when the list in the "Vegetable Kingdom" was prepared. — *A Lady.* Asplenium Trichomanes. *S.—C G F.* It seems to be the common Arum Dracunculus, a native of the Levant and an old inhabitant of gardens.—*T R M.* A Thalictrum; apparently aquilegifolium.

NEW PLANTS: *A Constant Reader.* The statements, if you read the whole of them, are perfectly consistent; and with great respect we submit that those who witness a thing are better authority than those who trust to mere reports.

PELARGONIUMS. *S C.* Next week. ‡

PERMANENT STUDS: *T D H.* We know nothing of them beyond what is stated in Mr. Fleming's paper on the subject. ‡

POTATOES: *A Subscriber.* It is not possible to form an opinion from the inspection of such a morsel, smashed to pieces in the Post-office.

SEA GULLS: *Old Reader.* They destroy grubs and insects unfriendly to gardeners, and do no harm in a garden, that we know of. ‡

SEEDS FOR EXPORTATION: *A W.* Put them into loose canvas bags, and hang them up in the ship in some well ventilated place.

STRAWBERRIES: *W H.* There is nothing very remarkable in the leaves you have sent ‡

TREE PÆONY: *J M S.* If it is not a grafted plant you may cut away the old branches and trust to the young shoots. That had, however, be better delayed till next January. But cannot you throw vigour into your old branches by abundant manure?

TURF ASHES: *Old Reader.* They are useful as a manure, and may be applied in all cases where manures should be applied. ‡

WATERCRESSES. *Felix.* The place you describe will suit watercresses perfectly. You will find all the information you seek fully given at p. 255 of our volume for 1846 ‡

MISC.: *Whitburn.* Thanks. The corrections are just; but against such mistakes it is very difficult to be always on the guard.

SEEDLING FLOWERS.

ANTIRRHINUMS: *Dundee.* A very nicely marked variety of Snap-dragon.*

CALCEOLARIAS: *T W.* Dark shaded crimson with a few irregularly shaped yellow spots; size and outline good; shape a little flat. A nice dark variety.*

FUCHSIAS: *W A.* Your specimen was so much injured by travelling that no opinion could be given of it.*

PELARGONIUMS: *G M.* Flowers of compactum roseum bright rose; size and texture good, truss large, horse-shoe leaf, robust (the truss sent had 78 flowers on it), the flowers are of the same colour and size as those of Lucia rosea, a very desirable variety.—"Mammoth," flowers large, bright scarlet, truss large, leaf marked with a dark horseshoe-shaped band; a fine variety, but not very distinct from other scarlets.*—*C J C.* Flowers much withered when received, and not examinable.*—*W D.* Flowers bright scarlet, truss large, but individually the flowers are rather small; a good variety, but it is certainly in no way superior to Tom Thumb.*—*Col Eyres.* Upper petals dark crimson, shaded with lilac towards the outer edge, margined with white, and veined and stained with deep violet near the base. Lower petals pale blush, with a few lilac stains near the centre; shape, colours, and margin good; size small. A rather distinct and pretty fancy variety.*—*G P.* Upper petals dark crimson, with the edges slightly margined with shaded rosy purple, and feathered with violet coloured veins in the centre. Lower petals bright pinkish-red, much stained with pink near the centre; texture, shape, and size good; colours bright and well contrasted. A very nice distinct looking variety, but a little crumply in the upper petals.*

PINKS: *H B.* Your Indian Pink is a semi-double, dark shaded crimson. A very nice rich-coloured variety.*

VERBENAS: *H B.* Rosy lilac self; nothing remarkable.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

The Summer Session will commence on Friday, the 10th of August, 1849. All New Students are required to attend for examination on the preceding day. Those who purpose entering as Students for the ensuing session are requested to apply (either by letter or personally) to the Principal, at the College, Cirencester, Gloucestershire, for the necessary admission papers.

PHILIP BOWEN, Secretary.

London Office, 26, King William-street, West Strand.

The Agricultural Gazette.

SATURDAY, JULY 21, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, July 24—Agricultural Society of England.
THURSDAY, — 26—Agricultural Imp. Society of Ireland.
TUESDAY, — 31—Agricultural Society of England.
WEDNESDAY, Aug. 1—Yorkshire Society at Leeds.
THURSDAY, — 2—Agricultural Imp. Society of Ireland.
FARMERS' CLUBS.—July 27: Needham Market.—Aug. 2: Ottery St. Mary —Aug. 4: Framlingham, York.

THE real value of green crops in farming does not depend only upon the money value of the beef or mutton made during their consumption. The true answer to the question—WHAT IS A TON OF TURNIPS WORTH?—must refer to the manure as well as the meat made from it. And if, in order to ascertain the profit or loss of a fallow crop, all the cost of the fallow operations it receives during growth be taken into account, then not only must the meat and the manure it produces be placed to its credit, but the improvement in the condition of the soil also, as a seed bed for the succeeding grain crop, since the period of the first winter's furrow with which those fallow operations commenced. But however the estimate be conducted, and whatever be the result to which it leads—whether we regard green crops with some as perhaps necessary evils, but involving large immediate losses to the farmer—or with others as the real source of agricultural profit—it is a fact that the improvement of British agriculture has proceeded with their more general cultivation, and that it is the Turnip husbandry which has enabled farmers to provide the corn-food which our country has required: for, the more green food the more cattle; the more cattle the more manure; the more manure the more corn. There is then nothing absurd in the idea of producing simultaneously a larger amount of both meat and grain from the same land; indeed we may safely assert that, except by an increase in the produce of the former, that of the latter has already in many instances reached its limit: our annual produce of grain in Britain depends very much on the quantity of ammoniacal manure annually applied to British soil, and, excepting the comparatively small quantities imported into the island, we may safely admit Mr. LAWES' demonstration of the fact that this depends wholly upon the weight of meat we annually manufacture. Raise that to a maximum, and we shall soon have attained a maximum of fertility. It is well that we are still far enough from that goal, and that so large a margin still remains, the inroads on which will result in the contemporaneous increase of both animal and vegetable produce as food for man.

It is to this that the farmer must look for increased profits: *he* will the most rapidly attain them who the most rapidly traverses the margin in question, and who by more energetic green crop cultivation and stock feeding provides the manure on which alone reasonable expectations of a large grain produce can be founded. It would be a good thing if such a course could be made directly as well as indirectly profitable, if the increased expenses incurred were more than met by larger returns of meat produced, so as to leave the larger dung-heap, also produced, free of expense, to increase the fertility of the corn fields. There are instances in which the manufacture of meat has of itself been a profitable business; and there are those we believe with whom it is always a profitable business: we wish we could procure for our readers the experience of our best farmers on this subject. No better boon, we believe, could be conferred on the agricultural interest than those are able to grant who can furnish the methods and the results of profitable "grazing" on arable land. And we must endeavour, before the Turnip crop is ripe, to obtain returns from successful farmers on this subject. If any one able and willing in this respect to help us will kindly furnish his name and address, we shall be happy to forward copies of a circular on the subject, to which we have already received some useful replies, and the information derivable from which we shall be careful to publish for the benefit of our readers.

The following are the answers to it received from two correspondents:

1. Twelve cattle from three to eight years old of different breeds.

2. Fed from the 15th of Jan. till the 15th of May.

3. Each in a 'box,' 8 feet by 11 feet, and 18 inches deep: fed six times a day, alternately with roots and compound; the dry litter in the corners of the boxes being thrown into the middle and levelled, and the animals being littered every morning, and cleaned out at the end of three months.

4. Each received daily 108 lbs. of Swedish Turnips or Mangold Wurzel, and 33 lbs. of compound, made of 14 lbs. of straw and 7 lbs. of hay cut into chaff, and 4 lbs. of Pea meal, mixed and steamed all together for half an hour, then emptied into a box with a brick floor, and 1 lb. of Linseed meal and 1 lb. of Barley meal, which had been steeped in 8 lbs. of water for 26 hours, thrown over it. During the last 5 weeks each animal had 5 lbs. of oilcake daily.

5. Each animal had 20 lbs. of straw or 2 bushels of sawdust daily, as litter.

6. The estimated increase in the animals, judging from their value at the commencement and end of the period, has been 20 lbs. weekly. They weigh from 10 to 12 score per quarter, and have been sold for from 5½*d.* to 6*d.* per lb.

7. The health of the stock under this treatment has been perfect, and the box feeding has been consistent with their health and comfort.

For the above we are indebted to Mr. WILLIAM AITCHESON, bailiff to J. S. WHITTIM, Esq, Coundon, Warwickshire. The following is our second case:

1. Four Hereford 3-year-old oxen.
2. Fed from Oct. 28, till Jan. 30—13 weeks.
3. In boxes, each about 7 feet by 12, not sunk.
4. They ate during that period 30 bushels of Beans, 4 cwt. of Linseed, and about 21 tons of Swedish Turnips and Mangold Wurzel, besides straw cut into chaff. The Linseed and Beans as meal were boiled and thrown over the chaff; each animal receiving about 1 lb. of the former, and 3 or 4 lbs. of the latter, daily, with rather more than 1 cwt. of roots.
5. They were littered with about 18 lbs. of straw, daily, apiece.
6. They were bought for 60*l.*, and sold, at 6*d.* per lb, for 77*l.*, an increase which repaid the cost of attendance and bought food, together with about 9*s.* per ton for the green food.

This instance again is furnished by Mr. JOHN C. MORTON, of Whitfield, near Berkeley, Gloucestershire. Now this is the kind of information desired; of course, the larger the number of cattle to which the facts apply, the more valuable is the result as illustrative of the farmer's business; and we do hope some of our correspondents will be induced to meet the appeal we now make for the information they can give us on this important branch of farm management.

As an instance of the gross returns on a farm where energetic green crop culture is aimed at, and as large a number of cattle fed as possible, we give the following figures, for the accuracy of which we can vouch.

		Payments.			Receipts.		
Stock account	1845	£1231	5*s.*	3*d.*	£1411	1*s.*	3*d.*
„	1846	1648	2	4	1992	10	11
„	1847	1467	10	0	1559	7	4
„	1848	1800	14	2	1865	2	8
Or, on the whole,		6147	11	9	6828	2	2
		Deduct payments			6147	11	9

Leaving a net profit of £670 9 5

which is the whole return for 4000 or 5000 tons of green food consumed. During the year ending April 6, 1849, the receipts under the stock account have exceeded the payments by 254*l.* 1*s.* 9*d.*, which is rather a better result than the average of the previous four years, but even then it does not exceed 4*s.* per ton of the green food consumed. Surely there is a way of converting a ton of green food into more than 8 lbs. of meat; surely 1 lb. of meat may be extracted from less than 2½ cwt. of Turnips. There is not one element of beef or mutton but exists in the Turnip in far larger proportions than the two-fifths per cent. to which this corresponds. We hope that many farmers succeed, on the large scale, in making a far better thing of their green crops than this; and if so, may we suggest to some of them the humanity of coming to the assistance of others who have failed in the attempt.

A WILTSHIRE FARM.

a. The extent of my farm is 200 acres.

b. Position.—We have a large population; formerly a large manufacturing town; the last 20 years they have lost their trade, which has thrown a great number of hands out of employ, causing a heavy poor-rate.

c. The character of the soil is about 30 acres a sandy loam, with a mild subsoil; 40 acres stone brash upon a white, stiff, or Oxford clay; about 100 acres a stiff clay, rather inclined to run; the subsoil so stiff that a man can scarcely dig it.

d. 30 acres pasture: 170 arable.

e. We mow about 10 acres of pasture annually, the rest we feed with horses, oxen, and cows; about 20 acres of Saintfoin and Clover, all consumed.

f. The arable land is sown half with Wheat, the average crop about 8 sacks per acre; the other half with Swedes, averaging from 12 to 20, Mangold Wurzel from 25 to 30, tons per acre; the rest sown with Rye, Tares, Clover, and Saintfoin, all consumed on the land.

g. The quantity of manure bought has been 25*l.* per annum, that is, bone-dust, nitrate of soda, &c., besides a considerable quantity of Oats and oilcake for cattle.

h. The animal labour is 7 horses and 4 oxen. The manual labour is about 6*l.* per week; our day wages 1*s.* 6*d.* per day, with a little beer; carter and shepherd 1*s.* per week more.

i. The rental, with rent charge, great and small, highways, land tax, church rates, window tax, county rate, is 2*l.* per acre, when we pay 5*s.* in the pound poor-rate; when we pay 10*s.*, 2*l.* 5*s.* per acre. This year we are paying 8*s.* in the pound, which makes 2*l.* 2*s* per acre. *G. N. H.*

Home Correspondence.

Steep v. *Level Land.*—In your Number of June 16th your correspondent "Agricola" seems to pity the ignorance of the Yorkshire farmers, in supposing that a larger crop of corn can be grown on hilly than on level land of the same base. In this he is supported by your authority, and a French philosopher to boot; but as I am a Yorkshire farmer, I may be excused if I attempt to show that the proverbial acuteness of the Yorkshiremen is not in this instance at fault. No dispute can be raised as to what is a hill. For the purposes of the argument, any deviation from a perfect level is a hill. I may therefore choose any sort of a hill I like, and as I wish to be moderate, I will not choose a perpendicular rock, but a hill that can be ploughed conveniently, and from which, either on account of its being drained, or from its natural porosity, or from its not too steep descent, the winter rains do not wash away the soil. Now I find that soil, in agricultural parlance, is the result of the action of the atmosphere on a variety of materials, and that the quantity is in proportion to its access to them, whether naturally or artificially promoted. Thus I find that I have more soil in two fields than one; and as there is a greater contact of earth and air in a hilly field than in a level one of the same base, so I find on that account that it has more soil than the other, its superficies being greater. I find, also, other things being equal, that the more soil I have the more crop I can grow; and as plants also require contact with air, so on the hilly field they also have more contact with it. On these accounts, greater quantities of any plants, not excepting trees, can be grown on a hilly field than on a level one of same base—quality of soil, &c., being the same. The argument is in no way affected by the fact that no more houses or hop-poles can be placed perpendicularly on the one field than the other. They can be placed in close contact, and all the space filled up; but I never met with any man who had seen trees, or corn, or any vegetable crop with the stems all touching each other. The cases, therefore, are not analogous. "Agricola" excepts moss or such like plants. These grow a certain height. By what principle does he limit this height to more or less, and what is the limit? By defining it he will confer a benefit on science. By his exceptions he confutes himself unknowingly, as he will find when he attempts his definition. But how does the simple Yorkshire farmer arrive at his conclusions? Why, he finds there are more acres of surface, and it takes more time to plough it; he manures it, and finds it requires more manure; he sows it, and, lo! it takes more seed. He reaps his crop, and does not find it thinner on the surface, and hence he concludes that he has not wasted extra labour, seed, and manure; but that he has his reward proportioned to his expenditure. Think you, in the oft times struggle to live, that it would not have been discovered, if the neighbour of the plains had one-eighth or whatever the advantage may be over him of the hills? or that men changing about from farm to farm would not speedily have discovered this advantage? And if you, disregarding this plain and practical method of solution, had held a scientific inquest on the facts, instead of jumping to your conclusion with long poles, you would have found that science confirms the absurd opinion of the Yorkshire farmer. *Henry Chaytor, Croft, Darlington, June* 26.

Sex of Poultry.—Will "D. S. E," or any other correspondent obligingly inform me how to distinguish the sex of the chicken which an egg will produce. I am aware that there are infallible signs, not only to ascertain whether an egg will produce a cock chicken or a pullet, but also whether or not it will produce any chicken at all. There is a poultry rearing establishment near London, where about 80 hens are superintended by an old woman; the hens are all of the Dorking breed (white), and all the chicks are pullets, as pullets are of more ready sale than cocks. The old lady inspects every egg, and selects none for incubation but such as will produce pullets, and are properly fecundated; so that she "reckons her chickens before they are hatched," will tolerable certainty. I was the other day informed by some friends, that having occasion to call at a cottage in this neighbourhood, they were not a little surprised at seeing a number of cocks in the yard. I think there were 17; on asking the cottager's wife how she came to have so many cocks, she replied, "my husband breeds game cocks for sale, and therefore sets no eggs but such as will bring cock chickens; he can always tell whether an egg will produce a cock or a pullet." If any of your correspondents will give the necessary information on the subject, I dare say it will gratify many others as well as "Lusor." *V. S.*

Clay Lands.—The most economical, and by far the simplest and most generally applicable, mode of reducing

the cloddy surface of clay lands, is to lay mounds of alternate layers of the rough materials and hot lime, and to ignite the heaps by exposure to the air, or by the application of water. A heap of 7 yards in length, 4 in width, and 3 feet high, and mixed with 72 bushels of hot lime, has been recommended to be reduced to ashes or nearly so, when clay may be applied as long as sufficient heat remains. The damp heat exhaled from the lime will produce a smothering effect on the clay, which is not easily attained in the open air, either with a large or small quantity of flaming combustibles; in the former case there is danger of calcination and uselessness, and in the latter, of imperfect burning and extinction of the fire from exposure, and the surrounding contact of air. The lime can be got at any time, and the process can go on in wet or dry weather; the means are more at the command of the farmer, and the work can be performed more promptly on that account than when it depends on so many contingencies, often beyond control. The expense of burning in heaps has been stated at 1*s.* to 1*s.* 6*d.* per load, and of clod burning at 12*s.* to 15*s.* an acre, but little dependance can be placed on such statements, or on the loads that are used, or on the quantity of ashes got from burning an acre of land, as they all vary according to circumstances. The quantity of ashes should be such as will cover the surface when they are spread; if the quantity be less, the application may be worth little, and a large quantity can be got at less proportional expense than a smaller. This mode of burning by lime is a very simple and effectual, and a process at all times available, and the ultimate products are a mixture of finely reduced and pulverised substances to be blended and incorporated with the soil, on which acquisition so very much of the fertility of the earth depends. *J. D.*

Colonising Ireland.—I have just had put into my hands a printed list of 24 farms that are at this moment to let in Ireland, and only some 24 hours distant from England. The terms on which they are to be had must astonish many of your readers; and when we reflect on the thousands that are annually leaving Britain to seek settlements in countries that for ever divide them from relations and friends, how surprising it is to find there are such openings at home, going as it were begging. Take for instance the following, viz.:

Bunlanaboy Farm,	1050	acres,	to let at	£75	per annum
Mingaroon Farm,	1667	,,	,,	0	,,
Faulagh Farm,	946	,,	,,	43	,,
Carrowmare Farm,	650	,,	,,	53	,,
Dereens Farm,	260	,,	,,	18	,,

Described as being situate in the main road, and only five miles from a town, with the further inducements that money will be found for the tenants to drain at 6½ per cent. per annum, and leases for 21 years will be given, and the tenants, should they at the expiration of the term be disturbed in their occupation, will be paid 10 years' purchase on the value of the improvements they have made, and this in a county one of the most peaceable in Ireland, and where agrarian outrages are unknown. On reading this can anyone refrain from feeling surprise and regret that so much British industry should go to the bringing into cultivation countries that are of so little use to us, as are our distant settlements in Australia and New Zealand, we having at home so fine a country lying comparatively waste, and a labouring population starving from the want of the employment that the colonising of home land with British agriculturists and capital would afford them, and this, too, going on at the same time that our occasions for larger supplies of food are annually growing greater, and when the deficiency between our own produce and consumption is already so serious as to have called for the resources of the world to meet it. What country in the world is there that offers to British capital and enterprise the advantages that at this time the land affords? The metropolitan towns of Britain and Ireland are but 18 hours apart; the western coast of England is only a few hours' sail, and offers ready markets for all that Ireland can raise; Irish labour is abundant, and to be had at half the price of English; stock wherewith to plenish a farm is to be bought at half the cost; the soil is very fertile and the climate temperate, and the country in all parts traversable by good roads; against all this there is to be placed but one objection, and that happily can hardly be said to any longer exist—or if it exists, is very much weakened—and appears to me capable of being wholly removed. I allude to the supposed insecurity of life and the ungovernable prejudices of the natives. The purchase of a large district and its division into sections, and occupation in chief by British tenants under the control of agents, resolute in maintaining order and suppressing outrage, accompanied with fuller employment of the labourers with more liberal expenditure, would destroy all organisation for mischief as well as take away the incitement that accompanies extreme distress. Let us suppose a tract of 50,000 acres to have been purchased by the city of London, intersected with roads and arterial drains, and laid out in farms of from 100 to 1000 acres—provided with agricultural buildings, and offered to British farmers on long leases—at rents, to cover only the interest at five per cent. per annum on the cost and outlay, this cost and outlay being together only about 5*l.* or 6*l.* an acre; and who would traverse half the globe for a home, to settle among barbarians, beyond the pale of civilisation, with all the hardships that the want of labour, absence of markets, and dependence on own resources must create? *Hewitt Davis*, 3, *Frederick's-place, Old Jewry, London.*

Pigs on Boards.—If you have not clean straw for an ample bedding, the next best is a solid one of wood, for the sleeping apartment. The feeding chamber is floored with staves about 3 inches wide, and ¾ inch interval from stave to stave. These are in Elm or Oak, and rest upon sleepers, about 4 or 5 inches thick, so as to allow any dung that may fall through to be daily scraped away. The advantage secured is that, the urine falling through immediately, the pigs are kept dry. Both under the sleeping and the feeding apartment the floor is made water-tight, so that the urine, by slightly inclining the floor, should all drain to one channel leading to the tank. The staves are 1 inch thick. The pigs are entirely under cover, *i. e.* the fattening ones, not "the rising generation." *A. Huxtable.*

Tiptree Hall Farm.—As the time approaches for testing the veracity of Mr. Peter Mathews and other detractors from agricultural improvement, I invite to the inspection of my growing crops all those who are desirous of satisfying their minds as to the probability of my being remunerated for my expenditure. My farm is at all proper times open to public inspection. I allow this on public grounds, disclaiming all vain or personal considerations. *J. J. Mechi, Tiptree Hall Farm, near Kelvedon, Essex, June 30.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Special Council, for the transaction of the monthly business of the Society, was held at the Society's House, in Hanover-square, on Tuesday, July 10, the Earl of Chichester, President, being in the chair.

Finances.—Colonel Challoner, Chairman of the Finance Committee, presented the Monthly Report on the Accounts of the Society; from which it appeared, that at the end of the previous month, the current cash balance in the hands of the bankers was 1825*l.* (including the special balances on the Norwich Meeting, the Life-Composition, and the arrear of subscription accounts). He also informed the Council that early in the month of June last, the Finance Committee sent out 1821 arrear letters, containing the opinion of eminent counsel as to the liability of members to pay their arrears of subscription; and which the Committee had great pleasure in being able to report had been attended with considerable success. Many members had expressed great regret at not having previously forwarded their subscriptions, and taking measures to prevent the recurrence of similar omissions, by giving orders on their bankers for the regular annual payment for the future; many others, who imagined they had ceased to belong to the Society, had paid up their arrears, and requested their names to be withdrawn; and a very small number of persons, in their answers to the circular, still disputed the Society's claim for the arrears. With regard to the latter class of persons, the Chairman remarked that the Finance Committee had already sufficient powers delegated to them by the Council to enable them to take such measures as would secure the Society from the loss of moneys so justly due to it. Colonel Challoner then proceeded to report the recommendations of the Committee in reference to the future entries for the Implement Yard, at the Country Meetings of the Society, and the arrangements connected with refreshments for the parties whose duties confined them within its enclosure during the period of meeting.

Farming Accounts.—Colonel Challoner, as Chairman of the Farming Account Committee, then submitted to the Council the Report of that Committee, along with specimens of the various forms of accounts recommended by them for the use of practical farmers. The Council ordered that a complete set of these forms should be printed and sent round to each member of the Council, for the purpose of receiving their comments and suggestions. The Council also directed that the Secretary should write a letter to each of the publishers of two farming account books in the library, that had come under the notice of the Committee, informing them that the assumption of the Society's "approval and sanction" in those works was incorrect, as no work whatever on the keeping of farm accounts had to that time received either the approval or sanction of the Society.

Implement Exhibition.—On the motion of Mr. Garrett, a Committee was appointed, "To take into consideration the recommendation of Implement Makers generally exhibiting at the Annual Meetings, as regards discontinuing the Prizes for Implements, and to determine whether an improved system of showing them to the public may not be adopted"—consisting of Lord Portman, Hon. Capt. Pelham, Mr. Brandreth, Colonel Challoner, Mr. Garrett, Mr. B. Gibbs, Mr. Fisher Hobbs, Mr. Miles, M.P., Mr. Shaw (London), Mr. Shelley, Mr. Thompson, Mr. George Turner, and Messrs. Easton and Amos.

Member of Council.—On the motion of Mr. Milward, Mr. William Simpson, of Hendon, Middlesex, was elected a Member of Council in the place of the Earl of Lovelace, whose engagements prevent his due attendance.

Reports were received and adopted from the General, Norwich, and Veterinary Committees. At the suggestion of Colonel Challoner, Members of Council and Governors of the Society were allowed, under certain conditions, the privilege of entrance into the Implement Yard, on the evening previous to its being thrown open to the public. The letter of the Right Hon. Sir George Grey to the President, granting the supply of Metropolitan Police required at the Norwich Meeting, was laid before the Council.

The Council then adjourned to Tuesday, July 17, at the Guildhall, Norwich.

THE ANNUAL MEETING AT NORWICH.

Wednesday, *July* 18.—The Implement Yard was opened this morning, and entrances tolerably well filled with visitors. Those who came for the transaction of business had, no doubt, every reason to be satisfied with their visit, for great variety and convenience and cheapness give employment and satisfaction to purchasers. Those, also, who came to study any particular branch of the wide subject of agricultural mechanics had no difficulty in obtaining the instruction they desired; but if any desired merely to see what was to be seen, and to carry away in their minds the impression of the show as a whole, they must have left, we imagine, but little wiser than they came. The show is much too unwieldy an affair to be carried off in that way. More than 140 ploughs, with every variety of mould-board and framework, 43 subsoil pulverisers, 66 drilling machines, 10 manure distributors, 18 steam engines, nearly 60 threshing machines, 30 corn dressing machines, about 40 flour dressing and grinding mills, upwards of 40 Linseed crushers, 70 chaff cutters, 20 Turnip cutters, 30 oil-cake breakers, 90 carts and waggons, nearly 30 draining tile machines and pug mills, 20 sets of draining tools, four dozen Norwegian and common harrows, 40 scarifiers and cultivators, nearly 50 horse hoes, 20 rakes, 7 dibbling machines, 44 hand dibbles and drills, 10 haymaking machines, 3 Gorse bruisers, a dozen of steaming apparatus—but it is needless enumerating further—we have only gone half through the catalogue, for it contains axles, and barrows, and Bean splitters, and *bedsteads*, and churns, and clod crushers, and covers; fencing, fire engines, flower-stands, forks, and garden chairs, gates, gauges, glass, Grass cutters, and harness, horse power, hummellers, hurdles, and levels, and mangers, manures, models, and pumps, and racks, ranges, ribbing machines, rickstands, rollers, and sackholders, safes, saws, screens, seed machines, spades, straw shakers, and tree guards, troughs, and washers, weighing machines, wheels, whippletrees, wire netting, and about 130 "*other articles* not capable of classification as above." Such a collection of individuals, each in succession making its individual impression on the mental sheet, must in the great majority of cases have reduced it to the condition of one great blot, where memory can decipher but very little. For ourselves, we can only say that, after the first survey, we arrived at the conclusion, that the exhibition was far more for the interests of buyers and sellers than for the instruction of visitors—and that the *trade* of machine making was prospering, and being furthered more than the *art*. There certainly remained with us the impression of some clever liquid manure carts and distributors, an ingenious churn, a remarkable slotting machine called a deep drain plough, a wonderful display of ingenuity in hand dibbling machines, and a portable farm railway, &c.; but without asserting that all individuality besides was lost, little else remained than a confused recollection of wire fencing, and steam engines, and drilling machines, and ploughs, and the hundred other articles present along with them. Certainly it would be an improvement if a smaller number of articles were a maximum, beyond which these exhibitions should not pass; if not more than one or two specimens, to illustrate the best developments of any one idea in agricultural mechanics, were allowed to any one exhibitor; if the show yard were less of a mart and more of a museum—less for the benefit of salesmen personally, and more for the benefit of their art.

In 1841 312 implements were entered for exhibition; at the annual meeting of the Society in 1842, 455; in 1843, 508; in 1844, 948; in 1845, 942; in 1846, 735; in 1847, 1321; in 1848, 1508; and now, in 1849, as per published catalogue, there were about 1700. For the examination of this immense number, nine gentlemen undertake the thankless and laborious office of judge; and the work which might well occupy them for a fortnight has to be performed in a day or two. "You don't think that I care anything about such a trial as that," we overheard an exhibitor say to them, on learning their decision against him; and "Well, you cannot blame us for the shortness of it," was the reply. The conversation was perfectly good-humoured on both sides—the machine maker seemed too well satisfied with the opinion of his customers to care much for that of the Society's judges; and the latter cannot have much confidence, themselves, in an opinion formed under such inadequate circumstances. And the fact is, that the judgments have in successive years varied so considerably as materially to diminish their authority—a circumstance which might be accounted for on the ground that the prize machines are either entire novelties or have appeared against different competitors every year, were it not that this is really not the case. Take the case of drilling machines: for instance when Messrs. Garrett and Hornsby alternate on the prize list—each, every other year, gaining over the other; not we believe because the other after victory loses ground in the progress of improvement, but because judges of different opinion succeed one another in office. Or take the subject of grubbers, where Biddel's scarifier and the Uley cultivator have won honours turn about, and where the chief prize in this year denied to both, and given to a tremendously heavy tool by Messrs. Smith, of Stamford. Take the instance of subsoil ploughs, where Smith has given way to Read, and Read has now given way to Comins, though all three have annually had the same implements in the yard for many years past.

But we must not pursue this subject further; the implement show is a magnificent affair, and most useful,

with all its imperfections, which have arisen out of the success with which this very usefulness has endowed it. Some method of curtailing the numbers exhibited of many similar machines, and a longer time in which, or a greater number of judges before whom, to submit their several merits to sufficient trial, seem to be the chief things wanted to increase this usefulness. The following are the awards of the judges on the present occasion :

Kind of Implement.	Prize.	Name of Exhibitor.
	£	
Plough adapted to heavy land	5	Messrs. Williams and Taylor, of Bedford.
Plough adapted to light land	5	Mr. Howard, of Bedford.
Plough adapted for general purposes	5	Mr. Ball, of Northampton.
Paring Plough	5	Mr. Kilby, of Leicester.
Subsoil Pulveriser	5	Mr. Comins, of S. Molton.
Drill for general purposes	15	Mr. Hornsby, of Grantham
Corn Drill	10	Messrs. Garrett, of Saxmundham.
Turnip Drill on the flat	10	Mr. Hornsby.
Turnip Drill on the ridge	10	Messrs. Garrett.
Drop Drill, for depositing Seed and Manure	10	Messrs. Garrett.
Manure Distributor	5	Mr. Crosskill, of Beverley.
Portable Steam Engine, applicable to threshing and other agricultural purposes	50	Messrs. Garrett.
The second best ditto	25*	
Portable Threshing Machine, applicable to horse or steam power	25	Messrs. Garrett.
Corn Dressing Machine	10*	
Grinding Mill, for breaking agricultural produce into fine meal	10	Messrs. Clayton, Shuttleworth and Co., of Lincoln.
Linseed and Corn Crusher	5	Messrs. Hurwood and Turner, of Ipswich.
Chaff Cutter	10	Mr. J. Cornes, of Nantwich
Turnip Cutter	5	Executors of the late Jas. Gardner.
Oilcake Breaker	5	Mr. Nicholson, of Newark-upon-Trent.
One-horse Cart	10	Mr. Crosskill, of Beverley.
Harvest Cart	10	Mr. Crosskill.
Waggon	10	Mr. Crosskill.
Machine for making Draining Tiles or Pipes	20	Mr. Whitehead, of Preston.
Set of Tools for General Draining	3	Messrs. Mapplebeck and Lowe, of Birmingham.
Heavy Harrow	5	Messrs. Williams & Taylor.
Light Harrow	5	Messrs. Williams & Taylor.
Norwegian Harrow	5	Messrs. Stratton, Hughes, and Co., of Bristol.
Scarifier	10	Messrs. Ransomes & May, of Ipswich.
Cultivator or Grubber	10	Messrs. Smith and Co., of Stamford.
Horse Hoe on the flat	10	Messrs. Garrett.
Horse Hoe on the ridge	5	Mr. Busby, of Bedale.
Horse Rake	5	Messrs. Williams & Taylor.
Horse Seed-Dibbler	10	Withheld.
Hand Dibbler	3	Dr. Newington, of Frant.
Barrow Hand Drill, to work with Cups	3	Mr. Holmes, of Norwich.
Liquid Manure Distributor	5	Messrs. R. and J. Reeves, of Westbury.
Haymaking Machine	5	Messrs. Smith and Co., of Stamford.
Gorse Bruiser	5	Messrs. Barrett, Exall, and Andrews, of Reading.
Steaming Apparatus for general purposes	5	Mr. Stanley, Northampton
Corn Dropping Machine	Silver Medal	Messrs. Ransomes & May.
Ribbing Drill	Do.	Mr. Busby.
For his Invention of depositing the Manure on the ridge before the roller, and combining the two principles of the ridge and flat in the same implement	Do.	Mr. Hornsby.
A Plough for general purposes	Do.	Mr. Downs, of Stamford.
For their Universal Plough, marked Y. U. L.	Do.	Messrs. Ransomes & May.
Cart Saddle	Do.	Mr. Jas. Hunter, of Kelso.
Patent Irrigator	Do	Messrs. Wedlake & Thompson, of Hornchurch.
Digging Fork	Do.	Messrs. Ransomes & May.
Churn	Do.	Mr. Whitehead.
Portable Farm Railway	Do.	Mr. Crosskill.
Circular Saw Bench for making Hurdles, &c.	Do.	Mr. Burrel, of Thetford.
For Improvements in Cutting Wires, and Dye Plates	Do.	Mr. Scragg, of Tarporley.

Highly Commended: Machine for making Drain Pipes and Tiles, Stand No. 39, Article 2—Mr. Scragg.

Commended: Portable Threshing Machine, Stand No. 107, Article 2—Messrs. Hurwood and Turner.

Before proceeding to describe a few of the machines exhibited, we must say that the two important particulars, simplicity and cheapness, seem to have been generally well kept in mind in the above awards. Certainly some of the iron implements exhibited, ploughs and horse hoes for instance, are remarkably cheap.

We cannot pretend to give anything like a detailed description of the machines exhibited, and must, therefore, be satisfied with selecting one or two as we walk round the yard. The first objects seen on entering are the various glass utensils of J. Phillips, 116, Bishopsgate-street without, for dairy and other purposes, including milk vessels, lactometers, thermometric fire-alarum, &c., Mr. Newberry's well-known dibbling machines, which should have occupied stand No. 1, being absent. The next stand, that of Messrs. Stratton and Hughes, of Bristol, contains a large number of carts, waggons, water carts, &c. Among them we particularly noticed the cylinder water and liquid manure cart, thus described by Mr. Thompson, in the society's report last year :—"The inconvenience of all other liquid manure carts is altogether avoided in Mr. Stratton's implement, which consists of a wooden or iron barrel revolving upon its axle. One side of the barrel consists of a perforated board, which is kept uppermost when not at work, and to set it to work it is only necessary to turn the barrel round. Thus valves and delivery pipes are altogether unnecessary; and however hilly the land, or however empty the barrel may be, it will always adjust itself by its own weight, and deliver its contents at an uniform rate. As a natural consequence of this greater simplicity of construction, the price is considerably lower than that of any liquid manure cart hitherto exhibited."—The cart No. 15, containing 100 gallons, weighs only 5¼ cwts., and can be drawn by a stout donkey, or small pony. Price 14*l.* 10*s.* The tumbler cart, especially adapted for use on streets, or where the roads contain no ruts, is also an ingenious contrivance. The body hangs on the axle, which passes through it; and the former may be turned completely round it, bottom upwards, for emptying, and downwards, of course, for filling. The Norwegian harrow of these exhibitors obtained a prize of 10*l.* It is now largely manufactured, and was shown at many other stands in the yard. At stand No. 5, Messrs. Clayton and Co., of Lincoln, exhibited a flour mill (hardly an agricultural machine), for which a prize was awarded. Messrs. Clayton also obtained the second prize for their steam engine. At No. 8, the Turnip cutter of Mr. Gardner, of Banbury, obtained, as it deserved, the prize offered for the best of that class of implements. One way of revolution turns out finger-shaped pieces for sheep; the other, slices for cattle.—The next stand (Mr. Busby, of Newton-le-Willows, near Bedale) contained a ribbing and drilling machine, which appeared a clever contrivance. It will rib and drill seven rows of corn at any width that may be required; can be worked by two horses, a man, and a boy, as the steerage is placed behind the implement. It is a simple machine, with seven ribbing ploughs, which hang independent of each other. Price 14*l.* 14*s.* It was rewarded with a silver medal. Mr. Busby also carried off the prize for the best Turnip horse-hoe; certainly a most excellent implement, and remarkably cheap. Price 2*l.* 10*s.* It contains three paring teeth; the two outer ones shifting to or fro, according to the width required, and these are followed by a sort of Norwegian harrow, on a small scale, which must reduce the land stirred to a good tilth.—Stand 13 (Mr. Burrell, of Thetford) contained, among many other things, a circular saw bench, fitted with a machine for boring and morticing at the same time, which is adapted for morticing hurdle or gate-heads, by which the five mortices for the ledges to fit in can be made in two minutes, and two men can complete one hurdle in a quarter of an hour. An extra frame is also supplied for putting the hurdles or gates together upon, by which they are all made one uniform size. It received a silver medal. The threshing machine exhibited here had a shaker of the horizontal oscillating-bar description, which differed from those hitherto exhibited in the greater width of its parts. The individual bars were not single strips; it was not so much a screen, the longitudinal bars of which were set to oscillate up and down, as a riddle divided into strips of several inches wide, each of which was independent of its neighbour, and possessed an independent up and down motion, alongside of it; the smaller number of parts should make the plan cheaper, but we imagine it will not prove so efficient as the old one.—At stand 16 we are glad to find that Dr. Newington's dibbling machine, already described in this Paper, had won the prize from the very numerous competitors it had to contend with.—At 18, Mr. Comins, of South Molton, exhibited his clever and simple turnwrest plough. His subsoil pulveriser carried off a prize of 5*l.* It is a simple and cheap implement, containing three tines.—Stand 19 (Mr. Hayes, of Stilton, Huntingdonshire), contained what is called "a crank appendant," which assists a man in working any sort of machine which is turned by hand. It is a "see-saw" (resting on the land), on which the man stands with a foot on each end of it, and as in turning the handle of the chaff cutter to which it may be applied he describes the downward half of the revolution, his weight then resting on his right foot, tells on the one end of the beam to the advantage of his hand power, while during the upper half, when he draws himself backward, his weight rests on the left foot on the other end of the beam, and it again comes in, by the intervention of crank work, to the assistance of that part of the labour.—Mr. Crosskill, of Beverley, at No. 25, exhibited an immense number of machines of carriage and cultivation. His cart and waggon carried off prizes—both of them are very cheap. The former is adapted for harvest as well as ordinary purposes. It is constructed without a nail, slot, sole, or mortice. The body is made of plain sides, bolted together; the form, position, and finish of this body is adapted for farming work; the loose shelvings are soon taken off or put on the cart when required; the wheels of this cart are made upon the principle advocated by the judges at the Royal York Show. Price—mounted upon patent wheels and axle, 4 feet 6 inches high, with 4½ inch tire, to carry 30 cwt. loads, 13*l.* The liquid manure cart exhibited here contained a contrivance by means of a pendulum spreading apparatus for preserving the evenness of the flow on side lands. A railway was exhibited at this stand for farm purposes. The following is an estimate of the cost of it :—

100 yards, or 20 lengths of rail, at 2*s.* 6*d.* per yard	£12 10*s.* 0*d.*
1 waggon, with side tippers	5 0 0
1 waggon, with end tipper	5 0 0
1 turn-table	5 0 0
	£27 10 0
Brought forward	£27 10 0
Extras—2 sets of points, with double rails, each 15 feet long	5 0 0
2 turning curves, to join a double line, each 10 feet long	3 0 0
	£35 10 0

Messrs. Richmond of Salford, and Robinson of Lisburn, exhibited a number of their well-known steaming apparatus, and churns, &c. At No. 33 (Messrs. Cottam and Hallen, of Winsley-street, Oxford-street, London), an ingenious recording dynamometer was exhibited, by which the force required to work any hand crank movement was pencilled down, and the number of revolutions noted at the same time, while the machine was at work. At No. 36, Messrs. Holmes, of Norwich, exhibited a broadcast sowing machine, with lever harrow following, so that the operation of sowing and covering are effected together. —Messrs. Howard, of Bedford, at No. 37, carried off the prize for the best plough for light land this year again. The prize implement is made entirely of iron (principally wrought), and is so constructed that it is sufficiently strong for four horses, as well as being easy of draught in general work for a pair; it can be used with horses at length as well as abreast. Its peculiarities consist in the very taper and regular curve of the cutting and moving parts, great attention having been paid by the makers to the share and furrow turner (of which they have several patterns), not only with a view to reduce the draught, but to make it suitable to as great a variety of soil as possible.—The prize steaming apparatus exhibited by Mr. Stanley of Peterborough, at No. 41, is the same in principle as the one which gained the prizes last year, but considerably improved by increasing the heating surfaces, covering the generator with felt and wood, and forming the stand of non-conducting materials, to obtain greater economy, and simplified in use by substituting a vacuum-valve for a stop-cock on the jet-pipe for stirring the compound, making it thereby self acting. The compound-tub is also fitted with a revolving stirring machine, to form an apparatus for drying damp or injured corn. Price 15*l.* 15*s.*; stirring apparatus, 1*l.* 10*s.* Not too dear for its construction, but too dear for its purpose.—Mr. Woods of Stowmarket, at No. 44, and many others, exhibited jointed rollers working on axles side by side, but a little advance of one another so as to allow of adaptation to the unevennesses across the land when travelling its length.—At No. 58, Messrs. Barrett and Co., of Reading, exhibited threshing machines, and their elegant and clever horse-power gear work. A two-horse-power threshing-machine and gear-work complete, which they exhibited at work, was a very neat, clever, and cheap piece of machinery. It had a patent breasting, formed by a series of straight wrought-iron bars, moving in two sets of slots, crossing each other transversely; one set in the side of the machine, and the other in a segment, which being worked round the centre of the drum draws the breasting either towards or from it, the segment being so formed as to keep the required sweep of the breasting. The advantages gained by this arrangement consist of the readiness and accuracy with which the breasting can be set for the various kinds of grain, which is performed by merely raising or lowering a lever, with teeth at the end, which work in corresponding teeth upon the slot segment, and moves it round the centre of the drum. The breasting being made of wrought-iron is less liable to accident, and should one by any means occur, any of the bars can be taken out, straightened, and replaced, or new ones put in without difficulty. The Gorse bruising machine shown at this stand obtained a prize. It is a Passmore's chaff cutter fitted with rollers below to crush the chaff.—We shall not refer to the drilling machines exhibited, more especially by Messrs. Garrett and Hornsby; they are already well known, and do not need description. One by Mr. Hensman, of Woburn, however, deserves notice for its hanging hopper, which always retains its vertical position; others of course acts uniformly and independently of the irregular steepness of the land.—At No. 66, Mr. Hunter, of Kelso, exhibited a cart saddle, which was rewarded with a silver medal. The improvement in it consists in the boards and panels being moveable, by which means they adapt themselves to the form of the horse's back, and fit a great majority of horses with perfect exactness, prevent galling and other dangerous consequences, and enable the horse to bear his burden with greater ease, which has been fully proved by experience. The boards and panels can be separated from the saddle at pleasure, and two or more pairs may be had for the same saddle, enabling them always to be kept dry and in good repair. The saddles with all the sets of harness are on the same principle. Price 1*l.*—At 68, Mr. Massingham, of Heacham, near Lynn, showed a very ingenious horse dibbling machine; the seed apparatus being separate from the dibbers, and arranged on the circumference of wheels of equal size working into one another, so that each lot of a few seeds is deposited in each hole without error, though the latter are made two or three in advance. A hand dibble, too, shown here was a very clever contrivance, lifting the seed with cups, and having a twist motion for clearing itself.—Mr. Whitehead, of Preston, Lancashire, at No. 75, exhibited a very ingenious modification of the plunge churn. Instead of a single horizontal disc traversing the milk, two are used at an interval of about a foot, and they were connected by a number of vertical rods. Besides the ordinary up and down motion of this plunge, it has a rotary motion given to it by a spiral slot on the piston-rod, so that these ver-

* Prizes not awarded at the time of going to press.

tical rods help, along with the plunge-boards, to produce the necessary agitation.

Messrs. Garrett carried off prizes for steam engine, threshing machine, a number of drill machines, and a horse hoe. Their stand was a large show in itself; and as we have not space to describe it as it deserves, we must pass it over.—At No. 90 we observed Mr. Chandler's excellent liquid manure distributor. It is made to distribute liquid manure in any state of consistency, either broadcast or in rows. It also forms a drill, for depositing in the earth together, Turnip, Carrot, or Mangold Wurzel seeds, with liquid manure, on the flat, in three, four, or five rows, at any stated intervals. It is constructed that straws or leaves, which are often found in liquid manure, will not at all interfere with its working. It will deliver the liquid as well as the seed in any given quantities. Price 30*l.*, at the Westbury station, Wilts. It received a prize of 5*l.*—Messrs. Fesrabee, at No. 100, exhibited a number of excellent chaff machines, in which the radial cutters are made to produce a circuitous cut, and no cessation of the feed apparatus is required during their operation, the blades being so placed as to admit of the protrusion of the straw or hay behind them while at work.—At stand 115, Mr. Paul, of Thorpe Abbot's Hall, near Scole, Norfolk, exhibited his remarkable drain plough. It is a revolving disc, with projecting teeth or tools, which, once in position for working, are made to rotate by chains and windlass, at a distance, while the whole machine is pulled forward in the opposite direction, towards the unfinished end of the trench. The teeth enter the land at the bottom of the drain; each takes its inch or so of the material on which it is acting, and works it out, lifting it up to the surface, and, with the help of a mould-board on each side of this disc, which takes out the first 8 inches of the top soil, throwing it on either side. It may be worked with three or more horses, and, by a single operation, will cut a drain from 3 to 4 feet in depth at the rate of from 4 to 5 feet per minute, according to the texture of the soil, leaving it in a finished state, with a perfect level bottom for the tiles to rest upon. It is also calculated for raising subsoil to the surface for the purpose of claying lands; and when the clay is in a plastic state, will raise from 4 to 5 cwt. per minute; and on stony soils it may be made equally efficacious, although the operation may be somewhat slower. It may be used to the greatest advantage when the surface of the soil may have become so hard, either from frost or dry weather, as to render it impracticable to accomplish the cutting of drains by manual labour. The utility of this implement, when it is required to cut drains on Clover lands in course for Wheat crops, and from which the first crop has been taken, is clearly seen, as the clay, from being immediately spread upon the surface, becomes thoroughly pulverised, and comes into immediate operation for the succeeding crop. Price, exclusive of royalty, 50*l.* This machine deserves examination by those who are about to enter largely on draining.—At stand 116, Messrs. Ransome and May exhibited a large assortment of agricultural machines. A cylindrical winnowing machine, with a sort of screw wind propeller, a straw cutter for littor, and a horse seed dibble, were among the novelties. Mr. Clark's (of Long Sutton, Lincolnshire) plough, at this stand, with the parts fitting it either for common or double mould-board work, for horse-hoeing between ridges, &c., was rewarded with a silver medal. The plan of uniting in one implement as many different purposes as possible deserves encouragement by the Society. Mr. Coode's irrigator, described and figured in our advertising columns, was rewarded with a silver medal. It is described thus:—Easily worked by a young boy, though more economically by two, and distributes water or liquid manure on the land with less violence and more regularity than a shower of rain. It will irrigate from 10 to 20 acres per day. No horses are used. The treading by the feet of the boys is inconsiderable, and the weight of the entire implement charged with liquid is less than 2 cwt. An acre may be manured with from four to twelve tons of liquid for 2*d.* Drought may thus be defied; it never need prevent seeding, planting, weeding, or any other operation. The land and the crops may be treated at any time with any manure or application they may require. Not only manures which are already liquid, such as sewer water, malt, hemp, and flax steeps, gas water, spent leys, and the like, and all soluble saline manures, such as guanos, superphosphate of lime, marine, and other salts, but also farm-yard manure, and even lime, marl, clay, and other insoluble matters suspended in water by agitation, are applied to the land by this implement in the most equal and effective manner, and at a cost incomparably less than that of the common processes. The great object of the invention is to enable the cultivator to liquefy all his manure, and to use it as rapidly as it is produced. Price 20*l.*

Messrs. Williams, of Bedford, at No. 122, carried off the prize for harrows and for a horse-rake—an implement which has excited great ingenuity in machine makers, and which, looking at this particular form of it, at that of Mr. Grant's, of Stamford, and at that of Mr. Smith's, of Stamford, would appear now to have nearly attained perfection. These imperfect remarks must conclude for the present our report of the implement show at Norwich. We regretted to find that the Cumberland cart, referred to by "L. V. R.," had not been brought to the ground, as intended, by Messrs. Ransome and May, of Ipswich.

AT 12 o'clock the Rev. EDWIN SIDNEY, M.A., commenced his Lecture in the County Court, "*On the Parasitic Fungi of the British Farm*," the President of the Society occupying the chair There was no crush at the doors as on former occasions; and the straggling appearance of the audience indicated either an absence of interest for the lecture among the public, or an injudicious choice of time for its delivery, seeing that the Showyard was then forming the chief vortex of attraction. Perhaps there were not 150 persons present. The Lecturer observed that he would endeavour to use "simple and popular language;" a usual opening announcement on such occasions, but we are sorry to say that the subject treated of is so pregnant with technicalities that it would have been almost impossible to render much enlightenment on the numerous points noticed in so short a time, except to persons already acquainted with them. Instead of thoroughly simplifying and explaining the nature and effects of two or three kinds of fungi, the Lecturer briefly remarked upon a great number, pointing out a few of the characteristics of each, glancing at the various theories held with respect to their propagation, and suggesting hints respecting remedies, so that a mere sketch cannot be of much value, and an entire report would take up too much of our space. The lecture was an interesting one, illustrated by upwards of 40 diagrams, and many real specimens of the development of various parasitic plants. The Lecturer described the epithet "parasitic" as meaning something which lives at the cost of what it grows upon. A fungus is a cellular plant, deriving its nutriment from *mycelium* or *spawn*, living by imbibing the juices impregnated with the peculiar principles of the matter to which it is attached. The simplest form of fungus is common "mouldiness." Under the microscope this appears to be a series of jointed threads, placed end to end. A second fungus consists of a mass of cellular tissue, containing the spores or seeds. It is upon the differences in structure that the botanical arrangement depends. Some fungi attack decomposing animal and vegetable matter; others attack healthy tissues. They have various properties, some eatable, some poisonous, others luminous. The minute fungi upon corn, Grasses, &c., appear to be masses of dust; they attack all parts except the roots, and are called *puccinia*. Under the microscope this dust appears to be clouds of club-shaped fungi, with seeds in the chambers at their ends. When ripe the seeds burst the epidermis and escape, thus being diffused abroad for the propagation of other fungi. The "rust" or "red robin" upon Wheat consists of one of the fungi termed *Uredines*. "Smut" is another variety, which injures the stem, and also renders the ear abortive. The "bunt" or "pepper brand" is another kind of *Uredo*; it confines its ravages to the grain, completely filling the seeds it enters with a black oily mass of powder or spores These spores will adhere to sound grain; and the disease, therefore, may be remedied by cleansing the Wheat which is about to be sown. As the seeds are oily, and as an *alkali* will convert oil into soap, a dressing of lime, or potash, or arsenic, will allow the fungus seeds to be easily washed off To remedy the "smut" is more difficult, as it is before harvest that the sporules are dispersed. The best antidote is clean farming, ventilation and light, early hoeing, sowing early varieties where there is liability to the disease, and manuring for the crop preceding the Wheat instead of for the Wheat itself. Ergot is a disease of the grain or seed of both corn and Grass. The attacked grains elongate and turn black; Grass attacked by it is very injurious to animals, and there is no cure but breaking up the land into tillage. Leguminous plants are particularly subject to the attack of parasitic plants. The blight on Peas, Beans, and Hops is the Erysiphe, the same which attacks Peach-trees. Beans are injured by a species of Uredo, Vetches by Botrytides. The Botrytis infestans is new to Europe, and occurs on the tubers of Potatoes. Dry rot in timber comes from the spawn of fungi; such as the Thelephora and Polyphorus. The spawn radiates from a spot upon the wood, and insinuating into every crevice, destroys cohesion, and rots the substance of the wood. Corrosive sublimate will immediately destroy it, hence the process for preserving wood, called "Kyanising." Fermentation of the sap tends to increase it or bring it on; therefore trees should be cut down in winter. Immersion in water has a counteracting influence, but heat tends to increase it. Penicillium (which produces mould in hay, &c) and Aspergil, are found growing upon dairy utensils. Cheese likewise is attacked by a fungus called Torula. But there are also fungi upon animals as upon silkworms, and on the skin and mucous membranes of various animals. All herbivorous animals are liable to moulds in the digestive canal. There is even an Aspergil found in eggs. The growth of these fungi depends upon irregularity of breathing, change in the blood, &c.; when assimulation flags, the parasites begin to propagate and thrive. These were the principal facts and objects brought forward. The Earl of Chichester thanked Mr. Sidney for his instructive observations, and the audience withdrew.

At 4 o'clock a rather larger company assembled to hear Professor SIMONDS' Lecture "*On the Anatomy, Physiology, and Diseases of the Organs of Respiration of Domesticated Animals, with particular reference to Pleuro-Pneumonia in the Ox.*" The President again took the chair, and the Lecturer proceeded to address a still scanty gathering of agriculturists by observing that the blood of animals is derived from their food. The food is first masticated, during which it is softened, and rendered pulpy, ready for deglutition by the saliva—and then passes to the stomach, where it is chemically acted upon. It is then passed onwards into the intestinal canal, the bile from the liver and the pancreatic juice mingling with the mass. Chylification, or the separation of the nutritious from the unnutritive portions, then ensues; and in passing along the small intestines, the chyle (or nutritive matter) is absorbed by the lacteal vessels, and conveyed by the mesenteric glands into the receptaculum chyli. In this receptacle terminates another system of absorbent vessels, which furnish the chyle with a fluid called lymph, and the two united fluids, now forming "blood," pass through the thoracic duct into the jugular vein. The heart resembles a pump, from which blood flows outwards by the arteries and returns by the veins. The veinous blood is unfitted for circulation until it has again passed through the lungs, and the new blood by first entering a vein is immediately forced into the lungs to be there fitted for its proper uses. Blood consists of several constituents, among which are fibrin, serum, and the red globules. Fibrin causes blood to coagulate—it is the most important ingredient, as the main part of all the solids of the body are composed of it. The red particles are flattened discs, which give colour to the blood. The arteries carry the blood to the capillary cells, where the red blood is turned blacker by the loss of oxygen. A chemical process occurs in these vessels by which carbonic acid is produced, and heat evolved; thus the blood serves two purposes—it builds up the various parts of the body, and also maintains heat in all parts by this process at the extremities of the veins and arteries. Respiration is a function which cannot be suspended or arrested. It is necessary for supplying the lungs and blood with oxygen, and for exhaling the poisonous carbonic acid gas. In the osseous cavity called the thorax or chest, are situated the lungs; and respiration requires a continual alteration in the bulk of that cavity. Accordingly the bones or ribs which protect, can also alter their position by means of joints and cartilages. In expiration the chest contracts, and then the air, by its own elasticity, with the assistance of the muscles, throws the ribs somewhat outward. The windpipe, when approaching the lungs, divides into branches called bronchial tubes, one to each lung. The ox and sheep have three, men and horses only two. These tubes terminate in air-cells, in close contact with the blood-vessels, and it is here in the lungs that the exchange of gases takes place—the veinous blood parts with its carbonic acid and receives a fresh supply of the oxygen, which reddens it and renders it fit for circulation through the system Pleuro-pneumonia is a bad name. It implies that inflammation has begun in the pleura, and has extended to the lung. But probably it is not in any stage inflammatory. The Lecturer said that of late years epizootic diseases had increased, and read from a book of 1747 a description of cases of this disease, thus showing that it is not a new thing, and inferring that as the disease has died out once, why should it not do so again? It seems evident that it arises from a peculiar state of the atmosphere; and when a disease is engendered by the air, it is seldom infectious. There are many cases where pleuro-pneumonia has arisen from the approximation of infected animals, and in others it is of spontaneous appearance. Perhaps exhalation and perspiration from a diseased animal may render the air around it more deleterious. A predisposition to it may originate in food, ventilation, over-exertion, &c., therefore avoid bad management in these particulars. It seems that the disease is not inflammatory; if so, we should find discharges, &c., as in a common catarrh, but the poison is absorbed by the lungs, thence it is transmitted to the blood; and then the poison reacts upon the lungs just as in small-pox the virus reacts upon the skin. As the blood is empoisoned, the disease steals on gradually. The diseased blood has a tendency to revert to its constituent parts. The *serum* separates, and as it will not coagulate, flows to the cellular bands, which are found in the ox's lungs, and not in those of the horse; whilst the fibrine congulates, and is locked up in the globulous portion of the lung. This is pure dropsy in the lungs. When the diseased action reaches to the pleura (or skin of the lungs), this separation causes a flow into the thorax or chest, and then we have dropsy of the chest. The oxygen cannot effect any good, while this is going on, and thus the blood is still further poisoned by a surcharge of carbon. Respecting treatment, it is desirable to bleed, but before there has been more than a slight effusion of blood into the lung. Bleed to remove a portion of the poisoned and poisonous blood, not to reduce inflammatory action, but directly the pulse falters from blood-letting, cease to bleed. Cathartic, or the exhibition of aperient medicines, is allowable at the commencement of the disease; but, if in large doses, the alimentary canal may be excited too much. Common saline aperients, in small doses, are desirable when (as seldom happens) constipation ensues. Diuretics, which act upon the kidneys by exciting them into more violent action, do not produce so much debility, and carry off the watery blood. They are therefore to be preferred in this case. Water containing nitre is useful; and the alkalies and carbonates are proper in an alteration of the fibrine. Sedatives are of little value; but the exhibition of opium, with calomel, is of much use. To keep up diuretic action, and excite perspiration, cover the diseased animals with clothes. Counter-irritants, to produce dropsy of the cellular tissue immediately below the skin, will reduce that affection elsewhere, and therefore are highly desirable. There is, generally, debility in the second stage of the disease, when brandy and water may be given; but rather give carbonate of ammonia, or, better still, spirit of nitric ether. Benefits are also to be gained from mineral tonics, and sulphate of quinine, &c. From these remarks it is certain that there can be no *specific* for this malady, and there is, as yet, no true knowledge regarding its origin and propagation.—Both the lectures were very interesting, and both well illustrated by diagrams and drawings, plain and coloured. The Lecturers, in their attempts to compress a vast deal in a close compass, scarcely left sufficient time for ample explanation; this is to be regretted, but still more should it be deplored that so few were present to receive such useful and valuable instruction. After thanks to Mr. Simonds, the Chairman, &c., left the room.

At 6 o'clock a large party of gentlemen repaired to St. Andrew's Hall, to partake of the Council Dinner. Though the company was large, the dinner was but a very dull affair, and the viands were far from being of a first-rate character, though the tickets were of first-rate cost. After the usual toasts had been enthusiastically responded to, Mr. Gibbs read the award of prizes to cattle, sheep, and pigs; and Professor Sedgwick then addressed the company, in a very rapid speech, respecting the "Drainage of a part of Norfolk and Lincolnshire, and the north of Cambridgeshire." He observed that the redeeming of enormous tracts of land from swamp and bog, by simple works of drainage, must have a beneficial influence on the agriculture of the country. It was to be hoped that when the great meeting of farmers at Norwich should break up, it would be gathered into smaller congregations, anxious to explore the different parts of the district around them. Let them go down to the coast and witness the fierce battles between the ocean and the cliffs, an action of the highest importance to engineering. They must have observed various strata in the railway cuttings. Chalk is the lowest stratum in Norfolk. Over that is the crag, and over that is spread a mass of brown clay, containing lumps of chalk, rolled stones, &c. This has been distributed by some enormous flood—perhaps when the chalk hills which once formed the surface were breached to form the Wash estuary this clay was sent, by a great inundation, over Norfolk, Cambridgeshire, &c. Under the chalk is the carstone, under that is the Kimmeridge and Oxford clay, which forms the great base of the Bedford Level. This great level consists also of undulations of gravel and clay. The Welland, Nene, and Ouse rivers, united with numerous trout streams, descend from the surrounding hills, acquiring a velocity by the fall. These rivers wash away earthy materials from the uplands, and transport them to their mouths, where in still water they are deposited and form a growing delta. Land elevated by such depositions was embanked and reclaimed by the Romans. The Ouse used to empty itself at Wisbeach, but some few hundred years ago an artificial channel was cut, diverting its waters into a lesser river, which evacuated at Lynn. The fens were frequently flooded, and continued in a most wretched condition until the time of Charles I., when the Earl of Bedford made some great works, cutting several long drains for the improvement of the watery tract. Tusks of the wild boar, and black bears' skulls are frequently discovered in the fen soil—relics of the ancient wildness of this region. Not many years ago a bend in the Onse river was made straight by a cut near Lynn, the effect being to allow the fen waters to escape more rapidly, thus diminishing the liability to floods on the land. These floods are serious matters. Not long since one flood alone has been known to damage the Bedford Level to the value of half a million of money. Land has increased in value prodigiously in consequence of the improvements in drainage, and also by geological manuring or claying. The blue clay which underlays the peaty surface of the fens is mingled with the black soil, giving it tenacity, and likewise furnishing it with siliceous matter. This is of great consequence, as the top soil is chiefly carbon. Marsh land is such as has been the gift of the sea, and consists of silt and sand. Fen is bog earth, formed by the damming of water and growth and partial decay of vegetables. Much land has been embanked from the sea at the mouth of the Nene, and since the bank was made the deposit has raised the soil 4 or 5 feet higher on the sea side than on the land-side. Rennie, the great engineer, was a giant. He grasped the whole of the fens, gauged them, levelled them, and found that they are all high enough above the ocean to admit of a natural drainage, without the use of mills to pump out the drainage-water. He proposed to convey the upland waters (by means of catch-water drains), along different channels to those for the fen waters, thus giving the level the best chance of getting rid of its waters. This has only been tried in part, but no doubt the improvement attainable will in time be taken advantage of, and the fens already productive be rendered still more properous and fruitful. The Chairman thanked the rev. professor, remarking that it would be well for the farmers to follow out more of the hints which are given to them by the men of

science who so kindly tender their assistance on these important occasions. After drinking the rev. gentleman's health, with three times three, the company separated.

THURSDAY, *July* 19.—This morning, the cattle yard was opened at 6 A.M., to a large number waiting, and the sheds were soon crowded to an inconvenient degree. The following is a report of the exhibition of cattle :

SHORT-HORNS.

Class I. Bulls calved previously to the 1st of January, 1847.—1st prize, 40*l*., to Mr. Wm. Tod, of Elphinstone Tower, Tranent, Scotland ; 2d, 20*l*., to Mr. Thomas Spore Atkins, of Kimberley, near Wymondham.

Class II. Bulls calved since the 1st January, 1847, and more than one year old.—Prizes withheld.

Class III. Cows in milk or calf.—1st prize, 20*l*., to Mr. Richard Booth, of Warlaby, near Northallerton, Yorkshire ; 2d, 10*l*., to the same.

Class IV. In-calf Heifers, not exceeding three years old.—1st prize, 20*l*., to Mr. John Kirkham, of Hagnaby, near Spilsby, Lincolnshire ; 2d, 10*l*., to Mr. William Fowler, of Market Lavington, Devizes.

Class V. Yearling Heifers.—1st prize, 10*l*., to Mr. Benjamin Wilson, of Bramwith, near Thirsk ; 2d, 5*l*., to Mr. C. Towneley, of Towneley Hall, Burnley, Lancashire.

HEREFORDS.

Class I.—Bulls calved before the 1st January, 1847.—1st prize, 40*l*., to Mr. Edward Price, of the Court House, Pembridge, Hereford ; 2d, 20*l*., to Mr. William Hewer, of Hill Farm, Northleach.

Class II. Bulls calved since the 1st January, 1847, and more than one year old.—1st prize, 20*l*., to Mr. Edward Price, of the Court House, Pembridge, Hereford ; 2d, 10*l*. to Mr. W. Fisher Hobbs, of Boxted Lodge, near Colchester.

Class III. Cows in milk or calf.—1st prize, 20*l*., to Mr. John Walker, of Westfield House, Holmer, Hereford ; 2d, 10*l*., to Mr. W. Fisher Hobbs, of Boxted Lodge, near Colchester.

Class IV. In-calf Heifers, not exceeding 3 years old.—1st prize, 20*l*., to Rev. J. R. Smythies, of East Hill, Colchester ; 2d, 10*l*., to the same.

Class V. Yearling Heifers.—1st prize, 10*l*., to the Right Hon. Lord Berwick, of Cronkill, near Shrewsbury ; 2d, 5*l*., to Mr. George Pitt, of Wellington, near Hereford.

DEVONS.

Class I. Bulls calved before 1st January, 1847.—1st prize, 40*l*., to Mr. James Quartley, of Molland, near South Molton ; 2d, 20*l*., to Mr. Sam. Farthing, of Nether Stowey, near Bridgwater.

Class II. Bulls calved since 1st of January, 1847, and more than one year old.—1st prize, 20*l*., to Mr. W. M. Gibbs, of Bishop's Lydiard, near Taunton ; 2d, 10*l*., to the Right Hon. the Earl of Leicester, of Holkham Hall, Norfolk.

Class III. Cows in milk or in calf.—1st prize, 20*l*., to the Right Hon. the Earl of Leicester, of Holkham Hall, Norfolk ; 2d, 10*l*., to Mr. John Blomfield, jun., of Warham, near Wells, Norfolk.

Class IV. In-calf Heifers, not more than 3 years old.—1st prize, 20*l*., to Mr. T. W. Fouracre, of Durston, near Taunton ; 2d, 10*l*., to Mr. John Blomfield, jun., of Warham, near Wells, Norfolk.

Class V. Yearling Heifers.—1st prize, 10*l*., to Mr. Anthony Hammond, of Westacre, near Swaffham, Norfolk ; 2d, 5*l*., to Mr. John Blomfield, jun., of Warham, near Wells, Norfolk.

CATTLE OF ANY BREED.

Class I. Bulls calved before 1st of January, 1847.—1st prize, 20*l*., to Lieut.-Col. Mason, of Necton Hall, Swaffham, Norfolk ; 2d, 10*l*., to Sir Edward Kerrison, Bart., of Oakley Hall, Eye, Suffolk.

Class II. Bulls calved since 1st January, 1847, and more than 1 year old.—The prize of 10*l*. to Capt. Inge, of Thorp Constantine, near Tamworth.

Class III. Cows in milk or calf.—1st prize, 10*l*., to Capt. Inge, of Thorpe Constantine, near Tamworth ; 2d, 5*l*., to the same.

Class IV. In-calf Heifers, not above 3 years old.—The prize of 10*l*. to Mr. Thomas Beard, of Stowe, Buckingham.

Class V. Yearling Heifers.—The prize of 5*l*. to Mr. George Theobald, of Southnepps Lodge, North Walsham.

Class VI. Cows for dairy purposes.—1st prize, 10*l*., to Mr. Henry Overman, of Wessenham St. Peter, near Rougham ; 2d, 5*l*., no competitor.

The position that has been assigned to cattle by Nature in the animal kingdom has ever obtained an especial consideration for that genus of the organised creation. The discovery was very early made that many qualities were possessed by that tribe of animals which were very useful to man, and that these properties were capable of being improved and retained much beyond those of other classes of the animal department. The first chronicled discovery of Britain shows that the inhabitants were possessed of large herds of cattle, which were supported by the vegetable produce of Nature, growing from a suitable soil, and thriving under a favourable climate. The flesh was used as food very much beyond the practice of most nations, which was, no doubt, induced by the favourable circumstances of production. These circumstances have continued from that time a very particular consideration to the culture of cattle by the inhabitants of the British Isles, until it has reached the excellence of the present day—an eminence which could not have been expected or entertained even a few years ago. Various causes have contributed to this result ; but none more powerfully than societies and associations having the especial object in view of promoting the advancement of every practice and detail that is in any way connected with the cultivation of the soil. The English Agricultural Society has tolerable grounds of congratulation for the Show of this year, in respect of the number of the articles exhibited, and the quality of some departments of the Show certainly has not been surpassed. The sheep and pigs and horses certainly were a very fine show. Some sections of our own particular division were not, however, first-rate.

The first prize for Bulls in the class of SHORT-HORNS, goes to Scotland, where the cultivation of cattle is now being pursued with much success. The colour was white, and though an uniformity of colour shows a purity of descent, we cannot divest ourselves of the opinion, that a delicacy always attends the prevalence of the white colour in every case of animal life. A roan colour seems preferable ; one, more especially, darker in the fore-quarters. The animal in question showed a lengthy and well proportioned carcase, but not free from very considerable blemishes, when the parts were examined in detail. The brow was curvedly prominent, and narrow between the horns. The shoulder was thin, and there was a very considerable laukness behind it round the girth. The short rib and the hook-bone were widely distant, and the ribs were flat. The distance was short between the hook and the rump, and in that quarter cattle never can be too long, as it affords the cuts of the choicest meat. The best point of the animal was the depth of the hind quarter, and the covering of the thigh with flesh, which forms a point of much value. The flank was unusually full, but the twist rather narrow. The horn was of proper length, and well set, and its size showed a large degree of vigour. Though no doubt the animal was the best on the ground, we think that a more symmetrical carcase has been often seen of the short-horn breed—more cylindrical in the carcase, and more refined in almost every part of the body. The length of the body was large, and it hung coarsely low. The back was not particularly straight, but sunk over the kidneys. The tail hung ungracefully, with a short curve in the middle of the length. The brush at the end was small.—The second prize bull was varied in the colour of white and red-roan. The body was comparatively short, but very deep in the rib. The chest was remarkably deep and full, and the back straight. The buttocks projected, interfering with and bending the tail outwards, thus forming a considerable deformity. The belly was deep, and showed much weight of offal. The breed was better than in the first prize animal, and the shoulder was wider and more rounded. The horn was very appropriate for the breed. The twist was of good width, and the hind legs stood very upright. The tail was deficient in length. The hook-bone was particularly well covered with flesh. The fore-bone of the arm projected much, and the upper bone of the shoulder tapered thinly. On the whole, we believe we have seen a better beast, as in the former case.—The first prize in Class III. was awarded to a red cow of the short-horned breed, which showed the properties in a very high degree. The head in every point was quite a model of symmetrical refinement. The horn of the proper length, and well set ; the ear long and agile ; the muzzle broad and clean, and the eye rolling and placid. The shoulder-bone uncommonly well covered with flesh, and the top rounded. The back straight, hook-bones wide apart, the ribs close home, and remarkably circular. Twist very wide thighs deep and fleshy. The touch uncommonly silky and resilient. Our opinion reckons this animal the best bred of the whole exhibition. The colour is not very fashionable, but the other properties most amply compensate.—The second prize went to a roan cow of a lighter colour. This animal and the last are the property of the same owner, and show much skill and discrimination. No animals in the yard evinced the points of breeding in anything like the same excellence. The circular prominence of the ribs surpass anything of common occurrence. The width of the hook-bones and the fleshy points are almost unequalled. Mr. Booth must possess no common skill.—The first prize in Class IV. was given to a white coloured heifer under three years of age. So far as the parts are developed at that age, perhaps no finer carcase was ever shown at any exhibition. The side of the carcase nearly measured a straight line from the shoulder to the outer hip, and the hook-bones were nearly hidden with flesh. The shoulder at the top was round, and covered with flesh almost beyond precedent, and not the least appearance of cavity could be seen at the girth. The width of twist was much more than common, and also of the posterior breadth. The back was very broad and straight, the tail deeply set, and perpendicularly swinging. The head showed "symmetry" itself, a horn of the gentle taper, an agile ear, and a placid quick eye, deeply fixed, and protuberantly set. Such an animal is of rare occurrence.—The second prize went to a heifer of the grizzled roan colour, and dark in the shoulder and neck. The body was very lengthy, and formed a superior carcase, but the points fell much below the former animal, but to which it formed a very good second. The hind legs stood narrow, and the ribs were wide from the hook bone. The girth and the shoulder were above mediocrity.—The first prize in the fifth class was awarded to a strawberry roan yearling heifer of very superior merit. At that age the appearance was very wonderful. No beast in the yard showed a back so straight, or a rib so round, or a shoulder so richly covered. The chine was most remarkably wide and full ; the head was a model of exquisite formation. The second prize went to a dark roan heifer of very considerable merit, but much inferior to the last. The loins were badly covered, and the back wanted the necessary fulness.

HEREFORDS.—The first prize Bull showed the fleshy parts in more than an ordinary degree. It was of the new Hereford or white-faced breed, with a white belly and shoulder. The body was lengthy and well proportioned, the hook bones buried in flesh, and the back straight in every inch. The hind quarters were very deep and fleshy, twist wide, and the legs short and well set. The chine was very full and deep, and the shoulder tapered in a very fine proportion. The head was relatively small, which perfects a difficult point of breeding. The muzzle was small almost to being hidden, and this forms another excellence. The animal formed a very superior beast of the very first class.—The second prize went to a bull of the mottled faced Hereford breed, which likewise formed a very superior animal. The body was long and cylindrical, and the flank full and protuberant. The shoulder in the slope to the neck showed the usual excellent point of the Hereford breed, in which they much excel the boasted short-horns.—The first prize in Class II. went to a white faced animal of very promising appearance. The face and chine showed the new breed of Hereford, while the body was a dark red colour that always evinces constitution and hardihood. The hind quarter was unusually deep, and the body long and round. The tail was very perpendicularly suspended, and swept the ground with a very handsome brush of white hair.—The second prize was awarded to a mottled faced young bull, which though inferior to the former animals, yet showed a very considerable superiority. The legs were very strong and well set, the thighs deep and fleshy, the back straight, and the ribs circular. The shoulder seemed deficient in taper, and in the outside furniture, a rare occurrence in the Hereford breed. The head and jaws were unusually large, and the neck deep and thick.—The first prize in Class III. was awarded to a light red-coloured cow of the new white faced Hereford breed. This animal possessed very much merit, being long in the body, full in the quarters, and fleshy in the points. The head and face were uncommonly cow-like and pleasant, and the neck and shoulder of a very fine taper. The hook-bones were widely set, and the thighs very deeply covered with flesh. The depth and width of the brisket were very extraordinary. This animal deserved the prize very richly. The touch was very delicate.—The second prize was gained by a Hereford cow of the very oldest variety, having a minutely grizzled face, and a back and thighs of a larger mixture of white and red. But the points were very good, the flesh on the ribs, the hooks, and the thighs being superior to many others. The legs seemed weak in proportion.—The first prize in Class IV. was gained by a heifer with a grizzled body and a mottled face. The symmetry of this animal was of the very first order, particularly on the ribs and on the rump. The fore-quarters seemed proportionally light, and the colour is not very pleasant, but otherwise the prize was in no case better bestowed.—The second prize went to a heifer of the purer Hereford sort, having a white face, and the body of a sandy red colour. The parts were good, but very inferior to the last animal.—The first prize of Class V. to a yearling heifer. The compactness of the body was very remarkable, and the short space between the hook and the rib. The buttocks were protuberant, and not so fine as the fore-quarters ; but the animal formed a very superior specimen of the yearling Herefords. The second prize showed as good a body for a yearling, but the head was longer, and tended to coarseness.

DEVONS.—The first prize was gained by an animal of great beauty and symmetry. We have often admired the Devon breed beyond any other in England, and never more than on the present occasion. At the Christmas show of fat cattle we have admired the animals of the same breed and ownership as the bull now exhibited. And it must be acknowledged that the animal of this show very fully confirms the opinions formerly expressed. The length of the body was large in proportion to the size of the breed of animals, and the compactness admitted no comparison in the show-yard. No heavy offal appeared weighing down the belly, nor any exuberant lumps of fat to deface the symmetry. The girth is full behind the shoulder, and the flank very closely ribbed home. The back is straight to a nicety, and the hooks well spread. The only fault to a Devon animal is the loss of width from the hook to the rump, and the comparative narrowness of the twist. In every other point the structure seems wholly unexceptionable. The present animal had no competitor in the whole exhibition of this year.—The second prize animal showed a very visible inferiority in the girth, and in the length of the body. The head was coarser, and the shoulder leaner in flesh. But the very superior properties of the Devon breed were very amply maintained.—The first prize of Class II. went to an animal that was fully equal to the former descriptions of the Devon breed of cattle. Though younger the animal showed a symmetry fully superior to the last mentioned animal ; every part of the body being formed by the very chastest model of animal life. The second prize animal being a young bull, showed the same marks of perfection.—In Class III. the first prize went to a Devon cow of much beauty. It is generally understood the Devon breed are not good milkers, and with this admission the present specimen could not be surpassed for the equally valuable qualities of forming flesh. The size was comparatively small, but for points no superior was probably ever shown.—The cow of the second prize was larger, and very much deeper in the body, showing more propensity to milk, and the specific tendency to the narrowness in the hind parts, from the hook to the rump.—The first prize in Class IV. was given to a Devon heifer, which amply maintained the symmetry of the breed, as did the heifer that got the second prize. The two yearling prize animals were very handsome, the one being of a dark red colour, and the other more sandy. It seems that any mixture of colour is not allowed in the Devon breed, even to the amount of one hair. This exclusion very much improves the uniform appearance of the animals, and stamps them as having arisen from an unmixed source of progeny. They are reckoned delicate, or they might be most beneficially introduced into many situations, where larger breeds would be unsuitable. The propensity to fatten is very good, and the flesh is of first-rate quality.

CATTLE OF ANY BREED.—The first prize was given to a polled bull, of very fine skin, but long in the body, and loosely formed. The colour resembled the Devon, but the carcase very different in symmetry.—The

second prize was gained by a Suffolk bull, which showed no particular points, except the coarseness of the polled head and the short shagginess of the neck.—The prize in Class II. was gained by a long-horned bull, of 2 years old. Of this breed little mention is now made, though in much repute at one time. They were always liked by the butchers for the large number of cuts of beef from the shoulders along the back.—The first and second prizes in Class III. were given to cows of the Darby or mixed long-horn breed. No particular qualities attach to these animals, except having the reputation of being good milkers, in that dairy county. —In Class IV. the prize was given to a long-horn cow, which showed the fattening properties beyond the common animals of that breed.—In Class V. the prize was given to a very handsome heifer, of some Ayrshire cross. The figure was very handsome, but light in the fore-quarter, as that breed generally are.—In Class VI. the first prize was awarded to a cow of the Durham and Ayrshire cross. The figure was very useful, but wanting in the most valuable points.

The yearling class of cattle, of all the kinds that are allowed for competition, never came forward in higher perfection than in the show of this year, which proves that the elements are not wanting, but only wait the attention that is necessary for the ulterior and successive development. We may confidently state an opinion, that no exhibition of cattle in England has ever brought forth such specimens of the young progeny, and not in one class only, but in all the three breeds of the choicest varieties. It would be difficult, or rather impossible, to name the preference in the yearlings of the short-horn, Hereford, or Devon, where all were, by universal acknowledgment, so very pre-eminent in their kind. The stretching length of the body of the Hereford, and the glossy state of the skin, invites a very special attention, and is pleasing beyond other bodies that possess and show some properties that may ultimately lead to more valuable results. Still, the appearance is very inviting, and founds the conviction that the first appearance will be followed by a corresponding gradation to improved maturity. It is impossible to say what changes may happen in the progress of organised life, as some qualities are seen to change, and even wholly disappear, and properties enter and show themselves in lasting vigour, which could not have been expected to proceed from the existing elements. But this certain fact, of very strong occasional occurrence, affords no excuse for neglecting the production of the best known elements, as good properties may be much more reasonably expected to arise from a combination of first-rate qualities than from a heterogeneous mass of incongruous qualities, assorted without judgment, and jumbled together without any discrimination. When good qualities disappear, equal or more valuable ones will often arise; and when inferior properties are banished by the growth of the animal, the contiguous influences of the better elements are often found to bring into existence a much more valuable and lasting substitute, which not only forms a very valuable exchange, but contributes to improve the whole frame of the animal. The just expectation is very reasonably grounded on a superior beast being produced from a handsome offspring than from ill-shapen and deformed specimens, which instead of improving, most frequently proceed in the opposite direction. This is the inevitable result of bad breeding, or of having a progeny from imperfect specimens; no improvement can be expected from them, for the elements do not exist, and nature requires both time and patience in laying the foundation of a future and durable excellence. In breeding from the most handsome specimens of organised life, the accidental freaks of nature may show an unseemly specimen in appearance from the best assorted materials, but the elements, though hidden, are in existence, and delay not to come forward in the progress of the animal. We dwell at some length on this point, the most influential of all considerations in the art of the breeding of animals, to have a progeny from the very best adult specimens that can be found, and to lay the foundation in order to raise a valuable superstructure. And when we see the beautiful young specimens of this year's show, our expectations are more pleasingly raised and satisfied, even more than by bestowing our consideration on the aged elements whence the young exhibitions take their origin. Similar circumstances will always produce similar results under the same care and attention, and hence we may look forward to the pleasing anticipation of all the animals in Britain being produced in the same state of excellence.

As a very chief element whence any handsome progeny can arise, we have much pleasure in recording the merits of the cows of the three breeds as shown this year. We challenge our opinion, that no show of cattle has ever exhibited two specimens equal or even comparable qualities with the two short-horn cows of Mr. Booth, of Yorkshire. The fleshy properties were developed almost beyond precedent in carcases that were rather under the common size of the heavy breed of short-horns, while the animals were fully capable of raising a progeny to any just and reasonable bulk. The hooks were very particularly expanded, which forms a point of much influence in affording room for the embryo fœtus, and also in developing the milking property. The colour was not fashionable or pleasing; the roan colour of some sort always shows the carcase of the short-horn to the best advantage. It may be said that there is not much consideration in colour, but we think that a colour is very often indicative of certain qualities and propensities, which produce the colour itself, and *vice versâ*. We believe that this mutual propensity is generally understood and acknowledged, and hence the acting realisation is only wanted. The cows of the Devon breed were pretty equal in their kind to the short-horns, and were much admired. The only objection that our own opinion ever had to the Devon cow, is the rather diminutive size, and the disproportional length of the horn. If the body was one quarter heavier, and the horn one-half shorter, the general appearance might be improved. It is true that neither of these qualities appear unfavourably in the oxen of that breed, none of whose parts show any incongruous assimilation. The Hereford cows fully supported their very just reputation.

Our concluding notice of the bulls of this year's show must be short. In no other show have the Devons ever been exceeded, if they have been equalled. In the bulls of every age and class, it would be impossible to begin to find any faults. With this general admission, we pass to the Herefords, which, we think, supported, but did not exceed, the shows of many former years. The first prize bull was most unexceptionable in the fore quarter, but the hind parts projected, and destroyed the square which should contain the outlines of the animal frame. In this perpendicular position of the hind quarter in the posterior extremity, the short-horn beats every other breed. The second prize bull showed a better hind quarter.

In the bulls of the short-horn breed, we give a candid opinion of a very considerable defalcation of this year's show. The prizes of the second class were withheld; and in the first class, both the prize animals were very evidently inferior to those of former years. This deficiency may arise, not so much from a want of the wonted excellence of that breed, but from some casual circumstances, which direct the sending or withholding of the animals, and according as they reach the necessary maturity. One year may be deficient, and the succeeding year may be over-abundant in the materials of exhibition, surely there can be no want of the requisite activity in upholding a breed of animals, of long and justly acknowledged celebrity. It must be acknowledged that the Devon and Hereford breeds are suited to a greater number of localities in Britain than the short horns. But situations are numerous which have kept and can support the latter breed to the utmost excellence. The gaudy colours and the splendid frames are very attractive and pleasing, and as we before observed there may be a mutual advantage in colour that has yet escaped observation. At all events, a colour is eligible which pleases the eye, when no known hurtful quality is attached, and when it is perpetuated in the continuous offspring, without intermixture. We always prefer the colour of strawberry-roan to any other in the short-horn breed, which may have resulted from the returning tendency of the original colours, which were white and red. On the grounds of a hardihood and more general utility, we always prefer the mottled-faced Hereford to the new white-faced breed, and we believe that this property is acknowledged by the breeders of these celebrated cattle. When the white face extends over the eye, as it often does, the visual organ becomes to appearance weak and sickly, and white eyelashes impart that appearance to every existence of animal life. A long and extensive experience among Hereford cattle, has enabled us to draw and establish this distinction between the white and mottled-faced Herefords. Perhaps it may not appear in lowland situations, which suit the temper of most animal organisations; but on higher latitudes, the difference has been very often proved. The same comparison exists between the varieties of most species of organised life, and when duly observed and used to advantage, very considerable benefit will be obtained, so soon as circumstances are able to impress the persistent quality. With the exception of the bulls of the short-horn breed, we think the Society never had a better exhibition of cattle than in the show of this year.

PIGS.

Class I. Boars of a large breed.—Prize of 15*l.* to Mr. Ashby H. Wilson, of the Abbey, Wigton, Cumberland. Second prize of 5*l.* to Mr. Edwin Eddison, of Headingley-hill, Leeds.

Class II. Boars of a small breed.—First prize of 15*l.* to Mr. W. Fisher Hobbs, of Boxted Lodge, near Colchester. Second prize of 5*l.* to Sir Edmund Kerrison, Bart., of Oakley-park, near Eye, Suffolk.

Class III. Breeding sow of a large breed.—The prize of 10*l.* to Mr. Joseph Tuley, of Exley Head, near Keighley, Yorkshire.

Class IV. Breeding sow of a small breed.—The prize of 10*l.* to Mr Joseph Tuley, of Exley Head, near Keighley, Yorkshire.

Class V. Breeding sow of a large breed.—The prize of 10*l.* to Mr. Mark Stainsby, jun., of Lady Pitt-lane, Hunslett, near Leeds.

Class VI. Breeding sow of a small breed.—The prize of 10*l.* to Mr. W. Fisher Hobbs, of Boxted Lodge, near Colchester.

The pig is naturally an unwieldy animal, and when reared to a large size, the body becomes almost incapable of motion. The animals included under the name of "large size" are much too big for the purposes of use, and the flesh becomes coarse and indelicate. The bodies are too bare of hair, which exposes the skin to blisters and eruptions, and is also indicative of the want of constitutional vigour, even though the body be large and bulky. A pile of hair of a medium length, and not too thickly set on the body, is most necessary to constitute a sound and healthy pig; and vigour of constitution is very essential to the organic development of animal life. The pigs of the small breed are equally objectionable in wanting a pile of hair, and the delicacy of the skin subjects them to scrophulous ulcers. Black pigs are less exposed to this evil, as the skin better withstands the heat of the sun and the cold of rain. But animals that are dressed for use with the skins upon the bodies, as pigs and poultry, are more pleasant to the eye in a white colour than in black, and even the spotted pig is less agreeable than the white body, which always retains an agreeable hue. All the pigs of this show are removed to either of these objectionable extremes, and show the very great advantage of having a good middle breed to combine the necessary size with the refined organisation, and having a sufficient vigour for the required activity of development. No such animals appeared at the show, which was very deficient in the general exhibition of pigs. The breeding sow of a small breed might be fairly ranked as a large sow, as it possessed length and depth of sufficient qualification. Length of body is very requisite in a pig, in order to form the flitches of bacon of the sufficient size. The next point is lateral extension, with the quantity of offal reduced to an easy carriage. It may be said that these two points form a superior animal of any kind, and very truly; but a pig needs them beyond any other animal, as it enters so very largely into the daily use of consumption. A small pig is only fit for fresh pork, and very small hams, which are troublesome and tedious; very large pigs form bulks that are beyond the convenience of constant use, and often beyond the means of acquisition. For these reasons we have ever preferred the size of a pig in the average fattened size of 14 or 16 imperial stones, and that for the purpose of general consumption; other uses will indulge in the smaller varieties for delicate gratification.

We think the show of this year to be very inferior to former exhibitions, and in the quality of the pigs more than in the number. The county of Cumberland sent a large breed, but withheld the middle size, with the deep round hams, which are unequalled in Britain. And Yorkshire most certainly did not show its breeding excellence in swine by exhibiting the sows and pigs, under the name of breeders, in Classes III., IV., and V. The black pigs, belonging to Mr. W. Fisher Hobbs, supported their character for the fattening properties, but no worthy competitor appeared against them. They are commendable in having a necessary activity, even in the drowsy and dull organisation of the swine genus of quadrupeds.

Sheep and Horses.—We regret that the limited room at our command does not admit of a detailed report of the exhibition of Sheep and Horses, which, however, we shall endeavour to give next week. We may mention, generally, that it was a larger show of horses than we have seen; that the individuals were, for the most part, of great merit, and that a great preponderance of them were of the Suffolk Punch breed.

At 6 o'clock in the evening a large assemblage took place at dinner in the St. Andrew's Hall, the Earl of Chichester, the President of the Society, in the chair, and the meeting passed off with great spirit. There was not much of immediate interest to the farmers brought out, but independently of that there was, and always is at such assemblages, a great deal of good done in the way of exciting a kindly feeling between the different classes of society generally, and of agricultural society in particular. The principal features of the evening were the Duke of Richmond's enthusiastic reception, and the Marquis of Downshire's admirable, good-natured, and manly address, as President elect. We may also refer to the speech of the Bishop of Norwich, including his demonstration of English soil as the true American California; and to the speech of Mr. Wodehouse on arts, manufactures, and commerce, during which he was called to order by the chairman for his criticism upon Mr. Caird's pamphlet, called "High Farming,"—or rather for his remarks on the "physician who knocked away the crutch," which had elicited too strongly the political portion of the assemblage. And thus has closed the tenth annual assemblage of the Royal English Agricultural Society; its prosperity for the year has attained a most successful climax under Lord Chichester's admirable presidency, and we have no doubt under Lord Downshire's care that it will go on and prosper during the year to come.

Calendar of Operations.

JULY.

Berwickshire Marse Farm, *July* 13.—Since last report we have finished ploughing, harrowing, and rolling the fallow land, and gone over it with the grubber, and made it all ready for gathering the weeds, but the workers are employed thinning Turnips; the Swedes and the yellow are ready, and we have all the men at them. We shall begin to lay on the dung as soon as we can get the fallow land cleaned. *J. B.*

Stirlingshire Carse Farm, *July* 14.—The weather for this week has been extremely fine and very hot. We have been engaged cutting the remainder of our hay, which is a small crop and below an average, and is so throughout the country. Yesterday we ricked all that we had cut last week. We have also been engaged thinning Turnip and ploughing fallow land. The Turnip is making rapid progress this week, as well as other crops, although from present appearances they will not be quite so bulky nor so early as last year. *J. A.*

Notices to Correspondents.

Construction of Stone Walls: *Mr. Martinson*, in a very able paper read at a meeting of the members of the Newcastle Farmers' Club, states that a stone wall 4½ feet high may be built for about 6*s.* a rod of 7 yards, stones included. Mr. Martinson will very much oblige many readers of the *Agricultural Gazette*, if he will state the price given for walling only. The cost of quarrying will of course depend upon the depth of stone from the surface, and distance to wheel or cart. *Somerset.*

Flax: *Q.* It may be grown in localities distant from a scutching mill. A great deal of Flax is prepared for market wholly by hand.

Late Green Crop: *Rape.* Probably the white Mustard is the latest plant you can sow. Stone Turnip is the variety which takes the shortest time to reach maturity. Rape *may* be sown early in August.

To Clean a Cow: *Rustic Robin.* Good feeding and care, with a little linseed gruel in a mash. The following lotion may also be applied with a syringe twice a day—sulphate of zinc, 1 scruple; cold water, 1 pint; mix. *W. C. S.*

Weeds: *Clackmannanshire.* Both the weeds you name are deep rooted plants, and must be got rid of, if at all, by deep culture. Charlock may be destroyed by perseverance in pulling. We have done it. It is a fact that all weeds may be destroyed by perseverance in cutting them off at the surface whenever they appear.

Markets.

COVENT GARDEN, July 21.

The supply of Hothouse Grapes, Peaches, and Nectarines is well kept up. Pine-apples remain unaltered. Strawberries and Cherries are plentiful. A few Apricots have made their appearance, as well as ripe Gooseberries and Currants. Nuts in general are sufficient for the demand. Oranges and Lemons are plentiful. Amongst Vegetables, young Turnips may be obtained at from 3d. to 6d. a bunch. Carrots the same. Cauliflowers are very plentiful. The season for Rhubarb and Asparagus is nearly over. Green Peas fetch from 1*s.* 6d. to 4*s.* per bushel. Potatoes are cheaper. New Potatoes realise from 1d. to 4d. per lb. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1*s* 6*d.* to 3*s.* per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Lily of the Valley, Cinerarias, Tropæolums, Carnations, Pinks, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 5*s* to 8*s*	Apples, kitchen, p. bsh., 4*s* to 8*s*
Grapes, hothouse, p. lb., 2*s* to 6*s*	Oranges, per doz., 1*s* to 2*s*
Peaches, per doz., 6*s* to 20*s*	— per 100, 6*s* to 16*s*
Nectarines, per doz., 6*s* to 20*s*	Lemons, per doz., 1*s* to 2*s*
Strawberries, p. pun., 9*d* to 2*s*	— per 100, 7*s* to 14*s*
— per pottle, 4*d* to 1*s*	Almonds, per peck, 6*s*
Cherries, wall, per lb., 2*s* to 3*s*	— sweet, per lb., 2*s* to 3*s*
— standard, p. lb., 4*d* to 6*d*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
Gooseberries, green, p. hf. sieve, 3*s* 6*d* to 5*s*	— p. bush., 16*s* to 24*s*
Currants, do., 5*s* to 8*s*	Nuts, Bar., p. bush., 20*s* to 22*s*
	— Brazil, p. bsh., 12*s* to 16*s*

VEGETABLES.

Cabbages, p. doz., 6d to 1s
Cauliflowers, p. doz., 6d to 3s
Peas, per bush., 1s 6d to 4s
Beans, p. bush., 1s 6d to 2s 6d
Sorrel, p. hf. sieve, 6d to 9d
Potatoes, per ton, 60s to 180s
— per cwt., 3s to 14s
— per bush., 4s to 7s
Turnips, per bunch, 3d to 6d
Red Beet, per doz., 2s to 4s
Horse Radish, p. bdl., 2s to 6s
Asparagus, p. 100, 1s to 4s
Rhubarb, p. bundle, 3d to 4d
French Beans, p. 100, 6d to 1s
Cucumbers, each, 4d to 1s
Leeks, per bunch, 4d to 6d
Celery, p. bundle, 1s to 2s
Radishes, per 12 hands, 9d
Watercress, per doz. bunches, 4d to 6d
Carrots, per bun., 4d to 6d
Spinach p. sieve, 1s to 1s 6d
Onions, p. bunch, 2d to 6d
— Spanish, p. doz., 1s 6d to 4s
Shallots, per lb., 6d to 9d
Garlic, per lb., 6d to 1s
Artichokes, p. doz., 1s 6d to 3s
Vegetable Marrows, doz., 6d to 1s
Lettuce, Cab., p. sc., 4d to 9d
— Cos, do., 6d to 1s
Mushrooms, p. pot., 1s 6d to 3s
Small Salads, p. pun., 2d to 3d
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Parsley, p. doz bun., 3s to 4s
— Roots, p. bdle., 1s to 1s
Marjoram, green, p. bun., 4d to 6d
Mint, green, per bunch, 3d to
Basil, green, p. bunch, 4d to 6d

SMITHFIELD, MONDAY, July 16.

The number of Beasts is moderate, but it is exceedingly difficult to realise any advance in price; however, 4s. is more freely given for the choicest. There is again a large supply of Sheep; trade is, however, more cheerful, the demand being somewhat increased; in a few instances rather more money is obtained. Trade is very heavy for Lamb, especially for middling ones, which form the majority of the supply. The supply of Calves continues abundant, and the demand for them small, consequently trade is very heavy at low rates. From Holland and Germany there are 345 Beasts, 2570 Sheep, and 186 Calves; from Ireland, 20 Calves; and from Scotland, 200 Beasts.

Per st. of 8 lbs.	s d	s d	Per st. of 8 lbs	s d	s d
Best Scots, Herefords, &c.	3 8	to 4 0	Best Long-wools		
Best Short-horns	3 6	— 3 8	Ditto Shorn	3 4	to 3 8
2d quality Beasts	2 10	— 3 4	Ewes & 2d quality		
Best Downs and Half-breds			Ditto Shorn	2 8	— 3 2
Ditto Shorn	3 8	— 4 0	Lambs	4 4	— 5 4
			Calves	2 8	— 3 8
			Pigs	3 4	— 4 4

Beasts, 3234; Sheep and Lambs, 29,880; Calves, 893; Pigs, 245.

FRIDAY, July 20.

We have to-day a small supply of Beasts; trade is consequently brisk at fully Monday's rates. In a few instances a trifling advance, but nothing quotable, is realised. The number of Sheep is a fair average; the cool morning causes a cheerful trade at late rates. We have more inquiry for choice Lamb this quality being scarce, but on the whole trade is no better. Calves are again plentiful; trade is exceedingly heavy, and Monday's prices are with difficulty obtained. From Holland and Germany we have 80 Beasts, 810 Sheep, and 189 Calves; from France, 24 Beasts; from Leicester and Northampton, 70; from Scotland, 29; and 113 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3 8	to 4 0	Best Long-wools		to
Best Short-horns	3 6	— 3 10	Ditto Shorn	3 4	— 3 8
2d quality Beasts	3 0	— 3 4	Ewes & 2d quality		
Best Downs and Half-breds			Ditto Shorn	2 10	— 3 2
Ditto Shorn	3 8	— 4 0	Lambs	4 4	— 5 4
			Calves	2 8	— 3 8
			Pigs	3 4	— 4 4

Beasts, 662; Sheep and Lambs, 12,790; Calves, 611; Pigs, 250

HOPS.—FRIDAY, July 20.

Messrs. PATTENDEN and SMITH report that the market is firm. Duty about 60,000*l.*

HAY.—Per Load of 36 Trusses.

SMITHFIELD, July 19.

Prime Meadow Hay	68s to 78s	Clover	60s to 95s
Inferior ditto	55 65	New Clover	60 85
Rowen	50 60	Straw	32 36
New Hay	60 75	J. COOPER.	

CUMBERLAND MARKET, July 19.

Prime Meadow Hay	70s to 75s	Inferior	55s to 80s
Inferior ditto	50 70	New Clover	55 80
New Hay	50 70	Straw	34 38
Old Clover	95 98	JOSHUA BAKER.	

MARK LANE.

MONDAY, JULY 16.—The supply of English Wheat from the neighbouring counties this morning was larger than for some time past. Early in the day a few samples were disposed of on about the terms of this day se'nnight. Subsequently, however, the trade became dull, and a large proportion remained unsold late in the day, although a decline of 1s. to 2s. per qr. would have been submitted to. Foreign: Very little business occurred, although generally a similar reduction would have been accepted.—Barley maintains the advance of Friday last, and we consequently raise our quotations 1s. per qr.—Beans are a slow sale.—Peas and Oats are unaltered, but trade less brisk for the latter.—There were a few samples of new Caraway and Rape seed at market; the former sold at 30s. to 31s. per cwt

FRIDAY, JULY 20.—To-day's market was badly attended, and holders being generally firm for Wheat at about Monday's prices, millers showed no inclination to purchase.—Barley is a heavy sale at 1s. per qr. decline.—We observe no alteration in the value of Beans or Peas.—Oats are a better sale than on Wednesday at a decline of 6d. per qr. from Monday.—Flour fully maintains our last quotations.—Indian Corn is dull, and may be purchased on rather reduced terms.

LIVERPOOL, FRIDAY, JULY 20.—At this day's market we had several country dealers, and there was a moderate demand for Wheat, but 1d. per bushel less money was taken. Good Flour was sold at full prices, but in other kinds very little was done. Oats and Oatmeal were dull, and rather lower. Beans and Peas firm. Barley quiet. The transactions in Indian Corn were on a limited scale, at a decline of 1s. per quarter.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS
June 2	44s 9d	27s 10d	17s 7d	28s 6d	31s 7d	33s 4d
— 9	44 6	26 11	17 7	25 4	31 7	30 4
— 16	44 2	26 5	18 0	26 3	30 3	30 4
— 23	44 6	26 5	18 9	25 9	30 10	31 5
July 7	47 1	25 11	17 11	28 1	32 1	33 10
— 14	48 2	25 3	18 9	26 11	32 1	30 9
Aggreg. Aver.	45 8	26 1	18 2	26 8	31 5	31 4
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	JUNE 2.	JUNE 9.	JUNE 16.	JUNE 23.	JULY 7.	JULY 14.
48s 2d	—	..	..	..	..	..
47 1	..	..	..	..		..
44 9		..	..	..	..	..
44 6	..	..	..		..	..
44 6	..		..	..	..	..
44 2	..	..	..	..	..	..

PRICES CURRENT.	London. July 9. qr.	London. July 16 qr.	Liverpool. July 10. 70 lbs.	Liverpool. July 17. 70 lbs.	Wakefield. July 6. qr.	Wakefield. July 13 qr.	Boston. July 11 qr.	Boston. July 18 qr.	Birmingham. July 12. 62 lbs.	Birmingham. July 19. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	42 to 44	42 to 44	6 10 7 2	6 9 7 6	45 to 51	46 to 52	45 to 50	45 to 50	6 1 6 7	6 0 6 7
„ white ...	47—50	47—50	7 3 7 8	7 2 7 7	45—53	46—54	46—53	46—53	6 6 6 10	6 3 6 7
Old, red ...	42—48	42—48	6 11 7 2	6 10 7 2	44—46	45—47	—	—	6 0 6 6	6 10 6 4
„ white ...	50—54	50—54	7 7 7 10	7 6 7 9	—53	—54	—	—	6 4 7 10	6 2 6 8
Foreign	36—58	36—58	4 8 8 6	4 8 8 6	41—54	42—55	—	—	5 4 7 0	5 3 6 10
			480 lbs.	480 lbs.						
Rye—New ...	22—24	22—24	—	—	—	—	—	—	—	—
Foreign ...	22—23	22—23	—	—	—	—	—	—	—	—
Foreign meal	6*l.*—7*l.*	6*l.*—7*l.*	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	21—24	21—24	—	—	22—23	22—23	24—26	24—26	23—25	23—25
Malting ...	22—27	22—27	30s—32s	30s—32s	—	—	28—30	28—30	29—32	29—32
Foreign	18—27	18—27	—	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White ...	19—25	19—25	2s 10d 3s 2d	2s 10d 3s 2d	—	—	14—21	14—21	20—28	20—28
Black ...	15—23	15—23	2 5 2 8	2 5 2 9	—	—	—	—	19—20	19—20
Foreign	14—21	14—21	2 4 2 6	2 4 2 6	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	25—30	25—30	34s—	34s—	28—32	28—32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding ...	23—25	23—25	29—30s	28—30s	—	—	—	—	11—12	11—12
Foreign ...	25—32	25—32	32—34	32—34	—	—	—	—	—	—
Beans—										
New, small ...	23—29	—	30—33	32—35	32—35	31—36	30—33	32—34	12—14	12—14
Old	—	23—33	32—34	34—36	—	—	34—36	34—36	15—16	15—16
Foreign ...	21—36	21—36	23—32	—	30—31	30—31	—	—	11—13	11—13
Linseed—Feed	—	—	40—42	40—42	32—40	32—40	—	—	—	—
Foreign ...	37—42	36—40	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9*l.* 7s	9*l.* 7s	7*l.* 12s	7*l.* 12s	—	—	—	—	—	—
Foreign ...	6*l.*—7*l.*	6*l.*—7*l.*	—	—	—	—	—	—	—	—
Indian Corn—	30—34	30—34	33s—34s	32s—33s	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	36—44	36—44	35—36	35—36	—	—	36—40	36—40	37—39	36—38

Weekly Averages and Imports.	Aver. July 17 s. d.	Impts. qrs.	Averages. s. d.	Imports. qrs.	Aver. s. d.	Impts. qrs.	Aver. s. d	Aver. qrs.
WHEAT ...	52 3	4720	47 1	1895	48 3	7005	49 11	1501
BARLEY ...	22 6	14970	25 11	—	21 0	1122	—	—
OATS ...	21 6	24060	17 11	263	19 0	1016	13 11	285
RYE ...	25 0	—	28 1	—	—	—	—	—
BEANS ...	31 11	—	32 1	190	30 0	827	34 0	19
PEAS ...	—	—	35 10	2222	—	317	—	—

Gloucester.	Averages. s. d.	Imports. qrs.
	49 0½	2725
	—	581
	—	—
	—	—
	—	—

SIGNED { KINGSFORD and LAY. / REGAR and TUNNICLIFFE. / SANDARS and DUNNS. / THOMAS WRIGHT. / J. and C. STURGE.

Sales by Auction.

ENGLEFIELD-GREEN, EGHAM, SURREY.

106 dozen of fine OLD PORT and SHERRY WINES, from 15 to 20 years in bottle, part of the Household FURNITURE, 2 Pianofortes by Broadwood and Tomkinson, a 12-feet Billiard Table by Thurston, 4 In-calf ALDERNEY COWS, Dairy and Brewing utensils, 4 capital 6-light Pine and Melon Pits, with Hot-water Apparatus and Lining Walls with Iron Copings, a Greenhouse, Garden Implements, Box and Handlights, Garden-engine, light Dung-cart, Pony Water-cart on 4 wheels, and other effects.

MR. WATERER will sell by Auction, on TUESDAY, July 24, at 11 o'clock, on the premises, at Englefield-green, the property of T. R. Ward, Esq. (leaving his residence), 106 dozen of fine old Port and Sherry Wines, from 15 to 20 years in bottle; 10 dozen of Gooseberry and Orange Wines; part of the Household Furniture, comprising Bedsteads, Bedding, Chairs, Tables, and Drawers, fine-toned 6-octave Square Pianoforte by Broadwood, and a Grand ditto by Tomkinson; excellent 12-feet Billiard Table by Thurston, with Cues, Balls, &c.; 4 fine young in-calf Alderney Cows, fine young Sow and Pigs; 4 nearly new 6-light Pine and Melon Pits, with Hot-water Apparatus, Pipes, Lining Walls with Iron Coping, and Slate Cistern; 100 Fruiting and Succession Pines, a Greenhouse 18 feet by 9, 300 Greenhouse Plants, Garden Tools, Box and Handlights, with Copper and Iron Frames, Garden-engine, Lead and Iron Pumps, Dairy and Brewing Utensils, 50-gallon Copper, Malt-mill, Hand Corn-mill, Dressing-machine, light Dung-cart, and Harness; quantity of Manure, Firewood, Sprays, and numerous other effects.—The Greenhouse and Pits may be viewed three days prior to the sale, and the remainder on the morning of sale. Catalogues may be had on the premises; the Barley Mow, Englefield-green; and of Mr. WATERER, Auctioneer and Land and Timber Surveyor, Chertsey, Surrey.

FREEHOLD AND COPYHOLD BUSINESS PREMISES, LONDON STREET, CHERTSEY, SURREY.

MR. WATERER will sell by auction, at the Crown Inn, Chertsey, on THURSDAY, July 26, 1849, at Three o'clock, by order of the Executors of the late Mr. Benjamin Butler, the excellent HOUSE AND PREMISES, part Freehold and part Copyhold, with an Extensive Frontage, situate in London-street; in the occupation of Mr. Grave, at the yearly rent of 28*l.* It contains four airy Bed-rooms, Lofty Parlour and Kitchen with convenient Cupboards, School-room and Counting-house, Wash-house, Two Cellars, Dairy and Pantry, Bakehouse and Oven, Coal and Wood Sheds, Chaise-house and Stable with Loft over, Large Building well calculated for Workshops, Spacious Yard and Garden, and a Pump supplied with excellent water, also the Freehold House and Premises adjoining the above, called "The Compasses," with Four good Attics, Two best Bed-rooms, Large Upper Sitting room, Two Front Sitting-rooms, Kitchen and Wash-house with Room over, Pantry and Cupboards, Large Building at back, Two Stables and other conveniences, with a Pump supplied with good water. Let to Messrs. Ashby's, of Staines, at the low rent of 18*l.* per annum. May be viewed, by leave of the tenants, any time previous to the sale, and further Particulars with Conditions had of Messrs. GRAZEBROOK and SON, Solicitors; or of Mr. WATERER, Auctioneer, Land and Timber Surveyor, Chertsey, Surrey.

N.B. A Plan of the Estates will be produced on the day of sale.

FREEHOLD ESTATE, NEAR WEYMOUTH.

TO BE SOLD, by Private Contract, a very attractive and improvable ESTATE, comprising 80 acres of superior Land, within one mile of Weymouth; with ornamental Plantations, adjoining the Dorchester turnpike-road. The land-tax is redeemed. Price 20½ years' purchase on the clear rental. Also a very pretty modern-built VILLA, with Stabling, Walled Garden, Plantation, and about two acres of Rich Pasture Land adjoining. Price 21 years' purchase.—Further particulars to be had of Messrs. HENNING and ANDREWS, Solicitors, Weymouth.

SUSSEX.

TO BE LET for a term of years, and entered upon at Michaelmas next, the Farm of WOTTON, in the Parish of Folkington, at present in the occupation of Mr. Shoosmith. It consists of about 409 acres of Meadow, Pasture, and Arable land: the Arable land is most productive of Beans and Wheat: most of the Pasture and Meadow land is of the richest fattening quality. There is an excellent Farm-house, with every convenience, and the Farm-buildings are large and commodious, and economically fitted up and arranged for fattening a large number of beasts in feeding-houses, stalls, sheds, and yards. The Farm is about four miles from Hailsham and Eastbourne, 10 miles from Lewes, market town, and one mile from the Polegate station on the Lewes and Hastings Railway. For particulars, apply to Mr. JOHN MORTON, Whitfield, Berkeley, Gloucestershire. A person at Folkington Place will show the Farm.

TO BE LET, for a term of years, and entered upon at Michaelmas next, the FARM of TESTWOOD AND COLMOOR, in the parish of Eling, in the county of Southampton, at present in the occupation of the Proprietor. It consists of 355 acres, of which 64 acres are excellent Water Meadow, watered by the river Test; 100 acres are good Arable Land, and 191 acres are of rough Pasture, now being drained, which may be converted into rich productive Turnip and Barley land. There is a good Farm house, and large commodious Farm Buildings. The Farm is about five miles from the town of Southampton, and the turnpike road from there to Salisbury passes through it. It is within 1½ mile of the Eling Railway Station and Wharf on the Southampton river.—For particulars apply to Mr. JOHN MORTON, Whitfield, near Berkeley, Gloucestershire. A person at Testwood House will be directed to show the Farm.

TO BE LET, and entered upon at Michaelmas, MALDRETT HOUSE and FARM, with excellent fatting yards, in the parish of Rusly wich, Sussex, 13 miles from Guildford; free of all tithes and rates, consisting of 60 acres of Meadow and Pasture, 130 acres Arable, and 52 acres of Woods. There are three Cottages on the Farm, which the tenant may have or not as he pleases. Roads exceedingly good.—For particulars and to view the same, enquire of Mr. MAURICE RICHARDSON, Stinfold, near Horsham.

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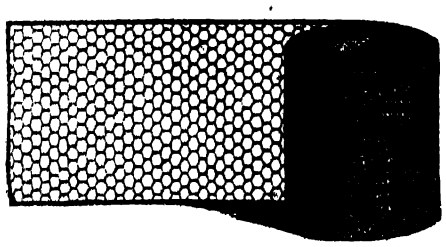

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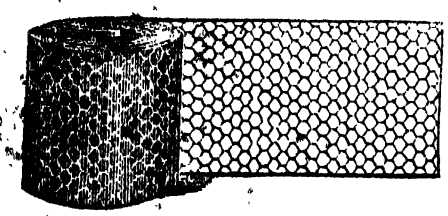

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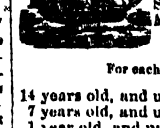

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THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 30—1849.] SATURDAY, JULY 28. [PRICE 6d.

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ROYAL BOTANIC SOCIETY OF LONDON.—Notice is hereby given, that the ANNIVERSARY MEETING of this Society will be held at the Gardens, in the Inner Circle, Regent's-park, on FRIDAY, the 10th day of August next, to receive the report of the Council, to elect the Council and Officers for the ensuing year, &c. The Chair to be taken at 1 o'clock.—J. DE C. SOWERBY, Secretary, July 28.

The Days fixed for the EXHIBITIONS NEXT SEASON are, for Plants, Flowers, and Fruit, WEDNESDAYS, May 8th, June 12th, and July 3d; and for American Plants, SATURDAYS, May 25th and June 1st, 1850.

HANDSWORTH AND LOZELLS HORTICULTURAL SOCIETY.—The Third Exhibition this season will be held in the grounds of Hockley Abbey, on TUESDAY next, July 31st. The Band of the Fifth Dragoon Guards will attend. Soho Park will also be thrown open for the occasion.

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WARWICKSHIRE HORTICULTURAL EXHIBITION.—THE SECOND GRAND HORTICULTURAL EXHIBITION is fixed to take place on THURSDAY, the 23d Aug next, in the Jephson Gardens, Leamington, under the special patronage of the High Sheriff and many of the resident nobility and gentry of the county of Warwick, when Prizes (highest 15l.) will be awarded on the most liberal scale for Stove and Greenhouse Plants, Heaths, Balsams, Cockscombs, Annuals, Specimen Plants, Cut Flowers, Verbenas, Roses, New Plants, and Flowers, and miscellaneous subjects, Melons, Pines, Grapes, and other fruits. Full particulars in the "Horticultural Magazine" for July, and Schedules to be obtained from OWEN WHITE, Esq., Hon. Sec., Jephson Gardens and Parade, Leamington.

PELARGONIUM—"FOQUETT'S MAGNIFICENT."—The raiser intends sending out plants of the above, well established in 4-inch pots, in the middle of October next, price 2l. 2s. each, hamper and package included. Terms, prepayment; and as the stock is limited, no discount can be allowed. Orders will be executed in strict rotation. Post-office orders payable on the Post-office, Newport, Isle of Wight

The well merited encomiums passed on this flower by "The Florist," "Floricultural Cabinet," and *Gardeners' Chronicle*, render any further comments unnecessary.—Address, MAJOR WILLIAM FOQUETT, Shide House, near Newport, Isle of Wight.

A. WILLIAMSON has much pleasure in announcing the arrival, per ship "Cornelia," from New Zealand, a very Choice Collection of FERN SEEDS, of the rarest kinds, and in excellent preservation; likewise a large collection of Specimens of Ferns, collected and sent home by the late Curator of the Sheffield Botanical Gardens. The names of the species are as follows:

No. 1. Cyathea medullaris, or large black tree Fern, grows upwards of 30 feet high in New Zealand. Much used for fencing bridges, &c., and called by the natives Mamuk.

No. 2. Alsophylla medullaris, fine variety.

No. 3. Cyathea dealbata, fine silvery-leaved tree Fern, from 20 to 30 feet high.

No. 4. Hymenophyllum, Trichomanes, Adiantums, Aspleniums, Lomaria, Nephrolepis, Pteris, Cyatheas, and other genera, &c.

No. 5. Mixed varieties of Alsophylla dealbata, or silver tree Fern.

No. 6. Todea, sps. australis.

In Packets, at 21s. each.—Apply to A. WILLIAMSON, Brandon, near Coventry, Warwickshire.

NEW AND CHOICE PLANTS.

BENJAMIN R. CANT, St. John-street Nursery, Colchester, begs to offer the following select plants, at considerably reduced prices.

Achimenes Knightii, each, 1s.
,, patens major, 1s.
,, Ghiesbreghtii, 1s.
Angelonia Gardneriana, 1s.
,, salicifolia, 1s.
Bouvardia [illegible], 1s. 6d.
Calceolaria, new shrubby sp. from [illegible], 1s. to 2s. 6d.
Camellia [illegible] of Exeter, [illegible]
Cheiranthus [illegible], 9s. per dozen
Cryptomeria japonica, strong plants, 1 foot high, 2s. 6d. each, 24s. per dozen
Cedrus africanus, 2s. 6d. each
Daphne indica odorata rubra, strong, 1s. 6d.
Fuchsia spectabilis, 7s. 6d.
Æschynanthus speciosissimus, 5s.
Gardenia Fortunii, 2s. 6d.
Jasminum nudiflorum, 1s.
Lobelia azurea grandiflora, 1s.
Plumbago Larpentæ, 1s.
Phlox imbricata, 1s.
,, depressa, 2s. 6d.
Pentstemon cordifolium, 1s.
Scutellaria Ventenatii, 1s.
Salvia oppositifolia, 1s.; per dozen, 9s.
,, azurea compacta, 1s. 6d.
Spiræa prunifolia pleno, 6s. per dozen
Tropæolum speciosum, each, 1s.; 9s. per dozen
Weigela rosea, p. doz., 6s. & 9s.
Zauschneria californica, 1s.

CHOICE FLOWER SEEDS FOR PRESENT AND AUTUMN SOWING, free by post, with useful instructions for sowing, &c. Catalogues on application. The following, saved from large collections of new and choice varieties, each, per packet.

Anemone ... 4d. to	1s 0d	Hollyhock	0s 6d
,, new semi-dbl. 6d. to	1 0	,, 30 vars., separate	5 0
Antirrhinum ..	0 6	,, 20 do.	3 6
Auricula	1 0	,, 12 do.	2 6
Calceolaria	1 0	Iris, English	0 6
Cinerarias	1 0	,, Spanish	0 6
Dianthus	0 6	Pansy	1 0
Fuchsia	1 0	Petunia	1 0
Geranium	2 6	Polyanthus 4d. to	1 0
,, smaller packets	1 6	Primula sinensis ...	0 6
,, scarlets .	0 6	Ranunculus	2 6
Gloxinia	0 6	Sweet William .	0 6
		Verbena 1s. 6d. to	2 6

20 vars. choice Greenhouse Perennials, 10s. 6d; 12 do., 7s. 6d.
20 vars. Choice Hardy Biennials and Perennials .. 7s. 6d.
12 ditto .. .. 5s. 0d.
20 vars. showy Hardy Annuals for spring flowering . 4s. 0d.

Remittances requested from unknown correspondents. Post-office orders to be made payable to BASS and BROWN, or STEPHEN BROWN. Postage stamps received for small amounts.

BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

TO THE ADMIRERS OF THAT SPLENDID AUTUMNAL FLOWER, THE CHRYSANTHEMUM.

YOUELL AND CO. are now prepared to execute orders from their extensive and very select collection of the above, comprising all the new and fine continental varieties, at the following prices.

50 best new sorts .... 25s.
25 ditto .... 15s.
12 ditto 9s

Fine plants for blooming in Autumn, well established in small pots, or per post free, with all orders (if requested), directions will be sent for a successful and easy mode of culture for exhibitions.

CAMELLIAS,

Comprising the finest varieties, well set with flower buds, 30s. to 42s. per dozen.

ANEMONE SEED, saved from selected sorts, is now being sent out by YOUELL and Co. in the finest condition, and can be forwarded, per post free, at 2s. 6d. and 5s. per packet, sufficient to sow a bed of 12 or 24 yards. Sown at the present time, it will afford a fine display through the autumn and winter months.

Catalogues of the above, with an extensive variety of highly ornamental plants, will be forwarded by enclosing two postage stamps.—Great Yarmouth Nursery.

TILEY'S EARLY MARROW CABBAGE.

EDWARD TILEY begs respectfully to inform the Nobility, Gentry, and the Public generally, that he is now ready to send out his Early Marrow Cabbage Seed, which has proved the best yet in cultivation, and five weeks earlier than any other sort yet grown. For further particulars see the advertisement in this Paper of July 14. Sold in packets containing 1 oz., 2s. 6d.; ½ oz. packets, 1s. 6d. The above will be sent postage free on the remittance of a Post-office order, or the amount in penny postage stamps. Sold by EDWARD TILEY, at his general Seed-shop, 16, Pulteney-bridge, Bath.

MESSRS. J. A. HENDERSON AND CO. beg to offer the following new and choice Plants:

GLOXINIA GRANDIS.—This is a very handsome and distinct variety, of robust habit, with rich green foliage, and produces very large flowers of a creamy white colour, with crimson throat, the colour of which is clearly defined; they are of a beautiful, compact form, finely expanded—and are even, smooth, and regular in their general appearance. The flowers are of good substance, retaining their colour and form for a long period after they are expanded. This Gloxinia is of a much more upright growth than any other, and therefore is more showy and conspicuous. Price 21s.

BEGONIA AURANTIACA.—This rare and beautiful Begonia is a native of Bolivia, in South America, and is one of the handsomest of this showy tribe of plants. It is a greenhouse species, flowering profusely from July until the end of the season. The flowers are the brightest orange-red colour, large and expanded, and are produced abundantly each flower continuing in bloom for a long period [illegible] rooted, like Begonia Evansiana, [illegible] at in its growth, with foliage of a rich green colour. The flower-stems rise several inches, so that the blossoms are thrown out conspicuously beyond the foliage. Price 30s.

Pine-apple-place, Edgware road, London.

BEAUTIFUL BOUQUETS OF FLOWERS are kept perfectly Fresh for several days in Glasses constructed for the Button-hole, the Hand, or to be inserted in any part of a Lady's Dress or Hair, at 2s. per dozen; or forwarded by post, in boxes containing one dozen, 2s. 6d., postage included, on receipt of stamps to the amount, by JACKSON and TOWNSON, 89, Bishopsgate Within, opposite St. Helen's-place, London.

FOR SALE, a Collection of about 50 SUCCULENTS, consisting of Cacti Cereus, Opuntias, Stapelias, and other select plants. To view, apply to Mr. WHOMES, Geranium Nursery, Windsor, Berks.

DRUMMOND'S REAPING SCYTHE.

W. DRUMMOND AND SON beg to call the attention of Farmers to their REAPING SCYTHE, which continues to give complete satisfaction. With this Scythe one man can cut down from 1½ to 2 acres per day, laying the swathe so that it can be easily gathered into evenly sheaves and without any waste whatever. Price 9s. 6d. each. When three or more go together, the cost for carriage to many of the railway stations throughout the kingdom will not be more than from 1s. to 1s. 6d. each. N.B. Orders from unknown correspondents without a remittance will not be attended to.

W. DRUMMOND and SONS, Agricultural Museum, Stirling, N.B.

BECK'S PELARGONIUMS, and the best varieties of other raisers.—12 of the following sorts, including the box and carriage to London, will be sent out for Two Guineas, well rooted in 3-inch pots, and ready for an immediate shift into a larger size. Orders will be booked, and correspondents informed when the plants are ready, when remittance may be made by Post-office order on Brentford: Aurora, Bianca, Centurion, Cracker, Forget-me-not, Ariel, Cassandra, Cavalier, Cruenta, Gustavus, Gulielma, Grandiflora, Junii, Negress, Rosamund, Sundown; or 9 of the above, and Hoyle's Crusader, or Topping's Brilliant, or Foster's Victory.

The above selection, well cultivated, will make first-rate exhibition plants. A Descriptive Catalogue, including the seedlings of 1848, may be had on application to JOHN DOBSON, Worton Cottage, Isleworth. Monthly directions for their culture will be found in the "Florist and Garden Miscellany," published on the 1st of each month, and to be had of all booksellers, under the title of "Beck's Florist." This work contains one coloured plate, one or more woodcuts, 24 pages of original matter, a Lady's Page, and a Calendar of Operations, supplied by eminent cultivators.

"Too much can scarcely be said in favour of the continued excellence of this work."—PROF. LINDLEY, *in this Paper, April*, 1849.

HOYLE'S SEEDLING PELARGONIUMS.—Circulars, with particulars of the above superb varieties (unquestionably the best of the season), can be had upon application to the purchasers of the whole stock, Messrs. MAYLE and Co., Florists, &c., 55, New-street, Birmingham.

NOVEL APPLICATION FOR THE IMPROVEMENT OF CELERY, SEAKALE, CARDOONS, RHUBARB, &c.—By means of ROBERTS'S Registered Sockets, these articles are greatly improved, if applied at this season. A pamphlet, with wood engravings, and an exposition of particulars of these and various other appliances to horticulture, may be had on application, enclosing two postage stamps, to Mr. JOHN ROBERTS, Merchant, 34, Eastcheap, London.

NOTICE.—*The Gardeners' Journal of July* 14, 1849, contains an editorial article upon these inventions, from which the following remarks are extracted: "The principle of the invention is one about the advantages of which there can be no doubt. By such appliances, and by the aid of such means, vast and important results may reasonably be looked for. As connected, especially with the culture of Strawberries and Melons, the use of these Tiles would undoubtedly add both to earliness and flavour. . . . We shall repeat, that the principle is excellent All that we ask, on the part of Mr. ROBERTS, is the thanks of horticulturists for bringing before them in a prominent manner a principle of great practical utility."

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 18 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15l. 10s., a do. do. 15 by 10, 22l. 10s.; a do. do. 18 by 12, 28l 10s.; a do. do. 21 by 12, 32l 10s., including a plan for brickwork. 1½-inch Greenhouse Lights, glazed with 16 oz. sheet glass painted three times, 11½d per foot; 2-inch do., 1s. per foot—J. LEWIS's Machine Hothouse Works, Stamford-hill, Middlesex.

HOTHOUSES AND CONSERVATORIES made and fixed complete in all parts of the Kingdom, at a considerable reduction. One, two, and three-light Cucumber and Melon Boxes, and Lights of all sizes, kept ready for use, packed and sent to all parts of the Kingdom; warranted best material. Garden-lights of every description, at JAMES WATTS', Hothouse Builder, Claremont-place, Old Kent-road. Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

IMPROVED FLOWER STICKS.—THESE FLOWER STICKS are of a circular form, thereby avoiding angles and sharp edges, which are liable to cut and injure the plants. They may be had stained brown or green to suit the various plants.—To be had of all respectable Nurserymen and Seedsmen, and dealers in Garden Implements. Manufactured and sold Wholesale, at H. MORRELL's, 149, Fleet-street, London.

N.B. Samples to be seen at the Office of this Paper.

TO AGRICULTURISTS, GARDENERS, AND FLORISTS.

COMPOUND CARBONISED ANIMAL MANURE. Prepared for AGRICULTURE, to suit general purposes, at 6l. per ton, or expressly for each peculiar kind of crop, at from 5l. to 10l. per ton. Quantity required per acre, from 3 to 6 cwt., according to circumstances.

FOR FLOWERS AND PLANTS IN GARDENS OR POTS, sold in tin canisters of 1s., 1s. 9d., and 2s. 6d. each, or in compact wooden boxes of 5s., by taking which a considerable saving is obtained. Supplied by H. COLES, SEEDSMAN, &c., (Agent for the sale, by special appointment), 32, Cranbourn-street, Leicester-square, where may be had, on application, a Prices Current of the various kinds of the manure, analyses, circulars, testimonials, and every relative information.

NOTICE TO AGRICULTURISTS, &c.—H. COLES takes this medium of informing the several customers and others who have requested him to let them know "why Agents are not established in the different provincial towns for supplying the Carbonised Manure?" that the highly respectable and scientific proprietor who has been pleased to confide to him the mode of its preparation, and principal deputation for its sale, being aware of the many tricks in the way of adulteration, &c. that are so frequently practised by these, does not wish to run the risk of its acquired reputation being thus injured. The only authorised agents, at present, besides H. COLES, therefore are—IN LONDON: Mr. M. Fothergill, [illegible], Upper Thames-street; Mr. G. Lawrence, 18, Piccadilly; Mr. S. Charlwood, 14, Tavistock-row, Covent-garden; Mr. G. O. Lewis, opposite Albert-gate, Knightsbridge; Mr. Kennedy, Bedford Conservatories, Covent-garden; and—IN HARTLEPOOL: Mr. Stephen Horner. Arrangements are also now being made to appoint one shortly in EDINBURGH and DUBLIN. All orders, consequently, must come direct to H. COLES himself, or to one or other of the above-enumerated parties, to ensure no disappointment in the supply of the genuine commodity. H. C.'s address is, 32, Cranbourn-street, Leicester-square, where applications for the Manure will be duly attended to, and every relative information may be obtained.

GLASS SLATES.

With Drilled Holes.	Rough Plate.				Sheet.			
	¼ in. thick.	⅜ in. thick.	½ in. thick.	¾ in. thick.	16 oz.	21 oz.	26 oz.	32 oz.
Size.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Duchess ..... 24 by 12	1 6	2 0	2 8	5 0	0 11	1 3	1 9	2 6
Small Imperials 20 by 14	1 5½	1 11	2 7	4 10	0 10½	1 2½	1 8½	1 11
Small Duchess 22 by 12	1 5	1 10	2 6	4 8	0 10	1 2	1 8	1 10
Countess. ..... 20 by 10	1 1½	1 6	2 0	3 8	0 8½	1 0½	1 5	1 6
Viscountess .... 18 by 10	1 1	1 4	1 10	3 4	0 8	1 0	1 3	1 4
Large Ladies ..... 16 by 10	1 0	1 3	1 7	3 0	0 7½	0 10	1 2	1 3
Ladies ..... 16 by 8	0 10	1 1	1 5	2 6	0 7	0 9	0 11	1 1
Doubles ..... 13 by 7	0 8	0 10	1 2	2 3	0 6	0 7	0 9	0 10

GLASS TILES.

Rough Plate.		Sheet.	
¼ inch thick ... 0s. 10d. each.		16 oz.	0s. 8d. each
⅜ ,, ... 1 3 ,,		21 oz.	0 10 ,,
½ ,, ... 1 7 ,,		26 oz.	1 0 ,,
¾ ,, ... 2 0 ,,		32 oz.	1 4 ,,

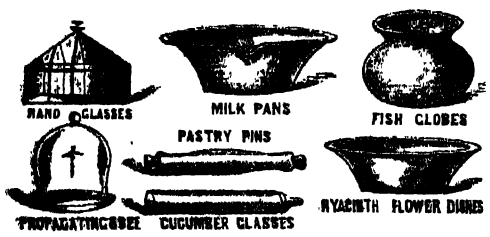
Corrugated Tiles double price.

A full List of Prices and every information may be had by applying to JAMES PHILLIPS and Co., Horticultural Glass Warehouse, 116, BISHOPSGATE-STREET WITHOUT, London.

GLASS PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, of Bristol, and of Nailsea, Somerset, beg to inform Engineers and others, that they are prepared to supply GLASS PIPES of from 1 to 4-inch bore, in lengths of from 3 to 7 feet—the lengths being less as the diameters of the bores increase.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had on application at the warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

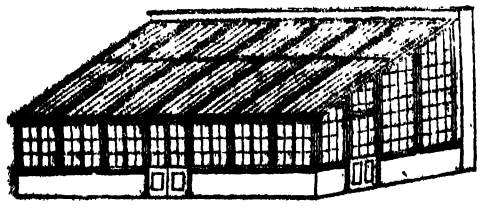
GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

APSLEY PELLATT AND Co. (late PELLATT and GREEN), Falcon Glass Works, Holland-street, Blackfriars, have always on hand, Bee Glasses, 1s. 2d. per lb.; Cucumber Glasses, 1s. 6d. per lb.; Milk Pans, 18-in., white glass, 5s 6d. each; Propagating Glasses, white, 1s. per lb.; do., green, 10d.; do. condensing, 2d per lb. extra; Grape Shades, 1s. 6d. to 2s. each; Fish-bowls, from 1s 6d. each; Wasp and Fly-traps, 40s. per gross, or 3s. 6d. per dozen. By the use of these traps fruit may be preserved from (otherwise certain) destruction.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold AT LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

TO NOBLEMEN, GENTLEMEN, AGRICULTURISTS, &c.

READ'S GARDEN ENGINES, &c., upon his New Patent Principle, which, for power, portability, and simplicity of action, surpass anything of the kind hitherto invented. May be worked with two-thirds the labour required for other Engines of the same powers. Also READ'S New Garden Engines, Machines, and Syringes, of every description. Patent Veterinary Injecting Instruments and Tubes. Improved Hollow Bellows for relieving Horses, or Choked Bullocks, Sheep, &c.—Manufactured by RICHARD READ, Instrument Maker to her Majesty, 96, Regent Circus, London

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 600 feet, and from a depth of 900 feet. Double, Vapour, Hot-air, and all other kinds of Ratio. Buildings, Conservatories, &c., Heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LEE, Cheltenham.

GUANO AND OTHER MANURES.

PERUVIAN GUANO, of the finest quality, direct from import warehouses.
NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SULPHURIC ACID AND COPROLITE.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of
MARK FOTHERGILL, 201A, Upper Thames-street, London.

A Treatise on Guano, Superphosphate of Lime, &c., will be forwarded on receipt of 8 postage stamps. Free to purchasers of Guano, &c.

TURNIP SOWING.

THE LONDON MANURE COMPANY, having adapted the "URATE" more particularly for Turnips and all Root Crops, can recommend it with the greatest confidence. It seldom fails, in the driest season, to secure a good plant, and to produce a heavy weight per acre. They would call attention to their Superphosphate of Lime, which is prepared with the greatest care, and sent out in a very fine, dry state, perfectly ready for use. The London Manure Company have made arrangements for a constant supply of Peruvian Guano, from the best cargoes, which they will deliver direct from the ship or importer's stores. Corn Manure, Nitrate of Soda, Fishery and Agricultural Salt, and every other Artificial Manure, on the lowest terms for a genuine article.

EDWARD PURSER, Secretary, 40, Bridge-street, Blackfriars.

PERUVIAN AND BOLIVIAN GUANO ON SALE
BY THE ONLY IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WILLIAM JOSEPH MYERS AND CO., LIVERPOOL;
And by their Agents,
GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
COTESWORTH, POWELL, AND PRYOR, LONDON.

To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

BURBIDGE AND HEALY'S NEW BOILER.—The above is a modification of their Boiler (before published), modelled expressly for the large Conservatory, Chiswick Gardens, where it is now at work. From the observations B. and H. have been able to make, they are warranted in stating it to be the "Ne plus ultra" for warming large plant structures. As a proof, one charge of fuel has been kept burning for 48 hours without any addition, and one boiler of the size used is equal to warm 1500 feet of 4-inch pipe. They are also extensively put up at the Royal Botanic Gardens, Kew. Smaller boilers upon the same plan.

BURBIDGE and HEALY, 130, Fleet-street, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 6 feet long, on the Houses when completed, from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity, our principle being formed without wood or putty in the roof.

HEATING BY HOT WATER.

TODD'S PATENT PROTOXIDE PAINT at a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it. Manufactured by CHARLES FRANCIS and SONS, Cement Works, Nine Elms, London.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 400 and 500) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a copy of the testimonials, will be sent on application to WALTER CARSON, 15, Tokenhouse Yard, bank of the Bank of England.—No Agents.—All orders are particularly requested to be sent direct.

ROMAN CEMENT made according to the specification of Parker's Patent, may be had genuine of J. M. BLASHFIELD (late Wyatt, Parker, and Co.), Waterloo Dock Wharf, Commercial-road, Lambeth; No. 1, Grosvenor Wharf, Paddington, and at the Manufactory, Mill Wall, Poplar. Also Plaster, Mastic, Tarras, Bricks, Tiles, &c.

PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 24 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, CHARLES FRANCIS and SONS, Nine Elms, London.

PORTLAND CEMENT.—Testimonials received from all quarters, prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and Sons, Millbank-street, Westminster.

GRAY, ORMSON, AND BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly shew the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

GRAY, ORMSON, and BROWN, have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, Chilan, bernacle, brent, and laughing geese, shelldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Haltmoon-passage, Gracechurch-street.

THE IMPROVED HYDRAULIC RAM, fixed by FREEMAN ROE, Fountain Maker, 70, Strand, London, can be worked by a small stream of half-an-inch, where a fall of 2 feet can be obtained. The same RAM, without the aid of a Tank or Cistern, arranged to throw a Jet of Water constituting a Fountain with the head of water beneath.

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A newly-invented Portable Vapour Bath, all complete for 4l.

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SCHOOL FOR GENERAL AND SCIENTIFC EDUCATION (especially with regard to Agriculture), Wickham Market, Suffolk, under the immediate patronage of the Right Hon. Lord Rendlesham, M.P.; conducted by Mr. G. Downes. The Classical and Mathematical Branches are entrusted to a Gentleman, a Graduate of Cambridge; the Commercial and other departments to efficient assistant Masters. A Farm, Laboratory, &c., are attached to the School. Terms are moderate and inclusive, and may be known upon application to Mr. G. DOWNES, Wickham Market, Suffolk.

SHETLAND PONIES AND CATTLE.—Just landed, direct from Shetland, a quantity of very handsome small PONIES; also, from 8½ to 12 hands high. Also some very handsome small COWS and HEIFERS, down Calving, some with Calf by side, and in milk; also some small OXEN and SHEEP, for feeding. These Cows give a large quantity of milk for their size, which is very rich, similar to the Alderney, and they are very hardy and suitable to this climate. To be seen at THOMAS CATON'S, Salesman and Importer to her Majesty, 69, Wapping.

GALVANISED WIRE GAME NETTING.—6d. per yard, 2 feet wide.

	Galvanised.	Expanded Iron.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	6d. per yd.
2-inch ,, strong ,, ...	9 ,,	8½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ...	10 ,,	8 ,,
1½-inch ,, extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for greenaries, 8d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

CAMELLIA JAPONICA SEEDLINGS.

MESSRS. STANDISH AND NOBLE having still the largest stock in Europe of the above splendid tribe, beg to offer fine strong plants at the annexed low prices:—4 to 9 inches high, 2s. 6d. each, 20s. per dozen, 12l. 10s. per 100; 12 to 18 inches, 3s. each; 18 to 24 inches, 7s. 6d.; 24 to 36 inches, 10s. 6d., and upwards, according to size.

The present is the most suitable time for planting out, and every plant sent out by Messrs. S. and N. will be handsome, well-grown specimens.—Bagshot, Surrey, July 28.

BECK'S SEEDLING PELARGONIUMS of 1848, and older Varieties. A DESCRIPTIVE CATALOGUE of the above is now ready, and may be had on prepaid application, enclosing one postage stamp.

Worton Cottage, Isleworth, July 28.

The Gardeners' Chronicle.

SATURDAY, JULY 28, 1849.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY, Aug. 3—Botanical.....8 P.M.

COUNTRY SHOWS.—Tuesday, July 31: Erith Horticultural. Handsworth and Lozells Horticultural.—Tuesday and Wednesday, July 31 and Aug 1: Leeds Horticultural and Floral.—Wednesday, August 1: Meath Horticultural.

We lately endeavoured (page 403) to show that DECAY IN TIMBER is greatly promoted by dampness, and, on the other hand, retarded by dryness; and that, consequently, thorough seasoning, as well as felling at the time when wood is naturally driest, is among the best remedies for that terrible waste of wooden materials of which the nation so loudly complains. The more we study this question the stronger becomes the evidence that herein lies the great secret of rendering timber durable.

That winter is the best time for felling we hold to be certain, and the spring the worst, for reasons partly explained already, and to be further strengthened on some future occasion. For the moment let us confine ourselves to the mere question of seasoning.

By seasoning is meant the removal of watery matter from the interior of timber. As we have formerly shown, the natural agency of the foliage does this to a great extent; but a much greater degree of dryness is required than is thus producible. Leaves relieve timber of a large part of its water, but by no means of all. Drying rooms have been employed to aid in the operation, and, we doubt not, with much advantage. But here, again, we prefer natural agency, as the most effectual and the cheapest. What a drying-room will perform quickly the air itself will do as well, though slowly; and therefore seasoning can be always effected by mere exposure to currents of air, which gradually take up the moisture of timber and carry it away. Such seasoning, however, requires much time, and, in our railway days, is most imperfect. We cannot wait for 20 years before air-seasoned timber is employed in construction.

Different plans have therefore been proposed to accelerate the operation, among which that of stripping standing trees of their bark, and then allowing them to remain in their places till they have become apparently dry, has had most favour; no doubt, because it was thought that this plan would save both bark and timber. When young we remember to have seen hundreds of trees thus treated, disfiguring the county of Norfolk. In fact, the project is of old date. Whilst Sir SAMUEL BENTHAM was officially engaged in devising means for the better management of timber in the Royal Dockyards he learned that the experiment in question had been attempted on a large scale, about the middle of last century, in the New Forest, by order of the Navy Board, and that the Oak timber so prepared had been used in the construction of certain vessels. But although positive orders had been given to the dockyard officers to examine from time to time the state of that timber, and to report upon it to the Board, yet no record of the result of the experiment could be found by him in any of the dockyard books. We also learn from Mr. DYER, of Holloway, that 25 or 30 years ago Oak trees were barked and left to stand barkless in Alice Holt Forest, in Hampshire, situate near Bentley Green. All these experiments ended, we believe, in a conviction that no practical advantage whatever was derived from the process. Nor could there. We have not indeed any direct evidence upon the subject; but we have the assurance by Mr. JOHN BURRIDGE that the *Hawke*, built at Deptford in 1793 "with timber cut in spring (at bark-harvest) on one side, and on the other side with Oak that had been barked three years before it was felled in winter," was broken up in 1803, or only 10 years afterwards, both sides being equally rotten. Such a result is only what might have been anticipated.

Our ancestors did not season timber in this idle way. They left it, when introduced into buildings, in such a state that it could season where it stood; so that every year added something to its strength and powers of resisting decay. This, together with the period of felling, is the history of the imperishable quality of their timber. The roof of Westminster Hall dates from the time of RICHARD the Second, and still is sound. The wooden roof of York minster, constructed in the 13th and 14th centuries, is as sound as ever. So are the timbers of that Hospitium, constructed about the same period, which now stands as an ornament to the beautiful garden of the Yorkshire Philosophical Society. Let any one remember the state of the old doors, and the ancient pews of our village churches, and they will soon be convinced that to them age is no messenger of decay. It may be true that their date is often uncertain, but it so happens that we have positive evidence as to the great antiquity of some of them. So late as July 1847 the remains of the skins of Danish pirates were still fixed to the doors of the churches of Hadstock and Copford, in Essex; to which doors they had been nailed; the gentlemen having had the misfortune to be caught with the red hand, and to have been flayed alive. These doors must be 900 years old.

Now in all these cases the wood was left to season where it stood. Our forefathers never painted such wood—not that they were ignorant of the use of paint; it would seem, on the contrary, that they were well acquainted with the consequences of employing it. But all their beams, their roofs, their carvings, their doors, their wainscot linings, were of unpolluted Oak. In the places where such timber was laid, the air moved freely round it, and constantly removed its natural moisture; hence its durability. We, on the other hand, what is it that we do? We smear our timber with paint, coat upon coat, or with varnish; and thus, instead of leaving it to season where it stands, we enclose within it all the elements of decay. Whatever moisture there may have been in such timber is imprisoned from the moment that the paint touches it; and there it remains to engender corruption. The old architects left their church roofs bare; modern churchwardens bury them in paint or whitewash. It is the same with the old half-wooden houses still to be found in our ancient towns; their timbers were all naked till the progress of ignorance caused them to be painted and consigned to decay. In our ships the accuracy of the workmanship may contribute to the mischief, for they are so constructed now that no air can circulate between the timber sides in which the moisture is effectually shut up as if in a coat of paint. We will engage to say that the "*Great Harry*," the durability of which is matter of history, had no such advantages; and that she was much more like in her build the rude Chinese Junk with which sight-seers have made themselves familiar, air rushing between her timbers, and tight no where, except on the outside of the hull, where tightness is indispensable.

If we intend timber to last as it once did, we must abandon much of our modern frippery and be content to see wood as wood, and not as a greasy surface of coloured paint. Yet, as we said before, this is only a part of the question. Another, and a not less essential point remains for consideration.

DURING the late dry weather reports were everywhere most appalling respecting the prospects of the Hop-grower. Vermin, mould, mildew, fire-blast, and a host of other plagues were said to be at work, threatening a more or less complete destruction. A projected visit to a country abounding in Hop-gardens promised a good opportunity of studying the various diseases, and we take the earliest occasion of communicating the results of our observations. We found that the reports were scarcely exaggerated, and though refreshing showers were just succeeding the long drought, under the influence of which the bine seemed here and there breaking out into bur, and in the face of the old saying that before Saint James's Day (July 25), no one can tell whether there will be a crop or not, everyone seemed to think all hope of produce completely desperate. For ourselves, perhaps from ignorance, we were disposed to anticipate better things, and we should greatly rejoice to find our good wishes realised Be this, however, as it may, the evil has advanced so far, that if it is not cured by genial weather, it is too late to suggest for the present season any remedy; but it strikes us that something might be done at an earlier stage of the attack.

From the information we could collect the crop is subject to two principal diseases only, for which there are perhaps a dozen names: these two are vermin and mildew. One of these diseases only is at work during the present season, for the indications of mildew are quite trifling. Indeed, it was with difficulty that one or two specimens in a very early period of growth could be procured. Plants in every stage of destruction from the aphides or Hop-lice may be observed in every garden, some quite yellow and blasted, in which case the disease is called fire-blast, though it is no distinct disease, but merely a severe attack of aphides, which, in conjunction with the drought, exhausts completely all traces of verdure, and leaves nothing but a sickly yellow corpse behind. The only attempt at remedy, and that probably at a late period, is the lighting smouldering fires, with a view to suffocate the myriads of insects, but at the best this must be very imperfect, if it is not altogether useless. It strikes us, however, that much good might be effected when the attack is still recent, and the bine confined to the lower part of the poles, with few or scarcely any branches, by a modification of what we have described more than once under the name of the "Parapetticoat." There is no doubt that tobacco-smoke properly applied would greatly check, if not altogether remedy, the evil, and, in the early stages of the attack, no injury could occur to the short close bine; the only question would be one of expense, and we do not conceive that this would be so great as to make the remedy impracticable, especially if, in the case of its being found really efficient, some regulations could in consequence be made to permit the growth of Tobacco, duty free, for the especial object. Or the Tobacco now burnt in the "QUEEN'S Tobacco-pipe," in the Liverpool Docks, might be allowed to be sold for the use of Hop-growers. The fumigation, with a modification of the parapetticoat, might be tried on half a rood of ground, by some intelligent practical man, and we are most sanguine as to the results, especially if commenced on the first occurrence of the disease. It would probably be necessary to apply it more than once, and even were the fumigation of each individual cluster of Hop plants too expensive, we conceive that a smouldering heap of ignited Tobacco leaves might prove a great alleviation of the evil.

As regards the other disease which is sometimes so destructive to Hop gardens, viz. mildew, caused by a parasitic fungus, belonging to the genus Erysiphe, and in an early stage of growth presenting the characters of the genus Oidium, a species of which has of late been so destructive to Grapes, and of which an allied species is the much dreaded Peach Mildew, it is still a botanical doubt whether all these egg-seeded mildews are not simply early stages of the genus Erysiphe, as is certainly the case with that of the Hop; but be this as it may, the structure in either case is so exactly the same that we cannot doubt that the same treatment would be equally efficient. Now it is well known that sulphur is an approved remedy for Peach or Grape mildew; a reference to our columns is sufficient on this head. And if so, might not sulphur be used in the incipient Hop mildew with as complete success as with Grapes or Peaches? When once a whole crop is affected, all hope of remedy is useless; but were the case attacked on its first appearance, the result might be very favourable. We submit both cases alike to intelligent cultivators, the only persons who, from practical experience, interest, and opportunity, are capable of conducting such experiments. We would observe in conclusion, that the black or olive-green mould which is now spreading on the fire-blasted leaves, and indeed wherever the honey-dew is most abundant, is simply in consequence of disease. It is due to the well-known Cladosporium herbarum, a mould which appears more or less wherever organised bodies are in a state of disease or decay. *M. J. B.*

ON THE CONDITIONS ESSENTIAL TO THE MOST PERFECT CULTIVATION.—No. IX.

THERE was a great amount of truth in the reply of the farmer who, on being asked what was the first great principle in good husbandry, answered, "Drainage" And if this be true of agriculture (as most assuredly it is), how forcibly must it apply to its twin sister horticulture. Yet in the face of the most powerful arguments in favour of thorough drainage, there are those to be found who consider drainage in agriculture (except in extreme cases), as belonging to what they are pleased to designate, "new-fangled notions," and amongst gardeners, or more properly those who profess to be gardeners, may be selected men who look upon the drainage of a flower pot as the most efficacious method of stopping the hole at the bottom.

If any practical illustration was required to convince the most sceptical of the paramount importance of good drainage, a more eloquent one could not be selected than a waterlogged plant. I mean one in which the water can be detected in a pool upon the surface soil after watering. Its very weight betrays its soddened condition; but turn such a plant out of its pot, and let plain sober reason, apart from any scientific arguments, reply to the question—Is it possible for any plant to flourish in a medium like this? The moisture, unable to escape from the pots, has filled every pore of the soil, and it has become an air tight, soddened, unhealthy mass of mud, in which, were not the vital energies of plants miraculous, no organised body could vegetate—to grow is out of the question.

Admitting as it does of so few exceptions, it may be recognised as a rule that no plant can flourish in a soil saturated with stagnant moisture. Every other adjunct to successful cultivation may be present, yet if this one principle be lost sight of, disappointment and vexations will crowd thick upon us. Nothing will compensate for good drainage in the pot cultivation of plants. So thoroughly am I convinced of this, that I look upon every other necessary as subservient to it, and if

neglected, the most assiduous attention in other respects will meet with no reward.

Of course the degree of care required in the drainage of some plants will be totally unnecessary in others. Plants which occupy pots but for a temporary period, such as reserve stock for flower beds, or quickly growing and ephemeral specimens, will need little care in drainage matters; but hard-wooded plants, specimens which will have to pass through a long winter, and withal delicately organised, need every careful precaution in matters relating to the roots, for upon the healthful action of them depends the welfare and excellence of the whole plant. Drainage must not be considered as consisting merely of a quantity of porous materials placed at the bottom of a flower-pot, in order to afford a ready egress for superabundant moisture; it will be of little use to drain well unless we protect the drainage from the mechanical action of water during its percolation through the soil. In its passage it naturally holds in solution a considerable amount of earthy matters, and if no intervening substance be placed to act as a filter, the interstices of the drainage will be rapidly filled with the sediment, and quickly rendered useless. It will be understood, then, that one of the essentials, one of the indirect accessories of drainage, is a material so placed immediately between the soil and drainage that it shall completely separate the two, and effectually filter the water. It will be readily seen that where a plant is destined to occupy the same pot for two seasons too much care cannot be bestowed upon what I have termed the filter. Writers upon horticulture, and those of the first authority, too, do not hesitate to recommend turning out fine rooted plants merely to adjust the drainage, or to substitute new; but, with all deference, I think this a somewhat questionable practice, which should never be resorted to except in extreme cases. That an efficient drainage, to remain in perfect working action for two years, can be afforded a plant, will not, I think, be questioned, and in most cases precautions can be taken to prevent that drainage being rendered useless from external sources, as from the action of worms.

As it is necessary that the protecting material for the drainage should be free from any noxious ingredients, and, withal, possess antiseptic qualities, moss is pronounced by all as the most efficient material. Our common feather moss, Hypnum castrensis, is the most readily procured, and, being of a soft close texture, is an excellent filtering agent. Leaves are sometimes used, but from their readiness of decay are not to be recommended, except in cases where a quick removal is anticipated. However, if moss cannot be procured, fresh dry leaves may be used with advantage.

To allow a free and equal percolation of water through the soil in which the plant is placed, the latter must be of an uniform porosity. That this should be the case, if the welfare of the plant is considered paramount, there can be no question. The soil should be such as to allow the water to pass directly downward where it falls; it should not be obliged to seek escape between the soil and pot, leaving the interior of the mass untouched. It has been much the fashion of late to recommend soil for potting to be cut into "cubes," and in the process of "shifting" to be "well thrust down," the spaces to be filled with new soil. Of the practical application of this principle, and of its excellences, I leave others to speak; for myself, I should intimately incorporate the various ingredients of which a soil was to be composed. By so doing I should preserve the whole of its natural porosity, both water and roots would enjoy free passage, and atmospheric influences would experience every facility of admission. G.

ANCIENT TREES.

THE PESSINE OAK, *Chêne de Pessine.*—This Oak is near Saintes, Charente-Inférieure; and an interesting account of it by Dr. Dessaline d'Orbigny was published in the Annals of the Agricultural Society of Rochelle in 1842; but wishing to obtain more precise data, M. Dubreuil procured the following account from M. Moreau, librarian at Saintes: "I have just arrived from Pessine, and have inspected the ancient Oak, the Old Druillard or Druillard (a term in the country for certain kinds of Oaks), doubtless consecrated to Druid worship." It is situated near a village called Breuil. This word, if I mistake not, was used by the Celts to designate a small wood. There are many places so called in Saintonge, where there are many such woods, more especially in the commune of Pessine. The tree in question is the only one of the old forest which the hatchet has spared.

This tree is decrepid. Its trunk, almost completely hollow, has been mutilated by man and by time. A door and a window have been cut in its side; the opening above has been covered in with straw, which harmonises badly with the foliage. Its stem is partly in a watering-pool, and I attribute the prolongation of its existence to the moisture which it thus continually receives. The gathering of cattle that come to drink renders the approach odious. It was not always so; the proprietor formerly took more care of this old witness of human vicissitudes. He had fitted up the interior of the tree with a table and seats, and gave a collation to 17 young persons ranged inside.

Although the tree is thus hollow, and one side entirely dead, yet the other appears vigorous; and at the present time, beginning of April, whilst other Oaks do not exhibit signs of vegetation, this is remarkable for the size and abundance of its buds. [This may probably be owing to the large supply of liquid manure which it derives from the assemblage of cattle above mentioned.] I have measured the trunk, both interiorly and exteriorly. The table which I have seen in the centre is gone; there yet remains a stone bench which serves for a seat. Twelve persons may seat themselves with ease, and leave a space for twelve more in the centre. The greatest internal diameter at the ground is 9 feet 10 inches; it is much less at the height of 6½ feet. At this height, which is the smallest part of the trunk, the external circumference is 29 feet 8½ ins." The calculated age of the tree is 850 years. M. d'Orbigny estimates it at nearly 2000 years, but it appears that he calculated from incorrect measurements. *Notes sur l'Accroissement des Arbres Exogènes, par M. A. Dubreuil.* ||

DISEASES OF PLANTS.

(*Continued from page* 458.)

GENUS XIII. WEEPING; *a single species.*—There are some few plants which every year, at the return of the fine season, distil from their buds a quantity of lymph, which they are unable to distribute internally. It will actually drop only from vigorous individuals, and is scarcely perceptible in weak ones. At first I was unwilling to class amongst diseases of plants a phenomenon which is constant, especially in the Vine. But as a superabundance of this evacuation would be injurious to the plant, I have mentioned it here. It is important to the cultivators to know the period when it takes place, in order to avoid the inconveniences which may arise from it. A Vine grower, who has Vines with the sap ready to rise, if he delays the pruning too long, runs the risk of seeing the lymph, instead of flowing through the usual channel, and, after feeding the buds, rejecting only what is superfluous through those buds, flow from the wounds made in pruning, and thus waste a large quantity of precious matter. There are some few Willows and Birches, or Alders, which likewise emit from their buds a lymphatic juice, and on some very rare occasions they may be incommoded by it.

GENUS XIV. GUM; *a single species.*—By many the ulcer, which is the last fatal consequence of the disease which I here call *Gum*, is confounded with the malady itself. This consists in a superabundant quantity of gum, produced by excessive vegetation. It splits the strata of bark and epidermis, and presents itself in the form of larger or smaller lumps along the trunk and branches of trees. Stone-fruit trees are those most liable to be affected by it. The Plum tree, of all others, has appeared to me to suffer the most. The disease is always most dangerous at the renewal of the flow of the sap in summer.

The principles of this phenomenon are little known, and generally neglected. Sometimes it first shows itself on some young and very vigorous branch. It appears in the form of a blotch of a pale yellow colour. As soon as this shows itself, the branch should be immediately amputated below the spot, otherwise there is the most certain danger of seeing it soon spread and occupy the whole of the branch spotted. When it has attacked the trunk, or a main branch of the tree, the gum should be cut away with a pruning knife. If necessary, an incision must be made even through the wood itself to the root of the disease; then the wound must be treated as will be explained under the head of wounds. Practical observers inform us that, in many cases, these incisions will not suffice—the evil is constantly reproduced; in such cases we must conclude that the overrichness of the soil may be the cause. If that is matter of doubt, it must be investigated, even if the disease has only attacked some small twig. If confirmed, recourse must be had to such means as will diminish the fertility; such is transplanting, which is the surest plan, but not always practicable. In such case, it may answer the purpose to remove a great part of the rich soil from about the tree, and replace it by a poor sand.

I would observe that in the Almond, the Apricot, the Plum, and the Cherry, the effects of gum are less dangerous, although even among them many of the young shoots that may be observed to be dried up, owe their death to that cause. In the Peach, owing to its delicate constitution and soft texture, the deposit of gum is more prejudical. Therefore in all situations not very dry it is prudent to graft it on the Plum. It will be observed that the latter, and some others, are generally attacked by gum on their trunk, whilst in the Peach it is the branches. Injudicious and too frequent prunings may also be considered as injuries of which the gum may be one of the fatal consequences.

GENUS XV. RANKNESS; *a single species.*—The ancients, from the time of Theophrastus, have observed that Cerealia, especially Wheat, when grown in a soil either naturally very rich or which is made so by art, attain an extraordinary height and vigour. But after having displayed the great force of vegetation, they cannot maintain themselves upright, and consequently do not arrive at a full maturity. The plants are laid, the overloaded ears bend down, cannot reach to perfection, and are destroyed by their own vigour. And it is not only Cerealia and Grasses that are subject to this malady. I have observed many herbaceous plants vegetate luxuriantly, put forth their flowers, set their seeds, and then falling oppressed with their own weight, unable to ripen them, in the same manner as the Gramineæ above-mentioned. I add this observation, in order that it may not be objected to me, that this luxuriance is but a mere species of the Genus VII. (Sphrigosapanthesis), as might be supposed, were we to rest alone on what Theophrastus says, cap. vii. lib. viii. of his "Historia Plantarum," when he tells us of the method practised by the Babyloniens to prevent this evil. They are in the habit, he writes, of shortening their grain crops twice, causing them to be eaten down by their flocks. By this means they put forth their ears, otherwise they would only luxuriate in foliage. It is very possible that in those countries the grain crops thus affected may not form their ears, but then it would be a disease different from that of which I now speak, and which I have had occasion to observe in various natural orders very different from each other.

Art often combines with the natural condition of the soil in producing this malady. It is possible that in some cases lands first brought into cultivation, when nature has enriched them with the spoils of organised beings decomposed in the soil, may cause the crops to become rank. But I do not believe it to be so frequently the case as is supposed. In the province of Bologna, in those districts where hemp is one of the chief objects of cultivation, every year when a Wheat crop follows the hemp, which is always most profusely manured, it is mowed down once, twice, or even, I think, more, in the spring. This operation is called *svettare* (clipping). Were it neglected the Wheat would all be laid, and they would lose much of it.

The same course might be pursued in any case where it is feared that plants, luxuriating too much in the first period of their growth, may not succeed in ripening well their seeds. In the year when a hot autumn and mild winter cause plants to grow so much as to make them peculiarly liable to suffer by spring frosts, it may be of use to check this extraordinary vegetation by pruning. In this way I knew a lover of agricultural experiments save a Bean field which had put forth its flowers much before the usual time. The one-half which he had left untouched was destroyed by a hoar frost.

VILLA AND SUBURBAN GARDENING.

IN the midst of a profusion of floral beauty, and in the full enjoyment of the gay parterre, decked out in all the splendour which season, favourable circumstances, and skilful management can accomplish, we are apt to forget that much of this depends upon the foresight and timely preparation which is brought to bear at this particular period. Hence early propagation demands our especial attention. The villa gardener has more difficulties to contend with generally than the gardener of larger means, and one of his greatest difficulties is the wintering of his stock intended for the following year; that difficulty is enhanced by late propagation, because the plants are then but indifferently rooted. Their growth also is made at a late period of the season. The tissue is in consequence full of water, and the slightest frost bursts the juicy stems, and death is the result. Let me, therefore, earnestly impress upon amateurs the importance of commencing thus early with the propagation of Pelargoniums, Verbenas, Fuchsias, Calceolarias, and indeed all perennial plants destined to decorate the flower-garden.

The *modus operandi* at this season is simple and certain. A shady border should be selected; a few common hand-glasses will answer every purpose. Indeed, when shade is secured almost all soft-wooded plants will strike readily without any covering, and the less covering the better. As soon as they are well rooted, which will be in about six weeks, they should be potted into 3-inch pots, and kept in the shade until they are well established; when they are so, let them be gradually exposed to full sunshine, in order that they may become hard and firm in the stem. To aid this, little water should be given; in fact, no more than will just keep them alive. By this mode of treatment the watery juices will have been expelled, and the plant rendered firm in texture, hardy, and in a position to resist both cold and damp—the principal enemies of soft-wooded plants. Plants in beds will by this time have made ample growth to afford cuttings enough, without disfiguring the beds, or plants in the borders.

Let me further impress upon all interested in this matter how important it is in potting off the young struck plants to use soil which is either naturally light and sandy or rendered so artificially. Soil which holds the wet is certain death. Half an inch of fine, clean-washed gravel in the bottom of each pot, after placing a sherd over the hole, will secure the necessary conditions to success. *Pharo.*

Home Correspondence.

Cape Bulbs.—I am glad to see your correspondent "Micklewell" appear again in your pages, treating on Amaryllids. I have just now a bulb of Cyrtanthus obliquus, throwing up a strong flower-scape—the third specimen I have flowered in these 20 years, and I should much wish "Micklewell" to try its pollen on those Vallotas he mentions, particularly those grown in the cottage windows, as they are more likely to seed than those we cultivate with more care in gardens. I could send him some anthers in a letter, and if the Vallotas to be dusted were placed in a saucer of water as soon as the flower-scape appeared, it would assist the plants to make seeds. It would also be desirable to dust some with their own pollen, and if these did not seed nor those dusted by the pollen of Cyrtanthus, the question of the union of the two plants would still be left open. Dr. Herbert was long of opinion that the Vallota and the two evergreen Cyrtanthi would unite by their pollen, although in his arrangement he placed Gastronema between them. If "Micklewell" or any other of your readers happen to flower Brunsvigia Josephinæ this autumn, I would be much obliged by a few anthers of it, cut off before they open, and folded

in a packet of tissue paper to be sent in a letter, as I had lately to renew the border in which our plants of Josephinæ grew, and I fear this has disturbed their roots so much that they will not flower this season, although they ripened ample foliage. When these Brunsvigias are growing in a free border they gladly receive any amount of water and liquid manure, also from Christmas up to the beginning of May; and so do the Hæmanthi. I want the pollen of B. Josephinæ to see if I can push a cross between it and the Belladona; a cross which, I believe, has not yet been effected; but Dr. Herbert obtained seeds from Amaryllis blanda by the pollen of Josephinæ, and as A. blanda is hardly to be met with now, I should be content with a cross from the less showy Belladona. Another pollen I am most anxious to obtain is that of Gastronema clavatum, a little African Amaryllis which I could never flower, and which is often received among Cape bulbs under the name of Amaryllis pumilio, and is said never to produce more than two flowers on a scape, often only one. There is no question now but pollen, if carefully preserved, will retain its virtue for some years. It is more than 12 years since I stated that you might gather pollen on the alps of Thibet, carry it home safer than seeds from the same plant, and apply it successfully at home, and I have seen no reason yet to alter this opinion. If Dr. Hooker or Mr. Low had sent home the pollen of those beautiful Rhododendrons they met with in the east, there is no doubt but it would fertilise our hardier varieties here, and thus procure new crosses of great and general interest. *D. Beaton, The Gardens, Shrubland Park, Ipswich.*

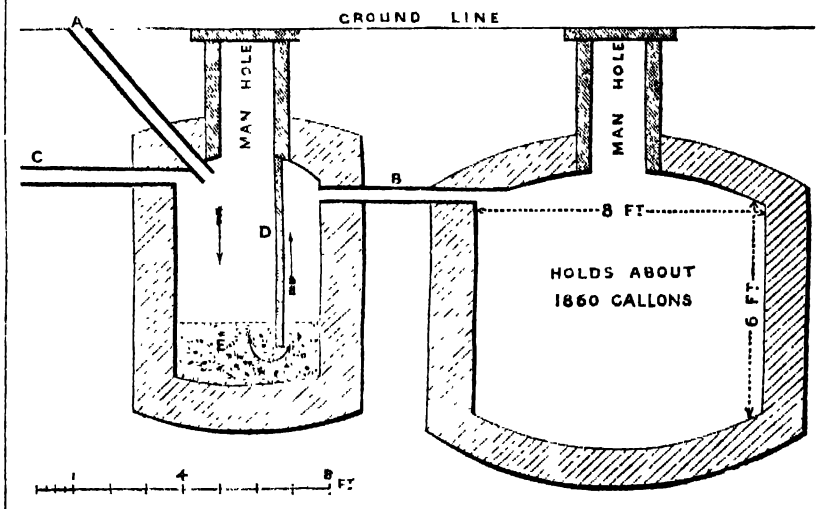
Roses.—"Devonian" states that he cannot get the larger Roses to blossom. Mine were in the same predicament in the early part of the year, but having repeatedly observed on a common near me a large accumulation of sheep droppings, where animals usually take shelter in bad weather, I had some collected, mixed it with a fair proportion of water, until the manure was well dissolved. The liquid was then applied to the roots of the Roses twice a week in rather strong doses, and by this means in the course of a fortnight the leaves assumed a rich, green, healthy hue, and the buds of all expanded beautifully, including La Reine and Souvenir de la Malmaison. It appeared as if the additional strength given to the plants by the liquid manure enabled them to throw off the green fly, or they ceased to give the peculiar nourishment suitable for it. *F. V., Ludlow.*

Polypodium Dryopteris and calcareum.—All our best British Botanists, from Sir J. E. Smith to Sir W. J. Hooker, Mr. Babington, and my neighbour the Rev. W. T. Bree, are, I believe, agreed as to Polypodium calcareum being specifically distinct from P. Dryopteris; and your correspondent, p. 454, will find—if he carefully watch his new supply of calcareum from Cheddar—that the difference between the two is not to be accounted for "by difference of soil." It is true that the calcareum has hitherto been found only in limestone districts, but it is a mistake to say that the Dryopteris is never found on limestone. Both species grow on the Mendip Hills, both in the neighbourhood of Matlock, both on Ingleborough. The latter habitat is given in "Newman" on an "authority in British Ferns, certainly inferior to no one's"—that of Mr. Wilson. Mr. Wilson says, "the two species are generally found in different habitats, but in a wood on the side of Ingleborough as you go to Weathercote, they are found in company." And he goes on to say that he has cultivated them, side by side, for years, with their respective characters unchanged. I, too, have grown both species, side by side, for years, and can testify with Mr. Wilson that they continue to be truly distinct. The plants of Dryopteris I brought from Craig Elachie in Strathspey in 1839; and those of calcareum from Matlock, Bath, and from rocks near Buxton, some before and some after that date. They are both planted amongst masses of red sandstone without a particle of limestone near them, and the calcareum grows so robustly as to indicate that limestone is not at all essential either to its vigour or to the maintenance of its distinguishing characters. It is not easy to understand how your correspondent's mistake has arisen as to his plants of "decided P. calcareum," of 1834 having become plants of P. Dryopteris in 1849; but as during those 15 years he was not observer sufficient to notice the supposed change going on, can he feel quite sure that the original plants from Cheddar were of the species "calcareum," or that his later plants from Northumberland are those of the Dryopteris? *W. T., Keresley, near Coventry.*

Josling's St. Alban's Grape.—I have two plants of this Grape, but I have no means of judging of its identity with the Chasselas Musqué. One of them is bearing a few bunches, and it appears to be a very bad setter, worse than the Muscats. I do not state this by way of complaint, but simply with a view to ask of your correspondents whether they have observed the same thing. Perhaps I have allowed it to bear too soon. *F. A.*

Compost Heaps.—I am glad to observe a leading article on compost heaps, with a promise of further attention to that subject. It has long been the wish of agriculturists to have experimental farms for testing composts, &c. The fact is, every farmer has a small experimental farm at his door, but he looks to you and well-educated gardeners for guidance and instruction. The gardeners of our country are well qualified to give aid, as they have advantages of education, and are accustomed to work neatly, and observe with nicety. A gardener raises crops which require no silica, a prevailing substance in farm-yard manure; he cultivates Peas and Beans, which require sulphate of lime; Turnips, which agree well with dissolved bones; the Cabbage family, which probably require the same manure. If bones give the Turnips an early start, may they not also start Cauliflowers, keep away the slug, &c., from them; and if they encourage blossoming, may they not enlarge the heads of Cauliflowers? I hope you agree with me that compound manures are most valuable for gardeners, both as to vegetables, flowers, and fruits, particularly as gardens are in general well drained, and do not require a bulky straw manure to keep them open when they are properly worked; in short, with a moderate supply of leaves and garden refuse, with 2*l.* or 3*l.* laid out in gypsum, bones, common salt, soot, and sulphate of ammonia, a gardener is independent of the farm-owner, except for his hot beds. *W. S., North Britain.*

Rain-water Tank Filter.—The following is a description of the filter attached to my underground tank. The tank itself is about 5 yards long, 10 feet wide, and 7 feet deep. The filter is attached to one end of it, and consists of a chamber as long as the tank is wide, the same depth as the tank, and about 4 feet 6 inches wide. It is divided into two equal parts by a wall, through which, at the bottom, is an opening about 12 inches high by 18 inches. Just above this opening is fixed in one of the compartments a false bottom of iron, perforated with half-inch holes, and upon that plate is packed the filtering material, as follows: 1st, coarse gravel, 2 feet; 2d, charcoal, 10 inches, upon which is spread a piece of coarse blanket or drugget, and upon that about 18 inches of fine gravel. Three similar layers may be placed in the other compartment, but I do not consider it necessary. Into this latter compartment the foul water from the roofs, &c., flows; it then passes through the opening in the partition wall into the other compartment, rises up through the false bottom and filtering materials, and flows through a delivery pipe into the tank. This pipe must of course be a little below the level of the supply pipe. The tank and filter are built of brick, and well cemented inside. The former is arched over. *T. W. S., Cheshire.*—I have had the following plan of a filter in use for some years, and the water is always sweet and fit for use. The filter requires to be cleaned once in the year. *J. H. N.*



Reference to Woodcut.—A, supply pipe; B, connecting pipe; C, waste-pipe; D, stone or brick tongue, built across filter tank to within 6 inches of the bottom; E, filter composed of gravel and charcoal.

The Cultivation and Forcing of Strawberries in Pots.—I commence in July by laying the earliest runners in 4-inch pots, placing a stone on each runner, to prevent it from being disturbed. I water when they are dry, and as soon as the plants become well rooted I repot them, placing one plant in the centre of each pot, which is 8 inches wide. The plants are then placed in an open situation on cinder ashes, with a view to prevent worms from creeping inside the pots. If the weather be hot and dry I sprinkle the plants daily, and when established with strong roots I occasionally give them a little clear manure water. They remain in this situation till November, when they are carried into the vacant houses (if any); if not, the pots are plunged in decayed tan, or cinder ashes, to prevent them from being broken by frost. I begin forcing in January by putting some of the plants into the early Peach-house, succession Pine-stove, or other houses where the temperature does not exceed 65° with artificial heat, nor fall lower than 45°. The pots are placed in pans partly filled with decayed dung, and as near the glass as is practicable. When symptoms of growth are perceptible, I fumigate two or three successive nights; for I invariably find that insects come to life at this stage of growth, and when young they are easily destroyed; but if allowed to infest the plants for weeks no after treatment will restore the plants to a healthy state, much less cause them to mature first-rate fruit. As soon as the plants have done flowering I remove the most forward of them into a higher temperature. The best situation I have found for the earliest crop is on a shelf at the back of a fruiting Pine-stove. I have grown them on a similar place in an early Vinery, but I do not approve of either situation, because I cannot have a suitable temperature, an essential point in forcing Strawberries. With respect to giving air, I prefer a constant supply both night and day, if the houses are so constructed that they warm it a little before it comes in contact with the plants. I can say little about soil; for I have hitherto not been able to procure much else than common garden mould. The varieties I force are Keens' Seedling and British Queen. *John Toy, Oatlands Palace Garden.*

A Three-tined Fork is recommended in a late number for field culture. In the south of France a tool of the same kind is in constant use in gardens, excepting that it has only two prongs, like the *bigot* used in the vineyard and field. These little *bigots* are in great variety as to size, length, and strength of prongs, and as to the cutting tool attached to them, resembling a spud; but all are exceedingly useful in loosening the ground between plants, particularly in the flower-garden. *B.*

Calanthe veratrifolia.—This is one of those delightful Orchids whose flowering season may be prolonged to an almost indefinite period, by removing it from the stove, on the expansion of its flowers, to a drier and cooler atmosphere. It is well adapted for the embellishments of sitting rooms, where its snow-white blossoms are preserved from damp spots, which an excess of cold or moisture readily produce. A plant has been in flower in the greenhouse here for a long time, and its blossoms are still pure and unspotted, and on several of its spikes the flowers are just beginning to open. Grown in moderate sized well drained pots, in rough fibrous peat, broken potsherds, and leaf-mould, in the atmosphere of a cool stove, it will readily produce flowers in abundance, which, by the mode I have described, may be preserved long in perfection. *Jas. Duncan, Basing Park, July 20.*

Hawks will prevent Sparrows from plundering Fruit.—Two years ago I reared two sparrow-hawks, and turned them out into our large walled garden, with clipped wings. The shrill chirping whistle they continually make so frightened off all the sparrows, throstles, and every other species of bird from the garden all the summer, that we at last destroyed the hawks, preferring the singing of the birds and the loss of a little fruit to the terrible silence that reigned in consequence of the desertion of the garden by the feathered tribe. The hawks were generally fed once a day with vermin or a little meat, which they came for regularly at a certain place. *T. U. Brocklehurst, jun., the Fence, Macclesfield.*

The Sparrow Nuisance.—"D." may save his Peas, and also enjoy his sparrow pudding, by the following plan: Early in spring, before the Peas are fit for use, begin to feed the sparrows in a secluded place, as far from the garden as possible, by throwing down a handful or two of Barley twice a day. Let this be continued regularly throughout the season, for if once the sparrows are driven to seek their food in the garden, it will be difficult to entice them from it. The efficacy of this plan I have tested this year in a place surrounded by woods. The early crops were quite unmolested until, on one unlucky day, the supply of food was withheld; the consequence of which was an immediate attack upon the Peas, which have not since been free from their ravages. When the birds are accustomed to the place in which they are fed, place the Barley in a wicker cage. Repeat this once a week (never shoot them), and thus the sparrows will be secured and the Peas saved. *J. E.*

Masses versus *Mixed Flower Beds.*—I feel greatly obliged by your elucidation of the principles on which the effective disposition of colour depends in a bouquet. It was this which I sought to have explained by your correspondent "E. X." He fears he may not make a convert of me. I rejoice that he regards me as a decided heretic, as far as his opinion, that mixture of an indiscriminate kind produces the greatest variety, is concerned. I fear that "E. X." must have the organ of combativeness developed in no small degree, when he deduces, from what I have said, that I think we have arrived at perfection in the art of gardening, and that we can go no further. I am at a loss to know from what passage that I ever wrote he collects materials for such an inference. It has ever been my endeavour to be associated with the ultra movement party as to gardening improvements, while I would not willingly discard old and cherished practices without duly investigating and weighing their merits. "E. X." says he knows nothing of the great authority of which I speak; it is that of Mr. Repton, and there never was a greater either in theory or practice. "E. X." has hitherto been *incognito*; but if he will have the kindness to favour me with his real name and address, I shall most willingly make a journey into Essex (with his permission) to see his "progress." Nuncham will at any time be open to his inspection, and I shall be most happy to give him practical illustration of the principles I have

attempted to advocate. If on examination of "E. X.'s" garden (which I trust he will accord to me) I see reason to think myself in error, I shall not shrink from acknowledging it—"*Palmam qui meruit ferat.*" The observations in your Leading Article as to the importance of breadth are, I think, of most material value. The beauty of many fine places is sadly marred by the dotting of insignificant plants over those broad spaces of open lawn, which the great practitioners of landscape gardening in former days had designed with such admirable fore-knowledge of effect. Your correspondent, "E. X" mentions a few flowers, which he thinks would compose a nosegay "fit for a Duchess." I will not oppose his recommendation in this matter, as I dislike those excessively artful monstrosities called nosegays, which it is now fashionable for ladies of rank to carry. I will, however, state for his information that some of these formidable bouquets are from 1 foot to 1 foot 6 inches in diameter, upon grand occasions, made upon wire, with the flowers arranged in different concentric circles of colour—from 40 to 60 or 70 Roses are frequently used in them. But this is one of the caprices of "despotic fashion," and may be truly called "*Horrendum, infame, ingens.*" I think that your correspondent's remark may have reference only to a cottage garden; if so, I should regard them as more pertinent. A gothic or Swiss cottage may with propriety be placed amidst the wildest and most romantic scenery of Nature. In such a situation, if a few flowers were introduced, I would adopt the *secundum naturam* principle (eschewing "the *ars Baileyi*"); but in the grounds immediately surrounding a classically designed and elegantly furnished mansion, I think it is right to extend the principle of artistic design to the flower garden, and would rather seek for than avoid the use of choice and valuable plants applicable for bedding, as tending to produce that unity of expression which should ever exist and characterise the residence of the man of rank and wealth, and in which the qualities of rarity and costliness are not to be lost sight of. Your correspondent says that "matters of taste are often as well understood by the peasant as the philosopher." His opinion is at variance with that of the author who says, that "the love of coarse pleasures distinguishes the multitude from the more polite classes of every nation." The inferior orders of society are therefore disqualified from deciding upon the merits of the fine arts; and this department of taste is consequently confined to persons enlightened by education, and conversant with the world, whose views of nature, of art, and of mankind are enlarged and elevated by an extensive range of observation. It is no argument against what is perfect (for the present age) in a style of gardening that it is too expensive for the resources of individuals. We are all creatures of circumstances, and must submit to the deprivation of what we cannot command. The peasant may know what is most suitable for his own garden, but is not in a position to say what is or is not most suitable for rank and wealth; it is beyond the limits of his conception. *Henry Bailey, Nuneham.*

Common Netting of a 2 or 3-inch mesh, stretched against a wall, forms a neat and cheap support for many climbing plants, Maurandyas for instance. *B.*

Chalk Beneficial to Lawns.—During the late hot and dry weather, the lawns in many places (particularly on the clays) have lost their verdure; but if chalk is laid on the soil about two inches in thickness, before laying down the turf, it will cause the turf to grow of a finer texture, and in a great measure prevent the sun from burning it. *G. Dyer, Holloway, July 23.*

Garden Gossip.—I know nothing of the capability of enduring the cold of winter possessed by Habrothamnus fasciculatus, as my plant is growing against the back of my conservatory, where it flowers tolerably well, but certainly not in the manner of the plant figured in one of the last numbers of the Transactions of the Horticultural Society. Habrothamnus elegans succeeds well with me against a south wall, where it flowers freely, and though inferior to H. fasciculatus, its foliage and habit are both better. Beside it, on the same wall, Jocroma tubulosa is 10 feet high, and coming into abundant bloom; its foliage and habit are, however, weedy, and detract from its value, though its porcelain blue flowers are very interesting. Can any cultivator give me hints respecting the management of Brugmansia sanguinea, against a conservative wall? I planted one in consequence of Mr. Paxton's encomiums on that at Chatsworth, but hitherto without any success; as, though it has grown immensely, and fills the recess allotted to it, its appearance is that of a rank gigantic weed, bearing few flowers, and those of an unusually dull hue; would root pruning check its luxuriance, and cause it to bloom freely? [You have got the wrong plant.] Would that beautiful fancy Geranium Unique succeed against a wall, and attain a height of 8 or 9 feet, if protected in winter? [No doubt.] I am glad that a discussion on the merits of Plumbago Larpentæ has commenced, and I hope all cultivators will record their experience of its merits: only two days ago I was informed by a respectable nurseryman that a bed of it was likely to succeed admirably in the garden of a noble lady in the east of this county; there, however, every plant succeeds that is capable of cultivation. If a plant do [illegible] the nursery of Messrs. Knight and Perry produced for [illegible] time more than 4000 flowers, it must be valuable. probably [illegible] Tacsonia manicata yet been figured? [No.] *A* [illegible]*ian.*

[illegible]—I have raised a Cistus from Italian seeds, [illegible] flowers 5 inches in diameter, and it produced one capsule of seeds, which I sowed, and from which I obtained several seedling plants; these produced three varieties, one large and peach-coloured, a second deep rose 4 inches in diameter, a third deep rose with a dark crimson spot at the base of the petals; its young wood is gummy. None produced white flowers. The parent grew near several common rosy flowered varieties in an open border; at some further distance is an old white spotted Cistus, which never produces seed. *John Street, Beil, Prestonkirk, East Lothian.*

Societies.

Royal South London Floricultural, *July* 25.—This Society held its fourth exhibition for the season, in the Surrey Zoological Gardens, on Wednesday last. The day was unfavourable, and there was but a thin attendance. The show itself was a good one.

In the Amateurs' Class, collections of 15 Stove and Greenhouse Plants were contributed by Messrs. Bruce, Cole, and Hamp, the prizes being awarded in the order in which the names stand. Mr. Bruce had good plants of Kalosanthes nitida, Leschenaultia formosa, Gompholobium polymorphum, Sollya linearis, Stephanotis floribunda, Astelma eximium, Torenia asiatica, and Erica Parmentieri rosea. Mr. Cole showed the pale yellow Allamanda grandiflora and A. cathartica, Cyrtoceras reflexum, the same Æchmea fulgens formerly exhibited, still in good condition, Astelma eximium, the beautiful Dipladenia crassinoda, Erica Savileana, and Crowea saligna, the latter insufficiently in flower. Mr. Hamp produced a well grown plant, sparingly bloomed, of Plumbago Larpentæ; also Lisianthus Russellianus, and Dipladenia crassinoda. The Nurserymen who showed in this class were Messrs. Pamplin and Pawley. A group of 9 Stove and Greenhouse Plants was contributed by Mr. Hook; and Mr. Cole had a good specimen plant of Dipladenia crassinoda.

Cape Heaths were numerous and fine. In the Nurserymen's Class collections were exhibited by Messrs. Fairbairn, Pamplin, and Pawley. In the first group we remarked nice plants of infundibuliformis, inflata alba, ampullacea obbata, Irbyana, Lee's tricolor, metulæflora bicolor, Jacksonii and eximia. The other groups consisted altogether of small plants. Amateur exhibitors of Heaths were Messrs. May, Williams, Cole, Leach, Smith, and others; among whose collections we remarked good plants of ferruginea, infundibuliformis, Ewerana, Irbyana, princeps, Savileana, a pretty Heath, and Wilsonii. The latter is one of the very largest flowered kinds we possess. We observed one or two excellently well grown specimen Heaths.

Fuchsias were shown in quantity. The best plants came from Mr. Shuckford, of Stockwell, who produced capital specimens trained to single stems, forming pyramids of flower, from 6 to 9 feet high. His varieties were Corallina, Napoleon, Exoniensis, Prince Albert, One in the Ring, Dr. Smith, Eximia, and Mead's Pomona. Mr. Robinson, of Pimlico, was second with Purity, Gigantea, Duke of Cornwall, Flavescens, Etoile de Versailles, Dr. Smith, Hebe, and Dreadnought. Mr. Vickery, of Brixton, was first among nurserymen, with Nymph, Queen Elizabeth, Eximia, Exquisite, Napoleon, Sanspareil, Dr. Jephson, Rosa elegans, Ne Plus Ultra, and Prince Albert. Mr. Smith, of Hornsey, showed a promising seedling named Kossuth, with crimson finely expanding calyx and violet corolla; and Mr. Kendall, of Stoke Newington, had three seedlings, one named Emperor, a large bold dark flowered sort, and two named Elizabeth and Mount Blanc, with light calices and violet corollas. Of these Elizabeth is the best.

Hollyhocks.—Mr. Chater exhibited spikes of these in beautiful condition. They consisted of Comet, a reddish-brown coloured seedling of 1848, with a closely packed spike of flowers 2 feet long; Pallida, lilac; Magnum Bonum, nearly black, an improvement on Black Prince; Formosa, crimson; Napoleon, buff; Queen, delicate pink; Purpurea elegans; Mulberry superb and Sulphurea.

Verbenas.—Mr. Ivery had a nice exhibition of these in pots. They were trained on horizontal wire trellises fastened to the tops of the pots, and with good effect. We did not observe anything very new among them.

The Exhibition of Carnations and Picotees was decidedly good. The new manner of showing them in boxes of a uniform size, and on cards, contributed much to the general effect. Instead of giving in full the names of the winning stands, we will notice the finest varieties in each class, selected from the entire exhibition. In Picotees there has been a great advance during the last two seasons; their delicate and even marking contrasts beautifully with the pure white grounds. Picotees are in this respect far in advance of Carnations; but for striking effect and brilliant colours the latter carry off the palm. Carnations.—The finest Scarlet Bizarres were Admiral Curzon, Splendid, Brutus, Lord Rancliffe, Puxley's Albert, Omnium Primum. Crimson Bizarres: Lord Milton, Count Pauline, Caliban, Mercutio, Thomas Hewlett, Vivid, Puxley's Queen, Paul Pry. Pink Bizarres: Sarah Payne, Puxley's Prince Albert, Twyford Perfection. Purple Flakes: Beauty of Woodhouse, Squire Meynell, Earl Spencer, May's Seedling, 1848, Premier, Squire Trow. Scarlet Flakes: Hollyoake's Dido, King of Scarlets, Holliday's Seedling, 1848, Bishop of Gloucester, Hardwick's Firebrand, May's Seedling, 1848. Rose Flakes: May's Lorenzo, Antonio, and Ariel, Princess Royal, Flora's Garland, Lady Ely, Lovely Ann, Ferdinand. Picotees.—Light rose: Mrs. Barnard, Lady Dacre, Lady A. Peel. Heavy rose: Venus, Princess Royal, Queen of Roses, [illegible]. Purple, light edge: Juliet, Regina, [illegible] of the Village, Enchantress, Amy, Duke of Newcastle. Heavy edge: Marris' Prince Albert, President, Portia, Olivia, Constance, Jessica, Lady Harriet Moore. Red, heavy edge: Marris' Prince of Wales, extra fine; King James, Isabella, Antagonist. Light red edge: Duchess of Sutherland, Jenny Lind, Ernest, the Gem.—*Seedling Carnations:* 1st class certificate to M. May, Esq., for Glendower, crimson bizarre, full size, and fine shape, colours beautifully distributed—good white; also to the same, for Falconbridge, a pink bizarre, with large finely shaped petals.—*Seedling Picotees:* Mr. Turner obtained three 1st class certificates, for Burroughes' Duchess of Sutherland, light red, very pure and well defined, noble petal; do., for Burroughes' Lorina, light purple, very double flower, well arranged petals, showing a very delicate edge to advantage, the white being very pure; do. for Turner's Lady Harriet Moore, heavy purple, large round petals, without bar or spots. Mr. Norman received a certificate for Prince Alfred, heavy purple, a pleasing flower in the way of Princess Alice, but larger. Mr. Newhall exhibited a heavy purple edged flower; and Mr. Edwards a very showy heavy scarlet edge, both good, and both deserving certificates, but did not obtain them. The Woolwich cup, open to amateurs only, for 12 Picotees, was awarded to Mr. May, for 12 beautifully grown flowers, mostly of that gentleman's own raising.—Carnations, 24 blooms. Nurserymen: 1st, Mr. Turner; 2d, Mr. Bragg; 3d, Mr. Ward; and 4th, Mr. Willmer. Amateurs: 1st, Mr. Edwards; 2d, Mr. Newhall; and 3d, Mr. Perkins.—Picotees, 24 blooms. Nurserymen: 1st, Mr. Turner; 2d, Mr. Norman; 3d, Mr. Bragg; and 4th, Mr. Ward. Amateurs: 1st, Mr. Lockner; 2d, Mr. Perkins; 3d, Mr. Newhall; 4th, Mr. Edwards; and 5th, Mr. Pond.—Mr. Edwards' prize for the best 6 yellow ground Picotees was awarded to Mr. Norman.

Cut Flowers and Roses were largely exhibited, and there were some Antirrhinums and Petunias. The best among the latter, to our taste, was "Youngii," a medium-sized purple variety, with a dark eye, from Mr. Young, of New Cross. Mr. Wood, of Norwood, had nice collections of Alpine and variegated plants, and there was some fruit.

Botanical of Edinburgh, *July* 12.—Dr. Balfour in the Chair. The following papers were read: 1. "*On Nostochineæ,*" by J. Ralfs, Esq.; 2. "*On the Chemical Composition of the fluid in the Ascidia of Nepenthes,*" by Dr. A. Voelcker, of Frankfort. The author stated that he had examined this fluid taken from Pitcher plants (Nepenthes distillatoria) supplied from the Royal Botanic Garden of Edinburgh, the Experimental Garden, the nursery of Messrs. J. Dickson and Sons, and the Royal Gardens at Kew. After detailing the observations made by previous chemists in regard to the watery secretions of plants, and noticing particularly the analysis of the fluid of Nepenthes made by Dr. Turner, he proceeded to give an account of his own researches. The quantity of solid matter, on evaporation, varied from 0.22 in 100 parts to .91. Dr. V. could not detect any oxalic acid, which Dr. Turner had stated to exist in the fluid supplied by Dr. Graham from the Edinburgh Botanic Garden. The solid matter, according to Dr. Voelcker, consists of,

Organic matter, chiefly malic and a little citric acid	38.61
Chloride of potassium	50.42
Soda	6.86
Lime	2.50
Magnesia	2.59
	100.57

Dr. Fleming called attention to the fact, that the young leaves of Barley distil a clear fluid from their extremities, which is generally called "dew" by farmers, but which has been shown to be an exhalation of the plant. He was not aware of any analysis having been made of it.—Dr. Balfour alluded to a similar phenomenon on the leaf of Richardia (Calla) Æthiopica; and Dr. Cleghorn made some remarks on the acid secretion (oxalic acid) of Cicer arietinum—the chick Pea, which he had often observed the Ryots collecting in India. 3. "*Notes of Excursions in the Neighbourhood of Edinburgh.*" By Dr. Balfour. He exhibited specimens of roots of an Ash which had penetrated tile-drains in Hampshire, filling them up completely for a great extent; and stated that similar occurrences had been observed in various parts of the country. The plants whose roots had penetrated were—Elm, Poplar, Willow, and Ash, Polygonum bistorta, Equisetum, and Tussilago farfara. The Bistort had been very troublesome in the Carse of Gowrie. Dr. B. exhibited the roots of an Alder which had been found by Mr. Gorrie penetrating into an old mine full of water, which were developed in a remarkable manner.—Dr. Neill stated that, 20 years ago, Mr. Riddock, of Falkirk, had transmitted to him a specimen of the root of Senecio Jacobæa, that had entered a drain by a very small orifice, but afterwards extended itself, completely filling the drain for about 20 feet.—Mr. W. Thomson referred to an instance which had come under his observation in Ayrshire, in which drains were completely obstructed at a place where they passed through a Larch plantation, the roots of the Larches having filled them up. Sir J. S. Forbes, in a letter addressed to Professor Balfour, gave some interesting particulars as to the water pipes which supply the village of New Pitsligo, Aberdeenshire. Part of these tile pipes, 3 inches bore, were laid about 40 years ago, overlapping 2½ inches, packed in clay throughout their whole length, and the joints filled with milled clay. The pipes are in general placed 3 feet

deep; but in [illegible] they [illegible] the surface, owing to the [illegible] points roots have entered. The roots [illegible] pipes outside, and never adhere to the tile. They run along the inside for 6 or 8 yards, and then become matted together so as to fill the pipes completely. The plants which have been observed to send their roots into the pipes are species of Rumex and Carduus, &c. The pipes require to be cleaned at least once in the season, which is done by a long wire with a screw at the end, which is twisted among the roots so as to break them up, and allow the loosened matter to pass out at the lowest level. Sir John sent a specimen of a root of the Gooseberry bush which had entered the pipes, where they passed through a garden. Dr. Balfour exhibited specimens of a peculiarly knotted stem of an Elm from Prestonhall. The leading stem had been broken off, and one of the side branches rising from a remarkably knotted base had become erect, giving the tree a peculiar aspect. All the branches of this new leader were covered with knots, while the other branches were free from them. The peculiarity was continued in plants raised from slips taken off the branch. Dr. Balfour also noticed the occurrence in Prestonhall grounds of a Mountain Ash, from which a large limb had been broken, splitting the tree so as to expose its centre, which is now covered with roots, sent down from the branches above. Dr. B. exhibited specimens of Sycamore roots, taken by Mr. Gorrie from very stony ground, which had become flattened and hollowed so as to embrace large stones at different points. The roots, when removed, carried the stones with them, and in some instances the stones were almost completely enveloped by the expanded continuous root.

4. "*Remarks on the Growth of Bambusa arundinacea*," by Mr. Robert Scott, communicated by R. M. Stark, Esq. The author had made observations on the growth of the Bamboo in the large conservatory at Chatsworth, and found that, after attaining a certain height, it increased very rapidly. Thus a specimen which appeared above ground on the 19th August, 1846, had attained the height of 8 feet by the 1st Sept., and its subsequent growth was as follows:

Date.	Height of Specimen.	Daily Growth.
September 1	8 feet	Nearly 7½ inches.
" 7	19 feet	1 foot 10 inches.
" 13	25 feet	1 foot.
" 30	42 feet	1 foot.

When cut down in December, 1847, the following were its measurements:

Number of internodes	32
Circumference of base	8 inches.
Do. of top	1½ inch.
Greatest circumference (at 8 feet 3 ins. from base)	9 inches.
Longest internode	1 foot 6 ins.
Shortest do. (being the lowest on the stem)	11 inches.

The temperature of the house during the growth was, maximum, 87 degrees; minimum, 60 degrees, Fahrenheit. The paper will appear in the Annals of Natural History, and the Society's Transactions.—Dr. Cleghorn, Madras Army, exhibited drawings of some interesting plants from Western Mysore. There was laid before the meeting a specimen of Mysore gamboge, with figures of Garcinia pictoria, Roxb., which furnishes it, and other Guttiferæ; also Xanthochymus pictorius, Roxb., &c. The analysis of Dr. Christison (with the opinion of the Bombay Chamber of Commerce), has established the value of this gamboge, whilst the testimony of several accurate observers prove that the tree is found in abundance at an elevation of 2000 to 3000 feet along a great portion of the Malabar Ghauts. The coffee planters have been seeking information, and it is expected that this hitherto neglected production of the forest may become an export of commercial importance from the western coast of the peninsula, rivalling Siam gamboge in the London Market. Mr. M'Nab exhibited a peculiar gelatinous matter, which continues to increase in a solution of sugar, and forms it into vinegar. In the course of a month the mass divides, forming two independent masses, each of which has the power of carrying on the process of converting saccharine solution into vinegar. The vinegar produced is excellent, and is the only kind used by several parties in Edinburgh. Mr. Evans exhibited plants of the Silesian Potato, a small Ranunculaceous plant, whose tubers have been used for food. Dr. Balfour exhibited male flowers of Pinus Lambertiana from Mr. Spiers, with whom this Pine is flowering—and stated that the same plant has likewise produced fertile flowers, and is in course of ripening seeds.

Garden Memoranda.

MESSRS. LANE'S NURSERY, GREAT BERKHAMPSTEAD.—The village of Great Berkhampstead lies towards the hollow of a long, rather narrow valley, through which the Grand Junction Canal passes, and near its north-west extremity is situated Messrs. Lane's nursery, about 10 minutes' walk from the Berkhampstead station on the London and Birmingham railway. The nursery, famous for its Roses, extends from the canal to near the top of the rather abruptly rising ground, and at its higher extremity commands an interesting view of the beautiful park scenery belonging to "The Castle," on the opposite side of the valley, while to the right and to the left stretches out a rich and varied country. That portion of the nursery immediately behind Mr. Lane's house is laid out in beds of Roses on Grass, and higher up are larger breadths of standard Roses, whose effect, when looked at under the influence of the morning or evening sun, is especially striking and beautiful. We noticed here a fine batch of that most brilliant of all Roses, Géant des Batailles, an acquisition which our gardens could now ill spare, for it is the first and the last Rose of the season in bloom. It succeeds well on both the Dog and Manetti Rose stocks. Contemporary with it, as regards its season of blooming, is our old friend Baronne Prevost, than which we know of no Rose so large and fine, and it is as sweet as the old Cabbage. Duchess of Sutherland, Jacques Lafitte, Madame Trudeaux, Queen, Reine des Fleurs, Robin Hood, than which there are few better Roses, Sidonie, Coupe de Hebe, and many others were also in flower here, and we should not forget Duchesse de Montpensier and Cymedor. The latter, though hardly double enough, deserves cultivation, even in small collections, on account of its colour, which is that of the Ten-week Stock. Du Petit Thouars is also a brilliant deep carmine Rose of great merit, and should not escape notice.

Further down the hill were some newly-formed beds, planted with Fabvier, dark crimson; Mrs. Bosanquet, creamy white; Souvenir de la Malmaison, white with blush centre; Géant des Batailles, and Baronne Prevost. These sorts, to which might be added Robin Hood, form beautiful self-coloured clumps, whose colours contrast well with one another. This mode of arrangement is far better than that of planting two or three Roses of different kinds in the same clump, for Roses so circumstanced generally associate but ill together, and therefore seldom exhibit unity of expression.

Our attention was next drawn to a row of pillar Roses of the Ayrshire and Sempervirens kinds, whose manifold uses in garden scenery are as yet but little understood. We last week pointed out the suitability of this class of Roses for, and the manner in which they may be made to, gladden the face of a barren bank otherwise uninviting, and under certain conditions they are no less useful in highly dressed ground. A circular clump of them supported some 5 or 6 feet high on stakes, so disposed as to form them into a dome, has a charming effect; they bloom most profusely, and are among the earliest of Roses. Such a clump should never receive more pruning than what is necessary to keep it within bounds. In another portion of the nursery Mr. Lane had, by the side of a Grass walk, a number of drooping or weeping standard Roses, varieties of the Ayrshire and Evergreen Rose (R. sempervirens), worked on tall stout stems, with their branches descending towards the ground. The effect of these weeping tree Roses is magnificent. The varieties treated in this manner here were Ruga, Thoresbyana, Garland, crimson Boursault, Banksiæflora, Myrianthes, Princess Louise, Donna Maria, and Laure Davoust. This latter is, however, somewhat tender; it succeeds best against a wall. Those weeping Roses, we believe, are never touched with the knife.

Along with a variety of others were the following promising new Roses: Etendard de Marengo, a brilliant carmine; Dr. Arnal, crimson, medium sized; Madame Pépin, blush; and Pauline Bonaparte, a white Perpetual, together with Paul Ricaut, a brilliant hybrid Bourbon Rose.

In a line parallel with the weeping Roses above alluded to Mr. Lane had planted various weeping forest trees, as Larch, Birch, English and Wych Elms, Ash, Poplar, Acacia, and the American Weeping Willow, a variety very different in appearance from our common Weeping Willow.

Among Conifers, of which there is here a nice collection; we noticed plants of Cryptomeria japonica nearly 8 feet high; Taxodium sempervirens of about a similar height; and large quantities of Abies Deodara, varying from 1 to 7 feet high. Specimen ornamental trees are planted by the side of a long walk here.

We are now beside the pits and glass houses, and will take a look at the Rose house, from which so many fine plants were brought in May and June to our metropolitan exhibitions. It is span-roofed, with a bed in its centre, in which the Roses are plunged in sawdust, and heated by means of a common brick flue running round it immediately within the walls. The bed is not warmed. It will thus be seen that the successful cultivation of the Rose in pots is attended with little expense, as far as the house and heating apparatus are concerned.

In addition to the home nursery, Mr. Lane has a large piece of land covered with Roses, and other nursery stock, on Berkhampstead common; and in the pure air which prevails here the Rose, as well as other shrubs, thrives admirably. No blight or aphis was to be seen, nor did we, indeed, see any in the home nursery. We observed here a nice plantation of Moss Rose Lanei, which is one of the best new dark mosses we have. Its colour is striking, and it possesses a delightful fragrance; associated with it were many thousands of autumnal flowering Roses in bloom. Young fruit trees were abundant, and there were large plantations of Rose stocks, which are now being budded; and here the Rhododendron and broad-leaved Kalmia flourish in pure loam—a circumstance which our readers far removed from peat will do well to remember; but, in order to make success the more certain, we would advise some well rotted leaf-mould to be mixed with the loam. In the same Nursery we remarked a large bed of Araucaria imbricata, consisting of plants from 2 to 3 feet high, in beautiful health. Messrs. Lane prefer plants treated in this manner to those grown in pots; and, to ensure their safe removal, they are transplanted every year.

MR. RIVERS' NURSERY, SAWBRIDGEWORTH.—In our notice of this Nursery last week, we stated inadvertently that Standard Hybrid Perpetual Roses were worked on the Manetti stock. Only dwarfs are at present worked on that stock, which seems highly favourable to many varieties, giving them a late autumnal growth and tendency to bloom. The following new Hybrid Perpetual Roses seemed very distinct and good: Standard of Marengo, raised by the person who raised Géant des Batailles, and which he stated would surpass it, a brilliant crimson Rose of the most perfect cupped shape, but not quite so full of petals as the Géant. Madame Guillot, deep pink, very double, and beautifully shaped. Dr. Arnal, a good Rose, like Madame Laffay in colour. Chateaubriand, of a bright glossy pink, scarcely double enough, still a very pretty Rose. Gen. Morangiez, a most profuse bloomer; deep rose, tinted with lilac. L'Inflexible, a very full Rose, cupped and finely shaped; colour, peach blossom. Madame Trudeaux, light brilliant crimson, a beautiful variety. Henry IV., bright pink, a very vigorous grower. Commandant Fournier, a very brilliant Rose, like Cymedor in not being very double; of a bright light crimson. Bouton de Flore, blush, blooming in very large clusters. La Gigantesque, a very large semi-double Rose, of a brilliant crimson. Jeanne d'Arc, a pale blush, and pretty variety.

Among the Bourbon Roses there is not much novelty. Menoux and Marquis de Moyria, brilliant crimson Roses, were finely in bloom; and Leveson Gower, a new rose-coloured variety, with flowers as large as Souvenir de la Malmaison, but it does not appear to open freely, at least in the summer months.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

AZALEAS which have completed their growth, and formed their flower-buds, may now have a slight shift, according to the instructions given in our Calendar some time back. This treatment will also answer for any hard-wooded plants in a similar state of maturity. Water must be liberally, but not lavishly supplied, taking into consideration the state and condition of each plant; many plants which are maturing their growth will soon require a less abundant supply, and particularly those which have bulbous or tuberous roots. Geraniums which have done blooming should be cut down and propagated; the old plants should be set in an open place, and after they have begun to break, they should be shaken out and potted in smaller pots. Conservatory climbers should be regularly attended to with regard to training, still leaving them to hang in graceful festoons from the roof. Maintain the plants in a healthy vigorous state by means of occasional waterings with liquid manure, as it is important by every possible means to provide an extensive in-doors display of floral beauty for the late autumn months, in order in some measure to compensate for the sudden prostration of that in the open garden, a circumstance which we may generally expect early in October. The syringe should now be used more sparingly, except in very fine weather, and it should at all times be applied sufficiently early to allow the superabundant moisture to pass off before night.

FORCING DEPARTMENT.

VINERIES.—Early Vines, which have completed their growth, ripened their leaves, and are showing an evident desire to go to rest, should have as much air as possible. If the amount of ventilation obtainable by means of front and top is insufficient, the lower ends of the front sashes should be tilted, so as to allow a free circulation of air to pass through the house. In very wet weather this plan is much to be preferred to that of throwing the top sashes open; the side, front, and back upright ventilators should stand wide open at all times. The outside border should be covered during heavy rain with a tarpauling. PEACH HOUSES, APRICOTS, AND CHERRIES.—Let no exertions be spared to keep the foliage clean and healthy as long as possible. Maintain a cool moist atmosphere, using a little fire in very wet weather only. Take care that the soil of the borders inside and out does not get so dry as to cause the plants to shed their leaves prematurely, and on the other hand do not allow it to get so wet as to induce the half ripened buds to burst; a medium condition should be aimed at. Where the fruit is not yet gathered, a rather drier atmosphere is required. FIGS.—Where these are now ripening the house must be kept somewhat drier; at the same time the state of the soil must be carefully watched, lest it get too dry, and cause the *swelling* fruit to drop off. Beware of red spider, which is particularly apt to establish itself at such a crisis, when the swelling fruits are making large demands upon the energies of the plants, thereby suspending in some measure the vigorous growth of the plant.

FLOWER GARDEN AND SHRUBBERY.

The late rains are causing everything to grow most vigorously, and numberless plants are demanding additional staking and tying, in order to prevent them from breaking down. The rainy weather has created an abundance of work, requiring immediate attention, and the only way to overcome it is to concentrate all available force, and to proceed with it in a progressive manner, taking care, by vigilant superintendence, that each portion is finished before another is commenced. Many beds and patches of early flowering annuals are now past their prime, and should be removed, filling their places with the gayest things that can be selected from the reserve garden. These matters should have immediate attention; for a garden should at all times, if possible, present a scene of progressive beauty, to

which and every effort should be made to conceal or alter anything which would give it a declining or fading appearance. Advantage should be taken of this favourable weather to do many jobs in the reserve garden, such as thinning and transplanting young annuals, biennials, and perennials, and various shrubs which stand too closely together in their seedling beds. The propagation of half hardy plants for next season should be commenced as soon as that of the hardier species mentioned in former weeks' Calendars is completed. The propagation of many plants, of which a great quantity is required, is sometimes rendered difficult by their tendency to produce nothing but flowering shoots; by cutting in a few of the plants very close this difficulty may be obviated, as they will thereby be induced to throw out strong young shoots, which strike with the greatest facility. This hint applies to Lobelias, Petunias, and many other plants of a similar character. While the shoots of these are preparing, operations may at once commence with scarlet Geraniums, which should be propagated early, in order to allow them time to become established and hardened before winter. They are easily propagated in any situation from a slight bottom heat to the front of a south wall; but attention to one point is indispensable: it is that the cuttings be planted in moderately moist soil or sand, and that they receive no water until they are cicatrised at bottom, after which there is little danger of decay. In whatever situation the pots or boxes may be plunged, a slight shading is necessary during strong sunshine.

FLORISTS' FLOWERS.

Carnations and Picotees. — These may now be layered, beginning with those which are the longest. After cutting away some of the lower leaves of each shoot to be operated on, slightly stir the surface-soil, on which may be placed some compost of decayed leaves, and either sandy soil or sand (a large handful under each layer); then divide the stem through one of the joints, leaving a tongue, which must have the "nib" cut off close to the joint; the layer may then be pegged down into the compost, just raising the point, so that it may be kept nearly erect. After each is fastened down, cover very slightly over where the incision has taken place, and water, to settle the soil. Another point of importance just now is the fertilisation or cross-breeding these flowers; if left to chance they will sometimes bear seed, but by far the best and safest way is to ensure it by fertilisation. On fine warm days examine the anthers, which are low down amongst the petals of the flowers, and those containing pollen must be extracted and applied to the pointals or "horns" (to use a technical term) of plants intended to be seeded. If this is done judiciously, selecting the best of each class for parents, a great improvement must soon take place in these popular and deservedly favourite flowers. Dahlias.—Liquid manure should be given occasionally, and especial care should be taken to fasten the side branches to neat sticks, in order not only to prevent them being twisted off by the wind, but to allow free access of the sun and air to all parts of the plant. Remove all semi-double flowers, and those having hard centres, as they show themselves. Attend to other flowers as recommended last week.

FRUIT GARDEN.

Advantage should be taken of this favourable weather to make new Strawberry beds. The ground intended for their cultivation, if vacant, should be immediately prepared by deeply trenching it and working in a good dressing of soot and rich manure. The earliest plants for the side runners should now be selected, and in separating them from the parent plants a few inches of the string should be retained, in order to assist in fixing the plant in the ground. The young shoots of fruit trees grafted in spring should be securely tied, or they will be very liable to split off in windy weather. In whatever method you intend to train them, commence at once, and fix this year's shoots in the most convenient directions; by attending to this matter immediately, an entire season is gained. For Pear trees, the shape now most popular is the pyramidal, and for Apples, the cylindrical. To produce the latter shape, the young shoots must be trained outwards horizontally, so as to form radii of a circle, upon the outside of which upright stakes must be fixed about 9 inches asunder to support the perpendicular branches; and when the latter have arrived at a convenient height for training and fruit gathering, their progress upwards should be stopped; the side shoots should be tied across from one upright to another, by means of which they will mutually support each other. In a few years' time the branches will have become sufficiently fixed to keep their proper shape without the assistance of stakes, which will of course be then removed. To produce pyramidal Pear trees, only one main shoot must be permitted to proceed, which will form the main stem of the tree; the growth of side shoots, especially of those towards the lower part of the tree, should be assisted and regulated by judicious stopping of any shoots which are progressing too rapidly for their neighbours. Suckers should be carefully removed from fruit trees of every description; it is not sufficient merely to cut them off level with the surface of soil, as such a mode of dealing with them only causes them to throw up a progeny ten times more numerous. To do the thing properly, the soil should be bared away, and the suckers traced back to their origin, and carefully removed with the point of a sharp knife. Budding may be performed on Apples, Pears, and on all kinds of stone fruit. Any inferior varieties upon the walls may, by this means, be replaced with better sorts, by using the inferior ones for stocks. Any young stocks which are fit for the purpose should be budded immediately, and, if they fail, the stocks can be cut down and grafted in spring.

State of the Weather near London, for the week ending July 26, 1849, as observed at the Horticultural Gardens, Chiswick.

July.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday .. 20	0.6	29.677	29.526	73	47	60.0	S.W.	.14
Satur. .. 21	1	29.982	29.831	69	44	56.5	W.	.00
Sunday . 22	2	30.055	29.959	69	56	62.5	S.E.	.00
Monday 23	3	29.768	29.556	67	48	57.5	S.	.40
Tues. .. 24	4	29.519	29.438	67	46	56.5	S.W.	1.18
Wed. .. 25	5	29.478	29.434	67	48	52.5	S.W.	.04
Thurs.... 26	6	29.626	29.549	74	47	60.5	S.	.46
Average ...		29.72?	29.612	69.4	48.0	58.7		2.20

July 20—Fine; dense masses of low white clouds; showery.
— 21—Cloudy throughout.
— 22—Very fine; densely overcast.
— 23—Rain; cloudy, with brisk south wind; heavy thunder showers.
— 24—Cloudy, heavy showers occasionally; excessively heavy rain at night.
— 25—Fine; showery; thunder 4—5 P.M., with heavy showers; cloudy.
— 26—Fine; showers; heavy thunder-storm in afternoon; cloudy and showery.

Mean temperature of the week, 4 deg below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Aug. 4, 1849.

July. and Aug.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 29	76.0	51.4	63.7	10	0.31 in.	1	1	4	2	2	7	4	3
Mon. 30	73.4	51.1	62.3	13	0.88	3	2	8	1	1	6	6	1
Tues 31	74.6	50.3	62.4	9	0.66	2	3	2	—	3	6	5	2
Wed. 1	75.7	51.3	63.5	10	1.23	1	2	4	2	3	6	5	—
Thurs. 2	75.1	53.2	64.2	12	0.65	1	3	2	—	7	5	3	2
Friday 3	74.3	52.1	63.2	13	1.03	3	2	1	1	2	9	4	1
Satur. 4	75.5	52.8	64.2	13	0.95	1	1	1	3	3	9	4	1

The highest temperature during the above period occurred on the 1st 1846—therm. 92 deg.; and the lowest on the 29th July, 1845, and 1st August, 1842—therm. 43 deg.

Notices to Correspondents.

Bees: *W G.* The uniting of your neighbour's bees to your own weak colonies, instead of destroying them, will answer well, especially if it is done a little before the end of the season. But in order to do the thing properly, you should have the hives brought in the evening near your own apiary; and you should be provided with a fumigation-box, or an empty hive will do, having a bit of burning fungus in a perforated tin box, with a handle stuck in the bottom of the inverted hive, beyond the reach of the bees. Place one of the hives over the burning stuff, and tie a cloth round both hives where they join, in order to prevent the escape of the bees. They will soon drop down stupified, at first making a noise like Peas falling on the floor of the hive; tap a little on the top hive, and when all is silent within, remove it. Shake the bees on a cloth, and spread them about with a feather, in order to find the queen, which should be destroyed. While that pursuit is going on, fumigate your own hive in the way described. Mix the whole of the bees in an empty hive, or on a cloth; see that there is only one queen amongst them. Place the storied hive over the whole, raised a little for air. Allow the bees to ascend during the night, and confine them until the afternoon of the next day. It may be needless to observe that your neighbour's bees will be of little or no use to you, if they have been previously nearly smoked to death by brimstone. *W.*

Books: *A would-be Botanist.* For European plants, Koch's "Flora Germanica;" for plants of all countries, Endlicher's "Genera Plantarum."

Dacrydium Franklinii: *J D.* We do not think this will bear any English climate, except that of Cornwall and Devonshire. It is only lately that it has been introduced: and even the discovery of its being the Huon Pine is of comparatively recent date.

Fruits for Shanghae: *T G, Clitheroe.* The following are selected as the most likely to succeed at that place. Pears: Jargonelle, Old Colmar, Crassane, Beurré Rance, Beurré Diel, Glout Morceau. Apples: Newtown Pippin, Male Carle, Court-pendu Plat, Gravenstein, Golden Pippin, Golden Reinette. Plums: Greengage, Washington, Impératrice, Blue Perdrigon. Cherries Florence, Bigarreau, May Duke, Late Duke. Maiden plants may be planted in a glazed case, as soon as the trees are fit to remove in October.‖

Greenhouse Climbers: *B B B.* To those you have, add Mandevilla suaveolens, white; Kennedya Marryattæ, red; Hardenbergia macrophylla, purplish blue; Clematis azurea grandiflora; Tecoma jasminoides, white, rosy eye; and Dolichos lignosus, pink. ‡

Insects: *W S.* The insect sent is not a wireworm, which is the larva of a species of Elater, and consequently unable to produce young. It is the larva of one of the large Staphylinidæ, which feeds on ground insects; and the small white insects attached to it are not its young, but the pupæ of a parasitic ichneumon (Proctotrupes), which have destroyed it. *W.—Index.* The wasp-like insect is one of the solitary wood wasps, Crabro cephalotes. The flies are laid up in store in its nest for food of its progeny. *W.—A M.* Next week.

Labels *Ly J W.* It is not probable that any fluid preparation will adhere permanently to the China tablets. They will not absorb ink with any force, and therefore writing is soon obliterated. Perhaps such Cedar-pencils as are sometimes sold, as large as small rulers, with thick soft black-lead, might answer. We have, however, long ago discontinued the use of these tablets. Those who sell them ought to be called upon to furnish the materials for writing with. Do they not?

Liquid Manure: *A Z.* Pump it into any covered reservoir among charcoal-dust, and leave it there till the smell is gone. Charcoal-dust is invaluable. Fine coke-dust is better than nothing; even peat may be used.

Melons: *P H.* Your note does not explain the history of your young Melons dropping. You say that they are carefully set; if this be so, then the cause may be that you attempt to make your Melons swell before the Vines are strong enough to feed them. Melons will not bear until their branches have attained strength and firmness. A smoke flue is as good as anything for the purpose described.—*H Bundy* The error in the name of your Brombam Hall variety is now corrected. We had no personal opportunity of judging of its qualities, but the judges must have entertained a high opinion of it to have awarded the Silver Knightian medal to it, when there were so many competitors. If an opportunity is afforded us we will report specially upon it.

Names of Plants: *Inquirer.* 1, Statice Limonium; 2, the same, with narrower leaves, or, perhaps, S. spathulata, but the three ribs are not visible; 3, Sedum Forsterianum. Take out Black Poplar, Witch Elm, Sycamore, every one of them. —*L S T.* 1, Statice spathulata; 2, Statice reticulata; 3, Teucrium Scordium; 4, Samolus Valerandi.—*E Franklyn.* Apparently a morsel of some Cape Podalyria, and if so, a greenhouse plant of little beauty.—*J H W.* 1, Celsia Arcturus; 2, Lychnis Chalcedonica; 3, Salvia Horminum; 4, Potentilla insignis; 5, Pentstemon angustifolius; 6, Centranthus ruber; 7, Mimulus cardinalis. Turn your dung bed over, or add fresh linings. A handful of guano to a large watering-pot full of water.—*H W J.* Dendrobium moschatum, and some Cheilanthes, too young for determination.—*J Johnson.* Your Yorkshire Sheep Grass, from the mudlands of the Humber, is Poa maritima.—*A Z.* 1, Circæa lutetiana; 2, Geranium sanguineum; 3, Epilobium montanum; 4, Agrostis vulgaris; 5, Holcus lanatus.—*M H A.* 1, Trifolium minus; 2, Veronica Chamædrys; 3, Equisetum sylvaticum; 4, Polygala vulgaris; 5, Sanicula europæa; 6, Stellaria graminea; 7, Cardamine pratensis; 8, Ajuga reptans; 9, Ranunculus hirsutus; 10, apparently a morsel of Celastrus scandens; 11, Aira cæspitosa; 12, the same, but younger.—*An old Sub.* The parasite that has attacked your Pear trees is Dothidea collinsiana. Its cause and cure are equally unknown. The Grapes are mildewed; that might have been prevented by the application of flowers of sulphur when the mildew first appeared.—*H B.* A, Leptospermum flavescens; B, Cleome violacea.—*G L.* The little Orchid is a Brassavola near retusa, but perhaps new. Whence does it come? You should always state that.—*W Barnes.* The preceding lists must show you that we are willing to consume time even in the answer of inquiries about the names of the commonest plants. But what are we to do with your bundle, 17 inches long, 9 inches broad, and 8 inches deep, filled with the commonest productions of the fields and hedgerows. To this application we must reply that we cannot help those who make no attempt to help themselves. Apply your understanding to the study of elementary botany. Make yourself master of Lindley's "School Botany;" next procure Babington's "Manual," and then when you meet with *difficulties*, we shall be most happy to solve them. Having said this we will give you next week the names of such as there is the least difficulty in identifying.

Pelargoniums: *S C.* No; the over luxuriance of your Pelargoniums is no doubt the cause of their not flowering well. With such rich soil as yours is, guano-water was unnecessary. It was probably that which did the mischief; we would advise you to be more sparing of it next year. Tobacco smoke effectually destroys green fly.‡

Roses: *A H.* Robin Hood and Jacques Laffitte are two of the finest red Hybrid Perpetuals.‡

Rough Plate Glass: *X Y.* It is a very good sample, and will suit your purpose perfectly. ‡

Stove Climbers: *B B B.* Stephanotis floribunda, white; Combretum purpureum, red; Bignonia venusta, orange; Dipladenia crassinoda, pink; and Allamanda cathartica, yellow. ‡

Tools: *Mrs S R.* The pickfork is not yet in the trade; but any village blacksmith will make one if he is furnished with the figure and description which we have published.

Torenia asiatica: *A B.* It does not succeed well out of doors. The best place for it is a rather warm moist greenhouse or a stove. It is a plant of easy cultivation. Peat and loam, with a little sand, suit it ‡

Wardian Cases: *L.* Your air is much too damp; ventilate them well every day till the mouldiness disappears.

Misc.: *Constant Reader.* We fear that your soil is either surcharged with moisture or that your garden is much shaded, and as a consequence the wood of your Ceanothus and Roses does not become sufficiently ripened to bear flowers. It might be well to cut out a good portion of the shoots now, in order that the others might be benefited by more thorough exposure to sun and air. The shoots of the Roses may be slightly shortened in November. If your soil is wet the surest road to success is to drain it ‡—*J H W.* We make it a rule never to recommend dealers.‡—*B R J.* The common Dock is a perennial.‡—*A nine years' Sub.* Surely you are not in earnest in requesting us to inform you what stock you, as a nurseryman, are to grow. If you understand the business, you must know better than we do; if you do not understand it, then let us seriously advise you not to think of embarking your capital in such a business.—*A Sub., Dysart.* Much obliged; but we never publish such papers unless they proceed from our own reporters, even if we had space for long statements interesting to none but the parties concerned.—*W.* Helianthemum ocymoides, algarvense and others are yellow with a dark eye; Cistus purpureus is purple with a dark eye. Cistus libanensis is probably an error for Libanotis. About Cistus ovatus we know nothing.

SEEDLING FLOWERS.

Calceolarias: *T W.* 1, pale yellow, irregularly blotched in the centre with purplish crimson; size small, shape flat, outline indented. 2, bright yellow, irregularly blotched or spotted with pale brown; shape, colours, and outline tolerably good, but the size is much too small. 3, pale yellow, with a few rather large shaded purple spots; size and colours good, outline indented, shape only middling. 4, pale yellow, marbled with dull purple in the centre; shape and outline tolerably good, size rather small. 5, bright yellow, blotched with dull brown; size and outline tolerably good, shape rather flat and crumply, a pretty bright-coloured variety. 6, brownish purple, thinly marbled with pale yellow; size large, outline good, shape rather flat and fluted on the upper side. 7, pale yellow, irregularly blotched or spotted with purplish crimson; shape and outline bad, size too small.*

Fuchsias: *T W.* Yours are superior to the common run of seedlings; some however are not sufficiently distinct from those already in cultivation. Amongst the dark-coloured ones, 6 is the best, with a bright tube and dark corolla; 1 and 3 are similar in size and shape, but less intense in colours; 8 has a fine large corolla; 8 and 12 are pretty, and, although short in the tube, desirable; 2 is not distinct enough, either in colours, shape, or size from others now in cultivation; 10 is a nice high-coloured variety, with the foliage and veins stained with deep purple, a new feature, and very desirable in the foliage of the Fuchsia. In the lighter-coloured varieties, 15, with its long flesh-coloured tube and orange scarlet corolla, is the most distinct and novel; 13 is a fine bold flower, but not distinct enough in colours; 7 and 14 are nice large-flowered varieties, good in texture and colours, particularly 7; 4 is a neat variety, with well contrasted colours and good texture; 5 is short in the tube, reflexed and common in colour; 11, tube rather short, with well contrasted colours and ample corolla, a nice variety.*

Gloxinia: *G H N.* Flowers pale blush, with a crimson stripe on the inside of the lower lip; size and colour good, and rather distinct; shape angular and bad.*

Heartsease: *Z Z.* Upper petals violet purple, lower ones the same colour, with a circular pale straw-coloured band towards the centre, within which are three violet feathery spots; size, shape, substance, and marking good.*

Heliotrope: *W J W.* Apparently a good robust variety, with rather larger flowers and foliage than the old sort; very fragrant.*

Passionflowers: *V N.* Colours dull; certainly inferior to its parents.*

Pelargoniums: *S F.* Upper petals dark crimson in the centre, fading to a bright rosy red near the outside, and margined with pale flesh colour, lower petals pale rose, fading to white near the base; size, substance, and margin good; colours common; shading and marking undecided.* — *Cantium.* Upper petals dark crimson in the centre, margined with rosy purple, and slightly veined near the base, lower petals rosy red; substance good, margin even, colours bright; size much too small for a show variety.*

Roses: *C.* Petals pale rosy lilac, incurved, well defined near the margin, broad and nicely filled up in the centre in the specimen sent; a fragrant and free blooming variety. Your other seedling was all to pieces when received.*

Sweet Williams: *Hardy and Son.* Among them are some very fine varieties, particularly the double ones with different shades of purple or pink in the centre, and white margins. Some of the single varieties are also good. If you had numbered them we could have pointed out the most desirable sorts. Some of the single kinds are very inferior.*

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

The Summer Session will commence on Saturday, the 11th of August, 1849. All New Students are required to attend for examination on the preceding day. Those who purpose entering as Students for the ensuing session are requested to apply (either by letter or personally) to the Principal, at the College, Cirencester, Gloucestershire, for the necessary admission papers. PHILIP BOWEN, Secretary.

London Office, 26, King William-street, West Strand.

TO ORCHID GROWERS.

BURBIDGE AND HEALY, 130, Fleet-street, respectfully call attention to their method of warming Orchid Houses. They have had the honour of warming the Orchid Houses at the undermentioned places:

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick, additions to the House.
Also the Orchid Houses of the following distinguished growers of this interesting class of plants.
The Bishop of Winchester, Farnham Castle.
S. Lyons, Esq., Ladiston.
J. Warner, Esq., Hoddesdon.
Messrs. Henderson, Pine-apple Place.
J. Schröder, Esq., Stratford.
R. Hanbury, Esq., Poles, near Ware.
W. Webb, Esq., Clapham.

The Agricultural Gazette.

SATURDAY, JULY 28, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, July 31—Agricultural Society of England.
TUESDAY, — 31 } Meeting of the Yorkshire Agricultural
WEDNESDAY, Aug. 1 } Society at Leeds.
THURSDAY, — 2—Agricultural Imp. Society of Ireland.
SATURDAY, — 4—Agricultural Society of England.
TUESDAY, — 7 }
WEDNESDAY, — 8 } Great Meeting at Dublin of the Agricultural Imp. Society of Ireland.
THURSDAY, — 9 }

FARMERS' CLUBS.—Aug. 2: Otterу St. Mary.—Aug. 4: Newcastle, York.—Aug. 7: South Devon.—Aug. 8: Furness.

We beg our readers to look at the report, in another column, of the HIGHLAND SOCIETY'S LATE HALF-YEARLY MEETING AT EDINBURGH; and they should especially take notice of the report and speeches connected with the chemical department.

Mr. FINNIE'S remarks on the practical advantages derivable to the farmer from the means which agricultural chemistry supplies are suggested by his own experience, and ought to be read by all practical agriculturists. They would see from them that there is no better business investment than that which goes to the support of efficient chemical aid against the fraudulent dealer in agricultural stores. The chemical department of the Highland Society has not yet received that aid which it deserves. We hope the statements on behalf of it made at the meeting referred to, will open the eyes of some who have hitherto stood aloof, and induce them to come forward in its support.

THE following remarks are not published to encourage a controversy which has, we submit, already been pushed to its limits. The question whether, other things being equal, larger produce may be grown on STEEP or LEVEL LAND is not of such importance as to justify the weekly abstraction of a column for its discussion, from the few we have to fill. It is certainly, however, of *some* importance; for though, whatever be the decision arrived at, we shall not be able, in accordance with it, either to level our hilly or elevate our level districts, yet the arguments which affect it also illustrate the practices on the one hand of ploughing land into high ridges, and on the other of using the turn-rest plough on the flat; and for these reasons we must attempt to justify the opinion we have already expressed on the subject at page 379.

The question must be decided, we imagine, by reference to such practices as those alluded to, and not by taking any such extraordinary instance as that of land steep as a staircase. We do not deny that there are some kinds of plants that will grow more largely on the steep surface than upon the smaller extent of its horizontal ground plan. Lichens, for instance, will cling to a vertical wall, whose ground plan is a mere line; but, with the French Professor alluded to by Mr. CHAYTOR, we believe that while some flat-growing plants may perhaps yield a larger produce upon the greater extent of the inclined surface, no greater yield can be expected from plants with vertical stems, such as high hay-Grass, corn, or trees. Of course we do not deny that good land on the slope will yield better than its ground plan extent of poor land on the level—that *would* be absurd; and yet it is to a defence of this undeniable proposition that Mr. CHAYTOR has devoted a large portion of his argument. And if he contends that it is the natural tendency of slopes to become covered with a better soil than that which covers flats, then we must altogether differ from him. A flat may be at the head or at the foot of a slope; in the former case, the fields are not robbed by the floods, as those on the slopes below them are, and in the latter not only does the flood not rob them, but it brings them much fertilising matter, at the expense of the slopes above them.

There certainly is one point to which Mr. CHAYTOR alludes with great originality and some force. The plants on the slope, he says, whatever their condition may be as to soil, have the advantage of a greater surface exposed to air. But what becomes of this idea, if we consider whether it be the extent of foliage immersed in air or the amount of sunshine lighting on the extent thus immersed, that is the material point? If the former, we are still at issue, for we believe that the extent immersed is not necessarily greater in the one case than in the other; if the latter, he cannot claim superiority over us; for the quantity of sunshine lighting on the surface of a district is none the greater for that district being broken up into hills and valleys. And we must remember, in choosing the slope and the flat on which to try this question, to select neither a southern nor a northern aspect; the right thing would be, to compare two similar circles of equal diameter, the one level and the other surmounted by a conical hill. In reference to the idea of more atmospheric food reaching the hill plants, we may also observe that the effect of winds, which bring this food to the leaves, must very much equalise any differences between the two cases that might otherwise occur to the observer; currents of air, it may be assumed in the case of cultivable slopes, take just as long, and not longer, to traverse the ascent as they do to pass over the horizontal surface on which it stands.

The question for discussion is—taking a piece of originally level land, forced upwards from below into hill and valley—whether with the greater superficial surface it has thus acquired, and altered in that alone, it will yield larger produce to the husbandman under the same treatment which it had previously received. We consider the true answer is in the negative: there is the same soil to feed the plants—a little consideration shows that it has just the same vertical depth as formerly—there is just the same sunshine as there was—there is the same air surface, whether the leaves be considered or the passing breeze which fans them; and we believe that no greater number of upright plants can be grown in the one case than in the other. If they could, there is not more food for them; but we believe they cannot. Mr. CHAYTOR admits, as must everyone else, that no more houses can be built in the one case than in the other; but the argument, he says, is not affected by this—"*they* can be placed in close contact and all the space filled up, but I never met with any man," he says, "who had seen trees or corn, or any vegetable crop, with the stems all touching each other." We think, nevertheless, that the comparison is perfectly just. Philosophers tell us that there is no such thing as absolute contact—that what we call touch is produced by that repulsion which exists between bodies forced upon one another: the greater the pressure the nearer the particles are forced, and the denser they collectively become—a thing which could not be if there were absolute contact to begin with. Just so with the stems of trees or of Wheat—Mr. CHAYTOR has certainly seen before now the attempt at pressure in these cases pushed to its limit—and the natural thinnings of our Larch plantations and of our thick sown grain crops; the numbers of stalks which perish in the struggle for existence, prove that here there is as much of absolute contact between the stems of adjacent plants as there is between the bricks of adjacent houses. Let the practice of thick sowing be adopted in either case, and so the contact of stems thus produced be obtained both on the steep and on the level land, and there will be just as many of them, and no more, on the one as on the other. Of course the steep land farmer may sow less grain if he chooses, and he may differ in any other particulars of cultivation he pleases from his neighbour on the flat—we will not answer for the effect of *that*: but let them both adopt precisely similar methods relatively to their respective ground plans; let them use the same quantity of seed, on surfaces—in rows, at distances—equal to one another *in the horizontal*, and, if they do not differ in other respects, we will answer for it they will not differ in their produce. They will differ in this—that the steep land farmer, though, by supposition, he has no more soil to turn over, will find it more difficult to accomplish, owing to the ascent up which he has to pull his machines and his manure—and they will especially differ in this that the rains will, unless at great labour they be prevented, eventually wash the soil from the one to the other. Have these differences had no influence in practice—have practical farmers "in the ofttimes struggle to live" never perceived it?—undoubtedly they have; and other things being equal, a steep field is not worth so much to rent as a flat one. Have these differences had the influence they ought to exert on the minds of flat land farmers, and checked that practice of ploughing clay lands into enormous ridges, such as are to be seen in some parts of Gloucestershire and Worcestershire? There may be no greater labour on account of the slope thus artificially created, and you may depend upon it there is no greater produce because of the greater surface exposed—but there is the mischief common both to the natural and the artificial cases—that every flood washes away some of the best of the soil and carries it by the nearest gutter out of the field. It is only in so far as the question considered can by its decision influence our practice that its discussion is useful. We cannot cause the valleys to be exalted or the mountains and hills to be made low in order to carry out our decision, which is, *pro tanto*, in favour of level land—but we can put a stop to that artificial process of high ridge-erection which has disfigured so many of our fields; and which has injured them too, for the process of surface drainage it facilitates is mischievous, and that of under drainage which might most usefully supplant it is hindered by it, not assisted.

In conclusion we add that, however fully we may consider this subject to have been already discussed, we are far from wishing to claim the last word upon it: we only suggest that if the discussion be continued, our correspondents should endeavour to make more of it than the determination of a merely amusing question.

ROYAL AGRICULTURAL COLLEGE.

LIST OF PRIZEMEN AT GENERAL SESSIONAL EXAMINATION, JUNE 1849.

AGRICULTURE—1. T. W. Mayo, of Yeovil; 2. V. Rise, London.
CHEMISTRY—1. T. R. Luzmore, of Liverpool; 2. C. Lethbridge, Exeter.
NATURAL HISTORY—1. R. Holland, of Mobberley; 2. T. W. Mayo, Yeovil; and E. J. Lambert, Clifton.
VETERINARY PRACTICE—1. G. Nicholls, of Wraxall; 2. H. J. Carter, Coventry.
MATHEMATICS, &c.—1. R. Holland, of Mobberley; 2. V. Rice, London.
SURVEYING AND ENGINEERING—1. V. Rice, of London; 2. J. S. Clarke, Teddington.

JOHN WILSON, *Principal, July* 9, 1849.

FARMERS' PROSPECTS.

In my last communication I endeavoured to show, by reference to details, that free foreign competition, however greatly it may reduce the value of agricultural produce, inasmuch as it will at the same time, and almost to the same extent, reduce the cost of production, will not seriously affect the surplus for rent and profit, and that by attention to a few details of management now too generally neglected, it is in the farmer's power to make up any deficiency, and in fact to derive larger profits from his farm without increased command of capital. I limited my remarks to two points—the unnecessary waste of cattle food, by unnecessary exposure of stock to wet and cold, and the waste and wasteful use of farm manure.

There is another point which I ought, perhaps, at the same time to have urged on the farmer's attention, not only as in itself of great economical value, but also as the means of greatly facilitating the preservation and application of farm manure. I allude to the waste arising from the use of straw as litter. No inconsiderable portion of the waste of manure in the farm-yard is occasioned by the large proportion of long straw requiring to be rotted before the dung is in a manageable condition, or, as farmers are too apt to think, in a valuable state. I will not stop to point out that the decay of straw within the soil, instead of in the farm-yard, must produce a larger amount of plant food by the whole amount of the products of decomposition, which in the yard pass into the air or the horse pond; for I am not advocating the use of straw as food for plants, but for live stock; and I will illustrate its value as cattle food by a reference to the results of analysis. To get a standard of comparison, let us consider the feeding capacity of an acre of meadow hay. A ton and a half may be taken as a fair average crop, and it will contain 1360 lbs. of starch, 240 lbs. of gluten, and 120 lbs. of oil. Assume the starch to be worth ½*d.* per lb., the gluten 1*d.*, and the oil 2*d.*, and we get 4*l.* 16*s.* 8*d.* as the feeding value of the hay crop, or 3*l.* 4*s.* 6*d.* per ton. A fair average acre of Wheat, say 30 bushels, will yield of straw about 3600 lbs., containing 1080 lbs. of starch, 48 lbs. of gluten, and 95 lbs. of oil—worth, according to the same scale of value, 3*l.* 4*s.* 10*d.* By fermenting this straw with cattle droppings this feeding value is of course wholly lost, and the necessity for exposing such droppings to air and moisture, in order that the straw mixed with them may rot and become what is called fit for use, deprives such droppings of their most fertilising qualities, which pass into the air as gases, or are washed into the horse pond as soluble salts.

It may perhaps require some little ingenuity to get the whole straw of a farm consumed and relished by stock, but it is and may be successfully done, the finer sorts being given with green crops and roots, and the coarser cut into chaff, and given to horses with their Oats and bruised Beans, and mixed for feeding stock with oilcake, soup, and Bean and Barley-meal. In ricking the Clover and other green crops intended for home use, much straw may be advantageously applied in alternate layers, whereby such crops may be safely carried in a greener state, consequently less exposed to injury and waste from weather, and the flavour given to the straw by the slight heating of the stack induces cattle to eat the mixed hay and straw with the greatest relish.

In consuming straw as cattle food, a portion of the starch will of course be wasted by the animal's breathing (more or less as the animal is more or less exposed to wet and cold), and a small portion will be represented

by the increased weight of the growing or fattening stock. With these deductions the entire ingredients of the straw will exist in the solid and liquid excrements in the best possible condition for fertilising the land, and for being carried on to it and covered by the plough.

We have arrived at the time when the production of agricultural produce, if the farmer is to maintain his position, must be carried on with more of those appliances of economy and skill, which in manufacturing processes are indispensable to success. All cannot command capital so as to farm high, but all may attain, by such simple means as I have suggested, a large share of those results which high farming promises—a greater supply of cattle food, a larger production of rich manure, and a consequent great increase of grain and stock for market.

The farmer, if he buy guano, knows or expects he is buying the droppings of sea fowl, but he does not sufficiently consider that its value mainly consists in the fact that these droppings, combining, as in all birds, the liquid and solid excrements, are deposited in climates where no rain falls, and as without moisture fermentation will not take place, the nitrogen has not passed into the air, nor the phosphates and other salts been washed into the sea. Let the farmer bear this in mind in the treatment of his farm manure; let him combine the liquid and solid excrements of his cattle; lessen the necessity for fermentation, by avoiding the admixture of straw; fix the gaseous products of fermentation, which in our moist climate must more or less take place, by layers of earth and gypsum, and not allow one drop of water to flow from his manure, unless into the tank, to be thence returned to the manure, or carried on to the green crops. The straw yard must, in fact, become a thing of tradition. However pleasant to see cattle up to their middles in straw, it is a luxury the farmer cannot afford them, and may be well exchanged for a dry skin and shelter from the winds. The farmer may object that he cannot shelter his cattle without additional sheds, involving outlay in building; there are few farms, however, where hedge-row thinnings or other waste wood may not be obtained; and as the treatment of manure recommended will leave most farm yards much too roomy, how easy for the tenant, even with his own men, to have some rude sheds run up, supported on stout poles, covered with Furze or Fern stalks, and sheltered on the exposed sides with haulm or wattles. My summary, then, of cheap appliances is the following:

1. To throw all manure into a pit, directing to it all cattle drainage, and catching any overflowing in a tank.

2. To spout all the farm buildings, that no water may reach the manure, save what falls direct.

3. To consume the utmost possible amount of straw as cattle food, that the least possible quantity be mixed with the manure.

4. To cover the manure from time to time with earth, and scatter over each layer some pounded gypsum, say 1 cwt. for a year's manure of each beast and horse.

5. To protect the stock by sheds from wet and cold. *P.*

Home Correspondence.

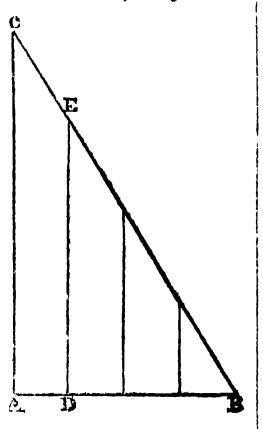
Disease in Pigs.—Seeing a letter in the *Agricultural Gazette* for July 7th from a person signing himself "Tom Tit," on the subject of a cure he effected on some pigs attacked with the prevailing disease, I beg to state that I have cured four of my own, which were nearly dead, by a more simple means, viz., immersing the pigs in hot water excepting the head, deluging that with cold, and applying cold wet clothes, taking care that the cold should not touch the body or the hot the head; they were then laid in a cool shady sty, made of hurdles, and all recovered; my poorer neighbours have been much benefited by it. I used a mash tub for the purpose. You are welcome to make any use of this you please, and I hope it may be as useful in other villages as it has been in our own; it is a simple remedy, and costs nothing. *Mary Holloway.*

New Method of Harvesting Grain.—It has been often observed that, by the employment of improved machinery, the farmer must aim to rival the manufacturers of other produce in supplying the country with food in abundance and at a reasonable price. As, therefore, we may suppose that many proprietors and others are contemplating an exchange of less perfect means of threshing corn for the more effective operation of steam machinery, I venture to suggest that, before erecting the expensive apparatus now considered necessary, trials should be made of other methods of separating the grain from the ear, which may be more simple and economical. I proceed then to suggest one method, which it has often occurred to me might be practicable. If we consider the operation of the present threshing machines, we shall be struck with the fact that the chief part of the power used is expended on the useless operation of passing through them a vast quantity of straw. In the discussion at the London Farmers' Club, reported in your paper of the 30th ult., one speaker mentions that 16 tons of straw were passed through a machine in 10 hours! A great deal of labour is expended in conveying this straw to and from the machine, the straw is only injured by the process, and it materially interferes with the end in view, which is simply the rubbing out of the grain from the ear. My idea then is that as soon as the corn is mown, it should, without being tied, be laid under a knife like that of a chaff-cutter, by which the ears, with as little straw as possible, should be cut off into bags or bins like those used for hop picking, the long straw being left in the field to dry, and then stacked in any convenient situation. The cutting machine should be made to travel onwards after the mowers. The ears of corn thus separated might be at once housed on a well ventilated floor near the threshing machine; if above the engine and boiler house they might be artificially dried when necessary, and the separation of the grain would then be a very simple operation; requiring much less time, power, and labour than is now employed, with less injury to the sample. Probably a sort of chain web sliding over a wire grating, by rolling and rubbing the ears between them, would clean the grain from them, and let it fall into the winnower beneath. The operations, according to the new and old methods, supposing the present fixed steam machinery used, would stand somewhat as under:

New Method.	Present Method.
1. Two women delivering corn to feeder, one man feeding machine. One man and one boy working machine to cut off ears of grain.	1. Two women, two men, and one boy saved.
2. Expence of machinery for cutting off ears of grain [The difference between cost of cutting machine and the staddles would be saved—each staddle costs 5*l.*, at least.]	2. Expence of staddles of stone, iron, &c., on which corn stacks now stand.
3. Carting ears at once to the barn. Carting loose straw to stack. [Expence of tying sheaves saved.]	3. Tying sheaves, setting them up in field, and carting them to the corn stack.
4. Stacking the loose straw. [Much of the cost of stacking, and all cost of thatching saved.]	4. Stacking and thatching sheaves.
5. One man carrying forwards ears in baskets to threshing machine, which would feed itself. [Horse and cart saved, and machine supplied quicker.]	5. One man, horse, and cart taking sheaves from stack to threshing machine.
6. Two women and one man saved.	6. Two women and a man unbinding sheaves, and feeding threshing machine.
7. Two women saved.	7. Two women forking away straw from machine.
8. Man, cart, and horse saved.	8. One man, cart, and horse, carting loose straw to stack, and stacking it.

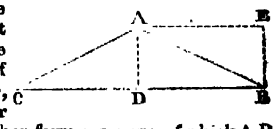
The result of a day's work, as far as I can estimate the relative advantages, seems to be a saving by the new method of two women, two carts and horses, tying sheaves, stacking them and taking them down from the stack, unbinding them and thatching the stack, part of the fuel for the engine (both because less power would be needed, and because more grain would be threshed in a given time), the cost of staddles, part of the cost of the engine and of the threshing machinery, and of the space occupied by them. The diminished risk from bad weather at harvest, and from heating in the stack, from vermin, &c., might be set against the small expense of the machines for cutting off the ears of corn. As the harvest season is drawing on, I venture to hope that some gentlemen who have the means to make an experiment, which if successful would be of so much value to agriculture, may be induced to try something like the plan here proposed. For their encouragement, I may add that I am acquainted with one instance in which it was put into execution by a tenant farmer in an imperfect manner, at the time when incendiary fires made the ordinary method of harvesting insecure. The implement he employed for cutting off the heads of corn was only an old scythe, as I am informed. I hope some of your readers will be able to communicate the result of a trial of this plan with a proper implement for cutting off the ears in the field. *T. T.*

Steep v. Level Land. — Your friend "C. B.," Heacham, Norfolk, having made a very palpable mistake on the above subject in your impression last week, I send you this to point out his error, and the accompanying diagram will, I think, explain it. Suppose I am a market gardener and have a flat piece of ground, A B, measuring 50 feet, on which there are 25 rows of Strawberries; a railway company seize on my plot and throw a mound over it, giving on the slope, C B, a surface of 70 feet. If I plant Strawberries on this, there being an additional surface of 20 feet, I have of course 10 more rows than I had on the flat. The error your Norfolk friend has fallen into is, that instead of measuring the distances on the slope he has done so on the base, and hence his mistake; but let him once apply his compasses to A D, and then transfer them to C E, and he will be convinced of his error, and he will not then say that "no more corn can be grown on a long ascending line (like that of the side of a hill), than on a much shorter line in a horizontal or flat position." *A Scotch Farmer.*



Steep v. Level Land.—Although not a Yorkshireman, yet being located in Yorkshire, I feel disposed to offer, if not a defence, yet a little justification to the Yorkshireman, in not being immediately convinced that he cannot grow more crops on sloping land than on a level; or at least that his disinclination to yield does not arise from want of thought. I will take "C. B's," own illustration and diagram (as published in p. 443). I cannot have anything better, and if it does not prove that seeing is not believing, I think it will prove that different conclusions may be drawn from the thing seen. It is true there are the same number of distances marked on the horizontal base, on the stairs and on the hand-rail; but it is also seen that the distances on the handrail or slope are greater than those on the stairs, or flat; and this I think supports the Yorkshireman's theory, for the conclusion is that if he makes the same number of drills on the slope that he does on the flat, they will be so much wider apart (therefore a benefit to the growth of the crops), or if he retains the same distance on the one as the other, he will have a greater number of drills, and therefore a benefit. In the diagram the difference may be called one-third, and the result is, that if the distances are alike on the slope and on the flat, the number will be 12 flat, 15 slope. If the number be preserved alike, it will be the distance between drills 12 flat, 15 slope, both cases showing the advantage of the slope. The subject seems to involve this question, which I think has not been decided; whether it be necessary for plants to have a base perpendicular to the horizon. [1] *Clericus Residens.*

Steep v. Level Land.—You must excuse my having a finger in the pie about the theory of hill measurement and its produce, as compared with that of the base upon which the hill stands. You seem to agree with the advocate of the idea that no more corn can grow upon the side of the hill than upon its base, because no more perpendicular lines can be drawn upon one than the other; and because these lines are at the same distance apart, that the roots or crowns of the roots must be also at this same distance; but this I deny, unless mathematics are at fault, for I have always been taught that the diagonal of a square, being the side opposite the larger or greater angles in the two triangles into which the square is divided, is larger than either of the sides forming that angle. Now we will take any hill, the line of the side forming the diagonal of a square. Let the accompanying figure be the side of a hill of which C D B is the base, let fall a perpendicular from A to D in the base, then form a square, of which A B is the diagonal and A D, D B, B E, and E A the sides. Now if "C. B., Norfolk," be right, the straw growing at the point A is at the same distance from B as the point D is from the point B, and the line A B is equal to the line D B, *i. e.* the diagonal is equal to one of the sides; merely because you cannot place more perpendicular lines upon one than the other, for building this would hold, but not for plants; or what becomes of the thin sowing system? do not its advocates say, and with truth, that the more room the roots of plants have the more nourishment they obtain from the earth, and the greater the produce within certain limits (Tull put his Wheat in at 5 feet distances, but I do not quote him to recommend his practice). Now it being proved that there must be a greater distance from crown to crown of each root on the side of a hill than on the base it covers, and the thin sowing system being granted to be true, especially as the roots do not grow perpendicularly but horizontally, it must follow that the greater crop would be produced upon the greater breadth of land, and that is on the hill side. *Surrey.*



Steep v. Level Land.—Your correspondent "C. B." on 14 July, supposing that the Yorkshire farmers are inaccessible to "mere argument alone," visibly proves, and finally disposes of this long debated point to his satisfaction, by a drawing of a very break neck looking staircase, which is only another version of Hop poles &c. &c. The scientific principles attached to this question, I have already advanced in yours of the 21st July, and, if they are erroneous, shall be glad to be set right. I now beg to say that, reverting to the more mechanical method in which it has been hitherto treated, that stalks of corn can grow nearer to each other on a hilly field, without making the average approximation of stalk to stalk greater, because the plant above is not opposite in its whole length to the plant below. *Henry Chaytor, Croft, July 22, 1849.* [Suppose two adjacent stems of equal length to be 3 inches apart, it would be a steep hill that would make the upper one over top the other by one quarter the length of its ear.]

Poors' Rates.—When Mr. Hewitt Davis mentioned the four-and-twenty Irish farms going a begging, he forgot the poors' rates and other taxes. Why, there is such a thing as a parish in England where the taxes amount to more than the value of the produce, consequently it is not cultivated, and this is the cause of the land going out of cultivation in Ireland. In the colonies scarcely any taxes are levied, and therefore it pays. This is the solution of the mystery. *Canium.*

Game.—Mr. Williams has given you an account of of Lord Hatherton's doings at Teddesley, he might have added that Lord Hatherton has done a grander thing than that for the farmer, by destroying the hares and rabbits on his estates in Staffordshire. He may have done this since Mr. Williams was there, or possibly the latter would have mentioned it, as being of even greater immediate importance to the farmer, than the system of drainage which his lordship has so praiseworthily introduced. *Litchfield.*

What is a Ton of Turnips Worth?—Your correspondent, who signs himself (June 2) "J. M.," and (July 7) "J. M. P.," makes an attack upon my statements, which I feel called upon to refute; and having done so, I shall take no further notice of any anonymous article of his. If "J. M. P.," or anyother of your readers, will take the trouble to refer to my first

letter of May 12th, it will be found that I do not profess to write from my own "practical experience" in the stall-feeding of cattle. I there give the name of the party whose experiments I quote, and I also refer to the volume of the Yorkshire Agricultural Society's Transactions, in which an account of the same may be found, so that I trust your readers, at any rate, will exonerate me from any design to assume "practical experience," and to pass off as my own the experiments of others. I there state 6 stones of beef had, by a certain process of feeding, been acquired in 31 days, on an average, by four bullocks, and this, at 6*s.* per stone, gave 7*s.* 6*d.* to pay for the weekly keep of each beast, whilst the weekly cost in Linseed, corn, extra attendance, &c. (the quantities of which are taken from the same authority, and the prices adapted to present times), amounted to 3*s.* 8*d.* As I had no other article of consumption to take into account, save straw and Turnips, it was natural that I should divide the remaining 3*s.* 10*d.* between those items; I therefore apportioned it over the quantities of straw and Turnips which the agriculturists to whom I had referred had stated to be the usual proportion allowed weekly to each beast. I would further recal attention to the fact, that the latter portion of my first letter on this subject was not intended as the ground of any argument as to the precise value of a ton of Turnips, but that it was meant to show the very great advantage possessed by one system over another, not only in the money returns from the consumption of an acre of Turnips, but also in the immense addition both in quality and quantity to the manure heap; and even had "J. M.," of June 2d (the "J. M P.," of July 7th), been able to establish his assertion that from 6*s.* to 7*s.* per ton is the usual average received during a series of years, would that fact at all shake my argument in favour of high feeding over the old system? On the contrary, it would, in my opinion, only the more decidedly prove the necessity which exists for high feeding, as well as high farming, in all its branches. The "J. M.," of June 2d evidently questions the probability of the amount of beef which I state may be laid on in a given time except under peculiar circumstances, such as change of food, &c., and goes on to state that "the results of such observations (referring to the account being confined to four bullocks), are not so trustworthy as when a large lot are taken," &c. In my answer to those criticisms, and in confirmation of my former statement, I quoted (June 23d) the result of feeding beasts in large lots, showing that the increased weight which I had mentioned were not isolated cases, or confined to experiments on a small scale, and the results of the experiments there quoted showed a heavier average increase than I had at first named. In the last week's *Agricultural Gazette*, "J. M. P." writes, that he never denied (no; but "J. M," of June 2d very much doubted) that some cattle might gain upwards of 6 stones in 31 days; but then (as he is compelled to make this admission), he says, it is the duty of those adopting such methods of valuing the food consumed to make a calculation of the increase in weight of the intestines, which should be deducted off the live weight, &c. Let "J. M. P." himself (he being the party who has provoked the discussion), ascertain the weight of the intestines of a live lean bullock, and of the same animal when fat, and let him deduct the difference from the lowest average increase of weight gained by one lot of Mr. J. H. Leigh's cattle, viz., 7 stones in 31 days, and I think he will be satisfied (if Mr. Leigh's statement be worthy of credit), that his last refuge (the bestial intestines) will not avail him, and that I can give him 1 stone in 31 days for offal, and beat him. In my original statement I gave the weekly amount and cost of the food consumed by each animal, to which "J. M. P." can refer, and thus refresh his memory; and with regard to the actual amount of money left between the buying and selling of the animal, I maintain that such is not the sole criterion by which, under all circumstances, to fix the value of the food consumed. The farmer knows that he cannot have heavy crops of corn without his land being first well stimulated and enriched by manures, and he also knows that the cheapest and best method of procuring such manures is to have them made upon his farm, even if he were to purchase the whole of the ingredients (straw excepted) out of which such manures are manufactured. Now, if by growing and giving to his cattle 1 ton of Turnips, the farmer displaces a certain portion of oilcake, or of any other ingredient, which, whilst it would have cost him 10*s.*, would have given no greater increase of weight to an animal, I again assert that such is the value to the farmer of a ton of Turnips. In conclusion, allow me to suggest to "J. M. P.," should it ever again happen that he is so far honoured as to be admitted anonymously as a party to any controversy, however trifling the subject may be, that he should not endeavour by insinuations to lead others to suppose that his opponent has made assertions which he at the same time knows never were made, as in his last letter, where he speaks of "showing that 10*s.* per ton had been made of Turnips consumed on the land, after deducting all expenses," when he ("J. M. P.") knows that I never named the deduction of expenses; and as he writes anonymously, and thus subjects himself to suspicion, he must also allow me to question whether his offer of 1000 tons of Turnips be not on a par with the offer of the man of straw to bet his 1000*l.* when he perhaps is without a guinea in his pocket. I note the Editor's remark at foot of my last communication, and would merely reply to him that his offer to sell all his Turnips at much less than 10*s.* a ton "to any one who will consume them on the land," is perfectly inapplicable to the question as to the value of a ton of Turnips to be pulled and carried off the land and consumed in houses by cattle. *William Tuke, Bradford, Yorkshire.*

Mowing Wheat.—If any of your readers who may have been in the habit of mowing their Wheat have paid particular attention to the mode of doing this, and to the form and fittings of the scythe best adapted for the purpose, any directions, and description of implement, accompanied by a drawing, would be most acceptable at this season. This plan would be the most economical in all respects if it were practicable, by a well-contrived implement, to lay the Wheat in very regular swathe, so that it might be tied up as regularly as reaped Wheat, and without whipping off the heads of corn. I have had but few opportunities of examining Wheat fields that have been mowed, and in those the very rough and uneven sheaves, and the quantity of ears of Wheat strewed on the ground, which appeared to have been whipped off the prostrated Wheat by the point of the scythe towards the end of the stroke, greatly discouraged the adoption of the practice. These objections have probably been obviated by experienced and observant hands. *C. L.* [Wheat should be mown up against the standing crop.]

On Cattle Food.—Allow me to call attention to what I believe to be a miscalculation in the letter on Cattle Fattening in your journal of the 7th inst. The writer recommends Linseed, which he estimates at 1½*d.* per lb, in preference to oilcake, which he puts down at 1*d*, on the ground that the cake being mere refuse, 6 lbs. of it are only equal to 3 lbs. of seed. The cake is the seed, less the oil which can be squeezed out in the mill, and if analyses are to be relied upon, the best seeds, generally bought up for pressing, contain 20 per cent. of oil, whilst the cakes contain, by analysis, 10 per cent. Consequently 1 cwt. of cake, costing, at 1*d.*, 10*s.*, contains 12 lbs. of oil, and 108 lbs. of food closely resembling in composition Bean meal. The same weight of seed, costing 15*s.*, would contain 24 lbs. of oil and 96 lbs. of precisely the same food. Suppose this residuous food worth ¾*d.* per lb., Bean meal being worth about 1*d.*, and we should have in 1 cwt. of seed 96 lbs. of food, worth, at ¾*d.*, 6*s.*, leaving as the cost of the oil 9*s.*, or 1¾*d.* per lb. For feeding purposes, oil is not worth any such price; take it at one-half, or 2¼*d.*, and we get as the value of 1 cwt. of seed 6*s.* and 1*s.* 6*d.*, or 10*s.* 6*d.*, and for cake 6*s.* 9*d.* and 2*s.* 3*d.*, or 9*s.*; and, if I am right, it will not be worth the farmer's while to give more than 10*s.* 6*d.* per cwt. for seed when cake can be got at 9*s.* *P., July* 11.

Societies.

MEETING OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND AT NORWICH.

We resume our report of the Exhibition with an account of the Horses and Sheep.

Horses.—Following the admirable show of horses at the York Meeting, which a favourable locality and the attraction of additional prizes had combined to render the most splendid exhibition ever seen in this country at any one time: following such a meeting as that, the present show laboured under considerable disadvantages. If in some former meetings some classes might have exhibited a greater number of first class animals, the present, in one respect, excels all former shows, viz., that in no previous one has there ever been so few bad or indifferent animals brought together. In Class I., for Stallions of any age, for agricultural purposes, no less than 30 goodly animals served to perplex the minds of the judges, being double the number exhibited in this class at Northampton, and one more than at York. The first prize, we find, was awarded to a fine four year-old dark chesnut horse, No. 214, the property of Mr. J. Coulson, jun, of Kenninghall, East Harling, Norfolk, an animal bred in Norfolk, but partly, if not wholly, of the Suffolk blood. This horse was upwards of 16 hands in height, with good legs and feet, strong back and loins, a fine shaped shoulder, and good head and neck; his only fault was being rather too long in the leg, but as he was only four years, and would probably furnish more as he gets older, and is, moreover, a splendid walker, we are not surprized that with these various excellencies he obtained the first prize, although he had some superb animals to contend with. It should be borne in mind that it is an instruction to the judges that they are to take into consideration, not only symmetry, but strength and activity; and that they only have an opportunity of judging of the latter, as well as of discovering various faults which the public have no means of ascertaining. The second prize was given to No. 224 (Mr. C. H. Branwhite, Geslingthorpe, Halstead), a true Suffolk, though bred in Essex, and a strong, compact, yet active horse. In this, as in other classes, the Suffolks were in great force, bearing off more than half the prizes and commendations. There were no less than 15 Suffolks in the first class, amongst which were a four-year old, bred by the Hon. H. W. Wilson, and two very fine three year olds, one of which, bred by Mr. Catlin, is certainly a remarkable animal for his age, possessing a wonderful depth of chest and strength of quarters. He was, however, by no means improved by the vast amount of fat which had been put on him, and which we believe is neither conducive to the health and activity of the animal, nor increases his chances of getting a prize. There were several other horses in an equally objectionable state of obesity. We observe that there was no prize given for three-year-old horses, consequently they are forced into competition with older animals, which is in some measure objectionable, as a horse at this age is not fully developed, and may either retrograde or greatly improve in the course of another year. There were no less than four three-year-old horses shown in this class, two of which were commended by the judges; and there would no doubt have been more had there been a separate class; whilst at the York show last year there were no less than 11 three-year-olds in the first class. At the Northampton meeting, although a prize was offered for three-year-old horses, there was only two competed, and the prize was withheld from insufficient merit. Also at some preceding meetings there appears to have been no award of prizes to three-year-old horses. These circumstances have no doubt induced the Council to discontinue the class for this age, but we take it that the results of the last two shows have offered some cogent reasons for renewing the prizes for this class, and thereby simplifying the duties of the judges. Class II., for two-year-old Colts, presented many animals of superior excellence. There were no less than 11 exhibited, the prize being given to an iron-grey colt of great promise, and the second prize to an almost equally fine colt of the Suffolk breed. Another of the latter breed, belonging to a gentleman who appears to have succeeded in every variety of stock, and to have carried off numerous prizes at the present meeting, Mr. Fisher Hobbs. The other animal, No. 242, was also deservedly commended. If these young animals go on well, we shall probably find them successful competitors in other classes in succeeding years.—Class III. (Stallions for dray purposes) were certainly the worst in the show, which may be accounted for in some measure by the fact, that such animals are rather out of their latitude in the eastern counties. Only four horses competed; the one which received a prize was certainly a fine large horse, and not deficient in activity, considering his size: the second horse, though with much merit, may rather be regarded as an agricultural than as a dray horse. Class IV. (Roadster Stallions) exhibited several deserving animals. We really think the Society is doing the public essential service in fostering this valuable, but unfortunately now rare description of animal. Every horseman knows how rare it is to get a perfect hack, for amongst 10 brilliant hunters there is scarcely to be found one perfect roadster. Breed, compactness, a light head and lengthy neck, with good oblique and lean shoulders, and undeniable legs, are some of the qualifications of a clever hackney, but to these must be added perfect action; he must be a safe and fast walker, and easy and fast in his trot, doing his work with ease to himself and without fatigue to his rider. Such are the principal desiderata required for a good hackney, and such, as far as we could judge, were the qualifications of the prize horse, a Norfolk trotter. This horse was 14 years old, and as he has been used as a stallion for the last 10 or 11 years, it is to be hoped that the breed of good roadsters will not become extinct. No. 265, a brown four-year-old horse, showing a good deal of breeding, with good shape and very superior action, was highly commended by the judges, who also commended No. 259, a black horse with excellent action.—Class V., for Mares and Foals, was decidedly the best ever collected together by this Society, and certainly deserved the general commendation which the judges awarded to the class. No. 274 carried off the first prize, the owner being a very successful breeder of this kind of stock, Mr. Thomas Catlin. The mare was a powerful animal, without being too heavy; in fact, what a brood mare ought to be. The second prize was awarded to No. 271, a fine bay mare, closely rivalling the former in merit—strong, compact, and apparently active, with a good foal by her side. Nos. 270 and 273 were also very superior animals, closely competing with the prize mares, and certainly with their produce well deserved the high commendations they received. There were also in this class other animals possessing great merit.—Class VI., for two-year-old Fillies, was very excellent, and equal, or superior, to that of any former show. The competition was certainly very close between the two prize animals, Nos. 287 and 296, and these were only a shade superior to Nos. 295 and 290, both of which were commended. There were also several others of considerable merit. There were also some very clever-looking animals exhibited as extra stock, amongst which was a very promising yearling colt, and a five-year-old mare, without a foal, both of the Suffolk breed, and belonging to the same breeder, Mr. Wright. With this we must conclude our report of the show of horses at Norwich, which on the whole we cannot but regard as creditable to the district in which it was located, and worthy of the great Society under whose auspices it was held.

The following is the prize list under this department of the show.

Class I. Stallions for Agricultural Purposes, of any age.—1st prize, 30*l.*, to Mr. John Coulson, jun., of Kenninghall, near East Harling, Norfolk; 2d prize, 15*l.*, to Mr. C. H. Branwhite, of Geslingthorpe, near Halstead, Essex.

Class II. Two-year-old Stallions, for Agricultural Purposes.—1st prize, 20*l.*, to the Right Hon. Lord St. John, of Melchbourne, near Higham Ferrers; 2d prize, 10*l.*, to Mr. William Wilson, of Ashbocking near Ipswich.

Class III. Stallions for Dray Purposes.—Prize of 20*l.* to Mr. William Gleaves, of Abbotsley, St. Neots.

Class IV. Roadster Stallions.—Prize, 15*l.*, to Mr. John Baxter, jun. of Wiggenhall St. Peter, Lynn Regis.

Class V. Mares and Foals for Agricultural Purposes.—1st prize, 20*l.*, to Mr. Thomas Catlin, of Butley, near Woodbridge; 2d prize, 10*l.* to Mr. John Smith, of Crownthorpe, near Wymondham.

Class VI. Two-year-old Fillies.—1st prize, 15*l.*, to Mr. Ben-

Jamin Cubitt, of Ickley, near Norwich; 2d prize, 5*l.*, to Sir Thomas Gooch, of Benacre Hall, Wrentham, Suffolk.

SHEEP.—A mere list of the successful exhibitors would afford useful information only to those who have watched the names on the prize sheet from year to year; and as most persons attend principally to those particular breeds in which they are most interested, the great mass of the public will be ignorant whether the various breeds are in a progressive, stationary, or retrograde condition, unless they are furnished with a critical comparison. Whether the first-class breeders are advancing or not, it is certain that improvement is being widely and rapidly diffused, and that there are many more first-rate sheep in the country now than there were two or three years ago. This is evidenced by the annual increase in the number of exhibitors, and in the number of animals in each class, not invariably, but taking the general numbers at several shows. The numbers of sheep shown at the three last meetings were:

	1847. Northampton.	1848. York.	1849. Norwich.
LEICESTERS.			
Class I. Shearling rams.	42	70, 14 of them entered also for local prizes.	46.
Class II. Rams of any age.	31	48 . ..	42.
Class III. Shearling ewes.	12 pens, 5 of each.	16 pens, 5 of them also for local prizes.	14 pens of 5 each.
SOUTHDOWNS.			
Class I. Shearling rams.	45	27 .. .	38.
Class II. Rams of any age.	15	15 . ..	24.
Class III. Shearling ewes.	11 pens, 5 of each.	4 pens .	17 pens.
LONGWOOLS.			
Class I. Shearling rams.	15	20, 6 of them also for local prizes.	14.
Class II. Rams of any age.	11	12	10.
Class III. Shearling ewes.	3 pens, 5 of each.	5 pens, 2 of them also for local prizes.	5 pens.
EXTRA STOCK . .	1 Oxford ewe. 1 Wiltshire ram, ewe, and lamb. 22 Southdown lambs.	1 Cheviot ram 6 improved Yorkshire rams. 1 Cotswold ewe. 10 Leicester rams and ewes.	2 Leicester rams. 3 improved Hampshire downs. 1 Southdown ram. 5 Southdown ewes.

But besides this multiplication of "the best models" throughout the country, these models themselves are being more and more improved. It has been said of a celebrated Southdown breeder, that his animals are every year pronounced perfect in form and quality, and yet each year finds them better than the last; and this is the case generally with the breeders of other sheep, so that the spectators of the Society's shows are obliged to confess that the standard of excellence is being continually raised. But though the great victors at the exhibitions have improved their stock, other breeders are frequently stepping in to deprive them of their honours. This fact, clearly showing the progress of improvement, is set forth in the following list of prizemen:

	1847. Northampton.	1848 York.	1849. Norwich.
LEICESTERS.			
Class I.			
1st prize ..	Pawlett ...	Borton .	Abraham.
2d do. ...	Pawlett .	Harvey	Sanday.
Commended ...	Bennett, Pawlett.		
Class II.			
1st prize	Smith	Borton	Sanday.
2d do. . .	. .	Hobbs ...	Hobbs.
Commended ..	Bennett, Paw lett, Hewitt, Wallis, and Freestone.	All highly commended.	
Class III.			
1st prize	Sanday ...	Sanday	Simpson.
2d do. ...	Smith	Sanday	Sanday.
Highly commend.	.. ...	. ....	Burgess.
SOUTHDOWNS.			
Class I.			
1st prize	Webb ...	Webb	Webb.
2d do.	Webb .	Shelley .	Webb.
Highly commend.	. .	..	Webb.
Class II.			
1st prize	Harris .	Salusbury	Hobbs.
2d do.	Harris	Duke	Shelley.
Commended ...	.....	..	Webb.
Class III.			
1st prize	Duke of Manchester.	Duke of Richmond.	Shelley.
2d do.	Barclay, M.P.	Shelley	Overman.
Highly commend.	.	.	Duke of Richmond & Earl of Chichester
LONGWOOLS.			
Class I.			
1st prize	Large .	Hewer .	Large.
2d do.	Faulkner .	Hewer ..	Garne.
Commended ...	.....	Handy .	Hewer, Garne
Highly commend.	Large	Large.	
Class II.			
1st prize	Large ..	Garne ..	Large.
2d do.	Handy ..	Handy .	Garne.
Commended ...	Handy ..	..	Hewer.
Highly commend.	.....	Large	Garne.
Class III.			
1st prize .. .	Large . .	Large .	Large.
2d do. . . .	Large ...	Simpson .	Large.
Highly commend	.... .	.....	Hewer
EXTRA STOCK.			
Highly commend.	Large		

Besides the improvement in the form and quality of the animals, there has been an increase in their size; thus we are progressing with the difficult but desirable task of augmenting the length and height of the frame without losing the symmetry of form, fineness of offal, and excellence of quality which indicate a soundness of constitution and propensity to fatten. From measurements taken by the same individual at York and Norwich shows, it appears that the prize sheep are not the largest, but that the prize sheep of 1849 are larger than those of 1848. The measurements stands thus—

	1848.—YORK.				1849.—NORWICH.			
	Age.	Girth.	Length.	Height.	Age.	Girth.	Length.	Height.
LEICESTERS.	Months.	ft. in.	ft. in.	ft. in	Months.	ft. in.	ft. in.	ft. in.
Class I.								
1st Prize	14	4 6½	6 7½	2 6½	16	4 10	3 10	2 6½
2d do.	16½	4 4	3 6½	2 5½	16	Not measured.		
Class II.								
1st Prize .	27	5 2	3 9	2 5½	28	5 2	3 9½	2 6½
2d do. . .	28	5 0	3 6⅝	2 7	40	5 6	3 10	2 6
Selected from the highly commended	26	5 1	3 9	2 6½				
	28	4 9	3 6½	2 8½				
	55	5 1½	3 8½	2 6				
SOUTHDOWNS.								
Class I.								
1st Prize	16	4 1	3 7	2 3½	16	4 4½	3 10½	2 4½
2d do.	16	5 8½	3 7½	2 2½	16	4 1	3 8	2 2
Class II.								
1st Prize ..	23	4 6	4 1	2 4	39	4 6	3 10	2 5½
2d do.	Not measured.							
LONGWOOLS.								
Class I.								
1st Prize	16	5 1	3 8½	2 6½	16	5 2	4 1	2 7
2d do. . . .	16	4 8½	3 6	2 6	16	4 10	4 0	2 7½
Commended	16	4 9½	3 7	2 6				
Highly commend.	16	4 8	3 7½	2 5½				
Class II.								
1st Prize .	40	5 7	4 0½	2 9½	61*	5 6	4 4	2 9
2d do.	52	5 7½	4 1½	2 8½	52	5 10	4 5	2 10*
Highly commend.	28	5 4	3 11	2 7½				

* This is the largest sheep during these three years.

Some of the sheep exhibited as Leicesters are, in fact, not Leicesters, but a cross between the Leicester and some larger breed. If, therefore, these cross-bred sheep are admitted into this class to carry away the prizes from the pure Leicesters, why should not any cross breds (between the Oxfords and Leicesters, Lincolns and Leicesters, &c.) be allowed to compete here also? Those breeders who scruple to certify a cross-bred as being of the Leicester breed have now no alternative but to compete with the Cotswold and Oxford breeds, both of which have obtained pre-eminence over theirs. At Northampton all the prizes in the longwool classes were obtained by the new Oxfordshires and improved Cotswolds. At York, five out of the six prizes were won by either Cotswolds or new Oxfordshires; and at Norwich, the majority went the same way. Would it not therefore be advisable to provide a fourth class of sheep for the admission of these important and useful breeds of sheep (far out numbering the Cotswolds and improved Oxfords) that are disqualified to compete as Leicesters, and retain the present class for the Cotswolds and Oxfordshires?

In examining the exhibition of sheep at Norwich, we found, as has been stated, a general increase of numbers in all the classes, notwithstanding that the Yorkshire Agricultural Society's fraternising spirit doubtless occasioned a vast addition last year. In each class we observed great merit, the animals being in good condition, and certainly possessing as much proportionate beauty of form, goodness of quality, and excellence of fleece as in any previous year. The prize of 30*l.*, Leicesters, Class I. (Shearling Rams), was awarded to Mr. W. Abraham, of Barnetby le-Wold, Lincolnshire. The sheep was a very good one, but the rump was scarcely high enough, and the handling rather loose. It possessed fine bone. The prize of 15*l.* to Mr. W. Sanday—an animal of better quality than the first; the fore-quarter good, the chine full, and head fine. Wool plentiful and good. In this class were some excellent sheep, possessing both size and symmetry; but there were many with thin necks and bad fore quarters. The sheep of Mr. Sanday were by far the most perfect and beautiful among the Leicesters.—In Class II. (Rams of any age), the prize of 30*l.* was given to Mr. Sanday's sheep, a very fine animal, of remarkably good form and fine mutton. It was good in every point. The prize of 15*l.* to Mr. Fisher Hobbs. A good rump, a straight firm back, and a wide full fore-quarter, together with a fine countenance and small offal, are the beauties of this animal.—In Class III. the prize of 20*l.* to Mr. W. Simpson, of Kirby, for five beautiful shearling ewes, with good backs, and well formed carcases covered with good curly wool. The prize of 10*l.* to Mr. Sanday, for five good ewes, with good rumps and legs, good long wool, thick necks, and firm mutton.

SOUTHDOWNS.—A large show of very fine animals. In Class I., the prize of 30*l.* to Mr. Jonas Webb, for a ram with remarkably fine fore-quarter, and excellent in every respect; the prize of 15*l.* to the same breeder, for a short-legged sheep, but having a *straight* back. Another of this gentleman's sheep, No. 429 (not a prize one), was a perfect model of a Down sheep, surpassing in symmetry and quality every sheep in the yard on this (and perhaps, also, on every former) occasion. In Class II., the prize of 30*l.* was adjudged to Mr. Fisher Hobbs. These ewes had straight backs, high good rumps, good necks and heads, and fine bone; the prize of 15*l.* to Mr. J. V. Shelley, for a very fine good sheep. In Class III., the prize of 20*l.* to Mr. Shelley, and the prize of 10*l.* to Mr. J. Overman, of Burnham, for most beautiful ewes, almost without faults.

LONG WOOLS.—Class I., prize of 30*l.* to Mr. C. Large, and the prize of 15*l.* to Mr. Garne.—In Class II., prize of 30*l.* to Mr. Large, and the prize of 15*l.* to Mr. Garne, for a remarkably fine sheep, of immense size, with good rump plate and chest, and fine bone.—Class III., prize of 20*l.*, and the prize of 15*l.* to Mr. Large, for two pens of beautiful ewes—large, round, good rumped sheep, with wide chests and firm good mutton.—In Extra Stock there were some pretty little Leicesters, but too small to be useful. Amongst the Shearling Longwools was a hollow-backed, thick-legged animal, No. 496, with a collapsed chest, coarse offal, and scanty wool—certainly unfit to enter so magnificent a show-yard, and unworthy to stand beside the many noble sheep in his class. On the whole the Leicesters keep up their character, the Southdowns have greatly increased both in *size* and *beauty*, and the Long-wools have eclipsed their former glory.

HIGHLAND AND AGRICULTURAL, *July 4—Half-yearly General Meeting of the Society.*—Forty-nine new members were admitted.

VETERINARY COLLEGE.—Mr. PRINGLE, of Whytbank, gave in the annual report on the state of that institution. He congratulated the Society on the success of that branch of their establishment, with which he thought they had every reason to be satisfied. Their diploma was now sought for as a distinction by veterinary students from all parts of the country, and it was recognised both by the Horse Guards and by the East India Company as a qualification for employment in their service.

SHOW AT GLASGOW.—The SECRETARY reported that the arrangements for the show to be held at Glasgow, next summer, had been commenced in a very satisfactory manner. The Lord Provost and Magistrates of the city had, as on former occasions, readily come forward to support the Society. They had appointed an influential committee to co-operate with the directors, and had intimated, through the Lord Provost, that the Green would again be at their disposal for the purposes of a show-yard. The district in connexion with the show comprised the six counties of Lanark, Renfrew, Ayr, Argyle, Dumbarton, and Bute, associated in 1844, with the addition of Stirlingshire, the agriculturists of which, the directors were happy to report, had consented to co-operate.

CHEMICAL DEPARTMENT.—Professor CHRISTISON said, the proceedings of the Chemical Department had been going on for the last six months with great vigour. The committee was divided into three sections, consisting of practical, financial, and scientific members; and it would be well if practical agriculturists throughout the country at large were aware of the names of those gentlemen who represented their views and interests in the committee. These are:—Mr. Hay, of Hardengreen; Mr. Finnie, Swanston; Mr. Dickson, Saughton Mains; Mr. Scott, Craiglockhart; Mr. Gibson, Woolmet; and Professor Low. He considered that the constitution of that committee ought to create great confidence in its practical views and proceedings, seeing that in such a department as Chemistry, without such co-operation, they might very easily be led into investigations of a purely theoretical nature. He believed that there was a general feeling among agriculturists in this country, that many of the investigations which have been entered upon by chemists and chemical associations have not been exactly calculated to be turned to account in a practical way. So strong was his own feeling in that respect, that he had recommended that all investigations which were undertaken under the sanction of the committee, should proceed, in the first instance, from the suggestions of practical men; and he had great pleasure in stating, that the gentlemen whom he had named had been enabled to suggest many important practical points, which would require a great deal of investigation in the first instance, but which promised to lead to results capable of immediate practical application. These gentlemen, in addition to having suggested the subjects, had also expressed their willingness to undertake those parts of the investigation which could be conducted only by practical men; and had agreed to grow a variety of articles of produce, in a variety of circumstances, in order to supply the subjects of the chemist's examination. He was sure that the Society would feel under great obligations to those gentlemen, especially when they considered not only the skill that was necessary to carry on such agricultural experiments, but likewise that their experiments involved both considerable expense and some risk of loss. He wished very much, in conclusion, that he could adopt the observations of Mr. Pringle with regard to the cordial support and encouragement shown to the department of veterinary science, and that he could say this encouragement had also been extended to the chemical branch. He had been instructed by the committee to state, that the total sum subscribed during the year was 308*l.* 9*s.* 6*d.*, contributed by 279 individuals. Now that certainly did seem to be a small sum to come from so large a country as Scotland, where so many agriculturists took so deep an interest in the success of that department, for the efficiency of which he understood that a sum of 500*l.* was required. That, certainly, was not a large amount to raise in an agricultural country like Scotland; and he conceived that it only required a little more strenuous exertion on the part of those numerous members of the Society who believed that there was a connection between chemistry and agriculture, to raise the necessary sum, and thus to realise the promise of support which

was held out to the Society when the expediency of establishing a chemical department was under discussion. [We regret that we are unable to publish Dr. Anderson's statement and Mr. Finnie's speech in large type; they are well worthy of perusal.]

Dr. Anderson said he had to report on the work done in the laboratory during the preceding six months. Nearly 100 analyses had been performed for different applicants. These included analyses of soils, limestones, and guanos. The subjects which they were for the present engaged with were the following: It was a statement which had been frequently made by agriculturists, that the feeding properties of Turnips grown with guano are inferior to those grown with farm-yard manure. They had, therefore, obtained samples of two different quantities of Turnips, one of which, grown with guano, was found to produce a very inferior quality of butter, and these had been subjected to a very careful examination, which was just finished, but which they proposed further to extend and substantiate upon Turnips grown for the purpose during the present season. They were also engaged with a series of analyses of different sorts of grains, oil-cakes, and other species of cattle food, for the purpose of drawing up a table of their comparative values, so that the farmer may, when the prices of home produce are low, be able at once to employ the produce of his own farm, in place of selling it, and buying foreign oilcake or other similar foods. Further, they proposed to carry out a series of experiments on the Turnip, for the purpose of determining the different feeding values of that root, from different localities and altitudes, which were well known to influence its value to a considerable extent. It had also appeared of great importance that they should as much as possible endeavour to ascertain the composition of the principal soils of Scotland, with the view of fixing the actual characters and constitution of a really good soil. As this, however, was a very extensive and laborious matter, they had resolved to confine their attention for the present to our Wheat soils, and had made arrangements for obtaining for analysis specimens of such soils as possessed an established reputation for the production of good Wheat crops. In connection with this subject, Mr. Dickson, Saughton Mains, had also agreed to grow Wheat for a succession of years in the same field, during the whole of which time a series of analyses of the soil and produce would be made at definite intervals, along with such experiments as might appear desirable, the results of which, whatever they might be, could not fail to be of some importance.—Mr. Finnie, Swanston, said: It cannot but be gratifying to every one connected with agriculture that the Highland Society should have in so satisfactory a manner completed its arrangements with regard to the appointment of a chemist, more especially when we witness the laudable exertions both of the English and, I believe, the Irish Agricultural Societies, to aid by science the operations of the practical farmer. But, as convener of one of the committees appointed for the purpose of obtaining subscriptions for the chemical department, I must say, and I believe I speak the sentiments of the other conveners, that unless the proprietors and occupiers of land come forward more promptly and decidedly than they have as yet done, little credit will redound to the agriculturists of Scotland from the step the Society has taken, for, assuredly, unless funds be provided, the Society will be thwarted in its efforts, and not only will its reputation be endangered, but in failing in its endeavours successfully to induce practical farmers to avail themselves of the aid of science, a lower status must be taken by the agriculturists of Scotland amongst those of the other countries of Europe. I can, to a certain extent, but not altogether, apologise for the apathy evinced towards the chemical department of the Society by the tenant farmers, aware, as I am, with what they have had to contend during the past two years. But it must be a serious disappointment to every one who has either the interest of agriculture or this Society at heart, that so very large a proportion of the proprietors of land should be lukewarm and indifferent to a matter which not only embraces, but will materially tend to advance, the agriculture of Scotland, and elevate the tenants to a still higher standard of intelligence. I am aware some are exceedingly sceptical as to whether chemistry can benefit agriculture at all. To all such I would respectfully say, such an idea exists from the want of inquiry. If not presuming too much on the indulgence of this meeting, I may state, in a few words, in what respect I myself, a practical farmer, have experienced benefit from it. I had a field of 50 acres, which I thought, and I am sure would have been supported in the same conclusion by nine out of ten of any farmers I might have consulted, would be much benefitted from lime. Eight acres were limed, at an expense of about 35s., including carriage. It then occurred to me I would have an analysis made of the soil, and was informed it contained a fair proportion of lime. I desisted, treated the whole 50 acres alike as regarded other manures, and, after a lapse of some six or seven years, am now convinced that the lime would have made no return. Then with regard to another point of my practice. I happened to have some poppy cake brought under my consideration by a Leith merchant, to whom it was consigned. Never having been known as used for feeding purposes in this country, or I believe any other, the offer I had of it was at such a price, as to admit of it being used for manure. I bought the poppy cake—an unfavourable spring ensued—when I was compelled to give my hill stock ewes forced feeding. I thought of using it, but was deterred, thinking that something deleterious might be in it, and, more particularly, as lambs were in the question, double caution was necessary. I sent, therefore, a sample for analysis, along with another of linseed, and to my agreeable surprise, it was found to contain not only more oil than the linseed cake, but otherwise most likely to suit rearing animals better. I gave it immediately to a breeding stock of 600 ewes, and never had both ewes and lambs brought through in better condition and in such circumstances, at so little expense. Since then, I believe, some of the first breeders have used it, and it has even been sent from this country to India for the purpose of feeding horses, in consequence of the information obtained from me by an extensive Glasgow merchant. I should state, however, that my after experience proves that good poppy cake is the exception and not the rule. But I may ask, would I not have lost the particular advantage I gained upon that occasion had it not been for the services of Professor Johnston, the Chemist of the Agricultural Chemistry Association, by whom the analysis was made? But I hold that all I have said is but a drop in the bucket, in comparison with the advantages to be obtained, and which I have obtained, from the analysis of portable manures, upon which now, I may almost say, the one-half of the green crop land in Scotland is dependant. We have our guanoes adulterated. We have had oyster shells, and such like, ground down and mixed with bone-dust; and numerous are the manufactured manures of which we cannot judge of in any other way but upon chemical principles, and in which those that offer them have no further interest than to secure a sale. In illustration, I may state, some years ago I joined with two or three farmers in the purchase of some tons of nitrate of soda. None of us derived any benefit from the application of it. Most fortunately I had some left—got it analysed by Mr. Kemp at the College; and when the secret was explained it was to a great extent mixed with common salt. I heard of a cargo shipped to a party in London; a chemist was ordered to examine it before being taken from the ship. The adulteration was detected, and immediately the ship was ordered off to Scotland, and the cargo sold amongst the farmers. I once purchased a quantity of guano from a person in Leith. Professor Johnston had given an analysis of it, but the sample sent to him had been very different from the stock. I found upon taking delivery that all was not right. I then had a sample from the stock analysed, and had no difficulty in procuring an abatement of 10 per cent. from difference of value. I cannot conceive how any agriculturist who expends his hundreds a year upon portable manures is justified in applying them before being tested, and would begrudge a few shillings per annum to obtain a chemist of skill who could satisfy him as to the purity of the article upon which he is not only expending a large sum of money, but upon the genuineness of which his green crop, and every succeeding crop in the rotation, is dependant; for without a knowledge of the nature and properties of the materials employed by the agriculturist, it is evident that the result of many of the laborious and extensive processes incident to his daily occupation must be a matter of chance, thus contributing more than anything else to the precariousness of the profits upon which his prosperity depends. I may be told this is a tenant's question, and let him look after his own interest and he will fare the better; but I hold whatever is necessary for the tenant cannot be dispensed with by the landlord; and if from not having a ready and cheap way of having his manures analysed, the loss of a crop is the consequence, is not the landlord's rent endangered? But I would respectfully submit that these portable manures, now so important an element in good farming, and for which I would say a chemist's services are required, leaving every other consideration, has done much already for the proprietors of land. It is well known that during the French revolutionary war land attained a fictitious value, and in its downward progress it was arrested by the introduction into this country of those very portable manures; thus affording a full supply of manure in localities where formerly it could not be obtained, and carrying cultivation to land naturally good, but inaccessible to cartage, and causing luxuriant crops of corn Grass where only stinted herbage appeared before. In illustration I may state, that in the year 1814, the declared value of bones imported into this country was somewhere about 500*l*; in 1823 it rose to 15,000*l*; and in 1837 to 258,000*l*. In 1815 the quantity of Rape seed, Rape-cake, and Linseed-cake imported was only some 1600 tons, in 1837 it rose to nearly 800,000. In 1814, guano imported was only some 1700 tons; in 1847 it amounted to upwards of 220,000. But, it may be asked, what have those statistics to do with the appointment of a chemist? In the first place, as I said before, our bone-dust is adulterated, and he could check that and Rape-cake. 2. To such an extent is Linseed adulterated, that, from a calculation I once saw, if the whole Linseed and Rapeseed grown on the Continent was converted into cakes, it is questionable whether it would amount to what is exported; and we know well to what an extent foreigners use both of these articles themselves. 3. Then, as to guano, we have a difference of 7*l* in the price of a ton, and will any one be bold enough to say that adulteration can otherwise but exist, and how necessary to have a test applied before purchase? But already we have experienced, in this country, the value of a chemist. In 1841 guano sold as high as from 22*l*. to 28*l*. per ton. In 1842, the Agricultural Chemistry Association came into existence. Professor Johnston analysed the natural guano, published a receipt for the manufacture of what was then termed British guano, and immediately the attention of manufacturers was directed to it, and in numerous ways was it presented to the public. No doubt an increased importation lowered the natural guano to a certain extent, but in consequence of that produced by manufacture, it was affected to the extent of some 6*l*. or 7*l*. per ton. If, therefore, it has been in a great measure owing to the industry, skill, and perseverance of the Scotch farmer that Scotch agriculture has assumed the proud position it now occupies, if it has been found that tenant farmers were the first to take steps still further to advance agriculture, by applying science to practice, through the medium of the Agricultural Chemistry Association, which they originated themselves, and now, when the Highland Society, with the reputation throughout Europe of being supported by the landed proprietors, says, dissolve your association, as we are ready to afford you all the benefits you expected from it, have the farmers not some reason to complain, if this Society is unable to fulfil what it has promised, and is willing to enter, in consequence of 1000 out of about 1200 proprietors who are members refusing to give a small pittance per annum for a matter which not only concerns themselves and their tenants, but our national character as agriculturists; and, instead of fostering, thereby damping that enlightened enterprise which evinced itself when they established the Agricultural Chemistry Association. I feel confident that no proprietor will be so ungenerous as to suppose I have any want of respect to the landed interest in making these observations. I disclaim being affected by any interested or unworthy motives, my only ambition is, in my humble sphere, to do what I can for the art I practise. For, whether we take a comparative view of the present state of agricultural science with its condition but a few years since—a glance at the rapid improvements which have been effected in the arts of tillage and drainage at the superior quality and greater abundance of crops on an average of seasons—at the progressive improvements in the breeding of sheep and cattle—the striking advantages which the agriculture of this day possesses over that of only a quarter of a century past—and reflect that all such is not confined to England, Scotland, and Ireland, but extends to countries with more favoured climates, and lands naturally productive—well may we conclude that this is not the time to be found unwilling to proceed with whatever may tend to advance the art of agriculture in Scotland.

Mr. Finnie's remarks elicited, as they were calculated to do, the applause of the meeting and of many speakers who subsequently addressed it, and means were adopted to insure the publication and circulation of his speech in quarters likely to be influenced by it.

Miscellaneous.

Yorkshire Agricultural Society's Meeting at Leeds.—The second visit of the Society to Leeds will be of a character in all probability to far surpass every other meeting, as regards numbers and attraction. One circumstance which will tend to this state of things is the fact of the vast assemblages which will be brought by the new railways, which converge at Leeds, and the new districts which are thereby opened to the public. Another reason is the local as well as general interest which will attach itself to this show, as being a union of the great County Society with the Leeds Local Association for the improvement of the breed of pigs and poultry, &c. In few towns, moreover, are there greater facilities for an exhibition than in Leeds; the site of the show ground being absolutely in the town, and within a few yards of the railway station, being a vacant space in Wellington-street. It is admirably fenced, and affords the most convenient access possible. The great dinner will take place in the magnificent new Stock-Exchange, which is one of the most elegant rooms in Leeds, and very conveniently and centrally situated. We understand the Earl of Carlisle has intimated his intention of occupying his post as President, and the Earl of Harewood has promised to take the vice-chair. Among the objects of interest will be a discussion on the "Housing of Feeding Stock," to be introduced by Geo. Legard, Esq., to take place after the Council Dinner on the 31st of July, and much information is expected to be elicited on this very important subject, which has excited so much attention of late, and perhaps more than any other needs investigation. It is the intention, we understand, if possible, to have a field trial of all the implements, both ground and barn, on the two days before the show, and two sets of judges will be set to work to accomplish, if possible, this object. A Tare stubble is, we understand, provided at Kirkstall for this purpose, and Messrs. Johnson, Dyson, and White are appointed the stewards of the implement trial. The classes this year exceed any previous one, being as many as 74 in number. We understand that great exertions have been made by the Local Committee, at Leeds, of which Messrs. E Eddison and J. Heaton are local secretaries.

Sulphate of Magnesia as a Manure.—1. As a fixer of ammonia, there can be no doubt that it possesses valuable properties. It has, in this respect, some advantages and some disadvantages as compared with gypsum. It is more soluble in water, and therefore will be more generally active than gypsum, in the average of weather and circumstances. Spread on the floors of stables and dung-heaps, it will all dissolve, and therefore will all act. There is little chance of much loss, I think, arising from its solubility when applied to dung-heaps. If it be intended to fix the ammonia in liquid manures, this solubility would prevent its falling to the bottom inactive, as gypsum is very liable to do, and thus there would be no waste of its natural fixing power, I may add, that a certain proportion of magnesia is especially grateful to the plant, and that, when added to manure in this way, it may be expected also to improve its quality. As to its disadvantages, compared with gypsum, the principal one is, that it is less economical. For, in the first place, it is higher in price, and, in the second, its fixing power is, to that of common gypsum, as 32 to 46, and to that of burned gypsum, as 32 to 58. This lesser fixing power, however, is in some measure compensated by the greater certainty that the whole of the sulphate of magnesia will act. 2. As to the use of sulphate of magnesia as a manure in the way of top-dressing or otherwise, there are several results on record which are so far satisfactory, and certainly very encouraging, and deserving of repetition.

1. *On Clover and Rye-grass cut for Hay.*

The undressed part of the field gave . . 125 stones per acre.
The part dressed with 1½ cwt of sulphate of magnesia, per acre, 200 stones.

2. *On Oats in Mid-Lothian* (Mr. Main.)

No dressing gave . . . . . 42 bushels.
Dressed with 2 cwt. of sulphate of magnesia. 56 „

In both of these cases there was a large increase; and similar results are said to have been obtained with Wheat, though I am not sure if there are any accurately recorded. I think, therefore, you will do a service to practical agriculture if you will cause repetitions of such experiments to be made in the way of top-dressing the several kinds of corn and Grass, and, I would add, Bean crops, in the course of the present or succeeding month. You may apply the salt at the rate of 1½ to 2 cwt. per acre, and must weigh and measure everything. You must also have at least two plots on every field on which the experiments are made, and two measured portions to which nothing is applied, in order that an average or mean result may be obtained. You may try them if you like on different soils, and upon soils in different states of richness, and be sure not to pass by any circumstance in the case of the several plots which is likely to affect the average result. Sulphate of magnesia is also recommended strongly by some as a special manure for the Potato. I am not aware of any numerical results obtained by its use upon the Potato that are of much value. I think, however, you might try it both as an addition to the manure in the drills, and as a top-dressing after the Potatoes are up,—in both which ways it may also be used with Beans. You may also try it as a dusting to the sets before they are planted,—a mode of using this impure sulphate which has been lauded by some as a preventative of the prevailing Potato disease. 3. In reference to your third question, there is no doubt that the principle of mixed manures is a good one. Many mixtures, more or less complicated, have been made or recommended, of which sulphate of magnesia forms a part. You will find recipes for many such mixtures in my published Lectures. I may, however, recommend you to try both upon corn, Beans, and Potatoes, mixtures of 2 cwt. of sulphate of magnesia with one of common salt or nitrate of soda, or with ½ cwt. of each. These mixtures are to be applied in the proportions and with the precautions already indicated in reference to unmixed sulphate of magnesia. *Report of Agricultural Chemistry Association.*

Calendar of Operations.

JULY.

Lammermuir Sheep Farm, *July* 23.—Until the beginning of this month it can scarcely be said that we have had summer weather. Frosty nights, and cold withering winds during the day, were the marked features in the register for May and June. Under such adverse circumstances vegetation made very slow progress, and there has been a greater want of Grass on our hills during the months of May and June than has been the case for some years past. The effect of this on sheep stock is very apparent, more especially on lambs, which have neither the condition nor the blooming skin they had last year. For three weeks, however, we have had genuine summer weather, which has had the effect of magic on the pastures and everything else. We finished the shearing of sheep on the 18th, being fully a week later than usual. This arises partly from the cold weather, and partly from the want of condition having considerably retarded the growth of the wool. Now that the Grass is growing and the ewes want their fleeces, we expect the lambs to improve rapidly. Prices of all kinds of sheep are

about 20 per cent. below those of last year. Wool has risen from 2s. to 3s. per stone of 24 lbs. The principal business of the shepherds at this season is to keep them clear of maggots, which, in the present warm moist weather, are very troublesome. The lambs will be weaned about the middle of August. Turnips are growing very fast; the thinning of them is more than half completed, and all are ready for the hoe. We have begun to pare those first thinned with the small plough. Oats are looking very well, and will be fully shot out in another week. The late cold weather retarded the growth of the hay crops so much that we shall not begin cutting for a week yet. The crop is very light. *A Lammermuir Farmer.*

Notices to Correspondents.

Alluvial Soil: *J P H.* Does the Grass contain salt in excess? If so, an efficient 'thorough' drainage might, in the course of years, rectify the fault you complain of. The scouring of cattle sometimes proceeds from this cause. Magnesia, lime, or any strong alkaline manure, such as potash, &c., sweeten Grass, but whether it will cure the defect to which you allude we cannot say

American Reaping Machine: *W B Egan, M D.* Many thanks. We will endeavour to procure a sight of the machine before its presentation.

Ashes of Sea-weed. *Marino.* Messrs. Rendle and Co., who supply them, inform us, that their calcined sea-weed is procured from the coast of France, and that they do not know the manner in which it is burnt.

Assurance Societies: *C R C.* The English Societies charge very high for assuring farm buildings in which steam-engines are erected. Scotch societies, to whom such cases are familiar, ought to advertise their terms.

Coal Cinders: *H.* They may be used to dry up and absorb all sorts of liquid and sewage manure, and thus render it fit for carriage. And no better application could be made to stiff soils than this material thus saturated.

Dr. Newington's Dibble: *J G N.*, in our Paper of last week, asks, "How is Wheat, planted by this instrument, looking?" In November last I planted both Wheat and Barley with this instrument, both of which are looking extremely well. The Barley came up very thin, and looked so bad during the winter that I thought I should not have any. I, therefore, in the spring, in order to fill up the crop, sowed Parsnips amongst it, but it began to tiller out so thick and strong that I was obliged to hoe the Parsnips up. It is now looking so well that every one who has seen it say that they never saw such a crop before in their lives. It is quite thick enough, and more than 5 feet high. The Wheat is equally as good. I have therewith sent a specimen of the Barley, and should feel extremely obliged if you would have the kindness to tell me the name of it. It is entirely new here. *A Spade Farmer.* [It is a remarkably fine specimen of common Bere.]

Gypsum: *B.* Use sulphuric acid on your dung heap. Do not think of manufacturing gypsum out of it and quicklime. The carbonic acid which the former would detach, and which the latter might retain, is of no importance. Plants can find plenty of it in the air for every necessary purpose, after they have once attained an advanced stage of growth.

Lime Kiln: *Q.* Wanted, an economical plan, specification, and estimate of lime kiln, to burn or turn out 50 or 60 barrels of lime, where the fuel used is mostly turf, coals not being easily obtainable.

Ornamental and Domestic Poultry, by the Rev. E. S. Dixon, price 5*s.* 6*d.*, is now ready, and may be had at the Office of this Paper, and of all Booksellers.

Rural Chemistry, 2d Edition, revised and enlarged; by Edward Solly, Esq., may be had at the office of this Paper, and of all Booksellers. Price 4*s.* 6*d.*

Smut in Barley: *J T Agricola.* It arises from the seed sown having carried with it to the ground some of the spores or sporules of the fungus, in the ravages of which the disease consists. And the only remedy lies in perfectly cleaning the seed before sowing it. To do this, you may thoroughly wash it in soft water, or soak it in salt water, and then dry it with lime powder. There are many other methods suggested, as you will see in No. 1 of our Paper for this year; but whether they apply to Wheat or to Barley, their *modus operandi* consists in the thorough cleaning they give the seed. Blue vitriol we have used for some years in the case of Wheat, but it has failed this year.

Sundries: *A B.* Southdown ewes, after their lambs leave, soon fatten, and probably that is the best thing you can do under the circumstances. Heifers will fatten at 2 or 3 years old, according to their breed: and they will increase as rapidly, or more so, than oxen. Rice is too expensive for cattle food, that is the only objection.

Turnips: *Agricola.* You will not admit either a mixture of good with dead seed, or irregular manuring, or a variable degree of pulverisation, to account for the irregular and patchy way in which the crop has come. In every dry seed time, with subsequent drought, Turnips do come at twice—those patches which were damp enough at once to start the seed, first become green, and the rest, if the drought be not long enough to kill the seed, will show plant shortly after the first rains. We cannot suggest any other cause.

*** Communications reaching town after Wednesday cannot be answered the same week.

Markets.

SMITHFIELD, Monday, July 28.

We have a fair supply of Beasts for the season; the demand is, however, considerable, and Friday's prices are well supported. The number of Sheep is small, the trade is cheerful at a small advance on the most selling sorts. Lambs come to market in very middling condition, consequently choice ones are easily sold, but it is difficult to dispose of other kinds. The supply of Calves being shorter, there is a trifling improvement in the trade. From Holland and Germany there are 438 Beasts, 3980 Sheep, and 117 Calves; from Norfolk and Suffolk, 1000 Beasts; from Leicester and Northampton, 800; from Scotland, 300; and 17 Calves from Ireland.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	10 to 4	0	
Best Shorthorns	3	6 — 3	10	
2d quality Beasts	3	0 — 3	4	
Best Downs and Half-breds				
Ditto Shorn	3	10 — 4	0	

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools				
Ditto Shorn	3	6 to 3	8	
Ewes & 2d quality				
Ditto Shorn	3	0 — 3	4	
Lambs	4	4 — 5	4	
Calves	2	8 — 3	10	
Pigs	3	4 — 4	4	

Beasts, 3496; Sheep and Lambs, 28,240; Calves, 250; Pigs, 240.

Friday, July 27.

The number of Beasts is large; trade is slow, but prices remain about the same as on Monday. The supply of Sheep and Lambs is about an average; trade is cheerful at late rates. We have fewer Calves than for some weeks past, they are consequently sold rather dearer, but 4*s.* is quite outside quotation. From Holland and Germany we have 175 Beasts, 800 Sheep, and 269 Calves; from Spain 10 Beasts; from Leicester and Northampton, 200; from Scotland, 120; and 141 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	6 to 4	0	
Best Shorthorns	3	6 — 3	10	
2d quality Beasts	3	0 — 3	4	
Best Downs and Half-breds				
Ditto Shorn	3	10 — 4	0	

Best Long-wools		to		
Ditto Shorn	3	6 — 3	8	
Ewes & 2d quality				
Ditto Shorn	3	0 — 3	4	
Lambs	4	4 — 5	4	
Calves	2	10 — 4	0	
Pigs	3	4 — 4	4	

Beasts, 1098; Sheep and Lambs, 12,450; Calves, 486; Pigs, 248.

COVENT GARDEN, July 28.

The supply of Hothouse Grapes, Peaches, and Nectarines is well kept up. Pine-apples remain unaltered. Strawberries and Cherries are plentiful. Apricots, ripe Gooseberries, and Currants are sufficient for the demand. Nuts in general are abundant. Oranges and Lemons are plentiful. Amongst Vegetables, Turnips may be obtained at from 3d. to 6d. a bunch. Carrots the same. Cauliflowers are very plentiful. The season for Rhubarb and Asparagus is nearly over. Green Peas fetch from 1*s.* 6*d.* to 4*s.* per bushel. Potatoes realise from 1*d.* to 4*d.* per lb. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1*s* 6*d.* to 3*s.* per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Lily of the Valley, Tropæolums, Carnations, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 5*s* to 8*s*
Grapes, hothouse, p. lb., 2*s* to 6*s*
Peaches, per doz., 6*s* to 20*s*
Nectarines, per doz., 6*s* to 20*s*
Strawberries, p. punn., 9*d* to 2*s*
— per pottle, 4*d* to 1*s*
Cherries, wall, per lb., 2*s* to 3*s*
— standard, p. lb., 4*d* to 6*d*
Gooseberries, green, p. hf. sieve, 2*s* to 3*s* 6*d*
Currants, do., 3*s* to 4*s*
Apples, kitchen, p. bsh., 4*s* to 8*s*
Oranges, per doz., 1*s* to 2*s*
— per 100, 6*s* to 16*s*
Lemons, per doz., 1*s* to 2*s*
— per 100, 7*s* to 14*s*
Almonds, per peck, 6*s*
— sweet, per lb., 2*s* to 3*s*
Walnuts, p. 100, 1*s* 6*d* to 2*s*
— p. bush., 16*s* to 24*s*
Nuts, Bar., p. bush., 20*s* to 24*s*
— Brazil, p. bsh., 12*s* to 16*s*

VEGETABLES.

Cabbages, p. doz., 6*d* to 1*s*
Cauliflowers, p. doz., 6*d* to 3*s*
Peas, per bush., 1*s* 6*d* to 4*s*
Beans, p. bush., 1*s* 6*d* to 2*s* 6*d*
Sorrel, p. hf. sieve, 6*d* to 9*d*
Potatoes, per ton, 60*s* to 180*s*
— per cwt., 3*s* to 14*s*
— per bush., 4*s* to 7*s*
Turnips, per bunch, 3*d* to 6*d*
Red Beet, per doz., 2*s* to 4*s*
Horse Radish, p. bdl., 2*s* to 6*s*
Asparagus, p. 100, 1*s* to 4*s*
Rhubarb, p. bundle, 3*d* to 4*d*
French Beans, p. 100, 6*d* to 1*s*
Cucumbers, each, 4*d* to 1*s*
Leaks, per bunch, 4*d* to 6*d*
Celery, p. bundle, 1*s* to 2*s*
Radishes, per 12 bunds, 9*d*
Watercress, per doz. bunches, 4*d* to 6*d*
Carrots, per bun., 4*d* to 6*d*
Spinach p. sieve, 1*s* to 1*s* 6*d*
Onions, p. bunch, 2*d* to 6*d*
— Spanish, p. doz., 1*s* 6*d* to 4*s*
Shallots, per lb., 6*d* to 8*d*
Garlic, per lb., 6*d* to 1*s*
Artichokes, p. doz., 1*s* 6*d* to 3*s*
Vegetable Marrows, doz., 6*d* to 1*s*
Lettuce, Cab., p. sc., 4*d* to 9*d*
— Cos, do., 6*d* to 1*s*
Mushrooms, p. pot., 1*s* 6*d* to 3*s*
Small Salads, p. pun., 2*d* to 3*d*
Fennel, per bunch, 2*d* to 3*d*
Savory, per bunch, 2*d* to 3*d*
Thyme, per bunch, 2*d* to 3*d*
Parsley, p. doz. bun., 3*s* to 4*s*
— Roots, p. bdle., 1*s* to 1*s*
Marjoram, green, p. bun., 4*d* to 6*d*
Mint, green, per bunch, 3*d* to
Basil, green, p. bunch, 4*d* to 6*d*

HAY.—Per Load of 36 Trusses.

Smithfield, July 26.

Prime Meadow Hay	68*s* to 75*s*	Clover	60*s* to 95*s*
Inferior ditto	50 65	New Clover	80 84
Rowen	50 60	Straw	30 34
New Hay	50 70		J. Cooper.

Cumberland Market, July 26.

Prime Meadow Hay	70*s* to 75*s*	Inferior	50*s* to 80*s*
Inferior ditto	50 63	New Clover	50 80
New Hay	50 63	Straw	32 36
Old Clover	92 98		Joshua Baker.

Whitechapel, July 26.

Fine Old Hay	66*s* to 72*s*	New Clover	65*s* to 75*s*
Inferior ditto	45 50	Inferior ditto	45 50
New Hay	55 63	Straw	30 36
Old Clover	95 100		

HOPS.—Friday, July 27.

Messrs. Tattersden and Smith report that the market is firm. Duty 70,000*l.* to 75,000*l.*

MARK LANE.

Monday, July 28.—The supply of English Wheat by land carriage samples to this morning's market was small; a few of the finest were disposed of at a decline of 1*s.* to 2*s.* per qr. from the prices of this day sennight, but the majority remained unsold late in the day. Business in foreign was circumscribed, and quite in retail, but we do not alter our quotations.—Barley must be written 1*s.* per qr. cheaper.—In Beans and Peas there is no alteration.—The Oat trade is heavy, and ordinary qualities are written 6*d.* to 1*s.* per qr. lower.

Friday, July 27.—The arrivals of English corn during this week have been small, and those of foreign moderate.—This morning's market was badly attended, and English Wheat left over from Monday could only be cleared at the reduction of that day. Foreign met but a retail inquiry at late rates.—Barley is 6*d.* per quarter dearer.—Beans and Peas are a slow sale at former prices.—Oats meet a better inquiry at an advance of 6*d.* to 1*s.* per quarter.—Indian corn has declined in value, and cargoes of Russian, and fine Galatz, arrived for orders are obtainable at 28*s.* 6*d.* to 30*s.* per quarter.—Flour meets an improved demand at 24*s.* to 25*s.* 6*d.* per barrel.—Heavy thunder storms have been general throughout England and Ireland, since the 20th inst.; these have partially laid the crops, and will protract the harvest, but we do not learn that extensive injury has yet been sustained; some of the spring crops, on the contrary, are greatly benefited.—In the Baltic prices are firmly maintained, and must be quoted fully 1*s.* per quarter higher at Dantzic. On the Continent, and along the Baltic, the weather appears to have been much of the same character as here; there are also great complaints of the yield of the Rye crops. In France prices have not undergone any material alteration, but in Belgium Wheat has again advanced in value, and best qualities cannot be had under 47*s.* 6*d.* per qr., f. o. b. New York letters of the 10th inst. state, that the demand for Flour during the week had been slightly in excess of the supply; shipments to some extent were making to Great Britain, chiefly from Liverpool and Scotland.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas
June 9	44*s* 6*d*	26*s* 11*d*	17*s* 7*d*	25*s* 4*d*	31*s* 7*d*	30*s* 4*d*
— 16	44 2	26 5	18 0	26 8	30 8	30 4
— 23	44 6	26 5	18 9	25 9	30 10	31 5
July 7	47 1	25 11	17 11	28 1	32 1	33 10
— 14	48 2	25 3	18 9	26 11	32 1	30 9
— 21	48 10	26 7	19 4	28 6	32 2	32 4
Aggreg. Aver.	46 4	26 0	18 5	27 2	31 6	31 8
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	June 9.	June 16.	June 23.	July 7.	July 14.	July 21.
48*s* 10*d*	.	...	..	...	..	.
48 2	..	..	.	.	..	..
47 1	.	...	.	.	...	...
44 6	...	...	...	...	...	...
44 6	...	...	...	...	...	...
44 2	...	.	.	.	.	.

PRICES CURRENT.	London. July 16 qr.	London. July 23 qr.	Liverpool. July 17. 70 lbs.	Liverpool. July 24. 70 lbs.	Wakefield. July 13 qr.	Wakefield. July 20 qr.	Boston. July 18 qr.	Boston. July 25 qr.	Birmingham. July 12. 62 lbs.	Birmingham. July 19. 62 lbs.
	s. s.	*s. s.*	*s. d. s. d.*	*s. d. s. d.*	*s. s.*	*s. s.*	*s. s.*	*s. s.*	*s. d. s. d.*	*s. d. s. d.*
Wheat—										
New, red ...	42 to 44	42 to 44	6 9 7 0	6 10 7 6	46 to 52	45 to 51	45 to 50	45 to 50	6 1 6 7	6 0 6 7
„ white ...	47—50	47—50	7 2 7 7	7 2 7 8	46—54	45—53	46—53	48—54	6 6 6 10	6 3 6 7
Old, red ...	42—46	40—48	6 10 7 2	6 10 7 2	45—47	44—46	—	—	6 0 6 6	5 10 6 4
„ white ...	50—54	50—54	7 6 7 9	7 6 7 9	—54	—53	—	—	6 4 6 8	6 2 6 8
Foreign	36—58	36—56	4 8 8 6	4 8 8 6	42—55	41—54	—	—	5 4 7 0	5 3 6 10
			480 lbs.	480 lbs.						
Rye—New ...	22—24	22—24	—	—	—	—	—	—	—	—
Foreign...	22—23	22—23	—	—	—	—	—	—	—	—
Foreign meal	6*l.*—7*l.*	6*l.*—7*l.*	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley—										
Grinding ...	21—24	20—24	—	—	22—23	22—23	24—26	24—26	23—25	23—25
Malting.. ...	22—27	24—26	30*s*—32*s*	30*s*—32*s*	—	—	28—30	—	29—32	29—32
Foreign... ...	18—27	18—26	—	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	19—25	18—25	2*s* 10*d* 3*s* 2*d*	2*s* 10*d* 3*s* 2*d*	—	—	14—21	18—22	20—28	20—28
Black...	15—22	14—23	2 5 2 9	2 5 2 8	—	—	—	—	19—20	19—20
Foreign ...	14—21	13—21	2 4 2 6	2 4 2 6	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	25—30	25—30	34*s*—	34*s*—	28—32	28—32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—25	23—25	28—30*s*	28—30*s*	—	—	—	—	11—12	11—12
Foreign ...	25—32	25—32	32—34	32—34	—	—	—	—	—	—
Beans—										
New, small ...	—	—	32—35	32—35	31—36	32—36	32—34	32—34	12—14	12—14
Old	23—33	23—33	34—36	34—36	—	—	34—36	—	15—16	15—16
Foreign ...	21—36	21—36	—	32—36	30—31	30—31	—	—	11—13	11—13
Linseed—Feed	—	—	40—42	40—42	32—40	32—40	—	—	—	—
Foreign ..	36—40	36—40	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9*l.* 7*s*	9*l.* 7*s*	7*l.* 12*s*	7*l.* 12*s*	—	—	—	—	—	—
Foreign ...	6*l.*—7*l.*	6*l.*—7*l.*	—	—	—	—	—	—	—	—
Indian Corn—	30—34	30—34	32*s*—33*s*	29*s*—30*s*	—	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	36—44	36—44	35—36	35—36	—	—	36—40	36—40	37—39	36—38

Weekly Averages and Imports.	Aver. July 24	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	*s. d.*	qrs.	*s. d.*	qrs.	*s. d.*	qrs.	*s. d.*	qrs.
WHEAT ...	50 0	8210	48 2	13130	49 6	7356	50 9	371	49 0½	2725
BARLEY ...	—	3080	25 3	50	—	930	—	—	—	581
OATS... ...	19 11	10470	18 9	3791	22 0	748	15 9	229	19 5½	—
RYE	—	—	26 11	430	—	—	—	—	—	—
BEANS ...	33 1	—	32 1	4802	31 0	468	34 11	17	—	—
PEAS... ...	29 0	—	30 9	1676	—	214	—	—	—	—
SIGNED	*KINGSFORD and LAY.*		*SEGAR and TUNNICLIFFE.*		*SANDARS and DUNNS.*		*THOMAS WRIGHT.*		*J. and C. STUBGE.*	

SUSSEX.

TO BE LET for a term of years, and entered upon at Michaelmas next, the Farm of WOTTON, in the Parish of Folkington, at present in the occupation of Mr. Shoesmith. It consists of about 409 acres of Meadow, Pasture, and Arable land: the Arable land is most productive of Beans and Wheat: most of the Pasture and Meadow land is of the richest fattening quality. There is an excellent Farm-house, with every convenience, and the Farm-buildings are large and commodious, and economically fitted up and arranged for fattening a large number of beasts in feeding-houses, stalls, sheds, and yards. The Farm is about four miles from Hailsham and Eastbourne, 10 miles from Lewes, market town, and one mile from the Polegate station on the Lewes and Hastings Railway. For particulars, apply to Mr. JOHN MORTON, Whitfield, Berkeley, Gloucestershire. A person at Folkington Place will show the Farm.

TO BE LET, for a term of years, and entered upon at Michaelmas next, the FARM of TESTWOOD AND COLMOOR, in the parish of Eling, in the county of Southampton, at present in the occupation of the Proprietor. It consists of 355 acres, of which 64 acres are excellent Water Meadow, watered by the river Test; 100 acres are good Arable Land, and 191 acres are of rough Pasture, now being drained, which may be converted into rich productive Turnip and Barley land. There is a good Farm-house, and large commodious Farm Buildings. The Farm is about five miles from the town of Southampton, and the turnpike road from there to Salisbury passes through it. It is within 1¼ mile of the Eling Railway Station and Wharf on the Southampton river.—For particulars apply to Mr. JOHN MORTON, Whitfield, near Berkeley, Gloucestershire. A person at Testwood House will be directed to show the Farm.

LOVINGTON MILLS, SOMERSET.

TO BE LET, for a term, with immediate possession, LOVINGTON MILLS, comprising a comfortable Dwelling House, suitable offices, and garden attached. The Mill has a powerful, newly-erected, iron Water-wheel, with connecting gear, by Messrs. Haden, of Trowbridge, in perfect repair; the wheel is driven by a stream of water which never fails in the driest season, driving three pair of stones, and is capable of grinding 200 sacks of corn per week. 56 acres of Arable Land, in a high state of cultivation, with a Homestead, and 60 acres of excellent Pasture, may be taken with the Mill from Michaelmas next. The Premises are well situated, three miles from Castle Cary, seven from Somerton, eight from Shepton Mallet, and twelve from Yeovil. For further particulars, apply to Mr. ALLERTON, Bailiff, Charlton, Somerton.

TO BE LET, ready furnished, in WILTSHIRE, a good Family Residence, with large Lawn and Shrubberies, Pleasure Grounds and Walled Garden, Paddock, Coach-house, Stable, and other Offices, pleasantly situate near the centre of the county and within an easy distance of railway, to and from which coaches pass the house several times daily. The above may be had either by the month or for a longer period, at terms accordingly.—Direct, by letter only, to W. H. S., 284, High Holborn.

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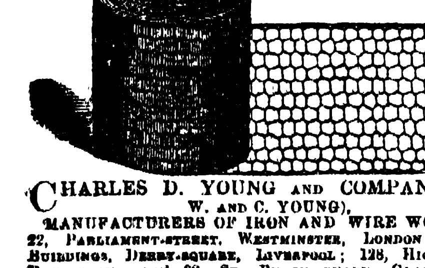

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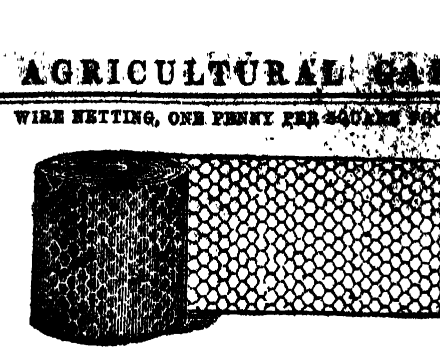

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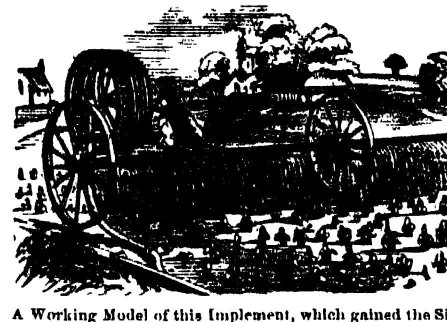

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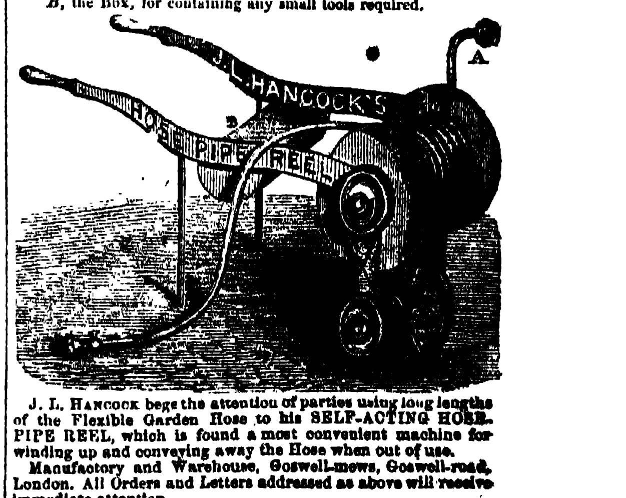

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 31—1849.] SATURDAY, AUGUST 4. [PRICE 6d.

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(Figured in Paxton's "Magazine of Botany" for this month.)

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"The Lake formed a beautiful sheet of water about three or four miles in diameter, and surrounded to the north east and south by an amphitheatre of picturesque mountains; upon the summit were erected pagodas, one of which attracted particular attention. It was situated on a bold peninsula that juts into the lake, and was called the Lui-Soong-'a, or Tower of the Thundering Winds. It is said to have been built in the time of the philosopher Confucius, who lived three centuries before the Christian era. In the Vale of Tombs the variety of monuments is almost infinite."

"These monuments of departed greatness are surrounded by trees—such as different species of the Cypress, whose deep and melancholy hue seems to have pointed them everywhere out as well suited for scenes of woe. The churchyard Yew did not, however, grow there, nor was it observed in any part of China; but a species of weeping Thuja, or Lignum vitæ, with long pendant branches, unknown in Europe, overhung many of the graves."

In the plate of the Vale of Tombs, the weeping tree in the foreground near to the Tower of the Thundering Winds is this plant, and it has since been proved by botanists to be the weeping Cypress. Messrs. STANDISH and NOBLE obtained, last winter, from the north of China, dried specimens and cones of the above tree, which were forwarded to DR. LINDLEY and Sir JOSEPH HOOKER, who at once pronounced them to be the famous Funebral Cypress (see leading article in the *Gardeners' Chronicle* of the 21st of April last).—Messrs. S. and N. can also supply 1-year Seedling Cryptomeria japonica at 1s. 6d. per plant, 15s. per dozen, or 5l. per 100; 2-years Seedlings at 3s. 6d. per plant, 30s. per dozen, or 12l. 10s. per 100.

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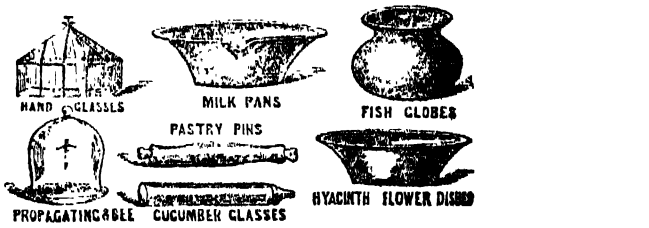

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GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 26, Fisher's-lane, London.

APSLEY PELLATT AND Co. (late PELLATT and GREEN), Falcon Glass Works, Holland-street, Blackfriars, have always on hand, Bee Glasses, 1s. 2d. per lb.; Cucumber Glasses, 1s. 6d. per lb.; Milk Pans, 18-in., white glass, 5s. 6d. each; Propagating Glasses, white, 1s. per lb; do., green, 10d.; do. condensing, 2d. per lb. extra; Grape Shades, 1s. 6d. to 2s. each; Fish-bowls, from 1s. 6d. each; Wasp and Fly-traps, 40s. per gross, or 3s. 6d. per dozen. By the use of these traps fruit may be preserved from (otherwise certain) destruction.

CLARK'S METALLIC HOTHOUSE WORKS, 55, Lionel-street, Birmingham.—Proprietor, Mr. THOMAS CLARK; Manager, Mr. JOHN JONES.

Mr. CLARK presents his grateful thanks to the Nobility and Gentry for their liberal patronage of the above Establishment, during a period of thirty years, and begs to state that the repeal of the duty on Glass enables him to offer his METALLIC HOTHOUSES at a greatly reduced price. These Houses are glazed with British Sheet Glass, in panes of from 24 to 30 inches in length, and of such thickness as to preclude all danger of accidental breakage, whilst that which arises from the action of frost is effectually prevented by the peculiar mode of glazing adopted. As a sample of his Metallic Hothouses, in which all the most recent improvements are happily combined, Mr. CLARK refers to the magnificent range erected by him in the new Royal Gardens at Windsor, admitted by competent judges to be the most complete of its kind in the world.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

GRAY, ORMSON, AND BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

GRAY, ORMSON, and BROWN, have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

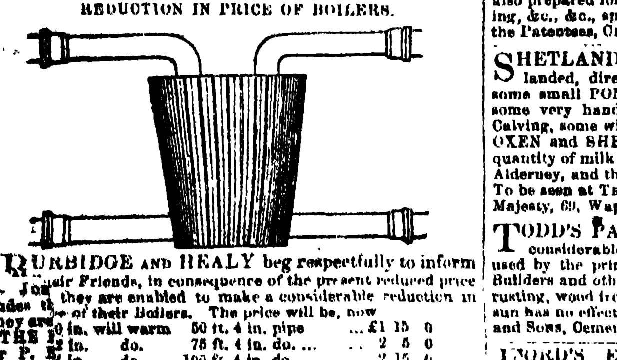
N.B. Plans and Estimates furnished free.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Duke of Devonshire's, Chatsworth Gardens.
Earl of Gainsborough's, Oakham, Rutlandshire.
Earl of Zetland's, Upleatham, Yorkshire.
Robert Hanbury, Esq., Poles, near Ware, Herts.
Mr. Glendinning's Nursery, Turnham-green.
And at least 500 other important places.

BURBIDGE and HEALY, 130 Fleet-street, London.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price ... they are enabled to make a considerable reduction in ... of their Boilers. The price will be, now

...0 in.	will warm	50 ft. 4 in. pipe	... £1 15 0
...2 in.	do.	75 ft. 4 in. do. ...	.. 2 5 0
...4 in.	do.	100 ft. 4 in. do.	. 2 15 0
...6 in.	do.	150 ft. 4 in. do. ...	. 3 10 0
...8 in.	do.	250 ft. 4 in. do. ..	... 4 10 0
... in.	do.	350 ft. 4 in. do. ...	... 5 16 0
... in.	do.	450 ft. 4 in. do.	... 7 0 0

NEW PATTERN BOILERS.

	will warm	800 ft. 4 in. pipe	... 13 15 0
	do.	1500 ft. 4 in. do. ...	... 25 0 0

... with double arms, up to 18 in., 5s. extra; to 24 ... all above, the same price.

... Fleet, London, August 4.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, on the Houses when completed, from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity, our principle being formed without wood or putty in the roof.

HEATING BY HOT WATER.

TURNIP SOWING.

THE LONDON MANURE COMPANY, having adapted the "URATE" more particularly for Turnips and all Root Crops, can recommend it with the greatest confidence. It seldom fails, in the driest season, to secure a good plant, and to produce a heavy weight per acre. They would call attention to their Superphosphate of Lime, which is prepared with the greatest care, and sent out in a very fine, dry state, perfectly ready for use. The London Manure Company have made arrangements for a constant supply of Peruvian Guano, from the best cargoes, which they will deliver direct from the ship or importer's stores. Corn Manure, Nitrate of Soda, Fishery and Agricultural Salt, and every other Artificial Manure, on the lowest terms for a genuine article.

EDWARD PURSER, Secretary, 40, Bridge-street, Blackfriars.

PERUVIAN AND BOLIVIAN GUANO ON SALE

BY THE ONLY IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WILLIAM JOSEPH MYERS AND CO., LIVERPOOL;
And by their Agents,
GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
COTESWORTH, POWELL, AND PRYOR, LONDON.

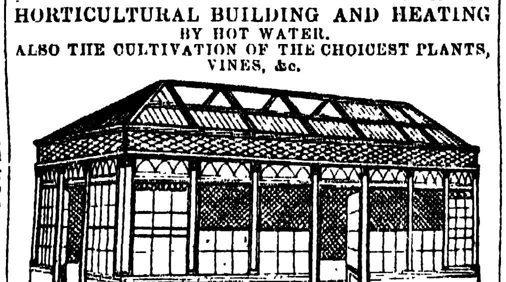
To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

GUANO AND OTHER MANURES.
PERUVIAN GUANO, of the finest quality, direct from import warehouse.
NITRATES SODA AND POTASH.
GYPSUM (SULPHATE OF LIME).
DRIED NIGHT-SOIL.
SULPHURIC ACID AND COPROLITE.
SODA ASH (WIREWORM DESTROYER).
SUPERPHOSPHATE OF LIME (made from bone only).
AGRICULTURAL SALT, and all other Manures of known value, may be had of

MARK FOTHERGILL, 201 A, Upper Thames-street, London.

A Treatise on Guano, Superphosphate of Lime, &c., will be forwarded on receipt of 8 postage stamps. Free to purchasers of Guano, &c.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, CHARLES FRANCIS and SONS, Nine Elms, London.

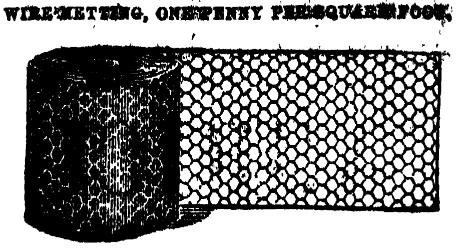
SHETLAND PONIES AND CATTLE. — Just landed, direct from Shetland, a quantity of very handsome small PONIES; size, from 8½ to 12 hands high. Also some very handsome small COWS and HEIFERS, down Calving, some with Calf by side, and in milk; also some small OXEN and SHEEP, for feeding. These Cows give a large quantity of milk for their size, which is very rich, similar to the Alderney, and they are very hardy and suitable to this climate. To be seen at THOMAS ORTON'S, Salesman and Importer to her Majesty, 69, Wapping.

TODD'S PATENT PROTOXIDE PAINT at a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it. Manufactured by CHARLES FRANCIS and SONS, Cement Works, Nine Elms, London.

FORD'S EUREKA SHIRTS.—"A comfortable fitting Shirt is a desideratum long wished for. The Public only need to be made acquainted with the Establishment of Mr. FORD, of 185, Strand, and try his Eurekas, to be convinced of the many advantages gained in appearance and comfort by wearing those made at this celebrated Establishment." —*Musical Gazette*, May 26, 1849.

Six very superior Shirts for 30s.; also all the new Patterns in Coloured Shirts, six for 27s. Detailed Catalogues, with Patterns and Directions for Self-measurement, sent post free. —RICHARD FORD, 185, Strand, London.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



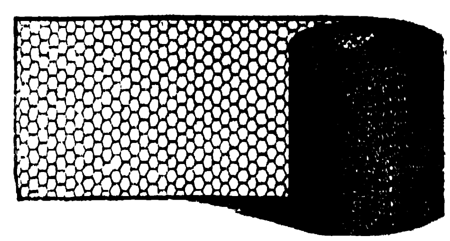
GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3d.	per yard	30 inches wide	7½d.	per yard
18 ,, ,,	4½d.	,, ,,	36 ,, ,,	9d.	,, ,,
24 ,, ,,	6d.	,, ,,	48 ,, ,,	1s.	,, ,,

Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden arches, 20s. each; Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

GALVANISED WIRE GAME NETTING.—
7d. per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7d. per yd.	5d. per yd.
2-inch ,, strong ,,	..	9 ,,	6½ ,,
2-inch ,, extra strong ,,	...	12 ,,	9 ,,
1½-inch ,, light ,,	...	8 ,,	6 ,,
1½-inch ,, strong ,,	...	10 ,,	8 ,,
1½-inch ,, extra strong ,,	...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

PORTLAND CEMENT.—Testimonials received from all quarters, prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Milbank-street, Westminster.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by
HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,
And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

, Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S
Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

HOYLE'S CRUSADER GERANIUM, *7s 6d.* each, in October.
ARNOLD'S VIRGIN QUEEN, 7s. 6d. each in October.
Two gems of the season; or a plant of each for 12s.
Apply to WILLIAM E. RENDLE and Co.,
Nurserymen, Plymouth.

ROBERT COOPER, Slon Nursery, Croydon, begs to offer the following select plants.

Adamia versicolor ...	1s	6d	Lobelia erinus lucida .	0s	9d
Angelonia Gardneriana	1	0	,, cardinalis seedlings ...	0	6
Balsamina repens ...	1	6	,, syphilitica ...	0	6
Browallia Jamesoni ...	1	6	Mimulus Harlequin ...	1	0
,, speciosa ...	1	6	Penstemon cordifolius	1	0
Calycanthus macrophyllus	7	6	,, M'Ewenii .	1	0
Cantera bicolor ...	2	6	Petunia elegantissima .	1	6
Cheiranthus longifolius	1	0	Phlox depressa ...	2	6
Cotoneaster marginata	1	0	,, good sorts, p. doz.	9	0
Dianthus Garnerianus .	1	0	Pitcairnea punicea ...	2	6
,, Hendersoni...	1	0	Pleroma elegans ...	1	6
,, Manleii ...	1	0	Plumbago Larpentæ ...	1	0
Edgworthia chrysantha	5	0	Salvia patens alba ...	1	0
Fuchsia splendida (Low)	2	6	Scutellaria macrantha.	1	6
,, The Rajah ...	2	6	Spiræa Lindleyana ...	1	0
,, fine sorts in bloom	1	0	Thunbergia Fryeri ...	0	9
Funkia grandiflora ...	3	6	,, new yellow ...	0	9
Heliotrope Souvenir de Liege	1	6	Torenia scabra ...	1	0
Heliotrope Triomphe de Liege	0	9	Tropæolum speciosum .	1	0
Hypericum hircinum .	1	0	Zauschneria californica	1	0
Lobelia erinus Kaimii	0	9	Weigela rosea .	1	0
			Rock plants, in great variety, per dozen ...	6	0

The Gardeners' Chronicle.

SATURDAY, AUGUST 4, 1849.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Aug. 7—Horticultural ....3 P.M.
FRIDAY, — 10—Royal Botanic (Anniversary) ... 1 P.M.
COUNTRY SHOWS—Wednesday, Thursday, and Friday, August 8, 9, and 10 Liverpool Floral and Horticultural.

IN THE GARDENERS' CHRONICLE of last week will be found a report of an interesting meeting of the Botanical Society of Edinburgh, held on the 12th of July, on which occasion some information was given concerning the ACTION OF ROOTS IN DRAINS. It is unfortunately notorious that drain pipes have in many instances been so wholly choked by the formation of a fibrous matter in their interior, that water can no longer pass; and this in gardens as well as farms. The fibrous matter is by some, we might say by many, persons supposed to be engendered in the water of such drains; and inquiries have been addressed to scientific men concerning the habits and mode of propagation of these imaginary subterranean aquatics. We have seen many drains obstructed; we have received many samples of obstructing matter; but we never yet saw anything fibrous except the roots of various plants—nor do we apprehend that any other fibrous material occurs in drains.

There are those who have a difficulty in believing that roots can always introduce themselves into these deeply buried water channels. It is not long since fibrous matter was found to have choked up pipes 4 feet deep in a field cropped with Mangold Wurzel; and the owner was puzzled to know how that could have come about; for there were no trees nearer than an adjoining hedgerow, and the obstruction occurred in the middle of a large field. In other cases Grass land has been found to have given rise to the same kind of mischief, still in the absence of trees. But trees have scarcely more power than herbaceous plants to send roots into drain-pipes; and the evils that have been observed are as likely to be owing to weeds or Grasses, as to Ash trees or Elms. At the meeting to which we have referred, the enemies which had been detected were Ragwort, Bistort, Horsetail, Coltsfoot, Docks, Thistles, as well as Gooseberry bushes, Elms, Poplars, Willows, and Alder trees.

One lesson taught by these occurrences is the necessity of clean cultivation, for there is no doubt that the tap rooted weeds and running Grasses are among the species most likely to have troublesome roots. It is true that corn and Turnips and Mangold Wurzel will also send their roots to a depth much greater than is suspected; but they are annuals, or biennials, and their roots, if extended into drain pipes, will perish and rot away in a few months. With perennial plants it is quite different; every year adds to the extent of their undying roots, and we entertain no doubt that many a case could be found like that mentioned by Dr. NEILL, where the Ragwort (Senecio Jacobæa) had insinuated the point of its roots into a drain, and had then extended them so much as to fill the drain completely for about 20 feet. We hardly need observe that it is by the point that roots extend, with an indefinite power of branching, and that the finest thread once introduced into a drain-pipe will rapidly become the origin of most extensive mischief, provided the plant is perennial.

Draining is so costly an operation that no means can be wisely neglected to ensure the effectual action of the apparatus when it has been once laid down. To allow coarse perennial weeds to grow on land thus improved is to rear a host of enemies all ready to countermine the engineer, and destroy his work. Yet this is often forgotten. There is land in Staffordshire, drained at great cost, and overrun with Thistles or Ragwort. There is, within our knowledge, a thoroughly drained garden, kept in perfect neatness, the drain-pipes of which pass to the outfall through a piece of waste land well cropped with Docks, Waterpeppers, Thistles, and Burdocks. Can any one hope that such pipes will long continue to work? We have no such expectation.

Possibly Mr. PARKES'S collared pipes may prove impenetrable to roots; perhaps some other contrivance may be even a more effectual barrier; but, as to those points, we want experience, and time alone can furnish it. We also want to know under what circumstances roots direct themselves into subterranean hollows. It is evident that there is something besides the mere existence of an opening into pipes which attracts the roots. If it were not so, all drain-pipes would in time choke up, under the careless cultivation with which they are connected. But that does not happen. In the hope of learning something upon this subject, we, two years ago, commenced the following experiment, which is still in progress:—Two rows of drain-tiles were laid down within 6 inches of each other, in heavy land, 15 inches below the surface. One row was formed with PARKES's collared pipes, the other with rude semi-cylinders, fitting very imperfectly at the ends and edges. Over these a row of Willows was planted. Upon examining them this morning the ground is found penetrated by their roots far below the pipes, but no sign of roots is to be remarked inside of either the one line or the other; and, what is very remarkable, a root has reached the junction of two semi-cylinders without entering the drain; on the contrary, after reaching the junction it has divided into two arms, which have followed the junction right and left, and finally plunged into the earth below the drain, the root sitting astride, as it were, of the joint.

Are we to infer from this that roots will not enter drain-pipes so long as the earth is moist enough to support them, and that they only pass into drains if the soil chances to be too dry when they are in the neighbourhood? or is their introduction a mere matter of accident, the chances of which are in proportion to the abundance of roots present in soil?

THE dry weather of May and June and the first half of July, has apparently saved the POTATO CROP. At least, there are no serious indications of disease up to the present time. Here and there Potatoes have been attacked, but the cases have proved local both in Great Britain and Ireland. That we are not yet safe is, however, to be gathered from a report by the Inspector of the Highland Relief Board, dated Lochalsh, in Ross-shire, July 25, 1849.

This intelligent officer states that it has broken out in the village whence his letter is dated, and that it made its appearance there a month ago, on the spot where he first detected it in 1847 and in 1848. "I showed it," says Captain ELLIOT, "to the excellent proprietor, who gave orders in my hearing for them to be taken up and thrown into the sea. His tenants, after I was gone South, induced him to believe it was the effects of frost (from which it was distinctly different, the leaf having a black spot in the centre, and not frosted *edges*), and in reply to the Secretary of the Highland Society, he said it had entirely disappeared, and so it had; I found on my return not a plant left where I had observed it!

"I have only seen it here, and on a spot 10 miles from here it exists; but now it is very rife, and they are making it disappear by cart-loads. There were about 20 women and carts employed cutting them (the stems) over and burying them to-day.

"The cereal crops are late, but looking well. There are *many* more Potatoes planted than for several years. The crop is unequal; some very good, a portion (the effect of bad seed) very shabby. The dependence on them very general."

We have reason to believe that in the district here alluded to, the bad effects of a safe Potato harvest are already observable. The peasantry are losing their industry, and trusting to the root of idleness, while others, who had prepared to emigrate, have changed their minds. In illustration of the condition of these people, we may add that although the herring fishery is more abundant than for 20 years, it is useless to the inhabitants, who have no salt, no barrels, and no home purchasers. They therefore cannot cure the fish either for their own use hereafter, or for sale to distant places.

We venture to add, that they never will find salt, barrels, or purchasers until they provide themselves with energy and industry; and that they will never do, so long as they can find Potatoes to feed upon.

ABOUT a fortnight before the earliest Scarlet STRAWBERRIES were seen this year near London, we received from Mr. CUTHILL, of Camberwell, fruit ripened in the open air, of a handsome dark brownish red variety, which he called the Black Prince. It was very good, although somewhat acid, and remarkable for its rich mulberry red flesh. On several subsequent occasions during the summer we again received it, and it was found to improve as the season advanced, so that at the Chiswick Meeting in July it bore comparison for quality with all except the finest flavoured sorts. It was not so good as the British Queen and Elton; like them was far behind the old Pine, the king of Strawberries; but was quite as good as KEENS' Seedling.

Upon inquiry we find that a few of our best cultivators are acquainted with this sort; but that it is unknown to all but a very few. We have also ascertained that it is always very early, preceding the scarlet varieties by a full week or 10 days. Under these circumstances it deserves to be generally dispersed—for the gain of a week in the Strawberry season is important. It may not however answer the purpose of London market-gardeners, because it is too small for the shops. The following letter from Mr. BEATON, dated June 27, expresses his opinion of the variety.

"*June* 28.—I have great hopes of the Black Prince Strawberry, which is as distinct in the growth and shade of colour in the leaves as to be noticed from others in the same bed at some distance from them. Its early qualities there can be no doubt about, for I had it in bloom here this season, in the same quarter with KEENS' Seedling, full 15 days before it. I tasted the fruit of it last year, and found it as good and well-flavoured as any other sort, excepting always the prolific Hautbois, to which we have no rival yet where it succeeds, but like some others it does not answer in every garden. At the request of the foreman in the fruit department here, I allowed all the May blossoms to be picked off the Black Prince, in order to get it in in the autumn instead of the Alpines, and I shall be much disappointed if we do not find that to be the most useful way of using it in large families where forced Strawberries are plentiful in May. Last season Mr. CUTHILL sent me forced plants, turned out of the pots. We shook the mould from them, just about this time last year, and divided the plants where we could; then planted them on a sunny border, to try them against forced KEENS' Seedlings, treated after the same manner, and also against our autumn Alpines. The result was very favourable to the Black Prince, of which we gathered fruit down to the first frosty weather, while very few of the others came to table in the autumn. The foreman of the fruit department here has—as all foremen should have—the whole responsibility of his department on his own shoulders; he has also been at it these 15 years, and I put a good deal of confidence in his observations. He suggested last autumn to pick off the blossoms in May, and I allowed him to do so. He has a good stock of the Black Prince now in pots, to be put under glass late in October, and others in the open ground which will be in bloom about three weeks hence. SHEPHERD, the foreman, declared to me this morning that 'them there new Strawberries would knock the Alpines out of the garden in less than three years.'"

This opinion is confirmed by others, who have great gardens under their charge; so that as a variety earlier than any, as late as any, and much better than many, the Black Prince Strawberry may be recommended.

We do not, however, say that it is a novelty. On the contrary, Mr. C. KAY states in a letter now before us that a very few plants of it were sent to B. D. COLVIN, Esq., Norwood, in 1843, from Aberdeenshire, and were cultivated by him at Norwood-hill-lodge for four years; adding, "it is 8 or 10 days earlier than any of the tribe I know, a very great bearer, fine flavoured, makes an excellent preserve, and a good forcer."

The question of novelty is immaterial. All that the public has any interest in is to know that it is new to them, and that its good qualities are such as we have described them to be, about which there is no room for doubt.

MIXED VERSUS MASSED FLOWER-BEDS.

"Great wits sometimes may gloriously offend,
And rise to faults true critics dare not mend;
From vulgar bounds with brave disorder part,
And snatch a grace beyond the reach of art."
Pope's Essay on Criticism.

ALTHOUGH much has been written upon the proper distribution of the flower-garden, as regards harmony of colour and general effect, and though there are those who would impose upon us a code of rules by which we are to curb the bent of our fancies, and bind as it were by the dry formality of mechanical rule the details of a subject admitting the exercise of the purest taste; in an art essentially a "fine art;" yet it will be found that rules will never be adhered to, that caprice or fancy, or pure taste, will each severally reign supreme, according as the mind of each operator is constituted or his tastes cultivated. In any art or science not purely mechanical (and no true science can be strictly so), no rules beyond the simplest elementary principles should ever be strictly adhered to. A thousand circumstances occur in each individual case, to show the truth of that axiom. The blind adherence to established

rules in the details of the fine arts must ever be productive of retrograde results. No great artist has ever been known who adhered closely to the style of his master; and those who are the loudest in their acknowledgments of precedent in the rules of art are but critics or copyists—never good artists. They are men who would sacrifice everything to mere rule, simply because they can appreciate nothing beyond it; they would pile every picturesque group into a pyramid, and cramp the noble expressions and harmonious diction of the great dramatist into the dull monotony of a 10 syllabled verse. But I am not about to pen an essay on taste; I must return to the subject matter of my letter.

I have said that no mechanical rules should be permitted to guide us in our refined tastes, and consequently none must be allowed in the execution of ornamental garden scenery. Yet there are principles which must be adhered to, and fortunately they are such as no good taste in landscape gardening will ever depart from. And it is because your correspondents have not expressed themselves clearly upon this subject, and because they evidently have not understood each other, that I beg to take part in the discussion of this somewhat important question.

The first great and all important principle in garden scenery is appropriateness. By this term I mean fitness, unity, or, perhaps, a better term would be harmony of parts. The harmonious blending of sounds upon the organ of hearing produces a sense of pleasurable delight; but the very same notes, the same cadences, could be so arranged that a harsh and disagreeable piece of music would be the result. What, then, constitutes the difference? Simply the skill of the composer; his knowledge of

"The harmony of sweet sounds."

And so is it in ornamental gardening (*i. e.* the artificial part); the same accessories may be at the command of all, yet each will not arrange alike, and consequently there will be various degrees of excellence. But in reference to the arrangement of flower-beds, there are two important points to be considered, and which appear to have been overlooked by those who have taken up this discussion. Masses in contradistinction to mixed flower-beds are excellent in their way, but their appropriateness is of a limited scale; while mixed flower-beds admit of a great diversity of form, arrangement, and application. Massed flower-beds are only appropriate in the vicinity of buildings; they are only seen to advantage when surrounded with everything essentially artificial, and where there is no attempt to ape natural scenery. The arrangement of the beds in which masses are displayed, must be artificial. A geometrical plan is the most appropriate, and the individual masses should not be large. Every arrangement, every accessory to massed flower-beds must bear the stamp of art, no attempt to conceal such must be allowed, or you verge into the ridiculous. Fountains, vases, terraces, with all consequent *et ceteras*, are the appropriate accompaniments to "masses" and geometrical beds, and the proper arrangement of each constitutes a parterre and not a pleasure ground. The arrangement of flowers proper for the one is totally unfit for the other. Large masses of one colour, or even colours formally arranged in beds promiscuously, dotted about the lawn, or in front of the shrubberry, are out of taste. The pleasure ground is, or ought to be, a refined edition of nature. Graceful curves, masses of shade, contrast in foliage; here a gloom cast by deep masses of overhanging boughs, and now emerging upon open portions of lawns, bathed in a rich light, the deep green background throwing into bold relief the noble Hollyhock and Dahlia, and the numerous appropriate subjects for such positions. Most gardens admit only of two styles of arrangement, the formal or geometrical, and the picturesque or pleasure ground. Although each is essentially different from the other, yet when both are combined there should be no harsh separation. We should pass almost imperceptibly from one to the other, yet no attempt should be made to mix the formal with the picturesque. Each has its own merits, each is adapted for its particular position, but one can never be substituted for the other.

In extensive grounds the landscape gardener will have scope to apply another style—the natural. This can of course only be applied with advantage where every accessory is at hand. An undulating surface is almost indispensable, affording, as it does, such scope for diversity of scenery, and of arrangement in the masses of foliage. Here the Gorse, and Broom, and Heath creep down the slope to the very edge of the abrupt bank of the river. As the bank diminishes in height, Sedges and water plants fringe its margin. Yonder the waters spread out into a quiet lake dotted by water-fowl. Where the level glade passes imperceptibly into the bosom of the lake, the Birch droops its graceful branches, and the deep green Alder forms a noble mass of foliage. In planting or improving a scenery like this, there is ample scope for "massing;" but it must be upon a large scale; there must be no niggard hand in the matter. As a multitude of minor and insubordinate patches of light breaks up and destroys the harmony of a picture, so would paltry masses of foliage or flowers destroy the "keeping" of a real landscape. But yet masses of flowers may be introduced with excellent effect. Acres of the yellow Gorse, broken up into subordinate groups upon a declivity, has a fine effect. Masses of Rhododendrons in the foregrounds of woods, so arranged that at times part of the same group shall be in shadow and part lit up by the sun, has a noble effect. And where portions are broken off from the main groups, to vary expression, or to throw some noble tree into relief, the Holly, and smaller clumps of Gorse in conjunction, are excellent accessories.

In whatever department of ornamental gardening we exercise our abilities and tastes, harmony of parts must be ever recognised. Nothing in the whole range of landscape gardening requires greater skill than the adaptation of pure art accessories in natural scenery. Yet how often do we see such principles entirely lost sight of, and with what lamentable results. Cupids in the nooks of uncultivated copses; Hercules on the lawn of a quiet rural retreat; and mountains and lake aped at in a square rod of flower-garden.

"Here Amphitrite sails through myrtle bowers,
There gladiators fight or die in flowers;
Unwatered see the drooping sea-horse mourn,
And swallows roost in Nilus' dusty urn"

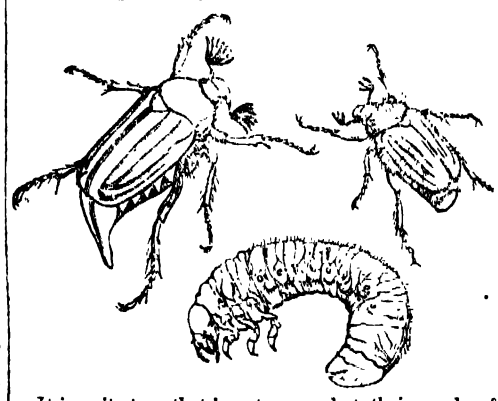
Pope's Moral Essays.

The disposition of the colours in a parterre in such a manner as to gratify a tasteful eye, admits of many variations, and each strictly artistic. What that arrangement must be can only be determined by the possessor for whose gratification the arrangement is to be made. *George Lovell.*

ENTOMOLOGY.

The May-bug or Cockchaffer, and the July-bug.

We are often asked whether insects do not grow, and whether in such case the small white butterfly (Pontia Rapæ) is not the young state of the large white (P. Brassicæ), whether the common house fly (Musca domestica) is not the young of the blue-bottle fly (M. vomitoria), or whether the July-bug (Amphimalla solstitialis, represented on the right hand side of the accompanying woodcut) is not the young state of the common cockchaffer or May-bug, figured on the left side of the woodcut, and which, two months ago, had been observed in equal profusion, and in the same localities as are now frequented by the July-bug.



It is quite true that insects grow, but their mode of growth completely differs from that of man and the higher animals; for insects are enveloped in a hard leathery or horny case, which is incapable of expansion, and which in fact is the representative of the bones of the vertebrated animals. Now in these latter the flesh and internal organs increase in size, without being prevented by the bones from swelling out, but this cannot take place in insects, and consequently when after a period of feeding the internal organs and flesh of the insect are increased in size, the outer case, which had prevented their still greater extension, splits open and is cast off, the insect gaining at the same time a new coat of an increased size. This process is repeated from time to time until the insect has arrived at its full size, when, at the period of its last moulting (and not before), it obtains fully developed wings, and is enabled to fly about and propagate its species. Whenever therefore an insect is seen on the wing, it may at once be assumed that it has done growing, and has acquired its full size.

But a more careful comparison of the insects so supposed to be the young of others with the latter, would at once prove them to belong to different species; thus the small butterfly differs from the large one, not only in its markings, but also in its caterpillar state; and thus, as may be seen at a glance at the accompanying woodcut, the May-bug and July bug are quite distinct from each other, belonging in fact to different modern genera of the family Melolonthidæ. The larger of these two figures represents, of the natural size, the full-grown male cockchaffer (Melolontha vulgaris), and the lower figure is that of the curved larva from which it is produced. The beautiful 7-branched fan-like antennæ, and the long pointed tail (through which children are in the cruel practice of running a pin, round which the insect whirls in its endeavours to escape), are peculiar characters of the species which is observed on the wing at the end of May and beginning of June. During the day they remain inactive on the trees and hedges; but no sooner is the sun set than they emerge from their retreats and fly with a humming noise round the trees in search of their mates; their flight is heavy and irregular, and they strike at whatever object may happen to be in their way. After coupling the male soon dies, and the female deposits her eggs in the ground, digging to the depth of 6 or 8 inches in the earth. During their existence in the perfect state they feed on the foliage of trees, and where they abound, as is sometimes the case to an incredible extent, they entirely defoliate them. It is, however, in the young state that their powers of devastation are the greatest, and when they occasionally become a serious annoyance to cultivators, feeding on the roots of Grass and other vegetables, gnawing off the bark of young trees, &c. On escaping from the egg they appear in the shape of a small thick white fleshy grub, having the body generally curved into a half-circle, and lying on the side, furnished with strong jaws, and with three pairs of legs attached to the anterior segments of the body. At the commencement of the spring they quit their retreats, at a depth in the earth, and come within a few inches below the surface of the ground to feed, and when full grown, at the end of the summer of the third year, they again descend to the depth of 2 feet, where they become pupæ, having previously constructed an oval cell, very smooth on the inside. In the following month of February, or even earlier, they assume the perfect state, but remain for a considerable time in a weak state, not venturing into the air till the warm days of May or the beginning of June. The most advisable plan for their destruction is to employ children to follow the plough or spade, collecting the larvæ, or white worms, as they are called, which must be afterwards destroyed. Pigs and poultry may also be similarly employed, and rooks are too well aware of the dainty treat to be far behind the plough; in fact, they will themselves pull up the dead roots of Grass where the larvæ harbour, and have hence by ignorant persons been supposed to be the real cause of the mischief, as in the case of the Yorkshire farmer mentioned by Mr. Spence, who "could'nt bear to see d' nasty craws pull up all d' Grass, and sae he'd set d' bairns to hing up some aud clouts to flay em away, gin he'd letten en alean they'd sean have reated up all d' close." It is also very advisable to employ children to collect and destroy them when they appear in the perfect state; thus Anderson in his "Recreations of Agriculture," states that 14,000 cockchaffers were collected in a few days near Blois, in France, by children, at two liards per 100; and from experiments lately made abroad it appears that these insects may be turned to good account, as an oily matter is obtained by boiling them in numbers, which is employed in greasing the wheels of carriages.

Amphimalla solstitialis, the July bug, is much smaller than the former, differing from it in having the fan of the antennæ only 3-jointed, and the body much softer and hairy, with the tail not pointed. It is generally about two-thirds or three-fourths of an inch long, and may be seen flying in the twilight round trees with great swiftness and in considerable numbers, especially in the south of England (being much rarer northwards). It is of a pale testaceous colour, with the crown of the head dusky; the thorax rather dusky, with grey hairs; the elytra also pilose and pale, with the suture and outer margin brownish; the legs reddish. It appears about the summer solstice, whence the specific name given to it by Linnæus. *J. O. W.*

NOTES OF A TRAVELLER.—No. VI.

The Chrysanthemum in China.—The Chrysanthemum is the Chinese gardener's favourite flower. There is no other with which he takes so much pains, or which he cultivates so well. His Camellias, Azaleas, and Roses, are well grown and well bloomed, but with all these we beat him in England; in the cultivation of the Chrysanthemum, however, he stands unrivalled. The plants themselves, seem, as it were, to meet him half way and grow just as he pleases; sometimes I met with them trained in the form of animals, such as horses and deer, and at other times they were made to resemble the pagodas, so common in the country. Whether they were trained into these fanciful forms, or merely grown as simple bushes, they were always in high health, full of fresh green leaves, and never failed to bloom most profusely in the autumn and winter.

The method of cultivating the Chrysanthemum in China is as follows. Cuttings are struck every year from the young shoots, in the same manner as we do in England. When they are rooted they are potted off at once into the pots in which they are to grow and bloom; that is, they are grown upon what would be called by our gardeners "the one-shift system."

The soil used in potting is of a very rich description. About Canton it is generally obtained, in the first instance, from the bottom of lakes or ponds, where the Nelumbium or Water-Lily grows. It is then laid up to dry and pulverise for some months, when it is mixed with old night-soil taken from the manure tanks found in every garden. A heap of this kind, after being laid up for some time and frequently turned over, is in a fit state for potting the Chrysanthemum. Manure water, taken also from the tanks already noticed, is liberally supplied during the growing season, and its effects are visible in the luxuriant dark-green leaves which cover the plants.

In forming the plants into nice compact bushes, which (with due deference to Chinese taste), I think much prettier than animals and "seven storied pagodas," their system is as follows: The plants are trained each with a single stem; this is forced to send out numerous laterals near its base, and these are tied down in a neat and regular manner with strings of silk thread. By having the plants clothed with branches in this way, and by keeping the leaves in a green and healthy state, the specimens never have that bare and broom-headed appearance which they often present in England when they are taken into the greenhouse in winter.

About Shanghae and Ningpo the Chrysanthemum is still better managed than it is near Canton; but the success which attends it may also be attributed, partly

at least, to the more favourable nature of the climate, the plant being indigenous to the central or more northern parts of the empire. The system of cultivation is nearly the same; the main points attended to being those which have been noticed, namely, choosing a rich soil, planting at once into large pots, training to a single stem, and inducing it to send out numerous laterals, and giving liberal supplies of manure water during the growing season. The Chinese are fond of having very large blooms, and, in order to obtain these, they generally pick off all the small flower-buds.

In China, as in England, the Chrysanthemum flowers during the winter months. When in bloom it is in great request among the people, and is used in the decoration of court-yards, halls, and temples. It is everybody's plant, and blooms alike in the garden of the lowly Chinese cottager as in that of the blue-buttoned mandarin.

Although we are indebted to China for the parents of those varieties of Chrysanthemums which now enliven our gardens during the dull months of winter, yet, strange to say, the progeny is more numerous in Europe than in China itself. Some of those beautiful kinds raised by Mr. Salter in France would be much admired even by the Chinese florist. It is a curious fact, however, that many of those kinds, such as formosum and lucidum, which were originally raised from seed in Europe, are also met with in the north of China. *R. F.*

DISEASES OF PLANTS.

(*Continued from p.* 468.)

GENUS XVI. CLAVUS; *a single species.*—This is the disease which in Italy we commonly call *Rogna*, and is peculiar to the Olive tree. I have restored to it the name given to it by Theophrastus, who calls it also *Fungus* and *Patella*. I have not had the opportunity of studying it well myself, and shall therefore confine myself to stating shortly what has been published relating to a malady which appears to have been very prevalent, especially in Italy, during the last 30 years of the last century. It is probably not much known in France, as one of the most celebrated of their writers, speaking of the Olive, says, "*cet arbre n'est ni sujet aux maladies ni aux insectes*" (*Labretonnerie "Ecole du Jardin Fruitier,"* vol. ii., p. 298). This *Rogna* of the Olives has in Italy engaged the minds of several physiologists and cultivators in the close investigation of its nature. Such are Giovene, Moschettini, Tanciani, Fineschi, Presta, Pangini, and others. It seems to me that the first mentioned of these writers has treated of it in the most instructive manner. According to him the disease consists in tubercles, which are distinguished from other excrescences of the Olive by being of a round shape, and have in their interior a cavity, which is not always in the centre of the tubercle; sometimes it is to be found with its aperture at the top of the tubercle, sometimes it opens laterally, and sometimes it is wanting altogether. The peculiarity of the tubercle is, that under the tumour of the bark there is a corresponding excrescence from the wood itself; and in this point it differs from all other excrescenses of the Olive tree. Many pretend that insects should be charged as the originators of these tumours, but from the dissections made by the above-named Giovene, it is made clear that they cannot be the work of insects, and that it is impossible that any should have a trunk or sting sufficiently long or powerful to pierce several lines through the wood and penetrate to the pith. This disease is owing to the large quantity of buds which form every year in this tree, naturally of a strong growth, and which cannot all develop themselves. "An epidermis or cellular covering of a closer texture, or more stiff or dry than usual, and which they cannot penetrate, causes them to die as they are formed. Or a frost, or even a hoar frost chokes them, a hailstorm strikes them, or an insect eats them. Sometimes the shoot itself, ill organised, causes them to perish. In the meantime a flow of the sap is directed to that point, the channel being already opened, the vessels extended, and the perforations made; the juices are carried there in abundance, the cellular tissue is distended, a transfusion takes place, and the *Rogna* appears."

This disease arises therefore from a superabundant vegetation, and takes its place consequently amongst those which are owing to stenical causes. Its remedy would consist in moderating the force of the sap. In good truth it is not necessary to prune the Olive so largely as is done, following too much to the letter the precepts of Columella. The more it is cut back, the more the tree endeavours to resume its rights, and shoots forth fresh productions, which a cautery or some incisions may perhaps prevent. The having observed that the more Olives are tormented by these extraneous productions the more vigorous they are, especially if manured with animal manures, has been the occasion of some of our best cultivators abandoning such a treatment and confining themselves to vegetable manuring. On this point Tanciani made some decisive experiments, which have been followed up in other places, and have proved still more clearly the real source of the malady. He planted a number of Olive stocks, a part of which he treated in the ordinary way with stable dung, and to the remainder he applied scalded or baked Lupins.* The former soon became affected with *Rogna*, whilst the branches of the latter remained perfectly sound. On seeing this, he manured a plantation of Olives already affected with Lupins only, and after a time they recovered their health, and after 20 months had no trace of the disorder. It is good to know, also, that the most clavose Olives are those most affected by frosts, and for this reason, also, it is necessary to prevent the disease.

In examining some other trees, I have thought I saw on them analogous excrescences, but I have not yet sufficient proof of it, however probable it may appear to me. I shall continue my observations.

* Lupinus albus, very much cultivated in Italy and other Mediterranean countries, to cut green for manure.

VILLA AND SUBURBAN GARDENING.

THERE is scarcely a class of plants to be found more interesting to the amateur than that of Carnations, Picotees, and Pinks. It is one in which he may excel (and frequently does) even the professional gardener. The season for their propagation having now arrived, no time should be lost, as the best blooms are always obtained from plants of the previous year's increase. Carnations and Picotees should now be layered, an operation which old florists were wont to look upon as difficult, but than which nothing is so easy and certain in gardening. All that is necessary is a slit three parts of an inch long passing through the second joint of the young grass, and each shoot pegged down in the soil. After the whole has been trimmed, and the points of the grass shortened, a little fine light soil, about three-quarters of an inch thick, should be spread carefully over the whole, then a good sprinkling of water from the rose of the watering-pot, and the work is finished. Some perform this kind of layering with great neatness and precision, but they are rarely more successful than others who spend less time about it. The principal points are the slit in the stem, pegging each shoot firmly down, a slight covering of soil, and keeping them moist until they are rooted.

Pinks and even Carnations may be readily increased by what are technically termed pipings, which are young shoots taken off, the points of the grass cut away, and the piping shortened at the second joint, by cutting horizontally through immediately under it. A spent hotbed, or a very light bed made up on purpose, will tend to promote their rooting. Six inches of light sandy soil should be placed upon the bed, and the pipings dibbled in about an inch from each other. An impression should previously be made on the soil with the hand-glass by which they are to be covered, in order to prevent the glass from fitting imperfectly afterwards. The whole should then receive a good soaking of water, and the glasses should be left off until the foliage of the cuttings is dry. They should be examined every other day, and if they are found to suffer from damp, the glasses should be kept off for an hour or two until the moisture is dried up; all damp mouldy leaves should also from time to time be carefully picked off. In about ten weeks they will be rooted sufficiently to enable them to be planted out into nursery beds, or to be potted, if that mode is adopted, in order the more securely to preserve them during winter—a cold pit or frame being eligible for this purpose. If placed under glass during winter, as much air as is practicable should be admitted, except in severe frosty weather. They will require very little water, which must be given only when the plants are actually suffering from drought, and then a small quantity only should be administered at a time. *Pharo.*

P.S.—"E. C. W." Your plants were suffering from the effects of the intense warm and dry weather which we experienced some time ago. The late rains, combined with a diminished atmospheric temperature, will improve them.

Home Correspondence.

Use of Charcoal in the Cultivation of Plants, and as a Drainage for Pots.—Under the head of, "On the Conditions Essential to the most perfect Cultivation," which appeared in a late Number, I fully accord with "G." that "nothing will compensate for good drainage in pot cultivation;" but it appears to me, from the various practical results that I have been enabled to arrive at in the course of my experiments relative thereto, that an infinitely more efficacious "protecting material" than moss will be obtained by the substitution of charcoal for the purpose, independently of the other advantageous properties that it possesses. I admit that, as "G." avers, moss is "an excellent filtering agent" so long as it remains in a fit state to act as such; and moreover, while its absorbing capabilities last, it proves exceedingly beneficial in the way of supplying moisture to the roots of the plant on occasions where, but for its presence in the pot, all humidity might become evaporated, besides acting in some measure as a manure; but where the plant was not removed for some length of time, I seldom found it to be an efficient material for drainage, because, in that case, when the moss had not yielded to entire decomposition, which frequently occurred, it became so compressed by the roots of the plant, and thereby so impervious to water, as almost wholly to prevent its escape through the pot. Another objection that I have experienced to the use of moss in pot cultivation is, that it affords a most inviting harbour for worms, slugs, woodlice, and other destructive vermin; and therefore I consider, that let its other advantages be ever so great, these cannot counterbalance the injurious effects attending this evil. I have lost many valuable plants through it, and in consequence I now discontinue the application. Now, with respect to charcoal, whether it be wood, peat, or animal, I think that its value, either in agricultural or floricultural application, is not nearly so well known nor so much appreciated as it ought to be. That from wood I have long used with the greatest advantage, both in the drainage of pots and as an absorbent in the preparation of manure. For the former it is well suited when placed over the hole in pieces large enough to prevent their falling through, and to the height of about a fourth of the pot, in the same manner as potsherds are employed. Owing to its highly antiseptic qualities, it will continue for several years in an undecayed state, and consequently afford an efficient drainage for a much longer period than moss, while it is calculated not only to act in like manner as a conveyer of moisture to the plant, but will also tend greatly, from its powers of imbibing and gradually giving out any ammonia with which it comes in contact, and other fertilising alkalies or gases that may exist in the soil, to produce a more healthy growth in the plant. "The peculiar property of charcoal," says Mr. Squarey, in his "Treatise on Agricultural Chemistry," "and the only one that makes it useful in connection with the subject of manures, is its powers of absorbing various gases in the pores of its structure, and subsequently yielding them to moisture. It is proved beyond all doubt that pure fresh burnt charcoal possesses the power of absorbing 90 times its volume of ammonial gas, and 35 times its volume of carbonic acid gas." And he further states: "If any manure has been applied containing ammonia in its free state, that is liable to pass off in a gaseous form, the charcoal will absorb it as it rises, and retain it until the first rain, when the gas will be dissolved by the water and carried into the soil, there to be applied for the assimilation of plants, and the removal of the gas by the rain from the charcoal restores its original powers of absorbing gas; so that this substance, when applied to the soil, acts as a constant reservoir for these valuable gaseous substances, a property which neither time nor any circumstances can alter. Even when, in the course of cultivation, the charcoal originally applied on the surface of the land is ploughed under the surface, even there it does not lose its power of absorbing the gases, but carries on its operations with undiminished energy." Professor Johnston, in his valuable work on the "Elements of Agricultural Chemistry," strongly recommends the mixing of charcoal, particularly animal charcoal, with liquid manure and other rich applications to the soil, but apprehends that the cost and scarcity of this substance may preclude its being brought into general use. On all occasions, however, where it has been tried, I believe that, without any exception, the results have been found so satisfactory, both as regards quantity and quality, in the produce of the crop, that they have fully compensated for the additional outlay. I understand that several manufactories have been established throughout the kingdom for supplying this manure in a prepared and profitable state; but so many frauds have been detected in the composition, that purchasers ought scrupulously to be on their guard, and, if possible, have the commodity analysed previous to their applying it to the land. This remark is also applicable to every other manure; and as an analysis, sufficient for the purpose, can now be obtained for a mere trifle from parties appointed expressly by the leading agricultural societies throughout the country, there can be no excuse for its omission. A very excellent carbonised manure (from my having seen an advertisement of it repeatedly in your journal) has recently been tried by me in various experiments, on a small scale, in an agricultural as well as floricultural way, and in most instances with good success. What are the exact proportions of its component parts I cannot say; but from a rough analysis that I have had taken, it appears to be very rich in phosphates, as well as to contain a considerable share of the sulphates of ammonia, soda, magnesia, and potash, in conjunction with other highly fertilising ingredients. I am told that in what is prepared for flowers, the foecal matter employed is sheep's dung; be it, however, what it may, I found an astonishing effect produced from an application of it to my Roses, which not only grew and blossomed more luxuriantly, but were wholly exempt from aphis or other insects. *W., London, Aug.* 1.

Josling's St. Alban's Grape.—I find myself mentioned in your Paper as being a fortunate man in realising a sum far beyond what is correct for this Grape. I have no objection to be considered fortunate, but I would be sorry should it be understood that I obtained money by unjust means. I will briefly state that the St. Alban's Grape is really and truly a seedling raised by myself, and that I used every means of showing it to persons best able to judge of its merits. Fruit was sent for opinion to the Editor of the *Gardeners' Chronicle*, two seasons to the Horticultural Society's Rooms in Regent-street, to the Editor of the Gardeners' Journal, and to Messrs. Henderson, Pine-apple-place; by all of whom it was pronounced to be "excellent and distinct." The fruit in every case is free from cracked berries, as was also that submitted for opinion to Mr. Thompson. *R. Josling, St. Alban's.*—I regret that I cannot at present give a satisfactory answer to the numerous inquiries which have been made respecting this variety; and I should, therefore, have preferred remaining silent on the subject till the facts of the case be fairly made out. The remarks, however, of your correspondent "Vitis," render it necessary that I should now inform him, and others, that I have been for some time employing means for eliciting the truth, and that in the midst of conflicting opinions, I must be excused for being slow to condemn that which I did not rashly praise. Under the circumstances, I certainly did not over-praise the variety in question. A Grape was sent to the Horticultural Society by Mr. Josling, and positively affirmed by him to be a

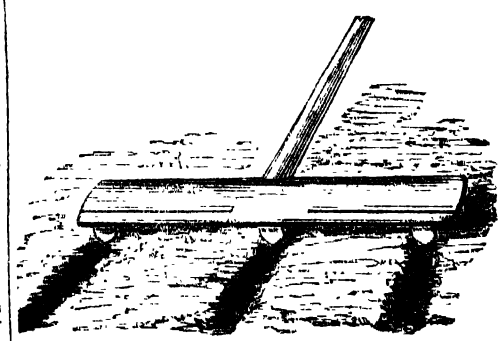
seedling. I described it solely in regard to the intrinsic merit which I found the fruit possessed; and, considered in this view, I flatter myself that all good judges will readily agree that I did it no more than justice; for I question much whether, in point of flavour, the variety is exceeded, or even equalled, by any Grape in existence. In this respect, at least, I have not to regret, with "Vitis," that too good an opinion was given of it; for, until a better flavoured Grape can be pointed out, too much cannot be said of the one that stands pre-eminent. If it should, however, turn out to be not distinguishable from the Chasselas Musqué, and if with all the goodness of the latter it should also combine its faults, that I should regret as much as any one. There were certainly no cracked berries in the bunches which came under my notice from Mr. Josling; and they had much longer, and also stronger shoulders than the Chasselas Musqué usually has, or even than I had observed it to possess under Mr. Wilmot's superior cultivation. The leaves sent for description appeared to me different from those of the Chasselas Musqué. Aware that different modes of cultivation and other circumstances have so great an effect in altering the appearance of varieties, that even those acquainted with them will sometimes be deceived, I thought it advisable to obtain, for the satisfaction of the public, the most direct proof of the origin of the Grape in question that I possibly could; and I accordingly addressed to Mr. Josling a series of questions, distinctly numbered, to which I requested the favour of a reply. The time when the variety was raised, and its parentage, were made prominent questions. To all inquiries as satisfactory answers were returned as could possibly be expected; they may be seen by referring to the notice of the Grape in the "Journal of the Horticultural Society," vol. i., p. 296. I need only add that I feel obliged to "Vitis," and other correspondents, for endeavouring to clear up the matter; and we must recollect that great similarity is no decided proof of identity. *Robt. Thompson.*

The Hop-fly.—I am of opinion that common tobacco (or the tobacco destroyed in the Liverpool Docks, if it could be procured at a cheap rate), steeped in boiling water, would be more efficacious and economical in destroying vermin on Hops than smoking them, for much of the smoke must necessarily escape without effecting any good. I find steeping 1 lb. of tobacco in two gallons of boiling water, and while it is milk warm dipping the shoots of Peach, Cherry, and other things infested with green and black fly into it, to be a sure remedy. A man by taking a pint basin full of liquor in one hand, and dipping the point of a Hop plant into the basin with the other, would get over a large plantation in the course of a day, and ten or a dozen hands would soon get over some acres. The work must commence as soon as insects make their appearance, and, if necessary, the ground must be gone over more than once. A moist day should be chosen for the operation, but heavy, rainy, or very windy weather, will not answer. *A. S. Slindon, Arundel.*

Winter-cut Oak most durable.—I venture to trouble you with the following statement, bearing strongly on the beneficial use of "*Winter-cut Timber*" *for buildings* of every description, as well as for ship building. On examination of a residence called Ockenden House, at Cuckfield, of ancient date, the residence of Mr. H. Fearon, my attention was called to the lintel of a door leading down from the *outward air* (the approach to which was by a flight of several steps) to the cellars, and upon which there was a portion of the Oak-bark, adhering to the wood, and necessarily to *that portion usually termed sap wood*, both showing not the slightest indication of decay, notwithstanding that the floor of the cellar was wet by the overflowing of the well of excellent water in the cellar, being a remarkably strong spring, though (in common with the town of Cuckfield) situate on an elevated position. The state of this portion of the doorway was pointed out to me by a person connected widely in the valuation of timber and its management (namely, Mr. Robert Chitten, of Hartswood, near Reigate) as *a self-evident proof of the superiority of winter-cut Oak in point of durability*; and in my view likewise of economy in the use of Oak timber, as showing its beneficial effect on even the sap wood: which, in a few years, when cut in the spring, and when the sap has risen, becomes frequently mere touchwood, and of no use to hovels or other buildings, to which Oak slabbing is generally made applicable. I should here, however, observe, that a tanner of respectability assured me, some years since, that if the larger class of Oak tillows, after being cut and barked in the spring, were tied together and subjected to the effect of running water for a few months, the sap wood being the major portion of the tillows would be greatly hardened by the out-soaking of the sap, and become usefully applicable for rough buildings, such as hovels, &c. If in addition, when well dried by exposure to a draught of air under a shade, they were immersed for a few days in a suitable tank containing Kyan's solution, they would become much harder and better adapted for forming roofs and other portions of farm buildings. I am satisfied by some years' experience of the benefit of using Kyan's solution for soaking timber, and especially the softer kinds of wood; it is a great, if not an effectual, safeguard against injury by worms, and being used with a paint brush on old chairs, picture frames, and other articles of furniture, has put an end to their destructive perforations, as experience has proved; but for these latter purposes the poison should be dissolved, partly in spirit of wine, to which water may be afterwards added, in the proportion of two-thirds. In fact, I have reason to believe the solutions for destroying bugs are chiefly composed of corrosive sublimate, but every bottle of such mixture should have "poison" legibly affixed, and be kept, as also everything made use of in its application, carefully locked up. As much timber for the royal dockyards comes, if I am rightly informed, from Africa, it appears very desirable that the contracts should be in future for timber only which has been, or shall be, cut when the sap has not risen, or commenced rising, insuring thereby the greater duration of ships, and great eventual economy of public money. *Charles M. Burrell, Knapp Castle, July 29.*

Fuchsia serratifolia.—This Fuchsia has succeeded admirably with me under the following treatment. In January I plunged my old plant in the stove, which is heated on the tank system; it soon made three shoots. I allowed it to remain there till the shoots were about one foot in length. The plant was then re-potted, and placed in a warm greenhouse, where it grew very strongly; it reached the height of about 2½ feet without showing the least inclination to flower. At this stage water was given it, but sparingly, for a few days, when the leaves turned yellow and most of them fell off. It was kept quite dry for about a week, which partly ripened the wood; it was planted in the flower border about the 20th of May, when it soon sent out 50 lateral branches, 43 of which are producing fine clusters of blooms. I have no doubt that fine specimens may be grown in this way, and by leaving only one shoot to take the lead instead of three. *J. Andrews, Ramsgate.*

New Drilling Machine.—Having in vain attempted to procure an instrument to supersede the old plan of making drills with the line and hoe, I constructed, this spring, a rough machine, something after the fashion of the accompanying model, which answered the purpose remarkably well. The teeth may be made moveable, or more may be introduced as required; at each end there is a guide to run out for marking the distance from the



last drill. It is weighted at the top, and drawn along the ground by a man, followed by two or three children, dropping into the drills either Beans, Peas, Parsnip, Carrot, or Turnip seed. The drills are filled in with a rake. Two men, and two or three handy children may sow an acre per diem at a cost of 5*s.* or 6*s.* It can be made of either iron or wood. *Falcon.*

Fruit Prizes at Chiswick.—The course adopted this year by the Horticultural Society in withdrawing the prizes it has hitherto offered for fruit at the Chiswick Shows in May and June, has been productive of very great disappointment and regret to a large class of enterprizing men. I do not of course question the right of the Society to make whatever regulations it may think proper, and I have no doubt it had good reasons for its proceedings in this instance; but those reasons are not sufficiently obvious to reconcile the growers of fruit to the "heavy blow and great discouragement" that has been inflicted on them. I could more clearly have understood the principle whereby the Society is influenced if the prizes had been withdrawn from the July Show and continued for May and June when the production of good fruit is so much more difficult. Surely it requires as much skill and attention to attain perfection in the cultivation of fruit as of flowers, and the results when successful are as satisfactory with the former as the latter; and as a proof of the great interest felt by the public in this matter it is only necessary to mention the well known fact that the fruit tent is invariably more densely crowded than any other part of the exhibition. I have heard it stated that the fruit shows in May and June have frequently fallen short of the expectations of the Society, both as regards quantity and quality, and have not deserved the prizes awarded; and I think it must be admitted that such statements are well founded; but it should be borne in mind that at those early periods of the season the imperfections in the exhibitions are frequently beyond the control of the gardener, inasmuch as private families then require for their own tables all that their gardens produce, and market-gardeners sell their best articles at high prices to purchasers, who will not allow them to be exhibited. It appears, however, to me that the principal questions are—whether the prizes heretofore awarded have answered the declared purpose of the Society, viz., "to reward the skilful gardener;" and whether the encouragement formerly given is worthy of renewal. On these points I do not anticipate any difference of opinion; any person who reflects on the Pines, Grapes, Melons, &c., which gave satisfaction 30 years ago, and compares them with the productions of the present day, must admit that extraordinary improvement has taken place, and I consider that such improvement is chiefly owing to the encouragement bestowed by horticultural societies, and the facilities which their periodical exhibitions afford for the inspection and comparison of first-rate fruits. The proceedings of a less important society would not have been of so much public consequence, but when I see the most influential association of the kind in England withdraw its cheering encouragement from those it has hitherto animated, I appeal to you in the hope that a more able and potent voice than mine may be raised to induce the Society to restore its countenance to a numerous, enterprising, intelligent, and industrious class. *Not an Exhibitor.*

The Potato Crop.—I am happy to state that I have taken up and housed about 60 bushels of Potatoes, and in the whole I have not found more than one Potato diseased, but that one was very bad. *A. S. Slindon, Arundel.*

Bees.—In your Paper of the 30th June, your correspondent "R. H. W." states, that from his beehives having collateral boxes, he is able to get from 1*s.* 6*d.* to 2*s.* 6*d.* per lb. for honey, whilst his neighbours are not able to sell at more than 8*d.* to 1*s.*; will he be so kind as to explain his plan of collateral boxes, and say also what is the average quantity of honey annually obtained from each hive by his plan—or has he adopted Nutt's plan—if he has, how does he prevent the bees from sealing up the ventilating pipes of the side boxes? how does he prevent swarms? how does he prevent the queen from depositing her eggs in the side boxes? If he is able to prevent all those untoward events, will he be kind enough to say what is the size of his collateral boxes, and generally to give an account of his plan, and also state what was the greatest weight of this pure honey he ever obtained from a hive in one year, beside leaving an ample supply for the bees during winter. I have been trying with more zeal than success every plan I could hear, read of, or devise, which promised an abundant supply of honey without destroying the bees. Nutt, in his book, speaks of 90 or 100 lbs. of honey being obtained from a hive annually, without destroying the bees, and still leaving them an abundant supply; but I have never been able to effect anything like this. The land of milk and honey in which he must have lived has no counterpart in this neighbourhood. Generally bees have not swarmed well hereabouts, but my own are an exception, I having had seven swarms from four hives, and some of these swarms have already been storied or imped, as we call it here; judging from the weight of my own hives, I fancy it will be an extraordinary honey year in Lancashire, if the present fine weather (July 12th) continues. I have kept bees for more than 20 years, and find nothing better than the old cottage hive with a loose top, which enables me to get the combs at the top (where the most honey is always found) without breaking them up; but I find large swarms do so much better than small ones, that I am in the habit of joining two small ones together. I have an octagonal wooden box of 14 inches diameter (in fact one of Dr. Warner's bee boxes), with a hole at the top of 6 inches in diameter closed by a slide. The swarm which I wish to join to the other is shaken into this box and left in quiet until the evening, when the hive into which I wish the bees to go is placed upon the box at dusk and the slide is withdrawn, and the bees always endeavouring to climb up as far as they can, creep quietly through this hole, and are united next morning to the other hive without the loss of any of the bees, from fighting, &c. An improvement on this plan would be to have the wooden box taper towards the top, allowing the slide to occupy all the roof, but with a rim all round large enough for the other hive to stand upon, because it sometimes happens when the swarm is a very small one that the bees collect in one of the corners at the top of my box and do not find their way through the hole. This would be impossible in the plan just described. I find wooden boxes very objectionable, having in various instances lost the hive from all the combs melting down in hot weather, although they have in all cases pent-houses to secure them from heat, rain, &c. I never cut the hives for the purpose of letting the bees in and out, but, instead of this, cut a groove in the board they stand upon, 2 inches wide and half an inch deep, and long enough to admit the bees well into the hive, besides having plenty of room on the board for alighting on; and I prefer boards for this purpose to flags or slates, as the moisture from the hive is so much more liable to condense on the latter, and the floor of the hive soon becomes foul in consequence. *T. G. Clitheroe.*

The Sparrow Nuisance will never be got rid of until the Game-laws are swept from the statute books. God formed the universe to move in harmony with his all-wise decrees, so that one part of his creation should not preponderate to the destruction of another, that an equilibrium should be maintained in the animal world, that man might not suffer from the over-production of any particular description of wild animal; thus the beasts and birds of prey in satisfying their appetites are instruments in the Divine hand of protecting us from the devastations of inferior animals. But man has decreed that pheasants, partridges, hares, and rabbits, shall be under his own especial protection; gamekeepers are directed to wage exterminating war against hawks, owls, magpies, polecats, domestic cats, weasels, &c., so that some of these animals are become really scarce, for one may walk about the country for months without seeing a kite, or almost any other description of hawk, the consequence of which is that small birds are now a very grievous pest, from which the gardener and farmer greatly desire to be delivered. The tiller of the soil is doubly injured; he has not only to maintain an increased quantity of game on his land, but to maintain

an increased number of sparrows and other birds with the produce of his industry. "D." will find no relief from keeping either hawk (if he can get one) or owl in his garden; the writer of this notice has tried both. *M.*

[A correspondent, writing from Blackrock, states that the well known plan of suspending pieces of tin plate (bright) to cords stretched across his plots of Peas, 2 feet from the ground, is the best "scare-sparrow" he has found.]

Societies.

STAMFORD HILL HORTICULTURAL, *July* 18.—This Society held its third and last exhibition for the season in the grounds of J. Wilson, Esq. It was well attended, and in addition to a respectable show of fruit, cut flowers, and plants, there was an open exhibition of Carnations and Picotees, which brought together the principal growers. Judging from the size and brilliancy of the blooms, they must have been at their best, at least about London. Carnations, 24 blooms: 1st, to Mr. C. Turner, Slough, with Collcutt's Brutus, May's Antonio, Prince Albert S. B, Brooks' Flora's Garland, Hale's Prince Albert, Puxley's Queen, Mansley's Beauty of Woodhouse, Holmes' Count Pauline, Jackson's Squire Trow, Puxley's Albert C. B., May's Lorenzo, Falconbridge, Caliban, and Ariel, Martin's Splendid, May's Timon, Ward's Fireball, Millwood's Premier, Esom's Admiral Curzon, Wakefield's Paul Pry, Simpson's Queen Victoria, Kay's Omnium Primus, Ward's Sarah Payne, and Holliday's Lord Ranelife; 2d, Mr. Norman, Woolwich, with Flora's Garland, Hughes' Sir Joshua Reynolds, Hepworth's True Briton, Cartwright's Rainbow, Willmer's Telemachus, Hepworth's Antagonist and Vivid, Collcutt's Brutus, Headley's Royal Chancellor, Willmey's Conquering Hero, Simpson's Queen Victoria, Smith's Princess Victoria, Addenbrook's Lydia, Wilson's Harriet, Holmes' Count Pauline, Mansley's Beauty of Woodhouse, May's Edgar, Hale's Prince Albert, Holliday's Lord Ranelife, Whale's Chance, Ely's Sir H. Hardinge, Bucknall's Ulysses, Esom's Admiral Curzon, and Headley's Incognita; 3d, Mr. Ward, Woolwich; 4th, Mr. Bragg, Slough. For 12 blooms. 1st, Mr. J. Edwards, Holloway, with Hale's Prince Albert, Willmer's Solander, Brooks' Flora's Garland, Collcutt's Juba, Lady of the Lake, Duke of Bedford, Turner's William Penn, Regular, Beauty of Woodhouse, Martha, Prince Albert, and May's Lorenzo, 2d, Mr. Newhall, Woolwich, with Tomlyne's Briseis, Hale's Prince Albert, Sealey's Princess Royal, Hughes' Sir Joshua Reynolds, Holmes' Count Pauline, May's Lorenzo, Holliday's Lord Ranelife, Willmer's Earl of Errol, May's Ariel, Ely's Lord Pollington, Mansley's Beauty of Woodhouse, and Esom's Admiral Curzon; 3d, Mr. Barrenger, Bedford; 4th, Mr. Ellis, Woolwich.—Picotees, 24 blooms. 1st, Mr. C. Turner, Slough, with Marris' Prince Albert, Youell's Heroine, Marris' Prince of Wales, Trakur's Rosamond, May's Sebastian and Constance, Burroughes' Duchess of Sutherland, May's Seedling 1848 and Portia, Barrenger's Miss Duke, Barnard's Mrs. Barnard, Cox's Regina, Burroughes' Lorina, May's Jessica and Ann Page, Ely's Mrs. Bright, Burroughes' General Jackson, Wildman's Isabella, Burroughes' President, Turner's Lady H. More, May's Sebastian and Juliet, Headley's Venus, and Youell's The Gem, 2d, Mr. Norman, Woolwich, with Norman's Jane, Burroughes' Duke of Newcastle, Barnard's Mrs. Barnard, Norman's Mrs. B. Norman, Garrett's Lady Dacre, Craske's Queen, May's Portia, Burroughes' Mrs. Bevan, Norman's Lord Nelson, Sharpe's Elegant, Norman's James II. and Delicata, Wildman's Isabella, Mathews' Enchantress, Burroughes' Morgiana, Willmer's Princess Royal, Holliday's Delicata, Hudson's Unique, Holliday's Lord Randolph, Headley's Venus, Cox's Regina, Burroughes' Amy and Emma, and Hollyoak's Viola; 3d, Mr. Ward, Woolwich, 4th, Mr. Bragg, Slough. For 12 blooms. 1st, Mr. Newhall, Woolwich, with Barrenger's Queen of England, Marris' Princess Royal, Sharpe's Duke of Wellington, Garrett's Lady Dacre, Barnard's Mrs. Barnard, May's Sebastian, Sharpe's Elegant, Burroughes' Duke of Wellington, Craske's Prince Albert, Burroughes' Miss Burdett Coutts, Cox's Regina, and Wildman's Isabella; 2d, Mr. J. Edwards, Holloway, with May's Constance, Sharpe's Elegant, Emma, Mrs. Bevan, General Jackson, Lady Chesterfield, Lady Dacre, May's Sebastian, Jessica, Prince Albert, and Portia, and Mrs. Barnard, 3d, Mr. Ellis, Woolwich, 4th, Mr. Barrenger, Bedford. The nurserymen present wisely and liberally gave up the classes for 12 blooms to the amateurs. A prize was awarded to a light red edged Picotee, Burroughes' Duchess of Sutherland, a flower which appeared to excite universal admiration.

SLOUGH CARNATION AND PICOTEE SHOW, *July* 24.—The annual meeting was held in the Royal Nursery. Mr. Turner did not compete on this occasion, he was anxious that the numerous growers present should see his whole collection of flowers on the plants. Seedlings were very good. We shall not repeat the description of such as were shown at the Surrey, and mentioned at p. 470. SEEDLING CARNATIONS.—The premier prize and 1st class certificate were awarded to May's Owen Glendower, and certificates to Falconbridge and Romeo, both Mr. May's flowers, the latter a fine rose flake, of good size, smooth, and unlike any out. PICOTEES.—Certificates for Burroughes' Duchess of Sutherland, Lorina, and Lady Harriet Moore, Norman's Lord Nelson and Prince Alfred, Dodwell's Mary (light red), Matthews's Juno (light purple), Edwards's Miss Edwards (heavy scarlet). CARNATIONS.—Amateurs: 12 dissimilar blooms—1st, M. May, Esq., for May's Shylock, Antonio, Falstaff, Lorenzo, Romeo, Justice Shallow, Percy, Bardolph, Ariel, Beauty of Wodehouse, Puxley's Prince Albert (f. P. B.), Puxley's Prince Albert (S. B.), 2d, Mr. Newhall, for Hero of Middlesex, Ariel, True Briton, Sealey's Princess Royal, Sir Joshua Reynolds, Lord Ranelife, Bright Phœbus, Mr. Banton, Lovely Ann, Georgiana, Squire Meynell, and Princess; 3d, Mr. Edwards, for Duke of York, William Penn, Prince Albert, Lady of the Lake, Sarah Payne, Prince Arthur, Dr. Solander, Georgiana, Harriet, True Briton, Flora's Garland, and Lord Morpeth. Open Class. 1st, Mr. Norman, for Hardwick's Firebrand, Flora's Garland, Squire Meynell, Hale's Prince Albert, Sir Joshua Reynolds, Royal Chancellor, Vivid, May's Edgar, Lord Ranelife, Sarah Payne, Simpson's Queen, and Splendid; 2d, Mr. Ward, for Flora's Garland, Squire Meynell, Bright Phœbus, Georgiana, Rainbow, Ariel, Lord Milton, Hale's Prince Albert, Beauty of Brighouse, Puxley's Prince Albert, Brutus, John Wright; 3d, Mr. Willmer, for Flora's Garland, Brutus, Rainbow, Duke of York, Huntsman, Duke of Bedford, Squire Trow, Count Pauline, Beauty of Wodehouse, Marquis of Chandos, Sarah Payne, and Admiral Curzon. PICOTEES.—Amateurs: 12 dissimilar blooms.—1st, M. May, Esq., for May's Portia, Ann Page, Beatrice, Constance de Miranda, Juliet, and Audrey; Mrs. Barnard, Mrs. Bevan, Isabella, Enchantress, and Princess Royal; 2d, Mr. Edwards, for Sebastian, Princess Royal, L'Elegant, Jessica, Lord Hardinge, Mrs. Bevan, Queen Victoria (Green), Lady A. Peel, Regina, Isabella, General Jackson, and Miss Edwards; 3d, Mr. Newhall, for Mrs. Bevan, Princess Royal, Sharp's Wellington, Jessica, Duchess of Cambridge, Regina, Delicata, Wildman's Isabella, Venus, Marris's Prince of Wales, Captivation, and Sebastian. Open Class: 1st, Mr. Norman, for Mrs. B. Norman, Unique, Delicata, Lady Dacre, Juliet, Mrs. Barnard, Seedling, Amy, Youell's Gem, King James, Princess Royal, L'Elegant; 2d, Mr. Ward, with Princess Royal, Mrs. Bevan, Amy, Lady Dacre, Youell's Gem, Venus, Juliet, Seedling, Isabella, Jenny Lind, Regina, and King James; 3d, Mr. Willmer, for L'Elegant, Green's Queen, Mrs. Bevan, Lady A. Peel, Field Marshal, Venus, Jenny Lind, Princess Royal, Juliet, King James, Gen. Jackson, and Mrs. Barnard.

MARYLEBONE COTTAGE GARDENING.—The first meeting for the season of this flourishing Society was held in the Hall on Friday the 13th inst. The present meeting bore forth all the good appearances, both in flowers, fruits, and vegetables, that has from meeting to meeting and from year to year been so pleasantly visible. The articles produced for exhibition were of an equally favourable kind, and altogether the show was a first-rate one.

CRAVEN FLORAL AND HORTICULTURAL.—This, the first exhibition for the season, proved equal, and in some respects superior, to any which have preceded it. The supply of fruit was small, but it was of excellent quality, particularly Strawberries, Figs, and Melons. The vegetables were unusually fine, considering the dryness of the season. Flowers were truly magnificent, particularly Fuchsias. The Rev. A. Marsden exhibited some beautifully grown plants. Verbenas and Roses were much admired. There was a marked improvement in the productions exhibited by amateurs and cottagers, particularly the latter. It was remarked by many present that the gentlemen's gardeners must go a-head, or the cottagers would surpass them. Wild flowers of Craven, exhibited by children under 14 years of age, were both numerous and select. Upwards of 300 prizes were awarded.

Reviews.

A Residence at Sierra Leone. By a Lady. (Two parts of the Home and Colonial Library.) Murray.

THOSE who desire to know something of the natural history of man, animals, and plants, in one of the most unendurable of our colonies, will find much information in these well written volumes. The authoress, however, although the wife of some high colonial officer, does not appear to have mixed much with the Europeans; on the contrary it would seem as if she had avoided intercourse with them, for her residence was on the bleak top of a hill, backed by an amphitheatre of mountains on the land side, and facing the ocean on the other. Here she spent some years in what seems very like seclusion, amusing herself with native servants, and natural history; and listening at nights to the roar of the torpadoes which incessantly sweep round the pinnacle on which her mountain home was perched. In reading her book this must be borne in mind, or it will be supposed that the life of a Sierra Leone settler is spent in a hurricane. The truth is that where Mrs. —— lived every puff of wind was felt as a gale, and every gale as a tornado.

There is much agreeable writing in these volumes, with some indication of a scientific knowledge of the objects spoken of. A fair example of the authoress's style will be found in the following extracts:

"I have lately seen the *Palm Cabbage*, which I think one of the strangest and best eatables that Africa affords. It is nothing less than the heart of a tree, the stem having to be cut down ere it is possible to obtain the delicacy itself. This is a large odd-looking substance, and at first I imagined the donor had sent us a piece of fat white veal (about as great a rarity in this place), when a closer examination showed it to be a vegetable, presenting a mass of young folded leaves so closely wedged together, that until boiled they were hardly discernible. It exactly resembles, when raw, fresh green Peas, and in that state is often used as a salad or pickle; but when boiled has a far more delicate flavour than a common Cabbage."

"One of the commonest trees of the negro gardens is the Pawpaw; it is of rapid growth, and has a very slight spongy trunk, ringed like that of the Palm. The fruit, which when ripe is of a bright yellow, or rather orange colour, and about three times as large as a swan's egg, is attached by short footstalks to the stem itself, round which it clusters very thickly. Europeans eat it with black pepper and salt, but I do not think it at all good, and fancy it has a poisonous taste. Indeed, previously to being placed on table, incisions are made in the rind to allow the escape of a glutinous and milky liquid, which is considered unwholesome."

The gleaner of facts relating to the uses of plants will find many such details as these. Of the Cocoa nut we find in the following brief account, something that requires a word of comment:

"In the evening we proceeded along the level path, which is shaded by Orange trees, and by one fine Cocoanut tree, whose feathery branches sweep the ground, as it has not yet attained a great height, though in full bearing. This is the first time I have seen the nut growing; and the flower, somewhat resembling a tall full bunch of ripe ears of Wheat, with both young and old nut in their polished green cases, all hanging at once from the same tree, has a peculiarly rich effect. The flower and young fruit, which is but a miniature of the full sized one, are protected by a coarse gauzy canoe-shaped covering, which falls off as the nut ripens; and *I think the natives must have derived their ideas of weaving cloth from the appearance of this fibrous substance, which is exactly like a strong but thin stuff*"

We believe that this suggestion may be extended far beyond the barbarous natives of Sierra Leone, and that the Palm tree was the real origin of linen, when man first thought of making it. Whoever has once seen the "reticulum" or fibrous sheath at the base of a Palm leaf, must have been struck with its exact resemblance to a very coarse kind of linen; its fibres crossing each other in the same manner. Now Palm trees are common in eastern countries, and must have been well known to the earliest inhabitants of the globe; their leaves must have been used as thatch, and in pulling off such leaves the linen-like reticulum must have become a familiar object. Why should it not have suggested the idea of forming a similar material by weaving together the threads found in the stalk of the leaf? We submit this to the consideration of our antiquarian readers;

Garden Memoranda.

GARDENING IN LONDON at all deserving the name is a feat seldom well accomplished. The smoke and soot of the dusky town are considered by most people to effectually preclude all chance of growing plants successfully in our great metropolis. Mr. B. says, "I have a flat-roofed house very suitable for a town garden. I intend to place a large Wardian case on it, and try my skill in the pleasant art of Horticulture." "Oh," says Mr. A., "your efforts will prove 'a dead letter.' I, too, have tried gardening on the leads of my house, and have failed, utterly failed. I would recommend you to seek amusement and the occupation of your spare time from some other source;" and Mr. B., relying on his friend's experience, relinquishes all idea of plant growing. But had the worthy gentleman seen Messrs. Wrench's little greenhouse on the leads of their warehouse, at London-bridge, he would not have been so easily dissuaded from his purpose. We paid it a visit the other day, and found it quite "a blaze of floral beauty," and that by Fuchsias alone; all or most of them trained to single stems from 2 to 4 feet high. F. Exoniensis was beautifully flowered, and a graceful Fuchsia it is when "well done" as this was. It could not be less than 3 feet high, and as much through. We also remarked Smith's Eximia, which still occupies a prominent place among dark varieties, as do Purity and One in the Ring among white kinds. It would, however, serve little purpose to enumerate all the varieties assembled here (about two dozen); but we must not forget to mention that we saw among them a well-bloomed plant of Messrs. Veitch's F. serratifolia, a species which few flower well even under the best of circumstances. These were placed on a flat stage in the centre of the house. Pelargoniums now cut down, disrooted, and put into small pots, Fairy Roses, Cyclamens, &c., occupied the side shelves.

Some may possibly imagine that the Fuchsias may have been good-sized plants bought in from the market. Nothing of the kind. They are the legitimate children of the house, grown and flowered in it, and they will last in beauty yet for a long time to come. The little greenhouse in which all this, and much more, has been effected (for it is kept gay with Hyacinths, Geraniums, Fairy Roses, Phloxes, &c., all the year round) is only 12 feet long, 9 feet wide, and about 10 feet high, span-roofed, and heated by a single row of 4-inch iron pipe supplied by one of Stephenson's little copper boilers, and by these means, a one-light frame, and a potting bench, with suitable soils, pots, &c., Messrs. Wrench are enabled to have the pleasure of a country greenhouse in one of the most crowded and busy parts of London.

We trust that the example Messrs. Wrench have set will not be lost sight of, and that London greenhouses, now that glass is cheap, will spring up in quarters where they might have been least expected. With a little attention such houses might be kept gay nearly all the year through, as the one in question is. During the early months, Hyacinths, Crocuses, and Snowdrops, might be had in flower. Then Cinerarias and Pelargoniums would keep up the display till the end of June. After that time Calceolarias and Fuchsias would carry us to the very verge of winter, when the Chinese Primula would afford some relief at that comparatively dull and flowerless season. And thus, at but little expense, we might catch a glimpse of *Rus in urbe* nearly all the year round.

Miscellaneous.

Insects Injurious to Orchids.—In building an Orchid-house it is very desirable to have no crevices or apertures left in any part of the walls, or round the pipes, in which insects can harbour; if such is the case little hopes can be entertained of effectually ridding the house of such pests as the cockroach, or even of keeping them sufficiently under. The cockroach, which is the greatest enemy to Orchids, only feeds by night, or in the dark; he frequently finds his way into the interior of the pots amongst the broken crocks, and eats all the young roots unseen. These pests delight in the hottest parts of the house, either in a moist or dry heat; their food is chiefly the tender points of the young roots and flower buds, and it is amazing the mischief a single insect will do in one night, for if the points of the young roots are once eaten off, the root is rendered of no service to the plant until it again forms a fresh point. The cockroach, however, is by no means nice as to his food, for he sometimes has no objection to eat his dead companion; he will also eat any kind of fat or tallow grease, and this is sometimes mixed with arsenic for his destruction, but with little success, for he certainly prefers the tender points of the roots to such food. Some employ toads and frogs to catch them, but these are slow, and the cockroach is very nimble: they therefore seldom come into contact. I have found from experience that the only way to destroy, or at least to keep such pests from doing any great damage, is to constantly look after them every evening after dark, and particularly in the winter time, and kill them; this may easily be done if there are no crevices in the walls, or round the pipes for them to escape into. The woodlouse is another pest to Orchids: this may easily be trapped in the usual way in the dark and damp corners, or they may be fed with slices of Potato placed upon the surface of the pots. As they feed in the daytime as well as at night, they are easily destroyed. Our next pest is the small brown ant, which, if not kept under in time, becomes so numerous as sometimes to entirely destroy the plants. They are day enemies

however, and are easily destroyed by arsenic in the following way: pound some loaf sugar very fine, and mix with it a small portion of arsenic; then grind the mixture on a smooth piece of slate with the face of a hammer into an impalpable powder, so that the little creatures cannot separate the sugar from the arsenic; then take some small pieces of white card paper, put as much upon each as would lie upon a shilling, and place it near where the ants frequent. The dose must be repeated whenever any again appear, as the eggs left behind are hatched after the old ones are destroyed. The slug, or small snail, which is also destructive to Orchids, may be trapped with Lettuce leaves placed amongst the pots; it feeds after dark, and should be sought for in the evening by candle-light. The red spider, thrips, and different kinds of scale, may all be destroyed by syringing the leaves, first with warm water, and afterwards with a weak solution of tobacco-water and sulphur. With attention, therefore, all these pests may be kept under: persevere constantly until you have entirely exterminated them, and afterwards make all fresh received plants do quarantine before they are admitted into the house. Fumigation is requisite in summer and autumn; for the small black or green fly sometimes makes its appearance upon the flower stems. Blowing tobacco-smoke with the bellows into the crevices and holes in the wall will also be found the best means of driving the cockroach from his hiding place in the daytime. Washing the leaves with a sponge and warm water (not hot) regularly every ten days, will prevent the increase of all such pests as the scale, red spider, thrips, &c., and it will at the same time greatly tend to keep the plants in health and vigour. *From Mr. Gordon's Paper in the Journal of the Hort. Society*

Climate of India.—"Feb. 18: At Akbarpore I had sunk two thermometers, one to the depth of 4 feet 6 inches, the other 5 feet 6 inches, which both indicated 76° during the time of my stay, the air varying at the surface from 56° to 79° 5'. Dew has been formed every night, on the plains, since leaving the hills at Dunwah, the Grass being here cooled 12° below the temperature of the air." "Tura, Feb. 19: Here I tried again the effects of solar and terrestrial radiation, on the sand at different depths, not being able to do so on the alluvium:

	Temperature of air, 87°. Noon.	Daylight of following morning.
Surface ...	110° ..	57°
1 inch	102	52 5'
2 ,, ...	93 5' ..	58
4 ,, ..	84 ..	67
8 ,, ...	77 Sand wet ..	73 Wet.
16 ,,	76 do. do.	71

[The vegetation here included Clerodendron, Asclepias, Ficus, Terminalia, Vitex, Veronica, Potentilla, Ranunculus, and Riccia.] *Hooker's Journal of Botany.*

Calendar of Operations.

(For the ensuing week)

FORCING DEPARTMENT.

PINERIES.—Maintain a high moist temperature, with abundance of ventilation, to Pines which are now swelling their fruits, and a rather drier atmosphere around those which are in flower. Let the necessary amount of moisture be obtained principally by means of the evaporating troughs. Use the syringe rather more sparingly, and in fine weather only, as an excessive use of this instrument is liable to render the soil too wet for the healthy development of the plants. Take care that the bottom-heat does not get too strong for plants recently potted or planted. VINERIES.—When the late crops have done stoning, the borders both inside and out should have a good soaking of liquid manure to assist the swelling fruit. The Vines in a more forward stage, on which the Grapes are just beginning to ripen, should be gradually inured to a freer admission of air; and if it be desired to keep those which are quite ripe for any length of time, they should have the advantage of a slight shading in addition to thorough ventilation in all sorts of weather, except in cold winds or rain. PEACH-HOUSES.—As soon as the crop is entirely removed, any of the trees which exhibit too gross a tendency in their tops should be partially root pruned by forking down at a safe distance of from 2 to 3 feet, according to the age of the tree, and shortening some of the strongest roots. Let them be frequently examined, to prevent the establishment of scale, red spider, and other insects. It is sometimes difficult to eradicate these pests entirely, but it is totally inexcusable to allow them to go on without making some effort to keep them in check. MELONS.—Keep up a good bottom-heat, or shanking and canker will be a natural consequence. It is our regular practice to insist upon a proper temperature, and disease is never seen, not even among the latest crops. Avoid confusion amongst the Vines by thinning out the weak shoots, and let all the fruits be properly supported upon pieces of slate, glass, wood, or some other hard substance.

FLOWER GARDEN AND SHRUBBERY.

Perhaps the flower-garden does not possess more beautiful ornaments during early summer than the Ayrshire and Evergreen Roses, worked high on standards, with their branches allowed to hang down as nature dictates. This will be a hint to those who are budding Roses to select some of the highest stocks for this purpose, or, if they are not fortunate enough to be provided with stems of the proper height for this season's work, it will suggest the propriety of leaving some of the strongest unbudded, and by pruning and liberal treatment to secure stems sufficiently high for another year. Cuttings of Roses should be taken immediately and planted in a close cold frame in a north aspect for three weeks or a month until they shall have cicatrized at the base; they should then be taken carefully up, potted in thumb pots, and plunged in a close warm frame with a gentle bottom heat. So treated, they will make nice plants in a very short time, and if kept under slight protection during winter, will fill their pots and be ready for planting out in April or May. Some so treated last year are now in great splendour. If the Pink pipings were put in at the time we recommended, they are now like ours ready for transplanting into nursery beds; in open situations they may be planted about 4 inches apart in soil sufficiently rich to induce a healthy growth. The rotten manure from an old Mushroom bed answers very well for this purpose, as it encourages a mass of fibres, and produces a healthy but not overgross development of top.

KITCHEN GARDEN.

No time should be lost in getting the main crops of winter Spinach sown in good rich ground, deeply trenched; the operations of trenching and sowing should proceed simultaneously, as the soil is thereby left in a loose, uncompressed state. Very thick sowing should be avoided, and the rows should stand about 15 or 18 inches apart, to allow a free passage between the rows for forking, cleaning, and gathering the crop. Let old exhausted Strawberry plantations be immediately destroyed, and the ground sown with Spinach, or some other crop, which renders a deep stirring of the soil indispensable. Celery is a plant excellently adapted to succeed any crop which has kept the ground unstirred for two or three years, as its cultivation includes a complete turning and exposure of the soil before any other crop is planted in the ground; the latest crops of this should now be planted. The system of planting a few new rows of Artichokes, and doing away with a few old ones every season, is practised. These remarks will very aptly apply to old plantations which have produced their earliest crop of heads, and the vigorous lateral heads from the two-year-old plantations will enable the services of the older ones to be dispensed with. If the Cardoon is much in request, and the probable supply deficient, some very good substitutes may be obtained by cutting the old flower stems of the Artichoke down, thinning the young suckers and trimming them exactly in the same manner as real Cardoons; to assist them a little rich manure may be forked in between the plants. As an extra stimulant for any crops which we wish to grow particularly fine, we have all the dung from the aviaries and poultry-yard carefully collected, and mixed with twice its bulk of charred refuse. The heaps of this mixture are cased over with charcoal-dust, and after lying a year in that state we use it for almost all kitchen garden crops; considerable care, however, is necessary in this, as it is nearly as strong as guano, and of course an over dose would be dangerous. After the ground is regularly dunged and trenched, a light top-dressing of the mixture is forked or raked in previous to planting or sowing the crops. To those in a state of progress, we lay a ring of it a few inches distant round the collar of the plant, as the Chinese do, and cover it with a slight top dressing of soil. This method is very appropriate for Cardoons and the Brassica family. Tripoli Onions for future transplanting should now be sown, and Endive for a late crop. Continue to make successional sowings of Cos Lettuce, and make the first sowing of Hammersmith Cabbage Lettuce to transplant into warm borders for late autumn use. The last sowing of early Stone and white Globe Turnips should be made this week. A considerable share of attention should now be directed towards securing an adequate supply of salads and other small matters for winter use. Chicory is one invaluable plant of which there should be no scarcity; it will do in any spare nooks or corners, so there need not be any difficulty made about want of room. We have a lot planted between the rows of fruit bushes, where the fruit is all gathered, and in the gaps in rows of Parsnips and Beet, which crops everybody complains of as being more or less a failure this year. Rampion is invaluable as a winter substitute for the Radish, and, if not already done, should be transplanted immediately from the seed bed into a south border. Care should be taken not to injure the tap root; and before planting, any strong side roots should be removed, so as to obtain one clean straight root. Occasional sowings should be made during the autumn, under a south wall, of Normandy and American Cress and Corn Salad. Some strong well curled plants should be carefully lifted from the spring sowing of Parsley, and planted at the foot of a south wall, and if a quantity is planted in boxes, they can be placed in a Peach house or similar situation on the approach of winter.

State of the Weather near London, for the week ending Aug. 2, 1849, as observed at the Horticultural Gardens, Chiswick.

July and Aug.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday .. 27	0	29.971	29.841	75	45	60.0	W.	.01
Satur. .. 28	8	30.030	29.992	78	57	68.0	S W.	.00
Sunday . 29	9	29.836	29.765	68	52	60.0	S W.	.22
Monday 30	10	29.662	29.614	74	50	62.0	S W.	.00
Tues. .. 31	11	29.914	29.771	70	47	58.5	W.	.00
Wed. .. 1	12	30.017	30.003	74	46	59.0	W.	.00
Thurs. .. 2	13	30.139	30.072	74	55	64.5	S.W.	.04
Average. ..		29.953	29.876	72.5	50.1	61.3		0.29

July 27—Overcast; very fine; cloudy; slight showers.
— 28—Very fine, sultry, cloudy
— 29—Densely overcast; heavy showers; cloudy and mild.
— 30—Partially overcast, fine; clear and fine at night.
— 31—Very fine cloudy and fine throughout.
Aug. 1—Very fine; clear and very fine at night.
— 2—Very fine, overcast and warm; slight rain.

Mean temperature of the week, 2 deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Aug. 11, 1849.

Aug.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 5	72.5	53.7	63.6	12	0.43 in.	—	2	3	1	3	9	3	2
Mon. 6	72.4	52.6	62.5	8	0.58	—	4	1	1	3	6	6	2
Tues 7	74.1	50.3	62.2	8	0.57	—	2	2	—	4	14	1	—
Wed. 8	74.9	49.4	62.1	8	0.35	2	3	2	—	4	6	4	—
Thurs. 9	73.8	51.3	63.5	8	1.06	1	3	1	—	5	8	5	—
Friday 10	76.3	52.7	64.0	10	0.36	1	1	2	—	2	11	5	1
Satur. 11	74.7	51.5	63.1	11	0.19	1	—	2	—	2	11	6	1

The highest temperature during the above period occurred on the 10th 1844—therm. 93 deg.; and the lowest on the 6th, 1838—therm. 36 deg.

Notices to Correspondents.

BEE-HIVES: *G B.* We never recommend dealers. The description and size of hives depend much on taste and locality. The best one, however, for common use is a straw hive, 10 in. high and 11 inches in diameter, flat at top, and having a hole there large enough to admit a common plug, covered with a cap or small hive, from which the honey is obtained. The collateral and bar-hives are also very good when well managed. You may find a description of both at p. 103, 1845. *W.*

BOOKS: *T R M.* We are not acquainted with any book which answers your description.—*N C.* Paul's "Rose Garden." We know of no book which treats on pot Roses alone.‡

BORDERS: *Highfield.* Edge it with the rough bricks called burrs in the brick-fields, or with the ironstone tiles made at Stourbridge. As for gay flowers now, you may sow any annuals that come quick to hand, and plant Chrysanthemums, with anything already in pots. Further than that you cannot go.

CHOLERA: *P.* We know nothing more of Mr. Ellerman's deodorising fluid. It is sold, we believe, but at a price beyond its value. It is for the vendors of such articles to make them known by public advertisement; we cannot undertake the duty. Chloride of lime, which does not deteriorate the quality of manure, is apparently preferred.

DISEASE: *F E.* We are unacquainted with this disease. It possibly arises from insufficient ventilation and too damp an atmosphere. The specks are caused by some matter oozing through the skin. Is it of much importance?

FRUIT: *L D.* Pack it in a box having a compartment for each sort. It used formerly to be packed in bran, but the kind of packing now generally employed is cotton wadding. Bran, however, answers the purpose very well where the fruit is not intended for exhibition.‡

GRAPES: *A D*, York. The affection which has shown itself in your Grapes has never been traced to its origin. It is evidently some internal malady, and may probably be connected with the roots. Such cases are not rare, and they generally disappear after a year or two, provided the roots are kept warm in permeable soil, and thoroughly free from stagnant water ‡

IMPROVED BUDDING KNIFE: *H Curtis and Co.* It is a good kind of budding knife, but in no important respect different from that long since manufactured by Mr. Plum, of Bristol.

LABURNUM SPORTS: *J L M.* These phænomena are of constant occurrence; see page 399 of our volume for 1848.‡

MILDEW: *F W C.* The leaves seem to be attacked by some Erysiphe. The mischief now done is beyond remedy. If taken early enough, flowers of sulphur would have prevented it.

NAMES OF PLANTS: *Mary.* Asplenium Filix-fœmina. *S.*—*B H.* 1, Agrostis vulgaris; 5, Agrostis alba; 2, Hordeum murinum; 3, Anthoxanthum odoratum.—*J W J.* Calceolaria ascendens.—*W Barnes.* 4, Lapsana communis; 3, Carex intermedia; 1, Sium latifolium; 8, Lythrum Salicaria; 9, Sparganium ramosum; 11, Œnanthe Phellandrium; 17, Sisymbrium officinale; 22 or 23 or 24 (numbers mixed), Sagina procumbens.—*W B F.* It is Lotus corniculatus, the common Bird's-foot Trefoil. It is not cultivated, but it abounds on a common near us, where it is eaten down close by sheep and other animals. It has the same quality as Lucerne.—*A Drainer.* It is a parasite called Orobanche minor, the lesser Broomrape. It lives on the roots of plants, and cannot injure your drains. Its presence indicates nothing more than that it is infesting red Clover or some such plant.—*G C O.* Your "Epidendrite" is a young specimen of Polyporus lucidus, a very curious fungus.

NEW GARDEN: *Snowdonian* Give your land plenty of ashes, peat, and clay. All you need is to render the soil more adhesive. Having done that manure it as well as you can afford. If you can lay your materials on the ground, and dig them roughly in the autumn, leaving the surface in heaps to be acted on by frost, it would be an advantage. Mind there is good drainage, and that you have not a hard iron pan beneath your sand. If you have you must break the pan up.

OYSTER PLANT: *A Corresp.* This is the Pulmonaria maritima; it tastes like bad oysters.

TREE ROSE. The price of this work is reduced to 3*s.* 6*d.* (post free), to be had at the Office of this Paper, or any bookseller.

VINES: *W R.* Nothing ails your leaves. The slight eruption is the consequence of good living, and is of no importance.

MISC: *Sylvanus.* The Peas should be shelled before they are dried. Your other question is answered at p. 311 of the current year's volume.‡ *C B.* We are not acquainted with a white Escholtzia.—*Adelaide.* Zauschneria californica will flower in the open ground in summer, but it may not live out during the winter. Plagianthus tasmanicus is not worth cultivating.‡

SEEDLING FLOWERS.

FUCHSIA: *E T.* Tube short, slender, bright scarlet; lobes long and narrow, too much pointed and reflexed, corolla dark violet-purple, very large (for the size of the flower), and well shaped. A nice variety, but not distinct enough, either in shape, size, or colours, from many others now in cultivation.*

GLOXINIAS: *G C.* A nice variety; tube rather short, and very much in the way of "Albo-sanguinea" in marking and shape.*

PELARGONIUMS: *B L.* 1, upper petals crimson in the centre, fading into bright violet near the outer edge, margined with white, and veined and stained with violet at the base; lower petals pale blush, fading to pure white at the base; substance, size, and shape good; a nice fancy variety. 2, upper petals dark shaded crimson fading to an orange scarlet towards the outer edge, and veined near the base; lower petals flesh-coloured, fading to white near the base; shape, margins, size, and colours tolerably good, texture rather thin, upper petals a little crumply.*

PETUNIAS: *W W W.* Your large white seedling has only size to recommend it; it is very coarse, and bad in shape.*

PINKS: *G B S.* 5, 11, and 12 are good large flowers, with tolerably well defined colours and petals. 2 and 18 have tolerably good petals and well defined markings, but they are very thin, and miserably small. 13 is tolerable, but too dull in colour. 5 and 12 are the best.*

POTENTILLAS: *R T.* Your three hybrids are very handsome, and if the plants are as good in habit as the flowers are in colours, they will be very nice things. The flowers in the first row on the card are very bright in colour (orange scarlet), and similar to P. Menziesii, those in the middle row, with more yellow in the centre of each petal, are in the way of P. Macnabiana; the other is less brilliant, but very handsome.*

RHODODENDRONS: *T W.* The leaves of your hybrids are very singular, and particularly large in some cases (No. 6), 11 inches long and 3½ broad; No. 1 is very large and fine also, and silvery on the under side; No. 5, very curious. If the flowers are in proportion to the foliage in Nos. 1 and 6, they will be very fine things.*

* Thermometer not registered above this temperature.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

The Summer Session will commence on Saturday, the 11th of August, 1849. All New Students are required to attend for examination on the preceding day. Those who purpose entering as Students for the ensuing session are requested to apply (either by letter or personally) to the Principal, at the College, Cirencester, Gloucestershire, for the necessary admission papers.

PHILIP BOWES, Secretary.

London Office, 26, King William-street, West Strand.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF THE COUNCIL—Right Hon. Earl BATHURST.
VICE PRESIDENT—Right Hon. EARL DUCIE.
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Mathematics and Natural Philosophy: Rev. L. C. Edwards, B.A.
Veterinary Practice: John Robinson, M.R.C.V.S.
Surveying and Practical Engineering: J. D. Pemberton, C.E.

The object of this Institution is to provide such a course of instruction as will be most useful to the Agriculturist. The benefits to be derived from a judicious application of scientific information are becoming more and more extensively acknowledged, while the means of obtaining that information, if, indeed, it can be obtained at all without for the time sacrificing a due attention to the practical operations of husbandry, are so scattered and costly as to be within the reach of very few.

The College course of instruction is conducted in such a manner that, while the student is well based in the principles of each science, its relations with agriculture are specially touched upon and explained, and their practical application shown as far as possible in the operations of the College farm. The theoretical and practical instruction go hand in hand, and the whole is combined with the advantages of collegiate discipline.

By order of the Council, PHILIP BOWES, Secretary.

London Office, 26, King William-street, West Strand.

The Agricultural Gazette.

SATURDAY, AUGUST 4, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, Aug. 7—Agricultural Society of England.
TUESDAY, — 7
WEDNESDAY, — 8 } Great Meeting at Dublin of the Agricul-
THURSDAY, — 9 } tural Imp. Society of Ireland.
FARMERS' CLUBS.—Aug. 7: South Devon.—Aug. 8: Furness.—Aug. 11. Peterborough.—Aug. 14: Claydon.

WE beg the attention of those correspondents who kindly furnish weekly reports, as a Calendar of Operations, to those which have been received this week from the BEDFORDSHIRE FARM. They were accompanied by the following note:

"I have enclosed two distinct accounts for the Calendar of Operations, so that you may be able to choose one, and give all your reporters for the Calendar such general instructions, as we require to write something of more or less use or importance. My desire is to give an account of any improvement or of successful management on our own or neighbour's farm, so that the young and amateur farmer may derive useful hints for conducting his operations. It is evident that some of the Calendar accounts have been quite useless for the intended purpose, and that a different style must be adopted before we can mutually assist each other. I shall for one be ready to act up as far as possible to any instructions you may favour me with for making the 'Calendar' of some service to general readers. *R. V.*"

We have published both of the "Calendars" referred to, and prefer requesting the attention of our reporters to them as specimens of what may be done in this way by an intelligent man, to giving the instructions which the accompanying note suggests. The note itself sufficiently indicates what is desirable under this head, and we are much obliged to "R. V." both for his criticism of past and his models of future contributions: so also, we are sure, will our readers be, if these remarks tend to the attainment of his object.

MR. WILLIAM THOROLD, late a Norfolk farmer, now a civil engineer, has published an essay on "THE PRESENT AND FUTURE PROSPECTS OF FARMING IN GREAT BRITAIN." * He does not think so ill of them as many do; and his object is to remove that discouraging gloom regarding them which, by hindering effort, is almost the only substantial cause of its own continuance. This object is both desirable, and, we believe, attainable: the thing is by no means impossible of attainment, especially in the way by which Mr. THOROLD approaches it. To argue that free trade will not, in the long run, reduce the price of agricultural produce, whether reasonable in itself or not, certainly is not a well-judged plan of offering encouragement to the agricultural body; for the sooner the conviction obtains that success is dependent on individual effort, and on that alone, the sooner will the effort be made which is certain to bring success in its train. Mr. THOROLD is encouraged, and would encourage, by no such idea as we have alluded to; he knows too well the importance of well-directed personal exertion to expect a useful success, whatever the profession, from anything external to it. He has seen contemporaneous failure and success on adjacent farms of similar soil; successive failure and success on the same farm, under altered management; he has seen land which yielded no rent to the occupying *owner*, and hardly paid its labour bill, paying both rent and profit in the occupation of a more skilful and economical agriculturist, although no alteration in prices had occurred in the interval; and he would therefore have landowners trust for their rents, and farmers trust for their profits, to improved management rather than improved prices. And we heartily back Mr. THOROLD's argument: of course we have the same desire for paying prices that every other person engaged in the work of manufacture or production naturally feels, but to suppose that our particular trade is to be an exception to the others, is unreasonable; to suppose that while cotton goods and silks and woollen cloths, while iron and porcelain, and everything else made and manufactured in this country, have been reduced in price one-half or even three-fourths within the last half-century, our own particular manufactures are to remain artificially enhanced up to within comparatively very little of former rates, is unreasonable; and we add—to think that farming, of all the arts, wants that elasticity which has enabled other trades to meet and master difficulties, is most unreasonable. Suppose free trade shall bring our prices down, and force us thus to put forth extra effort to draw from poorer circumstances profits as before, are we not thus merely subjected to the same pressure which has been *unremittingly* acting for so long on clothiers, cotton manufacturers, iron masters, and porcelain makers, and which, by its rough education, has not only benefited consumers of their wares, but perfected their several arts, and strengthened them respectively against a *mutual* competition far more serious than that of all the world beside. What is there in agriculture which shall disable it in the face of trials no severer than those which other trades have already withstood? Is it already pushed to its utmost? Has not "protection," on the contrary, preserved its resources almost untouched, so that the largest rewards are ready for extraordinary exertions?

Our opinion is simply this, and it is founded on the experience of several years, that when work as hard and skill as great shall have been applied to the business of the farmer as to that of any shopkeeper, merchant, or manufacturer, then, and not till then, may we expect returns as large. Is there any farmer with say 1000*l.* invested in his business, that toils like the man with a similar capital, who stands behind the counter for 13 hours in the day, or who sits at the desk from morning till night? Has not farming been the *recreation* which those who retire from the business of their lives hope to attain as a harbour of peace and quietness wherein to end their days? We do not mean to say that it is not hard work to very many, that there are not many to whom it is a serious business, a hard and anxious labour, a failure, too, notwithstanding all their efforts; and are there not instances enough of failure in other trades as well, too many to make us surprised at this? Ambitious men in any trade will take too large a field for their means, and listless men find any field too large; and want of judgment or of skill bring bankruptcy in any business. All we say is that a general survey shows farming to be one of the least laborious occupations, and, more than any other, to possess an ample scope for extra labour to meet an extra difficulty.

And it has ample scope for extra care as well: what would be thought of any other manufacture where the raw material was constantly exposed to pilfering, and where the destruction of one-tenth of the manufactured goods when lying in the warehouse was not extraordinary? The tale of the dungheap exposed, and the liquid manure allowed to waste, has been too often told to meet with attention now, but how much more might be made of the other raw materials of the agricultural manufacturer? of the straw which might be used for fodder instead of litter, of the soil which might be an active storehouse all the year round, instead of being locked up by stagnant water so many months of it, of the cattle which might be such productive machines if, instead of conducting a wasteful process out of doors, they were housed and fed with true economy?

But leaving the successive steps of their manufacture, what becomes of the goods after they have been manufactured? We had the pleasure to travel homewards from the Norwich meeting with a most intelligent, agreeable, and gentlemanly man—a practical farmer. His question was, "Well; after all the sights and lessons of the week, are we any the better able to compete with the foreigner?" and no one could answer; so that, after an explosion of indignation against the "wicked and iniquitous law," which has subjected us to this competition, the subject dropped. But shortly afterwards the questioner, we think, himself supplied the answer, so far as he was himself concerned. Farm practice had replaced farm politics in the course of conversation, and among other things, the ravages of rats in ricks were talked of; we were told of many stacks of corn that had lost one-fourth their grain, and of some which, not having yielded enough to pay the cost of threshing, were ultimately removed at once to the yard for use as litter; we were told of rats destroyed on one farm to the amount of many hundreds annually. Now in this instance, and no doubt it is not singular, it only needs enough of energy and will to stop this constant depredation to meet a heavy fall of prices. The fall may be a grievous thing, and doubtless *is* a grievous thing to us who profit by a maintenance of price, but just consider the interest of the Nation in the matter; we do not mean their direct interest in the cheapness of their food, but their interest in any plan for stopping such a waste of food as this. Must they not say, the farmers who have borne, unbankrupt, such a constant drain as this upon their means, need not exclaim against a lower price per bushel; their gross returns will be the same when the 100 sacks they grow shall *all* be sold at present rates, as when the 80 which the rats had left were sold at higher rates in years gone by!

We do not mean to build a serious argument for general application upon this story of the rats, or urge that their destruction would in every case meet the discouragement of lower price, but the spirit of the tale applies: there is many an unstopped drain on farm resources, many a wasteful plague, which thoughtlessness or idleness permits in agriculture: and we quite agree with Mr. THOROLD and with our correspondent "P.," who has been directing the attention of our readers to this subject, that farmers, or rather the agricultural interest generally, have unexhausted resources to amply—a margin of means untried, skill uncultivated, and labour unemployed, too wide—to render lower prices a hopeless affair. It would be strange indeed if agriculture, the art of all the sciences, a business which cannot fail so long as living bodies need support, were unable to withstand a slighter pinch of difficulty than that which other trades, with less resource, in British hands, have overcome triumphantly.

We only add, this subject has another side—to be discussed hereafter.

FARM ACCOUNTS.

THE *Agricultural Gazette* of the 30th June contains a report of an interesting discussion of the London Farmers' Club, entitled, "The Uses of Machinery as applied to Agriculture," but in fact resolving into the economy of employing steam *versus* horse power to drive the threshing-machine, chaff-cutter, and corn-crusher. An account is given showing that Barley has been threshed for 6*d.* per quarter, and which can now be done for 4½*d.*; and in performing the same work by horse power it costs 1*s.* 6*d.* per qr. Mr. Mechi did not think that corn could be threshed at the above rates, and estimates the expense for coals and labour at 10*s.* per day for working the engine 10 years. This mode of charging coals and labour, and giving the engine credit for all work performed, appears to me to constitute a garbled account, and to be very unfair towards the horses.

Every farmer employs a certain number of horses to perform the tillage, and keeps no more than is requisite to do the work in a satisfactory manner. During the year there occurs a varying number of days upon which the teams cannot be employed at field work, by reason of rain, frost, or snow, &c., and the horses are then employed at threshing, chaff-cutting, and corn-crushing. Upon many farms, in many counties, I have seen the whole satisfactorily performed during inclement weather, without interfering with the tillage operations; if the land is not in a fit state to work you cannot go upon it; the character of the seasons influences the forwardness or backwardness of field work. I do not wish to discuss the utility or indispensableness of the steam-engine upon the farm, but I object that accounts should be based upon the expense and work performed during a few hours, or even a single day. No reliance should be placed on such frivolous calculations, which may be made to appear more or less favourable according as the calculator's partiality is more or less fickle.

Let an account be opened for the steam-engine, charge all the expenses incurred during the year, but give credit only for that work performed over and above what the horses could have done—this will be just; but to charge the horses with all the food they consume, and allow them to remain idle in the stable, and consider them so in your accounts, when they might be employed at the very work which is then being done by the steam-engine, will be unjust; the horses (not the engine) should have credit for all such work which they could have performed during the year, upon whatever number of days they were prevented, or were not required to be employed in the fields.

I find the following passages in Young's "Farmers' Calendar," which are strikingly applicable to the present case, and coincide with me that no just conclusion can ever be formed without the aid of accurate accounts. "It should be remembered that experimental agriculture, or even those ideas, more or less detailed, which we meet with in conversation, must depend for their justness very much on accuracy of accounts. For 'a supposition' deduced from general observation on a farm, and 'grossly conceived,' must fall exceedingly short, for correctness, of the regular detail of exact accounts. The general fact is, however, admitted, and

Pp. 24. RIDGWAY, Piccadilly.

accordingly it is common to hear gentlemen speak of their accounts; but unfortunately they are usually kept in such a manner as to prove rather the means of fortifying prejudices than of removing errors; all these questions of nicety, where the contracts are not exceedingly strong, relative to the comparative profit of different soils, of different courses, of different applications of the same soil, of different modes of culture, &c., depend on accounts. Keep your accounts in the mode of one man; Grass is more profitable than tillage; keep them in a different method, and the contrary shall be the result."

From this we may conclude that for half a century, gentlemen have made no improvement in the mode of keeping their accounts, and that even in Arthur's time they perfectly understood the art of "cooking accounts." *T.*

CONTINENTAL AGRICULTURE.

Having recently visited a part of Belgium, Prussia, and France, your agricultural readers may like to have some account of the crops and foreign farming, now that the foreigner has a free market in England for his produce. At Ostend, we entered the great plain of Belgium, which we traversed as far as Louvain, a distance of 90 miles, without seeing a hill. It is a sandy loam, of easy cultivation, and requiring no draining, presenting to the eye a succession of gardens rather than of farms; Rye, winter Barley, Flax, Potatoes, Clover, and Rape seed being the chief produce: these grow close to each other, there being no hedges, excepting near dwellings. Every crop was good, some large, even, not patchy. The cultivation was perfect; no weeds were to be seen, excepting a few in the Wheat. Two horses, at most, were used in ploughing, occasionally one. Women were weeding. It not being the season for working the land, we cannot say much about it. There were no fallows. The Clover leas were being ploughed and dunged with stable dung, and no doubt the Rye land, when cleared, and it was nearly ripe, would also be ploughed for the stubble crops. Rye is largely grown, the soil suits it; it is the staple food of the poor, who almost exclusively eat black Rye bread. The Wheat crop was good, but only a small breadth was grown. The crops of Clover and meadow Grass were large. We saw no sheep, and nearly all the cattle were housed. At Louvain we entered the hill district, and travelled 75 miles through a mostly pasture country, strongly reminding us of England. Here we saw a few sheep, but more generally cattle of a black and white spotted breed, of fair quality; care is taken of the pastures, the droppings of the cattle is spread whilst fresh, so that no clods are left about the fields, as in England. After passing Aix-la Chapelle, we travelled through the great plain of Duren for 30 miles to Cologne; more Wheat was grown here than in Belgium, the land having more staple. The land is easily tilled, the crops good and clean, of Wheat, Clover, Rye, and Potatoes.

In returning we entered, near Lille, the plains of France, which were also stronger land than that of Belgium; we saw no failure in the crops, from any cause. A large breadth of Wheat, Colza, Sugar Beet, Oats, and Barley. All these plains are of very great extent; the climate is warmer and more uniform than in England; they are easy of cultivation, and require few implements, even drilling is not practised. No doubt the quality of these lands is better than the average of the Continent. As little was going on, their system of management and manuring could not be seen at work; it is evident, to keep up the fertility of the land, there must be some substitute for stock, which is nowhere to be seen on the land, and this is explained in the admirable report on the cultivation of the Netherlands, by the late Rev. Mr. Rham, to be found in the first numbers of the "Royal Agricultural Journal," which describes not only the care of preserving the manure of the stables, but also the careful collection and judicious application of the liquid and solid faces of man, to so great an extent thrown away in this country, and to which the Belgians, combined with increasing industry and skill, owe their unvarying and abundant harvests. At Lille we paid a visit to a proprietor and occupier of land, who received us kindly, and freely answered all our questions. His average crop of Wheat was 36 bushels, winter Barley 60, Oats 72 to 96, English measure. Ten miles further in the country, where the farms were larger, from 250 to 750 acres—Wheat 28 bushels, Barley 60, Oats 64 to 72 bushels. Rent near Lille 54*s.* per acre; 10 miles off, 18*s.* to 50*s.* Labour 1*s.* to 1*s.* 2*d.* a day in summer, 1*s.* in winter; they work from 4 o'clock in the morning to 8 in the evening, and have, besides money, soup three times a day. The women are paid by the hour—3*d.* an hour. Harvest work is often done by paying one-sixteenth of the produce in kind, and for threshing Wheat, one-twentieth of the corn is given. Excepting labour and a small communal tax, the whole amount of charges is paid by a 10 per cent. tax on the rent, by the occupier to the Government.

On landing in England at Dover we had to observe a melancholy change in comparison with the Continent. Near Folkstone there were some good pieces of corn but others were uneven and frost bitten. In the Weald of Kent, for 40 miles, not a single good crop of any kind was to be seen, nothing that would pay wages or rent; the stubborn fallows, with lumps of clay like horses' heads, bespoke the cost of cultivation, and probably explained why the crops were so bad, as last year there could be no good fallowing. Not being acquainted with this soil, I cannot venture to give an opinion, but I cannot help thinking this whole district wants scientific management and a judicious application of capital. Near Reigate the soil improved, and with it the crops, but these did not equal those of the Continent. The only district that could fully compete was that between Reading and Farringdon-road, on the Great Western Railway. The Cotswold Hills, too, were good, but varying excessively, according to the land or the cultivation. The conclusion I came to on comparing these home and foreign districts was, that in addition to the advantage England possesses in stock, she must imitate her foreign competitors in the economy and preservation of the liquid and other manures to be got from all her towns and villages; otherwise, with prices as low, labour and taxes much higher, a less genial soil and more uncertain climate, even with industry as great, and mechanical aids greater, she will be unable to pay the present rate of labour, tithe, rates, taxes, and rent, and keep a good table—as every industrious tenant ought to be able to do—for himself and family. *Thomas C. Brown.*

Home Correspondence.

Sex of Poultry.—"Lusor" and "V. S.," in a late *Gazette*, make inquiries, under the above title, concerning this important subject in the economy of poultry. "S. V." gives instances of the well-known possibility of ascertaining the sex of the forthcoming embryo within, and the non-fecundation or fecundation of an egg. The cause of doubt with many is the mean and selfish tenacity with which the knowing ones cherish that inordinate desire to retain all useful knowledge to themselves. Such persons are, in general, illiterate quacks, who would rather suffer many to perish than reveal their "secrets" for the general benefit. The sex of most birds in the adult state is marked by several peculiarities, as the difference of shape, voice, feather, and colour—the more robust appearance of the male, and more delicate form of the female. But most very young birds are so much alike, the male and female guinea fowl in particular, as to be distinguishable only by an exceedingly careful examination, *secundum artem*. With regard to the sex of the egg, and whether or not it be fecundated, many persons are gifted with so correct a perception as seldom to predict falsely. In the latter case, to the practised eye, the size, opaque appearance, peculiarly marked character of the oculus ovi, and position of the yolk within the egg, when inspected against the light, render the latter quality unmistakeable; with regard to the former (the sex of the embryo), the ancients entertained reverse opinions of round or long-pointed eggs, some preferring the flavour of round ones, as containing cocks. Certainly this is not infallible, but coupled with the following more certain criteria, the knowing ones are never out, particularly breeders of fighting cocks: it the air-sack at the blunt, round, widest end of the egg, be perfectly in the centre, a cock may be expected; if inclining to one side, a hen may be anticipated. When answering a correspondent, on a late occasion, who mentioned the beneficial use of pounded clam or oyster shells, I forgot to mention that they are not altered in their component parts—carbonate of lime, &c, but much improved, being rendered softer and more friable after being calcined, by putting them into a clear fire, and when red hot taken out, to be pounded on becoming quite cold. *D. S. E.*

Sex of Poultry.—A correspondent, July 21st, asks for information, and at the same time gives some interesting facts upon the success of cockfighters in breeding none but males, which I should like to see elucidated. Books are at variance, and agree only where they are copied from one another, seldom giving the result of the writer's own experience. "V. S." appeals to your correspondent "D. S. E.," who pointed out in a former volume of your paper the mode adopted to choose those eggs containing male and those with female embryos. (See No. 25, 1847, page 408.) More recently, in the "Ornamental Poultry," the latest work published, with the exception of the "Farmers' Dictionary" just completed, and which I have not seen. The author states his decided opinion that there is no possibility of foretelling the sex, but which is certainly opposed to the instances afforded by "V. S.," who will find the details treated of at pages 153, 4, 5, too long to be now extracted, having already appeared in your paper of last year. *M. C. Reardon, Bermondsey.*

Burnt Ears in Wheat.—Can you or any of your readers afford us any information as to the disease which causes what are here called burnt ears in corn? What may be supposed to cause it, and how it may be prevented or avoided? It affects Wheat, Oats, and Barley, but more especially the former, and some kinds more than others, which are generally white Wheats, and this year the Hopetown or Sheriff is most injured by it with me. It evidently also prevails much more some seasons than others. Last year I suffered much from it, in some instances I believe to the extent of 5 per cent. of the crop, and this year I hear great complaints of it among my neighbours, and my own crops are affected also, but not to the extent of last year. The disease seems nearly allied to smut, but differs from it in some essential particulars, though I belive it is considered a part of the same disease by many persons. Such however is not the opinion of the most experienced and intelligent farmers in this district, who believe the disease to be distinct, and not to be prevented by the same means as smut. I can say for myself that having made use of the ordinary precautions in preparing my seed Wheats I have never (except in one very partial instance just after I began farming) suffered from smut, but that in spite of this I have found my Wheat crops often affected with burnt ears, and more particularly the last two seasons, though I have used more rather more than less care in preparing the seed. I hear complaints also of the same disease from parties who are professed growers of seed Wheat, and who accordingly have long been, and are peculiarly careful in preparing and selecting their seed. I do not imagine, therefore, that any of the usual modes of steeping the seed before sowing, which are found to prevent smut, afford security against this affection, whether it be a form of smut or a distinct disease. If any one who possesses any knowledge or experience in the points I have alluded to, would afford it to the public, he would confer a benefit on the growers of corn. *J. Curtis Hayward, Quedgely, Gloucester.*

Bean Haulm.—You observe that you are not aware of green Bean haulm ever having been used for food. I have known a pony fed on it for some time, preferring it to good hay, and showing by its condition that the food was appropriate. I think it is a pity that market gardeners and cottagers should waste their Bean-haulm as they do. As far as it goes it is nutritious enough, and the habit of neatness and economy cultivated in the saving instead of wasting it is worth more than the haulm. It is capital "kindling" when dried too. In the north the small farmer often gathers his Potato haulm slovenly together and bundles it into a "beck," or leaves it littering in a "dyke" side. No theory of the Potato disease yet promulgated justifies this; it would be far better to burn or ferment it into manure. *L. V. R.*

Kohl Rabi.—You observe you have no experience of Kohl Rabi as human food. It is a very good vegetable; an agreeable change; in some respects more convenient than some other vegetables to the cook, and if a tender good kind is secured is not a vegetable likely to be given up after being once tried. Like all the Brassica tribe, it should be boiled, after most cooks consider it enough, in a fresh water for as long again. *L. V. R.*

The Appointment of Judges at the Agricultural Society's Meeting.—I send you a copy of my letter to Lord Chichester. *T. Beale Browne, Hampen, Andoversford, Gloucestershire.* [To the Earl of Chichester.] My Lord,—I address you and the members of the council, hoping that some decided change may take place in the selection of judges, and I give publicity to this request in the hope that the vast number of members who expressed themselves determined to leave the Society may pause, and see whether the council is disposed to change their present plan or not. I allude to the decision of horses especially, and I never heard anything like the universal burst of indignation at the decision in Class I., first prize, and justly so. I will impute no wrong motive to the judges, though the public did not thus charitably judge them. There could not be a moment's doubt that out of this splendid class the selected favourite was by far the worst—a more leggy brute no man ever saw; and I heard at Attleborough, in my way from Norwich, that last autumn twelvemonth, at the great public sale, his value was duly appreciated, and he was knocked down for 12*l.* I might safely say never did two such horses at any show stand together as Messrs. Ward's and Catlin's, admired by all except the council's judges. In Class III., their decision was just, if the Society deem hairy legs a criterion of excellence; several persons observed he had hair enough to make a hair mattress. Now I propose, my lord, that the council, like other companies in London, is chosen by the voto of the members, and to be paid a slight remuneration for their services. This will be the only way of giving satisfaction to the members at large. I sincerely hope this will have the serious consideration of the council, else I am quite sure very shortly we shall have a council and no members.—I am, my lord, your obedient servant, T. Beale Browne, Hampen, Andoversford, Gloucestershire.

What is a Ton of Swedes Worth?—I think most of your correspondents take a too limited and one-sided view of this question. We must not charge hay, Beans, &c., at the market value, when we are feeding cattle. In towns, those articles generally represent a certain amount of horse labour, and are probably worth what they cost. On the farm, a different plan of calculation must be adopted, and before we can say what Swedes may be worth in making beef, we must know how much beef some other article will produce without Swedes. Let us begin with hay. Some experiments seem to prove that when cattle have been fed upon hay alone, the result has been 3 lbs. of beef for 1 cwt. of hay. Again, a cow will eat the third part of a hundred weight of hay, and if we value that quantity at more than sixpence, the butter must cost more than it will sell for. I therefore put down hay as worth 30*s.* per ton, and no more, for feeding cattle. In Rham's table of the relative value of hay, Beans, &c., hay 100 lbs are equal to Barley 54 lbs., Peas 45 lbs., Beans 45 lbs. If this be true, a bushel of Barley will represent, say, 3 lbs. of beef, so that it is not fair to credit the Barley with 8 lbs. of beef, because it costs 4*s.* per bushel, and then say the value of the Swedes is next to nothing. In your Paper of 9th Oct., 1847, you will see that seven short horns above two years old, put up the 28th Oct., had by the 25th March increased 166 stones, having eaten 52 tons 14 cwt. white Globe, and 30 tons Swedes—say, per day, 196 lbs. of Globes, or 160 lbs. of Swedes, with straw. The straw we need not value. Eighty-two tons of Swedes and Globes therefore gave an increase of 166 stones in the weight of the cattle. *Rusticus.* [At 6*d.* per lb. for the beef, the Turnips averaged 14*s.* a ton.]

Ireland.—We constantly hear of enterprising and spirited individuals repairing to California and other localities in search of occupation, and lucrative employment. Why should men undertake a long and perilous voyage, and encounter an unhealthy climate, when by crossing a narrow arm of the sea, they may revel in the hidden riches of an "El Dorado!" Ireland now offers a field where an English or Scotch farmer, with spirit and energy, may soon reap a golden harvest, in exchange for a moderate capital, and a thorough knowledge of tillage in all its branches. The fear of being shot at is merely imaginary; a stranger who visits the county, and proposes to employ a number of hands, will be hailed as a protector; and so far from any attempt being made to injure him, he will by judicious management, apart from prejudice, obtain such influence over the labourers, as will astonish John Bull, not accustomed to the natural warm-hearted character of the Irish. Of course there will be difficulties to combat with in settling on our sister island, but in what quarter of the globe, from which large returns are anticipated, will there not be something to contend with. The tide of emigration now flowing from Ireland, and so much advocated, will in the course of a few years have its disadvantages, and we shall find that when the country is properly drained and cultivated, there will be a paucity of hands, and we shall be obliged to export labour from this country; for not only is land half waste, as well as only yielding, in many parts, half crops, but the enormous water power for manufacturing purposes is lying dormant, which will be brought into play (and follow the development of the agricultural strength), requiring a large amount of labour. A magnificent and fertile country cannot be over populated with either 7 or 14 millions, provided there is a substantial and working upper class to direct the measures for the welfare of the people, and assist, by precept and example, in proving to demonstration the resources of Ireland. Capital is the thing wanted, and the wealthy corporation of London will soon show what can be accomplished, when good intentions are backed by gold. The winter should not be allowed to pass over, without finding a large body of English and Scotch farmers located in various parts of Ireland. Land is to be rented cheap, and we have high authority for believing and asserting that the occupation of soil for agricultural purposes will pay well. *Falcon.*

Societies.

ANNUAL MEETING OF THE YORKSHIRE AGRICULTURAL SOCIETY AT LEEDS, JULY 31, 1849.

The 12th Annual Meeting of this important Society has been held during the present week at the manufacturing metropolis of the county. This is the second occasion on which Leeds has been honoured with a visit from the Society. The propriety of the step is fully and most completely justified by the great success of the meeting in every feature. This result has been fully anticipated. Leeds though so extensively engaged in manufactures as to claim the title of the capital of the West Riding, has an agricultural connexion second to few towns in England, and surpassing that of most of the provincial and purely agricultural towns. Situated at the confluence of several rivers, which in their course water pastures famed for their fertility—and brought into almost neighbourly connexion with the broad corn-lands of the county by the extensive system of railways which radiate from it as a centre—it has a market for cattle and corn that is scarcely surpassed in extent of business by that of Wakefield or of Smithfield, and which, owing to locomotive facilities, is the mart for much of the produce of Lincolnshire and the midland counties. In a market so well known, it was to be presumed that the breeders of the county would be glad to produce their specimens. In a similar manner it was to be expected that the engineering talent, for which Leeds and its neighbourhood is so well known, would furnish something of interest to the department of implements, and at least contribute a crowd of hard-handed but open-minded operatives to the exhibition, whose expected presence would stimulate the exertions of their agricultural brethren on the present occasion, and whose criticisms and suggestions give birth to future improvements. Upon these grounds, amongst others, Leeds recommended itself as a *locale* for this meeting, that gave promise of a brilliant meeting, the more especially as on a previous occasion, in the infancy of the Society, and when facilities of transit were very inferior to what they are at present, the success of the meeting exceeded every expectation. To the present meeting, also, an additional interest was given by the coalition of the Local Association for the promotion of the breed of pigs; 60 guineas being given by it towards the premiums for that class of stock. This Association has done much to encourage this description of stock; its meetings have been most successful exhibitions; it has therefore, on the present occasion, brought to the exhibition an additional interest. Since the last meeting at Leeds, in 1839, the taste for breeding the only description of animal that is compatible with the "ways and means" of the inhabitants of towns generally has sprung up in Leeds, and it has attacked both rich and poor, and succeeded in gaining a number of disciples greater than any other town in England can boast of; disciples, too, that have become no mean proficients in the art, if we may judge by the success that attends the Leeds pigs in competition with their Yorkshire brethren wherever they meet; and by their success against all England, if we refer to their doings at the several meetings of the Royal Agricultural Society at Newcastle, York, and Norwich. The interest accruing to this meeting from this prevailing taste may be judged of from the fact that the catalogue contains about 400 entries for pigs; that in one class there were 53 animals shown, "40 of which," as was properly observed by one of the judges at the dinner on Wednesday, "deserved a premium." A class of stock that can bring such a mass of exhibitors into competition, it is fair to presume, would attract a multitude of admirers and spectators. The last but not least guarantee of success in this meeting was the constitution of the Local Committee, which contained the most active and influential residents of the town and neighbourhood, and it is our duty to add, now that the meeting is over, that their exertions have been most materially enhanced by the courtesy and assistance of the public authorities, the Mayor and Corporation, and by the facilities which have been given by the directors of the several railways to the exhibitors of stock and to the visitors.

Trial of Implements, *Monday, July* 30.—The business of this day was the field trial of implements, preparatory to the award of prizes, of which this Society places at the disposal of the judges 200*l.*, to be awarded to those implements which are considered best in their respective classes; and five silver medals to implements which show the greatest improvements at the trial and meeting. A gold medal to the best assortment of implements in the yard is also usually awarded. The judges of implements were—Mr. Thos. Owthwaite Bainesse, Catterick, Richmond; Mr. Peter Stevenson, Rainton; Mr. Mansfield Harrison, Kenningham; Mr. Bourne, Civil Engineer, Leeds. The trial field was situated at Kirkstall, about 4 miles from Leeds. As it was immediately contiguous to the Kirkstall station of the Leeds and Bradford Railway, but little inconvenience was felt on this score, there being trains to and fro every hour. The field selected was a Tare stubble, a deep and fertile loam, in the occupation of Mr. Wilks, White Horse Hotel, Leeds. The implements were in the field at 8 o'clock A. M., and the trials commenced without delay. At this period the weather was beautifully fine, and nothing could be a more pleasing sight than the field afforded at this time. A field studded over with machinery of every form and size, capable of turning, pressing, scratching, cutting, paring, tearing the surface or the subsoil, from the ponderous clod-crusher, showing its iron teeth on every side, and the Norwegian harrow, with its *noli me tangere* look and hedgehog hide, to the insinuating plough and simple hoe, is at any time an interesting sight. Situated, however, as this field was, with a canal upon one side, and the railway as a fence on the other, and within a stone's throw of the remains of one of the great works of "other days,"—the ruins of the venerable Abbey of Kirkstall—the sight was one calculated to awaken reflection, and to open out a wide retrospect to the mind. The trial commenced with

Ploughs for Light Land. For this there were seven competitors.

1. Mr. Gascoigne, Wetherby (Swing)
2. Mr. Stead, Gateforth (One wheel).
3. Mr. Meynell, Northallerton (Two wheels).
4. Mr. Busby, Bedale (Y. L. L. plough, two wheels).
5. Mr. Barratt, Hull (J. L. plough, two wheels).
6. Mr. Kirkwood, Tranent, East Lothian (Swing).
7. Mr. Barker, Dunnington, York (Two wheels).

The depth of ploughing was fixed at 5 inches as the minimum. Mr. Busby, in this class, made beautiful work at 6 inches, burying the surface weeds, and leaving a fine edge, even seam, and level furrow sole. Mr. Barratt's J. L. plough, which was a specimen of neatness in manufacture, made excellent work at 5 inches deep. Mr. Meynell made very fair work—depth 5½ inches; but did not close the seam quite so well. The Scotch plough went 7½ inches, but broke the land, and left an unlevel sole. Mr. Gascoigne was not in the field, and a stranger was put to his plough; this, with a swing plough, where so much depends upon the skill of the ploughman and his knowledge of his implement, we were surprised at.

For General Purposes.—Messrs. Busby, Barratt, Barker, Meynell, and Kirkwood competed. The minimum depth was 7 inches. Messrs. Busby, Barratt, Kirkwood, and Meynell used the same ploughs as in the previous trial. The result, to our eye, was nearly same as last, the only exception being that Mr. Meynell had slightly the advantage of Mr. Barratt in this trial. Mr. Busby's work was at precisely 7 inches. Mr. Kirkwood went nearly 9 inches, and turned up the virgin earth. As before, however, owing to the friable nature of the soil, and the peculiarity of the Lothian mould-board, the furrow was broken up too much.

For Heavy Ploughs.—At a minimum depth of 9 inches. Mr. Busby, Mr. Barker, and Mr. Kirkwood competed. Mr. Kirkwood, with the perseverance appropriate to the countrymen of Bruce, again brought the same plough to work. The other two adopted fresh implements. Mr. Busby made capital work, at the exact prescribed depth. That Mr. Busby understands the art of making a furrow-turner, or mould-board, is certain; and that he works upon a clear and definite principle is demonstrated by the fact, that his strong and light ploughs not only made equally good work, but work that possessed the same characteristics and leading features. Each plough, indeed, is capable of producing the same peculiar result, if employed at the depth that is appropriate to it. Mr. Barker, with a very powerful implement, well calculated to make its way in a strong soil, had the advantage over Mr. Kirkwood, who was determined, though using the same plough as before, to "plough deep and find the gold." In this trial he took a furrow varying from 10 to 11 inches; the faults of his previous trials were still evident. The ground was naturally of a kind that is most favourable for ploughing, and it was in a condition to render it still easier than usual. For a trial of ploughs some incline to the opinion that more difficult work is desirable; in attempting to find soil of this sort it is seldom, however, we get a satisfactory trial; stony and difficult soils vary much in their composition in different parts of a field, and this generally prevents just discrimination of workmanship. We therefore think that a case of this kind on soils without stones and easy to plough, as exhibiting comparative perfection under the same precise conditions is the safest plan.

Stubble Pares were tried under very favourable circumstances. The friable nature of the soil, and the moisture it contained, enabled them to pare the surface cleverly, without missing any portion. The broad surface of knife and small weight of these implements usually render them liable to be thrown out of the soil. In this instance nothing of the soil was seen. Mr. Hills, of Dudley, and Mr. Barker, competed. Mr. Hill's skim plough is in our eyes a clever implement, takes little power, costs little, and is, in many instances, capable of doing the work of an expensive scarifier. To the small farmer it is a ready implement for cleaning stubbles for autumn sowing or fallowing. It has an advantage in being able to be lifted out of work in turning or passing a road, by pressing the handle. Mr. Hill's paring plough could not be tested upon stubble land.

During the trial of the "Skims," several very heavy showers of rain fell, which materially interfered with subsequent trials. Six Norwegian harrows were used, but none of them were capable of working, owing to the glutinous nature of the surface, which caused them to clog. The competitors were, Mr. Stratton, Bristol; Mr. Crosskill, Beverley; Mr. Kearsley, Ripon; Mr. Meynell, Northallerton; and Messrs. Barrett and Ashton, Hull. The general construction of these implements is now well known; the principle points of difference in them is in the length of teeth, the form of axle (square or round), the method of elevating them, and the number of rollers. Mr. Stratton and Mr. Crosskill have both received prizes from the Royal Agricultural Society. Mr. Stratton has three parallel axles, on which spiked wheels are fixed; Mr. Crosskill has also three axles. Mr. Crosskill's machine has long teeth upon a round axle; Mr. Stratton's has short teeth and a square axle. The former has the advantage in working deeper than the other, and the round axle lessens the danger of breaking the teeth upon soil which contains stones. Mr. Stratton was the original introducer of this machine. Mr. Crosskill has the right by patent of using the round axle with serrated wheels, by which the manufacture of his clod-crusher is secured to him. In this trial the short teeth had the advantage; the state of ground, however, was such that no one would use the implement upon it in ordinary farming, and no just decision could be come to. We are not therefore surprised that the judges made no award on this class of implements. Mr. Kearsley's implement has four axles. Mr. Barrett's differs materially, and more than any other, from the original machine; it has two axles, or rollers, in which spikes are fixed. These axles are cylinders with teeth similar to the ordinary spike roller; the diameter of the cylinder is, however, only half that of an ordinary roller. The teeth of two cylinders clean each other; the cylinders fix into the framework of his scarifier, and are lifted out of work by the same lever. These spikes upon Mr. Barrett's implements are, in our opinion, well calculated to break up the hardest clods, or to lighten a hide-bound soil; the soft loam in which it was tried nullified the value of any remarks deduced from observation of the trial.

The trial of Scarifiers was on a large scale. Mr. Stratton, Mr. Crosskill, and Mr. Kearsley, of Ripon, brought specimens of Ducie's drag, with their several improvements. Mr. Smith, of Stamford, Messrs. Barrett, of Hull, Mr. Askam, of Leeds, Mr. Barker, of Dunnington, and Mr. Kirkwood, of Tranent, also competed. Mr. Eddison, of Leeds, exhibited a very useful combination of wood and iron, made by Leith, White, and Atkinson. The whole of these machines did their work well. The state of the ground was such as to make it a matter of far less than usual difficulty. The Ducies all did their work well and with comparatively little horse-power. Mr. Kirkwood's grubber has a peculiar merit in the facility with which it is thrown out of work at the turn or in passing a road. Mr. Smith's scarifier is a very powerful machine; it can be raised or lowered easily, and has a side arrangement that enables it to work on sloping ground: this obtained the prize at Norwich.

The Subsoil Ploughs all made good work in so free a subsoil. Mr. Barker exhibited two, one worked with two horses and another with four. Mr. Kirkwood's machine is well known. Mr. Reid's worked well with two horses. This implement, we are inclined to think, does its work effectually, and with greater uniformity and economy of power than any other. The judges, however, in this trial, preferred Mr. Kirkwood's.

Heavy and Light Harrows of several kinds were employed. We did not observe anything new in the construction of any that were tried. Mr. Barratt's heavy harrow we have had some years' experience of, and it would be difficult to find another to surpass it for the purpose that it is professedly made: the workmanship of Mr. Barratt's harrow is very good. Mr. Kirkwood's harrows work well, and are constructed in the most simple and durable manner.

In Drills, one or two useful novelties were tried. Mr. Crosskill's drill and two-row presser combined, worked as effectually as the state of soil would admit. It cannot be too much recommended for those who sow Wheat upon Clover-stubble or after depastured seeds. Mr. Busby had also in trial a drill and ribber, and a drill, ribber, and presser combined. These implements are the invention of the Rev. W. Wharton. The latter, which is a large machine with seven pressers, did not work in the sticky soil so well as the smaller one, which ribs and drills only. This is a very useful machine, and works admirably. To parties who desire to use stimulating manures, this machine will be very useful, as it makes a beautiful seed-bed, deposits the seed, and leaves a fine seam or rib, into which the manure, when spread by hand, falls and mingles with the seed, without danger to it. We would recommend the number of pressers in the larger machine to be reduced, and their individual weight augmented. Mr. Barker used a small, cheap, and efficient plough for ribbing with. This implement took three rows at once, is a very small price, and admirably adapted for the small farmer who cannot purchase a drill.

General Exhibition of Implements: *Tuesday, July* 31.—The Implement Yard was opened to the public throughout the day, on payment of 1s. Very few persons availed themselves of the opportunity until afternoon, when the attendance became numerous. The weather was as favourable as could be wished, and our expectations of a fine and sunny meeting, which had been literally damped by Monday's rain, once more became in the ascendant. The trial of such implements as were not adapted for field use, was undertaken to-day by the judges, previous to their examination of the implements that were not for trial.

In Steam Engines the prize was awarded to a *petite* but almost a perfect specimen of machinery, by E. B. Wilson and Co., Leeds. This machine is of a novel character, being both portable and locomotive. During the day the multitudes were delighted and amused by the way in which it careered over the show ground, keeping along the avenues, and turning the corners of the cattle pens with much facility. Where the ground was a little uneven or soft, the steam power was inadequate, and a few shoulders had to be put to the wheel to get it out of the difficulty. This engine can be worked from 4 to 7 horse power, yet it is only half the size of engines commonly exhibited of the same power. It is locomotive on a common road, has two cylinders of 6¼ inches diameter, and 10 inches stroke, adapted to run about 70 strokes per minute, and requires no other fly-wheel than those on the hind axis, which act also as carrying wheels when travelling. Price 250*l*. Messrs. Barrett, Ashton, and Shaw, Hull, exhibited a 6 horse power engine, an improvement upon that which obtained the prize of this Society at Scarborough, in 1848. The machinery of this engine is completely boxed in, and it cannot suffer by exposure to weather. This engine has the merit of cheapness; price 75*l*. Mr. Horsfield's (Leeds) engine is of simple design and strong construction. Price 180*l*.

Threshing Machines tried and work done were as follows:

Barrett and Ashton,	3 horses	20 sheaves	..	1 min.	45 sec.
Do.	4 horses	20 do.	..	1 ,,	22 ,,
Mr. Thackeray	3 horses	20 do.	..	2 ,,	15 ,,
Mr. Crosskill, not worked, having been damaged by Railway.					
Mr. Barker	2 horses	20 do.		4 ,,	0 ,,
Barrett and Exall	2 horses	11 do.		2 ,,	0 ,,
Do.	2 horses	9 do.		2 ,,	4 ,,

A little time was lost to Messrs. Barrett and Exall in this last trial by a slight obstruction to the horse work which occurred. Mr. Barker's machine was set too wide; so wide that by endeavouring to do a large quantity it was not so thoroughly cleaned as by the other. The working of chaff machines, corn-dressers, crushers, &c., was not timed.

With reference to the general show of implements, the time at which our parcel must be posted almost precludes us from giving any other than a few general remarks. The entries were double in number the amount at any other meeting, and in no one class were those exhibited inferior to what we have seen before, while, in most cases, some improved features were visible.—In Stand 1, Mr. Richmond, Salford, Manchester, exhibited an excellent selection. Mr. Richmond's steaming apparatus is well known, yet we cannot refrain from mentioning the extraordinary cheapness to which Mr. R. has brought this valuable invention, without trenching at all upon its utility. This apparatus has on this, as upon many occasions, received prizes; the price at which it is now sold brings it within anybody's reach. Our opinion on this point will be taken when we state that this was one amongst the few articles that we could not resist the opportunity of purchasing. Mr. R. exhibited chaff-cutters, cheese-press, linseed and grain mills, Potato washer, and many other articles of recognised merit. To his chaff-cutter we confess a preference—at least for hand-power—to Cornes'. On many occasions Mr. Richmond's machine has carried away the palm. About this and all the other implements made by this firm, there are visible two striking merits—excellent workmanship and finish, and moderate price. The root-washer exhibited by this firm is simple and ingenious, and, what is very essential, very durable. The sack holder invented by Gilbert, with wheels, and the rick ventilator of Gillett, exhibited by Mr. Richmond, if trifling in cost, are of important use to the farmer. We have merely to refer to the trials to save us any allusion to Mr. Busby's stand. To it his choice collection of ploughs, and newly invented drills and ribbers, drew attention. Garrett's horse-hoe Mr. Busby exhibited, as well as many other implements from recognised makers. Mr. Crosskill, as usual, exhibited a very extensive collection of well assorted implements—threshing machines, shakers, corn dressers, hummellers, ploughs, harrows, drills, carts, waggons, wheels, &c. His Norwich prize cart was much noticed. The arrangement of the body is very convenient; the wheels made at the suggestion of the judges of the Royal Agricultural Society at the York meeting are not equal to those made upon his own plan. Indeed, after four years' use of his original cart we consider it as nearly as may be the *ne plus ultra* of single horse carts. Mr. C. had a good specimen of Hannam's harvest cart and a Yorkshire waggon. His liquid-manure cart and clod-crusher are too well known to need comment. The broadcast drill is a valuble machine for compost. The collection of implements by Mr. Barker, and also those of Messrs. Barrett and Ashton, equally extensive and well assorted. The prize lists, it will be seen, luckily for Mr. Barrett, point out several of his most useful machines. Mr. Hill, Brierly; Mr. Kirkwood, Tranent; Messrs. Smith and Co., Stamford; Messrs. Stratton, Bristol, and Mr. Kearsley, Ripon, were also extensive exhibitors. Mr. Clayton's tile machine, we are happy to see, was awarded 10*l*. and the prize medal. Mr. Clayton has laboured long in bringing this machine to the perfection it has attained; at present it is one of the most complete and durable machines of the kind extant. We subjoin the award for implements.

IMPLEMENTS.—AWARD OF PRIZES.

Heavy Ploughs—1st, Busby, 5*l*.; 2d, Barrett, Ashton, and Co., 2*l*.

General Purposes—1st, Busby, the same plough as on the light land in every respect, 5*l*.; 2d, Meynell, 2*l*.

Light Ploughs—1st, Busby, Y. L. L., 5*l*.; 2d, Barrett, Ashton, and Co., 2*l*.

Heavy Harrows—1st, Barrett, Ashton, and Co., for their zig-zag do., 4*l*.

Light Harrows—1st, Kirkwood, 4*l*.

Subsoil Pulveriser—1st, Kirkwood, 4*l*.

Scarifiers—1st, Smith and Co., Stamford, 5*l*.; 2d, Kirkwood, for his grubber, 4*l*.

Skim Plough—1st, E. Hill and Co., 2*l*.

A new Implement for Ribbing and Drilling—Busby, 3*l*. and silver medal.

To Barrett, Ashton, and Co., for their mill for bruising Beans, Barley, and Linseed, 2*l*.

To Barrett, Exall, and Andrews, for their two-horse threshing machine, 5*l*.; to the same, for their two-horse gearing, 3*l*. and silver medal.

To E. Hill and Co., for their improved hurdle for feeding sheep off Turnips on the ridge, and their general assortment of fencing, 4*l*.

To Messrs. Richmond and Chandler, for their steaming apparatus, 2*l*.; to the same, for their sack holder, 10*s*.

To Mr. Young, for his general assortment of iron fencing, 1*l*.

Chaff-cutters—1st, Busby, for Cornes's chaff machine, 4*l*.; 2d, Messrs. Smith and Co., Stamford, for their invention for throwing their chaff-engine out of work to prevent accident, 2*l*.

Horse-hoe—1st, to Mr. Busby, for Messrs. Garrett's hoe, 3*l*.

Clod roller—To Mr. Crosskill, silver medal.

To Mr. Crosskill, for his Potato washer, 1*l*.; to the same, for his broad cart manure drill, 2*l*.; to the same, for his wheels and axles, 5*l*.

To Barrett, Ashton, and Co., for dressing-machine, 1*l*.; to the same, for their Barley humbler, 1*l*.

To Mr. Meynell, for his Turnip-cutter, for both cattle and sheep, 1*l*.

To Mr. Gascoigne, for his whippletrees, 10*s*.

To Mr. Green, for his different specimens of wire fencing, 1*l*.

To Mr Nelson, for general assortments of foresops, 10*s*.

To Smith and Co., Stamford, for their slay-maker, 5*l*.

To Mr. Harland, for his one-horse cart, 5*l*.

To Sir George Caley, for his one-row drop drill, silver medal.

To Mr. Clayton, for his tile-making machine, 10*l*. and silver medal.

To Mr. Stratton, for his liquid manure cart, 2*l*.

To Mr. Crabtree, for rat traps, 1*l*.

To Mr. E. B. Wilson, for steam engine, 20*l*.

To Barrett and Ashton, for four-horse threshing-machine, 10*l*.

Exhibition of Stock.—The yard was crowded at an early hour to witness what is decidedly the best exhibition of Stock this Society has ever had. In pigs, indeed, it has been the best ever known in any place. The following statements of entries for stock at different times will best exhibit the truth of this statement:

In 1838,	at York, the entries were	..	301
1839	,, Leeds	..	240
1840	,, Northallerton	..	308
1841	,, Hull	..	305
1842	,, York	..	320
1843	,, Doncaster	..	289
1844	,, Richmond	..	270
1845	,, Beverley	..	375
1846	,, Wakefield	..	364
1847	,, Scarboro	..	313
1848	,, York	..	..
1849	,, Leeds	..	783

In 1848 the Society amalgamated with the Royal, and no entries are named in the above list for that year. The exhibition of short-horns has been first rate. The first prize bull (Class 1) is a very fine animal, belonging to a veteran Yorkshire breeder, Mr. Maynard. The second, were it not for his lameness, which detracts from his hind quarters, is scarcely inferior. The crack lot in this meeting was the yearling heifers (Class 7). In this lot four or five are commended. The prize animal of Mr. Wilson is almost a paragon of short-horn perfections. Mr. Booth, as usual, both in his own county and others, maintained his supremacy for cows. We are glad to find another of our old breeders, Mr. Wiley, maintaining his ancient fame; his fat cow was a fine specimen of size and quality, symmetry as well as fatness.

The show of Horses, although not so numerous in some of the classes as might have been expected in Yorkshire, was good. The stallions for getting hunters were considered, as a class, perhaps the worst part of the show. Freeman, the winner, and his second Mr. Martin, excepted; these two are first-rate horses, and the palm of victory was hard to win, the second having as many friends as the first. The same two horses were second and third to the Father of the Turf at the Royal Show, at York, last year. If we were inclined to criticise the two, we should say that Freeman's fore legs and his fore ribs were not of the first order, nor were his thighs so good as, for a hunter's, we should like; all else (back, neck, shoulders, and back ribs) are perfection. Mr. Martin's neck will always be against his being considered first in this class; it is too heavy, and his shoulders a little too strong, for a deep country. His legs are, perhaps, the best part about him.—The coaching stallions were a numerous and first-rate class. Yorkshire has always had the call for this description of horse, and this show will not shake its credit.—The nags were not so numerous nor so good; this description of horse should be like carrying weight, but in this they were deficient, all except the winner and a chestnut horse, Performer, belonging to Mr. Leeman, of York. The winner in this class was also the winner at the recent show at Norwich.—The agricultural horses were perhaps, as a class, the best on the field, and the judges had some difficulty in making their award; all were good.—The mares were likewise good in every class.—The young horses were first rate, but not numerous; expectation was disappointed in most of the classes for young horses, there being no competition in two or three of them.—Breeders know that, unless their young horses are perfection in the Yorkshire show, they have but little chance, and this anticipation it is that prevents many good and useful colts being shown.

The Sheep Class was not numerous, but remarkably good in every description—there was size, wool, symmetry, and inclination to fatten. Mr. Borton's shearling rams, and his 2-shear, also, were such as perhaps have never yet been surpassed. Mr. Borton won the first and second prizes of the Royal Agricultural Society at York last year. [Why was he not at Norwich?] Mr. Robinson's 1-shear ram (the 2d) was a beautiful animal, and had more of the characteristics of the Leicester than any other sheep in the yard, but Yorkshire breeders like "frame." Mr. Beal's 2-shear ram was a very pretty sheep, full of quality and mutton, but wanted wool and size. The ewes were not so good as we have seen exhibited in former years. Mr. Walmsley ran Mr. Dawson hard, but although he had mutton and wool, Mr. D. beat him in size and quality; but if Mr. W. could not come in the ewe class, his shearlings made up for his reputation as a breeder of sheep. We never saw better or finer sheep in any part of the country. Mr. W. was a winner in these classes at Scarborough in 1847, and his gimmers beat the winners at Norwich, a few days ago, at Burlington.

As to the Pigs, we shall not say a single word upon individual specimens. The number of animals exhibited, 400, entirely precludes any comment upon individuals without committing injustice exhibited at home, and from the best breeders in this number there were a multitude of the choicest specimens. In Class 55, 100 pigs of small breed, under 15 weeks old, were exhibited; and in Class 43, 53 sows of the small breed, not exceeding 14 months, were in the judgment ring. Among the pigs exhibited were several of the winners at Norwich and at York.

The show ground, which was situated in a vacant square of ground on the south side of Wellington-street, was of convenient access, and well arranged, while the stewards of the Implement yard—Mr. White, Exhall, Mr. Johnson, of Chevet, Mr. Dyson, and of the Cattle yard—Mr. Atkinson, Knowsthorp, Mr. Cattle, Arthington, and Mr. Leather—vied with each other in their exertions to promote the comfort and convenience alike of exhibitors and visitors.

The Council Dinner on Tuesday evening, and the Great Dinner of the Society, on Wednesday, have been equally well attended. The Earl of Carlisle presided, and the Earl of Harewood occupied the vice-chair on both occasions. We regret that our space will not permit us to make use of our notes of the proceedings at the dinners. We hope next week to furnish our readers with them in full. At present we may add that the discussion on the "Housing of Cattle" passed off well. G. Legard, Esq., H. S. Thompson, Mr. Maw, Mr. Marshall, and others taking part in the debate. These remarks will unquestionably give birth to much useful discussion in the press, and we are glad to say that the cause of agricultural enquiry was not marred by hasty or crude theorising, nor by the advocacy of extreme and speculative opinions, which frequently disgust practical men.

The judges of stock were:

Cattle: Mr. R. Dudding, Paulon, Wrayby; Mr. W. Bartholemew, Bayton, Horncastle.

Horses: J. Harrison, Everton, Baubry; Chas. Garfitt, Knutsford; John Bland, Flamborough.

Pigs and Sheep: C. Clark, Arthorpe, Lincoln; John Painter, Burley, Oakham; C. Smith, do. do.

Leeds Pigs: W. Henlock, Ouseburn, Borobridge; Jacob Smith, Humberton, Borobridge; H. E. Clark, Healon-house, Borobridge.

AWARD OF PRIZES.

SHORT-HORNED CATTLE.

Class 1. For the best Bull of any age—1st prize, 25*l*., to Mr. A. L. Maynard, Marton, Ripon, *for* Crusade; 2d, 10*l*., to Mr. F. H. Fawkes, Farnley Hall, Otley, for Laudable.

Class 2. For the best yearling Bull—1st prize, 20*l*., to Mr. Richard Booth, Warlaby, Northallerton, for Hopewell; 2d, 10*l*., to Mr. Samuel Wiley, Brandsby, York, for Van Dunk.

Class 3. For the best bull Calf upwards of 6 months old—1st prize, 10*l*., to Mr. Charles Towneley, Towneley Park, Burnley, for Duke of Lancaster; 2d, 5*l*., to Mr. John Booth, Killerby, Catterick, for Bullion.

Class 4. For the best Cow of any age in calf or milk—1st prize, 15*l*., to Mr. Richard Booth, for Isabella Buckingham; 2d, 5*l*., to the same, for Bagatelle.

Class 5. For the best three-year-old Cow in calf or milk, and having had a calf—1st prize, 15*l*., to Mr. John Booth, for Bloom;

2*d*, 5*l*., to the Marquis of Londonderry, Wynyard Park, Stockton-on-Tees, for Points.

Class 6. For the best two-year-old Heifer in calf—1st prize, 10*l*., to Lord Faversham, Duncombe Park, Helmsley, for Puella; 2d, 5*l*., to Mr. F. H. Fawkes, for Laurel.

Class 7. For the best yearling Heifer—1st prize, 10*l*., to Mr. Benjamin Wilson, Brawith, Thirsk; 2d, 5*l*., to Mr. Charles Towneley, for Beauty.

Class 8. For the best heifer Calf upwards of 6 months old—1st prize, 10*l*., to Mr. Charles Towneley, for Ruby; 2d, 5*l*., to Mr. F. H. Fawkes, for Lady Griselda.

CATTLE OF ANY BREED.

Class 9. For the best Cow for dairy purposes—1st prize, 10*l*., to Mr. Edwin Eddison, Headingley, Leeds, for Eliza.

Class 10. For the best fat Ox of any age—1st prize, 5*l*., to Earl Fitzwilliam, Wentworth House, Rotherham.

Class 11. For the best fat Cow of any age—1st prize, 5*l*., to Mr. Samuel Wiley, Brandsby, York, for Lady Chandos.

LONG-WOOLLED SHEEP.

Class 12. For the best shearling Ram—1st prize, 20*l*., to Mr. John Borton, Barton-le-street, Malton; 2d, 10*l*., to Mr. George Robinson, Carnaby, Bridlington.

Class 13. For the best Ram of any age—1st prize, 10*l*., to Mr. John Borton; 2d, 5*l*., to the same.

Class 14. For the best pen of 3 Ewes—1st prize, 10*l*., to Mr. Robert Dawson, jun., Sewerby-field, Bridlington; 2d, 5*l*., to Mr. George Walmsley, Bempton, Bridlington.

Class 15. For the best pen of 5 shearling Wethers—1st prize, 10*l*., to Mr. George Walmsley, Rudston, Bridlington.

Class 16. For the best pen of 5 shearling Gimmers—1st prize, 10*l*., to Mr. George Walmsley; 2d, 5*l*., to Mr. W. Dudding, Saxby, Spittle.

PIGS.

Class 17. For the best Boar, large breed—1st prize, 6*l*., to Mr. Edwin Eddison, for Emperor; 2d, 3*l*., to Mr. J. R. W. Atkinson, Elmwood House, Leeds, for Phœnix.

Class 18. For the best Sow, large breed, in pig or milk—1st prize, 6*l*., to Mr. James Chadwick, Chapel Allerton, Leeds, for Miss Sarah; 2d, 3*l*., to Mr. Joseph Tuley, Keighley, for Jenny Lind.

Class 19. For the best Boar, small breed—1st prize, 6*l*., to Mr. H. L. Maw, Tetley Crowle; 2d, 3*l*., to Mr. Robert Smith, jun., Sharon, Ripon.

Class 20. For the best Sow, small breed, in pig or milk—1st prize, 6*l*., to Mr. George Leather, Knowsthorpe, Leeds, for Harmony; 2d, 3*l*., to Mr. G. E. Taylor, Oatlands, Leeds, for Crimble.

Class 21. For the best 3 Store Pigs, of the same litter, from 4 to 9 months old—1st prize, 6*l*., to Mr Joseph Naylor, Chapeltown, Leeds; 2d, 3*l*., to Mr. Robert Milestone, Leeds.

HORSES.

Class 22. For the best Stallion for Hunters—1st prize, 10*l*., to Mr. R. Reed, York, for Freeman; 2d, 5*l*., to Mr. George Holmes, Thirsk, for Mr. Martin.

Class 23. For the best Stallion for Coach Horses—1st prize, 10*l*., to Mr. Thomas Moss, Scargill, Richmond, for Cardinal; 2d, 5*l*. to Mr. Thomas Denby, Rawcliffe, Selby, for Zephyr.

Class 24. For the best Stallion for Roadsters—1st prize, 10*l*., to John Baxter, jun., St Peter's, Norfolk, for Young Prickwillow; 2d, 5*l*., to Mr. Parkinson Fort, Silsden, Skipton, for Young Eclipse.

Class 25. For the best Stallion for Agricultural Purposes—1st prize, 10*l*., to Mr. John Ramsbottom, Bilham Grange, Doncaster, for Emperor; 2d, 5*l*., to Mr. W. Foster, Otley, for Prince Albert.

Class 26. For the best Mare and Foal for Hunting—1st prize, 5*l*., to Mr. Edward Ackroyd, Denton Park, Otley; 2*l*., to Mr. J. T. Leather, Leventhope, Leeds.

Class 27. For the best Mare and Foal for coaching—1st prize, 5*l*., to Mr. Botterill Johnson, Frodingham Bridge, Driffield; 2d, 2*l*., to Mr. Robert Goodlass, Hutton Cranswick, Driffield.

Class 28. For the best roadster Mare and Foal—1st prize, 5*l*., to Mr. Joseph Woodhead, Gomersall, Leeds, for Polly; 2d, 2*l*., to Mr. George Holmes.

Class 29. For the best Mare and Foal for draught—1st prize, 5*l*., to Mr. W. Walker, Winmoor Farm, Leeds; 2d, 2*l*., to Mr. John Simpson, Hunmanby, Scarborough, for Depper.

Class 30. For the best three-year-old hunting Gelding—1st prize, 5*l*., to Mr. John Simpson.

Class 31. For the best three-year-old hunting Filly - 1st prize, 5*l*. to Mr. Botterill Johnson.

Class 32. For the best three-year-old coaching Gelding—1st prize, 5*l*., to Mr. William Johnson, Brigham, Driffield.

Class 33. For the best three-year-old coaching Filly—1st prize, 5*l*., to Mr. Christopher Jordison, Lockington, Beverley.

Class 34. For the best two-year-old coaching Gelding—1st prize, 5*l*., to Mr. John Robinson, Leckby, Thirsk.

Class 35. For the best two-year-old coaching Filly—1st prize, 5*l*., to Mr. John Smith, Marten Lodge, Bridlington.

Class 36. For the best three-year-old hackney Gelding—1st prize, 5*l*., to Mr. N. T. L. Hodgson, Hightborne, Thirsk.

Class 37. For the best three-year-old hackney Filly—1st prize, 5*l*., to Mr. Edward Donkin, Westow, York.

Class 38. For the best pair of Horses, of either sex, for agricultural purposes, worked during the season—1st prize, 5*l*., to T. C. Johnson, Chevet, Wakefield; 2d, 2*l*., to Mr. George Leather.

Class 39. For the best Gelding or Mare for agricultural purposes—1st prize, 5*l*., to Mr. Henry Smith, Drax Abbey, Selby; 2d, 2*l*., to Mr. John Yeadon, Arthington.

*** *The following Prizes are from a Donation of the Leeds Association for Improving the Breeds of Pigs and Poultry.*

Class 40. For the best Boar, not exceeding 14 months old, large breed—1st prize, 2*l*., to Mr. Thomas Hall, Moor Allerton, Leeds; 2d, 1*l*., to Mr. Thomas Stephens, Banks, Leeds.

Class 41. For the best Sow, not exceeding 14 months old, large breed—1st prize, 2*l*., to Mr. J. Tuley, Keighley; 2d, 1*l*., to Mr. James Dawson, Leeds.

Class 42. For the best Boar, not exceeding 14 months old, small breed—1st prize, 2*l*., to Mr. George Goodman, Roundhay, Leeds; 2d, 1*l*., to Mr. John Heaton, St. John's Cottage, Leeds.

Class 43. For the best Sow, not exceeding 14 months old, small breed—1st prize, 2*l*., to Mr. James Dawson; 2d, 1*l*., to Mr. George Leather.

Class 44. For the best Boar, not exceeding 8 months old, large breed—1st prize, 1*l*., to Mr. Joseph Wright, Leeds; 2d, 10*s*., to Mr. George Roberts, Lofthouse, Leeds.

Class 45. For the best Gilt (for breeding), not exceeding 8 months old, large breed—1st prize, 1*l*., to Mr. James Chadwick; 2d, 10*s*., to the same.

Class 46. For the best Boar, not exceeding 8 months old, small breed—1st prize, 1*l*., to Mr. Henry Fawcett, Leeds; 2d, 10*s*., to Mr. William Abbott, Woodhouse Carr, Leeds.

Class 47. For the best Gilt (for breeding), not exceeding 8 months old, small breed—1st prize, 1*l*., to Mr. Henry Fawcett; 2d, 10*s*., to Mr. Joseph Bamfitt, Woodhouse Carr, Leeds.

Class 48. For the best store Pig of any age—1st prize, 3*l*., to Mr. Thomas Rowley, Leeds; 2d, 30*s*., to Mr. Edwin Eddison.

Class 49. For the best store Pig, not exceeding 14 months old—1st prize, 2*l*., to Mr. Stephen Clark, Churwell, Leeds; 2d, 1*l*., to Mr. John Gott, Wither, Leeds.

Class 50. For the best store Pig, not exceeding 8 months old—1st prize, 1*l*., to Mr. John Gott; 2d, 10*s*., to Mr. Robert Coxon, Holbeck, Leeds.

Class 52. For the best Labourer's Store Pig, not exceeding 14 months old—1st prize, 2*l*., to Mr. Richard Bowes, Hunslet, Leeds.

Class 53. For the best Labourer's Store Pig, not exceeding 8 months old—1st prize, 1*l*., to Mr. David Diggles, Burley, Leeds.

Class 54. For the best 5 Pigs, one litter, not exceeding 15 weeks old, large breed—1st prize 3*l*., to Mr. John Rinder, Kirby Overblow, Wetherby; 2d, 1*l*. to Mr. J. M. Hopper, Newham, Stockton-on-Tees.

Class 55. For the best 5 Pigs, one litter, not exceeding 15 weeks old, small breed—1st prize 3*l*., to Mr. Thomas Pearson, Leeds; 2d, 1*l*. to Mr. Henry Fawcett.

EXTRA STOCK.

Four of the Society's first class, and four of their second class Silver Medals were given for Extra Stock, deemed, by the judges, worthy of their special commendation; two for each description of animals, viz., Cattle, Sheep, Pigs, and Horses.

CATTLE.—1st prize to Mr. Richard Booth, Warlaby, Northallerton, for Cherry Blossom; 2d, to Mr. R. Wilson, Brawith, Thirsk, for a pair of Heifers, Castanetto and The Lass of Nineteen.

PIGS.—1st prize to Mr. John Bailiff, Leeds; 2d, to Mr. Joseph Tuley, Keighley.

HORSES.—1st prize to Mr. Stephen Kirby, Sowerby, Thirsk; 2d, to Mr. William Armitage, Farnley, Leeds.

Calendar of Operations.

JULY.

BEDFORDSHIRE FARM, *July* 30.—The weather of July has on the whole been suitable for field operations and the crops generally. The early part was dry and suitable for haymaking; the latter part has been showery, and suitable for the Turnips, pastures, and the bringing forward of the corn crops. We have harvested 12 acres of white Peas, and have now sown the ground with Turnips, and applied an artificial dressing of nearly 1 cwt. guano, 3 cwt. Rape-dust, 3 cwt. superphosphate of lime, and about 10 bushels of coal ashes, all mixed up together, per acre. We expect a return of at least half a dozen tons more Turnips an acre than could be grown without manure. The soil is exceedingly light, and better adapted for artificial manures than heavy clay soils. Artificial manures are more immediate in their effect than long dung, more easily applied, and therefore to be preferred so late in the season. Our horses have been subsoil-ploughing some stiff clay land, with a view to improve its texture, which has always been difficult to manage. The ground was drained some two or three years ago, but the drains did not act properly, from the stiff adhesive nature of the soil above. Our horses have now little to do but carting sundries and hoeing green crops. The labourers are making preparation for harvest, which will be commenced about the end of the week. Two men are trimming hedges, at about 2*d*. per chain of 22 yards. Two men have been thatching and are now finishing the last haystack, at 10*d*. per square of 100 feet. The hoeing of Turnips, Carrots, and Mangold Wurzel have engaged all odd men and boys for some time past, and will do so for some time to come. Turnips on the flat we have let at 11*s*. per acre, three times hoeing. Turnips growing on the ridge have been hoed three times, at rather less than 6*s*. per acre. The usual prices of reaping Wheat will range from 7*s*. to 9*s*. per acre. Men engaged by the month usually receive 18*s*. per week, with three pints of ale a day; time from sun rising to setting. This is now the usual time for dipping sheep, to improve the wool and destroy ticks, &c. For several years we have used arsenic, sulphur, and soft soap, boiled together. Four lbs. of arsenic, 8 lbs. of sulphur, and 8 lbs. of soft soap, all mixed together, is sufficient, when diluted with 70 gallons of lukewarm water, to dip nearly 200 sheep. The cost of the ingredients here is about 10*s*. The mixture is of course rank poison, and requires using with caution. Ewes should be kept from their lambs for a day after being dipped, and their udders well wiped and cleaned with a cloth. The head of the sheep should also be kept from touching the composition. Stock has been doing pretty well in general, and both Turnips and Potatoes have improved very much by the late rains. *R. V.*

For Young Farmers — Hay-making is now generally over, and preparations should be made for harvest. Turnips of rapid growth, such as the red and green-topped, and stone kinds, may yet be sown on well-prepared land, after Peas, or for the purpose of filling up blanks. The early sown Turnips should have received two hoeings at least before this time, and if another is necessary, should, if possible, be given before all hands are required in the harvest field. Rape and Mustard may now be sown for feeding off, or ploughing in, in November. The corn frames should be seen to, and Wheat straw provided for thatching. Road scrapings, the paring of banks, weeds, and the scouring of ditches, may now be carted together, to employ men and horses. Salt does well mixed with weeds and rubbish of this kind. Lime and soap-ashes may also be usefully employed for the same purpose. Stock should be seen to, and an account kept of the times of calving of the various cows. Lambs should now be weaned, and both ewes and lambs would be benefited by dipping in a composition, to kill ticks and prevent the teasing of flies and other insects. Some persons prefer letting all their corn harvest, previous to commencing, at a certain price per acre. Some engage men by the month. The custom of a country to a certain extent rules these matters, but in general it is no doubt best to get corn harvested by the acre; labourers then make the most use of their time, and few but can earn more by this system, especially where children are allowed to assist. Mowing, reaping high, and reaping low, and fagging, comprise the various methods of cutting Wheat. Mowing answers very well on clean land, with an ordinary crop, where neatness of appearance is considered no object. The usual price is from 6*s*. to 7*s*. 6*d*. per acre for mowing, tying up, and dragging. Reaping high, so that a stubble is left for cutting after harvest, is the most ancient system of any, and as yet the most universal. There is less straw to carry in harvest by this means, less to thatch, and less to thresh; but, on the other hand, the ground has to be gone twice over, both by manual and horse labour, and the most useful elements of the stubble are lost by long exposure to the weather. The usual price for reaping high is from 7*s*. to 12*s*. per acre, according to the district and the weight of crop. Reaping low, and fagging, are almost as one, so far as the cutting down of the crop is concerned. The prices for both systems seldom vary much, but generally rule 2*s*. or 3*s*. per acre higher than either mowing or reaping high. Our method of harvesting Wheat has always consisted of either one or two plans—reaping low or fagging, *alias* bagging. We prefer clearing the field at once, but at same time think the cutting down of Wheat should be modified according to circumstances, and that it is objectionable to cut low where many weeds exist, because the corn is longer in drying, and the seeds are carried to the barn, and from thence to the dung-hill and field. Again, if either Thistles or Docks exist in corn crops, they should be left, pulled up, and burnt immediately the corn is reaped. A horrid system obtains in some places of leaving both Thistles and Docks in the fields after harvest, to shake out their seeds, far and near around. The expence of pulling up a few Docks could not be much; but where the easiness of the owner allows such to grow, the same kind of indolence prevents them being attended to and pulled up at the proper time. *R. V.*

DORSET FARM, *July* 30.—We are now with a favourable season, having a near prospect of harvest; and never, I believe, did the crops present a more promising appearance. If the weather continue favourable for cutting down and gathering in, amends for both quantity and quality of last year will be obtained. Harvest will be commenced for the most part in about 10 days. All kinds of corn look well; and although we have had rather a stormy time for a few weeks, little or no damage has been done. Many of the Turnips were put in while the ground was very dry, but still they have done better than could have been reasonably expected, and upon the whole they may be said to be better than at this time last year. The land for them required a great deal of working, which has prevented us from getting them in so early as is desirable; but they require little trouble to keep them clean. The Potato crop is upon the whole very fair; in a few instances they have been a little affected, but not to any serious extent; and as the time is now past at which they were attacked last year, we entertain hopes that the crop will be satisfactory. There are still some patches of hay to make, and the last will be very inferior. But all that remains is not of much consequence—a very large quantity of hay has been made. We have not quite finished Turnip sowing, but will in a few days; but we have about 12 acres of Rape to sow, after second year's Grass. Our oldest ewes are eating off a piece of Rape that was sown early, and which is a very good crop, although it showed some symptoms of mildew, that stopped its growth. Grass is still very plentiful with us, the late showers having come very seasonably for it. Our hands are employed in hoeing Turnips, Carrots, and Mangold Wurzel, cutting down weeds in the pasture fields, and cutting some Grass for seed, and getting Turnip sowing and hay-making finished. *G. S.*

SUSSEX FARM, *July* 30.—With the fine showers of late, green crops have now a promising appearance, but part of the Turnips will be late, as the seed has never brairded till the rain came. Our teams are engaged working a rough piece of land as fallow for Wheat, carting faggots to burn lime, stones to roads, horse-hoeing Turnips, &c. Men are engaged threshing and cleaning Wheat by water power, thinning and hoeing Swedes, mowing Peas, mowing Rushes, and cleaning hedges and ditches. In about a week we shall begin to cut our Barley, and pull our Flax. We have now folded our flock of sheep over a seed field of 10 acres, intended to be ploughed up the end of September, and sown with Wheat in October. The field adjoining was treated in this way last year, and had no other manure, and I believe is now the best field of Wheat in the parish. *J. B.*

Notices to Correspondents.

CAPONS: *Dorking*. A sixpenny pamphlet was published some time since, and noticed by us at the time.

COODE'S PATENT IRRIGATOR: *A Villa Farmer*. We have not seen it at work, but may say it appears to us likely to answer its purpose, as it did to the judges of the English Agricultural Society at Norwich, for they awarded a premium to it.

DIBBLER: *Agricola*. Dr. Newington's implements are made by Wedlake, of Hornchurch, Essex.

FARM PROFITS: *T H M*. They depend more upon market ability, common sense, energy, and a general acquaintance with business, than upon science. Nevertheless a scientific knowledge of agriculture is a very useful and satisfactory thing. You had better procure for your son a good agricultural education from a money-making farmer (and there are such). Agriculture (producing the necessaries of life) can never in the long run be otherwise than a profitable business; nor, on the other hand (considering the numbers and consequent competition of agriculturists), can it ever be so profitable as other trades where competition is less or capital oftener turned.

HAND DRILL: *Col. Rawstorne* having mentioned in the *Agricultural Gazette* that he had constructed a hand drill to deposit Parsnip and Carrot seed, as well as other things, at the low price of 3*l*., perhaps he would be kind enough to place his invention in the hands of some clever mechanic, to enable spade husbandry cultivators to benefit by so useful a machine. *Falcon*.

LIQUID MANURE: *P R*. You cannot apply it to growing roots by water-cart without injuring the land. Could you not manufacture out of Larch poles some hundred yards length of shoots or wooden channels, supported on cheap tripods. If the tank is on a high level you might take the liquid into the field in this way, and when there carry it about in buckets.

LUCERNE. *Clericus*. We should be inclined to prefer adopting what was called "Gurneyism." The Clover would diminish the growth of the Lucerne. A little straw covering the ground after it had been tilled and manured, subsequently to a cutting, would benefit the soil and the plant, and hinder the mischief you complain of.

MANURE, &c.; *J S G*. Superphosphate of lime will probably be the best thing to mix with your dung-heap.—The Linseed compound might be made palatable by using good hay chaff instead of straw at first, and by making it salt enough.—Can any one give a receipt for salting butter, such as that which results in the best Dutch butter.

POULTRY. *A C H*. The geese appear to have been struck with paralysis, which generally proves fatal. The causes are various; some affect the brain, and the limbs show the first symptoms; or they are attacked with the megrims, and appear to be "tipsy." These symptoms often arise from bad digestion, from some error in diet, or want of shelter, wet and cold; but it is very difficult to guess. A very clear description of attendant facts is requisite to arrive at the real causes of diseases. *D. S. E.*

RABBITS: *E K B*. There is a society which encourages, by a system of sweepstakes, the breeding of rabbits, &c., among its members.

WASTE LAND: *Agricola*. Can any one in Dorsetshire or Sussex give our correspondent an account of their expense and methods in breaking up rough Furze land for tillage?

Markets.

SMITHFIELD, MONDAY, July 30.

We have a large supply of Beasts, and of average good quality; the demand is considerable, but a slight reduction is submitted to. The number of Sheep is larger; trade is, however, cheerful, but it is difficult to maintain late rates. There are very few good Lambs at market; trade is dull at rather lower prices. The supply of Calves is greater than the demand, the consumption of this article being very limited. From Holland and Germany there are 571 Beasts, 2510 Sheep, and 104 Calves; from Norfolk and Suffolk, 800 Beasts; from Leicester and Northampton, 2000; and from Scotland, 160.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	8	to 3	10
Best Short-horns	3	6	— 3	8
2d quality Beasts	2	10	— 3	4
Best Downs and Half-breds				
Ditto Shorn	3	8	— 3	10

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools				
Ditto Shorn	3	6	to 3	8
Ewes & 2d quality				
Ditto Shorn	2	10	— 3	2
Lambs			4 0 — 5	0
Calves			2 8 — 3	8
Pigs			3 4 — 4	4

Beasts, 3739; Sheep and Lambs, 31,270; Calves, 234; Pigs, 234.

FRIDAY, Aug. 3.

We have only a moderate supply of Beasts, too many, however, for the demand. Monday's quotations are with difficulty maintained for the choicest, and several inferior remain unsold. There is about an average number of Sheep and Lambs; trade is very dull, and in most instances lower rates are submitted to. The supply of Calves is few beyond the demand. The best qualities are lower, and a great many second-rate remain unsold. From Holland and Germany we have 136 Beasts, 1490 Sheep, and 170 Calves; from France, 50 Beasts; from Leicester and Northampton, 200; from Scotland, 100; and 143 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	8	to 3	10
Best Short-horns	3	4	— 3	8
2d quality Beasts	2	8	— 3	2
Best Downs and Half-breds				
Ditto Shorn	3	8	— 3	10

Best Long-wools			to	
Ditto Shorn	3	4	— 3	6
Ewes & 2d quality			—	
Ditto Shorn	2	8	— 3	2
Lambs			4 0 — 5	0
Calves			2 4 — 3	6
Pigs			3 4 — 4	4

Beasts, 830; Sheep and Lambs, 12,400; Calves, 667; Pigs, 255.

COVENT GARDEN, Aug. 4.

The supply of Hothouse Grapes, Peaches, and Nectarines is well kept up. Pine-apples are cheaper. Strawberries and Cherries are becoming less plentiful. Ripe Gooseberries and Currants are sufficient for the demand. Apricots are yet scarce. Nuts in general are abundant. Oranges and Lemons are plentiful, and the market is overstocked with Melons. Amongst Vegetables, Turnips may be obtained at from 3d. to 6d. a bunch. Carrots the same. Cauliflowers are plentiful. Green Peas fetch from 1s. 6d. to 4s. per bushel. Potatoes are cheaper, and, as yet, apparently free from disease. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1s. 6d. to 3s. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Lily of the Valley, Tropæolums, Carnations, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Pears, per doz., 2s to 4s
Grapes, hothouse, p. lb., 1s 6d to 4s	— per half sieve, 4s to 6s
Peaches, per doz., 8s to 15s	Oranges, per doz., 1s to 2s
Nectarines, per doz., 8s to 15s	— per 100, 6s to 16s
Plums, per punnet, 2s	Lemons, per doz., 1s to 2s
Strawberries, p. pun., 9d to 2s	— per 100, 7s to 14s
— per pottle, 4d to 1s	Almonds, per peck, 6s
Cherries, per lb., 1s to 4s	— sweet, per lb., 2s to 3s
Gooseberries, per half sieve, 2s to 3s 6d	Walnuts, p. 100, 1s 6d to 2s
Currants, do., 3s to 4s	— p. bush., 16s to 24s
Apples, kitchen, p. bsh., 4s to 8s	Nuts, Bar., p. bush., 20s to 22s
	— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 6d to 1s	Carrots, per bun., 4d to 6d
Cauliflowers, p. doz., 6d to 3s	Spinach p. sieve, 1s to 1s 6d
Peas, per bush., 1s 6d to 4s	Onions, p. bunch, 2d to 6d
Beans, p. bush., 1s 6d to 2s 6d	— Spanish, p. doz., 1s 6d to 4s
Sorrel, p. hf. sieve, 6d to 9d	Shallots, per lb, 6d to 8d
Potatoes, per ton, 60s to 160s	Garlic, per lb., 6d to 1s
— per cwt., 4s to 8s	Artichokes, p. doz., 1s 6d to 3s
— per bush., 3s to 5s	Vegetable Marrows, doz., 6d to 1s
Turnips, per bunch, 3d to 6d	Lettuce, Cab., p. sc., 4d to 9d
Red Beet, per doz., 2s to 4s	— Cos, do., 6d to 1s
Horse Radish, p. bdl., 2s to 6s	Mushrooms, p. pot., 1s 6d to 3s
Asparagus, p. 100, 1s to 4s	Small Salads, p. pun., 2d to 3d
Rhubarb, p. bundle, 3d to 4d	Fennel, per bunch, 2d to 3d
French Beans, p. 100, 6d to 1s	Savory, per bunch, 2d to 3d
Cucumbers, each, 4d to 1s	Thyme, per bunch, 2d to 3d
Leeks, per bunch, 4d to 6d	Parsley, p. doz. bun., 3s to 4s
Celery, p. bundle, 1s to 2s	— Roots, p. bdle., 1s to 1s
Radishes, per 12 hands, 9d	Marjoram, green, p. bun., 4d to 6d
Watercress, per doz. bunches, 4d to 6d	Mint, green, per bunch, 3d to
	Basil, green, p. bunch, 4d to 6d

HAY.—Per Load of 36 Trusses.

Smithfield, Aug. 2.					
Prime Meadow Hay	68s to 75s	Clover	60s to 95s		
Inferior ditto... ...	50 63	New Clover	50 84		
Rowen	— —	Straw	26 33		
New Hay	50 68		J. Cooper.		
Cumberland Market, Aug. 2.					
Prime Meadow Hay	70s to 75s	Inferior	50s to 84s		
Inferior ditto... ...	50 65	New Clover	50 84		
New Hay	50 65	Straw	32 36		
Old Clover	95 100		Joshua Baker.		
Whitechapel, Aug. 2.					
Fine Old Hay ...	66s to 72s	New Clover	65s to 75s		
Inferior ditto ...	45 50	Inferior ditto	50 60		
New Hay	55 60	Straw	28 32		
Old Clover	90 100				

HOPS.—Friday, Aug. 3.

Messrs. Pattenden and Smith report that the accounts from the plantations continue to come unfavourable for the most part. Market firm. Duty 70,000*l.*

MARK LANE.

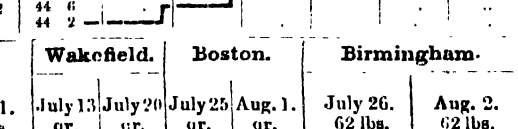
Monday, July 30.—The supply of English Wheat by land carriage samples this morning from Essex, Kent, and Suffolk was large for the season; a portion was disposed of at about the prices of this day se'nnight, but a part remained unsold at a late hour. The demand for foreign was of a retail character, and little progress could be made with sales where parties insisted upon former prices. Polish Odessa has met some inquiry for Belgium, but the limits, 36s. to 38s. 6d. per qr., cost, freight, and insurance, are too low to permit of purchases.—Barley maintains the advance of last week, being about 6d. per qr. over our quotations.—Beans and Peas are unaltered in value.—Oats are in good demand, at an improvement of 6d. to 1s. per qr.—New York letters of the 17th inst. quote an advance of 1s. per barrel on Flour.

Friday, Aug. 3.—There has been little English corn up since Monday, but the arrivals of Foreign are good. This morning's market was very thinly attended, and business in all articles was of a most limited character; prices may be considered nominally the same as on Monday, with a tendency in that of Wheat to decline.—The weather, although not settled, has been fine since the 28th ultimo, but the crops of late have made little progress towards maturity. Harvest operations, although partially commenced, will not be general for 10 or 14 days. The accounts of the Wheat crop are variable, but we continue to believe it will not prove a large one. The late rains will probably make the Barley samples of an uneven quality. Markets for Wheat have been heavy throughout the kingdom, and, with few exceptions, it has declined 1s. to 2s. per qr.

Liverpool, Friday, Aug. 3.—We have had fine weather. Supplies of Indian Corn have again been very large, of other articles moderate. At this day's market the demand for Wheat and Flour was extremely languid, though sellers were prepared to make some little concession in price. Oats and Oatmeal were dull, and rather lower. Barley, Beans, and Peas very quiet. Indian Corn further declined 1s. to 2s. per qr., on which the demand became very active.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas
June 16.....	44s 2d	26s 5d	18s 0d	26s 3d	30s 3d	30s 4d
— 23.....	44 6	26 5	18 9	25 9	30 10	31 5
July 7.....	47 1	25 1	17 11	28 1	32 1	33 10
— 14.....	48 2	25 10	18 9	26 11	32 1	30 9
— 21.....	48 10	26 7	19 4	28 6	32 2	32 4
— 28.....	49 1	26 1	19 6	26 1	32 5	32 0
Aggreg. Aver.	47 2	26 0	18 8	27 2	31 10	32 0
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.



Prices Current.	London. July 23 qr.	London. July 30 qr.	Liverpool. July 24. 70 lbs.	Liverpool. July 31. 70 lbs.	Wakefield. July 13 qr.	Wakefield. July 20 qr.	Boston. July 25 qr.	Boston. Aug. 1. qr.	Birmingham. July 26. 62 lbs.	Birmingham. Aug. 2. 62 lbs.
Wheat—										
New, red ...	42 to 44	42 to 44	6 10 7 6	6 10 7 6	46 to 52	45 to 51	45 to 50	45 to 50	6 0 6 7	5 10 6 4
„ white ...	47—50	47—50	7 2 7 8	7 2 7 8	46—54	45—53	48—54	48—53	6 3 6 7	6 2 6 6
Old, red ...	40—48	40—48	6 10 7 2	6 10 7 2	45—47	44—46	— —	— —	5 10 6 4	5 9 6 2
„ white ...	50—54	50—54	7 6 7 9	7 6 7 9	—54	—53	— —	— —	6 2 6 8	6 0 6 7
Foreign... ...	36—56	36—56	4 8 8 6	6 10 8 6	42—55	41—54	— —	— —	5 3 6 10	5 3 6 10
			480 lbs.	480 lbs.						
Rye—New ...	22—24	22—24	—	—	— —	— —	— —	— —	— —	— —
Foreign...	22—23	22—23	—	—	— —	— —	— —	— —	— —	— —
Foreign meal	6*l.*—7*l.*	6*l.*—7*l.*	—	—	— —	— —	— —	— —	— —	— —
			qr.	qr.					qr.	qr.
Barley—										
Grinding ...	20—24	20—24	—	—	22 23	22—23	24—26	24—26	23—25	23—25
Malting... ...	24—26	24—26	30s—32s	30s—32s	— —	— —	— —	— —	29—32	29—32
Foreign... ...	18—26	18—26	—	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush				
Malt—Ship ...	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	18—25	18—25	2s 10d 3s 2d	2s 10d 3s 2d	— —	—	18—22	18—22	20—28	20—28
Black...	14—23	14—23	2 5 2 8	2 5 2 9	— —	—	—	—	19—20	19—20
Foreign	13—21	13—20	2 4 2 6	2 4 2 6	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	25—30	25—30	34s—	34s—	28—32	28—32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—25	23—25	28 —30s	28 —30s	—	—	—	—	11—12	12—13
Foreign ...	25—32	25—32	32 —34	32 —34	—	—	—	—	—	—
Beans—										
New, small ...	—	—	32 —35	32 —35	31—36	32—36	32—34	32—34	12—14	12—14
Old	23—33	23—33	34 —36	34 —36	— —	—	—	—	15—16	15—16
Foreign ...	21—36	21—36	32 —36	24 —36	30—31	30—31	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	36—40	36—40	—	—	— —	—	—	—	—	—
Linseed Cakes										
British ...	9*l.* 7*s*	7*l.* 7*s*	7*l.* 12*s*	7*l.* 12*s*	— —	—	—	—	—	—
Foreign ...	6*l.*—7*l.*	6*l.*	—	—	— —	—	—	—	—	—
Indian Corn—	30—34	30—34	29s—30s	25s—28s	— —	—	—	—	13—14	13—14
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	36—44	36—44	35—36	35—36	— —	—	36—40	36—40	36—38	36—38

Weekly Averages and Imports.	Aver. July 31	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	51 3	14980	46 4	12585	49 6	7356	48 6	1163	44 5½	247
BARLEY ...	26 1	3190	26 0	2685	—	930	—	—	—	1331
OATS... ...	21 11	15170	18 5	1822	22 0	748	16 7	266	20 11¼	587
RYE	25 0	—	27 2	—	—	—	—	—	—	—
BEANS ...	30 10	—	—	700	31 0	468	—	—	—	1082
PEAS... ...	31 0	—	—	400	—	214	—	—	—	—

Signed { *Kingsford and Lay.* | *Segar and Tunnicliffe.* | *Sandars and Dunns.* | *Thomas Wright.* | *J. and C. Sturge.*

Sales by Auction.

EAST INDIAN ORCHIDS AND PITCHER PLANTS.

MR. J. C. STEVENS is directed by Messrs. Hugh Low and Co. to announce for sale by Auction, at his Great Room, 38, King-street, Covent-garden, on WEDNESDAY, August 8, at 12 for 1 o'clock, an importation of rare ORCHIDS, collected in the islands of the Eastern Archipelago, and comprising several presumed new species of Aerides, Dendrobium, and Coelogyne; also some Pitcher Plants, including the only two specimens in Europe of Nepenthes Hookeriana, and many fine plants of N. Rafflesiana and ampullacea. The plants have been in this country for several weeks, and are all in excellent condition, Messrs. H. L. and Co., having determined not to offer plants in doubtful health.—May be viewed on the morning of sale, and Catalogues had.

TO NURSERYMEN, GENTLEMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by Mr. Howcroft, to submit to competition by Auction, on the premises, Mile-end Nursery, Bow-road, on MONDAY, August 20, at 11 o'clock (unless previously disposed of by private contract), the valuable Lease for 50 years unexpired, and the whole of the Greenhouses, Pits, Frames; together with the Greenhouse Plants, Nursery Stock, Seeds, utensils in trade, &c.—May be viewed, and particulars had, one week prior to the sale, of the principal Seedsmen, on the premises, and of the Auctioneers, Leytonstone, Essex.

G. JACKSON, jun., begs to inform the Nobility, Gentry, Clergy, and Public in general, that he has received instructions to offer for Sale, at the Sun Inn, Hitchin, in the course of the following month, certain PROPERTIES, the particulars of which will appear in future Advertisements. It is intended, provided liberal offers be made for the respective lots, that the proceeds of this Sale are to be appropriated to, and form the basis of, a fund for providing for the moral and spiritual Instruction, in accordance with the principles of the Church of England, of the population of a District in this County, where such necessity exists to a great extent. Geo. Jackson, jun., will be happy to give any further information on the subject, and also to receive instructions from any parties who may feel inclined to send any articles to the Sale, in furtherance of the object contemplated by his employer.

Hitchin, Herts, August 4.

SUSSEX.

TO BE LET for a term of years, and entered upon at Michaelmas next, the Farm of WOTTON, in the Parish of Folkington, at present in the occupation of Mr. Shoosmith. It consists of about 409 acres of Meadow, Pasture, and Arable land: the Arable land is most productive of Beans and Wheat: most of the Pasture and Meadow land is of the richest fattening quality. There is an excellent Farm-house, with every convenience, and the Farm-buildings are large and commodious, and economically fitted up and arranged for fattening a large number of beasts in feeding-houses, stalls, sheds, and yards. The Farm is about four miles from Hailsham and Eastbourne, 10 miles from Lewes, market town, and one mile from the Polegate station on the Lewes and Hastings Railway. For particulars, apply to Mr. John Morton, Whitfield, near Berkeley, Gloucestershire. A person at Folkington Place will show the Farm.

TO BE LET, for a term of years, and entered upon at Michaelmas next, the FARM of TESTWOOD AND COLMOOR, in the parish of Eling, in the county of Southampton, at present in the occupation of the Proprietor. It consists of 355 acres, of which 64 acres are excellent Water Meadow, watered by the river Test, 100 acres are good Arable Land, and 191 acres are of rough Pasture, now being drained, which may be converted into rich productive Turnip and Barley land. There is a good Farm house, and large commodious Farm Buildings. The Farm is about five miles from the town of Southampton, and the turnpike road from there to Salisbury passes through it. It is within 1½ mile of the Eling Railway Station and Wharf on the Southampton river.—For particulars apply to Mr. John Morton, Whitfield, near Berkeley, Gloucestershire. A person at Testwood House will be directed to show the Farm.

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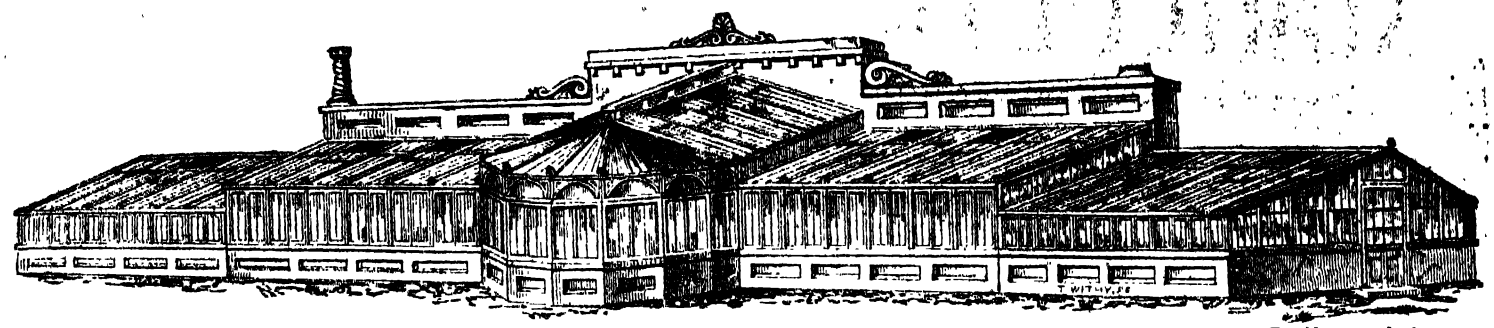

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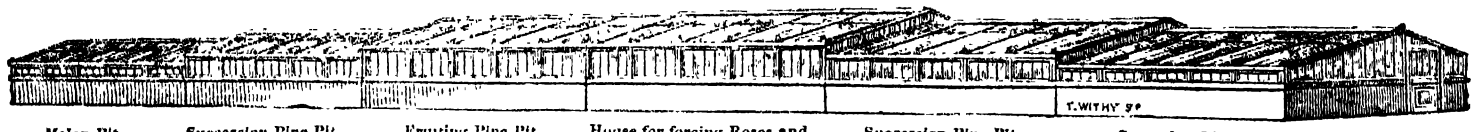

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THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 32—1849.] SATURDAY, AUGUST 11. [Price 6d.

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EDWARD TILEY begs respectfully to inform the Nobility, Gentry, and the Public generally, that he is now ready to send out his Early Marrow Cabbage Seed, which has proved the best yet in cultivation, and five weeks earlier than any other sort yet grown. For further particulars see the advertisement in this Paper of July 14. Sold in packets containing 1 oz., 2s. 6d.; ½ oz packets, 1s. 6d. The above will be sent postage free on the remittance of a Post-office order, or the amount in penny postage stamps. Sold by Edward Tiley, at his general Seed-shop, 16, Pulteney bridge, Bath.

NEW FUCHSIAS AND VERBENAS.

GEORGE SMITH begs to offer the following NEW FUCHSIAS, at 21s. per dozen, viz., Story's Elegantissima, Newtoniensis, Heben's Gem of the West, Smith's Lord Nelson, Turvill's Fire King, Elegance, Shylock Gem, Miellez' Perfection, Julia Grisi, Gazelle, General Negrier, Chateaubriand, Keyne's Admirable, and Tiley's Sir Charles Napier. VERBENAS: Smith's Psyche, Anna Burgundy, Village Maid, Napier's Monarch, Queen of the French, Duchess, Advancer, Beauty of Hornsey, Duval, Devoar, Painted Lady, Princess, War Eagle, Lady Russell, Giantess, Opthnus, Grey's Roses, Wyness's Princess Alice, Young's Morning Star, Royal Purple, Brilliant, Ivery's Attraction, Union Jack, Epps' Eclipse, Eppsii, Tiley's Criterion, Barker's Lord of the Isles, Duchess of Northumberland, Eyebright, Redworth, Junius, Lady Herrison, Miss Thurold, Miellez' Louis Napoleon Bonaparte, Ariadne, and Malvina. The above 12s. per doz., 24 varieties for 21s.—HELIOTROPES: Grisau and Souvenir de Liege, 1s. 6d. each.—PETUNIAS: Berryer, Louis Napoleon Bonaparte, La Reine, Model, Lady of the Lake, and Prince of Wales, 1s. each.—CHRYSANTHEMUMS: Miellez' Saturne, Madame Miellez, and Pomponette, 1s 6d. each.

The above, on the receipt of a post-office order, will either be sent post free or by hamper, with plants to compensate for carriage.—Tollington Nursery, Hornsey Road, Islington.

TO THE CULTIVATORS OF FLOWERS.—This being the season for the layering of Carnations and Picotees, propagation of Cuttings, sowing or transplanting of various Seedlings, repotting of sundry Plants, &c., those who desire to cultivate these in perfection will find their expectations fully gratified by using the CARBONISED ANIMAL MANURE, prepared expressly for the purpose, to be had of H. COLES, Seedsman, &c., 32, Cranbourne-street, Leicester-square, in tin canisters, of 1s., 1s. 9d., and 2s. 6d. each; or in compact wooden boxes of 5s., by taking which a considerable saving is obtained. A small quantity of it requires merely to be incorporated with the earth that is employed. Dahlias, Chrysanthemums, and every other autumn-flowering plant, will be greatly improved by its being now applied to them on the surface soil around their roots.

THE BLACK PRINCE STRAWBERRY.—Fine strong Plants of this useful STRAWBERRY will be ready for delivery on the 2d of September. Price per 100, 15s.; 50, 10s.; 25, 5s. This Strawberry possesses more good points than any other variety in cultivation; it is hardy, very early, prolific, well flavoured, and a first-rate preserver. It stands travelling well, and if the blossoms are picked off it in Spring, an abundant crop may be obtained from it in Autumn. For Dr. Lindley's opinion, see a leading article in the *Gardeners' Chronicle* of last week, page 483. It is also highly recommended by Mr. Marnock, Mr. Myatt, Messrs. Henderson, Mr. Ingram, of Frogmore, Mr. Mallison, of Claremont, Mr. Beaton, and Mr. Snow, gr. to Earl de Grey. Cuthill's "Treatise on the Strawberry, Potato, Cucumber, Melon, and Lisianthus," price 1s. Post-office Orders on Camberwell.—James Cuthill, Camberwell, near London.

TO THE ADMIRERS OF THAT SPLENDID AUTUMNAL FLOWER,
THE CHRYSANTHEMUM.

YOUELL and CO. are now prepared to execute orders from their extensive and very select collection of the above, comprising all the new and fine continental varieties, at the following prices.

50 best new sorts	25s.
25 ditto	15s.
12 ditto	9s.

Fine plants for blooming in Autumn, well established in small pots, or per post free, with all orders (if requested), directions will be sent for a successful and easy mode of culture for exhibitions.

CAMELLIAS,

Comprising the finest varieties, well set with flower buds, 30s. to 42s. per dozen.

ANEMONE SEED, saved from selected sorts, is now being sent out by Youell and Co. in the finest condition, and can be forwarded, per post free, at 2s. 6d. and 5s. per packet, sufficient to sow a bed of 12 or 24 yards. Sown at the present time, it will afford a fine display through the autumn and winter months.

Catalogues of the above, with an extensive variety of highly ornamental plants, will be forwarded by enclosing two postage stamps.—Great Yarmouth Nursery.

MESSRS. J. and H. BROWN will forward the fol- lowing NEW and CHOICE PLANTS to any part of the kingdom.

12 Tea scented Roses, superior sorts, one of each	9s	0d
Devoniensis and Yellow Noisette Roses, per dozen	9	0
China Roses, White, Yellow, and Crimson „	9	0
12 Bourbon Roses, choice sorts, in pots, suitable for planting in a bed	10	6
Yellow and White Banksian Roses, per dozen	9	0
Noisette and other Climbing Roses, in pots „	6	0
Passifloras, Clematis, and Jasminums, Greenhouse and hardy varieties, in pots, each 1s. to	1	6
New and Choice Chrysanthemums, per dozen	6	0
6 New Dwarf Chinese Chrysanthemums, La Laponne, Petit Poucet, &c.	12	0
Fine Perennial Phloxes, Belgian varieties, per doz.	8	0
The newest and most approved Petunias, Verbenas, and Fuchsias, can be sent by post, per doz., 6s and	4	0
12 Achimenes, best varieties	6	0
50 Choice Greenhouse Plants, one of a sort, for	40	0
Camellias, finest sorts, well set with flower buds, per dozen	30	0
Azalea Indica, beautiful distinct varieties, per dozen	24	0
24 Choice Ericas, one of a sort	18	0
Epacris 12 beautiful varieties, for	10	0
Geraniums, 12 superb varieties, for	15	0
Ditto 6 best fancy varieties, for	10	0

Allamanda Schottii	7s	6d	Viola lutea	3	6
Erythrina Fulgentissima	5	6	Lilium speciosum rubrum	3	6
Gardenia Fortunii	3	6	Phlox depressa	1	6
Clerodendron microphyllum	5	0	White Salvia and Azurea compacta, each	1	0
Balsamina repens	3	6	Thunbergias of sorts,	1	0
New Yellow Rhododendrons	7	6	Zauschneria Californica	1	6
Rhododendron Javanicum	21	0	Fuchsia spectabilis	7	6
12 Choice Ferns	6	0	Plumbago Larpentæ	1	6
12 Distinct Cacti	6	0	Gloxinias, new sorts, 1s. 6d. to	2	6

Choice Geranium, Cineraria, Primula, and Calceolaria seeds, 1s. per packet. Also List of Choice Greenhouse Plants, Roses, &c., by post.

Albion Nursery, Stoke Newington, London, Aug. 11.

PILLINGER'S HYBRID STONE TURNIP.

JOHN PILLINGER respectfully invites the attention of his friends, and agriculturists generally, to his HYBRID STONE TURNIP, which, from its quick growth, diminutive foliage, and tendency to bulb, stands unrivalled as a Stubble Turnip. The success that has attended its growth as a cropper, during the last season, has secured an extensive patronage. The present stock of seed being very limited, this advertisement will not be repeated, therefore early applications are absolutely necessary.—Chepstow Nursery, Aug. 11.

NOVEL APPLICATION FOR THE IMPROVEMENT OF CELERY, SEAKALE, CARDOONS, RHUBARB, STRAWBERRIES, &c.—By means of Roberts's Registered Sockets, these articles are much improved, if applied in season. A pamphlet, with wood engravings, and an exposition of particulars of these and various other appliances to horticulture, may be had on application, enclosing two postage stamps, to Mr. John Roberts, Merchant, 34, Eastcheap, London.

Notice.—*The Gardeners' Journal of July 14*, 1849, contains an editorial article upon these inventions, from which the following remarks are extracted: "The principle of the invention is one about the advantages of which there can be no doubt. By such appliances, and by the aid of such means, vast and important results may reasonably be looked for. As connected, especially with the culture of Strawberries and Melons, the use of these Tiles would undoubtedly add both to earliness and flavour. . . . We shall repeat, that the principle is excellent. All that we ask, on the part of Mr. Roberts, is the thanks of horticulturists for bringing before them in a prominent manner a principle of great practical utility."

ALEXANDER WILLIAMSON has much pleasure in announcing the arrival, per ship "Cornwallis," from New Zealand, a very Choice Collection of FERN SEEDS, of the rarest kinds, and in excellent preservation; likewise a large collection of Specimens of Ferns, collected and sent home by the late Curator of the Sheffield Botanical Gardens. The names of the species are as follows:—No. 1. Cyathea medullaris, or large black tree Fern, grows upwards of 30 feet high in New Zealand. Much used for fencing bridges, &c., and called by the natives Mamak. No. 2. Alsophylla medullaris, fine variety. No. 3. Cyathea dealbata, fine silvery-leaved tree Fern, from 20 to 30 feet high. No. 4. Hymenophyllum, Trichomanes, Adiantums, Aspleniums, Lomaria, Niphobolus, Pteris, Cyatheas, and other genera, &c. No. 5. Mixed varieties of Alsophylla dealbata, or silver tree Fern. No. 6. Todea, sps. australis. In Packets, at 10s. 6d. each.—Apply to ALEXANDER WILLIAMSON, Brandon, near Coventry, Warwickshire.

MUSHROOM SPAWN.

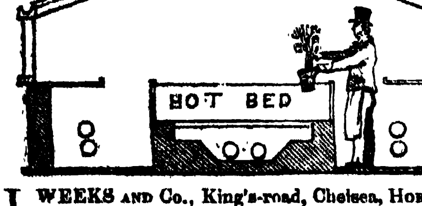
S. CHEESE begs respectfully to inform Mushroom-growers, Gentlemen, Nurserymen, and the Trade in general, that he still continues to supply his superior SPAWN, as usual, at 3s. per bushel, exclusive of package, usually charged 7s. Any quantity can be safely packed, and forwarded to any part of the known world, on receipt of a Post-office order. Early applications are requested, as the supply is limited and the demand great. No order attended to unless containing a remittance.—Address Flora Gardens, Bayswater, London.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, bernacle, brent, and laughing geese, sheildrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

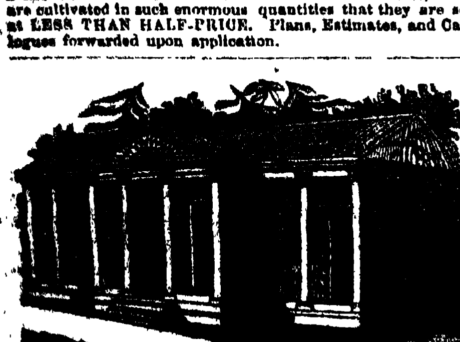
GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15*l.* 10*s.*; a do. do. 15 by 10, 22*l.* 10*s.*; a do. do. 18 by 12, 28*l.* 10*s.*; a do. do. 21 by 12, 32*l.* 10*s.*, including a plan for brickwork. 1½-inch Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 11½*d.* per foot; 2-inch do., 1*s.* per foot.—J. LEWIS'S Machine Hothouse Works, Stamford-hill, Middlesex.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.



GRAY, ORMSON, AND BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

GRAY, ORMSON, and BROWN, have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.

HENRY BAKER, INSTRUMENT MAKER TO THE BOARD OF ADMIRALTY, 90, Hatton-garden, London, has invented a new INSTRUMENT for giving an ALARM in case of overheating Greenhouses, Malt-kilns, or Dwelling-houses; it can be adjusted to call attention at any temperature desired. As a Fire-alarm it is a desirable Instrument, and when once fixed requires no attention to keep it in order, price 4*l.* 4*s.* Superior Achromatic Microscopes 3*l.* 12*s.*, 5*l.* 15*s.*, 9*l.* 10*s.*, and upwards. Hotbed Thermometers, to penetrate 18 inches, 15*s.*, 21*s.*, 25*s.* A Book of Prices and description of Microscopes, Telescopes, Barometers, and Thermometers sent on receipt of two postage stamps. Every Instrument warranted.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS and Co., 116, Bishopsgate-street Without, have the pleasure to submit their New List of Prices of SHEET GLASS for Cash.

CUT TO SIZE.				SHEET SQUARES. In boxes of 100 feet.	s.	d.
16 oz. from 2*d.* to 3½*d.* per foot.				Under ... ... 6 by 4	12	6
21 "	3½ " 5	"		6 by 4 and under 7 by 5	16	6
26 "	3½ " 7½	"		7 by 5 " 8 by 6	18	6
32 "	[illegible] " 9½	"		8 by 6 " 10 by 8	20	6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size.

CHURCH PLATE GLASS.

With a Quarry Pattern Cast upon it, about ⅛ inch thick.

ROUGH PLATE GLASS for WINDOWS, SKYLIGHTS, and FLOORS.

PATENT ROUGH PLATE TILES.

⅛ thick ...... each 0*s.* 10*d.*		⅜-inch .... each	1*s.* 7*d.*
¼-inch 1	3	½-inch	2 0

SHEET GLASS TILES AND SLATES.

	16-oz.	21-oz.	26-oz.	32-oz.
Tiles made of Sheet Glass	8*d.*	10*d.*	1*s.*	1*s.* 4*d.*
Slates, 20 ins. by 10	8½*d.*	1*s.*	1*s.* 5*d.*	1*s.* 6*d.*

Slates are kept in stock of the usual sizes, and made to any dimensions.

GLASS MILK-PANS, PROPAGATING AND BEE GLASSES, Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, Lamp Shades, and

LACTOMETERS FOR TRYING THE QUALITY OF MILK, 4 TUBES, 7*s.* 6*d.*; 6 TUBES, 10*s.*

Self-Registering Thermometers for Greenhouses.

HARTLEY'S PATENT ROUGH PLATE GLASS.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.

T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each. Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each. Wasp Traps.—Lists may be had on application at the warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1*s.* 3*d.* to 1*s.* 0*d.* per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per ft.

HEATING BY HOT WATER.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

BURBIDGE AND HEALY'S NEW BOILER.—The above is a modification of their Boiler (before published), modelled expressly for the large Conservatory, Chiswick Gardens, where it is now at work. From the observations B. and H. have been able to make, they are warranted in stating it to be the "Ne plus ultra" for warming large plant structures. As a proof, one charge of fuel has been kept burning for 48 hours without any addition, and one boiler of the size used is equal to warm 1500 feet of 4-inch pipe. They are also extensively put up at the Royal Botanic Gardens, Kew. Smaller boilers upon the same plan.

BURBIDGE and HEALY, 130, Fleet-street, London.

PORTLAND CEMENT.—Testimonials received from all quarters, prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Milbank-street, Westminster.

PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, CHARLES FRANCIS and SONS, Nine Elms, London.

THE IMPROVED HYDRAULIC RAM, fixed by FREEMAN ROE, Fountain Maker, 70, Strand, London, can be worked by a small stream of half-an-inch, where a fall of 2 feet can be obtained. The same RAM, without the aid of a Tank or Cistern, arranged to throw a Jet of Water constituting a Fountain with the head of water beneath.

Engines for deep wells of all kinds, Douche and other Baths, Buildings heated by hot water. Water Wheels to work small pumps, from 15*l.* Estimates given for the supply of towns, &c.

A newly-invented Portable Vapour Bath, all complete for 4*l.*

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

The terms of the School can be had on application either personally or by letter.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LEGG, Cheltenham.

LANDOWNERS' WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY. Established 1844. Incorporated by Act of Parliament. This Company is prepared to Contract with Landowners for the Drainage, Inclosure, Irrigation, or Improvement of Lands in any part of England, Ireland, or Scotland. Owners of Settled Estates in England may, through the Company, DRAIN, INCLOSE, BUILD ON, or IMPROVE their Lands, and charge the Inheritance with the permanent value.—Apply to Mr. THOMAS MAY, Secretary, 9, Bedford Circus, Exeter.

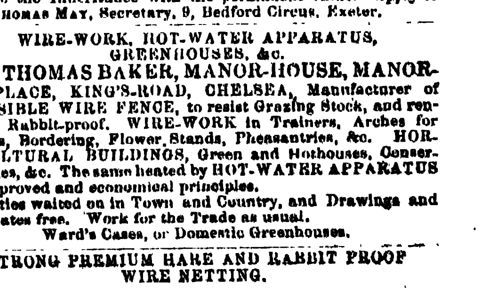
WIRE-WORK, HOT-WATER APPARATUS, GREENHOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS on improved and economical principles.

Parties waited on in Town and Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c., 22, PARLIAMENT-STREET, WESTMINSTER, LONDON; CASTLE-BUILDINGS, DERBY-SQUARE, LIVERPOOL; 128, HIGH-STREET, EDINBURGH; and 82, ST. ENOCH SQUARE, GLASGOW, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9*d.*; 24 ins., 1*s.*; 30 ins., 1*s.* 3*d.*; and 36 ins., 1*s.* 6*d.* per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	..	£3	15	0
Do. of 100 yards, 24 ins. wide	..	..	5	0	0
Do. of 100 yards, 30 ins. wide	..	..	6	5	0
Do. of 100 yards, 36 ins. wide	..	..	7	10	0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1*s.* is equal to 2½ yards of another article in the market, the same width, at 9*d.* per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

[illegible]—FOQUETT'S MAGNIFI-[illegible]—The raiser intends sending out plants of the above, well established in 4-inch pots, in the middle of October next, price 2*l.* 2*s.* each, hamper and package included. Terms, prepayment; and as the stock is limited, no discount can be allowed. Orders will be executed in strict rotation. Post-office orders payable on the Post-office, Newport, Isle of Wight. The well merited encomiums passed on this flower by "The Florist," "Floricultural Cabinet," and *Gardeners' Chronicle*, render any further comments unnecessary.—Address, MAJOR WILLIAM FOQUETT, Shide House, near Newport, Isle of Wight.

BECK'S PELARGONIUMS, and the best varieties of other raisers.—12 of the following sorts, including the box and carriage to London, will be sent out for Two Guineas, well rooted in 3-inch pots, and ready for an immediate shift into a larger size. Orders will be booked, and correspondents informed when the plants are ready, when remittance may be made by Post-office order on Brentford: Aurora, Blanche, Centurion, Cracker, Forget-me-not, Ariel, Cassandra, Cavalier, Cruenta, Gustavus, Gulielma, Grandiflora, Junii, Negress, Rosamund, Sundown; or 9 of the above, and Hoyle's Crusader, or Topping's Brilliant, or Foster's Victory.

The above selection, well cultivated, will make first-rate exhibition plants. A Descriptive Catalogue, including the seedlings of 1848, may be had on application to JOHN DOBSON, Worton Cottage, Isleworth.

Monthly directions for their culture will be found in the "Florist and Garden Miscellany," published on the 1st of each month, and to be had of all booksellers, under the title of "Beck's Florist." This work contains one coloured plate, one or more woodcuts, 24 pages of original matter, a Lady's Page, and a Calendar of Operations, supplied by eminent cultivators.

"Too much can scarcely be said in favour of the continued excellence of this work."—PROF. LINDLEY, *in this Paper, April*, 1849.

CUPRESSUS FUNEBRIS, OR FUNEBRAL CYPRESS.

MESSRS. STANDISH AND NOBLE, NURSERYMEN, Bagshot, have the honour to inform Noblemen, Gentlemen, and the Public, they have been successful in obtaining seeds of the above beautiful weeping Cypress from the north of China, and are now ready to send out fine healthy seedling plants at 21*s.* each.

This splendid Tree is a great favourite with the Chinese, and in the north of China used by them principally for planting in their burial grounds, where it often attains the height of 60 feet, and forms one of the most beautiful Evergreen weeping trees known to Botanists. It was first discovered by Lord Macartney and Sir Geo. Staunton, in the great Vale of Tombs, in the north of China, and dried specimens were brought home by Sir George Staunton, who, in Lord Macartney's mission or voyage to China, thus describes the Vale of Tombs and the plant:

"The Lake formed a beautiful sheet of water about three or four miles in diameter, and surrounded to the north east and south by an amphitheatre of picturesque mountains; upon the summit were erected pagodas, one of which attracted particular attention. It was situated on a bold peninsula that juts into the lake, and was called the Lui-Soong-ta, or Tower of the Thundering Winds. It is said to have been built in the time of the philosopher Confucius, who lived three centuries before the Christian era. In the Vale of Tombs the variety of monuments is almost infinite."

"These monuments of departed greatness are surrounded by trees—such as different species of the Cypress, whose deep and melancholy hue seems to have pointed them everywhere out as well suited for scenes of woe. The churchyard Yew did not, however, grow there, nor was it observed in any part of China; but a species of weeping Thuja, or Lignum vitæ, with long pendant branches, unknown in Europe, overhung many of the graves."

In the plate of the Vale of Tombs, the weeping tree in the foreground near to the Tower of the Thundering Winds is this plant, and it has since been proved by botanists to be the weeping Cypress. Messrs. STANDISH and NOBLE obtained, last winter, from the north of China, dried specimens and cones of the above tree, which were forwarded to Dr. LINDLEY and Sir JOSEPH HOOKER, who at once pronounced them to be the famous Funebral Cypress (see leading article in the *Gardeners' Chronicle* of the 21st of April last).—Messrs. S. and N. can also supply 1-year Seedling Cryptomeria japonica at 1*s.* 6*d.* per plant, 15*s.* per dozen, or 5*l.* per 100; 2-years Seedlings at 3*s.* 6*d.* per plant, 30*s.* per dozen, or 12*l.* 10*s.* per 100.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER begs to inform the public that his unrivalled Collection of Double Hollyhocks, consisting of 6000 spikes of these very beautiful flowers, is now in bloom, and will be in perfection for three or four weeks.

W. C. flatters himself that as a collection this is unequalled in the world, and will be very happy to show them to any admirers of this flower, whether purchasers or not, on any day excepting Sundays.—Nursery, Saffron Walden, Aug. 11.

The Gardeners' Chronicle.

SATURDAY, AUGUST 11, 1849.

IT was not without cause that we last week ventured to say that the POTATO CROP is still unsafe, notwithstanding its apparent soundness. At the very hour when those remarks were written it had begun to appear near London. At Putney, on Friday, the 3d of August, it was suddenly noticed, and every post has since that day brought some unfavourable communication. From these we select the following:

"DOWNSIDE COLLEGE, NEAR BATH.—It is making rapid progress in this locality. *W. Pippett.*"

"KEMPSTONE.—It has decidedly reappeared in this neighbourhood. The smell and premature decay of the leaves and stalks, and the well known marks on the tubers, leave no room for doubt. I speak above of the various sorts of Potatoes planted between the beginning of November and the middle of April, and in various soils. Mine are in peat (well drained) with a subsoil of white sand. The 1st of August seems to have been the fatal day; at least the disease was smelt and seen for the first time on the 2d. *J. H. Calcraft.*"

"READING.—The Potato disease has appeared again generally in this neighbourhood, particularly in low and damp localities; but even the highest and driest are not exempt, as an examination of my own field proved to me this morning. The crop in my own case is mostly forward and nearly ripe, but the backward sorts and late planted will I fear suffer severely, from present appearances. *Alex. Dickson, Coley Park Farm.*"

"TAUNTON.—After the truly gratifying Editorial remarks in your last week's Paper, upon the subject of the Potato crop now growing, it is a painful task to have to inform you that your remarks are not correct as regards this fruitful valley, and, from what I have heard, Cornwall is even worse. The plague broke out about ten days since, and I have got it worse both in field and garden than I ever before witnessed it, at least for the short time it has prevailed. It seems at present confined to the earlier varieties, or, to speak more correctly, to the white skinned Potatoes, for I have an acre and a half of a late white variety, which I brought from the sands of Norfolk, all diseased, and only a fortnight since they were looking splendidly. On every side I hear complaints of the beginning of the disease. Indeed I have taken the trouble to examine my neighbours', and find them as bad as my own both in stalk and tuber. Upon this you may fully rely, and if you desire it I can send you specimens. Last Sunday night the air quite stunk with them after the sun went down. I think it right to acquaint you with these facts, which I hope you will lay before your readers, that they also may be induced to examine theirs, and not indulge in the flattering hope that all is yet safe. I expect the late crops will also follow, if the present damp weather lasts, and I will take the trouble to report progress. Not a complaint was made until after the recent rains I have no other inducement in writing this than to fulfil a duty of affording information to those interested upon the subject of this mysterious plague—a grievous loss to the labouring man (notwithstanding cheap bread) as well as to the rich man, who seldom enjoys his dinner without a Potato. *Samuel Pitman, Rumwell Lodge, Taunton, Aug. 7.*"

"BISHOPS' CASTLE VICARAGE, SALOP, *August* 9.—I have to report to you the return of the 'Botrytis infestans' in its most virulent form, as far as devastation of splendid luxuriant haulm goes. On Sunday I saw the first spots on leaves; on Monday it had so far progressed over some Knight's Early Blues (as here called), that I had about 10 square yards of haulm cleared away. That evening a lot of Dorsetshire Kidneys were clean and untainted; but Tuesday evening they also were evident sufferers. Yesterday we had a very violent thunderstorm and heavy rain. Now, I assure you that the state of these Potatoes this day (Thursday) is perfectly incredible—when their appearance only Saturday last is considered. I can almost see them consuming before my eyes, while the stench is alarming to stand in, if effluvium of perishing vegetables is noxious. I should add, however, that I cannot find any symptoms of the malady on the tubers, which are more than half grown—and excellent eating. Kidneys (Lemon and Ash-leaf) are most excellent, and the haulm dead ripe. No diseased tubers have been found by us in the ground; but we have picked about a dozen out of about 2 bushels of seed Kidneys on the coach-house floor, unmistakeably affected. I have taken the liberty of reporting this to you as the very first decided case of this sad disease in these parts; and if it agrees with reports you are no doubt receiving from other localities, it may be some guide to you in forming an opinion as to the general prevalence. I should, however, assure you at the same time, how luxuriant beyond description all the field Potatoes are everywhere around me, and fast progressing now to complete a crop. Still how little ground for calculating on their being preserved to our use if only five days can bring forth the change I have witnessed in my own garden. *W. M. Rowland, Vicar of Bishops' Castle.*"

"LODSWORTH, NEAR PETWORTH, *August* 9.—The Potato disease has broken out in this neighbourhood, and with great virulence. I mentioned some suspicious circumstances when I had the pleasure of seeing you in town five weeks since, but I observed nothing tangible till Wednesday the 1st inst., on which day a single patch showed unequivocal symptoms of being affected. On Sunday, the 5th, this patch was quite black, or of a very deep dark brown, and the haulm totally destroyed. On Monday I personally examined between 30 and 40 patches under different varieties of aspect and soil, and found them all slightly affected. In some the disease had progressed rapidly yesterday, in others I could observe no difference. Our soil is generally a light sandy loam, looking to the south and east. I have not yet observed the disease, or heard any complaint of it in the clays. I have one field which I planted at various periods, at different depths, with different sorts, and with as well as without manure; but however discouraging it may be, I am sorry to add, all appear to be equally susceptible. *Hasler Hollist.*"

We have also before us the following extract from a letter of Captain SMITH, R.N., Depute Inspector to Captain R. ELLIOTT, R.N., Inspector-General Highland Destitution, dated 30th July, 1849. "I have now, with deep regret, to state to you that on Friday and Saturday I inspected in the several districts or townships in Skye the state of the Potato crop; at Ardheule the old disease has made its appearance in the shepherds' lot there; at Carbost, Fernbiar, and Borlin, in Skye, a new disease (at least so to me) has made its appearance."

This corresponds with Captain ELLIOTT's reports from Ross-shire. It is, however, proper to add that these northern examples are by some referred to frost—an opinion in which Captain ELLIOTT distinctly declares that he cannot concur.

On the other hand, Messrs. HARDY, of Maldon, report the apparent safety of the Potato crop, with less exception than for five years past. "Cases have rarely come under our notice of the real fatal blight, and of a formidable character, save one spot of 2 acres, where nearly one-quarter are much affected, on the same ground, too, where indications of disease presented itself last season sooner than on any other in this neighbourhood. It is an old rich pasture, broken up five years ago. Most early kinds, however, are matured and safe, but are a very short crop and small, on account of late frosts and severe drought. Since the late rains, second crops, and all late planted ones, both early and late kinds, are much improved and in a flourishing condition, as are also those which were raised from seed in the month of March—a circumstance very suspicious."

Unless these had been positive and unmistakeable cases of renewed disease we should not have published them; for many persons have entertained strong preconceived opinions unfavourable to the soundness of the crop, and among them we may name Mr. HEWITT DAVIS. This opinion has been founded upon the undoubted fact that during the whole summer the well known brown gangrene of the Potato haulm has infested it as usual near the old set, and therefore underground. One correspondent in particular lays great stress on this, and entertains very gloomy anticipations in consequence; although he is forced to admit that in his neighbourhood the early Potatoes have seldom been better, and he is unable to point to any case of disease manifested in the tubers themselves. The underground affection in question is no new discovery, as some gentlemen suppose; on the contrary it was pointed out by ourselves, as early as 1846, as being an unfavourable symptom, and a probable herald of coming danger. Perhaps it is. But increased experience has not so confirmed the accuracy of our original view as to lead us to rely too much upon it. On the contrary we have seen the brown gangrene in question heal and disappear; and it is perfectly certain that good crops have been obtained in spite of gangrene having made progress. Potatoes can certainly grow over it. Let no one therefore assume that because the brown gangrene can be found on the underground haulm the Potato crop will be therefore lost. For ourselves we have some suspicion that the underground gangrene, and the brown rot of the leaves may be distinct diseases, and by no means cause and effect.

Upon this point, however, as upon many (we may say most) others, relating to vegetable disease, much light requires to be thrown; and it is for that reason that we have for many weeks past continued to draw attention to the subject by means of Count RÉ's ingenious treatise. Our correspondents seem, however, to be unable to aid much in the discovery of causes; and it is evident that the subject is one that must be worked out mainly by men of science, whose minds are trained to exact observation and accurate reasoning. That mere "practical" men are incapable of dealing with it has been proved by incidents occurring in courts of law; where one "practical" gardener has been known to swear that the spray of Oak trees has been killed by frosts in January and February, and another "practical" nurseryman has been unable to distinguish between disease caused by a centre of destruction and those arising from "natural causes." To this, however, we shall return hereafter. In the meanwhile we take advantage of the present opportunity to mention a new suggestion as to this particular disease.

In a late number of the "*Comptes Rendus*" are the following observations by M. BOUQUET, of Poix (Marne), which we translate from the report laid before the Academy of Sciences of Paris, by Messrs. BOUSSINGAULT, PAYEN, and DECAISNE:

"It is well known that certain mineral salts, that is to say certain salifiable bases, are essential to plants. May not the continuance of the disease which has so long affected the Potato be owing to the absence in a greater or less degree of certain substances essential to this plant, from the soil in which it is cultivated? Some experiments which I have made, during one year only it is true, lead me to expect that such is the fact. I recommend, then, in addition to other precautions, which it would be useless for me to mention here, the application of a manure containing sulphate of iron.

"To fix the volatile ammoniacal salts, I spread sulphate of iron over the dung-heap, every time fresh dung is thrown on it from the stables. In manure thus prepared I planted some seedling Potatoes; they were perfectly sound when pulled up a short time ago. I had also planted some in land which had not lately been manured, but here a great many Potatoes were diseased. Can this difference be owing to the sulphate of iron?

"Every one knows that Potatoes taken from artificially broken fields that have had plaster scattered over their surface, are always sound, and that those on the contrary taken from ground from which several crops have been taken are nearly all diseased. How is this? Is it owing to the sulphate of lime? Can this disease, which has given farmers so much trouble, be owing to the absence of certain

[illegible] M. Boussingault's treatise on [illegible], that Potatoes, not counting the [illegible], deprive a hectare of land of 13.9 kil. of phosphoric acid, 6.6 kil. of sulphuric acid, 3.2 kil. of chlorine, 2.9 kil. of lime, 6.7 kil. of magnesia, 6.5 kil. of potash and soda, 6.9 kil. of silica, 18.6 kil. of oxide of iron and alumina; no crop takes from the soil so large a quantity of iron and sulphuric acid."

This may be added to the subjects of experiment, of which another year will show the result. In the meanwhile we should like to know whether any one in this country possesses any experience which throws light upon M. Bouquet's views.

Among the novelties produced on Tuesday last at the meeting of the Horticultural Society was an Oxalis, imported from Peru by Messrs. Veitch, to which we wish to direct attention. This plant, the *Oxalis elegans* of Humboldt, had been exhibited on several previous occasions without exciting much attention. It was regarded as a pretty plant, but not as one of striking merit. It has now, however, quadrupled the size of its foliage, doubled that of its flowers, and acquired a brilliancy of colour which places it in the first rank among border flowers. This change is the effect of cultivation. Cramped in a flower pot and coddled in a frame it was puny and worthless; planted in the open border, and fed abundantly with air and dew, it has become a gem of the purest water.

Mr. Veitch believes the species to be hardy. He has grown it for two years in the open ground in his nursery at Exeter; and he received it from the mountains behind Loxa in Peru, where his collector William Lobb obtained it. We take it to be about as hardy as O. Bowiei. The leaflets are firm, fleshy, of a dark rich green, and stained with purple on the under side. From the centre of these rises a stalk about 9 inches high, bearing a truss of five or six deep rose-coloured flowers, with a rich dark purple eye. In general effect they are not unlike Viscaria oculata, only much handsomer.

Till experience shall have been obtained of the real habits of this species, it will be prudent to give it some slight shelter in the winter. We believe, however, that dryness will be more important to it than warmth at that season. As a rock plant, it promises to be extremely useful; for a gay bed in a summer garden it will be invaluable. Nor are these its only merits, for it stands well in a dry drawing-room when cut and mixed with other flowers, and will open perfectly with no more light than that of an ordinary day.

VILLA AND SUBURBAN GARDENING.

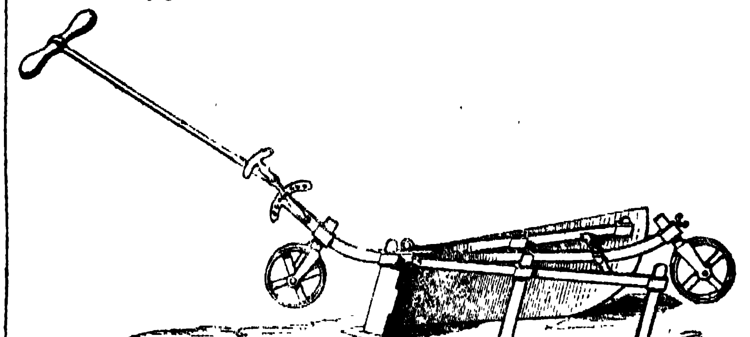
Those who possess greenhouses, and cultivate Heaths and New Holland plants, should put those shrubs now in a shady place in the open air, not in a situation from which the sun is entirely excluded, but only partially so; the object being to harden and ripen the young shoots, which become drawn if kept under glass during the whole year, and are consequently apt to damp off or lose their foliage during winter. Heaths are much subject to mildew at this season, and they should be well dusted with flowers of sulphur, to arrest its progress, and placed in an airy situation. In the course of a few days they should receive a good syringing, first laying the pot upon its side, so as to prevent the sulphur from being washed into the pot, and also to keep the soil from being deluged with an over supply of water. Some of the woolly-leaved Heaths are better kept under glass during the whole year, such as Massonii, Sprengelii, gemmifera, and others of that class, which are extremely liable to suffer when exposed to heavy rains. They should be placed in a frame tilted on a brick or two, so as to admit all the air which it is possible to give them, without exposing them unnecessarily to the autumnal rains, which are sure to prove extremely injurious, and from the effects of which they scarcely ever recover. When the flowers begin to wither, they should be carefully picked off. Allowing them to remain exhausts the energies of the plants, and exhibits at the same time slovenly cultivation.

The free-growing kinds of Heaths should have their shoots pinched back, in order to keep the plants within limits, and also to prevent them from getting leggy. This is also a good time to tie Heaths out, and to get them into shape; avoid, however, the use of too many stakes; this is the great sin of the present mode of cultivating this beautiful genus. Endeavour as far as possible to compel the plant to support itself. Neat, well-grown, small bushes are more to be desired by the amateur than huge overgrown plants, requiring several men to move them. Two or three such specimens would occupy his greenhouse and leave him no room for variety. The present is an excellent time to re-pot the later flowering sorts, or indeed all such as have become pot-bound; one of the grand secrets in the successful culture of Heaths and New Holland plants is never to let them get stunted and pot-bound. It would be better, when they get too large for the accommodation allotted them, to substitute young plants rather than keep overgrown, oversized bushes, which [illegible] villa gardens should [illegible] the plants subordinate to [illegible]. There are more [illegible] in winter than by any neglect or want of skill in cultivation. *Phazo.*

NEW DRILLING AND HOEING MACHINE.

I have used the machine represented by the accompanying woodcut for hoeing between drills, grubbing up ground to the depth of from 5 to 6 inches, and for earthing up between Potatoes, Cabbages, &c., for a considerable time, and have found it to answer the purposes most effectually, and with the addition of a very great saving of labour. When I use it for hoeing between drills, I use the tines as represented in the drawing (the near side), and which are five in number; the transverse bar at the back expands to the width of 21 inches, or contracts to 13 inches; and should even this latter width be greater than the drills will allow of, I take out the two hind tines. There is a weight which is fixed at pleasure on any part of the bar running through the centre, the position of which is regulated by the way in which you are using the machine, and which keeps it working steadily—this I see is not represented in the drawing, but it is necessary.

When I use the machine for grubbing up ground, or for working it into a fine state, I change the flat tines to a set which I have similar in form to those of a common grubber; in this way I prepare the ground for the reception of a second crop, saving the expense of digging; and where no manure is required to be buried in, doing the work far better than the spade. When earthing up Potatoes or Cabbages, the front tine is left in, the four hinder ones taken out, the moulding-boards put on as shown in the drawing on one side, and as the transverse bar expands or contracts, as I said before, I am enabled to earth up Potatoes 21 inches between the rows, or Cabbages at 13. The wheel in front regulates the depth to which the tines enter, and keeps them to an uniform depth when in the soil; the hind wheel can be applied to the same purpose; and where the ground is rough, has the additional effect of steadying the machine; but I never use it, it is not required, at any rate, in this soil. My ground is rather light and in very good order.



The whole machine, which is of iron, is very light, and the work which I have described it as doing is quite within the power of a lad. The work a man could go through with it would not be less than two acres per day, hoeing between Turnips at about 2 feet apart, the grubbing he would do nearly as quickly, and would certainly earth up Potatoes at the rate of an acre a day. Since I have had this machine, I have used no other tool for digging or earthing up in a field of nearly 2 acres, and except when I have to dig in manure, shall have no occasion to do so. If your correspondents were to see the work to which I allude as having been done here, I am sure they would be satisfied with the efficiency of the machine. *C. K. Sivewright, Cargelfield, Edinburgh, July* 23.

DISEASES OF PLANTS.

(Continued from page 486.)

Genus XVII. Carolo.—I give this Lombard name to a malady called by others *Ruggine* (rust) or *Brusone*, and probably known by still other names to growers of Rice, which is the plant which suffers so much from it. The Rice begins to grow most vigorously. This is clearly shown by the deep colour it assumes, its abundant and vigorous stalks, and its spikes longer and larger than usual. Then it dries up and dies in a very short time. Rice is affected by this evil at two periods —in its young state, and when full grown. The mischief is more easily prevented in the former case than in the latter. Thence I distinguish two kinds. Both are due to a superabundance of manure, and never show themselves in old or abandoned Rice grounds. As yet it has been held to be a genus of disease which only attacks Rice, but there is no reason to conclude that other Gramineæ living in marshes may not be subject to it.

First Species. The Lesser Carolo.—Now that the cultivation of Rice forms in many parts of Italy an important branch of rural economy, it is to be hoped that the diseases will become better known which affect this most useful plant, which has rescued so many marshes from their primitive sterility. Dal Toso and Bevilacqua have treated of them. More recently, Dr. Biroli, in his Economico-rural Treatise on the Cultivation of [illegible] containing a series of precepts for the successful bringing Rice ground to maturity.

The Rice plant, in its young state, having grown as has been said with rapidity and excessive vigour, begins suddenly to cover itself with spots of a rusty red colour. These spread over the leaves, and, if not stopped, pass from the leaves to the stem, and gradually drying up, show a yellowish powder, at first insipid and without odour, but subsequently becoming a little acid and acquiring a slight earthy taste. On account of this symptom, Dr. Biroli compares this disease to *rust*; but as the rust in corn, at least as far as my observation goes, is not accompanied by the phenomenon of rapid growth and excessive vigour, as in the case of the disease now considered, I have preferred retaining the latter as a different genus of malady, under the name by which it is known in many localities.

Second Species. Greater Carolo.—The Rice plant has happily passed through the first stages of its existence; but sometimes at a later period it becomes attacked by the *Carolo*, and then its cure must be almost despaired of; for when so affected at this advanced stage, the plant perishes in a very short space of time. It is the observation of the above quoted Biroli, that "If the spike raises itself so as to leave the last leaf at some distance below it, there is some hope of maturity. On the contrary, if the vigour of the stem has covered the last leaf up to the origin of the spike, not a grain of seed is to be expected."

The checking the too great fertility of the soil, either by instituting a rotation of crops in those grounds which will admit of such variety, or by ceasing to manure permanent Rice grounds, is the chief and most secure treatment to be adopted. If a Rice plantation is observed to be growing too vigorously, and gives clear indications of the approach of the malady, it may be mowed down whilst still young, which may afford a chance of a crop. Some draw off the water and let in cattle to feed it down. It seems, however, that a preferable course to either of these two is to draw off the water a little before the plant shoots up into ear. They should be left in this state till the leaves begin to fade and the plants generally look languid, when the irrigation may be restored. This seems to be the surest way of preventing the Carolo. It seems also to be a very good custom to irrigate most abundantly when the plants are very young, and to sow as early as possible. Care should also be taken in making new Rice grounds only to use a fourth part of the quantity of seed usually sown.

Genus XVIII. Fire-stroke (Fuoco).—It may happen that in the heart of summer a young tree may be seen loaded with fruit, giving promise of an excellent crop. But in the course of a very few days, and so much the fewer in proportion as the heat of the season is greater, it will wither up, with the fruit still hanging from its branches. This malady is sometimes known by the name of *sudden death*. But this does not appear to me to be an appropriate designation of a disease which proceeds by gradations, and which generally gives unequivocal signs of its approach, by the drooping and fading of the leaves. It is true that owing to a want of habitual attention to the state of the fruit trees in the places where they are cultivated, the disease seems to come on suddenly, but that is not the case in reality.

Trees planted in light friable soils, and grown as standards, as well as those trained in espalier or on walls, and in excessively rich soils, are equally subject to the fire-stroke. But above all, Peach-trees are peculiarly liable to be thus attacked, although Apricots also, and Pears and Quinces when they are young, will sometimes perish from it. There is no remedy for it when it has made any progress. It is caused by the heat of the season. But if chance has led to the detecting the disorder in its early stage, the fatal consequences might possibly be averted by a copious application of pure water, if the soil be rich, or otherwise by water mixed with liquid manure or kitchen-wash, or with well diluted urine. The first symptom of the disease is a slight discolouration and folding of the leaf.

ON THE GROWTH OF TREES IN DIAMETER.

A number of facts relating to this subject were ascertained during the years 1843—1846, by Professor Du Breuil, of Rouen, and have since been published in the "Mémoires de l'Institut des Provinces de France." A table is given of the measurements of 578 trees. It contains also the names of the localities, the nature of the soil, the kind of plantation, whether forest, copse, or row. In many cases the ages of the trees were known from records and other sources. In such instances it was only necessary to take the circumference, deduce from this the radius, and divide the latter by the number of years for the average thickness of each annual layer. In other cases, where the trees were cut down, the annual layers were minutely counted, and their mean thickness accurately ascertained. The di-

lowing table is a condensed abstract from the one above mentioned.

TABLE I.

No.	Species.	Nature of Soil.	Number of Trees.	Age of Trees.	Average thickness of Annual Layers.
				Years.	Ins.
1	Carpinus Betulus .	Argillaceous sand.	4	60 or more ...	.059
2	Fagus sylvatica ...	Sandy clay ..	51	Do.	.098
3	Do.	Do.	10	20 to 60	.137
4	Do.	Argillace. sand	4	60 or more ...	.102
5	Do.	Do. with flints	5	Do.	.090
6	Do., purple-leaved	Sandy clay ...	3	Do.	.133
7	Platanus orientalis	Do., moist ...	10	Do.	.200
8	Do., Maple-leaved	Do.	9	Do.	.200
9	Quercus Robur ...	Sandy clay ...	12	100 and upwards	.078
10	Do.	Do.	14	40 to 100 ...	.110
11	Do.	Do.	5	Do.	.125
12	Do.	Do., moist ...	3	100 and upwards	.110
13	Do.	Argillace. sand.	15	Do.	.082
14	Do.	Do.	5	40 to 100 ..	.106
15	Robinia Pseud-Acacia.	Sandy	4	20 to 60	.244
16	Thuja orientalis ...	Argillaceous sandy chalk.	8	60 or more . .	.090
17	Tilia europœa ...	Sandy	10	Do.	.094
18	Ulmus campestris	Do.	4	100 and upwards	.102
19	Do.	Do.	10	10 to 40	.224
20	Do.	Argillaceous sandy chalk.	11	100 and upwards	.114
21	Do.	Sandy calcareous clay.	30	40 to 100 ...	.129
22	Ailanthus glandulosa.	Sandy	4	60 and upwards	.251
23	Pinus sylvestris ..	Do.	8	20 to 60	.157
24	Do.	Sandy clay ...	4	60 and upwards	.122
25	Do.	Calcareous do...	10	20 to 60 . . .	.165
26	Do.	Argillaceous chalk.	11	Do.	.185
27	Do. maritima ...	Sandy	7	60 and upwards	.157
28	Do. Strobus .	Calcareous clay	11	20 to 60	.133
29	Do.	Sandy clay ...	5	60 and upwards	.141
30	Do. Laricio ...	Do.	5	Do.	.187
31	Do.	Argillaceous chalk.	9	20 to 60	.173
32	Do.	Calcareous clay	5	Do.	.185
33	Abies Picea ...	Sandy clay ...	8	60 and upwards	.200
34	Do.	Argillaceous chalk.	9	20 to 60	.137
35	Do.	Calcareous clay	9	Do.	.165
36	Do. taxifolia ...	Sandy clay ...	4	60 and upwards	.153
37	Cupressus disticha	Moist argillaceous sand.	4	Do.	.188
38	Cedrus Libani ...	Sandy clay ...	4	Do.	.2'9
39	Larix europœa ...	Do.	8	Do.	.125
40	Do.	Calcareous clay	10	20 to 60	.157
41	Populus alba .	Moist sand ..	10	10 to 30	.287
42	Do.	Moist calcareous clay.	8	Do.	.350
43	Do. monilifera	Do.	11	30 and upwards	.259
44	Castanea vesca	Sandy	7	40 to 100 ..	.240
45	Sophora japonica .	Sandy clay ...	4	60 and upwards	.118
46	Acer rubrum ...	Do. ...	3	Do. ...	.133
47	Juglans nigra .	Do.	3	Do. . .	.114
48	Liriodendron tulipifera.	Do.	3	30 and upwards	.185
49	Prunus Mahaleb.	Do.	3	60 and upwards	.090
50	Corylus Colurna ..	Do.	2	Do.	.062

The preceding table exhibits the respective thicknesses of the annual layers formed by the different species; but in order to ascertain the relative bulks of timber, further calculations are necessary; for this is not in proportion to the numbers representing the thickness of the layers, but according to the squares of these numbers. In order to facilitate comparison, I have arranged the species in the following table in the order of greatest production of wood, and have calculated the relative numerical values of the areas of the horizontal sections which the respective thickness would form. Thus, if the white Poplar, according to the first table, makes annual layers averaging 0·350 inch in thickness, whilst the Hornbeam makes only 0·059 inch; then at the end of say 10, 20, 30, or more years, the areas of their respective sections would be to each other as 79½ to 2¼; hence the area of the section of the Poplar is 35 times that of the Hornbeam. In like manner, it will be seen that the horizontal growth of stem of the sweet Chestnut is represented by 37·21; the Beech, in the most favourable instance, by 12·25; the latter, therefore, forms bulk of stem at least one-third slower than the sweet Chestnut. In a similar manner all the other species included in the table may be compared.

TABLE II.

Nos. referring to Table I.	Common Name of Tree.	Nature of Soil.	Relative amount of horizontal growth of stem.
42	White Poplar	Moist calcareous clay	79.20
41	Ditto	Moist sand..........	58 29
38	Cedar of Lebanon ..	Sandy clay.........	48.56
43	Virginian Poplar ..	Moist calcareous clay	48.56
22	Ailanthus glandulosa	Sandy	40.96
15	Locust-tree	Ditto	38.44
44	Sweet Chestnut	Ditto	37.21
19	Common Elm	Ditto	32.49
7	Oriental Plane	Moist sandy clay	26.01
8	Maple-leaved Plane.	Ditto............	26.01
33	Silver Fir	Sandy clay..........	26.01
37	Deciduous Cypress..	Moist argillaceous sand	23.06
26	Scotch Fir..........	Argillaceous chalk ..	21.09
32	Corsican Pine	Calcareous clay......	21.09
48	Tulip-tree..........	Sandy clay..........	21.00
31	Corsican Pine	Argillaceous chalk ..	19.36
25	Scotch Fir..........	Calcareous clay	17.64
35	Silver Fir..........	Ditto	17.64
23	Scotch Fir	Sandy	16.00
27	Pinaster	Ditto	16.00
40	Larch	Calcareous clay	16.00
36	Yew-leaved Spruce .	Sandy clay..........	15.01
29	Weymouth Pine	Ditto	12.96
34	Silver Fir..........	Argillaceous chalk ..	12.25
3	Common Beech	Argillaceous chalk..	12.25
30	Corsican Pine	Ditto	12.25
6	Purple Beech	Sandy clay..........	11.56
28	Weymouth Pine ..	Calcareous clay	11.56
46	Red Maple	Sandy clay..........	11.56
21	Common Elm	Sandy calcareous clay	10.89
11	Common Oak	Sandy clay..........	10.24
39	Larch	Ditto	10.24
24	Scotch Fir	Ditto	9.61
45	Sophora japonica ..	Sandy clay..........	9.00
20	Common Elm	Sandy calcareous clay	8.41
47	Black Walnut	Sandy clay..........	8.41
10	Common Oak	Ditto	7.84
12	Ditto	Ditto, moist	7.84
14	Ditto	Argillaceous sand ..	7.29
4	Beech	Ditto..............	6.76
18	Common Elm	Sandy	6.76
2	Beech..............	Sandy clay..........	6.25
17	Lime	Sandy	5.76
5	Beech	Argillaceous sand, with flints	5.29
16	Chinese Arbor Vitæ	Argillaceous sandy chalk	5.29
49	Mahaleb Cherry	Sandy clay..........	5.29
13	Common Oak	Argillaceous sand ..	4.41
9	Ditto	Sandy clay..........	4.00
50	Constantinople Hazel	Ditto	2.56
1	Hornbeam	Argillaceous sand ..	2 25

Home Correspondence.

Lagerstrœmia indica.—This very beautiful stove plant is so seldom seen in perfection that I am induced to send an account of one we now have in bloom. It stands about 9 ft. high, measures about 6 ft. through the centre, and has about 150 spikes of delicate purplish-lilac flowers fully expanded; some of the spikes are 9 inches to 1 foot long, and as they hang in graceful semi-pendulous carelessness, they present an aggregate of beauty seldom witnessed. Lagerstrœmia indica is a free bloomer, under judicious treatment. I have bloomed plants of about 18 inches high, but they should be three or four years old. They require to be wintered in a cool house, and started in a plant stove early in spring, after pruning them in hard, reducing the old ball, and potting them in a mixture of sandy loam and well rotted dung or leaf-mould. When in bloom they may be removed to the conservatory, and will last a month. A little manure-water will assist them very much after they show flower. *T. Ann, Gardener to J. D. Llewellyn, Esq., Penllergare.*

Failure in Figs.—My Fig trees were originally planted against a flued wall about 14 years since; early last season I built a house over them, and glazed it with British sheet glass; last year they bore a tolerably good crop of Figs for a first crop, which ripened about June; in the July following we had a severe hail-storm, which broke every square of glass about the place, consequently the trees were exposed to the influence of the weather, and to that cause I attributed their not ripening the second crop well. But such cannot apply to the crops of the present year. The first crop was scanty, and has not ripened kindly by any means; they appear tough, and when they arrive at a certain stage, small blisters appear just under the skin, and after a time they burst and give out a glutinous kind of matter, after which the skin turns brown, and decomposition commences before the fruit is quite ripe. The trees grow luxuriantly, and I should here mention that a milky exudation bursts through the half-grown green fruit. The house has a pathway running its whole length, consisting of flag-stones laid upon brick pillars. I first attributed the cause of failure to stagnant moisture at the roots, and I made a large drain 18 inches wide in front of the house inside, and deep enough to come in contact with a layer of sand. I filled the whole space to the top of the path with coarse material, and withheld water for some time, but it does not appear to improve them. I examined them yesterday, and found them dry—rather too much so for Figs; I therefore conclude that wet was not the cause. From what I can find upon examining the state of the border in several places (which is now 3 feet 6 inches wide, including the portion under the pathway, and 40 yards long), at 4 feet below the surface there appears to be a thin stratum of sand, upon which lies some clay, a sample of which I have sent, but it does not appear to be a solid bed; to all appearance it has been placed there at some time. The soil above that is of the same nature of garden soil, generally rather heavy. The matter quite puzzled me, and the only cause I can now assign is, that the trees have too much soil to grow in, which appears poor. I stop the young shoots at every fifth or sixth joint as they make wood, which reduces the foliage considerably, by which process I imagine that the roots take up more nutriment than the leaves can assimilate, and the crude matter is thrown off by the fruit, the action between root and branch not being equal. I would allow them more room to luxuriate in as a remedy, but I am obliged to keep them stopped in the manner described, or we should not be able to get along the pathway, there being scarce room to walk upright in the house. Do you think that taking away a portion of the soil in the autumn, and mixing a quantity of burnt soil and lime rubbish, would remedy the evil? or must I take the trees up, concrete the bottom, and give the roots less space? I ought to have stated that the front wall of the house is built on arches 4 feet below the surface, and I have made my rubble drain below the tops of the arches. *D. J.* [The trees have been probably too dry at some stage of their growth. Figs require little [illegible]]

The Swarming of Bees.—What makes bees swarm? is it heat? is it want of room? or again, why did my bees swarm when I gave them more room? are questions often asked, and I would remark here that the suggestion in your last Paper, that the young queens were in too forward a state when the additional room was given, is in my opinion wrong. I have always considered that swarming on a large proportion of bees leaving a hive, is a provision of a wise God to secure fresh pasturage for the rapidly increasing colony. Heat I consider nearly the only cause of bees leaving a hive, when the stock is once well established. I would say the only cause and the degree of heat that will cause this is from 100° to 110°, according to the weather. I do not consider want of room as any cause further than that of increasing the heat in the home of these little warm-blooded creatures, and I do not believe they would stop in a barn if the temperature was raised above 110°. I also consider that it is quite possible to let bees go on to almost the point of swarming, and then preserve them in the stock by increased room with ventilation, in which case several young queens nearly perfect would be quickly found thrown from the stock. It is hardly necessary to state that great benefit arises in preventing a swarm from leaving the hive. There are a certain number of bees required as nurses to the young grubs; and whether they swarm or not, that number will be so employed, but if you succeed in keeping them in the hive, the number which would have been required as nurses in your new stock, will now be employed in securing honey. To effect this object hives on Nutt's principle are necessary; three boxes fitting closely together, communicating with each other by openings left in the sides, which can be closed at will, and each of the three boxes having an entrance for the bees. The centre hive of such a nest of boxes must never be touched, the two outside ones must be provided with means for ventilation. If the centre is getting too full of bees, the communication with one of the side boxes must be opened, and that side box must be kept properly ventilated. And now for the great cause of failure in many instances. It is not enough to open the way into the side boxes, but the entrance into the centre box in front should be closed, and the entrance to the side box given as fresh room, opened so that there is no other way of getting out of or into the centre, except through the side box, kept cool by ventilation. If heat drives them from the centre, they go into the side box, which they find cool enough for them; and as the close communication with their queen is not cut off, they quickly go to work to build comb. If this is tried, I think the plan will be found to succeed. *An Old Apiarian.*

The Pickfork, figured at p. 403, has been in use in this part for years, and is known to our agricultural labourers as the Canterbury hoe. *J. A., Chislehurst, Kent.*

A few Hints for Villa and Suburban Gardeners.—A small three-pronged fork, handle (3 feet long) of some light wood feruled, prong 5½ by 3½ inches; the middle prong and cross-bar about half an inch thick, the outer prongs rather less at the hilt. This is a most useful little fork for such gentlemen (aye, and ladies too), as live in the Middlesex clay. The pick-fork is all very well for a working man, but this little tool may be handled by the most delicate, and a most useful one it will be found in the flower-border. Indeed, I hardly know what I should have done without it, after this long dry season, that has literally baked our borders up. I find it so very useful in loosening the clay from the annuals and other tender plants, and at the same time it supplies all that the rake can do for us, which, you may say, is little enough. This is a tool which we do not want the trade to furnish us with; for our village blacksmith has made me one, and really I think "Mrs. S. B." would be charmed with it. See Notices to Correspondents, p. 472. *Addio.*

Green-fly.—At the end of May, when the aphides threatened to devour all the foliage of our Roses, I ordered a lad who was working in my garden to pick off the ends of the Ayrshire Rose shoots, which were literally covered with them from 4 to 5 inches in length, and, of course, I told him what my object was in setting him about the job. Judge of my surprise on finding he had not picked off a single shoot, and conceive my delight if you can on finding my Rose-hedge looking in perfect ease next day, and not an aphis to be seen. I did not mention to you this "great fact," earlier in the season, as a substitute for your paraphernalia (your "parapetticoat"), not calculating on such a result as this; but I assure you my little peripatetic philosopher succeeded to a miracle, for not an aphis re-appeared. He had no sulphur, nor match-box, nor even a tobacco-box, nor pipe of any kind, nor any syringe, nor even Read's new engine; but he had a little besom of his own, made of the shoots of the Privet, with which he brushed up the Rose shoots so effectually that every one of the foe was driven off; and tell "M. J. B." that if I grew Hops, I would try and whip away the vermin from them in the same way, spite of your commendation of the "parapetticoat" and smoke of (sulphur or) tobacco. See Gardeners' Chronicle, page 467. *Addio.*

Eradicating Weeds.—Let me tell of the success I have met with in adopting your suggestion in regard to the extirpation of the Dandelion. And I mention it the rather that I know so many who are plagued with it as much as I have been; and for ten years I have

[illegible] at first, with salt; and by [illegible] I fancied I had succeeded; and so I had, as regarded the original plant in many cases; for I found it dried up the core of it, and the leaves withered up and rotted off quite black. But next year, hydra-like, for almost every head destroyed up came others innumerable, which had shot out of the sides of the roots, and so my enemy prevailed the more; and with all I did, they seemed not to be diminished, till, at your suggestion, persevering in cutting off the heads, this year, instead of pecks being carried off the lawn, only pints have been cut off, and the plants are obviously much attenuated. By next year I fancy there will hardly be a Dandelion to be seen, where there were hundreds three or four years ago. *Addio.*

Tenacity of Vegetable Life.—A seedling plant of Sunflower was eaten off at least 1½ inch. It was left in the pot with the other seedlings, and very shortly afterwards another head appeared; and when transplanted it had six leaves at the crown. It showed the gnawing line of the slug by a brown mark round the stalk, and from that upwards it had the appearance of being drawn out of the lower part of the stalk, like the length of a telescope. *Addio.*

Chenopodium Bonus Henricus, Good King Henry of Dr. Hill, Garden Arage, Arrach, or Orach of Culpepper, and called Mercury in Lincolnshire. Few gardens in this part of the country are without it, for it is a most desirable vegetable. Indeed, I may say that it is a luxury, more especially now that Potatoes are a failure. It comes in at a time when it is most wanted, viz., the beginning of May. It is a hardy perennial, and never fails to produce a crop. It should be treated like Asparagus. If sown in rich soil 15 inches apart, in rows 18 inches asunder, it will put up stalks nearly as thick as one's little finger. When from 4 to 6 inches high and upwards, it may be cut off close to the old root, the bottom leaves stripped off and the stalks peeled, which is readily done by taking hold of the peeling with the knife and thumb at the bottom where it is cut off, and stripping it upwards. If any seed shows itself on the top remove it with the knife, leaving the top leaves with the stalk, which is the part to be used. Tie it up in convenient bunches and boil it until it becomes tender; lay it on a drainer in a vegetable dish, and serve it up with or without melted butter, pepper, salt, vinegar, &c., as may suit different tastes. It may be eaten with any kind of meat, roast or boiled, and particularly with roast fresh meat, and boiled bacon. It forms a good substitute for Spinach, Cabbage, &c. No garden ought to be without it; about 50 roots for a small, and 100 for a moderate-sized family, will keep up a supply, until it is time to discontinue cutting it; then let it grow like Asparagus, cut off the dead haulm in autumn, and mulch over the roots with rotten dung; let it remain in that condition all winter, and turn it in with a fork in spring, as soon as it begins to grow, not earlier, for if done too early, and severe frost sets in, it starves the roots. It is fond of strong liquid manure, applied previous to forking over the ground. Propagate it by seed or by parting the roots. There are two or three sorts, red, green, &c.; the green is, I believe, much the best, and grows much the finest. *Richard Rilott Dorrington.*

Filtered Rain Water.—A 90 feet deep well of mine is quite out of repair, and the water never good. I should therefore feel obliged to "T. W. T., Cheshire," or any rain water tank correspondents, to inform me whether the water thus preserved is equally fresh drinking and equally wholesome with spring water. If so, I will give up the well at once, and build a tank as directed by the *Chronicle*. Any further hint will be thankfully received. *W. B. H., Hingham, Norfolk.*

Hot water v. *Mildew.*—I began to fire a Muscat of Alexandria Vinery on the 1st of March, having pruned it for a general crop, though it was in a weak state. French Beans were raised on the flues, and when the Vines were in flower red spider was spreading from them to the Vines. I had heard that blight and mildew were effecting sad havoc on Vines in all quarters, and, although it had not made any appearance here, I engined the house with water at 130°; the blossoms stood it well, and set their berries, so I continued the practice till the ripening of the fruit, which was early in July. I had a full crop, and the Vines are in condition to yield better berries and fruit in the ensuing year. In a greenhouse where there was no appearance of red spider, I did not apply hot water, and mildew made its appearance on the Vines in it more than a month ago. I applied hot water as above, and when the greenhouse plants were removed, increased the heat, and with that continued the application of the hot water by the engine, and from all appearance the virulence of the blight is subdued; but I believe that neither hot water, sulphur, nor anything else will restore the Vine to its pristine state for this season, for the evil seems to pervade its whole system—the leaves of the lateral shoots all indicate debility; a crop will be ripened, but less perfectly, than that in the Muscat house. *Thomas Torbron, The Grange, Leyton.*

Lasting Quality of Timber.—In connection with your late remarks on the lasting quality of timber cut in olden times, the following may be interesting. The details I met with in a small quarto volume, entitled "Memorials of the Antiquities and Architecture of Essex," by the Rev. Alfred Suckling (Weale, High Holborn). The author states that the parish church of Greensted, in Essex, was built in the year 1013, as a chantry for the reception of the corpse of St. Edmund. The walls are entirely of timber, being formed of trunks of trees with a portion of the heart cut out. These trunks rest on sills at the bottom, but how secured does not appear. At top they are roughly adzed off, and let into a groove in a piece of timber, which runs the whole length of the building, viz., 27 feet 4 inches. The beams forming the walls are 6 feet high, inclusive of the sill. Mr. Suckling thinks it probable that the portion cut from the centre of the trunks was used in other parts of the building, the roof, &c. He says he examined the wood, which, on being scraped with a sharp knife, is like ebony, and exceedingly hard; and from its appearance he sees no reason why it should not last as long again. He supposes it to be Oak, but others he mentions have supposed it to be Spanish Chestnut. It may be useful to add that in the work itself to which I have given reference, there is a full description of the church, and an engraving representing it, as well as the timber wall, &c., in detail. *Shem, Aug. 6.*

Hints for Amateurs.—The following are select, distinct, pot and bedding out plants, of various colours, for an amateur's garden, and are easily kept in a frame or pit during winter.

Geranium Unique	Anagallis carnea
,, La Belle d'Afrique	,, Brewerii
,, Lady Mary Fox	Saponaria ocymoides
,, Cottage Maid	Silene Schafta
,, Queen's Bouquet	Alyssum variegatum
,, Victoria	Potentilla Macnabiana
,, Sidonia	Viola Neapolitana
,, Lady Plymouth	Double Purple Jacobæa
,, Ivy-leaved, white	Lobelia Erinus compacta
,, ,, pink	,, cardinalis
,, new gold-edged	Gaillardia aristata
,, new silver-edged	,, picta
,, Tom Thumb	Phlox Van Houttei
Salvia patens	Double scarlet Nasturtium
,, splendens	,, Blood-red do.
,, chamædryoides	,, Orange do.
Campanula fragilis	Petunia Prince Albert
,, nobilis	,, splendidissima
Nuttalia grandiflora	Verbena Emma
Nierembergia filicaulis	,, Defiance
Cuphea miniata	,, Avalanche
,, platycentra	,, Lady Brackenbury
Aster bellidiflorus	Calceolaria amplexicaulis
Anemone japonica	,, Kentish Hero
Heliotropium Voltaireanum	Fuchsia formosa elegans
Gazania uniflora	,, Purity
Mimulus Conductor	Plumbago Larpentæ
Small Chusan Chrysanthemum	Zauschneria californica
Œnothera macrocarpa	Pentstemon cordifolius
Lantana crocea	Chelone mexicana
,, Sellowii	Sedum Sieboldi
Chironia Fischeri	Mesembryanthemum polyanthum

Cantium

Climbers.—The following are 18 select hardy flowering climbing plants for a country cottage:

Clematis florida pleno	Stauntonia latifolia
,, azurea grandiflora	Boursault Amadis Rose
Passiflora racemosa cœrulea	Noisette Jaune Desprez ditto
Lonicera flexuosa	,, Miss Glegg ditto
,, Nintooa	,, Solfaterra ditto
Solanum jasminoides	Multiflora De la Grifferaie do.
Jasminum revolutum	Ayrshire Queen of the Belgians ditto
,, nudiflorum	
Scarlet Trumpet Honeysuckle	Glycine sinensis
Bignonia radicans	

Cantium.

Pleroma elegans.—A plant of this beautiful species being now in bloom in my conservatory, I cannot refrain from recommending it to my fellow horticulturists who may not possess it. It is admirably suited to any collection of plants, however small, as few of our modern introductions can exceed it in beauty. It is well figured in "Paxton's Magazine of Botany" for March, 1848, but it is there stated to be a stove plant. This is a mistake, as it will thrive in a greenhouse where frost is excluded, being a native of an elevated part of the Organ Mountains, Brazil. That it is capable of being cultivated as a specimen plant of extraordinary beauty, a visit to the gardens of Messrs. Veitch, the fortunate importers of it, will testify, for there may be seen a huge bush, which is literally a mass of flowers. *A Devonian.*

Polypodium Dryopteris and calcareum.—I have found both of these on Symond's Yat, a limestone rock, on the banks of the Wye, Gloucestershire. I think they are both the same species, P. calcareum only taking the form of Dryopteris when growing in exposed situations. In the locality above mentioned intermediate varieties occur. *G. Maw, Bideford, North Devon.*

To Advertisers.—Much trouble might be spared if gentlemen who advertise in the *Gardeners' Chronicle* were to leave their full address at the post-office at which they wish their letters to be left, and the forms under which they intend to receive them; it would save gardeners a great deal of suspense in waiting so long for answers, and, what is more, the vexation of having their notes returned, and marked "not called for." If this should meet the eye of "C. P., Cranbrook," it is hoped that he will take the hint, and that I may be the only one, now or in future, who may have cause for complaint. *J. D., Dover.*

Societies.

Horticultural, *Aug.* 7.—J. R. Gowen, Esq., Secretary, in the chair. Messrs. Fairbairn, of Clapham, sent a collection of large and excellently well cultivated Cape Heaths, in beautiful condition. They consisted of three varieties of E. ampullacea; Irbyana, a very fine specimen; Lee's tricolor, and infundibuliformis. A Banksian Medal was awarded them.—Mr. Moore, Apothecaries' Garden, Chelsea, contributed Plumbago Larpentæ, a plant which has excited interest in consequence of its not having fulfilled the expectations which had been formed of it. It was suggested that as it was discovered growing on the walls of Shanghae, whose winters are more severe than ours, it might be found to succeed better planted out of doors on the shelves of rockwork, or in some well drained and necessarily rather warm situation, where it would receive some shelter. Its beautiful blue flowers, if they could only be had in abundance, and all in perfection at the same time, render it worthy of some exertion on the part of the cultivator to discover the best mode of managing it.—Messrs. Veitch produced plants of a new Peruvian Oxalis named elegans, a pretty species even grown in the greenhouse; but far prettier from the open ground, from which Messrs. Veitch also sent cut flowers and leaves. The latter were more than three times larger than those on the plants from the greenhouse, and the flowers were also larger and better coloured. It received a Certificate of Merit.—From Mr. Henderson, of the Wellington-road Nursery, came a plant of Pentstemon cordifolius, a new Californian, brownish orange-flowered shrub, about which, in its present state, little can be said; for it has not yet been in this country sufficiently long to test its true character. It is likely, however, to prove an acquisition. The same nurserymen communicated a collection of Verbena flowers, as did also Mr. Harrison, of Richmond.—Messrs. Wrench, of London-bridge, were awarded a Certificate of Merit for plants of Fuchsias serratifolia and Exoniensis, grown in their little conservatory on the top of their warehouse, some account of which appeared last week at p. 487.—Boxes of most beautiful Carnations and Picotees, even at this late season, were exhibited from the Royal Nursery, Slough, by Mr. Turner, who received a Certificate of Merit for them. The same grower also showed a pan of Heartsease, among which we remarked the pretty new variety named Mrs. Beck.—Some Pine-apples, all handsome, well swelled fruit, were exhibited by Mr. Jones, gr. to Sir J. Guest, Bart. They consisted of an old Queen, 4 lbs., and three Ripley Queens, weighing respectively 4 lbs. 8 oz., 4 lbs. 13 oz., and 5 lbs. 5 oz. A Banksian Medal was awarded for the last.—Eighteen fine looking fruit of his hybrid Egyptian green-fleshed Melon were exhibited by Mr. Monro, gr. to Mrs. Oddie, of Colney House, St. Alban's. The average weight of these was about 5 lbs., but one weighed 9 lbs. 3½ oz. It was stated that 28 fruit had been cut from under five lights, surely an example of good Melon growing; they had been produced in a brick pit, with the remains of dung and leaves, which formed a hotbed for early Potatoes. On one of the fruit being cut, it proved not to be first-rate in flavour. A Banksian Medal was awarded.—Mr. Davis, gr. to the Earl of Tyrconnel, sent two bunches of Black Hamburgh Grapes, finely swelled, and perfectly ripe; but insufficiently coloured and much spoiled by travelling. One, a fine bunch, to which a Banksian Medal was awarded, weighed 4 lbs.; the other 2 lbs. 1 oz.—Mr. Turnbull, gr. to the Duke of Marlborough, produced a dish of Brunswick Figs and a box of Black Hamburgh Grapes, medium sized bunches, jet black, and covered with bloom. A Certificate of Merit was awarded them.—Mr. Yexley, of Merton, sent a specimen of his oiled canvas covering material, proposed as a substitute for Russian mats.—From the garden of the Society came a collection of Achimenes, among which was A. pyropæa, quite a gem of its kind; various Orchids, including the beautiful Aerides quinquevulnera; the small-leaved variety of Hoya imperialis; the pretty Apricot-coloured Cafferland Gladiolus-like plant called Tritonia aurea; Abronia umbellata; a white and a yellow Portulaca; Vilmorin's pale variety of Thunbergia alata; Pentstemon cordifolius; Pelargonium gibbosum, a Cape species of little beauty, but desirable on account of its being very fragrant in the evening; the white variety of Salvia patens; Calceolaria cuneifolia; a highly coloured and finely flowered Begonia acuminata, from a cool greenhouse; a very fine specimen of the red flowered Zauschneria californica, a plant which everybody should possess; for, should it not prove hardy, as is expected, it will at least make a handsome greenhouse plant; and finally, a small plant of Mimulus tricolor, a species with very pretty flowers, but having a delicate constitution, and difficult to cultivate. It may, however, prove a useful agent in the hands of the skilful hybridiser.

Entomological, *Aug.* 6.—J. F. Stephens, Esq., in the chair. A very extensive collection of insects from Upper India, including many magnificent and rare species, was presented by Captain Hutton. Several rare English insects were also presented by the Rev. Hamlet Clarke, and Mr. Lamb. Numerous entomological publications were also presented by the Royal Agricultural Society, the Entomological Society of Stettin, the Tyneside Naturalists' Club, &c., as well as a series of portraits of English Naturalists, by George Ransome, Esq. Very extensive collections of Lepidopterous insects, including many species of the greatest rarity, recently captured, were exhibited by Messrs. Bond and Shepherd, from Cambridgeshire; by Mr. Douglas from the Isle of Portland, and by Mr. S. Stevens from Wimbledon and other London localities. Mr. F. Smith also exhibited a box of rare British hymenoptera recently captured, and Mr. Westwood the larva of one of the Harpalidæ, to the body of which a number of the pupæ of a species of the parasitical Proctotrupes were attached, and which had been reared within the body of the larva which they had destroyed. Sydney Saunders, Esq., H.M.'s Consul in Albania, exhibited various new and interesting hymenoptera from Greece, including both sexes of the curious genus Scleroderma, the real situation of which in the system had hitherto been doubtful. He also exhibited specimens of a new strepsipterous insect, apparently forming a new genus, which had been reared from a small Greek species

of Hydnum; also a living specimen of the curious beetle Parmena fasciata. Mr. Westwood exhibited a box of exotic Coleoptera, including three fine species of Paussidæ, and numerous Bolboceratæ, Cryptodi, and Mæchidii, from the collection of the Marquis de la Ferté. A paper was read by Mr. F. Smith, containing descriptions of two remarkable Australian solitary wasps, belonging to the genus Paragia.

Society for the Encouragement of Floriculture and Horticulture.—The second general meeting of this Society was held on Tuesday, July 31, at Watson's Hotel, Fleet-street, Charles Palmer, Esq., of Shacklewell, in the chair, when a number of novelties was exhibited. Mr. Turner, of Slough, showed six Picotees of unequal merit, but to all appearance useful. One exquisite gem, the Duchess of Sutherland, was awarded a first class certificate of merit, and richly deserved it. A dark blue Verbena, unnamed, was quite a novelty, and will be a favourite; and there were two of the Picotees, Lorina and Lady H. Moore, which every collector must have, although not in a condition to get a first-class certificate on that occasion. Mr. Bragg exhibited half a dozen seedling yellow Picotees, quite as good as the general run of named favourites, and somewhat more novel; the best of them was No. 5, a pure yellow, with thick petals; and though not in good trim, very likely to take the lead in the class. Mr. Robinson exhibited a seedling Dahlia, quite a gem in its way, called the Thames Bank Hero, a deep crimson, of excellent form, but as there were but three blooms, no adjudication could take place. Mr. Wynness showed a very delicate, beautifully shaded Verbena, which will be grown for its colour, though not quite all we want in form. Although nearly 200 novelties have been shown at the meetings of this Society, the certificate granted to Mr. Turner's flower was the first that has been awarded. This Society meets at four branches on the Tuesdays of the month; and whenever there is a fifth Tuesday, which is four times a year, the meeting is held at Watson's Hotel, being a central quarterly assemblage. *From a Correspondent.*

Reviews.

A Popular History of British Seaweeds, comprising their Structure, Fructification, Specific Characters, &c., with notice of some of the Fresh-water Algæ. By the Rev. D. Landsborough, A. L. S. London: Reeve, Benham, and Reeve, 1849, pp. xx. and 368, tab. col. xx.

It would, perhaps, be too much in a work professedly popular to require a great deal of novelty; we confess, however, that we were rather disappointed in not meeting with more original matter from the pen of a naturalist who is known not as a mere student in the herbarium, but, which is of as much consequence certainly in Algology, to say the least, as in any branch of natural history, an observer of Nature in her own most favoured haunts. The plates, which in point of execution are worthy of all praise, vying even with those of the most beautiful of books, Greville's "Algæ Britannicæ," are, with scarcely an exception, copies from Dr. Harvey's Phycologia, improved most certainly by the taste of Mr. Fitch, for even in Catenella Opuntia, about which (and indeed about the plates generally), there is a mystification which we cannot quite understand, though there is a sort of implication of originality, we can trace most clearly its virtual identity with the figure of the Phycologia. We protest also against an occasional attempt at smartness of style which is in bad keeping with the general tenor of the book, which is really excellent and does credit to the feelings of the author. Indeed we can scarcely point out a book which so unaffectedly exhibits the genuine expression of a true religious spirit, flowing naturally from a pious mind, apart from everything like effort or display.

After showing the happy results of the study of natural history, he adds, "The greatest advantage of this study is, if rightly prosecuted, that it keeps us continually mindful of the presence of God. Were we to regard the phenomena of nature with a constant reference to the great Creator, the world, says Paley, would become a temple, and life itself one continued act of adoration. But let us beware of expecting too much from the study of natural science. The book of Nature is one of God's books, and it is worthy of him—very precious, and fitted to teach us much. But there is another and a better—the volume of inspiration. They are from the same Author, and let both be very carefully consulted if we would be wise, and happy, and good."

This is exactly as it should be. It is difficult, as the poet says, to speak well on common subjects. This, however, appears to be characteristic of the author. We were much struck with the justice of his observations on the often told tale of Mungo Park. The effect on his mind of the contemplation of a little moss is known to every one.

"We may remark, however," says our author, "that if Mungo Park had not been an acute observer, the beauty of this little plant would have been unseen by him, even when it was close to his eyes. The eye requires training. Many have eyes and yet no eyes, because they have not been accustomed to make a right use of them. The little plant which had so cheering an effect on the observing traveller is not uncommon in our own country; and a bank covered with it in a state of fructification is one of the most lovely spectacles on which we can look. Though small, it is not so minute but that its beauty can be perfectly seen by the naked eye; and yet so little do we, in general, attend to these things that have no great magnitude to recommend them, that, were we to take at random ten thousand persons from either town or country, and march them along a bank carpeted with myriads of this beautiful Fork-moss, when every frond is surmounted by its lovely fructification, not ten out of the ten thousand would take notice, or say, 'Is not that charming!' The majority would also see it and not see it; yet if their attention were specially directed to it, they would almost all wonder that they had not before greatly admired it."

The mind of the young naturalist is directed also to other points of interest connected with the study of Nature, and, amongst others, to the Lamarkian doctrine of development, which, however attractive to imaginative and half-instructed minds, cannot stand before a sober and careful view. "Religion has nothing to fear from facts, but it rejects fiction, and it is well to be able to separate the chaff from the Wheat."

As regards the facilities which the work presents for acquiring a general knowledge of British Seaweeds, we are happy to be able to speak most favourably. An attentive study of the generic characters, with the help of the introductory analysis, and the subsequent representations of the various forms assumed by Algæ, cannot fail to reward the student with some tolerably adequate notion of the subject. A reference to some other work will be necessary for the knowledge of species. We think, however, that specific characters might have been given of the more common species, at least. Without them the greater part of the notes, under each individual genus, will be lost to the mere tyro, for whose more especial use the work must evidently be intended. Should a second edition be called for, which is highly probable from the attractive form and beauty of the work, we should recommend this point to the author's consideration. Something also might be added with advantage on the curious discoveries of Thuret.

We had marked, for extract, one or two exceedingly graphic passages relative to the myriads of animals which swarm amongst Algæ. The author evidently speaks of these points *con amore*, and there is a truth and liveliness about his remarks which is most pleasing. We have, however, already exceeded our usual limits, and must conclude by wishing him success, though we have spoken frankly where we thought it right to do so.

Garden Memoranda.

Royal Nursery, Slough.—Nearly a century has elapsed since this Nursery was established. Its first proprietor was Mr. Brown, and it continued in the possession of his descendants until 1845, when it was taken by Mr. Cutter, whose occupation of it ended on the 1st of January last. It then fell into the hands of Mr. Turner, the well known grower and exhibitor of florists' flowers, whose good taste has greatly improved the general aspect of the place, which, previous to his possession of it, had been much neglected. The Nursery itself is excellently well situated by the side of the London and Bath road, directly facing Windsor Castle. It is 20 miles from London by the road, and 18 by the Great Western Railway, to whose station at Slough it is contiguous. The soil of the Nursery is a rich yellow loam, and the whole premises are well sheltered by very large and fine Holly, Yew, and Box hedges.

Mr. Turner's excellent collections of Carnations and Picotees were just at their best at the period of our visit, and never have we seen such a fine display of these favourite florist flowers; the blooms were unusually large and well coloured, and the foliage in the most healthy condition imaginable. Mr. Turner has bloomed 1500 pots of these beautiful flowers this season (averaging three plants to each pot). A new conservatory, constructed after the manner of that put up in the Horticultural Society's Garden by Messrs. Hartley, contained 600 pots of these flowers arranged with the greatest care, both with regard to the colours of the blooms and the size of the plants, forming altogether one of the best displays of the kind ever produced. The soil which Mr. Turner has used for these flowers is the top spit of a meadow taken off in 1846, and frequently turned, in order to clear it of wireworms; it is by no means heavy soil; the only addition it receives is about one barrowful of good decayed stable manure to three of loam. Sufficient material for the following spring is mixed every August, and the loam is always in store some time before it is wanted. Rather a plentiful supply of weak liquid manure was applied to the plants during the hot month of June, with a view to assist them in throwing up their blooming shoots.

Among new Picotees we observed Burroughes' Duchess of Sutherland, red-edged; do. Lorina, purple; Holliday's Queen of Roses, rose; Turner's Lady H. Moore, heavy purple; May's Ann Page, light purple; Marris's Prince Albert, heavy purple; do. Prince of Wales, heavy red; the above are all decidedly fine flowers. We also noticed the following new Carnations: May's Owen Glendower, crimson bizarre; do. Falconbridge, pink bizarre; do. Romeo, rose flake, and several fine seedlings raised by Mr. Puxley but not named.

The following Carnations and Picotees are older but first-rate varieties, which may be added to any collection with advantage:—

Scarlet Bizarres.
Admiral Curzon (Easom)
Brutus (Colcutt)
Lord Rancliffe (Holliday)
Omnium Primus (Kay)
Prince Albert (Hale)
Prince Albert (Puxley)
Sir H. Hardinge (Ely)
Splendid (Martin)

Crimson Bizarres.
Caliban (May)
Count Pauline (Holmes)
Great Britain (Ely)
Lord Milton (Ely)
Queen Victoria (Puxley)
T. Sharpe, Esq. (Holliday)
Thomas Hewlett (Holliday)
Mentor (May)

Pink and Purple Bizarres.
Prince Albert (Puxley)
Sarah Payne (Ward)
Kirke White

Purple Flakes.
Beauty of Woodhouse (Mansley)
Earl Spencer (Barrenger)
Premier (Millwood)
Queen of Purples (Holliday)
Squire Meynell (Brabbin)
Squire Trow (Jackson)

Scarlet Flakes.
Bishop of Gloucester (Brown)
Dido (New)
Firebrand (Hardwicke)
Hero of Middlesex (Willmer)
King of Scarlets (Ely)
Queen (Simpson)

Rose Flakes.
Ariel (May)
Flora's Garland (Brooks)
Lady Ely (Ely)
Lorenzo (May)
Prince Arthur (May)
Princess Royal (Puxley)
Rosetta (May)

Picotees—Red-edged.
Antagonist (Reade)
Ernest (Edmonds)
Gem (Youell)
Isabella (Wildman)
Jenny Lind (Edmonds)
King James (Headley)
Miss Burdett Coutts (Burroughes)
Ne plus ultra (Mathews)
Sebastian (May)

Purple Edge.
Amy (Burroughes)
Beauty (Shaw)
Constance (May)
Enchantress (Mathews)
Juliet (May)
Marquis of Exeter (Holliday)
Olivia (May)
Portia (May)
Princess Alice (Wood)
President (Burroughes)
Pride of the Village (Kirtland)

Rose and Scarlet Edge.
Lady A. Peel (Burroughes)
Lady Dacre (Garrett)
Mrs. Barnard (Barnard)
Phœbe (May)
Princess Royal (Willmer)
Queen Victoria (Green)
Venus (Headley)
Princess Royal (Marris)

Yellow Picotees are but poor in quality, particularly in those points esteemed by florists. The best we saw were Topaz, Euphemia, Benvolio, Willmer's Queen of Yellows, Martin's Queen, Pride of Pont, and a pretty self yellow, named "Parsee Bride."

Dahlias were very vigorous, short, and strong; they are kept well tied out, and all superfluous shoots are removed—a part of Dahlia culture often overdone by inexperienced growers.

Pansy plants were short and healthy, though the late hot weather proved fatal to many collections. Some were in bloom, and we understand that Mr. Turner can cut stands of these flowers from the 1st of April to the end of October.

Pinks now occupy but a small compass, they are being struck under small square propagating glasses, with a trifle of bottom heat; they appeared to be doing admirably.

The grounds generally are well laid out, kept clean and neat, and contain in addition to Pinks, Carnations, Picotees, Dahlias, Pansies, and other florists' flowers, a large amount of general nursery stock. They are at all times well worthy of a visit; but especially so when any of the above named classes of flowers are in bloom.

Miscellaneous.

Botanical Collectors.—We are happy to learn that Dr. Karsten, of La Guayra, intends to proceed, if he receives sufficient encouragement, to examine the rich tropical vegetation of Venezuela, in the capacity of Botanical collector; and that he will be glad, while in that country, to execute orders for English gentlemen, who can communicate with him through the Prussian Consul at La Guayra. Tree Ferns are beautiful objects, generally wanting in English gardens. Dr. Karsten made them his peculiar study when in La Guayra, where they are to be found, and knows exactly the way and manner in which they can be best sent to Europe. He mentions that if he were favoured with a commission from English gentlemen, he could supply them with beautiful specimens of these arborescent Ferns, and also with Palms, Orchids, and many other plants new to English gardens.

Plant Sales.—A small collection of Pitcher Plants and Orchids was brought to the hammer the other day by Mr. Stevens. They fetched from 1*l.* 5*s.* to 2*l.* per lot, with the exception of two plants of the rare Borneo Nepenthes Hookeriana, one of which fetched 11*l.* 10*s.* and the other 4*l.* These were stated to be the only plants of the kind in Europe.

Bombay or Common Indian Senna, Suna Mukki of the natives, is first imported into Bombay from the Arabian Gulf.

316,728 lbs. in 1837-38 | 570,426 lbs. in 1838-39.
Re-exported to Great Britain, 262,284 lbs. in 1838-39.

That this Senna forms a large, if not the largest proportion of what is consumed in this country, is not only evident from the above importation, but also from a comparison with the whole quantity of the other Sennas imported, as given by Dr. Pereira.

	1838.	1839.
From East Indies	72,576 lbs.	110,409 lbs.
From other places	69,538 ,,	63,766 ,,

Some of this Senna is no doubt produced in Africa, as stated by Dr. Malcolmson; a good deal of it in Arabia, probably by Cassia lanceolata, and some perhaps by C. Forskalii. The leaflets are thin, lanceolate, usually entire, about an inch or an inch and a half in length, narrower than even the Tinnivelly or Saharunpore Senna, probably from growing in a poorer soil and drier climate. They are of a pale green colour, often with dark brown coloured leaflets intermixed, also some pods, and many leaf-stalks, with occasionally other impurities. The good specimens of this Senna are, however, of excellent quality, and its commercial and medical value would be much increased, if the finest leaflets were picked out. It is in constant use in hospital practice in India, and generally highly approved of. The author prefers them for all purposes to the kinds found in commerce. *From the Journal of the Agricultural and Horticultural Society of India.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

As in spring a progressive increase of heat and moisture was recommended, to keep pace with the advancing season, so an opposite or retrogressive course must now be pursued. The existence of plants in a healthy state during their winter or season of rest, and the amount of accumulated energy for a new year's growth, depends very much on their autumn treatment. Plants in general require from this time to be gradually exposed to an increased circulation of air, and a lower temperature. Water however must not be supplied too sparingly to the soil, as the roots of many plants will continue to make considerable progress. These remarks apply more particularly to hard-wooded plants, which, to ripen their growth, require a longer season than those of a more herbaceous character, which will continue to grow and flower yet for a considerable time. Remember the value of liquid manure for plants which are flowering freely, and others which it is desirable to invigorate to the utmost. The cutting down and propagating of the large flowering Pelargoniums should proceed as usual, but with the fancy varieties a different course must be pursued; most of these produce their flowers in such profusion that if left to the ordinary course, it is almost impossible to obtain any proper shoots for cuttings. By picking off the flowers as they appear and encouraging the growth of the plants by rich soil, and liquid manure, the extreme points will make cuttings, and the young side shoots will produce cuttings in abundance.

FORCING DEPARTMENT.

Pineries.—Unless the fruits in progress are supported in some way, they are very liable to grow one-sided, and sometimes to break off entirely; this, of course, must be prevented, but at the same time it should be done in a neat and workmanlike manner. We are induced to make this remark because it is not uncommon to see awkward looking stakes, of an unnecessary strength, used for this and other purposes; and the contrast between such and the noble foliage of the Pine is anything but pleasing. Vineries.—In damp weather a little fire will be found necessary to dry the atmosphere where ripe Grapes are hanging; these fires should be gentle, and invariably accompanied with air. Moisture must be carefully avoided, or some of the thin-skinned varieties will be liable to crack; this is an additional reason for covering the outside borders. There is no excuse for keeping pot plants which require watering and syringing in the houses at this time of year; the kinds which generally occupy such places may be very well accommodated in the open air for the next six weeks. Melons.—These are now growing fast, and must have regular attention in regard to stopping and thinning. Let the plants have abundance of air, and retain a little all night; by a systematic attention to this point, the flavour of the fruit is much improved. Let them have an ample supply of water except when the fruit is ripening.

FLOWER GARDEN AND SHRUBBERY.

Some time ago we promised to remind our readers about making memoranda of the most suitable arrangement for half hardy plants next season; we are just now doing so ourselves, and we take this opportunity of redeeming our pledge. Our mode is to stitch a few sheets of foolscap paper together sufficient to hold a rude outline on a moderate sized scale of the whole of our flower gardens. On each left hand page, a rough draft is made of the outline of a portion of the beds, which are all numbered, and on the opposite or right hand page, columns are arranged for the number corresponding with the plan, the names of the plants decided upon, and the number required for each bed. A summary of the whole is then compiled, and this is our guide as to the quantity to be propagated immediately by cuttings, and by seeds or cuttings in spring. The matter is thus reduced to a system, and as we have neither redundances nor deficiencies, disappointment is prevented on the one hand, and waste of labour on the other, besides having the satisfaction of carrying out a preconcerted arrangement to the letter. While the half-hardy plants are in their greatest beauty, a tasteful eye will easily discover the weak and improvable points, and, by observing the more satisfactory parts, will readily perceive the most desirable future arrangement. The Hollyhock is a general favourite for the decoration of the larger clumps, and the light-coloured varieties are excellently adapted for planting along the edges of the evergreen masses, to relieve their monotonous appearance. The usual method of propagation by seed is of course uncertain as to the quality of the flowers, and for this reason they should not be planted in permanent positions till they have been proved as to colour and quality. It is very desirable to perpetuate the select varieties, which is easily done. They are propagated from eyes, much in the same manner as Vines, in selecting which, care should be taken to choose those which have an incipient bud at the base of the leaf, and to reject those which are developing flower-buds. The cuttings should be prepared by splitting and cutting the stems up into lengths, leaving about 2 inches below the bud, and paring away the pithy part; they should then be planted about an inch deep in a frame of very sandy soil, and if they can have the advantage of a little bottom-heat, so much the better. It is only necessary to mention further that the operation should be performed as soon as the good and bad varieties are distinguishable.

FLORIST FLOWERS.

Pansies.—We have seen many seedlings this season of really good quality, but so similar to many out, that we do not think it proper to give them publicity, simply because many purchasing, on our recommendation, would feel disappointed. We are most anxious to see some new features in these beautiful flowers, and as seedlings are now blooming, we would advise amateurs to be careful in saving seed from those which exhibit novelty, in order that this may be accomplished. If rooted plants are not already put out, let no time be lost, choosing the first rainy weather for the operation. Carnations and Picotees.—Continue to layer every opportunity; they ought all to be done by the latter end of the month. Put out Pink pipings, and we would advise amateurs to make their selection now, and get their plants planted out on well prepared beds. By adopting this plan, however far the pipings may come, they will get well established before winter, and thereby ensure flowers in good character next season. Dahlias ought to be well attended to; mulch the soil with rotten manure, giving abundance of water; should the weather prove dry, remove all misshapen buds. Thin those which bring small flowers, whilst those which are coarse should be allowed to carry more blooms.

FRUIT GARDEN.

Strawberries.—In places where the work is kept in a forward state, it may be presumed that by this time a sufficient quantity of runners has been potted for forcing, and that all the new plantations are completed. And as the fruit is all gathered, the old exhausted beds ought to be at once destroyed, preserving those of one or two years' standing, to afford the main supply next season. These latter ought to be immediately divested of their runners, but without injuring the foliage; and to encourage their growth, some well rotted manure should be forked into the ground all round the plants. Do not at any time adopt the barbarous practice of cutting down the old foliage. It is a very convenient practice to plant a row of strong young plants from 6 to 9 inches apart, of some early kind, as Myatt's Eliza, at the foot of a south wall. These will ripen a week earlier than those in the open plots, and will consequently relieve the forcing houses a week sooner. It will be well to examine the state of the soil about the roots of Peaches, Apricots, and Figs, on the open walls, and especially of those which fortunately carry a crop of fruit; in many cases the ground will be found very dry, and unless watered, the trees will soon show evidence of the neglect by casting some of their fruit. Let the earlier varieties of Pears and Apples be gathered as they ripen.

State of the Weather near London for the week ending Aug. 9, 1849, as observed at the Horticultural Gardens, Chiswick.

Aug.		Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind	Rain
Friday	3	14	29.987	[illegible]	67	[illegible]	[illegible]	N.E.	.02
Satur.	4	[illegible]	29.979	[illegible]	70	41	[illegible]	N.E.	.00
Sunday	5	16	29.[illegible]	29.863	[illegible]	[illegible]	57.0	S.E.	.00
Monday	6	17	30.048	29.9[illegible]	80	[illegible]	62.0	W.	.00
Tues.	7	18	30.067	30.018	8[illegible]	60	71.5	W.	.17
Wed.	8	19	29.960	29.847	[illegible]	64	69.5	S.W.	.00
Thurs.	9	20	[illegible]	[illegible]	81	56	[illegible]	S.W.	[illegible]
Average			29.971	[illegible]	[illegible]	18.0	6[illegible]		0.19

Aug. 3 Slight rain, overcast, cold at night.
— 4 Clear, fine; clear.
— 5 Fine, overcast, cloudy.
— 6 Cloudless and fine, very fine, clear at night.
— 7—Fine, very fine, overcast, lightning.
— 8—Thunder and heavy showers early A.M.
— 9 Foggy; very fine, heavy rain in afternoon, overcast; rain.
Mean temperature of the week [illegible] below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week ending Aug. 18, 1849.

Aug.		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday	12	75.0	51.3	63.1	9	0.21 in	2	1	1	—	3	7	5	4
Mon.	13	72.6	50.3	61.4	10	1.14	—	2	8	2	8	9	2	3
Tues.	14	72.1	50.8	61.5	7	0.67	[illegible]	[illegible]	[illegible]	1	2	6	4	1
Wed.	15	73.1	51.1	62.1	10	0.61	1	3	4	1	3	4	2	5
Thurs.	16	73.6	52.8	63.2	8	0.58	—	1	2	1	4	8	7	4
Friday	17	73.3	51.8	62.6	12	0.51	2	1	1	1	4	5	7	2
Satur.	18	73.9	53.4	64.7	12	0.45	1	5	[illegible]	1	3	5	4	1

The highest temperature during the above period occurred on the 13th, 1842—therm. 92 deg.; and the lowest on the 14th, 1839—therm. 32 deg.

Notices to Correspondents.

Back Numbers. Full price will be given for Nos. 42, 43, 46, 47, 48, 49, 56, for 1848.

Bees: *W G.* We cannot ensure you much chance of success by the plan you suggest of uniting bees, for perhaps neither parties may mix together until they have recovered from sickness, consequently there might be a great uproar in the hive, and more harm done than if they had been left alone. You may, however, try it, but by no means sprinkle the smoked bees with sugar and beer; that would make a sad mess of them while in a state of stupor. *W.*

Cucumbers: *H W.* Your Cucumber leaf is affected by the kind of mildew which attacks Grapes. It can only be cured by dusting the leaves with sulphur the moment the mildew makes its appearance.‡—We have received from N. G. Clifton, Esq., of 88, Cross-street, Islington, two magnificent Cucumbers, of the Defiance kind, grown in his Polmaise-house by his gardener, John Hunter. They were 25 inches long, 2½ inches in diameter, solid almost to the core, juicy, and still bore the flower on their end. In short, they were just fit for table, and among the finest we have seen in that state.

Diseased Grapes: *Novice.* See last week's No., p. 488.

Eatable Plants: *B.* To answer your inquiry would fill a pamphlet. Consult the volume on Fruits and Farinaceous Plants in the publication by the Society for the Diffusion of Knowledge. The following are the most important. Yams, Sweet Potatoes, Mellocs, Eddoes or Tanfers, Colocaria, Apios, Psoralea esculenta, Arracacha, Oca or Oxalis crenata, Dion edule, Zamia furfuracea, Sago Palms, Cycas revoluta, Ipomæa macrorhiza. Besides these, there is a multitude of plants having about the same value as Pignuts. Some of them are described in Lindley's "Medical and Œconomical Botany."

Ferns. *S C M.* Mr. James Potter, 2, Blake's-row, Ravensbourne-walk, Deptford, Kent.‡

Fruit Trees for Espaliers: *X Z.* Apples, four dessert: Ribston Pippin, Court of Wick, Scarlet Nonpareil, and Boston Russet. Two kitchen: Dumelow's Seedling and Bedfordshire Foundling. Six varieties of Gooseberries for espaliers may consist of Woodward's Whitesmith, Red Champagne, Massey's Heart of Oak, Keens' Seedling Warrington, Pitmaston Greengage, and Red Warrington.‡

Glazing: *G L O.* If you do not mind expense your plan is unobjectionable, provided you can secure sufficient ventilation, that is a point to which you must pay especial attention.‡

Insects: *W Worm.* The best plan for the destruction of wire-worms is to lay patches of damp Grass about, to which they congregate during the night, and which must be hunted over in the morning. *W.—D R.* The grains of Wheat are badly attacked by the orange-coloured larvæ of the Wheat midge (see *Gard. Chron.* 1847, p. 604, for figure and description). The best remedy is the use of the midge sieves there recommended. *W.—Hortus.* The Vine leaves are sadly infested with the common Thrips. Fumigation is the only remedy. Try bruised Laurel leaves, closely shutting the house up. *W.—M Y.* The Copper Beech is attacked by aphides. Fumigation by tobacco, the tree being enveloped (if small enough) in a parapetticoat will cleanse it. *W.—A M.* Your worm is nothing else than the common earth-worm (Lumbricus terrestris.) *W.—W J B.* Hornets undergo precisely the same changes as wasps, and the female founders of colonies are to be met with at the beginning of the breeding season. *W.—Stella.* Your black-beetle is one of the commonest insects, Geotrupes stercorarius, which frequents dung; the smaller ones are G. sylvaticus, and what you regard as the young clustering on the beetles are parasitical acari. *W.—Shem.* No. 1, Bibio Marci; 2, Empis livida; 3, Microgaster glomeratus; 4, Molytes germanus; 5, Telephorus rusticus; 6, Malachius æneus; 7, Saltious (dried up); 8, Meligethes æneus. We cannot undertake to name insects so wretchedly preserved. Cannot you pin the specimens in the usual way?

Melons: *H Bundy.* We have received the Bromham-Hall Melon. It was much over-ripe. Nevertheless, it was by far the best Melon we have tasted this year, and undoubtedly stands in the highest class of green-fleshed sorts.

Mulberries: *Mary.* These plants vary greatly in their foliage, according to their vigour and age. The leaves now borne will probably be replaced in a year or two by others of a different form.

Names of Plants: *Philo filix.* 1, Struthiopteris germanica; 2, Cystopteris tenuis, Schott, C. atomaria, Presl, C. fragilis var. Hook. *S.—Novice.* Clematis florida, Veratrum nigrum, Nierembergia gracilis.—*E I.* Phytolacca icosandra.—*A B.* Apparently Cuphea miniata.—*C D.* Veratrum nigrum.—*B K.* 1, Hypericum perforatum; 2, Veronica officinalis; 3, Polygonum aviculare; 4, Juncus obtusiflorus; 5, Lysimachia nemorum—all plants of the commonest kind. Why not acquire the means of determining such points as this for yourself? To send such things to us for names is something like sending a fox, a goose, a rabbit, a cat, and a goat to a zoological museum for their names.—*J P.* Francoa appendiculata. *J M.* 1, Stachys palustris; 2, Anagallis tenella; 3, Juncus bufonius, very young; 4, Hydrocotyle vulgaris.—*G M.* Oxalis stricta.—*Shem.* 1, Verbascum nigrum; 2, Barbarea vulgaris; 3, Lamium amplexicaule; 4, 5, Raphanus Raphanistrum; 6, Lathyrus grandiflorus (?); 7, Digitalis lutea; 8, Some Cristaria? not determinable; 9, What sort of fruit has this? Where is it from? What its habit? Hardy? Send it again with better information; 10, Nostoc commune; 11, Ornus Europæa.

Pelargoniums: *R S B.* It is hardly possible to say what has caused your Pelargonium flowers to come blotched; in general such is the result of exposure at night to the open air and full sunlight by day, particularly after close confinement and shading during the principal blooming season. You had better cut them down now, keep the bottoms rather dry, and fully expose them for a short time; afterwards, shake them out of the soil, cut part of the roots off, and pot them in small pots. The old narrow petalled variety is one of the original hybrids, whose name (if ever it had one), has long since been forgotten.¶—*K.* Lucca rosea belongs to the race of scarlet Pelargoniums, but we are of opinion that it could not be shown with propriety as a scarlet.‡

Potatoes. *Old Sub.* We should think that the Ash-leaved Kidney would answer your purpose.‡

Tobacco: *Jean Nicot.* Gather the leaves when full grown, just before there is any sign of their changing colour. Hang them up to the rafters of a shed, to become partially dry. When about half dry take them down and throw them in a heap to ferment; if the quantity is small, press them down with a moderate weight, if they have become too dry add a sprinkling of water (some say urine). Examine them from day to day, and when the full smell of tobacco can be distinguished, again hang them up to dry. When dry enough, pack them tightly in a barrel or box.

Veronicas: *M W K.* Shorten in straggling branches. Remove all the dead flowers from your plants of V. Lindleyana and speciosa, and place them out of doors until late in autumn, when they should be removed to the greenhouse. If it be desirable they may be repotted now; but they generally flower best when their roots are kept within small compass. Peat and loam, with a little leaf mould and sand, suits them.

Vipers: *G W.* We cannot reopen this question. If you or others will catch a viper which has been seen to swallow her young, will secure her jaws so that the young cannot escape again, and will send her to some very intelligent surgeon for examination, we will publish his report with much pleasure. At present we have assertions only without proof, and you merely increase the number of them.

Misc.: *Clericus.* The most useful seeds for a clergyman going to China to take out with him would be choice florists' flowers of all sorts, Melons, Cucumbers, Fuchsias, Achimenes, and stones or seeds of our finest varieties of fruit, especially of Clingstone Peaches.

SEEDLING FLOWERS.

Achimenes: *W C.* Your hybrid, between A. patens and A. longiflora, with deep violet purple flowers about the size of those of A. patens, is a decided cross, and is a very beautiful thing, nice in colour.*

Fuchsias: *J H.* Tube rosy red, short and slightly inflated; corolla violet purple; good in shape and substance, but too small proportioned.*—*T W.* Light-coloured varieties: 21, tube rather short and slender, rosy purple; lobes long and broad, but a little too much pointed; corolla large, well shaped, bright violet, and well contrasted with the colour of the tube; a nice variety. 22, tube moderately long, of a rosy pink; corolla bright orange scarlet, stained with violet; good in texture, size, and colours; the best of your light-coloured ones. 23, tube short, rosy purple; lobes broad, purple on the outer side, and pale blush tipped with purple on the inner; corolla orange scarlet stained with violet; texture, shape, and colours good, and although very short in the tube, and rather small in size, its purple-tipped lobes give it a nice distinct appearance. 24 and 25 are good varieties, but too short in the tubes, and not sufficiently distinct in colour. Dark sorts: 4, 17, and 26 are short in the tube, but of good texture. Corollas well shaped, bright and well contrasted, but not sufficiently distinct in colours; the foliage of 17 is large and distinct. 16 and 20 are good bright coloured varieties, but rather short in the tube. 18. Tube reddish purple, not more than half an inch in length; lobes broad and well spread; corolla deep violet purple, large, and well shaped, small but distinct.*

Heliotropes: *W J W.* 1 is rather singular in its loose clusters of flowers, but wants size. 2 is not sufficiently distinct from the common kind, and it wants size.*

Pelargonium: *E C C.* Upper petals dark crimson, fading to rosy violet near the outside, and margined with pale blush; lower petals pale flesh colour; size, texture, and margin good, upper petals crumply, and not very novel in colours.*

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

The Summer Session will commence on Saturday, the 11th of August, 1849. All New Students are required to attend for examination on the preceding day. Those who purpose entering as Students for the ensuing session are requested to apply (either by letter or personally) to the Principal, at the College, Cirencester, Gloucestershire, for the necessary admission papers. PHILIP BOWES, Secretary.

London Office, 26, King William-street, West Strand.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

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The object of this Institution is to provide such a course of instruction as will be most useful to the Agriculturist. The benefits to be derived from a judicious application of scientific information are becoming more and more extensively acknowledged, while the means of obtaining that information, if, indeed, it can be obtained at all without for the time sacrificing a due attention to the practical operations of husbandry, are so scattered and costly as to be within the reach of very few.

The College course of instruction is conducted in such a manner that, while the student is well based in the principles of each science, its relations with agriculture are specially touched upon and explained, and their practical application shown as far as possible in the operations of the College farm. The theoretical and practical instruction go hand in hand, and the whole is combined with the advantages of collegiate discipline.

By order of the Council, PHILIP BOWES, Secretary.

London Office, 26, King William-street, West Strand.

TO ORCHID GROWERS.

BURBIDGE AND HEALY, 130, Fleet-street, respectfully call attention to their method of warming Orchid Houses. They have had the honour of warming the Orchid Houses at the undermentioned places:

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick, additions to the House.

Also the Orchid Houses of the following distinguished growers of this interesting class of plants.

The Bishop of Winchester, Farnham Castle.
J. Lyons, Esq., Ladiston.
J. Warner, Esq., Hoddesdon.
Messrs. Henderson, Pine-apple Place.
J. Schröder, Esq., Stratford.
R. Hanbury, Esq., Poles, near Ware.
W. Webb, Esq., Clapham.

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The Agricultural Gazette.

SATURDAY, AUGUST 11, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY, Aug. 14—Agricultural Society of England.
THURSDAY, " 16—Agricultural Imp. Society of Ireland.
FARMERS' CLUBS.—Aug. 16. Claydon.

WE may congratulate our readers on their prospect of the FINEST HARVEST ever seen in this country. There never was a better promise, and though the result still depends on many contingencies, it is satisfactory to think that average circumstances, during the next month or six weeks, will fill our barns and stackyards with as much food for man and for beast as they ever held before. They are empty enough now, as the reports on another page sufficiently show; the stock of Wheat on hand in Great Britain is certainly under an average, and in Ireland our correspondents report "none," "none," "none." The harvest, too, is generally later than it has been, but it will have begun very generally through the South of England in the course of next week. As to the reports from Ireland, which are an addition to our usual statement of harvest prospects at this season, we have to regret that there has not been time to arrange them correctly, according to their counties; but there is one from the neighbourhood of almost every important money order office in the island, and they are thus pretty evenly scattered over the whole surface of the country. It is very satisfactory to find that there is very little to be heard and still less to be *seen* of the Potato disease; the general statement is, that the crop is promising, healthy, and abundant.

SUPPOSE an assemblage of agriculturists met to assert the depressed condition of the agricultural interest, to denounce the effects of Free-trade, and to discuss the probabilities of a return to "Protection"—we do not mean to join in their discussion one way or the other—but imagine one of their number attempting to advise that instead of devoting their efforts so exceedingly to a political object, they should each increase their efforts at home on their own farms and homesteads; and do as, under the similar circumstances of a reduced price for their produce, other traders have been forced to do—act more carefully, more industriously, more energetically, and more skilfully in the prosecution of their business. How would he be received? Let him be of as simple-minded and honest intention as can be conceived—let him really believe that in thus advising he was doing his audience a service—the probability is that he would nevertheless be held to have insulted his hearers, and he would be hooted from the room. What! tell *them* that they are careless and unskilful, and do not know their own business (no such thing was either intended or expressed)—require the full tale of bricks from them and yet withhold the very material of their manufacture; blame *them* for diminished effort while their profit, the very motive to effort, has been destroyed (he would see that he had chosen an unfortunate time for his speech). Certainly, if it was not the general question of agricultural distress, but the subject of Free-trade alone, which had drawn the meeting together, then, whatever the soundness of his advice, it was no doubt impertinent to the object of the meeting, and ought not to have been given then and there; but the advice is well judged, nevertheless, and whenever readers or hearers are in a temper to receive it we believe it is well to offer it.

The advice is—not that they should cease their effort for any one thing, whether of a political or any other character whatever, which they believe to be either their interest or their due, but—that they should see their only unquestionable, and in all circumstances trustworthy safeguard to lie in their own skill, energy, and exertion, and in the improvements sure to be effected by these in an art which is at present in so very improvable a condition. But, as we said last week, this subject has another side, and to that we must now devote our attention. There are many to whom this advice is mere mockery: all these proposed improvements, however profitable, involve considerable first cost, and the means of many in this respect are already fully engaged. Now we do not pretend to offer advice to individuals in the prosecution of their private business; we will only say that there are hundreds in every trade in the position alluded to, and the short and the long of it is that the general progress will not stop to save them. The remark may perhaps sound ungraciously—but let them hear the truth for once—food *will* be had cheaper if the thing be possible, and labourers must receive employment: look at the history of any other productive art, and say if these things are not likely to be. We have no doubt that farmers will live notwithstanding, and that they will be better off on the average than they are at present; but those producers of food who cannot in their present position withstand a loss of price—who are unable to make the outlay necessary to that gain of produce which alone *can* withstand it—will be overrun and lost if they do not get out of the way. Any man who has done his utmost, the utmost which his means permit, and can only just live at present prices, if he believes that prices are to fall, is bound in duty to himself to retire from a position in which he is sure to fail. If it be his circumstances which disable him, these must be changed; let him resume his calling on a smaller scale, or in a position where he can fully carry out all the changes and improvements which the altered state of trade requires. The subject is no doubt a most distasteful one to him; and he may curse the policy which has brought the thing to such a pass, but that will not help him, and he may depend upon it that if such injury is to come, those only will be saved who at once bestir themselves to meet the altered circumstances of their position. It is no strange thing that has befallen us—other trades have suffered hardship and vicissitude like that through which we now are passing—they have survived and are stronger than ever, not because of external aid or government assistance, but because they acted to their own interest, energy, and skill; and while many of the men engaged no doubt have suffered much, those have risen unharmed and better off than ever who earliest acted on the advice we have ventured to offer. We take no part in the free-trade and protection struggle one way or the other: this advice we believe is sound whichever side prevail; if acted on, it will save us if prices fall, and it will enrich us if they rise. The general spirit it aims at encouraging is all that can now be referred to; the methods in which that will develope itself might furnish subjects for many weekly articles.

But there is one other general aspect of the matter deserving notice: and it may be introduced thus. At the late meeting at Norwich Mr. WODEHOUSE referred to Mr. CAIRD'S pamphlet on High Farming, and, quoting a passage relating to the practice of letting farms by tender to the highest bidder, he exclaimed—"God forbid that this should ever be the usual custom in this country, or that there should in any single instance be the least approximation to it." Now this is a favourite, but we submit a mistaken sentiment. It is certainly most desirable, and for no one more than for the landowner himself, that the highest bidder should not always be the accepted tenant—but if Mr. WODEHOUSE thinks that the rental of this country is generally lower than the intrinsic value of land will justify, we imagine that he is altogether wrong—if he thinks that, on the average, it is the generous feeling of landowners, and that alone, which enables tenants to live, he is altogether mistaken. It is as true of land to *let* as it is of land to *sell*, that it fetches just what "it will bring" in the market: the truth is as certain in the one case as in the other—competition is the reality which fixes market price in both the cases, whether it act through the formalities of open sale by auction or through the less immediate but still certain operation of a public opinion formed and disseminated at farmers' meetings. And the reason why rents are not higher is simply because they are already on the average as high as tenants can afford to give. We say this without for one instant thinking to fix a stigma on any party—when will the disciples of a mistaken school cease to attach or to suppose blame in what is positively an irreversible law of our nature? every man acts as he thinks best for his personal interests, and it is well for us all that we are guided thus, for the mass of mistaken and officious benevolence which would otherwise be let loose among us would produce bitter and mischievous fruits. Landowners and tenants, just like other business people, are guided on the great scale by the average of those ordinary feelings and opinions which have resulted in the multitude of separate bargains between individuals of either class. The maxim—live and let live—acts in agriculture not because of any extraordinary or especial generosity on either side in business there—it acts in every other trade as well; and it is the result of our constant obedience to instincts which have been implanted and are guided to this happy result by One who knows that we are essential to the prosperity of one another. Let it not be held that in translating this beautiful motto, live and let live, into the mercantile principle of each acting for his own interest, we aim at destroying what some might say was all the morality of our business relations: there are justice and honesty and other essential principles to bind us here: but why should any one try to fix the idea of personal obligation on either party to a purely business transaction—why should the idea of landlord and tenant as "protector and protected" be so dear? our belief is that there is room enough for neighbourly kindness between different classes and individuals with which to strengthen the bonds of society, without assuming it to have any special operation in conducting the ordinary affairs of business, whether in agriculture, manufacture, or commerce.

But we have digressed: the truth we believe to be that competition fixes the price and rent of land just as of other things; and it is to this point, as affecting our present prospects, that we wish to direct attention. We believe that an extra effort, guided by skill and economy, will save us from the injury of a lower price of grain; but that it will not *raise* what has hitherto been the average condition of the agricultural body, so long as an excessive competition for land prevails. Farming differs from other trades in this, that while *they* can increase their accommodation according to their need, *it* is confined within the rigid limits of our island—it can be intensified but not extended: and competition for land will thus always reduce the average agricultural profit to that amount at which any considerable minority of the agricultural body are content to live. Here, of course, as elsewhere, extraordinary individual skill will meet with extraordinary reward; but the influence of needy competitors will, by the offer of higher rents for land, make away with any general tendency to increased returns in farming. It is well for us that in the meantime we have only to raise the expectations of our readers up to the usual standard from which they have fallen: and it is also well, as may be hereafter enlarged upon, that needy competitors cannot for ever maintain a struggle with those to whom alone our expectations of an improved agriculture can be directed, who possess capital rightly proportioned to their land, and who have skill to employ it well.

REPORT OF THE CROPS IN ENGLAND, SCOTLAND, AND IRELAND.

COUNTY.	WHEAT.		BARLEY.	OATS.	PEAS.	BEANS.	POTATOES.	HAY.	GREEN CROPS	AUTHORITY.
	Stock on hand	The coming crop								
SCOTLAND.										
Isle of Lewis			Good	Average	....	. .	Very good	Light	Good	[noway J. M. Mackenzie, Stor-
Inverness ..	None	Average	Light	Average	Good	Good	Good	Poor	Good	J. Mackenzie, Ellenach
Moray	Under average	Excellent	Excellent	Good	...	. . .	Good, late	Very bad	Very good	J. Grigor, Forres
Aberdeen..... ...	. .	.	Abundant	Very good	.....	.....	Average	Light	Promising	J. Macdonald, Huntly
	None	Good	Average	Good	.	.	Very good	Bad	Not good	R. Smith, jun., Kintore
Forfar	Average	Excellent	Doubtful	Promising	Good	Good	Good	Light	Good	R. Colville, Chance Inn
	Under average	Good	Full average	Average	. .	Good	Very good	Bad	Well	Alex. Bell, Montrose
	Under average	Good	Full average	Promising	Good	.	Promising	Bad	Good	D. Ross, Nairn
Perth	.	Excellent	Average	Under average	. . .	Average	Good	Bad	Promising	W. Ewing, Crieff
	Under average	Average	Average	Average	Average	Average	Good	Deficient	Promising	—, Carse of Gowrie
Fifeshire.	Average	Excellent	Average	Average	Average	Average	Good	Light	Promising	D. Tennant, St. Andrews
	Under average	Average	Good	Average	.	Under average	Average	Light	Average	W. Veitch, Kinghorn
Stirling	Over average	Excellent	Good	Average	.	Excellent	Promising	Light	Average	R. M'Naughten, Stirling
	Average	Average	Under average	Deficient	. . .	Good		Bad	Good	W. Forrester, Stewart-
Linlithgow ..	Under average	Average	Average	Short	Good	Good	Promising	Light	Promising	J. Melvin, Ratho [hall
Edinburgh . . .	Under average	Good	Average	Fair	Good	Good	Good	Light	Promising	J. Finnie, Swanston
East Lothian..	Never less	Excellent	Average	Inferior	. . .	Middling	Healthy	Fair	Late	G. Hope, Fenton Barn
	.	Best	Light	Light	.	Average	Healthy	Light	Promising	J. Russell, Beanton
Berwick	Under average	Excellent	Good	Short	..	. .	Healthy	Light	Good	J. Wilson, Edington Main
Lanmermuir ..	.	.	Light	Promising	Poor	. .	Promising	Light	Luxuriant	A. T. Wilson, Dunse
Selkirk	Under average	Good	Average	Average	Good	Good	Very good	Average	Good	J. Walker, Galashiels
Lanark	Under average	Average	Good	Light	Good	Good	Average	Light	Not good	D. Gardner, Hamilton
Renfrew	Under average	Average	Good	Promising	.	Excellent	Good	Average	Promising	G. Boyd, Renfrew
Ayr	Little	Promising		Light	.	Promising	Average	Light	Good	J. Tennant, Shields
	.	Excellent		Average	. . .	Good	Good	Average	Good	J. Dykes, Kilmarnock
	Over average	Fair		Under average		Luxuriant	Good	Thin	Good	Alex. Macaw, Maybole
	.	Very good		Average	. . .	Light	Healthy	Light	Average	J. M'Culloch, Girvan
Wigton	Average	Good	Good	Average		Promising	Healthy	Light	Promising	J. M'Clelland, Balfern
	Average	Good	Good	Good	..	Good	Good		Very good	J. Caird, Baldoon
Dumfries	Limited	Very good	Very good	Poor	. .	Good	Promising	Light	First rate	. , Dumfries
			Average	Good		..	Very well	Very thin	Good	J. Little, Langholm
Roxburgh ..	..	Promising	Promising	Good	Full	Full	Promising	Average	Promising	J. Dudgeon, Shylaw
IRELAND.	None	Average	Average	Average	Few	Few	Promising	Thin	Late	—, Maheragh
	None	Middling	Poor	Average	Good	Good	Good	Average	Promising	R. M'Cleery, Portaferry
	None	Luxuriant		Average	. .	....	Poor	Defective	Promising	J. Sheer, Stranorlan
	None	Medium	Good	Good	. .	Excellent	Excellent	Short	Good	J. Boyd, Letterkenny
	None	Deceptive		Average	.	Average	Good	Good	Look well	J. Lamb, Belfast
	None	Over average	Average	Good	..	Blighted	Very good	Plentiful	Various	J. Marshall, Newry
	None	Very good	Healthy	Excellent	Very good	Very good	Very promising	Excellent	Very good	J. Ker, Bangor Castle
	None	Good	Average	Short	Full	Average	Promising	Light	Excellent	T. Robinson, Donaghadee
	None	Average	Good	Excellent	....	.	Luxuriant	Bad	Well	T. Gregory, Newtown
		Good	Average	Average		Average	Excellent	Very light	Average	—, Coleraine [Faber
	.. .	Excellent	Good	Very good	. .	Good	First-rate	Bad	Under average	W. M'Culloch, Dundalk
	.		Promising	Excellent	. .	.	Healthy	Poor	Good	J. Lindsay, Manor Ha-
										milton [tyr
	None	Never better	Excellent	Fair		.	Very fine	Poor	Very bad	J. Fitzgerald, Castle Mar-
	. .	Full	Over average	Good		.	Very good	Very good	Good	H. Hastell, Newtown Li- mavady
	None	Good	Average	Light	Good	Good	Promising	Light	Good	J. Gilston, Ballyborough
	Average	Excellent	Good	Average	Average	Average	Excellent	Poor	Good	W. Paterson, Newtown Stewart
	None	Average	Average	Light	Average	Average	Promising	Average	Promising	R. Jenkins, Stewartstown.
	None	Average		Good			Good	Average	Promising	R. Fowler, Hillsborough
	None	Good	Average	Poor	None	Blighted	Promising	Light	Average	J. Kennedy, Hollywood
	None	Good	Middling	Poor	Few	Good	Good	Good	Good	I. Taylor, Killylegh
	Little	Good		Excellent			Excellent	Poor	Average	R. Burrowes, Stradon
	None	Very good	Good	Light	Average	Good	Luxuriant	Light	Late	J. Bathurst, Carrickfgs.
	None	Excellent	Very good	Very good			Never better	Good	Fine	G. Green, Lurgan
	.	Good	Average	Under average			Healthy	Good	Excellent	C. Pollock, Magherafelt
	None	Good	Good	Average	Average	Middling	Promising	Average	Good	M. Forrester, C. Welland
	Over average	Diseased		Excellent		Average	Excellent	Short	Promising	R. L. Houghton, Lisburn
	None	Average	Under average	Very good			Excellent	Short	Very well	C. Bridger, Newport Mayo
	None	Superior	Splendid	Luxuriant	Fine	Fine	Good	First rate	Few	J. F. Blake, Galway
	.	Average	Poor	Good			Very good	Short	Good	Rev. W. Stoney, Castlebar
	None	Average	Deficient		.	. .	Promising	Average	Promising	Rev. J. Dixon, Wicklow
	.	Very good		Very good			Luxuriant	Heavy	Promising	J. M. Goodlil, Glenard
	None	Good	Good	Good	Good	None	Good	Good	Promising	J. Bolton, Tyrrel's Pass
	.	Very good	Very good	Best	.		Luxuriant	Shy	Good	W. Westport, Westport
	.	Under average	Good	Good	..	Fair	Very good	Variable	Good	A. Twynam, Buttevant
	..	Excellent	Good	Very good	Promising	Good	Excellent	Good	Very promising	J. Somerville, Castl. Comer
		Very good	Very good	Short, seedy	...	.	Excellent	Heavy	Various	R. Stoddart, Six-mile-
	None	Fair	Promising	Bad			Good	Fair	Promising	—, Ballyragget [bridge
				Good	.	.	Very good	Poor	Good	H. Wallace, Garva
	Very little	Good	Excellent	Various	Good	Good	Beautiful	Light	Excellent	A. Mair, Linashes
	None	Over average	Light	Promising	..	Good	Sound—small	Good	Promising	T. Ball, Malahide
	None	Very good	Good	Good	.		Very good	Very good	Backward	H. Galley, Clonakilty
	None	Very good	Good	Light	..		Excellent	Very light	Thin	J. Kelly, Roscommon
	None	Very good	Various	Luxuriant		..	Very good	Very good	Fine	J. O'Sullivan, Kenmare
	None	Good	Various	Various			Excellent	Short	Well	J. Fenton, W. Dunmore
	. . .	Good	Good	Thin	Well	. .	Excellent	Light	Very well	W. H. Poole, Ballinasloe
	..	Good	Average	Late	.	..	Fair	Light	Deficient	—, Talsk
		Remarkable	Good	Very good		. ...	Very fine	Average	Good	W. Stowell, Doneraile
	None	Average	Average	Average	Light	.	Healthy	Light	Poor	J. Doyle, Gouran
	..	Not good	Very good	Bad	Promising	Not good	Healthy	Poor	Bad	M. Dunne, Stradbally
	..	Excellent	.	Short	.	.	Very fine	Light	Promising	R. Rickarby, Boyle
	None	Very fine	Thin	Average			Very fine	Bad	Late	D. Hunt, Ballingarry
	Fair in general	Various	Various	Good few	Luxuriant — extensive	As yet healthy	Light but good	Generally in- jured	C. A. Walker, Vice Lieu- tenant, Co. Wexford	
	None	Excellent	Good	Good	.	Blight	Promising	Indifferent	Good	J. Hudson, Tallow
	.	Fair	Various	Under average	.	Diseased	Good in fields	Light	Promising	E. Bennett, Ballycar
	None	Good	Average	Poor	.	.	Promising	Good	Late	J. Hall, Kelleagh
	None	Excellent	Good	Good	.	.	Good	Good	Good	R. Downing, Rantry
	.	Good, late	Good	Poor	Good	Good	Promising	Excellent	Good	R. Stone, Freshford
	None	Various	Middling	Over average	.	Average	Good	Good	Good	R. Rodel, Dromore
	Little	Various	Good	Good	Good	Good	Excellent	Light	Very good	F. W. Newth, Rathkeale
	. .	Very good	Good	Good	. ...	. .	Good	Short	Late	G. Gubbins, Bruff
	None	Excellent	Good	Very good		.....	Excellent	Abundant	Middling	R. Swanu, Rathforland
	.	Good	Middling	Promising		.. .	Excellent	Tolerable	Various	J. Patterson, Mt. Millich
		Deficient		Average		....	Promising	Light	Promising	J. Bruton, Clones
	None	Injured	Under average	Poor	..	. ...	Healthy but thin	Good	Promising	G. Glascott, Camolin
	None	Average	Promising	Excellent	Bad	Bad	Excellent	Poor	Promising	G. Barker, Collooney
		Excellent	Average	Good	Good	..	Never finer	Average	Good	E. G. Finnerty, Rathkeal
	None	Promising	Good	Good	.	. . .	Promising	Good	Excellent	J. Fahan, Dingle
	None	Very fine	. . .	Short	.	.... .	Very fine	Scarce	Very good	D. Boyd, Carrick-on-Shan
	None	Various	Good	Average		..	Healthy	Various	Very good	—, Castle Dermot [non
	None	Diseased	Good	Promising	Good	Promising	Suspicious	Average	Poor	W. Oliver, Ballymaher
	None	Very good	Good	Good	. ..	....	Excellent	Good	Good	W. Digan, Killaloe
	None	Good	Average	Good	.	..	Good	Average	Good	T. Roe, Rathdowny
	None	Various	Poor	Middling		....	Sound	Good	Middling	T. Kellos, Leighlin-bridge
	Average	Over average	Never better	Over average	Promising	Various	Healthy	Good	Never better	J. Daly, Ennis
	...	. . .	Middling	Good	Scarce	. ...	Very good	Good	Excellent	H. D'Arcy, Clifden
	.	Good	Good	Short	.	.... .	Healthy	Light	Late	J. Fennell, Cahir
	Under average	Good	Poor	Average	Bad	. ..	Healthy	Excellent	Various	M. Murphy, Gore's-bridge
	Little	Late	...	Deficient	..	Good	Sound	Average	Good	J. Burmister, Randalstn.
	None	Blighted	Excellent	Good	Thin	Heavy	Healthy	Average	Various	P. Tierney, New Ross
	None	Good	Good	Average	.	.....	Promising	Excellent	Poor	T. Kidd, Ferns
	None	Good	Promising	Excellent	..	. ....	Healthy	Light	Good	T. W. Cooper, Macroon
	None	Excellent	Good	Very good	..	. . .	Excellent	Very good	Promising	T. Hunt, Baudon
	... .	Very good	Excellent	Excellent	.	Promising	Never better	Poor	Late	R. Moroney, Newtown
	....	Good	Middling	Average		.....	Promising	Various	Irregular	—, Carlow [Malbay
	None	Good	.	Good	Average	Good	Good	Average	Good	—, Piltown
	None	Injured	Good	Under average	..	..	Very good	Under average	Good	W. Young, Tullow
	Under average	Good	Average	Average	...	...	Good	Good	Good	J. Walsh, Newtown Barry
	None	Various	.	Very good	Very good	..	Capital	Various	Various	O'Brien Dillon, Nenagh
	...	.	Good	Excellent	. .	Excellent	First-rate	Average	Promising	H. M'Math, Castle Blay-
	None	Good	Average	Good	Average	....	Very promising	Good	Poor	G. Gordon, Ferns [ney
	None	Deficient	Average	Average	.	..	Sound	Good	Light	P. Kelly, Egremont [vady
	.. ...	Good	Fair	Late and bad	Good	Promising	Excellent	Average	Excellent	G. Craig, Newtown Lima-
	None	Good	. ...	Good	Fair	.....	Flourishing	Abundant	Very good	J. Power, Kilmacthomas
	. ....	Excellent	Excellent	Excellent	..	... ...	Very good	Poor	Poor	R. B. Massy, Tipperary
	None	Over average	Good	Good	.....	. ..	Very good	Good	Average	G. Hill, Cappoquin
	None	Excellent	Good	Average	.....	.....	Good	Average	Half a crop	W. Garnett, Moynalty

REPORTS OF THE CROPS—CONTINUED.

COUNTY.	WHEAT. Stock on hand.	WHEAT. The coming crop	BARLEY.	OATS.	PEAS.	BEANS.	POTATOES.	HAY.	GREEN CROPS	AUTHORITY.
ENGLAND.										
NORTHUMBERLAND	Under average	Very fine	Middling	Bad	Good	Good	Good	Fair	Good	W. Glover, Newcastle
	. ..	Full crop	Under average	Light	Good	Short	Promising	Light	Various	J. Grey, Dilston
CUMBERLAND ...	Under average	Various	Good	Short	. .	. .	Healthy	Very light	Various	——, Penrith
	....	Good	Excellent	Good	. ..	....	No complaints	Short	Excellent	——, Ullswater
	Considerable	Good	Middling	Short	Good	Good	Excellent	Light	Various	S. Rigg, Wigton
	.....	Good	Full	Light	...	.	Healthy	Light	Late	"L. V. R.," Mountain District
WESTMORELAND	Average	Good	Good	Light	. .		Promising	Light	Late	J. Crosby, Kirkby Thore
DURHAM	.	Average	Average	Not average	Poor	Poor	Promising	Light	Poor	T. Dixon, Darlington
	Very little	Not average	...	Very light	Light	Short	Good	Very light	Various	S. Bell, Durham
YORKSHIRE	...	Various	Various	Short	Good	Interior	Healthy	Light	Excellent	J. Hannam, Wetherby
	Very light	Average	Light	Poor	. .	Tolerable	Healthy	Light	Promising	P. Stevenson, Thirsk
	Small	Promising	Short	Poor	Fair	Tolerable	Healthy	Fair	Good	H. Briggs, Wakefield
	Small	Average	Various	Light	. .	Good	Healthy	Light	Various	J. Patron, Gamsborough
	Average	Full average	Average	Not average	Average	Good	Promising	Light	Average	H. J. Turner, Richmond
	. ...	Various	Over average	Short		Good	Healthy	Light	Various	H. S. Thompson, York
LANCASHIRE	.....	Average	Good	Very good	Light	Various	Excellent	Light	Various	J. Fair, Preston
	Not average	Excellent	Exc llent	Very good	.	Good	Very good	Light	Good	D. Harrison, Milnethorpe
	Not average	Excellent	.	Good	. .	Good	Sound	Light	Excellent	Ed. Evans, Wigan
	Not average	Good	Short	Short	. .	.	Excellent	Light	Very good	G. Drewry, Holker
	Light	Very good	Good	Good		Good	Healthy	Good	Good	W. Skirving, Liverpool
CHESHIRE	Light	Good	Good	Fair	Good	Excellent	Healthy	Light	Excellent	J. Palin, Chester
	.	Good	Good	Excellent	Good	. .	Look well	Light	Promising	R. Owen, Nantwich
SHROPSHIRE	. ....	Over average	Not average	Not average	Good	Not average	Healthy	Light	Promising	"J. B. V.," Ludlow
	.....	Average	Good	Average	Good	Good	Promising	Good	Good	——, Shiffnal
	Not average	Various	Not average	Average	Average	Average	Healthy	Light	Various	E. Bowen, Ludlow
	Not average	Various	Light	Light	Average	.	Good	Average	Very good	——, Shrewsbury
	Not average	Good	Good	Good	.		Very good	Good	Very good	C. A. A. Lloyd, Oswestry
	Not average	Average	Good	Excellent	Average		Healthy	Good	Excellent	——, Bridgnorth
	Not average	Average	Not average	Poor			Promising	Below average	Well	W. Minor, Mkt. Drayton
	Not average	Diseased	Good	Average	Good	.. ...	Excellent	Well got	Healthy	R. Davis, Little Wenlock
STAFFORDSHIRE .	Very small	Various	Good	Good	Excellent	Good	Healthy	First-rate	Good	J. Aston, Mkt. Drayton
DERBYSHIRE.....	Average	Good		Good	. .		Good	Thin	Excellent	W. Powell, Bakewell
	Not average	Average	Good	Good		Excellent	Promising	Over average	Very good	J. W. Ward, Repton
	.	.	....	Promising		Good	Good	Over average	Promising	A. J. Bernay, Derby
NOTTINGHAM	. .	Excellent	Average	Average	Good	Good	Promising	Excellent	Good	E. J. Lowe, Lenton
	Under average	Good	Various	Not average	Good	Promising	Healthy	Abundant	Various	"J. Y.," Newark
LINCOLNSHIRE ..	....	Heavy and laid	Good	Average	Average	Very good	Good, but diseased	Good	Good	J. Clark, Long Sutton
	Scarce	Good		Fair	.	Good	Unfavourable	Good	Tolerable	R. Westland, Boston
	Scarce	Good		Good	. .	Promising	Doubtful	Good	Well	T. Arthur, Mar Deeping
	Small	Average	Good	Not average	.	Average	Good	Good	Promising	J. C. Sowerby, Gt. Grimsby
	... ...	Good	Good	Average	Good	Excellent	Touched	Excellent	Good	T. Wight, Boston [by
	Not average	Average	Excellent	Poor	. .		Touched	Good	Late	E. Darby, Grantham
NORFOLK	Not average	Over average	Light	Below average	Average	Average	Promising	Very good	Good	W. Cubitt, N Walsham
	Not average	Average	Good	Indifferent	Good	Excellent	Good	Very abundant	Good	S. Lock, Barton Bendish
	Not average	Good	Bad	Good	Good	Good	Promising	Good	Good	T. Barton, Watton
	Not average	Average	Deficient	Good	Good	Fair	Promising	Very good	Late	F. Dix, Scole
	Not average	Fair	Not average	Good		Promising	Touched	Good	Well	T. Brown, Denmer
	Average	Not average	Not average	Good	Good	Good	Promising	Good	Promising	R. Ward, Acle
	Not average	Good	Bad		Good	.	Promising	Very good	Promising	W. P. Salter, Norwich
	Small	Very good	Various	Good	Average	Promising	Doubtful	Very good	Various	J. Warnes, N. Walsham
SUFFOLK	..	Average	Short	. ...	Good	Good	Diseased	Good	Promising	E. S. Gowing, Eye
	Average	Average	Deficient	Good	Good	Moderate	Fair	Very good	Average	W. Grimwade, Hadleigh
	Small	Injured	Deficient	Deficient	Excellent	Good	Touched	Good	Good	W. Green, Debenham
CAMBRIDGESH....	Not average	Average	Good	Above average	None	Very fine	Promising	Full	Average	J. Fryer, Ely
	Average	Not average	Various	Average	Good	Average	Various	Good	Average	. , Cambridge
	Not average	Various	Average	Not average	Good	Good	Promising	Good	Various	S. Jonas, Ickleton
HUNTINGDON ..	Average	Hardly average	Bad	Good	Abundant	Promising	Good	Good	Promising	P. Purves, Huntingdon
NORTHAMPTON.	.	Good	Various	Good	Good	Good	Good	Spoiled	Good	C. Hillyard, Northampton
	Very little	Good	Various	Average	Good	Good	Sound	Light	Good	W. Dunkley, do.
	Not average	Good	Not average	Good	Good	Promising	Healthy	Heavy	Promising	W. Grey, do.
	Very little	Very good	Various	Good	Excellent	Fine	Promising	Good	Late	J. Whitwell, Peterboro
RUTLAND	Not average	Average	Promising	Good	Excellent	Very good	Promising	Average	Good	W. Smith, Oakham
	Below average	Middling	Average	Good	Excellent	Good	Good	Good	Promising	S. Cheetham, do. [ham
	Not average	Good, late	Average	Good	Good	Good	Good, touched	Very good	Good	W. Fancourt, Empingham
LEICESTER.....	Very light	Average	Various	Average	Very good	Very good	Doubtful	Very good	Good	J. Ellis, Leicester
	.	Promising	Thin	Average	Not average	Short	Good	Good	Promising	J. Buckley, Loughboro
	..	Promising	Not average	Not average	Very good	Very good	Good	Light	Very good	T. Spence, Knossington
	... .	Average	Various	Good	Good	Good	Touched	Very good	Good	——, Leicester
WARWICKSHIRE,	. .	Very good	Not average	Excellent	Good	Very good	Good	Average	Promising	J. S. Whittem, Coventry
	Not average	Good	Various		Light	Good	Healthy	Good	Healthy	W. Forrester, Loorley
WORCESTERSH. .	.	Fair	Bad	Middling	Good	Good	Various	Good	Fair	W. Woodward, Pershore
	Not average	Good	Various		Very good		Touched	Good	Good	J. Nock, Stourbridge
	Not average	Average	Various	Indifferent	Excellent	Very good	Promising	Good	Good	H. Hudson, Wick
	.	Good	Interior	Average	Fine	Good	Abundant	Fine	Promising	R. Smith, Droitwich
HEREFORDSHIRE	Short	Full	Average	Fair	Excellent	Excellent	Promising	Abundant	Not good	——, Ross
	Not average	Good	Not average		Average		Good	Good	Bad	J. Matthews, Bakemore
	. . .	Various		Short	Good	Good	Good	Very good	Good	——, Bromyard
	....	Very fine	Various	Very light	Very good	.	Cood	Good	Patchy	J. R. G. Relphs, Usk
MONMOUTHSH. .	Very little	Good	Fair	None	Fair	Good	Healthy	Middling	Indifferent	T. Dyke, Monmouth
	..	Full	Two-thirds	Two-thirds	Good	Excellent	Good	Average	Promising	J. F Peacey, Winchcombe
GLOUCESTERSH..	Full average	Good	Light	Good	Average		Healthy	Very good	Promising	E. W. and S. Rich, Didmarton
	Not average	Excellent	Average	Average		Very good	Good	Average	Late	W. Laidlaw, Cirencester
	Two-thirds	Excellent	Average	Light	Good	Good	Good	Light	Promising	——, Frampton-on-Severn
	.....	Good	Various	Not average	Thin	Good	Good	Very good	Promising	J. Kersey, Tarlton
	..	Average	Fair	Good	Middling	Good	Good	Good	Very fair	S. Taylor, Gloucester
	Very small	Good	Light	Moderate	Very good	Very good	Excellent	Good	Injured	A. Tuckett, Warmsley
	.... .	Good	Light	Not average	Good	Good	Light	Light	Not average	J. Hunt, Almondsbury
OXFORD	... .	Full average	Not average	Good	Excellent	Good	Promising	Average	Good	S. Druce, Ensham
	.. ...	Excellent	Good	Good	Fair	Abundant	Promising	Good	Good	S. Collier, Witney
BUCKS	.....	Average	Average	Average	Full	Full	Over average	Over average	Poor	R. Valentine, Leighton Buzzard
	Not average	Promising	Bad	Poor	Average	Excellent	Promising	Poor	Late	A. Fraser, Claydon
BEDFORDSHIRE .	Average	Average	Average	Bad	Very good	Average	Promising	Good	Promising	——, Biddenham
HERTFORDSHIRE	Small	Good	Good	Indifferent	Good	Good	Good	Very good	Bad	J. B. Lawes, St. Alban's
	Never less	Average	Bare	Bad	Fair	Various	Touched	Various	Bad	——, St. Alban's
	But little	Good	Fair	Light	Good	Average	Touched	Large	Various	S. Sandars, Hempstead
ESSEX.....	.....	Average	Various	Bad	Good	Average	Good	Great	Bad	R. Baker, Writtle
	Small	Good	Poor	Poor	Good	Good	Good	Excellent	Good	J. Malpas, Harwich
	Full average	Good	Various	Good	Very good	Good	Good	Abundant	Moderate	——, Braintree
	Very little	Average	Various	Average	Good	Good	Good	Great	Partial	P. Hobbs, Colchester
	Average	Average	Average	Bad	Average	Average	Touched	Average	Late	C. Hall, Romford
	Not average	Injured	Poor	Poor	Average	Good	Promising	Excellent	Good	C. Wentworth, Harlow
MIDDLESEX	....	Full	Poor	Bad	Good	Good	Bad	Good	Various	H. Davis
KENT	Very little	Average	Full	Hare	Good	Average	Good	Good	Patchy	M. Sandford, Dover
	Short	Average	Average	Good	Good	Good	Good	Good	Good	R. Matson, Wingham
	Small	Poor	Poor	Average	Very good	Good	Diseased	Good	Average	A. Gardener, Dover
	Little	Well	Poor	Average	Excellent	Good	Good	Average	Good	T. Slater, Wingham
SURREY	Not average	Excellent	Middling	Various	Good	Good	Promising	Abundant	Promising	C. Allfield, Farnham
	Very little	Very good	Average	Average	Very good	Little blighted	Healthy	Very large	Various	J. M. Paine, do.
SUSSEX	....	Good	Good	Not good	Average	Good	Healthy	Short	Middling	C. P. Valentine (Weald)
	Not average	Average	Not average	Short	Average	Average	Promising	Abundant	Various	J. Brotherton, Robertsbridge
	.....	Average	Average	Good	Not average	Bad	Healthy	Good	Late	J. Morton, Stonington
	Very little	Good	Good	Excellent	Good	Short	Good	Excellent	Good	H. E Sadler, Chichester
HANTS	Very little	Very good	Average	Poor	Good	Average	Healthy	Very good	Poor	W. C. Spooner, Southampton
	.....	Full	Good	Inferior	Good	..	..	Good	Late	W. Knight, Overton
	Never less	Good	Average	Indifferent	Average	Middling	Fair	Good	Bad	J. T. Twynam, Stockbridge
	Very little	Under	Various	Bad	Average	Various	Well	Good	Bad	J. Eames, Beaulieu
	.....	Very good	Good	Various	Partial	Good	Healthy	Excellent	Late	J. W. Clark, Romsey
BERKSHIRE	Below	Full average	Good	Average	Interior	Blighted	Healthy	Various	Well	A. Dickson, Reading
	.. ...	Good	.. ..	Very good		...	Very good	Good	Promising	——, Slough [don
	Under	Not good	Good	Good	Good	Excellent	Touched	Very good	Various	R. H. Betteridge, Abing-
	Short	Good	Average	Poor	Bad	Very good	Touched	Abundant	Improving	C. H. Witherington, Thatcham
	Short	Average	Inferior	Inferior	.....	Average	Promising	Good	Doubtful	E. W. Moore, Colesbill
WILTS	Short	Good	Good	Below	Below	Average	Very good	Very good	Late	E. A. Nicholson, Salisbury

REPORTS OF THE CROPS—Continued.

County.	Wheat. Stock on hand.	Wheat. The coming crop	Barley.	Oats.	Peas.	Beans.	Potatoes.	Hay.	Green crops	Authority.
Wilts	Over average	Over average	Partial	Partial	Above	Excellent	Healthy	Excellent	All good	J. Spencer, Bowood
	Below	Good	Average	Partial	Good	Good	Healthy	Good	Improving	—, Devizes
	Short	Promising	Middling	Bad	Good	Good	Healthy	Excellent	Inferior	T. Askell, Swindon
	Short	Average	Short	Bad	Excellent	Good	Good	Good	Promising	G. Hulbert, Bradford
Dorsetshire ...	Average	Excellent	Good	Luxuriant		....	Healthy in fields	Abundant	Luxuriant	"F.F.B.M." Dorchester
	....	Average	Average	Average	Good	...	Good	Excellent	Good	W. Voss, Corfe Castle
	Short	Good	Various	Thin	Good	Not good	Touched	Various	Good	J. Furmedge, Beaminster
	.	Full	Fair	Good	.	.	Promising	Prime	Irregular	—, Lyme
Somerset	Short	Good	Excellent	Good	Good	Good	Promising	Average	Promising	R. Coventry, Haselbury
	Trifling	Good	Fair	Medium		Good	Good	Light	Very good	—, N.W. Somerset
	. ..	Over average	Average	Full	Good	Full	Healthy	Average	Deficient	—, South Petherton
	Less	Deficient	Poor	Average	Good	Excellent	Healthy	Light	Late	R. S. Graham, Glastonbury [ness
Devonshire.....	.	Full	Average	Average	Good	Good	Good	Various	Partial	T. Michelmore, jun., Totness
	Very short	Splendid	Various	Various	. .	.	Excellent	Prime	Partial	G. W. Fowler, Dartmoor
	Much below	Good	Good	Average	Good	Average	Good	Excellent	Poor	W. Bartlett, Torquay
	Very low	Excellent	Good	Indifferent		.	Good	Excellent	Very good	J. Benson, Tavistock
	Short	Excellent	Fair	Good	Good	. . .	Promising	Good	Promising	G. Langdon, Barnstaple
Cornwall	.	Excellent	Very good	Average	. .	....	Slight	Abundant	Good	W. Simmon, Gwennap
	Below	Good	Good	Excellent	.	. .	Disease	Excellent	Promising	R. R. Veals, St. Columb
	Below	Excellent	Good	Full	.	.	Average	Various	Promising	J. Wills, Launceston
	Below	Capital	Average	Average		Good	Fine	Good	Various	J. Peters, Stratton
	Below	Good	Excellent	Good		..	Better	Excellent	Bad	R. G. Pollard, Wadebridge
WALES.										
Denbigh	Very short	Excellent	Good	Average	Average	Good	Good	Light	Very fine	J. Girdwood, Chirk
Pembroke	Below	Very good	Good	Below average		..	Good	Good	Patchy	R. Garrow, Johnston
Glamorgan .. .	.	Average	Below	Below	..	....	Under average	Good	Very late	E. W. David, Cardiff
	Very little	Good	Good	Good		. .	Healthy	Light	Patchy	W.H. Little, Llanvinfray
Carmarthens.	Under	Excellent	Excellent	Excellent	Excellent	Excellent	Touched	Three-fourths	Very well	Jn. Lawford, Llandilo

Home Correspondence.

Practice with Science.—One of the best implements for thoroughly working the ground, and cleansing it of all sorts of weeds, is Mr. Garrett's patent horse-hoe. This may be adapted to his drill machine, which makes the two act well together. It is suited to all methods of cultivation, whether broad, flat, or ridge ploughing, and is adapted to hoeing corn or pulse of all sorts, as well as roots. It may be increased or diminished in spread to suit all lands or methods of planting: the axletree being moveable at both ends, either wheels may be expanded or contracted, so as always to be kept betwixt the rows of plants. The shafts are readily altered and put to any part of the frame, so that the horses may either walk in the furrow or in any direction to avoid injury to the crop. Each hoe works on a lever, independent of the others. The hoes may be set to any width, from 7 inches to any wider space; and by the easy method of steering they may be guided with the handle behind to the greatest nicety. Mr. Hewitt Davis says of this hoe, that it is calculated to work a most important reform as regards the cleaning of land, and he had practically tested its utility. By its use, all corn sown in rows from 9 inches upwards may be hoed in a superior manner, and at an expense of only 1*s.* per acre. Mr. Pusey also says "Several farmers I know regard this horse-hoe as one of the best implements lately invented. On an arable farm of 400 acres the price (17*l.* 10*s.*), might be saved by its use, I should think, in the first season." Such being the uses of this valuable implement, from authorities which cannot be disputed, it becomes important to the improvers of the present day that they should take advantage of the facilities thus afforded for eradicating all the noxious intruders which rob the corn crop of its proper sustenance, and also for giving them freer scope to extend their fibres. It has hitherto been too much imagined that the green crop was the only one to be attended to, and that the succeeding corn crop might be left to itself. Much, no doubt, has been gained by the introduction and good cultivation of the former; but our labours should not end there; we should consider that the same principles, if true in one case are equally so in the other. If the bulk of a green crop can be enlarged, and the weight of a crop of Turnips perhaps doubled by working the ground well, keeping it clean, and bringing it to a thorough state of pulverisation, by parity of reasoning the same results would arise from the corn crop being treated in a similar manner; and whilst we have such powerful aids at hand as the implement just described, and others of modern invention, there is no excuse, unless antiquated prejudices be considered in that light, for having our corn crops so much neglected, and, in fact, abandoned to chance. One of the best and most useful implements that has made its appearance of late years is Dr. Newington's hand-drill-hoe and cultivator. The great merit of it is, that it completes its work easily yet efficiently, that it effects it by hand labour cheaply, and that its whole cost is only 30*s.* This implement, by shifting the shares along a groove in the frame, can be used for any description of crop, provided it be in rows; thus for hoeing or stirring drilled Wheat, two rows at once, four shares are necessary, two for each row; the same for Carrots, Mangold Wurzel, Turnips, &c.—five shares. From the shape of the shares, they penetrate the ground on the implement being dragged on. The labourer has nothing to attend to but the guidance of the implement in a straight line, and no force except that of drawing is required to make the shares penetrate the earth; every other share being set behind its fellow precluding the collecting of earth or weeds. After the operation the weeds will be found to be torn out or cut off, and the soil mellow and open, and not trodden on afterwards by the workmen; the roots of the plants are enabled to penetrate in all directions, and to receive the full benefit of the air and dews at night, which latter being absorbed, and the loose earth rendering it constantly moist, while unmoved soil in the immediate vicinity will be found to be dry and cracking, and the plants growing upon it stationary and drooping. With this implement a man is enabled to get over a large breadth of ground in a day. I have tried it on some rather loose marshy soil, and its working is most satisfactory. If the land be of a stiff nature, and become still more so by the winter rains, it may require more power than a man can give, to work the implement efficiently. In this case it may be desirable that the rows should be first gone through with Mr. Garrett's more powerful horse-hoe, and followed by this some time afterwards, when the ground is tolerably dry. One advantage of it is that its use may be continued in a more advanced state of the crop than the other; and if it be true, as Mr. Tull tells us, that by cutting the fibres of the roots, new mouths will be formed for taking in fresh sustenance, this process will be attended with the best effects. It would be needless here to go through the list of scarifiers and grubbers, of hoes and cultivators, many of which are useful and even necessary in the cultivation of green crops; but it may be of service to consider the best means of giving a deep stirring to the land. There are two methods advocated—double trenching and subsoiling; these appear intended for different purposes. If the land has been shallow ploughed, and there is a good substratum underneath, which the plough has not already reached, then it may be most serviceable to bring this virgin soil to the top But if the soil below be of a cold sterile nature, a greater mischief cannot ensue than in making it an available soil for cropping. In double trenching, the common plough will take out the first furrow, but in the succeeding one the share of this is often too wide, and particularly in strong land, so great an obstruction is caused, as to prevent the plough reaching its proper depth. It would therefore be better to have a plough for the purpose, with a more contracted share. The great obstacle to the subsoiling plan has been the supposed difficulty in its execution. It was considered that nothing less than a large heavy plough, that would require four or six horses, would be equal to this. Mr. Smith of Deanston has constructed a plough of this kind, which answers the purpose well, but makes the working come to a great expense. It is now considered by some preferable not to penetrate too far into the ground in the first instance, but rather to effect the work by degrees. A common plough with two horses is equal to taking out the first furrow-slice; this should be followed with the subsoil plough with two horses lengthwise. A plough suited for the purpose may be had at Halewood, near Warrington, price 4*l.* When it is required to be done a second time to a greater depth, Read's sub-pulveriser, 25, Regent-circus, London, price 5*l.*, is a very valuable implement. It may however be mentioned that an addition he has made to it is too light and flimsy, as a scarifier, and its price too exorbitant—6*l.* One hint may be given to young farmers: never buy an implement without first inquiring the price. New implements are constantly coming out which catch the eye, but which, when brought into practice, entirely fail in answering the purpose they were intended for. *Law. Rawsthorne.*

Sewerage.—I believe I have before suggested that the sewerage wasted throughout the kingdom would, if applied to the land, almost meet the expenses now incurred by the outlay required to support the pauper establishments, which are in a fair way to ruin the country. So much valuable labour locked up which should and could be employed to advantage in cultivating the land, and forcing it, with the assistance of town refuse, to bear more abundant crops, which it would willingly do. It is to be hoped that any plan for the improvement of the London drainage, which will tend to waste the valuable manure, worth thousands and thousands of pounds, will not be adopted; as surely in these engineering times, when science can suspend a railway tube in mid-air, some scheme may be contrived, where a solid foundation can be worked upon, to draw off from the metropolis the semi-solid filth (now poisoning hundreds), without contaminating the water of the Thames. It is strange that in this enlightened and powerful country, the means of obtaining wealth should not only be thrown away, but converted into a source of discomfort, disease, and death. The condition of the houses inhabited by the lower orders in the great Babylon is disgraceful in the extreme. It is extraordinary the owners of property permit the tenements to remain in such a state of abominable dirt. How can they sleep in their own beds, knowing the existence of such horrors as the daily journals publish, and feeling, as they must do, they are in a great measure answerable for the evils complained of; as, although they may not be able to prevent the apartments being crowded, yet they may attend to the cleanliness of the premises, and secure a plentiful supply of water, as well as proper drains to carry away the foul accumulations breeding pestilence. An inquiry into the rents paid for these pigsties would be curious and interesting, as it would, in all probability, be found most valuable property, and, in comparison, more remunerative than larger houses. The strength of the labouring classes must be weakened by breathing the enervating atmosphere which pervades their dens, and no wonder they are driven to public-houses to escape the pestiferous exhalations. To produce wholesome meat we keep our animals clean and warm, with thorough ventilation. Can men, women, and children thrive amongst gases that would destroy the growth of beef and pork? It is both cruel and short-sighted economy to pay so little attention to the comfort and well being of our workmen; they are part and parcel of ourselves, and one cannot suffer without the other. The subject of turning town refuse to account is of the greatest importance. Sooner or later it must be done, and there appears no reason against it.—The scream of the falcon is not so loud as the roar of the lion, but it is shrill and heard from afar. It is satisfactory to think over-fed quadrupeds are not now admissible at the great agricultural meetings. *Falcon.*

Mole Hills.—We have a Grass field of 8 or 10 acres in our neighbourhood, that has not been broken up in the memory of a long life, covered with very large mole hills. In company lately it was remarked how strange it should be left in what appeared to some so unprofitable a state. One said its owner kept it so, being probably a breeder of horses, to make the young ones practise lifting up their legs. Another said the reason might be that there was more herbage from the numerous hillocks than if the ground was a plane surface; hence arose a very animated and somewhat mathematical discussion, the Cambridge gentleman affirming that by reason of these mole hills, though covered with vegetation the same as the field generally, that no more Grass was grown. Argument ran high; three thinking one way, two the other. Your humble servant was in the minority, and strove to illustrate his opinion by cutting an orange in half, taking out its contents, and pressing the skin flat upon the table, which by showing that it took up more space than in its hemispherical form, I thought would convince all that there were more superficial yards in the mole hill field than if the surface had been a plane. My illustration, however, was not considered conclusive, and so the matter rests; and I might not have thought any more upon the subject, but that I see in your last two numbers a controversy somewhat analogous; viz. flats *versus* slopes. I will take the illustration of the staircase. First lay a ladder upon the ground; then attempt to lay it at an angle of 45°, or any other, against a wall. Would it reach it? No. *Ergo*, the incline must be longer than the flat. *B. H.*

Societies.

GREAT MEETING OF THE AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND AT DUBLIN.

Thursday, *August* 9.—"This is a great week for Ireland." The old phrase applies with far greater force of truth under present circumstances than years ago it did during the Repeal agitation; for as regards the assistance Government can give this country, we have our Queen amongst us now, inspiring confidence and affection, which that tended to destroy; and as regards the help, far more worthy of trust, to be rendered

by our own skill and industry, we have evidences of both, and fresh incentives to the exertion of both in the results to which both have contributed, now collected in the yards of the Agricultural Society. No doubt the vast numbers which loyalty has collected in the city of Dublin during the present week will swell the subscription list of the Society, and multiply its visitors, but it is hardly necessary to observe that while her Majesty is here, agricultural topics, and indeed professional matters of any kind, occupy but a very incidental and second-rate position in the mind; and it is hardly possible for the reporter to confine himself to so limited a portion of the week's proceedings.

Her Majesty arrived in Kingstown harbour on Sunday evening amid the roar and the glitter of the most boisterous and brilliant welcome which tens of thousands of her most excitable subjects could contrive; she landed on the following morning in the presence of a multitude, silent till her first step or Irish soil, when the air was made to ring with shouts of heartiest joy, and rent with salutes from the war steamers of the squadron. The Queen entered Dublin about 11 A.M., and her progress through its principal streets was one continued illustration of the intense pleasure her presence has excited; she has since frequently visited the city, and drives out more than once every day, followed by a most amusing procession of enthusiastic admirers. The city was brilliantly illuminated on Monday night. A levee, attended by great crowds, was held at the Castle yesterday, and to-day a review of six or eight regiments takes place in the Phœnix-park. His Royal Highness Prince Albert is expected to visit the show-yard this morning. He will find a far less tremendous and unmanageable mass of material to examine than he saw at York, or might have seen at any other show of the national Society of England; but, on the other hand, supposing him to depend on the ordinary means alone which this Society provides for the assistance of its visitors, he will miss the guidance of those admirable catalogues and skilful arrangements by which that Society is distinguished at its annual exhibitions. The cattle and sheep, and pigs and horses, are here scattered about in different parts of a somewhat intricate series of yards, and the implements are not arranged either on the ground or in the printed lists with such facilities for examination and identification as we have been accustomed to in England.

The relative importance of the two parts of the exhibition is somewhat different in this country from what it is in England. Here we have circumstances of a different kind; a country in which no doubt good implements and skill to use them are as desirable as elsewhere, but in which more especially a climate suitable for green crop cultivation and for stock farming, renders good breeds of sheep and cattle even more desirable. The show of short-horn cattle appeared to us very good; the other breeds were not present nearly in such force. The exhibition of sheep was neither so numerous nor so excellent as we expected. There was a numerous and creditable exhibition of pigs; the horses were not so good a show as we expected. The Agricultural Improvement Society act in one respect better than their English neighbours. The cattle exhibited and catalogued have their pedigrees, as well as their owners, stated in the lists, which certainly is both instructive and useful to the reader. There was a very good show of poultry, comprising splendid specimens of the Dorking, Malay, and Spanish, and other breeds, though we understand there was a falling off from the previous years. The following is the prize list published by the Society. The judges were Messrs. Torr, Booth, and Smith.

SHORT-HORNS.

A.—James Douglas, Athelstanford, Haddington; Bull, Deception, roan, 4 years old. 30*l*.—Marquis of Londonderry; Bull, General Napier, calved April, 1844. 10*l*.

B.—Hon. A. F. Nugent, Pallas, Tynagh; Bull, Bamboo, calved 18th January, 1847. 20*l*. and three Medals. John La Touche, Harristown, Kilcullen; Bull, Collingwood, calved 13th Feb., 1847. 5*l*.

C.—Hon. A. F. Nugent, Pallas, Tynagh; Bull, Young Ranter, calved 7th March, 1848. 10*l*.—John Hodson, Twyford, Athlone; Bull, Mystery, calved 10th March, 1848. 5*l*

D.—Thomas Barnes, jun., Moynalty; Cow, Modish, 7 years old. 15*l*.—William Tod, Elphinstone Tower, Tranent; Cow, Judith, calved March, 1845. 15*l*.

E.—J. O. G. Pollock, Mountainstown, Navan; Heifer, Rhoda, calved in 1846. 10*l*.—James Douglas, Athelstanford, Haddington; Heifer, Blue Bell, in calf, calved February, 1846. 5*l*

F.—Hon. A. F. Nugent, Pallas, Tynagh; Heifer, Myrtle, calved 5th April, 1847, 10*l*.—Richard Chaloner, Kingsfort, Moynalty; Heifer, Rosina, calved 8th November, 1847. 5*l*

G.—Benjamin Wilson, Braith, Thirsk, Yorkshire; Heifer, calved June, 1848. 10*l*. The Gold Medal and Challenge Cup.—John J. Turner, Newtown Villa, Kilcullen; Durham Heifer, Mary Anne, calved 18th May, 1848. 5*l*.

LONG-HORNS, DEVONS, HEREFORDS, &c.

A.—John Walsh, Stedalt, Balbriggan; Devon Bull, Claret, 3 years old. 15*l*. and Gold Medal.

B.—Robert Quin Alexander, Acton, Poyntzpass; Devon Bull, calved February, 1847. 10*l*.—William Agnew, Esq., Killaughter Castle, Larne; Ayrshire Bull, Punch, calved April, 1847. 5*l*

C.—The Earl of Charlemont, Marino, Clontarf; Devon Bull, Volunteer, calved December, 1848. 10*l*.—Lord Talbot de Malahide, Malahide Castle; Devon Bull, Trojan, calved 11th July, 1848. 5*l*.

D.—Lord Plunket, Old Connaught, Bray; Devon Cow, Madge, 5 years old. 10*l*.—Henry L. Prentice, Caledon; Devon Cow, calved in 1844. 5*l*.

E.—Lord Plunket, Old Connaught, Bray; Devon Heifer, Dairy Maid, 3 years 6 months old. 10*l*.—Lord Talbot de Malahide, Malahide Castle; Devon Heifer, in calf, Belle of Malahide, calved June, 1846. 5*l*.

F.—Henry Potterton, Moyrath Castle, Kildalkey; long-horned Heifer, Trinket, calved March, 1847. 10*l*.—The Earl of Charlemont, Marino, Clontarf; Devon Heifer, Daisy, calved March, 1847. 5*l*.

G.—Gabriel Dunlop, Peacock-bank, Stewarton; Ayrshire Heifer, calved May, 1848. 5*l*.—Lord Talbot de Malahide, Malahide Castle; Devon Heifer, Primrose, calved May, 1848. 2*l*.

WEST HIGHLAND, KERRIES, &c.

A.—W. Owen, Blessington; West Highland Bull, 2 years old. 5*l*.—Edward Carroll, Newtown Dillon, Ballaghy; Kerry Cow (in calf), Black Rose. 3*l*.—David Charles La Touche, Luggela, Newtownmount-Kennedy; two West Highland Heifers, 1 year old. 2*l*.

FAT STOCK.

John Farrell, Moynalty; a short-horned fat Ox, 3 years old. 5*l*.—Thomas Barnes, jun., Westland, Moynalty; short-horned fat Cow, Brilliant, 4 years 8 months. 5*l*. and gold medal.—Charles J. Wade, New Haggard, Lusk, Balbriggan; fat heifer, calved March, 1845. 2*l*.

HORSES.

A.—Patrick Savage, Ardeath, Garristown; draught Stallion, Faugh-a-Ballagh, 7 years old. 30*l*.—William Hatch, Ardee Castle, Ardee, cart Stallion, Sir William Wallace, 5 years old. 10*l*.

B.—For the best cart Stallion, foaled since the 1st January, 1846. No merit.

C.—For the best thorough-bred Stallion. No merit.—1st prize: James Douglas, Athelstanford, Haddington; Clydesdale Mare for the cart, Kate, in foal, 10 years old, bred by Mr. Patterson, Clydesdale. No merit for 2d best.

D.—For the best cart Filly, not exceeding 3 years old. 5*l*. 1st prize. Thomas Ball, Malahide; agricultural draught Filly, foaled June, 1847, bred by Francis Beggs, Esq., Feltram; got by Rover, dam by Old Eclipse.

SHEEP—LEICESTERS.

Shearling Ram; James Douglas, Athelstanford, Haddington. 10*l*.—N. W. Roche, M.D., Fermoy. 5*l*.—Two-shear Rams, John Litton, Ardavilling, Croyne. 10*l*. Ram of any other age, James Douglas. 5*l*.—Pens of five shearling Ewes, James Douglas. 5*l*.—Pens of five Lambs, William Filgate, Lisrenny, Ardee. 3*l*.

ANY OTHER LONG WOOLLED SHEEP.

Shearling Ram; Henry L. Prentice, Caledon. 8*l*.—George Thunder, Kingston Lodge, Navan. 4*l*.—Two-shear Rams; Silvester Ratt, Rathmoyle, Edenderry. 5*l*.—Ram of any other age, Henry Potterton, Moyrath Castle, Kildalkey. 4*l*.—Pens of five shearling Ewes; no merit.—Pens of five ewe Lambs, Samuel White, Ballybrophy, Borris-in-Ossory. 2*l*.

SOUTHDOWNS.

Shearling Rams; no merit.—Rams of any other age; William Owen, Blessington. 4*l*.—Pens of five shearling Ewes; John Woolsey, Milesdown, Castle Bellingham. 3*l*.

SWINE.

Boars of large breed; Richard Chaloner, King's Fort, Moynalty (Berkshire). 5*l*.—Rev. John Warburton, Kill, Nass (Berkshire). 3*l*.—Boars of small breed; Lieut.-Colonel Hill, Oathlands, Castlenock (Yorkshire). 5*l*.—Lieut.-Colonel Hill (Essex). 3*l*.—Breeding Sow of large breed; H. Stanley, M'Clintock, Newberry, Kilcullen (Berkshire). 4*l*.—Lieut.-Col. Shaw, Kinmage House, Rathfarnham (Berkshire). 2*l*.—Breeding Sow of small breed, William Agnew, Killaughter Castle, Larde (Yorkshire). 4*l*.—Lieut.-Col. Hill (Yorkshire). 2*l*.—Lot of three Pigs of the same litter; H. Stanley M'Clintock (Berkshire). 3*l*.—Sir C. Edward Kennedy, Bart., Johnstown, Rathcoole (Berkshire). 2*l*.

As regards the show of implements, we must say that there was little novelty to observe, and not the quality which the high standard of English shows had accustomed us to. There was a large number of the strong and well made implements of Scottish makers. But there was a vast amount of polish and glitter which should not have been seen. If that sort of thing goes down among people, and tempts purchasers here, it does not speak much for their common sense. There was one steam-engine in the yard, and Mr. Robinson, of Lisburn, besides the merit of that, had the credit of exhibiting a very admirable lot of agricultural implements of various kinds, among which was his well-known churn. Mr. Grey, of Uddingstone, near Glasgow, showed a Turnip drill of new construction, the invention we believe of Mr. Girdwood, of Thirsk, North Wales. The common Turnip drill consists of a pierced cylinder made to revolve, and the seed is allowed to drop through the holes into a funnel which conducts them to the ground: in this machine the seed is passed by means of an oscillating slide, the holes in which were filled by the seed resting above them, and emptied so soon as they come to that position in their progress where they coincide with other holes in a plate below them, directly over the funnel aforesaid, into which they at once drop.—We have not room for a specific description of implements, most of which have already been described in our columns as exhibited at the English show; but we may refer to some specimens of admirable drain tiles—certainly of the best quality we ever saw—and remarkably cheap, exhibited by the manufacturer the Earl of Enniskillen, Florence-court, Enniskillen; and we must not omit mention of Mr. Linehan's simple drain level, in which horizontality is obtained by the action of a plummet, and the slope once obtained for the whole drain, is easily preserved in every part of it by a fixed position of the supporting legs, which once true for the whole fall may be made to apply in every successive part of the slope as it is made. Mr. Linehan is the author of an excellent practical work on Drainage, reviewed some weeks ago in our columns.

The banquet took place last night in the Rotunda, under the presidency of the Duke of Leinster. The subjects referred to there by the speakers were chiefly of a complimentary nature, and we are not sure that we should be of much service by transcribing the speeches, for which, indeed, we have not room. We have only to add that hitherto we have not been able to obtain a copy of the prize list of the implements exhibited, but that we shall publish it next week.

Reviews.

A Short Inquiry into the History of Agriculture, in Ancient, Mediæval, and Modern Times. By Chandos Wren Hoskyns, Esq. Bradbury and Evans, 11, Bouverie-street, London.

If elegance of composition, originality of illustration, and a thorough knowledge of his most interesting subject, can procure for the author any general attention, then is this work certain to obtain a multitude of readers.

No one, of late years, has done more than Mr. Hoskyns to rescue agriculture from the character of a merely laborious art, involving the exercise of little else than brute force; no one has been more industrious or more successful in the effort to show the vast amount and variety of truth involved in its processes, and the high intellectual qualifications for which there is ample scope in conducting them.

If living agricultural writers have done nothing else, they may claim the merit of having induced men of education and refinement to study, to enjoy, and finally to illustrate a subject, at first apparently so empty and dull, but really so full and so brilliant; and to no one is more of this merit due than to Mr. Hoskyns. We have no hesitation in saying that, in his past writings, he has brought a greater amount of instructive and interesting illustration, more true wit, more general intelligence to bear upon agricultural topics than are to be found together anywhere else in our agricultural literature; and his present performance is only another evidence of his admirable ability.

We have the good fortune to address a large number of the well educated and intelligent among those who are interested in the Agriculture of Great Britain, and many of our readers are no doubt much better qualified than ourselves to appreciate the merits of this little volume, as a literary performance; but we have sufficient confidence in our opinion heartily to recommend the work for perusal by all who would cultivate those higher regards and feelings towards their art which are altogether distinct from its aspect as a mere business by which money is made.

Perhaps no single extract will better explain the nature, object, and history of the work, or better illustrate the style in which it has been written, than the passage by which it is prefaced, and we give it entire.

"It has always seemed strange to the writer of the following pages that so little should have been done to connect Agriculture with those departments of History and of general Literature that belong to it. Every art has its biography—the investigation of which discloses a thousand pleasant points of contact with that great Stream of human Action and Interests, whose current, as it rolls, is 'History,' and whose eddying ripples, and sunny reflection of the skies above, are 'Literature.' Why should the toil and sweat of the '*patient* Husbandman' rub on for ever without a plunge in the translucent wave that cheers and invigorates other dusty labourers of the earth? English Publishers say, despondingly, that 'Agriculturists are not a *reading* class.' What have they ever had to make them so? Yet it was not so with Agriculture of old: in Rome its Poetry and its Philosophy ran a race with its most devoted Practice. The exquisite imagery of the Georgics, the sententious farming-truths of Cato, the man-and-nature-seeking History of Pliny, and THE FARMS of Terentius Scrofa, challenged each other in turn, with graceful rivalry, and all were in turn the best of their respective kind. With us, agriculture is altogether without a History; almost, if not quite, without a Literature. Arthur Young's 'Tours' may have been pleasant travelling *to him*; but the wisest Cicerones are often most tiresome on their 'instructive' topic. It is possible to fix the aching eye upon a single object till we *lose sight of it*.

"It is from the illustrations that *lie around* a subject—and opposite, and parallel to it—that we must seek at once its elucidation, and its embellishment. Light falls at all angles of incidence; and the reflections that arise are corresponding.

"Let us be *practical*, by all means: but not *pragmatical*. High finish never shows tool-marks. During the long winter evenings of our climate there is time enough, while the Plough is idle, for the skilful hand that guided it, to hold a little Book, and for the eye that can look back with such nice judgment on 'turning out' at the end of the furrow, to take just such a review of the 'gathering' and 'casting' that the Earth has seen, before our Lease commenced upon it. It may help us, more than we think perhaps, in looking *forward*: and at least it may beguile a present hour of care.

"It was at the prompting of such a thought,—especially for those to whom its pages are inscribed, that the purpose of this little book was long ago conceived. Its execution was hastened by a request conveyed from a distinguished body of promoters of Science—the Governors and Council of the Royal Manchester Institution: and if at first the quarter whence the wish for such a theme originated was unexpected by the Author, the opportunities of personal experience, into which it led him, of *manufacturing Labour soothed and dignified by mental culture and resources*, realised, with powerful analogy, the very hopes which had prefigured such an attempt for that of Agriculture.

"His effort has been, not to amplify a bare subject, but to simplify a full one. And he will be gladly contented if, instead of pretending to have satisfied a thirst, he should only have succeeded in creating one."

Miscellaneous.

Autumn Fallowing.—Having for several years past practised, and experienced the benefits arising from, autumn fallowing of stubbles intended for green crops the ensuing season, and since it is a practice very far from universal in this part of Norfolk, I take the liberty of suggesting to you the propriety of bringing the subject before your agricultural readers, presuming that in the present extraordinary wet season, those who have not hitherto practised it will admit that some advantage is to be gained from it. It is recommended that, immediately after the removal of the corn crop from the land, the soil should be well and effectually stirred, to the depth required to eradicate the weeds, either by "scarifying," "grubbing," or "skeleton-

ploughing," according to the nature of the soil, means, or taste of the operator, followed by sufficient harrowings and rollings (if necessary) to extricate the weeds; the whole, together with the stubble, may then be removed from the soil, and reduced to ashes, thereby producing a quantity of valuable manure. There are few seasons in which, by using his disposable means with sufficient energy, during suitable weather, the farmer may not thus prepare the whole or a greater part of his land intended for green crops, for deep-ploughing and sub-soiling (processes which an improving system of husbandry will cause to be also more generally practised), during the winter months. Amongst other advantages which may be expected to be derived from practice, besides the above, may be mentioned, that the weeds, by being arrested in an early stage of their growth, are much more easily extirpated; the seeds of annual weeds, from the soil being thereby brought to a state highly favourable for their vegetation, are consequently destroyed; and the labour required for getting in the green crops during the ensuing spring and summer is thereby greatly abridged, allowing more opportunities for horse-hoeing, &c., advantages well worth considering. *John Swann, East Carleton, in the Norwich Mercury.*

Notices to Correspondents.

BARLEY: *Ceres.* It is a remarkably fine head of common Bere.

EDUCATION: *H E.* You could learn farming in two years, and afterwards farm to an extent limited by your capital, at about 10*l.* per acre.

LEEDS: *Subscriber, &c.* Mr. Maw no doubt alluded to the practice of feeding growing cattle on straw alone during winter.

MUSCLE SHELLS: *Sulphate of Lime.* Burned and slaked, they would make good lime. That is all, or nearly all. They may contain, perhaps, 1 or 2 per cent. of phosphate of lime. The shell *fish* would be a good manure, and probably contains enough nitrogen to furnish, during decomposition, 6 or 7 per cent. of ammonia.

NEW SOUTH WALES: *J Denway.* Professor Low's "Elements of Agriculture," for the general subject; and "Atkinson on Agriculture and Grazing in New South Wales," for the special application of it.

NEW WORK: *J R M.* It is not yet published. It will appear in monthly parts.

ORNAMENTAL AND DOMESTIC POULTRY, by the Rev. E. S. Dixon, price 5*s.* 6*d.*, is now ready, and may be had at the Office of this Paper, and of all booksellers.

PROVIDENT HABITS OF LABOURERS: *B T.* As harvest occupation is commencing, wages will be good, and now is an excellent opportunity for the distribution, by those who interest themselves in the welfare of our rural population, of the tract "On the Advantages of Savings' Banks and Friendly Societies," which may be procured of the publisher, J. Hatton, Reading. It is supplied in a cheap form, to give it a wide circulation among those for whose benefit it is intended.

RAPE: *Spade Farmer.* You should transplant both Rape and Cabbage, and, digging your Potatoes in October, you will then have something worth more than to be dug in. If you want a green manure, sow 4 or 5 lbs. of Mustard seed broadcast, and rake it in; you may dig that in in two months' time.

RURAL CHEMISTRY, 2d Edition, revised and enlarged; by Edward Solly, Esq., may be had at the office of this Paper, and of all Booksellers. Price 4*s.* 6*d.*

*** Communications reaching town after Wednesday cannot be answered the same week.

Markets.

COVENT GARDEN, Aug. 11.

Hothouse Grapes, Peaches, and Nectarines are plentiful. Pine-apples are cheaper. Cherries are less plentiful. Ripe Gooseberries and Currants are sufficient for the demand. Apricots are pretty well supplied. Nuts in general are abundant. Oranges and Lemons are plentiful, and the market continues to be overstocked with Melons. Amongst Vegetables, Turnips may be obtained at from 3d. to 6d. a bunch. Carrots the same. Cauliflowers are plentiful. Green Peas fetch from 1s. 6d. to 4s. per bushel. Potatoes are cheap. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1s. to 1s. 6d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Rignonia venusta, Tropæolums, Carnations, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 3s to 5s	Apples, kitchen, p. bsh., 4s to 8s
Grapes, hothouse, p. lb., 1s 6d to 4s	Oranges, per doz., 1s to 2s
Peaches, per doz., 8s to 15s	— per 100, 6s to 16s
Nectarines, per doz., 8s to 15s	Lemons, per doz., 1s to 2s
Plums, per punnet, 2s	— per 100, 7s to 14s
Cherries, per lb., 1s to 4s	Almonds, per peck, os
Gooseberries, per half sieve, 3s 6d to 4s 6d	— sweet, per lb., 2s to 3s
Currants, do., 3s to 4s	Walnuts, p. 100, 1s 6d to 2s
Pears, per doz., 2s to 4s	— p. bush., 16s to 24s
— per half sieve, 4s to 6s	Nuts, Bar., p. bush., 20s to 22s
	— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p doz., 6d to 1s	Spinach p. sieve, 1s to 1s 6d
Cauliflowers, p. doz., 6d to 3s	Onions, p. bunch, 2d to 6d
Peas, per bush., 1s 6d to 4s	— Spanish, p. doz., 1s 6d to 4s
Beans, p. bush., 1s 6d to 2s 6d	Shallots, per lb., 6d to 8d
Sorrel, p. hf. sieve, 6d to 9d	Garlic, per lb., 6d to 1s
Potatoes, per ton, 60s to 160s	Artichokes, p. doz., 1s 6d to 3s
— per cwt., 4s to 8s	Vegetable Marrows, doz., 6d to 1s
— per bush., 3s to 5s	Lettuce, Cab, p. sc., 4d to 9d
Turnips, p. doz. bus., 2s to 4s	— Cos, do., 6d to 1s
Red Beet, per doz., 2s to 4s	Mushrooms, p. pot, 1s to 1s 6d
Horse Radish, p. bdl., 2s to 6s	Small Salads, p. pun., 2d to 3d
French Beans, p. hf. sieve, 1s 6d to 2s	Fennel, per bunch, 2d to 3d
Cucumbers, each, 4d to 6d	Savory, per bunch, 2d to 3d
Leeks, per bunch, 4d to 6d	Thyme, per bunch, 2d to 3d
Celery, p. bundle, 1s to 2s	Parsley, p. doz bun., 3s to 4s
Radishes, per 12 hands, 9d	— Roots, p. bdle., 1s to 1s
Watercress, per doz. bunches, 4d to 6d	Marjoram, green, p. bun., 4d to 6d
Carrots, per bun., 4d to 6d	Mint, green, per bunch, 3d to
	Basil, green, p. bunch, 4d to 6d

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Aug. 9.

Prime Meadow Hay	68s to 75s	Clover	60s to 90s
Inferior ditto	50 63	New Clover	50 84
Rowen	— —	Straw	24 30
New Hay	50 65		J. COOPER.

Trade very heavy.

CUMBERLAND MARKET, Aug. 9.

Prime Meadow Hay	70s to 75s	Inferior	55s to 90s
Inferior ditto	50 65	New Clover	55 90
New Hay	50 65	Straw	32 36
Old Clover	90 98		JOSHUA BAKER.

WHITECHAPEL, Aug. 9.

Fine Old Hay ...	68s to 72s	New Clover	70s to 80s
Inferior ditto	45 50	Inferior ditto ...	45 50
New Hay	55 60	Straw	25 28
Old Clover	95 100		

SMITHFIELD, MONDAY, Aug. 6.

We have rather a shorter supply of Beasts, and consequently a cheerful trade. The choicest descriptions make a little more money. The number of Sheep is also smaller; the demand is, however, very limited, and it is with difficulty that a small advance is obtained on the best qualities. Good Lamb being scarce is more readily sold. Trade is still very bad for Calves, although a slight improvement is observable in the choicest kinds. From Holland and Germany there are 579 Beasts, 3800 Sheep, and 86 Calves; from Spain, about 20 Beasts; from France, 59; and from Scotland, 160.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ...	3 10 to 4	0		
Best Short-horns	3 6 — 3	8		
2d quality Beasts	2 10 — 3	4		
Best Downs and Half-breds				
Ditto Shorn ...	3 10 — 4	0		

Per st. of 5 lbs.—	s	d	s	d
Best Long-wools				
Ditto Shorn ...	3 6 to 3	8		
Ewes & 2d quality				
Ditto Shorn ...	2 10 — 3	4		
Lambs	4 0 — 5	4		
Calves	3 8 — 4	6		
Pigs	3 4 — 4	6		

Beasts, 3433; Sheep and Lambs, 29,880; Calves, 203; Pigs, 225

FRIDAY, Aug. 10.

The supply of Beasts is moderate; the late warm weather has prevented slaughtering to the usual extent, and consequently trade to-day is slow, but prices remain about the same as on Monday. The number of Sheep and Lambs is about the same as of late; the demand is smaller, and prices are rather lower except for the choicest descriptions. We have rather a smaller supply of Calves, but the demand is so very small that no advance can be obtained. From Holland and Germany we have 125 Beasts, 1100 Sheep, and 163 Calves; from Leicester and Northampton, 300 Beasts, and 150 Milch Cows from the home counties.

Best Scots, Herefords, &c. ..	3 10 to 4	0	Best Long-wools	to ...
Best Short-horns	3 6 — 3	8	Ditto Shorn ...	3 4 — 3 8
2d quality Beasts	2 10 — 3	4	Ewes & 2d quality	—
Best Downs and Half-breds	—		Ditto Shorn ...	2 8 — 3 2
Ditto Shorn ..	3 8 — 4	0	Lambs	4 0 — 5 4
			Calves	2 8 — 3 6
			Pigs . .	3 6 — 4 6

Beasts, 843; Sheep and Lambs, 13,110; Calves, 489; Pigs, 240.

HOPS.—FRIDAY, Aug. 10.

Messrs. PATTENDEN and SMITH report that the accounts from the plantations are rather contradictory; the mould is said to be on the increase. Duty 65,000*l.* Market firm.

MARK LANE.

MONDAY, Aug. 6.—There was a fair supply of English Wheat this morning by land carriage samples from Essex, Kent, and Suffolk; a few of the finest were sold at the opening of the market at 2*s.* per qr. decline upon the prices of this day se'nnight, but inferior descriptions must be written 3*s.* to 4*s.* per qr. cheaper. Foreign continues to be much neglected; the few retail sales effected were at 2*s.* per qr. below the quotations of Monday last.—Barley meets a tolerable sale at a decline of 6*d.* per qr.; a sample of new Kent obtained 31*s.* per qr.—Beans and Peas are unaltered in value; of the latter there were a few samples of new white at market, which were disposed of at 30*s.* to 32*s.* per qr. on trial. In consequence of the very large arrivals of Oats, the trade ruled exceedingly heavy, at a reduction of 1*s.* per qr. on the rates of last week, stale and heated parcels being quite unsaleable.

FRIDAY, Aug. 10.—With the exception of 18,130 qrs. of Oats from abroad, the arrivals of all grain, both English and foreign, during the week have been moderate. This morning's market was thinly attended, and the little English Wheat fresh up was disposed of at prices barely equal to those of Monday. There were a few samples of new Talavera at market, quality thin and inferior, weighing about 61½ lbs., and were sold at 52*s.* to 53*s.* per qr. In foreign, sales have been exceedingly limited, and our quotations scarcely supported.—Barley is a slow sale at late rates.—Beans and Peas are unaltered in value.—Oats being held for a slight advance checked sales.—Best brands of barrel Flour find buyers at 24*s.*—The weather since the 3d inst. has been generally highly favourable for maturing the crops, and also for harvest operations. Where Wheat cutting has commenced, the yield is reported to be quite equal to expectation, but the quality variable. Apparently the grain crops, taken as a whole throughout England, will prove good. Wheat has everywhere been difficult of disposal during the week, and undergone a decline of 1*s.* to 2*s.* per qr. in the country markets. Spring corn has also shown a slight downward tendency. Indian Corn is unsaleable, unless at a further decline, say 23*s.* to 24*s.* afloat.

LIVERPOOL, FRIDAY, Aug. 10.—We have had very hot weather since Tuesday, with frequent heavy thunder showers. At this day's market there was a small attendance of dealers, and a very slow trade. Wheat was 1*d.* per bushel lower. Flour had to move. Oats and Oatmeal rather cheaper. Barley, Beans, and Peas much the same. Indian Corn was not freely offered, and the sale being rather brisk, the price closed 6*d.* per quarter higher.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
June 28.....	44*s* 6*d*	26*s* 5*d*	18*s* 9*d*	26*s* 9*d*	30*s* 10*d*	31*s* 5*d*
July 7.....	47 1	25 11	17 11	28 1	32 1	33 10
— 14.....	48 2	25 3	18 9	26 11	32 1	30 9
— 21.....	48 10	26 7	19 4	28 6	32 2	32 4
— 28.....	49 1	26 1	19 6	26 1	32 5	32 0
Aug. 4.....	48 0	26 3	19 4	25 6	31 10	32 1
Aggreg. Aver.	47 9	25 11	18 10	27 2	32 0	32 1
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	June 23.	July 7.	July 14.	July 21.	July 28.	Aug. 4.
49*s* 1*d*						
48 10						
48 2						
48 0						
47 1						
44 6						

PRICES CURRENT.	London. July 30 qr.	London. Aug. 6. qr.	Liverpool. July 31. 70 lbs.	Liverpool. Aug. 7. 70 lbs.	Wakefield. July 20 qr.	Wakefield. Aug. 3. qr.	Boston. Aug. 1. qr.	Boston. Aug. 8. qr.	Birmingham. Aug. 2. 62 lbs.	Birmingham. Aug. 9. 62 lbs.
Wheat—	*s. s.*	*s. s.*	*s. d. s. d.*	*s. d. s. d.*	*s. s.*	*s. s.*	*s. s.*	*s. s.*	*s. d. s. d.*	*s. d. s. d.*
New, red ...	42 to 44	40 to 42	6 10 7 6	6 8 7 3	46 to 51	45 to 51	45 to 50	42 to 48	5 10 6 4	5 7 5 10
„ white ...	47—50	46—48	7 2 7 8	7 0 7 6	46—53	46—53	48—53	46—50	6 2 6 6	6 0 6 3
Old, red ...	40—48	40—44	6 10 7 2	6 8 7 3	44—46	44—46	—	—	5 9 6 2	5 6 6 0
„ white ...	50—54	48—50	7 6 7 9	7 3 7 6	—53	—53	—	—	6 0 6 7	5 10 6 4
Foreign... ...	36—56	36—56	6 10 8 6	4 8 7 0	41—54	41—54	—	—	5 3 6 10	5 0 6 6
			480 lbs.	480 lbs.						
Rye—Old ...	22—24	22—24	—	—	—	—	—	—	—	—
Foreign...	22—23	22—23	—	—	—	—	—	—	—	—
Foreign meal	6*l.*—7*l.*	5*l.*—6*l.*	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley— Grinding ...	20—24	20—24	—	—	22—23	22—23	24—26	24—26	23—25	23—25
Malting... ...	24—26	24—26	30*s*—32*s*	30*s*—32*s*	—	—	—	—	29—32	29—32
Foreign... ...	18—26	18—26	—	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White ..	18—25	18—25	2*s* 10*d* 3*s* 2*d*	2*s* 10*d* 3*s* 2*d*	—	—	18—22	18—22	20—28	20—28
Black...	14—23	14—23	2 5 2 9	2 5 2 8	—	—	—	—	19—20	19—20
Foreign ...	13—20	13—20	2 4 2 6	2 4 2 6	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	25—30	25—31	34*s*—	34*s*—	28—32	28—32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—25	23—25	28 —30*s*	28 —30*s*	—	—	—	—	12—13	12—13
Foreign ...	25—32	25—32	32 —31	32 —34	—	—	—	—	—	—
Beans— New, small ...	—	—	32 —35	32 —35	32—36	32—36	32—34	32—34	12—14	12—14
Old	23—33	23—33	34 —36	34 —36	—	—	—	—	15—16	15—16
Foreign ...	21—36	21—36	24 —36	24 —36	30—31	30—31	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	—	—	—	—	—
Foreign ...	36—40	36—40	—	—	—	—	—	—	—	—
Linseed Cakes British ...	7*l.* 7*s*	7*l.* 7*s*	7*l.* 12*s*	7*l.* 12*s*	—	—	—	—	—	—
Foreign ...	6*l.*	6*l.*	—	—	—	—	—	—	—	—
Indian Corn—	30—34	24 28	25*s*—28*s*	24*s*—26*s*	—	—	—	—	13—14	12—13
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack.
Flour—	36—44	36—44	35—36	34—35	—	—	36—40	36—40	36—38	34—36

Weekly Averages and Imports.	Aver. Aug. 7	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	*s. d.*	qrs.	*s. d.*	qrs.	*s. d.*	*s. d.*	*s. d.*	qrs.
WHEAT ...	50 0	7550	49 1	8013	49 2	11812	47 7	1409	46 11¼	9122
BARLEY ...	26 0	3290	26 1	1424	—	1007	—	—	—	3557
OATS... ...	20 7	18130	19 6	392	19 4	899	13 7	43	20 7½	535
RYE	24 8	—	26 1	80	—	—	—	—	—	—
BEANS ...	29 8	—	32 5	185	32 4	544	32 0	40	—	4298
PEAS... ...	33 0	—	32 0	1356	—	222	—	—	—	—
SIGNED	*KINGSFORD and LAY.*		*SEGAR and TUNNICLIFFE.*		*SANDARS and DUNNS.*		*THOMAS WRIGHT.*		*J. and C. STURGE.*	

Sales by Auction.

RARE ORCHIDS FROM CENTRAL INDIA.

MR. J. C. STEVENS is instructed to announce for Sale by Auction at his Great Room, 38, King-street, Covent Garden, on TUESDAY next, 14th August, at 12 for 1 o'clock, an Importation of exceedingly RARE ORCHIDS, received by the last Overland Mail in excellent condition, collected in Central India, and comprising Dendrobium Devonianum, Dalhousianum, Farmeril, Griffithianum, Longicorne, Paxtonii, Sulcatum, a new Cymbidium, Vanda teres, &c. On view the morning of Sale, and Catalogues had.

ORCHIDS FROM ECUADOR, SOUTH AMERICA, VIA GUAYAQUIL AND PANAMA.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent Garden, on TUESDAY, Aug. 21, at 12 for 1 o'clock, A COLLECTION OF ORCHIDS made by Mr. Warszewicz in Ecuador, South America, in the neighbourhood of Chimborazo and Loxa, and said to comprise some great novelties, dried specimens of which will be produced. The Plants have just been landed at Southampton from Chagres, and will be immediately unpacked, and a more detailed notice appear in the next No. of this Paper.

TO NURSERYMEN, GENTLEMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by Mr. Howeroft, to submit to competition by Auction, on the premises, Mile-end Nursery, Bow-road, on MONDAY, August 20, at 11 o'clock (unless previously disposed of by private contract), the valuable Lease for 50 years unexpired, and the whole of the Greenhouses, Pits, Frames; together with the Greenhouse Plants, Nursery Stock, Seeds, utensils in trade, &c.—May be viewed, and particulars had, one week prior to the sale, of the principal Seedsmen, on the premises, and of the Auctioneers, Leytonstone, Essex.

MALMESBURY, WILTS.—IMPORTANT FREEHOLD ESTATE.—A rare opportunity for Investment.

MR. W. H. JEFFRIES will Sell by Auction, at the White Lion Hotel, in Malmesbury, on SATURDAY, September 8, 1849, at Two o'clock in the afternoon, subject to such Conditions of Sale as shall be then produced, unless an eligible offer be previously made by Private Contract, of which due notice will be given, that very superior ESTATE called "WHYCHURCH," eligibly and pleasantly situate within a short distance of the Borough Town of Malmesbury, comprising an excellent Farm-house, substantial Barn, Stables, stalling sufficient for 50 Beasts, and other suitable outbuildings, in good repair, and about 208 Acres of Luxuriant and Productive Land, in the following Lots.

Numbers on Tithe Map.			A.	R.	P.
	LOT I.				
94	Farm-house, Buildings, Yards, Garden, & Orchard		3	0	29
95	Wortheys	Pasture	47	2	18
665	Whychurch Marsh	,,	12	1	31
667	Broad Leaze	,,	19	0	28
668	Green Dry Leaze	,,	15	0	21
670	Little Dry Leaze	,,	11	3	4
671	Little Broad Leaze	,,	18	0	8
689	The 12 acres	Arable	13	2	0
690	The 8 acres	,,	9	0	8
691	The 16 acres	,,	17	2	12
			165	2	2
	LOT II.				
108	Part of Down Leaze	Pasture	23	0	7
109	Ditto, with Tie-up Stalling for 12 Beasts	,,	1	2	20
			24	2	27
	LOT III.				
875	Part of the Marsh	,,	1	2	25
	LOT IV.				
76 and 77	Clover Marsh Piece and Withey Bed	,,	6	2	0
	LOT V.				
89	South part of Long Marsh	,,	2	1	37
	LOT VI.				
89A	North part of Long Marsh	,,	1	3	30
	LOT VII.				
162	Allotment in the Common	Arable	0	3	10

Numbers 76, 77, 89, 89A, 94, 95, 108, 109, and 162 are situate in the parish of St. Paul's, Malmesbury, and subject to a tithe rent charge of 11*l.* 8*s.* 3*d.*, and a land tax of 6*l.* 17*s.* 4*d.* The residue of the Estate is in the parish of Westport St. Mary's, Malmesbury, and subject to a tithe rent charge of 10*l.* 16*s.* and to a land-tax of 1*l.* 10*s.* 7*d.*

The ESTATE abounds with young thriving Timber, is surrounded principally by lands of the Earl of Suffolk, and adjoins the Park.

The FARM HOUSE is capacious, and may at a small expense be converted into a comfortable and suitable residence for a respectable family, and particularly for a sporting gentleman, being very conveniently situated for (indeed in about the centre of) the two adjoining Hunts of the Duke of Beaufort and Vale of White Horse, and close to the Braydon country so celebrated for sport. Six miles from the Minety, and 10 from the Chippenham Stations on the Great Western Railway.

To view the Estate apply to Mr. Compton, at the Farm House, and for further particulars; and to treat, to Mr. Muskelyne, Solicitor, Tetbury, Gloucestershire, at whose office a map of the Estate may be seen. A moiety of the purchase-money for Lot 1 may (if required) remain on security thereof.

TO NURSERYMEN, FLORISTS, AND OTHERS.

TO BE DISPOSED OF, BY PRIVATE CONTRACT, the LEA-BRIDGE NURSERY.—For particulars apply on the premises, or of Messrs. PROTHEROE and MORRIS, American Nursery, Leytonstone, Essex.

LOVINGTON MILLS, SOMERSET.

TO BE LET, for a term, with immediate possession, LOVINGTON MILLS, comprising a comfortable Dwelling House, suitable offices, and garden attached. The Mill has a powerful, newly-erected, iron Water-wheel, with connecting gear, by Messrs. Raden, of Trowbridge, in perfect repair; the wheel is driven by a stream of water which never fails in the driest season, driving three pair of stones, and is capable of grinding 200 sacks of corn per week. 58 acres of Arable Land, in a high state of cultivation, with a Homestead, and 60 acres of excellent Pasture, may be taken with the Mill from Michaelmas next. The Premises are well situated, three miles from Castle Cary, seven from Somerton, eight from Shepton Mallet, and twelve from Yeovil. For further particulars, apply to Mr. ALLISTON, Bailiff, Charlton, Somerton.

SUSSEX.

TO BE LET for a term of years, and entered upon at Michaelmas next, the Farm of WOTTON, in the Parish of Folkington, at present in the occupation of Mr. Snoosmith. It consists of about 409 acres of Meadow, Pasture, and Arable land; the Arable land is most productive of Beans and Wheat; most of the Pasture and Meadow land is of the richest fattening quality. There is an excellent Farm-house, with every convenience, and the Farm-buildings are large and commodious, and conveniently fixed up and arranged for fattening a large number of beasts in feeding-houses, stalls, sheds, and yards. The Farm is about four miles from Hailsham and Eastbourne, 10 miles from Lewes, market town, and one mile from the Polegate station on the Lewes and Hastings Railway. For particulars, apply to Mr. JOHN MORTON, Whitfield, Berkeley, Gloucestershire. A person at Folkington Place will show the Farm.

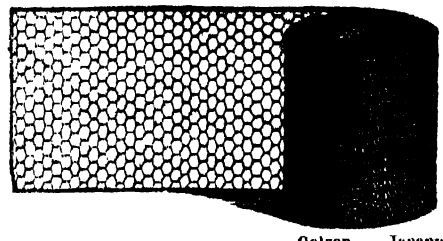
TO BE LET, for a term of years, and entered upon at Michaelmas next, the FARM of TESTWOOD AND COLMOOR, in the parish of Eling, in the county of Southampton, at present in the occupation of the Proprietor. It consists of 355 acres, of which 64 acres are excellent Water Meadow, watered by the river Test; 100 acres are good Arable Land, and 191 acres are of rough Pasture, now being drained, which may be converted into rich productive Turnip and Barley land. There is a good Farm-house, and large commodious Farm Buildings. The Farm is about five miles from the town of Southampton, and the turnpike road from there to Salisbury passes through it. It is within 1½ mile of the Eling Railway Station and Wharf on the Southampton river. For particulars apply to Mr. JOHN MORTON, Whitfield, near Berkeley, Gloucestershire. A person at Testwood House will be directed to show the Farm.

TO GARDENERS AND FLORISTS.

TO BE LET, on Lease, 2½ Acres of well-stocked GROUND, with or without Greenhouses and Pits, low rented; 1 acre of which are productive and well-frequented Cress-beds, within 1½ mile of the City.—For further particulars, apply to Mr. CLARK, Seedsman, 25, Bishopsgate-street, Mr. STREACY, Morning lane and Church-street, Hackney; and at the Office of this Paper.

WANTED, to Rent or Purchase, with immediate possession, a seven or eight-roomed detached HOUSE, with large Garden, at a low rent or price. No objection to an Acre of Ground, less or more. Near London and Surrey side preferred.—Full particulars to be sent to A. B., at Miss Eve's, 2, Turret-grove, Clapham.

GALVANISED WIRE GAME NETTING.—7*d.* per yard, 2 feet wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7*d.* per yd.	5*d.* per yd
2-inch ,, strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ...	10 ,,	8 ,,
1½-inch ,, extra strong ,, ...	14 ,,	11 ,,

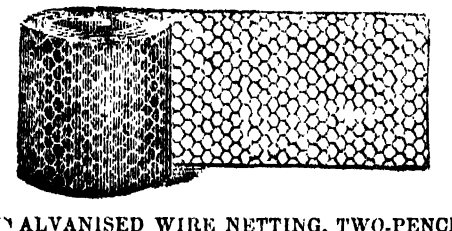
All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3*d.* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

SHETLAND PONIES AND CATTLE.—Just landed, direct from Shetland, a quantity of very handsome small PONIES; size, from 8½ to 12 hands high. Also some very handsome small COWS and HEIFERS, down Calving, some with Calf by side, and in milk; also some small OXEN and SHEEP, for feeding. These Cows give a large quantity of milk for their size, which is very rich, similar to the Alderney, and they are very hardy and suitable to this climate. To be seen at THOMAS ORTON'S, Salesman and Importer to her Majesty, 65, Wapping.

TODD'S PATENT PROTOXIDE PAINT at a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it. Manufactured by CHARLES FRANCIS and SONS, Cement Works, Nine Elms, London.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—The article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogized both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3*d.*	per yard	30 inches wide	7½*d.*	per yard
18 ,, ,,	4½*d.*	,, ,,	36 ,, ,,	9*d.*	,, ,,
24 ,, ,,	6*d.*	,, ,,	48 ,, ,,	1*s.*	,, ,,

Galvanised do., 1*d.* per foot extra.

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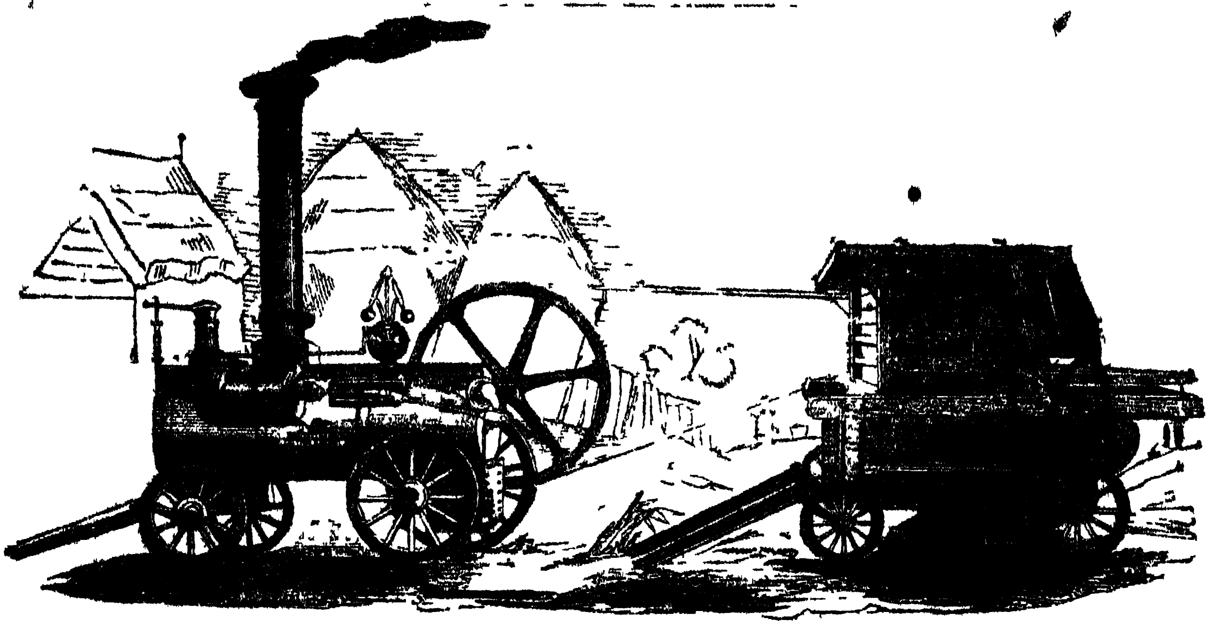

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No. 33—1849.] SATURDAY, AUGUST 18. [PRICE 6*d.*

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WOODLANDS NURSERY, MARESFIELD, near UCKFIELD, SUSSEX.

WILLIAM WOOD AND SON have the pleasure of announcing that their immense stock of AUTUMNAL ROSES is now in fine bloom, and will continue during the remainder of the season. A coach between Tunbridge Wells and Lewes runs daily each way in connection with the morning trains from London, and passes near the Nursery

WHOMES' UNRIVALLED PELARGONIUMS, and the choicest varieties of other raisers Priced Catalogues of the above are now ready, and may be had on application. N.B. J. W. having saved a greater quantity of Pelargonium seed than he has space to grow, hopes to offer the same at 1*s.* per packet of 12 seeds, or 65 seeds for 5*s.*, declared to be from the best varieties.

JAMES WHOMES, Royal Pelargonium Nursery, Windsor, Aug. 18

SEEDS FOR AUTUMN SOWING

J. CARTER begs leave to recommend the following SEEDS for Autumn Sowing. The Autumn-sown Hardy Annuals, including the Californian, flower much earlier and stronger than the Spring sown. With Perennials and Greenhouse Seeds, a whole season is saved The two latter should be sown as early as convenient, and the Hardy Annuals by the middle of September. Flower Seed is forwarded, prepaid, by post

I. FOR THE BORDERS.			II. FOR THE GREENHOUSE		
50 fine Hardy Annuals	10*s.*	0*d*	25 fine Greenhouse ditto	7*s.*	6*d*
25 do. do.	5	0	12 do. do.	4	0
12 do. do.	2	6	6 do. do.	2	0
12 German Larkspurs	2	6	3 Maurandyas	1	0
12 tall do do.	2	6	6 Petunias	1	6
Nemophila insignis, p. oz	1	0	12 Stocks, German	3	6
Do. maculata, p. paper	1	6	6 ,, Biennial	2	0
50 fine Hardy Perennials	12	0	Schizanthus, 3 fine vars.	1	0
25 do. do.	6	0	,, new white	1	0
12 do do.	3	0	Calceolaria, spotted m.	1	0
6 Antirrhinums	1	6	Cineraria, 20 vars. m.	1	0
12 Delphinium chinense	2	6	Ericas, 5 vars. m.	5	0
4 Gaillardias	1	6	Gladiolus, 20 vars. m.	1	0
10 Hollyhocks, n. dwarf	3	0	Ipomœa rubro-cœrulea	1	6
6 Pentstemons	2	0	,, new yel and purp.	1	6
3 Sweet Williams	1	0	Ipomœa superba	1	0
6 Wallflowers	1	6	Phlox Drummondi, 20 vs.	1	0

**** All other Flower Seeds may be had in single packets at the usual prices. A Catalogue of 1,500 will be sent, prepaid, on application. His new Autumn Catalogue of a first-rate collection of Dutch and other flowering Bulbs will be ready in a few days.—*JAMES CARTER, Seed-man and Florist*, No. 238, *High Holborn, London*

TO THE ADMIRERS OF THAT SPLENDID AUTUMNAL FLOWER, THE CHRYSANTHEMUM

YOUELL AND CO. are now prepared to execute orders from their extensive and very select collection of the above, comprising all the new and fine continental varieties, at the following prices.

50 best new sorts	25*s.*
25 ditto	15*s.*
12 ditto	9*s.*

Fine plants for blooming in Autumn, well established in small pots, or per post free, with all orders (if requested), directions will be sent for a successful and easy mode of culture for exhibitions.

CAMELLIAS,

Comprising the finest varieties, well set with flower buds, 30*s.* to 42*s.* per dozen.

ANEMONE SEED, saved from selected sorts, is now being sent out by YOUELL and Co. in the finest condition, and can be forwarded, per post free, at 2*s.* 6*d.* and 5*s.* per packet, sufficient to sow a bed of 12 or 24 yards. Sown at the present time, it will afford a fine display through the autumn and winter months.

Catalogues of the above, with an extensive variety of highly ornamental plants, will be forwarded by enclosing two postage stamps.—Great Yarmouth Nursery.

BEAUTIFUL BOUQUETS of FLOWERS are kept perfectly fresh for several days in Glasses constructed for the Button-hole, the Hand, or to be inserted in any part of a Lady's Dress or Hair, also for preserving the brilliancy of Flowers intended for exhibition at Horticultural shows, at 2*s.* per dozen; or forwarded by post, in boxes containing one dozen, 2*s.* 6*d*, postage included, on receipt of stamps to the amount, by JACKSON and TOWNSON, 89, Bishopsgate Within, opposite St. Helen's Place, London.

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15*l.* 10*s.*; a do. do. 18 by 10, 22*l.* 10*s.*; a do. do. 18 by 12, 28*l.* 10*s.*; a do. do. 21 by 12, 33*l.* 10*s.*, including a plan for brickwork. 12-inch Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 11*d.* per foot; 2-inch do., 1*s.* per foot.—J. LEWIS'S Machine Hothouse Works, Stamford-hill, Middlesex.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—This description of Glass has been greatly improved, and we can now supply it free from strings and all irregularities of surface. We have re-arranged our list of prices to correspond precisely with those of the Patentee, to which we would beg the attention of the Nobility, Clergymen, Gentry, and others.

In squares under 6 by 6			4*d.* per foot.		
8 by 6	under 10 by 8	4½*d.*	10 by 8	under 14 by 10..	5*d.*
14 by 10	,, 14 feet	5½*d.*	14 feet	,, 3 feet	6*d.*
3 feet	,, 4 feet	6¾*d*	4 feet	,, 5 feet	7*d.*

GLASS MILK PANS, PROPAGATING and BEE-GLASSES, Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments Fish Globes, Plate and Window Glass of every description, Lamp Shades, and Lactometers for trying the quality of Milk, 4 tubes 7*s.* 6*d*; 6 tubes, 10*s.* Self-Registering Thermometers for Greenhouses.

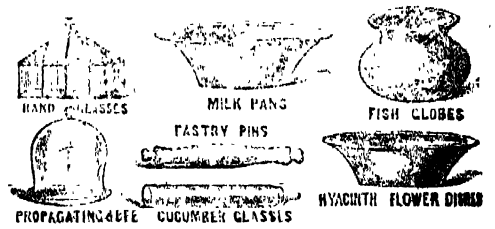
A full List of Prices and every information may be had by applying to JAMES PHILLIPS and Co, Horticultural Glass Warehouse, 116, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

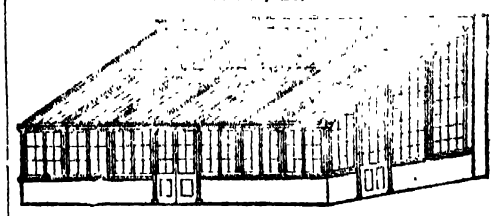
GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 4*s.* 2*d.* to 24 per foot, according to size. Patent Rough Plate Glass, from ¾ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s.* to 5*s.* each. Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s.* 6*d.* each Wasp Traps.—Lists may be had on application at the warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, &c.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. J. WEEKS and Co. have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., some of which are extensive, and all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. The erecting of these Hothouses, &c., has also enabled them to grow a first-rate collection of Stove and Greenhouse Plants, which are cultivated in such enormous quantities that they are sold at LESS THAN HALF-PRICE. Plans, Estimates, and Catalogues forwarded upon application.

NOVEL APPLICATION FOR THE IMPROVEMENT OF CELERY, SEAKALE, CARDOONS, RHUBARB, STRAWBERRIES, &c.—By means of ROBERTS'S Registered Sockets, these articles are much improved, if applied in season. A pamphlet, with wood engravings, and an exposition of particulars of these and various other appliances to horticulture, may be had on application, enclosing two postage stamps, to Mr. JOHN ROBERTS, Merchant, 34, Eastcheap, London.

NOTICE.—*The Gardeners' Journal of July* 14, 1849, contains an editorial article upon these inventions, from which the following remarks are extracted: "The principle of the invention is one about the advantages of which there can be no doubt. By such appliances, and by the aid of such means, vast and important results may reasonably be looked for. As connected, especially with the culture of Strawberries and Melons, the use of these Tiles would undoubtedly add both to earliness and flavour . . . We shall regret, that the principle is excellent. All that we ask, on the part of Mr. ROBERTS, is the thanks of horticulturists for bringing before them in a prominent manner a principle of great practical utility."

EXHIBITIONS AT THE GARDEN OF THE HORTICULTURAL SOCIETY OF LONDON, FOR THE YEAR 1850.

THE EXHIBITIONS WILL TAKE PLACE ON THE FOLLOWING SATURDAYS:—

MAY 18, JUNE 8, AND JULY 13.

SCHEDULE OF THE PRIZES.

FLOWERS.

Division I.—In which Nurserymen and Private Growers exhibit independently of each other.

A Pelargoniums; in collections of 6 new and first-rate varieties, with perfectly distinct colours, cultivated with superior skill, in 8-inch pots. SG—CE—LS

N.B. The collections in which the varieties are most distinct *will have the preference.*

B Pelargoniums; in collections of six varieties, in 11-inch pots. SG—CE—LS

N.B. Any plant that shall not have been actually grown in 11-inch pots will be disqualified.

C Roses, in pots; in collections of 12 distinct varieties. GB—SG—CE

N.B. To be shown in May and June only, and in 13-inch pots. The Judges will disqualify any collection that shall be found to contain a plant which has been recently placed in the pot from the open ground, or that is shown in a pot of any other size than 13 inches.

D Yellow Roses, best six varieties. SK—SB—C

N.B. To be shown in June only, and really to be yellow; pale cream colours are inadmissible.

E Cape Heaths; in collections of 10 entirely distinct varieties. GB—SG—CE

N.B. It is expected that the same plant shall not be exhibited on more than one occasion. The Judges, in making their award, will give, both in this and the next letter, a marked preference to plants grown in their natural forms, without stakes or stays; and will also take distinctness of species into favourable consideration. No duplicate will be allowable.

F Cape Heaths; in collections of 10 entirely distinct varieties, in 11-inch pots. SG—CE—LS

G Carnations, in pans of 24 distinct varieties. SB—C. *(In July only.)*

H Picotees, in pans of 24 distinct varieties. SB—C. *(In July only.)*

I Pinks; in pans of 24 distinct varieties. SB—C. *(In June only.)*

N.B. Carnations, Picotees, and Pinks must be shown without cards, in boxes of four sizes, of the following dimensions:—From centre to centre, 3½ ins.; from centre to outside, 2½ do.; depth at back, 7 ins.; ditto front, 3½ ditto. The face to be painted light green. *No collections will be allowed to exhibit in which these conditions are not complied with.*

Division II.—In which Nurserymen alone can show.

K Exotic Orchids; in collections of 15 species of superior cultivation. GB—SG—CE.

Division III.—In which all persons are admitted to equal competition.

L Calceolarias, in sixes; in 11-inch pots. LS—SK—SB

N.B. To be shown in May and June only.

M Single specimens of very superior cultivation, excluding everything which can be shown singly in other letters, and plants not in flower. CE—LS—SK

N Stove or Greenhouse plants; in collections of 20 plants. LG—GK—GB

N.B. Calceolarias, Fuchsias, Orchids, Pelargoniums and duplicates are excluded from all the four classes of Stove or Greenhouse plants.

O Stove or Greenhouse plants; in collections of 15 plants. GK—GB—SG

P Stove or Greenhouse plants; in collections of 10 plants. GB—SG—CE

Q Stove or Greenhouse plants; in collections of 6 plants. SG—CE—LS

N.B. Exhibitors cannot show in more than one of the classes of Stove or Greenhouse plants.

R Greenhouse Azaleas; in 12 distinct varieties. GB—SG—CE

S Greenhouse Azaleas; in six distinct varieties. SG—CE—LS

N.B. No one can show in both classes of Azaleas.

T Greenhouse Rhododendrons; in six distinct varieties. *(In May only.)* SG—CE—LS

U Collections of 6 New Hardy Evergreens grown in pots; Coniferæ excluded. LS—SK—SB

N.B. Nothing will be regarded as new which has been in the nurseries more than three years.

V Conifers, in sizes, of new or very rare species, in not less than the third year of their growth. LS—SK—SB

N.B. *U* and *V* can only be shown at the exhibition in July.

W Exotic Orchids; in collections of 20 species of superior cultivation. LG—GK—GB

X Exotic Orchids; in collections of 10 species of superior cultivation. GB—SG—CE

Y Exotic Orchids; in collections of six species. SG—CE—LS

N.B. Nurserymen cannot show in either of these three classes of Orchids. No exhibitor can show in more than one of them.

Z Exotic Orchids; single specimens displaying *very* superior cultivation. SK—SB—C

N.B. No duplicate Medals can be here awarded.

AA Fuchsias; in threes, of three distinct colours; *in July only.* LS—SK—SB

BB Pelargoniums; in six DISTINCT SPECIES, exhibiting superior cultivation. CE—LS—SK

N.B. By the word species is meant the wild kinds imported from the Cape of Good Hope, or New Holland, tuberous species inclusive, and not garden cross-breds.

CC Fancy Pelargoniums; in sixes, in 8-inch pots. SG—CE—LS

N.B. No duplicate Medals can be allowed here.

DD Achimenes; in collections of six distinct varieties, exhibiting superior cultivation. CE—LS—SK. *(In July only.)*

EE Six distinct varieties of Tall Cacti in flower. GB—SG—CE

FF Roses of 50 varieties in loose bunches, each consisting of three trusses as they are gathered, so as to exhibit, as far as possible, the habit of the variety. CE—LS—SK

N.B. In July only. No one who exhibits in this letter can also compete in the following.

GG Roses, exhibited as in the letter *FF*, and in 25 varieties. LS—SK—SB. *(Private growers only can exhibit here).*

N.B. In June and July only. If Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to compete

HH Helichrysums. CE—LS—SK

II Kalosanthes; in sixes. *(In July only.)* LS—SK—SB

KK Statices; in collections of six species. CE—LS—SK

LL Ferns, in collections of 10 hothouse species of very superior cultivation. LS—SK—SB.

N.B. To be shown in July only.

MM New Hybrid Plants, exclusive of Roses, Rhododendrons, Azaleas, and Garden cross-breds, such as Gloxinias and the like. SG—CE—LS

N.B. It is certain that much may be effected by hybridising plants in common cultivation, such as Lilacs, Honeysuckles, &c. &c. This class will be judged by the Society's officers.

NN Epacrises; in sixes. *(In May only.)* CE—LS—SK

OO Newly introduced or extremely rare ornamental plants in flower; not introduced by the Society. SG—CE—LS

N.B. These Medals will be awarded by the Society's Officers, and not by the usual Judges. Exhibitors will particularly observe that none but new or rare plants can be exhibited under this letter. *Nothing will be regarded as new which has been exhibited in the Garden or Regent-street on a previous season*, nor garden seedlings, hybrids, nor domesticated varieties of any kind. No prizes will be given to New Plants which have been introduced through the Society.

PP Miscellaneous subjects, exclusive of Ferns. SK—SB—C

N.B. Exhibitors under *P P* will not be thereby *entitled* to a pass ticket. Cockscombs, Heartsease, Hydrangeas, and bouquets, together with all plants for which separate prizes are offered as single specimens, are altogether excluded.

QQ Seedling Hybrid Pelargoniums, of entirely new crosses. SB—C

N.B. Every seedling must be shown singly, and marked with the name it is to bear. The same seedling cannot gain a prize more than once in the season. The plants must be shown in pots, and not in a cut state.

RR Alpines; in twelves. SK—SB—C

SS Cinerarias; in sixes, in 6-inch pots. *(In May only.)* SK—SB—C

N.B. Prizes will only be given to extremely fine specimens.

TT Hardy Heaths; in sixes. SB—C.

UU Seedling Florists' Flowers.

A tent will be provided for the exhibition of these; but no medals will be awarded; the Society not wishing to express any opinion upon the merits of seedlings.

FRUIT.

Market Gardeners, or Growers (not Fruiterers), in the habit of supplying the Market, and Private Gardeners, exhibit independently of each other. Fruiterers are not allowed to exhibit at all. No duplicate awards can be made in any case whatever, except in P. No person can take more than one award in each letter, except in B, E, K, M, O, P.

N.B. All Fruit must be sufficiently ripe for Market, WELL COLOURED, and PROPERLY NAMED by the Exhibitor, as far as practicable; if the contrary, it will be disqualified.

A Peaches or Nectarines in pots. SK—SB—C

B Pine Apples, in single specimens:—

1. Queens. LS—SK—SB.
2. Envilles, Cayennes, Sugarloafs, Black Jamaicas, Otaheites, &c. LS—SK—SB
3. Providences. LS—SK—SB

C Grapes in pots; three specimens to be shown. CE—LS—SK

D Grapes, the heaviest single bunch of any kind. SK

E Grapes; in three bunches for private growers, and six bunches for Market Gardeners:

1. Black Hamburgh, Black Prince, &c. LS—SK—SB
2. White Muscadines, Sweetwaters, &c. LS—SK—SB
3. Muscats. LS—SK—SB
4. Other sorts, distinct from the foregoing. LS—SK—SB

F Peaches, in sixes. SK—SB—C

G Nectarines, in sixes. SK—SB—C

H Apples and Pears of the previous year. SB—C

I Figs, in sixes. SB—C

K Cherries, in dishes of 1 lb. each:

1. Black. SB—C 2. White. SB—C

L Strawberries, in pots; six pots to be shown. SK—SB—C

N.B. They must have grown in the pots in which they are shown.

M Strawberries, one dish each:

1. British Queen, &c. SB—C
2. Keens' Seedling, &c. SB—C

N Oranges, Citrons, &c., in pots; no one to show more than one pot. LS—SK—SB

NB. This class of Fruits is excluded if gathered.

O Melons, one specimen each:

1. The heaviest. SK
2. The best flavoured. SK—SB—C

P Other kinds of fruit of peculiar excellence and value.

N.B. The medals under this head will be given at the discretion of the Society's officers.

WANTED, at HALF-PRICE, the GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE, a week after publication.—Address E. P., Nash's Newspaper-office, Upper Weymouth-street, High-street, Marylebone.

HENRY BAKER, INSTRUMENT MAKER TO THE BOARD OF ADMIRALTY, 90, Hatton-garden, London, has invented a new INSTRUMENT for giving an ALARM in case of overheating Greenhouses, Malt-kilns, or Dwelling-houses; it can be adjusted to call attention at any temperature desired. As a Fire-alarm it is a desirable Instrument, and when once fixed requires no attention to keep it in order, price 4l. 4s. Superior Achromatic Microscopes 3l. 13s., 5l. 15s., 9l. 10s., and upwards. Hotbed Thermometers, to penetrate 18 inches, 15s., 18s., 25s. A Book of Prices and description of Microscopes, Telescopes, Barometers, and Thermometers sent on receipt of two postage stamps. Every Instrument warranted.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm-servants, or unpractised persons. Price 1d. per square foot. CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel. Samples and Testimonials sent by post on application to CROGGON and Co., 2, Dowgate-hill, London.

PARIAN CEMENT, for internal Stucco; instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, CHARLES FRANCIS and SONS, Nine Elms, London.

TODD'S PATENT PROTOXIDE PAINT at a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it. Manufactured by CHARLES FRANCIS and SONS, Cement Works, Nine Elms, London.

FORD'S EUREKA SHIRTS.—"A comfortable fitting Shirt is a desideratum long wished for. The Public only require to be made acquainted with the Establishment of Mr. FORD, of 168, Strand, and try his Eurekas, to be convinced of the many advantages gained in appearance and comfort by wearing those made at this celebrated Establishment."—*Medical Gazette, May 26, 1848.*

Six very superior Shirts for 30s.; also all the new Patterns in Coloured Shirts, six for 27s. Detailed Catalogues, with Patterns and Directions for Self-measurement, sent post free.—RICHARD FORD, 168, Strand, London.

HERBARIUM FOR SALE.

TO BE DISPOSED OF, in excellent condition, and accurately arranged, A HERBARIUM, consisting of about 2000 species, with 3 or 4 duplicates, on an average, of each. It contains a great portion of the British Flowering Plants and Ferns (the deficiencies being chiefly very common species), and many interesting plants from Germany and the Swiss Alps. For further particulars, apply to ROBERT M. STARK, Seedsman, &c., 1, Hope-street, Edinburgh.

METCALFE AND CO.'S NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose—1s. An improved Clothes Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes of improved graduated and powerful friction. Velvet Brushes which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BENGOUGH, and Co.'s Sole Establishment, 130 a, Oxford-street, one door from Holles-street.

CAUTION.—Beware of the words "From Metcalfe's" adopted by some houses.

BECK'S PELARGONIUMS, and the best varieties of other raisers.—12 of the following sorts, including the box and carriage to London, will be sent out for Two Guineas, well rooted in 3-inch pots, and ready for an immediate shift into a larger size. Orders will be booked, and correspondents informed when the plants are ready, when remittances may be made by Post-office order on Brentford: Aurora, Blanche, Centurion, Cracker, Forget-me-not, Ariel, Cassandra, Cavalier, Crucata, Gustavus, Guillelma, Grandiflora, Junit, Negress, Rosamund, Sundown; or 9 of the above, and Hoyle's Crusader, or Topping's Brilliant, or Foster's Victory.

The above selection, well cultivated, will make first-rate exhibition plants. A Descriptive Catalogue, including the seedlings of 1848, may be had on application to JOHN DOSSON, Worton Cottage, Isleworth.

Monthly directions for their culture will be found in the "Florist and Garden Miscellany," published on the 1st of each month, and to be had of all booksellers, under the title of "Beck's Florist." This work contains one coloured plate, one or more woodcuts, 24 pages of original matter, a Lady's Page, and a Calendar of Operations, supplied by eminent cultivators.

"Too much can scarcely be said in favour of the continued excellance of this work."—PROF. LINDLEY, *in this Paper, April*, 1849.

NEW HARDY HYBRID RHODODENDRON.
RHODODENDRON CAMPANULATUM SUPERBUM.
(Figured in Paxton's "Magazine of Botany" for this month.)

THOMAS JACKSON AND SON are now sending out good plants of this handsome Rhododendron, at 21*s.* each. It was exhibited at the Horticultural Society's Exhibition at Chiswick, on the 5th of May, and awarded their Knightian Medal. The Editor of the *Gardeners' Chronicle*, in his review of that Exhibition, notices it in the following terms: "Of Rhododendrons, the best was a seedling from Messrs. JACKSON, of Kingston. It is a good truss, the flowers individually large, of a pure white, with the exception of the upper petals, which are deeply and distinctly spotted with crimson; a beautiful variety." Discount to the Trade.

Nurseries, Kingston, Surrey, Aug. 18.

THE BLACK PRINCE STRAWBERRY.—Fine strong Plants of this useful STRAWBERRY will be ready for delivery on the 2d of September. Price per 100, 15*s.*; 50, 10*s.*; 25, 5*s.* This Strawberry possesses more good points than any other variety in cultivation; it is hardy, very early, prolific, well flavoured, and a first-rate preserver. It stands travelling well, and if the blossoms are picked off it in Spring, an abundant crop may be obtained from it in Autumn. For Dr. Lindley's opinion, see a leading article in the *Gardeners' Chronicle* at page 483, 1849. It is also highly recommended by Mr. Marnock, Mr. Myatt, Messrs. Henderson, Mr. Ingram, of Frogmore, Mr. Malleson, of Claremont, Mr. Beaton, and Mr. Snow, gr. to Earl de Grey. CUTHILL'S "Treatise on the Strawberry, Potato, Cucumber, Melon, and Lisianthus," price 1*s.* Post-office Orders on Camberwell.—JAMES CUTHILL, Camberwell, near London.

PELARGONIUM—"FOQUETT'S MAGNIFICENT."—The raiser intends sending out plants of the above, well established in 4-inch pots, in the middle of October next, price 2*l.* 2*s* each, hamper and package included. Terms, prepayment; and as the stock is limited, no discount can be allowed. Orders will be executed in strict rotation. Post-office orders payable on the Post-office, Newport, Isle of Wight.

The well merited encomiums passed on this flower by "The Florist," "Floricultural Cabinet," and *Gardeners' Chronicle*, render any further comments unnecessary.—Address, MAJOR WILLIAM FOQUETT, Shide House, near Newport, Isle of Wight.

NEW FUCHSIAS AND VERBENAS.

GEORGE SMITH begs to offer the following NEW FUCHSIAS, at 21*s.* per dozen, viz., Story's Elegantissima, Newtoniensis, Heben's Gem of the West, Smith's Lord Nelson, Turvill's Fire King, Elegance, Shylock, Gem, Miellez' Perfection, Julia Grisi, Gazelle, General Negrier, Chateaubriand, Keyne's Admirable, and Tiley's Sir Charles Napier. VERBENAS: Smith's Psyche, Anna Burgundy, Village Maid, Napier's Monarch, Queen of the French, Duchess, Advancer, Beauty of Hornsey, Duval, Devear, Painted Lady, Princess, War Eagle, Lady Russell, Giantess, Optimus, Grey's Roses, Wyness's Princess Alice, Young's Morning Star, Royal Purple, Brilliant, Ivery's Attraction, Union Jack, Epps' Eclipse, Eppell, Tiley's Criterion, Barker's Lord of the Isles, Duchess of Northumberland, Eyebright, Redworth, Junius, Lady Kerr-on, Miss Thurold, Miellez' Louis Napoleon Bonaparte, Ariadne, and Malvine. The above 12*s.* per doz., 24 varieties for 21*s.*—HELIOTROPES: Grisan and Souvenir de Liege, 1*s.* 6*d.* each.—PETUNIAS: Berryer, Louis Napoleon Bonaparte, La Reine, Model, Lady of the Lake, and Prince of Wales, 1*s.* each.—CHRYSANTHEMUMS: Miellez' Saturne, Madame Miellez, and Pomponette, 1*s.* 6*d.* each.

The above, on the receipt of a post-office order, will either be sent post free or by hamper, with plants to compensate for carriage.—Tollington Nursery, Hornsey Road, Islington.

CUPRESSUS FUNEBRIS, OR FUNEBRAL CYPRESS.

MESSRS. STANDISH AND NOBLE, NURSERYMEN, Bagshot, have the honour to inform Noblemen, Gentlemen, and the Public, they have been successful in obtaining seeds of the above beautiful weeping Cypress from the north of China, and are now ready to send out fine healthy seedling plants at 21*s.* each.

This splendid Tree is a great favourite with the Chinese, and in the north of China used by them principally for planting in their burial grounds, where it often attains the height of 60 feet, and forms one of the most beautiful Evergreen weeping trees known to Botanists. It was first discovered by Lord Macartney and Sir Geo. Staunton, in the great Vale of Tombs, in the north of China, and dried specimens were brought home by Sir George Staunton, who, in Lord Macartney's mission or voyage to China, thus describes the Vale of Tombs and the plant:

"The Lake formed a beautiful sheet of water about three or four miles in diameter, and surrounded to the north east and south by an amphitheatre of picturesque mountains; upon the summit were erected pagodas, one of which attracted particular attention. It was situated on a bold peninsula that juts into the lake, and was called the Lui-Soong-ta, or Tower of the Thundering Winds. It is said to have been built in the time of the philosopher Confucius, who lived three centuries before the Christian era. In the Vale of Tombs the variety of monuments is almost infinite."

"These monuments of departed greatness are surrounded by trees—such as different species of the Cypress, whose deep and melancholy hue seems to have pointed them everywhere out as well suited for scenes of woe. The churchyard Yew did not, however, grow there, nor was it observed in any part of China; but a species of weeping Thuja, or Lignum vitæ, with long pendant branches, unknown in Europe, overhung many of the graves."

In the plate of the Vale of Tombs, the weeping tree in the foreground near to the Tower of the Thundering Winds is this plant, and it has since been proved by botanists to be the weeping Cypress. Messrs. STANDISH and NOBLE obtained, last winter, from the north of China, dried specimens and cones of the above tree, which were forwarded to Dr. HARDWICK and Sir WILLIAM HOOKER, who at once pronounced them to be the famous Funebral Cypress (see leading article in the *Gardeners' Chronicle* of the 21st of April last).—Messrs. S. and N. can also supply 1-year Seedling Cryptomeria japonica at 1*s.* 6*d.* per plant, 15*s.* per dozen, or 8*l.* per 100; 2-years Seedlings at 2*s.* 6*d.* per plant, 28*s.* per dozen, or 12*l.* 10*s.* per 100.

HOYLE'S CRUSADER GERANIUM, 7*s.* 6*d.* each, in October.
ARNOLD'S VIRGIN QUEEN, 7*s.* 6*d.* each in October.
Two gems of the season; or a plant of each for [illegible].
Apply to WILLIAM E. RANDLE and Co.,
Nurserymen, Plymouth.

The Gardeners' Chronicle.

SATURDAY, AUGUST 18, 1849.

MEETING FOR THE ENSUING WEEK.

COUNTRY SHOW.—Thursday, August 23: Warwickshire Horticultural.

WE alluded last week to the importance of studying the causes of DISEASE AMONG PLANTS with much more care than has hitherto been given to the subject; and we referred to incidents that have occurred in courts of law which strikingly illustrate the necessity of the question being reduced by men of science to fixed principles, which may be readily understood by everybody. A recent trial at the York assizes deserves mention with reference to this great public question.

In the cause of ATHA *v.* SIMPSON, tried lately before Mr. Justice PATTESON, the plaintiff, residing in the village of Walton, near Wakefield, claimed damages for injury sustained by his trees and crops from the deleterious matter which escapes from the chimneys of the defendant's soap and alkali works. It was proved that trees near these works were dead and dying, that garden crops were no longer yielded as they had been, that hay was of bad quality where it formerly was good, and so on. Labouring men and others swore that sometimes, especially in damp, heavy weather, the stench from the works was so offensive as to make them sick; and from other evidence it appeared that the smell rendered sitting-rooms uninhabitable above a mile from the chimneys; the plaintiff's property was close to the works.

On the other hand, it was contended that the injury remarked around the works was owing to what were called "natural causes," that is to say, to something with which the works had nothing to do. One witness in particular, from Huddersfield, referred the damage to insects, old age, and other such causes. Another seems, from a newspaper statement, to have imagined that wet tenacious soil must have caused the injury. It also appears that "a number of branches from Apple trees and Gooseberry bushes, grown close to the plaintiff's, and presenting some fine looking fruit, were placed before the jury, as a proof of the absence of injury from the defendant's works." We quote from the *York Herald*. The judge, in summing up, seemed unable to reconcile testimony so conflicting and opinions so directly opposite. His lordship also said that there seemed to be an inconsistency in the plaintiff's case, in this respect; that evidence went to show that active injury had been withdrawn in October 1846, yet the fruit was sworn to have been worse in 1847 and 1848 than in 1845-6; and he left the jury to form their own conclusions. The jury, which was special, and which had viewed the premises before the trial, gave a verdict for the defendant.

Had this been the decision of a common jury it would have excited no surprize; it would have only added one more case to that long list of verdicts against evidence with which the jury system is chargeable. But the 12 men who tried the cause in question were of a better description, and from their position in life should have been able to distinguish the truth, notwithstanding the difficulties which are said to have surrounded it. That they decided to the best of their judgment there can be no doubt; that they decided wrong is equally certain, as we shall proceed to show.

The defence was three-fold. First that the injuries in question were derived from "natural causes" with which the defendant had no concern; secondly, that the chimneys said to be the centre of mischief did not commit any injury, as was proved by the healthiness of vegetation near them; and thirdly, that they could not have produced any injury, because since October 1846 no noxious vapours *could* have escaped from them, as was proved by three scientific witnesses. We will take the two last arguments first.

It is perfectly true that some of the vegetation near the chimneys was to all appearance healthy. This was more especially the case with a field of Wheat, which almost reached the works themselves. Witnesses found Roses in the hedgerows, with no trace of injury. Elms and Sycamores near the works, Hazel bushes, and other plants, were as healthy as usual. And of the Ashes, Oaks, and others in a state of decay, some near the works were more healthy than others at a greater distance. We can easily conceive that such facts as these would have much weight with an inexperienced observer; and yet they are worthless in the case at issue. They belong to the class of negative evidence. Plants, like animals, have different powers of resisting disease, partly because of their proper nature, partly because of special constitutional vigour. In the case in question, whatever deleterious influence may have been exercised by the vapours proceeding from the defendant's chimneys must have taken effect through the skin of the plants exposed to them. Corn, like Grass, is provided with a flinty skin, which is not easily acted upon by acrid vapours; and therefore a corn-field or Grass-field may sustain no injury, although half the vegetation near it should perish; just as an Italian greyhound would be destroyed by passing through a fire which an armadillo could not feel. In fact, corn crops are not likely to be injured by alkali works, unless the acidity of the vapour is excessive, or unless they are exposed to it when very young and tender. So of Grass land; if the jury drew their conclusion from what they saw of the plaintiff's hay, the verdict they gave would have been inevitable; its quality as hay may have been deteriorated by the filthy smoke which settled down among it, but the evidence did not show that the quantity was diminished by the action of the chimneys. As to Elms, Sycamores, and some other trees, it is well known that they suffer little from acrid vapours; why is uncertain—the fact is undoubted; perhaps because their surface is securely guarded by some peculiarity of structure. The skin of the Rose and Elm is very hard, of the Hazel hairy, of the Sycamore thick and tough. On the other hand, individuals of the same species will escape when others die: and this is one of the most general of all facts around alkali works, when the mischief first begins to take effect. Individuals of the same kind of tree leaf at very different periods; in a row of Horse Chesnuts a difference of a full fortnight is observable, and the same is true of the Ash, the Oak, and all our common trees. One variety of the Walnut will hardly leaf sooner than Midsummer. It is needless to say that trees in young leaf are far more susceptible of injury than those whose buds are still closed; and that a current of deleterious vapour passing over the latter may leave it uninjured, although it may be most injurious to the former. In addition to this, we have constitutional differences among trees of the same kind as we have among animals of the same kind. One man will resist the miasma of a marsh or a fœtid drain, while another will sink under it. To say that no trees die from the effect of deleterious vapour, because some in the same field are uninjured, is to affirm that no persons are attacked by cholera in consequence of exposure to putrid exhalations, because some persons exposed to putrid exhalations escape from the attack of cholera.

A second argument on the part of the defendant was, that, as no noxious gases have escaped from his chimneys since October, 1846, no injury can have been sustained since that time. How any gentlemen can undertake to affirm that nothing ever escapes, because they find nothing escaping when they inspect such works as these, we cannot pretend to explain. Nor is it necessary to do so if it can be shown that the diseases observable are to be traced to the manufacturer's works, as to a common centre. It was proved in October, 1847 (12 months after acrid vapours were said to have been stifled), that recent injury had been then inflicted upon the vegetation round these chimneys. Evidence, produced on the late trial, also established conclusively that the atmospheric influence, of whatever nature it may be, is still at work; and this, we submit, is of more value than the confident reliance of gentlemen upon the soundness of flues, chimneys, and mechanical contrivances, and especially upon the care of workmen. Next week we shall show what that proof was; and examine the value of the opinion, that the damage complained of was referable to "natural causes."

WHEN we recently took occasion to call the attention of our readers to certain principles of Fine Art, we purposely avoided any direct interference in the particular question by which our observations were called forth, and we did so in the belief that there is, after all, some truth in the much abused maxim, "De gustibus," &c. It is quite certain that, however competent and accomplished in Art many of those may be who profess the art and science of ornamental gardening, there is also a far greater number engaged in it, either incidentally or as amateurs, to whom the familiar elucidation of sound principles would be far more useful than any attempt to decide an isolated question of taste.

The stronger the innate love and inherent feeling for Art, the greater the necessity for giving it a right direction. The more active and exuberant the fancy, the more will it require regulation. It has been truly said by one who was himself a genius of the highest order in Art, that "Rules are not fetters to men of genius, they are fetters only to men of no genius." In artistic training, as in every kind of education, example should ever go hand in hand with precept. REYNOLDS says of that greatest of all

names in Art, "the divine Raffaelle," that the works of "Michael Angelo and all Rome were a school of Art to him," and he expatiates largely on his obedience to rules of Art.

In almost every branch of Art, excepting that of ornamental gardening, the student is amply provided with graphic examples which serve at once as models of style and illustrations of principles; the architectural student is especially well cared for in this respect. Of what direct and immediate utility would a series of studies from nature be, consisting of garden subjects! They might exhibit not only the most characteristic and instructive points of view of the most celebrated gardens of Europe, but detached groups also of architectural embellishments combined with plants and water, or even of isolated accessories of whatever kind, so that the principles of Art are exemplified by objects of appropriate character and artistic beauty. One of the most instructive illustrations of this kind with which we are acquainted is a sketch from Nature by the elder Cox, consisting of a mass of Hollyhocks with a few Sunflowers, and part of a gate pier. All the pictures, and prints after them, of Van Huysum, Van Os, Rachel, Ruysch, and others of the old flower painters; and the works of Hunt, Holland, and Bartholomew, amongst the moderns, are instances of works of Art directly applicable to our purpose.

All the pictures of garden scenes by Watteau and Lancret, and many of a similar character by Stothard and Turner, are full of teaching, whether as regards appropriate character of design, or beautiful and correct composition, when studied with reference to the more abstract consideration of lines, forms, and colours. It is, moreover, greatly to be desired that no great horticultural establishment, whether public or private, should be without its "Library of Fine Art," in which might be found such works as that of Burnett on "the Education of the Eye," his threefold work on composition, light and shade, and colour; the whole of the literary works of Reynolds, or at all events the "Lectures;" and, notwithstanding they would be "caviare to the multitude," we would gladly include those extraordinary but truly valuable works of the "Oxford Graduate." We trust the day is not far distant when groups of garden plants will be tested by the same principles of Art, and considered amenable to the same kind of criticism, as a picture, a statue, or any work on which the artistic faculties have been exercised. But to effect this change we must look to artists, not to gardeners. *M.*

ON THE CLASSIFICATION OF GARDEN ROSES

We have always doubted whether the present classification of Garden Roses was acceptable, for after endeavouring to understand the particular points which are made to distinguish certain sections, we confess ourselves at fault, and we believe that if there was prepared a catalogue which should comprise fewer divisions, and more striking and obvious features only, the public would better comprehend the distinctions, and feel much more at home in the Rose garden. For instance, there are some distinctions that anybody can see.

The Moss Roses, which nobody can mistake, form a section already, and although there are several very distinct habits among them, a child can always understand the difference between a Moss Rose and any other kind.

The old China Roses, both the pale and the crimson, have long been familiar to every cottager, and indeed to all classes. The great characteristic of the China Rose is continuous growth and constant blooming, the most acceptable of all qualities; how many cottage fronts are covered with Roses for the greater part of the year! And what is there more striking as an ornament? If, then, there happen to be Roses of all colours with the peculiarity of the China, that is, to continue growing and blooming all the summer, and indeed, we might add, great part of the spring and autumn, what can be a better distinction? The least informed class of cultivators would recognise the distinction which we would have applied to all Roses with the habit of the China. It is perhaps to be regretted that the China Roses have not the richness of perfume which the summer Roses possess, but as far as the eye is to be pleased they are the most valuable of all the Roses in the garden. There is a very marked distinction also in the China kinds, and in all that we would have classed with them, which is, the smoothness of their bark; we do not mean that they are without thorns, but the bark is bright and smooth between the thorns; and therefore, premising that the Moss Roses are classed together as one family, we would suggest that all the continuous bloomers with smooth barks should be classed as China, under any other name that the Rose grower may choose, but China would be understood.

We now come to a family or rather a description of Roses that is perhaps best named Summer Roses, by which distinction we would comprise all those Roses with rough bark and only one season of bloom, June or July. These Roses are seldom in fine order more than a fortnight, and from the first to the last of the bloom is rarely more than three weeks or a month. Everybody would understand such a distinction. "The Rose in June" was a familiar figure when we scarcely looked for Roses more than one month in a year, but the summer Roses form but a small portion now of the large family of Roses, and many dealers have altogether discarded the greater number of them, in consequence of the better varieties which have been raised with equally fine flowers and more prolonged season of blooming. Still, the summer Roses boast of a few noble favourites.

Perpetual Roses, so called, have a very distinct feature, which cannot be mistaken. They bloom about the period of summer Roses; when the flowers decay they make new shoots and bloom a second time, and if the season be favourable they will even make third shoots and flower once more. The difference between these and the China, or continuous bloomers, is, that the China Rose does not leave off growing, unless it is allowed to perfect its seed, but continues growing and blooming so that there is always some flower; whereas the Perpetuals, so called, flower all at once, rest all at once, and, with new shoots, make a second season of flowering all at once; rest again, and perhaps make a third season, in which the flowers are as abundant as ever. If, however, the pods of any are allowed to go to seed, or rather to perfect themselves, the plant is checked, and like the common China, which is as free a grower as any of the whole family, they will make a complete stand, and discontinue growing until the seed pods have swelled, when they cease to draw upon the plant, and it will commence growing again, and, as a matter of course, flowering also.

We have thus pointed out several distinctions which everybody can understand, but when we find in a catalogue Bourbon Roses, French Roses, Damask Roses, Provence Roses, and Tea Roses, each comprising many varieties, and then Hybrid Bourbon, Hybrid Provence, and many others, of which none but the extensive cultivators appreciate the differences, we cannot but wish that the sections were reduced to such distinctions as we could all understand; we think this the more necessary, when we find the dealers themselves divided as to which section certain Roses claim, and one placing particular varieties in one section and a second placing them in another. Francis, a dealer, in Hertfordshire, publishes a catalogue, in which he gives first, Roses that bloom in May, June, and July; and follows with, second, those flowering in August, September, and October: but unless this were done exceedingly well, it were better let alone. In Part I., for Roses blooming the first three months, we have Moss Roses, Provence, Gallica or French, Hybrid Provence, Hybrid China, Hybrid Bourbon, Alba or Belgic, and Damask. In Part II, Roses flowering in August, September, and October, we have Damask, Perpetual, Hybrid Perpetual in two sections, Bourbon, China, Tea-scented China, Noisette, Rubifolia, Austrian Briars, and Sweetbriars. It will be seen at once by the families which are placed in the first and second parts, that it is not much of a guide. Everybody knows that the China Rose blooms long before August, September, and October, and that there are Hybrid Chinas which bloom long after July. We should have greatly approved a classification of any kind that the public could understand, but we object to the splitting of the family into sections that are hardly distinguishable the one from the other. Having, however, suggested four great divisions—the Moss, the China, the Summer Rose, and the Perpetual, with great distinctions that a mere novice can appreciate, we may suggest a fifth—the Noisette, which should be understood to mean Roses flowering in bunches; and a sixth, which may comprise all those whose habits are singular. What portion of the many Rose growers who are not dealers can tell us the distinction between Damask and Alba? particularly when they see in the family a section of Rosa Alba, some of them described "bright rosy crimson," "fine globular pink," "very double rich rose colour," and so forth; and in the section or family of Damask Roses, others described as "splendid white, pink centre," "pure white, superb," "crimson shaded with fawn." We venture to say very few see the sense of calling a white Rose damask, or a damask Rose white. Those half dozen sections which we suggest would require subdivisions as to height—merely dwarf and climber. Thus we should have Moss Dwarf, Moss Climber, China Dwarf, China Climber. Nobody could mistake or doubt distinctions like these; and if it were at all necessary to swell the number of sections, these may be again divided according to their months of blooming, because every one could understand that also. We observed at the Chiswick show scores who searched in vain for some distinguishing difference between Bourbon, Hybrid Bourbon, and China, and we felt the force of the objections to the present classification more than ever. It is for the multitude that we should provide facilities. Many are deterred from beginning a pursuit by the fear of committing themselves, and the more difficulties there are thrown into the way of their acquiring proper knowledge, the less people are inclined to encounter them. Who cares one farthing whether a new Rose is called a Hybrid Perpetual or hybrid anything-else? Why should it be called a hybrid at all? If it be like a China, let it be called a China If it be a Perpetual, place it among Perpetuals, and not for the turn of a leaf or the size of a thorn make distinctions without differences. Be it, however, understood that we are not so wedded to one plan as to be anxious for its adoption, any other would please us quite as well if it were but understandable by the mass. We are quite sure that as they are at present classified, nobody can thoroughly understand the distinctions, very few can see them, and the dealers themselves give us very good proof that they are not agreed among themselves at all times. We would rather Mr. Rivers, Mr. Lane, Mr. Paul, or any other of the Rose cultivators, would undertake a revision. All we require is that there shall be no ideal classes; that there shall be nothing merely nominal; that the classes shall be distinct from one another in some positive feature that everybody may understand. At present, for want of some better distinction, we would recommend strongly some Rose growers to divide them into—

1. Moss Roses, about which there can be no misunderstanding, describing their colour and habit.

2. China Roses, which should comprise all the Bourbons and Teas, and other smooth-barked Roses that have the original China habit of continuous growing and flowering; subdivided into dwarfs and climbers.

3. Summer Roses, being, without exception, all those which have but one season of bloom; subdivided into dwarfs and climbers.

4. Perpetuals, so called (for we cannot but think it a bad name for them), comprising those varieties which alternately bloom and rest, and therefore, with intervals between, give two or three distinct seasons of bloom; subdivided if necessary into dwarfs and climbers.

5. Noisettes, comprising Roses which bloom in bunches of five or more; and these must be subdivided into dwarfs and climbers.

These five sections would take in hundreds of the families not included by name. Hybrid this, or hybrid that, is either a continuous grower and bloomer like a China, or a mere summer Rose, blooming once, or it is an intermitting bloomer like a Perpetual; and whichever it is, let it be placed in its right section. The Briars are a very distinct family, but they would assuredly rank among summer Roses; then we have Microphylla and many other distinct things, but they will range under one of the five classes described; but there may be some which do not, and therefore No. 6 should comprise those Roses of singular or particular habit not comprised in either of the before mentioned classes, subdivided into dwarfs and climbers.

With what facility could we then choose our Roses! The colours being described, we need only seek the one we wanted among the dwarfs or climbers required. A single mark against the name would suffice to inform us whether the flowers were large or small, and we were going to say double or single, but we hope the day of single and semi-double Roses has gone by. This, however, belongs more peculiarly to another portion of the subject, in which it is necessary to consider what are the qualities to be most appreciated in a good Rose.

But we may be told that to those who study and understand the habits of Roses the present catalogues are distinct enough. Suppose it were so; what answer is that to the fact that there are hundreds who do not understand for every one who does? A cultivator of half a century may tell us that all these distinctions are very easily detected, and that the hybrid China is a seedling from the China, hybrid Bourbon a Rose reared from the Bourbon, and so carry us all through their catalogues, to explain to us the differences that separate the sections; the explanation might even be satisfactory to us; but in seedlings there is such a departure from original species, and the latter so run into each other's peculiarities, that it is idle to keep up the forms. We defy any ordinary observer to point out or to detect the difference between a Bourbon, a China, and a Tea Rose, if they only see them produced in flower at a show. They may observe a shining bark and leaf in all three of them; they see fine flowers, and in good order, in all three; but it is for the million that we want the thing simplified as much as possible. We have had a collection of 48 Roses, very beautiful in their way, and some are called hybrid Bourbon, others hybrid China, and others again hybrid Perpetual; they have all bloomed, and are all out of bloom again. We see nothing strange in the matter; they might all have been summer Roses for all the bloom there was a month after they began to flower; and, until we see what they mean to do, we shall be no wiser for the distinctions marked on the labels. We are incapable of appreciating anything but the flowers and the season of blooming; and much as we admire Roses in general, we should like to know how to order what we require, so that we might calculate a little upon what we should have. We are not sure that we should be right in ordering China when we require continuous growers; nor are we at all confident that certain other sections do not comprise varieties with that high qualification; but we do know that the great characteristic of the China is that it continues growing and blooming the greater part of the year, and we want a list, or family, or section of plants of that description only. The Moss Roses are comprised under one head only in some catalogues; and had the silly system of splitting hairs been adhered to even in Moss Roses, some might have been called hybrid this, and some hybrid that, according as they exhibited an approach to the habit of some other section.

We wish it to be inferred from this explanation that we are anxious to divide the Roses into such sections as would be practically useful to the multitude; that is, which the multitude could understand. We do not care if there must be a family of hybrids, only we doubt very much whether it would be advisable, because they would comprise many habits, many seasons of blooming, and be otherwise puzzling to the amateur. All we care to enforce is the necessity of simplifying the Rose

catalogue, so that a person who wanted a dozen, or a man who desired to form a complete Rosary, should be able to procure Roses to bloom how and when he liked, and short or tall in growth as he pleased; and be it remembered that there can very well be spared two-thirds of those at present in the extensive trade catalogues, for we would have everything that was not worth a place thrown out of cultivation.—*Crito.*

DISEASES OF PLANTS.

(*Continued from p. 500.*)

Genus XIX. Desiccation (Sacherecio).—In clayey soils and others subject to crack with the heat of the sun, young plantations of trees, and even full grown trees of those kinds which spread their roots horizontally near the surface of the soil, are liable to perish in the following manner. The small fibres of the roots first dry up at their extremities, an example soon followed by the youngest branches of the head. This evil is very difficult to cure, but may be easily prevented. It is in most cases fatal. It is a common complaint in some localities that so many plantations which appeared to prosper in spring are hastening to an inevitable death. It will be seen that this is almost always the fault of the cultivator, who by avarice or by carelessness, rather than from ignorance of the remedies, does not apply them. Not only trees but herbs also perish by this desiccation, and in the latter case the disorder is more fatal, as it is more difficult to perceive it in time. It more especially affects bulbs. Hence I distinguish two species.

First Species. Desiccation in Trees.—Poplars, Willows, and Elms are those which I have had the best opportunities of observing when attacked by desiccation. In young plantations of them, as I have observed, the roots dry up first, but, as far as I can perceive, very slowly. When the symptoms first appear in the branches, although attention is paid at the first moment of their appearance, the tree is already lost. I have seen a Poplar of which the lower half was already dried up, whilst the upper portions still gave signs of a vegetation not even very languid. This circumstance may easily lead into error if, after a severe drought, the roots being already affected, a heavy summer rain comes on. For a moment the head of the tree resumes its verdure, but shortly it inevitably follows the fate of the roots.

Whatever means tend to prevent the sun's rays from penetrating into the ground, by the cracking of the soil or by its too light nature, will also tend to preserve the plants. Thus, if the soil cracks from its argillaceous nature, as is generally the case, it may be most advantageous to mix sand with it. This will prevent the too close cohesion of the earthy particles which causes the fissures. I have seen the best results produced by spreading litter about the stems of the young trees along the rows, to the depth of about half a foot. But in this case it becomes troublesome to have to remove it, when a summer rain comes on, in order to give the benefit of the moisture to the roots. I therefore prefer the method of cultivating some vegetables between the rows, especially French Beans. The surface of the soil is thus maintained cool and even, and then there is no danger of desiccation. If the disease is owing to the soil being too light, or as the saying is, rich in sand and poor in sap, then the principal remedy, without which indeed little else is of use, is to add to the soil some substance which shall mechanically cure the sterility arising from its friability. Marl, potter's earth, and other clayey or tenacious earths are the best. Some attentive cultivators, when about to form their plantations, if they perceive that the soil is likely to crack, deposit some loads of brick earth along the trenches, and mix it with the rest. Those who are in the habit of preparing the holes or trenches beforehand, and leaving them some time open, have the advantage that, the soil being mixed up for a longer time before it is covered over, is more completely impregnated by the beneficial influence of the atmosphere, and acquires a greater fertility. The young plants have then much less to fear from the pernicious ardour of the summer heats. In the districts best known to me, I can affirm that many more young plantations are destroyed by the summer heats than by the winter frosts. Those who follow that most injurious practice of mutilating the roots, and thus leaving their extremities too near the surface of the earth, suffer much the most.

The Vine is also subject to *desiccation*. Virgil, on the occasion of speaking of the mischief which the too powerful heat of summer may do to its roots, teaches us a remedy which appears to have been use in his days. Take some stones, he says, or large bricks, and put them round the stems of the plants; in this way you will defend yourself from the rage of the "sun-burned dog who rends the earth." I knew a poor Vine dresser who followed this advice, and covered his plants with earthen vessels, and had the patience to uncover them every time it rained.*

I would warn the reader against confusing this disease, caused by the action of the sun on a vigorous plant, with another which ends by the drying up of the roots, but much less rapidly, and even in the mildest summers. This is owing to the soil being not only light but deprived of nutrimentary matter, and is not even due to that cause alone; it belongs to that genus to which I have below given the name of *Languor*.

* A peasant in the neighbourhood of Montpellier paved his Vineyard with large stones, and the results appeared to be beneficial, although, giving way to the ridicule and taunts of his neighbours, he did not persevere in the experiment. [*Translator.*]

Second species. Desiccation of Bulbs. — Some bulbous roots begin to lose their outer coats and at the same time to fade. Their scales no longer show their usual lucidity, but assume a greyish colour, and almost at the same time they become wrinkled, and finish by dying. Hyacinths have shown to me this kind of desiccation, and I have lost a considerable number from it. This was the more annoying to me, as the disease gave no premonitory symptoms, but only showed itself at the time of taking up the roots, which I generally did in the first fortnight of June.

My observations, and the remedies available against this evil, prove to me that it is owing to an excess of heat. Bulbs are more especially affected by it when the spring has been hot; those are first injured which are at the surface of the ground, thence the first preservative is to take care in planting them that they are covered at least with two inches of earth. A market gardener informed me that in those years when the sun was excessively hot, and the means of irrigation deficient, he lost in a similar manner a great portion of his Onions and Garlic. On visiting them I found these bulbs reduced to the same state as my Hyacinths. It may be of use to florists, when their Hyacinths are beginning to fade, to examine the beds occasionally, and if they find the roots too near the surface, to add two good inches of soil over them, taking care, however, that it be not of a clayey nature. When they are taken up they must be carefully examined. If the desiccation has not reached the inside of the bulbs, they must be cleaned from the soil, and put to dry, not exposed to the sun's rays, but in an appropriate place, through which passes a good current of air. Some put them in the shade, under a layer of sand. The gardener must not neglect the most careful examination of the roots when he takes them up, because some one, at that time scarcely attacked by the disease, may show it at a later period, when there will be no longer a remedy, it having remained concealed under the outer scales.

VILLA AND SUBURBAN GARDENING.

Those who are desirous to excel in the culture of plants would now do well to look to the compost-yard. A reserve of different soils and manures, in a prepared state, is an important element of success; so important indeed is it, that all our best plant-growers look upon it as the keystone of good cultivation. A garden, however small, has generally within its limits plants from all countries, and from every variety of locality, requiring different mixtures of earths and manures to secure their healthy development. The cultivator of the Tulip, the Carnation, or the Ranunculus, knows that one kind of compost will not suit all three alike well. He secures therefore in his compost ground the soils and manures which, by the application of skill and judgment, guided by the experience he has gathered in his favourite pursuit, he applies with certainty and success. His compost ground is to him what the laboratory is to the chemist, although it has long ceased to contain any mystery.

The first article to get is loam of a turfy and sandy texture. The Epping or Wanstead Common loam is the best which can be obtained near London. This will be found very suitable for all purposes of potting, Melon or Cucumber culture, and indeed for nearly all kinds of gardening where loam is required. Peat is the next article he should obtain, and if carefully selected from Wimbledon Common, where considerable variety may be found, he will have the best in this country,—capital stuff for potting, or for American plants in the open ground. It should be laid up in a ridge, to remain in that position until the Grass and Heath with which it is covered is partially decayed. A little silver sand should also be kept in store, which will constantly be in request in potting any delicate rooted plant. The next article, of which a supply should at all times be at hand, is decayed manure; cowdung, when of sufficient age to use, will be found a valuable article in the culture of florists' flowers, and especially the Ranunculus, three years are required to decompose it and reduce it into a condition fit for use, consequently a stock of this is absolutely necessary. Stable-dung is sooner reduced into a usable state; a supply may be frequently obtained from the Cucumber or Melon bed, and if laid up into a heap it is soon fit for use. With these materials at command there is scarcely any plant either in the open ground or under glass but what may be cultivated with the greatest success, provided a little skill, which perseverance and application will very soon command, is brought into requisition. Indeed it must be admitted that application will beat skill alone; our most successful productions owe much more to the one than to the other. "E. O.'s" frame should be 6 inches higher at back than front, and 2 feet deep at the latter place for his purpose; perhaps a double box would be better, that is, one to set upon the other as the plants grow. Use rough plate certainly. Glass in the front will not be required. Get an estimate from two different parties, and that will prevent your being imposed upon. Show your *Chronicle*, with the woodcut, to your nearest blacksmith, and he will readily make you a pickfork. Divide your Phloxes when the bloom is over. Secure the leaf-mould by all means. It will benefit your stiff soil. *Pharo.*

ON THE ACTION OF CARBONIC OXIDE ON WEEVILS. By M. G. Barruel.

Some corn and pea weevils in their perfect state, plunged in impure carbonic oxide (obtained by the action of sulphuric acid on oxalic acid), became perfectly still, and to all appearance died immediately; but as creatures exposed to the action of carbonic oxide often revive when again exposed to air, if they have not been kept long enough in the gas, I kept the insects, with which I was experimenting, 48 hours before I exposed them to the air, when they were quite dead.

I tried the same experiment with the larvæ of the same insects, but, the gas being this time mixed with a little air, its action was not so sudden; the larvæ did not become perfectly still before they had been in the gas 10 seconds. Some fresh larvæ were afterwards placed with the first, and in consequence of opening the jar containing the gas, a quantity of air got in, but still the fresh larvæ became perfectly quiet in the same space of time. At the end of 24 hours I exposed them all to the air. At the end of two hours those that had been put in the jar last came to life; when placed in the same circumstances as the first they died.

It is easy then to destroy weevils in these two states, by placing them for a certain time in contact with carbonic oxide gas; I am at present endeavouring to find out the shortest time in which they can be killed with certainty in the way I have described. To ascertain whether the eggs of these insects were also affected by carbonic oxide, I took some of the soundest corn I could procure, divided it into two portions, one of which I placed, together with some corn containing stupified weevils, in an open flask, and the other portion, also mixed with some corn containing stupified weevils, in a jar of the gas. If any of these insects are produced in the first and not in the second jar the question will be decided. My experiments lead me to expect that carbonic oxide may be usefully employed in preserving corn, which is destroyed so quickly in consequence of the rate at which these insects multiply, that it is not possible to send it with any certainty to the colonies in any other state than that of flour, which heats and becomes nearly worthless after passing the tropics. *Comptes Rendus, July* 1849.

Home Correspondence.

Roots in Drains.—Having observed in the last number of the *Gardeners' Chronicle* an article on the subject of roots in drain pipes, I am induced to send you a curiosity of that kind, which will accompany this, and which, from the peculiar circumstances under which it was found, must I think set at rest at least one question, namely, that as to the sufficiency of any collars or other such devices to prevent these occurrences. It so happened that in the very week of the appearance of the above mentioned article, I was engaged in exploring a line of water pipes laid through a plantation, for the purpose of conveying spring water to my house. They had entirely ceased to perform this office for several years past; I think about five: but, for several reasons, had been left unexamined until now. The other day, however, I found it necessary to open them, and ultimately to break them up, since the obstruction, whatever it was, proved to be too extensive to enable us to remove it by replacing only a small portion; and, from the nature of the case, a partial renewal was not easy. The line was one of what are called pot-pipes, socketed and cemented, and no doubt when first laid perfectly closed throughout, as they were intended to be. But the material of the pipes does not appear to have been of the best description, and here and there some minute cracks had occurred sufficient to allow the water to ooze through when it reached them, though not very perceptible at first sight in themselves. It was this which convinced me that they could be no longer trusted; and I therefore broke them up. On opening them, a singular spectacle presented itself. The pipes through a very considerable distance were filled with roots, and in places so completely choked with them, in a matted mass of fibres, that they afforded a perfect mould of the interior surface of the channel, with its various joints and other inequalities. I now send you up the greater part of what was taken out, extending in length to between 40 and 50 feet (the main piece 43 feet), and I trust so carefully packed to enable you to judge both of their length and of their mode of growth. I have had tied up together, so as to mark them, the two ends of the main roots which formed the connection through the pipe with the plant beyond; and not the least singular part of the phenomenon is the extreme thinness of the flattened part which had passed through the substance of the pipe by one of the small cracks before described, and had there grown in breadth, though it could not in thickness, and formed the connexion between the outer and inner portions of the roots. It is hoped these will be found easily recognisable. How long this mass of underground vegetation has been growing it is of course impossible to guess; since it must depend, in the first place, on the date of the crack in the water pipe, and, secondly, on that of the first entrance of the original fibres through it. But the pipes are believed to have been laid down about 20 years ago, and for some time there was no reason to suspect any material obstruction. The entire stoppage of the water about five years since, seems to show that the roots must by that time have filled the pipes in some part at least; and, therefore, it is reasonable to suppose that they must have penetrated some time before; and, on the whole, probably it may be concluded that they are of about 10 years' growth. There is an uncertainty also as to the kind of tree to which the roots belong. The nearest was apparently a Larch; but these seem not to be Larch roots. There

are likewise young Oaks, Beeches, Ashes, and Sycamores within a short distance. But the most probable to me appears to be a Sycamore stump close by; and the roots appear to correspond with those of that description of tree. But the practical point to which I would draw your attention is this; that if tree roots, such as these, are able to insinuate themselves through so minute an interstice as a crack in a cemented pot pipe, and there keep up a sufficient connection with the exterior stem to increase in bulk to the extent here exhibited, it is a conclusive and unanswerable proof that no collars, and no care in adjusting the ordinary drain pipes can, according to the supposition hinted at in the *Gardeners' Chronicle*, secure them against such contingencies The conditions under which these occur are, as is there very justly remarked, at present involved in much mystery; but it is to be feared that drains will at all times be more or less subject to them, and must suffer obstruction from them unless where made of a size, like the old stone drains of former days, totally inconsistent with that economy in their construction which is so essential an element in the whole question. *W., Aug* 9.

Polypodium Dryopteris and calcareum.—I suspect there must have been some error in the case respecting these Polypodies, stated by Sir W. C. Trevelyan at page 454. Many persons can surely bear testimony to having cultivated these two plants for a greater or less number of years, without observing the least change in their respective characters. For myself, I can bear decided testimony to this effect. In my own experience I find P. Dryopteris to be more easy of cultivation than P. calcareum, and to have a much greater tendency to take possession of situations in which it is artificially planted; and I would therefore suggest the possibility, in the case above alluded to, of the "decided P. calcareum" having died out in the course of "15 years," and P. Dryopteris having been in the mean time introduced to the same artificial situation by some other hand. The fact of the supposed Cheddar plant "having spread considerably" is quite accordant with this explanation, for P. Dryopteris soon spreads extensively on all sides when placed in a situation at all congenial to it. I do not, indeed, forget that there have always been those who have maintained that P. Dryopteris and P. calcareum are not specifically distinct; but I fancy this view is now confined to a very few individuals. It can hardly be supposed that a botanist of the experience of Sir W. C. Trevelyan could have originally mistaken the species; nevertheless, I have myself sometimes seen doubtful specimens, both as regards the texture and composition of the fronds, but the glandular surface has in these instances sufficiently separated them. Possibly it was such an example which was originally planted for P. calcareum, and if so, of course the supposed change was not a real one. I merely throw out this suggestion in the endeavour to account, in a way agreeable to my own convictions, for the case which has been stated; for I feel convinced that under any circumstances of culture, plants of real calcareum will continue to be calcareum as long as they exist. *Thomas Moore.*—Mr. Maw states that intermediate varieties occur between the above plants; as I have never seen such varieties, I should be glad to learn in what their intermediate character consists. I have seen plants intermediate in look, but not in structure. Can he show that the characters of one of the plants are connected by intermediate states with those of the other? I do not think that he can, and believe the opinion that they are distinct species is now universal amongst botanists. *Charles C. Babington.*

Culture of Cape Bulbs.—The following has struck me as throwing a new light on the culture of bulbs, by flowering and ripening them in frames without artificial heat. The plan is given in the June number of "Maund's Botanic Garden and Fruitist;" and lest your correspondent (see page 437) should not have ready access to the work, I will here copy it:—"In a a brick pit, adapted to a cold frame, which we have lately described, lower the moveable floor to within 2 feet of the top of the brick sides; place thereon 6 inches of draining material, and on this lay a stratum of compost a foot thick, composed of sharp sand, two parts; leaf-mould or peat, one part; and fresh loam, one part. These should be well mixed in a moderately dry state. In this plant the bulbs towards the end of October; give no water, but protect from frosts, and give air at all favourable opportunities. They will probably begin to vegetate early in February; still, however, continue the same treatment till the beginning of April, when a little sprinkling of water must be supplied in the morning, according to the luxuriance of the plants. In full growth, they will demand to be watered abundantly, once or twice a day, according as the compost may indicate; and, at the same time, after giving air early in the morning, close the frames during the warm part of the day, and thereby raise the temperature, not letting it exceed 90°, but never open the frame late in the day. After the plants have made their growth, subsequently to flowering, gradually decline giving any water. Give air morning and afternoon, but in the middle of the day, from 10 to 4 o'clock, close the frames and permit the thermometer to rise even to 100° before cool air is admitted. Continue this treatment till the foliage is fully ripened; and as this method of culture forms a good imitation of their native climate, the bulbs will be thoroughly matured, and therefore will always flower in perfection. If a brick pit, the chamber of which can be ventilated at pleasure, be not at command, the nearest imitation of it should be adopted, paying especial attention to its thorough drainage." *Anon.*

The Small Fork recommended in "Hints to Villa and Suburban Gardeners" (p. 501), is a most excellent tool, both for flower and kitchen garden, and one only wonders how people did without it. I believe it can be purchased, handle and all, for 2*s.* 6*d.*, from nearly all ironmongers. *A Subscriber.*

The Disease in Potatoes has suddenly and unexpectedly broken out in this neighbourhood. The worst cases I have seen, both in stem, leaves, and tubers, have been in confined cottage gardens, under the shade of fruit-trees; but it is not confined to those situations. The progress of the evil has been so rapid, that the worst may be anticipated respecting the Potato crop; and the worst ought to be anticipated by those who are wise enough to meet a coming evil. Large growers begin to be seriously alarmed. I find that early Potatoes, taken up a fortnight or three weeks back, and supposed to be perfectly clean, have now to be very much cut away before they can be used, and even show disease quite in the centre. While this is going on, it is impossible to calculate what proportion of the crop will be in an eatable state three or even two months hence. The more intelligent cottagers near us are taking up their whole Potato crop, and sowing Turnips and planting winter greens before it be too late. An immense weight of human food may yet be grown before the winter, if the country gentry, their agents, and the clergy will recommend this course to be pursued throughout the kingdom. The common Stone, purple American Stone, and early yellow Malta Turnips, are all excellent for the purpose. Two pennyworth of seed will furnish many a welcome mess as an addition to the scanty dinner of the labouring man; and the immediate distribution of packets of these seeds, and of Savoy plants to, every cottager in the United Kingdom who has a garden, would be true charity, involving only a little personal trouble to those who undertook the task, and but a light expense to those who supplied the means. To place any reliance now on the Potato crop is folly and wilful blindness. As a mere guess at a remedy, it may be worth inquiring of geologists and chemists whether the native soil of the Potato in South America contains any elements which are wanting, or very deficient, in that of Europe. Those who have been in volcanic districts are aware how every fissure and cranny of the earth is at least occasionally charged with gases of mixed composition, but especially sulphureous, which may be smelt in still weather by those walking on the surface, and which must have some influence on the vegetation of those regions. Mexico and the Andes are doubtless similarly circumstanced, and the peculiar constitution of plants native to that range may possibly have some dependence on those conditions of growth. Are the Potatoes in the kingdom of Naples attacked by the disease? Because, if they are, the presence of sulphur in the soil is no preventative against the Potato plague. *E. S. Dixon, Cringleford, Aug.* 13.

Josling's St. Alban's Grape.—In consequence of the high character given to this Grape I was induced to purchase a plant early in the spring of 1848, and being anxious to prove the nature of its produce as soon as possible it was shifted into a large pot filled with a rich compost, and as soon as one of the eyes was sufficiently developed the young shoot was inarched upon a strong Vine planted within the house. This shoot by autumn had ripened above the junction a rod of considerable length, and at the time of pruning was cut down to three eyes, from two of which bunches were obtained, which set well and progressed satisfactorily till the berries began to swell and ripen, when the majority of them began to crack or split at the end, and before they became fully ripe were rendered uneatable on account of the mould which grew upon the tips of the cracked portions. I am therefore anxious to ascertain if such has been the case with others who have fruited this highly commended Vine; if so, whatever flavour or quality it may possess in a sound state, it becomes valueless, and the sooner its demerits are made public the better. Should this, however, prove to be a solitary instance of its failure, in that event the splitting must be attributed to some other cause, perhaps to its having been grafted upon a vigorous shoot of an old-established Vine. *P. J. Selby.*

Hot water v. *Mildew* (see p. 502).—Pray Mr. Editor have you ocular proof that hot water is a cure for mildew? If your correspondent has produced you proof that he has effected a cure, then that is a sufficient guarantee to follow his example; but till he does so, in my opinion it is the blind leading the blind. I have little faith in such a remedy, and particularly when I hear from those who have seen his Grapes that they are not cured of the evil yet, nor likely to be. *Scrutineer.* [We know nothing of the case referred to.]

Achimenes.—I find that I can start Achimenes on the mantelpiece of a room in which a fire is kept during the day and that they bloom freely in my sitting room, with a western aspect. I also find that with the assistance of a camel's hair drawing brush I can keep my plants free from insects; the important point being never to allow the latter to multiply. I have sometimes not seen one for weeks. *B., Barnstaple.*

Decayed Wood a Substitute for Peat (see p. 452).—A bed for American plants was made of peat soil some time since, and I believe no peat has since been added; but every autumn the plants received the same treatment as the herbaceous plants adjoining. A large quantity of decayed leaves and sticks was put on the bed and forked lightly in—a practice which I would not adopt, for the bed was filled with Azaleas, Kalmias, Rhododendrons, and Heaths, whose roots are small and in masses, and should not be disturbed. However these plants grew luxuriantly, and flowered beautifully. I have applied leaf soil to Rhododendrons, and the tender kinds of Azaleas in pots with advantage. But I have also seen it used for Rhododendrons with disadvantage. About six weeks ago I turned 18 Rhododendrons out of pots which they had occupied nearly two years. They had been potted in two-thirds leaf soil, and the remainder peat. These plants, one and all, had not made a single root since the time they were potted. They had existed on the soil contained in the ball. The plants should have taken root in a peaty soil, and leaf soil should have been applied as a top-dressing. *The Gardener, Thorpe Perrow.*

Swarming of Bees (see p. 501.)—An "Old Apiarian" advises us strongly to use Nutt's hives, but in doing this to be careful to shut the entrance into the centre box as soon as the communication between that and one of the side boxes is opened. At the same time the entrance into that side box, given as fresh room must be open, so that there is no other way of getting out of or into the centre box, except through this side box, kept cool by ventilation. The "Old Apiarian" adds "if this is tried, I think the plan will be found to succeed." Now I want to know what is to be done when I am obliged to give the other side box as fresh room? I must open the entrance into that box, but I could not, at the same time, shut up the entrance into the other side box, given as fresh room some days before. Perhaps an "Old Apiarian" will make this part of the subject a little clearer. *Count de Roullèz.*

Lagerstræmia indica has been raised here from a cutting not more than 1¼ inch in length this spring, and it is now 6 inches in height and flowering beautifully. *John Stoveld, Stedham Hall, near Midhurst.*

Chalk beneficial to Grass on Lawns.—Mr. Dyer says, at p. 470: "If chalk is laid on the soil 2 inches thick before laying down turf, the Grass will grow of a finer texture, and not be so liable to burn by hot sunshine." Being about to lay down 1½ acre of turf, in the fall of the year, upon very heavy clay land (which, however, I purpose having thoroughly drained first), and there being no chalk that I am aware of within a very considerable distance of me, I should be extremely obliged to Mr. Dyer, or any correspondent, if he could advise me of any other article I could use instead of chalk that would have the same effect. The verdure of a very beautiful lawn where I have been living has been completely destroyed nearly through the entire summer, by being burnt quite brown, although laid on soil 18 to 20 inches deep, and I would gladly go to some trouble, and expense too, to prevent it in the turf which I am about to have laid, if I knew how. Would dry lime answer? and should it, or the chalk, be mixed up with the top soil? or the turf laid upon it alone without any soil? Any advice will much oblige *A Subscriber.*

Adders.—In a recent Number I expressed some doubt respecting the manner in which adders cast their skins; since then I have had proof that not only the viper, but also its harmless neighbour the Anguis fragilis or slow-worm, shed their skins by creeping out of their mouths in the way I described, *i.e.* the skin begins to peel off at the lips, and the reptiles soon clear off their "slough" by wriggling through bushes. Some of our popular writers, and amongst them Messrs. Chambers, of Edinburgh, state that serpents cast their skins on emerging from torpidity, and that their "sloughs are turned inside out like the finger of a glove." If this is meant to apply to our puny serpents the statement must be wrong; for they do not cast their coats before June and July; neither are they turned inside out, but merely cast off in a puckered state, like a pulled off stocking. I have observed a viper and slow-worm in the act of casting their coats during confinement. The former was very shy, hiding at the least sight of an observer; and although provoked by a stick put through the wires of its prison, still it never showed the least disposition to bite the stick or dart at one's hand. When hard pressed, it would hiss, and quickly dart out its tongue through a hole curiously situated, I think, in the upper lip, but without opening its mouth. It was surprising to see the small space into which my viper could coil itself, especially when short of litter to hide in; and from what I could see of its habits, I am fully persuaded that vipers will not bite or attack one except when hunted or trod upon. I offered my viper various sorts of food, such as live mice, frogs, and young sparrows, but it refused to eat, and died after about a month's confinement. Vipers are easily caught, by putting a forked or split stick across them as near their necks as possible; then hold a bottle to their heads, into which they will readily enter; a bit of gauze may be tied round the mouth of the bottle to admit air. This was the way in which my late pet was captured, and with which I had a clear path; all shunned me as if I had been a venomous animal myself, calling out, that I would "dally with the vermint until it stung me." And, strange to say, their prophesy was in some measure fulfilled, for in the act of giving the dead viper to a large tame herring gull, one of the fangs or teeth stuck fast into my finger, and left some venom. I took care immediately to suck the wound, which bled freely, and gave me little more pain than the sting of a bee. *J. Wighton.*

Transmutation of Shallots.—The following circumstance confirms the belief that the Potato Onion origi-

nated from the Shallot. In a bed of Shallots some few produced seeds, which ripened well. With a view of raising a greater supply of Shallots, in August we sowed this seed, and it stood the winter well; but to our surprize it has produced a bed of very fine brown Onions. There is no mistake in the matter, as the seed was saved and sown under our own special care. It only remains to be ascertained whether or not they will produce Potato Onions. About the shortest day we intend to plant them shallow, and will communicate the result. *Hardy and Son, Maldon.* P.S. In our report of Potatoes last week, the word "suspicious" should read "auspicious," to explain our meaning correctly.

The Potato Crop.—Up to the 9th of July both early and late kinds looked flourishing; but on that date I saw symptoms of disease. On the 16th, it had spread in tolerably strong loam, somewhat damp by being shaded by fruit-trees. On the 4th of August, after a considerable fall of rain, scarcely a garden was free from it, and wherever there was a damp or shady situation it was most apparent; dry open spots were mostly exempt. A friend of mine being anxious to ascertain if diseased tubers used as sets would infect the ensuing crop, selected some which were very much diseased, and planted them early in the present year in his garden. The result was a sound crop, whilst plants from healthy sets in the same garden were considerably affected. The disease is, therefore, not hereditary. I have been a witness to the following experiment, having reference to autumn planting. The situation was a bank sloping towards the south-east, moderately dry, and having a depth of about 2 feet of light loamy soil. On the 28th November, 1848, this ground was divided into three equal portions, and each portion was planted respectively with Early Blues, Tewkesbury Seedlings, Eaton's Bang-ups, and, by accident, a few sets of Blue Farmers' Glory got interspersed among them. On the 4th of this month the whole crop was prostrate with disease, except the Blue Farmers' Glories. Autumn planting is, therefore, no certain remedy against disease. The kind called here Blue Farmers' Glory is much less susceptible of disease than any other variety, a fact that is well known in this neighbourhood. Euptorix solani injures the Potato. This is an insect about half an inch in length, green, and having what is termed a "beak," with which it punctures the leaves and draws out the sap. Two cuttings were taken off a healthy plant on the 16th of July, and placed about 2 inches deep in moderate-sized pots, filled with wet sand, over both were placed bell-glasses, with holes for ventilation; three insects having been placed on the leaves of one of the plants. On the 18th the insects had produced several small brown specks, which, on the 23d, had become general all over the plant, some portions being quite black. On the 25th the whole of the plant had died, as if from disease, whilst that free from insects was still as fresh and green as on the day in which it was put in the pot. This experiment was repeated three times, with the same result. This insect, therefore, doubtless injures the Potato much, and renders it more liable to disease; but it certainly is not the direct cause of disease. I am satisfied that the latter is not inherent in the Potato, but that it is produced by atmospheric and other causes acting upon weakened tubers. Dampness, whether in the atmosphere or in the soil, and want of light, together with the ravages of insects, very much assist in producing disease. *G. Thompson, jun., Pregwood, Stourbridge, Aug.* 11.——On examining a piece of Cambridge Kidneys to-day, I saw several patches (one, 3 yards square) where the leaves and haulm looked black, and were fast decaying. *G. H., Sandy, Bedfordshire, August* 14.——Disease is spreading fast here (Amport), especially since the recent rains. The Jersey Blue Potato at present is very slightly affected. *J. Holmes, Amport, Hants, August* 15.——Disease is now worse than ever here. Crops stored away, apparently quite sound, have perished as thoroughly and as rapidly as those still growing. *M. D., South Downs, August* 14.——On Monday the Potatoes looked as healthy as I have ever known them. All that night broad sheet lightning, with but little thunder, prevailed, and now and then a scattering of hail or rain. Yesterday the Potatoes showed strong signs of disease, the leaves being spotted as if sprinkled with some deleterious liquid. To-day the stems are very much affected, the tubers only partially, but the garden and field plots stink of the decaying haulm. The land which has been planted in the garden was trenched 2 feet deep, and the plants put in without manure. The field plots were on parts of an old pasture, which has not been in cultivation certainly for 60 years, probably never. I am confirmed in the opinion that the cause of the blight is entirely atmospheric, that the sort or the tilth has but little to do with it. *C. Snoulton, Temple Dwell, near Dover, August* 15.——The Potato disease, which partially appeared in this neighbourhood (12 miles from Bath in Somersetshire) last week, has within the last few days made most rapid progress, and threatens the destruction of the late crop. Mine are nearly all dug and secured quite sound, and other crops in the ground. This year in June, I was using Potatoes dug in August, 1848. So much for two years' experience of the advantages of early planting. *Henry Edward, Clerk, Paulton Vicarage, Bristol, Aug.* 16.——The Potatoes are going in this neighbourhood. In many of the cottage gardens the same appearances of decay in the stalk, and unpleasant smell, and the Potato decaying. In my own garden the Potatoes have only just in a few instances shown a black appearance in the stalk. We are taking up all our early Potatoes, and finer or more abundant I have never seen. *C., Bromsgrove.* ——Since the date of my last the plague has continued to spread, and some late varieties, which a week ago looked prosperous, are now almost stalkless; the tubers of those most recently attacked appear outwardly sound, and the labourer will tell you that there is no disease, but I find the foul spots show themselves about a week or 10 days after the stalk is blasted. I can trace, by my Potatoes, the course of the disease; those last attacked turn up sound and look beautifully; those preceding, show here and there spots, and the first are very bad, from this I infer that, wherever the stalk is suddenly attacked and withers away, the tuber will in due time follow. Many persons around me, it is fair to mention, lean to hope, and Potatoes are selling at Taunton as low as 4*s.* for 160 lbs., called here a bag of 8 score. I have tried the plan of cutting off the stalk with a keen instrument, &c., and having duly attended to all your instructions, shall hereafter acquaint you with the result. I observe they are again sending forth strong shoots, and I argue from this that the tuber, if it increases, as alleged, in size, does so not independently of the stalk, but in virtue of the aid it still continues to derive from these second shoots, which supply the place, in a short time, of the first. *Samuel Pitman, Rumwell-lodge, Taunton, Aug.* 15.

Rebiews.

The Progress of the Development of the Law of Storms, and of the variable Winds, with the practical Application of the Subject to Navigation. By Lieut.-Colonel Wm. Reid, C.B., F.R.S. London. Weale. 8vo; pp. 424.

The object of the present work is, by the careful comparison of a great number of observations on storms in all quarters of the globe, to show the progress made in the development of the law of storms, and to point out how the same law accounts for variable winds and for many of those changes of the wind which, until recently, have baffled explanation.

It has been ascertained that storms are vast whirlwinds having a progressive motion, revolving by fixed laws in opposite ways on opposite sides of the equator, and tending generally, though not always, obliquely towards the Poles. North of the equator these whirlwind storms revolve from right to left, and south of the equator from left to right. This proposition Col. Reid proves by a great quantity of extracts from the logbooks of various ships overtaken by storms in all latitudes and in every sea. The way in which a knowledge of this great fact may be, and often has been, applied to navigation, is pointed out in great detail. Instances are given of ships, commanded by persons acquainted with this fundamental law, which have, when overtaken by a storm, been steered at once away from its vortex, and of others, having less skilful commanders, which have been nearly lost by being steered, instead of away from a storm, into its very centre. A remarkable case of this sort is given at p. 349. H. M. ships Vindictive, Rose, and Vesuvius, on their way from Halifax to Bermuda, encountered a gale of wind, which proved to be a revolving storm; the two first being steered away from the storm's centre escaped unhurt, whilst the latter, by being kept on the wrong tack, drew nearer and nearer the centre of the storm, and was considerably damaged. Nor is the knowledge of the way in which a gale revolves of use merely to enable a commander of a ship to escape from a storm; it also enables him, as the author shows by many examples, to calculate with considerable accuracy which way the wind will be at any place in the vicinity of the storm.

The reason why the mercury in a barometer falls on the approach of a storm is no longer a matter of mystery. The explanation of this well known fact, as given by Mr. Redfield and adopted by Col. Reid, is as follows. "A whirlwind which sets an extended portion of the atmosphere into a state of rapid revolution diminishes the pressure of the atmosphere over that portion of the earth's surface, and most of all at the centre of the whirl; the depth of the compressing column of air will at the centre be least, and its weight will be diminished in proportion to the violence of the whirl."

"The idea may be exemplified by taking a tumbler half full of water, and after putting the water into rapid revolution, holding it up against a strong light. The surface of the water will be seen to be depressed in the centre of the whirl. The liquid will serve to represent the atmosphere, and if the tumbler be moved over a fixed point, in the manner in which a progressive whirlwind gale would move over it, it will show how the barometer begins to fall as the storm sets in; how it continues to fall until the centre has passed, and afterwards rises and resumes its former level."

The value of the barometer to seamen, informing them as it does of the changes in the atmospheric pressure over their ships, and so of the direction in which they are sailing, with respect to a storm's centre, cannot be overrated; were it not for this instrument they would be perfectly in the dark in the most critical circumstances; they might be sailing into the pit of destruction without being aware of it, until the moment when they might have corrected their error had passed. "But," as the author very truly remarks, "for all this, this most valuable instrument has been brought into disrepute with many persons by the makers themselves, from their practice of marking on the face of the instrument indications of the weather not strictly correct."

"If the index of the barometer were simply divided into inches and parts of inches, the public generally would soon acquire the knowledge of how the instrument measures atmospheric pressure, and how that knowledge assists in forming a judgment on what will be the probable state of the weather. By leaving the agriculturist to make his own observations on the consequences which follow from the alteration of the atmospheric pressure, he will come to much more just conclusions on the probability of the weather being dry, or of rain approaching, than by putting faith in arbitrary expressions too hastily adopted."

The influence produced by storms on the climate of the regions where they occur is a branch of meteorology very important and interesting, but still to be discovered. It has, however, been observed that when storms which have come from far across the sea, reach the land, they cease to blow as regular whirlwinds and often deluge the countries over which they pass with rain.

The present volume is illustrated by maps and diagrams, by means of which the text is made perfectly intelligible even to those who may have turned their attention to the important subject of storms and winds for the first time; and although we are afraid that the generality of our readers will, at first sight, be inclined to turn away from the book, expecting to find little or nothing interesting to them, yet we assure those who are concerned, either in this most important branch of meteorology, or in nautical affairs, that they have in Col. Reid's book much matter of the highest interest to all who desire to know how to apply the indications of the barometer to practical purposes.

Garden Memoranda.

Walmer Castle Gardens, near Dover.—The kitchen-gardens here, one of which lies on either side of the small but beautiful pleasure-grounds and flower-garden, are very small. There are no hot or green houses; the only glass erections are two Melon and Cucumber frames. In one of the kitchen-gardens is a wall at least 20 feet high, which forms part of the offices and stabling, and against this wall are some large and well-trained Vines of the Black Cluster kind. On several of these Vines were a great many mildewed fruit, but none more than half way up the wall, showing that unripe wood tends to induce this evil; for the wood was better ripened towards the top of the wall, where there was no disease.

In this garden the fruit trees were remarkably healthy. The Apple trees had good crops on them, but there were very few Pears. Three sides of this garden are surrounded by a hedge fence, consequently there are but few wall trees. The ground was well cropped and very clean; all the walks edged with Strawberry plants, and gravelled with sea gravel, which always looks light and clean. As in other places, the Potatoes at Walmer are diseased. On examining a tuber it was found that the evil had penetrated it about a quarter of an inch. The ground in which it grow was a deepish loam, which produces all sorts of vegetables in the greatest luxuriance.

The kitchen-garden, on the south side of the pleasure-grounds, is walled in, with the exception of the north side, which is bounded by a belt of plantation. The walls are well covered with fruit trees, Peaches and Nectarines bearing very fairly; but the most remarkable crops of fruit here were those of Morello Cherries, which were excellent. This, like the other kitchen-garden, is well cropped and clean. The moat round the castle, now no longer wanted for the purposes of war, is well cropped with vegetables, and the wall on either side is covered with Pear, Plum, and other trees, bearing middling good crops.

The pleasure grounds occupy the west front of the castle. They contain healthy and large bushy evergreen Oaks and Portugal Laurels. In the flower beds were very fine bushy plants of Fuchsia globosa, which have been planted some years. The lawn and flower garden are surrounded by a belt of trees, among which are fine shady walks, the frequent resort of their illustrious and noble proprietor. The head gardener, Mr. Townsend, is one of the Duke's old soldiers. He has been gardener at Walmer 17 years. *J. C.*

Miscellaneous.

New Medicine against Diarrhœa.—At a recent meeting of the Academy of Sciences at Paris, M. Rossignon presented some seeds of a sort of Sage from central America where it is very common. These seeds, called by the natives Tchan, are very much used by them for curing chronic and acute affections of the bowels. "I have seen," said M. Rossignon in the letter accompanying his seeds, "many cases of diarrhœa and dysentery perfectly cured by a decoction of Tchan. The mucilage obtained by macerating the seeds in cold water is, in appearance, very like the mucilage of Quince seeds, which it also seems to resemble in its therapeutic properties." It is very likely that this Sage is the same as that described by Ruiz and Pavon, under the name of Salvia chia; if it could be grown in France, it would no doubt be useful in a medicinal point of view. *Comptes Rendus, November*, 1848.

New Process for Preserving Wood.—M. Brochard's plan for preserving wood, which differs very little from other methods now in use, or at least proposed for the same purpose, is, first by means of a pneumatic apparatus, worked by a steam engine, to exhaust the wood of its sap and other watery liquids; then by means of compression to force into the exhausted wood two other liquids one after the other, which combining in the interior form an insoluble salt of iron. The author produced before the Academy of Sciences at Paris, two pieces of deal which had been experimented on at Cette by the chief engineer of the Ponts et Chaussées. These two pieces of wood had been used as piles, and had been covered by sea water to the depth of 3 or 4 yards; one of them which had not been in any way prepared was very much attacked by the worm, whilst the others which had been prepared in M. Brochard's way, was scarcely attacked at all. *Comptes Rendus, November*, 1848. [This is evidently Payne's process.]

Sale of Orchids.—A small collection was sold on Tuesday last by Mr. Stevens. It consisted chiefly of the different kinds of Dendrobiums; but there were also a few plants of some unknown Cologyne and Cymbidium, together with three or four lots of Vanda teres. The highest sum realised on the occasion was 3*l.* 17*s.* 6*d.*, and the lowest 20*s.*; the medium being about 30*s.* per lot, of which there were in all 142.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

The creepers on the roofs of plant-houses should, from this time, be kept within more moderate limits; and, as the season advances, they should be gradually reduced, that the plants beneath them may receive the sun and air so necessary to mature their growth. Many plants in these houses are now in the last stage of flowering, and if proper attention has been paid to propagation, the old plants of many quick-growing, soft-wooded species may be discarded. By this practice, the remaining plants may be placed at greater distances asunder, thereby allowing a freer circulation of air amongst them. Plants of Gloxinias, Achimenes, &c., which are from time to time removed out of the houses to ripen their growth, should be placed in a dry frame, where they can have plenty of light, and where they must be sparingly supplied with water; they must not, however, be allowed to get dry all at once, which is too commonly the treatment they receive, and in consequence of which, many of them perish entirely. Hyacinths, Tulips, &c., for early

forcing, should be potted immediately, that they may have ample time to fill the pots with roots before their tops are excited into growth. To make amends for the limited quantity of soil allotted to each plant, a couple of inches of well-rotted cow or sheep manure, mixed with about one-fourth part of soot and sand, should be placed over the drainage in each pot. The whole of the soil should be rich, except the portion immediately surrounding the bulb, which should be of sand or pure sandy loam. The base of the bulb should be placed on a level with the rim of the pot, and the soil heaped over it in a conical shape. The pots when filled should be plunged in a bed of ashes, and earthed over with the same material. Schizanthus should now be sown for flowering during the spring months, and the different species of Lisianthus for next autumn's display. Neapolitan and Tree Violets should now be lifted and potted in 4 or 5 inch pots for winter flowering. Than these nothing can be more acceptable at that comparatively flowerless season.

FLOWER GARDEN AND SHRUBBERY

Everything in this department should wear an appearance of order and perfect neatness, and this state of things can be effected and maintained only by a systematic perseverence in going regularly and frequently over the whole. Considerable attention is necessary to keep the half hardy plants and annuals in order; any of these which have extended themselves beyond their proper limits should be cut back, and particularly where they are bounded by Box or other evergreen edging; at the same time tall or straggling growths of plants in masses should be shortened. If this is done with taste, the beds may be made regular and uniform without being formal. It is a common practice at planting out season, for the sake of immediate effect, to fill the mixed beds rather thickly; but as the plants increase in size, the least deserving should be thinned out, that the remainder may be more accessible to light and air. Beds of this character should appear as a group of distinct individuals, rather than that of a confused or jostling crowd. Spring flowering bulbs, such as Iris, Narcissus, Lilies, &c., the roots of which are scarcely ever dormant, should be planted immediately, that they may have time to establish themselves before winter. These are all deep rooting plants, and require that the beds should be deeply trenched. The manure should be placed in the bottom of the trench, to encourage the downward progress of roots, and thereby make them more independent during the scorching weather of June and July. The scarlet Tiger Lily is splendid at this season for planting in straight lines, or for the decoration of large clumps. If the plants are now examined, small bulbs will be found in the axils of the leaves; these should be carefully collected and planted, about an inch asunder, in boxes of light soil. Many annuals and perennials have now ripened their seed, which should be gathered immediately in fine dry weather, and spread out in a cool airy shed.

FLORIST FLOWERS

Pinks.—Great care must be taken of those pods of seed which have been fertilised; split down the calices, to prevent the lodgment of water, and cover with a handglass; but perhaps the most simple as well as efficacious covering is a small square of glass inserted horizontally in a stick which has had a niche made in it for its reception. By this plan the pod has a free circulation of air, and all descending moisture is guarded against. If pipings have damped off, or otherwise been destroyed, another crop may be yet put in with success. Pansies.—Now is a good time to slip off rooted side shoots; these make excellent plants in a very short time. Mark all promising seedlings, and retain those of ordinary colours only, which are pre-eminent in form; there is too much sameness already in this class of flowers. Dahlias.—Give plenty of weak manure water; remove all buds that are deformed, and thin out as previously recommended; attend to the side shoots. A rough wind may prostrate all the florist's hopes by the prostration of his plants. Give the Tulip bed a complete turning over, clearing it of wireworms at the same time, and inquire for those varieties wanted for next year's bloom.

KITCHEN GARDEN

Cleaning the borders, clipping the edgings of Box and Thrift, and weeding and repairing the gravel walks, is now the principal work in this department. Let the earthing up of Celery be attended to, as the different successions become sufficiently large; and let the intermediate rows of Peas, &c., be cleared away as soon as possible after the crop is gathered from them, that the Celery may have the advantage of the additional light and air. Late crops of Turnips, Parsley, Spinach, &c., should be thinned as soon as the plants begin to intrude upon each other. Immediate attention should be given to the transplanting of Endive, Lettuce, &c., as soon as the plants are large enough to be handled. The earliest sowing of Cabbage lettuce may be planted on a border with an east or west aspect, reserving the most favourable situations on the south borders for Endive and the later sowings of Cabbage-lettuce. Two sowings more of the latter should be made at intervals of 10 days. A main sowing should be made immediately of Early Asiatic Cauliflowers for planting under handlights, and preserving during winter in frames; and, at the same time, a little Early York and Red Dutch Cabbage should be sown for an early crop. Transplant late sown Cabbages in rows 9 inches asunder every way; of these three-fourths will be drawn in a young state, and used as Coleworts, and the remainder will be left to produce heads.

State of the Weather near London, for the week ending Aug 18, 1849, as observed at the Horticultural Gardens, Chiswick.

Aug.		Moon's Age.	Barometer.		Thermometer.			Wind.	Rain.
			Max.	Min.	Max.	Min.	Mean		
Friday ..	10	21	29.673	29.737	80	59	69.5	S W.	.09
Satur. ..	11	22	29.906	29.861	81	57	69.0	S.	.34
Sunday .	12	23	29.764	29.679	75	58	61.5	S.	.03
Monday	13	24	29.624	29.570	70	52	61.0	S W.	.09
Tues. ..	14	25	29.783	29.674	70	52	61.0	S W.	.00
Wed ..	15	26	29.910	29.836	72	52	62.0	S.W.	.01
Thurs ...	16	27	29.793	29.763	64	42	53.0	S.W.	.15
Average.			29.801	29.741	72.8	52.8	62.8		0.61

Aug. 10—Hazy; very fine, clear, lightning at night.
— 11—Much lightning, thunder, and heavy rain early a.m.; fine, clear, cloudy at night.
— 12—Fine; overcast; clear.
— 13—Showery, cloudy, slight showers; clear at night.
— 14—Cloudy; fine, cloudy.
— 15—Clear, very fine, slightly overcast.
— 16—Cloudy; heavy showers; very clear at night.
Mean temperature of the week equal to the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Aug 25, 1849.

Aug.		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No of Years in which it Rained	Greatest Quantity of Rain.	Prevailing Winds.							
							N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday	19	72.0	[illegible]	62.2	12	0.47 in.	–	2	2	1	1	7	7	3
Mon	20	72.7	53.8	[illegible]	9	0.61	1	1	1	–	[illegible]	4	9	2
Tues	21	72.2	50.1	61.2	9	0.62	2	2	–	1	1	6	6	2
Wed.	22	70.4	51.4	60.9	11	0.58	1	2	1	–	1	7	7	1
Thurs	23	71.3	48.7	60.0	13	0.95	1	2	–	–	5	6	[illegible]	2
Friday	24	70.6	48.6	[illegible]	10	0.23	1	5	–	–	[illegible]	4	6	5
Satur	25	70.5	[illegible]	61.2	7	0.53	[illegible]	2	1	1	5	6	4	2

The highest temperature during the above period occurred on the 20th 1826, and 21st, 1835—therm. 88 deg., and the lowest on the 20th, 1839—therm. 37 deg.

Notices to Correspondents.

To our Correspondents—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

Auricula Seed: *B H.* We would willingly assist you, but we cannot. Florists will not sell their best seed ‡

Campanulas (Perennial): *Sub.* Try Grandis (blue and white), macrantha, cæspitosa alba, pulla, pyramidalis, versicolor, nitida (blue and white), and persicifolia (blue and white) ‡

Charred Turf: *J B W.* It is a valuable manure for all kinds of vegetables. ‡

Cryptomeria japonica: *G I M.* It was introduced into this country from China by the Horticultural Society some four or five years ago ‡

Dahlia Exhibition: *Delta.* Without seeing the flowers, it is impossible for us to say with any certainty what was right and what was wrong. Open centres or hard green eyes are amongst the greatest blemishes pertaining to a Dahlia, but there are also imperfections of an opposite character which you may not have taken into account. If your statement be correct, then the judges were wrong ‡

Gooseberry: *T H.* Your seedling Gooseberry, about the size of the red Warrington, round, hairy, dark red, has a good appearance, but owing to long carriage, we cannot form a correct opinion of its flavour. ‡

Hollyhocks: *Expectant.* Transplanting is not likely to cause them to become more double than they are at present ‡

Hyacinths: *A S W.* We are not aware that the experiment of growing them in glass dishes has been tried. How are you to prevent their falling over? They will not bloom well a second year. Soil is immaterial. If moss is used, it must be thoroughly scalded in the first instance.

Ice Machines: *An Old Subscriber.* We are unable to answer your question. The dealers in the article probably supply them.

Insects: *S P.* The larva sent is not a wireworm. It is the young of one of the Staphylinidæ which destroy other insects. *W.*—*C K.* The blotches on the Pear-leaves are caused by the larvæ of Tinea Clerckella (see *Gard. Chron* 1841, p 231). *W.*—*F C.* The water-worm sent by you is the larva of a handsome two-winged fly, Stratiomys Chamæleon. Its history is recorded in all popular treatises on entomology. *W.*—*A C B.* The insects sent by you loose in a pill-box were of course all knocked to pieces. The beetle is the Curculio which nibbles the leaves of Peas, the tufted caterpillar probably that of the common vapourer moth, and the green cimex is the Phytocoris palustris. We know no one who sells caterpillars. Heather, Moss, Chestnut, Beech, and Hollyhocks are not attacked by so many species of insects as the Fir. It is impossible to determine caterpillars by your vague description. *W.*

Linen: *J B W.* Nothing is better than a solution of nitrate of silver for marking linen.

Liquid Manure: *Viator.* The term is used in a general sense to signify any kind of manure which is used in a fluid state. The kinds are numerous, and the manner of preparation is too lengthy a subject for this part of the Paper, but it may be treated upon more at length in a future Number. In the meantime you can use the water issuing from any deposit of manure, or if this is not procurable, you may make any quantity by soaking guano or other animal excrements in water, and adding a little soot and charcoal, the former to destroy insects and the latter to clarify the liquid. But whatever you use be careful that it is not too strong; it is much better to give several waterings of moderate strength than too much at one time. *F.*

Manure: *Amateur.* Do not add lime to your liquid manure by any means. It is the very worst thing you could possibly put into it. ‡—*Flora.* Ammonia in all its forms is an excellent manure, but it will not suit Carnations, Picotees, and Pinks. Apply it with caution; little and often is better than large doses given at long intervals. ‡

Names of Plants: *F A P.* It is a very curious little Pink, which we do not recognise. Is it really wild? Could you send a few more specimens, especially of a *larger size*, and a ripe seed pod or two. The form of the seeds is material among Pinks.—*B B B.* 1 and 2, Armeria elongata; 3 and 6, A. alpina, 5, A. plantaginea according to Koch; 7, Lobelia angulata.—*Emily Harriett.* Drosera rotundifolia, the Sundew.—*W.* Veratrum nigrum.—*W Y* All as common as partridges and poultry. 1, Butomus umbellatus; 2, Myosotis palustris; 3, Limnanthemum nymphæoides; 4, Sagittaria sagittifolia, 5, Alisma Plantago; 6, Symphytum officinale; 7, Scutellaria galericula; 8, Lysimachia nummularia.—*J M.* 1 and 2, Gentiana Amarella; 3, Trifolium procumbens; 4, Agrostis alba, one of the Fiorins; 5, Bromus erectus? No number, Festuca sylvatica.—*Fitzeroum.* Many thanks. Letter of July 4th just received; an excellent idea, by which we shall profit. No 3 is Scilla amœna.—*M D.* Calystegia pubescens.

Paxton's Cottager's Calendar. The reprint is now ready, price 5d. each copy. Parties wishing to have copies for distribution among their tenantry, can be supplied at the rate of 25 copies for 5s.

Pea: *A H.* Your Pea is very like Knight's Tall *Blue* Marrow. ‡—*B P.* Your Pea is the Large Crooked Sugar, Pois Géant sans Parchemin of the French. The pods have not the usual tough lining, and are dressed, in a young state, like French Beans. ‡

Phloxes: *Sal.* Cœlestis, conspicua, Eclipse, White Perfection, spectabilis, omniflora major, La Reine, and Beauty will possibly suit you. ¶

Potatoes: *Kettering.* There is nothing uncommon in the specimen sent. What has excited your surprize is the production of green Potatoes at the joints of the stem. Had the stems been earthed up, common Potatoes would have been produced. Green Potatoes on the stem arise from bad cultivation.

Royal Botanic Society: *G.* We can give you no information at present concerning the proceedings at the meeting on the 10th. Our reporter was refused admittance, and informed that the meeting was that of a *private Society*, and held for *private purposes!!!*

Rust on Grapes: *Vitisator.* You state that your Vine, which you suppose to be the Esperione, is "annually more or less afflicted with rust on branch, leaf, and berry; although plants of the White Muscadine and Black Cluster, growing on either side, are free from the evil." The Esperione is one of the hardiest varieties of Grape; we must therefore conclude that the plant in question is of a variety more tender in constitution, unless there is something wrong at the roots, which your letter would lead us to suppose cannot be the case. However, unless you are quite sure that the depth and quality of the soil is the same as that in which its neighbours are growing, we would advise you to make yourself so, by examining the state of the border as soon as the plant is dormant. If the evil does not lie in that direction, the only remedy is to remove or protect it. *P.*

Steel Mill: *E H.* See p. 101 of the current year's volume. ‡

Tree Rose. The price of this work is reduced to 3s. 6d. (post free), to be had at the Office of this Paper.

Vines: *Leyton.* Your Vines are in a fair way to be ruined, if we understand your meaning. Tobacco should not be allowed to flower; six leaves, and no more, should be permitted to form on each plant, the flowering branches should be pinched off. The stalks are of inferior quality, difficult to dry, and not worth the trouble. Rough plate. The Grapes are a little touched with rust; it seems to be of no consequence.

Wasps' Nests. *C C P.* Take them by means of turpentine. Pour a wineglass full into their holes at night, and then stop them up with a turf.

Misc. *S A, Wilton.* The Snake Cucumber is not eatable, quite the contrary. ‡—*B.* We have no idea what your "Pea Violet" is, but if it comes from India you must raise it in bottom heat, and treat it as a stove plant. Your Fuchsia serratifolia, which has only two flower-buds on it, is not likely to yield you many more flowers this season. Endeavour to get its wood well ripened, and start early next year ‡—*A G.* Messrs. Hovey, Boston, Parsons and Co., New York, and Buist, Philadelphia. ‡

SEEDLING FLOWERS.

Antirrhinums: *R W.* A nice collection, all of them more or less displaying a yellow centre. 1, 2, 5, 6, 11, and 12 are pretty mottled kinds, particularly 1. 3, 4, and 9 are good, light spotted sorts, some of them very good in shape; 10 is not distinct enough in colours, and dull in appearance; 7 and 8 are bright self-coloured varieties, particularly 8, with its large yellow centre; 13 is common, and dull in colour.*—*H W.* All good. 83 and 76 are good large white ones; 75 and 71, with white tubes and striped petals, are showy; 48 and 59 are large, lilac, spotted and striped with purple; good in size, but dull in colours; 92 a good purple stripe; 116, 110, 131, 15, 77, 86, 85, 81, and 90 are very nice light spotted varieties, particularly No. 90; 91, 88, 113, are handsome stripes, particularly 88, 97, rosy lilac, with yellow centre, is good in size, and showy, but rather common in colours. 79 is a good yellow; 78 is a pretty delicate variety, veined with violet on a white ground, 31 like the last, but a shape deeper, and not so good, 55 is showy, with its white tube and orange brown petals and bright yellow centre.*

Carnations. *Amateur* Your sport, being a self, is of little importance as a show flower, it is only worth preserving for the open border on account of its bright colour.*

Convolvulus: *Young Gardener.* Your flowers were so much shrivelled up when they reached us that no opinion of their merits could be formed.

Fuchsias: *G R y.* 1, tube pale blush, lobes the same colour; tipped with green at the points, broad and well expanded; corolla bright orange purple, petals small in proportion and rather narrow, a nice waxy, light coloured variety, good in size, with well contrasted colours. 2, tube and lobes white, stained with pale purple; corolla deep violet, texture, shape, size, and colours good; a nice variety, with the colours of Venus victrix—the best of your seedlings. 3, flowers small, with very long reflexed lobes and remarkably short corolla; a neat and singular shaped little flower, with bright, well-contrasted colours. 4, 5, 6, are pretty varieties, but too much like many others now in cultivation.—*E T.* Tube rather short and slender in proportion to the rest of the flower; lobes long, narrow, very much pointed, and not sufficiently expanded, corolla deep violet purple, large and well shaped. Its fine ample corolla and large foliage are its best points.*—*A L.* Your flowers have not come to hand.*

Gloxinias: *P W.* Rather small, but nicely formed; a pretty bright rosy red, dotted inside.*

Lilium lancifolium, *R H.* A good high coloured variety, spotted thickly with dark crimson, and stained with purple, in the way of L. lancifolium rubrum.*

Pelargoniums. *H W F.* Upper petals dark crimson, slightly edged with pale rosy pink, and veined near the centre; lower petals pale blush, stained with violet; shape, texture, and size good, colours well contrasted, but common.*—*R C.* So much withered when received that no opinion of its merits could be formed.*

Petunias: *J C.* 1, bright purple; size large, shape tolerable, texture thin, colour good. 2, reddish purple, stained with violet, size good, colours bright, shape middling, texture rather thin. 3 and 6, pale rose, stained and netted with purple, shape and texture only middling, size good. 4, rosy lilac, veined towards the centre with purple; size, texture, and shape tolerably good. 5, rosy, with a few violet veins near the centre; size good, texture thin. 7, pale lilac, shaded with purple near the edges; shape tolerable, texture good, contrast of colours novel. 8, bright rose, veined more or less in the centre, shape, texture, and size good, colour bright; a nice variety. 9, like 14, prettily veined, but too small. 10, rosy lilac; size and shape only middling, colours pale. 11, thin in texture and common in colour. 12, shaded violet; thin in texture. 13, texture thin, colours dull. 14, lilac, nicely netted with dark purple veins; size too small, but very pretty. 15, rosy pink; size and colour good, texture a little thin; a nice variety like 8, but duller in colour. The Pelargoniums were not in a fit state for examination when received.*—*G R—y.* Pale rosy lilac, veined in the centre with deep violet; shape, marking, and texture pretty good; rather small.*—*A R.* Your flowers were nearly all crushed to pieces when they reached us, but judging from size, &c., they appear to be the same as those sent us by "W. W. W.," last week.*

Verbenas: *F C.* Both common in colour. 1, pale blush; 2, rosy lilac.*

Veronica. *Edinensis.* Your hybrid, raised between V. Lindleyana (salicifolia) and V. speciosa, partakes of the character of both parents, the individual flowers being double the size of those of V. Lindleyana, and pure white when fully expanded, while the spike is rather shorter, and the foliage broader and rounder, and more like V. speciosa.*

Wallflowers: *J M.* Your specimen was not in an examinable state when received. Send a dried specimen, as there is otherwise little chance of forwarding it in good condition so far.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

TURNIP SOWING.

THE LONDON MANURE COMPANY, having adapted the "URATE" more particularly for Turnips and all Root Crops can recommend it with the greatest confidence. It seldom fails, in the driest season, to secure a good plant, and to produce a heavy weight per acre. They would call attention to their Superphosphate of Lime, which is prepared with the greatest care, and sent out in a very fine, dry state, perfectly ready for use. The London Manure Company have made arrangements for a constant supply of Peruvian Guano, from the best cargoes, which they will deliver direct from the ship or importer's stores. Corn Manure, Nitrate of Soda, Fishery and Agricultural Salt, and every other Artificial Manure, on the lowest terms for a genuine article.

EDWARD PURSER, Secretary, 40, Bridge-street, Blackfriars.

PERUVIAN AND BOLIVIAN GUANO ON SALE
BY THE ONLY IMPORTERS,
ANTONY GIBBS AND SONS, LONDON;
WILLIAM JOSEPH MYERS AND CO., LIVERPOOL;
And by their Agents,
GIBBS, BRIGHT, AND CO., LIVERPOOL and BRISTOL;
COTESWORTH, POWELL, AND PRYOR, LONDON.

To protect themselves against the injurious consequences of using inferior and spurious Guano, purchasers are recommended to apply only to dealers of established character, or to the above-named importers, who will supply the article in any quantity, at their fixed prices, delivering it from the Import Warehouses.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park
Duke of Devonshire's, Chatsworth Gardens
Earl of Gainsborough's, Oakham, Rutlandshire.
Earl of Zetland's, Upleatham, Yorkshire.
Robert Hanbury, Esq., Poles, near Ware, Herts.
Mr. Glendinning's Nursery, Turnham-green.
And at least 500 other important places.

BURBIDGE and HEALY, 130, Fleet-street, London.

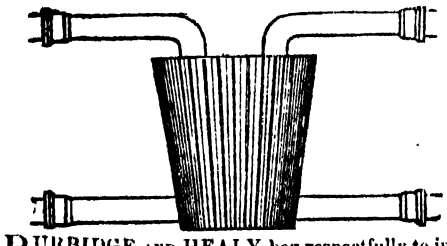
BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOT HOUSE WORKS, KING'S ROAD, CHELSEA.

EDENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1s. 3d to 1s. 6d. per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d to 9d. per ft.

HEATING BY HOT WATER.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in. will warm	50 ft. 4 in. pipe	...	£1	15 0
12 in.	do. 75 ft. 4 in. do.	...	2	5 0
14 in.	do. 100 ft. 4 in. do.	...	2	15 0
16 in.	do. 150 ft. 4 in. do.	...	3	10 0
18 in.	do. 250 ft. 4 in. do.	...	4	10 0
21 in.	do. 350 ft. 4 in. do.	...	5	10 0
24 in.	do. 450 ft. 4 in. do.	...	7	0 0
	NEW PATTERN BOILERS.			
30 in. will warm	800 ft. 4 in. pipe	...	15	15 0
36 in.	do. 1500 ft. 4 in. do.	...	25	0 0

All Boilers with double arms, up to 18 in., 5s. extra; to 24 in., 10s. extra; all above, the same price.

130, Fleet-street, London, August 18.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 400 and 500) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a copy of the testimonials, will be sent on application to WALTER CARSON, 15, Tokenhouse Yard, back of the Bank of England.—No Agents.—All orders are particularly requested to be sent direct.

PORTLAND CEMENT.—Testimonials received from all quarters, prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

The Agricultural Gazette.

SATURDAY, AUGUST 18, 1849.

MEETING FOR THE ENSUING WEEK.
THURSDAY, Aug. 23—Agricultural Insp Society of Ireland.

THE BUSINESS—THE ART—THE SCIENCE—OF AGRICULTURE: *that*, for the most part, is the order of their relative importance in the mind of the practitioner; just as, first, Self—then, the Profession—and, lastly, the General Welfare take precedence of one another in the minds of most of us. The farmer's attention is more easily excited by news of farm prices than by information on farm processes; and the latter again will be seized upon long before the theory of any suggested improvement is cared for or inquired into. The object regarding any practicable or plausible thing, is first to ascertain if it be profitable, then to determine the best way of carrying it out, and, *lastly*, to examine the rationale of the process. And so long as agriculture is not merely a department of natural truth, nor merely a food manufacture for the national support, but a trade by which livelihoods have to be attained, this is necessarily and properly the case for the more immediate consideration, though it affect but one, is naturally of more importance to me, just because that *one* is myself, than the remoter consideration, though it hold a nation in its grasp. It needs no great penetration to perceive that the *true* relative importance of the three aspects in which we have regarded our profession, is illustrated by reversing the order in which they are named above; the *national* interest, it may be thought, would be subserved by the establishment of sound principles in the art—the *professional* by correct methods—and only the individual by business-like management; but we believe that just as in society the commonwealth is best served by every individual paying what we may call an *intelligent* obedience to the selfish instincts with which he is endowed, so, doubtless in Agriculture, as in every other employment, the art will improve and the theory tend to completeness according as each of its practitioners displays energy and intelligent industry in his personal prosecution of the business. The particular subject of this article—the best method of keeping FARM ACCOUNTS—perfectly illustrates our remarks here; for though it is designed to benefit the individual in the prosecution of the business, yet it is to the want of that habit of recording observations in agriculture, which it would tend to correct, that both the art and the theory are in so incomplete a condition.

We shall not further discuss the general question, but proceed to describe a method of keeping Farm Accounts, involving little labour and no complexity, which we have for some time adopted in the case of a small farm. It is simply a method of classifying cash payments and receipts; it does not pretend to arrange or record either debts or credits—these are most easily kept account of by invoice cheque books, one, a leaf from which should accompany everything sold off the farm, whether for cash or not, and another in which receipts of unpaid goods must be acknowledged as from the parties sending them. Every money transaction is to be entered and described in the farmer's pocket memorandum book, and thence to be transferred to the pages of a book ruled as below.

—— FARM ACCOUNTS FOR WEEK ENDING ——

NAMES.	M.	T.	W.	TH.	F.	S.	*a*	*b*	*c*	*d*	LABOUR.	TOTAL.
PAYMENTS.							£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
J. Smith	*a c*	*b*	*a*	*a*	*c*	*a*	0 7 0	0 2 0	0 3 0		0 12 0	0 12 0
J. Cook, 1 ton of Oil-cake				—				8 10 0				8 10 0
Carried over							0 7 0	8 12 0	0 3 0		0 12 0	9 2 0
RECEIPTS.												
J. Brown for 10 qrs. Wheat		—					25 0 0					25 0 0
W. Smith for 10 fat bullocks								214 0 0				214 0 0
Carried over							25 0 0	214 0 0				239 0 0

The six small columns are for entering, each day, the labour done by each man against the account for whose benefit he has been working. Columns *a*, *b*, *c*, &c., are for the record of money transactions about the different accounts it is desired to open: thus, *a* may be the grain crop account; *b*, the green crop account, including all annuals bought to consume them or sold after consuming them; *c* a dormant capital account; and *d*, rent and taxes. And JOHN SMITH, it will be seen, was at work on Monday for the benefit of the Wheat crop half a day, and for the benefit of the dormant capital account, half a day; on Tuesday for the benefit of the green crops, and so on. And on the lower half of the page, devoted to the record of receipts, it is seen that, on Tuesday of that week, 10 quarters of Wheat were paid for by J. BROWN. The last column represents the cash account in a ledger—the balance of its total receipts and payments gives the gross result of our money transactions; and a similar balance, in the case of each of the other columns, explains the manner in which that gross result has been arrived at. Thus, in one page, at the close of any period when the farmer's liabilities and property are valued, and entered as paid and received for, he will see the exact financial result of his conduct during it, and be prepared during the ensuing period to modify his plans according as they have proved profitable or otherwise in the different departments of his business.

IT was not without reason we regret to find that the Editor of the *Gardeners' Chronicle* called attention last week to the condition of the POTATO CROP. The returns published in the *Agricultural Gazette* last week were filled up on Aug. 1—a date which was considered sufficiently late to represent the result of the year's crop with tolerable certainty; we are very sorry to find that the appearances visible then have since very generally and deplorably altered. Many of those who furnished those reports have since written to state that, during the first week of the month, the old Potato disease has reappeared: and we can state from personal knowledge, as regards Ireland, that the fields in the neighbourhood of Cork present evident marks of it, and that those in the hill district of Kerry to the north of Killarney are already black.

STEEP OR LEVEL LAND.

I HAVE read with great satisfaction the various arguments adduced in the case of Steep *v.* Level Land. You are right in supposing that I had not mere amusement in view when I addressed you on such a subject; the farmers all over England have been arranging and manufacturing their material, the soil, by a "rule of thumb" instead of a "rule of three." The drift of that letter was simply to precede an endeavour to disabuse the minds of farmers that "curved rigs" or lands were in any way advantageous to the growth of crops. Some time since, in reply to a remark made by me on the perceptible variation in the growth of the corn on one of these "curved" ridges, a farmer said, "Oh! see how beautiful that 'top' looks" "Yes; but see how poor, impoverished, and sickly the corn on the furrow-sides appear." "Oh! yes, but we say here one top is equal to two furrows." I said no more; it would have been useless; he had by this malformation of his seed-bed destroyed two parts to make one—won a shilling and lost eighteen-pence. You have most clearly explained all that I could have had to say on the subject of steep *v.* level lands. The only apology I have to offer to Mr. Chaytor is, for an apparent exaggeration; but if an exaggeration, it was done with a just motive. I have, in truth, represented a "break-neck" staircase; however it was executed for an express purpose. I hold that when you wish to point a moral or illustrate an idea, it should be done *in extremis*, especially if it be an address to the eye; if I had drawn a line hardly removed from the horizontal, it would not have carried half the weight I wished. All that I can now say is, that if my opponent, Mr. Chaytor, has hired a hill-farm, the rental of which is paid or adjudged from a superficial survey, the sooner he goes to, and has a scientific (not pugilistic) discussion with his landlord upon the trick he has played him, the better for his pocket. Remember, I do not wish to set the hill-farmers "by the ears" with their landlords, but I must tell them that if they have hired their hill farms by the surveyor's measurement over the surface, they have got bad bargains, and must have a remeasurement, if they wish to possess the same advantages and profits in erect cropping, with their neighbours of the plains.

This discussion has, I hope, tended to further an ulterior object I have in view for the benefit of farmers, which is this—to essay to improve them in the funda-

mental principles of their art, by introducing an improved method of manufacturing or treating their material—the soil. You have for years been teaching farmers how to improve the material they manufacture by chemical means and by manuring; chemistry and manuring will increase, but not cheapen production; artificial aids are important, but expensive; mechanical and natural aids are cheap and inexpensive—it is to the introduction and improved use of these latter agents I wish to direct the attention of farmers. I seek to teach them methods of growing crops by means more profitable and economical than any now in use, namely, by improved mechanical manipulation and natural aid; but before instruction can be administered it is often necessary to discover the radical cause of an evil; and with great numbers of otherwise well-meaning agriculturists, the impediment to progress or improvement will be found to be summed up in these words—erroneous ideas and petty prejudices, instituted in ancient time and perpetuated until they have become confirmed habits. As an example, let us return for an instant to the subject beginning this letter; there need be little doubt that farmers have indulged in these "rigs" to avoid or evade the difficulty and expense of subsoil-drainage, and many will still try to stave off this absolute requisite to good and profitable cultivation by continuing these imperfect expedients.

As you, in your leading article, have supposed this argument was not started with mere amusement in view, when I endeavoured to direct the attention of farmers to this apparently unimportant, but in reality very important matter, there were higher aims in the background—for the benefit and profit of farmers I seek to supersede that expensive but inefficient living power they now use to aid them in their labours, by a cheap and efficient mechanic power, as the prime agent to work in conjunction with the heads, hands, and fingers of the peasant and his children as the secondary agents in the culture of the soil; that machinery might work with that unerring accuracy and efficiency which is absolutely necessary to perfection, it was necessary it should operate upon a plane or level surface, that is, without having to contend with inequalities, holes, or irregularities, the district or country might slope or incline as much as it pleased; that natural peculiarity would be no impediment, but to get rid of the irregularities invented and created by the farmers themselves, and exhibited in the malformation of their seed-beds, it was necessary to disabuse their minds of certain erroneous ideas. The opportune introduction of "Agricola's" note afforded me a salient point wherefrom I might commence my friendly attack or operations to convince them of this one error, and lead to the removal of the idea that they obtained any advantages without immensely counterbalancing disadvantages, from fashioning their material, the soil, in this peculiar mode. From long, careful, and cautious deliberation, I have become convinced that the numerous, but praiseworthy improvers of agriculture, have been merely pruning the branches of this art, instead of examining the root. When I first addressed my mind to this subject, I studied to improve the branches or ramifications of agriculture; but, after deliberation, speedily descended to the root, and there discovered the true cause of the disease. Agriculture is a system of patchwork; they have been engrafting a modern upon an ancient art, and the result of this strange union is an imperfect and profitless manufacture. Agriculture, or the art of operating upon the soil, must be remodelled from its very foundation. To make a beginning let me announce this fact, that the plough must be abolished; it is not a machine, and for the sake of economy, profit, and salvation from impending ruin, farmers must cultivate the land by mechanic means, and according to the laws of mechanic science, in conjunction with those living machines represented by the hands and fingers of the peasant and his children. The plough is the prime mover in the manufacture of the soil; it is the sole impediment to the farming art being placed on a par with the sister manufacturing arts. Farmers have sought to make machines follow in the track of that which is not a machine, and the result is—no progress, no profit. If you can afford me occasionally a brief space to demonstrate such important questions as these, viz.: Why the plough is the sole great impediment to progress in farming; how it must and can be superannuated; how steam-power, as the prime mover of another description of machinery, to accomplish the same ends and purposes, may be introduced for the farmer's benefit and advantage?—I shall feel obliged, not for my own sake, but for the sake of our own country. I may be about to assail the foundation-stone of this ancient art; but we must bear in mind that we have arrived at and live in a mechanic age. Agriculture was instituted in a non-mechanic age, and the laws of agriculture have been considered hitherto even as the laws of the Medes and Persians, which we are told "alter not, neither do they change;" but we have emerged from the age of such delusions, and the laws of agriculture must share, if necessary, the same fate as the other human laws I have alluded to. So to make a request, and be somewhat facetious at the same time, I ask your permission, and the permission of your readers, to allow me to ascend that "break-neck" staircase and harangue your readers on the many unscientific and unprofitable customs they now adopt in using machinery on their farms, and after I shall have related how many of their implements are opposed to every rule and maxim in mechanic science, and how, in using their machines, they have been acting contrary to, or offending the fundamental laws of mechanism, to their own great detriment and loss, I will then point out these proved and unvarying rules in the use of machinery that ought to be followed, and, moreover, will describe such machinery as will serve the purposes, improve and simplify all the operations of husbandry; and remember, all this will be uttered on the top of a very "steep staircase," than which no more unfavourable situation could be chosen, for I put myself in that very situation, in which, if not able to maintain my position, my opponents may, with the utmost ease, and without danger to themselves, "break my neck" at once; which fate all innovators ought to have unless they verify the promises or assertions held out. *C. B., Heacham, Norfolk.*

ERRORS IN FRIENDLY SOCIETIES.

It is to be regretted, of this excellent class of institutions, that many of them are founded upon erroneous principles, or rather upon no principles at all; and it often happens, therefore, that those who trust to them are disappointed, the funds falling short before all claims are satisfied. This was at one time not to be wondered at, as no proper calculations for friendly societies existed; but such is no longer the case, for sound calculations are now attainable. Nevertheless, there is still a considerable number of obscure societies scattered throughout the country, proceeding altogether at random, and by which the industrious classes are induced to misspend large sums. We trust that what we have now to state will be of some service in promoting the establishment of sound societies, and putting an end to such as are of a different kind.

One great mistake in the formation of friendly societies is to assume that each member should pay an equal sum, whatever his age may be. This is unjust; for the younger members have a less chance of becoming burthensome to the funds than the middle-aged; and, indeed, there is a rising scale of probability of sickness throughout all the years of a man's life. The Highland Society found that, between 20 and 30, men are liable at an average to be half a week indisposed per annum. Between 30 and 40, the average was about two-thirds of a week. At 46, it became a full week; at 57, two weeks; at 70, 11 weeks. The society, from taking unsuitable grounds for their calculations, made out the probabilities of sickness too low. In the following table, three sets of calculations are given, as to the proportion of sick out of 100 at particular intervals of age:

Ages.	Highland Society.	English Benefit Societies.	Mr. Edwards' Theoretical Table.
20 to 30	1 14	1.54	1.72
30 „ 40	1 52	1 87	2.30
40 „ 50	1.97	2 56	3.10
50 „ 60	3.60	4 22	4.51

The difference in the three columns is here of little consequence. They at least agree in representing increase of years as attended by increased liability to sickness. Now a rightly-constituted friendly society is bound to advert to this circumstance. To admit all ages at an equal payment is clearly making the younger members pay for the elder, who should have entered at an earlier age, and been paying all along.

Another great error in the constitution of benefit societies is in making them for a year only. Many of the old friendly societies having ended in disappointment, in consequence of want of right calculations, or bad management, or peculation of the funds, the working-classes have contracted the notion that there is more safety in a yearly term. The immediate payments are also less than in a well-constituted friendly society. Yearly societies, as they are called, usually originate with some individual, often the keeper of a tavern, who advertises that a society will be formed in his house on a particular day. Applicants for admission pay 1*s.* as entry-money, which goes into the pocket of the originator of the scheme, by way of rent. The objects are generally three-fold—namely, a fund for sickness and funeral expenses, a deposit fund, and a loan bank. Towards the first, there is perhaps a weekly payment of 2*d.*, or more if necessary, together with the interest arising from the loan of the money to the members. Towards the deposit fund there is a payment ranging generally from 6*d.* to 2*s.*, the accumulations being received back when the society closes. The money deposited is employed in making loans to such of the members as desire such accommodation, within the amount of their several entire deposits for the year, 1*d.* per 1*l.* per month being charged by way of interest. The surplus, if any, of the twopences and interest, after sick and burial money, books, and other necessaries are paid, is divided amongst those members who may be clear of the books at the close of the society. Some such societies are formed by a spontaneous association of persons, who prefer renting a room for their meetings, and thus escape the temptations of a tavern; but none of them avoid the errors of an equality of payments for all ages, and the yearly dissolution. The youth of 15, who is not liable to half a week's sickness per annum, pays as much as the man of 57, who is liable to two weeks. Should sickness befall anyone towards the close of the year, he is left, when the society dissolves, quite unprovided for, because he cannot enter another society in a state of sickness. Considered as a deposit for savings, the yearly society is strikingly inferior to the savings' bank, in as far as the depositor cannot take out money without paying an exorbitant rate of interest. Finally, these societies are generally under the care of obscure persons, who can give no security for the funds placed in their hands, and who in many instances become bankrupt or abscond before the final reckoning. Yearly societies are, indeed, in every point of view, a most objectionable class of institutions, to which working people would never resort but for their ignorance and unwariness, and the temptations held out to allure them.

A well-constituted friendly society involves, in the first place, the principle of payments appropriate to particular ages, as no other plan can be considered equitable. It stands forth before the working classes as a permanent institution, like the life-assurance societies of the middle and upper classes, and necessarily requires its members to consider the connection they form with it as an enduring one, because its grand aim is expressly to make provision at one period of life for contingencies which may arise at another—youth, in short, to endow old age. By a yearly society, a man is left at last no better than he was at first, as far as that society is concerned; but the proper friendly society contemplates his enjoying a comfortable and independent old age, from the results of his own well-bestowed earnings.

It is also essential to the character of a proper benefit society, that individuals be not admitted indiscriminately. To take in a person in bad health or of broken constitution, is unjust to those members who are healthy, because he is obviously more likely to be a speedy burthen to the funds. Here, as in life-assurance societies, it is necessary to admit members only upon a showing that they are of sound constitution and in the enjoyment of good health. And it may be well to grant no benefits until after the member has been a year in the society. By these means men are induced to enter when they are hale and well, instead of postponing the step until they have a pressing need for assistance, when their endeavour to get into a benefit society becomes little else than a fraud.

Government has thought proper to interfere with its aid in the formation of friendly societies, though not compulsorily. An association of persons forming one, has the means of ascertaining the soundness of its principles, and also entitles itself to deposit funds in savings' banks, with the government security, and at not less than 3*l.* 0*s.* 10*d.* per cent. per annum, by submitting the proposed rules to the barrister appointed to certify them, to whom a fee of a guinea is payable. Under the sanction of government, tables have been formed by a highly-competent person, John Finlaison, Esq., Actuary of the National Debt, for the guidance of friendly societies; and these are easily to be had, so that it is quite inexcusable to proceed upon random and unauthenticated data. *From a Paper on the Social Economics of the Industrious Orders, in Chambers's Information for the People.*

Home Correspondence.

Poor Rates and Colonising Ireland.—Being strongly of opinion that the main chance for the regeneration of Ireland lies in the introduction of capital, I feel that anything tending to direct the attention of capitalists to Ireland should be encouraged and supported, and I cannot but express regret that your correspondent "Cantium" should have brought forward an argument that poor rates are a bar to profitable farming in Ireland; that fact being a solution of Mr. Hewitt Davis's system, of 24 farms in Ireland being begging for tenants at a nominal rental; and I think it would be well that your readers should be led to consider what weight should really be attached to "Cantium's" doctrine. "Cantium" starts with an assumption that Mr. Davis forgot the poor rates and other taxes on land in Ireland, when he wrote his letter of 21st ultimo, and states that there is a parish in England where the taxes amount to more than the value of the produce, "consequently it is not cultivated." In reply, I would assume that Mr. Davis did not forget the poor rates, and would just imagine that the peasants on these farms, or in the parish, must eat whether they be usefully employed or not. If unemployed they would live upon capital sunk in the shape of poor rates. If employed, upon capital invested in remunerative labour. In the absence of capital in the district the deficiency must be supplied by rates in aid, or contributions from England. But give to capitalists cheap and prompt conveyance of land, and security against outrage, and money will flow into Ireland. Then the Irish peasant may expect to receive money wages for his day's labour. The poor rate will be reduced to a moderate amount necessary for the support of the aged and infirm. The rich resources of Irish soil will be developed, and emigration to Ireland instead of from Ireland, will assuredly take place. With respect to the parish in England which does not grow enough to support its poor, I would beg to ask "Cantium" in all courtesy the name of it, and how the poor are otherwise supported, the land being out of cultivation. *V.*

Tobacco.—In reference to the remarks, at p. 454, on the destruction of damaged tobacco by your correspondent "T. G., Clitheroe," I may mention that, several years ago, I addressed a memorial to the Board of Trade recommending the tobacco to be reduced by decoction, for the purpose of being used as a bath for sheep in autumn, to kill the keds and keep off the flies; and as such a decoction is rendered much more efficacious by the addition of spirit of tar, that substance would at the same time render it unusable by tobacconists as a steep. I gave a recipe for making the decoction, and the proportion of the spirit of tar to be used in it. I showed also that all the tobacco destroyed, as shown in the returns, would be used by the number of

sheep annually subjected to such a bath in Scotland alone. I showed also that tobacco-leaf was as easily and cheaply decocted as burnt. The answer I received to my memorial from the Board, through Mr. M'Gregor, was, that my proposal could not be entertained; but why, the deponent said not. *Henry Stephens, Edinburgh, July* 30.

Norwich Agricultural Show.—Having attended several of these annual exhibitions, I may be allowed perhaps to make a few observations on this one of 1849. There were two days' admission, one of them, the first, was to admit visitors to the implement yard at 2*s.* 6*d.*, and the cattle yard at 1*l.*; several attended the former, though I doubt if many did the latter, the charge of admission defeating its object. Many implements were not on the ground the first day, and this, to one wishing to view them leisurely before the crush upon the great day, was a great disappointment. One implement of husbandry deserved all the attention and patronage it received, and this was Dr. Newington's dibble; in my opinion a most useful and invaluable invention, and one that gratified me so much, that I felt my long journey and expenses amply repaid by having had one in my own hands. They were bought up quickly whilst I was there, and the Doctor's agent on the ground obliging to excess. I must say I saw some monstrosities, a machine for digging or ploughing drains, another for grubbing, harrowing, pressing, and sowing land at one and the same time. I must not omit another implement for shocking or pooking Barley or Oats, an invention very ingenious and no doubt useful. I must say the plan of delivering catalogues looked very mercenary, one for beasts and one for implements at 1*s.* each; many could buy but one, and one only there should have been. The cattle not numerous but good of their kind; admirable pigs; some good horses, but none could discover the merits of one stallion which received a first class premium for agricultural purposes—a small hairy-legged animal. Are the clean-legged, for lightness of action, gone out of fashion? There were some good short-horns, but our remembrance of Derby and York meetings called up, forms not to be found at Norwich. The sheep were very fine, but not very numerous. This objection cannot be applied to the implements, for the fact is this—the great makers of great implements make it a bazaar—the shop is transferred to the show-yard. Hundreds never see the new implements nor a quarter of them; in fact, to view them attentively is impossible. There ought to be a distinct row of sheds for all the new inventions, and such as have deserved a premium; and hither strangers and others could at once meet with the object of their search, for truly it is a regular hunt, and no sign-posts to guide us. I will not trespass further on your space, and will conclude by noticing two things—the dinner, which offended many because it was bad; the other deserving strong remark, viz., the parliamentary train which generally, indeed constantly, left at half-past 4 P.M., was, on the great show day, started at 10 minutes to 8 A.M., so that the railway company *did* the humbler classes who visited the show, and who expected a cheap conveyance home. It caused much grumbling and annoyance. It was a shameful proceeding towards those the act of parliament intended to protect, but how is the poor man to make his complaint known; will you kindly do so, Mr. Editor, and I am sure they will be grateful. *X. Y. Z., Hants.*

Practice with Science: Mr. Caird's Pamphlet.—A greater service could not have been conferred on the agricultural public than has been by Mr. Caird, in his pamphlet, by bringing into prominent view the superior advantages of high farming. Many modern improvers have advocated the same thing, and have enforced their opinions by precept and example too; but it is to Mr. Caird the merit is due of having, in a small treatise, expounded his theory with singular perspicuity and force, and of supporting it by indisputable proofs of success in his own practice. The advantages arising from this admirable exposition of facts are likely to be attended with important results. His avowed object has been to find a substitute for depreciated prices by increased produce and an improved system. It may be a question whether in the Lothians of Scotland, where farming has, for more than half a century, been carried to a degree of excellence unknown to most other parts of there kingdoms, and rents have been proportionally increased, the same reasoning will apply; but there cannot be a doubt that there are large districts, or even the greater part of this kingdom, where farming is still in a very low condition, and it is to such districts that this treatise is more particularly applicable. Mr. Caird begins by showing what are the permanent improvements made upon his farm, consisting of 260 acres, through the means of a liberal landlord, Colonel M'Douall, co-operating with an intelligent and enterprising tenant, Mr. M'Culloch, he himself being only the occupier. These improvements consist in draining and subsoiling, and in the erection of suitable farm buildings. The reclamation of moss land, which cost 10*l.* an acre (a small outlay, considering the results arising from it), had been amply remunerative, from the Potato culture; and it is to be considered that the Potatoes had been rated at 40*s.* the ton, though they were then actually realising 100*s.* The most material part of his valuable system is the quantity of manure made upon the farm; and it is very clear that unless this be done, no high farming can be carried out. The raising of manure to the utmost possible extent is absolutely requisite in green crop cultivation; and it is through the growth of green crops, and the feeding of stock with them, that Mr. Caird derives his large profits. A difference of opinion may exist whether a greater profit would arise from the feeding of stock, or from growing an increased quantity of Wheat. But, in either case, the same principles apply to one as they do to the other; and it is to these we should look, if we wish to turn capital and skill to the best possible account, or, in other words, to make amends for the reduction in prices by augmenting the amount of produce. Mr. Caird is clear and satisfactory in giving accurate returns of the gains and outgoings in his farming concerns. This is a most important part in all farming speculations. Where doubt and incredulity often hang over a new system, stern facts alone can convert the sceptical into true believers, and then into practical imitators. The return of Mr. Caird's profits is shown from the following statements:

Value of crop and stock formerly produced ...	£642	0	0
Now produced	2518	0	0
Being an increase of	1876	0	0

The cropping of the farm is:

55	acres	Italian Rye-grass, Clover, and pasture.
30	,,	In Oats, after do.
25	,,	Potatoes, also after Clover, &c.
55	,,	In Turnips.
55	,,	Wheat.
30 or 40	acres	reclaimed moss, in Potatoes.
260	acres.	

This gives no less a quantity than 165 acres in green crop, Grasses included; or without these, 110 acres, for which manure must be regularly provided. To raise this manure 130 cattle are fed off during the year, five cows are kept, 150 sheep, and 3 young horses. The account for guano and bones in 1848 was 256*l.*, and for hay, Linseed, Beans, and other feeding stuffs, 270*l.* The dung house is covered, situated at a lower level than the feeding byres, by which arrangement the dung can be wheeled in successive layers over the heap, and the urine is conveyed over the top of the dung. Dried peat moss is stored at hand, to be spread over the different layers of dung. Any portion of the urine that finds its way to the bottom of the heap is caught in the tank, which extends the whole length of the dung-house. It is built with stone, lined with Roman cement, and arched over with bricks at the ground level. It is 4 feet deep, 10 feet wide, and 31 feet in length, and can contain 7724 gallons; 500 loads of sea-ware are also obtained yearly on the coast; and about 2000 loads of peat moss, previously turned up and exposed for a year or more to the atmosphere, are annually carted out. These substances are mixed in alternate layers with the manure as it is carted out from the fields. About 5000 loads of manure are in this way annually collected and applied to the green crops. This is certainly a splendid exhibition of high farming, setting at defiance protective duties. But we may go a step further, and see whether, even if we admit this management to be so superior, it may not be possible to attain a still more elevated standard of excellence. We hear nothing of the drill system being in use, nor of tillage. Now, these two processes are most important in husbandry, and are not in general sufficiently considered. We know that for a corn crop they will in a great degree serve as a substitute for manure. We read in the very valuable work of Mr. Tull, that he grew good crops of Wheat 12 years running on the same land without any manure at all, and solely by tillage. The quantity grown by Mr. Caird is exactly 36 bushels on the acre. May it not be supposed that if these two processes had been adopted, this quantity might have been largely increased; it is not impossible but that it might have extended from 40 bushels to 50 or even 60 bushels if the land were of a very superior quality. The rent paid on this farm is only 16*s.* the acre, the allowance for draining being deducted. This is a very small figure indeed, and considering the high rents paid in some other parts of Scotland, is not such as will bring high farming into great repute; because, disguise it as we may, rent is the main thing to look to. It has been mentioned that some landlords have raised their rents in East Lothian within these few years 33 per cent. It may be very possible that the Auchness farm may be raised in the same degree, when the tenant's present term expires, for unless a large rise takes place there will be but a poor return for the large sums expended by the landlord in the expensive buildings of which a plan is given; or for the great improvements that have been so successfully accomplished. It is not either just or reasonable that a farm should be put up to private auction, and that a tenant should be chosen who promises the highest rent, and accepts the lowest sum for outlay in improvement. This is rightly observed by Mr. Caird, but it is just and reasonable that a landed proprietor should turn his possession to the best account, the same as the owner of any other property; and if he does this with proper regard to the interest of his tenant as well as his own, it is most probable that both parties will be alike benefited by judicious and liberal covenants. *Law. Rawstorne.*

Mowing Wheat.—I am an advocate of, and invariably practise, harvesting my Wheat with the scythe, and I am happy in furnishing "C. L.," with the results of my experience. The instrument I use is a common scythe with a bow to it made from a stout willow wand, fitted and fixed with the aid of a little string by the workmen themselves. I mow towards the standing crop, with the "lay" of the corn and if possible with the wind. The great point to be attended to, in harvesting Wheat thus, is the gathering it well after the mower; I put my most trustworthy men (no women or boys to this office), for every straw left ungathered in the swathe, (that is just on the edge of the uncut corn), loses its head in the next "bout." As to the "tying," the roughness of the sheaves that "C. L." laments, is that which to my mind gives mowed Wheat its chief advantage. The rough sheaf admits the air and lets out the damp. For drying purposes there is as much difference between a neatly gathered and tied sheaf of reaped corn, and one well put together of mowed corn, as there is between a swathe of unturned meadow hay, and the same lightened up with a fork. I have said well put together, meaning by that gathered with a level butt, as few ears as possible below the band, and that band so made and fastened as to do its duty to the machine mouth; nothing is more irritating or impeding in taking in a rick than loose and faulty bands. A gang for mowing will consist of two men and a boy, one man cutting, the boy making and laying down bands, the other man gathering and tying. I however prefer leaving the sheaf open for an hour or two; in this case let the bands be laid well away from the standing corn, that when the cut corn is spread upon them, the ears of that corn may be at a sufficient distance from the standing corn, to leave an ample path for the mowers carrying back their scythes. I have seen much corn trodden under foot through neglect in this particular. So soon as the sheaves are shocked, I have the ground dragged with a hand drag, choosing the early morning for this operation, as the damp prevents any "shelling out;" of course these rakings are not tied up till noon and then only if dry. I get all my Wheat down before it is ripe, and I put the whole expence of cutting, gathering, tying, dragging, and setting shocks at 7*s.* per acre for a good crop of Wheat, last year's prices. *P.*

Spontaneous Germination.—In a late leading article in the *Agricultural Gazette*, you call the attention of your readers to the apparently spontaneous germination of seeds, and instance the springing up of Clover in heath lands that have been recently limed; a good example has occurred in my own garden. Twenty years ago I had a common Foxglove growing there, which seeded, and for two or three years the plants flourished but died away soon after, and I saw no more of them until two years ago, when, after giving my flower borders a dressing of peat earth in the spring, scores of Foxgloves sprung up around the place where the plant had stood 20 years since. It may be asked how I know that the seeds of these plants were not in the peat soil with which I dressed the borders? By this, that they only appeared around the spot where the Foxglove had formerly grown. If the seed had been in the peat it ought to have come up all over the garden. Our farm labourers say that "black muck" (night soil and ashes) always breeds chickweed; this I used to laugh at, and ask them whether they thought the seeds had passed through the fire or the stomachs of the people, but now I have no doubt of the fact that this kind of manure stimulates the growth of Chickweed in an extraordinary manner; and if the seeds would not vegetate without its assistance, it may be said to breed it. The fact you mention of Clover springing upon heath land after the application of lime is another instance of peculiar manures stimulating long dormant seeds into active vitality. Is it not possible that the difficulty which is often experienced in getting some seeds to vegetate, is caused by our ignorance of the proper stimulants to be applied when we sow them, and is not the study of this subject well worth the attention of gardeners? *T. G., Clitheroe.*

Nitrate of Soda for After-Grass and Weak Clover.—This dressing, at one time used for many crops for which it was not suitable, has since fallen into undeserved neglect. That the liquid manure of the farm is the best for after-grass, is now beyond question. When we see a report, at the Royal Agricultural Society, of Rye-grass cut six times a-year, yielding altogether at the rate of 118 tons per acre (!), by only giving it a good watering with liquid manure, immediately after each cutting—thus making it grow 3 feet in 6 weeks—we have probably reached the limits of practicability, for this climate. But how many farmers have not the means and convenience of thus collecting and applying their liquid manure! For these, nitrate of soda is probably the best substitute. Without pretending to approach the report above, it will nevertheless, when properly applied, produce surprising effects upon the after-grass, and upon poor hungry Clover. It must be strewed, in wet weather, as soon after cutting as possible: 1½ cwt. per acre is not too much; but where money is very scant (a too common case, now, amongst farmers) 1 cwt. may do; though of course not so well. For after-grass, it should be mixed with 6 or 8 times its weight (or more) of wood ashes; and for weak Clover it should be, per acre, 1 cwt. nitrate of soda, 2 cwt. gypsum, and 6 or 8 cwt. wood ashes. If the Grass or Clover is not intended for cutting, it may be strewed any time from May to September: but not in the short days, or early spring, as its effect is very dependent upon sunshine; and a wet day must be chosen, that it may be washed into the soil, as its great strength may do more harm than good, if lying dry on the surface. *J. Prideaux.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A SPECIAL COUNCIL was held at the Guildhall, Norwich, on Tuesday, the 17th of July; present, his Grace the Duke of RICHMOND, K.G., Trustee, in the chair; Hon. Robert Henry Clive, M.P., Sir Thomas Dyke Acland, Bart., Col. Austen, Mr. Raymond Barker, Mr. Barnett, Mr. John Booth, Mr. Hammond, Mr.

Fisher Hobbs, Mr. Stansfeld, M.P., Mr. Milward, Mr. C. Hampden Turner, Mr. Henry Wilson, and Mr. Wingate.—The business transacted at this Council had reference to topics of a local and temporary character connected with the details of the Norwich Meeting then about to be held.

A General Meeting of the Society was held at the Guildhall, Norwich, on Friday, the 20th of July; present, the Earl of Chichester, President, in the chair. Votes of thanks were passed unanimously, to the following parties for the manner in which they had respectively promoted in so essential a manner the success of the Norwich Meeting held in that week:

1. To the Mayor and Corporation of the City of Norwich; on the motion of Colonel Challoner, seconded by Sir Robert Price, Bart., M.P.
2. To the Local Committee, on the motion of Mr. Fisher Hobbs, seconded by Mr. Shaw, of London.
3. To the Owners and Occupiers of Sites of Ground; on the motion of Sir Robert Price, Bart., M.P., seconded by the Hon. Capt. Dudley Pelham, R.N.
4. To the Committees of the Norfolk and Norwich Museum, and the Norwich Chamber of Commerce; on the motion of Colonel Challoner, seconded by Mr. Barnett.
5. To the Railway Companies; on the motion of Mr. Fisher Hobbs, seconded by Mr. Kinder.
6. To Professor Simonds and the Rev. Edwin Sidney, M.A., on the motion of Sir Robert Price, Bart., M.P., seconded by Colonel Challoner.
7. To the Earl of Chichester; on the motion of the Duke of Richmond, seconded by Colonel Challoner.

A Special Council was then held; present, the Marquis of Downshire, President, in the chair; Duke of Richmond, Earl of Chichester, Hon. Captain Pelham, Colonel Austen, Sir Robert Price, Bart., M.P., Mr. Barnett, Col. Challoner, Mr. Hammond, Mr. Fisher Hobbs, Mr. Kinder, Mr. Shaw (London), and Professor Simonds.

The Council ordered their best thanks to be conveyed to Mr. Staff, the town-clerk of Norwich, for the exact manner in which he had carried out, under the authority of the mayor and corporation, the wishes of the Council, from time to time communicated to him; and to the Commissioners of Metropolitan Police for their grant of a supply of their force during the meeting, accompanied with an expression of the entire approbation of the conduct of Inspector Otway and the men under his charge.

On the motion of Col. Challoner, Mr. H. Manning was requested to act as the Society's Contractor of Works at the country meeting to be held next year in the city of Exeter, at the same rate of charge as on former occasions.

Colonel Challoner then gave notice that at the next monthly Council he should move the presentation of the gold medal of the Society to their Consulting Engineer, for the manner in which he had perfected the dynamometrical apparatus proposed by Colonel Challoner for testing the powers of agricultural machinery; and the Hon. Captain Pelham that he should move, at the same time, certain arrangements connected with the stewards and judges of implements, for the purpose of facilitating the discharge of the duties and details of their office in future.

A Weekly Council was held at the Society's House in Hanover-square, London, on Tuesday, the 31st of July; present, Mr. Raymond Barker, Vice President, in the chair; Mr. Brandreth, Mr. Burke, Col. Challoner, Mr. F. C. Cherry, Mr. Dyer, Mr. Kinder, Mr. C. E. Overman, Prof. Sewell, Prof. Simonds, Mr. T. Turner, Prof. Way, and Mr. W. White.

The following new members were elected:

Bouverie, the Rev. W. Arundell, Denton Rectory, Harleston, Norfolk
Alexander, the Rev. John, Norwich
Vincent, James, Clifton Maubank, Sherborne, Dorset
Bird, the Rev. James Waller, Briston, East Dereham, Norf.
Shaw, Thomas, Kilrie, Stoneyford, Ireland
Pritchett, William D., Little Hallingbury, Hertfordshire
Wickham, Edward, St. Margaret's, Rochester, Kent
Franklyn, Thomas, Maidstone, Kent
Baxter, William Edward, High-street, Lewes, Sussex
Macdonald, Sir Archibald, Bart., Woolmer Lodge, Liphook, Hants
Stanley, Hon. Edward Henry, M.P., Knowsley Park, Lancashire
Whitmore, Thos Charlton, M.P., Apley Park, Shiffnal, Salop
Bethell, John, Brighton, and 8, Parliament-street, London
Sedgwick, The Rev. Professor, Trinity College, Cambridge
Hall, George, Barton-Seagrave, Kettering, Northamptonshire
Moore, the Rev. Edward, Frittenden, Staplehurst, Kent
Tomson, James, Barut Green, Bromsgrove, Worcestershire
Scudamore, J., Abinghall, Mitchel Dean, Gloucestershire
Finch, Henry, 69, King William-street, City, London
Moody, Captain R.E., late Governor of the Falkland Islands (J. U. S. Club, London)
Whaley, J., Holly Lodge, Enfield, Middlesex
Fitz-Patrick, the Right Hon. J. Wilson, M.P., Lisduff, Rathdowny, Ireland.

Communications were received from Mr. Wright on the amount of grain consumed by rats; and from Messrs. Storar, of Cheapside, on Hosen tubing adapted for the purpose of distributing liquid manure.

A Monthly Council was held at the Society's House in Hanover-square on Tuesday, the 7th of August; present, Mr. Raymond Barker, Vice-President, in the chair; Hon. Capt. Dudley Pelham, R.N., M.P., Sir Robert Price, Bart., M.P., Col. Austen, Mr. Barnett, Mr. S. Bennett, Mr. Brandreth, Mr. Burke, Col. Challoner, Mr. Cherry, Mr. Garrett, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Fisher Hobbs, Mr. Kinder, Mr. Milward, Prof. Sewell, Mr. Shaw (London), Mr. Shaw (Northampton), Prof. Simonds, Mr. W. Simpson, Mr. John S. Tanqueray, Mr. T. Turner, Prof. Way, and Mr. Jonas Webb.

Mr. D. K. Bramwell, of Funtington, near Chichester, was elected a member of the Society, and the names of eight candidates were proposed for election at the next meeting.

Finances.—Colonel Challoner, Chairman of the Finance Committee, presented the monthly report of the accounts of the Society, from which it appeared that the following special balances were in the hands of the bankers, namely, composition balance to be invested, 939*l.*; balance derived from arrears of subscription paid, 1134*l.*; and available balance for current purpose, 1129*l.* The Chairman further reported, on the part of the committee, that the amount of the receipts for admission into the show-yards at Norwich, on the Tuesday evening and Wednesday was 410*l.*, and on the Thursday, 1914*l.* Colonel Challoner had then the gratification of informing the Council that, in consequence of the kind and prompt manner in which so large a number of the members in arrear had responded to the request contained in the letter addressed to them by himself, as Chairman of the Finance Committee, the funds of the Society were in a condition, at the conclusion of the present session, fully able to meet and discharge every claim against them.

Diseases in Stock.—Mr. Raymond Barker, Chairman of the Veterinary Committee, presented the report of the Committee, which was unanimously adopted by the Council.

REPORT OF THE VETERINARY COMMITTEE.

With a view to the collecting and perpetuating a body of authentic information in regard to the diseases of cattle, sheep, and pigs, and arresting their progress, the Society appoints a professional inspector for these purposes. Any member of the Society who may desire a competent professional opinion and advice in cases of extensive or destructive disease among his stock, and will address himself by letter to the Secretary, will, by return of post, receive a printed list of queries which he is requested to fill up and return immediately. On the receipt of such returned list, the Secretary will convene the Veterinary Committee forthwith (two members of which, with the assistance of the Secretary, shall be competent to act), and such Committee will decide on the necessity of dispatching the Society's inspector to the spot where disease prevails. The remuneration of such inspector shall be a professional fee of 2*l.* 2*s.* per diem, and 1*l.* 1*s.* per diem for personal expenses, and he shall also charge the cost of travelling to and from the localities where his services may have been required. The fees will be paid by the Society, but the travelling expenses will be a charge against the applicant for professional aid. This charge may, however, be commuted or remitted altogether, at the discretion of the Council, on such step being recommended by the Veterinary Committee.

The inspector, on his return from visiting the diseased stock, shall report to the Committee in writing the result of his observations and proceedings, which report will be laid before the Council.

When contingencies arise that may prevent a personal discharge of the duties confided to the inspector, he may, subject to the approval of the Committee, name some competent professional person to act in his stead, who shall receive the same rates of remuneration.

(Signed) Thomas Raymond Barker, Chairman.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.
QUERIES.

This list is returned by
Mr. ..... (Christian and surname)
of ..... (Parish.)
near ..... (Post town.)
Most convenient Railway station from London .....
Date .....

1. What length of time have you occupied your farm?
2. What are the relative numbers of cattle, sheep, and pigs, kept by you for breeding, milking, grazing, or other purposes?
3. What is the general character of your arable and pasture grounds?
4. What has been the usual state of the health of the animals kept on the farm?
5. When did the disease first appear?
6. What number of your cattle, sheep, or pigs are now affected?
7. How many have died or been destroyed?
8. What time has usually elapsed between the first indications of illness and the death of the animal?
9. What was the state of the weather previous to and at the time the disease was first observed?
10. Did the malady first show itself among the breeding or fatting cattle, sheep or pigs?
11. What is their age and condition as to fatness?
12. Can the outbreak be assigned to contagion or infection? If not what do you believe to be its probable cause?
13. Is a similar disease prevalent in the neighbourhood?
14. What are the symptoms shown by the animals, and what is your opinion, so far as you are able to form one, of the nature of the malady?
15. Has amelioration been attempted by change of situation or management? alteration in the quantity or quality of the food? by medical treatment or any other means?
16. What effects have followed any efforts that may have been made to stay the progress of the malady?
17. Are you willing to pay the travelling expenses of the inspector, should the committee decide on sending him down?

Have the kindness to add any other information that you think desirable, and return this list without delay to the Secretary, James Hudson, Esq., 12, Hanover-square, London.

Member of Council.—On the motion of Col. Challoner, seconded by Mr. Jonas Webb, Lord Camoys, of Stonor Park, Oxfordshire, was unanimously elected a member of Council, in the place of Mr. Thomas Umbers, of Wannenbury, deceased.

Norwich Dinners.—Mr. Shaw (of London) regretted to state that he feared the quantity and quality of the dinners, supplied by the contractor, at the Norwich meeting, had not given that general satisfaction it was desirable they should have done. At the proper stage of the proceedings in preparation for next year's meeting, he should be prepared, from the experience he had derived from attending large dinners of a similar character in London and elsewhere, to offer to the Council suggestions which he hoped would prevent a recurrence of the evil complained of; in the meantime he thought a statement he had seen in one of the Norwich papers, that the alleged failure on the part of the contractor arose from the manner in which the Society had tied him down in his price, ought to be met with the counter-statement that, instead of such limitation, the contractor's own price was accepted; and, in order that he might be enabled to fulfil his engagement more easily, one of the most costly dishes he engaged to provide at the Council dinner, namely, turtle-soup, was considerately, and of their own accord, directed by the Council to be omitted. He thought it ought also to be known, that the contractor was the only party who sent in a tender in reply to the Society's advertisement. An animated conversation then took place on this subject; in the course of which the anxiety and attention evinced by the Hon. Mr. Clive, during the dinner, towards all the guests who applied to him or required his care, as the steward of that department, were duly and gratefully estimated.

Consulting Engineer.—A letter was read from Mr. Thompson, senior steward of the implement yard at the Norwich meeting, conveying a strong recommendation on the part of himself and his colleagues, that some public notice should be taken of the very able and zealous way in which Mr. Amos had performed the duty of consulting engineer on that occasion. Mr. Thompson did not think it too much to say, that the greatly increased accuracy of the trials of implements at that meeting was in a great measure due to Mr. Amos's unremitting exertions, and to the complete success of the very simple and beautiful instrument, made by Messrs. Easton and Amos, for testing hand and other low powers. That machine had been applied to several classes of implements in Mr. Thompson's department, and in some instances had brought out results which were as unexpected as they were valuable in guiding the decision of the judges.

Colonel Challoner then brought forward the motion of which he had given notice at the Special Council at Norwich; and having favoured the Society with a detail of the steps by which this great result had been attained, and his own proposition of the machine, and his wishes connected with it, carried out by Mr. Amos during the last two years, the motion was seconded by Mr. Shaw, of Northampton, and carried unanimously, that the Gold Medal of the Society should be awarded to Mr. Amos (of the firm of Easton and Amos) as a mark of the satisfaction of the Council for the manner in which he had applied himself to the perfecting of those means of testing different implements exhibited at the country meetings of the Society, by which, trials hitherto of the most difficult and uncertain adjudication between competing machines, had now become, by means of this exactness of test, nothing more than a simple registration of facts, distinct and decisive in their character, and in their evidence convincing alike to the judges and the implement makers themselves.

Exeter Meeting.—On the motion of Colonel Challoner, seconded by Mr. Milward, Sir Mathew White Ridley, Bart, was requested to accept the office of Steward of Implements at the country meetings of the Society, in the place of Mr. Thompson, who retires by rotation. The name of Mr. Shelley was added to the list of the General Exeter Committee.

The Council agreed to the following schedule of Prizes for Implements at the Exeter Meeting:

IMPLEMENT PRIZES; 1850.

For the Plough best adapted for general purposes, 7*l.*
For the Plough best adapted for deep ploughing, 7*l.*
For the best One-way or Turn rest Plough, 5*l.*
For the best Paring Plough, 5*l.*
For the best Subsoil Pulveriser, 5*l.*
For the best Drill for general purposes, which shall possess the most approved method of distributing compost or other manures in a moist or dry state, quantity being especially considered, 10*l.*

N.B. Other qualities being equal, the preference will be given to the drill which may be best adapted to cover the manure with soil before the seed is deposited.

For the best pair horse steerage Corn and Turnip-drill, 10*l.*
For the best Drill for small occupations, 5*l.*
For the best Turnip-drill on the flat, which shall possess the most approved method of distributing compost or other manures in a moist or dry state, quantity being especially considered, 10*l.*

N.B. Other qualities being equal, the preference will be given to the drill which may be best adapted to cover the manure with soil before the seed is deposited.

For the best Turnip-drill on the ridge, which shall possess the most approved method of distributing compost or other manures in a moist or dry state, quantity being especially considered, 10*l.*

N.B. Other qualities being equal, the preference will be given to the drill which may be best adapted to cover the manure with soil before the seed is deposited.

For the best drop Drill, for depositing seed and manure, 10*l.*
For the Manure-distributor which is best adapted for distributing broadcast any kind of compost or hand-tillage when in a moist state, and which is capable of adjustment for the delivery of any quantity, from 2 to 20 bushels per acre, 5*l.*
For the best portable Steam-engine, applicable to threshing or other agricultural purposes, 50*l.*
For the second best ditto, 25*l.*
For the best portable Threshing-machine applicable to horse or steam power, 20*l.*
For the best Corn-dressing Machine, 10*l.*
For the best Grinding-mill for breaking agricultural produce into fine meal, 10*l.*
For the best Linseed and Corn-crusher, 5*l.*
For the best Chaff-cutter, 10*l.*
For the best Turnip-cutter, 5*l.*
For the best Oilcake Breaker, for every variety of cake, 5*l.*
For the best One-horse Cart for general purposes, 10*l.*
For the best Light Waggon for general purposes, 10*l.*
For the best Machine for making Draining Tiles or Pipes for agricultural purposes. Specimens of the Tiles, or Pipes to be shown in the yard: the price at which they have been sold to be taken into consideration, and proof of the working of the machine to be given to the satisfaction of the judges, 20*l.*
For the best Set of Tools for general Draining, 5*l.*
For the best Heavy Harrow, 5*l.*
For the best Light Harrow, 5*l.*
For the best Cultivator, Grubber, and Scarifier, 10*l.*
For the best Pair-horse Scarifier, 5*l.*
For the best Horse Hoe on the flat, 10*l.*
For the best Horse Hoe on the ridge, 5*l.*
For the best Horse Rake, 5*l.*
For the best Horse Seed-dibbler, or Seed-depositor, not being a drill, 10*l.*
For the best Cider Mill, 10*l.*
For the best Narrow Hand Drill, to work with cups, 3*l.*
For the best Liquid Manure Distributor, 10*l.*
For the best Haymaking Machine, 5*l.*
For the best Gorse-bruiser, 5*l.*
For the best Cottage Stove or Range for burning coals, 5*l.*

For the best and most economical Steaming Apparatus for general purposes, 5*l*.

Miscellaneous Awards and Essential Improvements, Silver Medals estimated at 70*l*.

For the Invention of any New Implement, such sum as the Council may think proper to award.

INSPECTION OF CROPS AT TIPTREE HALL, *July* 26.—**Mr. MECHI entertained a large party of agriculturists at dinner, after they had been conducted over the farm, and witnessed the remarkably fine appearance of this year's crops. The following are some of the remarks made in the course of the evening:**

Mr. MECHI could not but consider this country in a particularly anomalous position; 30 years ago they had a population of 15 millions; now it had increased to 30 millions. At the former period it was said by their predecessors "We are farming exceedingly well and no more food can be produced;" but experience had shown the statement to be a fallacy, and, depend upon it, a similar result would be witnessed 50 years hence. The double of our population would be 60 millions, while, with our sanitary regulations to prolong the life of the people, and peace societies to prevent their going to war, they were doing everything to increase the ratio of progress. True, an unfortunate event in the sister country had necessitated a large emigration to their starving neighbours; but still population outstripped emigration in such a way that the necessity for improved cultivation was daily and hourly forcing itself upon the consideration of all classes of the community. He was aware of the serious difficulties which stood in the way of that object; he was aware that there was an immense number of old prejudices to be overcome—prejudices not peculiar to the agricultural community; for when he recollected how the great towns and cities regarded the railways, which were to give them facilities of transit, as a curse and a nuisance, but were now lamenting with tears in their eyes that those lines had not been brought to their own doors—all resulting from their own prejudice—he did say that prejudices were not to be charged solely against agriculture. And did not prejudice exist as much among landlords as among tenants? Was there not a desire to preserve old and miserable pasture—mere beds of twitch, the non-breaking up of which was annually a large tax upon the means of their tenants? Could they possibly see the slip of land he had pointed out now bearing corn for food, and furnishing employment in its production, without saying that the same principle ought to be carried out upon old pastures all over the country? Then there was the old story as to timber trees and fences, with respect to which he did not know who was most to blame, as there were the picturesque-loving tenants as well as landlords. (Laughter.) He should not continue to hammer away at that prejudice, having found the clearance of his own land greatly to the advantage of the pocket. But there were other matters connected with agriculture requiring serious attention, no one could doubt that good farming lasted a long while; in walking over the farm of his neighbour Mr. Sadler he came upon a corner looking so different from the rest, that he was led to inquire the cause, and learned that it was a garden 50 years ago. If good cultivation lasted so long as that, by a rule-of-three sum how long did bad farming last? He was prepared to assert that it was of almost equal duration, and he believed that any gentleman taking an exhausted farm after a poor tenant, or one who was not protected by an agreement for a fair valuation at the end of his occupation, would find that it took a great many years to restore to the land what had been unfairly taken out of it. It came to this—that a good landlord with a good tenant were a mutual advantage to each other and the community, witness Lord Leicester, of Holkham; whereas a grasping landlord and an impoverished tenant were the reverse. He spoke strongly because he knew that a kind and judicious landlord, willing to encourage his tenantry, would be almost sure to find his own income increased—his position improved, and become, like his tenant, a better man and a better member of society. He hoped he had a proper feeling towards the landed interest of the country—indeed he felt for them very great respect. He believed, as a body, they were highly deserving of that sentiment, but like others they had their prejudices; and let each and all labour to remove them. They had seen the results of his operations on Tiptree heath; and what had been the cause of those results?—the expenditure of capital. Farmers would tell him that what he had done was all right; but to make it general, where was the money to come from? That was an obstacle not easily got rid of; for he must say, though with all respect, that the great mass of landlords, as well as tenants, in this country, were under capitalled and over landed. The landlord was poor because he had got twice as much land as he ought to have, and the tenant was poor from the same cause. If landlords would do as he had done—for he had made the same mistake once—if they would sell half and improve the other half, and tenants would take 200 acres instead of 400, and put the same money into it, more corn would be produced and more profit made. It was impossible to travel from one end of this great kingdom to the other without seeing that the bulk of the land is not half farmed. They saw some people sowing thick, to smother the weeds, and yet having a very plentiful crop of the latter. It was impossible to grow corn and weeds too; and having this year employed a large amount of labour in hoeing and weeding, the result had been the liberal crop of corn which they had that day seen. There were only one or two other points to which he wished to advert; and the first was as to the necessity of better educating the agricultural community. Another point was the miserable way in which the labourers were housed, and their generally neglected condition. It was impossible to help being struck with the way in which many large families were huddled together, without regard to age or sex, in hovels hardly fit for a pig; and surely it was the bounden duty of landlords and others, for their own interest as well as the interests of the nation at large, to see that greater regard was paid to the welfare of those who were essential to themselves and to the community generally. The ignorance of the employed recoiled also upon the employer. He had always found that the more intelligent a man was the better servant he made, and that was why the Scotch farmer was able to compete with them in Smithfield market; because there in every parish they had a school, which the children were almost compelled to attend. Hence, when a gentleman wanted a gardener, a bailiff, or a man more intelligent than another, he had to choose one from Scotland, which he took to be a great censure upon ourselves. He did not like precept without example, and another year he intended to devote a portion of his income towards educating the poor of that neighbourhood and his own lads in particular. —Mr. FISHER HOBBS said that it was a long time since he had gone over Mr. Mechi's farm just before harvest; and though he was on all occasions candid enough to tell him of his faults whenever he saw any, he thought every one would agree that this year he had a splendid crop of corn; and that by his spirited and enterprising example he was doing a great good to the community at large. His friend Mr. Mechi would excuse him for making a few honest remarks with regard to his cultivation—telling him where he might improve himself and set an example to others also. He had already said that the corn crops were good—that of Wheat better than might have been expected. From the appearances in March those not acquainted with thin sowing would have thought there would not be half a crop; but, as he then told him, by judicious management and the fine weather, he might expect, as it was now, as fine a crop as any in the kingdom. With regard, however, to roots he must tell his friend that he would benefit himself and his neighbours by cultivating a little better—making use of more autumnal cultivation instead of spring ploughing. He did not agree with those who thought Mr. Mechi going at too great a pace; perhaps his fault now was that he did not go fast enough (laughter), though all the operations of his farm would be found beneficial by tenant farmers if assisted by their landlords in carrying out the permanent and durable improvements. Even in the drainage he thought Mr. Mechi might improve, for he considered his drains were not made deep enough or close enough for sound and effective drainage; then with the use of chalk, marl, and other calcareous substances, in his opinion he would require no furrows whatever, which were certainly a loss of land. So near as Mr. Mechi was to water carriage he certainly expected to see the chalk carts going. He (Mr. Hobbs) objected to the wide and dry ditches in almost every field; he considered it only necessary to have one open ditch running through the farm; and in the Lothians of Scotland they were all covered over, the farmers there saying that with their high rents they could not afford to lose so much space. In this respect he was persuaded the more his friend saw of agriculture the more he would see room for improvement in his own system. With regard to his steam-engine, he was of opinion that no farmer with 200 acres of land could carry on its cultivation satisfactorily without the aid of steam or water power; and he was glad to find that a large practical farmer in this county (Mr. Wm. Hutley), who was, two years ago, opposed to the use of such implements, had purchased the steam engine and threshing-machine for which Mr. Garrett gained the prizes at Norwich. He believed that gentleman would find it greatly to his advantage; and as he before said, he was persuaded that every one who wished to farm with profit must have either steam or water power to perform the various operations connected with his occupation. Many of the old-fashioned farmers were of opinion that the use of machinery would supplant manual labour; but let them go through Scotland and the best-farmed districts of England, and they would find those who made use of steam power were almost invariably the men who were farming their land best, and employing most labour. He felt that he was expressing the feelings of the practical farmers present in saying that they had been highly gratified in going over the farm that day; still Mr. Mechi had confessed there was room for improvement; and he (Mr. Hobbs) should have liked to have seen the land a little freer from weeds; and, instead of the men being engaged hoeing the root crop at a cost of 7*s*. per acre, he thought it would have been better done with Garrett's horse-hoe, with the trifling addition of manual labour, at a cost of 2*s*. per acre.—Mr. BAKER, of Writtle, observed it was, perhaps, fortunate for the public at large that money was accumulated in other professions to a much greater extent than in agriculture (laughter); and it was also fortunate, as had been observed by an old writer, that "agriculture is a pursuit so pleasing and beneficial," and, as he then said, "so profitable" (laughter), that people who had made money in other professions felt delight in embarking a portion of it in agriculture; thus, like all the other ordinances of Providence, money realised in one direction was expended in another, and so the whole framework of society was sustained. It seldom happened, however, that individuals with thoroughly thinking minds and no common powers of observation were enabled to bring those powers into practice with the same success as their worthy chairman had done. (Applause.) If the reverse were the case, they should hardly have found themselves assembled together on the present occasion; for if every man had the same intelligence, energy, and ability, they should not feel the same pleasure in meeting Mr. Mechi, and congratulating him upon the result of his exertions. (Applause.) He had shown them what talent, well applied, could do in producing crops upon a barren soil, by the employment of capital and skill at the same time. (Applause.) They had seen from the earliest period of time men endued with a particular faculty, and with great energy to exercise that faculty for the good of mankind. The great astronomer, Ferguson, was but a shepherd boy. Another man, who early in life was a weaver, then by the bidding of necessity a bookbinder, became at length the great philosopher Franklin, who invented the means of bringing the lightning from the clouds, and through whose observations electricity had been turned to such an account, as to be not only unrivalled in its effects, but promising to become at some future day the main propelling power for all the machinery in use. He might allude also to Tusser, who, from a mere chorister in a cathedral, became an intelligent agricultural writer, and who farmed at both Rivenhall and Fairstead, in this county. Then there was Tull, who, by introducing the row system, and the rudiments of the drill process, did perhaps more good than any other man of his day. Then they had Marshall, Young, and others, down to their worthy friend in the chair, who had added the capital to the column, having not only evinced talent, ingenuity, powers of observation, and a desire to promote the improvement of agriculture, but brought a large fortune to bear upon it, accompanied with the kind and generous feeling of bringing his friends together to see what might be accomplished by uniting all their faculties.

Miscellaneous.

Savings' Banks.—The following table was formed to show what a certain weekly contribution paid into the Windsor and Eton Savings' Bank would amount to in a certain term of years, interest being at 3*l*. 8*s*. 5*d*. per cent. It is a highly instructive table, well worthy of being carefully studied by every individual of the industrious orders:

Year	One Shilling per week. £	s.	d.	One Shilling and Sixpence per week. £	s.	d.	Two Shillings per week. £	s.	d.	Three Shillings per week. £	s.	d.	Four Shillings per week. £	s.	d.	Five Shillings per week. £	s.	d.
1 Year	2	12	7½	3	19	0	5	5	4½	7	18	3½	10	11	1½	13	[illegible]	10
2	5	5	11	8	0	6	10	14	4	16	1	10	21	9	5	26	16	6
3	8	3	1	12	4	11	16	6	10½	24	10	11½	32	15	0½	40	18	7
4	11	1	1½	16	12	3	22	5	8	33	5	11	44	8	6	55	10	3
5	14	1	3	21	2	5	28	3	7½	42	6	10½	56	9	9½	70	12	0½
6	17	5	4½	25	15	9	35	8	1	51	14	0	63	19	4½	86	4	1
7	20	7	7	30	12	4	40	16	7½	61	7	6	81	17	5	102	6	8
8	23	14	2½	35	12	2	47	9	10	71	7	7½	95	4	4½	119	0	5
9	27	2	10	40	15	5	54	7	5½	81	14	7½	109	0	5½	136	5	7½
10	30	17	10½	46	2	8	61	9	10½	92	6	7	123	6	1½	154	3	7½
11	34	7	4	51	12	3	68	17	1	103	9	11	133	1	6			
12	38	3	9½	57	6	10½	76	9	4½	114	13	9½						
13	42	1	10	63	5	0	84	6	10½	126	15	6						
14	46	3	1½	69	7	2	92	9	9	139	0	5½						
15	50	7	2	75	13	5½	100	18	2	151	13	9½						
16	54	14	2	82	4	1	109	12	5½									
17	59	4	0	88	19	1	118	12	8½									
18	63	16	11½	95	18	8	127	19	1									
19	68	13	1	103	3	1½	137	11	9½									
20	73	12	5½	110	12	6½	147	11	2									

A prejudice exists in the minds of many working people, and is perhaps affected by others, against savings' banks, on the ground that, when a man is known to save, he is the more liable to have his wages reduced by his master, or to want work when there is anything like a general failure of employment. Surely there can be little foundation in fact for this notion. It is a general wish amongst masters that their working-people should save, and many endeavour to bring this about by instituting savings' banks, and acting as managers. It is felt by every master that a workman who has saved a little, is likely to be a much more steady and respectable person than one who has not. Indeed, as it has been justly observed, a receipt from a savings' bank is one of the best certificates of steadiness and sobriety which a working man can show. Let it also be considered that, with a little capital in his possession, a workman stands in a much more independent position with regard to his master than he otherwise could do. We cannot doubt that in these considerations there is much more than a counterpoise to the visionary fear of having wages reduced, or employment withheld, in consequence of possessing a bank deposit. It would be difficult to over-estimate the importance of a little private hoard to a working man. It not only proves a succour in the evil day, but it tends to improve his whole moral nature. Wealth has been the subject of many bitter remarks to both the poet and the philosopher; but it is after all a greater friend to virtue than to vice. Often a very small amount of it, acquired by honest industry, will supply a modest pride that supports, if it is not in itself, moral efficacy. Doing well in this small way suggests and leads to doing well in other ways. The saver may prove the stay of a declining parent or other friend; he can do a better duty to his children; he can contribute to philanthropic objects which interest and bring out his finest feelings. It may even happen that, from less to more, and with no sacrifice of peace of mind, he is enabled by saving to rise into a higher grade in society. One of the best of the immediate effects of saving is, that once fairly begun, it proves a preservative from many extravagancies and vices. Temptations may present themselves; but the mind reverts to the fondly-regarded little hoard in the savings' bank, and they are easily resisted. Hence, it is generally observed that, once a practice of saving has been commenced, a great revolution takes place in the character. Irregularities and improper self-indulgences disappear, and steadiness, sobriety, and reflection take their place. *Chambers's Information for the People.*

Calendar of Operations.

AUGUST.

DORSET FARM, *August* 13.—Harvest is now general with us. There is very little yet carried, but with favourable weather there will soon be a great deal in good condition. In most cases Wheat has been cut greener than usual; but it is now ripening so fast that it will only be the first cut that will be so. It is generally well filled, and will no doubt turn out heavy. Labour for horses is not so plentiful at present on farms, but some take the opportunity at this time of driving out dung for the leas intended for Wheat, so that they may be ready to plough it in when the proper season comes. But this is surely a wasteful mode. The dung ought to be ploughed in as soon as spread on the ground, otherwise, if the weather is very dry, a great part of its strength must be wasted in the "desert air." But though it should be ploughed in quickly it ought not to be ploughed in too deeply, as it would be too far from the seed to give that stimulus to the plant which is so beneficial to it at first. But if artificial manures, such as Rape-dust, are drilled in with the seed, then the dung can hardly be ploughed in too deeply, as the artificial dressing will give the plant a fair start, and then it will be able to dive down deeply to find support from the dung. We have drilled Rape dust with our Wheat in several instances, and have always found it a strong fertiliser; we use it from 3 to 4 cwt. per acre, made up with fine earth to from 20 to 30 bushels per acre. Turnips and all other roots are doing well; but owing to the late period at which many of them were put in, they cannot under ordinary circumstances be a very heavy crop. We are still engaged in hoeing them, the prices for the first or single hoeing being from 5*s*. 6*d*. to 6*s*., and for the second 4*s*. or 4*s*. 6*d*., according to the cleanness of the land. The system of giving beer in part of wages is not so common now as it was, and the sooner it is put a stop to altogether so much the better, for it is a system that never gives satisfaction to either party. But in money payment, both parties know how to fulfil their agreements. Most of the crop of 1848 is now being pushed into the market, and although the sale for it at present is not very easy, if we have a good harvest it will evidently be worse when the new comes fit for the market. *G. S.*

Notices to Correspondents.

AGRICULTURAL GAZETTE: *Our Correspondents* will perhaps be good enough to excuse a week's delay of the answers to their inquiries, owing to the absence of the Editor in Ireland.

DRYING MACHINE: *J P Y.* It is a cylinder with a pierced surface, whirling on a vertical axis. The clothes are put in, and the immense rapidity of revolution drives all the water through the holes.

MR. PARKES' MILLS: *H. Willmer.* It is impossible for us to say. We have no particular acquaintance with the hand flour mills.

TULL'S SYSTEM: *W P G* wishes to know if he has been correctly informed that some farmers near Market Lavington, Wilts, are cultivating successive crops of Wheat according to the method of Jethro Tull; and, if so, would be obliged by some account of it being communicated to us, and whether he could be permitted to see the method in operation.

Markets.

HOPS.—FRIDAY, Aug. 17.

Messrs. PATTENDEN and SMITH report that the market is firm. The accounts speak of the injury the crop has sustained in consequence of the high winds and cold nights. Duty 70,000*l*.

COVENT GARDEN, AUG. 18.

Hothouse Grapes, Peaches, and Nectarines are plentiful. Pine-apples have not altered since our last account. Cherries, except Morellos, are over. Ripe Gooseberries and Currants are scarcer. Apricots are pretty well supplied. Nuts in general are abundant. A few Filberts have made their appearance, but being unripe they realise a dull sale, at from 40*s*. to 50*s*. per 100 lbs. Oranges and Lemons are plentiful, and the market continues to be overstocked with Melons and foreign Plums. Amongst Vegetables, Turnips may be obtained at from 3*d*. to 6*d*. a bunch. Carrots the same. Cauliflowers are plentiful. Green Peas fetch from 1*s*. 6*d*. to 4*s*. per bushel. Potatoes are cheaper. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1*s*. to 1*s*. 6*d*. per pottle. Cut

Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropæolums, Carnations, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 3s to 5s
Grapes, hothouse, p. lb., 1s6d to 4s
Apricots, per doz., 1s 6d to 3s
Peaches, per doz., 3s to 15s
Nectarines, per doz., 3s to 15s
Plums, per hf. sieve, 3s to 4s 6d
Gooseberries, per half sieve, 2s 6d to 4s 6d
Currants, do., 3s to 4s
Pears, per doz., 2s to 4s
— per half sieve, 4s to 6s
Apples, kitchen, p. bsh., 3s to 5s
Oranges, per doz., 1s to 2s
— per 100, 6s to 16s
Lemons, per doz., 1s to 2s
— per 100, 7s to 14s
Almonds, per peck, 6s
— sweet, per lb., 2s to 3s
Walnuts, p. 100, 1s 6d to 2s
— p. bush., 16s to 24s
Nuts, Bar., p. bush., 20s to 22s
— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 6d to 1s
Cauliflowers, p. doz., 6d to 3s
Peas, per bush., 1s 6d to 4s
Beans, p. bush., 1s 6d to 2s 6d
Sorrel, p. hf. sieve, 6d to 9d
Potatoes, per ton, 60s to 120s
— per cwt., 3s to 6s
— per bush., 2s to 4s
Turnips, p. doz. bun., 1s to 2s
Red Beet, per doz., 2s to 4s
Horse Radish, p. bdl., 2s to 6s
French Beans, p. hf. sieve, 1s 6d to 2s
Cucumbers, each, 2d to 6d
Leeks, per bunch, 4d to 6d
Celery, p. bundle, 1s to 2s
Radishes, per 12 hands, 9d
Watercress, per doz. bunches, 4d to 6d
Carrots, per bun., 4d to 6d
Spinach p. sieve, 1s to 1s 6d
Onions, p. bunch, 2d to 6d
— Spanish, p. doz., 1s 6d to 4s
Shallots, per lb., 3d to 6d
Garlic, per lb., 3d to 6d
Artichokes, p. doz., 1s 6d to 3s
Vegetable Marrows, doz., 6d to 1s
Lettuce, Cab., p. sc., 4d to 9d
— Cos, do., 6d to 1s
Mushrooms, p. pot., 1s to 1s 6d
Small Salads, p. pun., 2d to 3d
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Parsley, p. doz. bun., 3s to 4s
— Roots, p. bdle., 1s to 1s
Marjoram, green, p. bun., 4d to 6d
Mint, green, per bunch, 3d to
Basil, green, p. bunch, 4d to 6d

HAY.—Per Load of 36 Trusses.
CUMBERLAND MARKET, Aug. 16.

Prime Meadow Hay	70s to 75s	
Inferior ditto... ...	50	65
New Hay	50	65
Old Clover	90	95
Inferior	50s to	84s
New Clover	80	84
Straw	30	34

JOSHUA BAKER.

SMITHFIELD, MONDAY, Aug. 13.

The supply of Beasts being small, and the quality of it but middling, choicest descriptions make rather more money. The number of Sheep is larger; the demand is, however, considerable, and prices remain unaltered. We have more inquiry for good Lamb, and advanced rates are realised. Trade is still heavy for Calves, although a slight improvement is discernible. From Holland and Germany there are 469 Beasts, 2990 Sheep, and 79 Calves; from Leicester and Northampton, 1700 Beasts; and from Scotland, 40.

Per st. of 8 lbs.—	s d s d	Per st. of 8 lbs.—	s d s d
Best Scots, Herefords, &c. ...	3 10 to 4 2	Best Long-wools	3 6 to 3 8
Best Short-horns	3 6 — 3 10	Ditto Shorn	...
2d quality Beasts	2 10 — 3 4	Ewes & 2d quality	2 10 — 3 4
Best Downs and Half-breds ...	3 10 — 4 0	Ditto Shorn	...
Ditto Shorn	...	Lambs	4 4 — 5 4
		Calves	2 8 — 3 8
		Pigs	3 8 — 4 6

Beasts, 3306; Sheep and Lambs, 31,240; Calves, 198; Pigs, 240.

FRIDAY, Aug. 17.

We have a moderate supply of Beasts; the trade is brisk, and Monday's prices are readily obtained; in a few instances they are exceeded. The number of Sheep and Lambs is smaller; they are freely purchased at about late rates. There is a more cheerful trade for Calves; prices on the average are still low, but a few choice ones have made nearly 4s. From Holland and Germany we have 361 Beasts, 650 Sheep, 166 Calves, and 24 Pigs; from Spain, 11 Beasts; from Leicester and Northampton, 900; from Scotland, 100; and 141 Milch Cows from the home counties.

Best Scots, Herefords, &c. ...	3 10 to 4 2	Best Long-wools	3 6 — 3 8
Best Short-horns	3 6 — 3 10	Ditto Shorn	— ...
2d quality Beasts	2 10 — 3 4	Ewes & 2d quality	2 10 — 3 4
Best Downs and Half-breds ...	3 10 — 4 0	Ditto Shorn	to ...
Ditto Shorn	— ...	Lambs	4 4 — 5 4
		Calves	2 10 — 3 10
		Pigs	3 8 — 4 6

Beasts, 970; Sheep and Lambs, 11,090; Calves, 411; Pigs, 250.

MARK LANE.

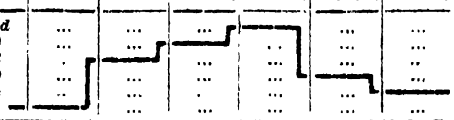
MONDAY, AUG. 13.—The supply of English Wheat this morning by land carriage samples was small, including only one parcel of new from Essex (red, and smutty), and 26 qrs. of white from Kent. The quality was not fine, and was sold at 50s. per qr.; the sale for old was barely equal to last Monday. Foreign was rather more inquired after at prices which could not be acceded to, and the retail sales effected were on much the same terms as Friday's.—We observe no alteration in the value of Barley; there were a few samples of new Kentish quality not fine, and sold at 30s. per qr.—Beans are unaltered in value.—New white Peas must be noted 2s. per qr. cheaper; grey realised 28s. per qr.—Oats meet an improved demand, and in some instances an advance of 6d. per qr. was obtained.

FRIDAY, AUG. 17.—The arrivals during the week of English and foreign grain have been exceedingly small, excepting 7190 quarters of Wheat from abroad. At this morning's market there were a few samples of new Wheat, the quality of which was generally thin and poor, and confirms the increasing opinion that the crop will prove worse than has been expected; this was disposed of at Monday's prices. We observe no alteration in the value of foreign, sales of which were limited.—Barley, Beans, and Peas are unaltered in value.—Oats are firm, there being few on sale.—Flour maintains our quotations.—The weather since the 10th inst., although not settled, has been sufficiently fine in this neighbourhood to admit of harvest operations being continued with little interruption.

LIVERPOOL, FRIDAY, AUG. 17.—We had a poor attendance of dealers to-day, and no life in the demand. Wheat was barely so good as on Tuesday, but prime old Flour made full prices, and was rather in request. Oats, Oatmeal, Barley, Beans, and Peas, were only taken in retail, at previous rates. In Indian Corn there was an advance of 1s. per quarter.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
July 7.........	47s 1d	25s 11d	18s 9d	28s 1d	32s 1d	33s 10d
— 14.........	48 2	25 3	19 4	26 11	32 1	30 9
— 21.........	48 10	26 7	19 6	28 6	32 2	32 4
— 28.........	49 1	23 1	19 4	26 1	32 5	32 0
Aug. 4.........	48 0	26 3	18 9	25 6	31 10	32 1
— 11.........	47 4	25 8	19 2	26 7	32 0	31 1
Aggreg. Aver.	48 1	25 11	19 0	26 11	32 1	32 0
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.



PRICES CURRENT.	London.		Liverpool.		Wakefield.		Boston.		Birmingham.	
	Aug. 6. qr.	Aug. 13 qr.	Aug. 7. 70 lbs.	Aug. 14. 70 lbs.	Aug. 3. qr.	Aug. 10 qr.	Aug. 8. qr.	Aug. 15 qr.	Aug. 9. 62 lbs.	Aug. 16. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	40 to 42	—	6 8 7 3	6 8 7 0	45 to 51	42 to 50	42 to 48	42 to 46	5 7 5 10	5 9 6 0
" white ...	46—48	—	7 0 7 6	7 0 7 4	46—53	44—52	46—50	44—48	6 0 6 3	5 9 6 1
Old, red ...	40—44	40 to 42	6 8 7 3	6 8 7 2	44—46	43—45	—	—	5 6 6 0	5 4 5 10
" white ...	48—50	46—48	7 3 7 6	7 3 7 4	—53	—52	—	—	5 10 6 4	5 8 6 2
Foreign... ...	36—56	36—56	[illegible] 8 7 0	4 9 7 9	41—54	40—53	—	—	5 0 6 6	5 0 6 4
			480 lbs.	480 lbs.						
Rye—Old ...	22—24	22—24	—	—	—	—	—	—	—	—
Foreign...	22—23	22—23	—	—	—	—	—	—	—	—
Foreign meal	5l.—6l	5l.—6l	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	20—24	20—24	—	—	22—23	22—23	24—26	24—26	23—25	23—25
Malting... ...	24—26	24—26	30s—32s	30s—32s	—	—	—	—	29—32	29—32
Foreign... ...	18—26	18—26	—	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	18—25	18—25	2s 10d 3s 2d	2s 10d 3s 2d	—	—	18—22	18—22	20—28	20—28
Black...	14—23	14—23	2 5 2 8	2 5 2 8	—	—	—	—	19—20	19—20
Foreign	13—20	13—20	2 4 2 6	2 4 2 6	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	25—31	25—30	34s—	34s—	28—32	28—32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—25	23—25	28—30s	28—30s	—	—	—	—	12—13	12—13
Foreign ...	25—32	25—32	32—34	32—34	—	—	—	—	—	—
Beans—										
New, small ...	—	—	32—35	32—35	32—36	32—36	32—34	32—34	12—14	12—14
Old	23—33	23—33	34—36	34—36	—	—	—	—	15—16	15—16
Foreign ...	21—36	21—36	24—36	24—36	30—31	30—31	—	—	11—13	11—13
Linseed—Feed	—	—	40—42	40—42	—	32—40	—	—	—	—
Foreign ...	36—40	36—40	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	7l. 7s	7l. 7s	7l. 12s	7l. 12s	—	—	—	—	—	—
Foreign ...	6l.	6l.	—	—	—	—	—	—	—	—
Indian Corn—	24—28	24—28	24s—26s	26s—28s	—	—	—	—	12—13	12—13
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	36—44	36—44	34—35	34—35	—	—	36—40	36—40	34—36	34—36

Weekly Averages and Imports.	Aver. Aug. 14	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	48 10	7190	47 9	14195	49 10	4838	44 5	1010	44 1½	7642
BARLEY ...	24 6	1360	25 11	3557	27 0	54	—	—	—	6357
OATS... ...	24 1	1366	18 10	1966	19 1	310	14 8	161	19 11½	2112
RYE	24 0	—	27 2	4115	—	—	—	—	—	—
BEANS ...	28 4	—	—	297	33 1	132	32 8	367	—	1229
PEAS... ...	29 7	—	—	—	—	220	—	—	—	2591
Sources {	[illegible] and Lay.		[illegible] and Tunnicliffe.		Sandars and Dunns.		Thomas Wright.		J. and C. [illegible]	

ORCHIDS FROM ECUADOR AND PERU.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King-street, Covent Garden, on TUESDAY, August 21, at 12 for 1 o'clock, the COLLECTIONS OF ORCHIDS made by Mr. WARSZEWICZ in Ecuador and Peru, which comprise a new Stanhopea, some fine Evelynas, a curious supposed new genus, several plants of the curious genus Trichoceros, a splendid Cattleya, and many other novelties. The plants offered are in good health, but unfortunately on unpacking the cases many were found dead.—May be viewed on the morning of sale, and Catalogues had.

CAMELLIAS.

MR. J. C. STEVENS is favoured with instructions from a most respectable Nurseryman in Belgium to submit to Auction, at his Great Room, 38, King-street, Covent-garden, on FRIDAY, August 31st, at 12 for 1 o'clock, about 500 CAMELLIAS, from 1 to 4 feet, comprising most of the old favourite varieties, with some of the best novelties; the Plants are well grown and furnished with flower-buds, and are all correctly labelled with their names.—May be viewed the day prior and morning of Sale, and Catalogues had.

TO NURSERYMEN, GENTLEMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by Mr. HOWCROFT, to submit to competition by Auction, on the premises, Mile-end Nursery, Bow-road, on MONDAY, August 20, and following day, at 11 o'clock (unless previously disposed of by private contract), the valuable Lease, for 50 years unexpired, and the whole of the Greenhouses, Pits, and Frames; together with the Greenhouse Plants, Nursery Stock, Seeds, utensils in trade, &c.—May be viewed, and particulars had, one week prior to the Sale, of the principal Seedsmen, on the premises, and of the Auctioneers, American Nursery, Leytonstone, Essex.

MALMESBURY, WILTS.—IMPORTANT FREEHOLD ESTATE.—A rare opportunity for Investment.

MR. W. H. JEFFRIES will Sell by Auction, at the White Lion Hotel, in Malmesbury, on SATURDAY, September 8, 1849, at Two o'clock in the afternoon, subject to such Conditions of Sale as shall be then produced, unless an eligible offer be previously made by Private Contract, of which due notice will be given, that very superior ESTATE called "WHYCHURCH," eligibly and pleasantly situate within a short distance of the Borough Town of Malmesbury, comprising an excellent Farm-house, substantial Barn, Stables, stalling sufficient for 50 Beasts, and other suitable outbuildings, in good repair, and about 208 Acres of Luxuriant and Productive Land, in the following Lots:

Numbers on Tithe Map.	LOT I.		A.	R.	P.
94	Farm-house, Buildings, Yards, Garden, & Orchard		3	0	23
95	Wortheys	Pasture	47	2	18
665	Whychurch Marsh	"	12	1	31
667	Broad Leaze..	"	19	0	28
668	Great Dry Leaze	"	13	0	24
670	Little Dry Leaze	"	11	3	4
671	Little Broad Leaze	"	18	0	8
689	The 12 acres	Arable	13	2	0
690	The 8 acres	"	9	0	8
691	The 16 acres	"	17	2	12
			165	2	2
	LOT II.				
108	Part of Bean Leaze	Pasture	23	0	7
109	Ditto, with Tie-up Stalling for 12 Beasts	"	1	2	20
			24	2	27
	LOT III.				
675	Part of the Marsh	"	1	2	25
	LOT IV.				
76 and 77	Clover Marsh Piece and Withey Bed	"	6	2	0
	LOT V.				
89	South part of Long Marsh	"	2	1	37
	LOT VI.				
89A	North part of Long Marsh	"	1	3	30
	LOT VII.				
162	Allotment in the Common	Arable	0	3	10

Numbers 76, 77, 89, 89A, 94, 95, 108, 109, and 162 are situate in the parish of St. Paul's, Malmesbury, and subject to a tithe rent charge of 11l. 8s. 3d., and a land tax of 6l. 17s. 4d. The residue of the Estate is in the parish of Westport St. Mary's, Malmesbury, and subject to a tithe rent charge of 10l. 16s. and to a land-tax of 1l. 10s. 7d.

The ESTATE abounds with young thriving Timber, is surrounded principally by lands of the Earl of Suffolk, and adjoins the Park.

The FARM HOUSE is capacious, and may at a small expense be converted into a comfortable and suitable residence for a respectable family, and particularly for a sporting gentleman, being very conveniently situated for (indeed in about the centre of) the two adjoining Hunts of the Duke of Beaufort and Vale of White Horse, and close to the Braydon country so celebrated for sport. Six miles from the Minety, and 10 from the Chippenham Stations on the Great Western Railway.

To view the Estate apply to Mr. Compton, at the Farm House, and for further particulars; and to treat, to Mr. Maskelyne, Solicitor, Tetbury, Gloucestershire, at whose office a map of the Estate may be seen. A moiety of the purchase-money for Lot 1 may (if required) remain on security thereof.

COTTAGE WITH LAND WANTED.

WANTED TO RENT, for a term of years or otherwise, A SMALL COTTAGE, with from 20 to 30 acres of Land, distant 10 to 25 miles west or north of London, and near a Railway Station.—Direct, with full particulars, rent, &c., to S.X., 23, Thayer-street, Manchester-square, London.

SUSSEX.

TO BE LET for a term of years, and entered upon at Michaelmas next, the Farm of WOTTON, in the Parish of Folkington, at present in the occupation of Mr. Shoosmith. It consists of about 409 acres of Meadow, Pasture, and Arable land: the Arable land is most productive of Beans and Wheat: most of the Pasture and Meadow land is of the richest fattening quality. There is an excellent Farm-house, with every convenience, and the Farm-buildings are large and commodious, and economically fitted up and arranged for fattening a large number of beasts in feeding-houses, stalls, sheds, and yards. The Farm is about four miles from Hailsham and Eastbourne, 10 miles from Lewes, market town, and one mile from the Polegate station on the Lewes and Hastings Railway. For particulars, apply to Mr. JOHN MOSSON, Whitfield, Berkeley, Gloucestershire. A person at Folkington Place will show the Farm.

LOVINGTON MILLS, SOMERSET.

TO BE LET, for a term, with immediate possession, LOVINGTON MILLS, comprising a comfortable Dwelling House, suitable offices, and garden attached. The Mill has a powerful, newly-erected, iron Water-wheel, with connecting gear, by Messrs. Haden, of Trowbridge, in perfect repair; the wheel is driven by a stream of water which never fails in the driest season, driving three pair of stones, and is capable of grinding 300 sacks of corn per week. 36 acres of Arable Land, in a high state of cultivation, with a Homestead, and 40 acres of excellent Pasture, may be taken with the Mill from Michaelmas next. The Premises are well situated, three miles from Castle Cary, seven from Somerton, eight from Shepton Mallet, and twelve from Yeovil. For further particulars, apply to Mr. ALEXANDER, Bailiff, Charlton, Somerton.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE SOLD, on advantageous terms, the Stock of a small compact NURSERY and good SEED BUSINESS, the former well stocked with Trees of various kinds, Greenhouse, and other buildings; situated opposite a railway terminus, in the vicinity of one of the principal market towns. The above are well worthy of notice.—For particulars apply, by letter only, to Mr. E. Hazaya, 3, Gilbert-street-buildings, Westminster-road, London.

FARMS TO LET.—Mr. EDWARD KYDE, Land Agent, Surveyor, and Valuer, begs to announce his instructions to Let, under liberal covenants, and at reasonable Rents, from Michaelmas next, several capital FARMS, varying from 150 to 320 acres, in Kent and Essex.—Printed particulars of which may be obtained at his Office for the Sale of Landed Property, Farming Stock, &c., 14, Upper Belgrave-place, Eaton-square, London.

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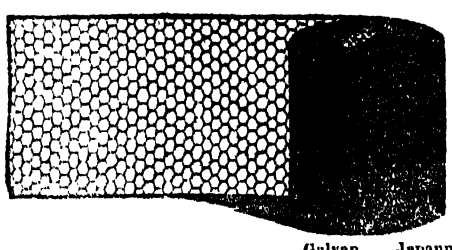

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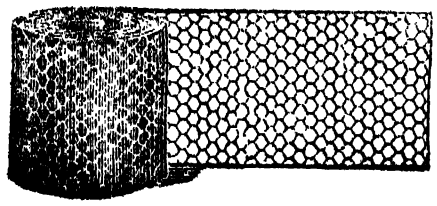

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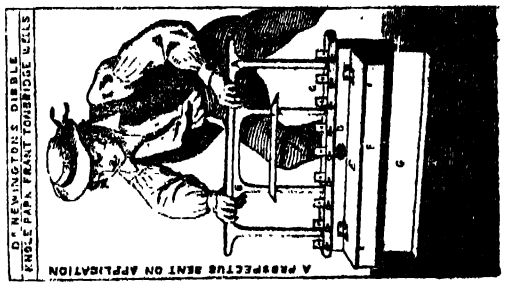

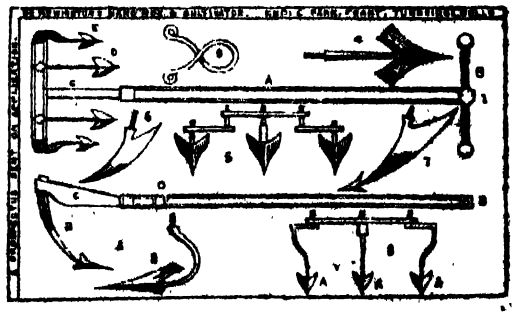

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 3, Chandos-street, in the parish of St. Paul's, Covent-garden, in the said county, where all communications and Communications are to be addressed to the Editor.—SATURDAY, August 18, 1849.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 34—1849.] SATURDAY, AUGUST 25. [PRICE 6*d*.

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ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.—Under the patronage of Her Most Gracious Majesty the QUEEN. A Grand DAHLIA, HOLLYHOCK, and MISCELLANEOUS FLOWER SHOW, being the fifth and last this season, will be held at the ROYAL SURREY ZOOLOGICAL GARDENS, on WEDNESDAY, the 12th of September, 1849. Open to all Exhibitors, when Prizes will be awarded for the following collections, viz.:—Miscellaneous and Specimen Plants, Fuchsias, Roses, Dahlias, Hollyhocks, Verbenas, Cut Flowers, Fruit, Grapes, and Honey. In addition to the Prizes offered by the Society, the following Members offer extra Prizes: By John Bushell, Esq., to Amateurs, for the best 3 blooms of Duchess, white Dahlia, three prizes, 6*l*. By Mr. John Keynes, for the best 6 blooms shown from the following nine Dahlias, viz., Keynes' Purple Standard, Lilac Perfection, Miss Chaplin, Sunset, Victoria Regina, Miss Blackmore, Rainbow, Miss Stevens, and Sunbeam; five prizes, 5*l*. 15*s*. By Mr. C. Turner, for the best 6 Dahlias let out by himself at any time, two prizes, 3*l*. By Mr. E. Hunt, for the best 3 blooms of General Cavaignac, fancy Dahlia, 1*l*. By John Edwards, Esq., for the best bloom of Mr. C. Turner's Dahlia, Mr. Seldon, 1*l*. By J. Howard, Esq., for the best 2 blooms of Miss Jane, fancy Dahlia, 1*l*. By John Chapman, Esq., for the best single bloom of J. Bushell's Duchess, 10*s*. By H. Harms, Esq., open to both classes, for the best 2 blooms of any one white Dahlia, 2*l*. By Mr. W. Hamilton, for the best fancy Dahlia, 1*l*. By subscription, to Amateurs, for 12 single blooms of Hollyhocks, four prizes, 4*l*. 5*s*.; to Nurserymen, for 12 spikes ditto, four prizes, 3*l*. 10*s*. By Mr. R. Hook, for the best single truss of any Seedling Verbena not sent out, 10*s*. And by an Amateur, for the best 3 Seedling Petunias not sent out, the Bronze Medal. List of Prizes and Rules for exhibiting may be obtained from JOHN TAYLOR NEVILLE, Secretary, Ebenezer House, Peckham.

THE GRAND DAHLIA SHOW OF ENGLAND, and HORTICULTURAL FETE, will this year take place at the TOWN HALL, BIRMINGHAM, on the 26th and 27th September next. Sweepstakes as Premier Prize, Sweepstakes of 100 Guineas, and 50 other prizes. Conducted by Mr. GLENNY. Schedules of prizes, &c., can be obtained at the *Gardeners' Chronicle* Office; Watson's Hotel, Salisbury-square, Fleet-street; and Messrs. MAYLE and Co., 56, New-st., Birmingham.

HOYLE'S SEEDLING PELARGONIUMS.—Circulars, with particulars of the above superb varieties (unquestionably the best of the season), can be had upon application to the purchasers of the whole stock, Messrs. MAYLE and Co., Florists, &c., 55, New-street, Birmingham.

CABBAGE PLANTS.—WESTERHAM, KENT.

JOHN CATTELL, SEEDSMAN and NURSERYMAN, begs to inform the public that his stock of bedded plants for COLEWORT PLANTING this season is, as usual, extensive and fine; the well known excellence of his Early Barnes recommends itself to all who have ground to spare, ensuring a supply of Cabbage through the winter, and (not running in the spring) very early Cabbages for cutting may be depended on. Price, per 1000, 4*s*. 6*d*., package included; 6*d*. per 1000 less when no package is required.

Remittances by Post-office orders to be made payable here. Orders of 1000 and upwards delivered free of carriage to the [illegible] station of the South-Eastern Railway.

NEMOPHILA MACULATA.

EDWARD GEORGE HENDERSON, Wellington Nursery, St. John's Wood, London, is now sending out seed of the above beautiful annual at 1*s*. 6*d*. per packet, and he would advise immediate sowing, as it will then form one of the most pleasing objects of the greenhouse during the spring months. Also Calceolaria seed of his own saving, from choice sorts only, at 5*s*. per packet, and Cineraria seed at 2*s*. 6*d*. and 5*s*. per packet.

CHRYSANTHEMUMS.

CHANDLER AND SONS, NURSERYMEN, Vauxhall, are now sending out strong bushy plants of CHRYSANTHEMUMS at 12*s*. and 18*s*. per dozen, package and delivery, at any of the Railway stations in London included. The plants are very healthy, and such as will flower well in the autumn, and are of the best and most desirable varieties. A Post-office order will be expected from unknown correspondents.

[illegible] NEW STRAWBERRY "ELEANOR."

J. [illegible] prepared to send out [illegible] varieties at the prices [illegible] Hautbois, 10*s*. 6*d*.; [illegible] Mammoth, 3*s*. 6*d*.; [illegible] Seedling, 3*s*. 6*d*.; Pelve- [illegible] 1*s*. 6*d*.; Cut- [illegible] payable to [illegible]—Aug. 25.

FUCHSIA "CORYMBIFLORA ALBA."

JOHN SALTER begs to inform the numerous subscribers to this beautiful new FUCHSIA, that it will be sent out in good strong plants on the 1st of September, at 1*l*. each, without discount; but one plant will be given over for every three ordered. It was awarded the Certificate of Merit at the Exhibition of the Horticultural Society on the 11th of July; it has been in bloom ever since, and is universally admired; it may still be seen at the nursery.

Versailles Nursery, William-street, Hammersmith Turnpike.

DOUBLE ROMAN AND PAPER WHITE NARCISSUS, 4*s*. per dozen.—The above Bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance have been just received at A. CORBETT's Italian and Foreign Warehouse, 18, Pall-mall, near Waterloo-place. Also Dutch Hyacinths, Crocus, Tulips, Anemones, Ranunculus, &c.; priced Catalogues of which may be had per post.

SEEDS FOR AUTUMN SOWING.

J. CARTER begs leave to recommend the following SEEDS for Autumn Sowing. The Autumn sown Hardy Annuals, including the Californian, flower much earlier and stronger than the Spring sown. With Perennials and Greenhouse Seeds, a whole season is saved. The two latter should be sown as early as convenient, and the Hardy Annuals by the middle of September. Flower Seeds forwarded, prepaid, by post.

I. FOR THE BORDERS.	*s.*	*d.*	II. FOR THE GREENHOUSE	*s.*	*d.*
50 fine Hardy Annuals	10	0	25 fine Greenhouse seeds	7	6
25 do. do.	5	0	12 do. do.	4	0
12 do. do.	2	6	6 do. do.	2	0
12 German Larkspurs	2	6	3 Maurandyas ...	1	0
12 tall do do.	2	6	6 Petunias ...	1	6
Nemophila insignis, p. oz.	1	0	12 Stocks, German ...	3	6
Do. maculata, p. paper	1	6	6 „ Biennial	2	0
50 fine Hardy Perennials	12	0	6 Thunbergias	2	6
25 do. do.	6	0	Schizanthus, 3 fine vars.	1	0
12 do. do.	3	0	„ new white ...	1	0
6 Antirrhinums ...	1	6	Calceolaria, spotted m.	1	0
3 Aquilegias ...	1	0	Cineraria, 20 vars. m. ..	1	0
12 Delphinium chinense	2	6	Erica, 50 vars. m. ..	5	0
4 Gaillardias ...	1	6	Gladiolus, 20 vars. m. ..	1	0
10 Hollyhocks, n. dwarf	3	0	Ipomœa rubro-cœrulea	1	6
6 Pentstemons ...	2	0	„ new yel. and purp.	1	6
3 Sweet Williams ..	1	0	Ipomopsis superba ...	1	0
6 Wallflowers ..	1	6	Phlox Drummondi, 20 v.	1	0

*** All other Flower Seeds may be had in single packets at the usual prices. A Catalogue of 1300 will be sent, prepaid, on application. His new Autumn Catalogue of a first-rate collection of Dutch and other flowering Bulbs will be ready in a few days.—*JAMES CARTER, Seedsman and Florist, No. 238, High Holborn, London.*

MESSRS J. A. HENDERSON AND CO. beg to offer the following new and choice Plants:

GLOXINIA GRANDIS.—This is a very handsome and distinct variety, of robust habit, with rich green foliage, and produces very large flowers of a creamy white colour, with crimson throat, the colour of which is clearly defined; they are of a beautiful, compact form, finely expanded and are even, smooth, and regular in their general appearance. The flowers are of good substance, retaining their colour and form for a long period after they are expanded. This Gloxinia is of a much more upright growth than any other, and therefore is more showy and conspicuous. Price 21*s*.

BEGONIA AURANTIACA.—This rare and beautiful Begonia is a native of Bolivia, in South America, and is one of the handsomest of this showy tribe of plants. It is a greenhouse species, flowering profusely from July until the end of the season. The flowers are the brightest orange-red colour, large and expanded, and are produced abundantly, each flower continuing in bloom for a long period. It is bulbous rooted, like Begonia Evansiana, of fine habit, being very neat in its growth, with foliage of a rich green colour. The flower-stems rise several inches, so that the blossoms are thrown out conspicuously beyond the foliage. Price 30*s*.

Pine-apple-place, Edgware road, London.

KITLEY'S GOLIAH STRAWBERRY.

JAMES KITLEY begs to announce to Strawberry Growers and the Public generally, that he has now ready to send out, strong well-rooted Plants of the above Seedling Strawberry, at 12*s*. per dozen, or 4*l*. per hundred, and feels confident that, taking it in all its combined merits, it is the very best of all Strawberries, and as a criterion, he has tested it with the best that is out, *viz.*, the British Queen.

1st. Flavour—if not superior, is equal with the above-named variety, though more resembling that of the Pine-apple.*
2d. Size—larger than the Queen.
3d. Shape—not so flat as the Queen; more conical.
4th. Colour—bright scarlet; not having that white unripe tip which prevails in the Queen, and very prolific.
5th. Foliage—villous, and very much resembling the Queen, from which it is raised, but stronger in its growth.
6th. Hardiness—it stands the winter much better than the Queen; at least, in this neighbourhood.

J. K. having fruited this very superior Strawberry three years, feels perfectly confident that any person once having it in their possession, will not find fault or regret having ordered it. It has gained three Prizes at the Bath, and one at the North Wilts Horticultural Societies' Exhibitions; and as a further proof of its goodness, begs to refer to extracts from the *Gardeners' Chronicle* and the *Gardeners and Farmers' Journal*:

(From the *Gardeners' Chronicle.*)

"Strawberries.—J. K.—Your Seedling Strawberry, 'Goliah,' judging from its size and appearance, is worthy of cultivation."

(From the *Gardeners and Farmers' Journal.*)

"Strawberries.—J. K., Lyncombe Vale.—We have great pleasure in bearing testimony to the exquisite flavour of your Seedling Strawberry, 'Goliah.' In our opinion, it combines the piquant flavour of the Strawberry with the richness of the Pine,* the delicious aroma of which it partakes in equal proportion with the taste. Apart from the Queen of Fruits, we certainly do not remember anything in this way that conveyed to our senses so delicious a treat as the noble fruit to be known to the world as 'Kitley's Goliah Strawberry.'"

To be had at Lyncombe Vale Nursery, Bath, and of Messrs. Garraway, Mayes, and Co., Bristol, who can testify to the superior quality and flavour of the fruit.

ROBERT WHIBLEY can supply strong plants of all the novelties sent out this year, English and Foreign, many of which can now be seen in bloom at the Nursery. R. W. can still supply his set of Chrysanthemums. See *Gardeners' Chronicle*, of August 4.—Chester Nursery, Kennington, London.

WHOMES' UNRIVALLED PELARGONIUMS, and the choicest varieties of other raisers. Priced Catalogues of the above are now ready, and may be had on application. N.B. J. W. having saved a greater quantity of Pelargonium seed than he has space to grow, begs to offer the same at 1*s*. per packet of 12 seeds, or 65 seeds for 5*s*., declared to be from the best varieties.

JAMES WHOMES, Royal Pelargonium Nursery, Windsor, Aug. 25.

MOORE'S SEEDLING RHODODENDRONS.—The demand for these fine Seedlings having exceeded JOHN MOORE's expectations, and being desirous of sending out well established plants, he has determined not to let them out till the autumn of next year. Orders for the same will be executed in strict priority. See former Advertisements for description.—Perry Barr Nursery, near Birmingham, Aug. 25.

SPLENDID NEW FOREIGN PHLOX, DAHLIAS, VERBENAS, &c. &c.

JOHN SALTER begs to invite the growers of these favourite flowers to inspect his unequalled collection of new Foreign and English varieties, among which are many far superior to any before seen in this country.

Versailles Nursery, William-street, Hammersmith Turnpike.

NEW CHRYSANTHEMUMS.—Twelve best new varieties of last season, strong and bushy plants, for flowering fine this autumn ... 15*s*. 0*d*.
40 new and select vars., (including the above) for .. 20 0
24 Ditto for 15*s*. 12 Ditto for ... 9 0

THE BEST NEW VERBENAS, FUCHSIAS, PETUNIAS, &c. of 1849.—Strong and bushy plants in bloom, in 3 and 4-inch pots. A Priced Catalogue is now ready, with very reduced prices attached, containing also the best new GERANIUMS, last sent out. Goods delivered free to London, and extra plants sent gratis with orders of 40*s*. and upwards.

BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

GRAVEL.—On Sale, at a reduced price (to save the expense of removal to another part of the pits), in consequence of the ground being required immediately for other purposes, about 500 yards of Hogan or fine sifted gravel for Garden Walks, or Pleasure Grounds.—Apply at No. 11, King-street, Holborn, London.

NEW AND RARE PLANTS.

MESSRS. VEITCH AND SON beg to inform admirers of beautiful plants that the following novelties will be ready for delivery on and after Monday, September 3:

HOYA BELLA (HOOKER).

This beautiful plant was sent us from Moulmein by Mr. Thomas Lobb. It is figured in Curtis's Botanical Magazine for October last, wherein Sir W. Hooker, in describing it, says, "The most lovely of all the Hoyas, deliciously scented, resembling an amethyst set in frosted silver." It was also figured in Paxton's Magazine for December last, and is thus described. "The flowers for delicacy and beauty surpass all the kinds yet known; the petals are of a very pure white, and beautifully frosted; altogether it is a plant of first-rate importance in a collection, as the flowers endure in perfection for a long time, and are delightfully fragrant." It has been exhibited at Chiswick and Regent's-park, at both of which places it received the first prize for new and rare plants. Fine blooming plants 63*s*. each.

MITRARIA COCCINEA.

This very handsome and distinct shrub (probably hardy), was sent to us by Mr. William Lobb, from the Island of Chiloe. It is figured in Paxton's Magazine for August last. It is a dwarf compact evergreen shrub, producing its brilliant scarlet blossoms in great abundance on plants in a small state. The foliage is small and good. It is a plant well adapted for pot culture and exhibition, the peculiar brilliancy of its flowers being in fine contrast to any other plant at present in cultivation. It has frequently been exhibited at Chiswick and Regent's-park, and had first prizes at both places. Strong plants 31*s*. 6*d*. each.

AGALMYLA STAMINEA (BLUME).

This beautiful plant is figured in Paxton's Magazine for May, 1848. It was exhibited at the London Horticultural Society's meeting in Regent-street, December 7, 1847, and received the Large Silver Medal; and at the Regent's-park exhibition on the 5th of July, 1848, it also received a Silver Medal. Strong plants, 31*s*. 6*d*. each.

CANTUA PYRIFOLIA (DE CANDOLLE).

This rare and fine greenhouse shrub, which was sent us from Peru by Mr. William Lobb, is figured in Curtis's Botanical Magazine for July, 1848, where a full description of it is given. It was exhibited at Regent-street, in April, 1848, and received a Medal. It is a hardy greenhouse plant for easy culture, it blooms freely, and is of a fine foliage and habit. Strong plants 31*s*. 6*d*. each.

GESNERA PICTA (HOOKER).

This is a very beautiful plant, the flowers being brilliant orange scarlet, and produced most copiously all through the summer and autumn. The foliage is handsome, the habit compact and dwarf. It is a plant that will certainly give general satisfaction. It requires the temperature of a cool stove or warm greenhouse. It is figured in Curtis's Botanical Magazine for March last. Good flowering plants 21*s*. each.

TROPÆOLUM SMITHIANUM (DE CANDOLLE).

This pretty and distinct Nasturtium was sent us from Columbia by Mr. William Lobb. It is figured in Curtis's Botanical Magazine for July, 1848. It is a free grower and abundant bloomer. Well established plants, 10*s*. 6*d*.

The usual discount to the Trade, and when three of any sort are taken, a fourth plant put in gratis.

N.B. The earliest orders will have the strongest plants.

Printed Lists, with further descriptions, sent on application.

Exeter, August 25.

EXHIBITIONS AT THE GARDEN OF THE HORTICULTURAL SOCIETY OF LONDON, FOR THE YEAR 1850.

THE EXHIBITIONS WILL TAKE PLACE ON THE FOLLOWING SATURDAYS:—

MAY 18, JUNE 8, AND JULY 13.

SCHEDULE OF THE PRIZES.

FLOWERS.

Division I.—In which Nurserymen and Private Growers exhibit independently of each other.

A Pelargoniums; in collections of 6 new and first-rate varieties, with perfectly distinct colours, cultivated with superior skill, in 8-inch pots. SG—CE—LS

N.B. The collections in which the varieties are most distinct *will have the preference.*

B Pelargoniums; in collections of six varieties, in 11-inch pots. SG—CE—LS

N.B. Any plant that shall not have been actually grown in 11-inch pots will be disqualified

C Roses, in pots; in collections of 12 distinct varieties. GB—SG—CE

N.B. To be shown in May and June only, and in 13-inch pots The Judges will disqualify any collection that shall be found to contain a plant which has been recently placed in the pot from the open ground, or that is shown in a pot of any other size than 13 inches.

D Yellow Roses, best six varieties. SK—SB—C

N.B. To be shown in June only, and really to be yellow; pale cream colours are inadmissible.

E Cape Heaths; in collections of 10 entirely distinct varieties. GB—SG—CE

N.B. It is expected that the same plant shall not be exhibited on more than one occasion. The Judges, in making their award, will give, both in this and the next letter, a marked preference to plants grown in their natural forms, without stakes or stays; and will also take distinctness of species into favourable consideration. No duplicate will be allowable.

F Cape Heaths; in collections of 10 entirely distinct varieties, in 11-inch pots. SG—CE—LS

G Carnations, in pans of 24 distinct varieties. SB—C. *(In July only.)*

H Picotees, in pans of 24 distinct varieties. SB—C. *(In July only.)*

I Pinks; in pans of 24 distinct varieties. SB—C. *(In June only.)*

N.B. Carnations, Picotees, and Pinks must be shown without cards, in boxes of four sizes, of the following dimensions:—From centre to centre, 3½ ins.; from centre to outside, 2½ do.; depth at back, 7 ins.; ditto front, 3½ ditto. The face to be painted light green. *No collections will be allowed to exhibit in which these conditions are not complied with.*

Division II.—In which Nurserymen alone can show.

K Exotic Orchids; in collections of 15 species of superior cultivation. GB—SG—CE.

Division III.—In which all persons are admitted to equal competition.

L Calceolarias, in sixes; in 11-inch pots. LS—SK—SB

N.B. To be shown in May and June only.

M Single specimens of very superior cultivation, excluding everything which can be shown singly in other letters, and plants not in flower. CE—LS—SK

N Stove or Greenhouse plants, in collections of 20 plants. LG—GK—GB

N.B. Calceolarias, Fuchsias, Orchids, Pelargoniums and duplicates are excluded from all the four classes of Stove or Greenhouse plants.

O Stove or Greenhouse plants; in collections of 15 plants. GK—GB—SG

P Stove or Greenhouse plants; in collections of 10 plants. GB—SG—CE

Q Stove or Greenhouse plants; in collections of 6 plants. SG—CE—LS

N.B. Exhibitors cannot show in more than one of the classes of Stove or Greenhouse plants.

R Greenhouse Azaleas, in 12 distinct varieties. GB—SG—CE

S Greenhouse Azaleas in six distinct varieties. SG—CE—LS

N.B. No one can show in both classes of Azaleas.

T Greenhouse Rhododendrons; in six distinct varieties. *(In May only.)* SG—CE—LS

U Collections of 6 New Hardy Evergreens grown in pots; Conifers excluded. LS—SK—SB

N.B. Nothing will be regarded as new which has been in the nurseries more than three years.

V Conifers, in sixes, of new or very rare species, in not less than the third year of their growth. LS—SK—SB

N.B. *U* and *V* can only be shown at the exhibition in July.

W Exotic Orchids, in collections of 20 species of superior cultivation. LG—GK—GB

X Exotic Orchids, in collections of 10 species of superior cultivation. GB—SG—CE

Y Exotic Orchids; in collections of six species. SG—CE—LS

N.B. Nurserymen cannot show in either of these three classes of Orchids. No exhibitor can show in more than one of them.

Z Exotic Orchids; single specimens displaying *very* superior cultivation. SK—SB—C

N.B. No duplicate Medals can be here awarded.

AA Fuchsias; in threes, of three distinct colours; *in July only.* LS—SK—SB

BB Pelargoniums; in six DISTINCT SPECIES, exhibiting superior cultivation. CE—LS—SK

N.B. By the word species is meant the wild kinds imported from the Cape of Good Hope, or New Holland, tuberous species inclusive, and not garden cross breds.

CC Fancy Pelargoniums; in sixes, in 8-inch pots. SG—CE—LS

N.B. No duplicate Medals can be allowed here.

DD Achimenes; in collections of six distinct varieties, exhibiting superior cultivation. CE—LS—SK. *(In July only.)*

EE Six distinct varieties of Tall Cacti in flower. GB—SG—CE

FF Roses of 50 varieties in loose bunches, each consisting of three trusses as they are gathered, so as to exhibit, as far as possible, the habit of the variety. CE—LS—SK

N.B. In July only. No one who exhibits in this letter can also compete in the following.

GG Roses, exhibited as in the letter *FF*, and in 25 varieties. LS—SK—SB. *(Private growers only can exhibit here).*

N.B. In June and July only. If Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to compete

HH Hollichrysums. CE—LS—SK

II Kalosanthe; in sixes. *(In July only.)* LS—SK—SB

KK Statices, in collections of six species. CE—LS—SK

LL Ferns, in collections of 10 hothouse species of very superior cultivation. LS—SK—SB.

N.B. To be shown in July only.

MM New Hybrid Plants, exclusive of Roses, Rhododendrons, Azaleas, and Garden cross-breds, such as Gloxinias and the like. SG—CE—LS

N.B. It is certain that much may be effected by hybridising plants in common cultivation, such as Lilacs, Honeysuckles, &c. &c. This class will be judged by the Society's officers.

NN Epacrises; in sixes. *(In May only.)* CE—LS—SK

OO Newly introduced or extremely rare ornamental plants in flower; not introduced by the Society. SG—CE—LS

N.B. These Medals will be awarded by the Society's Officers, and not by the usual Judges. Exhibitors will particularly observe that none but new or rare plants can be exhibited under this letter. *Nothing will be regarded as new which has been exhibited in the Garden or Regent-street in a previous season*, nor garden seedlings, hybrids, nor domesticated varieties of any kind. No prizes will be given to New Plants which have been introduced through the Society.

PP Miscellaneous subjects, exclusive of Ferns. SK—SB—C

N.B Exhibitors under *PP* will not be thereby *entitled* to a pass ticket. Cockscombs, Heartsease, Hydrangeas, and bouquets, together with all plants for which separate prizes are offered as single specimens, are altogether excluded.

QQ Seedling Hybrid Pelargoniums, of entirely new crosses. SB—C

N.B. Every seedling must be shown singly, and marked with the name it is to bear. The same seedling cannot gain a prize more than once in the season. The plants must be shown in pots, and not in a cut state.

RR Alpines; in twelves. SK—SB—C

SS Cinerarias; in sixes, in 6-inch pots. *(In May only.)* SK—SB—C

N.B. Prizes will only be given to extremely fine specimens.

TT Hardy Heaths, in sixes. SB—C.

UU Seedling Florists' Flowers.

A tent will be provided for the exhibition of these, but no medals will be awarded, the Society not wishing to express any opinion upon the merits of seedlings.

FRUIT.

Market Gardeners, or Growers (not Fruiterers), in the habit of supplying the Market, and Private Gardeners, exhibit independently of each other. Fruiterers are not allowed to exhibit at all. No duplicate awards can be made in any case whatever, except in P. No person can take more than one award in each letter, except in B, E, K, M, O, P.

N.B. All Fruit must be sufficiently ripe for Market, WELL COLOURED, and PROPERLY NAMED by the Exhibitor, as far as practicable; if the contrary, it will be disqualified.

A Peaches or Nectarines in pots. SK—SB—C

B Pine Apples, in single specimens:—
1. Queens. LS—SK—SB.
2. Envilles, Cayennes, Sugarloafs, Black Jamaicas, Otaheites, &c. LS—SK—SB
3. Providences. LS—SK—SB

C Grapes in pots; three specimens to be shown. CE—LS—SK

D Grapes, the heaviest single bunch of any kind. SK

E Grapes; in three bunches for private growers, and six bunches for Market Gardeners:
1. Black Hamburgh, Black Prince, &c. LS—SK—SB
2. White Muscadines, Sweetwaters, &c. LS—SK—SB
3. Muscats. LS—SK—SB
4. Other sorts, distinct from the foregoing. LS—SK—SB

F Peaches, in sixes. SK—SB—C

G Nectarines, in sixes. SK—SB—C

H Apples and Pears of the previous year. SB—C

I Figs, in sixes. SB—C

K Cherries, in dishes of 1 lb. each:
1. Black. SB—C 2. White. SB—C

L Strawberries, in pots; six pots to be shown. SK—SB—C

N.B. They must have grown in the pots in which they are shown.

M Strawberries, one dish each:
1. British Queen, &c. SB—C
2. Keens' Seedling, &c. SB—C

N Oranges, Citrons, &c., in pots; no one to show more than one pot. LS—SK—SB

NB. This class of Fruits is excluded if gathered.

O Melons, one specimen each:
1. The heaviest. SK
2. The best flavoured. SK—SB—C

P Other kinds of fruit of peculiar excellence and value.

N.B The medals under this head will be given at the discretion of the Society's officers.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.		SHEET SQUARES.	
16 oz. from 2d. to 3½d. per foot.		In boxes of 100 feet.	s. d.
21 " 3½ " 5 "		Under ... ... 6 by 4	12 6
26 " 3½ " 7½ "		6 by 4 and under 7 by 5	16 6
32 " 4 " 9½ "		7 by 6 " 8 by 5	18 6
		8 by 6 " 10 by 8	20 6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each.

6 by 4 and 6½ by 4½ ... 10s. 6d. | 7 by 5 and 7½ by 5½ ... 12s. 0d.
8 by 6 " 8½ by 6½ ... 13 6 | 9 by 7 " 10 by 8 ... 15 0

MILK PANS, from 2s. to 6s. each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d.; 6 tubes, 10s. Self-Registering Thermometers for Greenhouses.

Estimates and List of Prices forwarded on application to their Warehouse, 116, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 55, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

GLASS PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, of Bristol, and of Nailsea, Somerset, beg to inform Engineers and others, that they are prepared to supply GLASS PIPES of from 1 to 4-inch bore, in lengths of from 3 to 7 feet—the lengths being less as the diameters of the bores increase.

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15l. 10s.; a do. do. 15 by 10, 22l. 10s.; a do. do. 18 by 12, 28l. 10s.; a do. do. 21 by 12, 32l. 10s., including a plan for brickwork. 12-inch Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 1½d. per foot; 2-inch do., 1s. per foot.—J. LEWIS'S Machine Hothouse Works, Stamford-hill, Middlesex.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.

TILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 34 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had on application at the warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

THE BLACK PRINCE STRAWBERRY.—Fine strong Plants of this useful STRAWBERRY will be ready for delivery on the 3d of September. Price per 100, 15*s.*; 50, 10*s.*; 25, 6*s.* This Strawberry possesses more good points than any other variety in cultivation; it is hardy, very early, prolific, well flavoured, and a first-rate preserver. It stands travelling well, and if the blossoms are picked off it in Spring, an abundant crop may be obtained from it in Autumn. For Dr. Lindley's opinion, see a leading article in the *Gardeners' Chronicle* at page 488, 1849. It is also highly recommended by Mr. Marnock, Mr. Myatt, Messrs. Henderson, Mr Ingram, of Frogmore, Mr. Malleson, of Claremont, Mr. Beaton, and Mr. Snow, gr. to Earl de Grey. CUTHILL'S "Treatise on the Strawberry, Potato, Cucumber, Melon, and Lisianthus," price 1*s.* Post-office Orders on Camberwell.—JAMES CUTHILL, Camberwell, near London.

NEW HARDY HYBRID RHODODENDRON.
RHODODENDRON CAMPANULATUM SUPERBUM.
(Figured in Paxton's "Magazine of Botany" for this month.)

THOMAS JACKSON AND SON are now sending out good plants of this handsome Rhododendron, at 21*s.* each. It was exhibited at the Horticultural Society's Exhibition at Chiswick, on the 5th of May, and awarded their Knightian Medal. The Editor of the *Gardeners' Chronicle*, in his review of that Exhibition, notices it in the following terms: "Of the Rhododendrons, the best was a seedling from Messrs. JACKSON, of Kingston. It is a good trusser, the flowers individually large, of a pure white, with the exception of the upper petals, which are deeply and distinctly spotted with crimson; a beautiful variety." Discount to the Trade.
Nurseries, Kingston, Surrey, Aug 25.

EXHIBITION OF LILIUM LANCIFOLIUM, OR THE BEAUTIFUL JAPANESE LILY.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to invite the Nobility, Gentry, and Amateurs to inspect his assortment of this most splendid LILY, which includes a number of Seedlings.—On view every day, Sundays excepted.
Admittance gratis.

BECK'S PELARGONIUMS, and the best varieties of other raisers.—12 of the following sorts, including the box and carriage to London, will be sent out for Two Guineas, well rooted in 3-inch pots, and ready for an immediate shift into a larger size. Orders will be booked, and correspondents informed when the plants are ready, when remittance may be made by Post-office order on Brentford: Aurora, Blanche, Centurion, Cracker, Forget-me-not, Ariel, Cassandra, Cavalier, Cruenta, Gustavus, Guilelma, Grandiflora, Jnuti, Negress, Rosamund, Sundown, or 9 of the above, and Hoyle's Crusader, or Topping's Brilliant, or Foster's Victory.
The above selection, well cultivated, will make first-rate exhibition plants. A Descriptive Catalogue, including the seedlings of 1848, may be had on application to JOHN DOBSON, Worton Cottage, Isleworth.
Monthly directions for their culture will be found in the "Florist and Garden Miscellany," published on the 1st of each month, and to be had of all booksellers, under the title of "Beck's Florist." This work contains one coloured plate, one or more woodcuts, 24 pages of original matter, a Lady's Page, and a Calendar of Operations, supplied by eminent cultivators.
"Too much can scarcely be said in favour of the continued excellence of this work."—PROF. LINDLEY, *in this Paper, April*, 1849.

CHOICE FLOWER SEEDS FOR PRESENT AND AUTUMN SOWING, free by post, with useful instructions for sowing, &c. Catalogues on application. The following, saved from large collections of new and choice varieties, each, per packet.

Anemone ...	4*d.* to 1*s* 0*d*	Hollyhook ...	0*s* 6*d*
„ new semi-dbl. 6*d.* to	1 0	„ 30 vars., separate	5 0
Antirrhinum ...	0 6	„ 20 do. ...	3 6
Auricula ...	1 0	„ 12 do. ...	2 6
Calceolaria	1 0	Iris, English ...	0 6
Cinerarias ...	1 0	„ Spanish ...	0 6
Dianthus ...	0 6	Pansy	1 0
Fuchsia ...	1 0	Petunia	1 0
Geranium	2 6	Polyanthus 1*d.* to	1 0
„ smaller packets	1 6	Primula sinensis ...	0 6
„ scarlets ...	0 6	Ranunculus ...	2 6
Gloxinia	0 6	Sweet William ...	0 6
		Verbena 1*s.* 6*d.* to	2 6

20 vars. choice Greenhouse Perennials, 10*s.* 6*d.*; 12 do., 7*s.* 6*d.*
20 vars. Choice Hardy Biennials and Perennials ... 7*s.* 6*d.*
12 ditto ... ... 5*s.* 0*d.*
20 vars. showy Hardy Annuals for spring flowering ... 4*s.* 0*d.*
Remittances requested from unknown correspondents. Post-office orders to be made payable to BASS and BROWN, or STEPHEN BROWN. Postage stamps received for small amounts.
BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

CUPRESSUS FUNEBRIS, OR FUNEBRAL CYPRESS.

MESSRS. STANDISH AND NOBLE, NURSERYMEN, Bagshot, have the honour to inform Noblemen, Gentlemen, and the Public, they have been successful in obtaining seeds of the above beautiful weeping Cypress from the north of China, and are now ready to send out fine healthy seedling plants at 21*s.* each.
This splendid Tree is a great favourite with the Chinese, and in the north of China used by them principally for planting in their burial grounds, where it often attains the height of 60 feet, and forms one of the most beautiful Evergreen weeping trees known to Botanists. It was first discovered by Lord Macartney and Sir Geo. Staunton, in the great Vale of Tombs, in the north of China, and dried specimens were brought home by Sir George Staunton, who, in Lord Macartney's mission or voyage to China, thus describes the Vale of Tombs and the plant:
"The Lake formed a beautiful sheet of water about three or four miles in diameter, and surrounded to the north east and south by an amphitheatre of picturesque mountains; upon the summit were erected pagodas, one of which attracted particular attention. It was situated on a bold peninsula that juts into the lake, and was called the Lui-Soong-ta, or Tower of the Thundering Winds. It is said to have been built in the time of the philosopher Confucius, who lived three centuries before the Christian era. In the Vale of Tombs the variety of monuments is almost infinite."
"These monuments of departed greatness are surrounded by trees—such as different species of the Cypress, whose deep and melancholy hue seems to have pointed them everywhere out as well suited for scenes of woe. The churchyard Yew did not, however, grow there, nor was it observed in any part of China; but a species of weeping Thuja, or Lignum vitæ, with long pendant branches, unknown in Europe, overhung many of the graves."
In the plate of the Vale of Tombs, the weeping tree in the foreground near to the Tower of the Thundering Winds is this plant, and it has since been proved by botanists to be the weeping Cypress. Messrs. STANDISH and NOBLE obtained, last winter, from the north of China, dried specimens and cones of the above tree, which were forwarded to Dr. LINDLEY and Sir WILLIAM HOOKER, who at once pronounced them to be the famous Funereal Cypress (see leading article in the *Gardeners' Chronicle* of the 21st of April last).—Messrs. S. and N. can also supply 1-year Seedling Cryptomeria japonica at 1*s.* 6*d.* per plant, 15*s.* per dozen, or 8*l.* per 100; 2-years Seedlings at 3*s.* 6*d.* per plant, 36*s.* per dozen, or 12*l.* 10*s.* per 100.

VIRGIN QUEEN GERANIUM (ARNOLD), is the best WHITE flower in existence.
HOYLE'S CRUSADER has likewise proved itself of sterling excellence. Good plants, in October, will be ready for sending out at 7*s.* 6*d.* each; or the two for 12*s.* Early application should be made to WILLIAM E. RENDLE & Co., Nurserymen, Plymouth.

HOYLE'S CRUSADER GERANIUM, 7*s.* 6*d.* each in October.
ARNOLD'S VIRGIN QUEEN, 7*s.* 6*d.* each in October.
Two gems of the season; or a plant of each for 12*s.*
Apply to WILLIAM E. RENDLE and Co.,
Nurserymen, Plymouth.

The Gardeners' Chronicle.
SATURDAY, AUGUST 25, 1849.

MEETING FOR THE ENSUING WEEK.
COUNTRY SHOW.—Wednesday, Aug 29. S. Bilbury West of England Dahlia

AFTER the observations in our last journal were written, concerning the DISEASE produced AMONG TREES around alkali works, a copy of the *Wakefield Examiner* reached us, in which the subject is treated of at some length. If the statements made by one of the *Examiner's* correspondents may be relied upon, hard-swearing had more to do with the verdict at York than true testimony. We prefer, however, to treat the question without reference to such assertions.

It was proved in court that in the neighbourhood of the works great numbers of trees and bushes were dying and unhealthy. In a row of young Oak trees fully exposed to the chimneys, all were losing their branches more or less. These trees had once been in vigorous growth; they were now become stunted; several were nearly dead. A row of Larch trees

near the works was red with dead leaves; some were dead. Apple and other trees near the works were in wretched plight; some were dying. Fine and once healthy young Pear trees were dead on the side next the chimneys, among them the Swan's Egg, one of the hardiest of all varieties; their branches were in many cases in the state represented in the following cut; the leaves blackened or blotched, and all the buds at the end of the shoots of the present year black and dying; the shoots themselves were withered and shrivelled. In Gooseberry bushes the leaves were sapless, brown, and shrivelled, and many of this year's shoots, although as much as 6 inches long, were dead; in others the bark was blistered and the branches sapless. They had all the symptoms of having been acted upon, when in full growth, by some acrid vapour; this was in a place where vapours from the chimneys might fall; on the other hand, Gooseberry bushes close beneath the shelter of a wall and cottage were perfectly healthy. There was also a case mentioned of a Maple tree and an Oak tree standing in a line with the chimney, both of which had, to all appearance, been injured by a stream of vapour proceeding in a straight line from the chimneys. Evidence of the most respectable kind was produced to show that these Walton trees were once healthy, and that their diseased appearance had been increasing for several years past.

This description serves to give a general idea of the *class of facts* on which the plaintiff relied, and which the special jury disregarded; although if they had ever been within the gate of the Garden of the Philosophical Society in their own city they might have seen the very same kind of injury as that complained of, where the most dull witted person could not fail to trace it to a chimney.

Among the arguments employed to destroy the importance of facts of this kind, that most relied upon was that "natural causes" were sufficient to account for all such appearances; which it was said equally occur in places where no alkali works or manufacturers' chimneys exist. Insects, old age, wet tenacious soil, high winds, frosts, bad land, recent transplantation, were, we understand, assigned by the defendant's witnesses as causes sufficient to explain the appearance of the Walton vegetation.

It is perfectly true that diseases similar in appearance are to be found elsewhere. No man can ride a mile over a wooded country without meeting with dead or dying trees; and he will often find it impossible to say what the causes are which have produced the mischief. Stagheaded Oaks and Ashes, gummy, dying Cherry and Plum trees, perishing Fir trees, have undoubtedly in innumerable instances no possible connection with manufacturers' chimneys. They die, no one knows how or why. But when we find great numbers of such appearances all round a common centre; when we find that the sides of trees next that centre are most injured; that where currents in the air necessarily flow from that centre, there the cases of disease increase; and when we see all this happening in a fertile soil, where trees have once grown vigorously, drained by a natural valley, and producing good Wheat and Whitethorn, it must be evident that ground exists for grave suspicion at the least. The evidence, taken as merely circumstantial, can scarcely be resisted, unless the most satisfactory proof can be adduced that the injury is occasioned otherwise than by the centre in question.

Now we are of opinion that no one cause assigned by the defendant's witnesses ought to have weighed with the jury. Insects usually bear the blame of what ignorant people do not understand; no doubt they eat holes in leaves, or devour them entirely, and in some cases they commit extensive ravages; but who ever saw the young buds of a perfectly healthy shoot of a Pear-tree reduced to blackness, and the shoot itself shrivelled, because a few caterpillars had eaten some of the foliage. Such an explanation deserves no serious notice. The jury thought otherwise.

Old age was referred to. But the trees affected could not in any sense of the word be called old; many of them had only been planted a few years. The jury paid no attention to this, which they must have seen when on the ground.

A wet tenacious soil was spoken of. We dare to say that the Walton land is not artificially drained: and it is likely enough that it may be tenacious in wet weather. But fields sloping to a natural valley, which acts as a universal drain to the neighbourhood, are not likely to be unfit for the growth of trees. If they were the trees themselves would be stunted, bark-bound and mossy; they would never have been otherwise. Yet at Walton they were, till within a few years, in vigorous health; and are not mossy even now. In one case, however, the defendant's counsel shifted his ground, and endeavoured to show that the Larches that were dying had suffered from over-draining. It was contended that they stood near a sunk fence, by which it was supposed was meant a brick wall, forming the face of a bank. Here the trees would have been fully deprived of superfluous water in the soil, and yet they also were dying and dead. Their leaves were "foxey," and their fate was sealed. If they really were placed, as was contended, then they were in the best position to maintain their health. But the jury could not understand this.

Then soil was enlisted in the defence. But no one ever saw a heavy Wheat crop, and clean vigorous Oaks and Whitethorn in bad land. It is wonderful that the jury should not have thought of that.

High winds and frosts were also appealed to. But who ever heard of high winds and frosts destroying vegetation in the manner described, over an area of a thousand yards in diameter, and not producing similar effects elsewhere in the neighbourhood. Who, indeed, ever heard of a midsummer frost even in Yorkshire turning the old leaves of Pear-trees black, and killing the young shoots of a bush so hardy as a Gooseberry? Yet the jury could not see the absurdity.

As to Gooseberries, we understand that an attempt was made to show that it was recent transplantation which had caused their death. This was denied; there was no appearance of the bushes having been transplanted. If it had been so the

vigorous young shoots which those bushes had this year produced would not have died back in the remarkable manner sworn to; of which moreover specimens were produced in court. The jury did not perceive their importance.

But not only were the arguments employed by the defendant thus futile. There was the most positive proof on the part of the plaintiff that the destruction of the young shoots must have taken place lately, and from the action of some deleterious matter, acrid or otherwise, upon their surface. A case like that of the Pear trees, now figured, is, in our minds, conclusive. These trees were young and healthy, except that many of the branches were dead and others dying; they were attacked by some local affection, which rendered the young, fully-formed, perfect buds black to the core, and which dried up the surface of the branch itself. Acrid matter falling on them would produce such an effect. We know of no other cause that would. Let the following comparative description of healthy and unhealthy Pear shoots, of the same age, be attentively read, and the nature of the mischief will be manifest. No doubt can exist that it is produced by something acting on the outer surface of the branch.

Healthy Pear Trees near London.	*Diseased Pear Trees at Walton.*
Buds, covered with brown, dry scales; all the inner scales plump, green, and juicy. Under the microscope, the contents of the cells a clear, bright green.	Buds, covered with black, dead scales; the inner scales dying and tinged with brown, in some cases as far as the vital centre. Under the microscope, all the chlorophyll (green contents of the cells) tinged with brown; in many places already cinnamon brown, as well as the protoplasm (vital lining of the cell walls).
Shoots.—Bark firm, even, plump; with the cortical integument bright green and juicy.	Shoots. — Bark shrivelled and uneven. Pale brown stains proceeding through the wood downwards, and dark brown blotches here and there in the young cortical integument.

We regard a fact of this sort as being of the same value in evidence as the discovery of property capable of identification upon the person of a suspected thief. It overrides all denials and evasions. The inference is legitimate that if Pear trees are dying from an affection traceable to the atmosphere, then the other dying trees are injured by the same cause. In reality the same kind of injury was manifest upon other trees, although the jury could not see it.

But we are warned by our diminishing space that the question must be brought to a close. The room we have given it was demanded by the extreme importance of the subject; an importance that cannot be overrated, when it is recollected that every estate in this country may be ruined by the chimneys of chemical works. The owner of a few roods of ground may at any time lay waste his neighbour's timber, and render his residence uninhabitable, with perfect impunity, if verdicts like that in question can be sustained. Gentlemen will therefore do well to crush all such causes of evil while there yet is time. Their gardeners and stewards should be instructed to familiarise themselves with the early symptoms of mischief, and to learn how to distinguish between diseases generally met with, and the special effects produced by these centres of destruction. If this is not done skilfully and vigorously, they will be in the position of Mr. Waterton, who has the misery to behold his beautiful trees perishing before his eyes, and his fruit garden ruined, although it is full 1000 yards from the centre of destruction. It is evidently uncertain whether a jury may have intelligence enough to understand these cases, and to pick out the truth from among the rubbish that a dexterous attorney can encumber it with. And even if a verdict be favourable, the mere money compensation which it affords is no satisfaction for being driven from the home of one's ancestors.

Bad news of the Potato Disease increases. In another column we publish the more important of the authenticated advices we have received. From the mass of our correspondence on the subject, we select a couple of letters, to which we wish to draw particular attention. The first relates to the result of a trial of M. Tombelle Lomba's plan, published by us some weeks since; the second records the effect upon the Potato crop of a substance of unexplained chemical constitution, called "coal warp." Can any of our readers give us further information concerning this substance?

"After reading the 'Belgian Farmer's' recommendation on the treatment of Potatoes at the time of flowering, which appeared in your Paper of the 7th of July, I had my crop of 'Red Roughs' watched, and as soon as the flowering had ceased, I caused the haulms to be cut off within an inch of the surface, and the earth drawn over the plants an inch thick. This was done to two rows, leaving double the quantity of the same crop in its natural state. Yesterday the Potatoes of both were drawn; in the rows left untouched, two-thirds of the crop were found to be more or less affected; but in the rows on which the experiment was tried, every Potato was found perfect, and in size and quantity the same as the others. I beg to add that the same result followed a similar experiment, made in a garden by one of my workmen, upon a small crop of 'Snowballs.' *J. Gwatkin, Parc Behan, Tregoney, August 17.*"

"I send a sample of Potatoes, grown under circumstances which may, perhaps, illustrate the view respecting the disease suggested in your Leading Article in the *Chronicle* of the 11th inst. The Potatoes have been grown in unmixed coal warp, obtained in the following manner, from a coal mine in the Radstock district. The water pumped up from the mine is allowed to escape as it may find exit on the surface, but on the spot where it is first delivered from the pump a sedimental deposit is left, of a black unctuous substance, which we have called coal warp (though this term is more strictly applied only to the refuse soil of the coal measures). On this spot Potatoes had been planted, and hitherto always escaped disease. This circumstance came under the observation of the intelligent medical practitioner of this parish, and in consequence he obtained some of the deposit; and removing the soil from a plot of ground in his premises, down to the face of the rock (dolomitic conglomerate), he filled in with the coal warp, and set several sorts of Potatoes in it, of which I send you samples. 1, Ash-leaved Kidney, weighing 10 oz.; 2, Silver-skin or Button, a prolific but very small variety, weighing 4½ oz.; 3, Kingston White, 12 oz. The large size of these Potatoes would seem to indicate that there is something in the soil peculiarly suitable to the growth of the plants, and they have entirely escaped disease, which has appeared rather generally in the parish during the last fortnight. *J. H., Mells.*"

The Potatoes referred to in this communication were very fine, and perfectly sound.

We are requested to state that Dr. Lindley would be much obliged to the correspondents of the Journal of the Horticultural Society, if they will favour him with their communications in the course of a few days.

REMARKS ON PICOTEES.

Having attended most of the exhibitions, and made a few notes during the late Picotee season, I beg to give your readers some account of the best kinds of this much esteemed florist flower, and in doing so I will begin with the early varieties. (Explanations of abbreviations: h. stands for heavy edge, m. medium, l. light. Those marked with a * have proved constant, retaining their character even to the middle of the flowering season).

Of purple edges we have—

Agitator (Sharp), m.	Lady Chesterfield (Brinkler), h.
Beauty (Norman), l.	Lord Hardinge (Smith), h.
Beauty (Shaw), l.	Miss Annesley (Kirtland), l.
Coronation (Garrett), m.	Mrs. Fenton (Ely), m.
Constance (May), m.	Norwich Rival (Thurtell), l.
Duke of Newcastle (Burroughes), l.	Nottingham Hero (Robinson), l.
Enchantress (Matthews)*, l.	Nulli Secundus (Mansley), h.
Favourite (Ely), h.	Portia (May)*, h.
Gen. Jackson (Burroughes), m.	President (Burroughes)*, h.
Jenny Lind (Ely), h.	Prince Albert (Crask), l.
Jessica (May)*, h.	Prince Albert (Marris)*, m.
L'Elegant (Sharp)*, l.	Princess Alice (Wood)*, h.
	Regina (Cox)*, l.

Of late sorts we have Amy (Burroughes), l.; Juliet (May), l.; and Augusta (Edmonds), h. I would here observe, that our more recent varieties, which possess much substance, must have a warm season to develope their beauties in, and they also require the addition of cap or blooming glasses. Stout flowers, moreover, do not open so white as those of thinner texture, unless care and attention are bestowed on them; they, however, fully repay this extra trouble.

Of red-edged kinds the following are early: Antagonist (Read), m.; Isabella (Kirtland), h.; Miss B. Coutts (Burroughes), m; Ne plus ultra (Matthews), l. The next in succession are Duchess of Cambridge (Brooks), h.; Duke of Wellington (Sharp), m.; Emma (Burroughes), l.; Isabella (Wildman), h.; Mrs. Bevan (Burroughes), m.; Prince of Wales (Marris), m.; Sebastian (May), h. The late sorts are Ernest (Edmonds), l.; Gem (Youell), l.; Jenny Lind (Edmonds), l.; King James (Headley), h.; Mr. Trahar (Dickson), h.; Unique (Hudson), h.; and Yorkshire Hero (Hepworth), h. Generally speaking, the red edges seem more positive to their season than the purples.

In the scarlet and rose class we have less choice, but they too have their seasons and peculiarities. The first to gladden us are Fanny (Barrenger), h.; Heroine (Youell), l.; Lady Dacre (Garratt), l.; Mrs. Barnard (Barnard)*, l.; Rosalina (Trahar)*, m. The last two varieties extend their beauties into the second division, which is composed of Ivanhoe (Crouch), l.; Lady Alice Peel (Burroughes), l.; Princess Royal (Wilmer)*, h.; Proconsul (Gatliff), h.; Queen Victoria (Green)*, h.; Queen of Roses (Holliday), h.; and Venus (Headley)*, h. *These also form the late class of bloomers.

Size, height, habit of growth, &c., will probably form the subject of my next communication, and in it I also intend to give a cursory remark or two upon new or very scarce varieties. *John Edwards, Wade Cottage, Holloway.*

DISEASES OF PLANTS.

(Continued from page 517.)

Genus XX. Tarlo (*Vermiculare* or *Worm-corrosion*) of the Pine.—I shall here merely transcribe what Plenck says on the subject of this disease in his Vegetable Pathology. Having consulted the different authors who treat of the cultivation of the Pine, and searched Ginanni's work on the Pine-woods of Ravenna, I can find no mention of it. It appears that it attacks more particularly the forests of Germany.

"The corrosion of Pine-trees is a putrid decay peculiar to the Pine, which destroys especially the liber and the alburnum. This disease commences with the extreme branches, and gradually working its way downwards shows the following signs. A reddish discoloration and fall of the leaves. Little resinous drops exuding from innumerable pores on the surface of the bark; a putrid odour of turpentine, which is perceived from a considerable distance; large fragments of the bark either full off spontaneously or are easily detached with the finger. After the fall of the bark the wood appears of a fiery red colour. The liber, the alburnum and the inner surface of the bark are corroded by innumerable serpentine channels, assuming the forms of letters." As in these corroded channels are found numerous eggs of the Dermestes typographus, it was thought that the whole mischief was caused by this insect. Plenck shows however that it is caused by an excess of stimulus, the more so as a prolonged drought in a very hot season produces this disease, which spreads over vast tracts of Pine forest.

The above quoted author proceeds as follows: "The soil to the depth of 1 or 2 feet is converted, as it were, into hot cinders, and the roots are deprived of all nutritive juices, especially if the swamps and ponds in and about the forests are also dried up by the excessive heat. Nor can the leaves absorb any nourishment from the overdried atmosphere. Then the juices are stopped in the vessels of the plants and putrify. There is neither precaution nor remedy of any avail against the evil; a copious and prolonged fall of rain will alone put a stop to its progress, and preserve from it those trees which are yet sound." Wherever the disease first shows itself, the tree should be cut down, before the corrosion extends over the whole of it, and renders it unfit for any use.

Class II. Diseases constantly Asthenical.—The scarcity of aliment, its unsubstantial quality; the want of the stimulants electricity, heat, or light; deficiency of action in one or all of these agents, which concur in perfecting vegetation, are to be recognised as the causes which, under the present head, by placing the plant in a state of weakness, render it diseased. Whatever may increase the quantity of nourishment, improve its nature, or cause the necessary stimulants to resume their ordinary action, to which the plant will necessarily respond, will tend to restore the plant to a state of health.

Genus I. Sterility.—Some plants, although well formed in all their parts, bear no flowers, without showing any symptoms of excess of vigour in their vegetation. Others develop well formed flowers, which are not superabundant in number, but yet are not fertilised. Hence two species of sterility.

First Species: Sterility from Climate.—The admirable memoir of Regnier, on the influence of climate on the form and nature of vegetables, must persuade any one how essential it is for the agriculturist as well as for the botanist to know the character of the native stations of plants on the surface of the globe, their elevation above the level of the sea, the greater or lesser angle of reflection of light and its intensity, the quantity and duration of rains, and other circumstances which exercise so much influence on vegetation.

Some plants obstinately resist the most attentive care of the gardener, and cannot be made to bear flowers; neither will any bending of branches, nor increase of nutriment, be of any avail, nor any of the most refined processes of the art. This must be owing to a want of the requisite degree of energy in the stimulants, arising from the effect of climate. Thus we see some plants never flower with us, because they are natives of hotter climates. To a certain degree only can the gardener produce the desired effect by means of stoves, greenhouses, and other contrivances. But even further: some plants removed from a cold climate into a hot one, and there exposed to the open air, are struck with the same sterility. This will be readily understood. Accustomed as they are, if for example they are natives of high mountains, to remain nine months covered with snow, they live on the whole in a temperature more regularly mild, they have greater facility in fortifying themselves. It is not, as is generally thought, the great heat that usually injures them, but rather the want of a long continuance of equal temperature. Sometimes, also, their sterility may be occasioned by the inferior quality of their nutriment. Mountain plants vegetate in places where nature is constantly renewing the soil thereon by the decomposition of organised matter, and have thus a constant supply of fresh food of the richest kind; removed to cultivated plains they do not find it of the same quality, and are unable to put forth their flowers. In this case there is nothing to be done but to endeavour by artificial means to supply the deficiency.

Second Species. Non-apparent Sterility.—Plants in this case are seen to develope their flowers with that regularity and order which are known to be required for the sap duly to feed the expected fruits. The organs of generation, closely examined, appear perfect, nor is any defect to be found in the pollen. The whole

field of grain in an equally satisfactory flowering state promises to the cultivator that he will have to work hard to gather in the heavy sheaves. But all these flattering hopes vanish. The flowers do not set. The ears remain empty. The cause remains unintelligible to any one who is not in some degree initiated in the secrets of Nature. I have thus termed this sterility *non-apparent*, because the phenomena which usually come under our observation are not sufficient to account for it. This disease has its origin in various circumstances which enfeeble the action of the organs of generation. The rudest cultivator is aware that a heavy shower, or even a slight rain, may disturb the setting of fruits; but what this fall of water occasions may also be brought about by other causes.

It is necessary here to inform those who may be ignorant of the fact, that plants are endowed with a certain property which, in common with other writers, I shall call *irritability*, without at the same time pledging myself to define its analogy, or diversity from that which is recognised in animals. I only repeat, that it is that property by which a body contracts when acted on in a peculiar manner for that purpose. Botanists have observed that in vegetables the male organs of fecundation enjoy this property above all other parts. The touch of the finest hair will irritate an anther. Our countryman Comparetti had fixed the seat of this irritability of the stamens in their spiral vessels, proving it by his observations on the filaments of the Nettle and Parietaria. Let him, however, who would learn more on this subject, one of the most important in the physiology of plants, consult what Senebier says in the fifth volume of his "Physiology." For my purpose it will now suffice to add that whatever deprives the male organs of a vegetable of this irritability, renders it incapable of reproduction.

A very slight degree of cold at the break of day, a light rain even for a moment, a slight wind, one of those mists which are dissipated as soon as formed, may be sufficient to deprive these organs of their irritability. It must be admitted at the same time that the disease we are now treating of much resembles the *Polyanthesia*, and much attention is necessary to distinguish them. In the case of the latter, however, sterility is accompanied by an excessive production of flowers, whilst in the present instance that does not happen. I am very unwilling to have recourse to speculative causes for the effects we observe. Yet may it not happen sometimes that there is a deficiency of the necessary sap for bringing the organs of generation to perfection? What induces me to believe it is, the observation I have often made, that in those years where the springs are cold and backward, this kind of sterility is more frequent, and there is no remedy for it. Sometimes the whole of the flowers of a plant are struck with barrenness, at others it is only one or more branches, whilst others remain untouched. To this same species must be referred again a number of analogous diseases occasionally mentioned by writers under different names, such, for example, as the *false ear* (spiga falsa), by which the whole or a portion of one or more ears of corn remain empty.

I take this opportunity of observing, that the accidental failure which sometimes happens to the crops of one field whilst the adjoining ones have a rich harvest, may be owing to this disease. Where one amongst a number of fields covered with corn, is by its situation the first to receive the wind, if this comes on with violence whilst the corn is in flower, it carries off a great deal of pollen and deposits it in the adjoining fields. The latter are thus fertilised at the expense of the former. Thus it results that *sterility* may be produced by wind operating mechanically to carry off the fecundating principle.

ON THE CONDITIONS ESSENTIAL TO THE MOST PERFECT CULTIVATION.—No. X.

In the history of the world's progress—in the history of every art, science, and pursuit, to which the mind and energies of man have at any time been directed—there is in the records of each abundant evidence of the occurrence of epochs; periods in which some master spirit of the age had dared either in thought or deed to outstrip the tardy progress of the day, and show how true genius, calculating with few philosophical data, could in a very short time initiate the world in wonders, of literature, of science, of art, that the mere snail-pace of dogged experience could not have arrived at in a century.* But, still the world is ever slow to receive any great innovations upon existing systems. The most brilliant theories—ideas pregnant with the greatest practical advantages to the whole human race—have been cast upon the turbid waters of public opinion; their true benefits have been reaped only after many days and by a succeeding generation.

The literary and scientific records of our own country contain many dark pages of the world's neglect—pages telling us how in bygone days great minds have languished in obscurity, neglect, and poverty; how their possessors have gone down "in sorrow to the grave," leaving behind them the germs of mighty works, which germs, as the human mind progressed in intelligence, have become gradually recognised and appreciated; how these same germs of progress have, like the tiny seed from which springs the monarch of the wood, slowly ripened into perfection; and how in later days, as if in mockery of past neglect, every record of the originators has been hunted up and blazoned forth with all "pomp and circumstance;" and how, after their ashes have mingled, it may be for centuries, with their parent earth, we have held up their "counterfeit presentiment" in the speaking marble almost to adoration. But I must descend, and think it will not be irrelevant to link with the records of science those of gardening.

Like every other human pursuit gardening has had its epochs, and not one of more promise, at least in connection with my present purpose, than the one-shift system. Every one who has watched the progress of gardening matters for the few last years, will recollect the advent of the one-shift system. Like many other ill-fated bantlings, it was born before its time; and the nurses to whom it was entrusted, not understanding or not appreciating its nature and peculiarities, well nigh smothered it in its swaddling clothes. A few who could peep into futurity a pace or two beyond the mass, and who ventured to predict what might be expected from the infant when it became a man, were quickly assailed by a herd of opponents who recommended that the young monsters should be suffocated, and who, if they did not exactly hiss its advocates off the stage, at least "damn'd with false praise" any good qualities they might exhibit which pertained to it.

But a great revolution is slowly, and will eventually be effected in plant growing by the agency of the one-shift system. Its application no doubt requires discrimination—what use of any great principle does not?—but its advantages are great. We may not all recognise them at present, but we shall do so in time. It is a feature in both the practice and theory of gardening to enlist nature on our side, or at least to fancy we do so, and we cannot better exemplify this principle than in largely employing the one-shift system in the pot cultivation of plants. But it will be well briefly to investigate its principles and their application. In giving a plant an unlimited supply of root action we increase in an equal ratio its head, and at the same time we allow the individual to develope its true characters—a subject I regret that modern gardening, however excellent in its results, appears to have lost sight of. It does not seem to discriminate between the true characteristics of a plant, and a "drawn" badly grown specimen. Every plant, whatever may be its nature, must be formed upon one model; no natural luxuriance, no graceful elegance is allowed, but in twenty first-rate collections of plants, each "but reflects the other." What the knife effects by way of "stopping," to induce "bushiness," at the expense of the true character of a plant, the one-shift system would in some measure restore and preserve, and we should thus have all the natural gracefulness of which a highly cultivated plant is capable, surely no mean desideratum.

But no principle is universal in its application, neither is the one under discussion. There are many instances in which it would obviously be sorely out of place. In an establishment crammed to suffocation with plants, there is no room for it, and on the other hand, under the system many plants would quickly find a grave. But where gardening is recognised in deed as well as in name, where every available accessory is at hand, where a few noble specimens are more coveted than houses full of deformed rubbish—there will the one shift system ultimately find a home, and be appreciated. But I hear many whispers to this effect: "I grow noble specimens, specimens such as have no superior, and I do not use the one-shift system." "True, you may not; but I firmly believe that the same skill, applied in the application of the system I would advocate, would give you superior results in one-half the time you now employ." *G.*

* I would not be misunderstood here; I have no desire to be thought visionary enough to deem practical experience nothing in the scale against science, but I shall be understood, at least by all I wish to understand me—when I say that it is the too prevailing opinion *vice versa* to that which I wish to combat—that the speculations of scientific men are of no importance to practical details of every-day life.

VILLA AND SUBURBAN GARDENING.

The season has now arrived when much of the general beauty of the flower garden may be secured. We frequently leave the planting of herbaceous plants, and especially the beautiful Phloxes which so much adorn our borders during autumn, until spring, whereas if put out now they get established before winter, and are consequently sufficiently strong to bloom next season. It can scarcely be expected that small plants of a perennial nature turned out of pots in April can appear at all satisfactory that season. It is the practice, however, of some, and a bad practice it is, to replant and divide their herbaceous perennials every spring, thus destroying their beauty for the current year; now is the season when a new arrangement of the flower-garden should be effected; young plants from the nurseries planted out and others divided, if their flowering season is over.

In an operation of this kind some care will be required, in order that as little injury as possible may be done to the delicate species. The more robust growing sorts will require less care; in many instances they will have overgrown the spaces assigned to them, therefore a little discretion will be required in retaining a sufficient portion to occupy the space allotted to each plant. In small gardens variety is a cardinal point, the interest being heightened in proportion to the number of objects they contain, provided each has room to develope its beauty, but order must be the prevailing characteristic of every garden, however small, or the latter will very soon degenerate into confusion, and no part more rapidly than the herbaceous borders. To amateur gardeners no subject is of more importance, attention to this point gives their borders and beds an air of neatness and interest. Every plant, too, should be properly named; the mere writing of the names will have a tendency to impress them on the memory. The name being attached to a plant gives it double interest, and if the native country is also added, the interest is still further increased.

A herbaceous border is what every garden, however circumscribed, may boast of, and I know not a more interesting tribe of plants than such a border should contain, for some of them are in flower at all seasons, and as they require no glass, either in their propagation or culture, they are peculiarly amateurs' plants. The principal care they need is, keeping them clean, and the erect growing kinds neatly supported with stakes, which should always be placed as much as possible out of sight. Timely attention to staking is important, for when left too late, heavy rains or high winds often lay the plants prostrate, and early staking and tying will, when the plants arrive at their full height, have removed much of the stiffness which presents itself when this operation is neglected to the last moment. *Pharo.*

ANCIENT TREES.

The Chapel Oak of Allouville, *Chêne-Chapelle d'Allouville.*—The Chapel Oak is unquestionably the senior of the Oaks of Normandy. This tree stands in the cemetery of the Commune d'Allouville-Bellefosse, near Yvetot. In 1843, at the height of 5 feet 4 inches from the ground, its circumference was 28 feet 4 inches. Its trunk, completely hollow, has been formed into a chapel, 7 feet 7 inches in diameter, and nicely wainscoted. A grated door secures the entrance of this small temple. Above the chapel there is a small chamber containing a bed; the ascent to this chamber is by means of a winding stair-case on the outside of the trunk.

The top has been broken off many years; where the trunk now terminates, it has the diameter of a very large tree. It is slated and covered in with a conical roof, surmounted by an iron cross, rising up in a picturesque manner from the midst of the foliage. The crevices which various parts of the tree present are covered in with slate; and this, by replacing the bark, contributes to the preservation of the tree. The following inscription is over the door of the chapel:—"Érigée par l'Abbé du Detroit, Curé d'Allouville, en l'Année 1696." And above the door of the upper chamber: "A Notre-Dame de-la-Paix."

The tree had probably become hollow after losing its top; for, if this happened at a period of the season when the flow of sap was in great activity, all the wood then formed would be rendered liable to premature decay, in consequence of the sudden check. It may be presumed the top has been broken off nearly, or quite, 200 years; for it appears from the above date that the cavity had been so extensive as to admit of the chapel being formed 153 years ago. Yet the tree still continues to deposit fresh layers of wood; for, in 1821, it measured 27 feet 7 inches in circumference; and, in 1843, at exactly the same height, it measured 28 feet 4 inches. The calculated age of this Oak is 870 years. *Extracted from Notes sur l'Accroissement des Arbres Exogènes, par M. A. Dubreuil.* ||

Home Correspondence.

The Non-Transmutation of Shallots.—I have tried the experiment of raising Shallots from seed, and the result was that a few of the bulbs were very fine, and certainly bore a considerable resemblance to Potato Onions. Each bulb, originating from a single, isolated seed, was less compressed and taper in shape than those which are grown from offsets, and so produced in crowded clusters. The whole crop of seedlings was sorted into three parcels; one, light in colour, like fresh Spanish Onions; a second, pinkish and reddish; and a *tertium quid*, or intermediate odd lot, like common Shallots. These distinctions, however, nearly or quite disappeared when the outer cuticle became dry; and if they had not been observed when the bulbs were first taken up from the ground, would probably have remained unnoticed. The following season they were grown separately, planted shallow in rich ground at the winter solstice, and treated exactly like Potato Onions (which I have found to be the best way of growing Shallots), but no further development or transmutation ensued—Shallots they continued, and as there appeared no motive for carrying on the experiment further, they were suffered to become mixed with our old stock of offsets; although I may say that it is still carried on, as the divided bulbs of the seedling Shallots cannot now be distinguished from the produce of their original parents, nor have I now any hope of originating Potato Onions in this way, but believe that they will continue still to rise in the shape of Shallots long after we shall be removed from all earthly opportunity of observing their growth. The Potato Onion and the Shallot are undoubtedly very nearly allied in their propensity to subdivide into separate buds or bulbs (other Onions show the same tendency, the Tripoli especially, and that most in wet seasons); but besides the difference in their size, and the different proportions of their fistulous leaves, a main point of disagreement is that the Shallot throws up flower-stems, which I thoroughly believe that the Potato Onion never does. If any grower sees a head rising in his plot of Potato Onions, let him make quite sure that no other bulb has accidentally become intermixed with the

parcel planted before he venture to speculate upon the phenomenon. Is there a good monograph on the Onions in the Journal of the Horticultural Society? If not, such would be a desirable paper to add to the series. Finer Shallots are obtainable by sowing seed than by planting offsets, simply because the vigour of the plant, and the nutriment obtainable from a certain space of ground, are concentrated in one bulb, instead of being distributed amongst a cluster of half a dozen or eight; and as the seed is so easily obtained, it may be a question with gardeners which is the best method, *i.e.* as they are sold by weight, by which mode the heaviest crops can be grown on a given space of ground. Shallots are more mucilaginous than Onions, and if stewed and served whole are found by some persons to be a medicinal as well as a wholesome and agreeable dish. *E. S. Dixon.*

Uniting Bees.—I have just read in your Paper of the 11th inst. the doubts which "W." casts upon your correspondent "W. G.'s" plan for uniting bees. If he has not yet united them, perhaps the following method, lately adopted by me in two instances with complete success, may be available to help him out of his difficulty. Having a spare set of collateral boxes in a window in my house, devoted to the purposes of an apiary, I begged of a lady apiarian in my neighbourhood the bees out of as many stock hives as she intended to destroy this autumn, for the purposes of experiment. Five hives were accordingly placed at my disposal, so that I had enough to fall back upon, should the particular experiment about to be described fail. And now for my plan of operation: After dark on the evening of the 9th instant, I began by turning up into a pail No. 1 hive (a late cast of this year, full of bees, but only half full of comb); my assistant immediately, yet without hurry, applied an empty prepared cottage hive, of the same size, over the full one; a sheet was next thrown over the whole, round which was passed a stout piece of string two or three times, just above, below, and at the point of junction of the two hives, to prevent any bees escaping. My assistant then proceeded to drive the bees up, by tapping lightly, but briskly, on the sides of the reversed hive. In about 10 minutes it was evident, by the hum, that the bees were mounted into the empty hive. A second full hive (which had given a swarm this year), very rich and populous, was then turned up in a pail, as the first had been, and over it was quietly, but quickly, placed the hive into which the bees from No. 1 hive had already mounted. (In the meanwhile a third person ran off with No. 1, and placed it over a hole filled with a little sulphur, so as to destroy the few bees which still remained; this was done also with the second hive.) The hives having been covered with the sheet, as before, were similarly treated, and in a few minutes the bees of the two hives were united in apparent harmony together; for, though there was an increased hum, it was easily accounted for by the increased heat of the hive, and the consequent necessity for ventilation. No bees, however, were found dead. The hive was taken off after a short pause and placed on a table, where it was suffered to remain all night, and up to 3 o'clock the following day, when, the sun being out, I proceeded in a bee dress to finish the job alone. I first spread a sheet, doubled in two, on the ground; I then rested my box on one side of it (upon the sheet), taking care to elevate one side of it about half an inch from the ground with a couple of sticks. This done, I gently took the hive, wherein the united swarm had been quietly working all day, and holding it directly in front of the box, with two or three rude taps, shook the bees all out upon the sheet; when, lo! proof positive that my bees were harmoniously united, there appeared three combs, the centre one being already 2 inches long, and glistening with honey. Moreover, I picked up a dead queen, apparently the only victim of the experiment. In less than 10 minutes the bees on the cloth and in the air had all joined their queen in the box, whither she had instantly fled, attracted doubtless by the honey with which it was smeared. There remained nothing more but to transfer my bees to their destined locality in my window, where they were safely placed the same evening. Ten days have elapsed since then, and the box is almost half filled with comb; and I doubt not, with copious feeding during the rest of this month and the whole of September, to furnish them with food enough to stand the winter, and thus I hope to have an established stock in March at the same, at least (but I hope much less), cost as a swarm in May or June, to yield me honey the first year, if the season be fine. If "W. G." wishes to transfer the bees of a weak hive to a strong one, instead of destroying them, all he has to do is to drive the bees of both hives into a third hive together, and after the lapse of 17 or 18 hours to return them to the stock from which the one had been taken. I have only to add, if the plan of uniting bees above described appears a difficult business, I say, try it, and it will prove far simpler and easier than any plan of fumigation or drowning in sugar. *P. J. M. Filleul, Clerk, Ross, Herefordshire.*

Swarming of Bees.—At p. 501, "An Old Apiarian" mentions that swarming "is a provision of a wise God to secure pasturage for the rapidly increasing colony." If swarms fled beyond their usual pasturage this assertion might have some weight, but as they do not, the thing falls to the ground, as do also the writer's views respecting Nutt's plans, which have been so often exposed, that it is needless to say another word concerning them. If "An Old Apiarian" studies some of our leading writers on this subject, he may learn that bees will not swarm, however hot their hive may be, except the young queens are in a proper state to admit of their departure. Until that is the case a swarm will not leave the stock, even although the cells were melting, to ruin the colony. *J. Wighton.*

Sheep in Orchards.—I find an idea prevails in this neighbourhood that Apple orchards are rendered unfruitful if sheep are allowed to graze in them. Does the experience of the cider counties warrant any such conclusion, or is it altogether a prejudice? *J. R., Sevenoaks.*

Roses.—A thousand thanks to "Crito" for his article on Rose catalogues; he has much understated his case. I know that some of the very largest growers near London (not merely amateurs, but dealers) have no idea in which of their own classes their Roses are to be found. Pray pursue the subject. *L.*

Twenty Hardy Plants for a Rockery.

Sedum rupestre	Saponaria ocymoides
,, Forsteri	Silene behen
Soldanella alpina	Aquilegia Skinneri
Saxifraga cæspitosa	Lycopodium denticulatum
,, granulosa	Mimulus moschatus
,, rotundifolia	Vinca herbacea
,, oppositifolia	Alchemilla sericea
Erinus alpinus	Potentilla insignis
,, hispanicus	Viola lutea
Lysimachia nummularia	,, canina

Cantium.

Twenty Hardy Ferns for a Fernery.

Aspidium aculeatum	Asplenium ebeneum
,, phegopteris	,, Adiantum-nigrum
,, dilatatum	,, fontanum
,, auriculatum	,, dentatum
,, cristatum	,, Ruta-muraria
,, spinulosum	Pteris aquilina
,, Filix-mas.	Osmunda regalis
,, ,, fœmina	Onoclea sensibilis
,, Dryopteris	,, struthiopteris.
Asplenium Trichomanes	

Cantium.

Useful Seeds to be sown in Cottagers' Gardens in August.—Dwarf Asiatic Cauliflower, Cabbages, Horn Carrot, green Curled Endive, Cress, Giant Celery, Tripoli Onion, Myatt's triple Curled Parsley, Snowball Turnip, new Flanders Spinach, new Olive Radish, Corn Salad, hardy winter black seeded brown Cos Lettuce, hardy Hammersmith Cabbage ditto, and Walcheren Broccoli. *Cantium.*

Fungi.—A great benefit would be conferred if some kind of Board were formed to receive specimens, and to inform those who sent them which were wholesome funguses, and proper to be eaten, and how they should be dressed. Dr. Badham's book has called attention to the subject; but, as it is not written in a plain, clear, and popular form, is of no practical use whatever. We want, if it could be found, some such plain and practical writer as old Cobbett, who would have told us, without hazard of mistake, what were safe and good, and what were dangerous. At present few of them are known, and we know not where to apply for information. Here we are surrounded with funguses of all kinds. *Q. F., Tunbridge Wells.*

Centaurea nigra flore albo.—I have found this variety growing in a field amongst the common sort. *F. X.*

Six Hardy Aquatic Plants for a Pond.—Villarsia nymphæoides, Nuphar lutea and minima, Menyanthes fimbriata, Nymphæa alba, Hottonia palustris. *Cantium.*

Chalking Lawns.—I should say that the chalk should be spread evenly on the surface, say one inch thick (if the chalk can only be procured from a distance), not mixed with the soil, and the turf laid on it. I have chalked many acres of both arable and pasture land, and am certain of the great advantage derived therefrom. I may state that much information may be obtained on chalk, lime, and marl, from vol. i., "British Husbandry," published under the superintendence of the Society for the Diffusion of Useful Knowledge. *George Dyer, 3, Pollington Villas, Holloway.*

Chatsworth.—As many lovers of gardening may now be on the wing for an horticultural ramble, it will save them some risk of disappointment to learn that the conservatory at Chatsworth is not shown without an order, which must be obtained by special application, and this, to guard against all disappointment, had better be made by letter beforehand. Parties visiting the house are asked whether they wish to see the grounds, in which case they proceed at once to the pleasure-ground; but the order to see the conservatory can only be obtained at the gardens, which are nearly a mile distant, so that much time is lost in making application there. *J. R.*

Culture of Cape Bulbs.—One of your correspondents (p. 518) has quoted from the "Botanic Garden and Fruitist," of June last, a paragraph on the culture of Cape bulbs. Another part of the article quoted from should have appeared; as I think it but justice towards Mr. Cole, the intelligent gardener of John Willmore, Esq., of Old Ford, that it should also be known that the information was communicated to me by him, and to the success of his management I can myself bear testimony. The amount of intellect now brought to bear on garden culture is one of the most prominent features of the present age, and is already spreading its benefits, both social and commercial, as well as intellectual, through all classes of society. *B. Maund.*

Adders.—Mr. Wighton states that adders &c., in casting their skins, do not turn them inside out. In this he is wrong; last month I found a skin of our common snake, the length of which was 3 feet 4 inches; it was, as Chambers describes, turned inside out. It is now in my possession, and if Mr. Wighton will favour me with his address, I shall be happy to send the skin to him. *Hill House, Crawley, Sussex.* [His address is Cossey Hall, Norwich.]

My Polmaise Pits answer capitally in every way, except that my gardener cannot succeed with his Melons. Both last year and this, up to a certain point, the Melons were most promising, but then came the red spider, and all was over. It is difficult to get a sufficient amount of moisture. *W. Hornby, St. Michael's-on-Wyre, Garstang.* [If you cannot obtain sufficient moisture by the usual plan of sprinkling the paths, keeping the surface of the beds moist, &c., we would advise you to increase your evaporating surface. This, we should think, might be easily effected.]

Canary Birds.—Mine are kept in an aviary attached to a conservatory; they are regularly fed with hemp and canary seed, with a smaller portion of rape and flax, and, during the breeding season, with egg and bread in addition. Some pairs of the birds are in cages. In former years, with this treatment, I have been a successful breeder, but this season, with scarcely any exceptions, the young birds have died when half fledged, either from the old birds neglecting to feed them, or from some epidemic disease. I should like to learn whether a similar fate has been experienced by other breeders. *Gloucesteriensis, Aug.* 21.

Polypodium Dryopteris and calcareum.—The intermediate varieties of calcareum and Dryopteris partake of calcareum in the largeness of the rhizome and fronds, and of Dryopteris in the deflexed character of the branches. The editor of the second edition of Smith's "English Botany," vol. viii., says, "Although generally admitted as a distinct species, its claim to the rank seems doubtful." Sir W. J. Hooker states that a specimen which he possesses from Sir J. E. Smith seems rather distinguished by its thicker and more rigid texture than by any decided specific character. In the locality before alluded to (see p. 502), every degree of size and rigidity occurs, some perfectly rigid and nearly 18 inches high, while others are very small and drooping; the former occupying shady situations, while the latter are only found in open stony ground. *G. Maw, Bideford, North Devon.*

The Potato Crop.—I was in hopes we had got rid of the disease, but I am sorry to say that it has made its appearance in this locality, and is now making rapid progress both in the fields and gardens. The commencement has usually been similar to what I have noticed in former years, viz., the appearance of brown spots on the haulm, as if some vitriol had been thrown on it, then the curl of the leaf, and, lastly, the stalks affected in the same way. It made its appearance just after the late thunder-storms, but has this year come about a month later than it did last. It affects plants on all soils alike, and however cultivated. I have some which were planted last year in the autumn, some planted in the spring, some which have grown from chats left in the ground last year, and which have grown most luxuriously—all have been attacked. I have also some new sorts raised from foreign seed and grown this year from the tubers of last year; of which one portion was raised in a hotbed, one portion planted in the open ground, and another portion which grew spontaneously in the bed of last year, from the chats which remained in the ground. They are all of them most luxuriant in growth, far exceeding ordinary Potatoes, and I was in hopes they might have escaped; but the disease has made its appearance among the planted ones, though not as yet among those which were self sown, and is making rapid progress. It appears to be produced by some atmospheric cause, and not to originate in the tubers, which are often very good if kept from the diseased stalks. *G. S. Bosanquet, Broxbournbury, Hoddesdon, Herts, Aug.* 21.——The disease has appeared in a patch of Potatoes in the garden here. The sorts affected are the Ash-leaved Kidney and American Seedling. I gave them no manure of any kind when planted. The ground had been thrown up roughly during winter excepting the piece where the disease has shown itself. *M. Saul, gardener, Allerton Park, near Knaresborough, Yorkshire, Aug.* 17.——The Potatoes are showing symptoms of decay hereabout. *C., Ludlow.*——The Potato disease is spreading very rapidly here. The black spot invariably preceded by the Botrytis. *M. J. Berkeley, King's Cliff, Northamptonshire, Aug.* 20.——The blight has again visited Ireland. I had ocular proof of the fact yesterday, in a few fields within three miles of Belfast. One small field was almost entirely affected by it, and some others slightly. I have also heard that it has made its appearance in the neighbourhood of Lisburn. In the fields in which I saw the disease, both in the tops and tuber, the Potato was sown in the month of March, so that early sowing does not insure escape from it. *R. W. Brough, Belfast, Aug.* 16.——The stems of the Potatoes here have kept longer fresh than in the four preceding years; but they are now giving way. There is, however, an abundant crop of tubers formed, and they appear to be ripe. Some of the tubers are certainly affected with the disease. *R. Thompson, Horticultural Society's Garden, Turnham-Green, Aug.* 23.——Disease has made its appearance in our neighbourhood. In the short space of four days, the haulm of a luxuriant crop was entirely destroyed; land a good mixed soil, and in an excellent state of cultivation. *E. C. Nunn, Sec. to the Diss Farmers' Club, Norfolk, Aug.* 21.——Disease appeared in low situations early in July, upon the foliage, but did not affect the tubers at such an early stage of their growth as in previous seasons. The early sorts in many places have been secured quite sound, but late sorts, not dug or haulms cut off and earthed up, are now decaying very fast; not a crop is now to be seen with healthy foliage, and the air is becoming charged with the fœtid odour of the decomposition of the plant. *Henry Bundy, Dynevor Castle, Llandilo, August* 22.——The disease is spreading rapidly in this locality at present, where, fortunately, the principal portion of the crop is nearly ripe, and therefore not liable to suffer much. I fear, however, that the late-planted portion of the crop will be destroyed. *D. Moore, Glasnevin, Dublin, Aug.* 21.——Potato rot spreading like wildfire. *E., Tarporley, Cheshire.*——Potatoes are again attacked here; it began about 10 days ago. *Rees Thomas, Hill House, Swansea, Aug.* 21.——Potatoes that were nearly ripe, about one in ten diseased since August 1. Unripe ones, in general, but little affected, excepting in damp places. *B. M., Bromsgrove, Aug.* 22.

Reviews.

Introduction to Meteorology. By David Purdie Thomson, M.D. Blackwood, Edinburgh and London. 8vo, pp. 487.

Meteorology, or the "science which acquaints us with the various phenomena of the atmosphere," as the author of the work now before us defines the word, is still in a very imperfect state; and notwithstanding the labours of Franklin, Wells, Kämtz, and the many other great men who have turned their attention to this most interesting and important branch of natural philosophy,

a great part, indeed, it may be said, the greater part, of the phenomena of the atmosphere, yet remain to have their several causes assigned to them.

In the present work few original opinions are hazarded on the reasons of the effects with which we are all more or less acquainted; the author is satisfied with first stating a fact, then producing cases where it has been observed, and, lastly, condensing the various theories which have been offered to explain it.

The important subject of rain the author treats with considerable detail; "when," says he, "the air can no longer retain the moisture blended with its particles, it descends in drops upon the earth, purifying the atmosphere through which they fall, and fertilising the ground with refreshing rain. This or melted snow is the purest of natural waters, though, in consequence of its solvent power, it generally contains some extraneous ingredients." * * *

"The amount of rain, or meteoric water, which falls upon the ground is greatest in the tropics, and decreases as we approach the poles. The physical features of the locality influence considerably the quantity. When we say so much rain has fallen in a given time, we mean the gross amount which has descended upon the earth during that period, making no allowance for absorption or evaporation; it is, in fact, the quantity which would have accumulated on the earth had these agents not diminished the amount. Care must be taken with regard to the position of the instrument with which the quantity is measured, both as respects the openness of the exposure, its freedom from currents which would induce an unequal collection of the rain-drops, and the height above the ground. Thus a rain gauge on York Minster roof gave 14.963 in. between February 1833 and February 1834, while on the ground a similar apparatus indicated a fall of 25.706 in., and one on the top of the museum furnished 19.852 inches. The altitude of the first and last stations is 212·87 feet, and 43.66 feet respectively. Again, Professor Phillips, with four instruments, placed on the ground, 3, 6, and 12 feet above its surface, found the following results in a period of 4 months: 8.408, 8.314, 8.249, and 8.206 inches respectively."

After adverting to preternatural rains, such as pollen-rains, rains of manna, rains coloured with infusoria, and dust rains, the author draws attention "to the still stranger phenomena of showers of flesh, fish, frogs, grasshoppers, worms, &c.!"

Several instances of such rains are given by the author, and are referred by him to the action of violent winds. "That frogs," says Dr. Thomson, "and other living creatures have fallen from the atmosphere, need not be doubted, but that they have descended in such numbers as to deserve the appellation of a shower, is far from being probable. This subject was discussed in 1844 before the Academy of Sciences at Paris, and instances communicated. The personal observation of M. Peltier was one of the most interesting. It was made in early life at Ham, in the department of the Somme, where he resided. A heavy rain had fallen, and the *Place* was instantly covered with toads. 'Astonished at this, I stretched out my hand, which was struck by many of these animals as they fell. The yard of the house was full of them also; I saw them fall on the roof of a house, and rebound from thence on the pavement. They all went off by the channels, and were carried out of the town.'"

One more quotation must finish our notice of the present volume. After treating of thunder-storms, the author adds the following: "*Suggestions for safety.*—Sedulously avoid all conductors of electricity. Do not shelter under trees nor come near them; the great majority of accidents arise from want of this precaution. Do not handle or be very close to metallic bodies: a servant cleaning a silver fork at a window, during a thunder-storm, the prongs being outwards, was struck, but not killed; a young lady during the same storm, sewing near a window, was thrown from her seat and experienced a glow. The centre of a room, if a metallic lustre is not pendant, is safer than any other part of the apartment. It is not safe to be between the window and door, or fireplace, where there is a current of air. A bed is the securest retreat; so all ye who fear, and fail to derive pleasure, mingled with awe, in beholding this the grandest of Nature's meteors, ensconce yourselves within the woollen folds, and, sunk in your downy couch, if ye cannot fall into gentle slumber, think at least that you enjoy comparative safety."

The above passages, extracted from the present work, will give our readers a general idea of the author's style; the last chapter of the work is devoted to prognostications of the weather, the rules for which are laid down in general terms, and must of course be modified in practice by the physical characters of different places. In an appendix there is a short description of the principal instruments used in meteorology, and a copious index, concluding the work, tends very much to render it useful for reference.

Garden Memoranda.

ORCHIDS OF M. PESCATORE, AT CELLE-SAINT-CLOUD, NEAR PARIS.—In going out of the Château of Celle, and on a level with the apartments, we enter a glazed pavilion, of which the uprights and sash-frames are iron; the whole elegantly constructed according to the designs, and under the direction of M. Pellechet, architect. It is 14 feet 10 inches high at the sides, the extreme height to the top being 19 feet 4 inches; it is almost square, 30 feet 10 inches by 28 feet 2 inches. A terrace is seen on one side of this; on the other a view is afforded of the park, Saint Germain, and even as far as Maisons. Heat is supplied by means of pipes, furnished with stop-cocks, in connection with the pipes of the Orchid-house. This pavilion, gay with flowering shrubs, is also destined for the exhibition of Orchids in flower during summer.

The Orchid house adjoins on the left of the one above described, and has a span-roof, running north-west and south-east; length 78 feet 8 inches, width 21 feet 3 ins., height 14 feet 9 inches, and is sunk about 2 feet below the ground level. This house is divided into two compartments by a glazed partition, in order to accommodate species requiring a greater or lesser degree of heat. The hottest compartment, that next the heating apparatus, is 26 feet 3 inches in length, and is terminated by a small pavilion, which prevents the direct influx of external air. Stone tablets or shelves, 1 foot 4 inches wide, run along the sides. The space in the centre, surrounded with a low free-stone edging, contains some branching trunks of trees covered with Orchids; the rest of the ground is covered with Lycopods, Ferns, Palms, &c.; and a basin with a jet d'eau playing in the centre maintains a humidity very favourable to the plants.

The compartment for plants requiring a lower degree of temperature is furnished with side shelves, 1 foot 9 inches wide. There are two beds in the middle covered with gravel, which is kept constantly moist during summer. Effectual means are taken to prevent the drip from falling on the plants. The side lights are double; but, in order to avoid the opacity which usually results from double glazing, in consequence of the condensation of watery vapour between the inner and outer glass, the sashes containing the latter are hinged, so that they can be readily opened, and the whole kept in a proper state for admitting a pure light to the plants. The house is surmounted by a gallery which serves for the play of ventilators which are placed in it, and for partial shade.

The water in the environs of Paris is more or less charged with lime, and if employed for the watering of plants tends to destroy them. M. Pescatore has, however, established gutters round the house and pavilion, and the rain water from these and other buildings is conducted into a cistern sufficiently large for ensuring an ample supply of soft water for his plants.

The Orchid house and the pavilion are heated from two boilers situated at the end of the house; they are placed in a subterranean chamber; one is usually sufficient for heating. The pipes are of two kinds, viz., 344¼ feet of 3⅞ inch round pipe; and 439¼ feet of flat, 9⅞ inches wide by scarcely an inch thick. One portion of the round pipes pass under the foot paths, which are formed of open cast-iron gratings; the other is placed in the beds, and serve to heat the reservoirs of water, from which a moist heat is obtained by means of copper ventilators. By these pipes also the water for watering the plants is brought to the proper temperature. The flat pipes run in two rows, one above the other, under the stone shelves which go round the house; and by them the latter is heated very promptly. The heating apparatus was put up by M. Loyer, of Versailles.

M. Pescatore's collection of Orchids consisted, in 1848, of 610 plants; these comprised 350 species and varieties. Since then it has been augmented, more especially, by the collection of M. Quesnel of Havre; so that there are now upwards of 2000 plants, and the number of species and varieties amount to 700. The plants are grown on pieces of peat soil, in vases and pots placed on the beds and shelves; on pieces of suspended wood, or on the branchy trunks of trees. All the Orchids were in an excellent state of growth; their good condition and vigour do great credit to the intelligence and skill of Mr. James Craig, who is specially entrusted with their cultivation. In this splendid collection, 166 different species had flowered between the 1st of January and the end of July, 1848.

Besides the houses for Orchids, there are various others for the cultivation of different things, and for propagation; altogether the length of these amounts to nearly 200 feet. (*Annales de la Société centrale d'Horticulture de Paris.*)

MR. CHATER'S NURSERY, SAFFRON WALDREN: HOLLYHOCKS.—Until within the last few years the Hollyhock was to be found only in the plantation or border, but it is now becoming an especial favourite both with amateurs and florists. Mr. Chater's sorts are of a superior kind; instead of the bell-shaped blossom, showing a large eye, his specimens have a semi-spherical flower, exceedingly double, having a flat, regular guard-leaf, and the blossoms so thickly packed around the stem that the green leaf can scarcely peep through between them. Mr. C.'s nursery occupies about 6 acres, and more than one-sixth of it is devoted to Hollyhocks, 6000 of which are now in splendid bloom. His best varieties are—Comet, a very fine ruby red, seedling; Enchantress, deep rose; Rosea grandiflora, light rose; Attraction, elegantly veined with puce and silver; Model of Perfection, white with chocolate ground; Commander-in-chief, remarkable for immensely long spikes of flowers, some of them 9 feet high; Queen, a delicate blush; Aurantia, salmon; Pulchella, roseate; Pallida, lilac; Magnum Bonum, a rich glossy maroon; Snowball, purest white; Black Prince, sable black; Formosa, dark claret; Mulberry superb, Delicata, Atrosanguinea. Mr. C. exhibited this season, at Chiswick, some of his Hollyhocks, which were grown in pots especially for that occasion; also at the Royal Agricultural meeting, at Norwich, where he was awarded a prize for Comet, and a prize for the collection, and he obtained a medal at the late Royal South London Floricultural meeting in the Surrey Zoological Gardens. *A. Barfield, Dunmow, Essex.*

Miscellaneous.

Temperature of Orchid-houses.—In managing the temperature of an Orchid house, some have been misled by fancying that because the inmates come from what is called a "tropical climate," they should naturally be kept very hot and moist at all times; others again imagine that those from the hotter and damper parts cannot be advantageously cultivated in the same house with those from drier and cooler stations. Now in all places where epiphytal Orchids are found, there are at least two seasons, a dry and a damp, with transitions from each; and although the transitions may be but of short duration, yet they represent spring and autumn. Orchids, therefore, like other plants, have the power of adapting themselves to changes of climate and locality, both as regards heat, shade, moisture, and full exposure to bright light, and they will even endure a certain degree of cold. Lælia majalis grows upon Oaks in the mountains of Mexico, where the ground in the cool season is sometimes covered with hoar frost. Such low temperature, however, must always be endured at the expense of vigour. Again, plants, natives of a colder climate, may be grown in a far warmer one than ever they were subjected to in their natural state, provided at all times the extra heat and moisture are judiciously applied, and only when the plants are in full vigour and in good health; so we find that air plants, although naturally subjected to a high temperature, may, with proper precautions, be grown with advantage in a much lower one; and as all plants grown in a lower temperature than their natural one require less moisture, so Orchids, in a cool atmosphere, should be kept drier during a certain period of the year; an increase of moisture should only be given with an increase of heat, and that only in the growing season. It should be recollected that no plants can exist for any very great length of time without rest, and that rest is induced in a tropical climate by drought, in the same way as low temperature in our own country suspends vital energy: therefore Orchids must be subjected to the usual seasonable changes of rest and activity. Rest is induced by withholding moisture from their roots, and partly from the air, and this state of things may be considered to represent their winter. Spring should be initiated by gradually reviving energy, by increase of moisture, first to the atmosphere, and afterwards to the roots or soil, accompanied by a proportionate increase of temperature: thus period of their growth should be very slow. Summer must be represented by a greater increase of both heat and moisture; partial shade should also be resorted to, to bring the energy of the plant into full force. And lastly, an autumn must be created, to bring about maturity, by gradually reducing the quantity of both heat and moisture, until the plants are again brought to a fit state for repose. The first and last stages should be of but short duration, and require caution, otherwise much mischief may be done to the plants. By growing Orchids in the mean instead of maximum of heat and moisture, they will not make such rapid growth; but they will become more robust and healthy, and be less liable to receive injury from sudden transitions in the atmosphere, either of heat, drought, or moisture. The temperature of the house can only with certainty be kept regular by night, particularly in summer; therefore the fire should never raise the heat of the principal house higher than 60°, and about five degrees less should be maintained where the plants are in a less excitable state: but as the days lengthen, so the temperature may rise, yet it should if possible never range higher than 75° by night in summer; it will occasionally, however, be higher in very warm weather, and should be counteracted as much as possible by evaporation and ventilation by night, and by both, as well as by shading, by day. Injury is often effected by a sudden rise of temperature by fire heat in winter, while little or none is caused if the rise is occasioned by sun-heat: care should therefore be taken to guard against a rise of temperature by fire heat, particularly in midwinter; rather suffer a depression of a few degrees of heat in very severe weather than use over-strong fires, which will over-dry the atmosphere, and, on the other hand, create too much moisture, if water is supplied. Moisture, however, is by no means injurious to Orchids, provided they can part with it freely, but they are impatient of stagnant damp. *From Mr. Gordon's Paper in the Journal of the Hort. Soc.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

LET shading be used less frequently, and for a shorter number of hours, as the season advances. The heat of the solar ray is very rarely too powerful now, even if it were the growing season; and as the plants ought now to be ripening their growth, they have need of all the daylight and moderate sunshine they can get. In the case of Orchids this is especially necessary, that the roots, leaves, and pseudo-bulbs may be thoroughly matured. Those which are already in this state, or nearly so, should be removed forthwith to a cool house. Great care should be taken not to excite such plants into a new growth at this time, as it is much too late to get them properly matured, and the unseasonable

draught upon the stored energies of the plants will materially interfere with their next production of flowers. Dendrobiums of the D. nobile character, which are sufficiently advanced in growth, should also be removed to a cooler house, where they should be supplied with a moderate temperature, abundance of air, and scarcely any water, till their stems are ripened and their flower buds formed. Those Orchids which are in a growing state should be placed in the most favourable positions, and encouraged by a high temperature, so long as the strength of daylight will admit of such a course. A distinction should now be made between those plants which are to constitute the blaze of beauty between this time and the end of November, and those which are to be useful during midwinter and early spring; a third class will consist of those plants, principally hard wooded, which are cultivated more especially for their summer services. By reducing the thing to a system, in the way of appointing a definite end or aim for each plant, and assembling them, according to such order, it is more easy to give to each the particular treatment which its case demands.

FORCING DEPARTMENT.

Pineries.— The plants which have been recently potted or shifted into new soil are now growing vigorously. This state of things should be encouraged by a liberal temperature, accompanied however by sufficient ventilation to prevent undue elongation of the leaves, and to mature their tissue before the arrival of the short dark days. A less humid atmosphere should be supplied generally, and especially to those intended for fruiting early next spring, as it is very important that they should acquire a strong sturdy habit, and devote their whole energy to the elaboration of sap rather than to the increase of the size of the plant. Assist the swelling fruits with liquid manure, but admit abundance of air to prevent the crowns growing too luxuriantly. Vineries.—Pay every attention to the preservation of ripe Grapes from the effects of damp, by avoiding the spilling of water about the houses, and by admitting a free current of air through the house in all favourable weather, and accompanied by a little fire during rain or fogs. These houses should now, if possible, be freed entirely from plants in pots, or if any are allowed to remain, they should be of kinds requiring little or no water. As the wasps are now becoming troublesome, their ingress should be prevented by fixing some thin bunting over the moveable sashes. From this time the points of all growing shoots, whether of leaders or laterals, should be stopped, as the leaves produced so late take from the stored up energy, without ripening sufficiently early to benefit the Vines in return. Care, however, must be taken not to stop too closely the lateral shoots of Vines which are still growing vigorously, as they are liable in such cases to burst the buds too near the base of the shoots.

FLOWER GARDEN.

Before the season is further advanced, every gardener should calculate, as nearly as may be, whether the extent of his framing conveniences will be sufficient to afford shelter during winter to his stock of established half hardy plants, as well as to those which he is now propagating. It is necessary to do this immediately, as his proceedings must be regulated by it. If his room is deficient, he must either restrict autumnal propagation within certain limits, or, without further loss of time, must prepare additional pits. Brick pits are of course the most durable, and although expensive in the first outlay, are cheapest in the end. A very common makeshift pit is built of turves, they last one season, and, though very warm, are in appearance very untidy; and on this account are necessarily thrust into back premises, a species of locality which ought not to exist in a well appointed garden. It is, however, quite possible to construct a very cheap and useful pit, which shall be in perfect keeping with neatness and good order; to do this, mark out the interior length and width of the pit, and immediately without this line insert at convenient distances short Oak posts about 4 inches square, using taller ones at the back than at the front. A single course of bricks should be laid in a line with the posts, to cut off the communication between the ground and the boards above. Thin ½ inch boarding should be nailed to the uprights on the inside, and ⅜ or ½ inch boarding with feather edges on the outside; a 5 inch board nailed along the top completes the whole. The frame is thus in effect surrounded by a hollow wall built of non-conducting materials, and if the whole of the woodwork is tarred inside and outside, it will last for many years. A sowing of hardy annuals may now be made for flowering early in spring; these will flower as soon as the earlier plants raised in frames next year, and as frame room in spring is generally scarce, it is worth while to economise it; they may be sown in the reserve garden, and afterwards transplanted.

FLORIST FLOWERS.

The early layered Carnations and Picotees will now be sufficiently rooted to pot off. The great point will be to have not only the soil well sweetened by frequent previous turnings, but also completely free from destructive vermin. No care is too great, neither can vigilance be better directed than in searching for, and destroying wireworms, &c. Many an amateur has to deplore the loss of some scarce and beautiful variety, when it is too late, for want of this necessary precaution. Great care must be taken that the pots (pints) are well drained; after detaching the layer from the parent plant, it should be carefully examined, so that if cankered the diseased part may be cut away; to ne shorten the grass or foliage, we do not advise the plan, but nearly filling the pot, the layers are placed one on each side, filling up and slightly pressing the soil to them. They may then be watered, and after having stood an hour they should be put into a close cold frame for a few days, after which they may gradually be inured to the air. Little attention will be required for the present, more than keeping them occasionally watered and shaded from excessive sun. Look to Pinks that are ripening seed; examine the pods and keep from wet. Alpine seedlings will be flowering now; remove the pips, if good, as it weakens the plants very much at this season to allow them to bloom. Attend to other directions previously given.

HARDY FRUIT DEPARTMENT.

Wall Trees.—The tying in or nailing of these should now be gone over for the last time this season, that the young wood may have a better chance of ripening, from its closer proximity to the wall. Now the fruit of Morello Cherries is gathered, as many of their shoots should be laid in as there is room for. Enough has been said about Strawberries in former Calendars, and all that is now necessary is to urge the early completion of the work connected with the summer management of this crop, especially in making new plantations and cutting away the runners from the older ones. The old Raspberry canes which have done bearing should now be cut away and the young canes tied loosely up in their places; at the same time any very luxuriant ones should be stopped to the height of about 5½ feet. A little rotten dung, forked in amongst them, will very much assist the swelling and ripening of the buds for next year's crop.

State of the Weather near London, for the week ending Aug. 23, 1849, as observed at the Horticultural Gardens, Chiswick.

Aug.	Moon's Age.	Barometer.		Thermometer.			Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean		
Friday .. 17	28	29.945	29.872	73	42	57.5	W.	.01
Satur. .. 18	●	30.016	29.993	69	40	54.5	W.	.00
Sunday . 19	1	30.372	30.145	72	50	61.0	N.	.00
Monday 20	2	30.337	30.325	72	52	62.0	W.	.00
Tues. .. 21	3	30.323	30.240	78	58	68.0	S.W.	.00
Wed. .. 22	4	30.183	30.120	70	57	63.5	S.W.	.00
Thurs ...23	5	30.182	30.125	70	54	62.0	S.W.	.00
Average.		30.177	30.118	72.0	50.4	61.2		0.01

Aug. 17—Clear; fine; very clear at night.
— 18—Fine; low white clouds and fine; slightly clouded, cold at night.
— 19 Very fine; sultry; clear.
— 20—Overcast; cloudy, overcast and very calm
— 21—Overcast, exceedingly fine, dull and overcast.
— 22—Overcast; dry dusky haze; overcast.
— 23 Uniformly overcast, cloudy and fine.
Mean temperature of the week, ½ deg below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Sept. 1, 1849.

Aug and Sept	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 26	72.3	48.8	60.5	7	0.31 in.	—	2	2	—	6	6	5	3
Mon. 27	71.0	50.1	61.6	7	0.10	1	2	3	—	1	5	6	5
Tues 28	72.8	51.3	62.0	11	0.20	—	5	8	—	1	2	7	2
Wed. 29	71.6	49.5	60.6	10	0.58	3	3	4	—	2	7	2	2
Thurs. 30	71.9	50.0	60.9	5	0.92	—	4	2	—	3	5	6	3
Friday 31	70.7	49.6	60.2	12	1.31	1	5	1	2	2	2	6	6
Satur 1	70.0	48.5	59.3	11	1.50	2	1	1	4	2	6	2	2

The highest temperature during the above period occurred on the 1st Sept, 1843—therm. 88 deg; and the lowest on 1st Sept., 1841—therm. 33 deg.

Notices to Correspondents.

Back Numbers. Full price will be given for Nos. 42, 43, 46, 47, 48, 49, 50, for 1848.

Bees *Cockney. You may take some honey from your common hive in the manner pointed out in a recent Number; but as the season is advanced, do it sparingly. Cement the hive where it joins the floor before the end of the season; but by no means daub it all over; that would prevent the escape of damp from the bees. W.

Books: H D. M'Intosh's "Greenhouse, Hothouse, and Stove," and Whiting's "Flower Gardening for Ladies," reviewed at page 279.‡

Fuchsias. E O. You have possibly taken *flowering* shoots; they will not strike with you. Select half-ripened *growing* shoots, and you will succeed. The same remark applies to Heliotropes and Geraniums.‡

Galvanised Iron Pipes T C. Many causes prevent the setting of Melons, but galvanised iron pipes are not among those causes, that we know of. Such pipes are little employed, and we have no experience in them. Have any of our correspondents? "T. C." says that his Melon pit is heated with hot water passing through such pipes, that his fruit drops off, that nothing grows well in his pit, and that his experience of it extends over three years.

Grapes: Z C Y. Ventilate both at front and back. You cannot give Grapes too much air when they are colouring.‡

Josling's St. Alban's Grape: V A. Your specimens throw no light whatever upon the question of the identity of this and the Chasselas Musqué. The few ill-grown bunches sent us are characteristic of nothing, and appear to be the produce of late laterals. Mr. Thompson is endeavouring to ascertain the real facts about the Josling's St. Alban's, and in due time the result will be made known. If it is not a distinct variety, it is the Chasselas Musqué, which is one of the finest Grapes in cultivation.

Ivy: *Ivy hall.* Your inquiry was accidentally mislaid, for which we have to apologise. There is no objection to cutting the Ivy very close, in the first instance it will be disfigured by the operation; but it will recover by this time twelvemonth, if the pruning is well managed.

Lisianthus Russellianus: J F S. Sow it early in spring. See an excellent article on its cultivation at p. 783, 1848.‡

Mud: A G Common shrubs will thrive in mud from a stagnant pond, provided it is rendered permeable to air, by having been mixed with litter or leaves, or something of the kind. So will Firs. Nothing can grow in such mud if it forms a hard solid cake round the roots.

Names of Plants; A W. We cannot undertake the labour of naming dried plants. The parcel is returned through the railway.—E J. It is probably Angelica sylvestris; but Umbellifers cannot be certainly determined without their fruit. Phytolacca icosandra is an Indian plant; it has no English name.—J M. 1 and 2, Medicago lupulina; 3, Geranium pusillum.—*Mespil, Dublin.* It is not an Aglaia, nor at all like one, we are unacquainted with it. It is nearly related to Limonia, but has a 1-celled ovary. What is its history? and has it any fruit which you can send? The Fern is Pteris serrulata. S.—*Graminea.* Festuca sylvatica. We cannot undertake to manage interchanges of specimens.—J R Boyd. We make it a rule never to name florist flowers. ‡—W H, *Cheshire.* Wretched morsels. Seeing 2, 3, 4, 5, 6 to be natives of Britain, we therefore infer 1 to be so also, and this helps us to judge that it is Asplenium Adiantum nigrum, a common Fern, growing on dry walls, rocks, &c.; 2, Asplenium Ruta-muraria, a common Fern, grown as the preceding; 3, Asplenium Trichomanes, do.; 4, Polypodium Dryopteris, grows in dry, stony places, chiefly in mountainous countries; 5, Polypodium vulgare, a very common Fern, grown in shady places as well as on the tops of dry walls, fully exposed to the sun; 6, Lastrea spinulosa, moist banks, skirts of woods, &c. For further information respecting these Ferns you had better procure some book on Ferns. S.—A G M M. Yes; it is the Trifolium medium, which is usually called Cow Grass. We observe, however, that Mr. Cuthbert Johnson states that Cow Grass is a variety of Trifolium pratense; possibly more than one kind of Clover bears this name among farmers.

Pelargoniums and Geraniums: J D. The distinction which you say is given between these genera in the work you name is wrong. It is rightly stated in "School Botany." The writer of the work alluded to is not a botanist, although a good judge of florists' flowers.

Plantations: *Inquirer.* We do not see how to advise you further. In making additional thinnings you have only to exercise your own taste and discrimination. Acacia timber is excellent. Cut back Laurels in April.

Plums: D D. Your seedling, "Dwarf Prolific" Plum, middle-sized, roundish-oval, with greenish amber flesh, parting from the stone, is only fit for kitchen use ||

Rhubarb: *J Galloway.* We cannot recommend dealers. Three of the finest and largest sorts are the Tobolsk, Myatt's Linnæus, and Myatt's Victoria ||—*Agricola.* Thin your seedling Rhubarb plants, and in autumn make your plantation 3 feet between the rows, and the plants 2½ feet apart in the rows ||

Roses: J C. The Géant des Batailles Rose was raised by a person somewhere south of Lyons, and sent to the Rose growers of Paris, who let it out in the winter of 1847 ‡

Vines: B O W. The "fibres" are roots, produced by the branches in consequence of their being kept in a warm and very damp atmosphere—the original roots being much colder. Such fibres do no harm, and are extremely common; but they ought not to continue to grow after the fruit is set. No doubt your Vinery is far too damp and warm, and ill ventilated into the bargain, or your Grapes would not be mouldy.

Walls: E C. It would be desirable, for the purpose of training fruit trees, to have kitchen garden walls not lower than 12 feet; those having south, south-east, or south-west aspects, the higher the warmer. Coping should project 2 inches. Flued walls are not necessary in the southern counties; 14 inches is the preferable thickness, but 9 inches with piers will be strong enough on a good foundation.||

Waterproof Composition for Calico: *Omega* Three pints of old pale Linseed oil, 1 oz. of sugar of lead, and 4 oz. of white resin. The sugar of lead must be ground with a small quantity of the oil, and added to the remainder, incorporated with the resin by means of gentle heat. The composition is to be laid on by a brush. It dries in a short time when exposed to the air; and excludes as little light and heat as anything except glass, and does not become mildewed ‡

Misc. *James Hewitson.* The elastic tubes used by chemists are usually made of India rubber.—* The common spotted-leaved Trefoil is now supposed to be Shamrock; but there is good reason to believe that the Shamrock of the ancient Irish was Oxalis Acetosella.—Q T. We presume that Broad-beans may be preserved in the same way as green Peas.—L. Your Mulberry has got its roots into a cold, bad bottom. Improve the soil by some such means as you describe. The Mulberry likes a rich, light alluvial soil. Cannot say what is the matter with your Strawberries. Prune the Pears, Jersey fashion, *now*; it is rather late.—J Mc D I. Pentstemon gentianoides, coccineum, Campanula pyramidalis, and double white Feverfew are hardy plants.‡—G T H. Pot Musa Cavendishii in two parts light turfy loam and one part vegetable soil or well rotted manure, with a little sand, and plunge it in a bark bed where it can have a top heat of from 55° to 60° in winter and from 60° to 75° or even 90° with sun heat in summer. Glass cylinders are better than wood ones for Cucumbers. Pelargoniums are shown at Chiswick in the shape of round bushy plants, some 18 inches or more high, and as much through. The branches are at first trained horizontally towards the sides of the pots, and then they are allowed to grow upright. Strawberries may be kept clean by the use of Roberts' tiles, advertised at p. 513. Psidium Cattleyanum will succeed in a tub in a common greenhouse.‡—H D. Whitewashing the roof would not cause the appearances which your leaves present. They have been injured by some deleterious action inside the house. What kind of plants do you want—hothouse, greenhouse, or hardy? ‡

SEEDLING FLOWERS.

Achimenes: J E. Scarcely different from A. pedunculata, and, if anything, inferior to that sort.*—W H. A very nice variety, with purplish-violet flowers, rather smaller than its parent (A. patens).

Dahlias: A P. Your buff seedling is very good, both in size and shape; the depth of petals is well regulated; they are well cupped, and the flower well up in the centre. A very nice show variety *—N G. Princess Louisa: Petals shaded crimson, white in the centre, stained with violet; good in shape, texture, size, and contrast of colours; well filled up in the eye, and possessing a good depth of petals. A first-rate exhibition flower, if constant, like the bloom sent.*

Ericas: *J Leach.* Fairbairn's large flowered variety of E. mammosa is a great improvement on the species. Both the flower-spikes and the individual blossoms are very large, and the latter are highly coloured.‡

Fuchsias: A L. Very much reflexed in the lobes of the tube, and distinct on that account from most others; colours of the tube pale blush, corolla rosy pink, flowers good in texture, colours, and proportions, but rather small.*

Gladiolus: S B. Tolerably distinct in colours and pretty.*

Hollyhocks: R C. Very handsome, more particularly the shades of rose and pink in 9, 20, 1, and 11. In light-coloured ones, 13, 16, and 19 are very good. In the dark crimson-coloured ones, 2, 3, 8, 14, and 25 are good. In the shaded varieties, 12 and 24 are showy, while 4 is a good dark one, and 17 a nice clear yellow. 3 and 9 are the finest and best in the collection.*

Pansies: H B C. Not in an examinable state when received.*

Pelargoniums: R W. Your scarlet is very similar in colour and truss to Tom Thumb, but the petals are a little broader, and consequently the flowers better in shape, but still not sufficiently distinct from many of the better kinds of scarlets now in cultivation, unless it has some advantage in habit or growth.*—G R. Upper petals dark crimson, faintly edged with rosy purple; lower petals bright rosy red, white in the centre; texture, colours, and size good; outline middling, upper petals a little crumply.*—*J Giles.* Next week

Petunias: R J. Flowers rosy pink near the edge, fading to white in the centre; eye slightly veined, size and shape good, colours delicate, texture thin and flabby.*—S B. Too much withered to determine their real merits. Rolling the flowers up in paper singly as you have done is a bad plan.*

Verbenas: P. Not sufficiently distinct from many others now in cultivation.*—R N L. Very good, but remarkably near Comte de Paris, both in size and colour.* — W H. 1, bright red, fading to a bright rose near the centre; a fine large-flowered variety, good in colours. 2, bright scarlet; a little larger in the flower than Boule de Feu, but the same in colour. 3, pale blush, common and dull in colour. 4, pale pink or deep blush; a nice large flower, and rather novel in colour. 5, rosy lilac, tolerably good in shape; a pretty variety, and distinct. 6, pale lilac, rather small, and washy in colour. 7, a nice white, very like Miss Harcourt. 8, pale lilac or blush, not very uncommon in colour. 1 is the best and most novel.*

TURNIP SOWING.

THE LONDON MANURE COMPANY, having adapted the "URATE" more particularly for Turnips and all Root Crops, can recommend it with the greatest confidence. It seldom fails, in the driest season, to secure a good plant, and to produce a heavy weight per acre. They would call attention to their Superphosphate of Lime, which is prepared with the greatest care, and sent out in a very fine, dry state, perfectly ready for use. The London Manure Company have made arrangements for a constant supply of Peruvian Guano, from the best cargoes, which they will deliver direct from the ship or importer's stores. Corn Manure, Nitrate of Soda, Fishery and Agricultural Salt, and every other Artificial Manure, on the lowest terms for a genuine article.

EDWARD PURSER, Secretary, 10, Bridge-street, Blackfriars.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

BURBIDGE AND HEALY'S NEW BOILER.—The above is a modification of their Boiler (before published), modelled expressly for the large Conservatory, Chiswick Gardens, where it is now at work. From the observations B. and H. have been able to make, they are warranted in stating it to be the "Ne plus ultra" for warming large plant structures. As a proof, one charge of fuel has been kept burning for 48 hours without any addition, and one boiler of the size used is equal to warm 1500 feet of 4-inch pipe. They are also extensively put up at the Royal Botanic Gardens, Kew. Smaller boilers upon the same plan.

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BY HER MAJESTY'S ROYAL LETTERS PATENT.

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TO ORCHID GROWERS.

BURBIDGE AND HEALY, 130, Fleet-street, respectfully call attention to their method of warming Orchid Houses. They have had the honour of warming the Orchid Houses at the undermentioned places:

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick, additions to the House.
Also the Orchid Houses of the following distinguished growers of this interesting class of plants.
The Bishop of Winchester, Farnham Castle.
J. Lyons, Esq., Ladiston.
J. Warner, Esq., Hoddesdon.
Messrs. Henderson, Pine-apple Place.
J. Schröder, Esq., Stratford.
R. Hanbury, Esq., Poles, near Ware.
W. Webb, Esq., Clapham.

The Agricultural Gazette.

SATURDAY, AUGUST 25, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Aug. 30—Agricultural Imp. Society of Ireland.
FARMERS' CLUBS.—Sept. 1. Newcastle, York.—Sept. 3: Great Oakley, W. Hereford Clyst.—Sept. 4: Framlingham, Peterborough, South Devon.—Sept. 6: Burton-on-Trent, Ottery St. Mary.—Sep. 7: Halesworth, Debenham.

AT the side of a river in a remote English county a traveller once saw, or said he saw, a sign-post standing, with the following direction on it:

"In crossing this here Ford you must bear to the right when you come to the middle of the stream. N.B. *Them as can't read had better go round by the Bridge, two miles further down.*"

It was a witty scribe that wrote, or a witty traveller that invented, this considerate postscript for the benefit of unlettered passengers. The whole synod of the National Council of Education could not with their united wisdom have condensed into a more epigrammatic shape the great social puzzle of the present day, exhibited in no country of the world in such striking breadth of contrast as in our own. "Make a man acquainted with his ignorance," it has been well remarked, "and you have accomplished the most difficult part of his education;" he is *no longer ignorant* in the true sense of the word: or (to apply the cunning moral of the Sign-post) enable him to read the Postscript, and he will read the Direction for himself. Leave him in ignorance of *this*, and you address *that* to him in vain.

Again and again has this 'traveller's tale' jerked itself into memory when we have been reading or listening to many recent discussions on the subject of Agricultural Education. The question is as old as the words of the Apocrypha, "How can he get Wisdom that holdeth the Plough, and that glorieth in the goad, that driveth oxen, and is occupied in their labours, and whose talk is of the breed of bullocks?" *

Amongst the multiplying problems of Society in the present day—amongst those 'signs of the times' which meet us face to face in the crowded thoroughfare of the street, and mix themselves, unconsciously, with the hissing of the Locomotive, and the monotonous roar of the Cotton mill,—in the days of "early closing movements" in every town and village,—when the manufacturing operatives of Stockport and Manchester spend their rare holiday in a botanical excursion in the neighbouring country, and discuss the merits of the 'LINNÆAN' and the 'Natural' System—when symplified and popularised Science, cheap as the paper it is printed on, occupies the spare minutes of the dinner hour after the humbler appetite of labour has been sated,—when the factory boy or girl, neatly dressed and respectfully mannered, stands by the cotton-frame *book in hand* between the calls of the little bell that signals the broken twist or the knotted roving; in days like these (for view it with what eye we may, the fact stands before us open to remark, and shut against denial)—what is to be done, or said, or *thought*, about the great subject of EDUCATION, as pertaining to Agriculture and the Agricultural classes?

Are the words of the Preacher to be taken as a text of hopeless condemnation, engraved upon The Soil like the sentence of perpetual banishment cut upon the brazen tablets at the Piræus by the laws of cruel Athens? Are the pleasures of that

"divine philosophy
Not harsh and crabbed as dull fools suppose,
But musical as is Apollo's Lyre,"

contained in the study of Nature and of Science, and the education of the faculties to observe and comprehend them, to remain shut out for ever from those whose daily avocation lies, most of all men's, in *the midst of them?*

The answer may seem distant as yet—"Small as a man's hand" upon the far horizon; but it is one whose bearing is not only upon the mere *practice* of Husbandry itself—though that is no small matter—but is weighted with future influence upon the whole moral and social condition of the agricultural classes in the comparative scale of life.

But *what is* Education? Men agree upon the value of it, they mourn over the want of it, they blush to own the stinging taunt of its *inequality* in England, charged upon us by foreigners, they declare that *something must be done* about it; and they meet to do it: up to this point all is harmony and accord, unbroken by a doubt, or a dissentient whisper. No sooner is the subject opened,—the thing itself proposed to be defined, than the harmony bursts into uproar, and the warmest sympathy is chilled into dissent. No two minds are agreed even at the threshold. And while the doctors differ, the patient is left to cure himself as best he can; just so much worse off than he was before in proportion as individual enterprise and private benevolence are too often suspended for the hoped-for issue of public sentiment.

That the effects of this evil are felt most severely, and especially in the rural districts of this country, we have from time to time received sensible and complaining evidence. In towns, and especially in large towns, many causes are in constant operation, which bring some remedy, in ways direct and indirect, for the original misfortune, where it exists, of faculties early and utterly neglected. The very rubbing of mind against mind, in the after-contest of ability and even of manual skill, the quickly felt result of incompetency, the personal and immediate loss treading upon the very heel of the blunder that occasions it, the multitude of surrounding examples, of virtue and vice, of ignorance and knowledge, the occasional visit to the Institute or reading room, the popular lecture perhaps, where scientific Truth, or Truth of some sort, is dressed up in words that the little child, or that harder learner the *full-grown* child, can understand, and carry away at least "a little thereof." These and many other causes, acting in the aggregate, help to clear the mental atmosphere around the dullest comprehension, and keep up the vitality of the perceptive powers. Strange thought! that in the "man-made" town, with its stony thoroughfare, and endless rows of brick, where not a shrub, or blade of Grass, meets the aching eye, where the very air is polluted from its true proportions, where the physiology of earth, and the chemistry of heaven are either banished or disfigured,—a compensating influence pervades the spirit and whole *vital experience* of the place. What is denied from without is in some sort compensated from within. As corporate towns were the first in by-gone ages to shake off the iron grasp of feudal serfdom, so do they seem destined in a later day to achieve a similar emancipation from the slavery of the mind, from that *tyranny* of *ignorance*,—for it is a tyranny—which virtually *blinds out* the natural world from the mental eye, even whilst the bodily organ is reflecting the richest treasures of the fields and woods, the landscape of earth, water, and sky, teeming with multitudinous knowledge to the instructed looker on,—an unmeaning outspread of wonderment and puzzle to the ignorant.

"The history of philosophy," says LIEBIG, in one of his 'Familiar Letters,' "informs us that the wisest men, the most profound thinkers of all ages, considered the *insight into natural phænomena*, the acquaintance with natural laws, as the indispensable means for cultivating the mind. The *study of external nature*—the science of physics—renders the powers of Nature the servants of man, whilst empiricism subjects man to *their* control. The empiric permits the laws of matter to govern his will, whilst by a true insight into their hidden connections, he might *govern them.*"

Would it be possible to express in better contrast than these words do, the difference between the educated and the uneducated mind? or to describe more distinctly the *secular* object (for it is that to which we address our remarks) of education itself?

Our ideas of education, influenced as they are *by our education*, naturally partake of its errors whatever they may have been: they are unavoidably conventional to a certain extent in every mind. We look back upon a confused memory of books and slates and pens and paper, and we are apt to mistake, as usual, the *material* of education for its *object*, the means for the end. The acquirement of reading, of writing, and of applying these two faculties to *number* as expressed in cyphers, to *space* as expressed by linear figures, to *mass* as expressed by cubical form, no more constitute education than the acquirement of the manual use of a tool constitutes an apprenticeship to the art in whose manipulations the tool is used. The eye and the hand have, in either case, a familiarity and dexterity to obtain in the first instance, which is to be *the means* of that future acquirement from which education of the mind will hereafter spring. The most expert use of the spade does not make a man a gardener, nor will the best ploughmanship make him a farmer. Yet obvious as this truth may be, it is continually overlooked in practice, and an immense amount of individual trial and failure suffered in after life, by a premature *encounter with Nature* on the part of thousands who started with the blunder which mistakes *the use of the tool* for the *knowledge of the trade.*

The distinction was well marked in Lord LEI-

* Ecclesiasticus, xxxviii. 25.

CHESTER'S reply to the applicant for a Farm, who said he would 'plough against any man in England, for he had been bred up to it from a boy.' The celebrated rejoinder, "Then I have no doubt you are a very good *ploughman*," however excellent it might seem to a bystander, was as lost upon him to whom it was addressed as the written sign-post to the passenger who could not read. The words which conveyed to one hearer an instructive and important distinction, were to the other a mere compliment, or affront, according as he might happen to take it Had the great agriculturist gone on to explain to his applicant what *he* meant by *a Farmer*, he would have been utterly incomprehended, or (as soon as convenient) simply laughed at, or more probably both.

By the very same principle, could that really great man have been in turn submitted to the process of hearing from the mouth of a LIEBIG, a JOHNSTON, or a PLAYFAIR of our own day, what *they understood* by the term, he would have probably smiled with as right good will as he had himself been laughed at by the other.

All knowledge is comparative. The paradox of one age is the truism of the next. The 'Theory' scouted with ridicule by the 'Practical Man' of the last generation becomes gradually *solidified* into the 'practical knowledge' of the present. What can be more unlike than the massive timbers of a full-grown Oak, and the impalpable scentless invisible thing called 'carbonic acid gas'? Who would believe or suppose that *this* by simply parting with its oxygen becomes *that*? That the ponderous unwieldy Tree is but a deposit from the carbon of the viewless air?

And who does believe it, or any other fact of science, if he has been allowed to rush upon Nature, without one year of early life spent in the acquirement of her mysteries—to enter upon the long journey of a practical life that brings him into daily contact with the powers of Nature, unprovided with the weapons which can alone subdue them to his use and benefit? For they are the true Genii of the fairy tale, which either obey us implicitly, or crush us inexorably. It is one thing to "till the earth," another to "subdue it." The agriculturist is ever the governor, or the slave, ever the winner or the loser in the conflict with those natural laws by which his calling is surrounded.

'Every science in succession,' says a recent writer, 'has welcomed and claimed kindred with 'it:* Botany, Vegetable and Animal Physiology, 'the Sciences concerned with Air, Water, and Steam, 'Mechanics, Meteorology, Chemistry, and Geology, '—each in turn has paid tribute to it, and held out 'the means of progressive improvement, only limited 'by the ability of the agriculturist to avail himself 'of their resources, until it has become more and 'more apparent that scarcely any knowledge is 'superfluous to the tiller of the soil."*

If this be true, can there be a doubt of the necessity of a specific education to *the Science*, as well as to the Practice of Agriculture? Can there be much real doubt what the course of that education should be? These questions surely deserve a detailed consideration; which we hope in some future numbers to supply; and meantime earnestly invite every expression of opinion from our correspondents on a subject so important, on so many accounts, at the present time.

THERE was good reason to remark upon the want of system observable at the late meeting of THE AGRICULTURAL IMPROVEMENT SOCIETY at Dublin. As instances of its results, we may record the facts that no prizes were awarded to the implements till the Thursday, after a large number of visitors, who would gladly have been guided by the award, had seen them and departed—that the reported prize list of cattle and sheep is, we understand, incorrect, in what particular we shall hereafter be able to state—and that Mr. SULLIVAN'S lecture, advertised for 11 A.M., Wednesday, was then postponed till Thursday evening, when it was, we may say, thrown away upon an assemblage of two dozen hearers. No doubt HER MAJESTY'S visit may have upset many arrangements which would otherwise have ensured greater accuracy and punctuality in the proceedings; but when men have specific duties to perform, nothing should be allowed to intervene. Judges should not leave their business unfinished, even though it be to bow before the QUEEN. We have at length, however, the satisfaction of announcing their awards:

To WM. CROSSKILL, Beverley, for his clod-crusher, 5*l.*; for his broadcast manure distributor, 3*l.*

To K. ELLIOTT and SON, Oxford-street North, Liverpool, for their single Turnip drill, 3*l.*

To RICHARD GARRETT and SONS, Leiston, Saxmundham, for their drill, 5*l.*

To R. GRAY and SONS, Uddingston, Glasgow, for their parallel expanding horse-hoe, 3*l.*; for their hand Turnip sowing machine, 1*l.*

To R. GRAY, Police-place, Belfast, for his collection of Ploughs, 5*l.*

* HOSKYNS on the History of Agriculture.

To JOHN HOWARD and SON, Bedford, for their plough, a Medal; for their three-horse draught bars, 1*l.*; for their horse-hay-rake, 4*l.*

To J. KIRKWOOD, Tranent, East Lothian, for his two-drill Turnip machine, 3*l.*

To D. MILLER, Dunleer, county Louth, for his ploughs, 2*l.*

To J. MURPHY, 27, North Frederick-street, Dublin, for his winnowing machine, 1*l.*

To W. and J. RITCHIE, Ardee, county Louth, for their farm cart, 2*l.*; for their corn drill, 5*l.*

To RICHMOND and CHANDLER, Salford, for their steaming apparatus, 5*l.*; for their chaffing machine, 2*l.*; for their Linseed mill, 10*l.*

To RICHARD ROBINSON, Belfast, for his portable steam-engine, 10*l.*; for his churn, 2*l.*

To HENRY SHERIDAN and Co., Dublin, for their horizontal Turnip slicer, 1*l.*; for their lever Turnip cutter, 1*l.*

To — SCOTT, Belfast, for his three-horse threshing machine, 5*l.*

To JOHN WIGHTMAN, Comber, county Down, for his two-horse threshing machine, 1*l.*

To H. ALLNUT, C.E., Ballinasloe, for his estate model, 4*l.*

To F. LINEHAN, C.E., Carlow, for his drainage level, 4*l.* and a Medal.

We have only to add to the above that, let the merit of the exhibition of implements and cattle be what it may, it is surely one part of the Society's plan that its influence be exerted upon all classes of farmers in Ireland; and we think this would be more likely of attainment, if the admission fee was reduced on one of the days to one shilling.

A NORTH ESSEX FARM.

The farm which I occupy is situated in the northern part of the county of Essex, within 6 or 8 miles of several good market towns, and in the midst of a rather numerous labouring population. It contains 155 acres, 120 of which are arable, 20 are meadow and pasture land, and the remaining 15 consist chiefly of Ash plantations, &c. The rental is 30*s.* per acre. The soil may be said to be of an average quality, variable in depth and also in texture, as may be supposed from the nature of the subsoil, which consists chiefly of beds of clay, marl, sand, and gravel, such as usually characterise the plastic clay formation. A large portion has been drained within the last few years. The following is my usual course of cropping on the arable land, subject to such slight modifications as circumstances may require.

1st Year—Mangold Wurzel, Swedes, Carrots, or Tares, to be followed by White Turnips.
2d " Barley or Oats, with Clover.
3d " Clover, part (consisting of Red Clover and Trefoil) mown for hay, and part (consisting of white Clover and Trefoil) fed by sheep.
4th " Wheat; 5th, Beans and Peas; 6th, Wheat.

As it regards the amount of produce of the different crops, which varies considerably with the soil and season, the following may be considered as a fair statement.

Mangold Wurzel, Swedes, and Carrots, per acre,		15 to 20 tons.
Barley	"	5 to 6 qrs.
Oats	"	6 to 8 "
Wheat	"	4 to 6 "
Beans and Peas	"	Very variable.

The root crops are entirely consumed on the farm; the Mangold Wurzel and Swedes chiefly by bullocks, the Carrots by horses and pigs, and the white Turnips by sheep. The Tares are mown for horses, and consumed by them in the yard; the Oat crop is mainly consumed by horses, and the Beans and Peas are partly consumed by the different kinds of stock on the farm. The Wheat and Barley crops are grown for market. Two good dressings of manure are given during the course, viz., in the first year for the root crop, and in the fifth year for the Beans and Peas. Having always an ample supply arising from the farm-yard and stall-fed beasts, I seldom purchase any other manure. Of the meadow and pasture land, about one-half is usually grazed by bullocks, &c., and the other half is mown once a year for hay. The crop, which usually averages from 1½ to 2 tons per acre, is consumed on the farm.

The number of horses kept is six; four of these are used regularly for ploughing, the others assist occasionally, and are used for various odd purposes. The number of hands usually employed is eight men, two boys, and two or three women occasionally. One man and two boys are engaged chiefly with the stock, two men are employed with the horses, and the remaining five men perform the ordinary labour of the farm. The ploughmen receive 11*s.* 6*d.* and 10*s.* 6*d.* per week with perquisites, the other men from 9*s.* to 11*s.* per week. *B.*

THE QUALIFICATIONS OF A LAND-AGENT.

THERE is a subject most intimately connected with the cultivation of land which I have often wished would be taken up by some of your correspondents qualified to do it justice, and that is, the appointment of agents to the management of estates duly qualified for such engagements. No one possessed of the smallest share of observation can be otherwise than forcibly impressed with the utter want of capacity and knowledge in persons selected for this class of employment, and this is a matter entirely under the control of the landowners of the country, most of whom would have you believe that the prosperity of a nation depends much upon the success of advancement of the agricultural interest. If so, does it not follow as a matter of course that those most deeply concerned should show to the world their due appreciation of its importance, by appointing as their managers and representatives individuals possessing requisite information?

In the county I reside, it seems (which is a sample merely of the rest of the kingdom) no qualification whatever is necessary. The chief persons employed are attorneys, who have the control and direction of some of the largest estates, others have been made the receiver and agent of the nobleman or esquire for faithful services performed in a menial capacity, having been first errand boy, and gradually promoted through the stages in the household, of footman, butler, &c. Some have been taken from the respectable class of farmers or tradesmen; in short, to enumerate the early occupation of land-agents generally, would be to name every profession and business known in the country. But few, indeed, will be found to have had any regular education so as to fit them for such duties.

I need not surely point out the absurdity of this system, "or the heavy blows and great discouragement" presented to agricultural improvement by such means. Does a manufacturer or a tradesman commit his best interests to the hands of those so utterly incompetent? What, indeed, would be thought of a man who called in a lawyer to superintend the construction of a steam engine, about which he knows as much as of the soils upon estates, or interests of the tenantry? or, with his contracted notions, can the domestic servant, without education, full of his old habitual obedience, give utterance to opinions by which agriculture will be benefited? or if he did, would a tenantry be likely to adopt the advice of one probably the son of some of their own labourers? Could he command that respect or attention so essential to his position? Is a farmer either, who has always lived in the neighbourhood, convinced in his own mind that no plan of farming known more than 20 miles from his residence can be profitably applied to his own district, a man quite satisfied with his attainments, and firmly fortified against all your new doctrines. A tradesman of course is equally unfit.

Is it to be wondered at, then, that we find agriculture in many parts of England in so rude and neglected a state? or that the tenant farmers are sometimes men of such ignorance? Should not the great landowners set a better example in the choice of men for conducting their affairs; reading men who would be able to afford the farmers all requisite knowledge upon agricultural and other subjects connected with estates, as well as the best systems of cultivation known in practice. Till a total change takes place in this respect no marked progress will be made; and the landowner, instead of flying to his attorney in all points of confidence in connexion with his property, ought to entrust his estates to those competent to advise him to carry out his views, without the aid of the lawyer, whose objects and desires are often at variance with objects it is more important to promote. *B.*

STEEP AND LEVEL LAND.

IT can never be deemed a waste of time to work out a problem in philosophy, although the results may not at the moment seem to be of great practical importance. Every point established is, however, a stepping-stone to further advance, and the present question is not one that we can safely afford to leave behind us unreduced. The principles on which land is measured are in fact affected by it. The theory of land surveying is to measure the base; but I think in practice the chain follows the undulations, and the surface is really measured in most cases. [Not if their inclinations be material. The lines which form the map would not otherwise *fit* to one another.] This part of it I leave to abler hands. I desire to confine myself to a philosophical elucidation of principles. When these are settled we may consider their application to practical husbandry. The only way to accomplish this is to lay down premises from which the deduction is to be drawn, and as the question is confined to "steep *v.* level," we must at once clear it of all difficulty by saying that "other things are equal," viz., depth and quality of soil to be the same, or the land cannot be in other respects alike, and cannot be compared on this particular point. I think it will not be considered as presumption on my part, if I consider the principles laid down on the 21st July as correct until they are disproved. If they are true, they settle the abstract principle in favour of the hill. But this question I find is made to assume a Protean form by the *Gazette* of the 28th ult., in a Leader marked by ability, but discursive in character. It is obviously impossible to arrive at a satisfactory conclusion unless we stick to the point; and I submit with deference that the *Gazette* should set a good example to controversialists in this respect, having advantages of talent that we do not all possess. The abstract question of hill *v.* level is the question, as it has long been argued in the *Gazette* on mechanical grounds, whereas it is a very compound question in which mechanics occupy a subordinate part. In my former paper there is no comparison of good with bad land. "Other things being equal" is the burthen of my song, and when a man undertakes to answer an article he should certainly read it, and then he will not say it contains that wherein there is not a single word.

But let us consider further the "air immersion" of the land. Take half an orange—it has two surfaces, one flat, the other semicircular. Dip them both in water, and mark the relative displacement. The flat in contact displaces nothing; the circular to be so must displace the whole bulk of the half Orange. Apply this to the level and the hill dipped into the air. The air contains small quantities of various things needful for plants. It is obvious that the hill will get the same stratum of air at its base as the level, and also the benefit of stratum after stratum as it rises into it. It has therefore a greater command of atmospheric benefits. The time that currents of air take to pass over each is immaterial to the argument. However fast it passes, plants can arrest its gases, and a brisk wind makes them grow faster by supplying a quick succession of food, the internal circulation of fluids being accelerated

in proportion. In this respect it resembles exercise in animals, and is equally necessary to full development. The same quantity of heaven-descended sunshine alights on an equal base, but if it has more plants to shine upon, less slips through between, and more good is got from it. If the question was to take two pieces of flat land, and to force one of them up from below, then it is obvious that "other things would not be equal," for in proportion to increased surface would the thickness of the active soil decrease. The vertical thickness of the soil has nothing to do with it; for although plants for the most part rise vertically, yet the air does not act vertically on the soil, but perpendicularly to its surface; neither do the roots act only in a vertical, but every direction, up, down, or sideways. It is not necessary to the argument, or we might advance that an exact vertical position is not an absolute necessity in the growth of plants.

The plea that there is no such thing as absolute contact we cannot admit—that is a theoretical principle that is not proved; and if it was it does not apply, for if you cover a space with houses, how will you put other houses in between? But if you have stems of Wheat 3 inches apart, there is room for many in between [Here we differ. There is no gain by increasing the number beyond a certain degree], and moreover it is equally certain that they will grow and flourish nearer if you improve the condition of your land; for it may be taken for a maxim, that the more plants get from the land the less they require from the air. On rich land Wheat is thick; on poor, the stems are few and far between.

On mechanical grounds my argument is, "that, in proportion as ears of Wheat overtop each other, may the stems be approximated; because the one up the hill is not opposite in its whole length to the plant below." You answer, "Suppose two adjacent stems of equal length to be 3 inches apart, it would be a steep hill that would make the upper one overtop the other by one-quarter the length of its ear" Is it one grain or an aggregate of many grains that fills the bushel? So, if one ear overtops another in *any degree*, the effect must be looked for by its being many times multiplied; and if the approximation be only $\frac{1}{12}$ inch, it is equal to a gain of a quarter of an acre in an 8-acre field, or about 3 per cent.—no inconsiderable thing.

We must here remark that the practice of throwing land into high ridges is a question to which the leading principles, mentioned above, do not apply, or only in a very small degree. It must be argued on grounds peculiar to itself, and which a future opportunity will perhaps allow us to take up. We will only observe, that, ridge up as high as you like, you cannot practically take advantage of any but the lowest stratum of the atmosphere, if the field be a level one. Having done with the abstract principle, it only remains to consider the relative general merits of hill and level; and it cannot be denied that the best land is for the most part on the level; and in hilly countries, on the flat, at the top, or at the bottom, and doubtless on hill sides, the best soil has a tendency to wash away. On a naturally dry soil, we should for choice prefer slight undulations to a perfect level. The difference is perhaps not worth an argument. On lands that require well draining, a moderate rise is very superior to a dead level, in order that your drains may have a good outfall. Drains draw further on a level, but do not clear so well — they clear fastest with a steep fall, but you must place them much closer to compensate for their drawing a less distance. Thus, whichever way you turn, you cannot push a principle to an extreme. You cannot have the greatest benefit in one way without exposing yourself to more than a corresponding disadvantage on some other. We are of opinion that roots will not enter drains if they are free from standing water; that is, as a general rule. They are not formed to draw food from the air, but require a denser medium. When plants want water they will go for it when within reach, and if you can keep your drains dry, in dry weather, they will have no inducement to go there. This is best accomplished when there is an incline on the surface of the land. *Henry Chaytor, Croft, Darlington.* [The better quality of soil on the slope certainly was spoken of by Mr. Chaytor, at page 437; and it was referred to the greater exposure to the action of the atmosphere which the slope experienced. We do not think that there is much advantage gained by the reference to air of different strata; as, unless it be absolute calm, plants on the slope will feed on exclusively on one layer of air, just as those on the flat, and a plant to leeward will in both cases feed from air which has previously traversed the surface of the land; but this is a point not worth disputing. If we had space we could develop our argument more fully in reply, for we have not lost confidence in it; but we must defer it till that future opportunity to which Mr. Chaytor refers; for we have no doubt that he will agree with us that this subject has occupied sufficient room for the present.]

Home Correspondence.

Farm Prospects.—In recurring to the subject of last week's discussion on the benefits that are to accrue to the farmers of England by a reduction in the price of agricultural produce, and which, in your article of this week's *Gazette*, you have more fully dilated upon, I must again trouble you with a few reasons for dissenting from the deductions you have made, as well as from the advice you have offered. It needs not much ingenuity to find out the bias and inclination of the mind of the writer, when treating upon a question like the present, however much he may endeavour to conceal them. In whatever guise you would wish to dress this subject, you cannot dissever its political from its agricultural bearings, as they are identified; and you at once declare yourself to be either a supporter or an adversary of a system which is the mainspring of all these movements, and I leave your readers to judge which side of the question you advocate. Apologising for this digression let me now return to the subject under discussion, and try to find out the ultimatum of your project, the attainment of which is so much to be desired, and for which so much skill, energy, and exertion are to be brought into play. No one thinks of undertaking a work without an object, and the greater the work the greater of course the object to be gained. Well then, I suppose I may fairly assume that the grand object to be attained is the reward. What, then, is the reward you offer to the British agriculturist for all this extraordinary skill, energy, and exertion you call upon him to make? It appears to be just this—food the produce of those exertions, "must be cheaper" than it is at present; but yet he is to be a gainer. How? Your answer is, by increasing that produce. How much? Until he can withstand the loss in price. What then? Why, then he will have gained the victory and gotten the prize. Verily, was there ever before propounded such a Utopian scheme as this? So the capital, skill, energy, and industry of the farmers of this country are to be invested in so hazardous a game as this, on the possibility of a chance of their being able to produce such an increased quantity of food, that they shall not on account of its cheapness be losers thereby, and this is to be the reward offered them. Why it is an insult to their common sense. Oh! but have they not, you exclaim, bright examples before them, in the trader, the manufacturer, and the great commercial body? Have not these had difficulties to contend with greater and mightier than any the farmer has to encounter! and have they not withstood them all unaided and unprotected by dint of their own skill and exertions! A more unfair assumption and a more unjust comparison there cannot be; there is no parity of reasoning between the two classes of persons, they are not placed on the same footing at all; in the one case all the improvements in machinery and all that varied mechanical skill and ingenuity has brought forth to assist in the production of manufactures, are, in their operation, unvarying and undeviating, and their effect can be calculated upon to the greatest nicety, even to the fraction of a farthing in the price of the article produced. Here there is a certain return for a certain expenditure; in the other case how different is the result. Let the ingenuity of man be taxed to the utmost, so that he may increase the produce of the soil to the highest possible pitch; and when this is done, what will it all avail, unless the season favours his handywork? Here, then, the two classes must always be on an inequality, in the one case the result of skill and labour is a certainty, and in the other an uncertainty. I would ask, then, if the comparison is a fair one? and can any one, having a knowledge of the real state and position of agriculture and its prospects at the present time, in candour advise the farmers of England to embark their all, that they may be enabled to meet the depression that is to happen in the price of food? Would it not be more prudent to advise them to desist from any such rash experiment, and to save whatever means they may have for some more safe and profitable investment? As for those who unfortunately are without capital, and whom you have told "if they do not get out of the way they will be overrun," would it not be fairer advice to offer them, although hard and harsh as it may appear to be, to quit the land of their birth for some more propitious clime—for some land that will grant them what their own now refuses, a living for their toil? *Q., Aug.* 11. [You are not doing us justice. It is easy to stretch the meaning of words beyond the intention of the writer; but where do you find us speaking of the benefits accruing to the farmers of England by a reduction in the price of their produce? What ground have you for assuming us to have "an ultimatum" in view beyond the plain end of our writing, or for supposing that we are endeavouring to conceal anything bearing upon the question which it is proper for this Paper to discuss? We take the fact of low prices as we find it, and we advise those who suffer from them to see if they cannot conduct their business more economically and productively; where is the insult to common sense in that? Those who think they can avert this fall of prices by political effort, most certainly ought to put it in force; by heartily doing this, they will prove the possession of that spirit which, when once directed aright, is sure to save them.]

Ireland.—Let me advise spirited young English or Scotch farmers to turn their attention to Ireland as a most desirable country, at the present time, to locate in. The island has passed through the furnace of affliction, has been on the brink of total ruin, and after suffering horrors only experienced by a nation under the influence of a devastating army, has now every prospect of rising from its recumbent posture with vigour, with many of its faults corrected, and its misfortunes mitigated. A more efficient spirit of legislation is about to be introduced, and the real wants of Ireland considered without reference to society, which has hitherto been the bane of the land; this wise determination to consider the peculiar wants of the island cannot fail to produce a beneficial result throughout the empire. England has private capital locked up, and only waiting for a safe channel through which it may circulate, and return to its owners with interest. A speculation is considered uncertain, as the very term indicates, therefore the investment of money in Irish soil cannot be so designated, but may be termed an excellent business transaction, in which the most prudent might engage without the fear of being considered rash. It is strange to see active young farmers paying high rents for inferior land when, by crossing a narrow arm of the sea, they might have the choice of land of the most fertile description at almost a nominal rent. It must make an agriculturist's mouth water to hear of land being let at 1*l.* per English acre, producing upward of two tons of hay; this statement is believed to be no exaggeration, but rather under than over estimated as to bulk of crop. If with inferior tillage the produce is so good, what might not be anticipated from improved culture? There is a description of turf in Ireland quite black, and when dried, almost as heavy as coal. I cannot help fancying that if this was charred and pulverised, it would make an excellent dressing for Potatoes on heavy land; I should like much to try some of it, if the preparation could be imported into this country at a small expense per ton. What is the *Gazette's* opinion on the value of such manure? Supposing in itself it was not worth much, as a vehicle for absorbing liquid manure it might be exceedingly useful. To be made available for agricultural purposes in this country, it must be landed near a railroad at a very low price, and if during the first year it barely paid the expense of cutting and charring, it would nevertheless introduce profitable work into districts where labour is much required. The anxiety to promote the comfort of our Irish brethren would induce many gentlemen to try the experiment of dressing heavy land with charcoal turf; if scientific farmers entertained a favourable opinion of the suggestion, I trust some practical men will give their opinions on this subject, as a guide to amateurs. The possibility of converting the bogs into manure for the land is of so much interest to all classes, I feel confident the *Agricultural Gazette* will, in the course of a few weeks, contain numerous important letters on the point in question. *Falcon.* [We believe there nowhere is more money to be made by farming than in Ireland. But, so far as we could gather during a fortnight's visit, this is because of cheap labour rather than because of cheap land. No doubt, to men of capital, land may be let on better terms than those at which the wretched tenantry of large districts in that unfortunate country are able to obtain it for themselves.]

The Comparative Value of Sloping and Level Ground.—All persons seem to have forgotten that the ears or heads of corn, grown on a slope, present a surface parallel with the surface of the ground from which the plants have sprung. No one denies that the space afforded by sloping ground is to that afforded by level ground as the hypothenuse of a triangle is to its base; nor that increased space is as desirable for the full development of the fruit as it is for the roots of plants. Now, these facts, relatively considered, must prove to demonstration that sloping ground is superior to level ground in its capability of producing more, let alone all consideration of aspect. *J. Hailey Denton.*

Horses: Norwich Royal Agricultural Show.—I have read the letter from Mr. Beale Browne to Lord Chichester in a late Number of the *Agricultural Gazette*. I can bear testimony to the truth of his remarks, and I am confirmed in it by the judgment of three competent men, all of whom are first-rate judges of horses. Without hesitation I say such decisions as the judges of horses, appointed by the Council of the Royal Agricultural Society, arrived at at the Norwich show tend to break up the Society. There were some first-rate horses rejected and neglected, that it is to me wholly surprising that the judges could any how have awarded the prizes (I might say notice) which they did to those in the 1st and 3d classes. *Veritas.*

Bamboo Tubes for Irrigation.—You have more than once recommended some one to hollow out Larch poles for conveying liquid manure. Bamboos would be better, and, near any sea-port trading with the West Indies, can be got cheaply and, if in any demand, plentifully. A canvas tube or two, with an iron or gutta percha ring made to slide like a telescope, over a stout bamboo, or other solid tube, might irrigate a considerable length of furrow, or, with a spreader, a considerable breadth of ground. It might draw out and shut up, irrigating during both processes. *L. V. R.*

Sex of Poultry.—Your correspondent "V. S." asks how to distinguish the sex of the chicken an egg will produce. A hen-wife knows every hen. Some hens produce large eggs; most of these produce cock chickens. It is the selection of size, not a visible sign externally of the shell, which can determine the sex. The largest egg each hen lays will be found to produce a cock chicken; those said not to be properly fecundated are eggs containing no yolk; their smallness will determine this deficiency. Eggs laid by hens who have no cock to associate with, are never used as nest-eggs; this your correspondent may know. *N. V. Z., Hants.*

Breed of Pigs.—It was said by a Norwich correspondent the pigs exhibited there were not good of their kind. For my part I never saw a better collection of pigs of a "small breed," than were exhibited on that occasion. Some pens I did see which made me wonder at the presumption and audacity of their owners sending them. We are advocates of the small breed only, and wonder any one keeps what is a coarse-grained fleshy animal, viz., a large breed. It is said flitches of bacon ought to be long and deep; but it does not say the meat is to be regarded—that is close-grained and thin-rinded, or coarse and thick skinned. We never saw a good,

small breed of pig that could not be fattened to 15 or 20 score. Who desires bacon from a heavier pig? Who would eat bacon of the large, coarse breed who has tasted that of a small sort? And now we have spoken of the eater of bacon, we will ask does the feeder or breeder of pigs find the large sort more profitable? One says he can sell the shoots at more money, as being larger for their age. Another that they farrow 15 to 20 at a litter. This is an error in the first part, as the small breed, if properly attended to in the rearing, will be of greater weight for their age than the largest sort, which may look biggest. Many are at fault in breeding pigs; first, crosses are the best in these animals, as in all others. They soon degenerate by fineness, *i. e.* by breeding in and in; such a practice is a losing concern. Secondly, as to farrowing, a sow that has 10 to 12 pigs at a trip, yields her increase and multiplies too abundantly even then for profit. We should say a sow that brings up 10 youngsters will pay better than one that has a dozen; but as we rarely think of providing roasters for the family or for market, we must leave the sow and her family of 20 to those who enjoy this species of traffic. We have always reared the small sorts with large profit; they require less food, and, as porkers, are unrivalled, provided they are corn fed; and if your pork has a reputation, will always command a fair price. But we could say a hard word to some who do not buy honestly for honest fed meat, and who demand a price for their pork which many would not eat, if they knew how it was fed. *X. Y. Z, Hants.*

Scotch v. *English Agriculture.*—Some few years ago I sent you some facts concerning Scotch farming, which you were kind enough to publish. Some of the statements were contraverted by another correspondent in England; and this person's reasoning seemed to intimate that in his opinion Scotch farming in general was inferior to that of England, and that especially the Scottish agriculturists were deficient in the knowledge and practice of that part of rural economy, the breeding of stock. To this I replied, perhaps rather pertly, that as Scotch beasts brought always the best price in the London market, there would be but little wisdom in improving upon what was already the acknowledged best. Your correspondent made very light of this remark, and treated it as the offspring of their ignorance. Now, as I knew nothing then practically of rural affairs, and, as little yet, I gave up the controversy, because I was not able to continue it to any useful purpose; still it reads very like common sense that if the uncrossed Scotch beasts brings a better price than the high bred one of England, it must be the most valuable animal, everything else being equal. It has, however, occurred to me since that if there were either profit or honour connected with the high breeding of cattle, my countrymen would follow it out, as they attach much value to both of these distinctions. Now what will your correspondent say to the fact which is patent to all the world, that a bull bred in Scotland obtained the first prize in the short-horn breed at the great agricultural meeting for the whole of England at Norwich the other week. The value of the merit of this bull is greater on two accounts; 1st, the breed is peculiarly English, and not Scotch; and 2d, the merits of the animal were such as to strike every looker-on, whether initiated or not, and fairly set cavilling aside. This fact to a certain extent verifies the idea I had formed of the skill and enterprise of Scotch farming, when it can improve upon the high breeding of England to such an extent as to beat it with ease. *A Scotchman.*

What is a Ton of Turnips worth?—Having been the first to call on your readers to state their individual experience as to the actual worth of a ton of Turnips consumed on the farm, and having been under the necessity of calling in question the accuracy of an estimate of their value, furnished by Mr. William Tuke, Land Agent, &c., Bradford, Yorkshire, whom, however, I never saw nor knew "dead or alive, or on horseback," as the Irishmen say; but as he was a land agent, it appeared to me that the practical farmer's statement of the case should also be heard, and after stating what my own experience was, I asked others to give theirs. Well, what has been the result? That, so far as complete experiments have been detailed by practical men, Mr. William Tuke's estimate of 10*s.* per ton is pronounced erroneous, and Quixote-like he stands, with his solitary Sancho, signing himself "Rusticus," in your *Gazette*, of the 4th. When an individual, but especially a land agent, is placed in such a position, his only alternative is to talk big, to speak of honour, and to catch at trifling inaccuracies in his opponent's statements, for the magnanimity of Don Quixote fails him here. This plan accordingly Mr. William Tuke adopts. He tries to wriggle out of the statement which he made in his first communication to you of the 12th May—that an acre of 20 tons of Turnips is worth 10*l*, and that straw is worth 2½*d.* consumed on the farm, and *that* after deducting the expense of Linseed and Bean-meal bought, and also the price of coals and wages—by deriding practical experience, and stating that his calculations were founded on the experience of others. Now this gentleman, who scoffs at practical experience, founds his statements on the practical experience of others; strange fix certainly. Yet somehow or other, he only takes the incomplete experiments of others, leaving all those which your able and trustworthy contributors have supplied, and your own to boot, out of sight; and he also tries to give the offer of 1000 tons of Turnips, at something under 10*s.* per ton to be consumed on the farm, and straw gratis, the go-by, by trying to find a mare's nest in the change of my signature, but even this last refuge will not avail him, for the appearance of the letter P. as much surprised me as it could delight him. [It was the accidental misprint of the initial letter of the writer's residence.] But I again beg to repeat my former offer, and also to double the number of tons of Turnip, referring him to you for my name and address, as I have no private ends to serve by advertising my name and address at full in your columns, or any other purpose to serve than that of truth, nor any grudge against land-agents generally, as several of them are amongst my most valued friends; but they rejoice in being accounted practical men, and would scorn to throw obloquy on farmers as a body, or try by hypothetical statements to undervalue their skill. Absence from home has hitherto prevented me from seeing your *Gazette*, and of course replying sooner. *J. M., Ratho, Aug.* 13.

Calendar of Operations.—I have for long been a reader of the *Agricultural Gazette*, and I must confess that the "calendar accounts" of farming operations have been quite useless to me, who am only a small amateur farmer. It would very much oblige and assist me if your correspondents (who furnish the weekly notices of what should be going on), adopted the detailed plan under the heading "for young farmers." As I live some distance from my occupation, and am otherwise much engaged, a hint or two from time to time would have the effect of reminding me of the proper daily routine of farming practice. After attentively considering the observations of the writer of the article "What is an acre of Turnips worth?" I am anxious to be informed whether cows can be kept in "Warnes'" boxes without roots during the winter months as economically as with them, and what is the best substitute? Hay can be had in abundance, and straw is cheap and plentiful; the cutting of chaff is not a serious item, added to which the comparative low price of Linseed and oilcake is a great temptation to try them with the chaff. My object in keeping cows is to assist me in the rearing of pigs for sale off the sow, and I shall feel grateful for any information on the subject. *An Amateur Farmer.*

Prince Albert a Farmer in Ireland.—The late glorious reception of the Queen by her Irish subjects must be a source of heartfelt gratification both to her Majesty and Prince Albert. The warm hearts of our island brethren gave vent to a true and honest feeling characteristic of the nation, and evinced a devotion not merely for the occasion of the royal visit, but showed a deep-rooted respect and attachment to the throne. If his Royal Highness would condescend to purchase a farm in Ireland, and introduce the system of agriculture which he so liberally follows in England, he would be hailed as one of the greatest benefactors to the country, and would set an example which men of station and influence would eagerly follow. The desire of the Prince to promote the welfare of an important part of her Majesty's dominions, would tend more to pacify the country than any legislative measures to institute more stringent laws. Did the people feel that the first gentleman in the United Kingdom proposed establishing an experimental farm amongst them, they might then really begin to believe a brighter prospect was in store for their suffering land. And it would be a glorious and enviable reflection in after days to be able to say, Ireland improved from the period the Prince patronised the landed interest. It only requires a first effort to be carried out by a powerful and strong hand, to insure success; and no individual of rank is so well able to accomplish this undertaking as his Royal Highness Prince Albert. *Tomtit*

Cumberland One-horse Carts.—I "regretted" as much as you or any of those who inquired after the "Cumberland cart," promised to be shown outside the ground at Norwich, that it was not there. I was so well convinced that the general adoption of these light, easy-running, serviceable carts of the Cumberland mountains would be advantageous to agriculturists throughout Britain, that I had one made by one of the two best makers in the neighbourhood, with a view of having it exhibited at various "shows," so that its merits might be decided on by competent judges from various counties. Learning that Messrs. Ransome and May were desirous of having one, and knowing that they would have the best possible opportunities of bringing it into notice, I had much pleasure in giving up this cart to them. It was their full intention to have taken it to Norwich, and some unforeseen accident must have prevented them. I observe you say, you think the prize cart the perfection of a one-horse cart, and I believe you will only hold that opinion until you see a really good specimen of a Cumberland cart; for the latter is from 6 to 7, while the Scotch and prize carts are from 8½ to 9 cwt., and I believe the merit will be almost inversely as the weight, on very many soils at any rate. Roomy Cumberland carts with a slight shelving carry a ton of coal, lime, and well heaped-up solid manure; without the sideboards they hold quite as many Potatoes, Turnips, &c., as most horses can bring comfortably out of a field; they run lightly and easily, and will last, if taken care of, throughout the longest lease that the most sensible landlord yet thinks of giving; as these qualities are possessed by carts of 6, 6½, and 7 cwt., what superiority is there in the heavier carts, "Scotch" and "prize" to counterbalance the 2 cwt.? No doubt you will hear all kinds of objections from farmers on every kind of land, and accustomed to every description of vehicle—from the "light" one-horse cart of 8 or 9 cwt. to the ton weight waggon. One says "these carts are too little;" well, but the axles and wheels of a well made Cumberland cart will carry a body of any reasonable dimensions—many of them of 7 and 7½ cwt. will and do carry 30 cwt. They are kept small in general to suit the light horses of the district and the steep hilly ground. There are many counties in England, at present furnished with heavy, ill-bred lumps of horses, and ton weight waggons which, unless I am very much mistaken, would do well not only to introduce the light carts but the light horses also. In moderately free soils, and in all light ones, the active, light stepping horse of moderate bulk will do far more work and far more pleasantly, plough more and cart more in less time, than the coarse-bred animals we see in the ploughs and waggons of the south. The light plough, the light cart, and the active, compact horse with a little breeding are never, I believe, abandoned by those who, on suitable soils, have once adopted them. Another objector says, "these carts will not suit our heavy land and sticky roads; the narrow wheels will not do." But why should the wheels be narrow? There is no reason in the world why a cart weighing 6½ cwt. should have a narrower wheel rim than one of 9 cwt., if the road require it. Another "we require far stronger carts, more lasting." Now as lime, coal, and stones are just as stubborn in Cumberland as anywhere else, and as there are plenty of carts from 10 to 20 years of age, to be seen, which have been engaged in transporting these along country roads, one would think this argument is worth little. The fact, I believe, is that the heavy carts need more repairs and go down sooner; hence perhaps one reason why they are kept up. No farmer, but one who was bent on having the most wood and iron possible for his money, could look a venerable Cumberland cart of 20 years in the face, and use such an objection as this. It is probable that in many parts of England agriculturists will prefer carts equal to the most roomy of those among the Cumberland hills; but as the axles and wheels are well able to bear a larger body, and as a little additional wood weighs little, the one-horse cart sufficiently large for any useful purpose on the farm, should not perhaps, under any circumstances, weigh much more than 7 cwt., and might generally weigh less. It is the skilful adaptation of the different kinds of wood to the various parts, however, and the proper arrangement of the axle and dish of the wheels, &c. all summed up in the phrase "easy running," which constitutes the superiority of the carts I have been speaking of, and it is only a workman here and there, in this as in almost all other kinds of "skilled labour" who is of first-rate excellence. You may find clumsy enough "Cumberland carts" even in the district where the best are to be seen, and, outside the mountains the common Scotch cart prevails. But any one who will tilt the two up together and examine them, will at once be struck by the superiority of the lighter mountain cart. Generally speaking the shafts are attached to the body of the carts of the hills; because, lime and coal lying outside of the mountains, the firm "dormant bodied" (according to the clumsy Scotch phrase) cart suits better for the long journeys. Tilt carts however are common enough. Notwithstanding the objection of loss of time in emptying the cart with fixed shafts, it may be doubted whether the greater durability of the vehicle and steadiness of the load does not in most cases make them superior to the tilt-cart. With docile horses and steady men, loads are emptied quite as quickly and easily the one way as the other. The two country workmen who have the highest reputation near Keswick for constructing these carts are, as I said, John Hogg and John Postlethwaite, but should any of your south country readers be disposed to examine the merits of those carts for themselves, Messrs. Ransome and May are, I believe, making several upon the principle of that sent them from Cumberland. You know I have no personal or pecuniary interest in the matter whatever, but at the next Royal Agricultural Show—if no one more interested in it does so, I shall take care that a good specimen of the common "Cumberland one-horse cart" shall be placed under the inspection of the members. *L. V. R*

The Gang of Swindlers which you so usefully exposed in your Paper some time ago, as existing in Liverpool and Manchester, is again in full operation amongst the agricultural implement makers; and since the "Show" at Norwich, they have been, and are now, very industrious in giving their orders to the manufacturers of implements in that city and neighbourhood. Pray sound the alarm again, and impress upon them the necessity of either sending the orders they receive from strangers to some of the Guardian Societies for advice, or require post office orders before the machines are sent off. We have done all we can, and that is by no means little, to prevent this wholesale victimising, and that disinterestedly too, but still these machinists ought to try to protect themselves a little more. If they would show as much ingenuity in executing the orders they receive as they exhibit in making their implements, their crop of bad debts at the end of the year would be far from luxurious. *James Reay, Secretary to the Liverpool Guardian Society.*

Farmers' Clubs.

YORK, *Aug.* 4: *Farming in the Nineteenth Century—Past, Present, and Prospective.*

Mr. CHARNOCK said, for the sake of showing what had been done during the previous half century, he might refer to Arthur Young's tour through this country in 1769, from which work it would be found that the science of agriculture was then but little known compared to what it was even at the commencement of the present century. For instance, Turnips were

grown without ever being hoed, and he need not tell them the consequence of such a practice. Still there appeared in the writings of Young the germs of many of those improvements which have subsequently taken place up to the present time; those improvements only requiring to be carried into effect by practical and scientific men. At the commencement of the present century this country was engaged in wars and troubles, which, of course, drew off a very large proportion of the industrial part of the population. War brought high rents and still higher prices for produce, and these high prices conduced in no degree to agricultural advancement, but on the contrary to a laxity of cultivation which continued until the peace. The better to trace the progress of agricultural events at this period he might divide it into two portions, viz., the war and peace times, from 1800 to 1820, and 1820 to 1840. The battle of Waterloo was in 1815, and through all these troubled times they knew (many of them from personal recollection) what was the state of agriculture. Peace ensued, and men began to settle down, and to think what they could do for themselves. The consequence was a great demand for land, and the increase of its rental value, and at the same time a vast number of enclosures, which brought into cultivation a very large extent of maiden land. This brought them up to the period of 1820, when it began to be evident to men's minds that we were being established in a permanent peace, or, at all events, for a number of years to come. Population began to multiply, and, of course, everybody, with the prices of the day, wished to occupy land, and it was taken at extravagant rents. Without entering into details, which it was not necessary for him to do, he would observe that what he wished to show them was that certain great improvements had been accomplished, and that many of those improvements were at that day thought to be as impracticable and as far distant from accomplishment as we, at this day, think many of those practices which, he believed, were yet to be attained. This was what he wanted particularly to bring under their consideration, and it appeared to him that the middle of the century presented a fitting opportunity to take a review of its agriculture for the past 50 years, in order that by a knowledge of what has been done they might not be discouraged in endeavouring to accomplish what yet remains to be done. Along with the exertions which were being made in agriculture following the proclamation of peace, very great attention began to be turned towards the mechanical arts, and which were first applied to manufactures, because they paid the best, and ensured the quickest return. Those mechanical arts, however, soon became directed towards agricultural matters, and it was not long before the flail gave way to the threshing machine, and many other excellent implements and appliances were introduced, to the great advantage of those who used them. Mr. Charnock then referred to Sir Humphrey Davy, a man to whom, perhaps, the cultivators of the soil owe more than has ever yet been accorded to him. Since 1840 practical science has done wonders for agricultural advancement, in pointing out not only what was required, but in practically showing its application. During the last nine or ten years there has been an immense amount of mechanical appliances brought to bear on the cultivation of the soil, and if any of those present had been at the meeting at Leeds, they would agree with him that there was on the show-ground one of the most beautiful engines that was ever exhibited, capable, as he believed, of being brought practically to bear on the cultivation of the land before many years are over. He alluded to the engine exhibited by Messrs. Wilson, at Leeds. The same engine was exhibited at Norwich; and, in order to show its capabilities, Mr. Wilson ran it round the show-yard there, and he assured him (Mr Charnock) that it would work by its own means on any land over which horses could travel with it. He (Mr. C.) had a new drain cutter there, and he wished to attach this implement to the engine and see what could be done, but on examining the subsoil it was found to be of so loose and crumbling a character, that it was quite useless to make the attempt; otherwise he had not the least doubt that this engine, with a suitable implement, and upon ordinary land, would cut drains without any difficulty, and particularly on land in Grass. He was only giving this as an instance of what might be done, and what is likely to be done, when really mechanical men turn their attention to the subject. This brought his remarks up to the present time; and there was no doubt that notwithstanding a vast proportion of both the old and newly enclosed lands of the kingdom are at present in a miserable state of cultivation—many certainly not capable of paying any rent, or in times like the present, of realising any profit to the occupier—there is a very large extent in perhaps almost the highest stage of cultivation. Within the last fortnight he had been inspecting and valuing an estate, in which he made a difference in rental value of from 15s. per acre to 60s. in arable land, and that at 60s. was the cheaper of the two. The profits of cultivation did not depend so much on the rent as on the economy and amount of production. He now came to the consideration of what can be done for the future. He thought it was decidedly their safest course to look danger in the face and avail themselves of existing knowledge to attain a further advance, and if agricultural improvements should proceed (as who could doubt) in the same ratio during the coming as they have done during the last half century, they would have attained a point of which but a limited idea at present exists in the minds of many. The average yield of Wheat at present was about 25 bushels per acre, and if, instead of such a comparatively insignificant yield, they could grow 35 bushels per acre they would accomplish great things. Without making any political allusion, which should be scrupulously excluded from these meetings, he might venture to offer this remark; that inasmuch as the Yorkshire coal proprietors, with all the facilities at present existing for the transit of such an article, do not send Yorkshire coal down to Newcastle simply because they possess an abundant field of their own fully as cheap, so if it were as well known throughout the continent and America that England possessed a sufficient quantity of home-grown corn at a moderate price, they might take his word for it they would have very little foreign corn to compete with. On the subject of drainage, 10 years ago if a man set to work thoroughly to drain a strong clay field, it usually cost from 8l. to 10l per acre; it could now be more perfectly and permanently done at from 4l. to 5l. per acre—just one-half. And he would undertake, within a few months from this time, to cut drains on a far more economical principle than had hitherto been adopted; for whereas that operation, 3 feet deep, at present costs in an ordinary subsoil, and under favourable and economical circumstances, from 3d. to 1d per yard, means would be adopted for cutting these drains in a better form at from a farthing to one-eighth of a penny per yard. *In fact he would undertake to cut drains at a farthing per yard 3 feet deep in subsoils not subject to great impediments.* He then referred to Mr. Thompson's speech at Leeds, on the subject of making fold-yard manure; and also to the New Drainage Act alluded to by the Earl of Carlisle at the same meeting for promoting the improvement of land, which, he considered, would lead to an immense amount of work being undertaken by the agricultural community.

Calendar of Operations.

AUGUST.

Your Calendar of Operations seems to me to be more a sort of journal of anything occurring in the ever-varying phenomena of the farm, likely to excite any general interest, than a manual of instruction, although the faithful detail of operations cannot fail to have a good effect, when even ordinary information is only intended to be conveyed. I have no pretensions to dictate to the regularly bred husbandman a cut and dried system of farming, being but a young hand at the art; but there are so many modes of doing the same thing in different localities, that inasmuch as hints derived from your journal have been frequently found serviceable in the economical management of my business, I feel anxious to contribute my share to the common stock of details respecting either success or failure, believing that with a moderate use of editorial excision the facts revealed by numerous correspondents in the Calendar would be far from the least interesting or valuable part of your paper, however homely in their character, if they were but original and accurate statements. I would rather plead for a little indulgence for fresh contributors, than banish them by hypercriticism; accounts of wages, times of working, effect of certain regulations on workmen, sex, and age employed, any one might furnish, and lead to a better mode of treating and more uniform way of remunerating the labourers; so with every department belonging to the farm. *J. W.*

Cumberland Mountain District.—Since the beginning of August there has been much rain among the Cumberland hills; scarcely a day passed without heavy showers, so that the parched-up hill pastures are once more green and beautiful. The field Potatoes hold out bravely, scarcely a leaf touched; but here and there in the gardens they have gone down. A week or 10 days ago we cut a little Barley on a warm hill side. The crops still look well, though here and there laid, Oats especially. The green crops "behind time" a week ago are making fast up.

Fen Farm, *Aug.* 11.—This week Oats were cut and stacked; they are the earliest white corn this year, and generally good, both in quantity and quality. A friend intends mowing to the standing corn, and tie at the time. Ours, being not thoroughly ripe and very large, were mown in the common way, and allowed to lie a day before tying; if dry, the sooner they are in sheaf the better. The late rains have made the Turnips grow so fast that we could hardly hoe them a second time before the leaves became too large. We manured the Turnip land with 15 Scotch cart-loads of good manure, well moistened with urine from a tank near the cow-shed, and the seed, 2½ lbs., was drilled with 4 bushels of half-inch bones per acre, softened with 50 lbs. sulphuric acid. This proportion starts the seed well, and we expect the bones will not be exhausted until the root is fully matured. When a good plant, a man and boy hoed between the rows an acre a day. Men, at 3*s.* 6*d.* a day each, followed to set the Turnips out, having a girl each "to single" the plants, they would earn at this rate not more than 11*s.* per week, but there have been so many labourers unemployed that men might be had at less wages. Mowers are engaged to begin Barley next week, at 6*s.* per acre, tying and dragging included. We shall give 8*s.* per acre for reaping Wheat on Monday. Fen Wheat will be a week later, and will cost perhaps 2*s.* more per acre. Mowing part of a second crop of Clover last week, the remainder kept to be given green to horses and cows, which still prefer Tares, either for the corn they contain, as the Tares are getting ripe; or because the Clover-straw is getting tough and bitter, it being in full "bottle." A friend has already cleared a large ground of winter Oats, skimmed and scuffled it, and sown a quarter of a peck of Cole seed and a quarter of a peck of Mustard-seed per acre, to be fed off early with sheep. He will serve his Wheat land the same and so shall I, using Cole-seed of this year's growth, at 11*s* per bushel. I might mention that Turnips, being drilled 20 inches apart, are frequently horse-hoed; but if not in ridges, the Turnip plant is apt to be buried or bruised. Perhaps some of your friends will smile at that excellent implement being shelved, by the awkwardness or inexperience of those who use it. *J. W.*

Galloway Farm, *Aug.* 13.—The operations of late have been of a routine character, and scarcely worthy of record. The hoeing of green crops was finished a fortnight ago, and the Turnips are now all out in the drills. Nothing more plainly shows the advantage of early sowing and abundant manure to the Turnip crop than the difference of growth, during the late cold moist weather, between those which were well grown and those which were only newly thinned. For about a week the young Turnip made scarcely any progress, while during the same time the more advanced crop was growing rapidly, the larger development of leaves and roots being of course better fitted to afford rapid nourishment to the plant. We have a striking instance this season of the unsuitableness of very rough dung for the Turnip plant. About an acre of the corner of a field was dunged with ill-prepared dung, receiving also 4 cwt. of guano and 10 bushels of bones. The ground next it got no dung, but the same quantities of guano and bones. The Turnips on the latter are infinitely the best. The rough dung has been positively injurious to the plant in its earlier stage. Potatoes are a good crop, but the disease is beginning to make its appearance, and it should not be forgotten that it it appeared earlier last year, the crop itself was earlier by 10 days or a fortnight. We began Wheat harvest on this day last year. We shall have none ready this year for 10 days yet. The men have been busily engaged in preparing thatch and ropes for harvest, and the horses are getting a few week's holiday at the pastures. Indeed, I may mention that the men have been also getting a day's holiday, and a beautiful day it fortunately was, as by the kind arrangements of our steam shipping company all the ploughmen and tradesmen of the country, with their wives and sweethearts, have an opportunity afforded them for a shilling each of taking a pleasure sail to the Isle of Man and back again, of which it is to be hoped very many will avail themselves. All the farmers who can look beyond their noses have given their men a day's leave of absence, convinced that they will be well repaid by the stock of good nature which the men will lay in during the pleasure trip. The grain crops now show the advantage of an application of guano wherever it has been given. No investment of money in farming we think is so certain of a profitable return as that which is laid out in the purchase of 2 cwt. of guano per acre harrowed in with the grain crops. As rent and all expenses must be paid at any rate, whatever increase arises beyond the first cost of the guano is nearly all profit. *J. C.*

South Hampshire Farm, *Aug.* 17.—The weather during the past fortnight has been favourable for harvest operations in general, for although we have had rather showery weather during the past week yet no damage has been done to the corn, except in cases where it has been carried in a hasty and inconsiderate manner. We find in cutting our Wheat there is every chance of a good yield, something over an average crop, although in some instances injury has been done by blight. Barley is likewise a promising crop both as regards quantity and quality, and we think likely to prove a full average produce. Oats, Beans, and Peas are all likely to give an average yield. The horse labour upon the farm since we completed Turnip sowing upon the fallow land, has been chiefly preparing the fallows for Wheat, &c., carting and stacking second cut of Clover-hay, carting Peas, and also Wheat, the harvesting of which we completed this day; we have also got up a portion of the Barley crop, and have been employed these days ploughing Wheat stubbles and drilling in Turnips: we use as manure the same application as for the early Turnips, viz., superphosphate of lime 4 bushels, and 40 bushels of mixed night-soil and ashes, but we drill much closer than for early Turnips, namely, 14 inches between the rows. Our labourers have been engaged chiefly in harvest work, they have been fagging Wheat, reaping is going out of fashion, mowing Barley, Oats, and Clover, stacking Wheat, Barley, and hay; second, hoeing Swede Turnips, hoeing white Turnips, thatching corn-ricks, &c. They will probably be employed during the next fortnight in completing the Lent grain harvest, having Barley, Oats, and Beans yet to be cut and housed; we shall also sow more stubble Turnips at intervals during the month. Trifolium incarnatum must also be sown, the sooner the better. We set much value on this crop; indeed, since its cultivation has been better understood and rendered more certain, it has risen in general estimation as a green crop for early feeding, &c. Swede Turnips are now growing amazingly, although there is a great deficiency in plant when sown after the middle of June; young common Turnips are a promising crop; Potatoes of the early kinds are this year free from disease, and are an average crop; but the later varieties have been injured by the dry weather, and will, we fear, prove a small produce; added to which, the disease has attacked them during the past week, and seems likely to prevent any improvement in the crop. The sheep stock have done well this summer, although food is short; for the fatting sheep we continue to use a little oilcake. Our Southdown ewes for stock have been with the rams during the past month. Our horn ewes are now forward in lamb, and will begin lambing the first week in October. *J. B.*

Sussex Farm, *Aug.* 20.—Harvest in this quarter has now become general, and the most part of the Peas are carried in good order. There is a good breadth of Wheat, Oats, and Barley cut, but very little carried as yet; Beans are partly cut, but some fields are still green; all sorts of corn have the appearance of yielding well. Our teams are now engaged carrying faggots to burn lime, and carrying the lime to the land intended for Wheat; scarifying and harrowing for Wheat and horse-hoeing Turnips. Our labourers are mostly engaged reaping Wheat and Beans, and mowing Oats and Barley. Should the weather continue fine this week, we shall carry a considerable breadth of corn. We have now cut part of our Clover for the second time; the crop is short. The Flax is pulled, and the seed we shall ripple off in a few days. I am sorry to add the Potato blight has now made its appearance again in this quarter; the root is not much affected as yet, but in some fields the haulm has now become quite black. *J. B.*

Notices to Correspondents.

Barley: *J P L.* The specimen is a dark coloured Barley, and will no doubt malt well; that depending merely on the seeds being alive and containing plenty of farina.

Benty Grass: *Inquirer.* We should suppose there to be the same sort of benefit in mowing the tufts of benty Grass in pasture, even after they have seeded, as there is in mowing a stiff coarse stubble which would otherwise last through the winter and spoil the spring cut of Clover.

Burning Clods: *Inquirer.* We are not acquainted with the practice of charring clods with lime, and doubt the feasibility of the suggestion.

Curing Hams and Bacon: *F W F.* You will find this subject most fully discussed in past numbers: much more fully indeed than we liked at the time, and we have no desire to re-open the matter.

Grass: *C.* It is Cynosurus elegans.

Drains: *M N.* The length from one corner to the other, the highest to the lowest, must be so considerable, 300 yards, that a fall of 12 feet is not remarkably great, and we should therefore prefer the drains placed directly down the descent, as in your No. 1, without branches.

Economy of Manure: *Inquirer.* It is beneficial to collect the droppings of cattle and horses in the fields; all their nitrogenous ingredients will otherwise be wasted.

Eyes of Lambs: *W B H.* The lambs should be bled from the veins immediately below the eyes, which should be fomented with warm water, and a little camphorated oil afterwards applied. *W. C. S.*

Farm Accounts: *Agricola.* The dairy must have a column and an account opened for itself—but in the simple form given on the 18th, it would be entered under green crops as merely one of the ways in which those were turned into money, and its special ability in this way would not appear.

Farm of 50 Acres of Arable Land: *T T.* Two horses and two men, besides occasional labourers. Your labour bill may amount to 130*l.* or more per annum, independently of horses.

Farming in Ireland *J R.* We have no connection with the writers. Your letter has been forwarded to Mr. Davis. We have not seen any low rented land in Ireland.

Hydrophobia: *P A C.* About three months is the usual period; but the writer has known rabies to occur from five to six months after the dog had been bitten by a rabid animal. *W. C. S.*

Italian Rye-grass: *P A N.* Sow 2 bushels per acre of it on a clean Wheat stubble, first pared and harrowed; you will have several cuttings next year, and may then plough it up for Oats or Wheat. It may be grazed, but it is better suited for mowing.

Lucerne: *J C.* You may give it to your cows most beneficially. It very young and juicy, let it be cut the day previous.

Mangold Wurzel: *A Sub* will find that the removal of green leaves will injure the plant.

Pump: *Sussex.* You had better apply to Mr. Read, of Regent Circus, Piccadilly.

Removal of Mud: *H H.* We cannot say. The best way is to let the water out, and the stream running through the bed of the lake may, by a little management, be made to carry the mud with it.

White Mustard: *Anon.* Sow one peck per acre. It will cost probably 4*d.* per lb., it will not stand the frost, it may be sown in April and eaten off in June, in time for common Turnips. The present is too late for Rape, but we should prefer it nevertheless to white Mustard

Winter Barley: *Pecuniosus.* It appears to be Hordeum hexastichon, six-rowed Barley, and would afford a fair sample of good-coloured but not very plump grain.

Markets.

SMITHFIELD, Monday, Aug. 20.

We have a large increase in the supply of Beasts; the demand is, however, considerable, and a fair clearance is effected at a small reduction. The number of Sheep and Lambs is about the same as last week; trade is heavy, but prices remain about the same. Calves are not so plentiful, and good ones pretty readily realise 4*s.* From Holland and Germany there are 603 Beasts, 3660 Sheep, and 73 Calves; from France, 70 Beasts; and from Scotland, 40.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	10 to 4	0	
Best Short-horns	3	6 — 3	8	
2d quality Beasts	2	10 — 3	4	
Best Downs and Half-breds	3	10 — 4	0	
Ditto Shorn				

Per st. of 8 lbs.	s	d	s	d
Best Long-wools	3	6 to 3	8	
Ditto Shorn				
Ewes & 2d quality	2	8 — 3	0	
Ditto Shorn				
Lambs	4	4 — 5	0	
Calves	3	0 — 4	0	
Pigs	3	8 — 4	8	

Beasts, 4257; Sheep and Lambs, 30,490; Calves, 212; Pigs, 225.

Friday, Aug. 24.

We have an average number of Beasts, but the quality of the supply is very indifferent, consequently a few choicest Scots have made 4*s.*, but this is too much to quote as a fair average for best kinds. Trade is exceedingly dull, and many second-rate remain unsold. Sheep and Lambs are plentiful, the demand is very small, and prices are lower for all kinds, nor can they be sold at the reduction. Calves met with a very slow sale, at a reduction of fully 4d. per 8 lbs. From Holland and Germany we have 209 Beasts, 1020 Sheep, and 129 Calves; from Ireland, 9 Calves; from Spain, 24 Beasts; from Scotland, 100; and 145 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	8 to 3	10	
Best Short-horns	3	6 — 3	8	
2d quality Beasts	2	8 — 3	4	
Best Downs and Half-breds	3	8 — 3	10	
Ditto Shorn				

Best Long-wools	3	4 to 3	6	
Ditto Shorn				
Ewes & 2d quality	2	6 — 3	2	
Ditto Shorn				
Lambs	4	0 — 5	0	
Calves	2	8 — 3	8	
Pigs	3	8 — 4	6	

Beasts, 1008; Sheep and Lambs, 12,650; Calves, 446; Pigs, 230.

COVENT GARDEN, Aug. 25.

Hothouse Grapes, Peaches, and Nectarines are plentiful. Pine-apples have not altered since our last account. Cherries, except Morellos, are over. Ripe Gooseberries and Currants are scarce. Apricots are pretty well supplied. Nuts in general are abundant. A few Filberts have made their appearance, but being unripe they realise a dull sale, at from 35s. to 45s. per 100 lbs. Oranges and Lemons are plentiful, and the market continues to be overstocked with Melons and foreign Plums. Amongst Vegetables, Turnips may be obtained at from 3d. to 6d. a bunch. Carrots the same. Cauliflowers are plentiful. Green Peas fetch from 1s. 6d. to 4s. per bushel. Potatoes are cheaper. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1s. to 1s. 6d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropæolums, Carnations, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 3s to 5s	Apples, kitchen, p. bsh., 2s to 4s
Grapes, hothouse, p.lb., 1s6d to 4s	Oranges, per doz., 1s to 2s
Apricots, per doz., 1s 6d to 3s	— per 100, 6s to 16s
Peaches, per doz., 6s to 12s	Lemons, per doz., 1s to 2s
Nectarines, per doz., 4s to 10s	— per 100, 7s to 14s
Plums, per hf. sieve, 3s to 4s 6d	Almonds, per peck, 6s
Gooseberries, per half sieve, 3s 6d to 4s 6d	— sweet, per lb., 2s to 3s
Currants, do., 3s to 4s	Walnuts, p. 100, 1s 6d to 2s
Pears, per doz., 2s to 4s	— p. bush., 16s to 24s
— per half sieve, 4s to 6s	Nuts, Bar., p. bush., 20s to 22s
	— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 6d to 1s	Spinach p. sieve, 1s to 1s 6d
Cauliflowers, p. doz., 6d to 3s	Onions, p. bunch, 2d to 6d
Peas, per bush., 1s 6d to 4s	— Spanish, p. doz., 1s 6d to 4s
Beans, p. bush., 1s 6d to 2s 6d	Shallots, per lb, 3d to 6d
Sorrel, p. hf. sieve, 6d to 9d	Garlic, per lb., 3d to 6d
Potatoes, per ton, 50s to 100s	Artichokes, p. doz., 1s 6d to 3s
— per cwt., 3s to 6s	Vegetable Marrows, doz., 6d to 1s
— per bush., 2s to 4s	Lettuce, Cab., p. sc., 4d to 9d
Turnips, p. doz. bun., 1s to 2s	— Cos, do., 6d to 1s
Red Beet, per doz., 2s to 4s	Mushrooms, p. pot., 1s to 1s 6d
Horse Radish, p. bdl., 2s to 3s	Small Salads, p. pun., 2d to 3d
French Beans, p.hf. sieve, 1s 6d to 2s	Fennel, per bunch, 2d to 3d
Cucumbers, each, 2d to 6d	Savory, per bunch, 2d to 3d
Leeks, per bunch, 4d to 6d	Thyme, per bunch, 2d to 3d
Celery, p. bundle, 1s to 2s	Parsley, p. doz bun., 3s to 4s
Radishes, per 12 bunds, 9d	— Roots, p. bdle., 1s to 1s
Watercress, per doz. bunches, 4d to 6d	Marjoram, green, p.bun., 4d to 6d
Carrots, per bun., 4d to 6d	Mint, green, per bunch, 3d to
	Basil, green, p. bunch, 4d to 6d

HAY.—Per Load of 36 Trusses.

Smithfield, Aug. 23.					
Prime Meadow Hay	70s	to 75s	Clover	60s	to 95s
Inferior ditto... ...	50	65	New Clover	50	84
Rowen	—	—	Straw	28	35
New Hay	50	68		J. Cooper.	
Trade brisk.					
Cumberland Market, Aug. 23.					
Prime Meadow Hay	70s	to 75s	Inferior	70s	to 90s
Inferior ditto.	50	65	New Clover	70	90
New Hay	50	65	Straw	30	34
Old Clover	90	95		Joshua Baker.	
Whitechapel, Aug. 23.					
Fine Old Hay ...	65s	to 70s	New Clover	70s	to 80s
Inferior ditto ..	45	50	Inferior ditto. . ..	50	55
New Hay	55	63	Straw	26	32

HOPS.—Friday, Aug. 24.

Messrs. Pattenden and Smith report that the accounts from the plantations speak of the Hops having made a little progress this week, and the duty has advanced to 75,000*l*. At the same time the mould is said to be on the increase in Mid Kent. The market is firm, at full prices for all fine Hops.

MARK LANE.

Monday, Aug. 20.—The supply of English Wheat this morning by land carriage samples consisted almost entirely of new, amounting to about 1000 qrs.; the quality and condition was generally good, some fine, and consequently realised 1s. to 2s. per qr. above the prices obtained last week. The sale of foreign was quite in retail, but our quotations were maintained. —Barley, Beans, and Peas are unaltered in value.—The Oat trade is firm, and fine qualities command an improvement of 6d. per qr.—There were several samples of new white and brown Mustard on sale this morning; the former was disposed of at 10s. to 12s. per bushel, and the latter hung on hand at similar rates.

Friday, Aug. 24.—With the exception of foreign Oats, the supply of which amounts to 19,350 qrs., the arrivals of all grain since Monday have been small. This morning's market was very badly attended, and business in all articles exceedingly limited, prices may be considered nominally for each, excepting Oats, which are 6d. per qr. cheaper.—Since the 17th instant the weather has been close and dry, with a thick cloudy atmosphere; great progress has been made with harvesting, and a large proportion of the Wheat crop in the southern portion of the kingdom will be secured this week. Markets throughout the country have been generally lifeless, and foreign Wheat the turn lower. Spring corn has not undergone any material alteration in value. In the French markets prices continue too high for exportation to this country. The Belgian and Dutch markets are heavy, and evince a downward tendency. In Rotterdam prices have given way 2s. per qr. In the Baltic business has been extremely languid.

Liverpool, Friday, Aug 24.—There was a poor attendance of dealers at this day's market, and the business was extremely limited. Wheat was bought 1d. to 2d. per bushel cheaper, and low qualities were neglected. Oats and Oatmeal were very dull. Beans were in limited request. Barley and Peas quiet. Indian Corn was held with much firmness, but the demand being very moderate, it was difficult to make any advance. Good Flour was steady.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
July 14	48s 2d	25s 8d	19s 4d	26s 11d	32s 1d	30s 9d
— 21	48 10	26 7	19 6	28 6	32 2	32 4
— 28	49 1	26 1	19 4	26 1	32 5	32 0
Aug. 4.....	48 0	26 3	18 9	25 6	31 10	32 1
— 11.....	47 4	25 8	19 2	26 7	32 0	31 1
— 18.....	46 3	26 1	19 0	27 5	31 9	29 2
Aggreg. Aver.	46 11	26 0	19 2	26 10	32 0	31 3
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	July 14.	July 21.	July 28	Aug. 4.	Aug. 11.	Aug. 18
49s 1d	.	...	.	...	..	.
48 10	.	.	..	...	...	...
48 2	—	...	...	...	...	...
48 0	...	...	...	..	.	...
47 4	...	..	...	.	..	...
46 3	...	...	...	...	..	.

Prices Current.	London.		Liverpool.		Wakefield.		Boston.		Birmingham.	
	Aug. 13 qr.	Aug. 20 qr.	Aug. 14. 70 lbs.	Aug. 21. 70 lbs.	Aug. 10 qr.	Aug. 17 qr.	Aug. 15 qr.	Aug. 22 qr.	Aug. 16. 62 lbs.	Aug. 23. 62 lbs.
	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
Wheat—										
New, red ...	to	42—44	6 8 7 0	6 8 7 0	42 to 50	40 to 48	42 to 46	42 to 46	5 9 6 0	5 9 6 0
„ white ...	—	46—52	7 0 7 4	7 0 7 4	44 52	42 -50	44—48	44 —48	5 9 6 1	5 9 6 1
Old, red ...	40—42	40 to 42	6 8 7 2	6 8 7 2	43—45	41—43	—	—	5 4 5 10	5 4 5 10
„ white ...	46—48	46—48	7 3 7 4	7 3 7 4	—52	— 50	—	—	5 8 6 2	5 8 6 2
Foreign... ...	36—56	36—56	4 9 7 9	4 6 7 9	40—53	38—51	—	—	5 0 6 4	5 0 5 6
			480 lbs.	480 lbs.						
Rye—Old ...	22—24	22—24	—	—	—	—	—	—	—	—
Foreign...	22—23	20—22	—	—	—	—	—	—	—	—
Foreign meal	5*l*.—6*l*	5*l*.—6*l*	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	20—24	20—24	—	—	22—23	22—23	24—26	24—26	23—25	23—25
Malting... ...	24—26	24—26	30s—32s	30s—32s	—	—	—	—	29—32	29—32
Foreign... ...	18—26	18—26	—	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	18—25	18—25	2s 10d 3s 2d	2s 10d 3s 2d	—	—	18—22	18—22	20—28	20—28
Black...	14—23	14—23	2 5 2 8	2 5 2 8	—	—	—	—	19—20	19—20
Foreign ...	13—20	13—20	2 4 2 6	2 4 2 6	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers ...	25—30	25—30	34s—	34s—	28—32	28—32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—25	23—25	28 —30s	28 —30s	—	—	—	—	12—13	12—13
Foreign ...	25—32	24—32	32 —34	32 —34	—	—	—	—	—	—
Beans—										
New, small ...	—	—	32 —35	32 —35	32—36	32—35	32—34	32—34	12—14	12—14
Old	23—33	23—33	34 —36	34 —36	—	—	—	—	15—16	15—16
Foreign ...	21—36	21—36	24 —36	24 —35	30—31	30—31	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	36—40	36—41	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	7*l*. 7s	7*l*. 7s	7*l*. 12s	7*l*. 12s	—	—	—	—	—	—
Foreign ...	6*l*.	6*l*.	—	—	—	—	—	—	—	—
Indian Corn—	24—28	22—26	24s—28s	26s—29s	—	—	—	—	12—13	12—13
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	36—44	36—44	34—35	34—35	—	—	36—40	36—40	34—36	34—36

Weekly Averages and Imports.	London.		Liverpool.		Wakefield.		Boston.		Gloucester.	
	Aver. Aug. 21	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Averages.	Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	46 2	6460	47 4	6205	49 8	12133	43 10	874	42 2½	2312
BARLEY ...	32 0	4130	25 8	2286	—	1243	—	—	—	1060
OATS... ...	19 9	19350	19 2	1831	20 9	644	16 10	497	19 8½	1710
RYE	26 0	—	26 7	1152	—	—	—	—	—	—
BEANS ...	30 7	—	32 0	625	32 0	342	32 2	605	32 5½	—
PEAS... ...	29 5	—	31 1	763	—	413	—	—	—	—
Signed	Kingsford and Lay.		Segar and Tunnicliffe.		Sandars and Dunns.		Thomas Wright.		J. and C. Sturge.	

CAMELLIAS.

MR. J. C. STEVENS is favoured with instructions from a most respectable Nurseryman in Belgium to submit to Auction, at his Great Room, 38, King-street, Covent-garden, on FRIDAY, August 31st, at 12 for 1 o'clock, about 500 CAMELLIAS, from 1 to 4 feet, comprising most of the old favourite varieties, with some of the best novelties; the Plants are well grown and furnished with flower-buds, and are all correctly labelled with their names.—May be viewed the day prior and morning of Sale, and Catalogues had.

IMPORTANT SALE OF CAMELLIAS AND GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by Mr. J. Smith to offer to public competition by Auction, on the premises, Ralston, about the third week in September, in consequence of the premises being required by the London and Birmingham West India Dock Junction Railway Company, the valuable stock of CAMELLIAS, ranging from 18 inches to 10 feet, beautifully set with bloom buds, amongst which are finely grown specimens of all the approved kinds; also the choice Greenhouse Plants.

The Camellias and Greenhouse Plants are in the finest order, and are particularly worthy the attention of Noblemen, Gentlemen, and the Trade.—May be viewed a week prior to the sale, when Catalogues may be had of the principal Seedsmen in London, on the premises, Covent-garden, and of the Auctioneers, American Nursery, Leytonstone, Essex.

N.B. The valuable Nursery Stock will be submitted to public competition early in October.

TO NOBLEMEN, GENTLEMEN, AND OTHERS.

NOTICE OF SALE.—MAIDENHEAD.

CHOICE AND VALUABLE STOCK OF CONSERVATORY AND GREENHOUSE PLANTS.

MR. PREECE begs to notify that he has received instructions from the Proprietor, Mr. F. Hoare, Florist, (who is relinquishing his business), to Sell by Auction, on the premises, Felix Cottage, Ray Mills, Maidenhead, on TUESDAY, September 4, at 1 o'clock, all his Valuable Stock of excellent CONSERVATORY AND GREENHOUSE PLANTS, comprising about 170 Camellias, 50 Azaleas, 8 Acacias armata, 1 Jasminum azoricum, 12 Abutilons striatum, 10 Ferns (Adiantum cuneatum), 6 Daphnes indica, 30 Cyclamens persicum, 24 do. Corum, 18 Alpine Auriculas, about 90 pots Lilies of the Valley, and various other plants, which will be particularised in Catalogues, together with several lots, consisting of Plates and Rafters for Pits, Stages for Greenhouses, Hot-water Apparatus, Flower-pots, Hand Truck, 24 new deal lights (not glazed), quantity of Patent Glass in squares, Gothic Door and Frame, Gothic Windows, &c.

N.B.—The whole of the Plants are in first-rate condition. The Camellias are well set with flower-buds, consisting of good sorts, from 2 to 9 feet high, and some are large plants of the double white, and others in tubs. The Acacia armata, averaging from 9 to 10 feet high, some are in tubs, and well set with bloom. The Jasminum azoricum is a fine handsome plant, on trellis, 9 feet high, coming into bloom.

This Sale is well worthy the attention of the Nobility and Gentry. The Plants will be lotted suitable for private buyers. —May be viewed the day previous and morning of sale; Catalogues may be had on the premises, of Mr. S. M. Preece, High-street, Maidenhead, of Mr. Preece, Bridge-street, and post free on application.

MALMESBURY, WILTS.—IMPORTANT FREEHOLD ESTATE.—A rare opportunity for Investment.

MR. W. H. JEFFRIES will Sell by Auction, at the White Lion Hotel, in Malmesbury, on SATURDAY, September 8, 1849, at Two o'clock in the afternoon, subject to such Conditions of Sale as shall be then produced, unless an eligible offer be previously made by Private Contract, of which due notice will be given, that very superior ESTATE called "WILLCHURCH," eligibly and pleasantly situate within a short distance of the Borough Town of Malmesbury, comprising an excellent Farm-house, substantial Barn, Stables, stalling sufficient for 50 Beasts, and other suitable outbuildings, in good repair, and about 203 Acres of Luxuriant and Productive Land, in the following Lots:

Numbers on Tithe Map.			A.	R.	P.
	Lot I.				
94	Farm-house, Buildings, Yards, Garden, & Orchard		3	0	29
95	Worthcys	Pasture	47	2	18
665	Whychurch Marsh	„	12	1	31
667	Broad Leaze	„	19	0	28
668	Great Dry Leaze	„	13	0	24
670	Little Dry Leaze	„	11	3	4
671	Little Broad Leaze	„	18	0	8
689	The 12 acres	Arable	13	2	0
690	The 8 acres	„	9	0	8
691	The 16 acres	„	17	2	12
			165	2	2
	Lot II.				
108	Part of Bean Leaze	Pasture	23	0	7
109	Ditto, with Tie-up Stalling for 12 Beasts	„	1	2	20
			24	2	27
	Lot III.				
675	Part of the Marsh	„	1	2	25
	Lot IV.				
76 and 77	Clover Marsh Piece and Withey Bed	„	0	2	0
	Lot V.				
89	South part of Long Marsh	„	2	1	37
	Lot VI.				
89A	North part of Long Marsh	„	1	3	30
	Lot VII.				
162	Allotment in the Common	Arable	0	3	10

* Numbers 76, 77, 89, 89A, 94, 95, 108, 109, and 162 are situate in the parish of St. Paul's, Malmesbury, and subject to a tithe rent charge of 11*l*. 8*s*. 3*d*., and a land tax of 6*l*. 17*s*. 4*d*. The residue of the Estate is in the parish of Westport St. Mary's, Malmesbury, and subject to a tithe rent charge of 10*l*. 16*s*. and to a land-tax of 1*l*. 10*s*. 7*d*.

The ESTATE abounds with young thriving Timber, is surrounded principally by lands of the Earl of Suffolk, and adjoins the Park.

The FARM HOUSE is capacious, and may at a small expense be converted into a comfortable and suitable residence for a respectable family, and particularly for a sporting gentleman, being very conveniently situated for (indeed in about the centre of) the two adjoining Hunts of the Duke of Beaufort and Vale of White Horse, and close to the Braydon country so celebrated for sport. Six miles from the Minety, and 10 from the Chippenham Stations on the Great Western Railway.

To view the Estate apply to Mr. Compton, at the Farm House, and for further particulars; and to treat, to Mr. Maskelyne, Solicitor, Tetbury, Gloucestershire, at whose office a map of the Estate may be seen. A moiety of the purchase-money for Lot 1 may (if required) remain on security thereof.

TO BE LET, A DESIRABLE FARM, Seven miles from London and Four from Greenwich and Deptford, comprising 240 acres, 65 of which are in Grass, having a pleasantly-situated modern Cottage Family Residence, superior Homestead, Two Cottages, and all other necessary accommodation. The whole is in good order. The situation commands ready markets at high prices for green crops and every description of produce, and affords ready access to an unlimited supply of manure.—For particulars and cards to view, apply to Messrs. Davis and Vokes, Land Agents, 3, Frederick's-place, Old Jewry, London.

SUSSEX.

TO BE LET for a term of years, and entered upon at Michaelmas next, the Farm of WOTTON, in the Parish of Folkington, at present in the occupation of Mr. Shoesmith. It consists of about 409 acres of Meadow, Pasture, and Arable land: the Arable land is most productive of Beans and Wheat: most of the Pasture and Meadow land is of the richest fattening quality. There is an excellent Farm-house, with every convenience, and the Farm-buildings are large and commodious, and economically fitted up and arranged for fattening a large number of beasts in feeding-houses, stalls, sheds, and yards. The Farm is about four miles from Hailsham and Eastbourne, 10 miles from Lewes, market town, and one mile from the Polegate station on the Lewes and Hastings Railway. For particulars, apply to Mr. John Morgon, Whitfield, Berkeley, Gloucestershire. A person at Folkington Place will show the Farm.

DR. NEWINGTON'S IMPLEMENTS.—Mr. Bruce Mitchell, having been appointed Superintendent of the different agents for the sale of these Implements, would have much pleasure in giving every information with respect to them. He has, at 62, Charing-cross, an assortment of Dr. N.'s Dibbles, Hand-drill Hoes, &c., together with specimens of crops grown on the system of depositing the seed in even quantities at defined intervals, uniform depths, and cultivating deeply and often between the rows of the plants; the ears and grain are magnificent, the straw perfectly straight and very stout, of a fine bright colour, and decidedly the strongest Mr. M. ever saw.—Apply between the hours of 10 A.M. and 5 P.M. A Prospectus sent on application.

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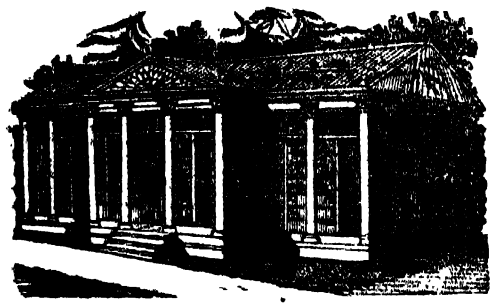

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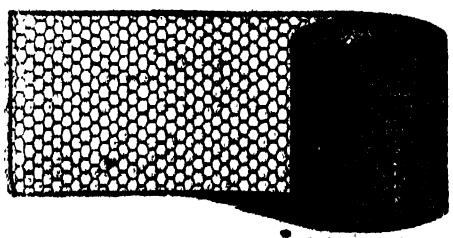

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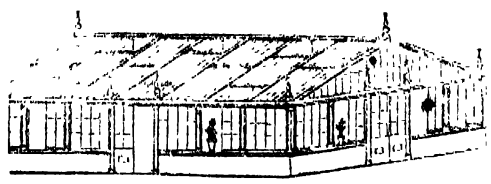

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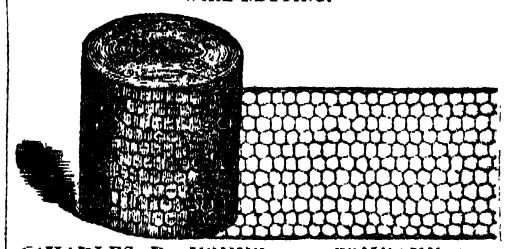

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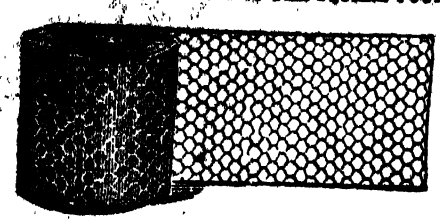

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THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 35—1849.] SATURDAY, SEPTEMBER 1. [Price 6*d*.

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ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.—Under the patronage of Her Most Gracious Majesty the Queen. A Grand DAHLIA, HOLLYHOCK, and MISCELLANEOUS FLOWER SHOW, being the fifth and last this season, will be held at the ROYAL SURREY ZOOLOGICAL GARDENS, on WEDNESDAY, the 12th of September, 1849. Open to all Exhibitors, when Prizes will be awarded for the following collections, viz.:—Miscellaneous and Specimen Plants, Fuchsias, Roses, Dahlias, Hollyhocks, Verbenas, Cut Flowers, Fruit, Grapes, and Honey. In addition to the Prizes offered by the Society, the following Members offer extra Prizes; By John Bushell, Esq., to Amateurs, for the best 3 blooms of Duchess, white Dahlia, three prizes, 6*l*. By Mr. John Keynes, for the best 6 blooms shown from the following nine Dahlias, viz., Keynes' Purple Standard, Lilac Perfection, Miss Chaplin, Sunset, Victoria Regina, Miss Blackmore, Rainbow, Miss Stevens, and Sunbeam; five prizes, 5*l*. 15*s*. By Mr. C. Turner, for the best 6 Dahlias let out by himself at any time, two prizes, 3*l*. By Mr. E. Hunt, for the best 3 blooms of General Cavaignac, fancy Dahlia, 1*l*. By John Edwards, Esq., for the best bloom of Mr. C. Turner's Dahlia, Mr. Seldon, 1*l*. By J. Howard, Esq., for the best 3 blooms of Miss Jane, fancy Dahlia, 1*l*. By John Chapman, Esq., for the best single bloom of J. Bushell's Duchess, 10*s*. By H. Harms, Esq., open to both classes, for the best 2 blooms of any one white Dahlia, 2*l*. By Mr. W. Hamilton, for the best fancy Dahlia, 1*l*. By subscription, to Amateurs, for 12 single blooms of Hollyhocks, four prizes, 4*l*. 5*s*.; to Nurserymen, for 12 spikes ditto, four prizes, 3*l*. 10*s*. By Mr. R. Hook, for the best single truss of any Seedling Verbena not sent out, 10*s*. And by an Amateur, for the best 3 Seedling Petunias not sent out, the Bronze Medal. List of Prizes and Rules for exhibiting may be obtained from John Taylor Neville, Secretary, Ebenezer House, Peckham.

THE GRAND DAHLIA SHOW OF ENGLAND, and HORTICULTURAL FETE, will this year take place at the Town Hall, Birmingham, on the 26th and 27th September next. Sweepstakes as Premier Prize, Sweepstakes of 100 Guineas, and 60 other prizes. Conducted by Mr. Glenny. Schedules of prizes, &c., can be obtained at the *Gardeners' Chronicle* Office; Watson's Hotel, Salisbury-square, Fleet-street; and Messrs. Mayle and Co., 53, New-st., Birmingham.

BIRMINGHAM MUSICAL FESTIVAL.

THE HANDSWORTH AND LOZELLS HORTICULTURAL SOCIETY will hold their Last Exhibition this season, in Soho Park, on Tuesday and Wednesday next, September 4th and 5th. The splendid band of the 5th Dragoon Guards will attend.

Charles James Perry, Hon. Sec., Handsworth, near Birmingham, Sept. 1.

UNIVERSITY COLLEGE, LONDON.—JUNIOR SCHOOL, under the Government of the Council of the College.—Head Master, Thomas Hewitt Key, A.M. The School will open on Tuesday, the 25th of September. The Session is divided into three terms, viz., from the 25th of September to Christmas, from Christmas to Easter, and from Easter to the 4th of August.

The yearly payment for each pupil is 18*l*., of which 6*l*. are paid in advance in each term. The hours of attendance are from a quarter past 9 to three-quarters past 3 o'clock. The afternoons of Wednesday and Saturday are devoted exclusively to Drawing.

The subjects taught are Reading, Writing, the English, Latin, Greek, French, and German Languages, Ancient and English History, Geography, both Physical and Political, Arithmetic and Bookkeeping, the elements of Mathematics and of Natural Philosophy, and Drawing. Any pupil may omit Greek, or Greek and Latin, and devote his whole attention to the other branches of Education.

There is a general Examination of the pupils at the end of the Session, and the Prizes are then given.

The discipline of the School is maintained without corporal punishment. A Monthly Report of the conduct of each pupil is sent to his Parent or Guardian.

Further particulars may be obtained at the office of the College. Charles C. Atkinson, Secretary to the Council.

The College Lectures in the Classes of the Faculty of Medicine commence on the 1st of October; those of the Faculty of Arts on the 16th of October.—August 15th.

MUMMY WHEAT.—A Packet containing 24 seeds of this curious Wheat, the third year from the Mummy, will be sent post free on receipt of 12 postage stamps, addressed to A. B. C., Post-office, Braintree.

NOTICE.

MESSRS. HAY, ANDERSON, and SANGSTER beg to inform their friends and the public that they will remove in September from 3, Surrey-place, to 18, Cumberland-place, Newington Butts, where the business will be carried on as usual in the wholesale and retail departments.

Newington Butts, Sept. 1.

THOM'S SEEDLING STRAWBERRY.

ROBERT THOM, Market Gardener, Cornhill, Aberdeen, is now sending out plants of the above Strawberry, at 1*l*. 1*s*. per 100; 25 sent post free, 7*s*. 6*d*. This Strawberry is allowed by eminent practical judges to be one of the finest under cultivation. It is a most prolific bearer, and the fruit, which ripens in succession to Keens' Seedling, is of a large size and deep scarlet colour. In point of flavour, it is most delicious, and cannot be surpassed. Reference may be made to the following parties, who examined the beds when in fruit.

Mr. T. Milne, Nurseryman, Sunnyside	Mr. Alexander, of Dickson and Sons, Edinburgh
M. T. Darling, Gardener, Woodhill	Mr. Edward Ravenscroft, Highland & Agricultural Society's Museum, Edinburgh
Messrs. Smith and Cardno, Seedsmen, Aberdeen	

Plants may be procured from Messrs. Smith and Cardno, Seedsmen; Messrs. B. Reid and Co., Seedsmen, Aberdeen; Messrs. Dickson and Sons, Edinburgh; Messrs. Peter Lawson and Son, Edinburgh; Messrs. Hurst and M'Mullen, Seedsmen, Leadenhall-street, London; and Mr. George Chivas, Seedsman, Eastgate-street, Chester.

Orders addressed to R. Thom, Cornhill, Aberdeen, will be punctually attended to.—Cornhill Gardens, Aberdeen, Sept. 1.

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NEW AND RARE PLANTS.

MESSRS. VEITCH and SON beg to inform admirers of beautiful plants that the following novelties will be ready for delivery on and after Monday, September 3:

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This beautiful plant was sent us from Moulmein by Mr. Thomas Lobb. It is figured in Curtis's Botanical Magazine for October last, wherein Sir W. Hooker, in describing it, says, "The most lovely of all the Hoyas, deliciously scented, resembling an amethyst set in frosted silver." It was also figured in Paxton's Magazine for December last, and is thus described: "The flowers for delicacy and beauty surpass all the kinds yet known; the petals are of a very pure white, and beautifully frosted; altogether it is a plant of first-rate importance in a collection, as the flowers endure in perfection for a long time, and are delightfully fragrant." It has been exhibited at Chiswick and Regent's-park, at both of which places it received the first prize for new and rare plants. Fine blooming plants 63*s*. each.

MITRARIA COCCINEA.

This very handsome and distinct shrub (probably hardy), was sent to us by Mr. William Lobb, from the Island of Chiloe. It is figured in Paxton's Magazine for August last. It is a dwarf compact evergreen shrub, producing its brilliant scarlet blossoms in great abundance on plants in a small state. The foliage is small and good. It is a plant well adapted for pot culture and exhibition, the peculiar brilliancy of its flowers being in fine contrast to any other plant at present in cultivation. It has frequently been exhibited at Chiswick and Regent's-park, and had first prizes at both places. Strong plants 31*s*. 6*d*. each.

AGALMYLA STAMINEA (Blume).

This beautiful plant is figured in Paxton's Magazine for May, 1848. It was exhibited at the London Horticultural Society's meeting in Regent-street, December 7, 1847, and received the Large Silver Medal; and at the Regent's-park exhibition on the 5th of July, 1848, it also received a Silver Medal. Strong plants, 31*s*. 6*d*. each.

CANTUA PYRIFOLIA (De Candolle).

This rare and fine greenhouse shrub, which was sent us from Peru by Mr. William Lobb, is figured in Curtis's Botanical Magazine for July, 1848, where a full description of it is given. It was exhibited at Regent-street, in April, 1848, and received a Medal. It is a hardy greenhouse plant for easy culture, it blooms freely, and is of a fine foliage and habit. Strong plants 31*s*. 6*d*. each.

GESNERA PICTA (Hooker).

This is a very beautiful plant, the flowers being brilliant orange scarlet, and produced most copiously all through the summer and autumn. The foliage is handsome, the habit compact and dwarf. It is a plant that will certainly give general satisfaction. It requires the temperature of a cool stove or warm greenhouse. It is figured in Curtis's Botanical Magazine for March last. Good flowering plants 21*s*. each.

TROPÆOLUM SMITHIANUM (De Candolle).

This pretty and distinct Nasturtium was sent us from Columbia by Mr. William Lobb. It is figured in Curtis's Botanical Magazine for July, 1848. It is a free grower and abundant bloomer. Well established plants, 10*s*. 6*d*.

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EXTRACTS FROM THE AUTHOR'S PREFACE.

"The Vegetable Kingdom contains, among a large quantity of plants of no known importance to man, various useful species employed in medicine, the arts, or in the many branches of domestic economy. The principal part of those which can be brought by teachers in Europe under the notice of students, or which, from their great importance, deserve to be among the earliest subjects of study, are mentioned in the following pages, where they arranged in the manner proposed in the 'VEGETABLE KINGDOM' of the author, with the sequence of matter departed from in a few instances, when it was believed that the convenience of younger students would be consulted by doing so. The author trusts that this selection will be found to have been made in such a way that all teachers who possess reasonably extensive means of illustrating their lectures, and all Botanic Gardens, may furnish the larger part of the species which are mentioned. A small selection was indispensable; firstly, because a greater work would have been beyond the reach of the majority of purchasers; and secondly, because experience shows us that those who have to study a science of observation, such as Botany, require to concentrate their attention, in the first instance, upon a limited number of objects."

"The plan of the work is similar to that so happily employed by Linnæus in his Materia Medica, a book invaluable in its day, although now forgotten, and better adapted to the objects of medical men than any thing which has since appeared." Each species, placed in its due position in the classification, has its vulgar or officinal name, as well as that which it bears in science, and, in a few words, the country whence it comes, the quality it has been said to possess, and the uses to which it has been found applicable. Very short phrases are also given, for the purpose of showing how the genera or species are to be distinguished from each other.

"The whole plan of the work is, in fact, to point out *distinctions*: and the fewest possible words are employed with this view. In many instances the distinctions may not be absolute, but they are sufficient for ordinary purposes. Those who wish to become better acquainted with Botany will, of course, make the 'VEGETABLE KINGDOM' of the author the subject of ulterior study. For the convenience of those who may desire to do so, references are made to that work throughout all the following pages."

SPECIMEN OF THE ILLUSTRATIONS.

PENICILLIUM. *Link* Microscopic. Cobweb-like or mothery flocculent masses, producing simple globose *spores* disposed in patches about the pencil-shaped ends of septate fertile threads.

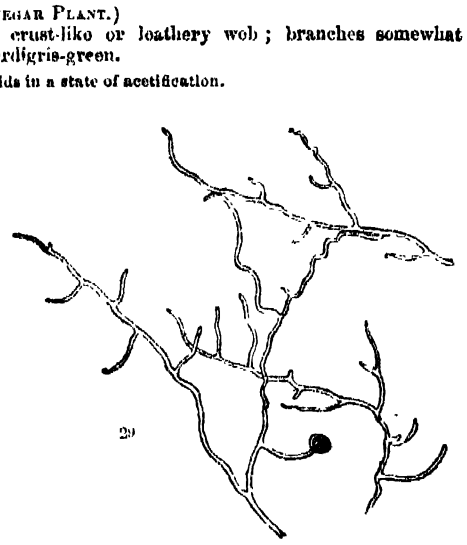
1. P. *glaucum* Greville.—(THE VINEGAR PLANT.)

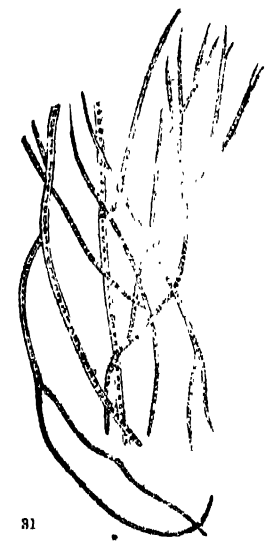
Mycelium forming a close tough crust-like or leathery web; branches somewhat entangled and bifid; spores verdigris-green.

Habitat. On decaying bodies, and in fluids in a state of acetification.

Quality. Assists in the decomposition of decaying matter, and augments rapidly the acetous fermentation of saccharine fluids. A bit placed in sugar and water soon changes it to vinegar.

MYCODERMA. It is probable that the flocculent substance which forms in various infusions when they become "mothery," and which bears this name, is only the mycelium of Mucor, Penicillium, and other Fungals of a similar nature. The accompanying cuts, from a paper of Mr. Berkeley's, illustrate this. Fig. 29 is a view of the mycelium of Mucor subtilissimus as found in water, with one ball of the reproductive bodies formed when the mycelium reached the air. 30 is Penicillium candidum in the same state, the greater part of which had been formed in water; but a couple of branches reaching the air produced the true fructification of this genus of Fungals.





Their identity with some of the Mycoderms, figured by Dr. Pereira in the Pharmaceutical Journal, is sufficiently evident; as will be seen by a cut (fig 31) of the "Vegetation in empyreumatic succinate of ammonia," borrowed from the *Pharm. Journal*, vol. vii. f. 8, p. 311.

NARTHEX. *Falconer*. *Umbels* compound. *Involucres* 0. *Calyx* obsolete. *Fruit* thin, compressed at the back, with a dilated border. *Ridges* 3 only, dorsal. *Vittæ* 1 to each dorsal furrow, and 2 to the laterals. *Albumen* thin, flat.

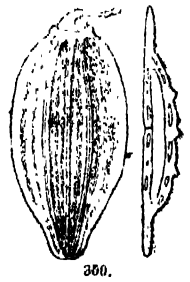
1. N. *Asafœtida* Falconer. *Ferula Asafœtida* Linnæus—(ASAFŒTIDA.) Fig. 350.

Radical leaves 3-parted; segments bipinnatifid, with oblong-lanceolate, obtuse, decurrent lobes.

Habitat. Luristan, Afghanistan, the Punjaub. *Quality.* Gum-resin fetid, stimulating, antispasmodic.

Uses. In spasms and convulsions, chronic catarrh, flatulent colic, uterine obstructions.

N. B. This is the genuine Asafœtida plant, but probably the substance is also yielded by even species of Ferula. It has been conjectured to have produced the Silphium or Laser of the ancients, but on unsatisfactory evidence. See Thapsia, p. 256.



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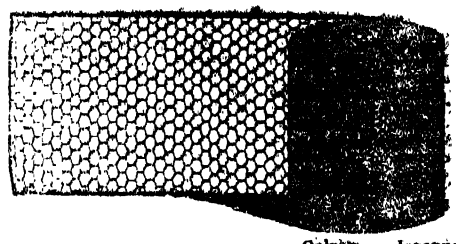

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JOHN CATTELL, SEEDSMAN and NURSERYMAN, begs to inform the public that his stock of bedded plants for COLEWORT PLANTING this season is, as usual, extensive and fine; the well known excellence of his Early Barnes recommends itself to all who have ground to spare, ensuring a supply of Cabbage through the winter, and (not running in the spring) very early Cabbages for cutting may be depended on. Price, per 1000, 4s. 6d., package included; 6d. per 1000 less when no package is required.
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Monthly directions for their culture will be found in the "Florist and Garden Miscellany," published on the 1st of each month, and to be had of all booksellers, under the title of "Beck's Florist." This work contains one coloured plate, one or more woodcuts, 24 pages of original matter, a Lady's Page, and a Calendar of Operations, supplied by eminent cultivators.
"Too much can scarcely be said in favour of the continued excellence of this work."—PROF. LINDLEY, in *this Paper, April*, 1849.

NEW HARDY HYBRID RHODODENDRON.
RHODODENDRON CAMPANULATUM SUPERBUM.
(Figured in Paxton's "Magazine of Botany" for this month.)

THOMAS JACKSON AND SON are now sending out good plants of this handsome Rhododendron, at 21s. each. It was exhibited at the Horticultural Society's Exhibition at Chiswick, on the 5th of May, and awarded their Knightian Medal. The Editor of the *Gardeners' Chronicle*, in his review of that Exhibition, notices it in the following terms: "Of Rhododendrons, the best was a seedling from Messrs. JACKSON, of Kingston. It is a good truss, the flowers individually large, of a pure white, with the exception of the upper petals which are deeply and distinctly spotted with crimson; a beautiful variety." Discount to the Trade.
Nurseries, Kingston, Surrey, Sept. 1.

THE BLACK PRINCE STRAWBERRY.—Fine strong Plants of this useful STRAWBERRY will be ready for delivery on the 3d of September. Price per 100, 15s.; 50, 10s.; 25, 5s. This Strawberry possesses more good points than any other variety in cultivation. It is hardy, very early, prolific, well flavoured, and a first-rate preserver. It stands travelling well, and if the blossoms are picked off it in Spring, an abundant crop may be obtained from it in Autumn. For Dr. Lindley's opinion, see a leading article in the *Gardeners' Chronicle* at page 483, 1849. It is also highly recommended by Mr. Marnock, Mr. Mylt, Messrs. Henderson, Mr. Ingram, of Frogmore, Mr. Malleson, of Claremont, Mr. Beaton, and Mr. Snow, gr. to Earl de Grey. CUTHILL'S "Treatise on the Strawberry, Potato, Cucumber, Melon, and Listianthus," price 1s. Post-office Orders on Camberwell.—JAMES CUTHILL, Camberwell, near London.

CUPRESSUS FUNEBRIS, OR FUNEBRAL CYPRESS.

MESSRS. STANDISH AND NOBLE, NURSERYMEN, Bagshot, have the honour to inform Noblemen, Gentlemen, and the Public, they have been successful in obtaining seeds of the above beautiful weeping Cypress from the north of China, and are now ready to send out fine healthy seedling plants at 21s. each.
This splendid Tree is a great favourite with the Chinese, and in the north of China used by them principally for planting in their burial grounds, where it often attains the height of 60 feet, and forms one of the most beautiful Evergreen weeping trees known to Botanists. It was first discovered by Lord Macartney and Sir Geo. Staunton, in the great Vale of Tombs, in the north of China, and dried specimens were brought home by Sir George Staunton, who, in Lord Macartney's mission or voyage to China, thus describes the Vale of Tombs and the plant:
"The Lake formed a beautiful sheet of water about three or four miles in diameter, and surrounded to the north east and south by an amphitheatre of picturesque mountains; upon the summit were erected pagodas, one of which attracted particular attention. It was situated on a bold peninsula that juts into the lake, and was called the Lui-Soong-in, or Tower of the Thundering Winds. It is said to have been built in the time of the philosopher Confucius, who lived three centuries before the Christian era. In the Vale of Tombs the variety of monuments is almost infinite."
"These monuments of departed greatness are surrounded by trees—such as different species of the Cypress, whose deep and melancholy hue seems to have pointed them everywhere out as well suited for scenes of woe. The churchyard Yew did not, however, grow there, nor was it observed in any part of China; but a species of weeping Thuja, or Lignum vitæ, with long pendulous branches, unknown in Europe, overhung many of the graves."
In the plate of the Vale of Tombs, the weeping tree in the foreground near to the Tower of the Thundering Winds is this plant, and it has since been proved by Botanists to be the weeping Cypress. Messrs. STANDISH and NOBLE obtained, last winter, from the north of China, dried specimens and cones of the above tree, which were forwarded to Dr. LINDLEY and Sir WILLIAM HOOKER, who at once pronounced them to be the famous Funebral Cypress (see leading article in the *Gardeners' Chronicle* of the 21st of April last).—Messrs. S. and N. can also supply 1-year Seedling Cryptomeria japonica at 1s. 6d. per plant, 15s. per dozen, or 5l. per 100; 2-years Seedlings at 3s. 6d. per plant, 36s. per dozen, or 12l. 10s. per 100.

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JAMES WHOMES, Royal Pelargonium Nursery, Windsor, Sept. 1.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 1, 1849.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Sept. 4—Horticultural ..... 3 P.M.
FRIDAY, — 7—Botanical ..... 8 P.M.
COUNTRY SHOWS.—Tuesday and Wednesday, Sept. 4 and 5: Handsworth and Leeds Horticultural.—Wednesday and Thursday, Sept. 5 and 6: Newcastle-on-Tyne Botanical and Horticultural.—Thursday, Sept. 6: Teddington Horticultural, Meath Horticultural, Woolton Horticultural and Floral, Tenbury Wells Horticultural.—Friday, Sept. 7: Newbury Horticultural, Cornwall Horticultural.

WHAT IS "RIPENING THE WOOD?" The question may be better put now than at any other season, for now is the time when ripening must take place, if at all. One would think that the question answered itself; but our correspondence tells us that many persons have no distinct notion of what ripening is, or how it is to be accelerated, or how prevented.

On previous occasions we have pointed out the unexpected fact that many plants cease to be tender, that greenhouse shrubs may be frozen with impunity, and that others will endure our winters with no risk, provided their wood is ripe. We know that the winters of Persia are far more severe than ours, and yet the Vine and Peach sustain no injury in Persia, because in that country the wood is ripe; the same plants are frequently killed in England with half the amount of cold—here the wood is seldom ripe. The most important, then, of all autumnal work is to look to the state of the wood.

The ripening process consists in a gradual and complete removal of superfluous water; and in a perfect conversion of fluid, crude, organisable matter into the more solid substances which represent it during winter. These two processes, although essentially distinct, are nevertheless brought about by the same agents and may be regarded as one. Superfluous water is driven off by heat, light, and currents of air acting upon the surface; sclerogen, starch, gum, resin, and other solid secretions are in like manner formed by the force exerted upon vegetable vitality by heat and light and by the carbonaceous matter derived from the air. If these agents are insufficient the wood remains soft and watery, and the solid secretions are so incompletely elaborated that they possess little of the stability natural to them in a complete condition. Heat and light together, in the presence of air, if possessing the requisite power, solidify all the tissues and all their contents, keeping up the play of chemico-vital action until the process of assimilation and elaboration is terminated.

The effect of this ripening process is by no means limited to giving plants a power of resisting cold; that is but an incident in the operation. The main object is to provide an abundance of food, of the proper kind, for the instantaneous nutrition of the parts which are about to appear in the succeeding spring, and also, in many cases, to the production of the embryo flowers upon which the hopes of the gardener are founded. It is literally true that not a flower will appear upon a Camellia, or an Azalea, or a Pear, or a Peach, or a Strawberry, or any other tree, shrub, or herb, unless there has been such an amount of heat and light, and free exposure to the air, as will have caused nutriment in abundance to be formed, and the young and tender, nay invisible scales, which come together and make the flower, to arrange themselves in the order assigned to them by the CREATOR.

This explains the great advantage of a dry, warm autumn to our Strawberry beds, which then produce an abundant blossom in the following year; while those who coddle and nurse their plants in cool and shady places, where they are always growing, have leaves in plenty, but not a fruit. This explains why Camellias flower so ill in close greenhouses facing the north, or darkened by Vines, where they have neither heat, nor light, nor air enough; and why, under circumstances the reverse of this, a bright sun, its accompanying heat, and the constant currents invariably present in the open air, flower-buds appear in crowds.

In England we have little idea of the extent to which this ripening should go; it is doubtful indeed whether the wood of exotics is ever ripened in England. We are told that in hot latitudes the wood of the Peach and Vine becomes as hard as mahogany, and as brittle, up to the points of the shoots. We know that numerous shrubs, especially of the race called hard-wooded, never become in cultivation what the samples of them brought from their natural abodes have led us to expect. Among New Holland plants this is more especially the case: we see them in our herbaria loaded with blossoms; in our gardens we are satisfied if they bloom at all. It is said that the Grevilleas and Hakeas, and Persoonias are in some instances sheets of white or yellow or red; we are too happy if we see their leaves. In cultivation is to be found a shrub, in little esteem, called *Xylomelum occidentale*; a correspondent, writing from the Vasse River, where it is wild, speaks of it as "a most beautiful tree; the blossoms are pure white, and their drooping soft wreaths, blended with the stern dark green leaves, are indescribably elegant." All that is wanted to ensure the same appearance here is to ripen the wood as it ripens in Western Australia. Perhaps no shrubs in existence are equal in perfect beauty to the *Verticordias* and *Chrysorhœes* of Western Australia; the brilliancy of their flowers when dead and dried is still metallic, and their number is countless among the dark green heathery leaves. We shall never see them thus till their wood is well ripened; perhaps we may never see them in any kind of beauty, for it may happen that art is unable to supply the requisites for perfect maturation. Let us, however, do what we can.

Gardeners may rely upon it that they cannot neglect any means of ripening perfectly every perennial plant which they may cultivate. They may be assured that no amount of ripening which they can possibly secure will be excessive; on the side of excess they cannot err. Let them, then, now that the time has come, put in action every contrivance which their circumstances can furnish. Spare lights over wall trees, hand glasses over ripening herbs, warm dry places for potted plants of all sorts; heat, light, and abundance of air secured by whatever means may be at command. These are what they must rely upon for next year's crop, and without them all the cultivation in the world will be of small avail.

But there is a difficulty in the way. Heat and light are dangerous powers, and will destroy life as well as invigorate it; and there is always a risk, that in pushing the ripening process to its limits by artificial means, plants may perish under the operation. How to guard against this contingency is what no rules can teach. Here the mere art of gardening comes into requisition, and experience alone must be appealed to. No gardener, however, who deserves the name, can have the least doubt as to the way in which the difficulty can be met.

WE are cautioned by an old poet against the danger of falling into the errors of great men, while we are attempting to imitate their virtues. But however deceptive the imperfect examples even of the greatest may be, we incur at least equal danger in following implicitly the best practices, when ignorant of the grounds on which they are performed. A curious circumstance illustrative of this was lately mentioned to us casually as we were travelling by railroad.

A few months since a disease had appeared amongst the winter Beans of a well known agriculturist, and singularly enough it was the very case of which an account was given at the time in this Journal. The disease increased rapidly, destroying ultimately almost every flower, and precluding all hope of a crop. The best course seemed to be to plough it up at once, and to secure a crop of Turnips, which we understand has been done with complete success. Previous to being ploughed up the Beans were rolled. A farmer who had a very high opinion (and with good reason) of his neighbour's judgment observed him rolling his Beans. "My friend," says he, "knows a thing or two; he has some good reason for what he is about, though I cannot conceive what it is; I will do the same." Accordingly he set his men to work, and a fine crop was soon demolished. Though, of course, this caused some amusement to his neighbours, his ready adoption of the practice of his magnus Apollo was by no means singular. Only in his case the consequences were more palpable.

Many an instance akin to this is [illegible] every day both in the garden and the field, and will [illegible] so long as people will neither think nor inquire for themselves. And thus it is that discredit is frequently brought upon really valuable suggestions from their supposed failure, when the failure might be traced to more or less complete ignorance. Another instance occurs to us on the moment. The practice of cutting off the haulm of Asparagus beds, just before the perfect ripening of the berries, had been adopted, with a view to prevent the growth of seedlings from the fallen berries. A neighbour, without inquiring the reason, or thinking what it might be, ordered his gardener the following year to cut off all the stalks, which accordingly was done as soon as the berries were formed; the consequence was that every root sent up a new growth, and the beds of course are weakened for ever. As example is better than precept, these two instances may possibly be of use in the present rage for novelty; a passion too often attended by a dislike of the trouble of thinking.

ON THE ODOURS OF PLANTS AND THE MODE OF OBTAINING THEM.

"By Nature's swift and secret working hand
The garden glows, and fills the liberal air
With lavish odours.
There let me draw
Ethereal soul, there drink reviving gales,
Profusely breathing from the spicy groves
And vales of fragrance." THOMSON.

NUMEROUS as are the gratifications derived from the cultivation of flowers, there are none that yield more pleasure and profit in the end than that of rearing them for the sake of their perfumes. The mode of abstracting these delightful fragrances from the various parts of the plants which yield them, and isolating them so that they may be applied to the various purposes required, is the main branch of the art of perfumery. The origin of this, like many other arts, is lost in the depth of its antiquity; it was certainly known to a moderate extent before the Christian era; it has had its rise no doubt from religious observances. Incense or frankincense, which exudes by incision and dries as a gum from the Arbor thurifera, was formerly burnt in the temples of all religions, to do honour to the divinities that were there adored. Many of the primitive Christians were put to death because they would not offer incense to idols.

In the Romish Church they still retain the use of incense in many of their ceremonies, particularly at solemn funerals, bestowing it on such persons as they would honour, as on prelates, &c., and sometimes on the people. Pliny makes a note of this tree, and certain passages in his works indicate that dried flowers were used in his time by way of perfume, and that they were, as now, mixed with spices, a compound which the modern perfumer calls *pot pourri*, used for scenting apartments, and generally placed in some ornamental vase. It was not uncommon among the Egyptian Ladies to carry about the person a little pouch of odoriferous gums, as is the case to the present day among the Chinese, and also to wear beads made of scented woods. The "Bdellium," mentioned by Moses in Genesis, is a perfuming gum, like, if not identical with, frankincense. Several passages in Exodus prove the use of perfumes at a very early period among the Hebrews; one records that the Lord spoke unto Moses, saying, "Take thou of myrrh, cinnamon, cassia, and oil, and make it into a holy ointment, with which anoint Aaron and his sons, and the altar of the Tabernacle and the vessels belonging thereto;" another passage runs, "Take sweet spices, stacte, onycha, galbanum, and frankincense, and confection them into a holy perfume, after the manner of the apothecary, to be offered up to the Lord." In John xix. 39, 40, it states that the body of Christ was wound in linen, with "spices, myrrh, and aloes." Our oldest records therefore prove that perfumes have been in use from the earliest period; the increasing demand for this article in modern times indicates that our tastes in this respect have kept pace with the age of the world. Flowers yield perfumes in all climates, but those growing in the warmer latitudes are most prolific in their odour, while those from the colder are the sweetest. Hooker, in his Travels in Iceland, speaks of the delightful fragrance of the flowers in the the valley of Skardsheidi; we know that Winter-green, Violets, Primroses are found here, and the wild Thyme in great abundance. Mr. Louis Piesse, in company with Captain Sturt, exploring the wild regions of South Australia, writes, "The rains have clothed the earth with a green as beautiful as a Shropshire meadow in May, and with flowers too as sweet as an English Violet; the pure white Anemone resembles it in scent. The yellow Wattle, when in flower, is splendid, and emits a most fragrant odour."

Though many of the finest perfumes (or oils of the plants) come from the East Indies, Ceylon, Mexico, and Peru, the south of Europe is however the only real garden of utility to the perfumer. Grasse and Nice are the principal seats of this art; from their geographical position, the grower, within comparatively short distances, has at command that change of climate most applicable to bring to perfection the plants required for his profession On the sea-coast his cassia grows without fear of frost, one night of which would destroy all the plants for a season; while, more northerly, his Violets are found sweeter than if grown in the warmer situations where the Orange tree and Mignonette flower to perfection. The odours of plants reside in different parts of them; sometimes in the roots, as in Iris and Vitivert; the stem or wood in Cedar and Sandal; the leaves in Mint, Patchouly, and Thyme; the flowers in Roses and Violets; the seeds in Tonquin Bean (Dipterix odorata) and Caraway (Carum carui); the bark in Cinnamon, &c.

Some plants yield more than one odour, which are quite distinct and characteristic. The Orange tree, for instance, gives three—from the leaves, one called petit grain; from the flowers, neroli; and from the rind of the fruit, orange. On this account, perhaps, this tree is the most valuable of all to the operative perfumer.

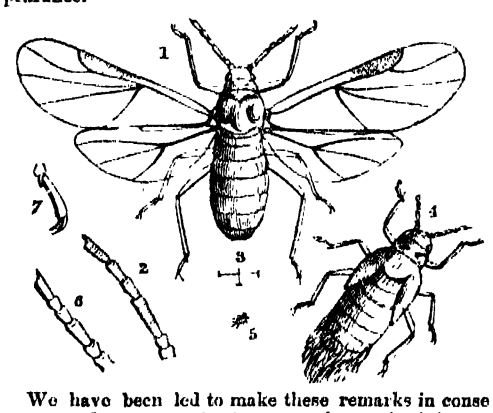
The fragance or odour of plants is owing, in nearly all cases, to a perfectly volatile oil, either contained in small vessels or sacs within them, or generated from time to time during their life, as when in flower. Some few exude by incision odoriferous gums, as benzoin, olibanum, myrrh, &c.; others give, by the same act, what are called balsams, which appear to be mixtures of an odorous oil and an inodorous gum. Some of these balsams are procured in the country to which the plant is indigenous by boiling it in water for a time, straining, and then boiling again, or evaporating it down till it assumes the consistency of treacle. In this latter way is balsam of Peru procured from the Myroxylon Peruiferum; and the former balsam of Tolu, from the Myroxylon Toluferum; though their odours are agreeable, they are not much applied in perfumery for handkerchief use, but by some they are mixed with soap, and here more with an idea of medicinal properties than for the sake of their fragrance. *P.*

ENTOMOLOGY.

THE APHIS OF THE LETTUCE ROOT.

THE atmospherical or other peculiarities influencing the sudden development of insects in situations and at times when their presence was not previously anticipated, have not received so great a share of attention as they deserve. That insects are especially sensitive both to changes of temperature and electrical influences are facts well known to every practical entomologist. The collector of moths knows well that a dull heavy electrical state of the air in an evening will be sure to bring out the moths in the greatest numbers; and nothing is more common in the earlier spring months than to hear persons apply the term of a blighting wind to those easterly currents of air accompanied by much cloud and a low state of the barometer, and which, sure enough, are shortly afterwards followed by the appearance of great numbers of insects attacking the young leaves and buds of fruit trees. So again our readers will recollect two or three summers ago reading numerous accounts of immense swarms of aphides at or about the time of heavy electrical storms or oppressively hot still weather.

A direct observation bearing upon this subject was published some years ago by Mr. R. H. Lewis, in the Transactions of the Entomological Society. Many persons had wondered at observing caterpillars of the small ermine moth of too large a size to allow the supposition of these having only just been hatched, appearing in the spring in considerable numbers in places where they had not been previously observed. The fact, however, was observed by Mr. Lewis that the eggs of the insects are hatched several months previously, the caterpillars remaining in the caterpillar state all through the winter, beneath the hard scaly patch of dark-coloured gluten with which the female moth had coated her mass of eggs, so that when the peculiar state of the atmosphere in the spring arrived, which instinct told these insects was best fitted for their appearance, they crept from under the patch of gluten, and so astonished the observer at their sudden appearance.



We have been led to make these remarks in consequence of a communication recently received from a friend in Oxfordshire relative to the appearance of numbers of a new species of destructive insects, under circumstances which seem to warrant the belief, not that they were produced by electricity, but that their development from ova, or the extraordinary fecundity of the parent fly, may have been influenced by the agency of that mysterious element. Our correspondent, M. Shurlock, Esq., writing from Ensham on the 15th Aug. inst., says: "On Saturday night (Aug. 11th) we had a great deal of lightning without thunder, and on the following morning all my Lettuces drooped. Being very large and fine, I told my man to give them a good watering; nevertheless they drooped more, and became good for nothing. On pulling one up, I found the roots appeared mildewy and covered with aphides. I send you a small portion of a root to look at. The Lettuces are growing in an open part of the garden between the Celery trenches. Will you be kind enough to tell me whether you think the Celery is likely to be attacked in the same way, and whether I can do anything to prevent the attack? The Lettuces drooped all at once suddenly."

On examining the root sent, we found it swarming with a number of small green wingless aphides, the majority in the pupa state, having short rudimental wing-cases, and do not accordingly hesitate to consider that the drooping of the Lettuces was owing to the attacks of the aphides, especially as we have since received other communications of the same insect observed under precisely similar circumstances. That this peculiar species of aphis will prove equally injurious to Celery or other garden crops, appears to us most improbable, as each species of aphis is generally confined to a single species of plant. The only remedy which appears to us as likely to prove serviceable in destroying this new enemy, is to remove the earth from the crown of the root of the plant, and give it a good watering with tobacco or quassia water, and this is the more necessary to be performed, because these aphides will in a very few days appear in the winged state, and fly away to propagate the mischief in other places, and to deposit a numerous progeny for next year.

We speak of this insect as a new insect plague, not having been able to meet with any description of it in the most recent works on the aphides. Mr. Walker also, whose papers on this family are in course of publication in the "Annals of Natural History," and the "Zoologist," also informs us that he is unacquainted with the species. Our highly magnified figures of the pupa, and of a winged individual just hatched, will enable our readers to distinguish the species from the majority of the aphides which belong to the genus aphis, having the veins of the wings differently arranged to those of this insect, for which we propose the name of Pemphigus Lactucæ.

The perfect insect is one line long, of a pale greenish yellow colour, with the surface of the body, and especially the thorax, polished; the head and thorax browner green, eyes chestnut, legs and antennæ dirty pale greenish. The antennæ not longer than the thorax. The wings one-third longer than the entire body. The pupa is also pale dirty green coloured, with shorter, stouter limbs; the antennæ, as in the perfect insect, 6-jointed, the terminal joint having a small style or slender appendage at the top. The extremity of the body of the pupa is enveloped in a coat of white cottony down, similar to that of the Apple aphis, or American blight; but this secretion is only slightly emitted in the species before us, and from the extremity of the body. Although found at the roots of plants, this species does not belong to the Hyponomeuta or subterranean section, none of which acquire wings; like most of them, however, it is destitute of the honey-secreting filaments at the end of the body.

Our figures represent—Fig. 1, the perfect insect magnified; fig. 2, its ringed six-jointed antenna; fig. 3, its natural size; fig. 4, the pupa state magnified; fig. 5, ditto, natural size; fig. 6, its six-jointed antenna; fig. 7, the two-jointed two-clawed foot. *J. O. W.*

THE QUALITIES MOST ESTIMABLE IN A ROSE.

AS TO THE FLOWERS.—There is no flower that has been less understood than the Rose; it is so beautiful in itself, from the moment the colour bursts through the calyx until it is fully bloomed, that even the wild Rose of the hedges is a favourite. On this account nobody who raised the flower from seeds could be reconciled to throwing any away, and the natural consequence was that every novelty in colour, habit, or size, was put forth as a new variety, and thousands got into cultivation with no merit to recommend them. The characteristic most esteemed, perhaps, by the multitude is the perfume, for surely there is nothing in the floral world that is so exquisite. Hundreds of fragrant flowers claim a high place in our favour; some dispute with the Rose the palm of excellence, but while all other scents become insupportable when in excess, no one feels cloyed with the perfume of the Rose. It is somewhat remarkable that most of the China kind, and generally speaking, the smooth barked sorts, are deficient of perfume, and some of the finest specimens of floral excellence have the least fragrance. It is impossible to overlook this deficiency even while we admire the symmetry and beauty of the bloom. Fragrance must be a grand point, if not the leading point, in the qualities of the Rose; hence the old Moss Rose and the common Cabbage Rose are established favourities, and it would have been a good thing if, in the selection of seedlings to be admitted into the Rose family, the raisers had always kept these two Roses in view, that they might have avoided bringing out so many that were not only infinitely worse than they were, but absolutely worthless. Novelty in the Rose way was all that was required; novelty like charity "covered a multitude of sins." Having disposed of the point of fragrance which, notwithstanding the beautiful hybrids, Tea Roses and China varieties that stand high, must be the leading point in favour of a Rose, we will now come to the dry rules which fill up the measure of perfection.

The form should be round and the face should be full, that the flower may form half a ball. The petals should be thick, smooth on the edge, and close, and be laid uniformly and symmetrically from the base, or lower petals, to the centre ones, which should be close, and show no anthers. The reason we insist on the form of half a ball need hardly be stated; it is the finest form that a flower can be produced in, and those of the present Roses that are the most round and the most full are certainly the favourites among ordinary observers. Again, the regularity and symmetry of the petals adds wonderfully to the effect of any flower. Whether a Rose be of the largest size or as small as a briar, the form would be equally good if half a ball, and all the approaches to it would be pretty.

But after all is said, and a good deal may be said, as to the valuable qualities of a Rose, there is nothing more important than a lasting flower. Hundreds of varieties, as all Rose growers know, hardly hold four-and-twenty hours in perfection; they are scarcely open before they are in pieces. The sun is scarcely out upon them an hour before they flag and are spoiled, and they seldom recover; the sole cause of this is thin flimsy petals; this it was that dictated the necessity of thick petals, which are not so soon affected by the sun; and having a much stronger foundation to rest upon, they hold much longer in their calyx, and of course retain their beauty much better and longer than thinner petals could under any circumstances.

The continuous growth and blooming peculiar to the China kinds of Rose is another inestimable quality. It enhances the value of a variety beyond calculation. A Rose tree permanently in bloom is a splendid ornament on the lawn, in the shrubbery, or in the borders, whereas a Rose tree out of flower has but little to recommend it. How important it is, then, to have these beautiful subjects in full bloom six months out of the twelve!

Abundance of bloom is another beautiful characteristic, and this is particularly the case when the flowers are small. Climbing Roses of many kinds exhibit this quality, and it is to be regretted that some of the most remarkable of these are of the flimsy kind we have mentioned; they are in the highest perfection before they are fully blown, because an hour's sun spoils all that are quite open, and the ground is soon covered with their falling petals; nothing can be more objectionable than this, for unless the seed-pods are daily trimmed off the plant looks shabby, and the ground ought to be swept hour by hour if it is to be kept clean of dead petals.

The smoothness of the petal, and particularly of the outer edges, is a quality that will be appreciated by the most ordinary observer; whatever is ragged is unsightly, and in almost all cases it will be found that in proportion as the petal is thick it is also smooth on the edges; the notched and ragged flowers, the varieties which curl up or roll back the edges of their petals, are invariably thin, and however double they may be they are ill-formed, because they have not the power to hold themselves in their places. Many of the popular varieties look miserable after being exhibited some time, because they bend and curl out of shape, exhibiting points, or rolled-over or shrivelled-up petals; and all this is to be attributed to thin petals, for those with thick ones may be seen holding their form to the last, and, whether on or off the plant, looking well till they fall.

Every one is capable of deciding that the Rose which lasts longest in flower must be the best for general effect, and it is the thickness of petal which commands all this; for they not only last much longer than thin ones, but they also keep their form better, and they are more dense in colour; and colour, in the eyes of some people, goes a great way in a Rose. But colour is a matter of taste; it should never be allowed it to form a part of the excellence required to make a flower perfect, because no two people will agree about colour. If we had to set a value upon a colour, we should decide upon one that does not exist in the species at all, because novelty confers a value. We have no yellow Moss Rose, therefore it is very natural that we should put a great value on such an acquisition; but, apart from such considerations as these, a well-formed Rose, with thick petals, would be an acquisition, be the colour what it may; at the same time a more brilliant crimson than we at present possess would be highly appreciated, and the same may be said of any colour or shade that we do not at present possess. *Crito.*

ON GROWING ORCHIDS FROM SEEDS.

At the present time there are few subjects connected with plant growing on which there is less recorded information than that of growing Orchids from seeds, which appears the more remarkable when the great interest our ablest cultivators have taken in growing this singular tribe is considered, along with their tardiness of increase by division of the plant, and their intrinsic value. I am not aware that there is any case on record of hybridisation having been effected among Orchids, though there seems no doubt that such could be accomplished by careful manipulation, an inference I draw from reasoning analogically on experiments made here to get seed.

Observers on this subject will have perceived that many of our indigenous Orchids appear to seed freely, whilst comparatively few exotic species among our cultivated collections produce seed, circumstances suggestive of the idea that the latter require artificial assistance, which can be readily afforded, by carefully applying the pollen masses to the viscid face of the column and rostellum. But whether the seeds of hardy Orchids be generally imperfect, or the necessary circumstances requisite for vegetation and the subsequent growth of the young plants wanting, we certainly do not find crops of young Orchids growing spontaneously in various stages of growth, as occurs with most other endogens, though experience has proved to me that when Orchid seed does vegetate under favourable circumstances, a very large number of the myriads of extremely minute seeds contained in the ovaries are perfect, whether artificially impregnated or not.

Within the last five years, seedlings of the following species have been raised in the Orchid-house at Glasnevin, namely, Epidendrum elongatum and crassifolium, Cattleya Forbesii, and Phaius albus, the seeds of which all vegetate freely.

The manner of sowing the seeds, and treating the young seedlings, has been to allow the fine dust-like seed to fall from the ovaries as soon as they show symptoms of ripeness, which is readily known by the ovaries bursting open on one side. When this takes place, they are either taken from the plant and shaken gently over the surfaces of the other Orchid-pots, on the loose material used for growing them in, or on pots prepared for the purpose, after which, constant shade, a steady high temperature, with abundance of moisture, are all requisites which are absolutely necessary to insure success. In the course of eight or nine days after sowing, the seeds, which at first had the appearance of a fine white powder, begin to assume a darker colour to the naked eye, and if looked at with a Coddington, or even a simple lens, evident signs of approaching vegetation may be perceived, which increase until the protrusion of the young radicle and cotyledon takes place, which varies from a fortnight to three weeks. From this period of their growth the young plants grow rapidly, and the rootlets lay hold of whatever material is supplied to them. If the seeds happen either accidentally or intentionally to be made to vegetate on bare wood, as in some instances has been the case here, the young roots extend themselves in different directions, adhering closely to the bark, and make great progress compared with the growth of the stems, thus affording beautiful examples of the manner in which epiphytical plants fix themselves so firmly on the highest boughs of lofty trees in tropical forests, as well as accounting for the isolated positions they frequently occupy in their natural state.

The principal difficulty to contend with in rearing the young seedlings has been found to consist in their treatment during the first year, particularly the winter months, when they are very liable to perish, if anything approaching to extremes of moisture, drought, cold, or even heat be permitted; though a steady medium of all these requisites is necessary. The second year's growth has been one during which the plants made much progress, and the only two kinds which have been brought to a flowering state have bloomed the third season. These are Epidendrum crassifolium and Phaius albus, the latter being now in flower, exactly three years from the sowing of the seeds. *D. Moore, Glasnevin, Dublin.*

DISEASES OF PLANTS.

(*Continued from p. 533.*)

Genus II. Apantherosia, *or deficiency of male organs,* and Genus III. Apetalismus, *or deficiency in the corolla.*—I will not stop to treat at length of these two genera of disease, for being in direct opposition to *Antheromania* and *Petalomania* which I have hereinbefore explained, it will be easy to comprehend all that is necessary to be known with respect to their nature. I will only briefly touch upon their causes.

These diseases may have their origin in two different sources, and first, in the deficiency of caloric. Thus some plants which from a temperate or hot climate are transferred to cold regions, or, to speak more correctly, into a lower degree of temperature, are seen to have a smaller number of anthers or petals, or, retaining the normal number of these organs, they are reduced to mere protuberances, not having been developed. Generally speaking the two diseases occur together on the same individual; that is, if a portion of the corolla is wanting, the same flower is also deprived of its stamens, or they remain in a rudimentary state. We know that some plants, growing spontaneously in our plains, such as Campanula speculum or Ajuga Iva, when removed to Switzerland, produce no petals,* and if the same individuals are brought back to a hot situation, they again develop their perfect flowers.

Another cause is the deficiency of nutriment and privation of light, which will often occasion the imperfect development of the corolla. This may be observed in regard to plants growing in the thickest shades of woods, which recover their petals when moved into the light. The increase of nutriment occasioned by the removal of plants from hills to the plain, produces the same effect. Thus plants, which remain unnoticed in the wildernesses of the Alps, put forth in our gardens, in the fulness of beauty, flowers which in their mountains were shabby and colourless.† It is for the botanist to inquire closely into the phenomena relating to these two genera of disease. For the gardener it suffices to guard against them, by keeping some plants sufficiently warm, by giving others a richer food; but, above all, by procuring for them the full benefit of light, as it is proved that that element, together with heat, is what exercises the greatest influence on the development of the corolla.

Genus IV. Carpomosia, *that is, Acidity of Fruit.*—It is well known that if the acidifying principle, that is the oxygen, is retained in too great abundance in a plant, the fruit does not attain that sweet savour which constitutes its maturity, but remains sour. This happens because the action of caloric and light on the plant is not sufficiently intense to expel the superfluous portion, and this takes place more especially in those years where the summer is not very hot, and rainy or particularly short. But sometimes the evil arises from a defect in the cultivation of the plant, not allowing the rays of the sun a sufficiently free access to it. Vegetables transplanted from hot climates to our own suffer from this disease.

Hippocrates, in his celebrated treatise, "De Aëre, Aquis, et Locis," par. 81, of the version of Coray, speaking of the fruits raised in the country watered by the Phasis, says that "It is to the superabundance of water that is to be attributed their bad quality; from that cause they have no flavour, and never attain perfect maturity. It is also owing to the mists which envelop that country; for it is the sun which, in expelling the humidity of the fruit, ripens it and sweetens it by its warmth." This passage shows that the action of the sun in carrying off the acidity of fruit was known to the ancients.

In many cases this disease has no remedy, especially with regard to exotic fruits which ripen late. All our attention must be directed in as far as possible to free the fruit from the shade occasioned by its own thick foliage. For this purpose, it is the custom in some places to trim the leafy shoots (épamprer) of Vines, and to strip the leaves of Peaches and Pears, especially those trained in espalier on walls, in order that the rays of the sun may be reflected with greater force, and, increasing the action of caloric and light, insure the maturity of the fruit. But this operation must only be performed with very great judgment. In the first place there must be no hurry, and it must be remembered that the leaves feed the buds which are to form the next year's shoots, lest it may happen that by too great anxiety to have well conditioned fruits one year, those of the following year may be entirely sacrificed. Besides, the foliage protects the young shoots of the present year not yet well formed, and prevents them from drying up. If you strip the tree blindly, a general disturbance of its functions will follow, and it will suffer greatly.

Let us commence therefore by thinning out the branches, and if we remove any leaves we must not tear them off, but take them off carefully, using for the purpose, if necessary, a sharp instrument. This stripping must moreover be done very gradually, so that it shall not be completed till a week before the ordinary maturity of the fruit. The cutting them off with a pair of scissors is a slow method, but a safe one.

In order to insure the maturity of the so-called winter fruits, it is an excellent plan to train them in espaliers. The dwarf pyramidal form is in the present day much recommended. I cannot, however, venture to praise blindly this mode of dwarfing trees which naturally love to rise high. I hope to be able to make some experiments on this point. In the meantime I further suspect that the plan is more advantageous in climates where the sun has less force than in ours.

* The Ajuga Iva, like the Ononis minutissima and some other plants in the hot calcareous regions of the south of Europe, belong to a class, now known to be very numerous, of plants which produce apetalous flowers at one season, and fully developed ones at another, and almost universally the apetalous flowers produce the most seed. In our garden Violets, as well as in V. canina and several others, the apetalous flowers are, in some seasons at least, the only ones which ripen their seed, the petalliferous flowers being generally barren. In that genus the apetalous barren flowers come out usually in summer after the perfect ones have ceased. In the Ononis, above mentioned, the apetalous are earlier than the petalliferous flowers, and both nearly equally fertile. In Ajuga Iva both are fertile, but no regular succession has been ascertained. In Lespedeza, some Hellanthoma, &c., the two kinds are usually at least simultaneous. It is a subject well worthy of further investigation. *Translator's Note.*

† The effect, however, of absolute elevation in mountainous countries is generally to increase the size and beauty of flowers, owing probably to the increase of light to which they are exposed. *Translator's Note.*

VILLA AND SUBURBAN GARDENING.

Many of the luxuries which have hitherto been exclusively produced in large and expensive establishments, can with a little care and forethought, by keeping an eye vigilantly upon the seasons as they pass along, be readily and inexpensively grown in even the smallest garden. The cultivation of small gardens has hitherto been a matter chiefly of spring work; once sown and planted in spring, with the exception of keeping down weeds, nothing more is done, forgetting that many of the most delicious culinary articles are to be obtained by autumn cropping upon ground that would otherwise remain unproductive during half the year. Saladings, which is scarcely ever thought of by the amateur cultivator, may be as easily produced in a small as in a large garden during winter. Lettuces, Endive, Onions, Corn Salad, American Cress, &c., if sown in autumn, will afford a supply during winter and spring; plant out on the driest and most sheltered corners, raising the beds above the general level of the ground; and to prevent ill effects arising from damp, cover the surface with a slight layer of dry sand or coal ashes; the latter will also prevent the harbouring of slugs, which are exceedingly destructive to the plants while in a young state. If the cultivator possesses a handglass or two, these may be usefully employed in protecting young Lettuces, &c, by pricking them out thickly under them, and transplanting them in early spring; but where no such means of protection exists, much may be done by hooping the beds over, and covering with mats in rigorous and inclement weather. If the plants are under a wall, recourse may be had to wattled hurdles, which can readily be placed in a slanting direction against the wall, and mats laid over them, which will keep off snow and heavy rains, as well as guard the young plants from severe frost.

Autumn and winter Lettuces, Radishes, &c., may be successfully cultivated in sheltered situations, by being covered in severe winter weather, with dry litter sprinkled lightly over them, and removed when mild dry weather occurs. A temporary mode of protection frequently practised by the London market gardeners consists in driving a few stakes into the ground in the form of a common frame, and nailing a few boards to them. The surrounding soil is then thrown up around these boards to the thickness of a foot, beating it closely and securely against the boards. Rods are then fastened over the frame to receive the coverings of mats or litter. In constructing this temporary pit, be careful to keep the back considerably higher than the front, so as to throw off rains: damp will be found to be as great an enemy as frost in all such contrivances; therefore whatever means or appliances are adopted, be careful to let all the sun and air in fine weather have free access, in order to dry and harden those succulent plants; keep a vigilant eye constantly upon them, removing all damp or decaying leaves, or any plants that may have gone off, as soon as they are observed, as these only increase the evil, by communicating their putrescent qualities to their neighbours; trifling as these little particulars may appear to be, they will be

found of more importance than scientific knowledge in ensuring success. Pharo. [Take care, however, that in giving sun in winter, the sun is never allowed to shine upon any frozen plant, until after it is thawed.]

Home Correspondence.

Polypodium Dryopteris and calcareum.—I am obliged to Mr. Maw for stating what he considers as the points by which the connection of the above species is proved, but I am sorry to add that they do not convince me. If he will look at any work describing the plants, such as Newman's History, or Moore's Handbook, he will see that the characters which he points out are of but little value. The kind of vernation, the structure of the frond, and the presence or absence of the glandular coating of the stems, &c., must be observed to vary before botanists will be ready to allow that the plants constitute one species. Sir W. J. Hooker's remark was made when much less was known of the specific characters of the plants than has now been learned. The remark of the editor of the second edition of English Botany has but little weight with me. Probably, however, the matter has now gone far enough, and might well have an end, as it is little more than a botanical question, and not of much interest to cultivators. *C. C. Babington.*

Large Bunches of Grapes.—A friend, who lately visited the Duke of Portland's garden at Clumber, reports having seen a bunch of Black Hamburgh Grapes of the weight of 10 lbs.; if so, we generally know little how to cultivate even this desirable, but comparatively common fruit. Is the thing possible? *G. O. L.* [We do not believe the statement.]

Garden Fork (see p. 501).—If "Subscriber" is not in the trade, he will be glad to hear that the fork which I have recommended costs 1s. 10*d*. only. And I beg to inform him and your other readers that there is very little probability of their meeting with it at the ironmonger, for it is the creature of my own invention—a miniature only of the common fork to be sure; but it is not the like of anything I have ever before seen, and I gave my village blacksmith the pattern of it. I may add that my fork is the admiration of everybody that sees it, and if you like I will, with pleasure, send you one per rail. *Addio, Harlow.* [Pray do.]

Growth of Weeds.—I have often wondered how weeds could rise up in a garden every spring, where, during the previous summer and winter, not a plant of Groundsel or Chickweed, or anything else of the same description, was permitted to show its leaves with impunity. After such a war of extermination as is generally waged against interlopers in a well kept vegetable plot, it appeared impossible that noxious weeds should exist. I have been puzzled to account for the innumerable enemies which occupy the ground after a shower of rain; some may be wafted by the breeze, others may be deposited by birds, but I feel convinced the great majority are sown with the manure—one of the disagreeable consequences of careless and dirty farming, permitting Charlock, &c., to ripen with the various kinds of grain. They are thus conveyed from the field to the barn, from the barn to the stable, and from thence to the garden, much to the annoyance of those who have the bump of order strongly developed and only a single pair of hands. Agriculturists should really compassionate the condition of amateur horticulturists, and instead of complaining of free trade in corn (for which there is now no remedy), endeavour to increase the quantity of grain per acre, to take the place of weeds. I find Vetches sown thick and highly manured are famous assistants in smothering weeds and purifying the soil. *Falcon.*

Plumbago Larpentæ.—I remember your asking, about a month ago (July 21, page 452), whether anybody had "tried this Plumbago in shade, or under a north wall." And now I can tell you that it is flowering in great beauty on the shady side of a flower bed in my garden; and it is a most lovely plant, notwithstanding all it has had to go through this trying season, weathering many a heavy storm, and many sunless, chilling days and frosty nights. And it was put into our cold, stiff, clay soil in the end of May, then a delicate thing, with one slender stalk only, and possibly fresh from the propagating pit; but for all that, it is not "a miserable thing, soon to be forgotten," I assure you. Its flower is a brilliant blue, associated with a most becoming foliage, in itself very ornamental. The plant is compact; after all it has gone through, it has spread to nearly a foot in diameter. Every shoot promises blossom, and they already show from 9 to 18 buds, of a reddish-brown hue, that much enriches the appearance of the plant. Indeed, I think that Plumbago Larpentæ promises to be a valuable acquisition to the parterre; and if it will not bear "the strong sun without curling up," nor even "a moderate breeze, without being deranged," we must put it where it will be sheltered from these rude invaders. And I shall be much surprised if it is not one of the prettiest things in the garden, a week or ten days hence. *Addio.*—I have grown Plumbago Larpentæ in heat and in cold, in the sun and in the shade, in a moist atmosphere and in a dry one, and I have starved it and surfeited it, in loam and in peat, and in no way that I have grown it do I consider it worthy the many encomiums that have been lavished upon it by some, on the correctness of whose judgment in such matters we have been wont to rely. The habit of the plant is good, and so is the colour of the flowers; but these good qualities do not, in my opinion, compensate for the flimsiness of the flowers, and the manner in which they are developed—two or three at a time. I have ... tried it; but, if report speaks true, many will be disappointed to find it worthless even in this respect. My opinion is, that it will very soon be consigned to oblivion. *J. L. M., the Gardens, Bentham hill, Tonbridge Wells, Aug.* 29. [You will be mistaken.]

Camphorated Spirits Deleterious to the Teeth.—Having observed in one of your recent Numbers a wash for the teeth recommended, of which camphorated spirits formed a portion, I wish to apprise you and your readers of the deleterious effects of camphor applied to such a purpose. I have known several sets of teeth totally ruined by the use of camphorated spirits; and a friend, a medical student, having placed teeth in camphor, found within a short period that they became so brittle as to be easily broken. *X.*

Hot Water v. Mildew.—Mr. Torbron states, p. 502, that he has cured his Vines of mildew by syringing them with water at 130°. I have since seen them, and can assure you that they are not cured, nor are they likely to be. His Muscat Vines are clear of the evil, they have never been attacked. *S.*

The Potato Crop.—Perceiving that disease is again becoming prevalent, I beg to give you my plan of storing Potatoes. In 1848 I had 30 bushels of very fine Potatoes when dug; but, as with others the disease began to make rapid progress among them after they were pitted. I had them taken out of the pit immediately, spread a foot thick on a dry floor, and 2 bushels of slaked lime well shaken amongst them and then turned. This plan stopped the disease, and I did not lose more than a gallon. After the lime was mixed with them, I allowed them to remain in it all winter, well covered with Wheaten straw, and they were all preserved sound. Next spring, finding, while working the ground which the Potatoes occupied, that some which had been left in the soil were sound, it struck me that Potatoes would keep better in the earth than otherwise, consequently I decided on pursuing the following plan. When the Potatoes are at all fit to dig, I have a pit excavated 1 foot deep and 4 feet wide, in the bottom of which I shake a little slaked lime, then spread a course of Potatoes about one thick and cover them over with a course of soil 3 inches thick, and so on with every alternate course, taking care to draw in the sides like the ridge of a barn, and then cover all over 8 or 9 inches thick with soil. I might have said that I shake a small quantity of slaked lime over the Potatoes as well as under them before the soil is put on. I build four courses of Potatoes, and leave the soil a foot thick on the ridge, well patted down all over the pit. Last year I pitted between 30 and 40 bushels in this manner, and I did not lose one bushel by disease. I had good sound Potatoes until they came in again this year. I have already dug every Potato which I have grown, both early and late sorts, in all about 150 bushels of perfectly sound tubers, not a diseased one is to be seen among them. I have pitted 100 bushels as above, and doubt not the same success will attend my labours this season which I experienced in former years. My Potatoes were all planted this year in February and March; they consist of white Farmers' Glory, pink-eyed Farmers' Glory, and a fine red sort the name of which I do not know, but it is not fit for use until Christmas; the above are late sorts. My early sorts are Golden Multipliers and Ash-leaf kidneys. In my opinion, a small dressing of slaked lime spread and dug in when the Potatoes are planted is an excellent preventive of the disease. Care should be taken to dig a trench to serve as a drain round the pit, to keep the latter dry, and a slight thatch of straw might do on the top about 3 feet down from the top on each side, but I did not thatch mine last year. *J. C. Willmer, Brudnell Wharf, near Wolverton Station, Bucks, Aug. 28.*——The Potatoes are very bad in many places here, but not generally so bad as they were last year. Turnips have not done well this season, except on some land, and the Cereal crops will be late. The weather has been very fine for these few days past. *C. C. B., Aldeburgh, Suffolk.*

Reviews.

A Treatise on Landscape Gardening, &c. Fourth edition. By A. J. Downing. Putnam, New York; Longmans, London. 1849.

A Treatise on Landscape Gardening, &c. By A. J. Downing. Longmans, London. 1849.

Our favourable opinion of the second edition of Mr. Downing's work is well known. We believed him to have imbibed, on the whole, sound principles on the subject of landscape gardening—to have applied them skilfully to the scenery of the United States—and to have shown in the course of his work a very considerable amount of original thought. We see no reason to repent of the opinions we have thus expressed; and our esteem for the author would have remained unchanged if he had republished his work in the same words as before, or, at all events, with only such modifications as enlarged experience might have suggested.

But the two volumes now before us have puzzled us in more ways than one; and in no one is the result to the credit or the praise of the author. In the first place, we must point our readers' attention to the *form* in which these volumes appear. Would any person imagine from the external appearance of each, and their respective title pages, that the one is the mere duplicate of the other? and yet it is so. The American fourth edition is gay externally; and within it is what it professes to be. The *seeming first* English edition comes out in demure simplicity of appearance, and its title page leads the unwary reader to suppose that it is a *new* publication. Napoleon, speaking of his invasion of Spain, confessed that it was worse than a crime—it was a folly. So with this so-called new English work. It is worse than a trick—it is a blunder. For the reader merely turns over the title-page and dedication, and finds that from the "*preface to the fourth edition*," even to the last page, it is in fact the American copy *verbatim et literatim*, disguised under a different binding and by an English title page. What the object aimed at may have been we cannot conceive. Nothing, however, could have been more clumsily done.

In this preface to the fourth edition the author writes: "In the present edition considerable alterations and amendments (!) have been made in some portions—*especially* in that section relating to 'the nature of the beautiful and the picturesque.'" Curious to see what these *amendments* were, we naturally turned to the section named, and certainly the ... of our imagination will not teach us that the changes made are amendments. The matter is of the greater importance because this section involves the fundamental principles and groundwork of landscape gardening. Now, the author in his second edition says in this section that "There are two species of beauty of which the art is capable . . ., these are, *general* and *picturesque* beauty; or to speak more definitely, the beauty characterised by simple and flowing forms—and that expressed by striking, irregular, spirited forms." This has always appeared to us a very fair definition. It is not every one who, like Johnson, can define truly—and by his definition *exclude as well as include*. And our author justly censures Gilpin for his vague definition of picturesque objects as "those which please from *some* quality *capable* of being illustrated in painting." The author's original definition amounted to this. There is a *general* beauty spread over Nature. But there are exceptional beauties—singular, startling, majestic, stupendous, still rare, which the moment they are seen by the painter arrest his attention completely by the vast effect which they would produce on canvas; and these are naturally called *picturesque*, because they produce the *most powerful* effects on the beholder when seen *in a picture*. In conformity with this view the author, very properly, took as his two main heads, *graceful* and *picturesque* beauty, and on this foundation all his essay was built. What are the *amendments* in this fourth edition?

In the passage which we have quoted, he substitutes "the *beautiful* and the *picturesque*" for "the *general and the picturesque*." Having made this change (without, however, altering one single remaining word in his definition), what is he to do with his former inferred classification of "the graceful and the picturesque;" in other words, *graceful* beauty and *picturesque* beauty in landscape gardening? Why he very quietly—being apparently bewildered by the effect of his new definition—defines the two species to be "the beautiful and the picturesque," that is the *beautiful beautiful*!! and the picturesque beautiful. If any artist can explain to us what this may mean, or what distinction there is between *beautiful beauty* and *picturesque beauty*, we shall feel under great obligations to him. The truth is, that, while in this new fit of theorising and defining, the author might just as well have enunciated a third—and assuredly it may now become a prominent—feature in landscape gardening, after instructions so obscure—we mean UGLY beauty; there would be something in that.

But the worst is to come. The clumsiness in attempting to give the fourth American edition the aspect of a new English publication, is completely surpassed by the sequel. At p. 77 in the fourth edition, the author reprints the division of the subject which appears in p. 5 of the second edition, only putting "*beautiful*" for "*graceful*," thereby accomplishing nonsense; and from that point (in substance) the two editions are to the end the same. Now all that followed the original definition was based on that foundation. The foundation is removed, another is put in its room, and yet the superstructure remains the same, utterly out of harmony with the foundation on which it stands. The result is as absurd as if we should raise the upper portion of a building, take away the old solid foundation, and then gravely lower the superstructure upon a foundation of *sugar-candy basket work*.

The groundwork being thus made unsound, we have no patience to go into further details. What can be the value of such a book as to principles?

Garden Memoranda.

Messrs. Standish and Noble's Nursery, Bagshot.—This nursery lies close to the London and Exeter road, about half way between the Farnborough station on the London and Southampton railroad and the Staines station on the Richmond line of railway. A six miles ride from Farnborough, through undulating country, covered for the most part with blooming Heath and Scotch Firs, brought us to the nursery, which is pleasantly situated contiguous to the village of Bagshot and the royal park of that name. The soil hereabouts is little else than sandy peat; but it suits shrubs and trees perfectly, as is well exemplified by the healthy condition of Messrs. Standish and Noble's stock, which almost wholly consists of hardy ornamental subjects.

The first thing we remarked on entering the nursery was a plantation of Mr. Fortune's Pæonies, among which something good is expected. Near them were compartments planted with seedling plants, from 1 to 2½ feet high, of the now well-known Cryptomeria japonica, of which Messrs. S. and N. have an immense stock. Many of these seedlings differ considerably from one another, both in appearance and habits, some being compact and bushy, while others are tall and thinly branched. Conifers are cultivated pretty extensively here, and the collection has lately received some new and important additions, the most interesting perhaps of which is the Funebral Cypress from the Vale of Tombs in the north of China, advertised in another column. If this should prove hardy, as is expected, it will be a valuable acquisition. Messrs. S. and N. have raised a new and distinct looking Larch from Chinese seeds, which we should like to see again in a larger state. They have a weeping Yew; a pretty variety of Cupressus thurifera, obtained through Kew; C. Govenianа, a handsome species; Picea nobilis, and others; various Junipers; Araucarias; Cedars; Thujas, among which was a pretty variety called W..., which forms a beautiful

spreading tree, 25 feet high, and 8 feet through; Taxodium sempervirens, and various other Conifers. Forsythia viridissima grows in the peaty soil of Bagshot luxuriant as a Willow, and when out of flower it is not very unlike one; and we also noticed here nice plants of the rosy-flowered Weigela. In a span-roofed Camellia-house were some new Hollies, some of them handsome and distinct-looking kinds; a Chinese Berberis, called Bealii, from the Vale of Tombs, with large and fine foliage; the Sweet Bay of California, some Viburnums, the white-flowered Glycine, and an Opuntia from North America, which is stated to be quite hardy. The Camellias are said to flower remarkably well in this house; they are planted out in a peat turf walled bed, composed of one-third loam, one-third peat, and one-third horse-droppings. Peat turf walled pits, covered with glass, are common here, and excellent pits they are for many purposes; they are cheap and warm, and with a little management they make capital hybernatories, as well as form suitable receptacles for Rhododendrons, &c., after they are grafted in April. One of these pits, heated by hot water in troughs in a hollow chamber, serves as a spring and summer propagating pit, in which Messrs. Standish and Noble strike such hardy evergreens as like a little bottom-heat. The pots are plunged in a bed of sawdust and coal-ashes, which is placed over the warmed chamber.

Much attention has been paid here to hybridising and improving the races of our hardy Rhododendrons, and we believe with considerable success. The object aimed at is to place the high-coloured blossoms of the Indian kinds on hardy sorts, and at the same time to give the latter such a late flowering habit as will set them beyond the reach of spring frosts. Blandyanum, which has been exhibited this season, is stated to possess both very high coloured flowers and a late habit, and we understand that Messrs. S. and N. have many equally meritorious and promising crosses; not the least interesting among which is one between catawbiense and a yellow Ghent Azalea, which they are in hopes will produce bright yellow blossoms, but it has not yet flowered with them.

It may be useful to know the way in which seedling Rhododendrons are raised here. The seed is sown in January, in a little heat, and about the end of March the plants are pricked out in a prepared bed over the heated chamber in the pit mentioned above. They remain there till July, when they are again pricked out into cold frames, 3 inches apart. Next spring they are sufficiently large to be planted in the open ground.

In a newly formed nursery on the opposite side of the road to the one we have just visited, was a large plantation of all the newest and best kinds of Roses, chiefly standards, on tall clean straight stems. They were remarkably clean and healthy, and appeared to thrive and bloom equally well in the peat soil of Bagshot as in the loams of Hertfordshire.

Mr. Groom's Japan Lilies.—These are now beautifully in bloom, and are well worth a visit. The show-house contains the largest and finest specimens of them; but there is another house near it whose stage is covered with smaller flowering plants, all seedlings, exhibiting every shade of colour, from punctatum to speciosum. Some of these seedlings have well defined blood-red spots on a pure white ground, and, being free flowerers, are extremely handsome. A few of the beds in the open ground planted with these Lilies are in bloom; but the majority of them have not yet reached that stage. They flower well every year with Mr. Groom in the open air, their gaudy blossoms producing a striking effect; but it is in the shrubbery border where these Lilies are seen to most advantage, where the green foliage of the shrubs hides their naked stems. In a house at the further extremity of the grounds we remarked a double red Amaryllis, and in the same house one or two plants of common Horse-chestnut, budded successfully with the new Californian kind.

Miscellaneous.

Progress of Horticulture in South Australia.—To the early attention of Mr. George Stevenson, whose attachment to garden pursuits led him to commence the culture of fruits and flowers immediately after the town lands were selected, the colonists are indebted for the introduction of the choicest descriptions of both fruits and flowers from all parts of the world, and the results of his experiments. In the garden of this gentleman at North Adelaide, there is scarcely a fruit common in European cultivation but has a place, including the Fig, the Olive, and many varieties of Orange, Lemon, and others of the Citrus family. There are also the Loquat, the Banana, the Guava, the Pine-apple, and other tropical fruits. There is also an extensive collection of Vines comprising the whole of the varieties from the Botanic Garden at Sydney, and numerous others from the chief wine countries. The example of Mr. Stevenson was followed by three other early colonists, Messrs. Hack, Davis, and Anstey. The garden and vineyard of the first named gentleman is situated at Echunga Springs, about 20 miles from Adelaide, on the Mount Barker road. The locality has been found admirably adapted for the production of the old English favourite, the Apple, of which there is an extensive orchard. The Cherry, Gooseberry, Currant, Raspberry, and Strawberry, also succeed as well as in this country. The vineyard is of considerable extent, and was the first from which colonial wine was manufactured. The quality is represented as being similar to the light Rhenish wines, and it is very sound. Hops are likewise largely cultivated by Mr. Hack, with adequate success. The orchard of Mr. Davis, situated about five miles from Adelaide, was commenced in 1840. It is the largest orchard in the province, having about 15 acres with fruit trees of all kinds, including 3½ acres of vineyard. The fruit is of great size and of high flavour. The Peach, Nectarine, Apricot, Cherry, and numerous varieties of Plum, together with the Fig, Apple, Pear, Quince, Mulberry, Loquat, Olive, and many other fruits, all grow luxuriantly. The Vineyard is divided into table Grapes, Raisin Grapes, and those for wine. These three gardens principally supply the Adelaide market with fruits. Mr. Anstey's garden and vineyard are situated on the lower mount Lofty Range, 12 miles from Adelaide. Numerous smaller gardens and orchards are to be met with, chiefly on the banks of the Torrens, and within the last two or three years many gentlemen have commenced both gardens and vineyards at their residences, in almost every part of the province. The fruits and vegetables far exceed those in this country, both in size and flavour. Peaches from 8 to 10 inches in circumference, of delicate flavour, and weighing from 6 to 8 ounces, are not uncommon. The Apricot grows remarkably fine, as also the Green-gage and other Plums. Tons of sweet and water Melons are vended in Adelaide weekly. Culinary vegetables are chiefly produced in small market gardens on the banks of the Torrens, from which source the town is pretty amply supplied. Great difficulty is, however, experienced in keeping up a succession, the warmth of the spring developing early and late sown crops nearly at the same time, so that the season of each vegetable is of more brief duration than in the moist climate of England. There is an agricultural and horticultural society established, which has proved of infinite benefit in assisting the personal efforts of the settlers. The annual exhibition takes place early in the month of February. As an appendix to these observations, the following account of the fruits and vegetables grown in the colony may be useful:—"*Almonds:* Trees from the seeds of the common Almond of the shops, sown in August, 1837, have attained the height of about 20 feet, each yielding annually about a bushel (at least) of Almonds. The fruit has a large mercantile value. There are at present four varieties cultivated—the Paper-shed or Sultana, the Jordan, the bitter, and the common sweet. The Almond is ready for table in its green state in November, and begins to drop from the tree fully ripe in February. *Apple:* About 40 of the finest varieties are grown in the colony. Some of the finest cider Apples from Devonshire have been introduced, and very large orchards are being formed. The fruit is ripe from December to April. *Apricot:* This tree flourishes everywhere as a standard, and bears most abundantly. Nine varieties exist in the colony. Ripens late in November, December, and January, about Adelaide; and in January and February in the higher districts. *Asparagus:* This is found to thrive on all soils. It has been cut the third year from seed, and produces abundantly. The Artichoke and the Cardoon also grow well, and produce heads and leaves of great size and high flavour. *Banana:* This is not found quite suitable to the climate, the heat being insufficient for it, as well as all other purely tropical plants. *Barberry* grows freely. *Bay:* The common Laurel and the sweet Bay, both free growers in any part. *Beans* grow very well, especially in the higher districts, but are much infested in some places with a small grub, which bores into the pod and destroys the Bean. The Windsor variety grows very large, but the common Mazagan is the most prolific. If sown early in winter, around Adelaide, excellent crops are obtained. *Beet-root:* Luxuriant in all its varieties. Mangold Wurzel has been grown 18 ins. in circumference. *Broccoli, Cabbage, and Cauliflowers* are abundant everywhere, at all seasons, and more delicate than in England. The curly Kail also thrives well. All emigrants should take out seed of these vegetables. *Capsicum:* Grows freely and abundantly. *Caraway* has been grown with perfect success. *Celery:* Little attention has hitherto been paid to this vegetable, except in a few private gardens. *Cherry:* Grows rapidly and produces abundantly. Mayduke, and the Black and the Whiteheart, are in the colony, but the true Morello, and the modern varieties, are wanted. This fruit ripens early in November. *Chestnut* (Spanish or Sweet): A few trees have fruited. *Cucumber:* Grows very freely everywhere without shade or protection of any kind. It requires to be sown early in September, and watered freely in the dry weather. *Currant:* All varieties have been introduced. The fruit, although as fine in flavour, does not attain the size it reaches in England. *Fig:* Abundant and luxuriant everywhere, especially on the plains. The trees yield fruit twice every year. *Filbert:* A few varieties have been planted. *Gooseberry:* The remark applicable to the Currant applies to this fruit, with the addition that it seems more inclined to be a free bearer. The sorts in the colony are not however select. *Grape Vine:* The whole soil of South Australia suits the Vine. 400 sorts are already in the colony, selected from the best vineyards in France, Italy, and Spain. The cost of planting and preparing a vineyard need not exceed from 8*l.* to 10*l.* per acre. From 450 to 1200 gallons of wine is the produce per acre of a vineyard in its fifth year. The Grape ripens in January, and the fruit continues to be gathered till the end of May. Raisins, of very good quality, have been made from the white Muscat of Alexandria, with no other trouble than cutting them off the branches and laying them on mats to dry in the sun. *Guava:* At present it is seen only in a few gardens. The white and purple varieties have produced fruit. *Herbs, &c.* grow well. The Water-cress has succeeded excellently in the streamlets among the hills, and the garden Cress, Radish, Lettuce, Endive, Sorrel, &c., are common everywhere. *Melons:* Sweet Melons grow everywhere in the open air in profusion, without the least trouble. They are very highly flavoured, and occasionally of large size, and sell at 2*d.* to 3*d.* each; it is a very great favourite. *Mulberry:* Of this tree there are 10 different varieties in the colony. It grows freely on all soils, and as the silkworm has been found to thrive, it is probable that the tree will be extensively cultivated. *Mushrooms:* On the plains around Adelaide hundreds of bushels are gathered during the spring and summer. *Nectarine,* as a standard, is found in every garden. It bears well, though less abundantly than the Peach. The colony possesses nearly all the fine varieties, including the Elruge. It ripens in January. *Nuts.* The common Hazel-nut, as well as the Filbert, grow among the hills and at Mount Barker, but they do not succeed nearer Adelaide. *Olive:* The attention of the commercial world has been directed to the tree, and it will doubtless be extensively planted. *Onions, Leeks, &c.:* All this tribe in the greatest abundance. *Hop.* It grows with a rapidity and luxuriance unknown in Europe, and is free from blight, fly, &c. *Kidney Beans* grow in abundance, and constitute the best summer vegetable after the Pea is over. *Loquat:* It ripens in October, and the soil and climate appears to be well adapted to its growth. *Orange:* The Orange, Lemon, Lime, Citron, and Shaddock, are growing luxuriantly in numerous places on the Lemons, Limes, and Citrons have borne fruit for several years, and the Orange commenced bearing last year. Orange trees have been recently imported in quantity, and in time South Australia will be able to boast of its Orange groves. *Pea.* All varieties have been cultivated, and the produce is immense. It can be grown in different localities nearly all through the year. *Peach:* Everywhere abundant as a standard, and the fruit plentiful. It ripens in January. *Pear.* Like the Apple, the fruit grows very large and fine. Some fine sorts have been taken to the colony, but there are many, both of the earlier and late varieties, well known in England, which are still wanting. They ripen in February. *Pine-apple:* Grows and produces well in cool frames, without forcing, but will not stand the open air. *Plum:* All sorts grow in profusion. Ripe in December. *Pomegranate:* Abundant, and most luxuriant in its growth. *Potato* In the winter season very fine crops are grown near Adelaide, but the Mount Barker district is its favourite region. *Quince:* Not extensively grown. *Rhubarb* grows freely. *Raspberry:* The common white and red only are known, with the exception of a few good varieties raised from seed on Mount Barker. The true Antwerp sorts are unknown. *Strawberry* is abundant in the same localities as the Raspberry. The only sorts known resemble, but are inferior to, the Carolina and the common Alpine. *Spinach* grows well. *Tobacco:* A variety of this plant is indigenous to South Australia. The Virginian and several other of the more approved sorts have been grown with the greatest success. *Turnip* is abundant in all gardens during winter, and spring especially. It is not cultivated in the fields at present, as there is no want of natural food for stock and sheep at any period of the year. *Walnut* grows luxuriantly, but has not yet borne fruit." *Abridged from the Morning Chronicle.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Many plants intended for winter flowering have filled their present pots, and are still growing fast; but, unless in the case of very small plants, it will be better not to pot them again this season, but to assist them with occasional waterings of liquid manure. The size of the ultimate pot must in many instances be regulated by the purpose for which the plants are grown, as in most places a supply of flowering plants is required for conservatory and drawing-room decoration; and many of them will be required to fit various ornamental vases, rendering it necessary to practise the small shift system, making the soil as rich as the plants will bear it, and by such means keeping the pots as small as possible, in proportion to the size of the plants; take also advantage, as much as possible, of the use of liquid manure. These remarks, of course, apply to quick growing plants, which are grown for a particular purpose, and which afterwards are of no further moment; but plants which are intended to form fine specimens of superior and skilful cultivation should never be cramped at the roots, except for the purpose of inducing an abundant supply of blossoms upon plants which are shy in that respect if grown luxuriantly. Some conceive that potting can only be performed at certain stated seasons, but this is a mistake; plants may be potted with safety and advantage at any season of the year, when the roots have made such progress into the soil of the last shift as to render the operation necessary, provided always that they are in an active state, and that such activity is not the result of unnatural excitement. The roots of many plants continue to progress while their tops are apparently dormant, and of course at such a time a shift into a larger pot will be perfectly consistent. One point however it is important to mark, that the supposed danger does not lie in the potting but in the watering;

no operation in gardening requires more care or judgment in its performance than this, and especially during the dark days. Attend to the staking of Chrysanthemums, and encourage their growth by occasional waterings of liquid manure. Let them be fully exposed to the sun; but in this situation they must be carefully attended to with regard to water, or they will lose their lower leaves. Remove all suckers as they appear; encourage the growth of Cinerarias, Primulas, &c., by repotting them into light rich soil as they require it. Young Calceolarias raised by seeds or cuttings should be similarly attended to; the latter luxuriate in a very moist but airy situation, and every attention should be given to induce them to make a strong sturdy growth.

FORCING DEPARTMENT.

PEACH-HOUSES.—With all the care that could be taken in preserving the foliage as long as possible, it will now be ripening and gradually falling off in the early houses; to keep them neat and tidy, which should at all times be an object, a light birch broom should be passed gently up the branches every second or third day, in order that all the leaves which are ready to fall off may be removed, instead of being allowed to make a litter in the house. As soon as the leaves are all off, the trees should be untrained, and the shoots washed over with a solution of sulphur and soft soap; taking care to perform both this operation and that of removing the leaves without injuring the young fruit or wood-buds for next year. The glass should be well washed, and the whole of the wood-work of the sashes and rafters; the front trellis and the back wall should be painted with oil paint. All this may be done by the ordinary labourers, and is therefore inexpensive, while it gives the house a respectable appearance, and effectually smothers every insect, in any stage, which may be lurking about the trees or their supports. As much of the effete soil as the roots will allow should be scraped away from the surface of the border, and replaced with fresh mellow loam, mixed with fine charred refuse, which all plants are fond of. No animal manure should be applied, as the trees can be stimulated to any required extent by using it in a liquid state during the growing season. The concluding operation will be to give the borders a good soaking of clean water, which will keep them sufficiently moist during the dormant season.

FLOWER GARDEN.

About a month since we recommended all those who are anxious to make the finest display of flowers next summer, to take notes of the most effective plants for the purpose, and of the habits and peculiarities of each. We would recommend that such a review be carefully repeated, and the present state of the plants noted also, marking particularly those which at that time made a creditable display, but which are now become shabby or indifferent. The object of this is to distinguish those kinds which commence early in the season, and continue in the greatest perfection to the latest period, and in future arrangements to make exclusive use of these, rejecting all of transient beauty or of second-rate habit. In making arrangements of this kind, it is a great mistake to aim at too great a variety; the object should be to make the *tout ensemble* perfect, and in very many cases this may be done much better by a small than by a large selection. For example if a gardener has of each distinct colour, and of the most useful intermediate shades, a few suitable plants of different heights, he may with proper taste make the arrangement of his masses as perfectly beautiful as a thing of the kind can be. The best way to proceed then is to make a list of desiderata, filling it up for the present with the things which approach most nearly to his standard, and substituting other and better things as soon as they come under his notice. One important point to be attended to in the selection of plants for bedding purposes is the proper balance between flower and foliage, and especially amongst the bright warm colours; a mass of inflorescence is all very well in the distance, when the proper complementary colours also come within the angle of vision from the same point; but those flower beds which are intended to please upon close inspection, must be plentifully interspersed with green foliage to relieve the eye from the unpleasant sensation produced by gazing on an intense colour. Many of the finest and most showy herbaceous plants are now in their beauty, and by studying the effect they produce in different situations, it is more easy to decide where they may be introduced with the greatest advantage. The dark masses of Rhododendrons and other evergreen shrubs stand particularly in need, during the summer and autumn months, of some flowering plants, such as Phloxes, Aconitums, Chinese and Noisette Roses, Hollyhocks, &c., planted amongst them, and the latter cannot be placed in a more favourable situation for displaying their charms, than with the deep glossy green of the Rhododendron for a ground colour.

FLORISTS' FLOWERS.

DAHLIAS.—During hot weather give abundance of water, and mulch the surface of the soil with very rotten manure. If blooms are intended for exhibition, they should be carefully fastened, to prevent the petals being chafed; all malformed flowers must be removed as soon as perceived. Sedulously continue to entrap earwigs, &c. AURICULAS.—Seedlings, and more particularly those of the class termed Alpines (with yellow centre and shaded margins), are much inclined to flower now; these we mark as they expand, or pull up if they do not present some novel or favourable feature. Offsets from named varieties, and sometimes the old plants, will also do so; but these, as we stated in a previous Calendar, should be plucked off without injuring the stem. Shade and water newly struck PANSIES, if the weather continue hot, and continue to propagate (by side shoots) those varieties it is desirable to obtain stock of. TULIPS.—Preparations should now be made in good earnest for planting offsets of choice sorts. Though full early enough for putting them in the ground, yet the bed should be got ready, and that too with great care, for well grown maiden bulbs from the offset bed, generally "come" or bloom in the cleanest and best character. If the soil of the main bed has been used more than one year, we would advise its renewal, taking care that the fresh soil is not too tenacious, but rather of a sandy texture than otherwise. The decayed sods from a pasture, the soil of which is of this character, will grow them to perfection. Water the layers of CARNATIONS as they require it; the emission of roots is thus facilitated; we have often seen these flowers comparatively neglected after the bloom is past, much to the injury of the crop of layers.

State of the Weather near London, for the week ending Aug 30, 1849, as observed at the Horticultural Gardens, Chiswick.

Aug.	Moon's Age.	Barometer. Max.	Barometer. Min	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain
Friday. 24	6	30.117	30.115	77	53	65.0	N E.	.00
Satur.. 25	D	30.112	30.097	77	52	64.5	S.W.	.00
Sunday. 26	8	30.100	29.985	79	56	67.0	S.W.	.00
Monday 27	9	29.983	29.969	66	51	58.8	N W.	.00
Tues .. 28	10	29.975	29.927	73	58	65.5	S W.	.01
Wed. .. 29	11	29.896	29.827	72	65	68.5	N W.	.00
Thurs .. 30	12	29.858	29.822	76	60	68.0	S.	.06
Average.		30.008	29.974	74.3	56.3	65.3		0.07

Aug. 24—Very fine; slightly clouded, overcast; hazy; cloudy.
— 25—Uniformly overcast; very fine; cloudy.
— 26—Very fine throughout, overcast at night.
— 27—Fine; very fine; overcast.
— 28—Fine; very fine, overcast, slight rain
— 29—Fine; overcast; unusually hot at night.
— 30—Dry haze; partially overcast, rain at night.
Mean temperature of the week, 5 deg. above the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Sept. 8, 1849.

Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain	Prevailing Winds. N	N E	E	S E	S	S W	W	N W
Sunday 2	70.7	48.2	59.4	8	0.23 in.	4	5	1	1	2	3	6	1
Mon. 3	69.0	48.4	58.7	9	0.18	1	5	1	1	3	5	6	1
Tues 4	68.9	48.5	59.2	11	0.48	1	4	2	—	4	1	3	2
Wed. 5	69.7	48.7	59.2	12	0.30	2	3	0	—	4	3	4	2
Thurs. 6	70.2	47.4	58.8	11	0.70	—	3	3	—	1	10	6	1
Friday 7	69.0	49.1	59.1	14	0.55	1	3	1	2	4	9	2	1
Satur. 8	69.0	49.3	59.1	10	0.65	1	3	1	2	4	9	2	1

The highest temperature during the above period occurred on the 3d 1835, and 5th, 1848—therm. 83 deg., and the lowest on 11th, 1817—therm. 31 deg.

Notices to Correspondents.

TO OUR CORRESPONDENTS.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

BACK NUMBERS. Full price will be given for Nos. 42, 43, 46, 49, and 50, for 1848.

BEES: *Junior.* Bevan on the Honey Bee.†

BOOKS: *E H.* Moore's "British Ferns" will suit you. It is a very nice little book, although ill printed.

CUPRESSUS: *X Y.* You cannot graft the naked stems of Cupressus sempervirens, a tree 40 or 50 years old, with Cupressus Lambertiana and Abies Deodara.

FERNS: *G W.* Seeds of them may be sown at any time in pots or pans half filled with broken potsherds, over which a layer of rough sphagnum moss should be placed, the remainder to be made up of peat, leaf mould, and a little silver sand. The mould should be pressed even, the seeds sown without covering, and the pot plunged in a bottom heat of 75°, and closely covered with a bell-glass. See an article on Tropical Ferns at p. 85, 1849 ‡

FIGS. *F F.* See p. 70 of the current year's volume.

FORKS: *J W.* We really see no difficulty in the matter, and do not at present care to incur the needless expense of a woodcut to illustrate that which is not in need of illustration. A pattern-fork is, however, promised us, and it it *does* require a cut it shall have one. We find the pickfork invaluable.

GLADIOLUS CARDINALIS: *Sub.* Some find it a shy bloomer, others flower it freely. We would recommend you not to separate the corms too much, but to plant them in clusters of considerable size it will then possibly bloom with you ‡

GLAZING: *F Ward.* The rough plate will answer perfectly. You may grow Vines on the rafters of your greenhouse; but the plants would thrive all the be ter without them.‡

GRAPES. *Max.* Without personal inspection it is impossible for us to say what is the matter with your Grapes.—*J D and M W.* If they have ever been mildewed, they are certainly free from it now. Sulphur cures mildew if it be applied sufficiently early, that is the point.

GUAVA JELLY. *J F.* Prepare it exactly like black Currant jelly.

IMPLEMENTS. *H B.* We make it a rule never to recommend dealers.‡

INSECTS: *An Inquirer.* We can hardly advise you without seeing specimens of the insect you term the white bug. Can you send us specimens? Try fumigation with tobacco under a parapetticoat. *W.*—*A C B.* The larger caterpillars were dead and shrivelled up, so as to be undeterminable. The hairy one was probably a young garden tiger or a buff ermine moth, which feeds on almost every plant. The black grubs on the Poplar are those of Chrysomela vitellinæ. The green one is that of a Syrphus or Aphis Lion. The small pupa is that of some Anthomyia—you need Ingpen's "Instructions for Collectors," and the volumes of British Butterflies and Moths in "Jardine's Naturalist's Library." There is no cheap Synopsis of British Butterflies and Moths, but one is in hand. We know no one who sells caterpillars. *W.*—*An Old Woman.* You can procure the Number through your agent. Kollar recommends plentiful watering as a means of driving the grubs of the cockchafer away; also an alternation of manure composed of animal dung and that of corrosive substances, such as gypsum, saline matters, &c., by which the grubs are driven so deep that they no longer injure the roots. The earth should also be well turned up and the grubs picked out. *W.*—*J T.* The grubs at the roots of Turnips are those of a moth (Agrotis segetum). We know no more available remedy than hand-picking by children as soon as the injury is first perceived. *W.*—*N.* Your Pinus excelsa is infested by Hylurgus piniperda. The shoots attacked should be well squeezed between the fingers, or cut off and burnt. *W.*—*E F L.* You cannot remove the scale in any other way than by hot water. Wait till the leaves have fallen.

MELONS: *J P.* When fruit is sent for examination, letters should accompany it. Your Camerton Court Melons arrived on Tuesday, and your letter on Friday, when they were half spoiled. They are, however, evidently a round netted sort, of very high quality. If good bearers; they are not inferior to the Beechwood.—*R Jesting.* Split and half rotten when received.‡

MONSTERS: *R B.* It is the terminal leaf-bud of an Oak, the growing point of which has been accidentally destroyed, the result being the enlargement of all the scales of the bud in the manner that has surprised you. This tells you the history of the cup of the acorn, if you understand morphology.

NAMES OF PLANTS: *Eboracensis.* It is the Longan, figured in Lindley's "Medical and Economical Botany," p.101.—*F A P.* The Pink from your park wall is apparently a variety of Dianthus plumarius, chiefly differing in its petals being less cut. It approaches D. arenarius, of Linnæus, but that species has green leaves, and the petals still more cut. It is a very pretty wild plant, extremely rare, and worthy of the charming place in which your clever description shows that it resides.—*H H C, Exeter.* 15, Primula auriculata; 90, Primula macrocalyx; 154, Gentiana; 127, Stachys lavandulifolia; 220, Rhinanthus; 346, Teucrium; 461, Phlomis; 2, Iris reticulata; 6, Crocus Cartwrightianus? no bulbs sent; 582, Crocus nudiflorus, bad specimens; 3, Scilla, near cernua (pray send bulbs); 70, Globularia; 95, Scrophularia—verna? 131, Onosma; 263, Linum flavum; 276, Paronychia; 344, Cuscuta; 368, Statice; 455, Tamarix; 467, Peganum Harmala; 512, Spiræa Ulmaria, 8, Caltha; 155, Anemone umbellata; 458, Aconitum sp n.; 17, do. very pretty, pray send seeds; 91, Æthionema, do; 92, Cheiranthus; 93, Hesperis, near sibirica (pray send seeds); 174, Cheiranthus; 334, Viscaria; 405, Saponaria; 156, Orobus; 159, Astragalus physodes; 322, Astragalus Lagurus; 395, Xeranthemum annuum; 571, Centaurea; 585, Gnaphalium; 66, Valeriana tuberosa? 543, Phyteuma; 397, Daphne; 222, Symphytum. Specific names hereafter.—*M B.* 1, Lastrea Oreopteris; 2, Lastrea dilatatum var. *S.*—*M C.* The Chelone is indeterminable from such a morsel. We never name florist's flowers.—*J H.* Eutoca viscida.—*C H N.* Eucharidium grandiflorum.—*A Z.* 1, Cuscuta epithymum or Dodder; 2, Mahernia incisa; 3, apparently a morsel of Begonia discolor.—*Shem.* 1, Cneorum tricoccum; its fruit is a tricoccous or tetracoccous capsule; 2, Funkia cærulea; 4, Cristaria coccinea, 5, a variety of Pharbitis nil; 6, Stachys germanica; 7, Monarda didyma; 8, some Anchusa; 9, cannot explain; 10, Corydalis lutea; 11, Mercurialis annua; 12, Populus canescens, 13, 14, shrubs not in flower require more time for examination than we can afford. The Snake nut is Ophiocaryon paradoxum. There! we are out of breath.—*Q Z* Some Asclepias, perhaps A. tuberosa; if so, hardy and requiring a moist peat border.—*Alpha.* Chenopodium ambrosioides.—*P B.* 1, Brassia brachiata; 2, B. caudata.—*J Knowles.* Stanhopea Wardii.—*C D.* Fuchsia cylindracea.—*E G.* Uredo candida. It seldom does much harm, though occasionally a formidable enemy. There is no known remedy.—*Farmer.* Equisetum arvense, Horstail. To destroy it, pull it up incessantly.—*S P.* Rhus Cotinus.—*Devonian.* Adlumia cirrhosa. We are unable to explain the history of the spotting on the Aucuba leaves.—*Z.* The leaf belongs to some kind of Bindweed.

ORNAMENTAL AND DOMESTIC POULTRY, by the Rev. E. S. Dixon, price 5*s* 6*d*., is now ready, and may be had at the Office of this Paper, and of all booksellers.

PAXTON'S COTTAGER'S CALENDAR. The reprint is now ready, price 2*d*. each copy. Parties wishing to have copies for distribution among their tenantry, can be supplied at the rate of 25 copies for 5*s*.

PINE-APPLES. *X Y.* By taking a penknife and cutting out the heart of a crown of a Pine-apple after it gets to a moderate size, you will spoil the appearance of the fruit, but not disqualify it for exhibition.

POTATOS: *E C.* We must decline inserting any discussions of the Irish Poor-law, or of questions arising out of it If the repeated warnings which have been given to the Irish have produced no effect, we can only regret their blindness, and leave them to the consequences.—*T S P.* We should leave the late Potatoes in the ground. They shoot again in consequence of having been cut over too soon, while in full vegetation. Mr. Tombelle Lomba particularly directs the cutting not to be done till the flowering is over or on the wane. At that time the growth of the Potato plant becomes languid, and is not easily renewed.

VINES *P W H.* Heat sufficient for fruiting Pines ought to ripen the White Muscat of Alexandria. You may therefore plant this, your favourite sort, next the warmest end; then Black Hamburgh, and at the farther end, Chasselas Musque.‡

MISC: *E B.* If you cut the points off your Leek leaves they will not reproduce new points.†—*H D.* We are unable to say what matters deleterious to plants exist in your house. Personal inspection could alone determine that. We would not advise you to prune in the branches of your Azaleas, except they are dead. Is it greenhouse plants you want?‡

SEEDLING FLOWERS.

ANTIRRHINUMS: *W S M.* 1, nicely netted with bright rosy pink on a pale ground, flowers small, but very pretty. 2, yellow in the centre, fading to white near the outer edge, small and rather common in colour. 3, 4, 5, and 6, are different shades of colours; in upper part thickly netted with violet veins; lower, straw-colour, centre yellow, pretty, but too small.*—*J W.* All nicely marked, but not sufficiently distinct in colours from many of the Carnation varieties now cultivated. 18 and 21 are the best.*

CARNATIONS. *J M C.* Your Carnation being only self-coloured (bright scarlet,, has no novelty in it, and can only be considered a nice variety for the open borders.*

DAHLIAS. *H B.* "Miss Wortley Robertson," outer petals rosy pink, those near the centre much lighter in colour; size, shape, and depth of petals good; a fine bold flower for exhibition.*—*W J.* Yellow, tipped with white: shape, size, and texture good, eye a little sunk; a nice variety, rather novel in colours, if constant. Yellow: petals too small, and crowded in the eye; size small. Deep red: petals small and too numerous, eye sunk.*

HEARTSEASE: *J R.* Small and out of condition at this time of the year. 1, dark purple upper petals and lower ones bright yellow, with a dark band round their outer edge, and feathered near the eye; size, texture, and colours tolerably good, outline irregular in the bottom petal. 6 and 9 dull and confused in colours, and not distinct from many others.*

PELARGONIUMS: *J Giles.* Your scarlet seedling called "Tom Thumb's General," is a good trusser, very bright, and apparently very dwarf. A nice sort for windows or vases, as well as for beds.

PETUNIAS: *T B.* 2, purplish rose, stained and veined with deep violet; shape, size, and texture tolerably good; colour a little washy. 3, violet purple, size and shape good, texture rather thin, colour common. 6, pale blush, thickly veined, particularly round the eye, with dark purple; shape, size, and colours good; texture a little thin; a nicely marked variety. 8, outer half rosy pink, inner bright purple, a little feathered; size, shape, and texture very good; colours bright and well contrasted; a nice and distinctly marked variety. 11, pale rose, slightly veined near the eye; pretty, but rather too small.*

PICOTEES: *W C.* 1, white, slightly edged with purple; shape and texture of petals good; size small, flower thin. 2, white, slightly striped and feathered at the edges with bright crimson; texture, marking, and colours good; size small, flower thin. 3, similar in properties to 1. 4, white, with a deep purplish crimson edging; shape, texture, and size of petals good; colours distinct. 5, white, slightly edged with pink; shape and texture of petals good; flower small, but well filled.*

VERBENAS. *W S M.* Quite withered when received.*—*M H.* Not different from V. bonariensis.*—*W R B.* 2, rosy pink; size and shape tolerable; colours rather washy, and not very novel. 3, reddish purple, flowers too small and dull in colour. 8, orange scarlet; a nice variety, with the clusters, as well as individual flowers, large and good in texture, but a little too deeply cut in the petals.*

TURNIP SOWING.

THE LONDON MANURE COMPANY, having adapted the "URATE" more particularly for Turnips and all Root Crops, can recommend it with the greatest confidence. It seldomfails, in the driest season, to secure a good plant, and to produce a heavy weight per acre. They would call attention to their Superphosphate of Lime, which is prepared with the greatest care, and sent out in a very fine, dry state, perfectly ready for use. The London Manure Company have made arrangements for a constant supply of Peruvian Guano, from the best cargoes, which they will deliver direct from the ship or importer's stores. Corn Manure, Nitrate of Soda, Fishery and Agricultural Salt, and every other Artificial Manure, on the lowest terms for a genuine article.

EDWARD PURSER, Secretary, 40, Bridge-street, Blackfriars.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

EDENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 8 feet long, furnished, and the Houses when completed charged from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.

HEATING BY HOT WATER.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Duke of Devonshire's, Chatsworth Gardens.
Earl of Gainsborough's, Oakham, Rutlandshire.
Earl of Zetland's, Upleatham, Yorkshire.
Robert Hanbury, Esq., Poles, near Ware, Herts.
Mr. Glendinning's Nursery, Turnham-green.
And at least 500 other important places.
BURBIDGE and HEALY, 130, Fleet-street, London.

CLARK'S METALLIC HOTHOUSE WORKS, 55, Lionel-street, Birmingham.—Proprietor, Mr. THOMAS CLARK; Manager, Mr. JOHN JONES.

Mr. CLARK presents his grateful thanks to the Nobility and Gentry for their liberal patronage of the above Establishment, during a period of thirty years, and begs to state that the repeal of the duty on Glass enables him to offer his METALLIC HOTHOUSES at a greatly reduced price. These Houses are glazed with British Sheet Glass, in panes of from 21 to 30 inches in length, and of such thickness as to preclude all danger of accidental breakage, whilst that which arises from the action of frost is effectually prevented by the peculiar mode of glazing adopted. As a sample of his Metallic Hothouses, in which all the most recent improvements are happily combined, Mr. CLARK refers to the magnificent range erected by him in the new Royal Gardens at Windsor, admitted by competent judges to be the most complete of its kind in the world.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND CO., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
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HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 21,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 400 and 500) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a copy of the testimonials, will be sent on application to WALTER CARSON, 15, Tokenhouse Yard, back of the Bank of England.—No Agents.—All orders are particularly requested to be sent direct.

PORTLAND CEMENT.—Testimonials received from all quarters, prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, CHARLES FRANCIS and SONS, Nine Elms, London.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 1, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS

THURSDAY, Sept. 6—Agricultural Imp. Society of Ireland.
FARMERS' CLUBS—Sept. 7: Great Oakley, W. Hereford. Clent—Sept. 4: Framlingham, Peterborough, South Devon.—Sept. 6: Burton-on-Trent, Ottery St. Mary—Sept. 7: Halesworth, Debenham—Sept. 10: Claydon.

THE POTATO BLIGHT AND IRELAND—IRELAND AND THE POTATO BLIGHT!—These are topics of which most readers are doubtless heartily weary. They are topics, however, not to be blinked in an agricultural journal. The condition of Ireland is an agricultural question. Improvement in the social system of Ireland must commence with an improved agriculture. The breaking up of a social system based upon the Potato reacts on the agriculture and retards its improvement. It perverts to evil all attempts to mend the state of that unhappy country by legislation, like the mysterious influence of which SPENSER complained in his day, that it marred all the "good plots" devised to the same end.

Everyone in Ireland, who had Potatoes to plant, has again planted with them every available acre. There are unequivocal symptoms that the Potato disease has now become chronic, and that we are on the eve of another failure more or less extensive both in England and Ireland. Appeals are even now making to the humanity of Great Britain for aid to the suffering Irish—the Irish who are suffering from their blind adherence to the Potato. How shall the appeals be met? In a recent article we declared our conviction, that the sooner all classes in that country knew that they would be left to their own resources, the sooner they would learn the necessity of self-exertion—the sooner they would cease to lean on that broken reed which has gone into their hand and pierced it. This proposition is advanced, however, with some limitations. If all aid be refused, hundreds of thousands must perish. Shall these multitudes perish that the survivors may learn self-exertion? Shall famine and pestilence be left to do their work in reducing the population which the Potato has called into existence? We advocate no such horrible doctrine, although we have heard it coolly maintained by Irishmen, and although Irishmen appear to be acting on it, from the ruthless manner in which they are clearing their properties of tenants, now burthensome but once profitable under the Potato system. We are no enemies to the Irish peasantry who, with all their faults, possess many qualities which we in England may admire and imitate. We would not withhold British aid, once more, from those who may suffer from a fourth Potato famine, even though they have to thank their own improvidence for it, in not taking warning by the three which preceded it. We protest, however, against aid being given in such a form as to perpetuate its necessity, and that is the direction which British aid has hitherto taken; whether the channel in which it has flowed has been that of gift or loan, whether it has been administered by the Government, by the British Association, or by those unwearied labourers in the cause of humanity—the Society of Friends. The report of the latter body was published in a recent number of our Journal. They distributed, they say, food and clothing to an enormous amount, and feeling the demoralising effects of such extensive alms-giving, they endeavoured to encourage reproductive industry; they aided local manufactures and fisheries by grants and loans, they supported industrial schools, they distributed seeds of Turnips, Carrots, Parsnips, Cabbages—we fear we must add, seed Potatoes also—and undertook the temporary cultivation of 800 acres by spade husbandry. The amount of relief administered by themselves and other charitable institutions they estimate at a million and a half, and the advances of the Government at 10 millions; and with all this expenditure they arrive at the melancholy conclusion, that, with very few exceptions, no permanent good has resulted from it, and that the prospects of the country, so far from having improved under it, are rather worse. The only form of relief which has not yet been tried by the Government, by the British Association, or the Society of Friends, is ASSISTANCE TO EMIGRATE. Let that now be tried. Let that be the form, and the only form, in which aid shall be given from funds not raised in Ireland, and let that be given as a loan rather than a gift, in order to counteract as little as possible that spirit of independence and self-exertion which it is of the utmost importance to encourage. We know, from experience on the Temporary Relief Service, that the peasantry are eager to emigrate; that if there were a bridge to America or Australia, they would rush across it *en masse*, and that they would hail assistance to cross the ocean as the greatest boon that could be conferred upon them. "I'd be a happy man, if I could but get to America!" is an exclamation we have heard from many a starving cottier. We know, moreover, from the same experience, that money begged or borrowed out of Ireland to be administered as relief in Ireland, holds out temptations to abuse too strong to be resisted; that the only guarantee against it consists in the direct levy of the relief funds in the locality wherein they are to be expended; and that even this is not a sufficient guarantee, because those who have an interest in abusing, or whose indolence connives at the abuse, of the relief funds, are more numerous than those whose interest lies in an opposite direction. Relief in aid of wages (the monster evil of the unamended English Poor-law), and relief in aid of rents (to which, so far as the rent of land was concerned, that law was a stranger), present themselves in Ireland under disguises so numerous and so specious that no one who has not had some experience of them can form any conception of their variety and extent. There are plausible arguments to be advanced in their favour, and plenty to ply them on the grounds of humanity and economy. Besides the jobbers of all shades and classes, whose name requires no explanation, there are the pseudo-philanthropists who measure the welfare of a people by the amount distributed among them in alms, and the confiscators, who, from party or interested motives, have seized on the Poor-law as an engine for accelerating the ruin of the present race of landowners. The most vigilant inspector will be unable wholly to stem the torrent setting in from these quarters; a lax, or not very determined inspector will be carried away by it, and will have on his relief-lists numbers exceeding the entire population of his district. This has happened in more instances than one, both under the Temporary Relief Act and the permanent Poor-law which succeeded it. The fact is, that out-door relief is wholly unsuited to the circumstances of Ireland, but the entire population of a country cannot be put into workhouses, and if the Potato is to continue the staple food of the Irish peasantry, they will periodically, if not constantly, be in such a condition that the greater portion of the population must have out door relief or starve; and, with each Potato failure, fresh numbers of the ratepayers will be dragged down into the class of paupers, while the resources for supporting them will continue to diminish.

Relief afforded in the shape of assistance to emigrate, if not wholly exempt (as it is not) from liability to abuse, presents smaller temptations to misappropriation, and greater facilities for resisting it. The modes of relief hitherto tried, costly as they have been, have barely sufficed to keep the recipients alive in squalid misery. Assistance to emigrate would place within their reach comfort and independence, the means of acquiring property, and becoming employers of labour, unattainable by the present generation of the peasantry of Ireland, or of England either.

We shall resume this subject hereafter, for the purpose of showing the importance of emigration as a preliminary to the establishment of a healthy system of tenancy and of agriculture in Ireland, and of pointing out means by which assistance to emigrate may be afforded without interfering with the spontaneous emigration now in progress, which, deep and rapid though its flow, is inadequate to restore the equilibrium, if such it can be called, disturbed by the Potato blight, and which, from want of assistance and direction, aggravates in some degree the misery attendant on the transition state through which Ireland is passing—and must pass.

THE FARMER'S PROSPECTS.

I HAVE perused with much interest the editorial remarks in the *Agricultural Gazette* of the 4th inst. on the "Prospects of Farming in Great Britain," and hope that journal will not cease to remind the agriculturist that he has "unexhausted resources too ample to render lower prices a hopeless affair." Once for all, let the farmer assume, as a necessity of his position, that the prices of agricultural produce must range low, that there is not the remotest chance of heavy, if any, duties being reimposed on the importation of raw materials, or articles of first necessity like corn and cattle. The cost of transportation from abroad is the only protection he can rely upon. His sales will be at such prices as

foreign produce, of equal quality and in large quantities, can be brought into his markets and sold at a profit. The position may not be agreeable, but let him look it in the face like a true Saxon, consider carefully how far low prices bear at all on net profits, and what means he has in his own possession of making up the actual deficiency.

The first result of this inquiry will be a conviction that low price will not affect net profits to the extent he apprehended; that it will not affect at all the seed he sows, and the produce consumed by his stock and by his own family; that his tithes, his tradesmen's bills, his labourers' wages, and even his poor-rates, will all be reduced in a degree more or less corresponding with the general reduction in the cost of living.

Still there will be a considerable falling off in the net results, and that loss the farmer must make up, or cease to command his accustomed comforts. What is called high farming has been held out as the grand substitute for protection; but knowing that nine-tenths of the tenant farmers cannot command the capital required for high farming, I am anxious to press on their attention how many resources they have which are daily neglected, because perhaps daily under their eyes. Some of the more obvious sources of increased economy I pointed out in communications inserted in the journals of the 14th and 28th July. The Editor, in the article above alluded to, has pointed attention to another "unstopped drain" in the ravages of rats. The farmer admits how much grain they eat and how much more they foul, but he says, do what he will he cannot keep them down. This is true if he allow them plenty to eat; the population even of rats will breed up to the food at command; the starving is the only plan, and with "rats and mice, and such small deer," there is no moral repugnance to the starving system. A tenant of mine says he has always effectually protected his corn from rats by laying at the bottom of his stacks and of his barn floors a layer of the husks of kiln-dried Oats; that with him it never failed, and he mentioned other farmers who had successfully adopted the same plan. I have not found this method generally practised or known, and perhaps it only amounts where the choice exists to a preference for corn not so protected, and as mice, whose powers of injury by eating and fouling are scarce inferior to those of rats, are not so sensitive and suspicious, I strongly recommend all farmers to place their stacks on staddles. "Oh, but the expense," is the usual objection, and I anticipate it by remarking that the most effectual, if the less sightly ones, can be put up by the farmers' labourers at the outlay of a few shillings. Fix firmly in the ground a sufficient number of stout posts, according to the size and number of stacks proposed, leaving them to project not less than 30 inches; purchase the same number of pieces of zinc or galvanised-iron sheeting, not less than 20 inches square; fix one on the top of each post, and then nail on the usual wooden framework, which may consist of the rudest wood thinnings. The cost of the nails and of the bits of metal sheeting is the only money outlay, and the staddles will be perfectly effectual and last many years, especially if the lower ends of the posts are first charred.

In my last communication I spoke of guano as illustrative of the importance of combining the liquid and solid excrements of animals, and of preserving them from fermentation and from rain. I have since read Professor Way's article on the "Composition and Value of Guano," in the July Number of the Journal of the Royal Agricultural Society, giving an analysis of near 50 specimens of guano, with estimates of their relative values. Some of the results illustrate in a remarkable manner the enormous waste from fermentation. I observed that the value of guano mainly consisted in the fact that it was deposited in climates where no rain fell, and that, as without moisture fermentation will not take place, the nitrogen had not passed into the air. The remark is true only of Peruvian guano; other kinds, the Saldanha Bay for instance, have not been effectually protected from fermentation; and mark the consequences. The Peruvian guano contained on the average 17.41 per cent. of ammonia, giving as the agricultural value of this ingredient in a ton of Peruvian guano 9*l.* 14*s.* The average amount of ammonia in Saldanha Bay guano was only 1.68 per cent., giving as the value of the ammonia in a ton of this kind of guano, 18*s.* only. What is the cause of this enormous difference in the amount of ammonia (or of ingredients producing ammonia) in these two kinds of guano? As deposited by the birds their composition is considered as nearly identical; the difference is owing to that very same cause—the exposure to the air and rain, which deprives the contents of the farm-yard of the greater portion of its fertilising capacity. In the words of Professor Way, "every ton of Saldanha Bay guano may indeed be regarded as having originated from two or more tons of Peruvian, from which fermentation and rain have removed the greater part of its ammoniacal compounds."

Our climate is moist, and fermentation will take place; indeed so much straw is generally allowed to mix with animal drippings, that fermentation must take place before the farm manure is in a manageable condition; but does it hence follow that farm manure must necessarily lose, like Saldanha Bay guano, almost the whole of the ingredient which constitutes its principal value? By no means; could each successive deposit of this guano have been covered with a layer of earth, and a sprinkling of gypsum, its ammoniacal compounds would have been as effectually preserved as in the Peruvian guano. The farmer can do this; he can employ the leisure time of his men in collecting soil, and occasionally spreading it over his manure; he can lay out a few shillings in the purchase of gypsum, and sprinkle a little over each layer of earth. The gypsum will fix, that is the 17 per cent. of sulphuric acid in it will combine with the ammonia as it rises. Nor does its service stop here; when the manure is carried to the field, and the ammonia is taken up by the growing crop, the sulphuric acid set free will be ready again to combine with, and fix any ammonia brought down by the rains, and store it up for the nutrition of plants. Even for this service, and its per centage of lime, it is worth its cost; as a means of preserving the ammonia of the liquid and solid excrements of cattle, it is invaluable.

It is not to be inferred that Saldanha Bay guano is valueless because its ammoniacal compounds are gone; the ingredients next in value are the phosphates, and this guano is doubly rich in these, because the phosphates, though most of them soluble in water, do not pass into gases, and are only wasted when washed out of the manure; and as each ton of Saldanha Bay guano contains the phosphates of two or more tons of bird droppings as deposited, it is still of considerable value. In most of the farm-yards I am acquainted with, even the phosphates of the manure are allowed to go. There is generally a foul ditch running from the yard after rain, or a black-looking horse pond in the corner; and to one or both of these receptacles the phosphates have been washed away. I therefore suggested spouted buildings, a hollow for the manure, and a tank to catch any occasional overflow, as only second in importance to the fixing of the products of fermentation, the carbonic acid, and ammoniacal gases. And when I remind the farmer that an average acre of Wheat straw is worth, as food for cattle, 3*l.* 4*s.* 10*d.*, of Oat straw 2*l.* 17*s.* 4*d.*, and of Barley straw, 1*l.* 14*s.* 3*d.*, and that their value as manure after passing through the animal is only diminished by about one-fourth, I am sure he will see the economy of using the utmost possible quantity of his straw as cattle food, especially when he considers the manageable condition of cattle-droppings, and how much more easily such strawless manure is protected from loss by fermentation and washing.

The agriculturist without the means of farming high must needs make ends meet by attention to sources of economy which he has hitherto overlooked and neglected. I the more pressingly urge on him the few I have referred to, for this is the last month for putting up staddles for his corn and pulse crops, and the most convenient time—the yards being empty of stock and manure—for spouting his buildings, and for making the manure pit and tank.

With the editor's kind permission I shall be happy at some future time to bring to the farmer's notice such other cheap appliances as observation and experience have suggested to me. *P.*

Home Correspondence.

Harvesting Grain.—From all we hear there is a prospect of an abundant harvest this year in our country, but the weather has not lately been favourable for securing it, and it may not be an unseasonable time to call the attention of agriculturists to the question, whether something might not be done, so that the work of harvesting grain might be carried on in wet weather. It is certain that more than one method is adopted in securing Wheat for storing; some farmers do not cap their Wheatsheaves, others take the trouble of doing so; then in some parts of the country it is heatmed; then corn in the straw has in wet weather been rendered fit for storing by drying it in the house with the aid of a kiln. I believe the manufacturers of cloth and paper have their drying rooms; may it not be asked could not farmers use such rooms for drying Wheatsheaves? it must be admitted they could, so that the business seems to be a question of expenditure and whether it is worth the cost, and it is strange that more numerous experiments have not been made to ascertain so important a fact, for the waste from the sprouting and shedding of grain during wet harvests must often amount to the value of millions, which would be saved to the country could it be house dried. However, in the present day, we have additional encouragement to make experiments, for the steam-engine which is frequently to be found in farm-yards would be available in producing a current of air, which of course would much facilitate the process of drying. I consider another important question connected with securing Wheat in this country during a wet harvest is—suppose an acre of Wheat cut and tied and placed in a line, what quantity of cotton cloth would cover its head, so as to secure it from the rain? Now understand such is the wonderful triumph of machinery that a square foot of cotton cloth may be bought for less than a halfpenny. *Cadogan Williams.*

Wales.—If you have a spare corner of your *Gazette* that you could now and then spare for poor isolated Wales, I do not think you could do a greater kindness than exciting a discussion on the advantage that must occur to the tenant, the landlord, and the public, if one-half of the "miserable" meadow and upland pasture land broken up and put into a proper course of cultivation, instead of remaining year after year, or even generation after generation, producing hardly sufficient Grass to support a few miserable sheep, that cannot pay for the constant trouble of looking after, they are certainly not worth looking at; or have they any good quality except that of being "first-rate jumpers?" *G. S. H., Swansea.*

Value of Green Crops.—The following remarks were made on this subject by Mr. Baker, of Writtle, in continuation of those reported at page 525, on the occasion of Mr. Mechi's gathering:—Turning to a subject mooted by the Chairman, he believed there was an erroneous notion among farmers as to the use of corn for the production of meat and manure in their respective forms. Almost every farmer was a grower of Turnips or root crops of some kind; in many instances they were cultivated with avidity and zeal, and not unnaturally so, because as roots were food for stock—stock would yield manure, and manure would produce corn, so that it appeared as it were the first step towards the improvement of a farm; but let any one ask himself, "what is a ton of Turnips worth, and what does it cost to produce?" and he could hardly fail to hesitate and inquire whether he could not make use of Beans, Peas, or some other production with greater advantage. He was led to make these remarks because he had closely looked into the subject: he believed it would be agreed that to grow an acre of Swedes, or Mangold Wurzel, would not cost less than from 8*l.* to 10*l.*; and taking the yield at 20 or 25 tons an acre, it would give a cost of about 10*s.* per ton. The subject had been discussed by various writers in the *Agricultural Gazette*; and the editor, himself, had clenched the arguments, by giving the average of a highly cultivated farm for four years. The results were an expenditure of about 1440*l.* in stock, for which about 1600*l.* was afterwards realised, leaving only 160*l.* per annum for the whole profit upon that investment of capital, including the use of from 4000 to 5000 tons of Swede Turnips yearly. That was a startling fact, and he left them to calculate the worth of a ton of Turnips in that case. Mr. Mechi: about 3*s.* 6*d.* Mr. Baker had no doubt his friend's figures were right; he would observe that if Mr. Mechi could use 800*l.* worth of corn upon his farm, and obtained no other remuneration than the manure, he (Mr. Baker) was disposed to think he would be a gainer over and above what he would have been had he grown Turnips and roots instead. He owned that the prejudice against which he was speaking had formerly impressed his own mind, and he had been in the habit of buying pollard and middlings, though not equal in weight to his own Barley, and not to be compared with it in fattening quality, because he had the weakness of liking to take the money for his Barley in the market, forgetting, however, that he had to pay it out again to the miller. With respect to the breaking up of Grass lands, he had drawn up a paper, which they would shortly have the opportunity of reading, showing the bearings of the question upon the interests of the landlord, the tenant, and the labourer; and he was prepared to prove that upon 100 acres of arable land he could with the *half* devoted to green crops feed a greater amount of stock than another man could upon 100 acres of Grass land of the best quality, besides, in the first case, employing the labourer and producing a crop of corn. He would not, however, so much recommend the breaking up of poor Grass land, especially if at an inconvenient part of the farm: he would rather till that which was in the best position and which would pay the best for cultivation, leaving the poor pasture land to become improved by the extra quantity of manure that would be raised, as well as by the extra quantity of stock that would be fed upon it; for he held that it would be of little use to convert poor Grass land into tillage lying at an inconvenient distance from the house-stock, and which had most probably at a former period been converted from arable to Grass on account of its unfitness for the purposes of tillage.

Cumberland One-horse Cart.—[It was expected that one of these carts would be exhibited at the Norwich Meeting of the Royal Agricultural Society, but as this was not the case, we have been supplied by Messrs. Ransomes and May, of Ipswich, with the following particulars of one which has been sent to them by our own corespondent "L. V. R.," see *Agricultural Gazette*, May 12, page 298.]—The one-horse cart we have received from Cumberland is a specimen of good workmanship, and of the proper application of materials. It is reported to us as usually carrying a ton of coal; and with large coal not friable we do not doubt this quantity can easily be packed on it, but it would not hold nearly so much of Newcastle coal, which cannot be heaped much above the sides. The strength of the frame work and wheels is quite adequate to even more weight. The following particulars are taken carefully from the cart itself.

	ft.	ins.		ft.	ins.
Length of body inside at top ...	... 5	4	average	5	1
Do. at bottom ...	... 4	10			
Width inside at top	... 3	7½	average	3	8½
Do. do. at bottom	... 3	0			
Average depth of sides ...	...	...	... ...	1	3½

The cubic content of the body without heaping is therefore 21½ cubic feet. There is a light framework attached when straw, hay, or similar material has to be carried, which consists of two cross pieces of Ash, each 4 feet 11 inches long, 2½ inches deep, and 2 inches wide, resting on and bolted to the top rails of the cart sides close to the ends. On these cross pieces are fastened two longitudinal bars of Ash 8 feet 5 inches long, 2½ inches deep, by 2 inches wide, and these are again connected by three other cross pieces 4 feet 11 inches long, 2 inches wide, by 1½ inches; one in front, another 18 inches therefrom, and the other at the back end. This frame when in its place projects about 2 feet 2 inches from the front, and about 1 foot 1 inch from the back of the body of the cart. The wheels are 4 feet 3 inches diameter, with 12 spokes and wood naves. The tyre is 2½ inches by ¾ inch thick; the fellies 3 inches deep by 2¾ wide; iron arms and boxes; the diameter of the former at the shoulder being

2½ inches, and connected together by a bar of iron bedded in a wood cross tree 6 inches by 4½ inches, and upon this are three blocks, 5½ inches deep, to raise the body of the cart. The naves are 11½ inches diameter, and the same in length. When the shafts are horizontal the floor is 3 feet 3 inches above the ground, and in this position the inside of the felloes of the wheels at the ground are 4 feet 1 inch apart, and at the highest part 4 feet 7 inches, and taking the distances at the front and back at the height of the centre, they are 4 feet 3½ inches, and 4 feet 4½ inches respectively.

	cwt.	qrs.	lbs.
The weight of cart without frame	6	0	20
The weight of the frame	0	1	26
Total	6	2	18

The total length of shafts and cart, 13 feet 7 inches, and the size of the shafts at the front end of the body, 4½ inches by 3½ inches. As the shafts form a portion of the frame of the body, the cart does not "tip" or "tilt." When the cart is empty and the shafts horizontal, the bearing weight upon the backband is 33 lbs. *Ransomes and May, Ipswich, August* 20.

Islington Market.—As there is at present a great plethora of money in the market, and from the disclosures which have lately come to light of the mismanagement and reckless waste of money in railways—a want of confidence in joint-stock companies—I beg to call the attention of your readers, more particularly those concerned in grazing and farming, to the prospectus of the new Islington Cattle-market Company. It differs from other schemes lately mooted, as, from its valuable property, it offers a certain fair return for the capital invested, and promises in prospective a large and increasing profit. The Islington Company possesses, secured by Act of Parliament, peculiar privileges and rights, and a large and valuable estate, close to the terminus of the new Junction Railway, and convenient to the termini of almost all the great railways which converge in this metropolis. The market is well worth inspecting; it is fitted up in the most complete manner, with engines to supply water to all the pens, with banking-houses, public houses, &c., besides a number of valuable dwelling-houses outside of the premises. When the abattoirs are built there cannot be a doubt but it will yield a good profit; and should Smithfield be abolished—and it is not possible that this pest-house can be allowed much longer to contaminate our metropolis—the capital will give a return beyond the calculation of the most sanguine. It is not generally known that an agreement exists between the company and the corporation of London, securing to the latter, on the abolition of Smithfield, full indemnification for all loss of tolls and dues, till such time as the ground now occupied by Smithfield shall be sold or so invested as to cover the loss of such sources of revenue. It may therefore be fairly hoped that the corporation will give the new company their firm support, as it will enable them to remove the monster nuisance of Smithfield, without even a temporary loss, and to lay out this valuable property in a way which will add to the beauty and health of the city. The Liverpool Market and Abattoir Company of the same kind give a very large profit, but nothing to what may be fairly anticipated from the metropolitan one. In conclusion, I earnestly recommend your farming friends, when they come to town, to visit the market and judge for themselves; they will then be fully able to judge of the value of the scheme, and prospects of its success. *M.*

The Wheat Crop.—I have not yet noticed in the agricultural publications any account of a deficiency in the Wheat crop. I am sorry to say a serious deficiency is very apparent in many of the crops in Cheshire; the chief indication is in the ears being perfectly erect, even when ripe, and on examination there is grain only on one side, the defective side is to the north generally; the loss is calculated to be from 20 to 25 per cent. Should not this be inquired into? *W. P.*

The Sex of Eggs.—"V. S." will confer a favour on probably not a few readers of the *Agricultural Gazette*, by giving the name and address of the old lady at the poultry rearing establishment near London, who is able, by the inspection of eggs, to "select none for incubation but such as will produce pullets." If she can do this, she is in possession of some little-suspected clue to a great mystery. The hatching season is getting over, and it is almost too late to do anything this year; but it is worth inquiry whether she would consent next summer to have her skill tested, by picking out, from any basket of hen's eggs that might be offered to her, those containing female embryos only, and allowing them to be hatched apart from her own superintendence, under the hens of several disinterested and trustworthy poultry fanciers. If she succeed, she deserves that her secret should not be allowed to die with her, but be purchased *pro bono publico* by a handsome reward, which would doubtless be forthcoming by subscription or otherwise. If she fail, her professed abilities to tell the fortunes of chickens before they have ceased to be eggs, will follow the fate of scores of other quackeries. The first thing is to establish satisfactorily, beyond suspicion of error or trick, the fact that it is possible for an old lady to select sittings of eggs, which will produce, be it remembered, pullets only. Broods of cockerels will occasionally result without the exercise of any skill whatever in the selection of the eggs. *D.*

Turnip Seed.—In South Hants the failure of the Turnip crop may justly be attributed to bad seed—many seedsmen mix old seed with the new. This year we find, though the rains have been late in coming, a most regular plant, which we know to be genuine seed; what we look of a seedsman has come up badly and patchy. If the seed is good we never fear having Turnips, provided we sow 3lbs. to the acre, and can depend upon the seed. The climate is very favourable to their growth, for they will grow till Christmas, and our soil being a strong sandy loam, it is well suited to their cultivation. Your observations in reply to a correspondent on the failure of this crop this year, or any year, are highly correct and just. *X. Y. Z., Hants.*

Agricultural Politics.—The arguments you set forth on August 4, in "backing those" made use of, by a "late Norfolk Farmer," in a recent essay on the "Present and Future Prospects of Farming in Great Britain," are so very fallacious to my mind, as I doubt not they will appear to many of your readers, that I cannot let them pass by, without making a few remarks upon them. The whole drift of your arguments seems to tend to this end, that a free trade, or more correctly speaking, a system that affords no protection to native industry, and that prefers rather to support the foreigner than our own countryman, is to be extolled; because, forsooth, "it is to arouse the farmers of England from their present slothful and lethargic state, and stimulate them to greater skill and energy." [This is not quoted from us.] And for what purpose? to compete with the foreigners in our own markets, and with what chance of success? Why with about as much as you might suppose any man would have, who having a heavy weight placed on his back that he could scarcely walk with, were he to be put to run a race against one who had but a feather weight to carry, and then supposing him to come behind and eventually lose the race, he must be told he is a very slow fellow, or he might with a trifle more of exertion have won. The position of the foreign agriculturist, and the advantages he has over the English are pretty clearly shown in a letter from Mr. Thomas Brown on "continental farming," which you will find in the very next page in the same *Gazette* as your article is published in. He therein states how much superior were the soil and climate, as well as the comparative freedom from the burden of taxes those countries through which he travelled were, but the English farmer has not so much cause to fear the competition of Belgium or France as from the more northern Continent of Europe—from Russia, Poland, Denmark, Sweden, &c., countries where corn can be grown at about half the cost it can be in Great Britain, and can be imported into our markets from theirs at such a price that must put it out of the possibility of our farmers competing with them. I have it from good authority, that Russian Wheat can be laid down at Odessa for 18*s.* the quarter, and when the freight be added to this, it can be imported into this country at from 24*s.* to 26*s.* the quarter. What chance then has the British farmer, as the gentleman whom you met on the railway returning from the Norwich meeting very fitly asked, what chance has he to compete with the foreigner? It is a question that can have but one answer. No, it is not the additional produce that he might possibly obtain by greater attention to the manure-heap, or the dung-water tank, or the quantity of grain that he might save from destruction by rats, that will enable him to stand upon an equal footing with his rival; he will need some stronger helps than these, to put him on a par with his antagonist; and unless those aids are rendered him, he must fight the losing game until he be forced to "shut up," as hundreds upon hundreds will do before that system will be overturned which shall have brought them to ruin. But that ultimately it will be upset, I have not a doubt, for it will bring its own destruction with it; but before that happens what a dreary aspect does the British farmer perceive to be his present and future prospects. I cannot conclude my remarks without saying that there can be no greater libel upon the farmers of England than to call them an idle and slothful body of men, nor any statement more fallacious than to make them appear to be less active or intelligent than the "trader or shopkeeper." I fearlessly assert, and am sure I shall be borne out in my assertion by those who are well acquainted with the rural population of England, that the hard-handed tillers of our soil are a class of men whose industry, perseverance, and incessant toil, cannot be surpassed by any other of this or any other country; and only give them fair play, and they will beat all the world. *Q.* [This should have been published before the letter on a similar subject last week.]

Experiments with Guano and other Manures in Stover Park, Devon.—No. I. Report of an Experiment to test the comparative efficiency of five different kinds of artificial manure in improving pond mud, the experiment being made on an acre of inferior pasture land in Stover Park, in the years 1847, 1848, and 1849. The land on which the experiment was conducted is of uniform quality, the soil being a light sandy loam a few inches in depth, incumbent on a stratum of white clay. The land underwent thorough draining in 1844, prior to which it would not produce a rent of more than 5*s.* an acre. No manures were applied to the land in 1848 or 1849. The object sought to be attained by extending the experiment over a period of three years was to test the *durability* of the different manures.

No.	Manures applied in 1847.	Weight of Hay cut in 1847.	Weight of Hay cut in 1848.	Weight of Hay cut in 1849.	Weight cut per acre in 1847.	Weight cut per acre in 1848.	Weight cut per acre in 1849.	Cost of the Manures.
		lbs.	lbs.	lbs.	Seams of 3 cwt.	Seams of 3 cwt.	Seams of 3 cwt.	£ s. d.
1	Six cubic yards of mud mixed with 6 cwt. of SALT	312	327	618	4⅛	4¼	9	0 11 0
2	Six cubic yards of mud mixed with 1½ hogshead of LIME	353	337	538	5½	5	8	0 15 0
3	Six cubic yards of mud mixed with 3 bushels of BONE-DUST	511	419	670	7⅛	6¼	10	0 14 3
4	Three cubic yards of mud mixed with 3 cubic yards of TAN YARD REFUSE	524	354	556	7¾	5¼	8⅛	0 14 0
5	Six cubic yards of mud mixed with 90 lbs. of PERUVIAN GUANO	930	550	725	13⅜	8	10¾	0 14 0

N.B. The after-grass in 1847 was stocked with sheep, but in 1848 it was left unconsumed.

No. II.—Report of an Experiment made with the undermentioned manures on an acre of pasture land in Stover Park, in the year 1849. The manures when mixed with a small quantity of fine earth, were applied broadcast on March 29th, and during the rainy weather which prevailed at the time. The land is of a fair average quality, and was formerly used as tillage land, but has been in pasture for many years. The crops were mowed on 22d June, and the herbage produced by the different manures was of a superior quality.

No.	Manures applied.	Quantity of Manures applied.	Quantity applied per acre.	Weight of Hay cut.	Weight cut per acre.	Cost of Manures.	Cost of the Manures, per acre.
		cwt.	cwt.	lbs.	Seams of 3 cwt.	£ s. d.	£ s. d.
1	..... None	..	..	401	4⅜	.....	.....
2	..... Superphoshate of Lime	2½	5	616	7⅛	0 18 0	3 12 0
3	..... Nitrate of Soda	1	4	706	8⅛	0 18 0	3 12 0
4	..... Peruvian Guano..... ...	1½	6	1210	14	0 18 0	3 12 0

E. S. Bearne.

The Steam-engine.—The object of my communication to your Paper is to elicit from you and some of your readers, well versed in the principles of the steam-engine, such information as will enable those about erecting to procure that sort which will be the plainest and most effective, and likewise such an insight of it, that if anything should go amiss they may judge the cause; for every machine produces the greatest effect in the hands of those best acquainted with its principle. It is not only necessary to have the working part good, but a good boiler put up in such a manner that every pound of fuel shall do its full extent of duty. I was not so fully aware of the importance of the boiler until, in the Journal of the Royal Agricultural Society, I saw Mr. Morton's letter to Wm. Miles, Esq., occasioned by some of the competitors for the steam-engine prize, given at Northampton in 1847, questioning the decision then given. Mr. Morton states: "that neither the diameter of the cylinder nor the length of the stroke determines the power of the engine, but the quantity of water converted into steam per minute at a particular temperature and properly used." Will you be so kind as to give us, or mention where the best rule can be procured for calculating the size of the boiler, the grate, the area of the flue, the height of the chimney, and the area of the opening at the top of the chimney. Mr. Stephens, in the "Book of the Farm," quotes Mr. Slight, who recommends a cylindrical boiler with hemispherical ends, having 18 cubic feet of space, 1½ feet of grate, and 80 square inches of area in the opening of the top of the chimney, whose height is 50 feet. For each horse-power, I have seen a foot of grate recommended; and at the Cornish mines, where the fuel is made to do more duty in general than any other place, two square feet of grate are allowed for each horse-power. I should say that the size of the grate should be regulated by the height of the chimney, for the higher it is the more air is drawn through the grate, and too much as well as too little may do harm. Mr. Craddock, of Birmingham, who gave lectures on the Chemistry of the Steam-engine, which he afterwards published, states "that 100 lbs. of good Newcastle coals is composed of 88 lbs. of carbon, 5½ lbs. of hydrogen, 5½ lbs. of nitrogen and oxygen, and 1½ lb. of ashes; requires 966 lbs. of air to pass through the furnace for its 276 lbs. of oxygen to produce perfect combustion; the remaining 690 lbs. is nitrogen, whose absence could be well dispensed with if possible, as it takes 10 per cent. of fuel away in the heat it gets in its passage under the boiler." So if there is too much air it will rob the boiler of so much more of its heat, and if too little air, you will be obliged to use more fuel for its carbon to keep up the steam, being then short of oxygen. Oxygen costing nothing, carbon or fuel very

high in places; so a formula for a correct calculation of size of grate to height of chimney would be very desirable. You no doubt can state where such a one can be procured. Is it the engine or the boiler, or both combined, that enables the Cornish engines to act so efficiently? What is the form and principle of the Cornish boiler? I remember in the mines and iron works of South Staffordshire, the use of the large round boiler with semicircular head being superseded by the waggon boiler, both sorts having flues round them; but now the cylindrical boiler is in general use there, having no flues round them, but the lower half of its circumference exposed to the fire and heated air. Is this last form what is called the Cornish? [The Cornish boiler has a flue through it.] At present the combustion of the fuel is very imperfect, which is known by the vast quantity of black smoke that is seen issuing from engine chimneys, which is mostly carburetted hydrogen or coal gas; but I see in the *Mining Journal* that upwards of 300 boilers have been altered in Manchester, after an improvement of Messrs. Galloways, which saves 30 per cent. of fuel, and allows very little if any smoke to escape. The grate is divided into two equal parts up to the bridge; each grate or part is fired alternately, by which the dense smoke or carbonaceous products of the newly made up fire rush beyond the bridge, and there brought into contact with the flame and heated air of the other part of the grate, and is effectually consumed. In the "Register of Arts and Sciences," published in July, 1825, is a description of a new application of steam to an engine belonging to Mr. Richard Evans, of London, whereby he saved about one-half of his fuel. His method was to have from the pipe which conveyed his waste steam to the atmosphere another pipe to the under side and close to the grate, being perforated with small holes for the steam to issue through; and it had a stopcock, to regulate the quantity of steam to go through the fire. I have not heard of this mode being used anywhere else, which makes me think there is something not right in practice; but it looks very well in theory. If steam is decomposed water, it contains one part of hydrogen, and eight parts of oxygen, both very necessary for the fuel; but whether under the grate, where no other gases are present, or to be introduced over the grate after the carburetted hydrogen is formed, remains for the chemist to determine. It would be a very valuable discovery to be enabled to retain the nitrogen of the atmosphere from going through the furnace, where it is detrimental, and mix it in its proper proportions with the hydrogen of the waste steam, so as to form that valuable compound to the farmer—ammonia. The oxygen of air deprived of its nitrogen, and the oxygen of the waste steam deprived of its hydrogen, would be freer for the combustion of the fuel on the grate; but these experiments should be left to the chemist, for when in London I attended a lecture of Dr. Ryan's at the Polytechnic, on the gases, wherein he fully showed the cause of the dreadful gas explosion which took place just before in Albany-street, London; he mentioned that a certain portion of common air, if mixed with coal gas, forms a most explosive mixture, but if under or over that quantity it will not explode. I was once connected with a flour mill driven by a condensing engine, having a round boiler of 15 feet diameter, with a semicircular top; the chimney was 75 feet high, the grate was large, and the draught so great, which consumed the fuel so quick, that I was obliged to put to it a regulating damper, which saved more than 20 per cent. of coal; but a damper of this description, worked by water, is easily put to a low-pressure engine, but a good one for a high-pressure boiler is not so easily obtained —Whose plan is best? I am acquainted with a 60-horse engine, that the work it does is often taken from it all at once, the throttle-valve placed in the steam-pipe did not regulate it well; but when it was removed to the discharge-pipe it worked admirably, besides saving the fuel. *Richard Nicklen, Glenville, Isle of Man.*

Drill-Machine.—In reply to the enquiry contained in your number of this morning, I beg to state that the drill mentioned by me is not for depositing seeds, but light and very fine manure. I consider the mode of sowing green crops should be the following. The ground having been drained from 30 to 36 inches deep, should be laid perfectly flat and level. The corn crop should be sown in rows 12 inches apart, with one of Mr. Garrett's drill machines, and afterwards well stirred betwixt the rows with his horse-hoe, followed by Dr. Newington's hand-hoe cultivator. It would then be perfectly clean, and if it had been subsoiled or double trenched would have sufficient depth for the roots of plants to luxuriate in. When the corn crop had been removed, the whole ground should be covered with farm-yard dung, properly decomposed. This should be spread equally over the whole surface, and then ploughed under. When the spring arrives, the sowing should take place, at what may be considered an early period. The Turnips and Mangold may have the rows 27 inches apart, Carrots and Parsnips 18 inches. When the plants have risen some inches above the ground, my drill comes into use. The manure I have used this year is a mixture of guano, soot, salt, and for the purpose of making it lighter that it may be more easily turned by the revolving brushes, and weaker that it may not injure the plants, I have added a considerable quantity of sawdust. The perforated slide underneath the box will either close entirely the holes intended for one of the two distances described, or it will partially reduce those that are in use, so as to make the quantity of manure more or less, as may be desired. A man draws the implement in such a direction that the manure falls in a continued stream upon the rows of plants, covering two rows at a time of the Turnips, or three rows of the Carrots. A man follows, pushing behind, and seeing that the manure falls equally through the tubes. This should have been passed through a fine sieve, and should be kept as dry as possible. If this be not attended to, there is a danger of the passage being clogged or stopped. This continued stream, falling immediately upon the plant, of a stimulating nature, added to the enriching manure before applied, has a wonderful power of forcing bulbous roots; I have tried it this year, in part, under every disadvantage. The ground was wretchedly poor and foul, almost one mass of weeds last year, in a farm taken from a dirty tenant. The Mangold on it is flourishing, the Carrots and Parsnips promising. I am decidedly of opinion that all ground for all sort of crops should be laid on what is commonly called a dead flat. There should be no furrow if possible, and no hollow; if there be the latter in any part, after being ploughed, it should be filled up to a level with the spade, as wherever there is a hollow the water will lodge, and when this is the case, the plant is apt to miss. The failure is generally placed to the palliative account of grubbing. Grubs no doubt may abound; but these, like insects that in muck begun, are propagated by wet. Let all the land be laid equally dry, and there will be no need of salt to kill grubs, there will be no grubbing without it. Besides the land receiving more equally the beneficial influences of the atmosphere and the fertilising properties of the rain by being laid flat, it is more easily worked by different implements. The expense of growing Carrots and Parsnips, if the whole work were to be done by hand-weeding, would be so great as to make them a most unprofitable crop; but by the use of modern implements, the labour is greatly abridged. Added to the reasons already given for laying the land flat, is the most important one, that it gives room for the fibres of the roots to extend themselves more easily. If the dung is placed immediately under the plant, it may forward its growth more in the early stage, but we now find from Mr. M'Arthur that the roots of Turnips will make shoots of 3 feet and more. These will derive benefit from the whole manure having been first incorporated in the soil, and then by having that of a more forcing quality placed immediately upon them, and washed into it by the rain which next ensues. On this account it is best to have this operation performed in wet or showery weather, but if this advantage cannot be obtained, it may be as well to follow the deposition of the manure from the hand drill with the hoe-cultivator, which will assist in covering the greater part of it, and thus prevent the escape of the ammonia. If the plans here suggested for growing green crops be adopted, there can be no reason why the minimum named by Mr. M'Arthur of having from 60 to 100 tons of Turnips on an acre may not be attained. We know very little at present of the capabilities of soils. By deep and frequent tillage, and by the most powerful application of manures on land of a superior quality, an amount of produce may be obtained quite unknown to us at the present time. *Law. Rawstorne, Penwortham Priory, Aug. 4.*

Expense of Feeding.—With reference to the remarks of "P.," in your *Gazette* of the 28th ult., upon what he conceives to be a miscalculation in my letter on Cattle Fattening in the *Gazette* of the 7th ult., I beg to say I am aware that there is room for a greater approach to accuracy in the comparative estimate of the value of oilcake and Linseed, for feeding purposes, than I have been able hitherto to attain to. If the details of "P.'s" analysis are satisfactory, and the result of the analysis itself is to be relied upon, it is a matter of considerable importance to the farming public that the fact elicited by it (viz., that 1 cwt. of Linseed cake contains half as much oil as 1 cwt. of the Linseed before it is pressed) should be generally known; and my chief object in writing these few lines is to request "P.," if he is at liberty so to do, to insert in your *Gazette* the particulars of the analysis on which he relies for the support of his view of the case; for there are two points which are worthy of remark in the knowledge we at present have of that analysis: first, that 10 per cent. of oil is a large proportion to remain in a material sent away from the mill as no longer useful for purposes of pressing. Mr. Warnes says, in his book on the cultivation of Flax, page 120, after mentioning an article called double-pressed cake, which was sold at one time at an extra cost of 2*l.* per ton (the oil being then supposed to be injurious): "A little reflection would have shown how improbable it was that the seed-crusher would be so regardless of his own interests as to leave oil worth from 35*l.* to 40*l.* per ton in the cake which he only sold for 10*l.*" Secondly, that there is no per centage allowed in the analysis of the oilcake for seeds of a different nature from Linseed, which, it is a pretty general impression, are to be found in considerable quantity in what is considered fair average oilcake, especially if imported from abroad; and if this impression is erroneous, it is desirable that it should be done away with. *R. W. B., Alnwick, August 6.*

Emigration to Ireland.—In your late numbers Mr. Hewitt Davis and your correspondent "Falcon" have represented that farms are to be had in Ireland on very low terms, and advised parties wishing to farm to "emigrate" to Ireland! rather than Australia, &c. Believing that, under such temptations, persons going to Ireland with the idea of making farming profitable would find themselves disappointed, I venture to trouble you with the following, hoping the subject may be set at rest by more competent authority. That farms may be rented in some parts of Ireland at a low nominal rent I do not dispute, but, upon investigation, I fancy it will be found that poor's-rates or some other heavy charge upon the tenant's industry balances the advantages of a low rent, and that, in reality, there is little to tempt an English farmer to remove thither. It will I think be granted as rather surprising (to say the least), that if such tempting offers do exist, the class of farmers resident in Ireland and possessed of some capital should not avail themselves of such, but should regard farming as so hopelessly losing an occupation there, as to induce them to emigrate in such vast numbers by every vessel for America, &c.; understand, I do not refer to mere labourers but to substantial farmers. Take for instance the following from the *Sligo Champion.* "A vast number of emigrants have left or are about leaving this port for America; 15 ships have lately taken their departure, and more are advertised for sailing. The emigrants are of the most respectable class of the small country farmers. Several respectable shop-keepers have already left Sligo for America." The following report of a meeting at Carlow of the tenant farmers of that county, as contained in a recent number of the *Cork Reporter*, is, I think, conclusive as to the prospects of farmers in Ireland at the present time. "The chair was taken by Mr. John Casey of Bagnalston. Resolved that rents in this country, together with county cess tithe, rent charge, increasing poor-rates, and other permanent burdens on land, are enormously and ruinously disproportionate to the produce of the soil, one-half, nay, in many instances two-thirds and more, of its entire value being paid as rent, even on tillage farms. That a rate for the relief of the poor, a just and sacred charge on property, being imposed chiefly on the already overburdened tenants of Ireland, has completely overwhelmed this important class, depriving them of the capital necessary for the proper cultivation of the soil, and thereby annihilating all hope of agricultural prosperity. That it is the deliberate opinion of this meeting that no amount of skill, industry, or economy can, under such adverse circumstances, and with present relations between landlord and tenant remaining unaltered, save the great majority of the farmers of this country from hopeless poverty, and that such destruction, necessarily increasing the burdens on the surviving minority, will ere long involve all classes in one common ruin. That unless the legislature and landed proprietary seriously and at once apply themselves to the cure of this social anomaly, a hope for which we see not the slightest foundation, it becomes an imperative duty which men owe to themselves and their families, to seek in a foreign land, before their entire capital is lost, the means of honourable subsistence denied them at home." I wish to be clearly understood as not wishing for a moment to deter English farmers from trying agriculture in Ireland, but merely that they may do so with their eyes open, and not be misled by reports of low rents, without clearly ascertaining in what other way their industry will be taxed. Under a better state of things, nothing whatever, I believe, which could be devised for "Ireland's regeneration" would be so successful as the encouragement of English tenant farmers by the Irish landlords; and as I have dissuaded several of the former from thinking of engaging in agriculture in Ireland at present, should I be mistaken in my ideas of its present state, I shall be happy to make any of the latter amends by introducing to them immediate tenants, who would gladly avail themselves of a liberal agricultural policy in the Emerald Isle. [Rents are *enormous* in Ireland.] *A. A. Dorant, Land Surveyor, St. Alban's, Herts., Aug. 7.*

Colonising Ireland.—In answer to the very many letters I have had, on the subject of the Irish Farms I alluded to in the *Agricultural Gazette* of the 21st July, I wish it to be understood that those farms, and the rentals at which they are now to be let, were named by me for the purpose of supporting my views as to what may be done in Ireland under certain arrangements, namely, the application of capital, in the first instance, to the improvement of a district, and the laying of property out into farms suited for British occupation. The mistake that has been made has been in supposing these farms, in their present condition, to be adapted for English or Scotch location. I know nothing more of these farms than a printed circular informed me, and certainly did not mean to recommend single instances of emigration, and without previous preparatory arrangements. In my opinion, neither the turbulent habits of the people, nor the wild condition of the districts where low-priced land is to be had, admit of individual settlement among them. The case would be very different on a large property, under the management and control of a British proprietary, improved by an outlay of capital, and the natives benefited by employment and good wages, and the whole becoming possessed by British occupants. Then, indeed, a fine field for British industry and capital may be opened, greatly to the advantage of all engaged, Irish and British. I have had nearly a hundred applications in consequence of my few remarks, and apparently from very respectable persons, all expressing an eager desire to find such means as were held out to settle and gain a living. Many were from young farmers, seeking in emigration the support the mother country cannot supply them. Alas! how cruel it is that thousands

annually should be driven so many miles away from friends and native country, when such ample space for them lies so near at home. *Hewitt Davis*, 3, *Frederick's-place, Old Jewry, London, Aug.* 23.

Hedge-rows and Hedge-row Timber.—I at once confess to you, with all the aids that improved farming affords, I cannot see any prospect of our being able to farm to a profit the inferior soils of Britain, whilst the produce shall realise only the inferior prices it is now fetching; "unless the land be first brought into order and condition," so as to admit of being made the most of. Before these can be worked to advantage, they must be trenched, drained, and freed of surrounding trees and unnecessary hedges; that is to say, "the soil must be deepened," to afford a continuance of growth and nourishment to the growing crops, through the heat of summer; "drained," that it may attain the highest temperature, be early warmed in the spring, and gather from the descent of the rains all the nutriment they leave when they percolate into the earth, and have the advantage of the earlier tillage, seeding, and extended rotation of cropping which dry land affords over wet; and "the growing crops must have given them the full influence of unrestricted light and air." I look at the position of the farmers of inferior land, that is subdivided into small enclosures and shaded by trees and high hedges, as most unfortunate. Their labour is being thrown away, their capital is dwindling to nothing, and notwithstanding heavy privations and constant anxiety and toil, I am convinced there is no other hope for them than from the occasion which sooner or later will be pressed on the landowners, to afford them the assistance I point out as indispensable to amend their farms. As regards your farm at ——, I have now done nearly all I can to amend it; my further progress is arrested by the trees and hedges, and the restrictions you have put upon me, and which I will not at all disguise from you, are fatal to views of profit in farming it. With respect to your observations as to the loss in attempting to cultivate highly small enclosures and headlands near to trees, I beg to represent to you, that I understand the term "cultivation" as being only applicable to an expenditure that produces a return, and I cultivate highly to give a proportionate larger return. I am quite sure judicious improved tillage is ever desirable, and becomes the more essential the poorer the soil, and is made necessary by the progress that others are making, and the larger returns that better soils naturally yield; indeed, the worse the land the greater occasion there is for higher cultivation, to bring it into successful competition with richer. In my opinion there is not (or should not be), a question between high or low cultivation, but there may be between high and no cultivation. I admit of no other test of farming, as applicable to the merits of any system, than that of figures. I hold he is the best farmer who raises produce "at the lowest cost;" but I must add that this is nearly equivalent to the commoner one, "of largest amount," for I believe corn can be best raised cheapest by developing the returns of the earth to the greatest extent. In writing thus much to you I have rather in view the interesting you and benefiting the numerous tenants with whom you have relations, than a mere reply to your letter, as it applies to ——.—*Hewitt Davis*, 3, *Frederick's-place, Old Jewry.*

Farmers' Clubs.

READING, *Aug.* 25.—MR. HEWITT DAVIS, the well-known author of a work on "Thin Seeding," and other popular works on agriculture, having kindly sent an invitation to the members of the Club to inspect and criticise his improvements and practice on a farm under his management at Southhill Park, Easthampstead, a party of the members availed themselves of Mr. Davis's courtesy, and spent a pleasant day in the inspection of the farm above mentioned. The part of the farm under cultivation has all been reclaimed from the waste heath within the last four years, and is a soil of the poorest description, consisting of light peat, sand, and gravel, to the depth of from 4 to 14 inches. The subsoil is a clay loam, which, by means of trench ploughing chiefly, has been mixed with the upper soil. The leading feature of Mr. Davis's system appears to be draining, deep ploughing, wide drilling, horse hoeing, and thin seeding. The party was much gratified at seeing, on the farm, the best field of Swedes between there and Reading; one field of Wheat estimated at five quarters per acre; one of Barley at six; a very fine field of Mangold Wurzel and Potatoes; a fine field of Beans, with Turnips between the rows; and the crops generally very superior to those they saw growing on similar soil in the immediate neighbourhood. These results speak loudly, and go far to prove the superiority and soundness of Mr. Davis's system. The following letter from Mr. Davis to one of the honorary secretaries of the Club will show in what mode, and at what expense, the above improvements have been effected.

"3, Frederick's-place, Old Jewry, London, August 2, 1849.—Dear Sir, the Southhill Estate, when bought by Mr. Matheson, four years ago, was thought to be of little value for agricultural purposes, and of the land now in cultivation, at that time 66 acres were heath, the remainder being considered suited only for growing the ordinary crops (Wheat, Beans, red Clover, Cabbage, or Mangold Wurzel, were never attempted on any of the land now in cultivation). From a careful examination of the subsoil, and observation of the growth of the neighbouring timber, I was convinced the land—even much of the heath—might be made very productive. You have seen the crops now on it, and from them you may judge what a few years' more perseverance in the system would bring the land to bear, for the crops there are owing only to better cultivation, and not to any stimulant from artificial dressing or purchased manures; and had the estate been properly stocked this spring, there would have been, at this time, 30 or 40 young cattle grazing on the hills, with 300 sheep on the pastures, to have given extra dressings for the coming crops. My first proceeding was to free the land of stagnant water; and to do this, I proceeded to deepen all the ditches, making them 4 feet in place of 2 feet deep, cutting fresh ones around the land I was going to bring into cultivation. At the same time I underdrained 4 feet deep, and at 40 to 50 feet apart, the principal and wettest portions of the estate. I likewise proceeded to trench-plough, 14 to 16 inches deep, all the arable land, and to remove from the land in cultivation all unnecessary obstructions to its tillage and ventilation; that is to say, trees standing in these fields and the interior hedges that too much subdivided them into too small inclosures. I reformed the cattle sheds and yards, so as to give better accommodation for keeping stock, and also to collect and preserve the manure. By means of stall-feeding 12 oxen, keeping 6 sows, and fatting between 100 and 200 pigs bred on the place, and providing absorbent matter from the plantations, to soak up the dung water, and burning the peat into ashes, I was enabled to collect sufficient matter the first year to dress and grow, the following year, half the farm with green crops; and in this way I have been going on annually, largely increasing the fertility of the land, so that at this time there are ample means to fatten more than double the stock that has ever been on the estate, and at the same time the amount of corn has been very largely and valuably increased. In reply to your questions, a very small portion is drained so near as 24 feet; all the drains, where possible, are 4 feet deep, and the size of the tiles is 1½ inch bore (except the master drains, which are 2 inches and upwards); the cost of the draining is from 4*l.* to 6*l.* an acre; the first crop on the new land was Turnips; I am an advocate for deep tillage at most times, say from 8 to 14 inches; the crops you saw are from seeding as under—Wheat, 4 pecks an acre; Barley, 6 ditto; Oats, 8 ditto; and Beans, 8 ditto. The yard dung has been helped out by mixing it with decayed vegetable matter scraped from the plantations, and by using ashes got from burning the peat in the bogs. I have long been of opinion that of all soils a sandy, if not too light, was the most profitable, and that much of the fertility of the larger portion of England was more owing to the better cultivation and treatment of the tenant, than to any superior natural fertility, and I have little doubt that the greater part of the Bagshot waste—drained deeply, tilled, and similarly treated as to dressing and cropping—in course of years might be brought to bear corn as well and as profitably as much of the land already in cultivation. I enclose you a letter I wrote sometime ago to a very large landowner for whom I was agent over a small estate that might be made very productive but for the prejudices of the owner in favour of hedges and hedgerows, timber, and other matters inconsistent with high farming. You will gather from it my views of some of the essentials to profitable farming. HEWITT DAVIS."

We are pleased to learn that Mr. Davis will, if possible, attend the next meeting of the Club, and address the members on this subject.

Miscellaneous.

New Scythes.—A trial has been made at Genlis (France), of a reaping machine used in the north of France, under the various names of Belgian scythe, sape, piquet, &c. It is of the same form as the scythe blade, though a little smaller and more curved, and is fixed with a strap to a very short handle. The reaper makes use of it with his right hand by an easy movement causing little fatigue. He has in his left hand a hook fixed to the end of a small handle of very light wood, with which he holds the Wheat while giving the cut with the sape. This instrument, worked in the above manner by a young man, 22 years of age, appeared, to all the farmers and intelligent labourers present, to furnish great advantages over the sickle and rake scythe. It cuts as close to the ground as may be desired, does not shake the ears, and consequently does not cause the grain to fall out. The reaper does not want (as is the case when using the rake scythe) an assistant to follow him to pick up what is left behind; his hook performs that office with the greatest facility and much better; it allows nothing to fall, and collects the corn into bundles of the required size with surprising regularity. It offers, in the most evident manner, a saving of hands, strength, fatigue, time, and acts better than the ordinary implements used. In corn beaten down, especially, labourers at present spend much time and labour, and much of the produce is lost; whilst the use of this instrument offers the greatest advantages, as it works with just the same precision as though the corn were standing. The reapers in the Franche-Comté, who are the ordinary harvest labourers, were quite astonished at the action of this instrument, and we doubt not but that next year a great number of farmers will adopt the system, which is a boon to both master and servant. Those persons who are desirous of seeing this new scythe used will be gladly afforded that opportunity on application at Genlis; it will be put into operation in their presence, and the manner of working it (which may be learned in a few minutes) will be explained to them. *Brussels Herald.* [This is well known as the common Hainault scythe, which is used much after the fashion of our bagging hook.]

Notices to Correspondents.

BOILED TURNIPS: *Old Sub.* The only exact experiment on this subject that we are acquainted with resulted in a loss on the cattle fed on warm boiled Turnip; those fed on the raw did better. The Turnips must be cut before steaming, and then any of the machines in use will answer the purpose. Richmond's, of Salford, for instance. Parsnip should be cut and given just as Turnips and Carrots are given. But they are certainly the most likely of any to benefit by a previous boiling.

BREAKING UP GRASS: *A R.* You will not get good Swedes after old Grass, ploughed only in mid-May. You should pare and burn it in April, and it will take you all May to get it properly reduced. You will be more likely to suffer from the wireworm, unless you burn.

BREEDS OF CATTLE: *A Young Farmer* must visit the herds of different breeders. Low's "Domesticated Animals" describes the different breeds.

CORN-RENTS: *Constant Reader.* In several cases lately, which have come under our immediate observation, the money rent agreed on as the reasonable present value of the farm has been converted into a corn rent at 50*s.* per qr. of Wheat; the rent payable year by year thereafter being the value, at the preceding year's imperial average, of the number of quarters thus obtained. And in these cases the farms contained both arable and pasture land; and we believe that it is only an affectation of greater accuracy to mix up in the calculation the average prices of meat and grain, for on the whole it will be found that they rise and fall together. We should prefer 6*s.* per bushel as the calculated price of Wheat to 50*s.* per quarter.

DIBBLE AND "LAND SCUFFLER": *Inquirer.* They (or information concerning them) are to be had at Knole Park, Frant, Tunbridge Wells. We believe they are made by Wedlake and Thomson, Hornchurch, Essex.

DR. NEWINGTON'S DIBBLE. We have received many testimonies to the excellence of the crops which have followed the use of this instrument. This of course is due, apart from the season and the soil, to the thinness or thickness of the plants on the ground; and independently of the fact that this instrument places the seed as certainly as the hand *can* do it, there is this advantage connected with its operation, that the seed is pressed into its place without that plastering of the earth around it, which, in ordinary practice, just amounts to the making of a water-tight cup in which it may perish. We attribute the excellence of the crops of which we have heard, to the adoption of a thinner seeding, more skilfully performed than is possible by either hoe or drill.

DRYING MACHINES: *J P Y.* We are not acquainted with the machine alluded to; but we understand that the one described at page 525 *dries* the calicoes subjected to it. it does not merely save the wringing.

GUANO: *Inquirer.* Less than 1 oz. of guano to 1 lb. of water, or 1 cwt. of the former to about 200 gallons of water, will make a good liquid manure. Sow guano early in April over Wheat, not at seed time. Rye cut after earing may be cut into chaff and then used as fodder; it will be little better than straw.

KOHL RABI: *A Subscriber.* Sow thinly in March, in a seed bed in rows 12 inches apart, and transplant in May and June, in rows 28 inches apart, and at intervals about as great as those in rows. They will keep through the winter, and may be given to all kinds of stock.—*A Cottager.* It would probably run worse next year. We should prefer seed from biennial rather than annual plants.

LIME ON GRASS LAND. *Sub.* Apply lime in compost with ditch scourings, &c., towards October. 100 bushels per acre, so applied, is a good dressing. If you would add salt, it should be done at the rate of 3 cwt. or so per acre, to an equal weight of slaked lime, some months before application, and spread over the land separately.

LINSEED: *Inquirer.* It ought to be ground, but may be given unboiled. Grind it and soak it for 36 hours, they say that is the cheapest method of using it.

MANGOLD WURZEL: *A T.* We have no doubt that to strip green leaves off a plant that is not diseasedly luxuriant will injure its growth; and no other kind is of any use as fodder.

PIGS: *A Young Farmer.* Mr. Rowlandson's Essay on this subject obtained a prize from, and is the property of, the English Agricultural Society. It has not yet been published, but will appear, no doubt, in the Journal ultimately.

POULTRY: *C W A.* Notwithstanding the many particulars sent, yet some points must be guessed at, there must have been some grand error from the commencement. What was the first food given to them, what troughs had they to eat and drink from, and were these daily washed from sour matters; were the birds cooped with their mothers in a dry, warm, airy, sheltered situation? The best for chicks is dry food, a few dry bread crumbs, then chicken grits (groats) cut small, at first, and a bit of hard boiled egg, cut up for them occasionally. The first symptom named, drooping of the wings, is a sure sign of something wrong. Swollen or hard crop proceeds from indigestion, which, coming on so early in such little delicate morsels, is rarely curable. Moping and staggering resembles the meghrims, and the shrill cheeping kept up among them the chip. Among so many, being difficult to distinguish, it is probable that they were variously affected from the same causes. On post mortem examination, their crops being found full of gravel is very remarkable, indicating privation of food in a state minute enough, probably for them to pick up. Barley and Wheat, as named, if whole, they could not well eat for several days. The same causes would be indicated by inflammation of the stomach and gall, probably diseased liver. Soft or washy diet is not recommendable, nor kitchen stuffs, nor alum curd. The ground could not have been poisoned where the chicks of other poultry had the same run. It is nearly impossible to cure chicks a fortnight and three weeks old. *D. S. E.*

SUPERPHOSPHATE OF LIME: *G B T.* Certain beds in the green sand contain the phosphate, not the superphosphate of lime. We believe the usual way of determining the quantity of phosphoric acid present in any earthy substance, is to dissolve in muriatic acid precipitate by ammonia, dissolve the precipitate in acetic acid, and again precipitate with the per-acetate of iron. Perphosphate of iron will fall, and may be dried and weighed.

WIREWORM: *A Sub.* We have seen nothing to corroborate the rumours on this subject, but are on other grounds so sceptical, that though without personal knowledge of the matter, we are much inclined to say it is not "true that white Mustard, sown in September, and ploughed in two or three months afterwards, will thoroughly destroy the wireworm," as well as be a rich fertiliser. Vetches sown in September will not be fit to cut till May on most soils.

Markets.

SMITHFIELD, MONDAY, Aug. 27.

We have a large supply of Beasts of good average quality; trade is exceedingly dull, and a reduction of fully 2d. per 8 lbs. is submitted to, yet they cannot all be sold. The number of Sheep has also increased, and the demand decreased; in consequence sales are slowly effected at lower rates. A few choice Lambs are still in request, but other kinds make very little money. Trade is again worse for Calves; it is with much difficulty they can be disposed of. From Holland and Germany there are 698 Beasts; from Spain, 24; from France, 27; from Denmark, 30; from Leicester and Northampton, 1800; from Lincolnshire, 300; and from Cambridgeshire, 300.

Per st. of 8 lbs.—s	d	s	d	Per st. of 8 lbs.—s	d	s	d
Best Scots, Herefords, &c. ...	3	3 to 3	10	Best Long-wools .	3	4 to 3	6
Best Short-horns	3	4 — 3	6	Ditto Shorn ...	...	.	...
2d quality Beasts	2	8 — 3	2	Ewes & 2d quality	2	8 — 3	2
Best Downs and				Ditto Shorn .	.	.	...
Half-breds ...	3	8 — 3	10	Lambs	4	0 — 5	0
Ditto Shorn . .	.	...		Calves	...	2 6 — 3	6
				Pigs	...	3 8 — 4	6

Beasts, 4513; Sheep and Lambs, 32,070; Calves, 259; Pigs, 220.

FRIDAY, Aug. 31.

We have by no means a large supply of Beasts; the demand is, however, exceedingly limited, and it is very difficult to maintain Monday's quotations. The number of Sheep and Lambs is for the time of year considerable; the general quality is inferior, consequently choice ones readily make as much as on Mondays, but other kinds meet with a dull sale. Calves are again lower; they cannot all be disposed of, even at reduced rates. From Holland and Germany we have 327 Beasts, 2130 Sheep, and 157 Calves; from Spain, 15 Beasts; from France, 43; from Scotland, 100; and 192 Milch Cows from the home counties.

Best Scots, Herefords, &c. .	3	6 to 3	10	Best Long-wools .	3	4 to 3	6
Best Short-horns	3	4 — 3	6	Ditto Shorn ...	...	—	...
2d quality Beasts	2	6 — 3	2	Ewes & 2d quality	2	8 — 3	2
Best Downs and				Ditto Shorn ...	...	...	...
Half-breds ...	3	8 — 3	10	Lambs	4	0 — 5	0
Ditto Shorn ...	.	--		Calves	2	4 — 3	4
				Pigs	3	4 — 4	4

Beasts, 991; Sheep and Lambs, 11,810; Calves, 461; Pigs, 240.

COVENT GARDEN, Sept. 1.

Hothouse Grapes, Peaches, and Nectarines are plentiful. Pine-apples have not altered since our last account. Apricots are scarce, and so are Currants. Nuts in general are abundant. Filberts are more plentiful. Oranges and Lemons are abundant, and the market continues overstocked with Melons and foreign Plums. Among Vegetables, Turnips may be obtained at from 3d. to 6d. a bunch. Carrots the same. Cauliflowers are less plentiful. Green Peas fetch from 1s. 6d. to 4s. per bushel. Potatoes are cheaper. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1s to 1s. 6d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia rehusta, Tropæolums, Carnations, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 3s to 5s	Oranges, per doz., 1s to 2s
Grapes, hothouse, p. lb., 1s6d to 4s	— per 100, 6s to 16s
Apricots, per doz., 2s to 3s	Lemons, per doz., 1s to 3s
Peaches, per doz., 6s to 12s	— per 100, 7s to 14s
Nectarines, per doz., 4s to 10s	Almonds, per peck, 6s
Plums, per hf. sieve, 3s to 4s 6d	— sweet, per lb., 2s to 3s
Currants, do., 3s to 4s	Walnuts, p. 100, 1s 6d to 2s
Pears, per doz., 2s to 4s	— p. bush., 16s to 24s
— per half sieve, 4s to 6s	Nuts, Bar., p. bush., 20s to 22s
Apples, kitchen, p. bsh., 2s to 4s	— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 6d to 1s	Spinach p. sieve, 1s to 1s 6d
Cauliflowers, p. doz., 2s to 6s	Onions, p. bunch, 2d to 6d
Broccoli, per doz. bundles, 12s to 15s	— Spanish, p. doz., 1s 6d to 4s
Peas, per bush., 1s 6d to 4s	Shallots, per lb., 3d to 6d
Sorrel, p hf. sieve, 6d to 9d	Garlic, per lb., 3d to 6d
Potatoes, per ton, 50s to 100s	Artichokes, p. doz., 1s 6d to 3s
— per cwt., 3s to 6s	Vegetable Marrows, doz., 6d to 1s
— per bush., 2s to 4s	Lettuce, Cab., p. sc., 4d to 9d
Turnips, p. doz. bun., 2s to 3s	— Cos, do., 6d to 1s
Red Beet, per doz., 1s to 2s	Endive, per score, 1s to 1s 6d
Horse Radish, p. bdl., 2s to 6s	Tomatoes, p. hf. sieve, 4s to 6s
French Beans, p. hf. sieve, 1s 6d to 2s	Mushrooms, p. pot., 1s to 1s 6d
Cucumbers, each, 2d to 6d	Small Salads, p. pun., 2d to 3d
Leeks, per bunch, 2d to 3d	Fennel, per bunch, 2d to 3d
Celery, p. bundle, 8d to 1s 3d	Savory, per bunch, 2d to 3d
Radishes, p. 12 bunches, 1s to 2s	Thyme, per bunch, 2d to 3d
Watercress, per doz. bunches, 4d to 6d	Parsley, p. doz bun., 3s to 4s
Carrots, per bun., 4d to 6d	— Roots, p. bdle., 1s to 1s
	Marjoram, green, p. bun., 4d to 6d
	Mint, green, per bunch, 3d to
	Basil, green, p. bunch, 4d to 6d

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Aug. 30.

Prime Meadow Hay	70s	to 75s	Clover	60s	to 95s
Inferior ditto	50	65	New Clover	80	84
Rowen	—	—	Straw	28	33
New Hay	60	70	J. COOPER.		

CUMBERLAND MARKET, Aug. 30.

Prime Meadow Hay	70s	to 75s	Inferior	70s	to 80s
Inferior ditto	50	65	New Clover	70	80
New Hay	50	65	Straw	30	34
Old Clover	90	95	JOSHUA BAKER.		

WHITECHAPEL, Aug. 30.

Fine Old Hay ...	65s	to 70s	New Clover	70s	to 84s
Inferior ditto ...	45	50	Inferior ditto	50	55
New Hay	60	65	Straw	20	30
Old Clover	90	100			

HOPS.—FRIDAY, Aug. 31.

Messrs. PATTENDEN and SMITH report that the market continues the same. Duty 90,000*l.*

MARK LANE.

MONDAY, Aug. 27.—The supply of English Wheat by land carriage samples this morning exceeded 3000 qrs., consisting chiefly of the new crop. The quality of the white is generally rather coarse but heavy, the red good, and before any progress in sales could be effected a reduction of 2s. to 3s. per qr. upon the new was necessary, and 1s. to 2s. per qr. on the old; as also foreign, for which latter the demand was limited.—English Barley is unaltered in value, but foreign grinding the turn cheaper.—Beans and Peas support our quotations.—Oats are a slow sale, and secondary qualities 6d. to 1s. per qr. lower.—There was a fair supply of new Mustard seed, quality generally good, but it could only be disposed of at a decline of 2s to 3s. per bushel. New York, 14th.—The supply of grain and Flour having been inadequate to the demand for consumption, prices were the turn dearer for all descriptions, and not likely to assimilate to ours before October. From Baltimore, 13th, the new crop is complained of, and only estimated at two-thirds of an average. In New Orleans, 4th, prices are firm.

FRIDAY, Aug 31.—With the exception of English Wheat, of which we have had fair arrivals during the week, the supplies of all other descriptions of Grain have been moderate. There was a very small attendance at this day's market, and sales of Wheat, either English or foreign, could only be effected in retail at some reduction upon our quotations.—We observe no alteration in the value of Barley or Beans.—New white Peas are held for 1s. per qr. advance.—Excepting for the finest qualities, the Oat trade is heavy.—Barrel Flour is held at late rates.—Maize is dull, but former prices are demanded. Since the 24th inst. the weather has been sultry and cloudy, but fine, and the crops around London are now tolerably secured; great progress has also been made in other parts of the kingdom. The new corn is generally good and heavy, and much of it very fine.

LIVERPOOL, FRIDAY, Aug. 31.—We had rain all day yesterday, but finer weather this morning. Supplies moderate. There was a thin attendance at market to-day. Wheat declined 1d. to 2d. per bushel, and Flour 6d. per barrel, with a very small demand. Oats and Oatmeal were dull of sale, and rather lower. Barley, Beans, and Peas were a shade easier. There were few transactions in Indian Corn, but prices were maintained; no new Wheat in to-day. A few undried new Oats sold at 2s. 6d., and new Oatmeal at 21s. to 23s. per load.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS	RYE.	BEANS.	PEAS.
July 21.....	48s 10d	26s 7d	19s 6d	28s 6d	32s 1d	32s 4d
— 28	49 1	25 1	19 4	26 1	32 5	32 0
Aug. 4.....	48 0	26 3	18 9	25 6	31 10	32 1
— 11.....	47 4	25 8	19 2	26 7	32 0	31 1
— 18	46 3	26 1	19 0	27 5	31 9	29 2
— 25.....	44 8	26 4	18 10	26 5	32 2	28 8
Aggreg. Aver.	47 4	26 2	19 2	26 9	32 1	30 11
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	JULY 21.	JULY 28.	AUG. 4.	AUG. 11.	AUG. 18	AUG. 25.
49s 1d	...		...	...	...	...
48 10		...	...	...	...	...
48 0	...		...	...	...	...
47 4	...	...	...		...	...
46 3	...	...	...	...		...
44 8	...	...	...	...	...	

PRICES CURRENT.	London. Aug. 20 qr.	London. Aug. 27 qr.	Liverpool. Aug. 21. 70 lbs.	Liverpool. Aug. 28. 70 lbs.	Wakefield. Aug. 17 qr.	Wakefield. Aug. 24 qr.	Boston. Aug. 22 qr.	Boston. Aug. 29 qr.	Birmingham. Aug. 23. 62 lbs.	Birmingham. Aug. 30. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d	s. d. s. d.
New, red ...	42 to 44	42 to 44	6 8 7 0	6 6 6 10	40 to 48	42 to 48	42 to 46	42 to 46	5 9 6 0	5 6 5 9
„ white ...	46—52	44—48	7 0 7 4	6 9 7 2	42—50	42—50	44—48	44—48	5 9 6 1	5 8 6 0
Old, red ...	40—42	40—42	6 8 7 2	6 6 7 0	41—43	41—43	—	—	5 4 5 10	5 3 5 9
„ white ...	46—48	44—47	7 3 7 4	7 0 7 3	—50	—50	—	—	5 8 6 2	5 10 6 6
Foreign	36—56	36—54	4 6 7 9	4 4 7 8	38—51	38—51	—	—	5 0 5 6	5 0 6 2
			480 lbs.	480 lbs.						
Rye—Old ...	22—24	22—24	—	—	—	—	—	—	—	—
Foreign...	20—22	20—22	—	—	—	—	—	—	—	—
Foreign meal	57.—67.	57.—67.	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley—										
Grinding ...	20—24	20—24	—	—	22—23	22—23	24—26	24—26	23—25	22—24
Malting... ...	24—26	24—26	30s—32s	30s—32s	—	—	—	—	29—32	29—32
Foreign... ...	18—26	18—26	—	—	24—26	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—42	39—42	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	18—25	18—25	2s 10d 3s 2d	2s 10d 3s 2d	—	—	18—22	18—22	20—28	19—27
Black...	14—23	14—23	2 5 2 8	2 4 2 6	—	—	—	—	19—20	18—20
Foreign ...	13—20	13—20	2 4 2 6	2 4 2 6	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	25—30	25—30	34s—	34s—	28—32	28—32	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—25	23—25	28 —30s	28 —30s	—	—	—	—	12—13	11—12
Foreign ...	24—32	24—32	32 —34	32 —34	—	—	—	—	—	—
Beans—										
New, small ...	—	—	32 —35	32 —34	32—35	32—35	32—34	32—34	12—14	12—14
Old	23—33	24—33	31 —36	31 —35	—	—	—	—	15—16	14—15
Foreign ...	21—36	21—36	24 —35	24 —35	30—31	30—31	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	36—41	36—41	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	7l. 7s	9l. 12s	7l. 12s	7l. 12s	—	—	—	—	—	—
Foreign ...	6l.	7l.	—	—	—	—	—	—	—	—
Indian Corn—	22—26	22—26	26s—29s	26s—29s	—	—	—	—	12—13	12—13
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	30—41	36—44	34—35	33—34	—	—	36—40	36—40	34—36	34—36

Weekly Averages and Imports.	Aver. Aug. 28	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	s. d.	s. d.	qrs.
WHEAT ...	47 6	3520	46 3	10069	48 11	7245	45 1	833	43 8	2090
BARLEY ...	30 10	3330	26 1	90	28 0	978	25 10	10	—	1285
OATS... ...	19 8	12960	19 0	1693	20 0	859	18 2	763	19 10	883
RYE	—	—	27 5	698	—	—	—	—	—	—
BEANS ...	28 2	—	31 9	222	—	570	32 2	77	—	—
PEAS... ...	28 9	—	29 2	—	—	229	—	—	—	266
Signed	KINGSFORD and LAY.		SEGAR and TUNNICLIFFE.		SANDARS and DUNNS.		THOMAS WRIGHT.		J. and C. STURGE.	

Sales by Auction.

IMPORTANT SALE OF CAMELLIAS AND GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by Mr. J. Smith, to offer to Public Competition by Auction, on the Premises, Dalston, on TUESDAY, Sept. 18, 1849, and following days at 11 o'clock, in consequence of the premises being required by the London and Birmingham West India Dock Junction Railway Company, the VALUABLE STOCK OF CAMELLIAS (about 7000) ranging from 18 inches to 10 feet, beautifully set with bloom buds; amongst which are finely grown specimens of all the approved kinds: also the choice Greenhouse Plants. The Camellias and Greenhouse Plants are in the finest order, and are particularly worthy the attention of Noblemen, Gentlemen, and the Trade.—May be viewed a week prior to the Sale, when Catalogues may be had, 1s. each, returnable to purchasers, of the principal Seedsmen in London, on the premises, Covent Garden, and of the Auctioneers, American Nursery, Leytonstone.

MALMESBURY, WILTS.—IMPORTANT FREEHOLD ESTATE.—A rare opportunity for Investment.

MR. W. H. JEFFRIES will Sell by Auction, at the White Lion Hotel, in Malmesbury, on SATURDAY, September 8, 1849, at Two o'clock in the afternoon, subject to such Conditions of Sale as shall be then produced, unless an eligible offer be previously made by Private Contract, of which due notice will be given, that very superior ESTATE called "WHYCHURCH," eligibly and pleasantly situate within a short distance of the Borough Town of Malmesbury, comprising an excellent Farm house, substantial Barn, Stables, stalling sufficient for 50 Beasts, and other suitable outbuildings, in good repair, and about 203 Acres of Luxuriant and Productive Land, in the following Lots:

Numbers on Tithe Map.			A.	R.	P.
	LOT I.				
94	Farm-house, Buildings, Yards, Garden, & Orchard		3	0	29
95	Wortheys	Pasture	47	2	18
665	Whychurch Marsh	„	12	1	31
667	Broad Leaze...	„	19	0	38
668	Great Dry Leaze	„	13	0	24
670	Little Dry Leaze	„	11	3	4
671	Little Broad Leaze	„	18	0	8
689	The 12 acres	Arable	12	2	0
690	The 8 acres	„	9	0	8
691	The 16 acres	„	17	2	12
			165	2	2
	LOT II.				
108	Part of Bean Leaze	Pasture	23	0	7
109	Ditto, with Tie-up Stalling for 12 Beasts	„	1	2	20
			24	2	27
	LOT III.				
675	Part of the Marsh	„	1	2	25
	LOT IV.				
76 and 77	Clover Marsh Piece and Withey Bed	„	6	2	0
	LOT V.				
89	South part of Long Marsh	„	2	1	37
	LOT VI.				
89A	North part of Long Marsh	„	1	0	30
	LOT VII.				
162	Allotment in the Common	Arable	0	3	10

Numbers 76, 77, 89, 89A, 94, 95, 108, 109, and 162 are situate in the parish of St. Paul's, Malmesbury, and subject to a tithe rent charge of 11*l.* 8*s.* 3*d.*, and a land tax of 6*l.* 17*s.* 4*d.* The residue of the Estate is in the parish of Westport St. Mary's, Malmesbury, and subject to a tithe rent charge of 10*l.* 16*s.* and to a land-tax of 1*l.* 10*s.* 7*d.*

The ESTATE abounds with young thriving Timber, is surrounded principally by lands of the Earl of Suffolk, and adjoins the Park.

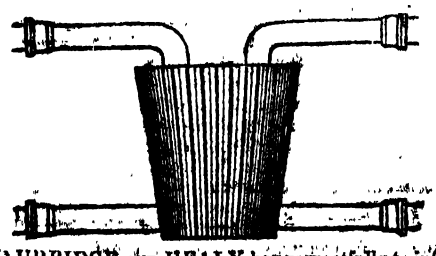
The FARM HOUSE is capacious, and may at a small expense be converted into a comfortable and suitable residence for a respectable family, and particularly for a sporting gentleman, being very conveniently situated for (indeed in about the centre of) the two adjoining Hunts of the Duke of Beaufort and Vale of White Horse, and close to the Braydon country so celebrated for sport. Six miles from the Minety, and 10 from the Chippenham Stations on the Great Western Railway.

To view the Estate apply to Mr. Compton, at the Farm House, and for further particulars; and to treat, to Mr. Muskelyne, Solicitor, Tetbury, Gloucestershire, at whose office a map of the Estate may be seen. A moiety of the purchase-money for Lot 1 may (if required) remain on security thereof.

SUSSEX.

TO BE LET for a term of years, and entered upon at Michaelmas next, the Farm of WOTTON, in the Parish of Folkington, at present in the occupation of Mr. Shoosmith. It consists of about 400 acres of Meadow, Pasture, and Arable land: the Arable land is most productive of Beans and Wheat; most of the Pasture and Meadow land is of the richest fattening quality. There is an excellent Farm-house, with every convenience, and the Farm-buildings are large and commodious, and economically fitted up and arranged for fattening a large number of beasts in feeding-houses, stalls, sheds, and yards. The Farm is about four miles from Hailsham and Eastbourne, 10 miles from Lewes, market town, and one mile from the Polegate station on the Lewes and Hastings Railway. For particulars, apply to Mr. JOHN MORTON, Whitfield, Berkeley, Gloucestershire. A person at Folkington Place will show the Farm.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of Iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in. will warm	50 ft.	4 in. pipe	... £1 15 0
12 in. do.	75 ft.	4 in. do.	... 2 5 0
14 in. do.	100 ft.	4 in. do.	... 2 15 0
16 in. do.	150 ft.	4 in. do.	... 3 10 0
18 in. do.	200 ft.	4 in. do.	... 4 10 0
21 in. do.	300 ft.	4 in. do.	... 5 10 0
24 in. do.	450 ft.	4 in. do.	... 7 0 0

NEW PATTERN BOILERS.

30 in. will warm	900 ft.	4 in. pipe	... 15 15 0
38 in. do.	1500 ft.	4 in. do.	... 25 0 0

All Boilers with double arms, up to 18 in., 5*s.* extra; to 24 in., 10*s.* extra; all above, the same price.

100, Fleet-street, London, Sept. 1.

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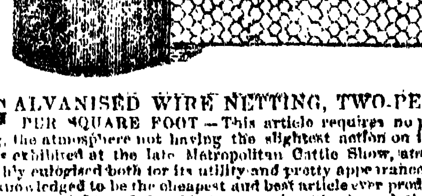

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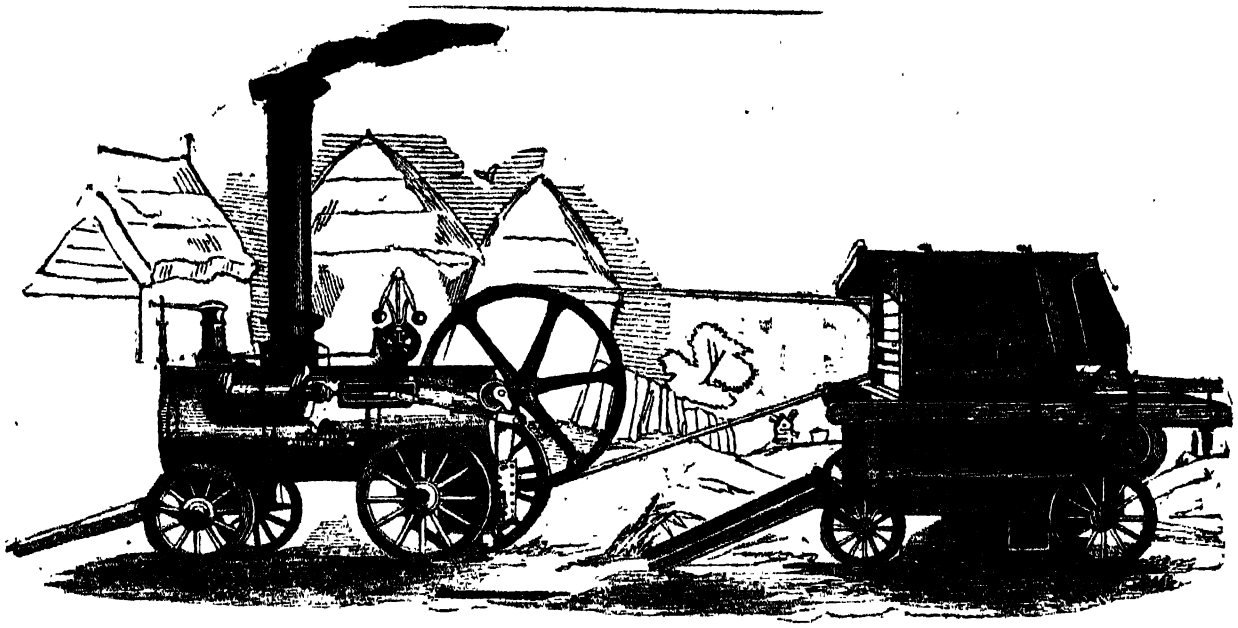

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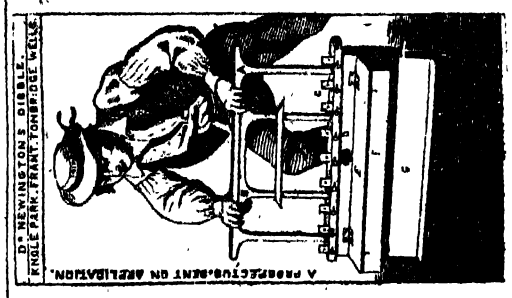

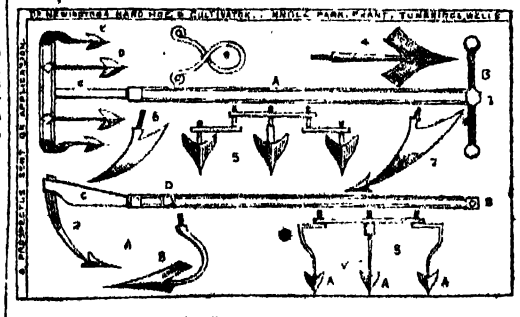

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 36—1849.] SATURDAY, SEPTEMBER 8. [PRICE 6*d.*

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THE DAHLIA SHOW OF THE NORFOLK AND NORWICH HORTICULTURAL SOCIETY will be held at the CORN EXCHANGE, NORWICH, on WEDNESDAY, the 19th of September. There will be offered for open competition, by Amateur Members and Nurserymen in all England, the following extra prizes:

The best collection of 24 Dahlias	. .	Five pounds
The 2d best do.	do. . .	Three pounds
The 3d best do.	do. .	Two pounds

No entrance money required, but parties intending to exhibit are requested to give notice thereof to the Secretary, Mr. C. S. GILMAN. Seedlings, either named or numbered, may be exhibited with named flowers. Exhibitors are requested to bring all specimens before 10 o'clock.—Norwich, September 8.

GRAND FLORAL AND MUSICAL FETE AT GOSFIELD PLACE, near Braintree, Essex, on FRIDAY, Sept. 14th. The Committee of the Halstead and North Essex Floral and Horticultural Society offer three extra Prizes for DAHLIAS (open to all England), viz., for the best 12 dissimilar Blooms, 3*l.*; second best, 2*l.*, third best, 1*l.* Entrance fee, 2*s.* 6*d.* Halstead, September 8. G. P. ARDEN, Hon. Sec.

CHICHESTER HORTICULTURAL SOCIETY.—The Autumn Exhibition will be held, by the kind permission of J. B. FREELAND, Esq., in his Grounds at Northgate, on Thursday, Sept. 13. Open to the public at Two o'clock; admission, One Shilling. A Band of Music will attend. Particulars of Premiums, &c., may be obtained of H. SILVERLOCK, jun., Hon. Sec., North Gate Nursery, Chichester.

ROUPELLIA GRATA.

C. LODDIGES AND SONS having raised the above new and beautiful Stove Plant, figured in the Botanical Magazine for the present month, are enabled to offer fine plants from 1 to 2 feet high; price 2*l.* 2*s.* each.—Hackney, Sept. 8.

MARY CONWAY, Widow of the late PHILIP CONWAY, of Earl's court Nursery, Old Brompton, begs respectfully to return her thanks to the Nobility, Gentry, and Gardeners for the numerous favours her late husband received at their hands. As Mrs. CONWAY purposes to conduct the Business with the same assiduity as heretofore, nothing shall be wanting to meet the approbation of those by whose kind patronage they have been so liberally supported, and she therefore begs the favour of their interest in her behalf.

THE following STRAWBERRY PLANTS may be had true, warranted, of Messrs. DILLISTONE, Nurseries, Sturmer, Haverhill, Suffolk:

	15*s.* 0*d.* per 100
Black Prince and Eleanor	
Princess Royal and Comte de Paris (Pelvilain's)	7 6 "
Highland Chief and Prolific Hautbois	5 0 "
Princess Alice Maud; this is here the very best and most productive early Strawberry	3 6 "
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Superb Hyacinths, by name, per dozen	...	... £0	9*s.* 0*d.*
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Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford, Kent.—Sept. 8.

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HOYA BELLA (HOOKER).

This beautiful plant was sent us from Moulmein by Mr. Thomas Lobb. It is figured in Curtis's Botanical Magazine for October last, where in Sir W. Hooker, in describing it, says, "The most lovely of all the Hoyas, delicately scented, resembling an amethyst set in frosted silver." It was also figured in Paxton's Magazine for December last, and is thus described. "The flowers for delicacy and beauty surpass all the kinds yet known, the petals are of a very pure white, and beautifully frosted; altogether it is a plant of first rate importance in a collection, as the flowers endure in perfection for a long time, and are delightfully fragrant." It has been exhibited at Chiswick and Regent's-park, at both of which places it received the first prize for new and rare plants. Fine blooming plants 63*s.* each.

MITRARIA COCCINEA.

This very handsome and distinct shrub (probably hardy), was sent to us by Mr. William Lobb, from the Island of Chiloe. It is figured in Paxton's Magazine for August last. It is a dwarf compact evergreen shrub, producing its brilliant scarlet blossoms in great abundance on plants in a small state. The foliage is small and good. It is a plant well adapted for pot culture and exhibition, the peculiar brilliancy of its flowers being in fine contrast to any other plant at present in cultivation. It has frequently been exhibited at Chiswick and Regent's-park, and had first prizes at both places. Strong plants 31*s* 6*d*. each.

AGALMYLA STAMINEA (BLUME).

This beautiful plant is figured in Paxton's Magazine for May, 1848. It was exhibited at the London Horticultural Society's meeting in Regent-street, December 7, 1847, and received the Large Silver Medal, and at the Regent's-park exhibition on the 5th of July, 1848, it also received a Silver Medal. Strong plants, 31*s.* 6*d* each.

CANTUA PYRIFOLIA (DE CANDOLLE).

This rare and fine greenhouse shrub, which was sent us from Peru by Mr. William Lobb, is figured in Curtis's Botanical Magazine for July, 1848, where a full description of it is given. It was exhibited at Regent street, in April, 1848, and received a Medal. It is a hardy greenhouse plant for easy culture, it blooms freely, and is of a fine foliage and habit. Strong plants 31*s* 6*d*. each.

GESNERA PICTA (HOOKER).

This is a very beautiful plant, the flowers being brilliant orange scarlet, and produced most copiously all through the summer and autumn. The foliage is handsome, the habit compact and dwarf. It is a plant that will certainly give general satisfaction. It requires the temperature of a cool stove or warm greenhouse. It is figured in Curtis's Botanical Magazine for March last. Good flowering plants 21*s.* each.

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The usual discount to the Trade, and when three of any sort are taken, a fourth plant put in gratis.

N.B. The earliest orders will have the strongest plants.

Printed Lists, with further descriptions, sent on application.

Exeter, Sept. 8.

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16 oz. from 2d. to 3½d. per foot.				Under .. .. 6 by 4	12	6
21	,,	3½ ,, 5	,,	6 by 4 and under 7 by 5	16	6
26	,,	3½ ,, 7½	,,	7 by 5 ,, 8 by 6	18	6
32	,,	4 ,, 9½	,,	8 by 6 ,, 10 by 8	20	6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ .. 10s. 0d. | 7 by 5 and 7½ by 5½ ... 12s. 0d.
8 by 6 ,, 8½ by 6½ .. 13 6 | 9 by 7 ,, 10 by 8 ... 15 0

MILK PANS, from 2s. to 6s. each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d., 6 tubes, 10s. Self-Registering Thermometers for Greenhouses.

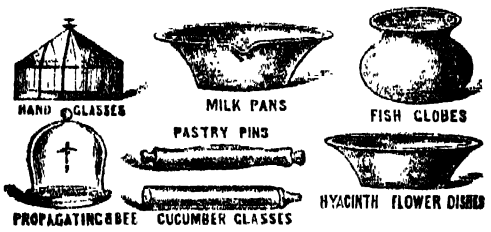
Estimates and List of Prices forwarded on application to their Warehouse, 116 Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d per foot. British Plate Glass, from 1s. 2d. to 2s per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s each. Cucumber Tubes, from 12 to 24 inches long, at 1d per inch. Lactometers, 7s 6d. each. Wasp Traps.—Lists may be had on application at the warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

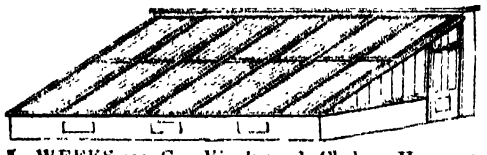
STATUES, VASES, FOUNTAINS, GARDEN-ORNAMENTS COATS OF ARMS, &c, and ARCHITECTURAL EMBELLISHMENTS, in Imperishable Stone, by VAUGHAN AND Co., 60, Stone's-end, Borough; T. J. CROGGON, late of Coade's, Superintendent. A pamphlet, containing drawings of a portion of the stock, forwarded on application.—Specimens may be seen at Messrs. CROGGON and Co.'s, 2, Dowgate-hill, London.

IMPROVED FOUR-HORSE PORTABLE STEAM-ENGINES AND BOLTING OR THRESHING MACHINES.

FREEMAN ROE AND HANSON, Southwark Iron Works, and 70, Strand, beg to call attention to their Steam-Engines and Threshing Machines, which are more economical in fuel, for the quantity of work done, than any before the public. They may be seen any day at their works, Summer-street, Southwark Bridge road.—Water-rams for raising Water. Deep Well Pumps, Baths; Hot-water Apparatus, Fountains. Towns supplied with Gas or Water.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, FERNS, &c.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. They have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., all heated by HOT WATER in various forms showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. By means of these houses, they are enabled to grow Stove, Greenhouse, Ferns, and other Plants, in such immense numbers, that they are sold at LESS THAN HALF-PRICE. Mats, Mushroom Spawn, and everything connected with the Nursery and Seed departments, Plans, Estimates, and Catalogues forwarded on application.

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15l. 10s.; a do. do. 15 by 10, 22l. 10s.; a do. do. 18 by 12, 28l. 10s.; a do. do. 21 by 12, 32l. 10s., including a plan for brickwork. 18-inch Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 11½d. per foot; 2-inch do., 1s. per foot.—J. LEWIS'S Machine Hothouse Works, Stamford-hill, Middlesex.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm-servants, or unpractised persons. Price 1d. per square foot. CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel. Samples and Testimonials sent by post on application to CROGGON and Co., 2, Dowgate-hill, London.

TO THE CULTIVATORS OF CACTI.

TO BE DISPOSED OF, on reasonable terms, a fine, healthy, original SPECIMEN PLANT of CEREUS SENILIS, measuring about a foot and a half high.—Apply to No. 138, Post-office, Hull.

TO GREENHOUSE BUILDERS AND OTHERS.—Any person having good second-hand or new Greenhouses, Greenhouse, Pit-lights, Hot-water Apparatus, and the like, to dispose of, cheap, may find a Purchaser by sending full particulars and price to A. B., Elm Cottage, Park-street, Camberwell, London.

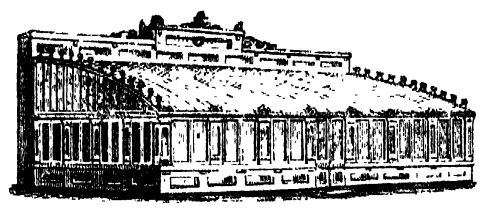
WHEEL BAROMETERS, all Sizes and Patterns, from 1l. 5s. to 5l. 5s.

PEDIMENT OR UPRIGHT BAROMETERS, 1l. 1s. to 6l. 6s.

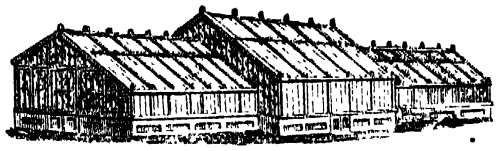
STANDARD BAROMETERS for minute observation, 5l. 5s. to 20l., according to the size of the tube. The above Barometers may be sent into the country without fear of injury, being made portable for carriage.

THERMOMETERS for Registering the extremes of heat and cold, of the best construction, 1l. 10s., 18s., and 15s; ditto for Registering Cold only, 4s. 6d. to 6s. 6d; ditto for Baths or Hot Water in Copper or Japan cases, 2s 6d to 14s.; ditto for Hotbeds to show the bottom-heat, 15s to 1l. 5s. Superior Achromatic Microscopes, price 3l. 12s., 5l. 15s., and 9l. 10s. Compound Microscopes, 10s. to 2l. 10s. Telescopes, 1, 2, and 3 draw, from 15s. to 2l. 2s.; ditto for the pocket, 12s. to 3l. 3s. Mason's Hygrometer for showing the degree of humidity in greenhouses, sick chambers, &c., 15s. and 1l. 10s. Lactometers for showing the quality of Milk, 5s. Drawing instruments, in sets, from 10s. to 4l 4s. Magic Lanterns, with 12 Slides, from 10s. to 2l. Dissolving View Apparatus, lent out for the evening, 7s. 6d and 10s.

Every Instrument warranted and exchanged, if not approved of. Gentlemen wishing for the prices and descriptions of any of the above, may have them by writing to that effect.—HENRY BAKER, Instrument Maker to the Board of Admiralty, 90, Hatton Garden, London.



HOTHOUSE DESIGNING, BUILDING, AND HEATING.—Every description of Horticultural Structure Designed, Erected, and Heated by Hot Water, common Flues, and other modes, on the most economical and improved modern principles. Testimonials and references from Noblemen and Gentlemen who have kindly patronised, for more than 15 years past, J. THOMSON and CO.'S Modern and Simple Mode of Constructing, Building, Warming, and Ventilating Garden Structures.



J. THOMSON having had full 25 years' experience as a practical Horticulturist, Landscape Gardener, and Garden Architect, in her Majesty's Royal Gardens at Windsor, Kew, and other places, most respectfully solicits the favours and patronage of Noblemen and Gentlemen about to form new, or to alter and embellish their present Parks, Gardens, &c.

Plans and Estimates for remodelling Parks and Gardens, or for Building and Heating Hothouses, and other Garden improvements, furnished on application to J. THOMSON and Co., Hothouse Builder, &c., King-st., Hammersmith, near London.

*** Rustic Summer Houses, Chairs, Vases, and similar Garden Ornaments, made on the shortest notice.

PORTLAND CEMENT.—Testimonials received from all quarters, prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, CHARLES FRANCIS and SONS, Nine Elms, London.

WIRE-WORK, HOT-WATER APPARATUS, GREENHOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS on improved and economical principles.

Parties waited on in Town and Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

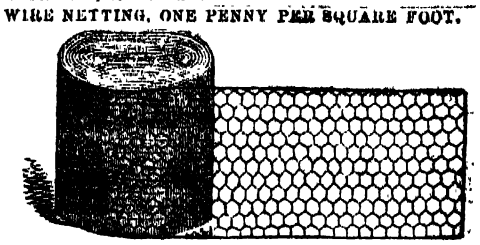
NOVEL APPLICATION FOR THE IMPROVEMENT OF CELERY, SEA-KALE, CARDOONS, RHUBARB, STRAWBERRIES, &c.—By means of ROBERTS'S Registered Sockets, these articles are much improved, if applied in season. A pamphlet, with wood engravings, and an exposition of particulars of these and various other appliances to horticulture, may be had on application, enclosing two postage stamps, to Mr. JOHN ROBERTS, Merchant, 34, Eastcheap, London.

NOTICE.—The Gardener's Journal of July 14, 1849, contains an editorial article upon these inventions, from which the following remarks are extracted: "The principle of the invention is one about the advantages of which there can be no doubt. By such appliances, and by the aid of such means, vast and important results may reasonably be looked for. As connected, especially with the culture of Strawberries and Melons, the use of these Tiles would undoubtedly add both to earliness and flavour. . . . We shall repeat, that the principle is excellent. All that we ask on the part of Mr. ROBERTS, is the thanks of horticulturists for bringing before them in a prominent manner a principle of great practical utility."

SMALL COTTAGE WANTED, containing two Parlours, and three or four Bed-rooms, with good Garden, and from one to five acres of ground, from 2 to 10 miles from town, and near a railway station.—Address, post-paid, stating full particulars, to J. H., 14, Priory-street, Camden-town.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LEGG, Cheltenham.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



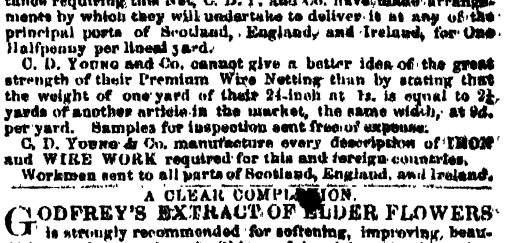
GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide 3d. per yard		30 inches wide 7½d. per yard	
18 ,, ,, 4½d. ,, ,,		36 ,, ,, 9d. ,, ,,	
24 ,, ,, 6d. ,, ,,		48 ,, ,, 1s. ,, ,,	

Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard, at galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden arches, 20s. each; Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c., 22, PARLIAMENT-STREET, WESTMINSTER, LONDON; CASTLE-BUILDINGS, DERBY-SQUARE, LIVERPOOL; 128, HIGH-STREET, EDINBURGH; and 32, ST. ENOCH-SQUARE, GLASGOW, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9d.; 24 ins., 1s.; 30 ins., 1s. 3d.; and 36 ins., 1s. 6d. per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3 15 0
Do. of 100 yards, 24 ins. wide	.. ..	5 0 0
Do. of 100 yards, 30 ins. wide	.. ..	6 5 0
Do. of 100 yards, 36 ins. wide	.. ..	7 10 0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s. is equal to 2½ yards of another article in the market, the same width, at 9d. per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

A CLEAR COMPLEXION.

GODFREY'S EXTRACT OF ELDER FLOWERS is strongly recommended for softening, improving, beautifying, and preserving the Skin, and in giving it a blooming and charming appearance, being at once a most fragrant perfume and delightful cosmetic. It will completely remove tan, sunburn, redness, &c., and by its balsamic and healing qualities render the skin soft, pliable, and free from dryness, scurf, &c., clear it from every humour, pimple, or eruption; and, by continuing its use only a short time, the skin will become and continue soft and smooth, and the complexion perfectly clear and beautiful.—Sold in bottles, price 2s. 9d., with directions for using it, by all medicine vendors and perfumers.

TOBACCO-PAPER of the very best quality, for fumigating Plants, &c., may be had, at 1*s.* 6*d.* per lb., on application to J. CHESLIN WHEELER, Kingsholm Nursery, Gloucester.

WINTER CUCUMBER, "LORD KEYNON'S FAVOURITE."—This Cucumber has proved itself to be the best yet in cultivation for winter growing, and proved much hardier than any other. It is a free setter, and never shanks off; the length is from 12 to 15 inches; it has a very handsome appearance on the table, and eats very crisp. Sold in packets, 2*s.* 6*d.* each. Also seed of the old Syon House, 1*s.* 6*d.* per packet. Warranted true. Postage free. A remittance must accompany the order, either in cash, or in postage stamps, to the amount. Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney Bridge, Bath.

NEW HARDY HYBRID RHODODENDRON.
RHODODENDRON CAMPANULATUM SUPERBUM.
(Figured in Paxton's "Magazine of Botany" for last month.)

THOMAS JACKSON AND SON are now sending out good plants of this handsome Rhododendron, at 21*s.* each. It was exhibited at the Horticultural Society's Exhibition at Chiswick, on the 5th of May, and awarded their Knightian Medal. The Editor of the *Gardeners' Chronicle*, in his review of that Exhibition, notices it in the following terms: "Of Rhododendrons, the best was a seedling from Messrs. JACKSON, of Kingston. It is a good trusser, the flowers individually large, of a pure white, with the exception of the upper petals, which are deeply and distinctly spotted with crimson; a beautiful variety." Discount to the Trade.
Nurseries, Kingston, Surrey, Sept. 8.

BECK'S PELARGONIUMS, and the best varieties of other raisers.—12 of the following sorts, including the box and carriage to London, will be sent out for Two Guineas, well rooted in 3-inch pots, and ready for an immediate shift into a larger size. Orders will be booked, and correspondents informed when the plants are ready, when remittance may be made by Post-office order on Brentford: Aurora, Blanche, Centurion, Cracker, Forget-me-not, Ariel, Cassandra, Cavalier, Cruenta, Gustavus, Gulielma, Grandiflora, Junii, Negress, Rosamund, Sundown, or 9 of the above, and Hoyle's Crusader, or Topping's Brilliant, or Foster's Victory.
The above selection, well cultivated, will make first-rate exhibition plants. A Descriptive Catalogue, including the seedlings of 1848, may be had on application to JOHN DOBSON, Worton Cottage, Isleworth.
Monthly directions for their culture will be found in the "Florist and Garden Miscellany," published on the 1st of each month, and to be had of all booksellers, under the title of "Beck's Florist." This work contains one coloured plate, one or more woodcuts, 24 pages of original matter, a Lady's Page, and a Calendar of Operations, supplied by eminent cultivators.
"Too much can scarcely be said in favour of the continued excellence of this work."—PROF. LINDLEY, *in this Paper, April, 1849.*

CHOICE FLOWER SEEDS FOR PRESENT AND AUTUMN SOWING, free by post, with useful instructions for sowing, &c. Catalogues on application. The following, saved from large collections of new and choice varieties, each, per packet.

Anemone	4*d.* to 1*s* 0*d*	Hollyhock	0*s* 6*d*
,, new semi-dbl.	6*d.* to 1 0	,, 30 vars., separate	5 0
Antirrhinum	0 6	,, 20 do.	3 6
Auricula	1 0	,, 12 do.	2 6
Calceolaria	1 0	Iris, English	0 6
Cinerarias	1 0	,, Spanish	0 6
Dianthus	0 3	Pansy	1 0
Fuchsia	1 0	Petunia	1 0
Geranium	2 6	Polyanthus	4*d.* to 1 0
,, smaller packets	1 6	Primula sinensis	0 6
,, scarlets	0 6	Ranunculus	2 6
Gloxinia	0 6	Sweet William	0 6
		Verbena	1*s.* 6*d.* to 2 6

20 vars. choice Greenhouse Perennials, 10*s.* 6*d.*; 12 do., 7*s.* 6*d.*
20 vars. Choice Hardy Biennials and Perennials . 7*s.* 6*d.*
12 ditto . . 5*s.* 0*d.*
20 vars. showy Hardy Annuals for spring flowering.. 4*s.* 0*d.*
Remittances requested from unknown correspondents. Post-office orders to be made payable to BASS and BROWN, or STEPHEN BROWN. Postage stamps received for small amounts.
BASS and BROWN, Seed and Horticultural Establishment Sudbury, Suffolk.

KITLEY'S GOLIAH STRAWBERRY.

JAMES KITLEY begs to announce to Strawberry Growers and the Public generally, that he has now ready to send out, strong well-rooted Plants of the above Seedling Strawberry, at 12*s.* per dozen, or 4*l.* per hundred, and feels confident that, taking it in all its combined merits, it is the very best of all Strawberries, and as a criterion, he has tested it with the best that is out, viz, the British Queen.
1st. Flavour—if not superior, is equal with the above-named variety, though more resembling that of the Pine-apple.*
2d. Size—larger than the Queen.
3d. Shape—not so flat as the Queen; more conical.
4th. Colour—bright scarlet; not having that white unripe tip which prevails in the Queen, and very prolific.
5th. Foliage—villous, and very much resembling the Queen, from which it is raised, but stronger in its growth.
6th. Hardiness—it stands the winter much better than the Queen; at least, in this neighbourhood.
J. K. having fruited this very superior Strawberry three years, feels perfectly confident that any person once having it in their possession, will not find fault or regret having ordered it. It has gained three Prizes at the Bath, and one at the North Wilts Horticultural Societies' Exhibitions; and as a further proof of its goodness, begs to refer to extracts from the *Gardeners' Chronicle* and the *Gardeners and Farmers' Journal:*
(From the *Gardeners' Chronicle.*)
"Strawberries.—J. K.—Your Seedling Strawberry, 'Goliah,' judging from its size and appearance, is worthy of cultivation."
(From the *Gardeners and Farmers' Journal.*)
"Strawberries.—J. K., Lyncombe Vale.—We have great pleasure in bearing testimony to the exquisite flavour of your Seedling Strawberry, 'Goliah.' In our opinion, it combines the piquant flavour of the Strawberry with the richness of the Pine,* the delicious aroma of which it partakes in equal proportion with the taste. Apart from the Queen of Fruits, we certainly do not remember anything in this way that conveyed to our senses so delicious a treat as the noble fruit to be known to the world as 'Kitley's Goliah Strawberry.'"
To be had at Lyncombe Vale Nursery, Bath, and of Messrs. Garraway, Mayes, and Co., Bristol, who can testify to the superior quality and flavour of the fruit.

The Gardeners' Chronicle.
SATURDAY, SEPTEMBER 8, 1849.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, Sept. 12—Royal South London ..... 1 P.M.

COUNTRY SHOWS.—Monday, Sept. 10: Liverpool Horticultural.—Tuesday Sept. 11: Hampshire Horticultural (Southampton).—Thursday, Sept. 13: Chichester Horticultural, Liverpool Floral, Devon and Cornwall Horticultural, Bath Horticultural, Aylesbury Horticultural.—Friday, Sept. 14: Halstead and North Essex Horticultural.

No one can have failed to remark how oppressive the atmosphere has been, though comparatively sunless, for the last six weeks; how warm, damp, and suffocating, especially at night. That cholera should follow, with all its horrors, in the presence of such influences, especially in low, ill-drained places, is exactly what might have been anticipated. The thermometer indicates, in fact, a state of the weather which is almost unexampled near London, as will be evident from the following table, which has been prepared by Mr. R. THOMPSON:

The following TABLE exhibits the Highest Temperature during the day, and the Lowest during the night, for the last 23 years, for the period between the 1st of August and 4th of September, compared with the temperature of the same period in the present year.

	Average Temperature for the last 23 years.		Temperature in the present year.	
	Highest during the Day.	Lowest during the Night.	Highest during the Day.	Lowest during the Night.
1826 — 1848	°	°	°	°
August... 1...	75.71	51.30	74	45
2...	75.17	53.26	74	55
3...	74.36	52.17	67	39
4.	75.56	52.86	70	41
5...	73.52	53 78	72	42
6.	72.43	52 69	80	44
7	74.17	50.34	83	60
8	74.91	49.43	85	54
9...	75.82	51.30	81	56
10...	75.34	52.73	80	59
11...	74.73	51.56	81	57
12	75.04	51.30	73	56
13...	72.60	50.34	70	52
14...	72.13	50 86	70	52
15...	73.13	51.13	72	52
16...	73 60	52.86	64	42
17...	73.30	51.86	73	42
18...	73 95	53.17	69	40
19	72.95	51.43	72	50
20...	72.78	51 82	72	52
21...	72.96	50.17	78	56
22	70.39	51.43	70	57
23...	71 34	48.73	70	54
24...	70 65	48.69	77	53
25.	70.82	51 60	77	52
26...	72 30	48 86	79	55
27..	73.08	50.17	66	51
28..	72 86	51.34	73	58
29..	71.65	49.56	72	65
30...	71.91	50.01	76	60
31...	70.78	49.65	75	53
Sept. ... 1...	70.04	48.60	69	58
2...	70.73	48.21	77	52
3...	69.08	48.39	80	58
4	69 95	48 52	76	58

From this we gather the following remarkable facts. Up to the 6th of August the day temperature had been lower than usual, and that at night considerably so; on the 3d it was within 7° of freezing. But on the night of August 7 a sudden rise took place, from about 8° below to 10° above the average, the whole of this rapid advance having amounted to 16° in the 24 hours. From this time the night temperature again fell up to the 15th, till on that day the thermometer was only 1° higher than usual. On the nights of the 16th and 17th it was from 9 to 10° lower than the average; on the 18th it was 13° lower. There then was a sudden rise of 10°, and on the 21st the thermometer was nearly 8° above the average. From that time the night temperature has been constantly above the average, on one occasion (the 29th) as much as 15 *degrees and a half*, thrice 10°, once 9¼°, and once 7°.

What is very striking is that these high night temperatures are not always connected with corresponding heat. Thus on the 29th August, when the night was 15½° above the average, the day was less than half a degree above it. In fact the mean highest temperature by day in all the month of August was only 74.03°, while the average highest mean in 23 years is 73.20°. It also appears that, during the month of August, the difference between the day and night temperature has varied greatly; in one instance as much as 39°.

How far these circumstances may affect vegetation remains to be seen; all newly planted trees have of course made striking progress, for they have been exposed, during more than a month, to the climate of a hothouse. It is not, however, certain that they will bear a hard winter the better on this account, unless we should have several weeks of cool dry, sunny weather, to counteract the effects of the forcing they have borne. The warmth of the soil at this moment would seem, however, to be highly favourable to the transplantation of evergreens; and in the garden of the Horticultural Society there is now in progress on that subject a great experiment, to which we shall look with much interest. A Holly hedge, about 20 years old, is at this moment removing from one part of the garden to another, in order to enclose a yard for the accommodation of exhibitors' vans. The process is aided by a dressing of superphosphate of lime, applied to the roots. If the experiment be successful, it will form a very important precedent as to the manner and season at which Evergreens of great size should be removed.

IT will be remembered that in the WALTON CHIMNEY CASE, to which we have lately devoted some space, the witnesses for the defence swore that no deleterious gases or smoke injurious to vegetation either had or could have proceeded from that chimney for a very considerable time. This plea seems to have had weight with the jury, who probably perceived nothing offensive in the defendants' works when they visited them.

The value of testimony of this kind is sufficiently indicated by the unanswerable proof given in our columns that injury has been inflicted very lately by deleterious matter in the air, and that that matter is distinctly traceable to the chimney. Indeed our own nostrils have borne witness to the offensiveness of the place even when worked under what may be supposed to be the most careful superintendence. But if any doubt could remain as to the justice of the plaintiff's cause, and to the insufferable nature of the nuisance, it would be removed by the following statement from Mr. WATERTON, whose mansion is almost 1000 yards further off the chimney than the house and land of the unfortunate plaintiff. In the *Wakefield Examiner* of Saturday last is a letter from this gentleman, from which the following are extracts:

"*Sept.* 1, 1849.—'Vitiantur odoribus aurae'—A land-agent, and a land valuer, and a tree valuer to boot, actually stood up, and publicly upheld the benefit of alkali works to meadows, gardens, orchards, and corn fields! If alkali and agriculture can go hand in hand, then, indeed, may Food and Famine do the same. But Ovid has told us, 2000 years ago, that they cannot. 'Neque enim Cereremque Famemque Fata coire sinunt.' Were he alive now, he would condemn all alkali works to some barren strand: 'triste solum, sterilis, sine fruge, sine arbore tellus.' Our health must suffer when the air is foul. On last Thursday evening a succession of sickening vapours entered our north sitting-room, and bed-rooms; and we were all of us affected by them during the night. Simpson's operatives are the very personification of death alive. There is not a single cherry-cheeked, fresh and hearty looking man amongst them. They are the 'mere shreds and ends' of men. When going to their dinner, they put one in mind of Falstaff's regiment in its march through Coventry. The Roman poet has hit them off to a nicety: 'hirtus erat crinis, cava lumina, pallor in ore.' When the north wind sweeps my valley, I never fail to have proof beyond all manner of doubt that Doctors A. and B. have signally failed in the administration of their nostrums to suppress the poisonous vapours. Not all the As and Bs who now figure in the ranks of modern alchymy can render them wholesome and innocuous. Nay, Eolus himself would not be able to confine their foul breath. To me, they are a stinking, horrid, black, and dangerous Vesuvius—ruinous to my health, ruinous to my comforts, and ruinous to my property."

And this must be the fate of everybody who rashly permits these pestilential chimneys to rear their heads within a couple of miles of their property.

AT this season, when the lovers of plants are considering on what they shall rely for a supply of NOVELTIES in the coming years, it may be useful to point out the real value of some which are about to be offered for sale. For the present we take a few of the examples to be found in Messrs. VEITCH'S Nursery at Exeter.

Fagus obliqua is an evergreen Beech tree of great beauty, growing from 30 to 40 feet in height. It inhabits Chili and Patagonia, according to Mr. LOBB; DOMBEY reports it to grow in the interior of the provinces of southern Chili, at an elevation of 1000—5000 feet. Capt. KING is said to have found it at Port Famine. It is one of the Robles of the Chilenos, and of value for its heavy wood. It occupies, however, according to Dr. JOSEPH HOOKER, only the lower elevations of the mountains, and will hardly bear the open climate, except in the south-west of England and Ireland.

Libocedrus tetragona (also called Thuja tetragona) is described by Mr. LOBB as a tree of 50 to 80 feet in height, growing as high as the snow line on the Andes of Patagonia. It is a Coniferous plant, with four-cornered branches, which must be extremely handsome. Another species of *Libocedrus*, of greater stature (80 to 100 feet according to Mr. LOBB) has also been raised. These two are said to constitute the famous Alerse of Chili, celebrated for its gigantic size, and the excellence of its timber. Specimens of Alerse are spoken of 24 and 22 feet round, at 5 feet from the ground; others are said to exist "from 30 to 40 feet round, and 80 to 90 feet in height to the first branches; above which the heads of these giants are said to rise some 40 or 50 feet more." No doubt they are among the finest Conifers in the world. Since they inhabit the same country as the Chilian

Araucaria, and advance to the southward even as far as Port Famine, it is not improbable that they may be as hardy as that tree, and if so they will be of very great value. Possibly one of these may be the genuine Alerse, and the other the Cypress of Chili, if indeed those trees are as distinct as is supposed by some writers.

Of Myrtle-like plants several have been obtained, especially a very pretty species called *Myrtus stipularis*. These will be about as hardy as the common Myrtle.

A Berberry of unrivalled beauty, evergreen, with deep green foliage and rich orange-yellow flowers, is *Berberis Darwinii*. It will probably be hardy.

Three *Escallonias* are raised, of which the *Escallonia macrantha* has become known as the finest of the genus, in consequence of its having been exhibited at one of the meetings in the Garden of the Horticultural Society. Two others are something like *E. rubra*, and will possibly have the same constitution.

Desfontainia spinosa; an evergreen shrub with the leaves of a Holly, from the Andes of Patagonia, will scarcely be valuable, on account of its flowers, which seem to be produced too sparingly in its native country. Its hardiness is uncertain.

Embothrium coccineum; a greenhouse shrub, with fine firm round foliage and clusters of deep red flowers, is a Protead, and will probably turn out a fine thing for exhibition.

Ourisia coccinea, from Chiloe, is a herbaceous plant, with several long crimson flowers at the end of a scape, like that of a Cowslip.

Luzuriagas, of which *L. radicans* and a new one are at Exeter, are greenhouse plants, with a very peculiar scrambling or trailing habit, short furrowed thin leaves, and multitudes of axillary spotted or spotless flowers the size of a shilling. They are very pretty under-shrubs in their own country, and the flowers seem to hang on well, without fading quickly.

Fuchsia lanceolaria, from North Chili, may be likened to a handsome, shrubby Pentstemon, with rose-coloured flowers. It will not be hardy.

Argylia is an herbaceous genus of Bignoniads, with tuberous roots, and leaves cut almost as much as curled Parsley. The flowers grow at the summit of long, erect scapes, and are fine looking when dried. A species, new, but near *A. puberula*, said to have yellow flowers, is growing in Mr. Veitch's Nursery.

Among other plants, of less moment, are *Cordia decandra*, an evergreen shrub, with white flowers, from North Chili. If the white is pure, it may be a good plant, for the flowers are large. *Crukshanksia* is a curious annual, with one of the lobes of the calyx enlarged into a round yellow plate, as happens in Mussænda. *Frankenia campestris*, with lilac flowers, may be compared to some sort of Thyme.

In addition to these is *Cynodendron Patagua*, a shrub, 6 to 8 feet high, from Chiloe and Patagonia, probably requiring a greenhouse. We can hardly form an opinion of the horticultural value of this plant. All we can say is, that, in a dried state, it is a fine looking thing, with drooping bell-shaped flowers, an inch long, and of some deep red or reddish colour. It certainly promises well.

These indications are, we confess, of a very slight texture; but they will suffice as a guide to purchasers, which is all that they are intended for.

ON THE ODOURS OF PLANTS AND THE MODE OF OBTAINING THEM.

"Unbidden earth shall wreathing flowers bring,
And fragrant herbs the promises of spring,
As her first offering to the ruling king."—*Dryden's Virgil*

The exquisite pleasure derived from smelling at fragrant flowers would almost instinctively induce man to attempt to separate the odoriferous principle from them, so as to have the perfume when the season denies the flowers; and thus we find the alchemists of old torturing the plants in every way their invention could devise for this end; their experiments were not wholly unsuccessful, and indeed upon their foundation the whole art of perfumery has been reared. Besides the uses in perfumery, the essential oils (the matters to which the odour of the plant is due) are used by druggists to cover the bad taste of medicines. Peppermint, Coriander, and Cassia, are much used for this purpose, and as the sense of smell has much to do with taste, their utility is obvious; by closing the nostrils many very nasty physics may be swallowed without tasting, particularly Rhubarb. We here see the advantage of the domestic subterfuge of "a little peppermint," with a home "dose of castor oil," or a peppermint lozenge before the "cup of salts and senna."

Without recapitulating those facts which may be found diffused through nearly all the old authors on medical botany and works of this character, we may state at once the mode of operation adopted by the practical perfumer of the present day for preparing the various extracts or essences, waters, oils, &c., used in his calling. The processes are divided into four distinct operations.

1. *Expression* or the squeezing the odour-giving part of the plant between two metal plates, which are generally made hot (though sometimes cold, and hence the term "cold drawn") and forced together by a powerful screw. This process is only adopted where the plant is very prolific in its oil, *i. e.*, odour.

2. *Distillation.*—The plant, or part required, is placed in a metal-pan, and covered with water; to the pan a dome-shaped lid is fitted, terminating with a pipe, which is twisted cork-screw fashion, and fixed in a bucket, with the end peeping out like a tap in a barrel. The water in the still is made to boil, and having no other exit, the steam must pass through the coiled pipe, which being surrounded by cold water in the bucket, condenses the vapour before it can arrive at the tap; with the steam the volatile oil or perfume rises, and is liquified at the same time; the liquids which thus run over, on standing for a time, separate into two portions, and are finally divided with a funnel having a stopcock in the narrow part of it. By this process the majority of the oils or perfumes are procured; it so happens, however, that the finest odours, the *recherché*, as the French say, cannot be procured by this method. Then recourse is had to—

3. *Maceration.*—This operation is conducted thus: For what is called pommade, a certain quantity of purified hog's lard and mutton suet are put into a clean metal pan; this being melted, the kind of flowers required for the odour wanted, are carefully picked and put into the liquid fat, and allowed to remain from 12 to 48 hours; the fat has a particular affinity or attraction for the oil of flowers, and thus, as it were, draws it out of them, and becomes itself by their aid highly perfumed; the fat is strained from the spent flowers, and fresh are added four or five times over, till the pommade is of the required strength. For perfumed oils the same operation is followed, but in lieu of the lard and suet, fine olive oil, or oil of Ben, is used, and the same results are obtained. These preparations are called *Huiles Antiques*, or commonly French oils of such and such a flower. When neither of the foregoing processes give satisfactory results, the method of procedure adopted is by—

4. *Absorption.*—The odours of some flowers are so delicate, or, as the French call it, *en fleurage*, that the heat required in the previously named process would greatly modify, if not entirely spoil them; this process is, therefore, conducted cold, thus: Square frames, about 3 inches deep, with a glass bottom, say 2 feet wide and 3 feet long, are procured; over the glass a layer of fat (lard and suet) is spread, about ¼ an inch thick, with a kind of plaster knife or spatula; into this the flower buds are stuck and ranged completely over it, and there left from 12 to 72 hours. Some houses have got 2000 and 3000 such frames; as they are filled they are piled one over the other, the flowers are changed so long as the plant continues in season, sometimes over a time of two or three months. For oils of the same plants, coarse linen-cloths are imbued with the finest olive oil, and stretched upon a frame made of iron; on these the flowers are laid and suffered to remain a few days. This operation is repeated several times, after which the cloths are subject to great pressure to remove the now perfumed oil. As we cannot give any general rule for working without misleading the reader, we prefer explaining the process required for each when we come to speak of the individual flower or plant.

Whenever a still is named, or the article is said to be distilled or "drawn," it must be understood to be done so by steam apparatus, as this is the only mode which can be adopted for obtaining anything like a delicate odour, the old plan of having the fire immediately under the still, conveying an empyreumatic smell to the result has become obsolete in every well regulated perfumatory. The steam-still differs from the one described only in the lower part, or pan, which is made double, so as to allow steam from a boiler to circulate round the pan for the purpose of boiling the contents; instead of the direct fire. In macerating, the heat is applied in the same way, or by a contrivance like the glue-pot, as made use of now-a-days. This description of apparatus will be found very useful for experiments, which we will suggest by-and-bye. The perfumes, as found in the shops of Paris and London, are either simple or compound, the former are called Extracts and the latter Bouquets, which are mixtures of the Extracts, so compounded in quantity that no one flower can be discovered as predominating over the odour of another; and when made of the delicate-scented flowers carefully blended, they produce an exquisite sensation on the olfactory nerves, and are therefore much prized by those whose wealth enables them to indulge in such pleasures. In a future article we shall explain the mode of obtaining the simple extracts, and if space allow detail, the formula for a few of the most approved bouquets, waters &c., as Eau de Cologne and Arquebuzade. *P.*

FERTILISATION OF PHANEROGAMS.

In the course of the present month a series of observations on the circumstances attending the fertilisation of Phanerogams, with the exception of the Gymnosperms, will be published by W. Hofmeister. Thirty-five species of 29 genera, belonging to various natural orders, have been submitted to examination. In all he established equally the existence of certain delicate cells, usually three in number, at the micropyle end of the embryo-sac, long before fertilisation, in all cases, except in one Orchid, before the opening of the floral envelope. The first origin of these cells was observed in a number of species. After the pollen tube reaches the embryo-sac, whose membrane generally remains entire, and is in a few genera only pierced by the end of the tube, a formation of cells takes place in one (very rarely in more) of the germinal vesicles, in consequence of which it is changed into a row of cells, or, in other instances, into a cellular body.

The author chose for investigation such plants especially as have given occasion to observations contrary to his own conclusions. Phormium tenax, which was the main prop and origin of the theory of one of the writers, and which has had the greatest influence on the formation of existing opinions on the origin of the embryo, is unfortunately very rarely to be found in blossom in our conservatories, and the author could not procure it. He examined Fritillaria imperialis with special attention, since so much stress has been laid on the apparent agreement of the observations which an opponent of the above-mentioned *savant* made on this plant, with his theory of fertilisation. The author had the satisfaction, in this plant also, to confirm his views in the most decisive manner.

In the course of his observations he had many opportunities of examining the first development of cells and cytoblast. He found that the formation of the cytoblast always preceded that of its cell; on the contrary, he came to the conclusion that the nuclei are universally later formations than the cytoblasts in which they occur. They have nothing to do with the formation of the cytoblast: these originate as vesicles, with a gelatinous sac, with their contents clear and seldom granulated, without any solid body within them.

The author has followed the formation of the embryo of many species through every step; the development of the embryo of Orchids has been carried back to that of the individual cells. He considers the notion, lately defended, that the embryo sac "is an intercellular space arising from the absorption of the cellular tissue in the centre of the ovule, which at length is clothed with a membrane," as completely contradicted as that of the embryo arising from the tip of the pollen-tube penetrating into the embryo sac, or introverting it. The memoir will consist of about eight sheets of letter-press, and 14 copper-plates, containing about 304 figures. *From a Notice by Schlechtendal in Botanische Zeitung, Oct.* 20, 1848.

DISEASES OF PLANTS.

(*Continued from page* 519.)

Genus V. Distrophy, *that is, scarcity or obstruction of aliment.*—This disease, of which there are several species, is always produced by the paucity of nutriment, or by the want of the necessary stimulants to procure its distribution as it ought to be equally over all the parts of the plant, whence it happens that whilst one portion is properly fed, another is starved.

First Species. Hemidistrophy.—In this case, the tree, whilst it remains vigorous on one side, is very poor on the other. Of this, frequent examples are seen, and if we examine its roots, we find that the roots corresponding with the starved branches are in a miserable state, and probably they will have penetrated into a very different and much poorer soil than the other. Such circumstances may occur, for instance, where the tree is against the wall of a court or near dwelling houses. The roots will on one side find themselves in a poor stony or dried up soil, whilst others may have found their way into some ditch or receptacle for drains and refuse, and will have taken good advantage of it. In other instances the disease may be owing to some weakness or defective conformation of some of the parts by which the nutritive juices have to be conveyed. These causes must be fully investigated before any steps can be taken to cure the evil.

The first thing to be done is to lay open the roots corresponding to the weak branches and cover them with fresh soil of the best quality to the depth of fully 6 inches. Burnt meadow soil mixed with stable manure at least a year old, should be spread over and covered with earth. The whole, however, must be barely brought up to the level of the soil, and even it would be better to leave it a little lower, in order that it form a kind of basin to catch any rain that may fall. But without waiting for such fall, it would be better in the mean time, when all is prepared, to take a few pailfuls of pure water, or rather better of kitchen wash, and pour them round the foot of the tree. By this means the fresh earth will become well mixed in among the roots, which is of importance. The next thing is so to treat the tree that the sap being suddenly directed in abundance to the weak branches may not cause them to suck up such a quantity, that they may become diseased from repletion, which will assuredly happen if proper precautions are not taken. The evil must be guarded against by means of incisions. On the weak side of the tree let a lateral incision be made, commencing from the base, all the way up the main branch which bears the diseased parts. In some cases it may be extended along a secondary branch. The fissures must then be covered with cowdung well steeped in water. But sometimes these incisions are not sufficient, and must be repeated the following year; for it is observed that the branches of the trees thus treated acquire a very great increase in diameter.

Second Species. Cladodistrophy, *that is, imperfect nutriment of the upper branches* (*Stagheadedness*).—This disease appears to me to be what the French term *decurtation* or *couronnement*. The upper branches, and especially their upper extremities, lacking nourishment, gradually languish, and finally die. Oaks and other trees of the first magnitude often show examples of this in forests, where the tops of the trees may be sometimes seen thus affected in all directions. But it must be observed that the nature of this disease cannot always be at once ascertained. Sometimes it may be a species of *necrosis*, caused by the too great ardour of the sun or

by cold. It may, however, occur that even this necrosis may be the consequence of a weak state to which the summits of the trees are reduced for want of proper nutriment. He who examines his trees with care will easily recognise the evil, and will seldom be mistaken.

The causes of this disease may be twofold. First the old age of the tree, by which the action of stimulants being weakened and losing their energy, the sap penetrates with difficulty to the extreme branches, and cannot assist in their development. In this case, which the owner of the tree will have no difficulty in recognising, there is no other remedy than to renovate it as will be explained below. When any portions are gone so far as to be quite incapable of vegetation they must be cut away.

The scarcity or bad quality of nutriment is the second cause of Cladodistrophy. If the young branches are still alive, although starved, a plentiful watering may restore them to their previous state of health. But the matter of irrigation should not be pure water, but with an admixture of any rich substance. All sorts of dung, but especially those which contain the greatest quantity of rich matter, kitchen wash, the remains of carrion, &c., will be of the greatest service. I have had frequent opportunities of observing, even in gardens, plants affected with this disease, and especially in those years when the month of April has been rainy and at the same time warm, and plants have grown with unusual rapidity. May coming on extraordinarily dry, they begin to fade in the upper portion. Even irrigation could not in such cases restore them without the admixture of some fattening substance. At other times the sudden transition from hot to cold, and other vicissitudes of the season, may occasion this disease. It may happen, for instance, that the roots may remain in a medium of considerable heat, whilst the leaves are suddenly surrounded by an atmosphere cooled down to a much lower degree. The absorption of sap by the leaves then becomes much weaker, whilst the roots continue to supply it as before. That this is really the case I am convinced by the observation I have frequently made of the effect upon vegetation in spring, when the genial warmth of that season is suddenly interrupted by an extraordinary cold. Not that the young branches die, nor are the buds lost, but after the attack of cold the branches languish for some time, lose their deep green, and grow more slowly.

Third Species. CLADIPODISTROPHY, *or starvation of the lower part of the plant.*—This disease is not frequent. I have indeed never seen it but in some dwarf trees with over luxuriant branches, whilst the trunk has not increased in proportion, whence death sometimes ensues. The remedy is by some of the same means as those used for the cure of the

Fourth Species. DISTROPHY OF THE GRAFT, *that is, in grafted subjects, when the sap is not so distributed as to feed equally the stock and the graft, so that the one or the other remains smaller or starved.*—Whoever transgresses the fundamental law for insuring the success of a graft, by neglecting the absolute necessity of only joining such plants as bear the most exact analogy to each other in every point, will see his trees afflicted by the disease in question, which ruins, or at any rate deteriorates, so many plantations. If either the part above the graft, or that below it, is weaker or less nourished than the other, the whole plant will shortly perish. At the point of junction a large callus will form, surrounding the whole trunk, and nothing is of more frequent occurrence or more natural, considering the way in which grafts are commonly made by some persons. If the graft is properly made, the evil will not occur; but when trees show symptoms of it, a remedy must be applied. And here I would observe that it may happen, though rarely, that two trees thus united, although they may have the strictest analogy with each other, may yet show distrophy of the graft, if one of them be taken from an individual of robust habit and vigorous vegetation, whilst the other, on the contrary, was weak and sickly, a phenomenon which has come within my own observation. If the tree is already aged, the remedy I propose will be of no avail. The secret consists in finding some means of usefully diverting the course of the sap. This will be done in the manner already detailed, by making some little incisions two or three inches long, in the trunk, the branches, or even the roots. These will always be made in the weak parts. It is an error that would spoil all, fancying that wounds made in the stoutest parts of the trunk would make them diminish in size. Even if the sap is made to flow continuously, by keeping open the wound, no effect will be produced in drawing the sap to the weak parts, which is the object to be gained. Where it is the upper grafted portion which is over-luxuriant, whilst the stock is poor and starved, the roots nearest to the surface of the soil should be uncovered and incisions made two or three inches long in the principal ones, and also in the trunk, and the wounds covered as usual with clay and cowdung. On the contrary, when the stock is disproportionately large for the size of the stem above the graft, and the branches appear weak and ill fed, then the incisions above mentioned must be made in the branches themselves, and especially in the youngest of the principal ones. They should extend from one bud to another. By means of these wounds, effected with judgment, the sap is drawn towards the weak parts, and the equilibrium is re-established, without which the tree cannot prosper. Where the incisions are made in the roots, attention should be paid to the making them laterally, not on the upper surface which looks towards the branches.

These operations require much experience, or at any rate much science, and can never be made at hazard. I regret not having many cases to bring forward within my own experience. I only once saw it very successfully carried through in the case of a Pear tree which was much more vigorous below than above the graft. I saw incisions made in an Apple tree, but it was aged; no good effect was produced, which in my opinion was occasioned by the old age of the tree, and consequent feebleness of vegetation. For further instruction on this class of remedies, which were already known to the ancients, I would refer to the treatise on gardens of Roger Chabot.

VILLA AND SUBURBAN GARDENING.

IT is scarcely possible to find a more imposing autumnal plant than the Hollyhock, or one having the power of producing, under a variety of circumstances, so striking an effect. The Dahlia, once the flower of the million, unceremoniously thrust this noble herbaceous plant into the shade; in fact, it had nearly disappeared except in the gardens of a few. I had occasion lately to visit a small suburban garden, the proprietor of which during, the Dahlia mania, could never be induced to substitute that flower for the Hollyhock, which he considered a far more imposing ornamental flower-garden plant; consequently he continued to cultivate his favourite annually, raising new seedlings, selecting such as were superior, and casting aside those of his old stock which were inferior; always restricting the number of his plants to the limits of his garden, for his neighbours spurned the acceptance of his surplus stock. The result now is, that he possesses, in a small space, a most attractive and highly improved assortment of these plants, exhibiting endless variety of colour, and perfectly double. His neighbours, who for years had scorned and spurned his Hollyhocks, which he continued to cultivate through good report and bad report, are now eager to possess them; and why? because although public taste and judgment may, for a season, be diverted from its legitimate and proper course, it is sure, in the long run, to right itself again. It must be admitted that the Hollyhock is a highly decorative autumnal plant, and, on account of its easy cultivation, one peculiarly adapted to the suburban garden. Its glorious spikes, loaded with innumerable flowers of all colours, are unapproached by any autumn plant in cultivation.

The Hollyhock may be propagated either by seed or by division of the roots, without the assistance of glass or other protection; the seed may be sown any time between April and July, in any odd corner of the garden, in shallow drills, after the manner of Parsnips, and finally transplanted into the border or bed in autumn. Managed thus they will flower profusely the following season. The effect of a line of Hollyhocks by the side of a walk is extremely grand. A mass of them is scarcely less imposing. In fact, it is the only herbaceous plant which can, as a matter of refined taste, be admitted amongst shrubs; its stately form contributing a new character to a limited landscape. In order to increase the finer varieties, the roots may be divided in autumn, and as they are apt to damp off occasionally in wet winters, the old flower stem, and around the crowns, should be carefully covered with coal ashes or dry sand. *Pharo.*

Home Correspondence.

Rose Catalogues.—I am glad to see that the subject of Rose catalogues is engaging attention. The present classification is too arbitrary and uncertain to satisfy the public wants, and one of the inconveniences most commonly experienced from the absence of any definite classification is the want of an easy and ready reference; for instance, an amateur is struck by the beauty of a Rose which he sees, and he learns its name; or some Rose is recommended by name to him; how is he to find it out in the catalogues as now arranged? Only by wading through each classified division therein; and if, instead of one Rose, he happen to have a list, and wish to find a description of each contained in it, the task becomes both troublesome and perplexing, as I from experience can testify. What is wanted in such a case is an alphabetical arrangement in which each flower may be found under its initial letter. Nor need this interfere with, or supersede, the present classified arrangement, if it be thought desirable to adhere to the same; thus, the alphabetical list or index might be after the following form:

Abricoté, Tea-scented China.
Adam, do.
Aimée Vibert, Noisette.
Augustine Mouchelet, Hybrid Perpetual.

And so on, through the catalogue. For the description, price, or other particulars, the classified arrangement may then be consulted. I am convinced it would much conduce to facility of search and reference if some such plan were adopted, and under those circumstances I am induced by the growing attention which the subject is receiving, to submit it for adoption. *An Old Subscriber.*

The Aphis of the Lettuce Root (see p. 548).—Your correspondent "J. O. W." speaks of this as being a new insect plague, but I can assure him that it is no such thing. I have known it to affect Lettuces in the way described by Mr. Shurlock in the months of July and August for at least these last 12 years. I believe that if 100 Lettuce beds were examined now, scarcely five would be found to be free from it Since my first acquaintance with this insect I have never had a Lettuce bed clear of it in autumn. My Lettuces are at present swarming with it. It does not attack Celery. *G. Spary, Clumber Park, Sept.* 3.

Tigridia conchiflora.—Last year all the first flowers of this showy bulb came up crimson, resembling in appearance the old Tigridia (Ferraria) Pavonia, when, having been in flower for a fortnight or three weeks, all the latter flowers in a fine bed of them came up true, the petals being fine yellow spotted with crimson. They are doing exactly the same this year, after having been in flower for about a fortnight. Can an explanation of this sporting be given? *Anon, September* 2.

Garden Fork and Liquid Manure.—"Subscriber," who mentioned the three-pronged fork (page 518), is not an ironmonger, but a poor "half-pay," who has an acre of garden, in which he is continually at work. The trenching, or turning the ground, is done with a large fork, with long prongs, saving much injury to the roots of fruit-trees, and doing the work easier and better than a spade. I had seen them used in Roxburghshire 20 years since, and was surprised not to find them that fashion in Devonshire, when I turned my sword into a fork two years since. My small fork, for working among Strawberry beds, &c., I procured for 2*s.* 6*d.* from an ironmonger in Launceston; he is considered dear, but his articles are good. Our blacksmith would not make one of the same sort under 2*s.*, and the carpenter charges 10*d.* for the handle, and with my small experience in these matters, I find that it is extremely difficult for the country manufacturer to compete with the trade either as to work or price. Perhaps "Addio" could give "Timotheus" (for I find it inconvenient not to have a name) some hints as to the proper use of liquid manure, for the accounts I have read are so different and contradictory, that I am quite in the dark. I have placed a pump in a tank in my garden, which receives all the drainage from the house, pig-sties, &c.; if the strength of the material ought to be judged by the odour, it is good stuff. I do not think it has had the good effect (when applied to Cabbages, &c.) which I expected, perhaps from not being properly used. In one way, I hope to make it useful; for having collected a large heap of weeds, I intend to turn it over, giving a sprinkling of salt and a good dose of the fluid to each layer. Is it recommended to use lime, and ought it to be slaked or unslaked? *Timotheus.*

Adder Skins.—I lately found the cast-off skin of a large adder, lying nearly at full length in a Furze bush; it was rather too far decayed for me to judge how it had been shed. But if a Sussex correspondent will have the goodness to send me by post the snake's skin which he kindly offered, that will enable me to compare the two, and by that means I may be able to judge more correctly respecting the manner in which our smaller serpents cast their skins. *J. Wighton, Cossey Gardens, Norwich.*

Camphorated Spirits injurious to the Teeth (see p. 550).—I beg to inform "X." that for years I have used camphorated spirits for cleaning my teeth, and I am glad to say that I have a capital set left. I shall be happy to afford "X." ocular demonstration of this if he will but invite me to dine with him, and will not exact from me more than three minutes' application to a tough dish. I enclose my card, and am at your correspondent's service any hour after 5 o'clock. N.B. "X." need not trouble himself to provide turtle or iced punch. *Veritas.*

A Dentifrice.—The following is one of my own, which, with some modification in the relative quantities, I have used for these last 20 years, and many of my friends have also adopted it:

Heavy magnesia	4	parts.
Myrrh	2	,,
Peruvian bark	1¼	,,
Camphor	1	,,

kept in a well-stopped bottle. When salmon fishing, a few years since in Scotland, I was seized with violent diarrhœa. I am not usually nervous, but when it had lasted two days, or more, I became a little uneasy; I was far from medical advice or medicine, and I thought of my tooth-powder—ant-acid, antiseptic, astringent, and carminative; just the thing I wanted. I took a good spoonful; the effect was, I may say, instantaneous. I have since recommended it in numberless similar instances, and, as far as my observation goes, it is much more therapeutic in its properties than any preparation of opium, brandy, ammonia, or other prescribed remedy. *Georgos.*

Seedling Dahlias.—I observe among the dealers a disposition to lower the standard of this flower; and where they can influence Societies under their control, they induce the management to require only three instead of six blooms the trial year, because this admits of their showing uncertain varieties, that could not be exhibited at all if six were required; and when it is considered that the year of trial the grower has 20 or 30 plants to cut from, a Dahlia that is very bad, and not worth growing, will nevertheless yield three blooms out of 30 plants. Amateurs should recollect that a certificate of merit awarded to a flower, of which only three blooms are produced, cannot be the slightest evidence of quality. *Georgiana.*

Specimen Plants.—The Leamington exhibition was remarkable for one excellent regulation. The committee authorized the judges to award specimen prizes without limitation of number, and of any amount not exceeding 20*s.*, and the same as to miscellaneous subjects not mentioned in the schedule, so that judges were not under the painful necessity of placing two or three plants of equal merit above or below each other. It was found to work well, and the Birmingham schedule, advertised last week for the 26th September, has the same regulation. *Censor.*

Growing Flowers near London.—The three first

prizes (one for show Dahlias, one for fancy Dahlias, and one for a specific size let out by one grower) went from Salisbury to Chelsea, and for superior growth. Shall we have, after this, classes made up for growers within five miles of London? *Dahl.*

Mildew.—Syringing with lime water, projected upwards, so as to wet the under part of the foliage of a Vine much affected, stopped the spread of the disease. The upper portion should also be wetted, but this is inevitable in syringing the under portion. Use a fine rose. It was an out-door Vine. *Vitis.*

Breeding Canaries.—A correspondent states that he has been unsuccessful in breeding canaries this season, but I am of opinion that he has only met with what has happened unto other bird breeders, not only in this year but also in bygone seasons. I have been breeding canaries for these 30 years, and I never had better success than I had this year; and I am also able to say what many bird breeders cannot say, viz., that I have a breed of canaries that lays seven eggs at a sitting, and they bring all out. When birds are breeding, their cages and nest boxes should always be closely examined, for in the breeding season they are often infested with small red bugs, which get into the nest, destroy the young, and cause the old hen to forsake them. Birds should have a good supply of water to wash in every other day in summer in the breeding season; give plenty of green Dandelion to your birds. In the beginning of the breeding season, during the first laying, some hens get egg-bound, and often die. I have seen many cures tried for this complaint, but without effect; I have, however, found out a cure, by which I would not let one out of a hundred die. Your correspondent should get the "Manual of Cage Birds," edited by John Timbs, 86, Fleet-street; he will then have all the information he wants. *John Pell, Athlone.*

Martin's Plan of Saving Potatoes.—Having found the plan of managing Potatoes, suggested by Mr. Martin in your *Chronicle* of March 10) which consists in setting, a yard wide, bending all the shaws one way and earthing up very high on one side), eminently successful, I feel found to bear testimony in its favour. I have just got up about 14 bushels of York Regents treated on this plan, without finding a single diseased tuber among them; while others, on the same ground, managed in the usual way, have several diseased ones. *S. F., Ryton on Dunsmore.*

Flavour of Melons.—In the report of the Chiswick exhibition in July last it is stated "that Melons were largely shown, but they were in general deficient in flavour;" and of those exhibited at a late Regent-street meeting by Mr. Monro, it is reported that they too were not first-rate in flavour. Now as the exhibition of Melons at Chiswick was one of the largest ever brought together, it becomes a question whether or not gardeners are retrograding in the cultivation of this fruit, or are they aiming at size at the expense of flavour. I cannot suppose the former is the case, and if the latter, I consider they are falling into a great error, for high flavour in fruits should be the first consideration of every gardener. The defect cannot be attributed to the season, for if under great power of sunshine we are to expect highly concentrated flavours, this has been the season which would lead us to suppose that inferior sorts would be of finer flavour than good sorts have been in sunless seasons; or could the high flavour of the Bromham-hall and Cuthill's improved scarlet-flesh (both new kinds to me) be so superior as to throw all others in the shade? I trust that these few remarks will induce gardeners to give some information on the subject, for among the Melons which were reported to be deficient in flavour were some that are considered to rank among first-rate sorts. *H. S. B.*

Potato traversed by Couch Grass.—I have sent you a Potato through which a piece of Couch Grass has insinuated itself, and grown out on the other side. It was dug out of poor ground which has been infested with Couch, but which I very seldom find now. The Couch has not only grown through the Potato in one place, but you will also find a minute shoot at the upper side of the tuber. *Subscriber, Deviera, August* 30. [This is a very curious case, to which we shall refer hereafter.]

The Irish Potato Crop.—On a former occasion, although opposed by the almost universal opinion of the inhabitants and the statements of the press, I unhesitatingly wrote that the Potato disease was as prevalent at the ground end of the stalk as ever, although the tops appeared to be very luxuriant. The withered tops throughout this part fully confirm my former statement; and the glut of unripe Potatoes in the market shows that the growers justly apprehend loss if they are stored. This causes prices to be low, which some think a good omen; but, alas! the result will prove the reverse. I am digging Kidneys, planted, on the 2d February, in ground not manured for the last four years, of a light nature, and one-half is left on the ground, quite unfit for any useful purpose; those which the disease has not yet touched are very good in quality. The people console themselves by the fatal and absurd delusion, that, suppose the tops are gone, perhaps the tubers will escape; and some extensive farmers declare that, if but one-third escape, the Potato is the most profitable crop. Some of the provincial papers give a favourable opinion of the Potato crop, but I defy them to point out one single field free, or even partially free, from disease in this county. *D. R., Carrick-on-Suir, Tipperary, Aug.* 30.

The Potato Crop.—Potatoes in this neighbourhood continue good in quality, but deficient in quantity, on account of the drought which lasted from May until the 1st of September. *Hardy and Son, Maldon, Essex.*— I am sorry to have to give a bad report from this neighbourhood. I have been absent at Buxton about 10 days, leaving the crop generally looking well; there is a woeful change in the appearance of the fields now, the tops of the plants being black, with little vegetation in the stems. We have been using all summer the kind called Radicals, a fine crop, with 9 or 10 full grown Potatoes at a root, without the appearance of a decayed tuber up to this time; but, in those got up to-day, the old complaint is very visible, several of them being yellow for one-eighth of an inch under the skin. They are quite ripe, having been set early, and I shall have them all got up immediately. *J. B. Glegg, Withington Hall, Chelford, Knutsford.*

Societies.

HORTICULTURAL, *Sept.* 4.—J. R. GOWEN, Esq., Secretary, in the chair.—Messrs. Henderson, of Pine-apple-place, sent an interesting collection of plants, consisting of Pleroma elegans, which, when grown in a cool greenhouse, as this was, proves to be one of the most brilliant half-hardy plants our gardens possess; it was clothed with round, bright violet-purple blossoms, nearly as large as a five-shilling piece, and, unlike the flowers of most Melastomads, they remain a long time in beauty. It comes from the mountains of Peru. A fine bush of the ever-flowering Babingtonia Camphorosmæ accompanied it, together with the new orange-scarlet Bolivian Begonia cinnabarina, by far the handsomest of all Begonias, and certainly a very great acquisition; also the larger variety of Nerine Fothergilli, a more beautiful plant than the Guernsey Lily, to which it is related, and for which it would form a charming substitute, for it requires the very same kind of treatment. Why don't the Guernsey people take to the propagation of it? The same establishment likewise furnished Gloxinia grandis; the little-known white-flowered Ipomœa pandurata, a North American species, almost, if not quite hardy; and a tall Acacia, called oleæfolia elegans. A Knightian Medal was awarded to the four first-mentioned plants.—Messrs. Veitch sent two specimens of their new Gesnera picta, a luxuriant growing species with orange scarlet blossoms, not particularly striking. The same nurserymen also showed a seedling Heath raised by Mr. Story, with pale green flowers tinged with pink.—Mr. Leach, gr. to S. Rucker, Esq., produced a well-flowered Statice imbricata; Erica Irbyana grown in a small pot, and almost without sticks; managed in this way it had a far more natural and graceful appearance than if it had been put in "stays," which has hitherto been too much the fashion. Along with it were Æschynanthus Lobbianus; Hoya campanulata, a free flowering species, and fragrant at night; and Erica infundibuliformis and Shannoni, both well cultivated specimens, as all Mr. Leach's plants are, but "done" in the usual formal way, and much inferior, with respect to graceful appearance, to the specimen of Irbyana just noticed. A Banksian Medal was awarded to the Statice and to the E. Irbyana, but not to the other Heaths.—Messrs. Fairbairn, of Clapham, sent large and well managed plants of Erica retorta major, mutabilis, Vernonii superba, and cut specimens of their large flowered variety of E. mammosa.—Mr. Mackay, gr. to C. Leach, Esq., of Clapham-park, communicated two species of Hæmanthus; the well known Amaryllis blanda, misnamed Belladonna purpurea pallida; and three beautifully flowered candelabra-like plants of Brunsvigia Josephinæ, one of which had a stem about as thick as one's arm, and nearly 3 feet high, with a head of flowers in proportion. A paper on the management of these Brunsvigias, which so few people can flower, was read to the meeting, and we understand it will appear in the next Number of the Society's Journal. A Banksian Medal was awarded for this exhibition.—From Mr. Plant, gr. to J. H. Schröder, Esq., came a nice specimen of Miltonia candida, and two Æschynanths—Lobbianus and miniatus—in wire baskets, in which they appear to better advantage than in pots. A Banksian Medal was awarded.—Mr. Turner, of Slough, showed 24 varieties of fancy Dahlias, which have now become much improved, not only in shape, but also in constancy. A certificate was awarded to them.—Of fruit, Mr. Jones, gr. to Sir J. J Guest, Bart., again contributed 4 Ripley Queen Pine-apples, all handsomely swelled, and weighing respectively, 4 lbs. 3 oz., 4 lbs. 12½ oz., 4 lbs. 13 oz., and 5 lbs. 2½ oz. No medal was awarded to these, Mr. Jones having been previously rewarded for fruit of the same kind of excellence.—Mr. Chapman, gr. to J. B. Glegg, Esq., sent a black Jamaica Pine, under the name of Montserrat, weighing 4 lbs. 7 oz. A Certificate was awarded to it.—A Ripley Queen, with perhaps too large a crown, but handsomely swelled, was exhibited by Mr. Ogle, gr. to the Earl of Abergavenny; it weighed 4 lbs 8½ oz., and received a Certificate.—Finally, Mr. Willcox, gr. to the Earl of Stamford, sent a seedling Pine, weighing 4 lbs. 3 oz., notwithstanding that it had been cut a fortnight or three weeks ago. In appearance it is something like an Enville.—Mr. Slowe, gr. to R. W. Baker, Esq., sent two bunches of Grapes, the produce of Vines planted in 1847; their weights were respectively 3 lbs. 12 oz. and 4 lbs.—large bunches, but badly coloured and unequally swelled. A Certificate was awarded them, on account of their weight.—Mr. Judson, of Richmond Villa, Brighton, produced a boxful of a seedling Grape called "the Richmond Villa Black Hamburgh." It was well-coloured, finely bloomed, and like the Black Hamburgh, except that the berries were more oval than those of that variety.—Fair specimens of Royal George Peaches and Elruge Nectarines came from Mr. Burrow, gr., Brough Hall, Yorkshire, and Mr. Monro, gr. to Lord Clarendon, at Grove Park, Watford, sent a dish of Figs, apparently the Brunswick, large and ripe. Various Melons were exhibited, and, as they were all cut and tasted, we can speak positively as to their merits. By far the best was the green-fleshed Bromham-hall Melon, a fruit of which, weighing 2 lbs. 4 oz., was sent by Mr. Bundy from Dynevor Castle, Llandilo. This is one of the best of Melons and it retains its excellence long after it is cut from the plant. A Banksian Medal was awarded it. The next in point of flavour was the Dampsha, a green-fleshed winter Melon, weighing 4 lbs. 11 oz., from Mr. Ogle. This is a netted oval, nearly cylindrically shaped, firm sort, remarkable for its valuable property of keeping well after being cut. It is not a new Melon, an account of it having been published in the Transactions of the Horticultural Society many years ago. A Certificate was awarded it. The third best was a hybrid between the Ispahan and the Hoosainee, a white-fleshed oblong fruit, weighing 11 lbs. 4 oz. It was inferior in flavour to both its parents. Then came a green-fleshed Cabul Melon, weighing 10 lbs. 13 oz. Both these fruit were exhibited by Mr. Chapman, gr. to J. B. Glegg, Esq.; and, finally, the worst flavoured was an unripe Beechwood, capitally grown, as its weight, 4 lbs. 4 oz., will show, from Mr. Culverwell, gr., Thorpe Perrow, Bedale. The same gardener also sent two new Cucumbers called "Thorpe Perrow," a seedling from the Sion House, and stated to be three weeks earlier than that variety.—The Society's Garden furnished a hybrid variety of Anemone japonica, produced between that sort and the white Indian A. vitifolia. The result was an improvement in the shape of the flowers, but they were much paler than those of the Japan Anemone. Along with it came the beautiful lilac-flowered Ipomœa ficifolia, Abelia rupestris, two Statices, three Orchids, Torenia asiatica, the beautiful lilac-flowered Abronia umbellata, which is scented in the evening; Pentstemon heterophyllus, a Californian species, with narrow leaves and pretty lilac pink blossoms; various Achimenes; Begonia Fuchsioides and acuminata, both from a cool greenhouse, where they flower profusely and acquire a degree of colour and beauty far beyond what they obtain when coddled in a warm stove; and, finally, Niphæa oblonga and Beckia patula. The same establishment also furnished fruit of the Imperatrice and Downton Nectarines.

ENTOMOLOGICAL, *Sept.* 3.—G. R. WATERHOUSE, Esq., President, in the chair. Amongst the donations were the fine publications of the Smithsonian Institution of the United States, as well as those of the Entomological Society of Stettin, and Zoological Society of London. The secretary announced that a new part of the Transactions (vol. v., part 7) was ready for distribution among the members.—Mr. F. Smith exhibited specimens of the globular cocoons of earth, enclosing newly-disclosed specimens of Geotrupes stercorarius. Mr. Waterhouse considered these cocoons to be formed by the parent insect, and to be filled with dung for the food of the larva hatched from an egg deposited with the dung.—Mr. Westwood exhibited a living specimen of the male of Sirex juvencus, with a specimen of the wood in which the larva of that insect was engaged in burrowing; a newly disclosed male being also enclosed in one of the burrows. He also exhibited specimens of the Pemphigus Lactucæ, described in the *Gardeners' Chronicle*, as well as several remarkable Hymenoptera from New Holland, on which he made some remarks as well as upon the discovery of the males of the singular genus of Scleroderma, by Sidney Saunders, Esq., in Albania, of which, as well as of the other species, drawings and dissections were also exhibited by him.—Mr. Samuel Stevens exhibited living specimens of the rare Lixus bicolor and Sitaris humeralis, as well as other rare Coleoptera and Lepidoptera, from Deal and Dover, including specimens of Choragus Sheppardi, which, notwithstanding its very minute size, he observed to be able to leap at least a foot and a half. Mr. Shepherd also exhibited various rare Lepidoptera, from Deal and Dover.—Mr. Stainton read a paper (which led to much discussion) on the Rules of Entomological Nomenclature, insisting, firstly, on the impropriety of altering the earliest specific name imposed on an insect, even if it implied erroneous considerations; thus, he considered that a species named Rosana ought to retain that name, even if the species did not feed on the Rose; secondly, on the necessity of the same specific name being applied only to one species in a genus; and, thirdly, on the impropriety of retaining the old Linnean terminations of *alis, ana, ella*, &c., for the species composing the different modern families of moths.

Reviews.

The Farmers' and Gardeners' Guide to the Analysis of Soils and Manures; and to the practical Application of Agricultural Chemistry. By John Martindale. London, Darton and Co. Small 8vo; pp. 137.

THE little work now before us is intended to teach agriculturists and gardeners the best and simplest methods of chemical analysis as applicable to agriculture. For this purpose the author introduces just as much of the principles of chemistry as is required to enable the analyst to understand what he is about, and to interpret the results he obtains. It is a great mistake, although a very common one among gardeners and farmers, to suppose that it is necessary to become a profound chemist in order to be able to apply its most simple principles to practice. People say they have not time to become chemists, therefore they will not learn how to make use of a few rules deduced for them by others. It would be just as wise to say "We won't learn how to tell the time by a watch because we don't know how it is made." The importance of a little chemical knowledge to all those whose business it is to cultivate plants has so often been insisted upon in our columns, that it would be superfluous to add anything more on that point in the present place.

The materials necessary for performing the ordinary

operations of chemical analyses are but few in number, and entail but small expense. They are all described, and their several uses are pointed out by Mr. Martindale in language as simple as the subject will allow. It must, however, be steadily borne in mind, that "chemistry being a science founded so entirely upon experiment, no person can understand it fully unless he personally perform such experiments as verify its fundamental truths. The hearing of lectures and the reading of books will never benefit him who attends to nothing else; for chemistry can only be studied to advantage practically. The student will acquire more knowledge from one well conducted and carefully observed experiment than he possibly could from the mere perusal of a volume; therefore, he who wishes to analyse his soils, &c., must not only read but perform the experiments, which are here divided into two parts for his convenience; into qualitative and quantitative." The author after making the above remark goes on to explain how, by means of a few chemical tests, both what the component parts of any substance are, and the proportions in which they exist, may be ascertained.

"*Of the Chemical Constitution of Soils*.—Having described as clearly as possible the processes to be adopted by the operator in qualitative and quantitative analysis, and the precautions necessary to be taken to ensure success, it may not be out of place here to mention that soil perform at least three functions in reference to vegetation. They serve as a basis in which plants may fix their roots and sustain themselves in their erect position; they supply inorganic food to vegetables at every period of their growth; and they are the medium in which many chemical changes take place, as necessary to a right preparation of the various kinds of food which the soil is destined to yield to the growing plant. We have spoken of soils as consisting of organic and inorganic substances, and have also described the elementary bodies of the organic part, and the substances which constitute the inorganic part. The study of the ash of plants shows us that a fertile soil must of neces-ity contain an appreciable quantity of 10 or 11 different substances, which, in most cases, exist in greater or less relative abundance in the ash both of wild and cultivated plants. Actual chemical analysis confirms the above, in regard to the constitution of soils. It shows that, in most soils, the presence of all the constituents of the ash of plants may be detected, though in very variable proportions; and following up its investigations in regard to the effect of this difference in their proportions, it establishes certain other points of the greatest possible importance to agricultural practice. Thus it is found, for example: 1st. That as a proper adjustment of the proportions of clay and sand is necessary, in order that a soil may possess the most favourable physical properties, so, the mere presence of the various kinds of inorganic food in a soil is not sufficient to make it productive of a given crop; but that they must be present in such quantity that the plant shall be able readily at the proper season, and within the time usually allotted to its growth, to obtain an adequate supply of each. Therefore, in examining a soil with a view of ascertaining whether it contains enough of any particular substance for the wants of the crop to be cultivated, the scientific agriculturist cannot give too much attention to the state of division in which the substance exists. For analysis may show a sufficient quantity of the body in question for a series of crops wished to be cultivated, and still, practically, the soil may be deficient in the substance which the crop immediately requires. Thus, it is quite possible that a soil containing no carbonate of lime might be dressed with a coarse calcareous gravel to such an extent as to show, in the analysis of the whole soil, an average quantity of calcareous matter; and yet, for the requirements of the crops, be still deficient in lime. In this case, however, were the impalpable portion, which is most uniformly diffused through the whole mass—and which certainly presents the greatest surface for the roots to imbibe from—were this impalpable matter separated, as directed in the mechanical examination, and by itself submitted to analysis, the deficiency in calcareous matter could not fail to be discovered. Again, a constituent may be present in fine division of parts, well diffused through the whole mass of soil, and in quantity quite sufficient for the use of the crops; and yet, unless the analysis is a very accurate one, and made on a considerable quantity of the soil, even a good manipulist may fail in estimating it, and so pronounce it absent, or present in insufficient quantity."

The present work is not confined solely to chemical analysis; it treats also of the physical properties of soils, and of their geological classification. On the classification of soils the author says: "The most ready and perfect method of classifying soils is to estimate their proximate principles: such as clay, sand, chalk, and organic matter; and according to the predominance of either one or the other constituent, so to name them. An easy manner for the estimation of proximate principles will shortly be given. If a soil contains much sand, it is called a sandy soil; if much clay, a more or less stiff clay; if much lime, a calcareous soil; but if the soil contains a mixture of sand and clay, with a little lime, it is called a loam; if much lime is present it is called a calcareous loam; and if it be a clay with much lime, it is called a calcareous clay. Lands are called light if they contain a large proportion of sand or gravel; such as contain much clay are called heavy lands. In order to assign a soil to its peculiar class, proceed as follows: First take care to select a fair sample from the field, not rejecting any small stones that may be in it; next expose it freely to the air, till it becomes dry at ordinary temperatures. Process 1st: Weigh out a quantity of this air-dried soil—say 200 grains—and introduce it into a short test tube, or suitable vessel, and heat in a saline, or oil bath, at 300° F., till it ceases to lose weight. The loss of weight is then carefully ascertained. This, although not involved in the classification, is in itself an interesting point: the per centage of water being known, of a portion of air-dried soil, corresponding to 100 or 1000 parts of thorough dried soil, can be used in any subsequent operation. Process 2d. Take 200 grains of dried soil, and mix it in a Florence flask, with 4 or 5 ounces of water, and boil. Then allow the contents of the flask to remain quiet for about 10 minutes; if any sandy matter subsides, then pour off the supernatent fluid, and add more water, until nothing but sand seems left; dry and weigh it. Half this weight is equal to the per centage of sand in the moist soil. Process 3d. In order to determine the amount of organic matter, take 400 grains of the *thorough* dried soil (freed of water after the manner just stated), and transfer it into a porcelain or platinum capsule or crucible, and heat it to redness in the furnace, or over a spirit lamp; allow it to remain red hot for about 10 minutes, then let it cool; determine the loss of weight by weighing the soil remaining in the capsule. The loss, since the first weighing, is organic matter; divide the loss by four, and the quotient is equal to the per centage of organic matter. Suppose the loss to be 40 grains, then 40÷4=10 grains, or 10 per cent. of organic matter. Process 4th. Take that portion of soil, which remains after ignition, and transfer it into an evaporating dish or precipitating jar, and mix it with 5 fluid ounces of hydrochloric acid; stir the whole mixture well, and allow it to remain for two or three hours. Bring the contents of the dish, or jar, on to a weighed filter, and when the liquid portion has passed through, wash the filter several times with pure water; dry the filter and its contents at 300° F.; weigh the contents, and the loss of weight reckon as lime. If the loss in this process amount to 46 grains, then 4⅞=11.5, or 11½ grains, or 11½ per cent. *of lime*. Process 5th. Take the contents of the filter paper, and carefully brush them off into a tall narrow test jar—then carefully mix them with a convenient quantity of water, say 4 ounces; stir the whole well till the soil is completely mixed and diffused through the water. After this is done allow it to settle till the sand or coarser parts have completely subsided; which, in a general way, will take place in a minute or two. The portion still held in suspension pour off into another vessel, and filter it afterwards. Pour a second portion of water, and on the part subsided, stir the whole well up, and again allow the coarser parts to settle; after which pour off the suspended part for filtration. Continue this process until only sand, and matters incapable of remaining suspended in water for a short time, remain. Collect the suspended matter on a weighed filter, dry it at 300° F.; weigh the contents thereof, and regard the weight as clay. Suppose the weight to be 130, then 130—32.5 or 32¼ grains—hence the soil contains 31½ per cent. of clay."

The above extracts will be sufficient to enable our readers to judge of the way in which Mr. Martindale treats the subject he has undertaken. In our opinion both gardeners and farmers cannot do better than to make themselves well acquainted with the "Guide" thus offered them. It is, however, a great fault in so useful a work as the present that it should have no index.

Miscellaneous.

Flint Soup.—"'Now Mary,' (said my husband when we were first married), 'I must lay by for—rent, and for—firing, and for—clothing; and here is the remainder for you to make the best of for our supply through the week. But mind you do not run in debt; and have always a fresh loaf in the house before you cut the last. We cannot afford to eat new bread.' I got things very comfortably, and, as I thought, very frugally; but the next Friday evening, after supper, I had to say to my husband, 'What must we do? the money is all gone, and we have nothing in the house for to-morrow's dinner. I am sure I have made it go as far as I could.' My husband was very kind; he found no fault, but said we could have some flint-soup for dinner. He asked, if there was bread in the house. 'Yes,' I said, 'a whole loaf and a piece.' 'That's well,' he said, 'and, perhaps you have a little Oatmeal or flour?' 'There is a little.' 'Good again, and plenty of herbs in the garden, we shall do.' So he washed a couple of flints very clean, and set them on with some water and Onions, and a Carrot or two. When the roots were tender he put in the meal, and some pepper and salt, and Parsley and Thyme, and the piece of stale bread, and I assure you we had a good dinner." "But what was the use of the flints? Why not leave them out, and call it herb porridge?" "That is what I could not understand at first. Well, next Saturday matters were much the same, so we again contentedly dined on flint soup. In the course of the week, having picked some bones of meat, I was going to throw them away, when the thought struck me, that if they were chopped up and put in the soup, they would give at least as much goodness as flint. My husband thought so too; so we tried, and found they greatly improved the soup, and from that time we never wasted a bone; and in the course of a few weeks we found the money hold out for Saturday's dinner, and even allow a trifle to lay by. My husband was pleased when we got into this course; and we were thoroughly settled in frugal habits, and not before, he told me the real use of the flints in the soup. 'There are two things,' said he, 'which I have always resolved against, as being the ruin of many poor people—*debt* and *waste*. So, from the day I took to providing for myself, I determined always to keep bread in the house, and to live on bread and water, rather than run in debt. But, instead of eating dry bread, and drinking cold water, I set myself to make it into soup; for I thought, if I boiled down the flints, which could not enrich the liquor, it might sharpen my wits to make the best use of anything that could."—"I believe," continued the good woman, "it was to sharpen my wits rather than his own; and I can truly say, that making flint-soup has taught me to turn to good account many things that are often thrown away as if they were worthless as stones." *From the Family Economist.*

Note on a diseased state of the Leaves of Pleroma vimineum.—In the *Gardeners' Chronicle*, 1849, page 683, an account will be found of some fungoid bodies, which were observed in great abundance, on the pods of Peas, by Dr. Dickie, near Aberdeen. They were supposed to be an hypertrophy of cellular tissue; and I am confirmed in the view I then took by a very similar appearance presented by the leaves of a Melastomaceous plant (Pleroma vimineum, Don.) observed by Mr. J. Smith in the great conservatory at Kew, much to the detriment of their beauty. The abundant hairs with which the leaves are clothed on both sides, especially the stouter ones upon the various ramifications of the nerves, are swollen at the base, and are composed of a number of cells, hexagonal below, but much elongated towards the apices, presenting very much the appearance of the leaves of some moss under the microscope. I have not been able to find the structure in Melastomaceæ, in any book to which I have access, though it can scarcely have escaped observation. In the affected leaves the base of the hairs swells, and at first remains green, the hair still occupying the centre of the swelling. As the swelling increases the hair is either thrown on one side or entirely disappears; while the little tubercles acquire a pale rusty hue, and are visible between the hairs, giving an unhealthy appearance to the leaves. They are of a tender consistence, swell out, after having been dried, very rapidly on the application of water, and consist of a very loose hexagonal tissue, with here and there a trace of slender threads. After a time they increase in size, projecting beyond the hairs, and present the appearance of some hypocreous Sphæria, or rather of some mangy eruption. They do not then so readily imbibe water. As the tubers are smaller than those on the Peas, they more readily dry, and therefore are not likely to pass into a state of decomposition, which may account for their not offering any extraneous bodies, such as existed in Dr. Dickie's specimens. *The Rev. M. J. Berkeley, in Hooker's Journal of Botany.*

Calendar of Operations.

(For the ensuing week.)

FORCING DEPARTMENT.

VINERIES.—Admit a free circulation of air through the houses in this department, and attend vigorously to the destruction of insects, by the ordinary appliances. Keep the atmosphere as cool as possible where the wood is ripe or nearly so, and in all cases stop the growth of laterals, even when a warmer temperature is necessarily kept up for the purpose of ripening the crop, as the leaves produced during this month cannot possibly attain a perfect development sufficiently early to repay the amount of stored up sap which they have consumed during their formation. Where the fruit is ripening, a moderate temperature must be maintained, varying according to their present state, but aiming in all cases to get them thoroughly matured by the end of September. PINERIES.—Encourage the growth of successions, by abundance of heat and moisture, as long as the strength of daylight and the fine autumn sun will sanction such a course. Let the bottom heat range from 81° to 87°. Continue to shift any that require it, or that are required to furnish the necessary succession, and place such under the most favourable circumstances of top and bottom heat, shade, and moderate moisture, until they have begun to make roots into the new soil. This is splendid weather for swelling off fine fruit, and they may be abundantly supplied with liquid manure, without thereby causing them to grow too fast to ensure good flavour.

FLOWER GARDEN.

The work of this department, though entirely of a routine character, must be strictly attended to, as the beauty of a place very much depends on the good keeping of every plant, clump, walk, and Grass plot. Staking and tying of herbaceous plants, must not on any account be omitted, as in the eye of any one accustomed to habits of order, the bare soil has a more agreeable appearance than a neglected flower garden. The turf, the edges of the walks, the plants, shrubs, or trees, and the ground around them, should wear an appearance of neatness and perfect order. Remove annuals and other half hardy plants as soon as they show signs of approaching decay, and let others of more hardy constitution be divested of their decaying flowers and flower stems. We have before endeavoured to impress upon our readers the fact, that a garden, to bear close inspection, must at all times and seasons wear a phase of progression, and a plant with an unhealthy appearance should be at once removed to the infirmary, if it is worth it, and to the rubbish yard, if it is not. Beds for Hyacinths and other early spring flowering bulbs should be prepared and planted immediately. They grow and flower

in the greatest perfection when planted in a light sandy loam plentifully interspersed with well decomposed animal or vegetable manure; a good stratum of the latter material should be trenched in about 12 or 15 inches below the surface. The depth of the bulbs should vary from 2 to 4 inches, and, in planting, a little sand should be placed round them.

FRUIT GARDEN.

Alpine Strawberries, where grown, should be occasionally examined, to ascertain the state of moisture about their roots. If they are over-dry they should be encouraged with rich water, and divested of all runners as soon as they are produced. A portion of the old plants should be divided, and planted immediately in nursery beds, and removed to their fruiting quarters early in spring. Any Peach trees which are fortunate enough to carry a good crop this season, are worthy of more than ordinary attention; let the border be examined, and, if necessary, watered. Proceed with forking dung in amongst fruit bushes and Strawberries, and thereby encourage the production of roots near the surface of the ground; these will materially assist in perfecting the growth of the plant, and preparing it for the healthy and abundant development of fruit. While the progress of the roots is being thus encouraged, prevent and check as much as possible late autumn growths on fruit trees of any kind. Attend to the gathering of fruit as it ripens, and if any of the trees are without names, take advantage of the opportunity of ascertaining their true name, and marking the fruit as well as the plants. Buds of fruit trees may now be put in with greater safety than a month ago, as they will have time to form an intimate union with the stock, but will not be likely to start into growth before the following spring.

KITCHEN GARDEN.

If Cardoons are wanted early, a few rows may be earthed up about the middle of this month. I do not think anything is gained by earthing up these plants a bit at a time. It is therefore my constant practice to perform the operation at once, on these and on Celery also. Advantage should be taken of a wet day to have a quantity of long, thin, well-twisted haybands prepared for binding up the leaves with, previous to surrounding them with soil; or if you can get a sufficient quantity of fine ashes for the purpose it will be preferable, for the reasons I mentioned when treating of the earthing up of Celery. A few more rows of the latter should now be earthed up for succession. The spring sown Onions should now be taken up and laid out to dry thoroughly before being strung and hung up for the winter. As the weather of our autumns is so very precarious, they should, if possible, be spread out thinly in an open shed, but if such a place is not at command, the next best is a hard dry gravel walk, from which the rain can pass freely off. Get them under cover, by all means, as soon as possible, but do not allow them to be thick together, nor be in too great a hurry to bunch them up. Continue the free use of strong liquid manure to the growing crops, as Cabbage, Broccoli, Lettuce, &c., and especially Asparagus, to compensate in some measure for the present draught upon its energies by the swelling seeds, to remove which is a work too large to be attempted in extensive places; and even if it were done, the injury occasioned by bruising the leaves and branches would more than counterbalance the advantage gained in any other respect. Pay particular attention to young crops, by stimulating their growth where needful, and guarding them from the attacks of insects by a sprinkling of soot and lime round them; and as a general preventive, which is always superior to cure, let a good dressing of soot always be worked into the ground, in company with animal or vegetable manure. In cleaning the ground, use the fork as much as possible, in preference to the hoe and rake; nothing can be of greater benefit to crops at this season, than affording the sun and air additional facilities for penetrating and permeating the soil

State of the Weather near London, for the week ending Sept. 6, 1849, as observed at the Horticultural Gardens, Chiswick.

Aug. and Sept	Moon's Age	Barometer. Max.	Min	Thermometer. Max	Min.	Mean	Wind.	Rain.
Friday.. 31	13	29.861	29.843	75	53	64.0	N	.26
Satur .. 1	14	29.782	29.675	69	58	63.5	E	.24
Sunday . 2	15	29.74+	29.681	77	52	64.5	S W.	.01
Monday 3	16	29.83	29.874	80	58	69.0	S	.12
Tues. .. 4	17	30.094	30.030	76	58	67.0	N E.	.00
Wed. .. 5	18	30.100	30.076	77	52	64.5	E	.00
Thurs.... 6	19	30.122	30.051	74	48	61.0	N E.	.00
Average		29.917	29.891	74	54.1	64 8		0.66

Aug 31 Hazy, cloudy and fine
Sept. 1 — Heavy rain; overcast; lightning and rain at night.
— 2 Fine, low white clouds, and fine, thunder, lightning, and rain.
— 3 Fine, very fine, heavy clouds, thunder lightning, rain at night.
— 4 Fine, cloudy and very fine: clear at night.
— 5 Hazy, very fine, clear at night
— 6 Clear: very fine, clear and cool at night.
Mean temperature of the week, 1½ deg. above the average.

State of the Weather at Chiswick during the last 23 years for the ensuing week, ending Sept. 15, 1849

Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 9	68.4	50 2	59.3	11	1.00 In.	—	1	1	1	7	6	2	1
Mon. 10	69 6	48.9	59.4	11	1.27	—	1	1	1	6	8	2	1
Tues 11	68 2	48.0	58.1	8	0.45	2	3	—	1	4	4	7	3
Wed. 12	67 0	46.9	56.4	7	0.49	8	4	—	2	1	3	10	—
Thurs 13	67 2	46.7	56 9	10	0.49	2	4	4	1	2	5	6	—
Friday 14	66.9	47.1	57.0	12	0.34	1	2	5	2	5	4	6	1
Satur. 15	67 0	47 1	56.5	12	0 63	—	4	2	2	4	1	5	5

The highest temperature during the above period occurred on the 13th 1841—therm. 84 deg., and the lowest on 12th, 1848—therm. 31 deg.

Notices to Correspondents.

Bees: *A B.* Without knowing the real condition of your bees, we cannot exactly state how long they ought to be fed. Except the hive is very light, however, and the weather bad, you had better delay feeding until October; and if the colony be short of about 14 lbs., hive exclusive, make up that weight by feeding. The bees will readily store up the food in the empty combs; attend again to their wants in the spring. *W.*

Cholera: A correspondent has sent us the following extract from the *Scarborough Gazette*:—"During the late alarming prevalence of cholera at Paris, it was clearly demonstrated by the experiments of M. Andrand, of that city, that the increase or decrease of this disease very much depends on the electrical state of the earth. The daily indications of his powerful electrical machine proved a progressive deficiency in that mysterious agent, electricity, until it amounted so nearly to an entire absence of it, that the machine ceased to yield any sparks, when worked in the usual manner. Coincidently with this singular fact, the cholera steadily increased, and was at its height on the 7th of June, when the machine would no longer act. On the 8th some feeble sparks re-appeared, and towards evening a thunder-storm announced that the electricity had re-entered its domain, and on the 9th the cholera abated, and has diminished in the number and intensity of the cases ever since. It is much to be desired that similar observations were made in London and other parts of the United Kingdom. So far as they have been made, they fully confirm the hypothesis resulting from those made at Paris, that the earth may in portions of its surface be for a time exhausted of its natural portion of electric fluid, and that it then abstracts from the bodies of men and animals that quantity of electricity which, by a beautiful law of Providence, every living system produces for the healthful maintenance of its own functions, and without which the physical energies languish." And he recommends everybody to furnish himself forthwith with boot soles made of gutta percha.

Churchyard Plants: *E S.* Shrubs: Yews, Cupressus Lambertiana, C. funebris, and Whitethorn. Flowers: Primroses, Violets, Amaranthus caudatus, Woodruff, Pansies, Xeranthemums, and Thyme of different kinds. The French use Gnaphalium arenarium and similar everlastings.

Conifers: It is difficult to say whether they would thrive planted in the way you mention or not. Some of them, as the Deodar and Cryptomeria japonica, succeed planted almost in any fashion. The plan, however, is a very clumsy one, and the undrained land would certainly be against them.‡

Cuttings: *Quidam.* No cuttings ought to have the leaves left upon them below the ground level. Leaves cause roots to appear, or at least assist much in the operation, therefore all cuttings are the better for having leaves upon them But it is necessary to take care that leaves do not destroy cuttings instead of feeding them, as they are very apt to do if permitted to perspire freely. Hence the use of bell-glasses and all such contrivances.

Figs *F F.* You will find a capital article on the cultivation of Figs, by Mr. Markham, of Hewell, at p. 228, vol 1844 ‡

Insects —*Z.* Your insect had escaped, the box not being tight. *W.*—*G C B.* The insects infesting your Potato-field, near Cork, are the minute Podura fimetaria (see *Gard Chron.*, 1847, p 221, for description). We should question whether they attack sound Potatoes. They are doubtless bred in the decaying vegetable manure, and it would be well to saturate this with lime-water after it is laid in the trenches in the field. *W.*—*G S H.* The insects at the crown of the root of your Daphne are the caterpillars of a small subcortical moth, attracted there by the injured state of the bark; the decayed part must be carefully removed, and a plaster of lime, clay, and cowdung applied to the spot. *W.*—*R U S.* The grub destroying the Turnips is the larva of the moth Agrotis segetum. See last week's answers to correspondents. *W.*—*Z.* The insects destroying your Cotoneaster are females of a species of Coccus full of eggs. They may be destroyed by washing the shoots with a brush with turpentine or oil, or with hot water. If the young have already escaped and gained the young shoots, those most infested ought to be cut off and burned. *W.*—*M J B.* We believe Kirby's book on Bees is not likely to be reprinted. Descriptions of the British species, by Mr. F. Smith, have appeared in the "Zoologist" from time to time, and we believe are likely to be reprinted. *W.*

Moths: *A G S.* Put spices or any very strong-scented substances among your clothes. Bruised pepper is as good as anything. Kill the larvæ by baking the articles infested.

Names of Fruits: *G M G.* No one can be absolutely certain of the names of Peaches and Nectarines without seeing the leaves and knowing whether the flowers are large or small. Most probably 1 and 9 are Royal George; 2 8 11, Grosse Mignonne; 4, Barrington; 5, 10, Bellegarde, 7, Noblesse. Nectarines: 1, 2, Red Roman, 3, 4, Violette Hative; 5, Elruge ‖

Names of Plants. *A B.* Cyanotis vittata.—*A M G.* We do not recognise it by the seed.—*A Sub.* We really cannot undertake to answer enigmas. Surely it is only reasonable that gentlemen who supply puzzles for names should take care that they are in an examinable condition. Those which you have done us the honour to send for our examination seem to have been pulled out of a pre-adamite haystack.—*G P H.* Daphne collina; one of its varieties.—*L N E* 1, Clinopodium vulgare, 2, Galeopsis Tetrahit.—*J P.* 1, Agrostis vulgaris; 6, a variety of do.; 2, A. alba; 3, Aira flexuosa; 7, Phleum pratense; 8, Aira cæspitosa; 9, Arrhenatherum avenaceum, 10, Bromus, apparently erectus, but indeterminable; 11, the awned state of Triticum junceum; 12, Festuca, perhaps duriuscula; 13, Molinia cærulea; 14, Nardus stricta; 15, Alopecurus geniculatus. This parcel was much like a wisp of hay, and some of the labels were off.—*W.* Arachis hypogæa; Africa; produces oil; is a little ugly annual.

Nuisances: *O.* As you came to the lime-kiln we do not see how you can complain of the nuisance. Had the lime-kiln been constructed after your occupancy began it would have been different. All large chimneys emitting volumes of smoke are destructive of vegetation more or less, according to the fuel used, or the works to which they belong.

Pears: *A B.* In a cold stiff soil the Jargonelle is even more likely to canker if grafted on the Pear than it would be on the Quince stock.‖

Pelargonium: *A B.* Such a state of the stem as yours is not uncommon, and is usually assigned to imperfect action of the leaves. It is, however, impossible to say how such diseases arise, unless after watching their progress and studying all the circumstances connected with them—if then. The same observation applies to the Melon leaves. There are no external indications of Fungi in either case.

Protected Trellises: *T.* The trees we have seen on these are thriving very well; but having been only planted last spring, nothing can yet be stated of the fruit. Mr. Ker is of opinion that the lights should be kept off till October. If the roots are too dry, they should be protected by mulching ‖

Salting Asparagus Beds: *K.* You may give as much as 20 lbs. to a rod. Apply it after the plants have began to grow in spring. ‡

Snails: *S W.* Your scullery must be damp, or it would not be "infested with snails." They dislike to cross horsehair, but the best remedy perhaps is sprinkling the floor now and then with quick-lime; they cannot stand that.‡

The Stanwick Nectarine: *A.* The price is not at present determined on. We will give ample particulars as soon as any decision is taken respecting the price and manner of sale.

Vines: *A B.* In some cases it may be advisable to cut a notch above a bud, to cause it to push a shoot; but the practice cannot be recommended as regards the Vine. In this, bending, or keeping the upper part cool and shaded, will stimulate the lower eyes ‖

Walton Alkali Works: *P W.* Yes. We have read the articles, but they require no answer; in fact they are founded upon false information, in part they answer themselves. If the persons concerned in them are really land-agents, or timber valuers, or nurserymen, as you suppose, all we can say is that landowners should think twice before they trust their affairs into such hands. As to the pretence that effectual means have been taken to prevent the escape from the chimney of noxious matter, that is disposed of by a letter in the *Wakefield Examiner* from Messrs. Muspratt and Sons, who candidly admit that "they are *now endeavouring* in every possible way to condense the *acid* vapours;" a tolerably plain avowal that they at least have not been successful. We may give full credit to their laudable endeavours, without entertaining a confident hope that the endeavours will be successful

Weeds on Walks: *Sub.* Salt destroys them at first, but it lays the foundation of a better crop afterwards. Corrosive sublimate has, we believe, been tried with success, but it is dangerous to use. If you wish to make a good job labour is best, and the cheapest in the end.‡

Winter Pits or Frames: *Ignoramus.* You are correct in understanding it to be a single line of bricks (one deep only) round the edge of the pit; the object is to cut off the communication between the ground and the boards, in order that the latter may be better preserved from decay. You perfectly understand the description, except that you did not observe that the boards were to be feather-edged or overlapping, by which the air is effectually excluded. This, you will see, does away with the necessity of the boards being all in one piece. This stratum of air, inclosed within the board-wall, will prevent the radiation of heat from the sides of the frame to a much greater extent than the 1¼-inch board. An inch or two of dry sawdust, laid in the bottom of the cavity between the boards, will effectually prevent ingress or egress; or, if you like to make your frame more perfect, you may fill the whole of your cavity with sawdust. *F.*

Misc: *An Old Sub.* We are unable to answer your question. One is probably as good as the other, and neither particularly so. Wardian cases may be had of a Mr. Lawrence, in Parliament-street.—*T Little.* To be able to answer your question correctly, we must be furnished with the name of the seeds you intend to sow.‡—*F G G.* Spiræa Lindleyana may be expected to grow 10 or 12 feet high.‡—*A B* The common becomes *giant* Asparagus when well cultivated in soil naturally congenial. We believe there is only one sort in cultivation. Experience is in favour of pyramidal-trained trees; but only where plenty of time can be afforded for their summer management. Coe's Golden Drop is a good dessert Apple, but for small gardens there are better, say, for one, the Court of Wick.‖—*Mary.* The Salsafy is attacked by Uredo candida, a very common parasitical fungus. Let it alone; to remove the leaves, if there are many affected on each plant, will do more harm than good. The Lily is the common monster called "the double L. candidum;" its origin is unknown to us.—*J D, Aldenham.* The tubers appears to belong to the common Tamus, or black Bryony, are you sure that they have not produced leaves hidden among the Grass, and continually kept down by the mowers. If you really desire to know what they are, put them into a little heat, and force them into growth.

SEEDLING FLOWERS.

Antirrhinums: *R W.* 32, striped and dotted with purple on a pale rosy ground, centre yellow; a nice variety, but hardly distinct enough 33 and 34, having more yellow in the centre, and higher colours, particularly 31, which has a tinge of yellow all over the ground colour, are very nice varieties. 34 is washy and pale, and 30 has too faint an appearance.*—*A H S.* Small and common in colour.*—*E T.* There are two or three nice kinds among your seedlings, particularly one or two amongst those with purple veined fronts; and one with a carnation front and white tube is very pretty.*

Dahlias: *J M F.* Clarissa: White, shaded near the outer edge of the petals with deep purple; good in size, texture, and shape, with depth of petals in proportion. 1, over blown, and not in a fit state for examination.*—*W D.* Bright crimson, well formed, and with a great depth of petal; but the petals are too much crowded, particularly near the eye.*—*A B.* A very good bright yellow, excellent in shape and depth of petals.*—*W R W.* Outer side of the petals crimson fading to violet, centre white, size good, shape rather flat; a nice fancy kind, with well contrasted colours.*

Delphinium *G V.* A beautifully marked little Larkspur, each petal being violet with a pure white stripe down the centre. You may be able to ripen seed this autumn, by placing a hand glass upon bricks over your plant, and so allowing plenty of air near the ground; but then the seeds will, in all probability, not reproduce your beautiful kind.*

Fuchsias: *Veitch and Son.* 1, tube bright scarlet, short; lobes broad and well reflexed; corolla violet purple, short, but well shaped; a nice bright variety, but too small. 2-48, tube long and rather slender; lobes very long, much pointed, and a little reflexed, colour bright red; corolla rather ample, and deep violet; large and showy, but not first-rate. 3-48, tube short; lobes broad and reflexed, bright red; corolla dark violet or purple, and double; a very curious kind, on account of its double corolla. 6-48, another double variety, nearly the same in colours as 3, but with the lobes more reflexed, and showing the double corolla better. 8-48, tube short and thick, with good broad lobes, a little pointed; corolla dark violet purple; a nice middle-sized flower, good in texture. 9-48, tube bright red, rather short and thick, with long broad lobes, a little reflexed; corolla ample, deep violet; a fine bold flower, good in size, colours, and texture, the best of your seedlings. 11-48, a novel and desirable kind, on account of its variegated or carnation-striped corolla; shape, &c., only middling.*

Hollyhocks: *W C.* A very good assortment, some of them very fine, particularly the following: Sulphurea Perfecta, Snowball, Enchantress, a fine rosy red, good in shape; rosea grandiflora, also good in shape and size; Comet, a fine large dark flower, but rather dull in colour; Surprise, a fine bold flower. None can be called inferior amongst the flowers sent.*—*R M S.* Marquis of Breadalbane: Bright red, very double; an exceedingly fine variety, with flowers measuring 5 inches across. Duke of Buccleuch: Very like the last, but a shade deeper in colour and not quite so large, but rather more double; also a very fine variety. Miss Elphinstone: Deep rose, very double, but rather flat in the crown; a nice variety in colour. Golden Prince: A fine light yellow, hardly double enough in the crown.*

Petunias: *B and B.* Your flowers being again packed in dry paper, arrived in a state quite unfit for examination.*—*Sub.* Duke of Devonshire: colour rosy lilac, stained with violet, a little veined in the eye; flowers 4 inches across, firm in the texture; for the size, good in shape and colour, but a little crumply at the edges,; a very fine large variety Enchantress, deep blush, violet in the eye, a little veined; flower nearly 4 inches across, firm in texture, and good in shape and colour; a fine bold flower. Goliah: purplish lilac, shaded with violet, slightly veined in the eye; size and texture good, petals very much reflexed, shape inferior. Prince of Wales: bright purple, dark in the eye, good in colour; petals crumply; not very uncommon in colour.*

Phlox: *J M.* Flowers pale lilac, in small clusters, very small, and unless the habit of the plant is dwarf in proportion to the size of the flowers, it possesses little merit.*

Verbenas: *A H S.* Quite withered when received.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

TO AGRICULTURISTS.

COMPOUND CARBONISED ANIMAL MANURE.—This MANURE is composed of a combination of highly fertilising artificial substances with natural animal products, so as to contain, in a concentrated state, all the elements that are best calculated, not only for promoting the germination of seeds and luxuriance of growth in vegetation, but increasing the produce, as well as improving the quality, of the crop to which it has been applied. It is prepared either to be suitable for general purposes, or expressly for each particular kind of crop, as may be required, and its beneficial effects upon the soil will continue for several years. Price (net cash) per ton, from 5*l.* 5*s.* to 10*l.*; the quantity to be applied from 3 to 6 cwt per acre, according to circumstances.

TO THE CULTIVATORS OF FLOWERS.

THE CARBONISED MANURE is also prepared, by a different process, peculiarly for Plants and Flowers in gardens or pots, and sold in tin canisters at 1*s.*, 1*s.* 9*d.*, and 2*s.* 6*d.* each; or, in compact wooden boxes, at 5*s.*, by taking which a considerable saving is obtained. It is so completely freed from smell, and clean, that the most fastidious lady may use it for her drawing room plants or conservatory without experiencing the slightest annoyance therefrom.

Orders addressed to H. COLES, Seedsman, &c. (Agent for the sale by special appointment), 32, Cranbourn-street, Leicester-square, London, will be duly attended to.

MANURE FOR WHEAT, &c.

COMPOUND CARBONISED ANIMAL MANURE.—THIS MANURE, fit either for the drill or for casting, being manufactured expressly to suit each peculiar kind of crop for which it is intended to be applied, those who may be pleased to favour H. COLES with their commands for it for the approaching autumn sowing of WHEAT and other crops, are respectfully requested to give him TIMELY NOTICE, in order to prevent any disappointment in its supply, the increasing demands rendering it frequently impossible for him to execute the orders punctually without such. The quantity recommended to be used is, in general, about 3 cwt. per acre, at the time of sowing, and 3 cwt. additional as a top-dressing in the spring. Orders addressed to H. COLES, 32, Cranbourn-street, Leicester-square, London; or the MANUFACTORY, Middle-yard, Great Queen-street, Lincoln's-inn Fields, will be duly attended to.

TURNIP SOWING.

THE LONDON MANURE COMPANY, having adapted the "URATE" more particularly for Turnips and all Root Crops can recommend it with the greatest confidence it seldom fails, in the driest season, to secure a good plant, and to produce a heavy weight per acre. They would call attention to their Superphosphate of Lime, which is prepared with the greatest care, and sent out in a very fine, dry state, perfectly ready for use. The London Manure Company have made arrangements for a constant supply of Peruvian Guano, from the best cargoes, which they will deliver direct from the ship or importer's stores. Corn Manure, Nitrate of Soda, Fishery and Agricultural Salt, and every other Artificial Manure, on the lowest terms for a genuine article.

EDWARD PURSER, Secretary, 40, Bridge-street, Blackfriars.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

FENCIH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1*s.* 3*d* to 1*s.* 6*d* per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7*d.* to 9*d.* per ft.

HEATING BY HOT WATER.

TO ORCHID GROWERS.

BURBIDGE AND HEALY, 130, Fleet-street, respectfully call attention to their method of warming Orchid Houses. They have had the honour of warming the Orchid Houses at the undermentioned places:

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick, additions to the House.

Also the Orchid Houses of the following distinguished growers of this interesting class of plants.

The Bishop of Winchester, Farnham Castle.
J. Lyons, Esq., Ladiston.
J. Warner, Esq., Hoddesdon.
Messrs. Henderson, Pine-apple Place.
J. Schroder, Esq., Stratford.
R. Hanbury, Esq., Poles, near Ware.
W. Webb, Esq., Clapham.

BURBIDGE AND HEALY'S NEW BOILER.—The above is a modification of their Boiler (before published), modelled expressly for the large Conservatory, Chiswick Gardens, where it is now at work. From the observations B. and H. have been able to make, they are warranted in stating it to be the "Ne plus ultra" for warming large plant structures. As a proof, one charge of fuel has been kept burning for 48 hours without any addition, and one boiler of the size used is equal to warm 1000 feet of 4-inch pipe. They are also extensively put up at the Royal Botanic Gardens, Kew. Smaller boilers upon the same plan.

BURBIDGE and HEALY, 130, Fleet-street, London.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

The terms of the School can be had on application either personally or by letter.

LANDOWNERS' WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY. Established 1844. Incorporated by Act of Parliament. This Company is prepared to Contract with Landowners for the Drainage, Inclosure, Irrigation, or Improvement of Lands in any part of England, Ireland, or Scotland. Owners of Settled Estates in England may, through the Company, DRAIN, INCLOSE, BUILD ON, or IMPROVE their Lands, and charge the Inheritance with the permanent value.—Apply to Mr. THOMAS MAY, Secretary, 9, Bedford Circus, Exeter.

AGRICULTURAL TRAINING SCHOOL, HODDESTON, HERTS.—TWO VACANT SCHOLARSHIPS, on the FOUNDATION, will be FILLED UP on Tuesday, the 25th inst., at this Institution. Full particulars relative thereto, the necessary Forms, and the names of the Noblemen and Gentlemen whose presentations are vacant, may be had of the Head-Master either personally or by letter.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 8, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS

THURSDAY, Sept 13—Agricultural Imp. Society of Ireland.
THURSDAY, — 20—Agricultural Imp. Society of Ireland.
FARMERS' CLUBS.—Sept. 10 Claydon—Sept. 12. Tavistock.

THEY say that it is impossible to separate the Agricultural from the Political. We wonder what the historian of the next 10 years will have to record on this matter. It is obvious that if the Political include only what may be called *artificial* politics, the two are thoroughly separated at present. And though our correspondents "Q." and "I. A. C." (certainly the former) may not have succeeded in maintaining this separation in our columns, to suppose the separation impossible is surely absurd.

A certain profession stands in an awkward predicament: some people think that Parliament can give it the assistance it appears to require—well! they ought to press their views upon the Government of the country; we who do not pretend to discuss questions of party politics are not however thereby precluded from suggesting what we think likely to be of use. And where is the antagonism between "Q.'s" views and our own, when he asserts that Parliament has committed a great blunder in removing agricultural protection, and we assert that the low price of agricultural produce may be met by an altered agricultural practice? He imagines an antagonism, no doubt, or he would not have attacked us so sharply; perhaps he thinks that the more the farmer strives with his circumstances, the less chance will there be of Government assistance being renewed; and that if he should succeed in conquering them altogether, then Protection, being unnecessary, will be no longer attainable. If this be his thought, we certainly agree with him; but why should there be ill-feeling between us on that account? We both aim at the same object; and the fact is, we are not enemies, but allies; and there is no cause for quarrel, though he may know that, on the conclusion of a successful campaign, in which our mutual object has been attained, his forces will be disbanded.

The point on which we differ is this:—We both desire the success of the farmer; he, however, by foreign assistance, and we by better-directed personal effort. But what would be thought of those in any land who should desire the national defence to be left to an ally, and discourage any attempt to rouse the spirit of the people in patriotic self-defence!—he would rightly be denounced a traitor to his country. We do not say so much as this of those who would have the farmer look exclusively to Government for help; but we do say that the permanent welfare of the profession depends far more upon its own effort and resources than on assistance from any other quarter. We do not object to the efforts of allies on its behalf; but we do object to everything tending to distract its attention from the main source of its relief.

There is no "insult" to farmers intended, and, but for "Q." we should have said *conceivable*, in the advice to meet a diminished price of produce by effort after an increased amount of produce. There is no insult intended when we say that agriculture is not so laborious an art, and has not hitherto involved such accuracy of method as many others. Where is the insult then to agriculturists when we tell them—Build your hopes of relief, not on promises of Parliamentary assistance, but on the better directed efforts and truer economy of a more skilful practice? Is it not better to speak thus, than talk with "Q." of our "industry, perseverance, and incessant toil"? or belaud ourselves, with a recent correspondent of the *Economist*, as "A 1" in the science and practice of farming?

Let us look our real condition fairly in the face, and, taking political professions, of what after all may be a mistaken sympathy, at their real worth, let our "Panics" reveal to us the ignorance on which they are really based, and let the cry of "agricultural distress" speak to us of agricultural mismanagement—for so it is, in spite of all the excuses which our fickle climate suggests to "Q." The cry has existed under too many sorts of political circumstances for us to see its solution in them. It is no novelty of the last few years: let us inquire if there be nothing in the ART to account for it—nothing in the relationship of landowner and occupier practising this art—nothing in the methods it employs, or in the processes of which it consists.

To this inquiry we shall henceforth confine ourselves.

IN our last year's volume we referred to an Act of Parliament (11 and 12 VICT.) which incorporated the "LANDOWNERS' WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY," greatly facilitating the borrowing of money for the permanent improvement of settled estates, by making the charge for its repayment take precedence of other incumbrances upon such properties. During the past session of Parliament, a bill was brought in by the Duke of RICHMOND and has passed, by which the facilities hitherto enjoyed only by those employing the West of England Company are now conferred generally. The machinery for superintendence employed in the case of the Government loans for these purposes is retained, and perfect security is thus ensured for all the interests connected with the property. The Earl of CARLISLE alluded to this Act in the following terms, at the YORKSHIRE AGRICULTURAL SOCIETY'S MEETING, in Leeds:

"You will remember that three years ago the sum of two millions was allowed to be advanced on loan, to be employed in the drainage of lands. Those two millions were allotted to Ireland and Scotland. But our Scottish subjects on the other side of the Tweed, who are very canny chiels, knew when they got hold of a good thing; they took care to be found 'wide awake;' they put in a claim first, and they got, I believe, three-fourths of the entire sum allowed. And the gentlemen of England, who flatter themselves that they occupy at least a larger portion of her Majesty's dominions, were put off with less than one quarter. (Laughter.) It remained with them to consider what they would do. A great many landowners and occupiers were anxious to borrow money for the more effectual drainage of their land. If they were offered good security for the purpose, there were many who had the money in their pockets—possessors of capital, who would be glad to lend it upon such terms. And I do not see why the capital of this country may not be justly and legitimately applied to the improvement of the soil, as well as to every other branch of occupation and employment.—We were told in the course of the late discussion, I think by Mr. MAW, that the process of agriculture must be considered as partaking of the nature of manufactures; and so it obviously does. The turning of fallows into flourishing corn crops—the turning of waste lands, of marshes, of fens, of uninclosed wolds, into such tracts of fertile lands and beautiful farming as we see on the high grounds of Lincolnshire and of the East Riding of Yorkshire, and the fens and marshes of Lincolnshire and Cambridgeshire—all the processes thus employed in this happy conversion—the draining, the manuring, the boning, the liming, the guanoing—what are these but so many processes of manufacture? And why is not the spare capital of the country to be as readily devoted to such purposes as these, as well as to the converting of the fleeces which we have admired upon the backs of the sheep in the show-field to-day into your broad cloths and merinos, or to the conversion of the Cotton plants in the wide tracts of Georgia and Alabama into prints and calicoes? Well, then, gentlemen, by this bill, which has just passed through Parliament, it is proposed that the same machinery, which has worked extremely well in the application of money lent by the Government, which money was applied under the superintendence of the drainage commission, of which I am a very humble member, and who employ competent, intelligent, and practical men in the superintendence of these operations—it is proposed, I say, that the same machinery shall again be employed. And the best fruit, I think, of the good working of that commission is, that so little fault has been found with it—so little complaint has been made—so little noise has been stirred about it, that a great many people have not been aware of its existence. It is proposed to apply the same machinery, under the same superintendence, and with the same checks with regard to the money which one private owner of property may borrow from any private association, or any private possessor of capital, for the purpose of carrying on improvements in the drainage of his property. And you will observe as to the borrower of the money, and his successor, and all the remainder men, that for their protection—whoever they may be—there will be the security of an organised superintendence, and of the execution of the work by skilful and practical inspectors. And for the protection of the person who lends the money, there will be first a charge made on the property so improved, equivalent to the increased amount of value which has been imparted to the property. And, as the amount of interest will not exceed 5 per cent., it is calculated that by allowing 3 per cent. additional to repay the principal, a sum total of 8 per cent. will pay off both principal and interest in the course of 22 years."

In reference to the interests of landowners, it is proper to call attention to the nature of this Act; as to those of the West of England Company, and the way in which the Act affects them, we refer our readers to the communication of our correspondent "T. T.," in another column.

AMATEUR FARMING IN 1776.—No. 1.

I send you an account of the amateur farming of the last century, from the MS. diary of a young Scotch farmer, who made a tour through the eastern counties at that time. It is satisfactory to think that considerable advances have been made since then in this department, as well as in the practical. The bad success of Arthur Young in farming is very well known, and it is rather singular how little the knowledge and experience which he acquired by his travels availed him when he attempted to reduce them to practice, for even in his early writings he had correct perceptions of the direction which the improvements in agriculture were to take, as many of the practices which he then strongly recommended are now being adopted, and in many instances claimed as modern discoveries. It was fortunate, however, that he left off the practice of agriculture for the teaching of it.

"Arthur Young's Farm.—*Thursday June* 20, 1776: Being within eight or nine miles of North Mims, the residence of Arthur Young, Esq., I could not think of leaving Hertfordshire without seeing the result of so much observation and experience as he undoubtedly has had, and accordingly dedicated this day to his farm, in expectation of much instruction and meeting with a pattern to model my farm upon, when I have finished my tour, but alas! I was, as I have often been in reading his works, disappointed. In the account I am going to give of the situation of this farm, if I do justice to it, I am afraid you will think me censorious, but I assure you it is nothing but the truth; if you doubt it, you can convince yourself by calling at North Mims three miles south west of Hatfield. There is about 100 acres on the farm, not of very good land, but such as any common Hertfordshire farmer could have improved by draining and good management. Mr. Young is an uncommon farmer—has laid out a great deal of money upon that farm, and made it worse. It is at present mostly in Grass, which is so bare and poor that the cattle can hardly live on it. He has 30 swine in one field, to try, I suppose whether they or sheep are best for the ground; one sees some poor weakly plants of Burnet in the pasture, which might have been good, if the land had been in condition. There is one field designed for hay, but there are more weeds than Grass in it; I never saw such a shameful field anywhere. There were three small enclosures in corn, which do not promise much more than the seed, and it is the only corn in Hertfordshire where I have seen rank Thistles and Redshanks allowed to rise so high. Mr. Young's is full of them; any other farmer would be ashamed of them. He has 3 or 4 acres of Potatoes, but the ground is so hard and coarse that the people cannot hoe them, nor can the Potatoes grow; some fields are laid into high ridges, evidently to the loss of the ground, for within some feet of the furrows nothing grows. His fences are full of gaps—his gates open. I had walked by myself through his farm before I called at the house, for it happened to be just upon dinner-time, and I did not choose to disturb them; about 3 o'clock I saw two men going to work, they told me Mr. Young was not at home, but they would show me the experiment field. Here I expected a great treat, and to find everything in fine order, but alas! I was again disappointed. There were several transplanted Lucerne, but as full of Grass as if they had not been in rows, and Red shanks allowed to come to seed in the midst of it. This, I suppose, will furnish materials for some other volume on farming. He had some coarse Hair-Grass in drills, too, and little spots of other Grasses, but all in so bad order, that the experiments must be very deficient. 'Pray,' says I to the servant, 'does not Mr Y. raise a good many Turnips?' 'Oh, yes;' replied he, 'we have a rood of ground to sow this year.' This is your spirited farmer. In the shed are a number of drill and drain ploughs, iron harrows, and other useless implements, fit only for paper improvers." To show that the writer could fully appreciate the advanced state of agriculture in the south in those days, as well as the industry and energy with which Curtis and Mallett, of Norfolk, and their contemporaries were prosecuting their business, we shall give you some samples of the high farming of those days, which would do credit to some districts in the present day. *N. B.*

TO CROP ELEVEN ACRES.—In order to obtain a uniform produce of Green Food in the different months.

Crop	When sown or transplanted	Acres	Produce	Jan.	Fb.	Mr.	Ap.	My.	Jun	Jly	Aug	Spt.	Oct	Nov	D
			tons												
1. Kohl Rabe after Beans and Parsnips	Sown in April	1	5 tops	..	..	.	..	..	..	..	..	..	5	..	.
			20 bulbs	4	4	4	..	.	..	..	.	..	..	4	.
2. Carrots (Belgian)	Sown in April	1	20 roots	2	2	4	6	..	..	..	..	..	2	2	2
3. Early Peas Followed by Rape	Sown in February. Transplanted in July and Aug.	1	15	5	3	5	..	..	..	..	.	..	2	2	2
4. Vetches	Succession, first to Nov. and until May and half of it	1½	18	..	.	..	..	..	5	5	18	..	..	..	..
Followed by Rape	Transplntd. in June after Vetches		8	..	..	..	..	..	..	..	4	1	..	..	..
5. Cabbages	Half of the land transplanted in Autumn after Vetches and again all of it in the April of the 5th year	1	6	.	..	.	..	2	4	..	..	..	..	..	..
			16	5	3	.	..	..	..	..	..	..	2	5	5
6. Barley, ½ sown with Italian Rye grass. The other half in	The autumn of the 6th year. Autumn, with Rye	½	2	..	.	.	..	..	..	..	..	1	1	..	..
7. Rye	....	¼	8	.		.	..	4	2	2	..	..	..	..	..
Italian Rye grass, followed by	....	½	6	.	..	.	..	..	..	6	..	..	..	..	..
Turnips	Sown in July	½	15	4	2	.	..	..	..	..	..	..	8	3	1
and Rape	Transplanted June	¼	5	.	.		..	..	..	..	..	..	..	..	..
8. Mangold Wurzel	Sown in April	½	22	.	.	3	7	8	4	..	..	..	..	..	..
Early Horn Carrot	Sown in March	¼	5	.	..	..	..	..	..	..	..	5	..	..	..
9. Beans and Parsnip	Sown in October and November	1	10	.	2	2	3	1	1	1				..	..
Lucerne	...	1	12	..	.	..	..	1	2	3	3	2	1	..	..
Total Produce	....	.	..	16	16	16	16	16	16	17	17	17	16	16	16

ENGLISH FARMERS *versus* FOREIGN FARMERS.

In the midst of an agricultural panic, induced by forebodings of ruin from lower prices, there are not wanting a band of nobler minds to point out to their nervous neighbours the fallacy of their apprehensions, and demonstrate the practicability of still farming with success. And it behoves every one who can throw a single ray of encouragement upon our future prospects to use every exertion in inspiring agriculturists with confidence; for until confidence is felt, and future safety believed in, there will be little increase in the amount of skill and energy applied to the work of cultivation. A glance at our actual situation will show the probability of future agricultural prosperity. Britain having found its population too numerous for its present distribution of property, and its present condition of cultivation, trade, and manufactures; and finding also that manufactures and machinery are being improved in a surprisingly rapid manner, perceives that it must rely for additional and adequate resources on an extension of foreign trade. One of the chief bars to this extension has been the expensive means of production, arising from an artificially-raised price of food. The Legislature, therefore, have abolished the protective duties which held up the prices, seeing that to increase the manufacturing trade with other countries required only a cheapening of the wares, and that to cheapen the wares needed only a diminution in the price of food. The British farmers have thus been laid open to competition from the whole world. Foreign farmers, with rich soils and beautiful climates, with labourers that live on black Rye bread, with low rents, no tithes, and taxes remarkably light, are competing with us who have rich soils in a less favourable climate; labourers that live on good wheaten loaves, bacon, and mutton; higher rents, burdensome tithes, heavy rates of numerous kinds, and taxes not only to defray the expenditure of a costly government, but the interest also of a stupendous debt. To succeed with such circumstances against us we have only one course left to follow; *i. e.*, we must obtain as much produce from a certain outlay as they do, so that supposing an acre of our land has one-third more expenses attending its occupation and management than an acre of theirs, we must raise a proportionate quantity from it either in vegetable or animal food. Now, are we able to do this? The prosperity or ruin of British agriculture depends upon the nation's practical answer to this inquiry. Whilst some are denying and others affirming our ability to accomplish this task, all are anxiously seeking a true solution of the question, and many hesitating whether to hope or despair, so we will raise our humble voice, and declare, with all confidence and boldness, an affirmative answer to the question. If we be asked for a proof that the British farmers can raise this extra amount of produce, we affirm that, whatever may have been the cause—whether or not our husbandry has been more scientific, our systems of breeding and feeding more skilful, our manures and implements more suitable, or our labourers more capable than in other countries—we have actually done it. And this assertion needs no other demonstration than the fact of our having, under the protective system, paid much heavier expenses upon our land than any other country has done; and certainly we must have produced just as much more per acre than they, as we have paid more per acre than they. To understand this, it is necessary only to reflect that price is merely an indication of relative and not of actual value. Suppose an acre of land in some foreign country yields 4 quarters of Wheat, and the expenses are equal to one-half of the produce; and suppose another acre in England to be under the same conditions. Suppose the value of a quarter of Wheat in the foreign country to be 30*s.*, then the produce would be 120*s.*, and the expenses 60*s.* In England, suppose the price to be 60*s.*, owing to a prohibitive duty which, by making corn scarcer in the country, augments its price, then the produce will be 240*s.*, and the expenses 120*s.*; but it is easy to see that in either case the balance or profit is actually the same. The English farmer might say, "I pay double the money in expenses that the foreigner does," but in reality it is no more; it is only half the produce, only two quarters of Wheat. Or he might say, "I sell my produce for double the money which the foreigner gets for his; I have 120*s.* profit, whilst he has only 60*s.*;" but in reality he is none the richer—like the foreign farmer, he gains but two quarters. He can live no longer on it; it will feed no more mouths, though it be worth more shillings; it may bring more English money, but it cannot be exchanged for more food or other commodities than the foreigner's two quarters can. In fact, it is the greater or less proportion of produce paid for expenses, and not the money value of the produce, that makes an expense greater or less, and it is the proportionate quantity of produce left after the expenses have been subtracted, and not the mere money value of that remainder, which forms the greater or less profit. When we say, therefore, that the taxes and other expenses of the British farmers are greater than in other countries, we mean not merely that they are greater in nominal or money value, but that a larger proportion of the produce is required to defray them than in any other country. The foreign farmer, then, after paying his proportionate part for expenses, has enough left to live upon; the English farmer, likewise, after paying a very much larger proportion of his produce, has had a remainder sufficient to live upon. Now, supposing that the British farmer needs only the same quantity of animal and vegetable produce to live upon as the foreign farmer, the remainder is in each case the same, and therefore the whole quantity raised by the British farmer is much greater than the whole grown by the foreigner. Suppose the English farmer's expenses to be double those of the farmer abroad—say the foreign farmer saves two quarters per acre to live upon, and spends two quarters in expenses, therefore he is producing four quarters per acre. The Englishman also saves two quarters to live upon, but spends twice as much in expenses, or four quarters, therefore producing six quarters per acre. It is thus clearly shown that if the British farmer requires no more to live upon (and it makes no difference at all if he exchange his produce for other things), than the foreign farmer, he must be producing at least as much more produce as he is paying more for taxes and other expenses; and when we consider that he is most likely expending more produce upon his living than the foreign farmer is, then he must be producing in a still larger ratio. When we are told that we must widen the relative proportion of produce to outlay, in order to balance against our superior weight of taxation, &c., and thus be equal with the foreign agriculturist—let us not be alarmed at the magnitude of the task—no; it has already been done, we have been for a long time, and are actually now growing a produce just as far exceeding theirs as our burdens exceed theirs.

It follows, then, that with cheaper prices for farm produce, we shall be relatively (as far as expenses and profit are concerned) in the same position that we were when prices were higher. There are, of course, some few exceptions to be made for th se m re arbitrary taxes, &c., which do not entirely depend upon the price of food, and therefore do not decrease proportionably to that price. As to the increase of the farmer's share of taxes upon losing from the revenue the customs duties on agricultural produce, that will make but little difference. For though the purchasers of our produce gave us (under the protective system) more money for it, we were really no gainers; because they thus (indirectly) paying those custom duties to the revenue, necessarily enhanced the price of every commodity that we purchased of them, in just the same degree that we had raised the price of what they bought of us. The effect of raising the price of our own produce, and making the consumers pay the tax on the foreign farm produce, was to make everything dearer that we ourselves wanted to buy; and now that farm produce has been cheapened, everything else will naturally become cheaper also. If we practically examine the case we shall find this statement to be true. If food be cheaper, labourers and artisans can afford to work for less money. If labour be cheaper, farm operations will cost less, and all manufactured articles will be reduced in price. Labour and manufactured articles being cheaper, tradesmen's bills will be less heavy. If food be cheaper, horses and cattle will be kept with less expense. With food, labour, and manufactures cheaper, the landowner can well afford to take a lower rent; civil and military officers and men will be maintained at less charge, and the taxes thus be reduced, and poor-rates, highway rates, &c., be considerably lessened. Tithes, being properly a tenth portion of the produce, will of course fall exactly as the price of produce falls. In short, all farm expenses will spontaneously fall; though some of them may not sink to an equal degree with the price of produce. To meet this disadvantage we must have recourse to improvements in our practice, such as are now being promulgated throughout the kingdom. We shall husband our manure more carefully, we shall feed our stock more economically, and, in cases where the quantity of manure already applied is so great as to force the crops to too rank and unprolific a growth, we may, by housing all our cattle and covering their manure, obtain a similar quantity with less cost or wastefulness. If our agriculture were not at the present time far ahead of agriculture in foreign countries, we could not pay the extra taxes and rates which are collected from us, and our only safety lies in keeping our place. It may be said, will not foreigners learn and practise these improvements as well as the home-farmers? In course of time no doubt they will; but the general adoption of better systems of management by the agriculturists of a wide territory is a slow work—slow even where there exist the best means for rapid dissemination. What profit-

able methods, what economical appliances are proved and published by books and newspapers in this kingdom, and yet practised by only a few individuals! Underdraining has been proved the fundamental basis of good husbandry; yet there are thousands of pastures and ploughed lands still dropsical with wet. Steam-engines or water-wheels will thresh, &c., more cheaply than horses; yet how few, comparatively, are the farm buildings furnished with these machines. Many are the farms without drills or horse-hoes, where ridging for root-crops is unpractised—or where those crops are regarded as injurious to the soil, when examples to the contrary are bordering around them. Improvements spread slowly even with the aid of flourishing agricultural societies, discussional clubs, animal and implement exhibitions, prize essays, and *Agricultural Gazettes*; are we to fear, then, that we shall be outrun by those who are far behind us with respect to all such valuable agents of progression? Mind is actively at work for us—chemists are discovering more fertilising manures, engineers are inventing more useful tools, breeders are producing more quickly fattening animals, seedsmen are forming more profitable plants, and we are gradually becoming educated in all these things. There are no signs but those of progress, no grounds for relinquishing diligence and hope. The crisis of a transition from a system of dear things to a system of cheap ones may bring ruin upon landowners and occupiers whose lands are too large for their capital, but only let the more enterprising agriculturists set a pattern of economy for their neighbours to follow, and with a flourishing commerce and manufacture as markets for our produce, we shall fear nothing from all the rich deltas and prairies on the globe. *I. A. C.*

Home Correspondence.

Decision of Judges at Norwich: Horses.—I am far from acquiescing in the spirit with which Mr. B. Brown and "Veritas" have assailed the Council of the Royal Agricultural Society in noticing the decision of the judges of the horses at Norwich. I cannot characterise it as anything else than a piece of bad breeding, even on the supposition that the premiums were not rightly awarded. I believe the Council to be composed of honourable men, who have most disinterestedly used every exertion to conduct the affairs of the Society in such a manner as would give satisfaction to the public. But judges are not infallible, and mistakes will now and then arise, though Mr. B. Brown and "Veritas" were in the Council themselves. We are of opinion that it is highly proper that decisions of judges should be commented on with the utmost latitude, as it is the only legitimate way in which a defective standard of excellence can be corrected. But why blame the Council after they have done their utmost, and make this a cause for "breaking up" a society which has done so much good in this as well as other respects? Those who send stock to exhibitions should make up their minds simply to take their chance of the premiums, and reserve their own judgment of the merits of the animals after having had a good opportunity of comparing them. We may mention the case of the white short-horned bull which gained the first prize at Norwich as a good example of the spirit in which exhibitors as well as the public should treat the decision of judges when that does not coincide with their own. This animal was shown at the Highland Society's show in Edinburgh last year, and also at the Royal Agricultural at York, without success at either; but this year he again made the journey from Edinburgh to Norwich, and where, I have no doubt, the spirited and persevering owner believes that his merits have at length been fully appreciated. So let those who have been disappointed this year try Exeter. *N. B.*

The New Drainage Act.—I am only generally acquainted with the provisions of the act just passed, some remarks on which were made by Lord Carlisle at the Yorkshire Agricultural Society's meeting. By enabling landlords to charge the repayment of money borrowed for draining on their estates, it will doubtless prove of great service. I rather think that it is to be worked by a company, which will lend money on this security. This act being confined to enabling proprietors more readily to raise money to be applied to draining land, I do not look upon it as antagonistic, but rather as auxiliary to the West of England Draining Company, for the latter do not lend money, they only execute work by contract or commission, whether their employers borrow money or pay for the worth out of their own pockets. The West of England Company's Act gives indeed facilities for parties to borrow, which facilities, by the Duke of Richmond's Act, are now extended to all parties, whether employing the West of England Company or not; but if money is to be had easily for this purpose, it will promote the operation of the Draining Company. It would, doubtless, be cheaper for a landlord to execute draining for himself than to employ the services of the company, supposing the landlord competent and willing to devote attention to the business, so as to ensure the work being equally well done in both cases, just as it would be cheaper to import one's own wine, to brew one's own beer, to supply one's own groceries, &c., instead of employing tradesmen; or, to come nearer home, to farm one's own land; but then this can only be on the supposition that one understands these several trades as well as those who make it their special business to carry them on, and also that one devotes one's time and attention to them. If a landlord will engage himself personally in the erection of tile-yards, the hiring labourers, the mapping and laying out of drains, the measurement and execution of the work, of course he deserves to save by his skill and attention; but if, on the other hand, he prefers putting the business into the hands of a company, whose character and interest are at stake in the proper performance of their contract, he must pay for the skill and direction of labour which they supply, and for the trouble and risk which they take off his hands. If, by the mistake of the surveyor, or the negligence of the workmen, &c., the work costs more than was expected, the company must stand the loss. The landlord is secure that by paying a certain sum per acre his land shall be effectually drained; and probably surveyors and workmen constantly employed in draining in all varieties of soils and circumstances, like those of the West of England Company, will be able to execute the work at a sum per acre as low or lower than those employed by a landlord only for that one operation. I have thus ventured to explain the mode of operation of the Draining Company, because it seems liable to misapprehension. People are apt to argue, "If the company makes a profit on my draining, why may I not do it myself and save the profit?" The same question may be made in any other business for which we employ a professional man, lawyer, architect, trades man, &c.; and the answer is the same, viz., try it, or ask others who have tried both, and see which in the end proves safest and cheapest. The profit made by the company on any one job of draining is very small, but as the same money which has been repaid for one job may be applied again and again in the course of the year to different jobs, all realising a small return, the aggregate profit may be sufficient to induce capitalists so to employ their money and attention for the benefit of the public. *T. T.*

Steep v. *Level Land.*—I believe that the slow progress of this controversy proceeds from the admission of an erroneous principle into it, in which both parties appear to have acquiesced. It appears to be taken for granted on both sides that the roots of Grass and of grain crops grow mostly, if not altogether, in a direction perpendicular to the base line or level line of the hill on whose side those plants are located; for if there be no perpendicular direction in any considerable portion of the roots it will be impossible to establish any relation between the extent of produce growing on the side of the hill and the extent of the base line of the hill; in whose direction (upon this supposition) the produce of the hill side has no tendency to continue itself. Unless the perpendicular line of the stem of the produce above ground be prolonged beneath the surface towards the base line of the hill, the restricted extent of that base line cannot in any degree limit the produce of the hill side. For it is obvious that if the superficial area of the hill side be alone considered (and not its connection with the base line by means of perpendiculars let fall from the line of the hill side to the level line) it must be possible to place more plants at a given distance on a superficial area of an acre and a quarter, whatever may be its inclination, than upon a superficial area of an acre only. Now the mode of growth of Grass, especially beneath the surface, is far more nearly horizontal and superficial (and so parallel to the base line) than perpendicular to it: and it is upon the extent of the superficial area of the land almost entirely that the extent of green sward depends. The quantity of Grass produced upon the slope of any hill is limited principally by the amount of nourishment which the 4 or 6 inches of soil next the surface are able to afford to the mass of matted and tangled roots. Then with regard to the stems of corn, unless the line of the stem be actually continued to the base line of the hill, the argument about the impossibility of placing more stems on the slope than you can place on the level has no applicability at all to the present case; if, indeed, you had to plant a parcel of canes through the slope, and fix them perpendicularly in the base, you might well say that you could have no more canes on the slope than you could find room for in the base; but that has surely nothing to do with a case in which the body of roots of the produce having themselves possession of a vastly greater area than that afforded by the base line of the hill, send up as many stems as that line will hold, and of course many more than they could have done at like distances from each other, if they had been confined to the area of the base of the hill. Nobody doubts that the circumference of a semi circle affords more superficial room than the diameter of the circle corresponding to it, or that you can stick a vastly greater number of pins (so that they be short enough to be considered as superficial) into the circumference than into the corresponding diameter; now the circumference of a semicircle makes a very good hill, of which the diameter may be considered as the base line, and we can no doubt find more room for either stems of corn or trees upon it (so that their growth be superficial in comparison with the depth of the hill) than we can upon its corresponding base line. I believe it is the surveyor's practice which has thrown so much doubt on the subject; but the surveyors are obliged to adopt many methods of approximation to truth which, while used on a small scale, do not lead to material error; and in the case we are now considering, that which is reputed to be their practice cannot boast of anything like mathematical accuracy. *R. W. B., Alnwick, Aug.* 27.

[We submit the above as a last word on this subject; but it is far from conclusive. If extent of area for upright stems be the question, then we maintain as before that there is not more in the case of the hemispherical surface than in that of its circular base. It is very true that your stems of Wheat do not touch, as houses do, but their ability to *grow* nearer one another is another thing: to whatever extent it be admitted on the slope, then to that same extent it must be admitted on the flat; and given the nearness possible, no more stems can be grown at that nearness in the one case than in the other. But if the area of the land for root pasture, as is *now* asserted, be the real point for discussion, then we say, to find *that* you must ascertain not the quantity of surface exposed by the soil to the air, but the gross total of the surface of every atom and particle it contains—an aggregate which represents the ability of the soil, under the action of a given dissolving agency, to supply food for those roots; an aggregate, too, which we assert without fear of contradiction to be the same, other things being equal, whether the soil be on a slope or on a flat, provided it be of the same vertical depth in both cases. If any one remains unconvinced on this point, we can only say that the discussion must be resumed in another volume.]

Box Feeding.—I confess myself to be sorely puzzled with the conflicting theories of box, stall, and shed feeding. Each partisan appears to establish his case so incontrovertibly, that as I read or listen I yield my judgment implicitly to the arguments of the last writer or speaker, whatever side of the question he takes. After reflection, however, leaves me as much in the dark as ever. I do not know what to think, how to act, or decide. One difficulty, with regard to box feeding, which bothers me, is the disposal of the liquids. There is to be no tank—no escape. The box is to be so drained as to exclude every drop of water from without. There may be little or no difficulty in constructing these one-sided drains, and in preserving the valuable liquids within. Probably there are many ignorant, like myself, who would be grateful for a little practical direction on this head; but is there no difficulty in the way of the box holding all the evacuations? We are told its dimensions should be about 10 feet by 8 feet 6 inches, and 2 feet in depth. A neighbouring gauger tells me this would contain a little more than 1000 imperial gallons. According to the best authorities, an ox voids about 2500 gallons of urine per annum. Suppose the box to be occupied for six months in the year, it appears to me that the urine alone must overflow, without the addition of straw or any other thing. The box feeders tell us there is no evaporation, no fermentation, no escape of any kind, or in any degree; but that the whole comes out of the same weight at the end of the season, as the aggregate of the fed and feeding material, which had been put in. How comes it, then, that the water which would stand nearly 4 inches above the level of the surface does not drain off? To the fact that it does not do so we have the testimony of a legion of box feeders. Yet the same parties contend there is no waste. It may be so, but to me, at least, it is paradoxical. Charles II. perplexed the philosophers of his day with a problem as difficult; why a goblet filled with water to the brim did not run over when a live fish was put in. The solution appears to be the same in both cases. To my plain understanding the box feeders prove too much—they scout the idea of any exhalation, and yet they ask us to believe a pint will hold a gallon. I do not wish to revive a discussion which, if I recollect right, you consider exhausted, or which may be uninteresting or unprofitable. I only want doubts cleared up, and so much of a common sense explanation given as may determine me, and possibly others, whether to build boxes, stalls, or sheds. It is to be regretted that we have no means of testing the value of the agricultural nostrums which, from time to time, are held up for adoption with such tempting arrays of figures, both of quantity and profit. If the royal society maintained an officer, like the ale taster of old—one possessing a correct nose and judgment, sharp eyes and ears, and accustomed to balance evidence—to examine into the genuineness or pretence of agricultural novelties, we should have an authority on which we could rely, and the important questions of box-feeding and thin seeding would not be at the mercy of the ignorant or prejudiced. [If you would only keep half a dozen beasts in boxes you would soon arrive at a satisfactory conclusion. You may depend upon its answering perfectly well. The question really turns now on the veracity of witnesses, and that only.] *N.*

Superficial Measurement of Land.—I do not intend to refer to the question—Steep *versus* Level Land, but your correspondent "C. B., Norfolk," on August 18, broaches the question as to the superficial measurement of farms. Your correspondent seems to think that surveyors give the area of a farm by what it may measure on the surface without any regard to the slopes or hillocks which may be upon it; that such is not the case any surveyor (worthy of the name) can tell you, and that the area of a farm is just calculated a perfect level as flat as paper, even supposing that Ben Mac Dhui, the highest mountain in Britain, were situated in the centre of the farm; in fact it could not be otherwise; no accurate plan could be constructed if you were to take "up hill and down dale" into account. Suppose the whole coast line of Scotland (which is level) to be measured and accurately laid down on paper; then, having surveyed the whole internal part, I will ask, could you lay down the surface measurement within the coast line, already laid down, unless you laid down merely its ground plan: it would be impossible. Take Scotland north of the Grampians, and lay down its surface measurement, and you would drive the coast line miles out to sea on every side. *John Smith, Land Surveyor, Aberdeen, August* 21.

The Prevailing Disease amongst Cows and Pigs.

The Royal Agricultural Society having issued circulars containing queries in reference to this disorder, it may not be unacceptable to many of your readers for me to state and describe the various symptoms and remedies as they have appeared and been successfully applied on the southern coast of Hampshire. I may in the first place observe, that, when any diseases have appeared in these parts the cattle on the coast have escaped being attacked. The present disease, however, has prevailed along this coast; there is no doubt it is contagious. It is said to be distinct from the disorder amongst pigs; but my observations will tend to confirm my belief of its being of one and the same character that assails both species of animals. The first outward appearances in the cow are these:—The hair erect, trembling of the frame, foaming at the mouth, and the lips and nostrils covered with glandular swellings or blisters; the mouth highly inflamed, the tongue and palate furred, and, when the former is taken hold of in drenching the animal, the skin peels off in flakes. The animal moves with pain; the soles of the feet very tender. The hoof, as the sufferer walks, opens and closes wide enough to admit a shilling piece between the crust and the sensible part of the foot. The milk secreted is very yellow, and the odour highly offensive, so also is the breath of the animal. Such has been the character of this complaint Its treatment:—Bleeding freely once, breaking the blisters, and rubbing the parts with a solution of salt and bark; some rub in common salt only Drenches of solutions of common or Epsom salts, given twice or thrice a day. As the animal cannot bite the Grass, it is cut for them, or any other green food. If this is not done, they waste flesh rapidly, and hence so many fatal results, the animal not having strength and nourishment sufficient to contend against the disease or support life. In a week or ten days the animal recovers its usual health. *Disease of Pigs.*—The first stages with these useful creatures are these—they suddenly appear paralysed, sit upon their hind legs, and seem incapable of moving; upon being forced to do so, they move with difficulty, and upon stones shriek with agony, the soles of their feet, especially those of the hind legs (and in cows the same is observed), are especially tender. A little sulphur (flower), mixed with some milk or wash, given twice or three times a day, has effected a cure; but giving them air, not allowing them to herd together, but turning them into a meadow by day, they soon recover Allowing them to remain in the sty, or to lie upon the dung in the yard, retards their convalescence. The cows also should be turned out. *N. V. Z., Hants.*

Cumberland One horse Carts.—There is in your paper of August 25th, page 540, an article entitled "Cumberland One-horse Carts," which deserves some notice for the unusual quantity of error which distinguishes it, and for the mischief it may do in misleading the ignorant and unthinking. What can be thought of the comparison drawn between these carts and what are contemptuously termed "Scotch" and "Prize" carts, the grand merit of the former being that they weigh only 6, 6½, or 7 cwt., while the despised Scotch and prize cart weighs 8 or 9 cwt.! Does not the author of those remarks perceive that a cart for a large and powerful horse, to be employed also on level roads, ought reasonably to be made of larger capacity than where these conditions are reversed. Does he not know that horses usually draw heavier carts than ponies, and did it never occur to him that the same persons who make capacious "Scotch" and "Prize" carts, could also make light carts, nay that they constantly do make carts as light as the Cumberland, and lighter too, whenever their customers choose to order them. "L. V. R." goes on to contrast light and heavy one horse carts, and winds up this part of his subject with this startling assertion,—"There is no reason in the world," says he, "why a cart weighing 6½ cwt. should have a narrower wheel rim than one of 9 cwt., if the road require it." This is much the same thing as to say, there is no reason in the world why a weight of 1 lb. should weigh less than a weight of 2 lbs. He then goes on to tell us of Cumberland carts being in use the enormous period of 20 years, but I could tell him of carts, and waggons, too, being in use for 40 years, aye, for half a century, and no one part yielding before another, but all going off at once, like the flame of a candle I pass this gentleman's attempts to puff Messrs. Ransome and May as cart makers, a branch of agricultural implements which they have never interfered with, and will just say, let him apply to any respectable maker of carts, to build him one of any weight, from 5 cwt. up to 15 cwt., and his request will be cheerfully complied with. Also, amongst those who are most celebrated for Scotch carts and prize carts, he may get any kind, built to any pattern of the very best seasoned wood, better in every respect than he can by the individuals he names in Cumberland, and also at less price, all these differences being the obvious result of much greater experience, skill, and capital employed by those who have long been devoted to this branch of manufacture. *A. B. C.*

Qualification for Land-agents.—No one who bestows any thought or observation on the connection between landlord and tenant, or on the present state and prospects of the agricultural interest, can doubt for an instant the importance of the subject broached by your correspondent, in reference to what are and ought to be the qualifications of a land-agent, and no one who is aware of the powers and responsibilities of those who are employed by landowners to manage their affairs and perform their duties, can doubt that the tendency of those powers must be great for either good or evil throughout the country. And I must agree with your correspondent in thinking it a subject which cannot be brought too prominently before the attention of those who alone can apply the remedy! Now what are the duties of a land-agent? And what attainments and qualifications are necessary to enable a person to perform those duties? He ought, I think, to be a person of good judgment, unfettered by prejudice, corrected by practical experience, and enlarged by education and his abilities; ought to be exercised, not alone in protecting his employer from imposition and increasing his rent-roll, but also, by encouraging, in every way, industry, the employment of capital, and consequently improved systems of cultivation, and by seeing strict justice done to those under him, to promote their prosperity, and the advantage of the proprietor both as regards his pocket, credit, and popularity. And what in too many cases do we find in the place of what the representative of the proprietor ought to be; a person, probably a lawyer, who performs his duty so far as to collect the rents, and if some report reaches him that the land is underlet, raises them—a person who has a very correct or perhaps exaggerated notion of the rights of property, without attempting the performance of its duties, and probably if an outlay is thought necessary, makes it in a way too often eventually found to be of little assistance to the tenant or advantage to the landlord. Or in the case of a person raised from some office, which cannot have given the experience necessary, we find the self-sufficiency and arbitrary abuse of power common in those who with narrow educations are raised from low degree to fill situations they cannot be adapted for, and consequently deter men of education and capital from embarking on the estates, or placing themselves under their influence. Any one who is in the slightest degree interested not only in the land, but in this country, must acknowledge the immense importance of this subject The mismanagement of many Chancery estates under legal receivers has long been a crying evil, and the embarrassments of many large landed proprietors renders them unable to escape from what I may call the control of their advisers, but those whose feelings and independence enable them to do so, and whose wish is to see comfort, content, and plenty around them, cannot too soon remove the management of their property from the blighting influence of misplaced power, to persons whose character, education, and pursuits will ensure the performance of their real and acknowledged duties. *A Subscriber.*

Dr. Newington's Machines.—Having previously heard much of the fame of Dr. Newington's dibbling machines and other implements, I took an opportunity a short time since to visit Knole Park, to inspect them, and also to witness the effects of their application in the cultivation of this year's crops; and although I travelled more than 60 miles for that purpose, I was certainly amply remunerated, as well as greatly gratified, from what I saw, and also from the very courteous reception I met with, being a perfect stranger. The Wheat crop grown from half a bushel per acre was the finest I ever saw, and formed a striking contrast to the lean and dwarf-like crop by its side, upon the same quality and condition of land, and where three bushels of seed had been sown broadcast; and I should say that the produce of the thin sown must be considerably the largest. I also inspected a field of Beans, part of which had been sown with the dibbling machine, and the other part by hand, and although the machine deposited only half the quantity of seed per acre, yet there appeared to be double the number of plants, owing, I conceive, to their regularity of distance, and also to the seed having all grown, in consequence of being deposited at a proper and uniform depth; the owner, a neighbouring farmer, stated as his opinion that there would be nearly double the produce per acre upon the dibbled portion, and that he should continue to use the machine. There can be no doubt that the thin sown corn derived very great benefit from its being frequently hoed with the admirably adapted implement employed for that purpose, constructed so as to hoe between four rows at one operation, and by which an acre of Wheat can be effectually hoed for a shilling. The dibbling machine appears to possess every requisite qualification for depositing the seed in a perfect manner. It not only deposits a regular quantity at equal distances and at a uniform depth, but also any quantity of any kind of seed may be sown with it, and both the distances and depth may be varied and regulated, as the season or the character and condition of the land may require. The dibbling points being only of a sufficient size to admit the seed, they easily penetrate very stiff soils, and the holes made by them do not retain the water, so as to destroy the seed, which is frequently the case when the common dibbling irons are used. It appears a man can easily dibble and drop half an acre a day, and that from the great regularity with which the seed is deposited, two or three pecks of seed Wheat will produce as thick a plant as any one would wish to see upon his land. *Observer.*

Dr. Newington's Dibbling Machine.—I have much pleasure in bearing testimony to the great excellence of Dr. Newington's hand dibble for sowing Beans. I have this year a piece dibbled with it, at the rate of 1 bushel per acre, and alongside of this another piece at the rate of 2 bushels per acre. The sort is the small Heligoland Bean, and the cups were so nicely adapted to the size of the Bean, that I do not think it would have been possible, on the land dibbled at the rate of 1 bushel per acre, to find one hole in a thousand with two Beans in it, with such beautiful regularity were they deposited. The soil is a cold silt, and not very well adapted to the growth of Beans; the ground, therefore, throughout the whole summer looked so thinly covered, that I regretted I had not sown the whole piece with 2 bushels per acre. But now the crop is fully grown the thin sown is so far superior, both in height of straw and in the number of coshes [pods] on the stalks, that I can have no doubt of the produce far exceeding the thick sown. Indeed, it is now so full a crop that I can with difficulty walk through it. From being so openly planted (16 inches asunder between the rows), and standing so singly down the rows, the air has so freely circulated as to promote the perfect setting of every blossom, and on many of the stalks I have counted 40 and 60 coshes. I also tried a small piece with Oats, dibbled at the rate of 1 bushel per acre. They looked much inferior to the rest of the field, which was drilled with 4½ bushels per acre, until the time of coming into ear, when the dibbled portion shot up fully 10 inches higher than the others, and the straw is so stout and reedy, that it will not be yet ripe for a week, whereas the rest of the field is in the sheaf. I shall have no hesitation in trying this implement on a much larger scale another season; for if thin seeding is to be made available, it can only be by the use of an instrument that secures, as this does, the most perfect regularity both of depth and distance in depositing the seed. *J. F., Denver, Norfolk.*

Farm Prospects.—It would be well if some one conversant with the reverses of the manufacturing interest would point out to "Q." that if the production "can be calculated to the fraction of a farthing," a long course of brisk demand is often required to compensate for a "glut," a dull trade, a strike, or other drawbacks, which bring the risks of manufacturing to a pretty close level with agricultural enterprise. "Q." thinks prudent caution or emigration preferable to an increased application of capital, skill, and industry. You said, August 11th, "that a man, after doing his utmost, who can only just live at present prices, and believes that they will fall, is bound in duty to himself to retire from a position in which he is sure to fail." Can "Q." advise anything better? I would ask him if he is quite satisfied with the manner in which farming operations are conducted in his neighbourhood; how many farmers have a proper quantity of the right sort of live and dead stock; how many farms are free from wild Oats, Thistle, and Twitch? And yet all the available capital is engaged, sunk if you will, on half the farms in the country, and, with all the "accommodation" that can be obtained at the bank, amounts to but a sorry investment compared with what might be employed if only as many acres were held as could be cleaned thoroughly, stocked amply, and used skilfully. "Let him resume his calling," you add, "on a smaller scale," and, however distasteful the hint, it is the only safe principle to be acted on by those who occupy beyond their means. "Q." has discovered that "seasons" may defeat ingenuity and production; but do not blight, insects, and other evils act prejudicially abroad as well as at home? "There is a time to sow, and a time to mow." Ninety-nine times out of a hundred the sowing and mowing are in favour of those who know their business best, and "do it well." Some men there are who think rent and taxes the wolf to devour all the profit, who boast of the minimum of labour they employ, and look upon all improvements as expensive nonsense. Such men grow 2 or 3 quarters of corn less per acre than they might do, they never have any other than store stock to sell, and, like the "Amateur Farmer," they grow no roots, or if they do, a stranger's flock consumes them. Talk of sending capital to Ireland, or the colonies, indeed! it must be supplied by the overflowing coffers of benevolent citizens, we have none to spare from the land; or what will become of the agricultural poor? A vast deal more capital is required in every village almost in England by both landlord and tenant, and might doubtless be obtained if those who advanced it could be assured of the recovery of principal and interest in case of death, change of ownership, or whims of landlords; few of them have the means to build and drain, and mere occupiers cannot be expected to invest liberally, unless compensation be secured for permanent improvements. A simple and equitable system must be established by Act of Parliament, we shall then find the bugbear of the "seasons" to possess no more terrors for the farmer than it does for the manufacturer, who, by the bye, derives no consolation from the genial shower, the ameliorating frost, or the invigorating wind; these provident influences belong especially to him who endeavours to turn "all weathers" to account, and who believes during the raging tempest or the scowling mist, "that there is a divinity which shapes our ends, rough hew them how we will;" the reflecting and grateful rustic grumbles not as the ignorant do at every rise and fall of the barometer, as the cause of weeds, bad crops, and low prices; but buckling on his armour of energy, and elated with hope, he sees in every passing cloud an agent of good, carrying fertility to his fields, and nourishment to his crops. You have ably advocated the necessity of improvement in the management of farms, and who in his senses can doubt the truth of this necessity! "*circumspice!*" Behold this Wheat thin and blighted, that black and mildewed; this crop was yellow with Charlock, it is now choked with "hairiff" (Galium aparine). Look at those three-cornered runts, and that flock of sheep of all shapes and ages, flyed and foot sore, depastured on the roadside, a public nuisance; they belong to the owner of clumsy carts and a winnowing machine, who dwells in yon low-roofed house, with a big crazy barn, and

wooden stable on one side, and on the other a heap of wet straw, called manure, and a pile of faggots, called firing. He is a small old-fashioned English farmer, just awaking to the stern realities of free trade, cultivation by steam-engines, root crops, and artificial manure; he has not much capital, but he has some hard earned experience, which only requires an acquaintance with the facts and arguments of the "new practice" to compete manfully with the foreigner, and we hope successfully. Let us suppose the subject of complaint to occupy a mansion instead of a cottage, to be a liberal master with well bred cattle, fat horses, and fine gear, to "sport the pink," take out a licence, may be steward of the races. Why he must read and reform also, fathom commercial principles, look upon his craft as a manufactory, and with sufficient wealth and intelligence to understand his position, set his neighbours an example of what may be effected by economy, skill, and industry; he may in time be brought to peruse the leaders of the *Gazette* with patience, and ultimately emancipate himself from the thraldom of agricultural politics, by which so many good folks are now deluded. *J. W., Peterborough.*

Farm Memoranda.

Baldoon and Auchness, Wigtownshire.—Mr. Caird of Baldoon, by his pamphlet entitled "High Farming under Liberal Covenants, the best substitute for protection," has created no slight sensation in the agricultural mind. That it was possible to clear anything like 1000*l.* a year of profit from a farm of 260 imperial acres has been declared perfectly ridiculous by the great majority of farmers. The writer of this was not a little sceptical, but in order to satisfy himself of the merits of the system practised by Mr. M'Culloch of Auchness, and advocated by Mr. Caird, he resolved to visit both of these gentlemen, which he did during the first week of July. He now ventures to present the results of his inquiries.

Having taken the coach to Girvan, we spent two or three hours with Mr. Wright, the tenant of Girvan Mains, who kindly showed us over his fine farm. Not knowing the place at all, or Mr. W. either, we were struck with the superiority of the crops on reaching his first fields. Girvan Mains contains about 300 acres, and is rented at upwards of 4*l.* an acre. It is mostly fine pasture land, and the pastures and cutting Grass or hay crops, seemed as excellent as any to be seen in the Lothians, the appearance of the Turnips and the Potatoes perhaps better, while the Wheat and other grains were also very superior. The farm lies along the sea-shore, which gives Mr. W. the command of large quantities of sea-weed; but besides this he drives from the town of Girvan about 2000 tons of manure annually, and over and above we found that he had applied 4 cwt. of Peruvian guano per acre to the 70 acres of green crops on the farm. He has a dairy of 50 cows, and brings up 40 calves annually, selling them fat to the butcher at two years old. The whole of the young stock are constantly kept in courts, on cut Grass during the summer and on Turnips during winter, till about six months before they are sold, when they are tied up in byres to feed off. Some of the most forward young cattle were already at the stake, they would weigh about 36 imperial stones. All the young stock were in high condition, though as a lot they could not be said to be particularly large. The milk of the cows was at present being converted into cheeses, of which we saw in one room 141 of this year's make, weighing about 10 lbs. each. The accommodation for the rearing and feeding of stock is by no means in accordance with the extent and value of the farm, or to what Mr. Wright's management clearly entitles him. From Girvan to Wigtown the road is mostly through a high and cold country. The soil begins to improve in the neighbourhood of Newton-Stewart, where we saw some draining and liming of moss going on.

Baldoon lies about a mile south from the town of Wigtown. The approach to the farm house from the public road is by a pretty drive along the wooded banks of the Bladnoch. The house itself, which is in the cottage style, is beautifully situated on the top of the bank, and lies embowered in evergreens and surrounded with tastefully laid out grounds. It is close to the ruins of an ancient mansion house, and almost within a stone's throw of the river and the sea, while the distance is enlivened by the picturesque Munnigaff hills and the more lofty Cairnsmuir. Having been introduced to Mr. Caird by a friend who accompanied us, we received a warm and hospitable welcome, and every facility was kindly afforded for the inspection not only of Baldoon farm, but of whatever was most interesting in the neighbourhood. The more we saw of Mr. Caird, the more we were convinced that he must make a good use of his magnificent library, which we should think second to none in extent and value in the hands of any private individual.

Baldoon has been long known as a crack farm, the Earl of Selkirk nearly 100 years ago having begun to cultivate it on scientific principles. It is now the property of the Earl of Galloway, and has been farmed by Mr. Caird for seven or eight years, by whom it has been all thoroughly drained. It contains upwards of 500 Scotch acres, of which about 140 are a deep dry loam, lying on small round hillocks free from rock, which form a peculiarity in the features of this part of the country; and these hillocks all appeared to be excellent soil. About 360 acres are rich alluvial clay, mixed with sand and shells, and so perfectly flat that the tides at high water prevent all current in the ditches, and render sluices for the drains necessary. There were, say 130 acres of Wheat on the farm all good and some of it magnificent, being fully taller than an ordinary sized man. The Oats, about 50 or 60 acres, were a very indifferent crop, the clay soil not seeming to suit them so well as from the rich pasture might have been supposed. There were 40 acres of superb Potatoes, the principal variety being "Pay the rents," and about 30 acres of Turnips, the latter, though mostly on clay land, being a good braird and looking well. The Beans, without being particularly strong, were healthy and growing. The remainder of the farm was excellent one and two years' old pastures, with the exception of a couple of fields round the house which were never ploughed. Mr. Caird has a dairy of 100 nice Ayrshire cows, we counted 60 in one byre and 34 in another. These cows are let at the fixed sum of 10*l.* we believe, for each, to a person technically named a "buer" or "boyner," who has the sole charge of them and the disposal of their produce. Mr. Caird of course supplies him with all the implements requisite for the business, and, besides pasturage and forage, the stipulated quantity of 4½ tons of Turnips and 10 bushels Beans for each animal. The Beans are converted into meal and given to the animals during summer, in order to enable them to give the greatest possible quantity of milk. Altogether, we were much pleased with the superior management of Mr. Caird's fine farm. There was, however, one point we were not satisfied with, and that was the alteration of the ridges, which have now been made to run across the drains. Seeing everything else so well done, it is with some diffidence we express this opinion, as there may be some peculiarity in the soil rendering it advisable, but we could not help recommending Mr Caird to alter his mode of ploughing from the old-fashioned system of crown and furrow, as assuredly water will take some little time to subside when the drains are placed in the centre of the ridges.

There is a tract of good arable land betwixt Baldoon and Garliestown, adjoining which is the residence of the Earl of Galloway. This district is chiefly the property of his Lordship. We were struck with the appearance and size of the labourers' cottages, which contain a sitting room or kitchen, and three bed-rooms, besides other conveniences. We looked into one of them, and found it neat, clean, and comfortable. There was no great quantity of furniture in the bed-rooms; still a few prints, such as they were, adorned the walls, and several substantial hams the roof of the kitchen. We were told that the building of the cottages was the work of the noble Countess, whose efforts to improve the morals and to ameliorate the condition of the labourers on the extensive Galloway estate, it is impossible to praise too highly. She has at least put it in their power to preserve in their houses the ordinary decencies of life, which is more than can be said of the houses of the labourers of noble Earls nearer Scotland's capital.

Mr. Caird was so kind as to drive us to Auchness, a distance of 32 miles from Baldoon. The road across the country to Glenluce bay was through a cold and bleak tract, composed principally of rocks interspersed with small patches of moss. Our attention was here first called to the truth of the description of a Galloway dyke, as said to be given by the learned professor of Agriculture in Edinburgh, viz., that it was a fence of round bullets, so piled one upon another, that all stock are afraid to touch it in case they bring it down upon themselves; indeed, you might put your head through betwixt the stones in almost all the dykes we saw. Along the shore of Glenluce, the soil was either sea sand or moss; here and there attempts were making to improve the latter, but, with two or three exceptions, the crops did not indicate much spirit in the management. The first field we came to belonging to Auchness was in cutting Grass. The first crop was all but finished, and the greater part of the second would soon be fit for cutting again. We have seen a second crop cut when even shorter than some of it. The next field was old Grass, in which stood the house and offices. The house itself has an old castellated appearance; amongst the shrubs in front of it the Fuchsias were most luxuriant. The offices are built immediately behind the house, and, though but a short distance from the road, they are scarcely seen. After going through them, we could scarcely credit the large extent of accommodation, under so little roofing. Having been introduced to Mr. M'Culloch, he kindly showed us over every acre of his farm, through all his offices, and even set a going all his machinery, the better to enable us to judge of the many contrivances he had for saving manual labour. This, however, can be pretty well understood by an inspection of the plan of the offices given in Mr. Caird's pamphlet.

There were about 50 cattle in the byres, and 10 pasturing on the old Grass round the offices, which will enable a comparison to be made betwixt pasturing in the field and house feeding. The byres were most excellently ventilated, and as sweet and clean as a dining room. The urine from each beast going at once into a covered drain leading to the dung-house, is there, by means of wooden spouts, allowed to trickle through any desired portion before it reaches the tank below, where it can be again pumped up on the dung, or conveyed away by the water-cart and applied directly to the land. The dung-house, being completely covered, must make the manure of far richer quality than any made in the open air, where it is liable to be washed by the rain and dried up by the sun. The quantity of dried moss mixed with the dung and saturated with the urine prodigiously increases the quantity of fertilising material with which the land may be enriched. And herein consists the principal element of Mr. M'Culloch's success. The large number of cattle fed on such a small farm, from the great outlay annually made in the purchase of artificial food for them, enables him first to make a profit off the cattle, and then, by the careful preservation from loss or deterioration of their manure, he has the means of growing extensively the finest and most valuable green crops, after which he is sure of obtaining an abundant grain crop.

There were nearly 80 acres of Potatoes on the farm, every drill of them looking more vigorous in the growth than any to be seen in the Lothians. Perhaps we should except those grown as a first crop on the moss, as they were rather late, though healthy. Potatoes are grown after Potatoes on this moss. The second year's crop we thought could not be excelled until we saw the third crop. This moss in its natural state was simply a moss hag, not worth 6*d.* an acre for any purpose; by draining it, and covering it with a dose of apparently worthless gravel from an adjoining bank, crops are now grown upon it, as valuable as at least twice or thrice the fee-simple of the land, including all the outlay that has been made upon it, even though it had been double of what Mr. Caird states it.

We saw another field of 40 acres that had only been two years in Mr. M'Culloch's possession, which was also in Potatoes. The previous tenant had to give it up, though the rent was only 15*s.* an acre. The soil was a soft sand, and it had been divided formerly into five or six fields. The whole of the fences had been taken out, including one on the top of the bank, which was a steep descent to the sea-shore. The bank being sand, 10 feet was taken off the top and carted on to a mass of stones or shingle on the sea-beach, at the rate of 1000 carts an acre, by which means 4½ acres additional were made arable, and having been copiously manured, the Potatoes were looking as well upon it as on the rest of the field. The drills were 30 inches wide, and were at the time we saw them closing in. Mr. M'Culloch said he expected from 12 to 15 tons an acre over the whole field, and should the disease not overtake them, there is every prospect of that yield. There were 50 acres of Turnips, the whole of which looked well, except 3 or 4 acres, being those earliest sown, which were touched with the disease known as "fingers and toes." There were 50 acres of splendid Wheat, and 25 acres of good Oats. It struck us that both crops would yield decidedly more than Mr. Caird states as the average produce, and that he has by no means overstated the productiveness of the farm. While the soil naturally is anything but fertile, the largest portion being a moorish sand, a part mere sea sand, and about equal quantities of good red land and moss, the whole has become productive by Mr. M'Culloch's skilful management, and he certainly has most judiciously seized and turned to account every natural advantage. Herein consists his merit. He has done and is doing what has *not* been done before. The soil and the climate are both favourable to the growth of green crops, and he turns these to the best account. Mr. Caird does not profess to give a balance sheet of Mr. M'Culloch's doings, but even adding a few hundred pounds to the expenditure stated, we have no doubt whatever, taking into account the crops of Potatoes raised and the price obtained, that Mr. M'Culloch must be clearing upwards of 1000*l.* a year. But before landlords are entitled to say to their tenantry "go and do likewise," they must be prepared to act in the same liberal spirit as Col. M'Douall has done in this instance. The same ample and convenient buildings must be supplied for the feeding of stock, the soil must be made thoroughly dry, complete possession of the farm must be given to the tenant, and the absurd attempt of laying down the manner of cropping each field for the next 21 years must be no longer dreamt of. Instead of Mr. Caird's pamphlet being a landlord's production, we say that it is a work calling upon the landlords to do justice to their tenantry, as well as for the tenantry to exert themselves. To obtain the desired success both must do their duty; which, unless they do, they do not deserve to succeed. Without going so far as to say that even when both parties do their best, a fortune is certain, still we think a fair return is.

Mr. Caird has carefully enumerated the advantages possessed by Mr. M'Culloch, the moderate rent, the situation, the soil, and the climate. But of these two latter there is not much to boast. We have alluded to the soil already; and regarding the climate, it is free from keen frosts, and, from lying on the eastern part of the peninsula, it is protected from the full sweep of the Atlantic by the grounds of Logan; but even the plantations close to Mr. M'Culloch's house are cut up as with a line, which shows the influence of the west winds. Still, wherever there is shelter the tenderest shrubs grow luxuriantly. We have noticed the Fuchsias around Mr. M'Culloch's house, several of them being fully 8 feet high, while one in Logan garden was at least 13 feet in height, and considerably more in diameter. We inspected the building of the new set of offices at Logan. It is the most extensive thing of the kind we ever witnessed. The byres are to hold 400 head of cattle, and the expense will not be much short of 5000*l.*, though nothing has been expended on mere ornament. There were some excellent fields of Wheat on Logan farm—most of it ran the risk of being too strong. We also saw some eight or ten beautiful pure bred Galloway cows, and one or two good short-horns. One curiosity deserves to be noticed, viz., a fish-pond

out of the rock, and surrounded with a high wall, into which the tide flows through a grating, and in which is kept a number of cod and other sea fish. These were so tame that they came when called on, and literally fed out of the hand, and allowed us to touch them with our hands, and to tickle their backs with our sticks, seeming to derive pleasure from it.

Having spent an interesting day with Mr. M'Culloch, and remained the night with him, we left next morning for Stranraer, where we got the steamboat to Ayr, and from thence by rail to Glasgow, Edinburgh, and home.—*Mr. Hope, of Fentonbarns, East Lothian*; [*in the Scotsman.*]

Calendar of Operations.

AUGUST.

BEDFORDSHIRE FARM.—The harvest being nearly concluded now, it is a good time to sow winter Tares for early spring food. The ground should, if possible, be well manured, and not less than 4 bushels of seed drilled per acre, to insure an early and full crop. We always use as much as 4 bushels of seed, and sometimes 5 to the acre. Trifolium is a cheap substitute for Tares, and may be sown now upon the stubbles for eating off or soiling next May. The ground does not in general require ploughing. The seed, if sown on the stubble and well harrowed in, has succeeded in every case we have seen tried. From 10 lbs. to 20 lbs. of seed is usually sown to the acre. We use 16 lbs. Any blanks in the Clover seeds may be readily filled up with Trifolium. Winter Beans cannot be sown at a better time than the end of this month; they are in general sown too late. Wheat sowing usually commences in October; and experienced farmers now begin to select their seed, always preferring a change, and that, if possible, from a poor soil to a rich, or from soils of opposite characters, such as from chalk to clay, from clay to sand, and *vice versa*, &c. Respectable corn-merchants will in general be able to supply customers with proper seed at a small charge above common market prices; but, in many instances, persons have been known to go to merchants of a certain class and buy their neighbours' corn at an extravagant price, supposing it all the time to be a nice change of seed from a distance. To obviate such mistakes as this farmers do well to change among themselves on market days, always of course knowing the character of the soil upon which the seed is grown, there is then a certainty in the transaction, and the saving of a dealer's profit. Dr. Newington's Dibble appears to be the best implement of the day for sowing seed regularly and cheaply in a proper manner. This seeding, or as Mr. Wilkins would have it, rational seeding, has generally succeeded where the whole system has been carried out, of preparing the land, putting in the seed well, and afterwards well hoeing the plants in the spring. We have used about a bushel of seed Wheat to the acre, and have invariably realised a yield of from 35 to 42 bushels of corn per acre. Young farmers would do well, when attempting any new system in agriculture, to adopt the whole series of the introducer's plans, or they cannot expect to succeed in the desired result. Some of the most beautiful experiments in chemistry fail from clumsy manipulation, or the want of a slight ingredient. So it is with agricultural plans and experiments, although many experimentalists do not appear to think so, when they suppose that part of a cause can produce a full effect. The dogma, "that similar causes produce similar effects," has misled many theorists, while the mathematical fact, that similar causes only produce similar results, when acting under similar circumstances, on similar substances, has been overlooked. *R. P.*

LAMMERMUIR SHEEP FARM, *Aug.* 31.—Since our last communication the weather has been highly favourable for all kinds of growing crops. Pastures are in general good. Corn is rapidly changing colour, and will, to appearance, be ready to cut about the 10th of September; while Turnips are growing vigorously, though, perhaps, on some farms there is more disease in the shape of "fingers and toes" than usual. The making of hay—that indispensable and invaluable commodity on a sheep farm in this district—has hitherto progressed favourably on the whole. The Clover hay (a miserably light crop), which was first in hand, was made during unfavourable weather, though the meadows, so far as we have proceeded with them, have been got up in excellent condition. These, also, are a lighter crop than usual. Since the 10th ult. the weaning and disposing of lambs has been our principal business among the sheep. Such as are intended for keeping on are removed from the ewes about the middle of August, while those which are destined for the butcher must remain a little longer to suit purchasers and the different markets to which they may be sent. In another week we expect to have everything weaned. Prices are about 2*s.* per head below last year's. Towards the latter end of September the drafting and sale of the oldest age of ewes will take place. The Cheviots we dispose of at four, and the black-faces at four and five years old. Our men and horses will be occupied for some time in carting hay for the use of the sheep during snow storms to those places on the hills where they can lie during snow without danger of drifting up. [*Lammermuir Farmer.*

Notices to Correspondents.

GRUB: *O D.* If it be a light soil with a good drainage, you may sow salt in excess during autumn, say at the rate of 8 cwt. or 10 cwt. per acre. This, with a good turning up to the frost, ploughing as late as possible, should destroy them. If the land be stiff, we should be afraid to use much salt, and you must then depend upon working the land about in the frost.

RABBITS: *A J H.* The chapter in the "Boy's Own Book."

SEX OF POULTRY: *N Y Z*, at page 580, in the last Number, says, "those said not to be properly fecundated (or impregnated), are eggs containing no yolk." He here makes a statement true in words only, likely to mislead, for very many eggs having yolks are too often unfecundated, and, in that case, are useful only for the kitchen. *D. S. E.*

SOILING OF CATTLE: *A Cumbrian* will see, in another column, a scheme for cultivating 11 acres of land so as to obtain 16 tons of green food from them in every month, 16 tons per month, or 10 cwt. per day, will keep probably 6 to 8 cows, according to their size.

STEAMED CORN: *Z.* Try common salt on the corn as a top-dressing in April; also silicate of potash, which has been recommended on peaty soils for this purpose.

WHEAT: *A Subscriber.* You may sow Wheat and compost of guano and ashes together. Wheat will not benefit from superphosphate of lime so much as Turnips do.

Markets.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Sept. 6.

Prime Meadow Hay	68s to 75s	Clover	60s to 95s
Inferior ditto... ...	50 68	New Clover	— —
Rowen	— —	Straw	26 28
New Hay	— —		J. COOPER.

HOPS.—FRIDAY, Sept. 7.

Messrs. PATTENDEN and SMITH report that the accounts come very unfavourable from Mid Kent. Mould is increasing very rapidly, and many planters have commenced picking in consequence. Sussex and Weald of Kent are progressing favourably. The market is dull, and no business doing. Duty 100,000*l.*

COVENT GARDEN, Sept. 8.

Hothouse Grapes, Peaches, and Nectarines are plentiful. Pine-apples have not altered since our last account. Apricots are nearly over, and so are Currants. Filberts and foreign Walnuts are abundant. Oranges are scarce. Lemons moderately plentiful. Among Vegetables, Turnips may be obtained at from 3*d.* to 6*d.* a bunch. Carrots the same. Cauliflowers are less plentiful. Green Peas fetch from 1*s.* 6*d.* to 4*s.* per bushel. Potatoes have not altered since our last account. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1*s.* to 1*s.* 6*d.* per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropæolums, Carnations, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 3*s* to 5*s*	Oranges, per doz., 4*s* to 6*s*
Grapes hothouse, p. lb., 1*s* 6*d* to 4*s*	Lemons, per doz., 1*s* to 3*s*
— Portugal, per lb., 9*d* to 1*s*	— per 100, 8*s* to 16*s*
Peaches, per doz., 2*s* to 6*s*	Almonds, per peck, 6*s*
Nectarines, per doz., 2*s* to 6*s*	— sweet, per lb., 2*s* to 3*s*
Plums, per hf. sieve, 4*s* to 6*s*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
Currants, do., 3*s* to 4*s*	— p. bush., 16*s* to 24*s*
Pears, per doz., 2*s* to 4*s*	Filberts, per 100 lbs., 35*s* to 45*s*
— per half sieve, 4*s* to 6*s*	Nuts, Bar., p. bush., 20*s* to 22*s*
Apples, kitchen, p. bsh., 2*s* to 4*s*	— Brazil, p. bsh., 12*s* to 16*s*

VEGETABLES.

Cabbages, p. doz., 6*d* to 1*s*	Spinach p. sieve, 1*s* to 1*s* 6*d*
Cauliflowers, p. doz., 2*s* to 6*s*	Onions, p. bunch, 2*d* to 6*d*
Broccoli, per doz. bundles, 12*s* to 15*s*	— Spanish, p. doz., 1*s* 6*d* to 4*s*
Peas, per bush., 1*s* 6*d* to 4*s*	Shallots, per lb., 3*d* to 6*d*
Sorrel, p. hf. sieve, 6*d* to 9*d*	Garlic, per lb., 3*d* to 6*d*
Potatoes, per ton, 50*s* to 100*s*	Artichokes, p. doz., 1*s* 6*d* to 3*s*
— per cwt., 3*s* to 6*s*	Vegetable Marrows, doz., 6*d* to 1*s*
— per bush., 2*s* to 3*s*	Lettuce, Cab., p. sc., 4*d* to 9*d*
Turnips, p. doz. bun., 2*s* to 3*s*	— Cos, do., 6*d* to 1*s*
Red Beet, per doz., 1*s* to 2*s*	Endive, per score, 1*s* to 1*s* 6*d*
Horse Radish, p. bdl., 2*s* to 6*s*	Tomatoes, p. hf. sieve, 4*s* to 6*s*
French Beans, p. ht sieve, 1*s* 6*d* to 2*s*	Mushrooms, p. pot., 1*s* to 1*s* 6*d*
Cucumbers, each, 2*d* to 6*d*	Small Salads, p. pun., 2*d* to 3*d*
Leeks, per bunch, 2*d* to 3*d*	Fennel, per bunch, 2*d* to 3*d*
Celery, p. bundle, 8*d* to 1*s* 3*d*	Savory, per bunch, 2*d* to 3*d*
Radishes, p. 12 bunches, 1*s* to 2*s*	Thyme, per bunch, 2*d* to 3*d*
Watercress, per doz. bunches, 4*d* to 6*d*	Parsley, p. doz. bun., 3*s* to 4*s*
Carrots, per bun., 4*d* to 6*d*	— Roots, p. bdle., 1*s* to 1*s*
	Marjoram, green, p. bun., 4*d* to 6*d*
	Mint, green, per bunch, 3*d* to
	Basil, green, p. bunch, 4*d* to 6*d*

SMITHFIELD, MONDAY, Sept. 3.

The supply of Beasts is again large, and trade is very heavy. There is, however, but little reduction in choicest qualities. Second-rate are lower, and several remain unsold. The number of Sheep and Lambs is considerable; the demand is equal, and late rates are fully realised. Calves are not quite so plentiful as they have been, they are more readily disposed of, but at no more money. From Holland and Germany there are 1051 Beasts, 5140 Sheep, and 92 Calves; from Denmark, 34 Beasts, from France, 81, from Leicester and Northampton, 1800, from Lincolnshire, 400, and from Cambridgeshire, 300.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c. ...	3	8 to 3	10	
Best Short-horns	3	4 — 3	6	
2d quality Beasts	2	8 — 3	2	
Best Downs and Half-breds ...	3	8 — 4	0	
Ditto Shorn				

Per st. of 8 lbs.	s	d	s	d
Best Long-wools	3	6 to 3	8	
Ditto Shorn				
Ewes & 2d quality	2	8 — 3	4	
Ditto Shorn				
Lambs	4	0 — 5	0	
Calves	2	4 — 3	4	
Pigs	3	4 — 4	4	

Beasts, 4113; Sheep and Lambs, 31,580; Calves, 211; Pigs, 225.

FRIDAY, Sept. 7.

We have a moderate supply of Beasts. A good clearance at the dead markets causes a large demand here, and, consequently, a few choice things have reached 4*s.*, but this is too much to quote as average of best kinds. There is a fair average number of Sheep for the time of year. Trade is more active, at a small advance on the most saleable qualities. There is more disposition to purchase Calves, at an advance of about 4*d.* per 8 lbs. From Holland and Germany we have 226 Beasts, 880 Sheep, and 58 Calves; from Spain, 12 Beasts; from France, 41; from Leicester and Northampton, 300; from Scotland, 70; and 126 Milch Cows from the home counties.

Best Scots, Herefords, &c. ...	3 8 to 3 10	Best Long-wools	3 6 to 3 8
Best Short-horns	3 6 — 3 8	Ditto Shorn	— —
2d quality Beasts	2 8 — 3 4	Ewes & 2d quality	2 8 — 3 4
Best Downs and Half-breds ...	3 8 — 4 0	Ditto Shorn	— —
Ditto Shorn		Lambs	4 0 — 5 0
		Calves	2 8 — 3 8
		Pigs	3 4 — 4 6

Beasts, 899; Sheep and Lambs 11,120; Calves, 319; Pigs, 240.

MARK LANE.

MONDAY, SEPT. 3.—The supply of English Wheat by land carriage samples to this morning's market was good, but the condition of much of it rather soft, and as millers continue to act on the reserve, sales could only be effected by submitting to a reduction of 2*s.* to 3*s.* per qr. upon the prices of this day se'nnight. Foreign met a very limited sale, and we reduce our quotations 1*s.* to 2*s.* per qr.—Fine English Barley supports its late value; grinding qualities are 6*d.* per qr. cheaper.—In Beans and Peas we observe no alteration; the latter (white), are in request.—The Oat trade is very dull, and ordinary qualities 6*d.* to 1*s.* per qr. cheaper.—Mustard seed is unaltered in value.

FRIDAY, SEPT. 7.—The arrivals of foreign grain during the week are large, and having but a small attendance at market this morning, millers were very reluctant to purchase foreign Wheat, except at a decline; in the little business transacted a reduction of 1*s.* to 2*s.* per qr. was generally acceded to. English is also rather cheaper.—Grinding Barley must be noted 1*s.* per qr. lower.—Beans and Peas are unaltered in value.—The Oat trade is heavy, and prices have declined 1*s.* per qr.—Indian Corn is still held for 25*s.* to 26*s.* per qr. for fine Russian afloat.

LIVERPOOL, FRIDAY, SEPT. 7.—We have had fine weather since Tuesday. Trade to-day was not active, but with no change in prices; fine qualities of foreign Wheat were comparatively scarce; only a little new Wheat, undried, rather soft, which was sold at 5*s.* 6*d.* per 70 lbs. Oatmeal, 24*s.* per load

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
July 28	49*s* 1*d*	26*s* 1*d*	19*s* 4*d*	26*s* 1*d*	32*s* 5*d*	32*s* 0*d*
Aug. 4	48 0	26 3	18 9	25 6	31 10	32 1
— 11.....	47 4	25 8	19 2	26 7	32 0	31 1
— 18	46 3	26 1	19 0	27 5	31 0	29 2
— 25.....	44 8	26 4	18 10	26 5	32 2	28 8
Sept. 1	44 8	26 3	19 3	27 0	32 3	28 6
Aggreg. Aver.	46 1	26 1	19 2	26 6	32 1	30 3
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0
PRICES. JULY 28.	AUG. 4.	AUG. 11.	AUG. 18	AUG. 25.	SEPT. 1.	
49*s* 1*d*—	...	...	...	...	...	
48 0	...	...	...	...	...	
47 4	...	...	...	...	...	
46 3	...	...	...	...	...	
44 8	...	...	...	...	...	
44 8	...	...	...	...	...	

PRICES CURRENT.	London. Aug. 27 qr.	London. Sept. 3. qr.	Liverpool. Aug. 28. 70 lbs.	Liverpool. Sept. 4. 70 lbs.	Wakefield. Aug. 24 qr.	Wakefield. Aug. 31 qr.	Boston. Aug. 29 qr.	Boston. Sept. 5. qr.	Birmingham. Aug. 30. 62 lbs.	Birmingham. Sept. 6. 62 lbs.
	s. s.	*s. s.*	*s. d. s. d.*	*s. d. s. d.*	*s. s.*	*s. s.*	*s. s.*	*s. s.*	*s. d. s. d.*	*s. d. s. d.*
Wheat—										
New, red ...	42 to 44	38 to 41	6 6 6 10	6 4 6 8	42 to 48	42—48	42 to 46	38 to 43	5 6 5 9	5 6 5 9
„ white ...	44—48	42—45	6 9 7 2	6 9 7 2½	42—50	42—49	44—48	40—46	5 8 6 0	5 8 6 0
Old, red ...	40—42	38—40	6 7 6	6 4 6 9	41—43	41—43	—	—	5 3 5 9	5 3 5 9
„ white ...	44—47	40—44	7 0 7 3	7 0 7 3	—50	—50	—	—	5 10 6 6	5 10 6 4
Foreign... ...	36—54	36—52	4 4 7 8	4 3 7 5	38—51	36—50	—	—	5 0 6 2	4 8 6 2
			480 lbs.	480 lbs.						
Rye—Old ...	22—24	22—26	—	—	—	—	—	—	—	—
Foreign...	20—22	20—22	—	—	—	—	—	—	—	—
Foreign meal	5*l.*—6*l.*	5*l.*—6*l.*	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	20—24	—	—	—	22—23	22—23	24—26	24—25	22—24	22—24
Malting... ...	24—26	25—28	30s—32s	30s—31s	—	—	—	—	29—32	29—32
Foreign... ...	18—26	18—26	—	—	24—28	24—28	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	39—42	37—40	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	18—25	18—25	2*s* 10*d* 3*s* 2*d*	2*s* 10*d* 3*s* 2*d*	—	—	18—22	16—20	19—27	19—27
Black...	14—23	14—23	2 4 2 8	2 2 2 5	—	—	—	—	18—20	18—20
Foreign ...	13—20	13—20	2 4 2 6	2 3 2 5	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	25—30	25—30	34*s*—	34*s*—	28—32	26—30	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—25	23—25	28 —30*s*	28 —29*s*	—	—	—	—	11—12	11—12
Foreign ...	24—32	24—32	32 —34	31 —32	—	—	—	—	—	—
Beans—										
New, small ...	—	—	32 —34	31 —33	32—35	32—35	32—34	32—34	12—14	12—14
Old	24—33	23—33	34 —35	34 —35	—	—	—	—	14—15	14—15
Foreign ...	21—36	21—36	24 —35	24 —35	30—31	30—31	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	36—41	36—41	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9*l.* 12*s*	9*l.* 12*s*	7*l.* 12*s*	8*l.* 2*s*	—	—	—	—	—	—
Foreign ...	7*l.*	7*l.*	—	—	—	—	—	—	—	—
Indian Corn—	22—26	22—26	26*s*—29*s*	26*s*—29*s*	—	—	—	—	12—13	12—13
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	36—44	36—44	33—34	32—33	—	—	36—40	36—40	34—36	34—36
Weekly Averages and Imports.	Aver. Sept. 4	Impts.	Averages.	Imports.	Aver.	Impts	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	*s. d.*	qrs.	*s. d.*	qrs.	*s. d.*	qrs.	*s. d.*	qrs.
WHEAT ...	47 9	21880	44 8	5665	47 10	7386	43 2	1109	41 5½	2938
BARLEY ...	30 8	25310	26 4	58	23 0	671	25 0	— 8	—	12
OATS... ...	20 6	51620	18 10	2776	19 0	1330	17 3	1750	19 4½	3145
RYE	—	—	26 5	—	—	—	—	—	—	—
BEANS ...	29 9	—	32 2	559	32 7	986	32 0	65	—	425
PEAS	30 10	—	28 8	209	28 6	374	—	—	—	—
SIGNED {	KINGSFORD and LAY.		SEGAR and TUNNICLIFFE.		SANDARS and DUNNS.		THOMAS WRIGHT.		J. and C. STURGE.	

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Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Honorable East India Company's Military Seminary at Addiscombe, &c., &c.

PREFACE TO THE SECOND EDITION.

"In preparing a Second Edition of this little book, the opportunity has been taken of correcting several errors which the First Edition contained. The whole has been carefully revised, and such additions have throughout been made, as the advanced state of knowledge rendered necessary. In particular, the Tables of Analyses have been greatly extended, by the addition of the latest and most complete Analyses of almost all those plants which are cultivated as crops, as well as of the principal substances employed as manure."

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IMPORTANT SALE OF CAMELLIAS AND GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by Mr. J. Smith, to offer to Public Competition by Auction, on the Premises, Dalston, on TUESDAY, Sept. 18, 1849, and following day, at 11 o'clock, in consequence of the premises being required by the London and Birmingham West India Dock Junction Railway Company, the VALUABLE STOCK OF CAMELLIAS (about 2000) ranging from 18 inches to 10 feet, beautifully set with bloom buds; amongst which are finely grown specimens of all the approved kinds: also the choice Greenhouse Plants. The Camellias and Greenhouse Plants are in the finest order, and are particularly worthy the attention of Noblemen, Gentlemen, and the Trade.—*May* be viewed a week prior to the Sale, when Catalogues *may* be had, 1*s*. each, returnable to purchasers, of the principal Seedsmen in London, on the premises, Covent Garden, and of the Auctioneers, American Nursery, Leytonstone.

N.B. The valuable Nursery Stock will be offered to public competition early in October.

IMPORTANT TO NURSERYMEN, FLORISTS, MARKET GARDENERS, AND OTHERS.

MESSRS. MOODY AND NEWBOLD are instructed to offer for peremptory and unreserved sale by Auction, in convenient Lots, on THURSDAY, the 20th September, and following days (unless previously disposed of by Private Contract), all the valuable and extensive NURSERY and GREENHOUSE STOCK, &c., of Messrs. Wilson and Sadler, contained in the Nurseries in the parishes of St. Peter and Littleover, near Derby, amongst which are comprised large ornamental growing Trees and Evergreens, collections of choice Greenhouse Plants, including Camellias, Roses, Fuchsias, Geraniums, Heaths, Epacrises, Azaleas, &c.; a general assortment of Fruit Trees, trained dwarfs and standard plants, Peaches, Nectarines, Apricots, Plums, Apples, Pears, Cherries, &c.; very large assortment of Rhododendrons in all stages of growth, Auracarias, Cedars, Junipers, Pinus, Kalmias, ornamental Thorns, Laburnums, Hollies, Limes, Oaks, Elms, and Yews, together with a general Nursery Stock, inclusive of Forest Trees, common and ornamental, varieties of Beech, Chestnut, Willow, Maple, and Poplar, with a large stock of Larch and Spruce, Oak, Elm, &c., stocks for progression of Apples, Pears, Plums, &c., seed beds of Yew, Holly, Portugal Laurel, Quick, &c. The sale will commence at the St. Peter's Nursery, at 11 o'clock, unless an entire sale be effected previously, of which notice will be given in the *Derby Mercury* of the 19th September.

&c. The Auctioneers are prepared to treat for the entire sale of the Stock of either Nursery, up to the 18th September, and credit may be had on approved security. The present is one of the oldest established concerns in the midland counties, and affords an opportunity which rarely occurs for parties commencing business in one of the most important midland towns. The St. Peter's Nursery contains about 5 acres, and is beautifully situated within 5 minutes' walk of the Derby Railway Station. The Nursery at Littleover contains (with Land occupied therewith, well adapted for Market Gardens) about 32 acres. Further particulars may be had of the Auctioneers.

Derby, September 5.

TO NURSERY AND SEEDSMEN.

TO BE SOLD, by PRIVATE CONTRACT, that old and long established NURSERY and SEED BUSINESS, Brompton-Park Nursery, carried on for many years by Messrs. Gray, Adams, and Hogg. The situation is first-rate, and the connection good.—For particulars, apply to Mr. John Sangster, Nursery Seedsman, Newington Butts, London; Mr Robert Donald, Nurseryman, Woking, Surrey; or to Sole and Turner, Solicitors, 68, Aldermanbury, London.

TO NURSERYMEN, FLORISTS, AND OTHERS.

TO BE DISPOSED OF, by Private Contract, the Lea-bridge Nursery.—For particulars, apply on the Premises, or of Messrs. Protheroe and Morris, Leytonstone, Essex.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, by Private Contract, the whole of that excellent and improving NURSERY BUSINESS, established for 20 years, situate in the parishes of Pilton and Marwood, contiguous to the well supplied Market Towns of Barnstaple, Southmolton, and Bideford, consisting of 13 acres of valuable young Stock, now growing in a very flourishing condition, the property of Mr. William Ireland. The principal portion of the Nursery Grounds are held on a Lease of 30 years, 20 of which are unexpired. The present proprietor will retain a portion of the business, as a partner, if required. All letters to be addressed to W. Gribble, Esq., Solicitor, Barnstaple, or to Mr. W. Ireland, Stanhope Arms, Holsworthy.

There is a good greenhouse on the premises.

ORCHIDACEOUS PLANTS FOR SALE, the property of a Gentleman's Gardener about to leave his situation. A collection of 60 varieties of ORCHIDS, all healthy and in good condition, consisting of—Stanhopeas, 5 vars., large plants, in baskets; Oncidiums, 7 vars., including altissimum and others; Brassias, 6 vars., all excellent plants; Dendrobiums, 6 vars., including nobile; Epidendrums, 5 vars., all good sorts; Lycaste, 5 vars., including Skinneri and cruenta; Eschynanthus, 6 vars., good plants, in baskets. Also Odontoglossum grande, Cattleya Forbesii, and many other valuable plants. The Advertiser would be glad to procure a situation as Head Gardener in a Nobleman or Gentleman's family, and could, if desired, bring a good collection of Orchidaceous plants with him; he is married, and aged 30. Wages, 60 guineas for last year, with house, &c.—Address T. F., Gardener, Ossington, Newark, Notts.

TO BE LET, from year to year, THE RIVERHALL FARM, in the Parish of Wadhurst, Sussex, about 4 miles from Tunbridge Wells, consisting of a good Farm Residence and Buildings, and 202 acres of Arable Pasture and Woodland, with a few acres of Hop Ground. Also a small Farm called the Grove, at Nevills, in the Parish of Tunbridge, consisting of a moderate sized new Farm House and Buildings, and 152 acres of Arable and Pasture Land.—For particulars apply to Mr. Bradel, 25, Gresham-street, City.

TO BE LET.—ARABLE, PASTURE, AND DAIRY FARM, in Surrey, near London, consisting of about 160 Acres of good Grass and Arable Land. For particulars apply to Mr. T. Tims, Auctioneer and Estate Agent, 63, Upper Charlotte-street, Fitzroy-square. To view, apply to J. Gill, Mr. Turner's Farm, Merton Road, Wandsworth.

SUSSEX.

TO BE LET for a term of years, and entered upon at Michaelmas next, the Farm of WOTTON, in the Parish of Folkington, at present in the occupation of Mr. Sloosmith. It consists of about 400 acres of Meadow, Pasture, and Arable land: the Arable land is most productive of Beans and Wheat; most of the Pasture and Meadow land is of the richest fattening quality. There is an excellent Farm-house, with every convenience, and the Farm-buildings are large and commodious, and economically fitted up and arranged for fattening a large number of beasts in feeding-houses, stalls, sheds, and yards. The Farm is about four miles from Hailsham and Eastbourne, 13 miles from Lewes, market town, and one mile from the Polegate station on the Lewes and Hastings Railway. For particulars, apply to Mr. John Morton, Whitfield, Berkeley, Gloucestershire. A person at Folkington Place will show the Farm.

MANCHESTER AND LIVERPOOL AGRICULTURAL SOCIETY.

Patrons—The Right Hon. the Earl of Derby and Wilbraham Egerton, Esq.

President for the Year—The Right Hon. Lord De Tabley.

THE ANNUAL SHOW OF LIVE STOCK, IMPLEMENTS, SEEDS, AND ROOTS will be held in the NORTH HAYMARKET, LIVERPOOL, on THURSDAY, the 27th Sept. next.

The Competition for Cattle, &c., is open to all parties within the district (South Lancashire and Cheshire), and to Subscribers beyond, and Implements from any part of the kingdom may be shown by non-Subscribers on payment of an entrance fee of 1*s*. each, and by Subscribers free.

The Entry to be made by letter addressed to the Secretary, between the 13th and 20th of September.

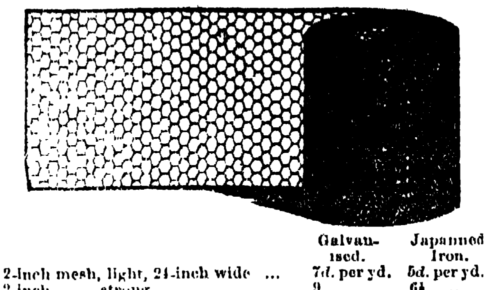
The SPECIAL GENERAL MEETING, to award prizes for the best cultivated Farms, Crops, &c., will be held at the Neptune Hotel, Liverpool, on the 20th Sept., at 11 o'clock, A.M.

Prize Lists, Rules, blank Certificates, and every other information, may be had by applying to the Secretary, Mr. Henry White, Land-agent and Surveyor, Warrington.

Warrington, September 8.

GALVANISED WIRE GAME NETTING.—

7*d* per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7*d*. per yd.	5*d*. per yd.
2 inch ,, strong ,,	...	9 ,,	6½ ,,
2-inch ,, extra strong ,,	...	12 ,,	9 ,,
1¾-inch ,, light ,,	...	8 ,,	6 ,,
1½ inch ,, strong ,,	...	10 ,,	8 ,,
1½-inch ,, extra strong ,,	...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3*d* per square foot. Patterns forwarded post-free.

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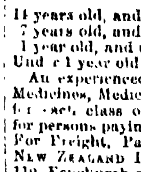

NEW ZEALAND COMPANY'S SHIP.—The First-class Passenger Ship BERKSHIRE, 582 tons, now lying in the London Docks, will be despatched for the Company's Settlements, from the Port of London, on Monday, the 1st of October next.

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Thomas Cudbert Harington.

New Zealand House, 9, Broad-street-buildings, London, September 8.

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ALFRED BALSTON begs to inform his friends in the Trade that he can offer MATS of best quality on very moderate terms.—Poole, Sept. 8.

Just published, the 2d edition, in 8vo, price 9*s*. cloth,

THE NEW HUSBANDRY; or, a complete Code of Modern Agriculture, drawn partly from the Works of the most eminent Agriculturists, and partly from Practice and Observation. By Law. Rawstorne, Esq.

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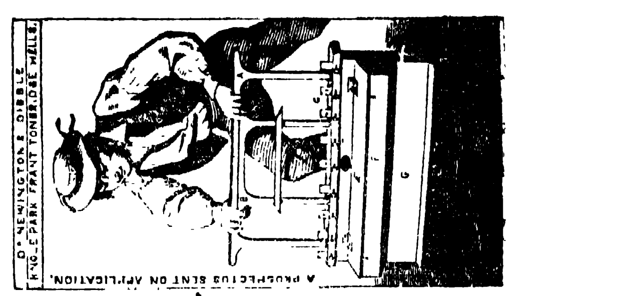
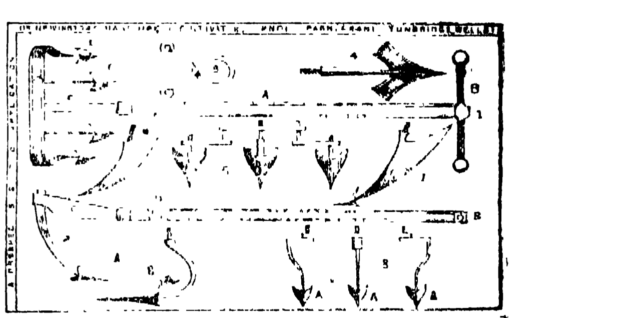
MR. HEWITT DAVIS begs to make known that he is prepared to supply, of his own raising, carefully selected Wheat (Chidham or Burrell), at 8*s*.; Beans (the Russian Winter), and Peas of early maturity, at 6*s*.; Red Oats, selected for finer feeding quality and larger returns, at 3*s*. 6*d*.; and Chevalier Barley, from winter sowing, at 5*s*.; any quantities at these prices, per bushel, will be delivered in London (on receipt of the money). Sacks 2*s*. each only extra.—Direct to Mr. Hewitt Davis, 3, Frederick's-place, Old Jewry, London.

THIS IMPLEMENT gained the Royal Agricultural Society's Prize for 1849, at Norwich.





A lad is enabled to use the improved Cultivators with ease, hoeing to the depth of from 4 to 5 inches 2 to 3 acres daily of Turnips, Wheat, Mangold Wurzel, &c. Any person willing to assist the inventor of these implements in his system of seeding and the after cultivation of the crop, would with pleasure be allowed 20 per cent on the trade price of these implements.

TOOTHACHE PERMANENTLY CURED BY using BRANDE'S ENAMEL for filling decaying Teeth, and rendering them sound and painless. Price 1*s*. Enough for several Teeth. The only substance approved by the medical faculty, as being unattended with pain or danger, and the good effects of which are permanent. Sold by all Chemists in the United Kingdom. Twenty really authorised Testimonials accompany each box, with full directions for use. Sent free, by return of post, by J. Willis, 24, East Temple Chambers, Whitefriars, Fleet-street, London, in return for 13 penny stamps. CAUTION.—The great success of this preparation has induced numerous unskilful persons to produce spurious imitations, and to copy "Brande's Enamel" Advertisements. It is needful, therefore, to guard against such impositions, by seeing that the name of John Willis accompanies each packet.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose—1*s*. An improved Clothes Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes of improved graduated and powerful friction. Velvet Brushes which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at Metcalfe, Bingley, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

Caution.—Beware of the words "From Metcalfe's" adopted by some houses.

TO THE LADIES.—The powerful influence of the sun on the skin at this period of the year calls for increased attention in preserving its delicacy and beauty. The most pleasing and effectual specific for this desirable object is ROWLAND'S KALYDOR, so deservedly established in royal and public favour and estimation. Its application neutralises the effects of the atmosphere, and induces that healthy action of the microscopic vessels of the skin, by which its delicacy and beauty are so essentially promoted. Freckles, Tan, Spots, Pimples, and Discolorations fly before the application of the KALYDOR, and give place to a healthy smoothness and transparency of complexion. Ladies travelling or taking out-door exercise will find it to diffuse a grateful and refreshing feeling. In cases of Sunburn or Stings of Insects its virtues have long been acknowledged.

. Beware of spurious KALYDORS for sale, containing mineral astringents utterly ruinous to the complexion, and by their repellent action endangering health. The words "ROWLANDS' KALYDOR" are on the wrapper of the genuine article; and the words "A. Rowland and Son, 20, Hatton-garden," are also engraved on the Government Stamp affixed on each bottle. Price 4*s*. 6*d*. and 8*s*. 6*d*. Sold by the proprietors and by Chemists and Perfumers.

Printed by William Bradbury, of No. 13, Upper Woburn-place, in the Parish of St Pancras, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, September 8, 1849.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 37—1849.] SATURDAY, SEPTEMBER 15. [Price 6*d*.

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SEEDLING HOLLYHOCKS.

JOHN CHATER AND SON beg to offer the following six HOLLYHOCKS, which are first-rate and very dissimilar from any sent out. Royal Standard, Obscura, Climax, Eclipse, Unique, and Nobilissima. The set of six for 32*s*., carriage paid to London. For colour, &c., see List, which may be had on application at the Nursery, Haverhill, Suffolk.

ROSES.—The Descriptive Catalogue of ROSES for Autumn, 1849, by Thomas Rivers, is now ready for delivery. It will be sent free, as usual, to known correspondents, and applications with two postage stamps enclosed, will be promptly attended to.—Nurseries, Sawbridgeworth, Herts.

DUTCH FLOWER ROOTS.

JAMES CHARTRES, Seedsman, &c., 71, King William-street, City, London, begs most respectfully to inform his Friends, and the Public generally, that he has imported a large Assortment of the above, which has arrived in excellent condition; the BULBS are remarkably fine, and the prices moderate. Catalogues can be had on application.

DOUBLE ROMAN AND PAPER WHITE NARCISSUS, 4*s*. per dozen.—The above Bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have been just received at A. Corbett's Italian and Foreign Warehouse, 18, Pall-mall, near Waterloo-place. Also Dutch Hyacinths, Crocus, Tulips, Anemones, Ranunculus, &c.; priced Catalogues of which may be had per post.

NEW ROSE CATALOGUE.
WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WILLIAM WOOD AND SON have the pleasure of announcing that their DESCRIPTIVE CATALOGUE of NEW and SELECT ROSES is now published, and will be duly forwarded to all who have favoured them with their commands; to other parties it will be sent free on application. Many new and very desirable Roses are enumerated and described in the present Catalogue.

RUSSIA MATS.

ALFRED BALSTON begs to inform his friends in the Trade that he can offer MATS of best quality on very moderate terms.—Poole, Sept. 15.

J. INGRAM, Exotic Nursery, Southampton, is now prepared to send out plants of that beautiful SWAINSONIA GREYANA, figured in the Botanic Magazine from his collection, small plants, 5*s*., blooming do., 7*s*. 6*d*. each.—S. GREYANA has proved to be a hardy herbaceous plant, it attains 4½ feet in height, with spikes 2½ feet in length, of beautiful rosy purple flowers, with a pure white circle in the centre of each flower.—Sept. 15.

W. H. ROGERS, Nurseryman and Landscape Gardener, &c., 130, High street, Southampton, begs to state that he has imported, direct from Haarlem, a large and splendid assortment of DUTCH FLOWER-ROOTS, which he can offer at low prices. The Hyacinths are particularly fine, and include many new and beautiful varieties. All orders will receive immediate attention, and be forwarded carriage free to any railway station within 100 miles of Southampton. Catalogues may be had on application, gratis.

W. H. R. can supply strong plants of the following sorts of STRAWBERRIES, at 2*s*. 6*d*. per 100, package included:—British Queen, Princess Alice Maud, Eliza, Keens' Seedling, Elton, and Late Pine. To prevent delay, all communications are respectfully requested to be fully addressed as above.

BECK'S PELARGONIUMS, and the best varieties of other raisers.—12 of the following sorts, including the box and carriage to London, will be sent out for Two Guineas, well rooted in 3-inch pots, and ready for an immediate shift into a larger size. Orders will be booked, and correspondents informed when the plants are ready, when remittance may be made by Post-office order on Brentford: Aurora, Blanche, Centurion, Cracker, Forget-me-not, Ariel, Cassandra, Cavalier, Cruenta, Gustavus, Gulielma, Grandiflora, Junil, Negress, Rosamund, Sundown; or 9 of the above, and Hoyle's Crusader, or Topping's Brilliant, or Foster's Victory.

The above selection, well cultivated, will make first-rate exhibition plants. A Descriptive Catalogue, including the seedlings of 1848, may be had on application to John Dobson, Worton Cottage, Isleworth.

Monthly directions for their culture will be found in the "Florist and Garden Miscellany," published on the 1st of each month, and to be had of all booksellers, under the title of "Beck's Florist." This work contains one coloured plate, one or more woodcuts, 24 pages of original matter, a Lady's Page, and a Calendar of Operations, supplied by eminent cultivators.

"Too much can scarcely be said in favour of the continued excellence of this work."—Prof. Lindley, *in this Paper, April*, 1849.

CHOICE GERANIUMS AT LOW PRICES.

WILLIAM E. RENDLE AND CO., Plymouth, have this season a very excellent stock of the following Geraniums, which will be ready the first week in October.

Purchasers' selection of TWENTY, from the following list, for 30*s*.

HOYLE'S CRUSADER, ARNOLD'S VIRGIN QUEEN, Sir Robert Sale, Black Prince, Star of the West, Lady Ebrington, Mercury, Jenny Lind, Scarlet Defiance, Rosy Circle, Nourmahal, Mount Etna, Desdemona, Remembrance, The Peri, Hebe's Lip, Pluto, Forget-me-not, Sir W. R. Gilbert, Flora's Flag, Zenobia, Isabella, Standard of Perfection, Sirius, Duchess of Leinster.

HOYLE'S CRUSADER and ARNOLD'S VIRGIN QUEEN, for 12*s*.

Early orders are desired, as some of the sorts are scarce.

Apply to William E. Rendle and Co., Union-road, Plymouth.

Our New Catalogue of Hyacinths and other bulbs is now ready, and can be had on application.

DUTCH BULBS AT REDUCED PRICES.

WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch-street, London, having purchased largely of the most extensive growers in Holland, is enabled to offer the following, all extra large roots:

	s.	d.
Hyacinths, choice sorts, named, suitable for either pots or glasses—per dozen	6	0
Hyacinths, not named, but in separate colours, very good mixture—per 100	21	0
Polyanthus Narcissus, choice sorts, named—per doz.	4	0
Tulips early, double and single, named, the best and most showy varieties—per dozen	2	6
Iris, English, beautiful varieties, named—per dozen	3	0
Do., Spanish, mixed, all colours, very pretty, for growing in masses—per dozen	0	6
Crocus, 20 splendid varieties, named—per 100	2	6
Do., Dutch, mixed, many colours—per 1000	12	0

W. D. feels confident the above will be sure to give satisfaction. No charge for package, where large quantities are taken roots sent over to compensate for carriage. Descriptive and priced Catalogues, embracing all the newest and choicest varieties of Bulbs, may be had on application.

STRAWBERRIES.

YOUELL AND CO. beg to offer the following to Growers of this highly esteemed Fruit, all of which are warranted correct to name:

per 100	s.	d.	per 100	s.	d.
Alpine White	3	6	La Liegeoise	5	0
" Red	3	6	Martham Seedling, fine and early	7	6
Austrian Scarlet	3	6	Myatt's Eleanor	10	6
Carolina	3	6	" Globe	7	6
" round white	5	0	" British Queen	3	6
Coul, or Sir G. Mackenzie's late scarlet	3	6	" Pine-apple	5	0
Cuthill's Black Prince	10	0	" Eliza	3	6
Downton	5	0	" Prolific	5	0
Elton Pine	3	6	" Mammoth	7	6
Grove End Scarlet	3	6	Princess Alice	3	6
Hooper's Seedling	5	0	Roseberry	3	6
Hautbois (prolific)	5	0	" black	5	0
" large flat	5	0	Royal Pine (fine)	5	0
Keens' Seedling	5	6	Swainston's Seedling Pine	3	6
Kitley's Goliah, p. doz.	12	0	Turner's Pine	5	0

Agents for the sale of Kitley's Goliah Strawberry, very hardy, large, and of delicious Pine-apple flavour, at 12*s*. per doz.

Nursery, Great Yarmouth.

WALNUTS FOR SALE.—Upwards of 100 Trees, of an average crop, within 30 miles of London, and one quarter of a mile of a Railway Station.—For further particulars, apply to T. C., Post-office, King's-road, Chelsea.

FINE LATE STRAWBERRY, "LA DELICIEUSE."

J. AND J. FAIRBAIRN, Clapham, near London, have great pleasure in recommending the above excellent STRAWBERRY.

Copy of Mr. Bruce's Letter, sent to Mr. Joseph Fairbairn.

"Merton, July 23, 1849.

"Dear Sir,—In respect to the Strawberries we were talking about this morning, I believe they would be an acquisition to an establishment, as they are distinct from any other kind, and have also the desirable property of coming in after most other sorts are over, thus lengthening the Strawberry season, and finishing in rather an unusual manner, namely, by leaving an impression on the mind, or perhaps I ought to say the palate, that the best were reserved till last. They are, moreover, large, hardy, free-bearing, and of first-rate flavour, and remain longer good after ripe than any other Strawberry I know—in one word, they have every quality a Strawberry ought to possess, except colour, which is a light amber, resembling that of a Bigarreau Cherry, and there are people who prefer this peculiar amber tint to the undecided red of many other varieties. To this recommendation you can add your confirmation from personal observation.—I am, dear Sir, very respectfully yours, James Bruce."

Plants ready for delivery after the middle of the month. Price 12*s*. per dozen, or 60*s*. per hundred.

P.S. A remittance or reference required from unknown correspondents.

The undermentioned are the Agents appointed for the sale of the above Strawberry.

Austin and M'Aslin, Glasgow	Jeffries, R., Ipswich
Backhouse and Son, York	Mackie, Arthur, Norwich
Bunyard, T., Maidstone, Kent	M'Intyre, Taunton
Burgess and Kent, Penkhull	Miles, John, Shaftesbury
Coysh, J., Leicester	Palmer and Son, Derby
Crane, George, Kidderminster	Pontey, Alexander, Plymouth
Dickson and Co., Edinburgh	Pettit, R., Bury St. Edmund's
Dickson, F. and J., Chester	Roy and Son, Aberdeen
Dixon, E. P., Hull	Scott, Mr., Bathford, nr. Bath
Darby, R. F., Colchester	Saltmarsh, Chelmsford
Fisher and Holmes, Sheffield	Skirving, Wm., Liverpool
Frettingham, Nottingham	Stacey, W. H., Dunmow, Essex
Garraway, Mayes, & Co., Bristol	Tate, Kelso, N.B.
Hurst, Thos., Hindon, Wilts	Veitch, J., and Son, Exeter
Irvine Brothers, Ayr	Watkinson, J. D., Manchester

CEDRUS DEODARA AND ARAUCARIA IMBRICATA.—Noblemen, Gentlemen, and Planters are respectfully informed that Youell and Co. possess the most extensive and healthy stocks of the above highly ornamental Evergreen trees, which they beg to offer at the following prices.

Cedrus Deodara, 12 to 15 inches	5*l*. per 100.
" " 18 to 2 feet	10*l*. "
Araucaria Imbricata, 1 foot	18*s*. per doz.
" " 1½ to 2 feet	12*s*. "

Larger or smaller sizes if required.

The usual discount to the trade if 100 or more are taken.

Nursery, Great Yarmouth.

TO THE FANCIERS OF DUTCH AND CAPE BULBS, &c.

COMPOUND CARBONISED ANIMAL MANURE.—This MANURE, which has already acquired such an established reputation in the cultivation of fibrous-rooted plants, is now also prepared specially for blooming in perfection Hyacinth, Tulip, Narcissus, Amaryllis, Ranunculus, Anemone and every other kind of bulbous or tuberous-rooted flower. It is therefore confidently recommended to be used in the culture of these, at the present period for planting them. So that no mistake may occur, parties, in giving their orders, are requested to be particular in stating whether it be for BULBS or other applications, that they require the manure, there being a material distinction in the constituent ingredients of the two sorts.

The cultivators of Carnations, Pinks, Auriculas, Polyanthuses, Chrysanthemums, Geraniums, Verbenas, Cinerarias, Roses, and other garden or greenhouse flowers that they may be planting or potting at this season, will do well in applying thereto the Carbonised Manure that is prepared for such description of plants.

The above to be had of HENRY COLES, Seedsman, &c., 32, Cranbourn street, Leicester square, in tin canisters of 1*s*., 1*s*. 9*d*., and 2*s*. 6*d*. each, or, in compact wooden boxes of 5*s*., by taking which a material saving is obtained, a consideration of some importance to those who may require the manure in larger quantity for beds, &c. Directions for use accompany each canister and package.

Parties who may wish to bloom, in a superior manner, their Hyacinths in Glasses, will have their desire fully gratified by using a CHEMICAL PREPARATION IN POWDER, supplied by H. COLES for that purpose in bottles at 2*s*. 6*d*. each, a tea-spoonful of it to every English pint of water, requiring merely to be dissolved therein, and the glasses kept filled with the solution, which is perfectly transparent.

H. C. has just received for sale, direct from HAARLEM, in fine condition, his extensive annual importation of DUTCH BULBS and ROOTS, a catalogue of which may be had on application to him.

MESSRS. J. AND H. BROWN offer to the Nobility and Gentry DUTCH AND CAPE BULBS AND CHOICE PLANTS.

	s.	d.
Hyacinths, fine roots, best double and single, per doz. 6*s*. to	8	0
Narcissus, Tulips, and Anemone, per dozen, 2*s*. to	3	0
Crocus, in many colours, per 100, 2*s*. to	3	0
Camellias, finest sorts, well set with flower buds, per doz.	30	0
Azalea Indica, beautiful distinct varieties, per dozen	24	0
24 Ericas, named best varieties, one of each for	18	0
50 Choice Flowering and Ornamental Greenhouse Plants	40	0
12 Tea-scented Roses, superior sorts, one of each	9	0
12 Bourbon Roses, choice sorts, in pots, suitable for planting in a bed	10	6
12 Noisette and other Climbing Roses, in pots	6	0
Passifloras, Clematis, and Jasminums, Greenhouse and hardy varieties, in pots, each 1*s*. to	1	6
Chrysanthemums, best varieties, per dozen	6	0
6 New Dwarf Chinese Chrysanthemums, La Laponne, Petit Poncet, &c.	12	0
Fine Perennial Phloxes, Belgian varieties, per doz.	8	0
Fine Yellow Picotees and Carnations, of best sorts, per pair	2	6
The most approved Verbenas, Fuchsias, Petunias, and Cinerarias can be sent by post, per doz. 4*s*. to	6	0
Geraniums, small plants of all the best sorts, at reduced prices		
6 of the following beautiful Lilies, viz., lancifolium album, punctatum, rubrum speciosum, intermedium, venustum, sanguineum, eximium superbum, canadense, belladonna, longiflorum, and japonicum, for	12	0
Gladiolus, in beautiful varieties, per dozen 3*s*. to	6	0
Black Prince Strawberry Plants, per 100	1	0

*** Catalogues of Greenhouse Plants and Garden Seeds of all kinds.—Albion Nursery, Stoke Newington, London.

NEW FANCY GERANIUM.

EDWARD GEORGE HENDERSON, Wellington Nursery, St. John's Wood, London, has to offer the exceedingly beautiful and very distinct new fancy Geranium ALBONI, at 10*s*. 6*d*. each, which he will commence sending out on the 15th of October. The upper petals are of a deep rosy purple, with a light edging of blush, the under petals blush white and sometimes blotched. The flower and truss large, a most profuse bloomer, and retains its flowers as long as the Queen Victoria Geranium. A drawing of the flower (by Holden) may be seen at the Nursery.

E. G. H. can strongly recommend the above Geranium, and has no doubt it will prove one of the greatest favourites ever sent out, as it continues in one sheet of bloom for such a lengthened period.

N.B. The usual allowance to the Trade, and for every three plants ordered four will be given.—Sept. 15.

FOR SEPTEMBER SOWING.

HERACLEUM GIGANTEUM, one of the most magnificent Plants in the world, is a Biennial, grows 14 feet high in one summer, with a handsome fluted stem, 6 or 8 inches in diameter, and a compound umbel of white flowers, 12 feet in circumference, with leaves from 5 to 7 feet wide. See Mrs. Loudon's "Ladies' Companion," page 312. Packet of Seed, with directions for sowing, 1*s*.

NEMOPHILA INSIGNIS.—This royal annual flower may be sown successfully in pots, beds, for edging, in autumn, spring, and summer, supplying a display of flowers from March till November. Per oz., ... per packet, ... 6*d*.

Twenty Hardy Annuals, 2*s*. 6*d*. All the above post free.

Hanley and Son, Seed growers, Maldon, Essex.

SHEPPARD'S "WINTONIA" GERANIUM will be sent out the first week in October next. Good strong plants, in 60 size pots, 14s. each; in 48 size pots, 21s. each. The usual discount to the Trade. JAMES SHEPPARD, Nurseryman and Florist, begs to observe that his WINTONIA is an excellent shape, and a first-rate fancy variety.—Agents in London: Messrs. HURST and M'MULLEN, Seedsmen, 6, Leadenhall-street; Mr. N. GAINES, Nurseryman, Battersea; Mr. W. IVERY, Nurseryman, Peckham.

J. S. has a good stock of the under-named varieties, at 1s. 6d. each, viz., Sheppard's Beauty of Winchester, Sheppard's Queen Victoria, Sheppard's Lady Rivers, Sheppard's Lady Flora Hastings, Sheppard's Princess Alice Maud.

42, High-street, Winchester.

NOVEL APPLICATION FOR THE IMPROVEMENT OF CELERY, SEA-KALE, CARDOONS, RHUBARB, STRAWBERRIES, &c.—By means of ROBERTS'S Registered Sockets, these articles are much improved, if applied in season. A pamphlet, with wood engravings, and an exposition of particulars of these and various other appliances to horticulture, may be had on application, enclosing two postage stamps, to Mr. JOHN ROBERTS, Merchant, 84, Eastcheap, London.

NOTICE.—The Gardener's Journal of July 14, 1849, contains an editorial article upon these inventions, from which the following remarks are extracted: "The principle of the invention is one about the advantages of which there can be no doubt. By such appliances, and by the aid of such means, vast and important results may reasonably be looked for. As connected, especially with the culture of Strawberries and Melons, the use of these Tiles would undoubtedly add both to earliness and flavour. . . . We shall repeat, that the principle is excellent. All that we ask on the part of Mr. ROBERTS, is the thanks of horticulturists for bringing before them in a prominent manner a principle of great practical utility."

WHEEL BAROMETERS, all Sizes and Patterns, from 1l. 5s. to 5l. 5s.

PEDIMENT OR UPRIGHT BAROMETERS, 1l. 1s to 6l. 6s.

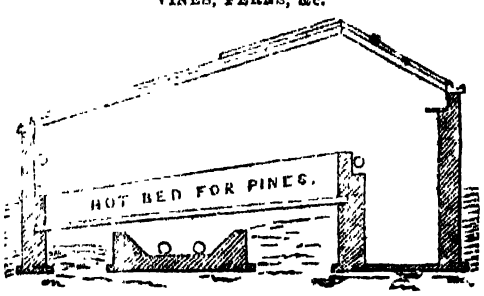
STANDARD BAROMETERS for minute observation, 5l. 5s. to 20l., according to the size of the tube. The above Barometers may be sent into the country without fear of injury, being made portable for carriage

THERMOMETERS for Registering the extremes of heat and cold, of the best construction, 1l. 10s, 18s., and 15s; ditto for Registering Cold only, 4s. 6d. to 6s. 6d., ditto for Baths or Hot Water in Copper or Japan cases, 2s 6d. to 14s.; ditto for Hotbeds to show the bottom-heat, 10s. to 1l. 5s. Superior Achromatic Microscopes, price 3l. 12s., 5l. 15s., and 9l. 10s. Compound Microscopes, 10s. to 2l. 10s. Telescopes, 1, 2, and 3 draw, from 15s. to 2l. 2s.; ditto for the pocket, 12s. to 3l 3s. Mason's Hygrometer for showing the degree of humidity in greenhouses, sick chambers, &c., 15s. and 1l. 10s. Lactometers for showing the quality of Milk, 5s. Drawing instruments, in sets, from 10s. to 4l 4s. Magic Lanterns, with 12 Slides, from 10s. to 2l. Dissolving View Apparatus, lent out for the evening, 7s. 6d. and 10s.

Every Instrument warranted and exchanged, if not approved of. Gentlemen wishing for the prices and descriptions of any of the above, may have them by writing to that effect. —HENRY BAKER, Instrument Maker to the Board of Admiralty, 90, Hatton Garden, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

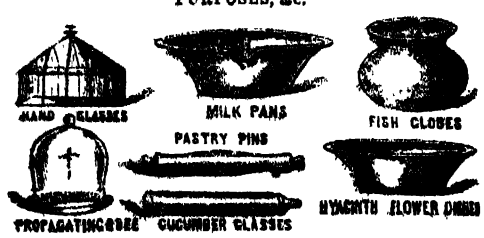
ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, FERNS, &c.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. They have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. By means of these houses, they are enabled to grow Stove, Greenhouse, Ferns, and other Plants, in such immense numbers, that they are sold at LESS THAN HALF-PRICE. Mats, Mushroom Spawn, and everything connected with the Nursery and Seed departments, Plans, Estimates, and Catalogues forwarded on application.

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15l. 10s., a do. do. 15 by 10, 22l. 10s.; a do. do. 18 by 12, 28l 10s.; a do. do. 21 by 12, 32l. 10s., including a plan for brickwork. 1½-inch Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 11½d. per foot. 2-inch do., 1s. per foot.—J. Lewis's Machine Hothouse Works, Stamford-hill, Middlesex.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 1s. 6d. each. Wasp Traps.—Lists may be had on application at the warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—This description of Glass has been greatly improved, and we can now supply it free from stringe and all irregularities of surface, perfectly flat and at the same price as charged by the Patentees, cut to order in panes of

14 by 10 under	1½ foot...5½d.	1½ foot under	3 feet...6d.
3 feet ,,	4 feet., 6½d.	4 feet ,,	5 feet.. 7d.
5 feet ,,	6 feet...7½d.	6 feet ,,	8 feet...8½d.

PACKETS IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½ ..25s. 6d.	7 by 5 and 7½ by 5½...12s.
8 by 6 and 8½ by 6½ ..22s. 6d.	9 by 7 and 10 by 8 ...14s.

Milk Pans from 2s. to 8s. each, Metal Hand-frames, Tiles, and Slates; Propagating Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d; 6 tubes, 10s. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

JAMES PHILLIPS and CO., 116, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 8d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

F. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant super or in every respect to any others. Good Glass from 16 to 21 oz per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.

HEATING BY HOT WATER.

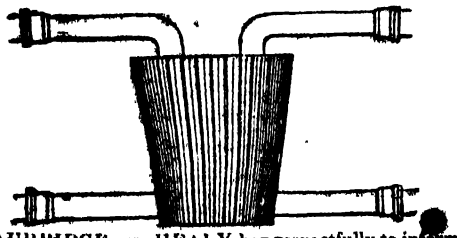
GRAY, ORMSON, AND BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

GRAY, ORMSON, and BROWN, have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in. will warm	50 ft. 4 in. pipe	...	£1	15 0
12 in. do.	75 ft. 4 in. do. ...	...	2	5 0
14 in. do.	100 ft. 4 in. do. ...	...	2	15 0
16 in. do.	150 ft. 4 in. do. ...	...	3	10 0
18 in. do.	250 ft. 4 in. do. ...	...	4	10 0
21 in. do.	350 ft. 4 in. do. ...	...	5	10 0
24 in. do.	480 ft. 4 in. do. ...	...	7	0 0

NEW PATTERN BOILERS.

30 in. will warm	800 ft. 4 in. pipe	...	15	15 0
36 in. do.	1590 ft. 4 in. do. ...	...	25	0 0

All Boilers with double arms, up to 36 in., 5s. extra; to 54 in., 10s extra; all above, the same price.

130, Fleet-street, London, Sept. 15

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Duke of Devonshire's, Chatsworth Gardens.
Earl of Gainsborough's, Oakham, Rutlandshire.
Earl of Zetland's, Upleatham, Yorkshire.
Robert Hanbury, Esq., Poles, near Ware, Herts.
Mr. Glendinning's Nursery, Turnham-green.
And at least 500 other important places.

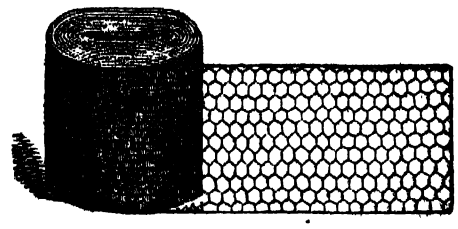
BURBIDGE and HEALY, 130, Fleet-street, London.

STEPHENSON AND CO., 61, Gracechurch-street, and London, and 17, New Park-street, Southwark, Inventors and Sole Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL ROLLERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Greeneries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the use of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide	3d. per yard	30 inches wide	7½d. per yard
18 ,, ,,	4½d. ,, ,,	36 ,, ,,	9d. ,, ,,
24 ,, ,,	6d. ,, ,,	48 ,, ,,	1s. ,, ,,

Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden arches, 20s. each; Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.

	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d. per yd.
2-inch ,, strong ,, ...	9 ,,	8½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ...	10 ,,	8 ,,
1½-inch ,, extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. The upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 400 and 500) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a copy of the testimonials, will be sent on application to WALTER CARSON, 15, Tokenhouse Yard, back of the Bank of England.—No Agents.—All orders are particularly requested to be sent direct.

METCALFE'S ALKALINE TOOTH-POWDER will be found to be the best that has yet been produced; it contains no acids, nor anything that can injure the finest enamel; it thoroughly removes the tartar and all impurities, produces that beautiful white appearance so much to be desired, and its fragrant perfume tends to sweeten and purify the breath. M. and Co., from the many years they have been celebrated as Tooth-brush Makers, have had opportunities (that cannot occur) of testing the relative merits of those powders that have been brought before the public. They have now succeeded in procuring the receipt from which the above Powder is prepared, and confidently recommend its universal adoption. Manufactured and sold at METCALFE, BUNGEY, & Co.'s, Brush-makers to H.R.H. Prince Albert, 2s. per box. Caution.—The genuine powder will have the Royal Arms, combined with those of H.R.H. Prince Albert, on the lid of the box, and the signature and address of the firm, thus: "METCALFE, BUNGEY, and Co., 130 B., Oxford-street, London."

ARNOLD'S VIRGIN QUEEN GERANIUM is the best WHITE flower in existence. It is a seedling of 1847, from which nine plants were procured, all of which bloomed magnificently last season, more than 350 EXPANDED BLOSSOMS *being counted on them at one time;* amongst which immense number only one imperfect flower was to be seen.

It can be strongly recommended, and will be sure to give the greatest satisfaction. Price 7s. 6d. each, or, including a plant of that excellent flower, HOYLE'S CRUSADER, *for 12s.*

Apply to WILLIAM E. RENDLE & Co., Union-road, Plymouth.

. Our Dutch Bulbs have just arrived in excellent condition. Catalogue on application, gratis.

MYATT'S NEW STRAWBERRY, "ELEANOR."

J. MYATT AND SONS are prepared to send out plants of this and the following varieties at the prices annexed: Myatt's Eleanor, 10s. 6d.; Fertilised Hautbois, 10s. 6d.; British Queen, 3s. 6d.; Globe, 3s. 6d.; Mammoth, 3s. 6d.; Hooper's Seedling, 3s. 6d.; Keens' Seedling, 3s. 6d.; Pelvelain's Comte de Paris, 7s. 6d.; Princess Royal, 7s. 6d.; Cuthill's Black Prince, 15s. per 100.

Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford, Kent.—Sept. 15.

NEW PLANTS AT VERY REDUCED PRICES. —A Priced Catalogue is now ready, of the best new varieties of GERANIUMS, FUCHSIAS, PETUNIAS, VERBENAS, CHRYSANTHEMUMS, ACHIMENES, and OTHER PLANTS. Copies sent free by post on application.—BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

THE BLACK PRINCE STRAWBERRY.—Strong Plants of this STRAWBERRY are now ready for delivery. Price, per 100, 15s., 50, 10s.; 25, 6s. It is hardy, *very* early, prolific, well flavoured, and a first-rate preserver. If the blossoms are picked off it in Spring, an abundant crop may be obtained from it in Autumn. For Dr. Lindley's opinion, see *Gardeners' Chronicle*, p. 483, 1849. CUTHILL'S "Treatise on the Strawberry, Potato, Cucumber, Melon, and Lisianthus," price 1s. Post-office Orders on Camberwell.—JAMES CUTHILL, Camberwell, near London.

THE following STRAWBERRY PLANTS may be had true, warranted, of Messrs. DILLISTONE, Nurseries, Sturmer, Harverhill, Suffolk:

Black Prince and Eleanor	15s.	0d.	per 100
Princess Royal and Comte de Paris (Pelvilain's)	7	6	„
Highland Chief and Prolific Hautbois	5	0	„
Princess Alice Maud; this is here the very best and most productive early Strawberry ..	3	6	„
Keens' Seedling, Eliza, British Queen, and Elton Pine	2	6	„
Old Pine, best for preserves	2	6	„

HYACINTHS, &c., JUST IMPORTED.

JOHN SUTTON AND SONS, being extensive importers from several of the most celebrated Florists near Haarlem, are enabled to supply the most splendid sorts, and most suitable for Pots or Glasses, at the following low prices:

Superb Hyacinths, by name, per dozen	£0	9s.	0d.
Fine do. do.	0	6	0
Do. do. in colours, separate or mixed ..	0	4	0
Early Dwarf Tulips, for pots or open ground ...	0	1	4
Crocuses, the best 8 sorts, large roots, per thousand	1	1	0

Also a choice and extensive collection of Anemones, Jonquils, Irises, and other Bulbous Flower Roots, as per Priced Catalogue, now ready.

JOHN SUTTON and SONS having a choice stock of trained and other FRUIT TREES of remarkably fine growth, will be happy now to mark off such as will early come into bearing, for which immediate orders are requested.

Reading Nursery, Reading, Berks, Sept. 15.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 15, 1849.

MEETINGS FOR THE ENSUING WEEK.

COUNTRY SHOWS—Tuesday, Sept. 18: Oxfordshire Horticultural.—Wednesday, Sept 19. Norfolk and Norwich Dahlia, Shack'ewell Dahlia, Wycombe Horticultural, South Shields Horticultural.—Thursday, Sept 20. Thame Horticultural.

EXPERIENCE has proved that stirring the soil, so as to insure a loose surface, is highly beneficial to growing crops. Air is thereby enabled to act more perfectly upon the substances from which plants derive their nourishment; and, in dry weather, the escape of moisture is prevented. In fact, loose soil acts as a mulching. Where the surface is compact, it will have been observed that the sun's rays dry the ground to a greater depth than they do where it is loose. When the particles of the soil are in close contact, the uppermost, parched by the heat of the sun, draw humidity from those immediately under them; and these again from others still lower. On the contrary, when the surface is loose and well pulverised, it may lose its moisture rapidly and become very dry; yet, from imperfect cohesion with the inferior portion, the latter cannot readily communicate its moisture. In short, the loose soil at the top becomes an interposing medium which protects the under stratum from the drying effects of the sun's rays.

It is not only in dry weather that a compact surface is prejudicial to crops, in general it proves very injurious when rain comes. All the rain which falls in most summers is fully required for the growth of crops, provided the ground is deeply drained and trenched as it ought to be. Some wet districts, of course, will form exceptions. If a great portion of the rain which falls on a given piece of ground is allowed to run off by the surface, as is too often the case when the latter is not kept loose, then the crops must suffer from the want of moisture, unless the expense of artificial watering is incurred; but even this supplied in equal quantity has not the genial quality which rain-water possesses for promoting vegetation.

In connection with this subject we have a word or two to say with respect to an implement invented by Dr. NEWINGTON, called the HAND-ROW HOE AND CULTIVATOR; it is advertised in our columns, together with THE PATENT ECONOMIC HAND-DIBBLE, another implement invented by the same gentleman. The first consists of a cast-iron stock, into which tines, curved forward, with barbed points, can be secured by screws. These tines are well adapted for loosening the soil where the crops are in rows wide enough apart to admit of the stock passing freely between the plants. The tines can be shifted wider apart or closer; or they may be entirely removed and the stock fitted with other adaptations for drawing furrows, hoeing, and earthing up. When used for hoeing, the soil must be dry, otherwise the cutters get clogged; and we find the latter must be kept very sharp in order to cut all the weeds as completely as could be wished. We are not satisfied that, for this purpose, the implement does not admit of great improvement. The middle tine, terminating in a flat triangular sole, clears the centre of the course very well; but the sharp edges of the side cutters form inward curves, between which weeds are apt to accumulate and muffle the edges. Cutters with edges forming convex lines, resembling scimitars in this respect, would doubtless clear themselves much better.

The ECONOMIC HAND-DIBBLE is probably the best contrivance of its kind. The holes can be made with it at any required distance; and their depth can also be regulated. The only drawback common to this and other machines employed for the same purpose is the uncertain number of seeds which may drop in each hole. Some farmers do not object to several; most gardeners, we believe, would prefer having only one. Sometimes seeds are sown in gardens, in patches of three or four together; but it is with the intention of thinning out all but the strongest plant in each patch. It is rarely the case that three or four plants from seeds, crowded in the same hole, will come up equally strong; and although the strongest will ultimately overcome the weaker, yet it cannot fail to be more or less injured by the contest. For garden crops, we consider the drill system is preferable to dibbling.

With regard to grain crops, the hand-dibble effects a great saving in seed; but, for the reasons above stated, we think it would be desirable to make a comparative trial of the hand-dibble and the cultivator mounted with its furrow-drawers, for the seed thinly scattered in the drills made by the latter implement would probably yield a more substantial crop, in quantity greater than would suffice to cover the extra expense of seed and labour which the drill system might require.

IT is well known that certain species of FUNGI traverse the loose tissue of the green portions of plants, and in many cases the more solid structures, by means of their creeping mycelium, decomposing the substance of the cells, and at length reducing them to a dark decayed mass. The mode, however, by which this change is produced was quite unknown, for it was evident that something more effectual was at work than the mere exhaustion of the contents of the cells in favour of the growth of the parasite. Mr. F. J. GRAHAM has lately paid much attention to this subject, and after repeated examination is completely convinced that the change is due to the contact of the mycelium, which, after having performed its office of sending up fruiting shoots, rapidly decays. Doubtless, in the first instance, the vital energies were greatly deranged by the presence of the parasitic rootlets, but the main act of decomposition remained to be accomplished by the "body of death" which cleaved to them.

No more fatal or more general cause of disease perhaps exists in the vegetable kingdom than the contamination of decayed tissues. If there be not an extremely vigorous constitution to throw off the gangrened part, the decay is quite sure to spread. One of the most striking instances, perhaps, is that which may be seen in every Melon frame. The leaves are taken off, to admit a free current of air, and access of light to every part. As long as the root is healthy all is well; the tip of the leafstalk dries and no attention is paid to it, but the moment that there is any weakness about the plant, from too sparing or too abundant watering, from original poverty of soil, from deficient bottom-heat, or from whatever other cause the evil may arise, the truncated petioles are a source of evident and rapidly destructive disease; instead of drying up, the tissue below the truncated portion becomes decayed and pappy, the contamination may be traced running down to the stem, often for a considerable length, but occupying at first the upper surface only, and often showing beneath the cuticle traces of mould; the disease, in exact proportion to the state of the roots, and the judgment employed, spreads, encircling at length the whole stem; this soon decays, and the fruit is left entirely to its own resources.

In cases where the leaves are articulated with the stem they are easily thrown off, but where there is no destined point of separation, the peccant part must either be insulated by a new growth beneath, more or less similar to that which takes place in scabby Potatoes, for instance, or the evil can scarcely fail, sooner or later, to spread.

Mr. GRAHAM is still continuing his observations, and, from a communication we have lately had with him, we have reason to expect that his views on this subject will be both extended and confirmed.

THE QUALITIES MOST ESTIMABLE IN A ROSE, AS REGARDS HABIT.

THE habit of the Rose will be found to differ as much as the flowers, and in a descriptive catalogue it should always be mentioned what sort of habit a plant has. The disposition to grow outwards is preferable to that to grow upwards, and in a plant the latter habit is highly objectionable. It is impossible to control it sufficiently to make a good-shaped bush or standard; but we must be understood to mean straight growth. It will have been observed of some Roses, and especially among those called perpetual, that is, those which have more than one season of bloom, that some of these make perpendicular shoots; till the bloom comes at the top; this bloom off, other shoots will come from the side, near the top, and go as upright as the first; all the pruning that can be given will not form a handsome head or a handsome bush. The habit most desirable is that of an ordinary Plum or Pear tree, in which the branches grow all manner of ways, according to where the buds are left to shoot; so that, supposing the five or six main branches of a standard, say two years old, might be left pointing outwards and a little upwards all round, the shoots would of themselves gradually form a good tree-like head, and continue so even after being neglected. It is true that climbing Roses should grow upwards, but not straight nor long-jointed, and the side shoots, upon which the blooms come, should come out at the bottom as well as near the top. For standards, neither rapid-growing nor tall-growing varieties should be used; those which make very long shoots soon get unmanageable, unless they are pendulous, and in that case they may form a drooping head to a tall standard.

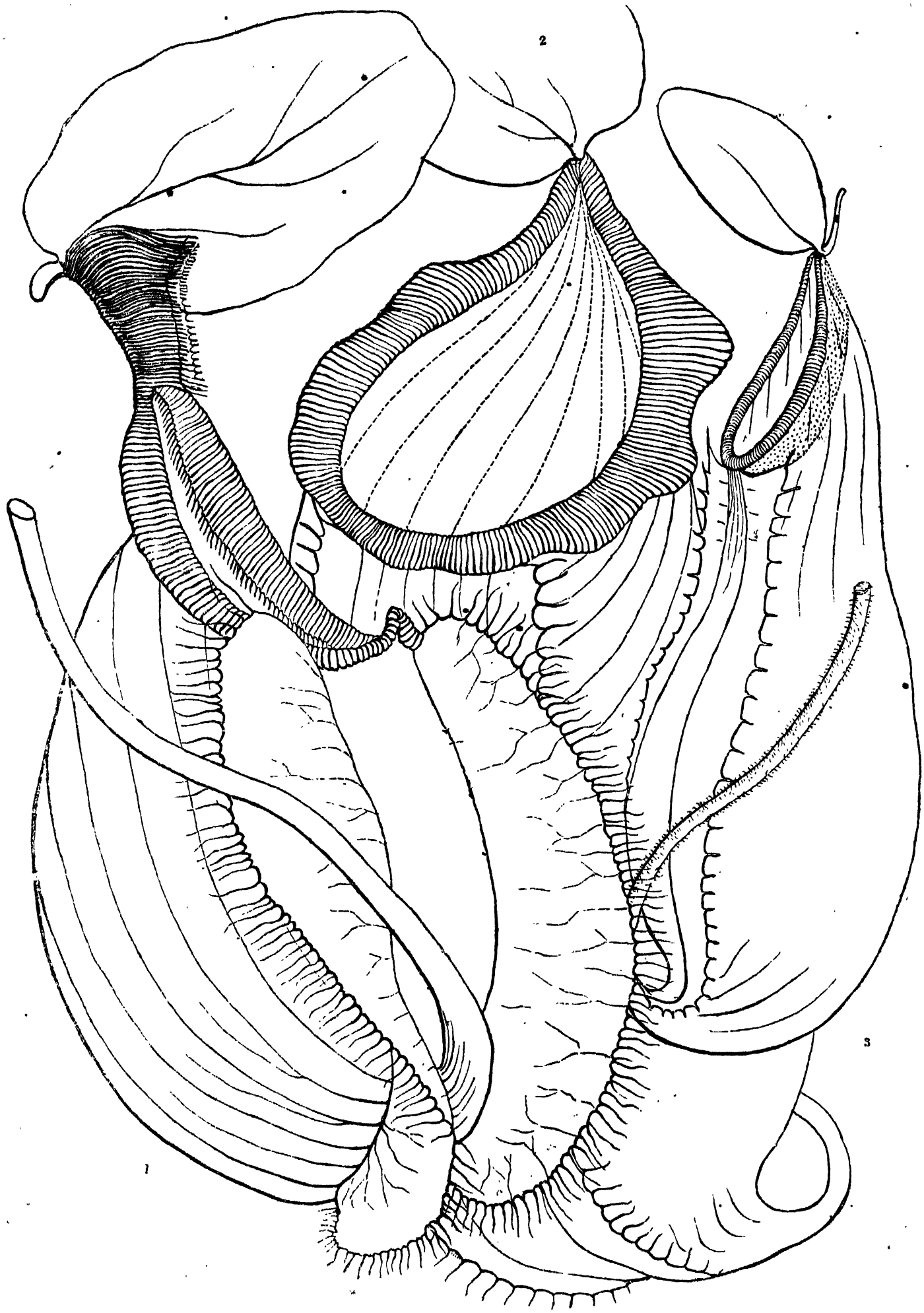
Many climbing Roses, that is, tall growing Roses, make very long shoots without many side shoots, and they bloom only at the ends of these long shoots; this is a bad habit. Others throw out side shoots not very long, but from the very ground, and every side shoot has its bloom; this is a good habit, but all Roses should be short-jointed.

It is quite certain that evergreen Roses would be far preferable to deciduous, and therefore it is very desirable when a Rose does not readily drop its leaves; there are many that retain them half through the winter, and if continued in the house in pots perhaps would not lose them at all. For standards or bushes long shoots are always bad and troublesome, and if you are determined to grow such, the only way to check it a little is to put the stock in poorer soil, instead of the ordinary rich compost of Roses. This may tend to moderate the growth, but it is far better not to use them if they will not come under control.

Another essential is to have the blooms one in a place, and not three, as is often the case with perpetuals and hybrids. It is seen on many otherwise fine Roses that two side buds actually cramp the main one, and that unless they are cut clean away it is impossible to prevent their forcing their way into the main bloom, and spoiling its circular form. The blooms should be at the ends of shoots, and if more than one they should be so distant from each other as to be perfectly free in blooming. The habit of the Austrian Briar is very beautiful; every bud left on the branch sends out its small shoot, at the end of which there is a bloom, consequently the blooms come at every bud all along the branch, and they present a mass of flower; this is so decidedly favourable for the making of handsome standards, that temporary as is their bloom, they may be made the most beautiful form that can be imagined; they are all short jointed, and the little shoots that come out all over the branches let the branches wander where they will. Willison's weeping Rose is a singular habit, but good for little unless you can graft or bud on a six-foot standard, when it will in a short time almost reach the ground. The Roses are not very good, although the plant is very curious; but the true habit of a good dwarf Rose is shrubby and bushy, whether it be on the ground or in the air. The flower should stand out from the plant all round and over, the footstalks being long enough to hold them out beyond the foliage, and strong enough to prevent them from hanging down.

The common China in very strong soil is too vigorous a grower for a standard; the crimson China is not, but there are many that are quite as good of different colours, much newer than either of the originally imported China Roses, so well known on cottage fronts and walls. The common pale China is a good climbing plant, more so than the crimson, on account of its vigorous growth; but it is not very manageable until it has covered a tolerably large space, when it may be spurred all over, and with care it makes a considerable show; but it has all the faults of thin petals and semi-double flowers, and requires the seed vessels to be trimmed off almost daily, to keep the plant in good flowering order. This Rose sinks very much in estimation when compared with some of the newer and better kinds, which have all the best features of the China, with more prominent and better flowers. *Cyle.*

FAMILIAR BOTANY.—THE PITCHER PLANT.



1. Rafflesiana. 2. N. sanguinea *Lindley*; ascidiis oblongis sanguineis antice alâ alatis et fimbriatis, petiolo lævi, collo repando lato inermi. 3. N. albomarginata *Lobb*; ascidiis ovalibus angustis viridibus apice sub collo albotomentosis antice alatis et dentatis, petiolo tomentoso, collo anguste inermi.

"WELL, we know all about that. A plant that bears pitchers is no great rarity. I have seen them on Cabbages. The world is *blasé* with marvels, which the diligence of the learned has shown to be no marvels at all;" quoth Mr. Watkin Wonderless to his son Japhet, that returned from a distant voyage. Mr. Japhet Wonderless had been expatiating upon the strange plants to be seen in foreign lands, upon the Rhododendrons that grow perched in the branches of Figs, upon the wooden cables by which old trees ride at anchor in the woods till the coils eat into their bodies, and destroy them; and upon the natural carvings, shaming the Acanthus sculpture of the Greeks, which lie tumbled side by side with the dead parasites that fashioned them while living. He had been talking too of the strange idols that grow of themselves in the woods of Malacca, too hideous to be human and too human to be trees; of goblets ready fashioned for the drinker, which monkeys tumble down upon the heads of the unlucky traveller; and, finally, of those pitchers which are born full of water, and only lose their contents when upset as they hang dangling from the branches to which they cling. "I assure you, sir, that these things are true," said Mr. Japhet; "and if you had seen them as I have

seen them, you would have thought them wonderful enough. You never were on Mount Ophir, sir." Upon which Mr. Watkin turned upon his heel, and betook himself to his Carnation bed.

No. Had the worthy gentleman been on that Mount Ophir where botanists resort, he would never have doubted the existence of such wonders as Mr. Japhet talked about; and, sweet as his Carnations were, he would have been forced to admit that finer things might be found in distant lands. The Pitcher Plants alone must have shaken his confidence in the immeasurable superiority of Carnations. Malacca is the place to find them, clustering in broad rings, carpeting the morasses with fantastic forms, darting upwards with altered features and throwing their arms round their neighbours, some wide open, some closed up; crimson and green, sanguine and party-coloured, wearing collars of which a knight might be proud, furred, crested, and dangerous looking as a man in point-armour, and as harmless as his under-jerkin.

Behold them as they grow in Mr. Veitch's Nursery, at Exeter; or look at them as they are sketched on this paper, where colour, texture, and all, save form, is lost. Can any one see such marvellous things, knowing them to be only plants, and feel no wonder? To us they seem prodigious. First there is the *Rafflesian*, a deep green or marbled sort, with a lid like a trowel, a collar of spines rolled inwards, and a crest that stands fiercely up, as if to guard the entrance to the fountain; then comes the *sanguine*, deep crimson, and larger than the first, with a wider mouth, and without the crest which gave the Rafflesian so formidable an air; and lastly observe the *white edged*, narrow, slender, and far more graceful than the others, with a stalk of fur, and a broad collar of silvery wool. Is there nothing here to excite our wonder, or to cause us to inquire why such things are?

Botanists call these plants Nepenthes:

> Not that Nepenthe rare
> Whence as Dan Homer sings huge pleasaunce grow,
> And sweet oblivion of all earthly care,
> Fair gladsome waking thoughts,
> And joyous dreams more fair.

No, not that, which was only vulgar Hemp disguised in a poet's masquerade; but a far more striking race, refusing all near alliance* with the vulgar inhabitants of earth, and seeming to be the relic of some order of things that has passed away. No sensual delights are to be derived from them; the "huge pleasaunce," and "gladsome thoughts," and "joyous dreams," are merely intellectual. Would they be greater if they were sensual?

But what are Pitchers for? Can any one tell me that? or must I find a use for them hereafter? *R. E.*

MANNA.—MIRACULOUS FALL OF FOOD FROM HEAVEN!!

Two months ago a report was current in Erzeroom that a miraculous fall of an edible substance had occurred near Byazid; but as the simplest facts are often greatly distorted and exaggerated in this country, and the most unblushing falsehoods circulated, in connection with anything of unusual occurrence, the European residents here were not inclined to listen credulously to the accounts of this "wonderful fall of bread from heaven." The report, however, instead of being soon forgotten, gained daily more ground, specimens of the substance were brought hither, and travellers from Byazid bore testimony to the fact of several showers of these lichens having taken place. Finding that there was some foundation for this phenomenon, I thought that the matter was deserving of investigation, and that you would be interested in knowing it. I therefore applied to Dr. Heinig, the sanitary physician at Byazid (the only European residing there), to furnish me with information, which I elicited by means of a series of questions. It is the result of these inquiries which I now have the pleasure of submitting to your notice.

About the 18th or 20th April last, at a period when there had been, for a whole fortnight, very rainy weather, with strong winds from the S.E. and E.S.E., the attention of the shepherds and villagers frequenting the country near Byazid was attracted by the sudden appearance, in several localities, of a species of lichen scattered in considerable quantities over certain tracts, measuring from five to ten miles each in circumference. Dr. Heinig describes two of these spots as follows: One is situated three miles east of Byazid, behind a range of rocky mountains stretching from the north, gradually towards the south-east. The other is five miles to the south of Byazid, near a similar range of rocks, running in the above-named direction.

It is remarkable that no one had ever before observed these lichens in the neighbourhood, not even the shepherds, who often pasture their flocks on the crags and in almost inaccessible places; and Dr. Heinig, who has been on Mount Ararat (which is close to Byazid), and who appears to have a taste for rambling over mountains, says he has never met with any. What seems to confirm the assertion that these products were not known previous to their unaccountable appearance is, that last year the crops were greatly injured by locusts, and a famine threatened; and had the substance been known to exist anywhere in the vicinity, it would most assuredly been eagerly sought after and collected last autumn, when the price of Wheat had risen to more than double its usual value. A similar phenomenon is said to have occurred at Byazid some years ago, when it is probable that the edible quality of these lichens became known to the natives; unless showers took place previous to that period, which I have not been able to ascertain. Supposing the lichens to have been blown off some adjoining inaccessible places, and in such great quantities, too, how is the rarity of the occurrence accounted for? and how is it that they covered such large tracts of country?

No proof has been adduced of any one having seen the fungi fall; but as the first intelligence was brought by villagers who, early one morning, had observed the lichens strewed over a tract of ground where they had not observed any on the evening before, it is probable that the showers must have taken place during the night. In some localities, the one or the other kind of lichen alone was found; in others, the two species mixed. On the 19th June, another quantity of lichen was discovered, and as the spot was a well-frequented one, it seems likely that the fall had occurred only a few days previously.

From all accounts, the quantities collected have been very great. Dr. Heinig says that a person could collect at the rate of 1½ lb. in an hour, which, considering the lightness of the product, is a tolerable quantity. The substance is ground up with Wheat and made into bread, or eaten simply in its raw natural state. *Erzeroom, July* 2, 1849. [Our correspondent has favoured us with specimens of these productions, which we shall take an early opportunity of figuring and reporting on.]

* See Lindley's "Vegetable Kingdom," p. 267.

DISEASES OF PLANTS.

(*Continued from p.* 565.)

Genus VI.; *one species.* Phyllilesia, *or Curl of the Leaves.*—The greater part of French writers, who are followed by those amongst us who are satisfied with copying or imitating them, describe this disease under the name of *Cloque* in speaking of the cultivation of the Peach, for it is supposed to be peculiar to that tree. I am not, however, of that opinion, although I admit that it is not so common anywhere as on the Peach. But I have seen it on the Almond, on an Apricot, and on a young Quince. If we have been used to observe it only on trees, and on those which interest us more nearly, we cannot nevertheless deny that it may attack herbs also. We are mistaken if we think that a disease peculiar to a tree will pass over herbs, although it may not afflict them so frequently. We may with more plausibility inquire whether diseases affecting monocotyledonous plants will also attack dicotyledons, and *vice versa*, considering the difference in the internal structure of the two classes.

The *curl* attacks weak individuals, especially towards the end of spring, and sometimes again in the beginning of autumn. The leaves, previously green and healthy, suddenly curl up, acquire a livid hue, and by degrees, but in a very short space of time, pass to a dark rusty brown. Their size increases, and very soon the buds and young branches become deformed. In the meantime a swarm, more or less numerous, of aphides (gorgoglioni) attaches itself to the plant, which has made some believe that they are the cause of the disease, producing by their bites an exudation of sap, which reduces the plant to that state.

I have carefully investigated this point, and as far as my observation goes, I have never seen the aphides settle on vigorous and healthy branches. I have always found previous symptoms of disease in the leaves, although often very slight. The curling up takes place in the night, and follows upon a sudden cold occurring out of season, as well in spring as in summer, and still more at the end of August and in autumn. I have seen it happen after a cold rain, or even after very fresh winds. From these data I should attribute the disease to a cessation of organic distensibility, produced by the loss of caloric on a sudden change of temperature. A learned colleague of mine, in the university of Bologna, has well illustrated this property, common to all organic beings, showing its influence on animal economy. I trust that his new duties will leave him sufficient leisure to publish the result of his labours on this important subject.

This disease is one of those for which there is no remedy. It is therefore necessary to provide against any fatal consequences that may result from it. The first care, which to many may seem of little account, will be every day to collect and burn the fallen leaves, in order that the aphides may propagate as little as possible; for the more they are multiplied, the more they will injure the debilitated tree. The branches should not be touched for some time, and then the diseased ones pruned off. The tree must also generally be thinned of branches, in order that in its weak state it may not have so many to support. If it is a gummy tree, the thinning out must be done more cautiously. This thinning out the branches has been found to be the most effectual mode of restoring vigour to the tree. If the soil is poor, some fertilising substance must be administered. Sometimes, however, Nature will assist herself, especially where the disease is not severe, and the tree well nourished. It is therefore again necessary to recommend caution in the treatment of it. I have also ascertained that badly kept Peach trees, those which are not worked about the roots, or are allowed to cover themselves with lichens, are more than others liable to the *curl*.

Genus VII.; *one species.* Pallour.—The designation *chlorotic* has been hitherto applied to such plants as lose their vivid green, turn whitish, and become somewhat soft. This denomination has been intended to convey the idea of a point of analogy between animal and vegetable life. And although I myself, in my Nosology, had been incautiously led into adopting it, I now think it necessary to reject it. What relation can there be between the *chlorosis* of the fair sex, usually accompanied by an inordinate appetite for acid fruits, and this *pallour* in vegetables? In my opinion not one of the causes which bring on the one can produce the other, this *pallour* being solely caused by a failure in the action of some one of those stimulants which act with the greatest energy in vegetable economy.

In the fourth volume of Senebier's "Vegetable Physiology," the scientific reader will find all that relates to the discoloration of plants arising from the deprivation of light. This disease is easier of prevention than of cure. The principal point is to give the plants plenty of light; in the case of trees that will be the easier done the more care has been taken in pruning to distribute the branches well. Exotic plants, requiring more light, are more subject than our indigenous ones to *pallour*. But when they are attacked by it they must not be suddenly exposed to the full rays of light. It has been found most advantageous to bring them to it gradually by removing them every day into a lighter situation.

Gardeners take advantage of this effect of the privation of light upon plants, to render them more tender and less acrid than they would naturally be. Sometimes they bury them in the earth as in the case of Celery, at others they tie their leaves up together, as with Lettuce, or again they combine both methods. Thus the Bologna gardeners treat us with most excellent Cardoons, first enveloping them, whilst still attached to the root, with pieces of rush-matting, or simply tying them close up together, and afterwards separating them from the stock they bury them in a hole made on purpose, where the blanching is completed, and they acquire their delicate flavour. Thus man is gratified by degenerate productions, which nature can only consider as not corresponding to the ends for which they were created organised and living beings.

COMPARATIVE TRIAL OF MR. TOMBELLE LOMBA'S PLAN OF CUTTING THE STEMS OFF POTATOES.

In the beginning of last November I planted the Early Frame Potato, a later white sort, and the Queen's Noble, a still later Potato. Fresh slaked lime was spread over the ground and turned in upon the sets as each row was planted, to prevent the ravage of slugs during the winter. No other manure was used.

I certainly had always entertained the idea that the stem and leaves were indispensable to the growth of the tubers; but after reading your observations upon Mr. Tombelle Lomba's plan, I resolved to try the experiment, as recommended in your Paper of July 7th.

On the 14th of July, the Potatoes being still in flower, I cut off the stems of two rows of the later white sort, and earthed them over about 2 inches, leaving two rows in their natural state. Adjoining were several rows of the Queen's Noble. I cut down three rows of these and earthed them over. Early in July I perceived symptoms of disease (black spots) upon some of the leaves; it spread more after some showers which fell about the 24th. The haulms of the Early Frame had then assumed an appearance of natural decay. I cut them all down. They were taken up on the 21st August all sound, and a fair average crop.

Finding the disease was spreading, and that the stems as well as the leaves of the Queen's Noble had become much affected, I, on the 14th of August, cut down the remainder, and earthed them over. On the 4th September I caused three rows of the Queen's Noble, cut down on the 14th July, and three rows cut down on the 14th August, to be taken up. Those cut down July 14th, produced—

1 row, 55 feet in length	..	15½ lbs.,	tubers all sound.
2 do. do.	.	18½ do.	all sound.
3 do. do.	...	16½ do.	all sound.

The tubers small, the largest size weighed 3 oz. Those cut down on the 14th August, produced—

1 row, 55 feet in length	...	44½ lbs.,	32 tubers diseased.
2 do. do.	...	42½ do.	27 do. diseased.
3 do. do.	...	39 do.	8 do. diseased.

The tubers generally of good average size, the largest weighed 8 and 9 oz. I was, I must confess, disappointed with the result in the first case. I then proceeded to take up two rows of the white Potato, cut down on the 14th July, and two rows which had been left untouched. Those cut down on the 14th July produced—

1 row, 55 feet in length	...	41 lbs.	tubers, all sound.
2 do. do.	...	42 do.	all sound.

The tubers generally of a good size; what would, in fact, be called a fair sample, some of the largest weighed 5 and 6 oz. Those rows which had been left untouched produced—

1 row 55 feet in length	...	60½ lbs.,	7 tubers diseased.
2 do. do. do. ..	.	69 ,,	10 ,, ,,

The tubers generally much larger, and many weighed 8 ounces. The result in this instance is more favourable, and I think it may be accounted for in this way. The white Potato is an earlier sort than the Queen's Noble, and, although both planted at the same time and under the same circumstances, as to locality, soil, &c., it came into flower earlier, and I had, as is my usual practice, picked off the first flowers a week or 10 days before the stems of both sorts were cut off. The tubers, therefore, were, in all probability, in a more advanced state, and in a better condition to draw nourishment, by their own vitality, from the soil.

There is here, I opine, strong presumptive evidence that the tubers do, as affirmed by Mr. Lomba, grow unassisted by the stem and leaves, as it cannot be supposed they would attain a size to weigh six ounces

under the plants are yet in flower. The difference in produce may probably arise from my having cut down the stems too soon; I think, indeed, the result in both cases, but more particularly in the Queen's Noble, clearly proves this to be where I have erred. The effect, however, is instructive. It would also appear that the disease is communicated by the leaves and stem to the tubers; for in no instance where the stems were cut off before attacked by the disease, are the tubers diseased, whereas in both of the other cases many of the tubers are diseased.

The result of these experiments will, I think, justify the conclusion, that by autumn or early spring planting there is a better chance of a healthy crop, as the plants would, under favourable circumstances as to weather, &c., put forth blossom before the time the disease usually makes its appearance, and by adopting Mr. Tombelle Lomba's plan, there would be a reasonable hope of securing an average crop.

The goodness of the crop, both as to quality and quantity, this year, may, I think, be attributed to the unusually dry state of the atmosphere, and the small quantity of rain that has fallen, not enough, in this locality, during the whole of the summer, to reach to the Potato tubers. I first noticed the disease as early as the 19th of June; it was confined to a spot a few yards square, and did not increase or spread to the adjoining plants until rain fell in July. *H. Doonills, Alphington, near Exeter, Sept.* 6.

VILLA AND SUBURBAN GARDENING.

The Calceolaria being a plant very easily cultivated, provided a little care is taken to keep it free from green fly, and when well grown exceedingly beautiful, I will proceed to give the particulars by which amateurs should be guided in its management. The seed should be sown now, in a common garden-pot, and covered as lightly as it is possible to cover it. The pot should then be placed under a common handglass in a shady situation, when the seed will very soon germinate; as soon as the cotyledons are expanded, the tiny seedlings should be pricked out into other pots or shallow pans, and placed in a frame, keeping them shaded for a few days, after which they may be gradually exposed both to sun and air. As the leaves expand abundance of air should be given, and if green fly has made its appearance fumigate immediately, taking care, however, that it is done sparingly and often, for the leaves are liable to be damaged when tobacco smoke is too strongly applied.

In the course of a few weeks the plants may be potted off into 4 inch pots, and still kept in a frame; but as they are liable to be injured by damp in that situation, an airy shelf near the glass in a greenhouse is generally preferred for them, although I have kept them in common frames during winter, and, by the admission of plenty of air in fine weather, have succeeded admirably; they grow and flower much better in the absence of any artificial excitement. In February or the beginning of March they may be shifted into their flowering pots, and if kept in the frame or pit they should be placed near the glass, and little air should be given them for a week or two, until they shall have begun to grow. During their growth see that they are kept clear of insects, for on this nearly all depends. Varieties which have been cultivated the previous season, and which are esteemed for their good qualities, should be layered in the pots in which they have flowered; they will soon root, when they may be removed and treated precisely as the seedlings.

The most suitable soil for the Calceolaria is a mellow sandy loam, moderately enriched with well rotted manure—that from an old hotbed answers perfectly; a sixth part silver sand may be advantageously added to the compost. This, however, will depend upon the nature of the loam. *Pharo.*

Home Correspondence.

Orchids from Seed (see p. 459).—The growing of Orchids from seed will, I hope, be productive of a great and desirable change in that family of plants; and with the view of furthering the object aimed at, I have thought it worth while to record what has been accomplished in that way here. My employer informs me that Bletia Tankervillæ was some years since obtained from seed sown in common soil; also Epidendrum elongatum, sown on a block of wood covered with moss. I have sown other sorts of Orchids at various times and in different ways, but without success. I observed some time since a paragraph on this subject in a gardening periodical, the plan laid down in which was to obtain a very soft burnt pot, to fill it full of water, sow the seed on the water, and then to let the water gradually soak out at the bottom, so as to leave the seeds clinging to the sides of the pot, after which the pot was to be placed in a saucer of water, and allowed to remain there, always keeping the saucer full of water. The pot being porous absorbed sufficient moisture to keep the seeds continually damp, and thereby favoured their vegetating. As to the manner of obtaining seedlings, much depends on the kinds of Orchids employed. I have sown seeds of various kinds, some on the top of Orchid pots, after the manner described by Mr. Moore at the page above quoted, others on moss, and on a cocoa-nut shell, but all without success. As with raising Ferns from seed, I think much depends on circumstances. In one establishment Ferns will spring up of their own accord, without any care, while in another the best means may be employed to produce them, but without success. I believe with Mr. Moore that no cross has as yet been acknowledged to have been obtained in this class of plants; a few have been hybridised successfully here, so far as obtaining seed to all appearance perfect is concerned; and it has been sown, but it did not vegetate. Cattleya labiata was crossed with C. guttata, and swelled its pod; Calanthe veratrifolia with Bletia Tankervillæ; Dendrobium moniliforme with other Dendrobes; and Stanhopea Wardii with one of the other Stanhopes. I may remark that the pericarps which swelled belonged only to hybridised flowers, showing that a cross was either effected, or that in the removal of the anthers the pistil got fertilised. I have the hybridised seed pod of Stanhopea Wardii by me, and I shall be pleased to present some of the seeds to Mr. Moore or any other gentlemen who may take an interest in raising seedlings, but in the event of their being successful, I should be glad to have one or two of the plants. I intend sowing seeds of it in the way I before mentioned; I shall also sow a little seed on a piece of bark, and suspend it in a ventilated Wardian case, which we are about to introduce into the Orchid house here for the reception of a collection of Pitcher-plants, and I shall communicate the results at a future time. *J. Cole, gardener to J. Willmore, Esq., Oldford, near Birmingham.*

Flavour of Melons.—At page 566 "H. S. B." has made some remarks on the deficiency in the flavour of Melons this year, and hints that gardeners may be retrograding in their culture. The defect, he says, cannot be attributed to this season. So say I. Does it not arise from size being more aimed at than flavour? I was a censor at the Salisbury exhibition on the 29th ult, and to appearance I never saw a finer lot of Melons at an exhibition than were present on that occasion. My old friend the Beechwood was produced larger than I ever saw it. The Trentham hybrid was also apparently very fine; but with the exception of two, a Trentham hybrid and a small green-fleshed sort, both of which were anything but first-rate, the others were positively inferior to ripe Vegetable Marrows. How is this to be accounted for? Perhaps some of my Salisbury friends will tell. *R. Glendinning.*

Storing Potatoes.—Potatoes for house use kept in prittles (large open baskets which the bottle-merchants use), become mealy and of peculiar and fine flavour. Every gardener will agree that the first and strongest pods and plants should be selected for seed—the directions in the oldest books counsel this. Great care is taken to keep pulse and seeds dry, why should Potatoes be solely subjected to a different and to a bad system? to be put into heaps and underground. Those to be reserved for seed (and these of the best), should be protected from both frost and damp, but in fine weather the air should be enabled to pass through and around the heap, in order that the constantly exuding moisture might be carried off. It is carefully wiped from Pears, Apples, &c.; in Malta from their Oranges, which are also wrapped in an absorbent paper. In Madeira, Bananas are put into perforated casks, to allow the damp to escape, the retention of which, the writer has found, and for years, to be most prejudicial to the future seed; and may not the plants therefrom become more tender, and less able to resist what otherwise might make little or no impression on them? Carrots, &c., could not be kept if subjected to the same bad contact which Potatoes must submit to. The writer has found the Potatoe disease wherescever the pitting system is followed; it is not present where the dry process exists. Let any one call to mind what he may have seen and smelt when a large pit has been opened. Not a tuber would shoot or a Potato be lost by the dry process. A trial of the prittles (holding fully 1½ sack each) will prove how much the flavour of the Potato is improved by the dry process; and the barn floor could be easily arranged by the large growers to preserve all the seed they require. The finest dust of cinders should on certain soils be lightly sifted to windward; this would become hoed up over the tubers, and preserve them from both flies and worms. *J. W. D.*

Rose Catalogues.—The index of Roses, referred to by "An Old Subscriber," is not a new idea. Mr. Rivers, I think in 1840, published an index in the exact form given by your correspondent. On suggesting to Mr. R., some time since, how convenient such an index would be at the present time for reference, he replied, that, to make it complete, it must contain such a vast number of names of Roses, the greater part of which are not now cultivated, owing to their being supplanted by other and better varieties, that he had been deterred from again publishing a second edition. The number of comparatively worthless varieties of Roses may be judged of by a reference to a list occupying half the volume of "Paul's Rose Garden;" the sorts there enumerated amount to more than 2000, in 38 groups. Now, from 250 to 300 really good varieties, worthy of cultivation, can alone be selected from this heterogeneous mass of names; it remains therefore for the Rose-growers to do their duty, and select for the public, in their annual catalogues, only such sorts as are now really worthy the attention of the Rose amateur. This good work was commenced last year; for I observed that the Rose catalogue of Mr. Rivers was headed with a paragraph commencing, "The increase in the number of Roses has become alike irksome to the amateur and cultivator." On reading the letter of "Crito," in No. 33, I did hope to see him point out some better mode in detail of classifying Roses than the present; but he only finds fault, and is, I fear, a *gourmet*, who not only requires his food *provided* for him, but also *digested*. Let me suppose him a real amateur, and to have crossed a Cabbage or Provence Rose with a Rosa Gallica, would he not have pointed out to his friends his seedling as a "Hybrid Provence!"—or, again, a Rosa Gallica crossed with a China Rose, would he not have been delighted with the vigour of its offspring, and at once have designated it as a "Hybrid China Rose!" Such was the origin of those families; the misfortune is that too many of those hybrids have been produced, leading to confusion, but I cannot help thinking that thus dividing Roses into groups has given additional interest to their culture, *i. e.*, with those who really love Roses; but then grouping has been carried to an excess. Our Damask and Hybrid Perpetuals, quite hardy, our Bourbon and China Roses nearly so, our Tea-scented Roses, tender, and requiring distinct treatment, are all sensible groups; but, dividing Bourbon Roses and their Hybrids and Hybrid Perpetuals into "divisions" is a departure from common sense, and is a servile copy from the French Rose growers, which reminds me of a French gardener in Normandy whom I met with in my travels last summer, and who claimed great credit for having "invented" a new group of Roses, viz., "Rosa mahonifolia," from the leaves of such Roses as Gloire de Rosamène, Grand Capitaine, and others, being like the Mahonia or Berberis aquifolium. Let our English Rose-growers avoid such trifling, and have as few groups and as few varieties, all good, in their catalogues as possible. *Rosa Sensu.* [Why this is just what "Crito" contends for.]

Adder Skins.—For the information of Mr. Wighton, I can assure him that adders do invert their skins, on shedding them. A few years ago I was walking by some bushes, and on hearing a rustling, I looked down, and saw an adder gliding away amongst them, having that instant shed its skin, which was lying at full length, slightly entangled amongst the herbage, but not so much but that I removed it quite perfect: it was entirely inverted; one circumstance was observable; not only each scale, but even the corner of the eye had been cast off, and still retained its lenticular form, with the convex side inwards. I have observed this in other skins that I have seen, and I think it sufficient proof of the manner in which adders cast their skins, by inversion. *Lusor.*

Potatoes grown at Lodsworth in 1849.—

Date of Planting.	SORTS.				
	Julys in Field	London Kidney.	Forty-fold, or Prolific	Julys.	Canada Pine.
Nov. 30, 1848 ..	*26	80	28	52	—
Jan. 10, 1849 ...	*78½	114	28	152	118
Feb. 27, 1849 ...	*85	134	48	—	84
March 20, 1849	*126	—	—	—	—

The Julys in field marked * were dug up on the 15th of August, the haulm having entirely decayed in the course of the preceding 10 days. The 2d, 3d, 4th, and 5th columns refer to Potatoes grown in a garden under a wall running south and east; these were all dug up on the 7th September. The figures denote the weight of the produce of one perch of ground in lbs. On the 6th August, two perches in the centre of a field, and corresponding in appearance, were selected for a trial of Tombelle Lomba's experiment. I suspect, however, that the haulm was not cut off sufficiently early, though I do not understand how this fact could have contributed to the following result:

Haulm retained ... 88 lbs. dug up 7th September.
Haulm cut off ... 68 lbs. " "

As one more fact bearing on the question of early planting, my Yorkshire Reds planted 4th March, have produced 76 lbs., while those planted on the 30th March have produced 81 lbs. per perch. The greatest weight of Potatoes this season has been produced on a plot of ground in my allotment field, manured with pig dung and turves, or parings from a common. *H. H., Sept.* 11.

Crops in Ireland.—Crops of every kind are abundant, Potatoes nearly a double crop; the leaves all withered, the stalks not yet much affected. I have cut off all and earthed them up, thinking that the stalks can do no more good, and may infect the tubers. The people expect to lose one-fifth of the crop, though the tubers are very slightly affected; but they say they can afford to lose one-third, and be well off after. I planted in November in beds, in March in drills; also in May in drills. Those planted in March are by far the best. Would you not recommend early planting and early sorts for the future? [Certainly.] The Lumpers are very much improved in quality and mealiness. *O., Ballindine, Sept.* 9.

"Times and Seasons for all Things."—On going to the Show of the Royal South London Floricultural Society, at the Surrey Zoological Gardens, on Wednesday last, I was much struck with the altered appearance of the company, compared with what I have seen at former shows, not only as regards the number of the visitors, but the character of the individuals; it is true the day was most unpropitious, and that would account for the absence of many of the fair visitants, who usually honour the gardens on such occasions; but what struck me most forcibly was the number of persons with cigars in their mouths, and, in some few instances, clay pipes; go where you would, you were met at every turn with a whiff from a cigar, and some not of the finest flavour—in fact, it was a general fumigation. Now, I do think such a practice, in such a place, most abominable; if visitors were permitted to smoke at all in the gardens, which I think ought not to be allowed, surely they ought to keep out of the tents—where the ladies are examining the flowers and desirous of inhaling their perfumes—but no; I have seen ladies turn away in disgust, being willing to forego the pleasure of admiring the exhibition rather than undergo the ordeal of being surrounded by two or three men, who were blowing their cloud, as they would term it, just under

their notes, and who, if spoken to, would treat the matter with the greatest possible levity. Surely the authorities might prevent this practice; for there can be no great difficulty in showing those persons that they are acting contrary to their best interests, in keeping away the visitors, who might become their supporters, if allowed to see and admire the effects of their labours. We do not expect to see the most refined manners in gardeners, but we do expect to see them pay some little respect to the society they mix with on such occasions, who would not fail to admire and appreciate their productions, if allowed to do so, undisturbed by tobacco smoke. *A Visitor.*

[We entirely concur in the remarks of our correspondent. If the proprietor neither can nor will prevent such offensive practices, the evil will work its own cure; for no person of respectability will visit such a place.]

Tendency of Couch-Grass to enter Roots of other Plants.—In support of the statement at p. 566, I may mention that in rooting up the remains of an old garden I discovered many stout roots of Rhubarb with five and six roots of Couch growing through each plant. *Jno. S. Harding, Trelawney House, Liskeard.* [On this and other examples which have been communicated to us, we hope to find room for observation shortly.]

The Potato Crop.—A large proportion of our Potato crop is now housed, and the general impression is, I am happy to say, that it has sustained very little injury. All our haulm has been destroyed, and very rapidly; but whether the tubers had acquired sufficient stamina during the long continuance of dry weather to throw off the disease, or whether the recurrence of sun and warmth immediately after the first development of the mischief prevented or arrested its progress, I cannot tell; the satisfactory result is that very few of the tubers, except in certain localities, appear to be infected. They come to table in a firmer and better condition than has been the case for some years, and there is good hope that they will keep better, though of course we cannot yet feel confident on this head. *H. H., Lodsworth, Sept* 11.—The disease has been quite stationary here during the late extremely dry weather. The black spots on the leaves did not spread, and all trace of the Botrytis had vanished. On the morning of yesterday, though I searched diligently, I could not see a plant of Botrytis. In the middle of the day a gentle rain came on, which continued more or less through the evening and night. This morning the Potato plants had assumed quite a different appearance. They were very fetid, frosted with the Botrytis, which occupied the green portion surrounding the old black spots, in broad white rings, and unless the disease be checked again by the bright sunshine, and the speedy absorption of the little moisture that has fallen, every leaf must in a day or two be destroyed. Indeed the parts of the leaves which were attacked this morning are already, to the breadth of half an inch or more, perfectly dry and discoloured, though they have not yet assumed the brown tint. They are so parched that they may be rubbed with the slightest effort into powder. The tubers are at present little if at all affected. *King's Cliff, Sept.* 11.—Up to the 3d of September there never were finer or more luxuriant crops. On the afternoon of that day we were visited with an unusually severe thunder-storm. The results have been sad indeed; all our beautiful crops are gone. The tubers are attacked as in former years; and what has happened in this district will I fear be prevalent all over the kingdom. Some of our Beech hedges, Gooseberry and Currant bushes, were deprived of their leaves; and the contents of a sack of fine Kemp Potatoes belonging to a neighbour, dug on the 3d and left in an open shed until the following Monday, were in a great measure unusable. *Thomas Barnes, Merrion Nursery, Dublin, September* 11.

Reviews.

A Lecture on Blights, Aphides, or Plant Lice; their Habits, Economy, and Transformations, including the Hop-fly and its Enemies; with an Introduction to the Study of Insects generally. By F. Blomley, Esq., M.D., Maidstone. 12mo. 53 pp.

The title of this little publication, which we have given at length, indicates the general character of a lecture delivered by the author before the Weald of Kent Farmers' Club on the 4th July last, and which is here reprinted from the *Maidstone Journal*. We are well pleased to see the subject of insect blights brought in so plain and proper a manner before such a meeting of agriculturists, who, we are afraid, from want of early instruction in natural history, too often entertain the most ill-founded ideas of the nature of insects and their ravages. We could indeed have wished that the author of this little pamphlet had even been a little more guarded in his assertion that "blights (of which the Hop-fly is one species) are a most extensive family of very peculiar and wonderful insects called aphides or plant lice." That aphides are capable of producing a diseased state in plants called blight is too certain; but there are blights produced by atmospherical causes. Blights consequently are not necessarily aphides, or rather the effect produced by aphides, although these insects may often produce a species of blight.

One fourth of the lecture is occupied with the natural history of this family of insects and its enemies, and another fourth to the Hop-fly (Aphis humuli), which must of course be supposed to possess considerable interest with his Kentish hearers, and of which he gives various particulars observed by himself, in addition to the recent facts and observations of Messrs. Spence, Walker, Haliday, and others. In connection with the effect of atmospheric changes on insects (a subject touched upon in our recent article on the Lettuce Aphis), the author observes: "There is, I am quite certain, very much yet to be discovered respecting the conditions, meteorological, physiological, and, perhaps, electrical, under which the Hop-flies make their appearance, grow, and propagate;" and again, "In the College Hop-garden, at Maidstone, in consequence of the want of rain or moisture at the beginning of June, I found that the lice, after they had been deposited two or three days, ceased to grow, and remained without the slightest increase in size for many days, after which a shower, with a cloudy sky, produced an increase of sap, and an increased distention of the cells and sap vessels, and in a few hours the lice became of a greener colour, increased rapidly in size, and soon became ripe to propagate their progeny."

After confirming the observation that the Hop-fly is produced in spring on the Sloe bushes, from which it migrates to the Hop, the writer dissents from the suggestion of Mr. Spence (contained in an address to the Entomological Society in January last, "which has been much circulated in the Hop districts"), that it is only necessary to destroy the Sloe trees in order to secure the Hop from the attacks of this insect, asserting that its eggs have also been found on the Plum, and that if all the Sloe trees were destroyed, the insect would resort to some other allied species of tree. The memoir terminates with the history of the different species of insects which feed on the Hop aphis.

Garden Memoranda.

Apothecaries' Garden, Chelsea.—There is in bloom here an interesting species of Agave, which appears to be the A. mexicana of Haworth. The general aspect of this plant, before it gave evidence of flowering, was not dissimilar to that of A. americana, but in its flowering state it proves quite different from that species, especially in the arrangement of its inflorescence, which, instead of forming a pyramidal head, with horizontal branches, has the branches ascending and forming a dense head, which becomes thicker and broader upwards. There seems little doubt that this plant has been reared, and probably from its very infancy, in this garden; and it is therefore to be regretted that no record of its origin, nor any historical particulars respecting it, appear to have been preserved. Under these circumstances, it is impossible to form even a conjecture as to the actual age of the plant. But considering that it has naturally a somewhat less massive appearance than the common Agave, it would appear to be a full sized specimen, the spread of its leaves being about 7 feet, their height 4 feet, and the height of the flowering stem, measuring from the base of the plant, 19 feet 6 inches. This stem has 21 branches, and these are again subdivided into eight secondary branches, terminated each by a cluster of flowers; the number of flowers may be estimated at about 4000; thus, $21 \times 8 \times 24 = 4032$. The expanded flowers are found on examination, and especially when confined, to have a strong and very disagreeable odour, which I can compare with nothing but that of decomposing Cabbages. They contain also a clear liquid, the taste of which is a compound of sweetness and nauseousness. The flowering stem became visible about the middle of June, resembling in the first stages of its progress a giant head of Asparagus. Its growth was rapid for three-fourths of its height, and until the branches became developed, when its progress was less marked. The first blossoms, those of the lowest and least vigorous branches of the panicle, were developed in the first week of September. No particular record of its rate of growth was preserved, in consequence of an impression that it was merely the common species, whose progress has been already often registered. The plant had no shelter during the summer beyond what was afforded by the situation of this garden; and but some very slight assistance from a small quantity of decaying leaves and Grass laid around the tub in which it was growing; but it is probable that this slight stimulus may account, in some measure, for its more rapid growth in its earlier stages, than afterwards, when that stimulus became exhausted. The following is a more detailed description of the plant in its flowering condition: Stem short, terminated by thick fleshy leaves, as in Agave americana. Leaves numerous, the central ones erect in the early flowering stage, all becoming flaccid and drooping by the time of the expansion of the flowers; narrower and more attenuated than those of A. americana; the largest about 4 feet long by 4¼ inches wide, the sides nearly parallel to within a foot of the apex, then gradually tapering to a point; nearly plain above, convex beneath; the smaller ones towards the centre about 3 feet long by 3 inches wide, concave above, convex beneath, tapering almost regularly from the base to the apex; the smallest gradually passing into bracts. The colour of the leaves is a pale glaucous green. Their margins are not indented, as seen in A. americana, but are set with small distinct Chestnut-coloured spines, which project about an eighth of an inch (half the size of those of A. americana, on vigorous plants), and are usually set at a right angle with the margin, but sometimes curved, and pointing backwards or forwards, slender and tapering from a broad base, as in the prickles of the Dog-Rose; each leaf is terminated by a strong dark-brown spine, an inch long. Flowering-stem erect, from the centre of the leaves, furnished throughout with alternate bracts, which become smaller upwards, the lower ones gradually passing into leaves. The bracts are sessile, half encircling the stem by their base, and lengthened out into a narrow taper point. The flowering-stem, from its base above the insertion of the central leaves, is 17 feet 6 inches high; at this base, which is the thickest part, 1 foot 3 inches in diameter, and 10 inches in diameter just below the flowering branches, the stoutest of which are 2¾ inches in diameter. The lower half of this stem bears only a few abortive branches, but the upper half is densely panicled. Flowering branches ascending, again alternately branched, the secondary branches forming dense corymbose panicles, of from 18 to 25 flowers; lower primary branches thin, with fewer flowers, the upper ones becoming larger and more crowded with blossoms; the apex is simply branched. The outline of the inflorescence thus becomes somewhat club-shaped, slightly lengthened out at the top. Perianth erect, funnel-shaped, with an erect limb, yellowish-green, 3 inches long, including the germen, which it equals in length. Sepaline divisions linear—lance-shaped, petaline divisions linear—oblong obtuse, with broad thin margins, otherwise of the substance of the sepals, which are thick and fleshy. The sepaline divisions overlap the thin margins of the petaline segments in the bud state, in which state the former appear twice the width of the latter, which is seen not to be the case after expansion. Stamens protruding beyond the perianth, about its own length; anthers versatile, yellow, an inch long. Pistil equalling the perianth. *T. Moore.*

Miscellaneous.

Potting Orchids.—When shifting or fresh potting, be particular to drain well. If the plant is to be kept in a pot, always place a small inverted pot in the bottom of the other, and fill round the sides and over the inverted pot until the pot is filled with potsherds to within three inches of the rim; then put in a sufficient portion of the roughest fibre of peat to slightly elevate the plant above the rim, and cover up the roots (if they require so doing), with fibry peat mixed with half decayed leaves, pressing it rather firmly round the stems, but in no other part, more particularly near the outside. In shifting, remove all the old soil from the roots, when such can be done without injury; and in all cases allow the plants to become rather dry for a few days prior to the operation, and for a like time afterwards before moisture is applied, which should be, first to the atmosphere sparingly, and afterwards to the roots or the soil. No season can be recommended as the proper one for shifting Orchids, but generally it may be done shortly after the plants have commenced forming young or fresh roots, and which, in general, will be some time after they have flowered, and just before they commence a fresh growth. All the plants should be shifted at least once every two years; but when, and the length of time between the shiftings in some cases, will entirely depend upon circumstances. One thing, however, is certain, that whenever the soil becomes in any way sodden, or when the plant has lost its roots from having become over dry, shifting at once is the best remedy. Top dressing, also, is very necessary at times, particularly with very large plants; but if small ones require anything, remove the soil entirely. *From Mr. Gordon's Paper in the Journal of the Horticultural Society.*

To preserve Milk or Cream.—The "Chemical Gazette" quoting from "Newton's Journal" of August 1849, states that "to preserve milk or cream, according to Mr. Bethel, who has taken out a patent for this invention, it is first scalded, and then impregnated with carbonic acid gas in a soda-water machine. When the milk is charged with the gas, it is drawn off into bottles, and corked in the usual way; or, instead of being put into ordinary bottles (from which, as soon as opened, the whole quantity of milk must be poured out), it may be put into strong metal barrels, or cases, or jars, or bottles supplied with a cock or valve attached to a pipe leading to the bottom of the barrel, case, jar or bottle; so that, on opening the cock, a portion only of the milk may be drawn off at a time, the pressure of the gas within the barrel, case, jar or bottle being sufficient to force the milk out; and for keeping milk or cream a moderate time, it is sufficient to put the milk, after it has been scalded, into the metal barrels or vessels, and then force in the carbonic acid gas by an air-pump through the cock; or the milk or cream may be charged with carbonic acid gas by any other of the various means now well known for supplying carbonic acid gas to liquids. For milk or cream, the patentee prefers using carbonic acid gas made by the mixture of carbonate of soda and acid. The gas he washes in water before it is used, and he always scalds or boils the milk before it is prepared."

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Many Australian and other plants, which have been set in the open air during summer, should now be removed to favourable situations under glass, and there placed as near the light as possible, that the process of ripening may still continue, while the plants may be protected from our cold autumnal rains. They should however have the advantage of a free circulation of air, which should continue night and day unless the weather is very cold. Oranges standing in the open air should be removed into their winter quarters during the next week in most parts of England; and, as all other greenhouse plants must soon be housed, the necessary preparatory arrangements should be immediately completed. The climbers in the roofs of the houses should be considerably reduced in bulk, reserving a proper selection of shoots for late autumn flowering, and for adequately furnishing the roof next summer. In addition to this means of admitting the light more freely into the house, let the glass be washed, that the plants may have every chance. Promote the growth of Gesnera zebrina, Achimenes picta and cupreata, by a strong bottom heat, with a moderate top heat; do not allow the latter to be too excessive, or the leaves will be less hardy in their constitution, less durable, and less useful in the decoration of drawing-rooms and conservatories, for which purpose these beautiful plants are admirably adapted. As the Japan Lilies go out of flower, let the pots be laid on their

sides for a week or two in a sunny situation, after which they must be repotted in sandy peat with a little loam, and plunged in a bed of ashes in an open situation. These plants require a very short season of rest.

FORCING DEPARTMENT.

Melons and Cucumbers must now have careful attention, to continue them in a fruitful state as long as possible. See that the lights are in good order, that drip does not introduce canker among the Melons. Water judiciously, and select the mornings of fine days for the purpose; endeavour to keep the pits perfectly clean and wholesome, by admitting at all times sufficient air to ensure a circulation. Let the walls be occasionally washed with lime and sulphur, to destroy insects. Keep up a good temperature top and bottom, and if the pits or frames are furnished with no better means, this must be effected by dung linings and by covering with mats and shutters at night. Young Cucumbers for winter forcing, recently planted, should have sufficient heat and moisture to induce a luxuriant growth, but accompanied by a free circulation of air, to ensure a sturdiness of habit; to this end, also, let the glass be kept perfectly clean, that they may have all the light possible. After planting, a slight shade is necessary for a short period, during strong sunshine, but they must be gradually inured to full exposure.

FLOWER GARDEN.

Little can be done in this department, except in the way of cleaning and removing annuals and half-hardy plants as they cease to be effective. As the various masses of these are removed, the beds should be at once filled with their winter and early spring occupants, whether of bulbs or dwarf evergreens. In planting the former no time should be lost; but if a press of other work renders it necessary to postpone the latter, let the ground be neatly dug over, to give it a clean and fresh appearance for the time being. Attend to the pruning and training of climbers, and the staking and tying of any plants requiring artificial support. Great exertions should be made to render the neat and orderly keeping of a place conspicuous, to compensate in some measure for the gradually fading beauty. The leaves of some of the trees are falling earlier than usual this season, and make it more difficult to keep the grounds in order; this, and the unsettled weather, render the most industrious perseverance necessary to maintain them in a proper condition. Let the necessity of intense exertion be forcibly impressed on the mind of every propagator; every day's delay in putting in cuttings, at this season, lessens the short time that they would have for striking root and strengthening themselves before winter. Unless the work in this department is very forward, it will be advisable to concentrate a strong force upon it, as the early summer display for next year depends considerably on the greater part of the half-hardy stock being propagated in the autumn. Attend to those in progress by judicious watering and shading; remove all decayed leaves, and carefully cut away every attempt at producing flowers. As soon as the cuttings are rooted, let them be gradually but speedily inured to the open air, that they may form sturdy, healthy plants before winter. If frame-room in winter cannot be afforded for the autumn struck Roses, they should be planted in rich soil, in well sheltered borders, in the reserve garden, that they may have time to establish themselves. The Tea-scented and other tender kinds should occupy a compartment by themselves, where they can be conveniently protected from frost. Brompton, Queen, and late Ten-week Stocks should be transplanted into light soil, in a warm, dry border, where they can be protected by placing a wooden frame over them during winter. Take advantage of favourable weather for gathering seeds; those of biennials and perennials should be cleaned and stored immediately, and sown in the reserve garden. A considerable time, often amounting to an entire season, is saved by autumn sowing.

FLORISTS' FLOWERS.

CARNATIONS AND PICOTEES.—We would advise the operation of potting layers to be proceeded with on all favourable opportunities. It is a bad plan to remove them when wet, as the soil is then often retained in the axils of the leaves, which has an injurious tendency during the winter. We have potted our layers in heavy soil, and kept them through the winter in good health; but after-experience has proved to us that a third of coarse sand in the compost is far preferable. In potting layers, do not remove the tips of the foliage as some do. It is attended with no good, and in the case of badly-rooted plants it is positively injurious. If those amateurs who lost their first crop of Pink pipings layered the shoots afterwards made by their plants, they will now be ready to put out. We have to-day planted a beautiful crop of Pink layers, the second this season; though, to the professional man, striking (as it is called) is easy enough, yet the amateur often fails, and by adopting the latter plan much mortification is avoided. The TULIP drawers and boxes should now be gone over; the bulbs, which were found last season to be wrongly placed should now be re-arranged: for instance, if a sort that will reach a third or fourth row place occupied a first, which ought to be lowest, it should be put nearer the centre of the bed. If possible, always have duplicate bulbs for the three rows on each side the centre one, so that the first and seventh may be alike, also the second and sixth, and the third and fifth; the taller varieties occupying the centre or fourth row. By this mode of arrangement, that beautiful uniformity, so desirable in a well appointed Tulip-bed, is maintained. Get offsets planted the first dry day. As for AURICULAS, they may be occasionally watered, but never overdone, as at this season of the year they are impatient of wet. Our Alpines are blooming most beautifully: those that are good we mark with colour, &c., on the peg, the very inferior ones we remove. Top-dress and clean POLYANTHUSES on the open border, and cover the roots of seedling plants, which are sometimes exposed.

KITCHEN GARDEN.

This is more particularly a season for gathering and garnering than for planting and sowing, and whatever general work connected with the former remains undone should have attention forthwith. In storing Potatoes, it is a better practice to form them into small heaps, on the surface of a dry piece of ground, than to dig pits for them; the soil for covering them should be obtained from the ground round the outside of the heaps, thereby leaving the Potatoes in a mound of dry earth. They should at present be only partially covered, laying over them sufficient straw and soil to exclude and throw off rain, but deferring their frost-proof casing till the nearer approach of winter. The object of these precautions is to keep them perfectly dry, and to prevent their sweating; to assist in effecting the latter object, a few pipe air-drains may be laid on the floor beneath the Potatoes, radiating towards the centre, from which an upright shaft of draining pipes may be built to the top of the heap. This is in imitation of the ordinary method of ventilating haystacks. The joints of the pipes must stand sufficiently apart to allow the air a free circulation. In gathering herbs for drying, do not omit a good quantity of Parsley; it answers as well as the green for every purpose except garnishing, and, by securing a supply beforehand, the demand during winter is considerably diminished. Do not neglect to gather in due season Gherkin Cucumbers, Nasturtium seeds, Radish and Bean pods, Chillies, and other matters required for pickling and preserving. In addition to the rows of Parsley planted at the foot of the south walls, a few boxes should be filled with some carefully selected plants of extra curled; these will stand under the trellis of a Peach-house or some other cool place during winter, and form a very useful resource, to afford a supply in severe weather. At the same time, a few boxes should be filled with roots of Tarragon and green Mint, to force in winter. If any alterations in the arrangement of the herb-garden are contemplated, this is a very good time to carry them out, as the roots will yet have time to establish themselves before winter. In very cold localities, a frame or a few hand-lights should now be devoted to the raising of small Salads for late autumn use.

State of the Weather near London, for the week ending Sept. 13, 1849, as observed at the Horticultural Gardens, Chiswick.

Sept.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday 7	20	30.181	30.131	67	45	56.0	E.	.00
Satur. 8	21	30.158	30.092	66	49	57.0	N.E.	.00
Sunday 9	0	29.864	29.840	70	49	59.5	N.E.	.00
Monday 10	24	29.866	29.850	70	51	60.5	S.	.18
Tues. 11	25	29.864	29.811	68	42	55.0	S.W.	.32
Wed. 12	26	29.094	29.611	60	48	54.5	S.W.	.36
Thurs. 13	27	29.905	29.410	62	47	54.5	N.W.	.01
Average		29.700	29.521	66.0	47.1	55.5		0.87

Sept. 7—Cloudy, very fine; cloudy.
— 8—Fine, cool and dry, very fine, cloudy.
— 9—Fine throughout; hazy at night.
— 10—Fine; distant thunder at noon; heavy showers in the evening.
— 11—Hazy; very fine, clear at night. [showers.
— 12—Heavy rain from dense clouds, lightning at night, heavy
— 13—Overcast, rather boisterous; rain.

Mean temperature of the week, 2¼ deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Sept. 22, 1849.

Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds						
						N.	N.E.	E.	S.E.	S.	S.W.	W.
Sunday 16	68.2	47.6	57.9	10	0.60 in.	1	2	3	1	4	5	4	1
Mon. 17	69.0	47.9	58.4	10	0.50	1	1	2	3	2	8	4	3
Tues 18	66.4	44.9	55.6	12	0.76		6	1	2	6	4	3	
Wed. 19	69.9	45.6	57.2	10	0.60	3	2	4		5	7	1	2
Thurs. 20	67.3	44.6	56.0	9	0.45	—	3	3	1	2	4	6	3
Friday 21	66.8	45.8	56.3	13	0.20	2	1	5	2	6	3	2	2
Satur. 22	67.1	45.2	56.6	11	0.40	—	1	6	1	6	6	4	1

The highest temperature during the above period occurred on the 17th 1845—therm. 84 deg.; and the lowest on 17th, 1840—therm. 29 deg.

Notices to Correspondents.

A LONG STRING OF QUESTIONS: *L B S.* 1. A wall built of granite will answer for a conservative wall, but it is not so good as one faced with bricks. 2. You can, without difficulty, preserve half-hardy plants through the ensuing winter in Kent, in sheds protected from the air on three sides, but with no light except the one open side, where matting or something similar must of course be hung. 3. The best material for protecting the roots of plants left in the ground is leaves, next coal ashes, &c. 4. Camellias will live out of doors in the winter in Kent without mats, against a north wall. 5. Heliotropes will not live through a winter if shaken from the earth and hung in a dark place. 6. It is not advisable to leave Salvia patens in the ground during the winter. 7. It is unnecessary to mix water with the drainings from a farm-yard, into which the slops from a dwelling-house, including quantities of soap suds, are conveyed before applying the fluid to flowers; if too strong it can be diluted when applied. 8. We do not know whether it be possible to make the Fuchsia corymbiflora and the white Azalea blossom in the open air. We believe that the latter will in the milder parts of England. 9. The probable cause of all the buds withering on a plant of Maurandya, which looks in perfect health, brought from a cold frame into a sitting-room where it has abundance of light and air, and where no fire is kept, is a dry atmosphere. 10. The leaf belongs, we believe, to Celsia Arcturus. 11. The following varieties of annuals will blossom in the spring of next year, if sown this autumn: Nemophila insignis, Collinsia bicolor and grandiflora; Gudetia Lindleyana, rubicunda, and tenuifolia; Lupinus nanus, Gilia tricolor, Leptosiphon androsaceus and densiflorus, Viscaria oculata, Clarkia pulchella and alba, and Eucharidium grandiflorum.

BEES. *A B.* Feed your colony as soon as possible in the forenoon of warm days. Bees cannot exist long on honey alone. *W.*

BOOKS: *A A.* James' "Gardening," an old quarto.

DISEASED LEAVES: *E Smith.* Your Pear leaves are attacked by the fungus called Cicidium laceratum.

GOOSEBERRIES: *John Willison.* Your seedling late Gooseberry, middle-sized, roundish-oval, dark red, downy, has a rich flavour, and would doubtless be good for preserving. It retained its flavour during carriage better than is generally found to be the case with Gooseberries.‖

INSECTS: *H S.* Consult our article on the Cockchaffer in the *Gardeners' Chronicle* of August 4th last, p. 484. It would be well to turn up the soil and water it well with lime and gas-tar water. The same applied to the roots of the Lettuces would also prevent these attacks of the grubs. *W.*—*M B.* Corixa Geoffroyi, a water insect; which, having taken flight, has mistaken the glass of your frame for water, and alighted there. *W.*—*E F.* Your Grape leaves are badly infested with thrips, which you must get under by fumigating your house with tobacco or pounded Laurel leaves. You see the impropriety of not nipping the mischief in the bud. *W.*—*T B.* Your Dahlias are infested with a species of thrips distinct from that of the Vine, but having the same habits. Try fumigation with tobacco, enveloping the plant in a parapettic-coat. We believe this tribe of insects has this season been propagated to an unusual extent. It has nothing to do with the Hop-fly. *W.*— *Shem.* Nos. 1 and 2, females of Sirex juvencus; No. 3, Capsus spissicornis; No. 4, pupa of some species of Nabis; No. 5, we have not been able to rear the Cynips from this species of Rose-gall. Your plan of pinning insects upside down is a novelty, but by no means an improvement. *W.*

MELONS: *R Josling.* Your small round green-fleshed Melon proved to be well flavoured; the large oblong scarlet-fleshed sort was but middling, in that respect. The latter had burst, and had begun to decay when it reached us.‡

NAMES OF FRUITS: *H C Z.* Your Grape appears to be the same as the Chasselas de Fontainebleau.‖— *W T.* Dumelow's Seedling ‖—*J C N.* Yellow Ingestrie ‖

NAMES OF PLANTS: *M B.* Young fronds (from seedling plants) of Asplenium Adiantum nigrum *S.*—*P B.* 1, Warrea discolor, quite new; where is it from? what its habit? 2, some Arundina.—*Exeronus.* 6, Crocus serius; 582, C. vallicola. The very curious set of things in the tin box has arrived safely—a thousand thanks. They will be reported on hereafter.—*T Fairfield.* The old and well known Cornus mas, or Cornelian Cherry.—*A Constant Reader.* Funkia Sieboldi.—*E M J.* Rhamnus catharticus.—*S R.* Your African seedling is a Gomphocarpus, and apparently G. albens.—*M G C.* Lathyrus tuberosus. All latter volumes of the "Botanical Register" have a general index, except the two last, which are indexed separately. People will not pay the expense of elaborate indices. —*H W F, Chichester.* The Hop Elm is the Hop Hornbeam, Ostrya vulgaris. 1, some sort of Carya or Hickory; 2, the curled Witch Elm; 3, Ulmus glabra; 4, the Scarlet Oak, Quercus coccinea. Plants out of flower require more time for naming than can be afforded without great inconvenience. —*Shem.* 1, Rosa spinosissima; 2, Calamintha officinalis; 3, Calamintha Acinos. *D N R.* Only an accidental monster of Stachys sylvatica.—*J Jones.* Salisburia adiantifolia, a common hardy tree.—*B Z.* 1, Nephrolepis exaltata; 2, Nephrodium molle; 3, Drynaria hiloides; 4, Nephrolepis pectinata; 5, Adiantum assimile; 6, Pteris serrulata. *S.*—*T B W.* Perscoonia linearis.—*A Foreigner.* We cannot waste time upon unexaminable fragments.

POLYSTICHUM LONCHITIS: *P J W E.* You will find this rare Fern thrive if firmly planted in soil which is rather turfy and sandy, and thoroughly drained, so that it can be supplied freely with moisture without souring the soil. The Wardian case should suit it, as it grows vigorously in the moist mild climate of Ireland. Perhaps your soil is full of stagnant moisture; or it may be parched. Avoid both these extremes. The staple of the soil may either be peat or loam, provided it is of sufficiently open texture. This Fern seldom does well on rock-work that is much exposed. *N.*

VINES: *Salop.* On a south aspect, and against the back of a kitchen chimney, you may plant the Royal Muscadine, in November, or early in March.‖—*G.* It is impossible to say what occasions some of your Grapes to be small, sour, and red, while others are plump, sweet, and black. Most probably it is owing chiefly to coldness at the root; perhaps partly to vicissitudes of temperature above-ground.‖—*G S.* The leaves you have sent us swarm with the young of the red spider, which is sufficient to account for the unhealthy appearance which they exhibit.

WATER: *A Sub.* We will thank some of our correspondents to inform him respecting the best mode of conveying water from a distance, and the relative expense of the different modes; also the best trees for an avenue in an exposed place, and also the preparation of manure to ensure a speedy growth of the avenue.

MISC.: *J B.* Do not shut up greenhouses at all at this season; leave the windows open always. If you want heat keep them closed all day and open at night. Cold nights are advantageous to ripening wood. Coddling at night is the ruin of plants.—*Sylvanus.* Send bulbs to New Zealand the moment the bulbs are ripe—packed in dry sand.—*A Reader.* Your Grapes shank because the roots are buried too deep. You *ought* to find them close to the surface, enjoying the sunshine: you *will* find them pining in a dungeon "deep deep underground."—*J L R.* Your sporting Dahlia is not a common case; but examples of the same tendency appear occasionally in many plants, *e. g.* Chrysanthemums, Roses, Peaches, Plums, &c. The cause of such changes is unknown.—*Flora.* We presume that your Fuchsias cast their fruit without ripening it, because they were starved. When bearing fruit such plants require to be particularly well fed, especially upon water or weak manure water.—*G.* Melons require a steady condition of moisture at the roots; but a constantly moist and close atmosphere renders the fruit and even the stems liable to damp off.‖

SEEDLING FLOWERS.

DAHLIAS: *R., Slough.* Lady Grenville: Petals brownish-red, with a white tip, flowers good in size, shape, eye, and depth of petals, but the petals are a little too flat, and the colour, although novel, is dull.*—Earl of Clarendon: Colour, orange scarlet; size, shape, eye, and depth of petals very good, but the petals are rather small, and so numerous as to give them an overcrowded appearance.*—*G L C.* Fancy variety: crimson, tipped with white; a nicely marked kind, with a good shaped petal, but a little flat in shape. Yellow: Flowers good in shape, colour, and depth of petals; the petals, also, are good in shape, but rather small, and too numerous. The flowers sent are rather below the standard in size.*

FUCHSIAS: *W W.* Tube slender, and not very long, with the lobes long, broad, and rather pointed; corolla deep violet, rather short, but well shaped; common, and of little importance.*—*H G.* 1-44, tube rather long, pure white, and well proportioned; lobes broad and nicely reflexed; corolla orange scarlet, well shaped; a nice variety. 1-45, tube long and well proportioned, pure waxy white; lobes broad and well reflexed; corolla rosy violet, well shaped; a nice delicate variety, with well contrasted colours.*

PETUNIAS: *H J H.* Very much withered when received, and in an unfit state for examination; they, however, seem to comprise some nicely-marked varieties.*

VERBENAS: *W K B.* Colour bright rose, fading to pink; a remarkably fine variety, with much the largest flowers we have yet seen.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

PORTLAND CEMENT.—Testimonials received from all quarters, prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

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Orders to be addressed to the Superintendent at the MANUFACTORY, Middle-yard, Great Queen-street, Lincoln's-inn-fields; or to either of the following Agents. *In London:* Mr. H. COLES, 32, Cranbourn-street, Leicester-square; Mr. MARK FOTHERGILL, 201 A, Upper Thames-street; Mr. GEORGE LAWRENCE, 18, Piccadilly; Mr. G. CHARLWOOD, 14, Tavistock-row, Covent-garden; and—*In Hartlepool:* Mr. STEPHEN HORNER.

N.B. To insure punctuality in the delivery, when the quantity required is considerable, a few days' previous notice is requested to be given.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 15, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Sept. 20—Agricultural Imp. Society of Ireland.
THURSDAY, — 27—Agricultural Imp. Society of Ireland.
FARMERS' CLUBS.—Sept. 28: Hadleigh.—Sept. 29: Northampton.

A GREAT deal of GUANO and of other MANURES—perhaps the most of what is sold at any distance from our sea-port towns—is purchased by the farmer from dealers who, retailing the articles at second hand, are themselves as liable as their customers to be the victims of roguery. This fact was perfectly illustrated by a case tried last week in the Gloucester County Court. That the ultimate purchasers of the article would avoid the accumulated risk which they thus incur, by dealing only with the original importer, or with those who can supply them with orders upon his warehouse, appears plain enough; but it is not to this we would now refer. It is to the perfect safety which the evidence of the analytic chemist gives to the purchaser, even under the double risk he may have thus incurred, that we beg the attention of our readers.

Mr. BUSSELL of Ross purchased from Mr. MARKLOVE of Gloucester some "Patagonian guano" for 6*l.* 15*s.* per ton. It was bought by sample, and the bulk delivered was of the same quality as the sample by which it had been bought. The transaction was perfectly straightforward and honest on both sides. Mr. MARKLOVE is well known as a perfectly trustworthy honourable man: but, as we are all well aware, harm is often done and suffered *unintentionally*. The thing we have to show, however, is, that if buyers of guano will only do as Mr. BUSSELL did, they are perfectly safe from every risk which ordinary care is likely to incur. He "took samples out of all the bags to Mr. HERAPATH of Bristol for analysis," and their contents, which he had bought for guano, proved to be not guano at all, but a compound of gypsum, bone-earth, and "organic" rubbish. Mr. HERAPATH said in evidence—we take his words from the *Gloucester Journal*, in which the whole case is fully reported—"Mr. BUSSELL came to Bristol a short time ago, and brought me samples of something which purported to be guano to analyse. I did so, and found it to be composed of

Water	15.22
Organic matter	16.75
Crystallised gypsum	32.19
Carbonate of lime	.17
Phosphate of lime	32.67
Superphosphate of lime	2.11
Silica	.34
	99.45

Its nitrogen is one per cent., consequently the fertilising powers of 1 lb. of it would be equal to those of 2½ lbs. of farm dung. It is undoubtedly a made-up article, and not a natural guano. It appears to be made of one-third part of ground raw gypsum, and one-third part of bone earth or coprolites, with a little vitriol added to it; and the remaining third of some organic matter. It is very poor in ammonia. I never saw a guano like it before; and the reason I say it is a 'made-up article' is, first, because crystallised gypsum could not well exist in natural guano; secondly, it contained no shells of any sort; thirdly, it contained no feathers, which guano always does; fourthly, its solution is acid instead of alkaline; and fifthly, its nitrogen is lower than that of any guano I ever tried. It has not even the smell of guano, by which those who know anything about guano could tell it to be spurious immediately; but it is made to resemble guano as much as possible in appearance and in character. I have analysed many guanos. Like other things they differ in quality, but there is a general character running through all of them. I have invariably found shells in guano—water, of course—organic matter, always—crystallised gypsum, never—carbonate of lime, commonly—phosphate of lime, always—superphosphate, never—nitrogen, invariably."

The case was obviously at an end after such a statement as this; and what we particularly impress upon purchasers of guano is, that such a statement as this can be had by every one who will take the trouble to preserve a specimen of the article he purchases, for analysis by a competent chemist, in case he should be disappointed in the result of its application. "The learned judge was of opinion, from the evidence on both sides, that some rogue or other had imposed upon the merchant at Liverpool, and through the merchant at Liverpool, in all probability, upon his innocent agent, Mr. MARKLOVE; and that that which Mr. MARKLOVE had received was not guano. Could he justly order Mr. BUSSELL to pay 6*l.* 15*s.* per ton for an article that was not guano? Mr. CARTER said that the guano was sold by sample. But what was the sample said to be?—guano. The sample was of that which Mr. MARKLOVE believed to be guano, and of that which Mr. BUSSELL, upon the representation of Mr. MARKLOVE, believed to be guano too. It was so clever a counterfeit that it could be very well imposed upon an agent in Liverpool; and his opinion was that the fraud was not perpetrated by any house in England. From a consideration of the whole of the evidence judgment must stand for the defendant, with costs. In arriving at this decision, however, he could not avoid saying that he was sorry for Mr. MARKLOVE." Mr. MARKLOVE has a remedy, no doubt, similar to that by which Mr. BUSSELL has been saved; at all events, the great point for the farmer is, that *he* is safe if he do but use ordinary precaution in these transactions, and trust in the real power of chemical analysis to protect him.

Just see the character of the stuff which had imposed on Messrs. MARKLOVE and BUSSELL. Mr. WAY has a most valuable paper on guano in the current number of the English Agricultural Journal, in which he arrives at the conclusion that, in the valuation of manure, according to present market rates, ammonia should be considered worth 6*d.*, phosphate of lime ¾*d.*, and potash 2¼*d.*, per lb. In the case before us, a ton of the spurious guano contained—

About 336 lbs. of water, worth ...	£0	0	0
„ 360 lbs. of organic matter, containing 22 lbs. of nitrogen, or, say 26 lbs. of ammonia, at 6*d.*	0	13	0
„ 720 lbs. of gypsum, at 1*s.* per cwt.	0	6	6
Carbonate of lime, worth	0	0	0
About 720 lbs. of phosphate of lime, at ¾*d.*	2	5	0
„ 29 lbs. of superphosphate, at 1½*d.*	0	3	6
Silica, worth	0	0	0
Total	£3	8	0

The real value of the article, at the *highest* valuation, did not exceed one-half the charge made for it. So long as such enormous profits reward roguery, so long will security be possible, whether for dealers or farmers, only by obtaining evidence of the composition of the article, either before or after purchase. The dealer should obtain an analysis before purchase; the farmer should mark a sample, for analysis after harvest, in case the result of the application seems to require it.

TESTIMONY is valuable not merely in proportion to the truthfulness of the witness; his ability as well as his honesty determines the value of his evidence. People are often misled by well-intentioned guides. The student of many an art and science has often lost his way for a time, misguided by false finger-posts, which had nevertheless been erected with the sincere desire to direct him aright. And the agricultural student, in proportion to the greater variety of his excursions on the field of knowledge, and the greater intricacy of the roads he traverses, is the more liable to these mishaps. Error is common in proportion as truth is difficult of attainment; and agricultural truth being accessible only to its more laborious students, agricultural error is frequent enough. The writings which profess to guide the agriculturist abound in mistakes with regard to his art—mistakes arising, no doubt, from the misconceptions, not the dishonesty of those who originated them. And thus the severest criticism is often appropriate to the agricultural writings of really honourable men.

It is on this account only that we could excuse the numerous critiques which have appeared of Mr. CAIRD's pamphlet on HIGH FARMING*. No one has thought of accusing it of any but unintended error; but this has been done with a confidence strangely inconsistent with the fact that the accusers are, at the least, as fallible as the accused; and that the arguments of the former are quite as liable to mislead as was the eyesight of the latter to have been misled. Mr. CAIRD, however, is now corroborated by other evidence: the details of Mr. HOPE's report on Auchness farm were given in our last Number, and well deserve a careful examination. The pamphlet, too, which excited all this discussion deserves to be well studied: it has reached its fifth edition in less than five months from its publication, and as it was worthy of attention, whether it had received it or not, we shall again refer to its contents.

And, first, as to the qualifications of the witness: Mr. CAIRD has long been a practical farmer, fully aware of the difficulties which render agricultural evidence generally so valueless, and thus exempt from that tendency to enthusiastic exaggeration which unprofessional men are led into by the partial view which alone an unpractised eye can obtain. We know of no one whose evidence on farm affairs can be safely taken if that of an intelligent man, long practised in the art, is to be rejected.—But how has it been treated in the case before us? It would really seem as if the wariness of some agricultural writers on behalf of the tenant farmer led them instinctively to suspect the truth of reported improvements in his art. It would seem as if they *wished* this reported success and that reported improvement might prove mistakes; for if (they appear to think) it become known that this tenant farmer is prospering, so surely his landlord and others in the train will raise their rents to within the same margin of the gross returns of farming as before. Now we have no fear of this. It is not the owners—it is the occupiers of land who raise its rent. It is the competition among cultivators to which high rents are owing; and till Auchness profits are general—a thing surely not undesirable—the general tendency of rents will be unaffected by the publication of them. People talk of "Live and let live"—but, really, those who are loudest in praise of the motto seem to have the least confidence in the existence of its principle. They are forced to admit that however well it serves as a text from which to preach on duty, they have no confidence in it as a real motive in the ordinary run of business transactions. How much better to acknowledge this at once: the real truth is a far better foundation for the security of steady business-

* BLACKWOOD and SONS, Edinburgh.

like behaviour than any that this continual advocacy of a merely pretty sentiment will ever provide. The truth we believe to be this—that the would-be and not the *actual owners of property* determine its value—that it is the competition among purchasers and not any understanding among the holders of the article which is offered for sale, that determines the amount of the purchase money. Landowners take as much rent as they are offered by trustworthy tenants: and rents will rise just as tenants permit—not otherwise. Surely it is the height of paltry foolishness to fear improvements in any art whatever: let us know the truth whatever it be—it will tell upon us whether, ostrich like, we hide our heads in wilful unbelief or not—but when the truth is so obviously for our benefit as in the case before us it professes to be, the prejudice which instinctively opposes it is inexcusable. Let, then, the tendency of Mr. Caird's pamphlet be what it may, the point open to discussion regarding it is not whether it be a "Landlord's statement" as some have called it, but whether or not it be a true one.

Now on this point those who have the means and the leisure ought to apply for permission to satisfy their doubts by a personal inspection. For those who cannot spare the time which this would require, we have stated the grounds on which we advise them to believe in the reports of Messrs. Caird and Hope. When they shall fully admit the truth of the reported results, they will be disposed to examine the circumstances under which they have been attained, and they will desire to assimilate, as far as possible, their own to the conditions under which such produce and such profits have arisen. There is no better advice to give when the price of agricultural produce is falling, than that those should be made our examples whose profits so far exceeded our own when prices were satisfactory: and to examine in detail the plans of Mr. M'Cutcheon at Auchness, will be in strict accordance with our intention expressed last week, to look for the causes of agricultural distress in the faults of the art, not in those of its political circumstances.

CANADIAN AGRICULTURE AND RAILWAYS.

The valuable pamphlet of Major Robert Carmichael Smyth is calculated to stimulate our national energies towards the accomplishment of designs which, if achieved, will have immense influence in promoting emigration, colonisation, and commerce, the three great points on which our national prosperity hinges. The writer shows that the connexion of the Atlantic and Pacific Oceans by his line of railway, would unite "in one powerful chain the whole English race." We avail ourselves of part of an able paragraph which appeared in the *Sun* newspaper (Feb. 16), descriptive of the results which might be expected to follow from the establishment of a Colonial American Railway.

"According to the scheme disclosed in this remarkable pamphlet, mails, merchandise, and passengers might be perpetually conveyed to and fro between England and her colonial territories in the two hemispheres without having to traverse the roads of continental Europe (which roads might be rendered impassable at any moment by the outbreak of a general war), and without the necessity of having to double either the Cape of Good Hope or Cape Horn, where the seas are as tempestuous as the voyages are circuitous; and the intercourse between Great Britain and her most distant and scattered possessions would not only be by this means less liable to interruption, but it would be infinitely more rapid, and, in every respect, more convenient. The proposed line of railway would link together the two oceans, the Pacific and the Atlantic; it would stretch in a direct line across our colonies in North America; it would commence at Halifax, in Nova Scotia, and would terminate at Frazer's River, pouring into the Gulf of Georgia; it would communicate by steam-vessels with the ports of the United Kingdom in one direction, and in the other would promote a continual interchange of commodities and intelligence with Pekin, with Canton, with Australia, with New Zealand, with the Spice Islands, with Ceylon, with Madras, and with Calcutta."

This is a gigantic scheme, but not impracticable in this age of railway wonders. That a communication will be opened between the two oceans is a matter of which we entertain no doubt. The Americans of the States will do it if we do not; a short cut to California is now a matter of necessity with them. The voyage thither from New York by Cape Horn must be shortened, even if the golden treasures of that present El Dorado should become exhausted. A great population has been already introduced into that region, and Agriculture and Commerce must be promoted and maintained there.

Assuming that there will be a line of railway, we will suppose across the narrow Isthmus of Panama, or near it, and a free communication with California by land and sea, Vancouver's Island necessarily becomes a valuable colonial appendage to us, one of those colonies towards which some portion of the tide of emigration may be directed with great ultimate advantage to us. It has a fair climate, fine soil, secure harbours, and abounds in coal, in the raising of which the natives work industriously. Sir George Simpson says, respecting it,* "We passed along the inner end of Fuca's Strait, the first of the numberless inlets of this coast that was ever discovered by civilised man. The neighbouring country, comprising the southern end of Vancouver's Island, is well adapted for cultivation, for in addition to a tolerable soil and a moderate climate, it possesses excellent harbours and abundance of timber. It will doubtless become the most valuable section of the whole coast above California."

We may be permitted to doubt whether the Government have acted judiciously in surrendering this island to the Hudson's Bay Company, because it is very questionable whether it will be the interest of the Company to encourage colonisation there. We believe that at this moment they (the Company) demand twice or thrice as much per acre for their lands as the United States require for theirs, on the opposite side of the Sound. Who then will pay a price which practically amounts to a prohibition! If we be not greatly in error, it is not the policy of the Company to encourage settlers there, because these, in disposing of their agricultural produce, would become rivals to the Company in the purchase of furs, which they would have to take in barter. At least such is a common opinion. The Government, however, have a power of resuming the ownership of the island after five years, if the Company should fail in satisfying the expectations of this country.

We would now draw attention to the suggestions with which we have been favoured by another military gentleman, who is well acquainted with the condition of all our North American Colonies. Having for some years held a staff appointment, and travelled repeatedly over Western Canada in particular, he has had ample opportunities of observing the actual condition of our provinces in that region of the world. His diary, which he has placed at our disposal, though written only for his private use, betrays the good education and intellectual vigour of the writer.†

When it is borne in mind that about 250,000 emigrants annually leave our shores, with frequent disappointment of their hopes, every plan which seems likely to give a good direction to the tide of emigration is worthy of some consideration, and any feasible proposition by which Irish pauper labourers may be established with cheapness and facility in any of our colonies, is at this moment especially deserving of attention by those individuals who are looking to Sir Robert Peel's scheme for the regeneration of Ireland, socially and agriculturally, which involves the removal of the surplus population to distant lands, where they may find the means of prosperity which are denied to them at home. We know that enormous sums are remitted to Ireland by settlers in the Canadas and the United States, to defray the expenses of their relatives in the mother-country to the trans-Atlantic settlements. What a boon then would it prove, if an arrangement could be made, by which, in the course of a few months, employment should be secured to the large body of pauper labourers who would willingly go out, from various parts of the United Kingdom, if they had thereby a certainty of bettering their condition! What a boundless field for the absorption of labourers, including the adults of the ragged schools, in our North American provinces! Even the outcast beings of the streets might be quickly absorbed into the healthy community of our colonies there, without corrupting it, though they are plague-spots in their native land.

We shall first notice a few short extracts, respecting the west country, from Sir George Simpson's work. "The river (the Raministaguvia, leading westward from the western extremity of Lake Superior) passed through forests of Elm, Oak, Pine, Birch, &c., being studded with isles not less fertile and lovely than its banks, and many a spot reminded us of the rich and quiet scenery of England. The paths of the numerous portages were spangled with Violets, Roses, and many other wild flowers, while the Currant, the Gooseberry, the Raspberry, the Plum, the Cherry, and even the Vine, were abundant. One cannot pass through this fair valley without feeling that it is destined sooner or later to become the happy home of civilised men, with their bleating flocks, lowing herds, with their schools and their churches, with their full garners and their social hearths. The mines of Lake Superior, besides establishing a continuity of route between the east and west, will find their nearest and cheapest supply of agricultural produce in the valley of the Raministaguvia.

* * The river, from Fort Francis downwards, a stretch of nearly 100 miles, is not interrupted by a single impediment, while yet the current is not strong enough materially to retard an ascending traveller; nor are the banks less favourable to agriculture than the waters themselves to navigation, resembling in some measure those of the Thames, near Richmond. From the very brink of the river there rises a gentle slope of green sward, crowned in many places with a plentiful growth of Birch, Poplar, Beech, Elm, and Oak. Is it too much for the eye of philanthropy to discern, through the vista of futurity, this noble stream, connecting as it does the fertile shores of two spacious Lakes, with crowded steamboats on its bosom, and populous towns on its borders."

"The soil of Red River settlement is a black mould of considerable depth, which, when first tilled, produces extraordinary crops,—as much as some accounts as 40 returns of Wheat; and even after 20 successive years of cultivation, without the relief of manure or of fallow, or of green crops, it still yields from 15 to 25 bushels an acre. The Wheat produced is plump and heavy. There are also large quantities of grain of all kinds, besides beef, mutton, pork, butter, cheese, and wool in abundance. The soil of *Butte aux Chiens* (eight days' journey westward from Red River), towering 400 feet over a boundless prairie, as level and smooth as a pond, is covered with an alluvial soil of great fertility."

"The river Sascatchawan, at Carlton, is navigable for boats from Rocky Mountain House in long. 115° to Lake Winnipeg in long. 98°, upwards of 700 miles in a direct line, but by the actual course of the streams double that distance. Though above Edmonton, which is 900 miles westward of Red River, the river is much obstructed by rapids, yet from that fort to Lake Winnipeg it is descended without a portage, alike by boats and by canoes, while even on the upward voyage the only break in the navigation is the grand rapid already mentioned." Speaking of Edmonton, this interesting writer says, "the vicinity is rich in mineral productions. A seam of coal about 10 feet in depth can be traced for a very considerable distance, along both sides of the river." That coal may prove to future generations of men the means of facilitating intercourse by railway, through a region yet imperfectly explored. Western Canada is, without doubt, the most desirable portion of our American possessions as to soil and climate, and there are there millions of acres of unappropriated or unoccupied land inviting the labour of the emigrant. Let us introduce here by way of episode a portion of our correspondent's diary *verbatim*. It holds out great encouragement for emigration to the industrious labourer, and declares facts without unnecessary amplification or any artificial embellishment.

"A humble farmer having disposed of his interest in a small mountain farm in the north of Ireland, emigrated to Canada in 1845. His family consisted of his wife, six sons of the respective ages of 18, 16, 14, 12, 6, and 3; and two girls of 8 and 10 years. They arrived at their destination in the Bush, as it is called, about the beginning of August, and settled on the Canada Company's lands in the Huron district. This emigrant not having capital wherewith to buy at once, took a lot of 100 acres from the company on their terms (with command of capital a much more advantageous purchase may be made from the Government or individuals), *i.e.* at 12*s.* 6*d.* the acre; with 10 years to pay it off, interest charged meantime 6 per cent., and payment received by the company's agents by instalments whenever convenient to the purchaser. The settler's first step was to raise a log house; this was quickly done for him by his neighbours, after the custom of the country, merely at the cost of a feast, and with the understanding that he or one of his sons should be ready to give a day's work in return for every man given to him. On this occasion, a Bee (as it is called), was summoned, the settlers for some distance round collected, and in one day the space for the house was cleared, the trees were felled, jointed, and fitted, the walls built, and the skeleton of the roof placed on them. Two days more of his boys' labour and his own sufficed to cover it in with bark. These houses generally measure 20 by 16 feet. It was now harvest time; so leaving his wife and little ones to take care of his new house, he and his eldest boys hired themselves out for daily labour; he and the eldest earning one dollar (4*s.* 2*d.*) per day each, the second boy ¾ of a dollar, the third ½ a dollar; total 3¼ dollars daily, with three good meals added. This engagement lasted for about a month; afterwards they worked at intervals through the fall at lower but still remunerating wages, and earned so much as enabled them to live through the first year without expending more than 5*l.* in cash, besides paying with their labour for the boots and shoes they required (of wearing apparel they had taken a supply with them from home), for three cows, three sheep, and eight pigs; even the woman (but she was one of extraordinary intelligence, thrift, energy, and industry), who had brought her wheel with her across the Atlantic, earned three barrels of flour towards the house-keeping by spinning wool for neighbours less skilful than herself. It must be understood that although calculations are made in money, payments in those remote settlements are almost always made in kind (money being very scarce), but good measure or weight is always given.

"After Christmas when the snow was well down, the family began to work for themselves with the axe, and the father and sons were able to clear and get under crop by the following spring 15 acres, which produced them Wheat, Oats, Indian corn, Turnips, Pumpkins, and pot-herbs, all of which went in aid of their own subsistence. They grew Hops, with which the good wife made yeast for her bread, and in the month of March she and her girls contributed their aid by tapping the Maple trees, from which they extracted juice enough to make 150 lbs. of sugar; worth in their remote place 6*d.* a pound. Two of their cows produced them bull calves, so that they had the good luck of having in prospect a yoke of oxen without purchase, a valuable acquisition to a settler. In the second year they had 15 acres more cleared; a yoke of full grown oxen (which they were obliged to get on credit for immediate use), paid for; and crops sufficient to maintain them through that and the following year. Another 15 acres cleared the third year would, they expected, enable them to pay the first instalment of their purchase

* "Overland Journey Round the World," p. 182.

† The gentleman to whom we refer, Major Ogle Moore, 82d Regiment, has fallen a victim to malignant cholera; to the deep regret not only of his regiment, but to the many friends whom his great worth had attached to him. He was endowed with a rare combination of professional and personal qualities, which gained him unqualified admiration and esteem.

money. All this while, although they worked very hard, they lived in rude plenty on substantial fare. I subsequently learned that towards the end of 1847 this family had done so well that they were building a commodious frame house in a better situation on the farm; the old house was to be converted in the harvest of 1848 into a barn. Such a family soon became the employers of labourers."

But "the far west" is not easily arrived at by the poor emigrant, who has a tedious voyage along the St. Lawrence from Quebec, and often endures great misery (especially so if he have a family), before he reaches the promised land, whether from Boston or Quebec. The settler, too, in that remote land being obliged to limit the conveyance of his surplus agricultural produce to the St. Lawrence, which is navigable only during six months, labours under a great disadvantage. Now, a railway communication from Halifax to Quebec would give an open sea-port communication at all seasons. On this subject, the "Diary" informs us "A despatch addressed by Lord Grey to the Governor-General of Canada towards the close of 1846 on the subject of railroads, tended considerably to diminish the annoyance caused by the sudden and testy abrogation by the Government of the United States, of the postal convention with Great Britain, by giving rise to a hope that some comprehensive scheme was in contemplation for uniting our noble North American provinces together, with an iron band, to use the expression of the late sagacious and lamented Lord Metcalf. A second missive issued recently from Downing-street, on the same subject, consequent on the successful completion of the survey ordered by Government, has excited new hopes that the happy moment has at length arrived for securing to the empire at large, but more especially to the North American portion of it, great and lasting advantages; among which would be, pre-eminently, security from danger, in case of hostilities, by means of good military communications between the open parts of Novia Scotia and New Brunswick and the strongholds of the interior of Canada at all seasons of the year.

"Second to this advantage only, would be the security and rapidity of postal communication—a matter of essential consequence to the mercantile community, to which is to be added the advantage of conveying agricultural produce to a port of shipment when winter has closed the great Canadian highway (the St. Lawrence), against us. That such important objects may be rendered subservient to a great and systematic plan of colonisation should give them an additional claim to the consideration of the Government, which feels that other outlets than those hitherto used for carrying off her excessive population are needed." I would suggest then that a railway be formed from Halifax to Quebec, the utility of which undertaking none can doubt, though its practicability will undoubtedly be questioned by very many. The immense distance of trackless wilderness to be traversed, the snows of winter to be encountered, and above all the great expense to be incurred, are the ready objections that present themselves to the speculators in railway stock, whose only test is, will it pay? But higher ground must be taken by those who have great national objects in view. Nor is it always advisable that the narrow spirit of the counting-house should influence the councels of the state. A great difficulty has already been removed by the report of Major Robinson, which announces that the line is perfectly practicable, contrary to pre-conceived opinion. Assuming then that the financial difficulties of the scheme (these are serious) can be overcome, by the Imperial Government contributing its share to the construction of a military road, the provincial Government theirs to the formation of a great mercantile line of communication, and the balance supplied from the sale of lands along the line, it remains to be shown how the minor difficulties that will present themselves at the outset of the undertaking may be removed.

"To carry through a work of such magnitude as a line of railway through hundreds of miles of unsettled country, and to complete it within any reasonable degree of speed would, from the difficulty of procuring labour, appear almost insurmountable. Supposing (we are still referring to the "Diary") in round numbers, the length to be 600 miles, and that a belt of 5 miles in width were cleared throughout the extent, and appropriated to the settlement of an emigration population, there would be 1,920,000 acres for their sustenance; and supposing 100 acres (according to the calculation in Western Canada), for every six souls, a population of 115,200 individuals would be well maintained on that belt of land if it were as fertile as that of West Canada. But, deducting largely for the inferiority of soil and climate, as compared with that other province, let it be supposed that only 40,000 emigrants could be settled on the belt, how are they to be hutted and fed there, and set going on their farms? How are a sufficient number of labourers to be fed and lodged in the wilderness, at the commencement, more especially, of the line of road? And be it considered too that the pioneers of such colonisation should possess a much greater proportion of the muscles and sinews of labour than will be requisite for the subsequent culture of the country. I would suggest, then, that throughout the line of the proposed railway, whatever arrangements may be made as to granting land to companies interested in the undertaking, a sufficient portion be allotted to the settlement of labourers, on the principle which succeeded so well (while it lasted) in the Owen Sound district (Canada West), and which it is in contemplation to adopt in opening up the country between Kingston and the Ottawa, viz., to give 50 acres free to every labourer on actual settlement, reserving 50 more adjoining which he shall have the right of purchasing, at a moderate rate, and to be paid for by easy instalments. It would then be for the home Government to organise and send out a strong healthy body of labourers, in whatever way might seem most conducive to the relief of the parent country. The stream once set in motion might be kept constantly fed and constantly increasing and tending to the west, whose wilds have enormous powers of absorption.

"But while all this is maturing; while surveys are being completed, and emigrants preparing to depart, it strikes me forcibly that the Government might make a great stride in advance. I have already claimed from England a large share of the expense, on the plea of her interest in the construction of a military road. I now claim from her the assistance of her soldiers to commence a work which may yet be required for military purposes; and I do so on account of the immense advantage, at the beginning of such a work, derivable from the combined power which military organisation alone can give. I regret to say that great names are to be found amongst the number who still hold to the idea of reducing a soldier to a piece of mechanism, just fit to pipeclay belts, to fire ball, or thrust a bayonet; and, with a view to keep this machinery in order, he is to be studiously withheld from any other occupation, however well calculated to develop his frame, expand his mind, or teach him that reason is the essential difference between him and the brutes. I know, too, that so studiously has this system been carried out, that our soldiers, unlike the hardy legions of Rome, are unfit to cope with a daily labourer, although possessing frames capable, if trained to it, of any exertion; so that it is a common opinion amongst the hardy sons of the soil in Canada that a soldier cannot work; but I am sure the opinion is erroneous, and that a little training in a right direction would make him an effective workman. My proposition, then, is that troops, to any amount to which they can be spared from pipeclay, should at once be placed at intervals along the line from Halifax to Quebec, by battalions, half battalions, or companies, at such a time of year as to enable them to establish themselves by hutting and erecting the necessary buildings for commissariat supplies, &c. This of course would be carefully looked to by those on whom would devolve the arrangements of detail. The winter, it is well known, is the most favourable season in North America for chopping and clearing wood, to which the soldiers would quickly become accustomed, and from the combined power which they could so readily bring to bear upon the forest, such a clearance would be made by the opening of spring, as would afford space to a large number of labouring emigrants to commence at the works of the railway. The troops might then be moved on to other points; the emigrants supplying their place, and occupying at once the huts and villages, where some kind of stores and market will have been already established, in consequence of the previous occupation of them by the soldiers. Then should commence the system of settlement, and while the emigrant labourer was earning more than enough to maintain a family, his sons would be gradually clearing and bringing into cultivation a portion of his 50 acre lot, which, by the time the railway work had ceased, would be sufficiently productive to supply the wants of his family. In this way, while effecting a great military object, a large amount of the preliminary work would be accomplished at a moderate cost; for the soldiers' hire, be it recollected, would amount to less than one-third of that of the daily labourer in America, being 10*d.* sterling in addition to his pay, which he must receive, no matter how he may be employed.

"But should it be found desirable to extend the sphere of a soldier's utility beyond the rougher operations of woodcraft, I know that every regiment in the service can supply from its own ranks handicraftsmen of every description in abundance. Nor let it be supposed that the soldier would be disinclined to this work; on the contrary, I know from experience that it would make him a better and a happier man than the town pot-house or barrack canteen system ever can, while it would prepare him, too, to become a valuable settler, to which destination every encouragement should be given.

"I advocate this line of railway because it will serve as a military line of communication between Great Britain and her noble provinces; because it will bind the provinces more closely together, and to the mother country; because it will form a complete line of postal and mercantile communication between the shores of the Atlantic and the (now) terra incognita along Lake Superior; and because it will make us independent of foreign influence, while it offers a great opportunity to England and her colonies of conferring reciprocal and lasting benefits on each other, by opening a wide field for healthy colonisation. The port of Halifax, open at all seasons of the year, and two days nearer to England than the United States, would be brought, if this proposition were carried into effect, within 24 (or, under pressing necessity, 20) hours of Quebec; and thus, in time of difficulty, and in winter, there would be insured to Canada any amount of reinforcements that England could afford to send her, increasing the confidence of her hardy and martial population, the great mass of whom the late Sir Richard Bonnycastle most justly described as devotedly loyal. Instead of being dependent on Boston for their European news, the merchants of Canada would be able to anticipate their neighbours, and be freed from that feeling of uncertainty which always attaches to the state of dependence on foreign caprice, in which they are now placed by our renewed postal convention with the United States.

"Great, however, as these advantages unquestionably are, their value is enhanced almost beyond calculation by the prospect which the means for their attainment opens to our view—the settlement of tens of thousands of our industrious population, who are struggling with starvation at home, in plenty and independence; while millions of acres of wilderness, reduced under the dominion of the plough, would soon add another chamber to the great storehouse from which the millions of Europe in future must be fed; and happy homesteads, smiling villages, and prosperous towns would spring up where now the bear, the wolf, and the fox make their lair."

DISEASES OF POULTRY.

(*Continued from pages 231 and 236.*)

5th and last Division. EXTERNAL AND INTERNAL ACCIDENTS. 1. *Obstruction of the Rump Gland.*—This is often confounded with and miscalled the pip, in small birds in particular. Your readers are referred to former Numbers of this journal for an account of the disputed points as to the actual office of this organ. Clater has an excellent chapter on the cure.

Symptoms.—This useful vessel often becomes obstructed and prone to fester, when it grows into a spreading sore, surcharged with yellow purulent matter, and which, if not relieved, will obliterate the gland altogether; and suffered by neglect to continue, will infect the whole system, and produce death. At first the bird shows great uneasiness, the feathers become ruffled, and it refuses food and becomes mopy.

Cause.—Dirty water, too much hot seeds, and other improper diet; want of a proper quantity of fresh green food.

Cure.—When taken in time it is attended with little or no trouble. First gently pluck away a few of the adjacent feathers; then with a needle gently open the channels once or twice a day, and clean off any matter which can be pressed out, particularly keeping the two little valves free and clean, and the bird soon recovers. If requisite, a dose or two of castor-oil may be administered, with pellets of rhue and brickdust, as recommended before.

2. *Fractures*; 3. *Bruises.*—Little can be here said upon these common accidents, except that they must be treated carefully and artistically. After amputation the healing process is very quick.

4. *Tumours*; 5. *Ulcers.*—Birds are subject to great variety, both external and particularly internal, mostly incurable, and ascertainable only after death. They would require a very accurate and minute description. They are generally the concomitants of age.

6. *Vermin.*—There are several species of these animalculæ. Some infest the hen-houses, and are only to be expelled by great cleanliness and repeated lime-washing, or fumigations of flower of sulphur in hand fire-basket. Others inhabit the feathers and make a bird very uneasy and ill, provoking sitting hens to abandon their eggs. Plenty of clean dust and sifted cinders to roll in is a great antidote. The most simple application is to anoint the birds with a minute portion of white precipitate ointment, on each wing, on the head, and on the throat, and where else the insects abound. This had better be accomplished after several applications than at once, the substance being poisonous. Powdered Henbane scattered between the feathers with a dredging-box has been applied successfully.

7. *Corns.*—These are generally characteristics of age. They may often be extirpated with great ease.

8. *Cross-bill.*—From some cause unknown it sometimes happens that the upper or lower mandible of birds becomes softened and grows crooked, or the upper hooks over the lower one, depriving them of the power to pick up a sufficiency of food, and they die of starvation, although in apparent health a little before death to the unpractised eye. If not too long neglected, these may sometimes be remedied—by paring off the irregular portion of the interior points of the upper or lower bills with a sharp penknife, so as to cause them to meet and fit together evenly, which had better be performed a little at a time, until the bird can pick up grain with facility—at the same time gently bending the crooked beak into its proper position, where it will remain after a little perseverance. This may often be accomplished in two or three days. Little chicks born with these defects seldom survive. *D. S. E.*

Home Correspondence.

Agricultural Politics.—Since you have so prominently brought me before your readers in your leading article of last Saturday's *Gazette*, I am very reluctantly compelled to take up my pen again—not from any antagonistic desire, as I agree with you on many points, but to explain the difference of opinion that subsists between us on the real matter in argument, "The present and future prospects of the farmers of England." I have yet had no proof that this subject can be discussed apart from its political bearings, indeed every article you have written yourself upon it entertains "the political question" on which the farmers' prospects hang; therefore to suppose that you have, or can possibly argue the subject irrelatively, seems to me most incredible. Perhaps we shall hereafter see how "the art" is to be handled. "A certain profession" you say, "stands in an awkward predicament." I would say, one of the most important interests in the kingdom

is placed in a hazardous position, and a vast community think that a Parliament, or rather a section of a Parliament, is to blame for the dangerous position in which that great interest is placed, and that it is now bound to afford relief, having *so* placed it. Well! is there any just ground of complaint against them for such a declaration? nay, is it not rather their bounden duty to make known their grievances, and call upon the Legislature to remove, or, at any event, to mitigate them. So far, I think, I have your assent; but, then, you say, "What have we to do with all this? We must take the matter as we find it, and deal with it accordingly." True; but how are we to deal with a subject fairly, unless we take it as a whole, and look at it in all its phases. Can you take agriculture for your theme, and, making a trench around it, totally dissever and disunite it from all the external affairs appending to it, keeping entirely to the plough, the harrow, the scythe, the reaping-hook, &c.; discarding altogether the *main* consideration, the main point after all, the *money* part of the business—the profitable investment of capital? This, the chief part of the farmer's business, must lead you to the market and to the fair, to the buying and selling of stock and produce; and it is here where you will have to encounter the new system—the farmer's enemy—the foreign rival, who is actually sucking the very honey from our own combs, and abstracting the fruits of the well-earned industry from our own hives. And can such a feeling as this be smoothed over and made pleasant by the constant attrition of some go-ahead enthusiast, who would urge us to find out some hidden art through which, by a highly-wrought and imaginative cultivation, an extra produce is to restore the defalcation—I say "the robbery"—and make that appear a profitable, which is now palpably a losing, business. I would gladly leave you, the farmers of England, in the hands of such an alchymist, could I perceive any fair ground of hope that, by the touch of his wand, your grief would be turned into joy, and that you would assuredly find the golden treasure there; but I must confess my faith falters here, and therefore it is that I would advise you not to run the risk which an unbounded confidence "*in rebus incertis*," might lead you, but rather for a time lay on your oars abaft the breakers, watching the tortuous and upheaved billows of a much disturbed and swollen sea, hurrying on its tempestuous waves the wrecks of many fair and tight-trimmed vessels, that set out perhaps from the same harbour with you, under as fair and favouring a breeze, but who have been involuntarily or unwarily hurled, and engulfed in the destructive whirlpool, by the violence of the storm that surrounded them. My advice, then, is opposed to yours in this way. I say the present is not the most adventitious time for the farmer to risk his all in the new-fangled and untried schemes of a new-born agriculture. I do not mean for a moment to assert, or to recommend, that no step towards improvement ought to be taken; but if so, with due caution, counting the cost, and the prospect, or otherwise, of a return for the outlay, considering the present circumstances of the times to be most unfavourable to the investment of capital in so exceedingly uncertain and hazardous a business. You, on the contrary, urge the necessity of the farmer's immediate metamorphosis, and tell him he must change his tactics at once to meet the emergency, and employ whatever capital he may possess in all the newest plans and artifices, not sparing any expense, but looking to the grand desideratum, a return of produce so greatly increased, that it must repay the producer. This I believe to be the main point of difference between us. I say wait; do not rush forward without regard to the breakers ahead! You say come on; retard not, or you are lost. Q. [We only add, with reference to one passage in the above, that the advice proper for the farmer, under present circumstances, is offered to men who are themselves in the midst of the "tempestuous sea" referred to, and who *cannot* take the position of mere spectators.]

Practice with Science.—The implement next in importance to the drill machine is the dibble. It has already been stated that the practice of dibbling has been much impeded or even frustrated for the want of proper means to economise labour. This difficulty has been greatly overcome by some late inventions. A few years ago Mr. Newberry invented a machine of this kind, which is highly spoken of in the report of a deputation who were purposely sent to inspect its working and results by the Royal Agricultural Society, vol. iv., p. 318. Their report goes to the effect that the machine deposited the seed very regularly at the distance of 6 inches; both the quantity in each hole and the distance between the rows can be easily regulated by the person using the implement. One bushel and 1 peck per acre Mr. Newberry recommends, and they believed it to be amply sufficient. They found the dibbled Wheat to be much larger and stronger in the stems, finer in the head, and much more free from diminutive heads than either that which had been sown broadcast or had been drilled; it was also much less lodged, which they attributed to the pressure of the rim or iron roller of the dibbler giving the seed a firmer bed; sufficient grains being placed in each hole to guard against contingencies and supply the crop; but as vegetation advances, each plant having space to expand, and thus derive more nourishment from the soil and atmosphere than those which are placed more thickly in the drills. They thought the dibbler would become of general use in the planting of Beans, as it enabled the farmer to clean them more perfectly. Mr. Mechi informs us that he had tried it, and gives the following description of it in his letters (p. 59). He says: "My machine has five rows of dibbles, cost me 60*l.*, besides carriage and expenses of a man to instruct us in the use of it. It dibbles 8 inches from row to row, and 6 inches from hole to hole. Five or six kernels, according to the inventor, should be put in a hole; this would take about 5¼ pecks per acre." The result he had not then seen. He adds that on light and mellow soils it is a most valuable implement; but on dense soils, in a wet or putty state, it cannot be advantageously used. Being a very heavy instrument it solidifies such land too much. Mr. Newberry has also invented a hand-dibble on the same principle as the larger one, acting by means of a vertical wheel. It is of course free from the objection just named, from its being so much lighter. It costs about 10*l.* Dr. Newington has invented a horse and hand-dibble, highly deserving the attention of the public. I have put in the seeds for my Beans, Mangold, and Parsnips with his hand-dibble this year. The Beans have come up well; where they have missed, it seems to have arisen from the irregularity of the ground, which had been lately broken up from lea, and the pods in consequence had not got properly decomposed. The principle upon which it acts appears more true than most of the modern inventions of the same kind. The dibbling depositors when raised up open a passage for the seed, which then drops into the holes which these have made. The price of it is 4*l.* The advantages to be derived from the use of this implement are not only the great saving of seed (half a bushel of Wheat being a fair allowance for an acre, giving from three to four grains in each hole at 4 inches apart, the rows 10 inches apart), but in its producing a crop of equidistant plants, each plant being thus enabled to assume the form intended by Nature; Wheat, for instance, growing, when the plants are distinct, in the form of a circle, like a Pink, throwing out stirring and healthy shoots in all directions. This implement likewise inserts the seed into a firm bed at any required depth, and the holes made by the depositors are so small that they do not form cups to hold water, as in the old method. With a seven depositor a man can, when used to it, be expected to dibble half an acre of Wheat in a day, the rows 12 inches apart. This seven-row dibble is very convenient in size, being light and handy. As to his lever-dibble on wheels I have not yet seen it, but I understand it can dibble two acres of Wheat a day, and that it will create so great a saving of seed as will shortly purchase the implement, the price of which I am not exactly acquainted with. In the Farmers' Almanac, by Cuthbert Johnson, Esq., there are a number of implements given, with drawings of them, and a description of their uses and prices. It will be sufficient to refer to this for the greater part of them, but it may be as well to notice more particularly one or two of them. There is nothing that requires more consideration for the farmer, both for economy and expedition, than the mode by which the grain is to be delivered from the ears of corn. In a small farm the flail is of general use, and it may be a question whether this method will not answer the purpose, if properly performed, full as well as most of the machines that are worked by horse-power. The fault of these is, that unless great attention is paid in passing the corn through them slowly, the person feeding it retaining the straw a sufficient time for the teeth of the machine to extract the grain, much of the latter will be left in the ear. On the other hand, the work of the flail is laborious, if done by measures is often slurred, and it often leads to pilfering. The expense of a large threshing machine, such as is attached to almost all the farms in Scotland, is very great, often amounting to 500*l.* or 600*l.* each; but it is to be considered that these answer a variety of purposes, such as bruising corn, cutting chaff, slicing Turnips, &c. Smaller ones, worked by steam, but of course more confined in their uses, may be put up for about 100*l.* Mr. Johnson mentions a portable steam-engine of four horse-power, of which the price is 100*l.*, and one with two horse-power 90*l.*; this is equal to cutting chaff, Turnips, &c. Several of these have been exhibited at the different agricultural shows, but until more trial has been made of them than has hitherto been done, it is no easy matter to speak to their respective merits. Lord Hatherton has a steam-engine machine on a large scale described in the Royal Agricultural Society's Journal, which, besides doing the different things named, will raise water for the purpose of irrigation. Certain it is, that in nothing has science more displayed its powers in a manner almost miraculous than in the machinery of the steam-engine and its wonderful results. All this shows that a judicious outlay of capital may be made the means not only of economising labour, but also of operating on the land so effectually as to greatly facilitate the process of tillage and the general work of the farm. The best means of preparing the land for cultivation through the admirable process of the row-culture, and the facilities afforded for this by the newly invented implements, having been now fully explained, it remains to be seen what are the other implements best adapted for cleaning the ground and bringing it into a proper tilth. *Law. Rawstorne.*

New Drilling and Hoeing Machine (see p. 500).—I felt great interest in the plan and decription of the hand-hoeing and drilling machine, which is capable of being worked by a lad or a man. As there is no scale attached to the plan, it is difficult to judge of its weight, but does it not appear too heavy to be drawn by one man? If it were capable of performing all the work as stated, it would be a most invaluable machine, and the more the public were made acquainted with it the better. The soil in which it has been used is said to be light and in good order, but it cannot be lighter than the endless boggy tracts of this country. I own my astonishment at reading that this implement will hoe 2 acres a day of Turnips of 24 feet drills, and prepare nearly the same quantity of ground in the same space of time, for a second crop, when no manure is required to be turned in, and the work better done than with the spade; or earth up an acre of Potatoes per day, with the labour of one man! Such an implement, if exhibited at the late cattle show at Norwich, would have commanded the first prize. The public must feel extremely thankful to the kind contributor of this information, and without intending to offer any doubt on this statement, it would be satisfactory to many of your agricultural readers to obtain the fullest particulars of the weight, dimensions, scantling of iron, mode of working, price, &c., of an implement which promises to work such an extraordinary economical change in the culture of crops in light lands. Where so much has been already effected by the invention of this machine, further improvements to lessen its weight may, no doubt, be suggested by ingenious mechanics, and thus render it more perfect if possible. Implements not unlike the one in question have been lately introduced into this neighbourhood; but they have only one wheel in front with two handles behind, and are drawn by a horse, without any provision for attaching mouldboards. It would be satisfactory to know whether the use of the machine has at all extended beyond the inventor's farm, and where it may be had to purchase. Perhaps Mr. Sivewright, if he has had this machine constructed under his own immediate supervision, would kindly supply a working plan, to assist those who may live at too great distance from the residence of the mechanic whom he employed on the occasion, as the position of the weight on the centre bar is not represented in your sketch. *W. H., Cork, Aug.* 21.

Ireland.—Contributing as I occasionally do to the columns of the *Gazette*, I should regret extremely if any remarks of mine were to influence a single individual to undertake anything to his disadvantage. With regard to Ireland being a fair field for the display of the science and energy of young farmers, I must confess I believe it to be so; and feel quite sure, from conversations I have had with landed proprietors, that they would be glad to receive either English, Scotch, or Welsh farmers, with capital, on the most liberal terms. But they must have a thorough knowledge of agriculture, as well as funds, to enable them to practise the best mode of tillage, combined with industrious habits, and steadiness of purpose, not easily daunted by the first difficulties of their position. As to the rates being heavy, this would be considered in the rent, in the same manner as it is in this country. If the average poor's rate, &c., amounted to 5*s.* in the pound on a farm, surely a tenant would not give the same rent as if the burthen on the land was only 3*s.*, the market price of produce, and the facility of sale being the same. Should active and enterprising young men be prevented visiting Ireland because they will have to work hard, and meet with disappointments during the first and second year of their settlement, the unfortunate country will become a complete desert. I am so satisfied that the only remedy for Ireland is the circulation of money, by the introduction of profitable labour, superintended by intelligent farmers of the present school, that I shall be happy to subscribe to a fund for the purpose of paying the rates for the first 12 months on farms rented and properly cultivated by English or Scotch agriculturists, not exceeding 300 acres each. A scheme of this sort would be more beneficial to all classes than merely keeping human beings alive with Oatmeal, and employing them in stone-breaking and making roads. Irish landlords who are willing to let farms would do well to publish their terms in the *Agricultural Gazette*, with the amount of poor's rate, &c., to which the land is liable, as many persons appear anxious to avail themselves of settling advantageously in Ireland, but are deterred from ignorance of nature of the tenure, rates, taxes, &c., belonging to the soil. Were these thoroughly understood, the regeneration of Ireland might commence, and capital flow into the country. Are we to do nothing but talk and write, without offering something more substantial, to induce Englishmen and Scotchmen to establish themselves in our sister island? The warning voice was heard in 1848, as to the probable fate of the Potato crop in 1849. Exhortation to sow Turnips, and plant Cabbages, on every inch of spare ground, it is to be feared, was unheeded. Example will alone have the effect of marking the superiority of improved cultivation over the old system of tillage, this can only be accomplished by experienced agriculturists, who would, no doubt, in the course of a few years, reap a rich reward. I do not recommend any set of men to flock over to Ireland as enthusiasts have to California, and bitterly repented of their folly. The distance from London to the most remote parts of the Emerald Isle, by the assistance of steam, is not great. Let a committee of gentlemen and farmers be formed to receive applications from landlords in Ireland in want of tenants; and let them send a responsible man to inspect the locality of the farms, and inquire into all particulars before advising any one to embark his fortunes in poor Ireland. Let us take every precaution against failure; but at the same time, let us use every legitimate means, and that instanter, to establish English and Scotch farmers in the country, or we shall miserably repent of our short-sighted policy. My impression is that Ireland holds out great encouragement to a yeoman who is not afraid of a little foul weather, but has courage

manfully to put his hand to the plough, &c. *Faloon.*—I do not like, at the present critical juncture of Irish affairs, that an unfavourable impression (as quoted in the following extract) should be sent abroad through the columns of so widely circulated a paper as the *Agricultural Gazette*.

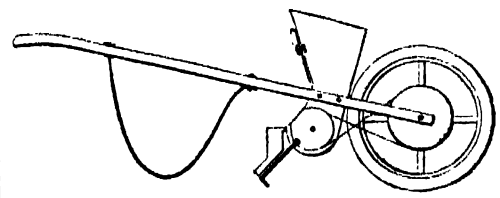
"They (the Central Relief Committee of the Society of Friends) distributed seeds of Turnips, Carrots, Parsnips, Cabbages, and we fear we must add seed Potatoes also."—Vide *Agricultural Gazette, Sept.* 2.

I therefore take the liberty of so far trespassing on your time as to state that the Committee of the Society of Friends never either directly or indirectly assisted in distributing seed Potatoes—if it was done by any of the parties who were entrusted with its funds, it was against their advice. I may add that they had numerous solicitations on the point, all of which were steadily refused—it being the idea of the Committee that those who attempt to raise the Irish cottier from his present miserable condition must endeavour to lead him from his sole dependence upon so precarious a crop, by introducing other and more nutritious articles of diet. Having said so much, allow me to add, as my own private opinion, that had the Potato crop this year turned out a perfect one, had the disease totally disappeared, a great deal of the sad experience of the last four years would have been forgotten, and the Irish cottier and small farmer would have relapsed into their former state of indolence; of course I do not mean to say that this would been universal, but from my knowledge of the character of too many of my countrymen, I have no doubt it would have been so to a large extent. I feel a great interest in the various articles which appear from time to time in the *Gazette* upon Ireland, but I see from many of them, that however well intentioned the writers may be, they, in common with many more of our neighbours across the Channel, do not fully understand us. There is nothing like a personal inspection, and a person of good observation and moderate abilities would learn more in the course of a fortnight's tour amongst us, than he would from years of reading and theorising on the subject. *S. B.*

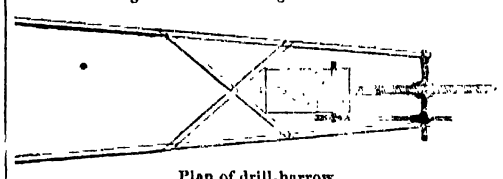
Farmer's Prospects.—Your last two or three *Gazettes* have drawn attention to the future prospects of farming, of which the writers have stated their various opinions, as to the best method to pursue to smooth the way to better times. Your correspondent "P." thinks by trifling details and strict economy in all their business transactions that some relief may be gained; while another writer, "Q.," says nothing but a return to protection, or, in other words, a fixed duty upon imports, will keep the present race of farmers from certain ruin, concluding with the remark, that the "hard-handed tillers of the soil are a class of industrious and persevering men." Without disputing this fact, will the writer state the amount of acres and reputed capital the small British farmer generally has in his neighbourhood? Those who advocate high prices should reflect that the increased population have to be fed, and that our "Statistics" of corn consumption show it is utterly out of the power of the farmer to produce with the old method of culture corn sufficient to feed the millions. It is not to continue the system of 21 bushels, but an improved method, by which our fields may produce double the old average. This improved system of husbandry, if I mistake not, your intelligent correspondent "Q." can give, if so inclined. I hail with pleasure his second letter, and trust he will enlighten us agriculturists by often giving in your columns his able and intelligent advice, both in raising cereals and pulse, and general management of farm pursuits. With regard to ruinous prices in this neighbourhood, a small poor farm of 80 acres, and a tumble-down house, was sold a fortnight ago by public auction for 4000*l.*; another is to be sold in a few days, without a house—45*l.* per acre has been bid for it, and refused; the land in bad condition. To meet the present times, besides the modern system of farming, and capital sufficient to carry it out, so often ably argued in your columns, there must be some alteration in rent, tithes, poor-rate, and general taxation bearing upon the farming interest. Let them steadily argue against these burthens, and they will succeed, without advocating to burthen one class for the benefit of another. *S. M.*

Grass Lands of Wales.—A correspondent writing from Swansea, asks you to stimulate the Welsh farmers to break up their mountain lands. If he had spoken of South Wales only, as I am ignorant of that country, I should have been silent, but as to North Wales his advice would be pernicious, though there is small fear that it will be taken. The climate of 7-10ths of North Wales would only allow of corn being grown to a profit when under protection from an influx from more favoured countries. We, the proprietors and farmers of North Wales, had cultivated almost to the tops of our mountains, and neither industry nor capital has been spared. All this is now over, and ruin stares us in the face, and can only be partially averted from the farmer by a great fall in the rent, by laying down ploughed land into permanent pasture, by taking to the dairy, rearing black cattle, and small sheep. This change is going on, and what is to become of the labourer? I know not how he is to be *absorbed*, which I believe is the term used by you political economists. *A Sufferer.*

A Drill Barrow.—Two or three weeks since I saw an inquiry in the *Agricultural Gazette* respecting a small drill for sowing Mangold Wurzel, &c. I have one that I made some years since, which answers admirably, and it will not (or need not) cost 20*s.* I have sown my Carrots with it (sprouting them, first, in sand), Parsnips dry, Mangold Wurzel steeped four days, Swedes either dry or soaked, also guano and ashes mixed and drilled over the seed. I always harrow lightly after the drill with one horse, and find, from several years' experience, that whether on the ridge or flat, it answers well and does not spread the seed too much to admit the closest horse-hoeing. My crops were all put in with it this year, and I believe finer or more regular cannot be seen. My neighbours are also glad to use it; a lad can easily drill 3 acres per day of Mangold Wurzel or Swedes, and, besides the saving of expense, I much prefer it to dibbling; the seeds are more separate, and the thinning done more easily afterwards. I got the idea from a drawing of a drill-barrow at the end of Sinclair's Code, substituting cups on shanks 2 or 3 inches long to dip out the seed, for the plan he recommends of letting the seed pass through grooves in a roller regulated by a brush. The following is a rough sketch of a drill-barrow:—



Profile, showing the two pulleys with a piece of sash-line, and legs made of three-eighths rod iron.



Plan of drill-barrow.

Wheel diameter, 21 inches; length of sides or handles, 5½ feet. The box should be kept as near the wheel as possible, and near the ground. A tin shute conveys the seed in a slanting direction to the ground, and this shute lies on the top of a curved piece of iron which hangs loosely, and by its weight just scratches the mould where the wheel does not print sufficiently, and sometimes a piece of chain dragging close after will cover Turnip seed sufficiently. There are four holes drilled in the iron axle, into which I screw different sized cups as required, generally using only two at a time. I use an old wheelbarrow wheel, on which, when the tire was off, I screwed pieces of hard wood with a sharp edge. *Alfred Tuckett, Warmsley, Bristol.*

Steam Engines.—In reply to your correspondent's desire to gain some information about the best steam engines, I beg to say that I took some trouble to do so, and succeeded in finding one Englishman, named Powell, of St. Severs, Rouen, to whom I refer him for any calculations, who put up two 60 horse engines for the concern that I established in France. The consumption of coals will be guaranteed by the maker not to exceed 4 lbs per hour per horse power, that is, a 60 horse power will consume $60 \times 4 = 240 \times 12$ hours $= 2880$ lbs. = consumption per 12 hours. Our engines have each two cylinders, the high pressure steam entering the small cylinder, and after acting upon the piston, is allowed to pass into the larger cylinder, where, by expanding, it again acts upon the large piston, which works conjointly with the small piston, connected by a parallel motion. The boilers are 30 feet long, with two tubes, to receive water from the boiler, placed under the boiler; these tubes can be taken out and put in again without displacing the boiler. The furnace is under the two tubes, and the flue turns from under the left hand tube and returns over the left hand tube under the left hand side of the boiler, it then returns over the top of the right hand tube and under the right hand side of the boiler. By this plan an unusual quantity of surface is exposed to the action of the fire, and the flue, which is thus three times the length of the boiler, is 90 feet in all, and thus consumes nearly all the gas before it passes into the chimney. I need not say that I shall be happy to allow any one to see the engines, and you can furnish my address, if required, as my only motive is to do good. *J. J. H.*

Reviews.

Drainage of Lands, and the Sewerage of Towns. By J. Bailey Denton, Land agent and Surveyor, &c. John Weale, 59, High Holborn, London.

This very interesting pamphlet contains the substance of a paper, on model and relief mapping as the best index to the capabilities of a surface, which was read before the Society of Arts during the past session. The main point on which Mr. Denton insists, in that part of his performance which relates to drainage, is the value of drainage waters as a motive power. The quantity of rain falling on the land is estimated at 30 inches per annum over England generally; and deducting 18 of them as absorbed by vegetation, and evaporated again into the air, 12 inches remain, which trickle downwards through the soil, and find their way from the land by springs—to the sea by rivers. An inch of water over the surface of an acre of land weighs 100 tons; 1200 tons fall annually on every acre in the island, and thence descend to the sea. What an enormous force is here wasted, which might be made available to displace the expensive steam power employed in mills, or the far more expensive animal power employed on farms.

"Taking the quantity of land in England and Wales which might come within the scope of a general measure of drainage, as 20,000,000 of acres, the number of cubic feet of water given will be 871,200,000,000. To reduce this into horse power, there is this datum, according to the ordinary estimates—about 37½, say 38, cubic feet of water, falling every minute on an overshot wheel of 10 feet diameter, is reckoned the power of one horse. Divide the above numbers by 525,960, the minutes in a year, and by 38, the number of cubic feet, and the result is the constant horse power of 43,590. This, however, supposes the water-power to be only on a 10-feet wheel, and that wheel to be in motion every minute of the year. But by judicious conservation and division of the water obtained, instead of using the power constantly, it may be applied for a certain number of hours per day, and at certain seasons of the year; and taking the average of falls at 50 feet, the gross amount of power to be derived from the drainage of 20,000,000 of acres may be safely calculated at a gross amount superior to 1,000,000 horses."

This is sufficient to show the national importance of the idea; and to estimate its value in individual cases, the means suggested by Mr. Denton will be found useful and interesting. It is for this and other purposes that the modelling is so superior to the mapping of an estate, as indicative of its surface capabilities. But on this subject we must refer to the pamphlet itself, which landowners should read.

Calendar of Operations.

SEPTEMBER.

East Lothian Farm, *Sept* 10.—Shearer's wages in this district are 10*s.* a week, and victuals and lodgings. If the weather prove favourable next week, we expect a great portion of the crop will be secured. *M.*

South Hampshire Farm, *Sept.* 8.—We have had a continuance of fine weather since our last report, which has enabled us to finish harvest, by carting the Bean crop on Sept. 3; indeed, the harvest may now be said to be completed in this part of the county. The fine showers we had on the 1st Sept. have greatly assisted the green crops, Carrots, Swedes, and Mangold Wurzel, which are all growing luxuriantly, and promise a heavy crop where sown early. The horse labour on the farm for the past fortnight has been ploughing, harrowing, rolling, &c., land which we have seeded down for permanent pasture, carting manure on to lea ground for Wheat, harrowing in the Trifolium seed, ploughing for winter Tares, carting the remaining portion of our Oats and Beans, scarifying and harrowing the Bean and Pea land, preparatory for the sowing of Wheat. Odd horses are kept continually employed, carting hedge trimmings, border cuttings, Grass, and weeds after the scarifier, carting earth for cattle pens, carting hurdles for removal of sheep, also carting Clover and Swedes for the cows and young stock and sundry odd work which, for decency sake, and keeping up the appearance of the farm, is at all times necessary. The labourers, after the conclusion of harvest work, have been employed trimming hedges, cutting Grass round the field borders, hoeing Turnips, filling manure carts, turning and heaping manure, sowing Grass seeds for permanent pasture, and sowing with them 12 bushels of bone-dust, 2 cwt. of Peruvian guano, and 1½ cwt. of gypsum per acre, broadcast, and harrowed in with the seed, they have also been threshing Oats, Barley, and the second crop of Italian Rye-grass seed, and thatching and trimming the corn ricks. Our work during the next week or two will be taking up the Potato crop, sowing Tares, carting the manure out for Wheat, and ploughing the heaviest of the lea ground for Wheat, the early ploughing of which we have always found very advantageous to the Wheat crop. The appearance of the crop of Potatoes is similar to that of former years, the haulm being prematurely cut down; the disease does not seem to affect the tubers, except in a very trifling degree, but the produce is small, even in the good land. The Grass is very short and scarce for the cattle and sheep stock, yet they do well where not affected with the epidemic, which complaint is still doing much damage in some parts of this county. We have not yet threshed any Wheat, but the yield in this neighbourhood is stated to be not so good as was expected; the quality is fine, but not equal, we think, to the produce of the year 1844. *J. B.*

Sussex Farm, *Sept.* 10.—We have been favoured with beautiful weather throughout the harvest, which we completed last week, and the harvest in general in this quarter is nearly finished. The crop upon the whole is good, even better than we expected. Our teams at present are engaged harrowing Wheat stubble, rolling in Tritolium, and scarifying Tare and Pea land for Wheat. Men digging Potatoes, which are a very good crop; the haulm is quite black with the disease, but the roots are very little injured as yet, cleaning and repairing hedges, hoeing Turnips, threshing Wheat and Oats of this year's growth, of which we shall be able to state the yield next week. *J. B.*

Notices to Correspondents.

Agricultural Politics: *Q.* The publication of the first letter before the second was accidentally prevented; but you would see that it appeared in *No.* 55. We invite criticism, and, desiring to find and disseminate truth, are glad to be corrected when in error, but it certainly appeared to us that, angry at an apparently severe criticism of ours on the art of agriculture, you had endeavoured to obtain sympathy from others by giving a personal character to our remarks which did not fairly belong to them, thus making readers think that we had accused farmers generally of being an idle and witless body of men. We belong to the body ourselves, and we imagine that you do too: the conduct proper to the present crisis may surely be discussed by us without either of us being supposed to bring personal charges against our comrades. We hope you will not think we desire on this account to discourage fair criticism.

Andalusian Wheat *I. B. H.* There is nothing extraordinary in the statement. You may take the first sound grain of Wheat that comes in your way, and if sown in a rich garden soil, it will probably yield quite as many ears as the young soldier of Cantillana obtained.

Bank: *Brentwood.* It is Buckwheat. Drill a bushel of seed in mid-May, in rows a foot apart, on a light soil, which is none the better for being very rich. It flowers all summer; but must be cut when most seed is on it, say end of August. Move it gently in the swathe, or you will lose the seed. It is worth less than Barley.

Breaking up Grass Land: *A Y* says, "I am about to break up about 100 acres of old Grass land, and I am advised, instead of adopting the usual plan of paring and burning, to make use of salt, thus: Plough the turf thin before Christmas, apply 15 cwt. salt per acre, harrow it, let the frost come on this, and in February knock the turf to pieces with proper tools, plough it under, and in March sow with Oats. The soil is not heavy, 3-horse land in winter, and pair in summer; it will be well drained before breaking up. I have had some experience in paring and burning, and I do not therefore desire information on this particular method, so much as on

the use of salt or any other means that have practically proved successful in transforming pasture into arable. I trust too that the information which may be given in reply to this may prove not solely of individual benefit, for surely under the present aspect of affairs, one of the most obvious means of obtaining a fair money return from much land in this country is to turn it upside down, and exchange bad Grass for good arable crops."

DISEASE IN PIGEONS: *Anon.* We cannot explain it.

DISEASE IN SHEEP: *E. L.* In the absence of all information as to the circumstances under which the sheep are placed, all statement of their age, sex, and food being omitted, it is quite impossible to advise. We are inclined to think the deaths arise from tympanites, or distention of the stomachs from gas generated by the food. If so, an alteration of the food, or more frequent changes, suggest themselves as prudent measures. *W. C. S.*

DRUMHEAD CABBAGE. *Anon.* When fully ripe pull off the outer leaves and pit the solid Cabbages in a dry place.

DR NEWINGTON'S MACHINES: *W Griffin.* We have received many testimonials to the excellence of the dibbling machines, and need not publish them. The point may be considered established.

ESSENCE OF GUANO: *Amateur Subscriber.* Let well alone. Peruvian guano is a very good thing. We advise you to avoid so-called "Essences."

GREAVES. *VAN.* They are no doubt a powerful manure. But in the absence of an analysis, it is difficult to state their value relatively with that of other fertilisers.

LIME: *J R Pearson.* Fertility does not always depend exclusively, or even very materially, on the presence of lime in the soil. Rich soils may contain 2 or 20 per cent. of lime, and so may poor ones. To separate the oxalate of lime, boil the precipitate before filtration.

LIQUID MANURE. *J. M.* Theory would indicate that it should be applied at intervals during the growth of the plant, and in quantities varying directly with the natural tendency to growth at the successive periods of application. The best mode of applying is that of Mr. Huxtable's, by under-ground pipes, with removable hose connecting at a succession of corks on these pipes. The details regarding the construction of your proposed water-cart could be best determined by a conference with some maker of such machines. The best plan we believe to be that of Mr. Stratton's, where the cylinder holding the liquid is pierced so as to drop the liquid when the holes are placed under its level, as, by a simple chain movement, they may: and hence all the complexity and liability to stopping of pierced pipes and hose and nozzles is avoided.

PHOSPHATE OF LIME: *Amateur.* It is never *made*: our natural supplies are abundant in bones, which are half phosphate of lime, and in coprolites, which give from one-third to two thirds phosphate of lime. The biphosphate is made from the phosphate by adding one-third their weight of sulphuric acid to bones, which are first well wetted, and, after the addition of the acid, suffered to lie in a heap for a week or two; and at length mixed with ashes and sown, 3 or 4 cwt. per acre, as a manure for Turnips. Gypsum is never prepared artificially; there are great beds of it in the marls of the new red sandstone. You cannot *make* it so cheaply as dealers supply it.

OILCAKE. *Inquirer* asks, "Will milch cows pay in extra milk for the addition of oilcake, say 3 lbs. per day, to their other food, being Grass in summer, and roots or Cabbage with hay in winter?" [Will any one say, who has had experience?]

RAPE CAKE. *Old Subscriber and Young Farmer.* In the recent Number of the English Agricultural Journal, Mr. Pusey gives the following result of an analysis by Mr. Way:

	Per Centage of Nitrogen	and Fat.
Linseed cake	4.6	11.9
Rape cake	5.23	11.6

which is to the advantage of the latter. We have seen no analysis of the ashes of Rape seed.

SAINFOIN. *G.* Yes; you will probably have another good crop of it.

SEX OF EGGS: *D O* cites the following on this subject, from the "New Library of Useful Knowledge," published by Cradock and Co., Paternoster-row, and the number on Domestic Animals. "To know whether an egg will produce a male or female chick, it is directed to hold it between the eye and the candle, and if the vacancy caused by the air-bag, which every egg contains at the blunt end, appears to be on one side, it will produce a hen; if the vacancy be exactly in the centre, it will produce a cock. The largest eggs commonly produce cocks." Page 28.

SUSSEX PLOUGH: *X Y Z.* Any machine maker will construct one. We do not know Mr. Cartwright. Messrs. Wilkie, of Uddingston, near Glasgow, make them, no doubt.

WHEAT PLANT: *Peruvian.* It is a very fine specimen. But 37 stalks from one seed are not an extraordinary occurrence where plenty of room is given for the plant on a rich soil.

*** Communications reaching town after Wednesday cannot be answered till the following week.

Markets.

COVENT GARDEN, SEPT. 15.

Hothouse Grapes are very abundant, Peaches and Nectarines plentiful. Pine-apples have not altered since our last account. Filberts and foreign Walnuts are abundant. Oranges are scarce. Lemons moderately plentiful. Among Vegetables, Turnips may be obtained at from 8d. to 6d. a bunch. Carrots the same. Cauliflowers are less plentiful. Green Peas fetch from 1s. 6d to 4s. per bushel. Potatoes have not altered since our last account. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1s to 1s. 6d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Dignonia venusta, Tropeolums, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 3s to 5s
Grapes, hothouse, p. lb., 9d to 3s
— Portugal, per lb., 6d to 1s
Peaches, per doz., 2s to 6s
Nectarines, per doz., 2s to 6s
Plums, per hf. sieve, 4s to 6s
Currants, &c., 3s to 4s
Pears, per doz, 2s to 4s
— per half sieve, 4s to 6s
Apples, kitchen, p. bsh., 2s to 4s
Oranges, per doz., 4s to 6s
Lemons, per doz, 1s to 3s
— per 100, 8s to 16s
Almonds, per peck, 6s
— sweet, per lb., 2s to 3s
Walnuts, p. 100, 1s 6d to 2s
— p. bush., 16s to 24s
Filberts, per 100 lbs., 45s to 55s
Nuts, Bar, p. bush., 20s to 22s
— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 6d to 1s
Cauliflowers, p. doz., 2s to 6s
Broccoli, per doz. bundles, 10s to 12s
Peas, per bush., 1s 6d to 4s
Sprouts, p. hf. sieve, 6d to 9d
Potatoes, per ton, 50s to 100s
— new, per cwt., 3s to 5s
— per bush., 2s to 3s
Turnips, p. doz. bun., 2s to 3s
Red Beet, per doz., 1s to 2s
Horse Radish, p. bdl., 2s to 3s
French Beans, p. hf. sieve, 1s 6d to 2s
Cucumbers, each, 2d to 6d
Leeks, per bunch, 2d to 3d
Celery, p. bundle, 6d to 1s 3d
Radishes, p. 12 bunches, 1s to 2s
Watercress, per doz. bunches, 4d to 6d
Carrots, per bun., 4d to 6d
Spinach p. sieve, 1s to 1s 6d
Onions, p. bunch, 2d to 6d
— Spanish, p. doz., 1s 6d to 4s
Shallots, per lb, 3d to 6d
Garlic, per lb., 2d to 6d
Artichokes, p. doz., 1s 6d to 3s
Vegetable Marrows, doz., 6d to 1s
Lettuce, Cab., p. sc., 4d to 9d
— Cos, do., 6d to 1s
Endive, per score, 1s to 1s 6d
Tomatoes, p. hf. sieve, 4s to 6s
Mushrooms, p. pot., 1s to 1s 6d
Small Salads, p. pun., 2d to 3d
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Parsley, p. doz. bun., 3s to 4s
— Roots, p. bdle., 1s to 1s
Marjoram, green, p. bun., 4d to 6d
Mint, green, per bunch, 3d to
Basil, green, p. bunch, 4d to 6d

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Sept. 13.

Prime Meadow Hay	68s to 76s	Clover	60s to 90s
Inferior ditto... ...	50 65	New Clover	— —
Rowen	— —	Straw	25 30
New Hay	— —		J. COOPER.

CUMBERLAND MARKET, Sept. 13.

Prime Meadow Hay	70s to 75s	Inferior	60s to 80s
Inferior ditto... ...	50 65	New Clover	— —
New Hay	— —	Straw	28 33
Old Clover	86 92		JOSHUA BAKER.

WHITECHAPEL, Sept. 13.

Fine Old Hay ...	65s to 70s	New Clover	80s to 90s
Inferior ditto ...	45 50	Inferior ditto... ...	50 60
New Hay	60 65	Straw	24 28
Old Clover	95 100		

HOPS.—FRIDAY, Sept. 14.

Messrs. PATTENDEN and SMITH report that the accounts from the plantations where picking has commenced state that the Hops come down very short of expectation, and that the mould continues to increase rapidly. Duty called 90,000*l.* About 1000 pockets of the new growth have arrived, and are selling freely from 7*l.* to 8*l.* 8*s.*

SMITHFIELD, MONDAY, Sept. 10.

The supply of Beasts is rather shorter; trade is very cheerful at advanced prices. The best qualities readily make 4*s.* We have fewer Sheep and Lambs, the demand is considerable, consequently Friday's advance is well supported, and, in some instances, exceeded. Calves are more readily disposed of. Good ones make rather more money, but second-rate are still very low. From Holland and Germany there are 609 Beasts, 3710 Sheep, and 21 Calves; from France, 16 Beasts; and from Leicester and Northampton, 1600.

Per st. of 8 lbs.—	s d	s d
Best Scots, Herefords, &c.	3 10 to 4	0
Best Short-horns	3 6 — 3	8
2d quality Beasts	2 10 — 3	4
Best Downs and Half-breds	3 10 — 4	0
Ditto Shorn	... ...	

Per st. of 8 lbs.—	s d	s d
Best Long-wools	3 6 to 3	8
Ditto Shorn	... ...	...
Ewes & 2d quality	3 0 — 3	4
Ditto Shorn	... ...	...
Lambs	... 4 0 — 5	0
Calves	... 2 8 — 3	10
Pigs	... 3 8 — 4	6

Beasts, 3709; Sheep and Lambs, 28,420; Calves, 160; Pigs, 220.

FRIDAY, Sept. 14.

The number of Beasts is considerable, but the demand is also large; in consequence, Monday's rates are readily obtained. The supply of Sheep is for the time of year good; however, the weather being favourable, and dead markets clear, trade is brisk at about 2d. per 8 lbs. advance. Lambs are not much in request; a few good ones make nearly as much as of late, but second-rate are unsaleable. Calves are plentiful, and trade for them very bad; there is a reduction of fully 4d. per 8 lbs. From Holland and Germany we have 254 Beasts, 510 Sheep, and 93 Calves; from Spain, 65 Sheep; from Leicester and Northampton, 200 Beasts; and 108 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3 10 to 4	0	
Best Short-horns	3 8 — 3	10	
2d quality Beasts	2 10 — 3	6	
Best Downs and Half-breds	4 0 — 4	2	
Ditto Shorn	... ...		

Best Long-wools	3 8 to 3	10	
Ditto Shorn	... ...	...	
Ewes & 2d quality	3 0 — 3	6	
Ditto Shorn	... ...	...	
Lambs	... ...	4 0 — 4	10
Calves	... ...	2 4 — 3	6
Pigs	... ...	3 4 — 4	4

Beasts, 951, Sheep and Lambs, 10,800; Calves, 306; Pigs, 240.

MARK LANE.

MONDAY, SEPT. 10.—The supply of English Wheat by land carriage samples this morning was moderate, and the stands were cleared at a decline of 2*s.* per qr. upon the prices of this day se'nnight. There was more disposition to purchase the good common qualities of foreign Wheat at a similar reduction, but the very finest Dantzic could not be quitted excepting at a greater abatement.—English Barley is barely so good a sale. Foreign must be written 1*s.* per qr. cheaper.—Beans are unaltered in value. New white Peas are inquired after at 2*s.* per qr. advance. We also raise our quotations 1*s.* per qr. for Maple.—The Oat trade is heavy, and fully 1*s.* per qr. lower.—The quantity of Mustard seed offering this morning was large, quality and condition inferior to that of late, and the sale slow at a decline of 1*s.* per bushel.—The top price of Flour is reduced to 40*s.* per sack.

FRIDAY, SEPT. 14.—The arrivals of all grain have been good during the week. This morning's market was tolerably well attended; red Wheat was inquired after, and in some instances realised a slight advance, but no improvement could be established on the best descriptions of Dantzic, these being less in demand.—Barley maintains our quotations. In Peas and Beans we observe no alteration.—The Oat trade is firm, and must be written fully 6d. per qr. dearer, with a good inquiry.—Flour is a dull sale, and late prices for barrels realised with difficulty.—Indian Corn attracts a little more attention at 25*s.* per qr. f. o. b., cost, freight, and insurance.—Since the 10th instant much rain appears to have fallen throughout the kingdom, which must affect the crops not yet secured in the north of England and Ireland, also Scotland. Although an improved feeling was manifest in this market on Monday, it does not appear to have been followed by those in the country held early in the week, and a decline of 1*s.* to 2*s.* per qr. was general. In those of yesterday, however, there was a decided improvement, and in some instances 1*s.* per qr. advance was established.

LIVERPOOL, FRIDAY, SEPT. 14.—We have had a large supply of foreign Wheat. There was a fair retail business in Wheat, at the prices of Tuesday; the quantity of new fresh up was small, and it was cleared off at from 5*s* 7*d.* to to 5*s.* 10*d.* per 70 lbs. for prepared. Oats were in moderate request. Flour was no better. Barley rather cheaper, Beans and Peas steady. Indian Corn was firm in advance at 1*s.* per quarter.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Aug. 4.....	48*s* 0*d*	26*s* 3*d*	18*s* 9*d*	25*s* 6*d*	31*s* 0*d*	32*s* 1*d*
— 11.....	47 4	25 8	19 2	26 7	32 10	31 1
— 18.....	46 3	26 1	19 0	27 5	31 9	29 2
— 25.....	44 8	26 4	18 10	26 5	32 2	28 8
Sept. 1.....	44 8	26 3	19 3	27 0	32 3	28 6
— 8.....	44 6	23 9	18 4	25 11	31 2	29 7
Aggreg. Aver.	45 11	26 3	19 0	26 5	31 10	29 10
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	AUG. 4.	AUG. 11.	AUG. 18	AUG. 25.	SEPT. 1.	SEPT. 8.
48*s* 0*d*		...	...	...	...	...
47 4	...		...	...	...	...
46 3				...	...	...
44 8	...	...	...			
44 8		...		...	...	...
44 6	...	...	...	...	...	

PRICES CURRENT.	London.		Liverpool.		Wakefield.		Boston.		Birmingham.	
	Sept. 3. qr.	Sept. 10 qr.	Sept. 4. 70 lbs.	Sept. 11. 70 lbs.	Aug. 31 qr.	Sept. 7. qr.	Sept. 5. qr.	Sept 12 qr.	Sept. 6. 62 lbs.	Sept. 13. 62 lbs.
	s. s.	*s. s.*	*s. d. s. d.*	*s. d. s. d.*	*s. s.*	*s. s.*	*s. s.*	*s. s.*	*s. d. s. d.*	*s. d. s. d.*
Wheat—										
New, red ...	38 to 41	38 to 40	6 4 6 8	6 3 6 6	42 to 48	39—45	38 to 43	38 to 42	5 6 5 9	5 6 5 9
„ white ...	42—45	40—43	6 9 7 2	6 9 7 2	42—49	41—48	40—46	40—45	5 8 6 0	5 8 6 0
Old, red ...	38—40	38—40	6 4 6 9	6 4 6 8	41—43	40—42	—	—	5 3 5 9	5 3 5 9
„ white ...	40—44	40—42	7 0 7 3	7 0 7 3	—50	—49	—	—	5 10 6 4	5 10 6 4
Foreign	36—52	36—50	4 3 7 8	4 2 7 8	36—50	35—49	—	—	4 8 6 2	4 8 6 2
			480 lbs.	480 lbs.						
Rye—Old ...	22—26	22—24	—	—	—	—	—	—	—	—
Foreign...	20—22	20—22	—	—	—	—	—	—	—	—
Foreign meal	5*l.*—6*l.*	5*l.*—6*l.*	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	—	—	—	—	22—23	20—22	24—25	24—25	22—24	22—24
Malting... ...	25—28	25—28	30*s*—31*s*	30*s*—31*s*	—	26—34	—	—	29—32	29—32
Foreign... ...	18—26	18—26	—	—	24—28	21—26	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	37—40	37—40	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	18—25	18—25	2*s* 10*d* 3*s* 2*d*	2*s* 10*d* 3*s* 2*d*	—	—	16—20	16—20	19—27	19—27
Black...	14—23	18—22	2 2 2 5	2 2 2 5	—	—	—	—	18—20	18—20
Foreign ...	13—20	13—20	2 3 2 5	2 3 2 4	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	25—30	25—32	34*s*—	34*s*—	26—30	26—30	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—25	23—25	28 —29*s*	28 —29*s*	—	—	—	—	11—12	11—12
Foreign ...	24—32	24—32	31 —32	31 —32	—	—	—	—	—	—
Beans—										
New, small ...	—	25—27	31 —33	31 —33	32—35	32—35	32—34	32—34	12—14	12—13
Old	23—33	23—33	34 —35	34 —35	—	—	—	—	14—15	14—15
Foreign ...	21—36	21—36	24 —35	24 —35	30—31	30—31	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	36—41	36—41	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9*l.* 12*s*	9*l.* 12*s*	8*l.* 2*s*	8*l.*—8*l.* 5*s*	—	—	—	—	—	—
Foreign ...	7*l.*	7*l.*	—	—	—	—	—	—	—	—
Indian Corn -	22—26	22—26	26*s*—29*s*	25*s*—28*s*	—	—	—	—	12—13	12—13
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	36—44	34—42	32—35	32—33	—	—	36—40	32—38	34—36	34—36

Weekly Averages and Imports.	Aver. Sept. 11	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester, Averages.	Gloucester, Imports.
	s. d.	qrs.	*s. d.*	qrs.	*s. d.*	qrs.	*s. d.*	qrs.	*s. d.*	qrs.
WHEAT ...	45 11	9070	44 8	14031	45 8	7819	40 6	2044	41 9½	2403
BARLEY ...	30 1	3620	26 3	1807	— —	121	24 0	20	—	2958
OATS... ...	20 6	19410	19 3	2688	19 9	546	16 3	1648	20 0½	572
RYE	38 2	—	27 0	1011	—	—	—	—	—	—
BEANS ...	28 7	—	32 3	25	32 0	1035	30 6	10	—	472
PEAS... ...	32 0	—	28 6	697	—	—	—	—	—	635
SIGNED	*KINGSFORD and LAY.*		*SEGAR and TUNNICLIFFE.*		*SANDARS and DUNNS.*		*THOMAS WRIGHT.*		*J. and C. STURGE.*	

Sales by Auction.

CAMELLIAS, AZALEAS, AND LILIUM LANCIFOLIUM, FROM THE NURSERY OF MR. A. VAN GEERT, AT GHENT.

MR. J. C. STEVENS is directed to Sell by Auction, at his Great Room, 38, King-street, Covent-garden, on FRIDAY, Sept. 21, at 12 for 1 o'clock, 800 CAMELLIAS, comprising many Double Whites and other popular sorts, well set with bloom-buds, 250 Azaleas, of good varieties, and 200 strong bulbs of Lilium lancifolium rubrum. May be viewed on the day prior and morning of Sale, and Catalogues had.

IMPORTANT SALE OF CAMELLIAS AND GREENHOUSE PLANTS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by Mr. J. Smith, to offer to Public Competition by Auction, on the Premises, Dalston, on TUESDAY, Sept. 18, 1849, and following day, at 11 o'clock, in consequence of the premises being required by the London and Birmingham West India Dock Junction Railway Company, the VALUABLE STOCK OF CAMELLIAS (about 2000) ranging from 18 inches to 10 feet, beautifully set with bloom buds; amongst which are finely grown specimens of all the approved kinds: also the choice Greenhouse Plants. The Camellias and Greenhouse Plants are in the finest order, and are particularly worthy the attention of Noblemen, Gentlemen, and the Trade.—May be viewed a week prior to the Sale, when Catalogues may be had, 1s. each, returnable to purchasers, of the principal Seedsmen in London, on the premises, Covent Garden, and of the Auctioneers, American Nursery, Leytonstone.

N.B. The valuable Nursery Stock will be offered to public competition early in October.

SPRING PARK FARM, CROYDON, SURREY.—Live and dead Farming Stock, 100 loads of prime Hay, home bred Colts, Fillies, and Horses, 6 Draught Horses, Agricultural Implements, Household Furniture, &c.

MESSRS. BLAKE will sell by Auction, on the premises, on TUESDAY, September 25, and following day, at 12 o'clock (exact time), by order of HEWITT DAVIS, Esq., who is quitting the Farm, comprising all the capital live and dead Farming Stock, upwards of 100 loads of Hay, valuable Colts, Fillies, and riding Horses (all bred upon the Farm and of good pedigree), a grey 7-year-old Hunter, do. 6-year-old Carriage Mare, 6 useful Draught Horses, 2 Cows, a new 4-horse power Threshing Machine (complete) by Garrett and Son, nearly new Patent Suffolk Corn Drill, Horse Hoe to correspond, a 10-wheel iron Land-presser, Finlayson's Scarifier, Ploughs, Harrows, Rollers, &c.; light Phaeton, neat Gig, Harness, and Spring Cart, also the neat Household Furniture, Dairy and Garden Utensils, and a variety of useful effects.—N.B. The Furniture will be sold on the first day, Tuesday, 25th inst.—May be viewed the Saturday and Monday preceding the sale, and Catalogues had of Mr. WHITE, the Bailiff at the Farm; at all the principal Inns in the district; at the Artichoke Inn, Newington Causeway; Garraway's Coffee-house, Change-alley; at the office of Messrs. DAVIS and VIGERS, 3, Frederick's-place, Old Jewry; and of Messrs. BLAKE, Croydon, Surrey.

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TO BE DISPOSED OF, by Private Contract, the whole of that excellent and improving NURSERY BUSINESS, established for 20 years, situate in the parishes of Pilton and Maw wood, contiguous to the well-supplied Market Towns of Barnstaple, Southmolton, and Bideford, consisting of 13 acres of valuable young Stock, now growing in a very flourishing condition, the property of Mr. William Ireland. The principal portion of the Nursery Grounds are held on a Lease of 80 years, 20 of which are unexpired. The present proprietor will retain a portion of the business, as a partner, if required. All letters to be addressed to W. GRIBBLE, Esq., Solicitor, Barnstaple; or to Mr. W. IRELAND, Stanhope Arms, Molsworthy.

There is a good greenhouse on the premises.

TO NURSERY AND SEEDSMEN.

TO BE SOLD, by PRIVATE CONTRACT, that old and long-established NURSERY and SEED BUSINESS, Brompton-Park Nursery, carried on for many years by Messrs. GRAY, ADAMS, and ROGG. The situation is first-rate, and the connection good.—For particulars, apply to Mr. JOHN SANGSTER, Nursery Seedsman, Newington Butts, London; Mr. ROBERT DONALD, Nurseryman, Woking, Surrey; or to SOLE and TURNER, Solicitors, 68, Aldermanbury, London.

SUSSEX.

TO BE LET for a term of years, and entered upon at Michaelmas next, the Farm of WOTTON, in the Parish of Folkington, at present in the occupation of Mr. Shoesmith. It consists of about 409 acres of Meadow, Pasture, and Arable land: the Arable land is most productive of Beans and Wheat: most of the Pasture and Meadow land is of the richest fattening quality. There is an excellent Farm-house, with every convenience, and the Farm-buildings are large and commodious, and economically fitted up and arranged for fattening a large number of beasts in feeding-houses, stalls, sheds, and yards. The Farm is about four miles from Hailsham and Eastbourne, 10 miles from Lewes, market town, and one mile from the Polegate station on the Lewes and Hastings Railway. For particulars, apply to Mr. JOHN MORTON, Whitfield, Berkeley, Gloucestershire. A person at Folkington Place will show the Farm.

TO BE LET, a desirable FARM, seven miles from London, and four from Greenwich and Deptford, comprising 240 acres, 65 of which are in Grass, having a pleasantly situated modern Cottage Family Residence, superior homestead, two Cottages, and all other necessary accommodation. The whole is in good order. The situation commands ready markets, at high prices, for green crops and every description of produce, and affords ready access to an unlimited supply of manure.—For particulars and cards to view, apply to Messrs. DAVIS and VIGERS, Land-agents, 3, Frederick's-place, Old Jewry, London.

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TO BE LET, on a 7 years' Lease, a NURSERY, 9 miles from town, and near a railway station, containing nearly 7 acres of Land, well stocked with Shrubs, &c.; a good Dwelling-house, 5 Greenhouses, and 3 ranges of Pits, all in good repair. The Stock to be taken at a valuation, for which cash would be required—about 1000*l*. The present proprietor wishes to leave only on account of having an offer of partnership in a business of a different description.—Address to A. B., 148 Fleet-street, London.

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TO BE LET, on Lease, 2½ acres of well stocked GROUND, with or without Greenhouses and Pits, lowlanted; 1 acre of which are productive and well-frequented Cress-beds, within 1¼ mile of the City.—For further particulars, apply to Mr. CLARK, Seedsman, 95, Bishopsgate-street; Mr. STRACEY, Morpeth-lane and Church-street, Hackney; and at the Office of this Paper.

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,, scarlets	0 6	Ranunculus	2 6
Gloxinia	0 6	Sweet William	0 6
		Verbena	1s. 6d. to 2 6

20 vars. choice Greenhouse Perennials, 10s. 6d.; 12 do., 7s. 6d.
20 vars. Choice Hardy Biennials and Perennials 7s. 6d.
12 ditto 5s 0d.
20 vars. showy Hardy Annuals for spring flowering 4s. 0d.

Remittances requested from unknown correspondents. Post-office orders to be made payable to BASS and BROWN, or STEPHEN BROWN. Postage stamps received for small amounts.

BASS and BROWN, Seed and Horticultural Establishment Sudbury, Suffolk

NEW CHRYSANTHEMUMS FOR EXHIBITION THIS AUTUMN

YOUELL AND CO. are now executing orders from their extensive and very select collection of the above, comprising all the new and fine continental varieties, in fine strong, bushy plants, fit for Exhibition, at 15s. per dozen, or smaller plants, per post, free, or well established in small pots, at the following prices:

50 best new sorts		25s.
25	ditto	15s.
12	ditto	9s.

With all orders (if requested), directions will be sent for a successful and easy mode of culture for exhibitions.

HYACINTHS.

YOUELL AND CO. have just received, direct from Haarlem, their annual importation of DUTCH BULBS in the finest condition, comprising many new and beautiful varieties of this favourite flower, which they are enabled to offer at 6s., 9s., 12s., and 18s. per dozen, adapted for glasses or pot culture, catalogues of which may be had on application.

FINE CAMELLIAS WITH FLOWER BUDS, AT 30s. PER DOZEN.

Comprising the following superb varieties: Picturata, Ruckerii, Horsphallii, King, Monarch, Imperialis, Ranunculiflora striata, Noblissima, Pendula, Thomson's Susannah, Lombardii, Julliana, Elizi, Queen Victoria, Sieboldii, with every other fine variety worthy of cultivation.

PINKS.

The finest first-rate show flowers, of the newest kinds, per post free, 12s., 18s., and 24s. per dozen pairs.

STRAWBERRIES.

Their fine collection will be found advertised in a separate Advertisement of this day's Paper.

Catalogues of the above, with an extensive variety of highly ornamental plants, will be forwarded by enclosing two postage stamps.

Post-office orders or references are required from unknown correspondents.—Nursery, Great Yarmouth

KITLEY'S GOLIAH STRAWBERRY.

JAMES KITLEY begs to announce to Strawberry Growers and the Public generally, that he has now ready to send out, strong well-rooted Plants of the above Seedling Strawberry, at 12s. per dozen, or 4d. per hundred, and feels confident that, taking it in all its combined merits, it is the very best of all Strawberries, and as a criterion, he has tested it with the best that is out, viz., the British Queen.

1st. Flavour—if not superior, is equal with the above-named variety, though more resembling that of the Pine-apple.*
2d. Size—larger than the Queen.
3d. Shape—not so flat as the Queen; more conical.
4th. Colour—bright scarlet, not having that white unripe tip which prevails in the Queen, and very prolific.
5th. Foliage—villous, and very much resembling the Queen, from which it is raised, but stronger in its growth.
6th. Hardiness—it stands the winter much better than the Queen; at least, in this neighbourhood.

J. K. having fruited this very superior Strawberry three years, feels perfectly confident that any person once having it in their possession, will not find fault or regret having ordered it. It has gained three Prizes at the Bath, and one at the North Wilts Horticultural Societies' Exhibitions; and as a further proof of its goodness, begs to refer to extracts from the *Gardeners' Chronicle* and the *Gardeners and Farmers' Journal*:

(From the *Gardeners' Chronicle*.)

"Strawberries.—J. K.—Your Seedling Strawberry, 'Goliah,' judging from its size and appearance, is worthy of cultivation."

(From the *Gardeners and Farmers' Journal*.)

"Strawberries.—J. K., Lyncombe Vale.—We have great pleasure in bearing testimony to the exquisite flavour of your Seedling Strawberry, 'Goliah.' In our opinion, it combines the piquant flavour of the Strawberry with the richness of the Pine,* the delicious aroma of which it partakes in equal proportion with the taste. Apart from the Queen of Fruits, we certainly do not remember anything in this way that conveyed to our senses so delicious a treat as the noble fruit to be known to the world as 'Kitley's Goliah Strawberry.'"

To be had at Lyncombe Vale Nursery, Bath, and of Messrs. Garraway, Mayes, and Co., Bristol, who can testify to the superior quality and flavour of the fruit.

ARNOLD'S VIRGIN QUEEN GERANIUM is the best WHITE flower in existence. It is a seedling of 1847, from which nine plants were procured, all of which bloomed magnificently last season, more than 350 EXPANDED BLOSSOMS *being counted on them at one time*, amongst which immense number only one imperfect flower was to be seen.

It can be strongly recommended, and will be sure to give the greatest satisfaction. Price 7s. 6d. each, or, including a plant of that excellent flower, HOYLE'S CRUSADER, *for 12s.*

Apply to WILLIAM E. RENDLE & Co., Union-road, Plymouth.

Our Dutch Bulbs have just arrived in excellent condition. Catalogue on application, gratis.

MYATT'S NEW STRAWBERRY, "ELEANOR."

J. MYATT AND SONS are prepared to send out plants of this and the following varieties at the prices annexed: Myatt's Eleanor, 10s. 6d., Fortilised Hautbois, 10s. 6d.; British Queen, 3s. 6d.; Globe, 3s. 6d.; Mammoth, 5s. 6d.; Hooper's Seedling, 3s. 6d., Keens' Seedling, 3s. 6d.; Pelvelaun's Comte de Paris, 7s. 6d.; Princess Royal, 7s. 6d.; Cuthill's Black Prince, 15s. per 100.

Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford, Kent.—Sept. 22.

THE BLACK PRINCE STRAWBERRY.—Strong Plants of this STRAWBERRY are now ready for delivery. Price, per 100, 15s.; 50, 10s.; 25, 5s. It is hardy, very early, prolific, well flavoured, and a first-rate preserver. If the blossoms are picked off it in Spring, an abundant crop may be obtained from it in Autumn. For Dr. Lindley's opinion, see *Gardeners' Chronicle*, p. 181, 1849. CUTHILL'S "Treatise on the Strawberry, Potato, Cucumber, Melon, and Lasianthus," price 1s. Post-office Orders on Camberwell.—JAMES CUTHILL, Camberwell, near London.

NEW FANCY GERANIUM

EDWARD GEORGE HENDERSON, Wellington Nursery, St John's Wood, London, has to offer the exceedingly beautiful and very distinct new fancy Geranium ALBONI, at 10s. 6d. each, which he will commence sending out on the 15th of October. The upper petals are of a deep rosy purple, with a light edging of bloom, the under petals blush white and sometimes blotched. The flower and truss large, a most profuse bloomer, and retains its flowers as long as the Queen Victoria Geranium. A drawing of the flower (by Holden) may be seen at the Nursery.

E. G. H. can strongly recommend the above Geranium, and has no doubt it will prove one of the greatest favourites ever sent out, as it continues in one sheet of bloom for such a lengthened period.

N.B. The usual allowance to the Trade, and for every three plants ordered four will be given.—Sept. 22.

NEW CINERARIAS.

EDWARD GEORGE HENDERSON, Wellington Nursery, St. John's Wood, London, will, on the 15th of October, commence sending out the following new Seedling CINERARIAS, raised by him, and would advise intending purchasers to lose no time in sending their orders, as the strongest plants will be sent off first, and all orders executed in strict rotation.

ADLA VILLIERS, a beautiful rosy crimson and white flower in equal proportions, of first-rate form, large size, and surpassing in all its points every other flower known	10s. 6d.
ANGELIQUE, carmine, white disc, distinct and novel colour	5 0
BESSY, fine rich plum, a beautiful, distinct, and striking colour	5 0
CARLOTTI GRISI a clear white, slightly tipped with light blue, fine form	7 6
DELIGHT, rosy lavender, distinct and new colour, a neat dwarf flower	5 0
EMPEROR, rosy crimson, large bold flower, and very showy	5 0
FLORA M'IVOR, rich brilliant crimson, one of the best of its colour, of free growth, and excellent habit	7 6
LADY GERTRUDE, bright dark blue, large flower, fine form	5 0
NYMPH, a clear white, violet-purple disc, form good, flower cupped, a very desirable variety	5 0
PAULINE, a violet plum, shaded with crimson, fine broad petals, exquisite shape	10 6
WEDDING RING, petals divided with white and crimson, the latter predominating, fine dark disc, most chaste flower, of fine form, and a striking variety	5 0
WELLINGTON, petals equally divided with white and purplish crimson, maroon disc, flower of fine form, large, and beautifully cupped	5 0

N.B. When the above set is taken, the price will be 3l. 10s., and if three sets are taken, four will be given, or three plants of any one sort, four plants will be given.

E. G. H. begs to observe that the above may be relied on as possessing the desirable qualities necessary for a good Cineraria, being compact in their habit, and producing a fine mass of flowers equally expanded. The usual allowance to the trade.

RUSSIA MATS.

ALFRED BALSTON begs to inform his friends in the Trade that he can offer MATS of best quality on very moderate terms.—Poole, Sept. 22.

GREATEST NOVELTY OF THE SEASON—WILL GIVE A NEW FEATURE IN THE FLOWER GARDEN.

JOSEPH SMITH, NURSERYMAN, Westerham, Kent.

To be sent out the 1st of October—
GERANIUM HYDRANGEAFLORA.
,, ROSEA FLORIBUNDA.

J. S. begs to inform his friends and the public that he intends to send out his two beautiful rose-coloured GERANIUMS, so much admired by every one that has seen them, for their profuseness of bloom and beautiful foliage. The brilliant green of the foliage is admirably revealed by the distinct marking of the horseshoe.—For particulars, see Answer to Correspondents, in the Gardeners and Farmers' Journal, August 25, under the signature "J. S., Kent."

J. S. recommends the above Geraniums to his friends and the public, with the greatest confidence, to those who may honour him with their orders. Good plants 5s. each, the usual allowance to the Trade when three plants are taken.

SEEDLING PETUNIA, "ENCHANTRESS."—A very fine large variety, obtained a Prize at Chiswick last June. Colour, a deep bluish violet in the eye, a little veined, 4 inches across, firm in texture, good in shape and colour, a fine bold flower. It was raised by SAMUEL GAD, who wishes to dispose of the stock. To be seen at Rose Cottage, or Stamford Brook Lodge, New-road, Hammersmith.

JOSEPH BAUMANN, NURSERYMAN, Ghent, Belgium, begs to inform his friends and the public in general, that his New CATALOGUE of PLANTS is just published, and may be had gratis, or will be sent post-free on application to Mr. JOHN BETHAM, Custom House and Shipping Agent, Cox and Hammond's Quays, Lower Thames-street, London.

TO NURSERYMEN, FLORISTS, &c.

JOHN BETHAM, Member of the Committee of the Royal South London Floricultural Society, Custom House and General Forwarding Agent, begs to inform the above that he continues to receive and forward consignments of plants, seeds, &c., with strict attention, despatch, and moderate charges. Information given as to the arrival and departure of vessels to and from Hamburgh, Rotterdam, Ostend, Antwerp, Havre, Boulogne, and Calais, also to the United States, Scotland, &c.—Address, Cox and Hammond's Quays, Lower Thames street, London.

CHRYSANTHEMUMS.

CHANDLER AND SONS, NURSERYMEN, Vauxhall, are now sending out strong bushy plants of CHRYSANTHEMUMS at 12s and 18s. per dozen, package and delivery, at any of the Railway stations in London, included. The plants are very healthy, and such as will flower well in the autumn, and are of the best and most desirable varieties. A Post-office order will be expected from unknown correspondents.

PLANTING SEASON.

ALFRED BALSTON begs to inform planters he has still a large proportion of his Nursery Stock to dispose of, which, in consequence of having relinquished the trade, he offers at very reduced prices. The Stock comprises every variety of ORNAMENTAL FRUIT, and FOREST TREES, and all the best kinds of SHRUBS in cultivation, no expence having been spared in the collection, and from the light nature of the soil in which it has grown, the plants have all a mass of fibrous root, which causes them to grow most luxuriously after being transplanted.

A. B. particularly recommends the following common Laurel, 9 inches to 1 foot, 15s., 1 to 2 feet, 30s.; 2 to 4 feet, 40s.; 4 to 6 feet, 60s. per 1000. Portugal Laurels, 1 to 2 feet, 10s. per 100. Rhododendron ponticum, 1 to 2 feet, 30s.; 3 to 4 feet, 60s.; 4 to 5 feet, 100s. per 100. Ghent Azaleas of all the finest kinds, specimen plants, 2s. 6d. each; smaller ditto, 6s. per dozen. Rhododendron campanulata, cinucasicum, catawbiensis, &c., 100s. per 100. Standard Roses of all the finest sorts, 12s. per dozen. A large stock of Evergreen Oak in pots and transplanted; also common Oak, Elm, Beech, Birch, Berberis, Hornbeam, Privet, &c.

Orders must be accompanied by remittances. Orders amounting to 5l. delivered free.—Poole Nursery, Dorset.

FLOWERING BULBOUS ROOTS, &c.—HYACINTHS, TULIPS, GLADIOLUS, IRIS, NARCISSUS, JONQUILS, CROCUS, RANUNCULUS, ANEMONES, LILIES, &c., may be had, of sound quality, from WM. HAMILTON, SEEDSMAN and FLORIST.

HYACINTHS, superior varieties (named), 9s., 12s., and 18s. per dozen; common (named), 6s. per dozen, mixtures, 3s. per dozen. TULIPS, 1s; JONQUILS (large), 1s.; NARCISSUS, 4s. to 6s per dozen. Mixed CROCUS, 1s. 6d.; in colours, 2s 6d. per 100. SNOWDROPS, 2s. 6d. per 100. GUERNSEY LILIES, 9d. each. A Priced Catalogue may be had GRATIS on application.

25 varieties of Hardy Annuals, for autumn or early spring sowing, 5s.; 12 varieties, 2s. 6d.; free by post, 6d. extra.

CALCEOLARIA, GERANIUM, and PRIMULA SINENSIS FIMBRIATA, saved from the best varieties, and warranted very fine. Vegetable Seeds of all kinds, Garden Implements, Bird Seeds, &c.

WM. HAMILTON takes this opportunity of recommending his IMPROVED FLOWER SUPPORTER for Hyacinths, Narcissus, &c. The "Florist's Directory" remarks—"A more simple, useful, and cheaper support for Hyacinths, Narcissus, &c., whether grown in pots or water, can hardly be imagined." Price 6s. per dozen.—Address, 156, CHEAPSIDE, LONDON.

A Post-office Order requisite from unknown correspondents.

NEW FANCY PELARGONIUMS.

W. AMBROSE begs to inform the admirers of this beautiful class of Pelargoniums that he will be prepared to send out, in the middle of October, for prepayment only, the following first-rate varieties, raised by himself, and which he can confidently recommend as show varieties or to adorn the Greenhouse or Conservatory, as they flower nearly the whole of the year round.

DEFIANCE.—Very dark maroon, with white belt all round, and pure white throat; of good size and form, a most profuse bloomer; admitted by all who have seen it to be the most distinct yet raised. 21s.

FORMOSA.—Beautiful rosy crimson upper petals, shaded with purple; white ground—bottom petals clouded with the same colours; of strong habit and most profuse bloomer. 10s. 6d

PICTURATA.—Upper petals rosy carmine, white ground, lower petals distinctly spotted with cherry, very dwarf habit, adapted for small pots; a most profuse bloomer. 10s 6d.

BEAUTY.—A most distinct and showy variety; upper petals deep plum colour, shaded with purple; white ground; lower petals spotted with deep maroon; of robust habit, and a free bloomer. 21s

BEAUTY SUPREME.—Rosy lilac ground, clouded with purple; a fine bold trusser, of good habit; a fine show plant. 10s. 6d.

GARLAND.—Rosy purple ground, clouded with violet; of beautiful dwarf habit, and most profuse bloomer. 10s. 6d.

EMPRESS.—A fine bold show variety; white ground shaded with carmine, sweet-scented foliage, strong habit, and good bloomer. 10s. 6d.

VILLAGE MAID.—A very distinct and pretty flower, marked with rosy lilac stripes. 7s. 6d.—Most of the above have received Certificates of Merit at the London exhibitions.

The following Six first-rate fancy Pelargoniums in 4-inch pots, fit for exhibition in the ensuing season, 30s.: Modesta, Jenny Lind, Fairy Queen, Queen Superb, Magnifica, Minerva.

NEW SCARLET GERANIUM, "MAGNUM BONUM," 5s.—W. A. can with confidence recommend this as the finest formed scarlet in cultivation. See the opinion in the Gardeners and Land Stewards' Journal of Oct. 28, 1848: "W. A., Battersea.: Your seedling is a beautiful flower, form excellent, flower medium size; the shortness of the footstalk gives a compactness to the truss that is highly desirable though not often attainable; colour a brilliant orange scarlet; from the specimens before us, we do not hesitate to pronounce it an excellent show variety, if cultivated to that end, and as a market variety, certain to give satisfaction either in the plant or as an addition to the bouquet, the elegant and fashionable accompaniments of almost every lady of the present day." The usual discount to the Trade.

W. AMBROSE having saved more seed of the Fancy Pelargoniums than he requires for his own growing, begs to offer the same (which he can recommend as saved from new and first-rate varieties), at 2s. 6d. per packet.—Nursery, Battersea.

NEW PANSIES.

JOHN SCHOFIELD AND SON beg to offer the following fine Seedlings for 15s., viz., Negro, Alpha, Regna, Sulphurea, and Yellow Perfection. Negro was awarded a first-class certificate and named at the South London Horticultural Society's Show, held on the 17th of May. The whole have been highly spoken of. For full particulars see our Catalogue.

J. S. and Son have now ready fine healthy Plants of the following, viz., Pansies, best out, at 6s., 12s., and 21s., per doz. Carnations and Picotees, best out, 12s. to 20s. per doz. pairs. Pinks, 3s. to 12s. per doz. pairs. Also Fancy and Calceolaria seed, saved from the best show sorts, 2s. 6d. and 5s. per packet. The List sent free on application.

Knowsthrope, near Leeds, Yorkshire.

NORLAND NURSERY, NOTTING-HILL.

W. TOWNSEND begs to offer the following strong flowering Plants at from 1s. to 1s. 6d. each, or 10s. to 15s. per dozen, free to any of the London Railways. Lychnis coronata major, Browallia Jamesoni, Dianthus Hendersoni, Plumbago Larpentæ, Rosa Devoniensis, Yellow Noisette, and Pumila alba; also a large quantity of Cramoisie superieure, Ne plus Ultra, Fabvier, and Fairy Roses, at from 6s. to 9s per dozen.—W. T. has also a fine selection of the leading varieties of Fuchsias and Verbenas (some of the Continental ones being truly beautiful) at from 9s. to 12s per dozen.—A few strong plants of that splendid new hardy perennial plant Dyclitra spectabile at 7s. 6d. each.

W. T. having imported (direct from Haarlem), a large assortment of Hyacinths, Tulips, Narcissus, Gladiolus, Ixias, Crocus, Iris, &c., is enabled to offer them at very moderate prices.

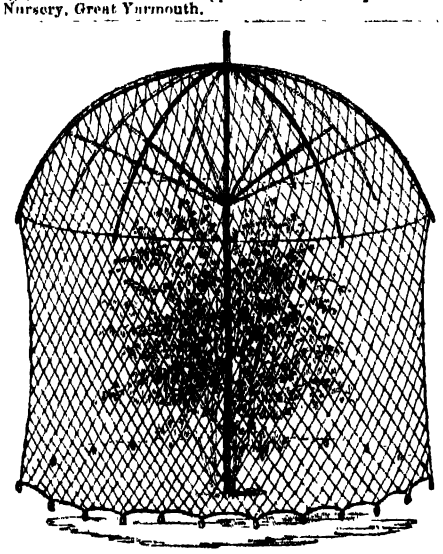
STRAWBERRIES.

YOUELL AND CO. beg to offer the following to Growers of this highly esteemed Fruit, all of which are warranted correct to name:

	per 100—s.	d.
Alpine White	3	6
,, Red ..	3	6
Austrian Scarlet .	3	6
Carolina .. .	3	6
,, round white .	5	0
Coul, or Sir G. Mackenzie's late scarlet .	3	6
Cuthill's Black Prince .	10	6
Downton	5	0
Elton Pine .	3	6
Grove End Scarlet ..	3	6
Hooper's Seedling.. ...	5	0
Hautbois (prolific)	3	0
,, large flat .	5	0
Keens' Seedling . ..	3	6
Kitley's Goliah, p. doz.	12	0
La Liegeoise	5	0
Martham Seedling, fine and early	7	6
Myatt's Eleanor . .	10	6
,, Globe ...	7	6
,, British Queen	3	6
,, Pine-apple ...	5	0
,, Eliza	3	6
,, Prolific .	5	0
,, Mammoth ...	7	6
Princess Alice	3	6
Roseberry ..	3	6
,, black	5	0
Royal Pine (fine) ..	5	0
Swainston's Seedling Pine	3	6
Turner's Pine .	5	0

Agents for the sale of Kitley's Goliah Strawberry, very hardy, large, and of delicious Pine-apple flavour, at 12s. per doz.

Nursery, Great Yarmouth.



THE ABOVE IS A SKETCH OF A FRAMED NET to protect a single Gooseberry or Currant Bush from Bullfinches and Sparrows in the Winter and Spring, and from Blackbirds and Thrushes in the Summer. This Net is 4½ feet high, 12 feet in circumference, and 1 inch from knot to knot; being made waterproof, it will last many years, although constantly exposed to the weather. This Frame may also be used for fumigating plants, by covering it, when wanted for this purpose, with a loose bag of cheap calico. Being made to fold up as an umbrella, the Frame Net is conveniently packed for carriage.

PRICES FOR READY MONEY.

4½ feet high,	12 feet circumference	5s. each.
4½	do. 14 do. ...	6s. ,,

For 1 dozen and upwards, 10 per cent. discount.

Netting of all sorts for Fruit Trees, and of any size, at the following prices:

1 inch from knot to knot .	...	2d. per square yard.
1½ do. do.	...	1½ ,,
1¼ do. do.	...	1¼ ,,
Rabbit Nets, set to line 5 feet deep		4d. per yard.
Sheep Nets, 5 feet deep .	...	6 ,,

Wasp and Fly Nets for Greenhouses and Hothouses, 5d. per square foot. Nets, Lines, and Twine of all sorts made to order, by KENWAY and Co., Bridport, Dorsetshire.

NORFOLK.

WANTED, a Small Occupation of 100 to 150 acres of highly cultivated first-rate LAND, in the above county, subject to Norfolk covenants.—Address, O. STEGGS, Braintree, Essex.

YARMOUTH BLOATERS—GENUINE AND OF THE FINEST QUALITY.

Yarmouth has for centuries been justly celebrated for its well-known "Yarmouth Bloaters," the delicacy of which, when obtained in their genuine state, requires no comment. Such an opportunity is now offered; and they can be forwarded to any part of the kingdom, or for exportation (on receipt of a post-office order), at 12s. per 100, package included.—All orders to be addressed to Mr. FREDERICK BROUGHTON YOUELL, Church-square, Great Yarmouth.

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15l. 10s.; a do. do. 15 by 10, 23l. 10s.; a do. do. 18 by 12, 28l. 10s.; a do. do. 21 by 12, 32l. 10s., including a plan for brickwork. 12-inch Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 11½d. per foot; 2-inch do., 1s. per foot.—J. LEWIS'S Machine Hothouse Works, Stamford-hill, Middlesex.

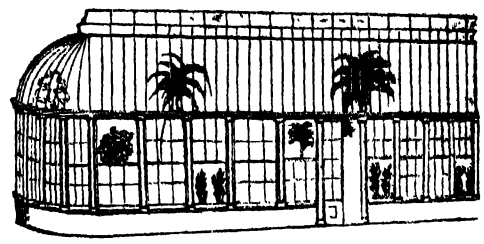
BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, bernacle, brent, and laughing geese, shelldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

NOVEL APPLICATION FOR THE IMPROVEMENT OF CELERY, SEA-KALE, CARDOONS, RHUBARB, STRAWBERRIES, &c.—By means of ROBERTS'S Registered Sockets, these articles are much improved, if applied in season. A pamphlet, with wood engravings, and an exposition of particulars of these and various other appliances to horticulture, may be had on application, enclosing two postage stamps, to Mr. JOHN ROBERTS, Merchant, 34, Eastcheap, London.

NOTICE.—The Gardener's Journal of July 14, 1849, contains an editorial article upon these inventions, from which the following remarks are extracted: "The principle of the invention is one about the advantages of which there can be no doubt. By such appliances, and by the aid of such means, vast and important results may reasonably be looked for. As connected, especially with the culture of Strawberries and Melons, the use of these Tiles would undoubtedly add both to earliness and flavour. . . . We shall repeat, that the principle is excellent. All that we ask on the part of Mr. ROBERTS, is the thanks of horticulturists for bringing before them in a prominent manner a principle of great practical utility."

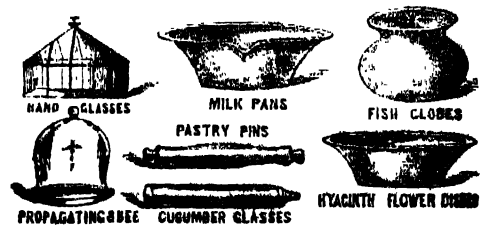
HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, FERNS, &c.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. They have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. By means of these houses, they are enabled to grow Stove, Greenhouse, Ferns, and other Plants, in such immense numbers, that they are sold at LESS THAN HALF-PRICE. Mats, Mushroom Spawn, and everything connected with the Nursery and Seed departments, Plans, Estimates, and Catalogues forwarded on application.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



TIMMINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Mats may be had on application at the warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.					SHEET SQUARES.	
16 oz. from	2d.	to	3½d.	per foot.	In boxes of 100 feet.	s. d.
21 ,,	3½	,,	5	,,	Under	6 by 4...12 6
26 ,,	3½	,,	7½	,,	6 by 4 and under	7 by 5...16 6
32 ,,	4	,,	9½	,,	7 by 5 ,,	8 by 6 ..18 6
					8 by 6 ,,	10 by 8 ..20 6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ...	10s. 6d.	7 by 5 and 7½ by 5½ ...	12s. 6d.
8 by 6 ,, 8½ by 6½ ...	13 6	9 by 7 ,, 10 by 8 ...	15 0

MILK PANS, from 2s. to 6s. each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2s. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d.; 6 tubes, 10s. Self-Registering Thermometers for Greenhouses.

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HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2s. to 5d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application for PATENT ROUGH PLATE, TRICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GRASS MILK PANS, PATENT FLAT-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 23, Sohosquare, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

CHOICE GERANIUMS AT LOW PRICES.

WILLIAM E. RENDLE AND CO., Plymouth, have this season a very excellent stock of the following Geraniums, which will be ready the first week in October.

Purchasers' selection of TWENTY, from the following list, for 20s.

HOYLE'S CRUSADER, ARNOLD'S VIRGIN QUEEN, Sir Robert Sale, Black Prince, Star of the West, Lady Ebrington, Mercury, Jenny Lind, Scarlet Defiance, Rosy Circle, Nourmahal, Mount Etna, Desdemona, Remembrance, The Peri, Hebe's Lip, Pluto, Forget-me-not, Sir W. R. Gilbert, Flora's Flag, Zenobia, Isabella, Standard of Perfection, Sirius, Duchess of Leinster.

HOYLE'S CRUSADER and ARNOLD'S VIRGIN QUEEN, for 12s.

Early orders are desired, as some of the sorts are scarce.

Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

Our New Catalogue of Hyacinths and other bulbs is now ready, and can be had on application.

NEW CHRYSANTHEMUMS.—Twelve best new varieties of last season, strong and bushy plants, for flowering fine this autumn 15s 0d
40 new and select vars. (including the above) for .. 20 0
24 Ditto for 15s. 12 Ditto for .. 9 0
THE BEST NEW VERBENAS, FUCHSIAS, PETUNIAS, &c. of 1849.—Strong and bushy plants in bloom, in 3 and 4-inch pots. A Priced Catalogue is now ready, with very reduced prices attached, containing also the best new GERANIUMS, last sent out. Goods delivered free to London, and extra plants sent gratis with orders of 10s. and upwards.

BASS and BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

DOUBLE ROMAN AND PAPER WHITE NARCISSUS, 4s. per dozen.—The above Bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have been just received at A. CORBETT'S Italian and Foreign Warehouse, 18, Pall-mall, near Waterloo-place. Also Dutch Hyacinths, Crocus, Tulips, Anemones, Ranunculus, &c.; priced Catalogues of which may be had per post.

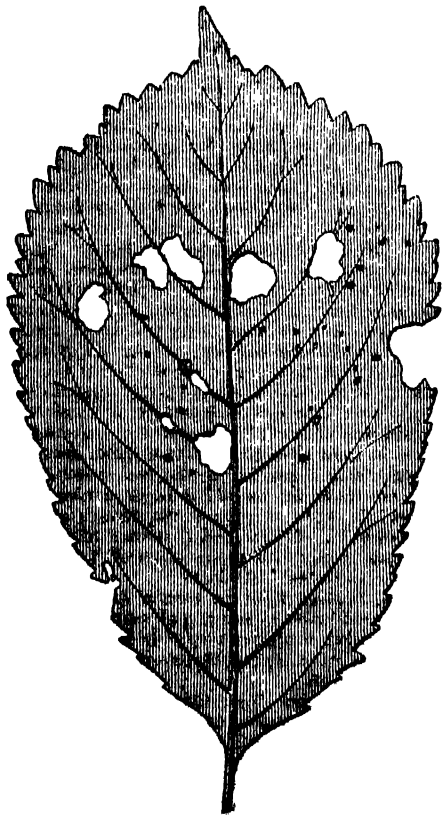
The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 22, 1849.

MEETINGS FOR THE ENSUING WEEK.

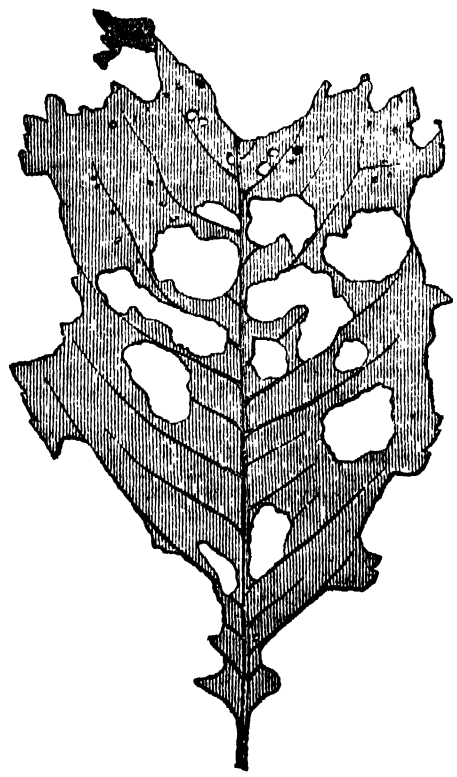
COUNTRY SHOWS—Monday, Sept. 24 North London Floricultural.—Wednesday and Thursday, Sept. 26 and 27 Birmingham Horticultural.

We are reminded at every turn to be cautious in exercising our judgment, and not to determine too hastily, though the data before us seem at first beyond all question. This has been forcibly impressed upon us by one or two cases of injury to the foliage of trees and shrubs, apparently from insects, but really from other causes, which came within our notice some time since, but which have lately been recalled to mind by the trial to which allusion has been made more than once in our columns. The first case observed was that of a young, vigorous Cherry-tree,, every leaf of which was perforated

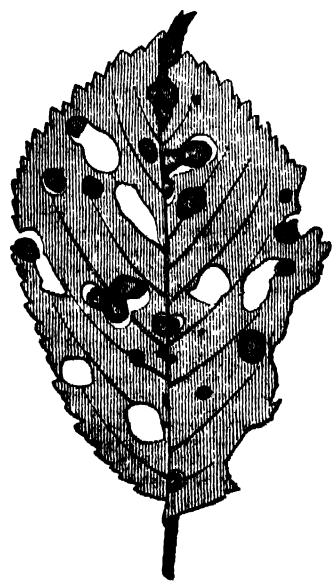


with holes, in some cases to the destruction of half of their substance. The apertures were of various sizes; some confined to the centre, but others on the margin, and presenting exactly the appearance of having been made by insects. Our attention, however, being directed more especially to all kinds of morbid appearances in plants, or accidental injuries, we were induced to examine a little more closely, and we soon found that our first judgment was wrong.

It was not a case of injury from insects at all. A few leaves were found which, to a great extent, explained the matter. In an early stage of growth, while very tender, they had been injured evidently by some outward agent, such as globules of water deposited upon them, which, from some chemical action probably, are often destructive to such tender tissues, or the freezing of such globules by one of the late frosts of last spring. Whatever the cause might have been, the substance for a definite space was quite brown and seared, and the succeeding vigorous growth of the uninjured portions of the leaf had eventually thrown off entirely the inert and dead spots. Leaves were found which showed the process of separation in every stage, till the little brown patches hung by a single point, and at last fell out entirely. The same appearance was observed subsequently in a Plum-tree, and a heavy



hail-storm in the summer afforded an opportunity o tracing from the beginning a similar injury in several Rose-trees, only, in this case, the effect being caused by a blow, the bruise had extended beyond the line of separation, and there was in consequence a dark border round every cavity. The apertures, it should be observed, were caused not by an actual penetration of the hail-stones, but by the separation of the



sound from the dead tissue. It requires evidently a tender condition of the leaves to give rise to such phenomena.

Now, if we suppose, merely for the sake of argument, and the case is far from impossible, that similar spots were produced on tender leaves by drops condensed from some corroding vapour deposited upon them, and the corroded parts afterwards thrown off by the progress of vegetation, there is scarcely a person who would be placed upon a jury who would not at once pronounce the leaves perforated by insects, and therefore affected by what are called natural causes. There might indeed be peculiarities which a nice eye would either have detected, or which would have induced further inquiry, but which, with the ordinary uncultivated powers of observation, would have passed unheeded.

We have, indeed, merely supposed a case, suggested by the subject, but it is obvious that numberless analogous cases would occur in such an inquiry, respecting which it would be impossible for a jury, however intelligent in other respects, so long as education is so little directed to natural phenomena, to form a correct judgment. One of our great aims has constantly been to call attention to the necessity of improvement in this branch of education; and apparently trifling circumstances, like the present, are sometimes more convincing, from the train of reflection to which they lead, than greater matters.

SEVERAL months have now elapsed since we drew attention to a most important contrivance for EXTINGUISHING FIRE WITHOUT WATER. Arrangements for the sale of the apparatus being now complete, we gladly return to the subject. We are so much accustomed to regard water as the only available material which can be employed in case of conflagration, that the attention of scientific men has hitherto been diverted from devising means of applying other well known agents possessing the same power. And yet water is but a feeble ally, even when it can be had; while the having it at command involves such heavy and costly apparatus that it can scarcely be called available, unless in cities. As for country houses, villages, or rural property, that may be said to be, by our present arrangements, consigned to almost inevitable destruction in case of fire.

It has occurred to Mr. PHILLIPS, a naval officer, that other agents may be employed, and with far greater effect than water, in extinguishing fire. We all know that flame cannot exist for an instant in carbonic acid gas, or in the air called nitrogen; but the difficulty has been how to obtain any such instantaneous and ample supply of them as would be capable of arresting a conflagration. That difficulty has been wholly overcome. By the sudden ignition of a mixture of charcoal, gypsum, and saltpetre, in a vessel containing water, a prodigious volume of carbonic acid, nitrogen, and aqueous vapour is instantaneously extricated, and when directed upon a fire, as instantaneously extinguishes it, or, as Mr. PHILLIPS says without exaggeration, annihilates it.

The apparatus by means of which this great result is obtained is not bulky, nor costly, nor liable to get out of order, nor tedious in its application, nor dangerous to keep, nor difficult to apply; it is the reverse of all these. With an apparatus which might, without the slightest inconvenience, be kept in a lady's bed-room, not bigger, in fact, than a muff-box, we have ourselves seen a fire of timber-shavings, tar, and combustibles, blazing so fiercely that it could not be approached within 20 feet without inconvenience, extinguished in a few seconds by a lad. Such a fire would not have been put out by a common fire-engine in a quarter-of-an-hour, even if the machine, the men, and the water were all at hand when it broke out.

Persons in cities may be indifferent to fire, because they have the great insurance companies incessantly on guard; yet even they are not free from the most fearful risks. A curtain catches fire, woodwork follows, the firemen are sent for, they arrive, the flames are extinguished (perhaps); but the room at least is gutted, and the house is left a wreck, with windows smashed, and the furniture and fittings ruined by the inundation that is employed. An "annihilator" in a dwelling-house would render all this impossible; for, in its employment, nothing is perceptible except its marvellous efficiency, brought about by a cloud of pure vapour, scentless, and incapable of soiling a muslin window curtain. A single discharge of this vapour would instantaneously extinguish the fiercest fire that ever raged in a London chimney.

If it is attended with these advantages even in a city, how much is its value enhanced when we consider the unprotected, and unprotectable, condition of all sorts of country property? Mansions and cottages, stables, barns, ricks, and timber-yards, can scarcely be said to enjoy any protection from fire. If burnt they may be paid for by the insurance companies; but there is no means of preventing their destruction when fired. No engines can be had; or no water can be found in sufficient quantity.

Every day brings examples of this. We find the following, for instance, in this morning's daily paper: On Tuesday morning, about 10 o'clock, a fire was discovered in a stack-yard, containing above 12 ricks of corn, in a village six miles from Nottingham. The Nottingham fire-engines were sent for without delay, but by 2 o'clock eight stacks of Wheat were consumed. The fire had by this time reached a barn filled with corn, which, with various carts and implements, were speedily consumed. The dwelling-

house was only saved by the great exertions of villagers and firemen; a corner of it was burnt. *The fire continued to rage until the evening.* Had an annihilator been at hand the fire would have been extinguished while a man was mounting a horse, in order to search for a fire-engine.

"The immense ratio," says Mr. Phillips, "in which fire is multiplied by time, makes it an important desideratum to have at hand the means of extinguishing a fire as soon as possible after discovery. The rapidity of its progress over inflammable materials is such, that a fire extinguishable by one gallon of water will in five minutes require one hundred gallons, and in ten minutes, one thousand gallons." A supply which it is needless to say there is generally no means of procuring with the necessary promptness. An annihilator of proper dimensions is an effectual and incessant guard against all such contingencies.

That this contrivance will come into universal use we entertain no doubt; for that it will perform unerringly all that it professes to perform is certain. Of its merits, then, it is impossible to say too much; and we earnestly recommend it to our readers, who will be able to obtain full particulars concerning the details of its application at the Company's office in Leadenhall-street, No. 105.

Even the meanest subjects afford matter for admiration when attentively observed. Nothing at first sight could appear less interesting than the mode in which decay takes place in fruit; yet several distinct phenomena are exhibited, even in the same individual variety. In Apples, for instance, every housewife has observed that her fruit sometimes rapidly passes into a moist loathsome mass, while at other times it becomes a brown or black mummy. In the former case either some Penicillium or Mucor is almost invariably present; in the latter there is sometimes a fungus of a totally different type, though frequently there is no indication, at least externally, of any parasite.

An appearance, so very strange, presented itself a few days since in a basket of common Codlins, that a specimen was at once brought to us for examination. The whole of the outer surface had assumed a pale grey opake tinge, as if it had been scalded, the substance meanwhile feeling extremely hard and glassy, reminding one forcibly of the Potatoes described by Martius, affected with the dry rot (Trockenfaule). Here and there beneath the cuticle beautiful radiating threads were observed, evidently indicating the presence of a fungus, but as they did not proceed to any further development we could not ascertain of what species they were the mycelium. The grey tinge soon assumed, in portions of the surface, a deep brown tint, though the greater part still remained pale. A section exhibited three different strata, the central one apparently sound, but rapidly becoming reddish brown, and collapsing in a very different way from what would have been the case with healthy tissue; surrounding this was a thin layer of brown, evidently diseased, if not actually dead cells, and beyond this a superficial stratum of pale grey tissue. In none of these was there any trace of fungus threads except where the radiating flocci, above mentioned, were visible; the brown cells had lost their granular contents, and the walls of the grey cells were very irregular and collapsed, so as to present a confused appearance under the microscope. After exposure to the air for two days, a crop of fungi appeared on the cut surface; but, strange to say, the central portion, consisting of the two internal strata, was covered with a species of Oidium of a greyish tint, while the external ring, which had now lost all rigidity, was occupied with a white circle of Penicillium glaucum passing on the inner edge into the greenish tinge of adult tufts of that fungus. We do not recollect to have seen anything of the kind before, and we record it with the greater pleasure, as it shows how much ground there is for observation, even in objects which we tread every day under foot.

The Oidium is a most beautiful object under the microscope. It is a form of *Oidium fructigenum*, differing merely in its rather greyer tinge and diffuse mode of growth, owing probably to its having liberty of free development, instead of being forced to break out through the cuticle, in which it forms little tufts which are often arranged concentrically. In intimate structure it precisely resembles the type which is admirably figured by Corda in his "Icones Fungorum."

ON THE CLASSIFICATION OF ROSES.

I have but recently read with attention the letter of "Crito" in No. 33, and am inclined to agree with him that classifying of Roses has been carried too far, still I am averse to changes too hastily made. If "Crito" is a botanist, he well knows that the science of botany has suffered much in its advance by repeated changes; let us, therefore, still have our Roses in classes, but reduce them and the number of varieties cultivated as much as possible. I confess I cannot go entirely with "Crito" in his attempt at a new classification. Our Cabbage Roses are well defined; also our Moss Roses. Hybrid Cabbage Roses may go with French Roses, of which they largely partake. We thus get rid of one class, by calling the group French Roses and Hybrids. Hybrid China and Bourbon Roses must be retained (one group containing both will be better), for they are so remarkably robust and distinct in their habits; and here let me remark, that cut Roses at a show are altogether a fallacy as regards distinction in grouping, it is only in the plant with its distinct foliage and habit that a Rose is seen in its true character. I have often heard the exhibitors of Roses joke among themselves as to the difficulty of knowing one Rose from another when their boxes have been open in a hot tent for two hours; it is, indeed, only some few of the stars that can then be distinguished even by the most practised eye. But to return to our classes; the vulgar idea is that a Damask Rose is a blowsy red Rose, like a rural lass at a country fair. "Crito" well knows that this is far from the truth; the species is a pale red, and our earliest variety, the York and Lancaster, is pale red and white. We must keep our Damask Roses with these pale beauties, for they are but few, but they are very beautiful; then, again, Rosa alba has diverged into some few varieties with bright pink flowers, but the group is very distinct, with its glaucous leaves and pale green shoots; but cut the flowers from the plants and it loses all its individuality, hence it has often pained me to see those long trays of Roses at our shows—flowers that in the Rose garden would have attracted every real lover of this charming flower—tied in bunches without grace, character, or beauty.

Perpetual Roses are overdone with grouping. The damask and hybrids should go together, but, then, what shall we term them? Hard-wooded autumnal Roses is their proper designation, but it is ugly and ungraceful. Suppose we call them "Hardy autumnal Roses," for they are in truth the only really hardy Roses that bloom in autumn. "Crito" is incorrect in saying that they differ from China Roses in having a "season of rest." The China Roses bloom early in June; this is the first crop of flowers; they rest awhile; lateral shoots and shoots from the root then break out, which, with the exception of a few straggling flowers, form a second crop towards the end of July; the same "rest" again occurs, and they give flowers from these young shoots in September and October. Hybrid Perpetual Roses bloom also early in June, for they are our earliest Roses; give occasional flowers during their "rest," a second crop towards the end of July and August, and occasional flowers till September; then a full crop, which, in rich soils, as the shoots always bloom in succession, continues all through October, and often till late in November.

We must keep our Bourbon Roses, our China Roses, our Tea scented Roses, and our Noisettes. The first group, in particular, is of so much interest, is so distinct in its habit, and contains the most abundant bloomers of all our autumnal Roses; their interval of "rest" is very short; still, in common with China Roses, they always take it and deserve it. Tea-scented Roses are tender. Noisette Roses, as at present grouped, are a jumble of hybrids, but there are many good climbing Roses among them. If "Crito's" suggestion is followed, so that this group is to comprise "Roses which bloom in clusters of five or more," we may place nearly all our autumnal Roses in it, more particularly the Bourbons, which generally bloom in large clusters. This subject is really worthy of attention; let it be discussed temperately, but let us not be too hasty in making changes. Botanical names and classes have been so often changed within a few years, that we ought to be able to purchase new memories to follow them; let us Rosanthropists act with due caution. *R.*

ON THE ODOURS OF PLANTS, AND THE MODES OF OBTAINING THEM.

"Should we chance to stray
Down by the hamlet's Hawthorn-scented way,
the sight is pleased,
The scent regal'd; each odoriferous leaf,
Each opening blossom, freely breathes abroad
Its gratitude, and thanks Him with its sweets."

We are not going to speak of, perhaps, more than a tithe of the plants that have a perfume—only those (which, for convenience, we have arranged alphabetically) will be mentioned that are used by the operative perfumer, and such as are imitated by him in consequence of there being a demand for the article; while, at the same time, from circumstances, he is unable to sell the real. The first that comes under our notice is—

Almond.—This perfume has been much esteemed for many ages; it may be procured by distilling the leaves of any of the Laurel tribe, and the kernels of stone fruit; in practice it is obtained from the bitter Almond, and resides in the skin or pellicle that covers the seed after it is shelled. In the ordinary way the Almonds are first pressed between plates, for procuring the mild or bland oil from the nut; the cake which is left after this process is then mixed with salt and water, and distilled by some, and by others it is put into a bag of coarse cloth, or spread on a sieve, and the steam allowed to pass through it; in either case the essential oil rises with the watery vapour, and is condensed in the still-worm. In this concentrated form its odour is far from agreeable, but when diluted with pure spirit or alcohol, it is very pleasant. It is much used for perfuming soap, but must be used sparingly; and if a little Thyme, Caraway, or winter-Green oil is used with it, the odour of the soap is improved. It enters into the combination of a handkerchief perfume, sold under the name of extract of Peach-blossoms, and also one or two others, which will be mentioned in their place. Perfumers also use it in what they call cold cream of Almonds, balsam of Almonds, &c., which are mixtures of oil, wax, spermaceti, and Rose-water, with sufficient essence of Almonds added to suggest the flavour of the nut; it is also used to perfume a species of soft soap much used in Paris for shaving, and called *Crême d'Amande*; also in the manufacture of a skin lotion, patronised by ladies under the name of milk of Almonds; a simple way of preparing which is, to rub ground Jordan Almonds in a mortar with about four times their weight of water, which has been distilled, or if Rose-water is used, it adds to the richness of the odour of the milk.

Allspice (*Myrtus Pimenta*).—But little used in perfumery, and, when so, only in combination with other spice oils for scenting soap; procured by distillation from the dried fruit before it is quite ripe.

Bergamot.—This most useful perfume, or essential oil, is procured from the Citrus Bergamia by expression from the fruit-peel. It has a soft, sweet odour; its price being moderate, allows it to be used in the cheapest kind of perfumery, and hence is not very popular in the fashionable world. When mixed with other oils, it greatly adds to their richness, and gives a sweetness to spice oils attainable by no other means, and such compounds are much used in the most highly-scented soaps. Mixed with highly rectified alcohol in the proportion of about ½ ounce of Bergamot to 1 pint of spirits, it forms what is called "extract of Bergamot," and in this state is used for the handkerchief. Though well covered with orris and other extracts, it is the leading ingredient in the famous Eau Bouquet. Mixed with about a quarter of its weight each of oil of lemons and cloves, it forms an excellent ingredient for scenting pomatums.

Benzoin.—Sometimes called Benjamin, this is a very useful substance to perfumers. It exudes by incision and dries as a gum from the Styrax Benzoin, and is principally imported from Borneo, Java, and Sumatra. When kept in melted lard or suet for a few hours it is partially dissolved, and to them imparts an odour like Vanilla; these fats form the leading ingredient in the celebrated Ogilvy's Pommade Divine; it is principally used in the manufacture of pastilles, which are burned in the chambers of the sick, to make which we find this to be a good form

Benzoin	½ lb.
Mixed Spices	2 oz.
Nitre	1 ,,
Gum Traganth	1 ,,
Charcoal	12 ,,

Rose water sufficient to make into a paste; let the gum lie in a little of the water the over night, in order to facilitate mixing; dry the whole after moulding with the hand to the form desired, in a warm but not hot situation. Benzoin is also used in making the best court plaister, in combination with isinglass.

Cassie (from the *Acacia Farnesiana*), is one of those fine odours which enters into the composition of the best handkerchief bouquets. When smelled at alone it has an intense Violet odour, and is rather sickly sweet. It is procured by maceration, the fat is melted, into which the flowers are thrown and left to digest for several hours; the spent flowers are removed and fresh are added until sufficient richness of perfume is obtained. Strained and cooled it is then known as Cassie pommade; this pommade is cut into pieces the size of a nut and put into pure alcohol and then left for a fortnight, the spirit dissolves the odour or essential oil of the Cassie flower out of the fat and becomes highly scented thereby, in this state it is termed "extract of Cassie." The so-called "oil of Cassie" is prepared by macerating the flowers in pure olive oil instead of fat as above; it is obviously only a solution of the real essential oil of Cassie flowers in the fat oil; it forms a nice dressing for the hair, and has a fine odour, though not a very great favourite. It is a good deal used by the French perfumers to mix with preparations of Violet, to give the latter an increase of odour.

Cassia, distilled from the bark of the *Cinnamomum Cassia*, used much in scenting of soap, especially that which is called "military soap;" it is more aromatic than flowery in odour, and, therefore, finds no place for the handkerchief.

Caraway, drawn from the fruit of the *Carum Carui*, has a very pleasant odour, quite familiar enough without description; it is only used in scenting soap. The fruits roughly ground and mixed with an equal weight of cloves, and afterwards with ten times their weight of Lavender flowers, make a sweet scent for bags to put in drawers with linen, &c.

Cedrat has a pleasant lemony odour, not much used now-a-days in perfumery; there is, however, an "Extract of Cedrat," which may be had of the leading shops in London, and is used for the handkerchief. It is made by dissolving the oil of Cedrat in spirits; the oil itself is procured by expression, or distillation, from the Citron peel. Some few druggists use this (sometimes called Citronelle) to perfume the various nostrums they prepare for the "growth of the hair."

Cedar yields an oil by distillation resembling the wood in odour, but is never made use of. The wood is split and used for matches by the affluent, as, when burned, it diffuses an agreeable fragrance in a room.

Cloves.—There are two species of this odour or oil, the one distilled from the Cloves, the other from the buds of the Caryophyllus aromaticus. Their fragrance resemble each other; the former is most in use by the perfumer, much for scenting soap, in combination with other perfumes, and also for mixing with Lavender oil in spirit for handkerchief use. A combination of this kind is much prized, under the name of "Rondeletia," to make which we find the following a good form:

Pure Alcohol	...	...	1 quart
Oil of Cloves	..	...	½ oz.
,, Bergamot	...	...	½ oz.
,, Lavender	...	...	½ oz.
,, Rose (Otto)		...	½ drachm
,, Santal	...	...	½ drachm.

The two last ingredients may be left out if it is thought proper, but they greatly improve it if used. *P.*

DISEASES OF PLANTS.

(*Continued from page 549.*)

Genus VIII.; *one species*. Blotches. (*Maochii.*)—The gardener prides himself much in the possessions of plants marked with white spots or blotches; he shows you with gratification his variegated Althæa and similar productions. But the naturalist cannot conceal that he sees in these blotches a certain symptom of a weakness derived from the want of appropriate nutriment. The sure remedy of this evil, and the means we possess of causing it to disappear, leave no doubt of its origin. It suffices to remove the plant to a situation where it will imbibe more substantial food, and we shall soon see the green colour extend over the whole surface of the leaves. The experiment of Fabbroni is well knwn. He treated the variegated leaved Pelargonium zonale with very rich nutriment, and caused the white zone to disappear and the whole of the leaves to assume their green colour. And it is certain that almost all plants that are variegated with white in poor soils, lose their blotches when removed to a rich and moist one. The Tulip is made to become spotted with various colours by removing it from a rich to a poor soil; but at the same time it loses more than a third of its natural height.

The spot which sometimes appear on fruits and seeds appear to me to belong to a very different class of diseases, of which I shall speak hereafter under the name of *mildews*.

I warn the lovers of variegated plants, that if they wish to preserve them they must water them copiously in summer, otherwise the heat and light of that season will make them resume their primitive green. That has often happened to me with the *striped Grass*, or variegated Arundo Donax, which when not watered in summer loses the white streaks, so prized by gardeners. In this case the disease is clearly owing to a deficiency in the proportion of the stimulus of light and heat.

A fact I have often witnessed, confirms still further what I have said. I have several times procured from Florence seeds of the variegated curled Kale. Upon sowing it repeatedly in Lombardy, I could scarcely raise here and there a plant which showed some slight trace of spots. And this always happened the first year only; the second year the whole crop entirely resumed the green colour. This perfectly agrees with the above theory, the soil of Lombardy being much richer than that of Tuscany, by the abundance of nutriment it affords the plants, puts them into such a state that they fulfil all their functions without the least trace of weakness. For the same reason all variegated plants, of which we receive the seeds from Paris or London, soon become perfectly green with us: that is caused not only by our rich soil, but by the action of heat. The French themselves admit that with all their care the Melons of Paris, and of almost all France, do not acquire the exquisite favour of our Italian ones; and who will not admit that it is because the greater heat of our climate is so eminently favourable to them.

Genus IX. Callosities of the Root.—It is not uncommon for trees to have callosities more or less voluminous at the commencement of the roots, or on such parts of them as are near the surface of the earth. This is the case, especially with large trees. The Elm and the Maple have them often. The Olive tree is in some countries very much affected with them. The causes of this disease, which is much more common than is generally believed, must be attributed to a deficiency of juices, to the difficulty encountered by roots in extending themselves freely, and in some cases to insufficient heat in proportion to the wants of the plant. I have observed the roots deformed by these callosities not only in soils naturally sterile, but also in those deep soils of a stiff nature vulgarly called cold.

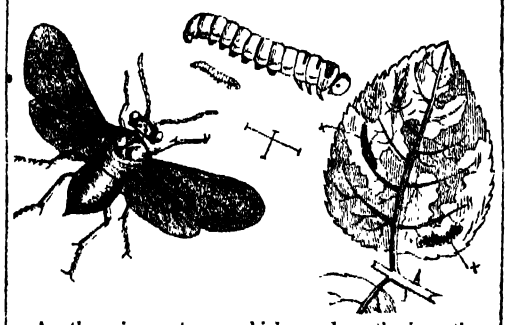
Such callosities must not be confounded with those excrescences, often of considerable size, caused by amputation or injuries; those of which I speak show no signs of internal or of external disorganisation. They are generally very regular in form, and have often the figure of boils, by which name I should have designated this disease, had not the word already so different a signification. The Almond and the Olive are the fruit trees which with us are the most frequently covered at the root with these callosities. The distinguished Abbé Ignazio Molina assures me that in Chili, his country, the Olive tree grows most vigorously, without ever showing any such excrescences. The assertion of a man whose authority is deservedly recognised by the most distinguished naturalists of the age, confirms me in the opinion I have formed, that the poorer soil in which the Olive is planted in Italy, and the want of sufficient space for its roots to extend, is the primary cause of these callosities. In fact I have seen them in the greatest abundance on trees of all sorts where the vegetable soil was of very little depth in proportion to the requirements of the roots for their extension and support.

I am persuaded that although it may be more easy to prevent than to cure this disease, by adapting the plants to the soil that may suit them, yet that when the subjects are not old the cure may be attempted. It would be necessary to change the soil and give them a better one, which would probably be attended with beneficial results.

ENTOMOLOGY.

The Raspberry-leaf Miner.

The family of the Sawflies (Tenthredinidæ) constitutes one of the most interesting groups of winged insects. Belonging to an order (Hymenoptera), the caterpillars of which are almost universally white fleshy grubs destitute of legs, the larvæ of the Tenthredinidæ are, on the contrary, active, variously coloured caterpillars, furnished with numerous legs, which feed like the caterpillars of butterflies and moths (which they closely resemble) upon the leaves and other parts of trees and plants. Nor is the structure of the perfect Sawfly less remarkable, and at the same time different from that of the majority of the order. We here, in fact, find that the sting (which in the wasps, bees, &c., is so terrible a weapon, and which is transformed in the Ichneumons and Siricidæ into an apparatus for boring), exists in the sawflies in the shape of a pair of very beautifully constructed saws, which are made to act in concert together for the purpose of forming drills in the leaves or stems of plants within which the eggs are deposited by the females.



Another circumstance, which renders the investigations of the habits of the insects of this family especially interesting, is the remarkable variation of habits which different species exhibit. The majority, it is true, feed in the caterpillar state upon the leaves of various plants, to which they are sometimes very injurious, without any provision for covering or defence. Such is the case with the caterpillars of the Gooseberry Sawfly (See *Gard. Chron.*, p. 548, 1841), the nigger or black caterpillar of the Turnip (*Gard. Chron.*, p. 620, 1842), and the larvæ of different species of Lophyrus, which occasionally defoliate whole Fir plantations. But other species exhibit singular modifications of instinct in the means which they adopt for concealing and defending themselves; thus the Slimy Grub or Slugworm of the Pear and Cherry (*Gard. Chron*, p. 692, 1842) covers itself with a black secretion which completely alters its appearance, and serves to conceal it from its enemies, or defend it from the hot rays of the sun; the larva of another species (Selandria Æthiops, *Gard. Chron*, p. 524, 1848), feeds on the under side of the Rose leaves, leaving the upper surface of the leaf entire, as a defence. Other species peculiar to the Rose and Hazel form remarkable moveable spiral tents or cases with portions of leaves, in which they reside (*Gard. Chron.*, p. 684, 1847); whilst another species, first observed by us, materially injures the Apple crop, the larva eating the core of the young fruit (*Gard. Chron.*, p. 852, 1847), exactly in the same manner as the Apple Tortrix; another species (in the same way as the Cynipidæ) forms and inhabits galls on Willow leaves (Nematus intercus), long ago figured by Swammerdam, and whose history has again been recently published by Léon Dufour, in the Annales of the French Entomological Society. Other remarkable modifications of habits in the larvæ of different species, have also been observed by ourselves; one species, whose history will shortly appear in this series of entomological articles, committing very great injury to the young shoots of Roses, by burrowing into and feeding upon the pith; and we now publish the history of another species, which mines the leaves of the Raspberry, in the same manner as the larvæ of the mining Tineæ or Tephritides.

At the beginning of the month of July, 1847, we observed that the leaves of a very fine Raspberry plant, growing close to the south side of a wall in our garden at Hammersmith, were covered with large blotches, or dead parts, which, on examination, were found to be hollow, the fleshy portion of the leaf being consumed, leaving the two surfaces entire. Within these blotches we found one, or occasionally two or three, small dirty green caterpillars, furnished with three pairs of legs attached to the segments following the head, six pairs of ventral, and a pair (?) of anal prolegs; the first segment next to the head was dark brown in front, the head fulvous; the second, third, and fourth segments with a black dot on the under side, and the anal proleg surrounded at the base with a black ring.

These caterpillars shed their skins several times, leaving the exuvia within the blotch. When full grown they eat their way out of the blotch, which by this time nearly occupies the entire leaf, and then descend to the earth. The perfect insect appears at the beginning of August, in the shape of a minute black-winged sawfly (Fœnusa pumila), measuring about one-eighth of an inch in length, and about a quarter of an inch in the expanse of the fore wings. It is glossy black, the abdomen with a palish edge to the second joint; the legs pale testaceous, with the thighs, except at the tip, dusky black; the tibiæ sometimes whitish at the base, and the wings blackish, with the fore margin and stigma black. Some specimens must appear in the winged state in the following spring, in order to deposit their eggs in the new Raspberry leaves. These are either a fresh brood or, as appears more likely, are the survivors of those hatched in August.

During the month of August some minute Ichneumonidæ appeared from the mass of blotched leaves under observation, proving that a natural check exists to the too great increase of these sawflies, which certainly had an injurious effect upon the plant on which we observed them, which has not, during the two or three years since we first observed the mischief, produced a proper crop of fruit. We can only recommend picking off and burning the leaves as soon as they are observed to be blotched, as a remedy likely to prove beneficial.

Our engraving represents a Raspberry-leaf with two large blotches; the dark parts, marked with a *, showing the position of the mining caterpillars; also the caterpillar itself of the natural size and magnified, and a magnified representation of the perfect insect; the cross lines showing the natural size. *J. O. W.*

VILLA AND SUBURBAN GARDENING.

The amateur gardener may consider the cultivation of the Grape Vine beyond his ability, and with much apparent reason, for the conflicting statements respecting the formation of the border alone are enough to deter him, to say nothing of the numerous plans suggested as to the description of house most suitable for its successful management, and the importance attached to the peculiar modes of heating. Good gardening, however, depends less on mysterious quibbles, and far-fetched plans, than on a close imitation of the laws of Nature, as affecting the economy of vegetable life; and this remark is especially applicable to the Grape Vine.

The Bishop's Stortford Grapes, an account of which appeared at p. 683, 1847, were evidence of what an amateur, but little accustomed to the art of horticulture, can effect in Grape growing. This class of cultivators, therefore, should take courage, not only from the example just alluded to, but also from another which has recently come under my notice, at Goodwood, not in his Grace the Duke of Richmond's garden, but in that of Mr. Kent, the superintendent of his stud. Mr. K. is eminently successful in the culture of his garden, to which he devotes his leisure hours. At this moment he has a small Vinery well worth the inspection—aye, of the best Grape growers in the kingdom. The construction and heating of this house is of the most simple kind. The subsoil of the border is chalk, on which is laid a quantity of flints as drainage. Turfy loam moderately enriched with common manure constitutes his border, which is raised above the surface of the surrounding ground, and has an inclination outwards. The Vines are pruned moderately close, upon the spur system, one cane occupying a light. A little artificial heat is applied during the growing season, accompanied by abundance of ventilation. The bunches are thinned so as to leave a good but not an excessive crop, the wood being but moderately strong. The bunches are only of moderate size, but well thinned in the berries, which are large and well coloured, and covered with a beautiful bloom, all of the sorts being Black Hamburghs. Throughout the whole house there is not an imperfect bunch or an ill-coloured berry; they are produced in a style worthy of the first gardeners of the age. Let the amateur, therefore, not despair of being able to furnish his table with good Grapes of his own growing. Little is wanted to do this except courage and perseverance. *Pharo.*

Home Correspondence.

Cucumber Disease.—This year has baffled the skill of some of our most experienced Cucumber growers to produce that fruit in perfection. We had little direct sunshine up to the 1st of June, except a few bright days about Good Friday. Under such circumstances, canker, or *gout*, or whatever you like to call it, killed the plants in all directions. The way in which I treated mine this spring was as follows: When the mould, to the amount of about 25 or 30 cart-loads was put into the pits, it was fresh from the fields, and consequently very wet. I could not have it in until it was absolutely wanted, on account of woodlice getting into it. I add no solid manure to the mould at all, but I enrich it with liquid manure when the plants come into bearing, not before that time. The process of exhaustion by evaporation from the leaves was carried on so slowly this year, that my Cucumbers did not need or receive a drop of water for two months after they were planted. All the moisture they got was from saddles on the hot-water pipes kept full of water, in order to moisten the atmosphere. Under this treatment I had not a cankered plant or fruit. Cucumber growers failed this spring on account of their using highly manured mould, and that on a rich yellow loam; all which, in a fine sunny spring, might do very well; but in a season like the past, and with the addition of water now and then,

is sure to produce disease. The leaves, as most people know, perform an important part in the economy of vegetable life, and if their functions are performed imperfectly, as they are sure to be in the absence of sunlight, the plant cannot get rid of its water; it becomes gouty and dropsical, and canker is the result. Too high feeding aggravates the evil. Under such circumstances they cannot properly elaborate the rich sap that is rising in them, therefore they ought to be starved as much as possible at the root, during such weather as we have had this last spring. *James Cuthill, Camberwell.*

Importance of Neat Gardening.—I often feel obliged to you for your remarks on the absolute necessity of neatness in gardening. For my own part, I would rather have ordinary things in perfect order than many superior plants huddled together, and full of weeds. I would wish to see order not merely in the flower-borders, but also in the kitchen-garden, tool-house, and everything belonging to them. With a view to promote this, may I suggest to your readers how desirable it would be that every horticultural society should give premiums to gardeners, who can show that they deserve it, for the general tidiness of the premises under their care. I believe it sometimes happens that, for want of some such encouragement as this, horticultural prizes may lead to neglect of the general state of the garden, on account of the gardener's time being principally spent in raising some particular choice fruits or flowers. This, I think, is buying gold too dear; besides that, it leaves many pains-taking men without that encouragement which they deserve for their general attention to everything placed under their care. *H. G. A., Sept.* 18.

Hardiness of the White Indian Azalea.—If it be this Azalea that your correspondent "S. B. S." wants information about, I can inform him that I know of several that flower as beautifully in this neighbourhood in the open ground, without any protection, as ever I have seen them in a greenhouse. *A Subscriber, Tunbridge Wells, Sept.* 18.

Experiments in Potato Planting.—Regents, weighing on an average 4 oz. each, were cut into sets of single eyes of the average weight of ¼ oz. each; they were planted in February on unmanured land, in alternate rows with small whole Regents of the same average weight. The former produced a crop of 21 bushels to the chain, and the latter of 17. The difference was partly to be ascribed to some of the whole sets not growing. The tubers of the cut sets did not excel the others in size as much as I had expected. The conclusions I have drawn from various other experiments on sets of single eyes of about ¼ oz. each are, that early kinds, and all sorts, late planted especially, on poor ground, require the largest sets; whilst late kinds, early planted, and on rich land, prosper with smaller sets. Regents and Forty-folds were thus planted on the same plot of ground in February. The produce of the former is excellent, the tubers being often of nearly a pound in weight; but the crop of Forty-folds is very poor. Small sets of Early Frame produced a good return in the garden, but the crop in the field was miserable. I also cut Walnut-leaf Kidney in crown and bottom sets. The former were planted in the field with excess of manure, came up and ripened early, and are not affected with the rot. The bottom ends were planted at the same time, close by, in unmanured ground, came up late, and many are rotten. As to the rot, it prevails in highly manured ground and heavy soils, even if thoroughly drained. The late planted also are much diseased, but the early planted, on poor dry soils, with manure in moderation, have almost always succeeded. These crops are generally good and sound. *Sigma.*

Adders.—In my communication on the subject of adders casting their skins (p. 582) your compositor has changed a letter, and thus rendered the sentence unintelligible; as it now stands it appears as though I had stated that the "corner" of the eye had been cast; it should have been printed the "cornea." Perhaps I was incorrect in calling the scale, which in the skin occupied the place of the eye, "the cornea," but I thought the fact that a scale which appeared to fit the surface of the eye, and which in the skin presented a concave surface outwards, sufficiently curious to merit particular observation. Of the fact I am quite certain. *Lusor.*

At the Chepstow Horticultural Show, held on the 4th of September, a silver cup was offered for the best stand of 24 clusters of Roses, containing not more than three stems in a cluster. Two stands were put up and both disqualified by the judges; having one cluster in each stand containing four stems. One of the judges, Mr. Reith, gardener to Lady Smith, Ashton Court, informs me that they recommended neither stand; yet some gentlemen in whose hands the cup was placed, on their own responsibility, gave it to one of the parties. Is this fair? *John Saul, Durdham Down Nursery, Bristol.* [It was undoubtedly an injudicious act.]

Flavour of Melons.—I cannot understand how an increase in the size of good sorts of Melons can affect their flavour, provided all other conditions necessary to the full perfection of the fruit are present. I imagine that the inferior-flavoured Melons, of which Mr. Glendinning speaks, must have been unripe, or the leaves of the plants must have been destroyed from some lack of attention previous to their having completed their functions; for healthy leaves are a *sine qua non* in the production of well-flavoured fruit. Melons have been very fine here this season; and where due attention has been paid to maintaining a healthy foliage, the fruit must of necessity be as fine in flavour in this as in any other season. High flavour, as I have just stated, is dependent upon the perfect action of the leaves, and the action of the leaves is dependent upon the supply of that amount of light and heat which each plant requires; and if high flavour in the Melon does not follow as a matter of necessity, from the result of heat, light, and healthy foliage (of the two former we have been highly favoured), then this portion of the theory of vegetable physiology falls to the ground. *A. Jenkins, Berth-llynddwya.*

Conifers at Redleaf.—When perusing, a short time since, an account of the luxuriance of Araucaria imbricata growing in low, damp, and shaded situations at the foot of the Andes, it occurred to me that planters might be induced from this account to select a similar situation for it in this country. With this impression allow me to offer them a hint with respect to this noble Pine founded upon experience. I planted the first plant of it at Redleaf, in the lowest part of the gardens, in a cool situation, having a confined atmosphere, corresponding with the place above described. It produced very vigorous growths, but the latter ripened imperfectly, and the consequence was that all the young growths made in the year 1837 were destroyed by the ever-memorable frost of January 20th, 1838, although the plant had a thatched frame to protect it at the time. In the following year this plant was removed to higher ground, near where Cunninghamia sinensis was growing. The latter endured the frost just alluded to without protection, and it experienced but a slight discoloration of its foliage, proving the superiority of a high situation over a low one. Profiting by the hint I planted Cryptomeria japonica on high and dry ground, in which probably it may not for some years equal in growth plants in low and damp situations; but should the latter have to contend with frosts equal to that named above, which will prove the highest in the following year! Abies Webbiana, at Redleaf, I originally planted near the Araucaria in low ground; it was much injured in January 1838, and was afterwards moved to a higher place, and exposed to a north aspect, with a view to delay its growth in the spring, for late spring frosts often injure this beautiful variety. Worked plants of Pinus Lambertiana are making great progress in growth; I imagine that they will prove more successful and durable than seedlings. Some of them are worked upon the Weymouth Pine, the grafts having been taken from the large 16 feet plant at Redleaf, which died in 1843; they promise soon to attain the height of their parent. I am of opinion that this very distinct species will be found to succeed best in situations partially shaded from the sun's rays. It may be interesting to know that the late proprietor purchased in Bond-street, in 1808, then 40 years of age, cones of the Cedar of Lebanon, and that from the seeds were raised several plants, which now assist to embellish those gardens; before his death, one of them girthed upwards of 3 feet, at 3 feet from the ground. Two plants of Abies Deodara, from cuttings made by me, in 1836, are now upwards of 20 feet high, furnished equally well as seedlings, and spreading in diameter proportionately with their height. At the present time, however, the abundance and cheapness of seedlings renders raising them from cuttings unnecessary. *Joseph Wells, Shorne, ex-gardener at Redleaf.*

Alkali Works.—The Yorkshire jurors on a recent case may have their observation directed to the influence of alkali works on some trees near the Stoke Prior Works at that station, on the line of the Birmingham and Gloucester Railway. *Viator.*

Kidney Bean Seeds.—Though it is well known that the ripe seeds, especially of the varieties producing white seed, of Kidney Beans, are much esteemed as food on the Continent, and at some tables in our own country, it may not be known that the seed of fresh Kidney Beans, when far too stringy for use, make a most excellent vegetable. It is merely necessary to remove the coloured skin, which is very easily done by the finger, and requires far less time, in consequence of the small number wanted for a dish, than might at first be supposed. They should then be well boiled and served either with gravy or melted butter, and will be found to make a very agreeable variety, when vegetables are just beginning to fall off. *M. J. B.*

The Colour of Grapes altered by Guano.—Our Vine borders were well dressed last winter with good cow-yard manure, which had been protected from rain and sun, and on leaving home in May I desired our gardener to dissolve some Peruvian guano in a large quantity of water, and to use it freely on the borders of Nos. 1 and 2 houses, as also on the Vines in the houses, some being planted inside. The result has been that nearly all the Hamburgh Grapes in these houses are colourless. Our gardener assures me that his treatment has been in every respect the same as last year, and to prove that the guano has caused the defect, he has sent us four bunches of very highly coloured Hamburgh Grapes, gathered from a Vine led from No. 3 into No. 2, to the roots of which no guano has been used. The guano was purchased of Mr. Lawes, King William-street, London, and was of excellent quality. *A Constant Reader, Sidmouth, Sept.* 12. [There is certainly some error in this statement. Guano is incapable of producing the effect described, unless used in enormous quantities—if then.]

Foreign Correspondence.

HANOVER, *Sept.* 6.—The Potato disease has again made its appearance, with more or less intensity, throughout this country, the loss of the crop being estimated to vary from two-thirds to one-half; but the quantity planted is so great, and other agricultural produce is so abundant, that no alarm seems to be felt about it; and prices are lower than last year, when they were not half what they were in 1847.

Societies.

CALEDONIAN HORTICULTURAL.—The weather was unfavourable for a promenade, and the company was small, but the fruits and flowers were very numerous, and many of them of first-rate character. For the best two sorts of Peaches, a premium was assigned to Mr. Crocket, gr. to Colonel Ferguson, for Bellegarde and Royal George; and a 2d award was made to Mr. Reid, gr. to J. Syme, Esq., for Noblesse and George IV. There was an extensive competition in Grapes, many of the competitors producing very large clusters of fine fruit. For Muscats of Alexandria, a 1st prize was voted to Mr. Lees, gr. to the Earl of Haddington; and a 2d to Mr. Baxter, gr. to Sir J. G. Craig, Bart. For Black Hamburgh Grapes, a 1st award was made to Mr. Ramsay, gr. to Sir G. Clerk; a 2d to Mr. M'Lanchlan, gr. to W. R. Ramsay, Esq.,; and a 3d to Mr. Rennie, Inch House. For excellent Frontignan Grapes, a 1st prize was gained by Mr. M'Lauchlan with white; a 2d by Mr. Cameron, gr. to S. Hay, Esq., with Grizzly; and a 3d by Mr. Reid, Millbank, with Black Frontignan. For the heaviest bunch of Grapes, fit for dessert, the prize was awarded to Mr. Marshall, gr. to A. Croll, Esq, for white Syrian. For very large clusters, a 2d award was voted to Mr. Ramsay, for Southfield Black; and a 3d to Mr. M'Lauchlan, for white Syrian. For the best grown Pine-apple, the prize was awarded to Mr. Smith, gr., Cunoquhie, for a fine fruit of Ripley Queen. For Moorpark Apricots, a 1st prize was awarded to Mr. Thom, gr. to C. Balfour, Esq., and a second to Mr. Crocket, Raith. The prize for the best six Apricots, exclusive of Moorpark, was gained by Mr. King, Musselburgh, with the Breda. For excellent Green-gage Plums awards were respectively made to Mr. Miller, gr., Culross, and Mr. Thom, Newton Don. For fine Plums, exclusive of Green-gage, a 1st award was assigned to Mr. Goodall, gr., Newbattle Abbey, for Washington and Victoria; and a 2d to Mr. Mackie, gr. at Larbert House, for Orleans and Victoria. The competition in Melons was extensive, and two prizes were awarded; the 1st to Mr. Aitken, gr. to P. G. Skene, Esq., for a green-flesh variety; and a 2d to Mr. Lees, for Prizefighter.

The Dahlia competition excited considerable interest, and, notwithstanding the untoward nature of the season, there were many admirable stands of flowers sent in competition. In the Nurserymen's Class the highest prize was assigned to Messrs. James Dickson and Sons; the kinds being Marchioness of Cornwallis, Duke of Wellington, Crocus, Beeswing, Grenadier, Mr. Seldon, Scarlet Gem, Purple Standard, Princess Radziville, Sir E. Antrobus, Empress of Whites, and Boule de Feu. The Silver Medal was voted, as a 2d premium to Mr. Handasyde, Musselburgh, who produced the following: Purple Standard, Torson d'Or, Mr. Seldon, Beeswing, Lilac Standard, Shylock, Marquis of Worcester, Gem of the North, Grenadier, Princess Radziville, Sir Edward Antrobus, and Crocus. In the competition among practical gardeners, the highest premium was voted to Mr. Macdonald, gr. to Lord Willoughby d'Eresby, Drummond Castle, for Capt. Warner, Duke of Wellington, Marchioness of Cornwallis, Standard of Perfection, Cleopatra, Mr. Seldon, Beeswing, Scarlet Gem, Sir E. Antrobus, and Grenadier. The Silver Medal was awarded as 2d prize to Mr. J. Oswald, gr., Murthly Castle, who produced Cleopatra, Beeswing, Duke of Wellington, Mr. Seldon, Shylock, Marchioness of Cornwallis, Boule de Feu, Emperor of Whites, Sir E. Antrobus, and Scarlet Gem. A 3d prize was voted to Mr. Young, gr. to Mrs. H. N. Ferguson, who produced a stand of very choice flowers. In the Amateurs' department, the highest prize was assigned to Mr. Sanderson, Musselburgh, whose kinds were: Beeswing, Box, Shylock, Caractacus, and Cardinal Ferrier; and a 2d award was made to Mr. King, Inveresk, for Golden Fleece, Beeswing, Mrs. Shelley, Standard of Perfection, Shylock, and Box. For fancy Dahlias (a department in which great improvement was manifest), the highest prize was awarded to Mr. Macdonald, Drummond Castle, who produced the following:—Madam Washy, Hermione, Surprise, Mrs. S. Lefevre, George Clayton, Mons. Adolphe, Harlequin, and Erzherzog. A second premium was voted to Mr. Currie, gr. to Miss Wedderburn, for Mirobolante (Kruff), Mons. Cherne, Jenny Lind, Bijou de Chloshauet, Victorata, Triumphe de Magdeburg, and Duchess of Sutherland. For Hollyhocks, a 1st prize was awarded to Mr. Pow, Norton; and a 2d to Mr. Foulis, gr. to J. Tytler, Esq. For Carnations, the prize was awarded to Mr. Foulis, for Duke of Roxburgh, Admiral Curzon, Prince Albert (Hall's), Regular (Ely's), William IV., Robert Burns, Bishop of Gloucester, Chadwick's Brilliant, John Wright (Ely's), Lovely Ann, Beauty of Woodhouse, and Prince of Wales. For Picotees, a 1st premium was assigned to Mr. Henderson, gr. to C. K. Sivewright, Esq., whose varieties were: Edwards' Jenny Lind, Wilson's Fanny Irbey, Maria's Sylvanus, Dickson's Mr. Traher, Rickland's Hon. Miss Annesley, and Lee's Privateer. A 2d award was made to Mr. Foulis for President, Miss Jane, Red Rover, Grace Darling, Mr. Traher, and Prince Albert. The prize of 1*l.* 1*s.* offered (through the Society) by Messrs. Dickson and Sons, for the three finest-flowered specimens of Japan Lilies, was gained by

Mr. Stewart, gr. to Professor Dunbar, the kinds being: Lilium lancifolium album, speciosum, and punctatum. We have to add, that on this occasion many meritorious extra productions were exhibited, for which thanks were voted, or honorary awards made, according to circumstances. There were also two splendid Cape Heaths from the Royal Botanic Garden; and some magnificent specimens of Petunias, raised in the Society's own garden, attracted general notice, and were much admired. It may be mentioned that a new implement, for facilitating the hoeing and earthing up of garden crops, invented by Mr. Sivewright, of Cargilfield, was exhibited at work in the Culinarian, and remitted to a committee for a report.

Royal South London Floricultural, *Sept.* 12.—The Dahlia show was held on this occasion, and, notwithstanding the unfavourable state of the day, there was a fair attendance. In preference to giving the names of all the winning Dahlias, we will enumerate those only which appeared the most constant and which were shown finest, selecting from the whole exhibition. Many of the flowers were most excellent specimens of their kind. First: Shylock, scarlet, was very generally shown; also Mr. Seldon, shaded lilac; Richard Cobden, shaded maroon; Duke of Wellington, orange; Victory, rosy purple; Scarlet Gem; Andromeda; Yellow Standard; Fearless, lilac; Grenadier, crimson; Marchioness of Cornwallis, blush; Toison d'Or, buff; Black Prince, maroon; The Hero, rose; Nonpareil, red; Mynn, crimson; Privateer, yellow and red; Miss Vyse, white and purple; Gem, white and lavender; Violet Perfection; Queen of the East, blush; Louis-Philippe, crimson; Hector, maroon; Box, scarlet. *Fancies.*—Belle de Nogent; Bou Maza, nankeen and white; Comte de Flandre, dark red and white; Conspicua, crimson and white; Empereur de Maroc, dark maroon and white; Gasparine Furstin Reuss, dark and white; General Cavaignac, violet purple and white; Hermina, red and white; Jenny Lind, maroon and white; Madame Washy, purple and white; Miss Jane, purple and white; Miss Blackmore, white, with purple edging; Miss Stevens, buff, orange, and white; Œillet Parfait, orange, striped with red; Picotee, yellow striped and spotted with red; Postsecretaire Hane, violet and white; Rainbow, scarlet and white; Remembrancer, rose and white; Striata perfecta, lavender spotted and striped with rosy lilac; Vicomte de Ressequier, purple and white. *Seedlings* were numerous, but there was nothing among them very striking. Keynes' Magnificent is a shaded rosy lilac of fine form, and apparently constant. The same may be said of Sir F. Bathurst, crimson. Legg's Premier is a well formed purple; also an orange flower named Earl of Clarendon. Sylph is a promising white ground variety; Aurantia compacta, bright orange; and Gaiety, yellow with red mottled. These constituted the principal objects in the seedling stands, with the addition of a very fine constant dark Dahlia of medium size, exhibited by Mr. Soden, of Oxford, and named Beauty of the Grove. *Fancy Seedlings.*—Procter's Elizabeth will make a very desirable addition to this class; it may be described as a blush, with rosy purple stripes well defined; Liddiard's Miss Compton is a bright red and white, but too thin; Bragg's Lady Grenville is dull white and red, but very good in form.

Hollyhocks were shown by Mr. Chater and Mr. Bircham, in very fine condition, the spikes being one compact mass of flowers. Mr. Chater's specimens looked as fresh as if they had been on the parent stem. Their names were, Mrs. C. Barron, fine rose; Delicata, flesh white; Enchantress, rose; Sulphurea perfecta; Queen, blush; Surprise, fine deep rose; Comet, rich crimson; Model of Perfection, fine French white; Coccinea, bright red; Aurantia, salmon; Rosea alba, pink and rose; and Obscura, grey purple. Mr. Bircham's flowers were, Rosea alba, shaded rose; Defiance, fine maroon; Model of Perfection, fine blush; Rosea grandiflora, best rose; William Tell, purple crimson; Bicolor, mottled lilac; Mount Etna, fine rich crimson; Queen, blush; Aclunet, dark maroon; sulphurea perfecta, pretty; Fireball, red; formosa, fine dark; and Magnum Bonum, fine dark.

The prizes were awarded as follows: for the best 24 Dahlias, dissimilar blooms (private growers), 1st, R. Proctor, Esq.; 2d, J. Howard, Esq., Burnham; 3d, J. Hopkins, Esq.; 4th, Mr. Cook. For the best 12 Dahlias (private growers), 1st, Mr. Robinson; 2d, Mr. Rowden, Newbury; 3d, Mr. Black; 4th, Mr. Batten; 5th, Mr. Pope. For the best 6 Fancy Dahlias (private growers), 1st, Mr. Rowden; 2d, R. Proctor, Esq.; 3d, Mr. Holder. For the best 24 Dahlias (Nurserymen), 1st, Mr. C. Turner, Slough; 2d, Mr. Drummond; 3d, Mr. Hunt; 4th, Mr. Gaines. For the best 12 Fancy Dahlias (Nurserymen), 1st, Mr. Turner, Slough; 2d, Mr. Harrison; 3d, Mr. Hunt. Extra Prize by Mr. Keynes, for the best blooms of the Dahlias named Purple Standard, Lilac Perfection, Miss Chaplin, Sunset, Victoria Regina, Miss Blackmore, Rainbow, Miss Stevens, and Sunbeam: 1st, Mr. Black; 2d, Mr. Hunt; 3d, Mr. Pope; 4th, Mr. Cook; 5th, Mr. Edwards. Extra Prize by Mr. Bushell, for best blooms of Duchess white Dahlia: 1st, Mr. Robinson; 2d, Mr. Hunt; 3d, Mr. Noakes. Extra Prize by Mr. C. Turner, of Slough, for the best 6 blooms of Dahlias let out by himself (not fancies): 1st, Mr. Robinson; 2d, J. Howard, Esq. Extra Prize by J. Edwards, Esq., for best bloom of Turner's Mr. Seldon: 1st, Mr. Robinson; 2d, Mr. Procter. Extra Prize by Mr. Hunt, of Paddington, for the best 3 blooms of Hunt's General Cavaignac: 1st, Mr. Hatchman. Extra Prize by Mr. Chapman for the best single bloom of Bushell's Duchess: 1st, Mr. Noakes. Extra Prize by J. Howard, Esq., for the best 2 blooms of Howard's fancy Dahlia Miss Jane: 1st, Mr. Pope. Extra Prize by H. Harms, Esq., for the best 2 blooms of any one white Dahlia: 1st, Mr. Keynes. Extra Prize by Mr. H. Hamilton, Cheapside, for the best fancy Dahlia: 1st, Mr. C. Turner. First Class Certificates were awarded as follows: to Mr. Keynes for seedling Dahlia Sir F. Bathurst; ditto ditto Magnificent; ditto ditto Gaiety. Mr. Bragg for seedling Dahlia Lady Grenville; Mr. Legg for seedling Dahlia Premier; Mr. Liddiard for seedling Dahlia Miss Compton; Mr. Drummond for a seedling Gloxinia. It is not our intention to report these meetings again unless the tobacco nuisance, alluded to last week, is completely stopped.

Botanical of London, *Sept.* 7.—The Treasurer in the chair. Mr. C. C. Babington presented specimens of Rubus pyramidalis (Bab.), and Rubus incurvatus (Bab.), collected by him at Llanberis, North Wales, in September last. Specimens of Odontites verna, and Odontites verna var. elegans, were exhibited from Mr. Ball, in illustration of the plants described by him in the "Botanical Gazette" for September. A paper was read from Mr. W. H. Colman, "On the Plants Indigenous to the neighbourhood of Horsham, Sussex."

Royal Horticultural of Cornwall, *Sept.* 7.—Fruit: Finest Pine Apple, Black Jamaica, Mr. G. C. Fox. Best Melon, Beechwood, Sir C. Lemon, Bart., M.P. Best dish of Grapes (the Silver Medal), Hamburgh, Muscat, Tottenham Park Muscat, Black Prince, Mr. Vivian. Best bunch of Grapes, White Syrian, Mr. G. C. Fox. Best 6 Peaches, Ford's Seedling, Mr. Vivian. Best collection of Pears, Mr. G. C. Fox. Best 6 Nectarines, Elruge, Mr. W. Daubuz. Best collection of Apples, White Quarandine, Mr. G. C. Fox. Best 6 Figs, Mr. M. Williams. Best dish of Cherries, Morello, Rev. Canon Rogers. Best dish of Plums, Delicieuse and Nectarine, Mr. Vivian. Flowers: New ornamental Plant (The Bronze Medal) Zauchneria Californica, Sir C. Lemon, Bart., M.P. Best 12 Stove and Greenhouse Plants (the Silver Medal), Aphelandra cristata, Dipladenia crassinoda, Plumbago Larpenta, Zauchneria Californica, &c., Mr. W. Daubuz. Best Stove specimen, Dipladenia crassinoda, Mr. Vivian. Best Greenhouse specimen, Clematis imbuosa, Sir C. Lemon, Bart, M.P. Best Orchids, Oncidium Lanceanum, O. flexuosum, Gongora maculata, Cattleya Loddigesii, Mr. W. Daubuz. Best 4 Heaths, E. Hartnelli, retorta major, jasmuiflora, eximia, Mr. F. Passingham. Best Heath specimen, Lamberti rosea, Mr. F. Passingham. Best 6 Fuchsias, Exoniensis, Corallina, Duke of Cornwall, Reine d'Amour, Honourable Mrs Millbank, Gigantea, Mr. W. M. Tweedy. Best Fuchsia specimen, Haben's Gem of the West, Mr. W. Daubuz. Best 12 Dahlias, Bathonia, Admiral Stopford, Beeswing, Marchioness of Cornwallis, Sure-enough, Cleopatra, Sir D. Antrobus, Essex Bride, Orange Superb, Antagonist, Marquis of Aylesbury, Princess Radzeville, Mr. G. C. Fox. Best 6 ditto, Shylock, Toison D'Or, Beeswing, Princess Radzeville, Bathonia, Marchioness of Cornwallis, Mr. W. Daubuz. Best Roses, Mr. H. Williams Best Hollyhocks, Mr. M. Williams. Best Asters, Mr. Vivian Best Bulbous Plants, Lilium lancifolium rubrum, album, longiflorum, Mr. W. Daubuz.

*** Two other reports of Country Shows have reached us, but we cannot publish them, for they contain a list of awards only, without the names of the subjects for which they were given.

Reviews.

Die äusseren Einflüsse auf das Pflanzenleben in ihren Beziehungen zu den wichtigsten Krankheiten der Kulturgewächse. Ein populairer Vortrag gehalten am 30 *Marz*, 1847. Von Eduard Regel. Zurich, 1847. 8vo, pp. 32.

This, as the title implies, is the substance of a popular lecture on the different outward agents which affect vegetable life, more especially with reference to the most important diseases to which the crops most usually cultivated are subject. It was of course impossible within so short a compass as a lecture contained in a pamphlet of a very few pages, to give anything like a complete view of the subject, or even to glance at many important matters, some indeed excluded by the very terms of the discourse, still it contains a great deal, not indeed of novelty, but of plain sense, on the matters which are brought in view.

After briefly stating the fact that vegetation varies with climate, without however entering at all on the subject of botanical geography, the author proceeds simply to describe the chemical composition of vegetables, and the various sources from whence the component parts are derived.

The absorption of fluids and gases necessarily implies secretion. The raw materials penetrate through the whole of the plant, and form peculiar substances, besides producing new parts. The processes are most actively carried on in the newly-formed organs, and amongst these, exhalation of gases more or less charged with humid matter, and the aeration of the fluids.

The outward circumstances which affect the vital activity of plants are temperature, light, electricity, atmospheric air, water, and soil. The effect of each of these is briefly reviewed. The concurrence of each in its proper proportion is necessary to the complete and perfect development of any individual species. If any one of them be deranged, much more if they be replaced by, or be more or less mixed with matters absolutely noxious, the normal development will be impeded, or actual disease will be produced.

Various deviations from their normal forms have, in process of time, been produced in plants, which, according to the object of the cultivator, are regarded as good or bad qualities. Many of our most valuable vegetables have arisen from such deviations, and in many cases it is the object of the cultivator to prevent them as much as possible from reverting to their original type, or if practicable to increase the peculiar qualities of the variety. The deviation from the ordinary form of Brassica campestris in the Kohl Rabi, and of the Cauliflower from B. oleracea may be instanced. Such instances, it is clear, are not regarded by cultivators as diseases.

1. Diseases properly so called arise first from some derangement or change of relative proportion in the various circumstances of temperature, &c., mentioned above. The effects of deficient light, air, and temperature, as also of a meagre or over-manured soil, are known to every cultivator, and guarded against to the best of his powers. The chemical moments are doubtless quite as important though less obvious.

2. A second most prolific source of disease is the influence of parasitic plants living at the expense of their proper juices, and often deranging their structure. Mistletoe and Broomrapes are well known examples of one class of parasites, but these are few in comparison with the host of moulds and mildews which affect them. The fungi of different forms of Potato disease, rust, smut, bunt, ergot, &c., are obvious instances. Our author, like most of his countrymen, is an advocate to a greater or less extent of the doctrine of equivocal generation, a doctrine which solves difficulties merely by throwing them out of view and involving greater.

3. Insects also are productive of disease, as in the case of earcockle; and, besides the actual loss sustained from their direct ravages by cultivators, many a structure is deranged and altered by the deposition of their eggs.

Such is an outline of the little work before us. If it does not contain full information on the points on which it touches, it at least lays before us some general principles, which is the great thing which is requisite. Isolated examples must indeed first be described; but these will do little to promote our knowledge of vegetable disease, except we take some wider view, and endeavour, as much as possible, to generalise our notions.

Miscellaneous.

Botanic Garden, Port Philip, N. S. Wales.—The Board of Management has appointed Mr. Delachey [Dallachie ?] to the office of Superintendent, vacant by the death of the late Mr. Arthur. Mr. Delachey arrived in the province by the Torrington, from Ceylon; he was formerly head gardener for the Earl of Aberdeen, and is stated to be well qualified for the appointment he has obtained. *Port Philip Argus.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

The severe weather this week, in many localities, has testified to the necessity of being beforehand with the season, and those who had housed their most tender plants would not be sorry that they had done so when they saw the severity of Tuesday and Wednesday mornings. Even in the most favourable localities, all the most tender greenhouse plants should be placed under glass; but we do not advocate a general housing at present, as we dislike crowding the houses as long as it can be avoided, and there are many plants whose constitutions will allow of their being freely exposed for some time yet; as a familiar instance of this we may mention the Cytisus, and as the flowers of many such plants are valuable through the winter, a little longer exposure will retard their season of blooming. In very cold localities, Chrysanthemums, in pots, should be placed in a cool house, or under the shelter of a wall, where they can be protected by drawing down a canvas in severe weather. Many plants whose wood is properly ripened may at once be removed to a cool light shed facing the north, or they may be placed beneath the stage of the Geranium house: the situation should however be such, that frost can be effectually excluded without entirely depriving the plants of light. These will include Fuchsias, Hydrangeas, Plumbago capensis, Hibiscus, Brugmansia sanguinea, Erythrina, Bouvardia, Hedychium, Canna, and a great many others. By removing these, a greater space will be afforded for plants with healthy foliage. Annuals, which have been cultivated for decorating the plant houses during the summer, must of course give place to the winter occupants, as soon as the space is required. Hardy Rhododendrons, Azaleas, Kalmias, &c., for forcing, should now be taken up, potted, and plunged in a bed of ashes, from whence they can be brought forward in succession as they are required. Roses, in pots, for winter use, should be examined, and any that require re-potting or top dressing should be immediately attended to; a little stimulus in the way of rich soil will encourage the progress of their roots, and prepare their buds for a healthy and vigorous expansion. Let all watering in this department be done in the early part of the day, and let this operation be performed with extra caution, especially with hard-wooded plants; too much care cannot be exercised in this matter.

FLOWER GARDEN.

We have had sufficient evidence this week of the near approach of winter to make us on the alert to finish the autumn insertion of cuttings, as soon as possible; we intend to finish this week, and would advise others to lose not a moment. If the cuttings are put in early, they have a much better chance of striking, and have a longer time to establish themselves, so that one early struck well rooted plant will go as far as two or three weakly things at planting out season, besides which, numbers of the latter dwindle away during winter; the disadvantage of delay is too obvious to need more comment. Campanula pyramidalis, Antirrhinum, and

other plants which require a slight protection, should be placed in a suitable situation. All these arrangements should as far as practicable be completed at once, so that the hands may be clear when the weather becomes so severe as to render it necessary to take up and pot all the old plants required for another season. To this end, pits, frames, boxes, pots, &c. should be prepared, as this weather makes it desirable to complete the job as quickly as possible. If it is intended to make any extensive alterations and improvements, which will include the removal of trees or shrubs, no time should be lost in commencing the work, as the ground is in a much more workable state than it will be two months hence, and any shrubs shifted immediately will have time to strike fresh root before winter.

HARDY FRUIT GARDEN.

PEACHES.—Any available means of facilitating the ripening of the wood should now be made use of. If the trees are of moderate strength, and are not overcrowded with shoots, the process will now be going on in a satisfactory manner. If anything be necessary in this case, it will be merely to stop the points of the strongest shoots. With trees of greater vigour, this must be practised more extensively, taking care, however, not to stop the shoots so far back as to cause the buds to burst, but only to prevent late autumn growths. Trees which are very gross in their habits should be immediately root pruned by cutting round them at distances varying from 2 to 4 feet, according to the age, size, and luxuriance of the individual. To perform this operation properly, a trench should be taken out round the circumference, and the ball of the tree carefully undermined so as to cut off all roots which are penetrating the subsoil. Where the bottom has been concreted, or is naturally impervious, this is of course unnecessary. If any of the canvas used for protecting the blossom in spring is at liberty, it may be made very serviceable by fixing it on to the walls in such a manner that it can easily be let down at night and drawn up in the morning. This will protect the wood from early frosts, while at the same time the trees will have the full benefit of the moderate day temperature, and its maturing influences, and thus at least make the best of our precarious season. Those who have flued walls will of course take advantage of this means of assisting the ripening of the wood. Endeavour by all means to effect this desirable object before the arrival of severe frost.

State of the Weather near London, for the week ending Sept. 20, 1849, as observed at the Horticultural Gardens, Chiswick

Sept	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max	Thermometer. Min.	Thermometer. Mean	Wind	Rain.
Friday . 14	27	30.166	30.096	62	51	56.5	S.W.	.00
Satur 15	28	30.170	30.130	66	42	54.0	S.	.00
Sunday . 16	●	30.164	30.128	70	52	61.0	N.E.	.00
Monday 17	0	30.353	30.296	65	36	50.5	N.E	.00
Tues. .. 18	1	30.415	30.341	57	38	47.5	N	.00
Wed. .. 19	2	30.370	30.415	65	45	52.0	N.E.	.00
Thurs....20	3	30.307	30.298	59	46	52.5	N.E.	.05
Average . . .		30.30.	30.219	63.3	43.6	53.4		0.05

Sept. 14—Fine; dusky haze at night
— 15—Fine, cloudy and mild, overcast.
— 16—Fine; overcast
— 17—Clear and fine; quite cloudless at night, and cold.
— 18—Clear and cold, with dry air; cloudy at night.
— 19—Fine, very fine; slightly clouded.
— 20—Fine, dry north-east wind, clear at night, rain.
Mean temperature of the week, 3½ deg. below the average

State of the Weather at Chiswick during the last 23 years, for the ensuing week ending Sept. 29, 1849

Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 23	65.3	45.9	55.6	12	1.31 in.	–	5	3	1	6	5	2	1
Mon. 24	65.3	46.7	56.0	10	0.75	1	4	2	1	4	7	3	1
Tues 25	65.7	46.3	56.0	10	0.50	1	4	1	2	4	6	4	1
Wed. 26	66.1	46.0	56.1	14	0.69	–	1	2	1	8	8	1	1
Thurs. 27	65.0	46.1	55.0	14	0.57	–	2	2	1	4	6	6	2
Friday 28	64.5	44.3	54.4	10	0.80	1	3	2	1	8	1	3	2
Satur. 29	64.3	45.4	54.8	13	0.46	1	2	3	2	5	6	–	2

The highest temperature during the above period occurred on the 25th 1842—therm. 82 deg.; and the lowest on 27th, 1828—therm. 24 deg.

Notices to Correspondents.

ASPARAGUS: *J A*. Transplant it now, if the beds are ready. Move your Myrtle now; and if it flags shade it, and syringe it every evening till it recovers. There is no risk if you take it up with a good ball

BEES: *G G*. You will find a very nice and useful broadside, on the ways of managing bees, circulated by the East Marlow Horticultural Society, to whose secretary we refer you.—*Anon*. If your bees still refuse to feed from the pans, you had better put the food on a bit of comb, or in a common plate with litter amongst it; place the plate under the hive. *W.*

BLACKBERRY WINE: *P T O* is anxious to make wine from the fruit of the Hazel-leaved Bramble, which is now ripening; and will be obliged by answers to the following questions. Will daily additions of fruit to the must be injurious, gathering it as it ripens? Does the Bramble juice resemble the Grape juice in thinness, so as to render water needless? The juice alone is difficult to ferment, where there is 4 lbs. of loaf sugar to the gallon, which quantity of sugar is added to give strength. "P T O" is aware that beer-yeast is objectionable; might Potato-yeast be less so, which, in its first process, had a very small quantity of beer-yeast, but which ultimately lost it by additions of sugar and Potato, and had a purely vinous smell? The Bramble berry has a Rhubarb taste; will boiling the fruit destroy it? or is there any other process? The wine is rather pale; how to improve it? If by Elder-berry, how is it to be used juice or husks?

BOOKS: *S W M*. We can only say that "School Botany," the "Elements of Botany," and the "Vegetable Kingdom," of Dr. Lindley, are found to be amply sufficient for all real students of botany, who do not require details.—*An O. Sub.* "The Theory of Horticulture," "Encyclopædia of Gardening," and "Manse Garden." "Stephens's Book of the Farm" "Porter's Tropical Agriculturist." If he can read French, "Boussingault's Economie Rurale."

DISEASES: *G T F*. Your Thorn is out of health, no doubt; but the cause can only be determined on the spot. The monstrosity is curious, but perfectly in harmony with the theory of morphology.

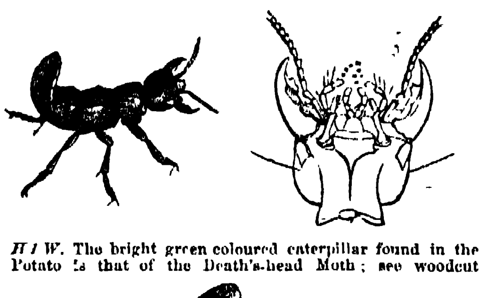
FORK: *Addio*. Much indebted to you for the fork; but it is not suited for labourers. It is much too light. Amateurs who amuse themselves with gardening will find it handy.

GARDEN WALLS: *H H* will be obliged by an opinion as to the best plan of a garden wall, and will be glad to know if there would be any advantage in letting the face of the wall slope, so that the rain would reach the trees better.

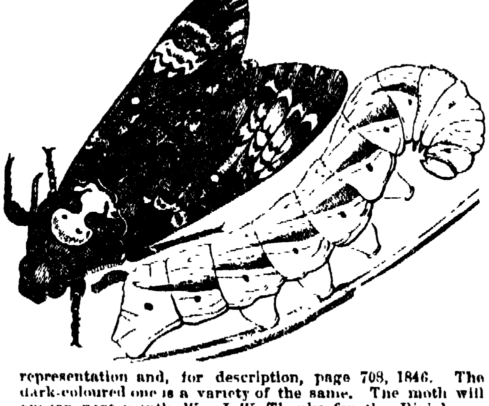
GERANIUMS: *J Y*. We are unacquainted with a dwarf white-flowered Geranium having a horse-shoe leaf like the scarlets, and if we were we could not tell you where it is to be purchased. We never recommend dealers.‡

GRAPES: *C R S*. The destruction of the leaves of your Vines sufficiently accounts for the want of colour and bad condition of your fruit ‡

INSECTS: *Notts Sub*. Your Vines are attacked by the thrips; see answer to "E. Franklin," in last week's Answers to Correspondents. *W.*—*Observer*. Several queen wasps occasionally hybernate in the old hive, but we believe that in all cases they undergo the change to the perfect state in the autumn. Place the nest under a bell-glass, and favour us by informing us whether the supposed dead queens sealed up in their cells make their appearance this autumn, or whether they are really dead. *W.*—*T C*. The larva is that of Sialis lutarius, and the Amphipod (not Isopod), is Gammarus aquaticus. *W.*—*E B*. The two insects sent are Staphylinus olens; see annexed woodcut and, for its further history, p. 740, 1842. *W.*—



H I W. The bright green coloured caterpillar found in the Potato is that of the Death's-head Moth; see woodcut



representation and, for description, page 708, 1846. The dark-coloured one is a variety of the same. The moth will appear next month. *W.*—*J W*. Thanks for the Ripiphorus paradoxus. Can you oblige me with a piece of the comb containing the cocoons of the parasite beetles, and will you endeavour next season to find the larva, which is a great desideratum; *J. O W.*

LONG STRING OF QUESTIONS: *L B G*. No; your Maurandyas must be sheltered in a house where the air is rather damp without being cold. The air of all sitting rooms is necessarily too dry for plants; and such as Maurandya will never thrive in it; if *they* thrive, *you* at least will not, unless it is a very dark room. British Orchids are not very well suited to a Wardian case; they cannot be raised from seeds; you must get them from their native wilds. Give plenty of water (*weak* liquid manure if you can), with charcoal.

MELONS: *Sub*. We are unacquainted with Passingham's Victoria green-fleshed Melon; but if, as you state, your three plants produced fruit all different from one another; the only inference to be drawn from the circumstance is that the seed must have been badly saved.‡

MONSTERS: *Addio*. The Bean-stalk is a very curious example of the same kind of change as that which produces the Cauliflower, only each flower here is converted into a close mass of branches, each terminated by a monstrous scaly abortion of a flower.

NAMES OF PLANTS. *A S* Coronopus Ruellii.—*Jas. Munro* Pentstemon glandulosus apparently, but it is smashed to pieces.—*J S W*. A deformed spike of Funkia Sieboldi. You are very obliging, and we should thank you much.—*A D H.* Claytonia perfoliata.

NEW DRILLING AND HOEING MACHINE: *W H, Cork*. Mr. Sivewright, of Cargilfield, Edinburgh, states, for your information, that the machine which is figured at page 500 was made under his superintendence by Mr. Slight, agricultural machine maker, Edinburgh. The frame into which the tines fit is 22 inches in extreme length. The whole machine, with the tines in, weighs 29 lbs., when with the moulding-boards, 39 lbs.; but this weight, he adds, is without that of the sliding weight attached to the centre bar, which weighs 7 lbs. With the hoeing tines and the moulding-board it is easily drawn; it is somewhat harder work with the grubbing toes; his men say about equal to digging for the same time. The quantity of work which a man could do is not overstated, especially as regards the hoeing and the earthing up. Mr. Slight has made many of these machines, and his charge for the complete machine is 2*l*. 15*s*. Mr Sivewright states that he will be happy to show one in its various forms to any one who may call on him for that purpose.

ORNAMENTAL AND DOMESTIC POULTRY, by the Rev. E. S. Dixon, price 5*s*. 6*d*., is now ready, and may be had at the Office of this Paper, and of all booksellers.

OZONE: *Ignoramus*. It is the smell of electricity.

PINE-APPLES. *James Chapman*. The Montserrat of Speechly, and of many growers in the north of England, is the Black Jamaica of Brookshaw's "Pomona Britannica." The true Montserrat is comparatively worthless ||

ROSES: *An Amateur*. We do not understand your case, and suspect some mistake. Are you *certain?*

SNAKE CUCUMBERS: *J Weeks*. We are of opinion that the Trichosanthes colubrina, impregnated with the common Cucumber, will not be eatable, but will be poisonous.

TALLIES: *Subscriber*. At present our opinion is most in favour of galvanised iron tallies, cut with a rebate surrounding the face and allowing a piece of glass to be inserted in it over the name which is painted on the face of the tally. Specimens may be seen in the Botanic Garden, Chelsea, and in that of the Horticultural Society.

TRANSPLANTATION: *Eboracensis*. We incline to believe that the experiment with September planting of evergreens will be successful. Cupressus and Thujas have been removed by ourselves, along with other things, and at present they look quite well. You may therefore as well try.

VINES: *A B C*. The Chasselas Musqué is easily distinguished from the Royal Muscadine. The leaves of the former are smooth above and below, whilst those of the Royal Muscadine are thickly set on their under sides with short bristly hairs. Both sorts have round white berries, but the Chasselas Musqué has a richer Muscat flavour. The White Frontignan will ripen in a greenhouse.||

MISC.: *C R S*. There are *practical* difficulties in the way.—*A K*. Neither Edgworthia chrysantha nor Coprosma lucida can be regarded as other than greenhouse plants.—*Penton & Co.* We cannot answer the inquiry better than by replying that all European seeds, of VERY FINE QUALITY, are in demand in the United States; and that no others can be exported advantageously.—*Anon*. We believe you to be mistaken. To what "abuse and lies" do you refer in regard to the person who signs himself "Dahl," or of any other correspondent?—*A Gentleman's Gardener*. We entirely agree with you in looking upon the whole affair as a fraud and a snare. It is a peddling piece of Hudsonism. But we do not think it advisable to interfere; nor, indeed, is it necessary, for the true character of the transaction is now understood by all the gardeners who happen to possess understanding.

SEEDLING FLOWERS.

ACHIMENES: *H B*. Flowers the size and very nearly the same colour as those of A. Beatoni, and certainly no improvement on any of the scarlet or rose-coloured kinds.*

ANTIRRHINUMS: *W G K*. 1, 3, 4, very common in colours; 2, purple, with a pale tube, rather novel in colour, but dull; 5, a fine large, bold flower, bright in colour and good in shape.*—*E T*. 2, 3, and 11 are very pretty veined varieties, tolerably good in shape and colours. 1 and 10 are also nice carnation marked ones, but your flowers were much withered when they reached us; the other numbers were not in a fit state for examination at all.*

DAHLIAS: *T R P*. 1, dark maroon; flowers good in shape, size, and depth of petals, the latter are nicely cupped, good in texture, and well arranged; a very nice dark variety. 2, orange, stained and tipped with light purple; size, shape, and depth of petals good, eye well up, and petals well formed; a good flower, but dull in colours. Your mode of packing is excellent; the Dahlia flowers arrived in very good condition, after a journey of 400 miles.*—*N G*. Lady Auckland size and depth of petals very good, petals well cupped, good in texture, and regular; colour pale blush, stained near the outer edge with bright purple; eye well filled, but slightly sunk; a very nice bright variety.*—*Q R S*. Dark: size good, petals dark maroon, well shaped, and regular; eye well filled, depth of petals only tolerable, texture good. Dusky red. size and depth of petals good, petals good in shape, but rather flat; eye good; the sulphur markings near the eye is not sufficient to constitute it more than a self, unless it become more decided. White: a thin flower, hollow in the eye, and with flimsy petals.*

FUCHSIAS: *W G*. Tube bright red, rather short and slender; lobes particularly long and very pointed; corolla large and well shaped, and of a deep violet colour; size middling; shape very lanky; colour common.*—*J S*. 1, tube well proportioned, pale waxy green; lobes long and rather broad, and well reflexed, corolla well shaped and ample, and of a bright reddish violet colour; a nice middle-sized variety, with the colours well contrasted. 2, tube moderately long and stout, of a pale flesh colour; lobes long and rather pointed; corolla bright orange-red, and hardly ample enough. 3, tube well proportioned, of a waxy white; lobes long, broad, and a little too pointed; corolla bright orange red, a little stained with violet, ample in size and good in shape; a nice variety, good in texture.* *J P*. 1, tube pale rose or blush, rather long, and well proportioned to its length; lobes rather short and broad, and a little deeper in colour; corolla orange-scarlet, well shaped, and ample, a good large flower, but a little too coarse in texture. 2, a curious monster, having only a slit on one side of the corolla.*—*W G K*. 1, a good bright variety of F. fulgens, of which there are several in the same way. 2, tube pale red, small, and rather short; lobes long and very much pointed; corolla orange-red, small, and not distinct enough in colour from the tube.*—*L*. 1, tube bright red, rather short and stout; lobes long and broad in proportion, but not sufficiently reflexed, and rather coarse in texture; corolla reddish violet, good in shape, and ample. 2, tube rather long and slender; lobes long and rather pointed, and hardly reflexed enough; corolla deep violet; good in size and shape, but common in colour. 3, tube deep red, corolla violet; shape and size very inferior; foliage large. 4, tube pale blush, short, and stout; lobes broad and well reflexed, corolla bright purple, good in proportion but rather crumply; a nice well contrasted little flower. 5, tube short, bright red; lobes very long and pointed; corolla good in shape, but rather small; a nice bright coloured variety, but very much too small. 6, tube short, dull red; lobes long and rather broad; corolla violet, ample, and well shaped, but common in colour. 7, tube short and stout, pale red; corolla violet, small, but well formed; colour common; flower too small.*

GLADIOLUS: *J C*. Flowers produced in long spikes; bright rosy pink in the centre, becoming deep in colours towards the outer edge, the three lower petals have a dark purple stripe up their centre, and are much the smallest; a beautiful hybrid, with flowers 4 inches across; the spike sent had more than a dozen expanded and unexpanded flowers upon it.*

HELIOTROPE: *W J W*. No improvement upon the older kind, except in being a little deeper in colour.*

PELARGONIUM: *H J H*. Good, but not sufficiently distinct in the flowers from others. Its merits must depend upon its habit of growth.*

PENTSTEMON: *W G K*. A dull coloured variety of P. gentianoides coccinea.*

PETUNIAS: *H J H*. 1, pale blush with dark eye, slightly feathered with violet veins, good in shape and texture. 2, rosy pink, stained, and thickly veined in the centre with bright reddish purple; texture and colour good, shape middling, size small. 3, violet shaded with purple, size and shape tolerable, texture thin, colours common. 4, pale blush with dark eye feathered with violet, rather too deeply cut in the lobes, and thin. 5, pale lilac with purple eye, texture thin, size small; 6, pale pink, with crimson eye and veins, good in shape, but thin and small. 7, rosy pink, eye dark and slightly feathered: good in shape, texture, and colours, but small. All your flowers are rather below size, but in general nicely marked, and good in colours.*—*W G K*. 1, pale pink feathered towards the centre, with deep violet, eye dark; a nicely marked variety, with middle-sized flowers, tolerable in texture; 2, pale shaded violet, flowers too small and crumply.*

PHLOX DRUMMONDII: *V O W*. A very fine dark crimson variety, with large well shaped flowers and broad petals.*

VERBENAS: *H B*. 1, rosy pink; flowers large and bright in colour, a nice variety. 3, 10, 16, nice varieties, with shades of pale rose or blush; good in size and delicate in colours. 4, 6, good violet-coloured varieties, but not distinct enough from many others now grown. 5, 2, 9, 7, 11, 14, and 17 are too small, and like many others in colour.*—*J G*. Small in flowers and common in colour.*—*W G K*. Rosy pink flowers; small, and common in colour.*

. As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

WHEAT SOWING.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure sent out by them shall be free from the slightest adulteration. Peruvian Guano direct from Importer's Warehouses, London Manure Company's Wheat Manure and Urate, Sulphate of Ammonia, Phosphate of Ammonia, or Ammoniacal Phosphate; Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone Sawdust, and every other Artificial Manure.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

SOWING OF WHEAT, &c.

COMPOUND CARBONISED ANIMAL MANURE.—This Manure, which is particularly well adapted for the drill, and contains in its composition a variety of highly invigorating artificial substances intimately united with certain organic and inorganic animal products, is now ready to be delivered, specially prepared for the autumn or winter sowing of Wheat, Barley, Beans, Vetches, and other crops, at from 5l. 5s. to 10l. per ton, according to the description or richness wanted. The quantity per acre recommended to be used, in general, is 5 to 6 cwt., the better plan being, one-half with the seed, and the other half as a top dressing in the spring.

Orders to be addressed to the Superintendent at the MANUFACTORY, Middle-yard, Great Queen-street, Lincoln's-inn-fields; or to either of the following Agents. *In London* Mr. H. COLES, 32, Cranbourn-street, Leicester-square; Mr. MARK FOTHERGILL, 201 A, Upper Thames-street; Mr. GEORGE LAWRENCE, 18, Piccadilly; Mr. G. CHARLWOOD, 14, Tavistock-row, Covent-garden; and—*In Hartlepool:* Mr. STEPHEN HORNER.

N.B. To insure punctuality in the delivery, when the quantity required is considerable, a few days' previous notice is requested to be given.

GORSE FOR CATTLE.—To be sold, about 100,000 strong young plants of GORSE (French Furze) at 5s. per 1000, which will be taken up and disposed of before the close of this month. 20,000 plants is a proper quantity for planting an acre.—Apply to Mr. JESSOP, Nursery Ground, Cheltenham.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

The terms of the School can be had on application either personally or by letter.

PORTLAND CEMENT.—Testimonials received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LEGG, Cheltenham.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA

EDENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.

HEATING BY HOT WATER.

TO ORCHID GROWERS.

BURBIDGE AND HEALY, 130, Fleet-street, respectfully call attention to their method of warming Orchid Houses. They have had the honour of warming the Orchid Houses at the undermentioned places:

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick, additions to the House.
Also the Orchid Houses of the following distinguished growers of this interesting class of plants.
The Bishop of Winchester, Farnham Castle.
J. Lyons, Esq., Ladiston.
J. Warner, Esq., Hoddesdon.
Messrs. Henderson, Pine-apple Place.
J. Schröder, Esq., Stratford.
R. Hanbury, Esq., Poles, near Ware.
W. Webb, Esq., Clapham.

BURBIDGE AND HEALY'S NEW BOILER.—The above is a modification of their Boiler (before published), modelled expressly for the large Conservatory, Chiswick Gardens, where it is now at work. From the observations B. and H. have been able to make, they are warranted in stating it to be the "Ne plus ultra" for warming large plant structures. As a proof, one charge of fuel has been kept burning for 48 hours without any addition, and one boiler of the size used is equal to warm 1500 feet of 4-inch pipe. They are also extensively put up at the Royal Botanic Gardens, Kew. Smaller boilers upon the same plan.

BURBIDGE and HEALY, 130, Fleet-street, London.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

SEED WHEAT.—For Sale, at 50s. per quarter, good and genuine seed of the RED-STRAW WHITE, and HOPETOUN varieties. Samples of grain and ear will be sent on receipt of stamps to cover the expense of postage. No orders for less than 4 bushels can be executed; those from unknown correspondents must be accompanied by a remittance. Sacks 2s. each. WINTER BEANS, for seed, can be supplied at 5s. per bushel. JOHN MORTON, Whitfield, Berkeley, Gloucestershire.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 22, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Sept. 27—Agricultural Imp. Society of Ireland.
THURSDAY, Oct. 4—Agricultural Imp. Society of Ireland.

FARMERS' CLUBS.—Sept. 28. Hadleigh.—Sept. 29. Northampton.—Oct. 1 Great Oakleigh, West Hereford.—Oct. 2 South Devon.—Oct. 4: Burton-on-Trent.

Our friends in Cumberland had better beware of certain gentlemen, well known to the Guardian Societies in Manchester and Liverpool, who have lately been advertising in the local papers of that county for ham and bacon. Goods, for these advertisers, to the amount of 70*l.* have been stopped *in transitu*, which would otherwise have been lost to the parties sending them, for Messrs. WALKER, COX, RUSSELL, or whatever the *alias* for the time may be, are not likely to be solvent customers. And we advise those who are likely to require their memory refreshed on such a subject as this, to copy this paragraph for the purpose.

A VERY interesting communication will be found, in another column, on IRELAND AS A FIELD FOR ENGLISH CAPITAL. The statements it conveys appear to us entirely trustworthy. We have no doubt that the safety of both person and property over large districts in Ireland is, as our correspondent says, quite as complete as is enjoyed in England or Scotland. And land may doubtless be had by *trustworthy men* reasonably cheap for agricultural purposes; we are very sure there is many an estate whose owner has long enough been tired of *naming* high rents and receiving *none*. The climate, too, is no hindrance to good farming; indeed, no circumstances of this kind more favourable for the growth of green crops can exist than concur over the greater portion of the island. There is nothing but labour needed to produce abundant food for man; and labour, we may well say, is *miserably* cheap. Food for man, as the result of good agriculture, might be had as abundantly as anywhere; and food for beast, as the *means* of good agriculture, might be had, we believe, more abundantly than anywhere else.

Why is it that such *desperate* wretchedness is so often to be found in the midst of these circumstances? We have seen families living in hovels unfit for pigsties—under cover which no careful farmer would think sufficient for his Mangold Wurzel or his Potatoes; the children swarm around you, naked or nearly so, as you pass through the villages, or kraals, as they may often be more appropriately called—and, either of habit or necessity, clamorous for help. How is it that they starve with the elements of fertility around them? The true answer, as we firmly believe it to be, is plain enough; the case is but another illustration of the truth that "if a man work not neither shall he eat." The people, whatever be the cause, do not work as others do, and they therefore fare the worse. This, their condition, we, no doubt, call bad, but it is their ordinary experience: it is their standard of life, beyond which all superfluity is squandered——within which all scarcity is suffered—borne—with "*praiseworthy patience*," "*unparalleled fortitude*" and so forth: these are the phrases. Alas! that we should praise the very worst features of their case. *Listless torpidity—infatuated submissiveness* would be more expressive of the truth; but, miserable creatures, what can we expect of them — their religion discourages independence of mind, and with it all vigour of resolution; and where is there a resident gentry to guide them? In ignorance and dependence they are children, but these are in hapless union with the confirmed habits of old age; and a character handed down for so long with all its mischievous tendencies strengthened by such lengthened exercise might well be deemed unchangeable. So situated, of what use to them is food beyond their power of consuming it? Any extension of the margin of profit is *very soon* swallowed up by a corresponding increase of population, or, owing to a relentless competition for land, it is *immediately* swallowed up by landlords with necessities as great as those of their tenantry. And thus, when land does produce abundantly, the people benefit not; and we have seen in harvest months the extremes meet together of poverty and of plenty.

What is to be done in mitigation of all this wretchedness? We do not pretend to speak of CHARACTER in these columns, except in so far as material causes affect it; though a change there, we doubt not, must occur, contemporaneously with, or previously to, any material improvement in the condition of the people: it is not our part to exhibit those motives which alone have radical influence here, but we believe that much remains for discussion which is entirely within our province to consider, and which is of high importance to the right solution of the Irish problem. Idleness, which IS at the root of the mischief, might be diminished by good example and reasonable reward for industry. Excessive competition for land might be diminished by a wholesale translation from the rank of a nearly pauper tenantry to that which would then exist of independent and comfortable labourers. The necessities of landowners would cease to aggravate the case, if those who have only the *name*, were enabled or obliged to abdicate in favour of others who could fulfil the *duties* of their station. Direct relief to paupers most certainly goes to the encouragement of pauperism. So long as death by starvation hangs over a people they must no doubt be assisted; and far better enable them, as has been already urged in our columns, to leave the country at once, than have to administer relief season after season to the same individuals: but all relief, except that which personal effort brings, will strengthen the necessity for its repetition, and we therefore look to the energetic labours of an able and resolute tenantry as almost the only *material* remedy of which the case admits.

Whether this remedy is available or not depends on the judgment which intelligent men may form of Ireland as a field for the investment of capital in agriculture: the main, if not the only difficulty which exists over many large tracts of land in that country is the absence of farm buildings. Taking this deficiency into account, the rents, known in many instances to exist, certainly are enormous; but they would, undoubtedly, be lowered considerably if an intelligent and moneyed tenantry could thus be attracted. The national interest—the *imperial* interest—is, no doubt, just the sum, or resultant of all the individual interests of our population: every man will, of course, consider, in the investment of his capital, how his own interests and those of his family are concerned; and we believe he will most benefit his fellows by those modes of investment which, in the long run, shall prove best for himself. There is ample room for greater energy and larger capital in the prosecution of farming in England—we have no doubt of that: and as little do we fear that money would be lost if judiciously invested in the business of agriculture on the other side of the Channel. Let every one interested in the matter determine for himself in which position he is the most likely to prosper. The case of poor Ireland certainly requires that those who are at liberty to go should, at any rate, carefully investigate it, and see whether it may not be their interest to carry their capital to a place where such immediate benefits would follow its investment.

HE is the best friend of the agriculturists of this country who keeps steadily before them the necessities of their position, and the means by which alone they can hope to overcome. And we must regard him as a friend only in will—an enemy in *deed*—who distracts their attention from these considerations, by what must be considered *vain* clamourings for a renewal of protective duties upon their produce. But let us not be mistaken. We make this remark altogether irrespectively of the policy or impolicy of these duties. We are merely enunciating that which we know to be the opinion of ninety-nine out of every hundred persons, of all parties, who have reflected on the subject at all; and we make the observation in order to use it as a text on which to offer a few remarks.

By the term "agriculturists" we by no means intend to restrict ourselves to the mere tillers of the soil. We also include the landlords of the country under that denomination—those who are agriculturists by deputy; who either have not the capital, the skill, the leisure, or the inclination to cultivate their own land, and therefore hire it out to others for a share of the profits, and whose interests are therefore so inseparably connected with those of actual cultivators that, for our present purpose, the two classes may be considered as one.

These are struggling times in which we live. Every man who has to earn his own living, and who hopes to raise, or even to maintain his position in the world, be his profession what it may, has to think hard, live hard, and work hard; aye, and against obstacles, too, which make it necessary to hope hard also. Now, while, on the one hand, we cannot admit that there is the same amount of bodily and mental tear and wear going on amongst the actual farmers of the country, as a class, as is to be found behind a merchant's desk, in a Manchester counting-house, or in a lawyer's chambers; still, on the other, we do not deny that they are a hard-working, industrious body of men. A tolerably extensive

experience, gained not in one country, nor in one part of the kingdom only, convinces us of the reverse; but at the same time, we may observe, that there is an industry, as well as a zeal, which is not according to knowledge. A man who toiled from early morn to late night, descending by means of a ladder into a deep well, and bringing therefrom successive bucketsful of water, might be very industrious; but he would hardly draw as much water as one who stood on the brink, and with less exertion, lowered and raised his bucket by means of a rope; while he, in his turn, would have his quantity far out-measured by one who, having procured a pump, contented himself with the still slighter exertion of plying its handle. And to carry out the illustration, some one possessed of still greater ingenuity and resources, might, provided with a steam-engine and apparatus, by merely, now and then, throwing a few coals on the fire, raise more water in five minutes than the other three could do in five days.

It is in this, then, that our hope for agriculturists lies—that their present practice leaves such a vast margin for improvement. There are a great majority of our agriculturists still in the position of the water drawer with his bucket and ladder; and but few indeed have reached the point of excellence in practice indicated by the pump; while the steam engine measure of perfection belongs as yet to the ideal.

"*En avant*" has long been the watchword in almost all avocations, and must and will be so in that of agriculture also. "Onwards, still onwards," is the cry, which rings loudest in the ears of the reflective, when they look into the busy world around them. And can the cultivators of the soil hope to succeed without advancing also? If we turn to the ancient writers on agriculture, we shall have no difficulty in concluding that the principles of the art were better known and acted upon by many of its professors in different countries, even before the Christian era, than they are now by a prodigious majority of the farmers of the United Kingdom.

Is agriculture then to be the only thing devoid of progress? Are we to turn for lessons in the most important of arts, to days, when our forefathers crept timidly along their shores in the frail canoe? Is agriculture alone to remain a monument of the past, while the mighty powers of the press and the steam-engine are revolutionising the world? Is "*Semper eadem*" to be the motto of this alone, of all things sublunary? If advances in agriculture had been made, corresponding with the spinning-jenny and power-loom in manufactures, then, indeed, there might have been reason to doubt of the possibility of great and rapid advances now; but as the period corresponding to the time of the distaff has hardly even yet been discovered to be behind the times by many, we feel satisfied that if farmers can only be awakened to a proper appreciation of the resources they possess, we shall hear less of the despondent and almost despairing tone which has lately been so common. The feeling which prompts the setting of a stout heart to a hard task will then take the place of that which throws the sword after the scabbard.

Let landlords then, and tenants too, unite together in raising the profession of agriculture to that place which, we feel well assured, it is destined one day to occupy. Let them, instead of allowing their whole attention and energies to be distracted with the spectacle of shiploads of foreign corn, reflect that every pound of food which might be, but is not manufactured from the elementary, and in that state valueless, substances, upon which they operate, is a direct loss to themselves and the country at large. Let them ever bear in mind the maxim, that "one good crop begets another."

Mr. Caird's pamphlet, and Mr. Hope's letter, which we lately published, are eminently suggestive of the direction which the course of improvement must take with both tenant and landlord. The "Private Drainage Act," which has lately received the Royal assent, and the principle of which, if we mistake not, was first brought into public notice in this Paper,* puts it in the power of the latter, even though their hands be otherwise tied up, to afford to their tenants those drainage works which are the foundation of all agricultural improvement, and which, inasmuch as they are permanent, are eminently a landlord's improvement.

For the benefit of those who intend to take advantage of the provisions of the new Drainage Act during the ensuing winter, we shall take an early opportunity of bringing its provisions, and the proceedings necessary to be taken by those resorting to it, under the notice of our readers. *G.*

AGRICULTURAL EDUCATION.

"All attempts," says the celebrated Robert Hall, "to urge men forward, even in the right path, beyond the measure of their light, are impracticable if they were lawful, and unlawful if they were practicable. Augment their light, conciliate their affections, and they will follow of their own accord." If ever there was a truth placed before us this is one. From our own observation we have proved its verity. It applies to all men, and consequently to all classes of men. Looking at the philosopher, the commercial man, the tradesman, we could not but see this truth. We wandered forth into the fields, acquainted ourselves with the farmer and the peasant, and again we recognised it. How many the attempts to urge men forward, with ill success, it is impossible to compute. Faith is not natural to man: it is pleasant to know where one is going; most unpleasant to be led with shut eyes one knows not whither. Work is performed with satisfaction so long as its result is not matter of conjecture, nor its means matter of mystery. If a knowledge of neither the one nor the other is possessed, work is most unsatisfactory. Without light man cannot work, nor can he pursue his way; neither in any sense of the word can he live. Nor can a mind that is dark think, advance, or live. To say that a man is intelligent is incompatible with his wandering about, unobservant of the sublimities, and the utilities, and slumbering over the beauties, that are around him.

A clever workman must possess a quick perception, an accurate eye, and a thorough knowledge of his profession in all its branches. The eye of the statuary, for instance, sees in that huge block of marble the figure he is about to develop, and even before he has wielded his mallet, the treatment of the various limbs, he discusses with confidence, for he knows how to apply the means that will bring them forth. To work with any kind of success, the statuary must possess a vast amount of knowledge. He must be versed in all the branches of learning and science that bear directly or indirectly on the art in which he strives for pre-eminence. A mason, a geometrician, an historian, a poet—he must at least be all these before he can rise to distinction.

A systematic course of education is necessary to fit a man for the attainment of eminence in the schools of science and art. The necessity is universally allowed, and in none of the sciences, save that of agriculture, would the students think of professing a competence without such a course had been completed. We can see the attainment of such a position only through a long avenue of laborious study. Men who have made the attainment can look back not only on the path by which they reached it, but on the station itself at which they originally aimed, for they always arrive there with a force of will that projects them beyond it. Progress is therefore constantly seen and felt in an educated profession. That it is not seen and felt in agriculture is known. The fact is not only well known, but greatly deplored by all that desire its advancement. The cause is most obvious—a systematic education is needed for the farmers. Hitherto a majority has been unmindful of this. In this day, however, they must not be let alone; some one must meddle with them; they must be stimulated to advance; their own labourers, arising from the school-houses that are now thickly dotting our land, clear-headed men and women, will push them forward, or pass over them if ignorant men obstruct the way.

There are few subjects more hackneyed than this of education, and yet there are none upon which opinion at the present time is more divided. Although there may be many individuals who entertain peculiar views of the best methods of educating the people, and who propagate those opinions perhaps with irritability, there are none that do not concur in a high valuation of the principle at stake. We therefore do not propose to consider so much the necessity there is for education, because the fact is allowed, as the methods and appliances best suited to secure to the farmer the benefit of instruction in those departments of science which lie beneath or border upon his peculiar province. If allowed, we will see also what may be done for the labourers through the farmers.

The labour of the present generation occupies a larger space and requires more exertion than that of the last. Labour now requires more knowledge and more experience than has hitherto been expended upon it. Men of most professions keep pace with the times; but to how many farmers have the "exigencies of the times" been otherwise than as foolish talk? How many have heeded when friends have told them they were lagging behind? Awake they must now most thoroughly. This is a critical season for them. Thought must be resorted to—purposes must be formed and executed with determinate ingenuity. We come then again to the fact that people must be educated for the agricultural profession. In what, do you ask? Surely in those branches of learning that bear in any degree towards the profession. That course of education which boys universally run through, or are forced through, we do not speak of.

As a science of the very first importance, the art rests upon chemistry. The relation of chemistry to agriculture is most evident. The earth, the air, the water, the animal, and the plant come within the sphere of this science, are regulated by its laws, and continually exhibit its truths. The study of geology is most eminently a study for the agriculturist. Should he, of all men, be ignorant of the origin, formation, and nature of the soil upon which he works, and from which he derives his subsistence? With botany he must be acquainted, since it treats of the constitution, the growth, and the habits of the plants he cultivates. Surely such information cannot be unimportant, neither can an ultimate acquaintance with the physiology of the animal creation be to him valueless. With the laws of mechanics he should be conversant, for reasons that need not here be mentioned. In truth, the benefits resulting from such knowledge to the farmers have been so frequently stated, and the points where these sciences impinge upon agriculture so frequently and clearly defined by other writers, that it is now unnecessary to reiterate them.

The few instances that occur of a professional education, supplied by a peculiar gift for combining traditionary and acquired knowledge by habits of observation, lessen not the necessity of a regular education. When we think that every art keeps pace with the intellect and information of the persons employed in it, this fact must be looked upon as true, not as fallacious. Science cannot longer be despised by the farmer as the mere speculation of theorists. He already begins to discover and accredit its practical utility, and he becomes more willing to examine its suggestions, and to employ them where he thinks they will profit him. But how can he do so with any certainty, since he knows not the laws by which the materials he desires to employ are governed. A good workman must know the use of each tool that he uses; such knowledge economises strength and saves money. If the farmer is ignorant on this economy of strength, let him learn. The time has come when he must seize upon all available floating materials that will help to bear the weight of his difficulties, and carry him forward. Nothing may be left that can be impressed into his service. During these days of heavy taxation he requires all the aids that he can obtain. He still looks with unreasonable suspicion on what he styles theory. But what is true theory but that which will eventually become practice, and what is practice but that which was formerly theory? The application of any other than animal power was once theory; the manuring of land was once theory; draining also was esteemed a theory. Each was laughed at in its turn as unfeasible, but who laughs at them now? If we laugh it is at the unwieldy suspicions of our ancestors, or at whatever resembles such suspicions now. Is there nothing like them now? Are not geology, chemistry, botany still as theories to many a farmer; and to be cunning in the handling of a sheep, the age of a horse, the breed of a beast, and to be acquainted with the routine of cultivation, is the perfection of practice.

By far too great a stress is laid upon experience. Its sense, with the class of men who now occupy our attention, is too confined. By it they mean a practical knowledge of the entire details of farm management, extending its meaning to little or nothing else. It is with them the result of ocular observation. An experienced man is one who has held a particular farm for a great number of years with general merit; and such experimental knowledge is deemed by all the community amply sufficient to ensure them success. This is the only test of all ability. But we all know the origin of that maxim "which (as Mr. Hume remarks), has been so industriously propagated by the dunces of every age, that a man of genius is unfit for business."

Now, in what consists this boasted experimental skill? A talent for minute observation, a ready memory, a presence of mind, a degree of perfection in the external senses, and in the mechanical capacities of the body. These, its elements, are acquired by habits of active exertion. Without such training, therefore, experimental skill is not to be acquired.

"It is shown," says the celebrated Prof. Stewart, "that mere experience without theory may qualify a man in certain cases for distinguishing himself in both. It is not, however, to be imagined that in this way individuals are to be formed for the uncommon or for the important situations of society, or even for enriching the arts by new inventions; for as their address and dexterity are founded entirely on imitation, or derived from the lessons which experience has suggested to them, they cannot possibly extend to new combinations of circumstances. Mere experience, therefore," mark this, all students of agriculture! "mere experience can at best prepare the mind for the subordinate departments of life, for conducting the established routine of business, or for a servile repetition in the arts of common experience." Now that we are on this line of remark, we cannot refrain from introducing a lively picture drawn by Mr. Burke, in his celebrated speech on American taxation, of the inefficiency of mere experience to qualify a man for new and untried situations. The observations are of so general a nature that they apply to any class of men. "Mr. Grenville was bred to the law, which is, in my opinion, one of the first and noblest of human sciences, a science which does more to quicken and invigorate the understanding than all the other kinds of learning put together; but it is not apt, except in persons very happily born, to open and to liberise the mind in the same proportion. Passing from that study he did not go very largely into the world, but plunged into business, I mean into the business of office and the limited and fixed methods and forms established there. Much knowledge is to be had, undoubtedly, in that line, and there is much knowledge which is not valuable. But it may be truly said, that men too much conversant in office are rarely minds of remarkable enlargement. Their habits of office are apt to give them a turn to think the substance of business not to be much more important than the forms in which it is conducted. These forms are adapted to ordinary occasions, and therefore persons who are nurtured in office do admirably well, as long as

* Mr. Girdwood's Letter to Lord John Russell, vol. for 1847, p. 478.

things go on in their accustomed order; but when the high roads are broken up, and the waters out, when a new and troubled scene is opened, and the life affords no precedent, then it is that a greater knowledge of mankind, and a far more extensive comprehension of things is requisite than ever office gave, or than office can ever give."

Thus much for mere experience. It may suffice for such as believe in the stationary tendency of society, and we must leave them to it. Most of us, however, happily for agriculture, believe in the advancement of society. Some excursions must be made beyond the experiences of our forefathers; we must rout out some available material from among the experiences of science. Every one should do something to increase the store of knowledge accumulated by his ancestors; else the assiduous coral worm will shame us—that little insect that performs its share of labour, little apprehending that it is a necessary part of the wonderful whole. We could enter more deeply into this subject, but time failing we must postpone this part of our subject by remarking that the soil contains inexhaustible materials, "which when properly appreciated and employed," says Sir Humphrey Davy, "will tend to increase our wealth, our population, and our physical strength." As a nation we possess advantages in mechanical ingenuity and economy of labour common to none other. That energy of character and vastness of resource which has raised us to our present elevation, which has secured to us the highest reputation as a working and a learned people, may apply to raise us as agriculturists, beyond all fear of competition. *F. R. S.*

IRELAND.

THERE has been some discussion of late in your columns on the subject of English farmers taking land in Ireland, and perhaps the observations of one on the spot may not be useless.

I would first of all warn those who write without personal acquaintance with Ireland, and even those whose acquaintance with it is confined to a rapid tour, against forming general conclusions from too limited an induction of facts, and against thinking that what is true of one or several districts is true of all. Counties, districts, and even parishes, differ just as much in Ireland as they do in England, and in the same respects. This error is of perpetual recurrence, *e. g.*, in your Paper of Sept. 1, Mr. H. Davis says that "Neither the turbulent habits of the people, nor the wild condition of the districts where low-priced land is to be had, admit of individual settlement among them." Mr. Davis knows that some parts of Ireland are turbulent, and infers from this that the wild and distressed districts of the south and west are turbulent too, which is just the opposite of the truth. I can speak from a residence of years in the south, managing property, often forced to put out tenants, &c., employing sometimes 50 to 100 labourers at once, that the people of this district are very quiet, and by no means turbulent; and it is a mere fiction that any stranger taking a farm here would be in any more danger than at home. The same is true of the west. Surely the instances mentioned by Sir R. Peel in Parliament last spring, of Englishmen lately settled in Mayo, are not yet forgotten. Tipperary, Roscommon, Cavan, &c., with parts of the adjacent counties, are turbulent, but I doubt if even there any man taking land and giving employment would not be gladly received in these times, provided a fair amount of judgment and determination was exercised. In the distressed districts of the south and west, want of skill, laziness, scheming, and pilfering have to be contended with, but not half as much turbulence as in many parts of England, nor need a farmer fear having his stacks or premises fired, as is just possible might be the case if he farmed in Essex, within 20 miles of the spot whence Mr. Davis wrote.

Another of your correspondents, Mr. Doran, thinks there is some secret charge upon the tenant's industry in Ireland which will surely be his ruin. I can assure him, there is nothing of the kind. Tithes are commuted, and paid by the landlord. On all lettings, since Lord Stanley's Act, 1833, they are necessarily included in the rent. The highest poor-rate levied in Ireland has been 11*s.* in the pound, but this has been in very few places: 6*s.* or 7*s.* has been the amount in the year generally in the distressed districts; in some parishes, even in these, only 2*s.* 6*d.* or 3*s.* 6*d.* Half the amount of rate paid is charged to the landlord and deducted on paying the rent. I need hardly ask what the rates are in the south of England, or whether any part is charged to the landlord? Let them increase, as they say, during the lease. County rates (which here include way rates) are from 1*s.* to 2*s.* in the pound, and are wholly paid by the tenant. Now, as to rents, your own observation is that these are very high: enormous! My view has long been that, generally they are high, relatively to the skill and means of the tenants; but positively as to the capabilities of the land in better hands, quite the contrary; of the greatly increased produce of which the land is capable with proper farming, and at a moderate outlay, I have had direct proof in my own experience. Even in the present circumstances of the tenants, rents are often very moderate. I know on many estates it has always been the object to let low. On one estate near me, rents are fixed by a very intelligent Scotchman from East Lothian; on another, they do not exceed the Poor-law valuation. I have known landlords make a sacrifice of 10*s.* an acre to secure a good tenant. In fact, the system of letting to middlemen was often prompted by a wish to have one responsible tenant, and was attended with a considerable sacrifice of rent by the head landlord for this object. Doubtless these things are not inconsistent with enormous rents elsewhere. There is no fear, however, of the point of rent being overlooked by any one who may come over to take land.

In my opinion, the chief drawback to an English farmer here is (with few exceptions), the want of farm buildings, and the capital needed for bringing round exhausted land, draining, levelling useless fences, and making new ones that will really fence. The cheap farms mentioned by Mr. Davis some weeks since were plainly mountain farms in remote places, probably wholly unreclaimed. Such farms, I believe, in many parts, may be hired to great advantage, and for very long leases, sometimes for ever. The point to be guarded against is bad climate. If high, or deep in the mountains, the constant wet and want of heat make everything late, and even the Grass poor and unprofitable, though I have seen wonderful crops of Turnips in such places. The Irish climate seems especially adapted for Turnips everywhere.

My advice to any one thinking of taking land in Ireland is, come over and see for yourself. If possible, give yourself plenty of time to learn how things really are; but, if you are in a hurry, the railways will take you from London to Dublin and back, allowing you 6, 15, or 20 days in Ireland, for 42*s.*; travelling in Ireland is cheap, as are the inns. If possible get an introduction to some respectable person here, and, through him, to some of the numerous Scotchmen who, as stewards and bailiffs, are scattered everywhere; or of some of Lord Clarendon's instructors. From them you will be able to hear where land is to be let, and get a disinterested opinion of what its capabilities are. (If unable to get a private introduction to any one, I should think an application to Mr. Bullen, the secretary of the Irish Agricultural Society, Sackville-street, Dublin; or even to the Under Secretary of State for Ireland, properly stating the object, would procure one to some of the instructors.) At the workhouse you can always procure from the clerk the Poor-law valuation of any farm. The clergyman of the parish can generally give you the old tithe valuation, and, in many districts, the new Government valuation (Mr. Griffiths') is accessible too. Make your inquiries as to the character of your landlord, rates, &c., just as you would if taking a farm in an English parish; and question the relieving officer, if you like, as to the present state of the pauperism. Of course you will insist on a lease, and probably get a much longer one than in England. At the present moment many are anxious to let land cheap; many are forced to let for anything it will fetch; and I shall be much surprised if any reasonable expectation as to cheapness of rent will not be satisfied, where due inquiry is made. Even as to outlay in buildings, &c., many landlords, who have not the money to spend at once, will gladly allow a portion or the whole of the cost gradually out of the rent.

I believe the main obstacle to the success of English farmers here is in themselves; the difficulty of adjusting themselves to a state of things wholly different from that they have been accustomed to, and I therefore do not urge them to come over. Scotchmen are much better fitted for success here; they are better educated, and their habits of living and farming more economical. But for any English farmer that has the materials in him, I believe there are chances of success here (especially if he has some command of capital) which he will not find at home, though undoubtedly both judgment and exertion are required here too, as I suspect, *non obstante California*, is the case all over the world. *W. B. J.*

Home Correspondence.

Climate no hindrance to the commercial character of Agriculture.—It is not an uncommon notion, and I perceive it is entertained by some of your correspondents, that farming, or the manufacture of food, differs from all other manufactures, in consequence of the uncertainty of our climate. Now, it appears to me, that this notion is a complete fallacy; no man is foolish enough to take a farm with the expectation of having no bad seasons; he takes his land, or ought to take it, with the certainty that the seasons will vary. He puts the good crops against the bad ones, and gives a rent according to what experience has shown to be the probable average produce. If a landlord could engage that the weather over his land should always be propitious, it is clear he would readily obtain a much higher rent for it; the weather, therefore, is as much an item calculated upon in the manufacture of food, as bad debts and other casualties are calculated in the manufacture and sale of other articles. Competition in both cases mainly decides the amount of profit. But so far from this uncertainty of the seasons affording any reason why the manufacture of food should be conducted on a different principle to that of other manufactures, it is a strong additional reason why it should be carried on far more than it has been, in accordance with that principle, viz., the employment of capital, industry, and skill proportioned to the nature and extent of the business, with ample security for reaping the fruits of such employment; for it will surely be admitted that somewhat in proportion to the amount of capital and skill employed in husbandry, in the shape of draining, good cultivation, &c., have the effects of uncertain seasons been mitigated, and the per centage of loss from this cause greatly lessened. I believe the fallacy of supposing the manufacture of food requires to be conducted on different principles to those which regulate other manufactures has seriously injured the agricultural interest, and the adherence to this fallacy will be very likely to lead to the fulfilment of its own prophecies, viz., that it is impossible to manufacture food to a profit in free competition with other countries. I feel assured that the manufacturers of other articles than food could not successfully compete with the lower wages, lower taxes, and other advantages possessed by foreign countries if they were clogged and fettered as is the agricultural interest of this country by chains of its own forging. Let us suppose for a moment that the manufacturer of cotton had no better security for the expense of fitting up his machinery than a yearly tenancy, that his landlord expected a full rent for the whole mill while he kept one floor for his own use and profit, and that he insisted on having constant access to the premises for a set of pilferers who carried off many pounds' worth of the manufacturer's goods in the course of the year, and we shall at once see that the result of so unreasonable and unbusiness-like an arrangement must necessarily be to induce the manufacturer to use the machinery that could be fitted up at the least expense, however inefficient, whilst the country at large would be called upon to make up this disadvantage, loss by pilferage, &c., by paying a higher price for cotton goods, or, in other words, protecting the manufacturer against foreign competition. Let the landlords of England fit up proper machinery to carry on the manufacture of food to the best advantage, charging their tenants a rent accordingly, or let the tenants fit up such machinery themselves, upon the security of a lease long enough to enable them to get back the capital thus expended. Let the landlords give up the timber and hedgerows so inimical to profitable cultivation, and the game, those stealthy pilferers of the night which often rob the tenant of no small portion of the fruits of his toil. On the other hand, let the tenants adopt those principles of trade upon which the general manufactures of our country have been so vastly extended and improved. Let them abandon the absurd notion that low prices are only to be met by lessening expenditure. Let them reduce their acres to their capital, and thus put themselves in a position to expend in improvements all that their judgment, experience, and increasing knowledge of science may dictate, and I have no doubt the skill, the capital, and the enterprise of Englishmen will enable the manufacturers of food, equally with other manufacturers, to carry on their business successfully against the competition of every country in the world. *S. B. G.*

Box-feeding.—Having for some time past read with great interest much on the subject of box-feeding, in connection with the most economical method of making and preserving manure, so as to prevent the ammonia from evaporating into the air, I submit the best method that I can suggest, which plan I have adopted for more than 12 months with the greatest success, *viz.*: I had the floor of my pigsties, and cow-boxes, and horse-stables, excavated 1 foot deep, then filled in the same with anything I could procure at hand, such as road scrapings, clay, or subsoil from the land, leaving the soil behind, or any rubbish that is not fit for any other purpose, having the same dug over once a week or fortnight, as convenient, for this job can be done in showery weather, both the digging over the compost in the boxes and the gathering up the stuff ready to put in, at a time when the men would not be worth a farthing at anything else; it depends upon the quality of the soil when put in, as to the time it should remain there; if of a friable nature, a month would be quite ample, provided it be dug over once a week, or if of a strong clayey nature it would require a longer period; but only dug once a fortnight, treated as above, you will have the richest manure possible, as it drinks up all the urine of the cattle, also some of the excrements are sure to be dug in among the compost. I have the litter which is put in for the cattle's bedding taken or cleaned out from off the compost in the boxes every time the compost is dug over, whether that be once a week or fortnight, except the horses' stables, which are cleaned out every morning, as in ordinary; and I assure you the boxes and stables are sweet and wholesome, of course ventilated, as any I ever saw, and the cattle, whether feeding, breeding, stores, or milking, all do and thrive exceedingly well indeed. My cow calved last April, has been kept in the box as above ever since, and gives quite as much milk now, or more, as she did at the first; she has been kept on Cabbages, Vetches, steamed Potatoes, and now the under leaves of Mangold Wurzel, all of which make the richest milk and butter (on the Devonshire plan of making butter, that is, scalding the milk), by which means the cream is all thrown up at once. There is not a drop of urine to be seen running from the boxes, any of them; the compost, when taken out, is quite ready for the land, if it be ready for its application; if that be not the case, for the want of a covered place, which should be the case, as I have proved, manure kept in the dry and not allowed to be washed with the rain and scorched with the sun, is of more than double worth. I have my manure pit excavated 3 feet deep, the circumference of which is adequate to hold the manure from 3 horses, 1 cow, from 15 to 20 pigs, feeding and breeding. I also have a tank or small reservoir to catch the drainings from the manure pit, so that nothing should be lost. If the land be not ready for the compost when taken out of the boxes, I have it spread on the manure in the pit to prevent fermentation. I make as above ample manure

of the best quality for 8 acres of land within 12 months, and a much better dressing for that quantity of land, than farmers give theirs hereabouts. The compost thus made will not produce so quick an effect on the crops at the first, but when the grain is coming to maturity, it then developes itself very fast. My manure pit is ready for emptying every six weeks; I have it taken out, thrown up into a heap about 2 or 3 yards wide at bottom, ridged up to the top, to keep out the rain, and a slight covering of earth of some sort put all over it, thus to prevent the strength of the manure from evaporating. I also take care not to let manure when spread on the land to lie exposed to wind and sun days before dug in, but when drawn out on the land, if not ready for digging in, I have it put in large heaps, say a load in a heap well patted down, and when spread dug in immediately. I am sorry to see so many farmers hereabouts allow their manure to lie weeks before it is ploughed in, when it cannot be better than so much chaff. At some future day, I purpose giving you the whole history of my little farm, with a Dr. and Cr. account, if agreeable to your pages. [Many thanks] *J. O. Willmer, Bradwell Wharf, near Wolverton Station, Bucks.*——In your Paper of the 8th September, a correspondent, who signs himself "N." appears sorely puzzled at various statements for and against the system of "Box-feeding." Now I, though not possessed of a four-footed beast beyond horse and dog, am much given to looking over and comparing agricultural establishments, and have been fortunate enough to have seen some of the best conducted among the farms where each system is carried out; and the conclusion at which I have arrived is certainly much in favour of the dung-making boxes. Probably the opinion of a mere amateur will not convey much weight in the argument, but I wish to explain to "N." that he is apparently puzzled by thinking that as soon as the muck is heaped up to a level with the top of the 2 feet (which is sunk) the dung is cut out, and hence I think comes to him the puzzle that a certain width and length and depth can contain more than it could possibly hold in measurement; but the heap is kept on, getting higher and higher, adding dry bedding, to soak up the urine and droppings till the back of the bullock comes inconveniently close to the ceiling of the box, and the front door being then opened, the muck appears as a solid cake of well-trodden manure, compact, and consequently easy of carriage, and from the very small amount of surface exposed to the air very little ammonia escapes, having much the appearance in point of compactness of a truss of hay, fresh cut. *Cornwaidd.*

The Box of Eggs.—Your correspondent seems to consider the knowledge of this point of so much importance to those not already in the secret, that I am induced to come forward and divulge that which, by the way, is already well known to every housewife in the north of Scotland, and acted upon by them with unerring success. Before they set the clucking hens, the eggs to be placed under them for incubation are carefully examined in the following manner: The eggs are, one by one, poised in the fingers of the left hand, with the broad end uppermost, and in that position held close to the light of a candle, or before a bright sun; the little finger of the right hand is then placed behind the egg, near the top, faintly to shade the light. When thus placed, and the egg turned gently round (as a top would spin), a hollow or vacuum, about half an inch in diameter, will be distinctly seen, inside the egg. Now, if this hollow be exactly on the top the egg will produce a cock, if on the side, it will produce a hen. If the egg has no such vacuum or hollow, either on the top or side (as is the case with all hen's eggs where no cock is kept to fecundate or impregnate them), no one in the secret would place any such under the hen, for incubation, or in the hope of its hatching. I need only add, for the satisfaction of your correspondent, that he may rely upon the accuracy of this statement, to which I make him welcome without the promised or proposed reward. *B.* [This subject has now occupied quite as much attention as it deserves.]

Practice with Science.—High farming, with all its different processes, combinations, and requirements, comprehends an enlarged system of agriculture suited to the exigencies of the present times, and calculated to relieve from difficulties an important part of the community. If we want to view it in all its bearings and relations, we should find it branch out into such a variety of ramifications, that it would take whole volumes to give a full exposition of its numerous constituents; but if we confine our enquiry to a plain and simple analysis, we should see, as it is stated in the "New Husbandry," p. 41, that the whole of it consists in the following operations. 1. Carrying off superfluous water by means of effectual draining; 2. Returning through the medium of manures the exhaustion caused by continual cropping; 3. Eradicating noxious weeds, that the strength of the manure may be thrown into the crop and not into the weeds; 4. Deep stirring and pulverising the soil, that the roots may better draw their sustenance from it, and that surface water may descend more easily into the drains. The first step towards good farming is unquestionably draining—without it no farming of a superior order can exist either in the stiff clays of Northamptonshire or the blowing sands of Norfolk. But if anyone is to suppose that draining alone will do everything for him, he will find himself grievously mistaken. Draining is only like the ground-work and foundation of a house; the superstructure must afterwards be raised upon it. This consists in tillage and the application of manure. It has been too much the case in late years with the different agricultural societies to give draining the entire pre-eminence, to the exclusion of other most important objects. In the infancy of our practice this might be all-sufficient; but as we advance further, when we have laid aside our leading strings, something more is required to raise us to the elevated standard which the bounds of science demand, and to make farming not only creditable to us, from its high attainments, but remunerative as an investment of capital. High farming can alone produce this great result. It then becomes a matter for matured consideration—what are the principles and elements of which it is composed? Farming of the first order consists in arable culture only: the nearer it can approach to horticulture the more perfect it will be. Let anyone examine the rich gardens in the vicinity of London, and it will be seen what an immensity of produce is derived from them. The principles remain the same in agriculture, but that art takes a more enlarged scope. To the green crop, in them so productive, is added the raising of a grain crop; and the accomplishment of this is facilitated by a variety of useful implements. Of the two, therefore, agriculture, as an art, is more comprehensive; and as a practice, is more perfect and may be made more productive. No one who has at all considered the abundant production of the green crop system, the capabilities possessed by it, of its being increased in bulk much beyond our present notions, will hesitate in placing arable land of infinitely more value than Grass can possibly be. Some excellent articles in the Royal Agricultural Society's Journal have determined this point from figures beyond all dispute. Mr. Caird mentions his cutting his Italian Rye-grass four times in the year; Mr. M'Arthur talks of going for 60 to 100 tons of Turnips on an acre. This may appear wild and extravagant, but we should not denounce as hopeless and impracticable whatever does not come under the range of our own limited philosophy. If we divert our attention from the green to the grain crop, we may find the scope of improvement not narrowed to present performances. In many parts of the kingdom the average amount of Wheat grown on an acre does not exceed 20 bushels. There can be no reason why, under proper management, the minimum should not be 40 bushels. It is no easy matter to say what enlargement of produce may take place from extreme comminution of the soil by deep and frequent stirring, by uprooting every weed as soon as possible after its appearance, by the application of enriching as well as stimulating manures, by bringing the soil into a proper consistency; if too strong reducing it, if too weak strengthening it, and by the choice of seeds of the most approved samples. These ameliorating appliances, the constituent essentials of high farming, will better the condition of the tenant as well as that of his landlord. In many cases the tenant is striving hard with the sweat of his brow, living penuriously, having hard work to scrape his rent, or only the larger part of it, together, against the appointed day; and all this not from his being over-rented, paying perhaps infinitely less than others are doing on much inferior land, but entirely from his going on upon a make-shift and short-sighted system, which must be carried on to a loss. Money, they say, begets money; and in the same way poverty begets poverty. He who undertakes a farm when poor, will be poorer still. A poor man makes a farm poor; *vice versa*, a poor farm makes a poor man. One word more in regard to the landlord. It is his place and interest to promote and uphold high farming. There are many estates still conducted upon the old plan, with ploughed land undrained, doing little more than bringing back the cost of the working of the land and the seed put into the ground; the Grass fields yielding scarcely any crop, and these only cut to be broken up, because the farmer is too poor to work them to advantage. All these might be made most profitable, and by judicious improvement going forward, the landlord would, at the expiration of a term, receive a fair and reasonable increase of rent. Many landlords there still are, worthy scions of the old school, who, when any account is related of the results of high farming, deem it all a mere hyperbole, or the chimera of a heated imagination; but let these peruse the best publications of modern agriculturists, and if not then convinced, let them go and inspect some of the splendid farms in the East Lothians, or even mount a step higher and examine Mr. Mechi's Tiptree-hall farm or Mr. Davis's Spring-park farm, they may perhaps be led to change their opinion, and may then acknowledge that high farming is the thing to look to, to improve the value of their property, and to raise their tenantry from a low state of depression to competence, respectability, and wealth. *Law. Rawstorne.*

The Social Relation existing between Farmer and Labourer rests on a sandy foundation, and is liable to be severed by every change in the market of the supply of able-bodied men, all anxious to obtain employment, and ready to engage on the lowest terms—but as I have before asserted, it is not always the wisest plan to screw your purse too closely in regard to wages. It is better to pay a man well and make it his interest to serve you faithfully, than to cut him down so close that he cannot act honestly; I do not mean to say that he will plunder, but he will feel his inability to do justice to his employer, and he will of necessity neglect his work, and justify his conduct to himself by saying, "I work according to my wages. My master values my services at a cheap rate, he cannot expect me to do more than he pays me for." A man cannot be blamed for thus reasoning. In buying an article in a shop we pay for it according to its worth; if the texture is fine we give so much more, if coarse, the price decreases. If we purchase a horse with both bone and blood, and capable of carrying a heavy load, he costs more, and we look for an increase of work from him, when compared with a weaker animal at an inferior price—in fact throughout commercial transactions of every description we anticipate money's worth. Can we wish for a different code of rules, in treating with a labourer for his strength and intelligence? in too many cases the practice is contrary to common sense; the ploughman is underpaid, and yet he is desired to produce his best samples. Why should he, or any other peasant, be called upon to do what a tradesman would laugh at you for asking?—his best broad cloth at the price of serge. Now, if a clothier finds from the glut of the market, and the extraordinary competition in his particular business, that men are manufacturing an inferior article, with the outward appearance of something better, he is obliged to do the same, as he cannot afford to dispose of a material for 7*s.* 6*d.* worth 12*s.*, without advancing rapidly on the road to ruin. In the long run the sufferers are the purchasers, who find out when too late, that it would have been more prudent to buy a substantial article than one made like "Peter Pindar's razors," for sale only. If in trade it is the custom to traffic on certain terms well known in society, why should the labour branch be an exception? Workmen in all capacities are considered too much in the light of machines, to serve a certain purpose as long as they are able with the least expense; when the mechanism begins to get a little the worse for wear, they are turned off to seek a livelihood from chance employment, or submit to the confinement of a workhouse: these wages during the earlier period of their lives being barely sufficient to preserve existence, without the possibility of laying anything by. It is said the lower orders are improvident, which is no doubt true; but we must in a great measure blame the upper classes as being the cause of such recklessness: when I use the term "upper classes," I do not mean those only who are considered gentlemen by birth and education, but all those above individuals who are compelled to earn their daily bread by constant manual labour. This charge may appear rather sweeping and harsh; however, when we come to analyse it, there will be probably found more truth in it than a superficial observer may imagine. There are many things of importance which we pass over without much attention, although they comprehend the very essence of our beautiful religion—one lesson we learn from our earliest years, and is contained in the church catechism—our duty towards our neighbour: three or four lines of the answer will be sufficient for the present consideration. "My duty towards my neighbour is to love him as myself, and to do unto all men as I would they should do unto me." Let any man or woman ask himself or herself, do I practically carry this out to the best of my power? If those persons who are now blessed with more than sufficient to provide not only the necessaries of life, but even the luxuries, were by some unforeseen calamity, or by their own extravagance, to be reduced to penury and want, they would naturally desire substantial assistance from their neighbours. Why should they not have the same compassion upon others they would wish for themselves? *Falcon.*

Improved Management of Landed Property.—The business or calling of a landlord has not been cultivated in this country to that perfection which it is capable of attaining. It is an axiom in industrial economy that no calling, under a monopoly, can advance to that perfection it will reach under free competition. The proper business of a landlord is not in farming himself, but to improve his estate and means in the highest possible degree through his tenantry. His tenants are his proper industrial agents. As a general rule, he can only work to good and gainful purpose through their instrumentality; and as they are possessed of sufficient capital, skill, and industry, so will improvement go on, and the value of his property be increased. The landlord problem then is—"What are the most efficient means of Tenant-improvement?" In North Britain the solution of this problem will in general be given—"Improving leases to tenants of skill and capital." In endeavouring to solve this problem, it has occurred to the undersigned that tenant, as well as landlord, improvement, could be immeasurably forwarded by the landlord availing himself properly of the principle of emulation—the desire to excel in competition implanted in our nature for wise ends, but too often perverted to useless or evil objects; whereas, in the contention here meditated, the loser even would be a winner—intellectually, physically, morally, and substantially. Excitement is a necessary food of the mind—is the ruling appetite of human nature. Under proper arrangements and systematic organisation as much ardour, keen rivalry, and vital stimulus might be induced in the strife of agricultural superiority, as in that of the turf, ring, or gaming-table, and more glory in the victory—a victory without a victim. To reach excellence in any branch we must enter into the pursuit with engrossing enthusiasm, make it the ruling passion. The wise make their proper business, or some ennobling study, their ruling passion; well! when the proper business is an ennobling study. The subscriber's solution of the landlord's problem is, to make the utmost use of rivalry of excellence, in addition to the common stimulus of profit. In the first place, the tenantry of each estate to be induced to keen competition of good management and value of produce, by annual prizes and encouragements afforded by the landlord, and perhaps by sweepstakes of their own; while, again, the landlords of each district should compete in superiority of tenantry, tenant-improvement, high cultivation of property, superior farm-steading accommodation, &c. This might be further extended to shire competition, and by the tenantry to the working men upon their farms. There is now an actual necessity for exertion. *Patrick Matthew, Gourdie-hill, Errol, Scotland.*

Societies.

YORKSHIRE AGRICULTURAL: *The Best Mode of Housing Cattle.* — After the usual dinner of the council of the Society, a discussion on this subject took place, which was opened by Mr. LEGARD, who said:—There are three methods of house fattening cattle to which he would direct attention. The first is the stall-feeding system, the prevalent method in England; second, box-feeding, of late introduction in Norfolk and Cambridgeshire; third, feeding in sheltered yards, the plan pursued in the south of England and in Scotland. If the only desideratum in winter feeding were to produce in a given time the greatest quantity of animal food, with the least consumption of vegetable food, then it would be granted that feeding cattle under cover would be the best way; because science has pointed out the reason why exposure to the cold of winter retards the production of fat in the animal, and also causes it to consume a greater quantity of food, in order to keep up the animal heat of the body. But the production of flesh and fat is not the only question; the consumption of straw, and the manufacture of manure, as carried on in the large arable farms of the fens of Cambridgeshire and the wolds of Lincolnshire and Yorkshire, is a matter of very great importance. It has been found by practical men that it is almost impossible to consume large quantities of straw where animals are fed in stalls. By the second plan, that of box-feeding, cattle are fed in long buildings, in two rows of stalls or boxes, with a gangway running down the centre, by which means food is brought to the animals. The boxes are 10 feet by 8 feet 6 inches in width, and the gangway is 4 feet 6 inches wide. The width of the building externally is 26 feet 6 inches, so that for 10 beasts there would be required an area of 1170 superficial feet. As many gentlemen were aware, the cattle were in square boxes, 2 feet below the surface, and divided from one another by palings. The cattle are supplied with a quantity of litter, so as to trample down the solid and liquid excrements; and although much was said against the noxious vapours which arise by feeding animals in this manner, no such effects were perceivable in the establishment where he had recently witnessed the feeding of cattle in this way. By the trampling down of the straw no fermentation took place, and no noxious vapours could arise. Another advantage was, the liquid excrement would be dealt with in a much readier way than if it had to be taken to tanks, and they all knew that this was of great importance. The third system to which he would allude, and which he had pursued in the fattening of cattle, is the feeding in sheltered yards. The dimensions of a yard for 10 beasts are 55 feet square, giving a superficial area of 3025 square feet, or nearly three times the space required in boxes. The sheds should not be less than 18 feet within, thereby enabling them to be sheltered from the storms of winter as far as may be. The yards ought to be dished out, so that the surplus matter may be carried off; and, in order to avoid too much water from running into the tank, the building should be spouted. Then came the question of the exposure of manure to rain being prejudicial, and this gave rise to a question of no slight importance to this branch of agriculture. Not long ago he was present at a meeting of a farmers' club, when the subject of preserving farm-yard manure was under discussion. A practical farmer then rose, and said he believed the exposure of manure to rain, instead of being disadvantageous, would be beneficial; and he quoted a statement made by Professor Sprengel in the first volume of the "Royal Agricultural Society's Journal." The Professor laid it down that the urine of cattle is very much advantaged by water, and he has given three analyses of cows' urine. The first is, when fresh, 205 parts of ammonia to 1000 of water; second, after four weeks' putrefaction, 487 parts; and thirdly, with rain water added in equal parts, 1622 parts. This is explained by the fact that water absorbs ammoniacal gases; also, that it retains and abstracts from the atmosphere carbonic acid gas, which combines with the ammonia, and neutralises it; also, it absorbs a much greater quantity of sulphuretted hydrogen gas than when unmixed—more than 30 times the quantity. The question is of importance—are these dicta from the philosopher's laboratory trustworthy? Mr. Legard then concluded by making some observations on the inconvenience often felt in giving cattle oil-cake, because the master beast fights the weaker ones, and gets the best portion of the food. The plan that he had seen adopted was this: the cattle are fed in yards with sheds, and the oil-cake is given to them in a manger, which is protected by a sort of rack, which, by admitting the head of the animal only, prevented him from getting more than his share. The construction was very simple, and the plan having been successful, he felt justified in recommending it.—Mr. THOMPSON, of Moat-hall, said the three principal points to be attended to in the management of cattle were: 1st, that the cattle should be healthy and thriving; 2d, that the manure should be made in the best way; 3d, that due economy should be considered in carrying out the two former objects. He would therefore briefly compare each of the usual modes of housing cattle with reference to these three points:—First, box-feeding. Cattle fed in boxes were kept in excellent health, if the boxes were well constructed and littered with straw at least once every day. If, however, the site of the boxes was imperfectly drained, so that land water found its way into the box; or, if from an insufficient supply of straw the cattle were allowed to stand and lie in wet and filth, the box system could not be expected to answer. In boxes the manure was made in the best possible way, as, by compression, fermentation was almost entirely prevented, and by being kept under cover, the only moisture was that which came from the animal; and its strong alkaline nature had such an effect on the straw, that if the manure was taken to the land at once without being heaped at all it rapidly decayed, and was not found to interfere with the subsequent working of the land. It was important not to make boxes too large; 9 feet square, or at any rate 9 feet by 10, should not be exceeded, otherwise the compression was less perfect, and the moisture was not sufficient to convert the whole of the straw into first-rate manure. On the score of expense also, box-feeding stood high; as, if boxes were well arranged in double rows, they were very accessible, and the manure was preserved without either labour or expense from the time the straw was put into the box until the manure was ready to be carted to the land. The second mode of housing cattle that he would consider was that of fattening them in stalls, and by this plan also the cattle were kept in perfect health. He had practised it for years, and, unless from some accidental cause, he scarcely ever had an animal off his feed. In stalls it was easier to keep up the temperature of the cattle-shed, as there were more cattle in the same space. This was a decided advantage for fattening animals, of which he had a good instance last winter, having moved eight bullocks from one feeding-shed to another which was warmer, their food remaining the same, and they made much more rapid progress in the warmer than they had done in the colder shed. In stalls there was considerable economy of straw, which on some farms was a great object, but the preservation of the manure was rather a difficult matter. The stalls must be cleaned out daily, and if the manure was taken into the fold-yard, which was the usual practice, it was exposed to rain or drought, and if even placed under cover it would lie so light as to become dry; should it be artificially moistened, it would ferment rapidly and suffer material injury. He had accordingly tried a method last year which he had found to answer remarkably well, viz. to litter the cattle with straw cut into short lengths by a chaff-cutter. The cut straw was placed in the mangers at night, and the cattle picked it over and eat a little of the best of it; the remainder was thrown out in the morning for litter. In this way it was easy to remove each day merely the soiled part of the litter, which from being cut short absorbed all the liquid which came from the cattle, and the whole was wheeled alongside a heap of moist clay, road scrapings, ashes, or even soil which had been carted together at any vacant time. In this way it was mixed in a few minutes with soil, which effectually prevented the escape of either gas or liquid, and formed the best compost for putting on with the Turnip drill, thus obviating the necessity for purchasing other land tillage. He had some 30 acres of Turnips this year with no other land tillage, and in spite of the drought, he never had Turnips which came up more evenly or grew faster. Feeding cattle in open yards was the next method to be considered, and to this he thought there were great objections; 1st, because the stronger cattle robbed the weaker; 2d, because the manure was too much exposed to the vicissitudes of weather; and 3d, because the cattle could not be kept sufficiently warm. It was necessary, however, to have open yards for the young cattle which were to go to Grass the following spring, as, if they were tendered by being kept too warm, they would suffer when exposed to wet and cold in the open fields. The evils of open yards might be much diminished by being not too large—well provided with sheds—all the buildings spouted—and the yards dished in the centre, so that nothing flowed from them except in extremely wet weather. By way of recapitulation he recommended that the fattening animals should be housed in boxes, the dairy cows in stalls littered with cut straw, and the young cattle in small yards, constructed as he had described above. In this way the manure from the boxes and yards would be ploughed into the land, and that from the stalls be drilled in as land tillage, thus enabling them to grow the best of root crops from their own resources, and in the most economical way.—In answer to a question, Mr. Thompson stated his opinion that Sprengel's analysis of urine in different stages had been misunderstood. Undoubtedly the addition of water to urine would enable the mixture to retain a considerable portion of the ammonia which would be produced by decomposition, and which would otherwise fly off; but all the elements of the ammonia existed previously in the urine, and if retained, together with the solid excrements, in a well made compost, he thought it much safer than when collected separately in a tank.—W. R. C. STANSFIELD, Esq., M.P., combined both the systems last referred to. He had small yards which were always accessible to two or three animals, and they could shelter themselves when they chose. His system, therefore, combined the advantages of both stall and box feeding. He was rather surprised at what his friend had said respecting manure being exposed to the action of the air and rain, and although Mr. Legard had quoted the opinion of a celebrated German chemist, Sprengel, he (Mr. Stansfield) must remind them of the very different opinion held by Professor Liebig. In Belgium the system of farming was to turn the whole of what came from an animal into a tank, and they thought it worth while to carry these matters a good way to the tank. The greater the space irrigated with liquid manure the more valuable the land became; but if an individual who farmed 2000 or 3000 acres of land had only three or four homesteads, and had to carry the liquid manure a distance of three or four miles, the mechanical power required for this purpose would entail a considerable loss. In such cases they must carry the manure in such a shape as to make it immediately accessible.—JOSEPH MARSHALL, Esq., of Ashgrove, said, his opinion of the stall feeding and housing of fattening cattle was that housing them in stalls was by far the readiest way, and the cheapest, as a smaller quantity of food sufficed. They must turn the whole of their straw into good manure, and carry the system out to a state of high farming. The cattle in the stalls would tread the manure into a good quality without any additional expense, and when this manure was taken out it might be put into the drill, or used in any way they liked. His opinion might be very little regarded, as he was an agriculturist more for pleasure than profit, but he could say he had tried a great number of experiments, and by always taking care of his manure he had been reimbursed on every outlay he had made. As for the box-feeding system, he did not think it would answer for landlord or tenant; the expenditure was too great for the tenant to pay, and the returns were too small. The tenant would not invest sufficient capital to make the system remunerative.—Mr. H. L. MAW, of Tetley, said he had not long ago gone to hear the lectures of Professor Playfair on the subject, or rather a part of the subject now before the meeting, and the learned Professor had laid down one great axiom, which was, that warmth and rest were necessary for fattening cattle. He (Mr. Maw) had a certain number of cattle upon his farm, and was of course wishful to make the most of them and their produce, so as to render them more available in a pecuniary point of view. He had constructed a number of boxes; and he had found that the cattle should be comfortably sheltered, and kept with a certain degree of warmth and cleanliness, not allowing the manure to accumulate, for if it did both fermentation and exhalation would take place, and gases would be thrown off which were prejudicial to the health of the animals. He was anxious to hear the opinion of Professor Playfair on the subject, and therefore he went to his lectures, and the Professor went on to say that every particle of oxygen which the animal consumed carried off a certain proportion of fatty matter. Now there had been a great difference of opinion on these matters. They had been told that the straw could not be consumed upon the farms. He was of opinion, however, that no straw need be wasted upon any farms; and therefore the straw, even upon strong lands, might be consumed and converted into manure of the very best quality. The fact was this, that in relation to the sheltering of feeding cattle, to give the most beneficial results to the cattle themselves, box-feeding on large farms would require an enormous number of boxes, and a vast amount of expense and labour; and the fact of the manure remaining so many months in these boxes must be prejudicial to the health of the animals. He had a number of boxes himself, and he knew the difficulty of keeping them in a state of cleanliness; but there was no objection to box-feeding, if they had a certain proportion of boxes in which to put their cattle, and the boxes were kept clean; no doubt they might bring their cattle to a high state of perfection. He supposed very few now fed cattle upon straw, that system being nearly banished. But now came the grand point. It was very well for lords and gentlemen to discuss the best mode of sheltering feeding cattle; but the question was this, had the farmers the sheds to put the cattle in? Every barn and stable in a farm-yard ought to be a manufactory of beef and mutton and milk and corn for the market. The farm was also a manufactory for the tillage which was carried from the farm. But how many farmers did they see whose farm buildings were in proportion to what, under the present system of agriculture, was now generally adopted?—Mr. RUTSON, of Newby Wiske, begged to direct the attention of those gentlemen who were practically acquainted with the subject to a point which seemed to him to be one of much importance, viz., the temperature at which cattle ought to be fed, as in the discussion so far that point had been left untouched. In the course of his observations upon the feeding of beasts, he had sometimes remarked that the animals were in a state of perspiration, and, upon his drawing the attention of those who had the care of them to the fact, he had been told that that showed the beasts were in a thriving state. This he had observed in the same building to be the case with some beasts, whereas in the case of others, they appeared to be in a state of rest as to their perspiratory powers.—Mr. MAW said the temperature would vary according to the condition of the beast. If they put an animal into an open shed, and it was thoroughly well fed and attended to (which was very difficult to accomplish), it would be in a state of perspiration. But they might put it into the warmest shed they had, and if it were not well fed and attended to it would not perspire. The fact of the animal perspiring was a sure sign that the animal was doing well, and it did not, in his opinion, proceed so much from the temperature. Mr. THOMPSON quoted a case which had occurred to him last year. He had some feeding bullocks, and he put eight of them into a warmer shed than the others, and although they were fed with the same quantity and the same quality of food, the result was very different, for those in the warmer shed had, in the course of five or six weeks, made considerably more beef; and therefore it was clear, he thought, that the warmth had done them good. He could not

state exactly what temperature was the best, but he should say that from 55° to 60° would be found most favourable. It was impossible during winter to regulate the temperature exactly, but they might have ventilation enough if the boxes were not too large. Mr. Maw had intimated that he had found these places offensive. In the case in which he had done so, he thought the building must either have been too large, or that it was not sufficiently littered, because he must repeat, that where the animals were sufficiently littered, he had never observed the least exhalation, and he had been over scores of well-managed boxes. He quite agreed, however, that there should always be ventilation from the roof, to prevent these buildings being close: and with such ventilation, if they kept the temperature up at 55° or 60°, he believed they would find the animals do the best. When the temperature got above that, the animal was likely to be off its food, and that was the best test.—The Chairman, Lord CARLISLE, then said: If no other gentleman has any observations to offer, and if the discussion is now closed, I am sure that I am now authorised, on the part of those who have been quiescent auditors of what has been said, to express their acknowledgments to the gentlemen who have favoured the company with their opinions in so able and clear a manner. (Applause.) Happily, it is not a duty which devolves upon your president to attempt the task of presenting to you a summary of the observations which have been made, or of collecting any inference from them. There has been one observation offered by my friend, Mr. Legard, who introduced the subject to your notice, which might be construed to lead to far weightier moral applications even than that which he has applied to that important field of action which we have had under our consideration. I mean with reference to that part of his observations in which he told us how to subdue the unruly dispositions of the cattle, in the administration of the daily meal of oilcake. And it is a lesson, I think, which you might all apply to your municipalities—(laughter)—to your parishes, to your labourers, to your servants'-halls, aye, even to your drawing-rooms. (Laughter.) If you want to prevent people being contumacious—if you want to prevent them from growing rusty—from kicking, in short, the best way is to give them a good dinner. (Loud laughter.)

Calendar of Operations.

SEPTEMBER.

BERWICKSHIRE FARM, *Sept.* 14.—Since last report we have been employed reaping; we have nearly finished cutting Oats, and have cut about 30 acres of Wheat, and have about 94 to cut. What was sown after Potatoes and Turnips is a full crop; we have 32 acres after Beans, which is a light crop, but good quality. There is some smut all over the farm. The white and the Swede Turnips look healthy, but the yellow are diseased with "fingers and toes." The weather has been favourable for reaping, but not for carrying. *J. B.*

Notices to Correspondents.

BEAN DRILL: *E H.* Stratton, Bristol, Drummond, Stirling, &c.

BEST FOOD FOR FOWLS AND PIGEONS: *Ballindine* should be aware that these questions have been often answered in our columns, and may be found treated of in most of the poultry books. Reaumur's experiments on food of poultry are well known. Fowls and pigeons are differently formed in the crop; the one, therefore, requires to be fed chiefly on grain and green food; the flesh of the other, too heating as a general diet, feeds on pulse. The most simple answer is, Barley for fowls, and Peas and Beans for Pigeons. But fowls require more variety, as pointed out in former Numbers of this journal, and many little delicacies, occasionally Oats or Buckwheat mixed with the Barley; also in moulting time a portion of Wheat, malt, and Hemp seed. They should generally be fed three times a day before sunset; the mid-day meal sometimes may be boiled Potatoes mashed up with a little dry Barley-meal or Rice, not overdone and boiled dry, to be given when cold, never hot. An Onion chopped fine and mixed with the above is said to be good, or green Chives. Two cocks with eight hens each will consume in this way from a peck to a peck and a half of Barley per week. A pigeon will consume from a pint to a quart per week; much depends upon town or country keep. *D. S. E.*

GRASS LAND: *A P* may be assured of this, that if he puts too much salt to his turf, he will certainly kill the Grass, but he will poison his land for two or three years. A neighbour of mine did the same thing, and was thought very clever, but he learned something from his experience—he lost his first seed entirely. Land recovered from the sea requires many seasons to render it fertile. *J. D.*

RABBIT WARREN: *An Old Sub* has a large space of vacant ground on the face of a hill, at a distance from houses, which he cannot profitably apply. He thinks of turning it into a rabbit warren. Can any of our correspondents tell him how best to proceed, and where to get a quantity of rabbits, and how to settle them in their quarter? He supposes that early in the spring will be the most favourable time.

THISTLES: *C R S.* They doubtless "increase by seed."

ERRATUM: "Diseases of Poultry," p. 587, line 45 from top, read *under each wing*, instead of *on each wing*.

Markets.

HOPS.—FRIDAY, Sept. 21.

Messrs. PATTENDEN and SMITH report that there is but a short supply of Hops in the market yet, which realise as follows:—Weald of Kents, 7*l*. 7*s*. to 8*l*. 8*s*.; Sussex, 7*l*. to 8*l*. Duty, 85,000*l*.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Sept. 20.

Prime Meadow Hay	68s to 74s	Clover	60s to 90s
Inferior ditto	50 65	New Clover	— —
Rowen	— —	Straw	25 30
New Hay	— —		J. COOPER.

WHITECHAPEL, Sept. 20.

Fine Old Hay ...	65s to 70s	New Clover	84s to 90s
Inferior ditto ...	50 55	Inferior ditto... ...	55 65
New Hay	60 65	Straw	24 28
Old Clover	90 95		

COVENT GARDEN, SEPT. 22.

Hothouse Grapes, Peaches, and Nectarines are plentiful. Pine-apples have not altered in price since our last account. Filberts and foreign Walnuts are abundant. Oranges are scarce. Lemons moderately plentiful. Among Vegetables, Turnips may be obtained at from 3d. to 6d. a bunch. Carrots the same. Cauliflowers are less plentiful. Green Peas fetch about 4s. per bushel. Potatoes have not altered since our last account. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1s. to 1s. 6d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropæolums, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 3s to 5s	Oranges, per doz., 4s to 6s
Grapes, hothouse, p. lb., 9d to 3s	Lemons, per doz., 1s to 3s
— Portugal, per lb., 9d to 1s	— per 100, 8s to 16s
Peaches, per doz., 2s to 6s	Almonds, per peck, 6s
Nectarines, per doz., 2s to 6s	— sweet, per lb., 2s to 3s
Plums, per hf. sieve, 4s to 6s	Walnuts, p. 100, 1s 6d to 2s
Currants, do., 3s to 4s	— p. bush., 16s to 24s
Pears, per doz., 2s to 4s	Filberts, per 100 lbs., 45s to 55s
— per half sieve, 4s to 6s	Nuts, Bar., p. bush., 20s to 22s
Apples, kitchen, p. bsh., 2s to 4s	— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 6d to 1s	Onions, p. bunch, 2d to 6d
Cauliflowers, p. doz., 2s to 6s	— Spanish, p. doz., 1s 6d to 4s
Broccoli, p. doz. bundl., 10s to 12s	Shallots, per lb., 3d to 6d
Peas, per bush., 1s 6d to 4s	Garlic, per lb., 3d to 6d
Sorrel, p. hf. sieve, 6d to 9d	Artichokes, p. doz., 1s 6d to 3s
Potatoes, per ton, 50s to 100s	Vegetable Marrows, doz., 6d to 1s
— per cwt., 3s to 6s	Lettuce, Cab., p. sc., 4d to 9d
— per bush., 2s to 3s	— Cos, do., 6d to 1s
Turnips, p. doz bun., 2s to 5s	Endive, per score, 1s to 1s 6d
Red Beet, per doz., 1s to 2s	Tomatoes, p. hf. sieve, 4s to 6s
Horse Radish, p. bdl., 2s to 6s	Mushrooms, p. pot., 1s to 1s 6d
French Beans, p. hf. sieve, 1s 6d to 2s	— per bush., 3s to 6s
Cucumbers, each, 2d to 6d	Small Salads, p. pun., 2d to 3d
Leeks, per bunch, 2d to 3d	Fennel, per bunch, 2d to 3d
Celery, p. bundle, 8d to 1s 3d	Savory, per bunch, 2d to 3d
Radishes, p. 12 bunches, 1s to 2s	Thyme, per bunch, 2d to 3d
Watercress, per doz. bunches, 4d to 6d	Parsley, p. doz. bun., 3s to 4s
Carrots, per bun., 4d to 6d	— Roots, p. bdle., 1s to 1s
Spinach p. sieve, 1s to 1s 6d	Marjoram, green, p. bun., 4d to 6d
	Mint, green, per bunch, 3d to
	Basil, green, p. bunch, 4d to 6d

SMITHFIELD, MONDAY, Sept. 17.

There is a considerable increase in the supply of Beasts, and a consequent slow trade. However, the best Scots make 4s., but second-rate are lower. Lower prices are, on the average, taken for Sheep, but trade is cheerful, and everything cleared off at a small reduction. There is not much demand for Lamb, the supply being also small, choice ones make nearly as much as of late. Trade is exceedingly bad for Calves; it is difficult to dispose of middling qualities at any price. From Holland and Germany there are 691 Beasts, 3280 Sheep, and 52 Calves; from Leicester and Northampton, 1700 Beasts; and from Lincolnshire and Cambridge, 600.

Per st. of 8 lbs.—	s d s d	Per st. of 8 lbs.—	s d s d
Best Scots, Herefords, &c. ...	3 8 to 4 0	Best Long-wools .	3 6 to 3 8
Best Short-horns	3 6 — 3 8	Ditto Shorn	...
2d quality Beasts	2 8 — 3 4	Ewes & 2d quality	2 8 — 3 4
Best Downs and Half-breds ..	3 10 — 4 0	Ditto Shorn	...
Ditto Shorn		Lambs	4 0 — 4 8
		Calves	2 0 — 3 4
		Pigs	3 0 — 4 0

Beasts, 1232; Sheep and Lambs, 31,850; Calves, 169; Pigs, 210.

FRIDAY, Sept. 21.

The number of Beasts is considerably larger than the demand. A few choice Scots make 4s.; this is, however, an extreme quotation. Many of inferior quality remain unsold. The supply of Sheep is large and the demand small; Monday's prices cannot, on the average, be maintained. Some choice Lambs are in demand at late rates, but other kinds are very unsaleable. No improvement in trade for Calves, it is difficult to dispose of them. From Holland and Germany we have 311 Beasts, 1680 Sheep, and 79 Calves; from Leicester and Northampton, 800 Beasts; and 110 Milch Cows from the home counties.

Best Scots, Herefords, &c. ...	3 8 to 4 0	Best Long-wools	3 [illegible] 3 6
Best Short-horns	3 4 — 3 8	Ditto Shorn	...
2d quality Beasts	2 8 — 3 2	Ewes & 2d quality	2 8 — 3 2
Best Downs and Half-breds ...	3 8 — 4 0	Ditto Shorn ...	...
Ditto Shorn	— ...	Lambs	4 0 — 4 8
		Calves	2 0 — 3 4
		Pigs	3 0 — 4 4

Beasts, 1111; Sheep and Lambs, 11,130; Calves, 317; Pigs, 220.

MARK LANE.

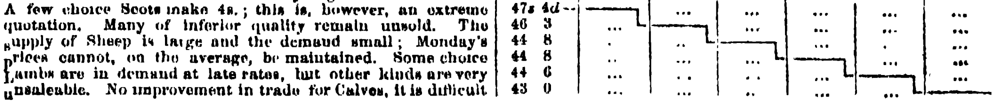
MONDAY, SEPT. 17.—The supply of English Wheat by land carriage samples this morning was moderate, and the stands were quickly cleared at an advance of 1s. to 2s. per qr. Red foreign met a free sale at a similar improvement, but we are unable to raise our top quotations for Dantzic.—Grinding Barley is in good demand, and 1s. per qr. dearer. Malting qualities are unaltered in value, as are also Beans and Peas. —Fine Oats are inquired after, and 6d. per. qr. higher in price. —Mustard Seed is a heavy sale, and a large quantity remains unsold at a decline of fully 1s. per bushel.—Floating cargoes of Maize are more in demand, and 26s. obtained for Ibraila.

FRIDAY, SEPT. 21.—The arrivals of foreign grain during the week have been large, and moderate of English. Monday's prices are supported for Wheat of all kinds, but the attendance being small, business was limited.—We observe no alteration in the value of Barley, Oats, or Peas.—Beans are the turn dearer. —Flour continues to be held at our quotations.—Indian Corn is inquired after, 27s. has been obtained for a cargo of Ibraila.— The country markets during the week have been well attended, and an advance of 1s. to 2s. per qr. established on both English and foreign Wheat. Spring corn has undergone no alteration of consequence. In Dantzic prices remain nominally as last quoted, with little business doing. In the lower ports of the Baltic old Wheat is still quoted 37s.; and 52 lbs. Barley 17s. per qr., f. o. b. The quality of the new crop is represented as being fine there.

LIVERPOOL, TUESDAY, SEPT. 18.—We had a good attendance at this day's market; at first the advance required on Wheat made the demand slow, but ultimately a fair business was done, at 1d. to 2d. per bushel advance on general runs. In Flour little was done. Oats were cheaper. Barley and Peas the turn cheaper. Beans were quite as dear.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Aug. 11	47s 4d	25s 8d	19s 2d	26s 7d	32s 10d	31s 1d
— 18	46 3	26 1	19 0	27 5	31 9	29 2
— 25........	44 8	26 4	18 10	26 5	32 2	28 8
Sept. 1	44 8	26 8	19 3	27 0	32 3	28 6
— 8........	44 6	26 9	18 4	25 11	31 2	29 7
— 15........	43 0	27 1	18 6	26 7	30 8	30 1
Aggreg. Aver.	45 1	26 4	18 10	26 8	31 8	29 6
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.



PRICES CURRENT.	London. Sept 10 qr.	London. Sept. 17 qr.	Liverpool. Sept. 11. 70 lbs. s. d. s. d.	Liverpool. Sept. 18. 70 lbs. s. d. s. d.	Wakefield. Sept. 7. qr.	Wakefield. Sept 14 qr.	Boston. Sept 12 qr.	Boston. Sept 19 qr.	Birmingham. Sept. 13. 62 lbs. s. d. s. d.	Birmingham. Sept. 20. 62 lbs. s. d. s. d.
Wheat—	s. s.	s. s.			s. s.	s. s.	s. s.	s. s.		
New, red ...	38 to 40	38 to 43	6 3 6 6	6 0 6 6	39 to 45	41—45	38 to 42	40 to 44	5 6 5 9	5 4 5 9
" white ...	40—43	42—45	6 9 7 2	6 4 6 9	41—48	41—48	40—45	42—44	5 8 6 0	5 8 6 2
Old, red ...	38—40	38—42	6 4 6 8	6 4 6 8	40—42	40—42	—	—	5 3 5 9	5 3 5 8
" white ...	40—42	41—43	7 0 7 3	7 0 7 4	—49	—49	—	—	5 10 6 4	5 10 6 4
Foreign... ...	36—50	36—50	4 2 7 8	4 2 7 8	35—49	35—49	—	—	4 8 6 2	4 8 6 2
			480 lbs.	480 lbs.						
Rye—Old ...	22—24	22—24	—	—	—	—	—	—	—	—
Foreign...	20—22	20—22	—	—	—	—	—	—	—	—
Foreign meal	5*l*.—6*l*	5*l*.—6*l*	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	—	24—26	—	—	20—22	20—22	24—25	24—25	22—24	22—24
Malting... ...	25—28	25—28	30s—31s	30s—31s	26—34	27—33	—	—	29—32	29—32
Foreign... ...	18—26	18—26	—	—	21—26	21—26	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	37—40	37—40	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	18—25	18—25	2s 10d 3s 2d	3s 0d 3s 2d	—	—	16—20	16—20	19—27	19—27
Black...	18—22	17—22	2 2 2 5	2 1 2 5	—	—	—	—	18—20	18—20
Foreign	13—20	13—20	2 3 2 4	2 3 2 4	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	25—32	25—32	34s—	34s—	26—30	26—30	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—25	23—25	28 —29s	28 —29s	—	—	—	—	11—12	11—12
Foreign ...	24—32	24—32	31 —32	29 —32	—	—	—	—	—	—
Beans—										
New, small ...	25—27	25—27	31 —33	—	32—35	32—35	32—34	32—34	12—13	12—13
Old	23—33	23—33	34 —35	32 —35	—	—	—	—	14—15	14—15
Foreign ...	21—36	21—36	24 —35	24 —35	30—31	30—31	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	36—41	36—41	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9*l*. 12s	9*l*. 12s	8*l*.—8*l*. 5s	8*l*.—8*l*. 5s	—	—	—	—	—	—
Foreign ...	7*l*.	7*l*.	—	—	—	—	—	—	—	—
Indian Corn—	22—26	22—26	25s—28s	27s—30s	—	—	—	—	12—13	12—13
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	34—42	32—40	32—33	31—32	—	—	32—38	32—38	34—36	32—35

Weekly Averages and Imports.	London Aver. Sept. 11 s. d.	London Impts. qrs.	Liverpool Averages. s. d.	Liverpool Imports. qrs.	Wakefield Aver. s. d.	Wakefield Impts. qrs.	Boston Aver. s. d.	Boston Aver. qrs.	Gloucester. Averages. s. d.	Gloucester. Imports. qrs.
WHEAT ...	44 2	13570	44 6	27208	45 1	9897	39 11	2953	41 3½	[illegible]
BARLEY ...	30 11	9320	26 9	3399	—	1546	21 10	77	—	[illegible]
OATS... ...	19 1	28030	18 4	6522	19 0	559	16 7	1011	19 6½	[illegible]
RYE	26 0	—	25s 11	5	—	—	—	—	—	—
BEANS ...	28 3	—	31 2	1816	32 8	1288	31 3	8	—	—
PEAS... ...	36 2	—	29 7	5906	29 0	382	—	—	—	—
SIGNED	KINGSFORD and LAY.		SEGAR and TUNNICLIFFE.		SANDARS and DUNNS.		THOMAS WRIGHT.		J. and C. STURGE.	

Sales by Auction.

SMITHFIELD.
TO SEEDSMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS have received instructions from the Trustees of Mr. C. FARNES, late Seedsman, to submit to public competition by Auction on the premises, No.128, St. John-street, Smithfield, on TUESDAY, Sept. 25, 1849, at 12 o'clock, the whole remaining Stock of VEGETABLE and FLOWER SEEDS, together with the Fixtures, consisting of large Bins, several nests of Drawers, Counters, Scales and Weights, Measures, capital Winnowing Machine, Root-cases, Window-trays, Sack-trucks, Seed-screens, Fans, Sieves, Mahogany Desks, Sacks and Bags, Mushroom Spawn, Gas-fittings, Parlour and Bedroom Stoves, Fender, and other effects.—May be viewed prior to the Sale, and Catalogues had on the Premises, and of the Auctioneers, American Nursery, Leytonstone Essex.

NOTICE.

MR. J. C. STEVENS begs respectfully to announce that the sale of CAMELLIAS, AZALEAS, &c., from Mr. A. Van Geert, which was Advertised to take place on Friday, 21st, was, in consequence of a delay in the arrival of the vessel from Ghent, unavoidably put off, but it will positively take place on MONDAY NEXT, 24th INST.
38, King-street, Covent-garden, London, Sept. 22.

FREEHOLD FARM AND RESIDENCE, IN SOUTH WALES, with singular attractions and advantages, beautifully situate on the banks of Milford Haven, Pembrokeshire.

MESSRS. DAVIS and VIGERS are commissioned by the Trustees under the Will of the late Orlando Harris Williams, Esq., to Sell by Auction, at the Mart, London, on WEDNESDAY, October 3, at 1 o'clock, a most enjoyable ESTATE, called Woodfield, otherwise Suailson, in all 166 acres of very valuable land, well adapted for Turnip cultivation and Sheep husbandry, and for a gentleman's occupation. It is situate in the Parish of Cosheton, 3 miles from Hobb's Point and Pembroke and Her Majesty's dockyard, and 10 miles from Tenby, bounded on two sides by a singularly beautiful estuary of the Milford Haven, to which the ground precipitately falls, and presents a richly-wooded bank of several hundred feet slope, affording on its side upwards of a mile of romantic terrace walks, from whence the views of land and sea scenery are most charming. The water is ever clear and lake-like; it affords an inexhaustible supply of seaweed for dressing the land, and of fish of almost every description, including oysters. The communication by boat with Pater and Pembroke admits of ready supplies of manure and limestone so that the soil may always be enriched at trifling cost. These advantages, with its command of hunting, shooting, fishing, boating, sea-bathing, and rural enjoyments, render this property altogether unique and most desirable. The London mail passes daily within half-a-mile, and the London and South Wales Railway Stations at Pater and Milton will be within 3 miles of the estate. The buildings are modern, substantially built of stone, and well arranged. The house contains on the first-floor six chambers, and on the ground-floor, dining-room 15 feet by 14 feet, drawing-room 20 feet by 19½ feet, pantry, dairy, and very convenient and commodious offices; adjoining are coach-house, stabling, and the homestead. John Furlong will be in attendance on the farm to show it, and particulars, with plans, may be had at the Ordnance Hotel, Hobb's Point; the Lion, and of Wm. Lock, Esq., Solicitor, Tenby; of Wm. Wells, Esq., Solicitor, Ivy-bridge, Devon; of John Vizard, Esq., Solicitor, Dursley, Gloucestershire; and in London, at the Mart; of Messrs. Blower, Vizard, and Parsons, 61, Lincoln's-inn-fields; and of the Auctioneers, 3, Frederick's-place, Old Jewry, London.

SPRING-PARK FARM, CROYDON, SURREY.—Live and dead Farming Stock, 100 loads of prime Hay, home bred Colts, Fillies, and Horses, 6 Draught Horses, Agricultural Implements, Household Furniture, &c.

MESSRS. BLAKE will sell by Auction, on the premises, on TUESDAY, September 25, and following day, at 12 o'clock (exact time), by order of HEWITT DAVIS, Esq., who is quitting the Farm, comprising all the capital live and dead Farming Stock, upwards of 100 loads of Hay, valuable Colts, Fillies, and riding Horses (all bred upon the Farm and of good pedigree), a grey 7-year-old Hunter, do. 6-year-old Carriage Mare, 5 useful Draught Horses, 2 Cows, a new 4-horse power Threshing Machine (complete) by Garrett and Son, nearly new Patent Suffolk Corn Drill, Horse Hoe to correspond, a 10-wheel iron Land-presser, Finlayson's Scarifier, Ploughs, Harrows, Rollers, &c.; light Phæton, neat Gig, Harness, and Spring Cart, also the neat Household Furniture, Dairy and Garden Utensils, and a variety of useful effects.—N.B. The Furniture will be sold on the first day, Tuesday, 25th inst.—May be viewed the Saturday and Monday preceding the sale, and Catalogues had of Mr. WHITE, the Bailiff at the Farm; at all the principal Inns in the district; at the Artichoke Inn, Newington Causeway, Garraway's Coffee-house, Change-alley; at the office of Messrs. DAVIS and VIGERS, 3, Frederick's-place, Old Jewry; and of Messrs. BLAKE, Croydon, Surrey.

MR. W. HASLAM begs to inform AMATEURS and the public generally, that he is instructed to offer to public competition, at the Auction Mart, London,
On TUESDAY, October 2, and FRIDAY, October 5,
at 12 for 1 o'clock each day,
A MAGNIFICENT COLLECTION OF LILIUMS, TULIPS, &c.,
Cultivated by Mr. GROOM, of CLAPHAM,
500 DWARF AND STANDARD ROSES, AND A LARGE IMPORTATION OF DUTCH BULBS.
All warranted true to name, and will be fully described in Catalogues, to be had at the Mart, and of the Auctioneer, Epping and Ongar.

FARM TO LET, in the parish of Croydon, Surrey, about 140 acres, with good buildings.—Apply by letter to J. S., 5, Upper Wellington-street, Strand, London.

FARM TO LET ON LEASE, in Hampshire, between 300 and 400 acres at the option of the tenant, within reach of four Market Towns. The land is capable of great improvement, and is to be let on advantageous terms. For particulars, apply to Mr. A. W. IRELAND, Guestwick, Foulsham, Norfolk.

IMPORTANT DISCOVERY TO MANUFACTURERS OF MANURE.

TO BE DISPOSED OF, for a moderate Royalty, the exclusive Right of a RECIPE for the ECONOMICAL MANUFACTURE of a MANURE or FERTILISER for CORN CROPS, by which the return may be quadrupled on the most Barren soils. For particulars, apply (post-paid) to Dr. JONES, Lancych, near Newcastle Emlyn, South Wales.

LIGHT LAND FARMS.

TO BE LET, with immediate possession, (being now in the [illegible] of the proprietor), and at a moderate rent, 1480 acres of [illegible] and Meadow-land, as one or four Farms, there being on the land four Dwelling Houses, with homesteads all in good repair. The land is situate in a southern county, within easy access of several important markets. The soil is [illegible], adapted for the growth of Turnips and Wheat, and a considerable sum has been expended upon it in draining and otherwise by the proprietor, who will now give every encouragement to an unexceptionable and enterprising tenant.—Apply only to Mr. [illegible], Land Agent, Watford, Herts.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, by Private Contract, the whole of that excellent and improving NURSERY BUSINESS, established for 20 years, situate in the parishes of Pilton and Marwood, contiguous to the well-supplied Market Towns of Barnstaple, Southmolton, and Bideford, consisting of 13 acres of valuable young Stock, now growing in a very flourishing condition; the property of Mr. William Ireland. The principal portion of the Nursery Grounds are held on a Lease of 30 years, 20 of which are unexpired. The present proprietor will retain a portion of the business, as a partner, if required. All letters to be addressed to W. GRIBBLE, Esq., Solicitor, Barnstaple; or to Mr. W. IRELAND, Stanhope Arms, Holsworthy.
There is a good greenhouse on the premises.

TO NURSERY AND SEEDSMEN

TO BE SOLD, by PRIVATE CONTRACT, that old and long-established NURSERY and SEED BUSINESS, Brompton-Park Nursery, carried on for many years by Messrs. GRAY, ADAMS, and HOGG. The situation is first-rate, and the connection good.—For particulars, apply to Mr. JOHN SANGSTER, Nursery Seedsman, Newington Butts, London; Mr. ROBERT DONALD, Nurseryman, Woking, Surrey; or to SOLE and TURNER, Solicitors, 68, Aldermanbury, London.

TO BE LET for a term, from Michaelmas next, a compact FARM, Corn Tithe Free, with suitable house and Farm Buildings, well situated, within five miles of Southampton, comprising 84 acres of good Arable and Pasture Land in a good state of cultivation.—For particulars, apply to Mr. THOMAS LONGLAND, Hounsdown Cottage, Eling, near Southampton, Hants.

SUSSEX.

TO BE LET for a term of years, and entered upon at Michaelmas next, the Farm of WOTTON, in the Parish of Folkington, at present in the occupation of Mr Shoosmith. It consists of about 409 acres of Meadow, Pasture, and Arable land the Arable land is most productive of Beans and Wheat: most of the Pasture and Meadow land is of the richest fattening quality. There is an excellent Farm-house, with every convenience, and the Farm-buildings are large and commodious, and economically fitted up and arranged for fattening a large number of beasts in feeding-houses, stalls, sheds, and yards. The Farm is about four miles from Hailsham and Eastbourne, 10 miles from Lewes market town, and one mile from the Polegate station on the Lewes and Hastings Railway. For particulars, apply to Mr. JOHN MORTON, Whitfield, Berkeley, Gloucestershire. A person at Folkington Place will show the Farm

PONDER'S END, ENFIELD, MIDDLESEX.
TO MARKET GARDENERS AND OTHERS.

TO BE LET ON LEASE, 15 acres of Excellent Market Garden and Fruit Ground, upon which a commodious House and Premises have lately been built. The property is situated near the railway station. For particulars apply to Mr. THOMAS KNIGHT, Edmonton; or to Mr HENRY KNIGHT, Solicitor, 27, Bucklersbury, London.

GLASS PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, of Bristol, and of Nailsea, Somerset, beg to inform Engineers and others, that they are prepared to supply GLASS PIPES of from 1 to 4-inch bore, in lengths of from 3 to 7 feet—the lengths being less as the diameters of the bores increase.

TO THE FANCIERS OF DUTCH AND CAPE BULBS, &c.

COMPOUND CARBONISED ANIMAL MANURE.—This MANURE, which has already acquired such an established reputation in the cultivation of fibrous-rooted plants, is now also prepared specially for blooming in perfection Hyacinth, Tulip, Narcissus, Amaryllis, Ranunculus, Anemone, and every other kind of bulbous or tuberous-rooted flower It is therefore confidently recommended to be used in the culture of these, at the present period for planting them. So that no mistake may occur, parties, in giving their orders, are requested to be particular in stating whether it be for BULBS or other applications, that they require the manure, there being a material distinction in the constituent ingredients of the two sorts.

The cultivators of Carnations, Pinks, Auriculas, Polyanthuses, Chrysanthemums, Geraniums, Verbenas, Cinerarias, Roses, and other garden or greenhouse flowers that they may be planting or potting at this season, will do well in applying thereto the Carbonised Manure that is prepared for such description of plants.

The above to be had of HENRY COLES, Seedsman, &c., 32, Cranbourn-street, Leicester-square, in tin canisters of 1s., 1s. 9d., and 2s. 6d. each; or, in compact wooden boxes of 5s., by taking which a material saving is obtained, a consideration of some importance to those who may require the manure in larger quantity for beds, &c. Directions for use accompany each canister and package.

Parties who may wish to bloom, in a superior manner, their Hyacinths in Glasses, will have their desire fully gratified by using a CHEMICAL PREPARATION IN POWDER, supplied by H. COLES for that purpose, in bottles at 2s 6d each, a teaspoonful of it to every English pint of water, requiring merely to be dissolved therein, and the glasses kept filled with the solution, which is perfectly transparent.

H. C. has just received for sale, direct from HAARLEM, in fine condition, his extensive annual importation of DUTCH BULBS and ROOTS, a catalogue of which may be had on application to him.

AUTUMN SOWING.—POTTER'S GUANO.

MR. POTTER particularly recommends this season for using his Guano, as, if now committed to the earth, it is better adapted, when the spring returns, to yield to the growing crops the food they require in a fit state for immediate assimilation. The increase of chemical knowledge, as applied to agriculture, has enabled Mr. POTTER to make some important improvements in the manufacture of his Guano, which he now most confidently recommends to the use of all who wish to grow luxuriant crops at small expense.

In consequence of some unprincipled persons, once acting as Mr. POTTER'S agents, substituting their own compounds for the genuine article, the Proprietor is induced to recommend a direct application to himself at the Works, 28, Clapham-road-place, London. Where the quantity taken is adequate, an arrangement, as to carriage, will be made to the satisfaction of the purchaser.

PURE GYPSUM, in a state peculiarly adapted for the farmers' use, at the usual low price.—Please direct your orders, per post, to the above address.

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IMPROVED FOUR-HORSE PORTABLE STEAM ENGINES AND BOLTING OR THRESHING MACHINES.

FREEMAN ROE AND HANSON, Southwark Iron Works, and 70, Strand, beg to call attention to their Steam-Engines and Threshing Machines, which are more economical in fuel, for the quantity of work done, than any before the public. They may be seen any day at their works, Sumner-street, Southwark Bridge-road.—Water-rams for raising Water. Deep Well Pumps; Baths; Hot-water Apparatus; Fountains. Towns supplied with Gas or Water.

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SMITHFIELD CLUB, 1849.—The Annual Show of FAT STOCK will take place on Tuesday the 11th, Wednesday the 12th, Thursday the 13th, and Friday the 14th of December, 1849, at the Bazaar, Baker-street. The Printed Forms of Certificates for the entry of Stock and Implements, must be obtained from the Honorary Secretary, and returned to him, filled up and complete, on or before Saturday the 17th of November, 1849. B. T. BRANDRETH GIBBS, Hon. Sec., Corner of Half Moon Street, Piccadilly, London.

EASTERN COUNTIES RAILWAY.—Several alterations will be made in the Trains of the Company on the 1st proximo. For particulars see Time Books, which will be ready at all Stations on and after the 26th inst.
Bishopsgate Station, Sept. 22.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.

CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),
MANUFACTURERS OF IRON AND WIRE WORK, &c.,
22, PARLIAMENT-STREET, WESTMINSTER, LONDON; CASTLE-BUILDINGS, DERBY-SQUARE, LIVERPOOL; 128, HIGH-STREET, EDINBURGH; and 32, ST. ENOCH-SQUARE, GLASGOW, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

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The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

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Or a web of 100 yards, 18 ins. wide, will cost	..	£3	15	0
Do. of 100 yards, 24 ins. wide	.. ..	5	0	0
Do. of 100 yards, 30 ins. wide	.. ..	6	5	0
Do. of 100 yards, 36 ins. wide	.. ..	7	10	0

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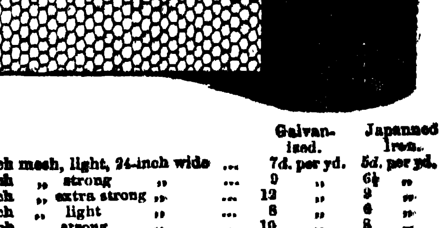

			Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...		7d. per yd.	5d. per yd.
2-inch ,, strong ,,	...		9 ,,	6½ ,,
2-inch ,, extra strong ,,	...		12 ,,	9 ,,
1½-inch ,, light ,,	...		8 ,,	6 ,,
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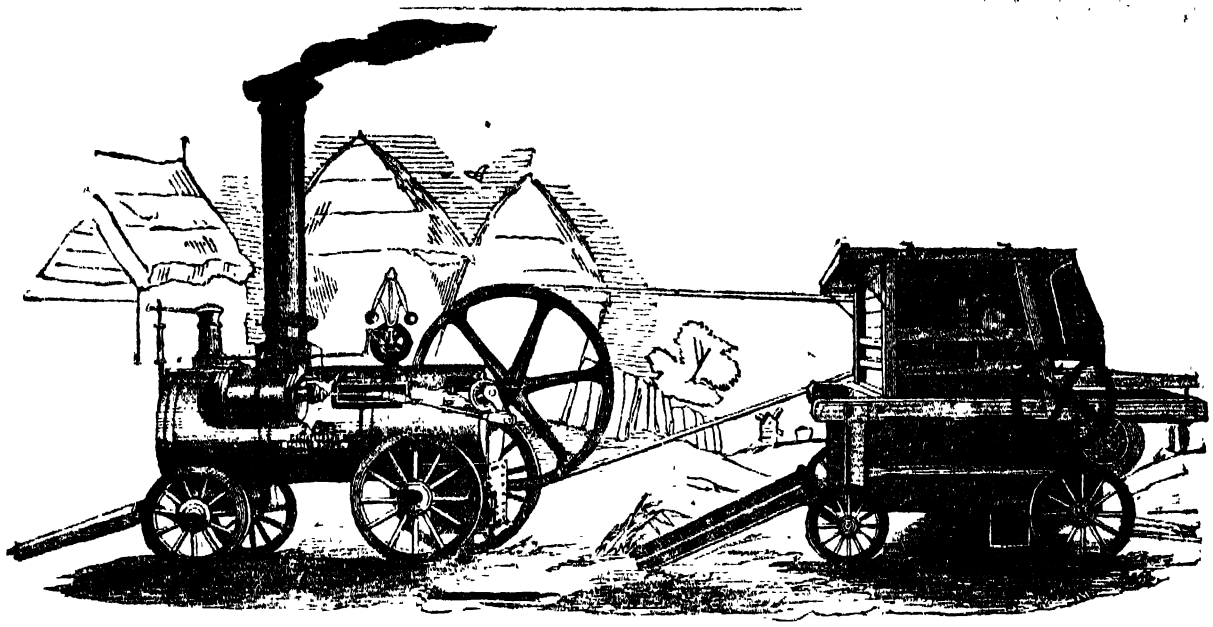

The principal Prize of 50*l.* for the best Portable Steam Engine, for Threshing and other Agricultural purposes, and the Prize of 25*l.* for the best Threshing Machine, were both awarded to R. GARRETT AND SON, of Leiston Works, at the Royal Agricultural Society's Meeting, at Norwich, July, 1849.

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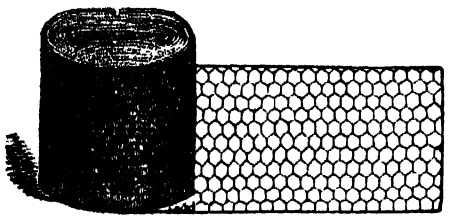

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No. 39—1849.] SATURDAY, SEPTEMBER 29. [PRICE 6*d.*

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ORCHIDS FOR SALE, by Private Treaty.—A collection of upwards of 100 plants, containing many fine specimens of all the leading genera, the property of an amateur. For particulars, apply to R. PLANT, Florist, Lee-green, Kent.

NEW FANCY GERANIUM.

EDWARD GEORGE HENDERSON, Wellington Nursery, St John's Wood, London, has to offer the exceedingly beautiful and very distinct new fancy Geranium ALBONI, at 10*s.* 6*d.* each, which he will commence sending out on the 15th of October. The upper petals are of a deep rosy purple, with a light edging of bush, the under petals blush white and sometimes blotched. The flower and truss large, a most profuse bloomer, and retains its flowers as long as the Queen Victoria Geranium. A drawing of the flower (by Holden) may be seen at the Nursery.

E. G. H. can strongly recommend the above Geranium, and has no doubt it will prove one of the greatest favourites ever sent out, as it continues in one sheet of bloom for such a lengthened period.

N.B. The usual allowance to the Trade, and for every three plants ordered four will be given.—Sept. 29

NEW CINERARIAS

EDWARD GEORGE HENDERSON, Wellington Nursery, St. John's Wood, London, will, on the 15th of October, commence sending out the following new Seedling CINERARIAS, raised by him, and would advise intending purchasers to lose no time in sending their orders, as the strongest plants will be sent off first, and all orders executed in strict rotation.

ADELA VILLIERS, a beautiful rosy crimson and white flower, in equal proportions, of first-rate form, large size, and surpassing in all its points every other flower known	10*s.* 6*d.*
ANGELIQUE, carmine, white disc, distinct and novel colour	5 0
BESSY, fine rich plum, a beautiful, distinct, and striking colour	5 0
CARLOTTI GRISI, a clear white, slightly tipped with light blue, fine form	7 6
DELIGHT, rosy lavender, distinct and new colour, a neat dwarf flower	5 0
EMPEROR, rosy crimson, large bold flower, and very showy	5 0
FLORA M'IVOR, rich brilliant crimson, one of the best of its colour, of free growth, and excellent habit	7 6
LADY GERTRUDE, bright dark blue, large flower, fine form	5 0
NYMPH, a clear white, violet-purple disc, form good, flower cupped, a very desirable variety	5 0
PAULINE, a violet plum, shaded with crimson, fine broad petals, exquisite shape	10 6
WEDDING RING, petals divided with white and crimson, the latter predominating, fine dark disc, neat chaste flower, of fine form, and a striking variety	5 0
WELLINGTON, petals equally divided with white and purplish crimson, maroon disc, flower of fine form, large, and beautifully cupped	5 0

N B. When the above set is taken, the price will be 3*l.* 10*s.*, and if three sets are taken, four will be given, or three plants of any one sort, four plants will be given.

E. G. H. begs to observe that the above may be relied on as possessing the desirable qualities necessary for a good Cineraria, being compact in their habit, and producing a fine mass of flowers equally expanded The usual allowance to the trade.

GERANIUM, "THE QUEEN OF SUMMER"

EDWARD GEORGE HENDERSON, Wellington Nursery, St. John's-wood, London, is now receiving orders for the above beautiful SCARLET GERANIUM, which will be sent out on and after the 15th October, at 7*s.* 6*d.* each. This is a very fine free blooming and ornamental variety, equally suitable for pot culture or bedding. It partakes of the close habit of Tom Thumb, but is much superior in point of growth, and very distinct. The stems are variegated, the flower-stalks white, the leaf beautifully transparent in appearance, and quite ornamental in itself. It blooms most profusely in large trusses of dark scarlet flowers, thrown well out from the foliage; and with all its good qualities, will certainly prove one of the most beautiful, unique, and desirable scarlets for bedding yet out.

N.B. The usual allowance to the Trade, and when three plants are ordered, four plants will be given.

GREATEST NOVELTY OF THE SEASON—WILL GIVE A NEW FEATURE IN THE FLOWER GARDEN.

JOSEPH SMITH, NURSERYMAN, Westerham, Kent.

To be sent out the 1st of October,
GERANIUM HYDRANGEÆFLORA.
" ROSEA FLORIBUNDA.

J. S. begs to inform his friends and the public that he intends to send out his two beautiful rose-coloured GERANIUMS, so much admired by every one that has seen them, for their profuseness of bloom and beautiful foliage. The brilliant green of the foliage is admirably revealed by the distinct marking of the horseshoe.—For particulars, see Answer to Correspondents, in the Gardeners and Farmers' Journal, August 25, under the signature "J. S., Kent."

J. S. recommends the above Geraniums to his friends and the public, with the greatest confidence, to those who may honour him with their orders. Good plants 5*s.* each, the usual allowance to the Trade when three plants are taken.

CHOICE GERANIUMS AT LOW PRICES.

WILLIAM E. RENDLE AND CO., Plymouth, have this season a very excellent stock of the following Geraniums, which will be ready the first week in October.

Purchasers' selection of TWENTY, from the following list, for 30*s.*

HOYLE'S CRUSADER, ARNOLD'S VIRGIN QUEEN, Sir Robert Sale, Black Prince, Star of the West, Lady Ebrington, Mercury, Jenny Lind, Scarlet Defiance, Rosy Circle, Nourmahal, Mount Etna, Desdemona, Remembrance, The Peri, Hebe's Lip, Pluto, Forget-me-not, Sir W. R. Gilbert, Flora's Flag, Zenobia, Isabella, Standard of Perfection, Sirius, Duchess of Leinster.

HOYLE'S CRUSADER and ARNOLD'S VIRGIN QUEEN, for 12*s.*

Early orders are desired, as some of the sorts are scarce.

Apply to WILLIAM E. RENDLE and Co., Union road, Plymouth.

Our New Catalogue of Hyacinths and other bulbs is now ready, and can be had on application.

SPLENDID NEW GERANIUMS.

MESSRS. VEITCH AND SON have now ready for delivery strong, well-established Plants of the following beautiful varieties, which they can confidently recommend.

Aspasia, Gaines'	15*s.* 0*d*	LadyClementine,Gaines'	15*s.* 0*d*
Belle of the Village, Hoyle's	10 6	Lyra, Gaines'	15 0
Berengaria, Wood's	7 6	Meleager, Gaines'	15 0
Brilliant, Topping's	10 6	Refulgent, Beck's	10 6
Crusader, Hoyle's	15 0	Rolla, Hoyle's	10 6
Elegans, Topping's	10 6	Sparkler, Hoyle's	10 6
Flamingo, Hoyle's	7 6	Star, Beck's	10 6
		Superlative, Hoyle's	7 6

This set of 15 for 6*l.* 6*s.*, or a selection of any 12 for 5*l.* 5*s.*—Parties taking Geraniums to the amount of 5*l.* 5*s.* will have a strong plant of Symons' Field Marshal sent gratis on the lot.—A general list can be had on prepaid application.

Exeter, Sept 29.

BECK'S PELARGONIUMS, AND OTHER RAISERS' FLOWERS.—Now ready for selection and going out. Twelve of the following Varieties, including box and carriage to London, will be forwarded in exchange for Post-office Order on Brentford for 2*l.* 2*s.* They are well rooted in 3 inch pots and ready for an immediate shift into a larger size.—Bianca, Centurion Cracker, Forget-me-not, Ariel, Cassandra, Cineria, Gustavus, Guilelma, Grandiflora, Juno, Negress, Rosamund, Sundown. Or, nine of the above, and Hoyle's Crusader, or Topping's Brilliant, or Foster's Victory.—EDWARD BECK, Wotton Cottage, Isleworth.

Saffron Walden, Sept. 29, 1849.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER is now sending out good strong Plants of his unequalled collection of Hollyhocks, comprising his new and choice seedlings of 1848 and 1849, which took the first prizes at the London and Norwich Horticultural exhibitions, open to all England, and wherever shown this season.

W. C. has also the entire stock of the late Mr. C. Baron.

A descriptive and priced list may be had, on application, by enclosing a postage stamp

Cash is requested on delivery of Plants. Post office orders payable at Saffron Walden.

NEW FANCY PELARGONIUMS.

W. AMBROSE begs to inform the admirers of this beautiful class of Pelargoniums that he will be prepared to send out, in the middle of October, for prepayment only, the following first-rate varieties, raised by himself, and which he can confidently recommend as show varieties or to adorn the Greenhouse or Conservatory, as they flower nearly the whole of the year round.

DEFIANCE.—Very dark maroon, with white belt all round, and pure white throat, of good size and form, a most profuse bloomer; admitted by all who have seen it to be the most distinct yet raised. 21*s.*

FORMOSA.—Beautiful rosy crimson upper petals, shaded with purple; white ground—bottom petals clouded with the same colours; of strong habit and most profuse bloomer. 10*s.* 6*d.*

PICTURATA.—Upper petals rosy carmine, white ground, lower petals distinctly spotted with cherry, very dwarf habit, adapted for small pots, a most profuse bloomer. 10*s.* 6*d.*

BEAUTY.—A most distinct and showy variety; upper petals deep plum colour, shaded with purple, white ground; lower petals spotted with deep maroon; of robust habit, and a free bloomer. 21*s*

BEAUTY SUPREME.—Rosy lilac ground, clouded with purple; a fine bold trusser, of good habit; a fine show plant. 10*s.* 6*d.*

GARLAND.—Rosy purple ground, clouded with violet; of beautiful dwarf habit, and most profuse bloomer. 10*s.* 6*d.*

EMPRESS.—A fine bold show variety; white ground shaded with carmine, sweet-scented foliage, strong habit, and good bloomer. 10*s.* 6*d*

VILLAGE MAID.—A very distinct and pretty flower, marked with rosy lilac stripes. 7*s.* 6*d.* Most of the above have received Certificates of Merit at the London exhibitions.

The following Six first-rate fancy Pelargoniums in 4-inch pots, fit for exhibition in the ensuing season, 30*s.*: Modesta, Jenny Lind, Fairy Queen, Queen Superb, Magnifica, Minerva.

NEW SCARLET GERANIUM, "MAGNUM BONUM," 5*s.*—W. A. can with confidence recommend this as the finest formed scarlet in cultivation. See the opinion in the Gardeners and Land Stewards' Journal of Oct. 28, 1848: "W. A., Battersea: Your seedling is a beautiful flower, form excellent, flower medium size; the shortness of the footstalk gives a compactness to the truss that is highly desirable though not often attainable, colour a brilliant orange scarlet; from the specimens before us, we do not hesitate to pronounce it an excellent show variety, if cultivated to that end, and as a market variety, certain to give satisfaction either in the plant or as an addition to the bouquet, the elegant and fashionable accompaniment of almost every lady of the present day." The usual discount to the Trade.

W. AMBROSE having saved more seed of the Fancy Pelargonium than he requires for his own growing, begs to offer the same (which he can recommend as saved from new and first-rate varieties), at 2*s.* 6*d.* per packet.—Nursery, Battersea.

NEW GERANIUMS, STRONG PLANTS NOW SENDING OUT AT VERY LOW PRICES.

BASS AND BROWN have a large, strong, and vigorous stock of the following, well established in 4-inch pots. They are prepared to receive an immediate shift, and will make fine specimen plants for exhibition

NEW VARIETIES LAST SENT OUT.

The set of 18 in the following list	£3	18	0
12 varieties of ditto, our own selection	2	2	0
12 ditto, purchaser's selection	2	15	0

Or less than 12 at the prices attached.

Topping's Brilliant	10s 6d		Story's Mont Blanc, No. 1,	5s	0d
,, Elegans	5	0	,, Ditto, No. 2	5	0
Beck's Emelia	5	0	Hoyle's Flamingo	5	0
,, Princess	5	0	,, Prometheus	5	0
,, Refulgent	5	0	,, Rolla	5	0
,, Star	5	0	,, Sparkler	5	0
,, Symmetry	5	0	Whomes' Princess Helena	3	6
,, Sundown	5	0	,, Queen Victoria	5	0
,, Harlequin (Fancy)	3	6	,, Windsor Castle	5	0

Selections from the following first-rate varieties.

20 varieties, of our own selection	£1	5	0
12 Ditto ditto	0	15	0
20 Ditto, selected by purchaser	1	10	0
12 Ditto ditto	1	0	0

Viz. Armada, Aurora, Bacchus, Folly's Black Prince, Blanche, Cavalier, Camilla alba, Centurion, Cassandra, Clara, Competitor, Cracker, Duke of Hamilton, Empo, Fair Rosamond, Flora's Flag, Forget-me-not, Gigantic, Gulielma, Gustavus, Honora, Isabella, Jenny Lind, Minna, Mrs. M'Lean, Mrs. Brock, Negress, Painted Lady, Peri, Pericles, Priory Emperor, Rachel Superb, Rebecca, Rosamond, Rosa Mundi, Scarlet Defiance, and Star of the West.

A LARGE COLLECTION OF FINE OLDER VARIETIES, at 9s per dozen, our own selection, such as Josephus, Rosy Circle, Orion, Desdemona, Isabella, Mustee, Margaretta, &c

NEW CHRYSANTHEMUMS.

12 strong and bushy plants, best new varieties of last season, for flowering fine this autumn	£0	15	0
40 new and select (including the above)	1	0	0
24 ditto, 15s., 12 ditto	0	9	0

Goods carriage free to London, or any station on the London and Bury line, and extra plants sent gratis with orders of 40s. and upwards.

Our Autumn Catalogue is now ready, comprising our splendid collections of Ranunculuses, Gladiolus, Iris, early and other choice Tulips, Anemones imported Dutch Hyacinths, and other roots; select Roses, herbaceous plants, &c. &c.

Remittances requested from unknown correspondents. Post-office orders payable to Bass and Brown, or to Stephen Brown, Seed and Horticultural Establishment Sudbury, Suffolk.

SUPERB NEW FUCHSIA.

WM. SKIRVING begs to call the attention of the admirers of Fuchsias to his unrivalled seedling, "Lady Stanley," which he purposes sending out the first week in February 1850. It possesses in a high degree all the properties which constitute a White Fuchsia of the first class. It is decidedly distinct from all others now in cultivation, possessing the most beautiful white, transparent tube and sepals, contrasted with a dark corolla of unusual form and richness of colour. See *Gardeners' Chronicle*, August 5th, 1848, "Seedling Fuchsias, J. M. L." Also Gardeners' Journal, Sept 15, 1849, "Seedling Fuchsias, T. M. W." Price 10s 6d each. One added when three are taken.—Walton Nursery, Liverpool, Sept. 29.

PANSIES AND PINKS, new and selected show varieties, now ready for sending out.

PANSIES.

ELIZABETH.—Clean white, broad deep-blue belt, fine eye, large, and fine shape, 5s

PURITY.—Clean white, broad violet belt, fine eye, large, and fine shape, 5s.

AZURE, clean white, neatly edged with light blue, good eye, large, and fine shape, 5s.

ALFRED, yellow, edged with purple, fine eye, large, and good shape, 5s.

MISS STORKE.—Clean white, neatly edged with lilac, good eye, large, and fine shape, 5s.

VILLAGE MAID.—White, with broad purple belt, eye good, large, and fine shape, 5s

The above Pansies have been ordered by the oldest amateur growers in the west, who have said, "They are something like what we want."

12 of the following for 10s. Masterpiece, Mrs Bragg, Berryer, Prince of Waterloo, Lord Stanley, Blooming Girl, Beauty, Ophir, Purple Standard, Sampson, Supreme, Satirist, Mar. of Lothian, Zobdi, Empress, Winnifred, Sabina, and Mabel; the others 6s. per dozen.

PINKS.

CRISPIN.—A fine-shaped flower, of full average size, with broad petals, well laced with purple 5s per pair

ALNWICK.—A full sized flower, with high centre, broad petals, laced with rosy purple, 5s. per pair.

12 of the following for 10s Young's double X, Kirtland's Princess Royal, Great Britain, Gathes's Conqueror, Juliet, Jenny Lind, Lord John Russell, Berkshire Hero, Alfred Morrison, Emma, Mrs. Fry, Princess Royal Smith's Queen of England, Old English Yeoman George Glenny, Dauntless, Lady Mildmay, and King of the Purples, others 6s per dozen. If required through the post, they will be sent free, if otherwise, hamper and package free.

Pink, Pansy, Ranunculus, Petunia, and half-globe Aster seed in packets 2s. 6d. and 5s. each, from the same stock S. W. makes use of himself.

Samuel Walters, Florist, Hilperton, Trowbridge, Wilts

TO NURSERYMEN, FLORISTS, &c.

JOHN BETHAM, Member of the Committee of the Royal South London Floricultural Society, Custom House and General Forwarding Agent, begs to inform the above that he continues to receive and forward consignments of plants, seeds, &c., with strict attention, despatch, and moderate charges. Information given as to the arrival and departure of vessels to and from Hamburgh, Rotterdam, Ostend, Antwerp, Havre, Boulogne, and Calais, also to the United States, Scotland, &c.—Address, Cox and Hammond's Quays, Lower Thames street, London.

FIRST-CLASS GERANIUMS AT VERY REDUCED PRICES.

HENRY WALTON begs to inform his Friends and the Public that his AUTUMN CATALOGUE is now ready, and may be had for one stamp, containing the leading varieties of Geraniums, Fuchsias, Petunias, Pinks, Carnations, &c. 12 of the best Geraniums sent out last autumn for 2l. 2s., including Hoyle's Crusader and Arnold's Virgin Queen.

NEW SEEDLING GERANIUM.

ANTAGONIST (Walton).—Upper petals deep claret, margined with rose; lower petals blush, with pure white centre. The great consistency of the petals of this flower constitute its great claim to admiration. Price 15s. The usual allowance to the Trade, with one over on every three ordered.

H. W., in offering the above Seedling Geranium, feels confident of its giving entire satisfaction, having this season been seen by competent judges, who have pronounced it first-rate in its class. Strong plants now ready.

PINKS.—The finest first-rate show flowers, post free, 6s., 9s., and 12s. per dozen.

All orders must be prepaid, and be made payable at Burnley Edgend Marsden, near Burnley, Lancashire.—Sept. 29.

ALEXANDER LAING, Nurseryman, Beverley, begs to inform the public that he will send Atkinson's new Seedling FUCHSIA "ALBONI" out the second week in October, at 5s. 6d. each; no discount, but one plant will be given over for every three ordered. A. L. begs to refer to extracts from the *Gardeners' Chronicle*; also to the Gardeners' and Farmers' Journal.

(*From the Gardeners' Chronicle.*)

"Fuchsias: *A. L.* Very much reflexed in the lobes of the tube, and distinct on that account from most others, colours of the tube pale blush; corolla rosy pink; flowers good in texture, colours, and proportions, but rather small."

(*From the Gardeners' and Farmers' Journal.*)

"Atkinson's Alboni, an excellent variety of unusual attractions; tube short, stout, but well proportioned: colour, blush; sepals broad, obtuse, and well expanded, the same tint as the tube, tipped with pale green, flushed a shade or two deeper on the inner portion; corolla excellent, describing half a circle. The peculiar attraction of this flower consists in each petal of the corolla being beautifully and distinctly margined with bright rosy scarlet on a pale blush ground, the inner portion being beautifully tinted with the same. We consider this a novelty, for such decidedly is an acquisition to any collection."

SELECT PANSIES.

HENRY MAJOR, Knosthorpe, near Leeds, begs to announce that he has now ready for sending out healthy plants of his five beautiful PANSIES, viz., Julien, Indispensable, Sultan, William Henry, and Knosthorpe Gem; the five for 10s., post free. Also the following first-rate kinds, for 18s., post free.—Youell's Androcles and Ariel, Major's Julien, Indispensable, Sultan, William Henry, and Milton; Schofield's Canary and Negro, Hunt's Disraeli, Bell's Duke of Norfolk and Yellow Climax. Very select Pansy and Calceolaria seed, 2s. 6d. and 5s. per packet. From unknown correspondents a remittance is respectfully requested with the order.

CONWAY'S "JENNY LIND."—JENNY LIND.—Cherry pink, fine, good shaped flower; plants, 3s. 6d.; Royalist, 2s; Rosy Morn, 1s. 6d., Symmetry, 1s. 6d.; Queen, improved, fine, 1s. 6d., Tom Thumb's Master, 1s 6d.; Tom Thumb, improved, 1s; Tam O'Shanter, 1s 6d.; Ibrahim Pacha, 1s. 6d., Gem of Scarlets, 1s. 6d., Mrs. Maylor, 1s; Punch 1s, Pink Nosegay, 1s.; Ivy Scarlet, 1s., Lucia Rosea, 1s. The set of 16 for 20s.

PETUNIA, CONWAY'S "BEAUTY SUPREME"—The habit of the plant forms a compact close bush, studded all over from the ground upwards, with a dense mass of most showy deep purplish crimson flowers; good strong plants, 1s. 6d.

VERBENAS.—Fine collection of the newest variety, 9s. to 12s. per dozen.

Mary Conway, Earl's-court Nursery Old Brompton.

ROSES, &c.

EDWARD DENYER Nurseryman, Loughborough-road, Brixton, near London, informs his Patrons his fine collection of AUTUMNAL ROSES may now be seen in full bloom, also his annual importation of DUTCH ROOTS have arrived in fine condition. He also invites attention to his extensive stock of FRUIT AND ORNAMENTAL TREES AND SHRUBS of the finest growth, of all sizes Gardens and Pleasure Grounds laid out and planted to any extent.

E. D. is desirous of informing his customers he has no seed shop in London. A general list sent on a prepaid application, by inclosing a twopenny stamp

IVY FOR SALE.—Some of the finest IVY grown in England, of different sorts, at a very moderate rate as the proprietor intends to clear it off his grounds.—Apply to Charles Warl, Carpenter, Sutton, Surrey.

ROSE AMATEURS are respectfully informed that A. Paul and Son's Descriptive Catalogue of ROSES for the present season may now be had on application, enclosing two stamps for postage.—Cheshunt Nurseries, Herts

ROSES.—The Descriptive Catalogue of H. LANE and SON, Great Berkhampstead, with a Supplementary List of those best suited for Forcing, Grouping, Training on Trellis, Weeping, &c., is now ready, and applicants will be supplied with a copy by enclosing two postage stamps

PINUS (ABIES) DOUGLASII, DOUGLAS'S PINE The Subscriber having succeeded in raising from seed a fine stock of this most MAGNIFICENT CONIFER, now offers them for sale, and which is thus described by Dr. Lindley, in the *Gardeners' Chronicle* of October 17, 1846, page 691—"Height, 215 feet greatest circumference, 57 feet 9 inches, at 187 feet high, 17 feet 5 inches, which by calculation must contain 237 loads of timber" This description of its magnitude, the several beautiful specimens now growing at Dropmore (and some few other places), and planted when first introduced 18 years since, seem likely to realise, having made an average growth of 3 feet per annum on ungenial soils. Strong healthy plants, 6 inches high, in pots 2 years old, 10l. per 100, 30s per dozen 3s 6d single plants. A few fine specimen plants, 3 to 5 feet, 7s 6d to 42s each W Rogers, Nurseryman and Contracting Planter, Red Lodge, near Southampton.

WHEEL BAROMETERS, all Sizes and Patterns, from 1l. 5s. to 5l. 5s.

PEDIMENT OR UPRIGHT BAROMETERS, 1l. 1s. to 6l. 6s.

STANDARD BAROMETERS for minute observation, 5l. 5s to 20l., according to the size of the tube. The above Barometers may be sent into the country without fear of injury, being made portable for carriage.

THERMOMETERS for Registering the extremes of heat and cold, of the best construction, 1l. 10s., 18s., and 15s.; ditto for Registering Cold only, 1s. 6d to 6s. 6d., ditto for Baths or Hot Water in Copper or Japan Cases, 2s 6d to 14s, ditto for Hot-beds, to show the bottom-heat, 15s. to 1l. 5s.. Superior Achromatic microscopes, price 3l. 12s., 5l. 15s., and 9l. 10s. Compound Microscopes, 10s. to 2l. 10s. Telescopes, 1, 2, and 3 draw, from 15s. to 2l. 2s; ditto for the pocket, 12s. to 3l. 3s. Mason's Hygrometer for showing the degree of humidity in greenhouses, sick chambers &c., 15s and 1l. 10s. Lactometers for showing the quality of Milk, 5s. Drawing instruments, in sets, from 10s. to 4l. 4s. Magic Lanterns, with 12 slides, from 10s. to 2l. Dissolving View Apparatus, lent out for the evening, 7s 6d and 10s.

Every instrument warranted and exchanged, if not approved of. Gentlemen wishing for the prices and descriptions of any of the above, may have them by writing to that effect.—Henry Baker, Instrument Maker to the Board of Admiralty, 90, Hatton Garden London.

NOTICE.

HOT WATER APPARATUS erected at less than the cost of Flues, by E. Eley and Co., 2, Pentonville-hill, near King's Cross, London, Hothouse Builders and Hot-water Apparatus Manufacturers, for warming Greenhouses, Pits, &c. Several portable Greenhouses and Conservatories requiring no brickwork, and can be erected and removed by any labouring man; also very neat, portable, Potting Sheds. Being practical and working men, enables them to offer the same very low. Can be highly recommended by several noblemen and gentlemen, where the work has given the greatest satisfaction. Plans, models, and estimates free. Melon and Cucumber Boxes, Hand Lights, &c.

N. B. Work done for the Trade.

TO THE FANCIERS OF DUTCH AND [illegible] BULBS, &c.

COMPOUND CARBONISED ANIMAL MANURE.—This MANURE, which has already acquired such an established reputation in the cultivation of fibrous-rooted plants, is now also prepared specially for blooming in perfection Hyacinth, Tulip, Narcissus, Amaryllis, Ranunculus, Anemone, and every other kind of bulbous or tuberous-rooted flower. It is therefore confidently recommended to be used in the culture of these, at the present period for planting them. So that no mistake may occur, parties, in giving their orders, are requested to be particular in stating whether it be for BULBS or other applications, that they require the manure, there being a material distinction in the constituent ingredients of the two sorts.

The cultivators of Carnations, Pinks, Auriculas, Polyanthuses, Chrysanthemums, Geraniums, Verbenas, Cinerarias, Roses, and other garden or greenhouse flowers that they may be planting or potting at this season, will do well in applying thereto the Carbonised Manure that is prepared for such description of plants.

The above to be had of HENRY COLES, Seedsman, &c., 32, Cranbourn street, Leicester-square, in tin canisters of 1s., 1s. 9d., and 2s. 6d. each, or, in compact wooden boxes of 5s., by taking which a material saving is obtained, a consideration of some importance to those who may require the manure in larger quantity for beds, &c. Directions for use accompany each canister and package.

Parties who may wish to bloom, in a superior manner, their Hyacinths in Glasses, will have their desire fully gratified by using a CHEMICAL PREPARATION IN POWDER, supplied by H. COLES for that purpose, in bottles at 2s. 6d each, a tea-spoonful of it to every English pint of water, requiring merely to be dissolved therein, and the glasses kept filled with the solution, which is perfectly transparent.

H. C. has just received for sale, direct from HAARLEM, in fine condition, his extensive annual importation of DUTCH BULBS and ROOTS, a catalogue of which may be had on application to him.

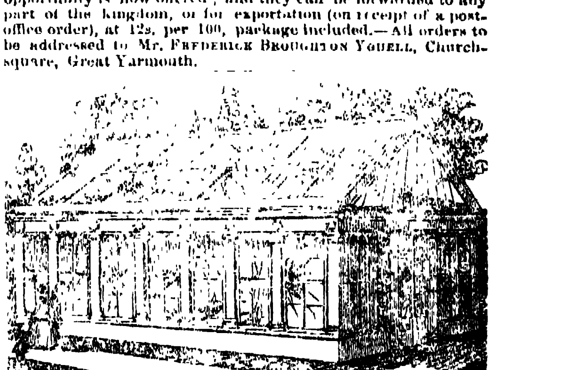
HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, FERNS, &c.

J. WEEKS and Co., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. They have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. By means of these houses, they are enabled to grow Stove, Greenhouse, Ferns, and other Plants, in such immense numbers, that they are sold at LESS THAN HALF-PRICE. Mats, Mushroom Spawn, and everything connected with the Nursery and Seed departments; Plans, Estimates, and Catalogues forwarded on application

YARMOUTH BLOATERS—GENUINE AND OF THE FINEST QUALITY.

Yarmouth has for centuries been justly celebrated for its well-known "Yarmouth Bloaters," the delicacy of which, when obtained in their genuine state, requires no comment Such an opportunity is now offered; and they can be forwarded to any part of the kingdom, or for exportation (on receipt of a post-office order), at 12s. per 100, package included.—All orders to be addressed to Mr. Frederick Broughton Youell, Church-square, Great Yarmouth.



GRAY, ORMSON, and BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

Gray, Ormson, and Brown, have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.

NORFOLK.

WANTED, a Small Occupation of 100 to 150 acres of highly cultivated first-rate LAND, in the above county, subject to Norfolk covenants.—Address, O. Silcock, Braintree, Essex.

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15l. 10s.; a do. do. 15 by 10, 22l. 10s.; a do. do. 18 by 12, 28l. 10s.; a do. do. 21 by 12, 32l. 10s., including a plan for brickwork. 1½-inch Greenhouse Lights, glazed with 16-oz. sheet glass, painted three times, 11½d. per foot; 2-inch do., 1s. per foot.—J. Lewis's Machine Hothouse Works, Stamford-hill, Middlesex.

NEW GERANIUM.
SYNONYM "FIELD MARSHAL."

THIS is a striking and Noble Flower, with a remarkably fine habit, great freedom of bloom and substance of petal. The truss is large and thrown well above the foliage, on most erect foot-stalks; the colour of the upper petals is a deep rich scarlet, with an intense dark spot, the lower petals are fine crimson. It is a most decided improvement, and will make an admirable show variety. Its only fault is an occasional unevenness in the upper petal. It was exhibited at the Seedling Geranium Exhibition at Upton Park, on the 15th of June last, when it was one of the four that received prizes. See report of the Exhibition, and description of flower, in No. 19 of the "Florist."

Messrs. VEITCH and Son are now prepared to send out strong well established plants of the above at 31s. 6d., with the usual discount to the trade.—Exeter, Sept. 20.

JOSEPH BAUMANN, NURSERYMAN, Ghent, Belgium, begs to inform his friends and the public in general, that his New CATALOGUE of PLANTS is just published, and may be had gratis, or will be sent post-free on application to Mr. JOHN BETHAM, Custom House and Shipping Agent, Cox and Hammond's Quays, Lower Thames-street, London.

AMERICAN PLANTS.

HOSEA WATERER begs to announce he has just published a New and Complete Catalogue of his AMERICAN and CONIFEROUS PLANTS, which may be had on application, inclosing two stamps for postage to

HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

SHEPPARD'S "WINTONIA" GERANIUM will be sent out the first week in October next. Good strong plants, in 60 size pots, 14s. each; in 48 size pots, 21s each. The usual discount to the Trade. JAMES SHEPPARD, Nurseryman and Florist, begs to observe that his WINTONIA is an excellent shape, and a first-rate fancy variety.—Agents in London: Messrs. HURST and M'MULLEN, Seedsmen, 6, Leadenhall-street; Mr. N. GAINES, Nurseryman, Battersea. Mr. W. IVERY, Nurseryman, Peckham.

J. S. has a good stock of the under-named varieties, at 1s. 6d. each, viz., Sheppard's Beauty of Winchester, Sheppard's Queen Victoria, Sheppard's Lady Rivers, Sheppard's Lady Flora Hastings, Sheppard's Princess Alice Maud.

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NEW ROSE CATALOGUE.
WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WILLIAM WOOD AND SON have the pleasure of announcing that their DESCRIPTIVE CATALOGUE of NEW and SELECT ROSES is now published, and will be duly forwarded to all who have favoured them with their commands; to other parties it will be sent free on application. Many new and very desirable Roses are enumerated and described in the present Catalogue.

ARNOLD'S VIRGIN QUEEN GERANIUM is the best WHITE flower in existence. It is a seedling of 1847, from which nine plants were procured, all of which bloomed magnificently last season, more than 350 EXPANDED BLOSSOMS *being counted on them at one time*, amongst which immense number only one imperfect flower was to be seen.

It can be strongly recommended, and will be sure to give the greatest satisfaction. Price 7s. 6d. each, or, including a plant of that excellent flower, HOYLE'S CRUSADER, *for* 12*s*.

Apply to WILLIAM E. RENDLE & Co, Union-road, Plymouth.

Our Dutch Bulbs have just arrived in excellent condition. Catalogue on application, gratis.

PLANTING SEASON.

ALFRED BALSTON begs to inform planters he has still a large proportion of his Nursery Stock to dispose of, which, in consequence of having relinquished the trade, he offers at very reduced prices. The Stock comprises every variety of ORNAMENTAL, FRUIT, and FOREST TREES, and all the best kinds of SHRUBS in cultivation, no expence having been spared in the collection, and from the light nature of the soil in which it has grown, the plants have all a mass of fibrous root, which causes them to grow most luxuriously after being transplanted.

A. B. particularly recommends the following common Laurel, 9 inches to 1 foot, 15*s*; 1 to 2 feet, 30*s*.; 2 to 4 feet, 40*s*.; 4 to 6 feet, 80*s*. per 1000. Portugal Laurels, 1 to 2 feet, 10*s* per 100. Rhododendron ponticum, 1 to 2 feet, 30*s*.; 3 to 4 feet, 60*s*.; 4 to 5 feet, 100*s*. per 100. Ghent Azaleas of all the finest kinds, specimen plants, 2*s*. 6*d*. each; smaller ditto, 6*s*. per dozen. Rhododendron campanulata, caucasicum, catawbiensis, &c., 100*s*. per 100. Standard Roses of all the finest sorts, 12*s*. per dozen. A large stock of Evergreen Oak in pots and transplanted; also common Oak, Elm, Beech, Birch, Berberis, Hornbeam, Privet, &c.

Orders must be accompanied by remittances. Orders amounting to 5*l*. delivered free.—Poole Nursery, Dorset.

The Gardeners' Chronicle.

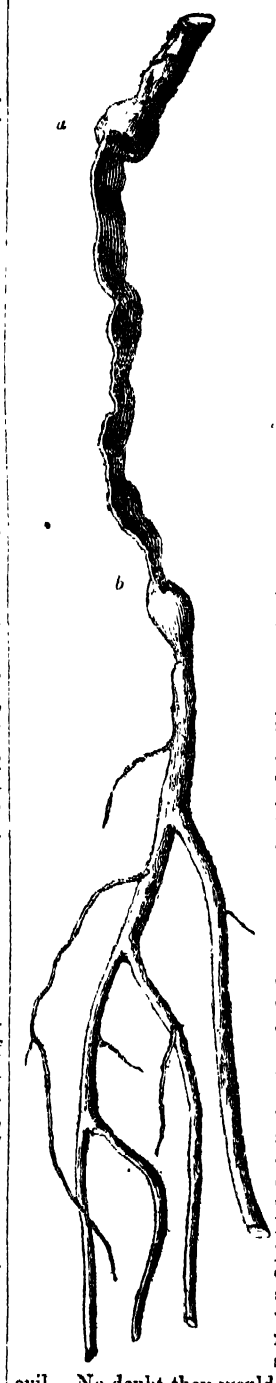
SATURDAY, SEPTEMBER 29, 1849.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY,	Oct.	2—Horticultural	1 P.M.
FRIDAY,	—	5—Botanical	1 P.M.

A FEW weeks since (p. 517) we published a very interesting letter, signed "W.," giving an account of the manner in which some DRAINS had been choked by roots in one of the northern counties. It stated that a line of "pot-pipes," from 40 to 50 feet long, *socketed and cemented and intended to be perfectly closed throughout*, laid down about 20 years ago, had become so obstructed that as many as five years since no water had been able to pass; the pipes had, therefore, remained serviceable less than 15 years. They had been carried through a plantation; and there the mischief had been caused. In the side of one of the pipes there had been a chink, unobserved by the workman who made the drain, and through that chink some tree had insinuated the point of one of its fibrous roots. Once inserted, the point lengthened and divided, and lengthened and divided over and over again, till at last the interior of the drain was entirely filled by an entangled mass of fibres which had pressed so firmly against each other as to form, in some places, a tolerably perfect mould of the cavity. The noble lord to whom we were indebted for this communication justly observes that if roots can thus be introduced into such a drain as one of socketed and cemented pot-pipes, we have "a conclusive and unanswerable proof that no collars, and no care in adjusting ordinary drain pipes, can secure them against such contingencies."

As we have formerly remarked, this is one of the most important questions that can possibly be raised in horticulture and agriculture; for of what avail are the great sums which are now sunk in draining, if, at the end of a few years, all the pipes are to become inactive? The way in which the root in question introduced itself into the pipe is that in which roots have been found to act in other cases. There is somewhere on record the history of a Melon plant which sent a fibre through a brick wall into a tank of water, and when there it too divided into countless ramifications, so as nearly to fill the tank in the course of the summer. From their peculiar nature, roots are always capable of doing the same thing. Roots lengthen, not by extension, but by perpetual additions of very soft cellular matter to their points. That matter is in fact in the beginning mere mucilage, capable of organisation. A small portion of this mucilage finds itself in contact with a minute cleft; conditions, the real nature of which is unknown, cause the mucilage to press against the cleft; the mucilage is introduced, it organises, solidifies, and the point of a root is established in the cleft. The point forms more mucilage in advance; that also solidifies, and a further lodgment is made; and thus the growth goes on, through all the sinuosities of the narrow passage that it traverses. In the annexed figure of "W.'s" root, the space from *a* to *b* represents the part where the root passed through the pipe, which must have been nearly 2¼ inches thick; the root, there, was as thin as paper, and had followed every bend in the crack. As soon as it reached the inside of the pipe (at *b*) it swelled, acquired its usual cylindrical form, and thence proceeded to develop and branch in the manner already described. The thin connecting plate was sufficient to maintain the vitality of the roots for many years; the roots were not dead, indeed, when we received them the other day, although the pipes had not run for five years.



If one single point of any one of the myriads of roots that abound in all soils, when once brought, under favourable conditions, into contact with a crack in a drain-pipe, is sufficient to obstruct a whole run of water, there would seem to be no hope that the common all fitting tiles and pipes employed in ordinary draining, presenting fissures at every inch, would be otherwise than choked: and such has already been the fate of many, as is too well known. Whether this can be prevented, is a most serious question. We do not believe that it can where drains pass though plantations, unless iron or glass pipes, proved beforehand, are employed. Our correspondent suggests that the old stone drains of former days would offer some security from the evil. No doubt they would, if they were of such a diameter that the inside could be cleaned out like a sewer; but we have, within 80 yards of where we are now writing, an example of a 3 feet culvert about 50 yards long, passing through shrubberies, which has become so obstructed by roots that it is every year becoming more and more useless. In point of fact, no subterranean water-courses can be constructed in which roots will not form, and with extraordinary rapidity, if they can but get into them. The other day a well at Putney became dry; and upon examination it was found that the open brick-work, forming its sides, had become so coated with a thick layer of roots in the form of peat, that no water could pass through *laterally*. A specimen of them is, we believe, preserved in the museum of King's College, London.

It is probable, however, that this evil may be mitigated, if not removed, by a few simple precautions.

Deep drains will be more exempt than shallow ones, for fewer roots will reach them.

No drains should pass near trees; especially Ash, Sycamores, Alders, Poplars, Willows, Limes, Elms, Privets, and Laurels. All these form fibrous roots with great rapidity. It is not possible to say what kind of root obstructed the drain described by "W.," but there was reason to suspect either a Sycamore or a Larch. It certainly was not the latter, as was proved by a microscopical examination of the tissue; it might have been the former. In addition to all other reasons why drains should not be near trees, this especially is to be noted, that the roots of trees are woody like the branches, and are formed in a ratio corresponding with the dimensions of the branches; once in the drain they will not die till the tree dies from which they sprang, and, being dead, it will be years before they rot away.

Clean land, with annual crops, will be little liable, because the roots of annuals are not deep, and if they get into the drains, will quickly die. Wheat roots, everybody knows, die rather sooner than the straw; in drains they will perish as if in earth, and rotting quickly may be washed out by the drain water. For this reason we think it doubtful whether such a plant as Beet will do *permanent* injury to drains, as is suspected. In foul land, on the contrary, overrun with Docks and Thistles, such as one sees where the soil is good and the rental low, drains will run the most imminent risk of early destruction; for not only are the tap roots of those plants peculiarly well suited to burrowing down to a line of drain pipes, but their roots are perennial, though their tops are annual. This is the case with all Docks, Plantains, Dandelions, Burdocks, and with many Thistles. Wherever such plants are allowed to flourish, there we consider the permanence of drains impossible.

The first thing, therefore, to keep drains clear is to keep land clean——and perhaps the only thing.

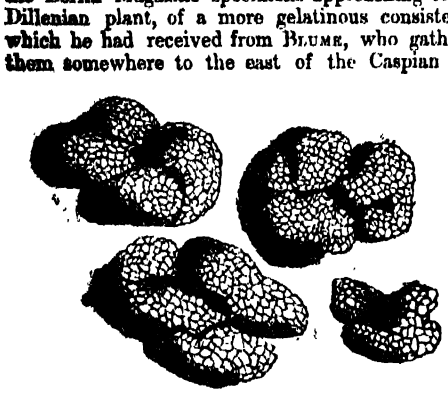
THE natural world is full of real mysteries and marvels, "bodied forth and evanescent." "no one knows by what device," and to those the credulity or ignorance of man has added many more, which vanish before calm inquiry or observation. Hence have arisen the greater part of the various reports with which we meet in our journals, of showers of frogs and other matters, which, under ordinary circumstances, could not be carried to any distance by the wind. Such histories, when inquired into, seldom bear investigation, and it is found, for the most part, that they rest upon the evidence of persons either unused to scientific inquiry, or too ready to adopt any report that falls in their way. The sudden appearance of large masses of vegetation where none was observed a few hours previously, is well known in the case of the common Nostoc. A dry bank, covered with scarce a vestige of Grass, or gravel walk, after a hasty shower, is copiously scattered with large gelatinous masses, which disappear almost as rapidly, to the common eye, under a burning sun; but the more minute observer will still recognise their withered relics, ready to revive under the first shower. To this cause also have been referred some of the cases of the sudden appearance of immense quantities of *Lichen esculentus*, PALLAS, and its allied forms or varieties, in Persia, Armenia, and Tartary, sometimes to the depth of several inches, where it had not been observed before; though others are not so easily explained, as it seems impossible that a substance eagerly devoured by the natives wherever it occurs, could possibly be overlooked in any district where it is abundantly produced, however closely it might resemble the stones amongst which it lies, especially as it does not shrink into a mere pellicle, but into masses, varying in size from that of a grain of sand to an inch or more in diameter. Hence we cannot at once reject the accounts which have been from time to time received, like that which has lately reached us from Erzeroom, of prodigious quantities falling from the skies in the course of the night, though no one has ever witnessed their descent. It is certainly possible that some of the heavy storms which traverse the enormous steppes in which it is evidently extremely abundant, might take up a quantity in their course, and transport it to Persia or Armenia.

AMMANN first discovered one of the forms of it in the neighbourhood of Orenburg, from whence it is well figured by DILLENIUS. PALLAS, towards the

end of the 18th century, described and figured that form or variety which is continuous or uniform within and contains the greatest quantity of nutriment, under the name of Lichen esculentus.

Lichen (or Lecanora) esculentus.

Treviranus, many years afterwards (1815) figured in the Berlin Magazine specimens approaching to the Dillenian plant, of a more gelatinous consistence, which he had received from Blume, who gathered them somewhere to the east of the Caspian Sea.



Lichen (or Lecanora) affinis.

Parrot brought specimens collected in the beginning of 1828, which were said to have descended from the skies in some districts of Persia, and to have covered the ground to the depth of 5 or 6 inches. Gübel analysed some of these, and believed them to have been carried by electric winds from distant localities. Ledebour, however, to whom they were submitted, and who recognised them as the plant of Pallas, having met with the production frequently in the Kirghiz steppes, and in Central Asia, had seen them spring with great rapidity after continued heavy rains, and believed that they must have been produced under similar circumstances in Persia, and it is observable that in all the accounts, the supposed descent is uniformly during rainy weather.

Eversmann had an opportunity of studying the species on the rivers Emba and Jaik, and also near Lake Aral, and was convinced that, even in the earliest stage of growth, there is not the slightest attachment even to a grain of sand, but that the thallus is developed freely, as was at first declared by Pallas. A species or variety has lately been found in large quantities in Algiers, which has attracted the notice of Link and others, amongst whom Treviranus informs us that specimens supposed to have descended from the clouds at Mount Ararat exist in the Museum of Natural History in the Armenian Convent of S. Lazzaro, in an island of that name near Venice.

The curious production in question is eaten both by men and animals in the several countries extending from Algiers to Tartary, where it is produced. The sheep, however, which feed upon it in Algiers do not thrive, in consequence, it is supposed, of the large amount of oxalate of lime which it contains, amounting, according to Göbel's analysis, to nearly 66 per cent.

The individual plants weigh from a few grains to two scruples or upwards, even when dry, and when swollen with moisture nearly twice as much. Pallas mentions another Lichen which is eaten by the Kirghiz Tartars, under the name of Earth-bread. This, however, has a very different habit, covering the surface of the steppes with a whitish grey crust and breaking into many fragments when the soil is dry. It appears to be eaten only in cases of extreme necessity, and is constantly accompanied by the common Nostoc.

The internal structure varies considerably in the different forms. In Lecanora esculenta, Eversmann, which is exactly the plant of Pallas, the central portion consists of loose threads, which gradually become more densely packed towards the circumference, forming an extremely close cellular network. In Lecanora affinis, Ev., which is the second form received from Erzeroom, the whole substance is compact, with few, if any, free threads.

We understand that a supply of the finest possible specimens of the Chasselas de Fontainebleau Grape has been obtained from Paris by the Horticultural Society, and will be exhibited at the meeting in Regent-street, on Tuesday next. This will give those who have never seen this celebrated Grape an opportunity of making themselves acquainted with its merits.

A GLANCE AT THE DIFFERENT MODES OF PROPAGATING ROSES.

The propagation of Roses involves many nice operations; we may say as many as any plant or flower in cultivation. They comprise layering, budding, grafting, suckers, and striking cuttings; and these operations in all their varieties.

Layering is a rapid way of getting strong plants, but you can only obtain as many plants as there are branches, therefore it is generally practised with those kinds which are not scarce, and which are wanted for use the next year — the Moss Rose which is grown so plentifully in pots and planted out in great abundance to produce cut flowers for market. The stool is planted out in rich soil, and generally we select a strong bushy plant for the stool; this is planted firmly and rather deep, all the branches are layered round. First measure the part at which the branch can be best bent to go underground, by pressing the branch down, and having fixed upon the place, cut a sloping cut not quite half through the branch, and pass the knife through a joint, that is, the place of a bud; cut off the lower part of the piece close up to the joint you passed the knife through, and carefully bend that part of the branch to the earth, which must be removed 1½ inch deep, and with a birch twig or a hook of any wood, like a hooked walking-stick in miniature, pin the shoot down firmly, so that it shall not be disturbed, and keep about two buds of the end out of ground, and if there be more shorten it. Let this be done in the autumn or winter, and the next autumn you will have strong plants well rooted, which may be cut off the parent stem as close to the rooted part as you can. In the mean time the old plant has sent up many young shoots fit to be layered for the next year.

Budding is a delicate operation, and the value of it is hardly calculable. In the operation of layering a whole branch is devoted to the production of a single tree, but in budding you may insure as many plants as you possess leaves, for on a Rose branch there is a bud at the base of every leaf. For budding you must prepare the requisite number of stocks, and of the varieties in use the common hedge Briar is the chief. These stocks are of various heights, according to the use they are to be put to. The tallest and best are for tree or standard Roses; these run from 4 to 6 feet; then we have them range from 2 to 3 feet, called half standards, and others are very short, cut close to the ground, for dwarfs. These stocks are planted as close as they can be well worked, say from 1 to 2 feet distance in the row, according to the room that can be spared. They are planted in well dressed soil, because it is desirable to excite very strong growth; when they begin to push their buds, it is necessary to examine them and rub off all but two or three of the highest, for on these you require all the strength, and this examination for the same purpose must be repeated several times, for the stock will make great efforts to grow, even after being cleared two or three times of superfluous buds; about Midsummer, or a week or two later, you will find that by cutting a slit along the bark you can raise it up from the wood, and in fact, if you wished it, you could strip off the bark like that of a Willow. At this period when the bark leaves the wood easiest and best, you commence your work of budding. Take a sharp knife, and on the upper side of a strong top shoot, make a slit in the bark, close to the main stem and up the branch, an inch long, through the bark, but not into the hard wood; make another slit across, near the top; with a thin piece of wood, or the thin handle of a regular budding knife, lift the bark a little on each side, and it will be ready for the bud; then take the Rose you intend to propagate, and select the bud you mean to use; shave off a piece with the leaf on it, by entering the knife a quarter of an inch below the leaf and slicing it out a quarter of an inch above it, then with the sharp point of the knife pick out the piece of wood that you have shaved off with the bark, and leave the bark only; slide this into the slit you have made in the stock till the bud is at the cross, and by cutting off the part above the bud, the bud with the leaf attached to it fits down close to the wood of the stock, and the bark of the stock covers it in complete; it is then bound down with a bit of matting or coarse worsted, and then unites. You may bud one only or all the shoots; generally if the branches come opposite sides two buds are put in, but no growth must be permitted, except the branches on which the buds are placed, and even these are shortened, enough growth being maintained to draw the sap past the bud. In a few weeks the ties may be taken off, and the bud is found completely united; the rest of the branch is then cut away one joint beyond the place budded, and they require no other attendance than an occasional examination to see that the stocks do not push out other branches, and so exhaust the strength that the buds require. This operation is performed in all nurseries to a great extent, and nearly all standard or tree Roses are produced by these means. Roses may be budded on China Rose stocks, and on any other rank growing varieties; but the Briar is the general favourite. When the budding is performed close to the ground, the plants are called dwarf, but it is done chiefly for the sake of the additional strength produced by the adaptation of a well seasoned, robust stock.

Grafting is not a common operation, but it is occasionally resorted to in the spring, when Roses are pruned and the grafts are valuable. There is more difficulty in grafting the Rose than there is in many trees, for the wood is soft and pithy. The French cut a slit across the stock, and cutting two grafts wedge fashion, they tuck in one on each side the stock. They then cover with a grafting wax, made of equal parts of bees'-wax and resin, and enough tallow to make it melt at a low temperature, and get hard when cold. This has to be carefully laid on warm, without allowing it to get between the graft and the stock. We have, however, seen many of these grafts miss, and prefer very much cutting an angular slit down one side of the stock, so that two sides of a triangle would lay in close; then cut two sides of the graft to fit in, while the bark touches that of the stock, and forms the outside; this, made to fit well, and the barks to meet close together, never fails. It may be remarked that, in all operations of this sort, dexterity is necessary; for, if the parts are suffered to dry before they are bound up, they cannot unite. There is another species of grafting that is highly useful in the propagation of Roses, we mean root-grafting. There are always plenty of roots dug up when you are digging among Roses, and these may be appropriated very easily; you merely cut a plain side to the root and a plain side to the graft, bind them together, and plant them below the join. It has been found advantageous in the spring months, and, if properly fitted, cannot fail to unite; the plant grows as well as if it were on its own root, and often better than it could on its own root.

Cuttings.—Almost all Roses strike under a hand-glass, and many only require to be cut on the under side close to a joint, and planted 3 in. into the ground and as many out (or, if short, 1 inch out), in a common border, where they have some little shading from the heat of the mid-day sun. All the smooth-barked kinds should be put in under glasses, if taken in spring, but if put in the ground in the autumn, they need no such precaution. The tender kinds should be put in pots, a dozen or more, in a 4-inch size, and a larger number in proportion to the increased size in use; these should be put into a cold frame, to keep them from drying winds and frosts.

The layering and cutting produce Roses on their own bottoms, that is, Roses whose roots are the same as themselves, and these almost always continue to send up suckers, which form another mode of propagating, for these suckers may be cut from the main plant by digging down to the root, and so much of the root as is necessary for the existence of the new plant should be taken with it; this may be planted where it is to bloom; Moss Roses rapidly extend themselves by means of suckers, which may be taken off and planted out directly they appear above ground. Those which are grafted or budded are upon stocks and roots of the common Briar or other stock; and, therefore, all suckers should be destroyed the instant they come up. Of all the modes of propagation budding is the most rapid, and if the operation be well performed it makes the best tree; grafting is never so safe nor so strong, nor does the union ever present so clean and neat a finish; for if the budding be well performed, nothing will be seen to indicate where it has been done but the mere base of the growth, which we know must be the place, although the neatness of the operation makes it appear the actual growth of the stock.

Roses may be raised by eyes in the same manner as a Vine, but nothing is obtained by it that might not be more easily attained by other means; they are cut with not more than a quarter of an inch of wood, and placed round the edge of a pot, like so many seeds, and covered half an inch, then placed in a common hotbed till they are up, when they may be gradually cooled, and when large enough potted off, one in a pot. *Crito.*

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

The 19th meeting of this Association was held this year at Birmingham. Although the officers of the Association expected a large increase of members by returning once more to the seats of our manufacturing industry and commercial wealth, they were doomed to be disappointed. The following is the report of the number of persons attending:

Old Life Members	277
Old Annual Members	94
New Life Members	11
New Annual Members	52
Associates	439
Ladies	237
Foreigners	32
Making a total of	1122

From this report, however, it will be seen that the numbers were much larger this year than last. Although the meeting was characterised by few original communications of importance, yet the attendance of men of eminence in every section was good, and the discussions generally interesting. As usual, we shall select from the communications and discussions thereon in the various sections those which bear on subjects most interesting to botanists and horticulturists.

Monday.—Section B, Chemistry, its applications to Agriculture and the Arts.—*On the presence of fluorine in the Frith of Forth, the Frith of Clyde, and the German Ocean*, by G. Wilson, M.D.—The author detailed the chemical processes by which he had been enabled,

from the deposits of those rivers, and those of the ocean, to ascertain the presence of fluorine by the peculiar reaction of this substance upon glass. From what is known of the comparative uniformity in composition of sea water, it may safely be inferred that if fluorine be present in the waters of the Firths of Forth and Clyde, and in the German Ocean, it will be found universally present in the sea. Mr. Middleton, before 1846, came to the conclusion that fluorine must be present in sea water, since it occurred, as he had ascertained, in the shells of marine mollusca. Silliman junior, without a knowledge of Middleton's views, drew the same inference from its invariable presence in the calcareous corals brought to America by the United States expedition from the Antarctic Seas. The author has found fluorine abundantly present in the teeth of the walrus, which points to its existence in the Arctic Ocean; and it seems so invariably to associate itself with phosphate of lime, that it may be expected to occur in the bones of all animals marine and terrestrial. The author has found fluorine likewise in kelp from the Shetlands, but much less distinctly than he anticipated. Glass plates were only corroded so far as to show marks when breathed upon. Prof. Voelcker, also, was kind enough, at the author's request, to search for fluorine when analysing the ashes of specimens of the Sea Pink (Statice Armeria), which had grown close to the seashore, and contained iodine, and found fluorine in the plant. When all those facts are considered, it is not too much, the author thinks, to urge that fluorine should now take its place among the acknowledged constituents of sea water. He has entered at length into the consideration of the natural distribution of this element, and into other details connected with it, in a paper in the "Transactions of the Royal Society of Edinburgh," vol. xvi., part 7, and in a communication made to the Association at its Southampton meeting. The Statice Armeria may certainly be added to the list of plants containing fluorine, and so may the Cochlearia Anglica, in specimens of which, obtained from the Bass Rock, and analysed in Dr. Wilson's laboratory, Dr. Voelcker has also detected this element. Specimens of etched glass were shown to the section in illustration of this communication.—Prof. FORSCHAMMER confirmed the results of Dr. Wilson. He had examined sea water from near Copenhagen, and found fluorine in every instance. He had also examined many shells and marine products from various localities, and they all gave the same body—the quantity of which was always greater in sea than in land animals.—Mr. PEARSALL thought he had detected fluorine in many waters from springs and rivers.

(To be continued.)

ON THE ODOURS OF PLANTS, AND THE MODES OF OBTAINING THEM.

EGLANTINE, OR SWEET BRIAR, notwithstanding what the poet Robert Noyes says,

"In fragrance yields,
Surpassing Citron groves, or spicy fields,"

does not find a place in the perfumer's vocabulary except in name. This, like many other sweet-scented plants, does not repay the labour of collecting its odour; the fragrant part of this plant is destroyed more or less under every treatment that it is put to, and hence it is discarded. As, however, the article is in demand by the public, a species of fraud is practised upon them by imitating it thus:—1 pint each, or, we might say, equal parts, by measure, of spirituous essence of Rose, Neroli, Cassie, and Lemon Grass. This we know is sold at many of the shops in Paris, and gives great satisfaction.

ELDER (*Sambucus nigra*).—This perfume may be obtained by any of the processes before described, none of which are, however, resorted to by the manufacturer; the only marketable article is Elder-flower water, and the so-called "Milk of Elder-flowers," made by Rigge, of London, and other perfumers of note. For the former preparation, the flowers should be carefully picked and freed from stalk; a certain weight, say 9 lbs., are introduced into the still, with 4 gallons of water; the first 3 gallons that come over is all that is used, and, when bottled, is ready for sale. It is more used for its medicinal virtues than for its odour, which, though somewhat faint, yet resembles Orange flower. As Elder water does not keep well for any time the flowers must be preserved by "pickling" in the same way as Roses (see ROSE), and the "water" drawn from time to time, according to the consumption. Although the oil of Elder is not used by perfumers, we think it would not be a bad adjunct to some bouquets, in minute proportions, especially if used in connexion with Lemon Grass and essence of Orange.

GERANIUM.—The Rose-leaf species yields an essence by distillation with spirit, which is very characteristic of the odour of the plant; this forms a fine handkerchief perfume; that only which comes from Italy and the south of France is, however, worth using for this purpose; as there can be no true essential procured from the plant it has no other application.

HELIOTROPE.—Fine as the odour of this plant is, it at present has no application (except in name) in perfumery; this we think rather a singular fact, especially as the perfume is powerful and the flower very abundant; we should like to hear of some experiments being tried with this plant; we will suggest the mode of operating which we think most likely to lead to successful results; for a small experiment, which may be tried by many gardeners, we will say procure an ordinary glue-pot of the kinds now in use which melts the material by the boiling of water, the pot being double, capable of holding, say 1 lb. of fat; at the season when your flowers are in bloom, obtain half a pound of fine mutton suet, melt and strain through fine linen; put this in your macerating pot, and place it in such a position near the fire of the greenhouse or elsewhere, that it will keep hot; into the fat throw as many flowers as you can, and there let them remain for 24 hours; at this time strain the fat from the spent flowers and add fresh ones; repeat this operation for a week; we expect that at the last straining the fat will have become very highly perfumed, and when cold it may be justly termed *Pommade à la Heliotrope*; a certain weight of this mixed with twice its weight of Almond oil, will form an exquisite dressing for the hair. The cold pommade being put into a wide-mouthed bottle (it should be chopped small and covered with proof spirit) will yield, if left to digest for a few days, "Extract of Heliotrope," a delightful perfume for the handkerchief. The *rationale* of the operation is simple enough, the fat body has a strong affinity or attraction for the odorous body or essential oil of the flowers, and it therefore absorbs it by contact and becomes itself scented; in the second operation the spirit has a much greater attraction for the fragrance than the fatty matter; the former, therefore, becomes perfumed at the expense of the latter. The same experiment may be repeated with fine Olive oil substituted for the fat, as above directed; it should not be kept hot, but merely milk-warm. The experiments here hinted at, may, of course, be varied with any flowers that there are to spare; indeed by having the vessel for maceration a little larger than that which we have mentioned, a most excellent "*millefleur*" pommade and essence might be produced from every conservatory in the kingdom, and thus those for whose enjoyment the flowers are generally grown, might be supplied with perfumes, &c., of their own gardener's production, as well as the many other luxuries he lays before them. When my lord and my lady of the house are away from home, how many flowers in the conservatory are

"Born to blush unseen,
And waste their fragrance in the desert air,"

which might economically be preserved in the way we suggest? We hope that those of our readers that feel inclined to try experiments of this nature, will not be deterred by saying "they are not worth the trouble," as we affirm this to be incorrect. It should be remembered that fine essences for the handkerchief are worth 20*s.* per pint, and the best scented pommades fetch 24*s.* per pound.

The odour of Heliotrope resembles a mixture of Almonds and Vanilla, and is well imitated thus—

Spirituous extract of	Vanilla	½ pint.
,, ,,	Rose .	½ pint.
,, ,,	Orange flowers .	2 oz.
,, ,,	Ambergris .	1 oz.
Essential oil of	Almonds	4 or 5 drops.

A preparation of this kind, under the name of "Extrait de Heliotrope," is that which is generally found in the shops of Paris and London.

HONEYSUCKLE OR WOODBINE.—

"Copious of flower the Woodbine, pale and wan,
But well compensating her sickly looks
With never-cloying odours."

What the poet Cowper here says is quite true, nevertheless it is a flower that is not used in practical perfumery at present. The experiments suggested above for Heliotrope and Millefleur (or Thousand Flowers), are also applicable to this, as also to the Hawthorn. A good imitation of Honeysuckle is made thus—1 pint each of extract of Rose, Violet, and Tuberose, ½ pint of extract of Vanilla and Tolu, 10 drops of oil of Neroli, and 5 drops of essence of Almonds.

JASMINE.—

"Luxuriant above all,
The Jasmine throwing wide her elegant sweets."

This flower is one of the most prized by the perfumer; its odour is delicate and sweet, which it imparts freely to grease and spirit; it is, however, exceedingly volatile, and therefore flies off rapidly, if heat is applied in any of the operations for procuring it. The method for obtaining it is that which we spoke of under Absorption, and to which the French apply the term *enfleurage*, namely, that of spreading a mixture of lard and suet on a glass tray, and sticking the flowers all over it, leaving them to stand a few days, and repeating the operation with fresh flowers—the grease absorbs the odour. Oils strongly impregnated with the fragrance are also prepared much in the same way—the flowers are put into a stoneware pan, and covered with the oil and allowed to remain for two or three weeks, when fresh flowers are added, and the old ones removed; this operation is repeated from three to five times. Fine Olive oil is used for the purpose, but more frequently, by the French manufacturers, oil of Ben, which is quite inodorous; it is procured from a kind of seed, of the Moringa aptera, an Arabian tree, by expression. By pouring proof spirit either on the Jasmin Pommade, or oil as prepared above, in the proportion of about 3 lbs. of the latter to a quart of the former, a very pleasing, white and highly performed "Extract of Jasmin" is procured, the spirit should remain on the greasy bodies for about three weeks or a month before it is drawn off; the pommade must be cut up, and if oil is used it must be shaken well daily. A small quantity of this, which in the trade is called French Jasmin pommade, being mixed with well washed lard and suet, then melted and beaten up with a whisk, so as to make it light, and of greater bulk, is commonly sold by the hairdressers under the name of Jasmine Pomatum; the proportions may be thus:

French Jasmine Pomatum	... ...	4 oz.
Lard	... ...	8 oz.
Suet	... ...	6 oz.
Olive oil	... ...	2 oz.
Essence of Lemons	... ...	10 drops.

The "Extract of Jasmin" enters into the composition of a great many of the most approved handkerchief bouquets, especially those which are of light colour. The oil of Ben, impregnated as above, is sold under the name of "Huile Antique au Jasmin"—old oil of Jasmin, and is much used for dressing false or artificial hair, curls, wigs, &c. *P.*

DISEASES OF PLANTS.

GENUS X.; *one species.* ALBUGO.—From June to the latter end of September, and sometimes, when the autumn continues hot, as late as October, the extremities of some plants are seen covered with a very fine kind of wool, precisely resembling the mould that spreads over some rotten fruits, and of a white colour. Writers give the name of *Bianco* (the white) to this wool, others also call it *leprosy*; but as both these names occasionally designate very different maladies, I prefer calling the present one by that of *Albugo*.

This disease, according to some authors, only affects trees, and more especially the Nut tree. I can, however, confidently assert that I have observed it on several plants of the Gourd tribe, and on some others, more especially in valleys where there is much humidity. It shows itself first at the ends of the branches. The leaves and buds become white, and, as it were, at the same instant the wool begins to form. In most cases the evil ends there; but sometimes it spreads over the whole plant, killing it if it be herbaceous; and if it be a tree, not only carrying off the produce of the year, but even doing considerable injury to that of the succeeding year. The subject is more or less hurt according to its more or less delicate structure. Herbs, natives of hot climates, are the most subject to it; amongst fruit trees, the Peach, the Apricot, and the Plum above all others. I have very rarely seen it on the Apple or the Pear. I have never succeeded in verifying the observations of Roger Chabot, who writes that this disease is so contagious that a healthy tree coming in contact with another attacked by this *measure* catches the infection.

Considerations derived from the localities and circumstances in which are placed the plants most subject to this disease, have led me to conclude that it is originally produced by a subtraction of calorie, which, by weakening the plant, prevents it from properly discharging the matter of secretion. I believe that at the moment when this matter is ready to exude, it is suddenly stopped at the orifices of the exhaling vessels. It then forms on the surface a whitish substance, which is extremely injurious to the vital economy of the plant. For supposing even that the right temperature be restored to produce the usual transpiration, the channels are obstructed or already destroyed by the accumulation of matter which is probably in a corrupt state, a new obstacle arises which must affect the whole machine, and the regular course of vegetation being disturbed, the plant must perish at last.

I have observed—1. That this disease is very prevalent in cold summers, and rarely in dry or hot ones. 2. It attacks chiefly plants in low situations, and spares those of hills or mountains, or perhaps attacks those alone placed in shady northern aspects. 3. Plants much watered with cold water are the most subject to it. 4. It usually declares itself after a sudden mist has formed, and those valleys where the dews are the heaviest show it even in the height of the driest summers. 5. Plants which in the evening have shown no symptoms whatever of the disease, have appeared the following morning covered with albugo. 6. It appears at the moment of sunrise, that is to say, at the very coldest hour. 7, lastly. Plants growing along the most banks of lagoons, fish-ponds, and other such reservoirs of water, are the most affected. Sometimes, however, it is but partial in trees as well as in herbs, which confirms me in the opinion that it arises from a weakness occasioned by a privation of caloric. No one will, I suppose, dispute the fact that a plant may be less stimulated by this agent in one part than in another. It has been observed that when a tree is affected by albugo in the summer time it may recover; but if this happens in autumn it is much more dangerous. Herbaceous plants generally perish from it; at least as far as I have observed, when the disease is general, no individual recovers its former vigour.

When, however, a portion only of the individual is infected, it is a safe and prompt remedy to prune it down to the sound part. The ground must then be well worked around, and moderately watered. This proceeding will at any rate succeed with herbaceous plants. The cure of trees is more difficult. Some have proposed incisions, not such as I have before referred to, but of a different kind, made with a view to assist the exit of the sap, which is presumed to be arrested in the exhaling vessels. Incisions of this sort are termed by some foreign gardeners *cauteries*, on account of some remote resemblance to animal cauteries. On the root a longitudinal incision of two or three inches is made. Into this wound, which must penetrate to the heart-wood, is fixed a wedge of stone or very hard wood, to keep it open; it is then covered with some rag. Every 24 hours the wood is examined, and from the edges a quantity of sap, more or less dense, will have exuded; this must be wiped off with a bit of cloth. If the wedge

[illegible] In this manner [illegible] superfluous humours, and re[illegible] I have detailed the method for two [illegible] ... and secondly, because this vegetable cautery was one of the secrets of cultivators in ancient times, to cause trees of superabundant vigour of vegetation to produce their fruits, as may be read in Pliny's "Historia Naturalis," lib. xvii., cap. 27.

All, however, are not agreed in prescribing cautery of the roots for the *albugo*. Some, on the contrary, think it should be practised on the under side of the affected branches. Others recommended the amputation of the infected branches. This should be done in the spring, for it is only then that we can ascertain the real extent of the injury done; we then run no risk of lopping too much, and will be able the better to judge which are the branches that really obstruct the due course of vigorous vegetation. These remedies are solely directed to the prevention of the sad consequences which follow the disease. The disease itself can only be prevented in some very rare cases where the humidity or mists which may be the cause of the albugo can be turned away.

But looking at the whole thing in the proper light, it should be ascertained whether bad cultivation may not, in some remote degree at least, have facilitated the development of the disease. If the state of neglect or want of working of the soil has had any influence, the remedy is clear; but if the disease is solely due to irregularities in the climate, there is nothing to be done. We have thus no course to follow but to let Nature work for herself, contenting ourselves with cutting away those branches only which are absolutely destroyed, and such caution is especially necessary in the case of gum-bearing fruit trees. I can never repeat too often that the mania of pruning fruit trees in our country is fatal to numbers of them.

VILLA AND SUBURBAN GARDENING.

Neatness should be a prevailing feature in every small garden, and one of the principal steps towards effecting this desideratum is having the edgings to the walks in proper repair. Whether they consist of Grass, Box, Thrift, or Daisies, they should be well kept. By this expression I mean that they should be unbroken and of equal width and height; for however otherwise well kept a garden may be, unless the edgings of the walks are in high keeping, the whole will convey an expression of disorder and neglect.

This is a good time to lay down Grass edgings, as the roots will have time to catch hold of the soil before winter. After the edging is laid down it should be well beaten and rolled. A line should then be stretched upon it, and it should be edged off with the edging iron. This is also an excellent season for forming new edges of Daisies, and Thrift and Box-edging may either be relaid now or clipped with the shears; it should never be more than 3 inches in height, for this height is sufficient for all the purposes of an edging, and when not higher than this they look neat and tidy, particularly in small gardens. Overgrown edgings of any kind are evidences of bad gardening; besides they harbour slugs and other vermin. I am acquainted with an amateur who this summer had all his annuals destroyed by slugs in one night. The plants were swept off as if by magic, and no wonder, his box edging was a foot high, and swarming with slugs. His Cabbages and Cauliflowers vanished as soon as they were put out. Now, one of the best cures for slugs and other vermin is to offer them no house room; and as edges of proper size afford them but little accommodation, and also add greatly to the general appearance and high keeping of the garden, let me urgently insist upon this apparently trivial yet important matter of garden detail being attended to. *Pharo.*

Home Correspondence.

Peaches on protected Trellises.—I left home before the Peaches on the trellis were ripe, and forgot to direct specimens of the fruit to be sent to you. On my return I found that there were a few left. I now send the best, you will see it is quite ripe, and certainly as fine as any I had on an ordinary garden wall. There is also a Nectarine, I do not know the sort; it is a profuse bearer and fine looking, but not good flavour. I think I had the tree from Ghent. The trees were planted in the early part of the spring of 1848, and bore a good crop, perhaps more than ought to have been allowed to remain, and when Mr. Rivers saw the fruit, he said, he had seen none finer that year; as the wood of 1847 had not been ripened under the trellis, but against a wall, this ripening of the fruit was not to be considered a proof that the plan would be successful; however, the wood of 1848 ripened nearly as well on the trellis as that against a wall. I say nearly, as I think the shoots had not in the summer pruning been sufficiently thinned out, and were not shortened; but as the wood of 1848 was ripened in the trellis, and as the fruit is quite equal to that ripened against the wall, I think there is now no doubt as regards the success of the experiment; I should however state that the crop has been small. The trees were covered with bloom and [illegible], but being near the glass, the frost on April 18 passed through the glass and nearly all the fruit was frozen, and I think it was more injured than that which was on the wall protected by nets and Fir branches. I should state that I protected the trellis border outside the glass against the autumnal and winter rains by asphalte felt shutters, and which stopped, to a certain extent, the late growth of the wood; but these shutters were not put on sufficiently early. I shall this year put them on in October. Though the roots were protected from the rains, owing to a mistake, the gutter at the bottom of the lights was not put up, and the roots during the whole early spring were sodden with wet, as all the rain water from the whole surface of the lights ran down on the border in which the trees were planted, and although this was well drained, when I saw the sodden state of the border, I did not think the bloom would set. *H. B. Ker, Cheshunt, Sept.* 20. [The flavour of this fruit was perfect.]

Glass.—I saw nothing new amongst plants on my trip; they are suffering much from scorching by sheet glass, and as the glass dealers are cutting up sheet, and mixing it with small crown squares, the mischief is being spread far and wide. *S.*

Agave mexicana.—In the description of this plant at p. 583, I have stated that the pistil is as long as the perianth. I find this condition of the pistil becomes altered by age, that organ ultimately equalling the stamens in length, but this is not the case until near the period of the decay of the perianth. In other words, in the earlier stages of the development of the flower, the pistil is equal to the perianth; in the latter stages it becomes lengthened, and then equals the much exserted, and then perishing stamens. *Thomas Moore.*

Drifted Wood, and Climate of the West of Ireland.—I enclose a piece of a trunk of a tree, just washed on shore here. It is 23 feet long, and from 10 to 8 inches in diameter. Will you have the kindness to tell me what wood it is, and whether it is one which is imported, and likely therefore to have been washed from a vessel. For if not, and if it is a Palm, as I suspect, from the absence of medullary rays, it may be interesting, as a species of tropical vegetation mentioned by Humboldt as frequently carried by the great Gulf Stream to the west coasts of Ireland and Scotland, and to which we are mainly indebted for the mildness of our climate; which is such that, during the last eight years, my register thermometer in an exposed situation has never been lower than 28° Fahr., and has never remained below 32° for more than 18 hours together. During the same period it has never been higher than 73° in the shade. *Bewicke Blackburn, Island of Valentia, Kerry.* [The wood in question is that of some Palm tree, and possibly of the Cocoa-nut tree. It is never imported, and therefore the specimen must have drifted.]

Fuchsia corymbiflora may be flowered with success in the open air in Kent; for two seasons following I have put out plants early in spring, which flowered exceedingly well all the latter part of the summer, and autumn months. Plants of it survived last winter with me in an open border without the slightest protection. Some of your correspondents will perhaps answer the following questions for me. Will Cupheas taken up in autumn, cut back, and put into small pots, keep and do better than cuttings for bedding out in spring? Is it usual for Nerium Oleander to flower twice in one season, and when is the best time for pruning it? *A Sussex Beginner.*

Potatoes raised from New Zealand seed distributed by the Horticultural Society last spring.—The seed was sown as soon as it was received (April 17), in a shallow pan, in light earth, and placed in a frame in a gentle heat. As soon as the young plants were well up they were shifted from one place to another, always keeping them as near the glass as possible, until I had inured them to the open air. On the 26th of May, being then sturdy little plants, 2 inches in height, they were planted out on a south border, in a prepared bed, in rows 18 inches asunder and 9 inches plant from plant. They took well and grew enormously. I had them harvested the other day, in consequence of the haulm indicating disease. The produce is about a peck and a half; three sorts are decidedly early ones, the remainder second earlies. They consist of White, Purple-eyed, and Pink eyed. A distinguishing characteristic is that they are all shallow-eyed and very handsome Potatoes. Most of the roots had three or more larger than hens' eggs—the rest smaller; one-sixth of the produce was very much diseased, the remainder was sound. *John Cox, Redleaf.*

Formation of Fungi.—It was stated in the *Gardeners' Chronicle* for 1848, that fungi are formed by an elongation and modification of the tissue of a plant. Hence we see (as Dr. Barry has observed) how the various organs and even organisms have their peculiar parasites. In further corroboration of this fact, allow me to refer to the fungi which are formed in paste, made from the flour of Wheat. These fungi may be formed by placing a small quantity of the paste betwixt two plates of glass, and allowing it to remain covered up for eight days; and from the manner in which the paste is spread out on a flat surface, its structure, and that of the fungi, may be seen very distinctly by the aid of a compound microscope. If the microscope be directed to the fungi, viewed by transmitted light, their internal structure will be found similar to that of the paste from which they are produced. To describe that structure might be difficult without the aid of a figure, but fungi are so easily produced in this way, that any one interested in the subject may very readily prepare specimens for examination. [illegible] in the instance now adduced, that the mycelium of the fungus is just the paste out of which the fungus grows. If this paste be put into another substance, it will, under certain states of air and moisture, produce a new crop of fungi, which in like manner will be found to resemble the paste in its internal structure. In this manner, the paste (and most organic substances) may be made to produce fungi till it be reduced to its ultimate constituents of gaseous and inorganic matter. As I have already stated, the paste should be spread out rather thin on a flat surface, as its structure, and that of the fungi, and their origin or point from which they rise up, will thus be seen distinctly. *Observator, Elgin, Sept.* 21.

Potatoes.—Early in August I was sent for to witness the state of a good crop of second early Potatoes that a neighbour was collecting. On account of the destruction of the haulm by the disease, fears were entertained for the safety of the tubers, which were, however, found to be full-sized and unaffected. But a second crop of young Potatoes was again formed, about the size of sparrows' eggs; half the plantation was then collected, the remaining portion, after clearing off the haulm, and treading the soil firmly over the rows, was allowed to remain until within these few days. The result of this treatment is that the very small tubers have increased to a fair size for table use. Dr. Lindley's "Theory of Horticulture" states that "tubers and bulbs contain an unusual quantity of secreted matter, separable spontaneously from the part which bears them; that they are magazines in which plants store up the nutritive matter collected from the leaves." This second crop therefore must have been fed and matured on the "nutritive matter" stored up in the tubers of the first crop, which was in an active state when the leaves were destroyed. *C. E. Wells, Gardener, Highnam Court.*

"The Chepstow Show."—Will Mr. Saul venture to assert that the cup was given unfairly? We understood at the time that, as both parties had been disqualified for the same cause, "the gentlemen in whose hands the cup was placed" resolved on waiving the irregularity. Unless Mr. Saul can prove, therefore, that his stand was best, we consider his complaint, so far as we are concerned, falls to the ground. *H. Curtis & Co., Bristol.* [The judges ought not to have possessed the power to "waive the irregularity." Rules are mere vexations unless they are acted upon. Since writing the above, we have received from Messrs. Curtis and Co., a letter addressed to them by the hon. secretary of the Chepstow Society, from which we take the following passage:—

> "Although *both* Messrs. Garraway and Co. and yourselves were disqualified by the censors from taking the cup offered at the September Show of the Chepstow Horticultural Society, for the best stand of 24 clusters of Roses, in consequence of your *both* having one bunch in each lot containing more than three stems, they did recommend your collection (numbered 445), for the cup; in corroboration of which I send you the following copy of the remarks made by them *in writing*, at the time:—'Both disqualified, having more than three stems in each bunch—one bunch in each lot only. *No. 445 worthy the prize, with that exception.*' The gentlemen in whose hands the prize was placed, desire me to say that they have no reason to regret their conduct in awarding the cup to you, after seeing the remarks of the censors; and I trust my letter is sufficiently explanatory to convince any disinterested party of the absence of any unfairness on the part of any gentleman connected with our Society."

We have also received a letter on the subject, from Mr. Saunders of Abergavenny. We are not aware that there was any imputation upon the fairness of this award. We dare say that 445 was the best exhibition; but we retain our opinion, that no departure from rules should ever be allowed, and therefore the award was injudicious. In fact, the dispute in question proves the correctness of that view.]

The Classification of Roses has been brought forward in an excellent article by Crito, and well remarked upon by others, and particularly by "R.," in your Paper of the 22d inst., with whom I concur in many points, though I dissent from him in others. He says: "Perpetual Roses are over-done with grouping. The Damask and hybrids should go together." Why should the Damasks and hybrids go together? Are not such Roses as Bernard, Crimson Perpetual, La Favourite, &c., very different in their constitution and growth from La Reine, Madame Laffay, Dr. Marx, &c. The Americans say that Damask Perpetuals bloom but little or none with them in the autumn, and this is to a certain extent true in some parts of this country; why then should we jumble them together? There is another small class or subdivision of dwarf Perpetuals, including Coquette de Montmorency, Pompon, Léonie Verger, &c., which certainly cannot be mixed with the foregoing; they are diminutive in habit (whilst the others are robust growers), and require peculiar management; they will not group well with others either as dwarfs, half-standards, or in any other way: indeed many of the latter are best adapted for pot culture. Will this class mix with either of the foregoing? I think not. Again, we have a group or division, including such Roses as Comte d'Eu, La Bédoyère, and that beautiful new Rose Géant des Batailles; this small group carries with it its own distinctive marks. Shall we simplify the classification of Roses by blending these sorts with others? Under China Roses "Crito" wishes to comprise Bourbons, Tea-scented, and what are now called "Chinas." What! are the strong, robust, and free growing Bourbons, that will cover a wall or pillar, to be classed with the weak-growing crimson China, and the delicate and tender Teas? To mix Roses such as these, differing as they do in growth, in constitution, in general appearance,

and, more than all, in their culture as well as in their adaptability to special purposes, appears to me to be retrograding instead of advancing the classification of Roses. What is proposed, if I understand the new classification right, is to blend together classes that are now, for every purpose the amateur or tyro may require, distinct. When I say distinct, I must not be understood as implying that the line of separation is clearly defined; on the contrary, the various classes, to use a common phrase, "run into each other," or, in other words, crossing, to obtain new varieties, has intimately linked all the classes together. In this case, Rose-growers must place each variety in that class or division to which it is nearest related; this will be found sufficient for all practical purposes. If an amateur, having already some knowledge of Roses, takes up the catalogue of any respectable Rose-grower, he will soon learn, from what class a Rose is placed in, what description of plant it is, and, with tolerable certainty, what treatment will best suit it. Take for instance Noisettes, which "R." calls a "jumble of hybrids;" even here the amateur can safely select from the catalogues all the robust growers as well as dwarfs, and what are hybridised with Teas, having each its distinctive mark. The robust kinds are well suited for walls or pillars, the dwarf sorts, of which some are very beautiful, are adapted for grouping or for pot culture. A tyro, even with a little discernment, might form a tolerable idea what any Rose is from the Rose catalogues, as they are now classed. Thrown together as "Crito" proposes, neither amateur nor Rose-grower could form any correct notion of the habit of any particular Rose, except a special description was attached to each. But classified or divided we have a guide, and that a systematic one. If the present management is not perfect, let us not make confusion more confused, or, as "R." would say, "let us Rosanthropists act with due caution." *J. S., Bristol.*

Nutt's Plan of Bee Keeping.—A gentleman of the name of Bentley exhibited at the scientific meeting lately held in Birmingham, three glass hives of quite pure honey, the weight of which was 50 lbs. All this was procured from one hive upon Nutt's plan, this year, and I understood him to say in three weeks. *C. A. A. Lloyd, Whittington, Oswestry.*

Bedded out Fuchsias.—There is now upon my lawn a bed of the Fuchsia Napoleon and another of serratifolia, of both of which I send you fair average specimens. Every branch, from the top to near its junction with the stem, is loaded with the same gorgeous bloom, and this from very backward cuttings of last autumn, which were not planted out until the end of June. I have also in my possession four plants of Fuchsia serratifolia, which in two years have attained a height of 10 feet, and if the leaders had not been stopped they would probably have been 15 feet high. These are also in full bloom. *J. E. G.* [Beautiful certainly, and very encouraging.]

Potato Rot.—"Clericus" is an allotment landlord, and every year he has observed that particular spots are more liable to the rot than others. The allotment land is on one side of a valley of the lower Oolite land, and consists of clay, sand, brash, loam, and peat. Now the damp spots appear to be destined to have rotten Potatoes. Every year's experience verifies this notion. [No doubt. That is the rule, as we have repeatedly stated.]

Hornets' Nests.—A notion prevails, but it is a mistaken one, that hornets never live underground, like common wasps. I have frequently found them in such situations, but it was only in spring, when the queens could not find favourite places to rear their offspring in. They prefer a cavity under the roof of a shed, or beam in a barn, but most of all a hollow rotten tree, which affords them both shelter and materials to make their nests with. These consist chiefly of a substance like coarse paper, manufactured by the insects from the fibre of decayed wood. During this season I met with a hornet's nest where I least expected it. While I was examining a fresh built grey wren's nest, on the top of a small tree, something buzzed out; to my surprise, I found my finger amongst hornets instead of eggs or brood. I have this curious double nest, which first belonged to one of our smallest indigenous birds, except its smaller neighbour, the golden-crested wren. Although the wren is a great destroyer of insects, it of course could not combat against so powerful an invader as the hornet. *J. Wighton.*

The late Potatoes are a complete failure, very small and of bad quality, the stalks all died off six weeks since. The Wheat harvest very good, and plentiful; green crops very fine. The barometer still continues very high, and the weather dry, with a decrease in temperature, and N.E. wind. The highest here during the past week, from 13th to 20th inclusive, was 63°, the lowest 47°. Barometer, 13th, 29.900; 14th, 30.275; 15th, 30.200; 16th, 30.175; 17th, 30.300; 18th, 30.400; 19th, 30.500; 20th, 30.350. A great want of elasticity in the atmosphere. *William W. Childers, 4, the Crescent, St. Helier, Jersey, Sept. 21.*

The Potato Crop.—The result of the following experiment may be acceptable to your readers: Five rows of York Regents were planted the second week in May; they looked well until the 12th of August, when the first symptom of disease appeared in the haulm. It increased until the 18th, on which day the haulm of four of the rows was cut off close to the ground, one of the outside rows being left with the haulm on, and the other outside row was dug up the same day; the tubers of this latter row weighed 69 lbs.—none were diseased. The remaining four rows were dug on the 22d inst. The outside row, on which the haulm had been left, yielded 44¼ lbs. of sound tubers and 20¼ lbs. of diseased ones. The other three rows (deprived of haulm) yielded respectively 80 lbs. sound and 2¼ lbs. diseased, 72 lbs. sound and 2¼ lbs. diseased, and [illegible] sound and 8 lbs. diseased tubers. I would also state that my other Potatoes were all planted in March, and were just ripening when the disease appeared in August; they were immediately dug up, and produced a good and sound crop. *A. J. Canham, Summer Hill, near Tenterden, Sept. 24.*—Hereabouts certainly Potatoes show all the difference to be expected, from previous experience, between a wet and dry summer. As to my own, the contrast is complete between the digging of this and last year; for though others may say, "Do not halloo till you are out of the wood," this is clear, whatever afterwards becomes of the Potatoes in store, that there is the widest difference between the Potatoes, as turned up this season and the last. I venture to add, that so it will continue, and be evidenced by that reduction of price which is already most marked in this quarter. Some people attribute this to an apprehension in the minds of growers that the Potato will not keep, and that therefore they are pressed early on the market, at a reduced rate: but why was not this the case in former years of Potato failure? It was not so in the markets here, as I can testify; and indeed, for several years, we have neither seen such a price nor such Potatoes as are now universal. Last week, the Horticultural Show of the neighbourhood took place at Tenbury, and such Potatoes as the cottagers exhibited were really enviable, and nowhere to be found, last year, throughout the country. I there exhibited Potatoes (Pink Kidney) grown on raised ridges, for better drainage, which fully answer my expectations, both as a crop and as to freedom from disease. Of course, a fine dry summer afforded little or no test of the advantage of this mode of culture, yet the comparative want of luxuriance in the haulm, which was very apparent, indicated throughout the effect of that self-drainage of the ridge-planting, which, in wet seasons, would be the great desideratum. The last thing which caught my eye in respect to the connection between humidity and Potato disease (if it be not sufficiently established), is in a communication, from Ireland, to the *Morning Chronicle*, dated Sept. 21st, where a writer from Westport states, that "after a heavy fall of rain from the 7th to the 9th, succeeded by dense fog," Potatoes, which had been previously sound, fell into rapid decay. But if humidity is a cause of Potato disease, then drainage, to the same extent, must be an antidote. *Caleb Whitefoord, Tenbury.*

Societies.

Royal Horticultural of Ireland.—We find in *Sanders's News Letter* of Sept. 15, a report of the last meeting of this Society. We are glad to see that public opinion has wrung from its managers some consideration for the gardeners who exhibit. According to the report, the entries for competition were as follows: Plants and flowers, 83; fruits, 215; vegetables, 181. The day's proceedings are stated to have ended with a row, of which the following account is given in the *Irish Farmers' Gazette*: "It is now our painful duty to take notice of the degrading and shameful finale to this splendid and highly useful and important show. We, reluctantly, were obliged to animadvert on the terminating scene of the autumnal show of 1848, which stands recorded on our pages, but the scene of Thursday evening last outbeggars description, for vulgarity, ferocity, and a total disregard to anything approaching, in the most remote degree, to decency or honesty. The whole scene was of the most brutal description. We have already stated that above 200 entries were made in the fruit department alone; many trays of extraordinary dimensions, and the whole presenting the most delicious fruits of the season—in fact, nothing was wanting that could be produced with or without the aid of glass. We are considerably under the mark in stating that the value of the fruit at this exhibition was over 100*l*. Intimation was given that each exhibitor was at liberty to remove his fruit, at half-past 5, but not sooner. Just as the period expired, a rush was made; the police made no resistance, but rather enjoyed the scene, and the whole of this fine collection of fruit went to destruction in a few minutes, along with a quantity of the plates upon which they were laid, which were trampled under foot. The attack was instantaneous, and we have not heard if any particular individual has been recognised as leading it on, but we observed some clerks from public offices, and other places, very busy in the scrimmage, or grush, as the tinkers would call it, and a noted character, who should have set a better example, wearing a white hat, cramming a very large Melon into it, and wedged it round with small fruit. This individual was not satisfied with all he could purloin in the fruit way, but filled his coat pockets, some say his unmentionables, with Parsnips, Carrots, Beet, &c. On the whole, the scene was of the most disgraceful character." !!

Country Show.

Chichester Horticultural, *Sept* 13.—Having on former occasions visited the exhibitions of this Society, it is gratifying to record that in the gardening skill bestowed on the stove and greenhouse plants, great improvement was discernable on the present occasion. The leggy-necked plants of days gone by, are not now to be seen at this exhibition, in fact, so improved has it become, that it may fairly be termed a miniature London show. Great and commendable encouragement is held forth by this Society to cottagers, who, on the present occasion, gave ample evidences of the due appreciation of the advantages afforded them for their exhibitions of fruit, vegetables, and honey, were beyond all praise. The friendly feeling existing amongst all grades of society here, must, and no doubt does, do much to improve and extend horticulture, not only in the highest ranks of the community, but also amongst cottage gardeners. The following awards were made: best 6 Orchids, to Mr. Webster, for Renanthera coccinea, Oncidium Papilio, O. microchilum, Zygopetalum Mackayii, Z. rostratum, and Cattleya Harrisoni. 12 Greenhouse or Stove Plants: 1st prize to Mr. M'Ewen, Petworth Gardens, for Leschenaultia formosa, Erica Blandiana, Siphocampylus bicolor, Statice floribunda, S. sinuata, Clerodendron fallax, Erica pilosa, Allamanda Schottii, Ardisia crenulata, Phænocoma prolifera, Lantana mutabilis, and Mussænda frondosa; 2d, to Mr. Graham, gr. to Mrs. Smith, for Erica cerinthoides major, Vinca alba, Clerodendron squamatum, Gesnera zebrina, Manettia cordifolia, Strelitzia regina, Torenia asiatica, Gloxinia maculata, Plumbago Larpentæ, Chironia floribunda, Æschynanthus maculatus, and Cuphea platycentra. 1st 6 do., to Mr. Edney, gr. to P. Fitzpatrick, Esq., for Stigmaphyllon aristatum, Cyrtoceras reflexum, Clerodendron splendens, Convolvulus pentanthus, and Oncidium flexuosum; 2d six, to Mr. Kent, Goodwood, for Justicia carnea, Melastoma mexicana, Torenia asiatica, [illegible] 6 Fuchsias: [illegible] Cornwall, Coralina, [illegible]; 2d, to Mr. Hall, gr. to the [illegible], for Duke of Cornwall, Exoniensis, Coralina, Dr. Jephson, [illegible]. 6 Roses in pots: 1st prize to Mr. [illegible], Esq., for *Bourbons*: Souvenir de la Malmaison, [illegible], and Comte d'Eu; *Teas*: Le Pactole and Elise Sauvage; and *China*: Archduke Charles. The best specimen Exotic Orchid: 1st prize to Mr. White, gr. to C. Dorrien, Esq., for Acineta Barkerii; also the 2d prize for a single specimen, not an Orchid, Witsenia corymbosa, the 1st being awarded to Mr. M'Ewen for Ixora coccinea. 6 Petunias in pots: 1st prize to Mr. Evans, for Elegantissima, Lady Middleton, Kossuth, Semiduplex, Beauté parfait, and Delicata; 2d, to Mr. Hall, for Nino, Gem, [illegible], Grandiflora alba, Goodwood seedling, and Thunbergiflora. 6 Verbenas in pots: 1st prize to Mr. Evans, for Princess Alice, Skinneri, Gem of the West, Ibraham Pasha, and Shylock; 2d, to Mr. Hall, for Defiance, Duchess of Richmond, Excelsa, Taglioni, Louis-Philippe, and Beauté Supreme. 6 scarlet Geraniums in pots: 1st prize to Mr. Drover, gr. to Col. Rotton, for Lady Carolina, Tom Thumb, Royal Crimson, Beauté Supreme, Eclipse, and Perpetual Queen; 2d, to Mr. Hall, for Smith's Emperor, Compactum, Defiance, and Perpetual Queen. 6 Ericas in pots: to Mr. M'Ewen, for Altoni, pilosa, Blandiana, verticillata, vestita fulgida, and retorta major.—Fruit: best Black Jamaica Pine-apple, Mr. M'Ewen, who also showed the best Queen, but the rules not allowing him to receive two prizes for Pines, the 1st prize was awarded to Mr. Cameron, gr. to his Grace the Duke of Richmond. Black Grapes (Hamburgh), 1st, Mr. Lambert, gr. to J. Baring, Esq.; Hamburgh, 2d, Mr. Graham, also best Muscat and best white. Muscadine, 1st, Mr. M'Ewen; 2d ditto, Mr. Graham. Scarlet flesh Melon, 1st, Mr. Graham, for "Graham's Scarlet-flesh;" 2d, Mr. Webster; 1st prizes for green Melons to Mr. Grounsell and to Mr. Toogood; 2d, Mr. Gale. Peaches: 1st, Mr. M'Ewen; 2d, Mr. Lambert. Nectarines, Mr. M'Ewen. In-door Figs, Mr. Lambert; White Nerii do., Mr. M'Ewen. Several other prizes were awarded for Plums, Cherries, Pears, &c. About 7*l*. was distributed among the cottage exhibitors for vegetables, honey, &c., which were very good.

Great Central Dahlia Show, Birmingham.—The sweepstakes of 100 guineas, subscribed by five exhibitors, was decided by the placing of the general nurserymen's stands, and was awarded to Mr. Turner, of Slough, who also took the first 5*l*. prize for fancy flowers. The usual metropolitan exhibitors were the chief winners; Howard, of Burnham, first in amateurs. But the seedlings were the chief attraction. Certificates of the first class were awarded to Mr. Keynes for Sir F. Bathurst, Magnificent, and Snow-flake; to Mr. Bragg for Lady Grenville; to Mr. Proctor for Elizabeth; and to Mr. Turner for Mrs. Seldon, and for a new Verbena called Mrs. Mills. Second-class prizes to Mr. Keynes for Highland Chief and Flying Dutchman. The second day there were some beautiful Roses produced by Messrs Curtis and Co., of Bristol. *Birmingham, Sept. 27.*

Reviews.

Observations on the Culture of Strawberries, Melons, and other Fruits; also an improved method for the Cultivation of Celery, &c., by means of New Inventions recently registered, by John Roberts, Eastcheap, London, 1849.

The above is the title of a pamphlet setting forth the advantages likely to result from the use of various earthenware articles which Mr. Roberts has had manufactured and registered. One of these is his "Horticultural Double Tile," for Strawberries. These tiles consist of two oblong pieces, with a semicircular space taken out of the side of each, so that when the two are brought together, a circular space about 5 inches in diameter affords room for the plant, the leaves and fruit of which is then exposed on a sort of platform of nearly a foot square, and 2 inches above the surface of the ground. Whilst the fruit is thus exposed to the sun, and its ripening accelerated and flavour increased by the heat of the tile, it is kept clean, and is less liable to rot from damp. So far the contrivance is good, and may be recommended to amateurs and others, *careless of expense.* It is proposed in the pamphlet to plant in beds 3 feet wide, with alleys 18 inches wide between; two rows of plants, a foot apart, in each bed, and the same distance from plant to plant in the rows. Thus disposed, an acre would contain 19,360 plants, requiring as many double tiles; and as the latter cost 30*s*. per hundred, the expense for an acre would be upwards of 289*l*. Besides this, the labour of placing the tiles round the plants, and afterwards removing them would be considerable. The Melon tiles have much the same form as the Strawberry tiles; and the pamphlet contains the following directions for growing Melons and Cucumbers in the open air, with them:

"*Directions for making a Melon or Cucumber Bed.*—It should face the south; the north end should be 3 feet 6 inches high, the sides 20 feet long, width 6 feet, sloping down to 4 inches, built either with bricks or timber, but bricks are preferable. If the ground is level, the shallow end must be dug out 3 feet 6 inches, and gradually lessened towards the deep end, so as to ensure an equal depth throughout. The earth dug out will do to cover the surface of the bed. Having dug out to the depth required, fill up the bottom with brushwood, flower-stalks, or any old litter, to within 12 inches of the top of the sides; tread it well and firmly, then cover over with good earth, as full as it will hold without being trod in. Afterwards get two flour barrels, saw them through the middle, knock out both ends, plunge them in the bed at equal distances down the centre (let the edges of the casks be quite under the earth), fill them with good rotten dung, half from the stable and the other half pig's dung, mixed; cover the dung with about 4 inches of good maiden earth (from an old pasture would be best), then spread finely sifted coal-ashes over the whole 2 inches deep; plant three or four seeds of Melon or Cucumber in each cask, cover with a hand glass, watering occasionally till the plants are well established. Afterwards gradually expose them to the air in fine weather, covering them later every

evening till the middle of June, choosing fine warm weather for the final removal; when that is fixed, then cover the whole surface of the bed with the horticultural tiles, pegging your plants as they require it on the surface of the tiles; when the glass is finally removed there is no further trouble required, as they will scarcely require any more attention, except to be occasionally watered. By paying attention to these directions, you may have the best flavoured Melons or Cucumbers that can be grown."

The above plan may succeed in warm situations, in warm summers, and with some of the small, hardiest sorts of Melons.

The pamphlet next treats of the culture of Celery by means of earthenware sockets, formed like two longitudinal halves of a cylinder, so as to inclose the plant. These sockets are of different lengths, and seem well deserving of trial. We cannot at present give any opinion on the Grape tile. Its effects require to be tested by experiment.

Calendar of Operations.

(For the ensuing week.)

FORCING DEPARTMENT.

WHERE dung linings are used for forcing pits of any description, means should be taken to secure them from the autumn rains, which check fermentation, and cause the heat to decline at a time when it is most wanted; this evil involves a continual turning and renewal of the linings, and the labour expended in this would soon repay the trifling outlay, which would not only protect the heating material, but would prevent the escape of the heat, and do away with that farm-yard, like appearance which many frame grounds present. PINERIES.—As the necessity for using artificial heat increases, considerable attention must be paid to regulating the temperature. The night temperature should be kept steadily ranging from 63° to 68°, with a bottom heat of 85°. As long as the daylight is strong enough to keep the plants in a healthy growing state, great care should be taken to prevent them receiving any check, and where the heat is supplied by dung linings &c., this will require special attention. Examine carefully the wants of the plants as regards water; avoid either extreme, and syringe only in very fine weather, and then with water of the same temperature as the pits. Care must be taken not to syringe to such an excess as to allow the moisture to accumulate about the stems and hearts of the plants, as considerable injury will be done thereby during very dull weather. Admit air freely in such weather, to assist evaporation, even if extra fire heat is required to enable you to do so. VINERIES.—The pruning of Vines intended for early forcing should not be longer delayed, or they will be liable to bleed. The course of proceedings should be similar to that recommended for the early Peach-houses. The old, loose rough bark should be rubbed off, and the whole of the plants washed over with sulphur and soft soap. The glass should be cleaned, and all the interior of the house painted; every precaution should be taken to smother effectually insect life in every stage. The old worn-out soil should be removed from the surface of the border, and replaced by a rich compost, containing a portion of rough bone dust. CHERRIES.—The forced Cherries will now be losing their leaves, and should, with the house they occupy, be treated exactly as was recommended for the early Peach-houses some weeks back. MELONS.—Unless these can be freely supplied with top and bottom heat, thereby allowing the admission of a free current of air, they will be of little further value; and, as the fruit ripens, they may be cleared out, to make room for various plants during winter. Take care, however, of those growing in pits which are furnished with the necessary facilities for keeping up the requisite amount of heat. We have such a house, from which the first fruit was cut in the first week of May, and which has continued bearing in uninterrupted succession ever since, and will do so for a long time to come.

FLOWER GARDEN.

Every flower gardener has plants in the open ground which he intends to take up and preserve under glass during winter. Many of the tenderer kinds must of necessity be lifted immediately, and if the temporary autumn display is not a matter of great importance, it will be better to take up the whole at once, as it will give them time to establish themselves before winter. Scarlet Geraniums should be taken up, pruned to within one healthy joint of the old wood, and placed in pots or boxes in moderately moist soil. No water should be given to them till they have commenced to form new shoots and roots. Other beds may now be cleared of their occupants, wherever these are getting shabby or untidy in their appearance. Gather seeds as they ripen, and give due attention to mowing, cleaning, weeding, rolling, &c. If short moderately hardened shoots of Hybrid Perpetual and Bourbon Roses are taken off at their junction with the preceding growth, and placed in a slight bottom-heat, they will strike root easily, and will come in admirably for flowering in pots during next spring or the following winter. It is now high time to plant spring flowering bulbs, and the ground intended for them should be immediately cleaned and prepared by making it light and rich. The soil in which they flourish most beautifully consists of a highly enriched sandy loam. A more cheerful appearance may be given to the beds by interspersing them with some plants of the hardy Primrose or Polyanthus, or with small plants of Erica carnea from the reserve garden. These flower at the same time, and may also be returned to the reserve garden in April or May next. Many of the early flowering herbaceous plants are in a dormant state, and if it is wished to remove them to other than their present situations, or if it is desired to increase the stock by division, this is an excellent time to effect these objects, as they will commence rooting immediately, and will have time to establish themselves before the ground is locked up with frost.

KITCHEN GARDEN.

Proceed with the earthing of Celery, and commence with Cardoons. For the latter plant, sand or fine coal-ashes is decidedly preferable to haybands in immediate contact with the stem, and may be managed by a similar contrivance to that recommended for earthing up Celery. The haybands unavoidably absorb moisture from the surrounding soil, and are thereby decomposed and form a harbour for insects, and a natural conductor by which the frost is admitted, where the object should be to exclude it. In very dry sandy soils this evil does not exist to so great an extent, and to such ground an admixture of sand or ashes would be injurious; but where it is of a stiff clayey nature, such an admixture will ameliorate the texture of the soil, besides being more suitable for the preservation of the crop. In either case do not allow the outer leaves to be stripped off, as they are much hardier by reason of their exposure, and form a natural guard to the more tender leaves within. Where soil is used, let it be as dry as possible, and made fine with the spade before it is placed round the plant. Any crops of Potatoes still remaining in the ground should be got up without delay, carefully sorted, and slightly sprinked with quick-lime, or the caustic ash produced by charring or burning refuse; a good plan to ensure perfect dryness is to fill up the crevices between them with dry charcoal dust, which will absorb any moisture exhaling from the Potatoes. The strongest of the young Cauliflowers should be planted out about 4 inches apart, in spaces of such sizes as will suit the handlights by which they are to be protected during the winter. The ground should be prepared by forming a shallow trench of the requisite width, removing the soil to the depth of about 6 inches, and laying it on the edges, in a manner similar to a Celery trench. The bottom should then be manured and dug, and spaces the size of the handlights marked out; of these, only the alternate ones should be planted, reserving the intermediate spaces to set the tops of the handlights upon when not required over the plants. These little portable glass houses should be immediately put into a state of thorough repair, and brought to the spot, in order that they may be ready at a moment's notice.

State of the Weather near London, for the week ending Sept. 27, 1849, as observed at the Horticultural Gardens, Chiswick.

Sept.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 21	4	30.172	30.123	64	49	56.8	N.E.	.02
Satur... 22	5	30.082	30.050	66	50	58.0	E.	.00
Sunday . 23	6	29.915	29.887	70	40	55.0	E.	.16
Monday 24	D	29.366	29.320	66	42	54.0	N.	.00
Tues. .. 25	8	29.539	29.534	71	39	55.0	S.W.	.00
Wed. .. 26	9	29.817	29.807	67	55	61.0	E.	.00
Thurs.... 27	10	29.763	29.725	76	51	60.5	E.	.09
Average....		29.952	29.892	66.2	48.0	57.1		0.27

Sept. 21—Showery; fine; very dry air; slightly clouded.
— 22—Fine, overcast at night.
— 23—Ducky hare, rain, hazy.
— 24—Foggy; very fine, clear at night.
— 25—Foggy; exceedingly fine; overcast.
— 26—Foggy; fine, very clear at night.
— 27 Fine, rather windy, very fine, rain at night.

Mean temperature of the week, 1 deg. above the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Oct. 6, 1849.

Sept. and Oct.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 30	64.3	44.4	54.5	11	0.84 in.	2	1	3	1	5	5	6	—
Mon 1	64.1	46.6	55.4	10	0.03	2	3	2	0	6	3	—	—
Tues 2	64.6	44.7	54.5	12	0.48	1	3	1	—	6	6	4	2
Wed. 3	62.7	45.0	53.8	12	0.17	1	—	1	7	7	2	2	—
Thurs. 4	64.2	43.9	54.0	10	0.36	—	5	2	—	6	3	2	1
Friday 5	63.3	41.9	52.6	8	0.57	4	3	2	1	5	5	3	—
Satur. 6	62.0	43.8	52.9	11	0.78	1	2	3	3	3	5	4	1

The highest temperature during the above period occurred on the 5th 1844—therm 80 deg; and the lowest on 3d, 1836, 5th, 1826, 1845, and 6th, 1836—therm. 29 deg.

Notices to Correspondents.

BOOKS: *G B.* M'Intosh's "Hothouse and Greenhouse."‡

BROOM: *Priapus.* Either your seed has been gathered unripe, or it has been buried too deep when sown. For heaven's sake change your name.

EXHIBITIONS: *A O.* The number of Pansies, &c., to be shown is the number specified in the schedule, and no other number more or less can be permitted. Neither five nor seven are six.

FORKS: *Rusticus.* The fork you have been so good as to send a sketch of is in no essential respect different from the common English digging fork, except that it has four tines instead of three. We entirely agree with you and others that for many purposes these forks are much better than spades, which should never be used in breaking up the surface of borders.

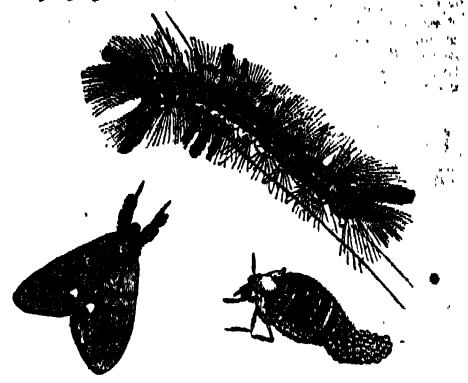
GLASS: We have received from Mr. Phillips, of 116, Bishopsgate-street, a sheet of "Hartley's patent rough plate" glass, which shows that much improvement has taken place in the manufacture of this article.

GRAPES: *S D.* Are not the roots of your Vines too deep? That often causes Grapes to shank.‡

LAURELS: *Hesperus.* You can only destroy them well by stubbing them up. Corrosive sublimate may poison them now, but it would be better to apply it in June when the sap is in full motion, and before the tops are removed. Salt would probably answer as well as corrosive sublimate, and is a safer substance. Sea-weeds, decayed, are excellent manure, for all things that require it. You can do nothing better with Currants on a north wall than cover them with netting, so as to exclude birds, and manure them when their vigour begins to decline.

IMPLEMENTS: *A Subscriber.* We cannot incur the expense of publishing woodcuts of the working plans of implements. Nor is it necessary, for you can buy Dr. Newington's ingenious machine much cheaper and better than you can have it made. It is a very clever contrivance; and we may as well add, that it has been much improved lately, especially in the part objected to by us. As a dibble, it seems almost perfect for agricultural purposes; the remarks which we made upon the delivery of seeds applied to garden crops only, and by no means to cereals. We shall probably return to the machine when we have seen the improvements.

INSECTS: *J S G.* The wasp is infested with a parasitic worm called Filaria, not usually found so thick, but much longer than the one sent. *W.—R R J.* The "strange formation" is the cocoon and egg of the female vapourer moth, the chrysalis skin of which you have mistaken for a bee. See accompanying wood engraving. The red mite (Trombidium



holosericeum) has no connection with it. *W.—H W W.* Your lawn is infested with young grubs of the cockchaffer. You had better pare off the Grass, turn up the earth, and turn in a brood of young ducks. You had better do this before the grubs grow larger, and next year employ children to kill the perfect cockchaffers. *W.—Constant Reader.* The insects on the Pear leaves are the larvæ or slimy grubs of a saw-fly, Selanaria æthiops. Powder the leaves with lime, or syringe them with lime-water. *W.*

LAW: *F G.* We cannot, as we have repeatedly stated, answer legal questions. Pray consult your attorney.

MELON: *J C.* Your Melon was about as worthless as any we have tasted this season.

NAMES OF PLANTS: *Beaumaris.* Gaillardia picta.—*A Young Beginner.* Pergularia odoratissima, swarming with mealy bug. It is produced by negligence and dirty habits, and can only be removed by cutting down the plant to the old wood, burning all that is cut off, and then watching the plant and destroying with a coarse brush and water every bug as it afterwards appears.—*D H.* Cheilanthes tenuifolia. *S.*—*Ford.* Zygopetalum maxillare.—*B G M.* Elsholtzia cristata. *S S.* 1. Coronilla Emerus; 2. Erythræa Centaurium.—*G.* Oncidium sarcodes.—*R S.* A curious new Bignoniad, and very handsome. Send your address, in order that we may communicate with you privately.—*B K C.* Oncidium Pinellianum.—*W H B.* Ipomœa sanguinea, a rarity. Have you seed to spare?

ONIONS: *A Constant Reader.* The quantity of seed allowed for an acre of ground is 10 lbs., provided it is very good. Plant the Potato Onion in rows a foot apart on the surface, and cover thinly with light mould.‖

PEARS: *P W J.* You must let your Beurré Rance Pears remain till they easily part from the spur on being merely lifted up, without pulling or twisting.‖

PERFORATED LEAVES: *B L.* If you will read the article with a little attention, you will see that the illustrations are to show that leaves may *appear* to have been pierced by insects, and yet that the perforations may be owing to a totally different cause. That is *your* case.

POTATOES: *A Constant Reader.* For autumn planting the Regents and Early Shaws may be employed.‖

RIPENING WOOD: *R T.* We do not see how we can meet your wishes, without going into long and tedious details, needless when men possess ordinary intelligence. Our difficulty consists in the variable nature of the means at the disposal of a gardener. Some have one convenience, some another, all or any of which would answer in good hands, and with none of which can we be acquainted. Gentlemen not familiar with the practice of gardening may be unable to apply the principles we have pointed out; but surely gardeners can, according to their means.

SNAKES: *J M, jun* Much obliged. The cast skin is perfect, and proves conclusively that these reptiles do turn their skin inside out, when they strip themselves of it. Mr. Wighton is mistaken, as he himself now admits. A correspondent now declares that adders have legs! or grapplers, and he gives the following account of his discovery: "One of the men employed to cut timber in Thieves'-wood, on Sherwood Forest, found a large adder in his dinner basket, the lid not having been put down close; he made it so on seeing the adder, and brought it to me. I had it taken out with a pair of blacksmith's pincers, taking it by the skin only at the back of the neck. I then administered a dose of prussic acid, and in its convulsions it sent out the legs or grapplers, exceeding an inch in length, each provided with three claws nearly semicircular; they remained out until death (nearly half an hour). They are situated about one-third of its length from the tail, and they were drawn in just before death, the extreme end being first drawn in, precisely on the same principle as the snail's horns." We wonder that our correspondent should not have suspected what these "grapplers" were.

SOOT: *Anon.* Some of the best growers of Carnations do not use it. Try its effect on a small scale first by way of experiment.‡

SPRING-GUNS: *A G.* We cannot answer legal questions. Upon the principle that you can have no right to inflict a punishment more severe than the law would give, such contrivances should be illegal. The law will not order a man's leg to be shot off, or his life to be taken, because he trespasses or steals a few Cabbages. Therefore the law ought not to allow you to shoot such an offender or break his [illegible].

VINES: *Beeswing.* The best Vines for general bearing in small greenhouse are the Black Hamburgh and Royal Muscadine. Trench the border 2 feet deep and 12 feet wide.‖ *P W J.* Mildew is probably the cause of your Grapes not ripening.‖

WHEAT PRODIGY: *M N.* Many thanks. It is very instructive as you will see next week.

SEEDLING FLOWERS.

GLOXINIA: *Y.* Flowers light blue, with a darker shade on the inside of the lower lip; inside a little spotted, size good, colour common, shape only middling. Both your seedlings are very similar in colour, &c.*

HOLLYHOCKS: *G M.* 1, dull red, size good, centre well filled. 2, purplish crimson, outer petals large, centre well filled, but too small. 3, pale rose, outer petals large, filling up in the centre meagre, size good. 4, 6, 11, and 12 are very nice bright pink or rose coloured varieties, well filled up in the centre and good in shape and size. 5, crimson, well filled in the centre, and good in shape. 8, pale blush, well filled in the centre, and delicate in colour. 7, white, well filled in the centre, but small in size. 10, white, too thin in the centre and rather small. 8, bronze red, edged with yellow, too small in the flower, and not uncommon in colour.*

SMITHFIELD CLUB, 1849.—The Annual Show of FAT STOCK will take place on Tuesday the 11th, Wednesday the 12th, Thursday the 13th, and Friday the 14th of December, 1849, at the Bazaar, Baker-street. The Printed Forms of Certificate for the entry of Stock and Implements, must be obtained from the Honorary Secretary, and returned to him, filled up and complete, on or before Saturday the 17th of November, 1849.—R. T. BRANDRETH GIBBS, Hon. Sec., Corner of Half Moon Street, Piccadilly, London.

WHEAT SOWING.

THE LONDON MANURE COMPANY beg to offer it as under, and pledge themselves that every Manure sent out by them shall be free from the slightest adulteration. Peruvian Guano direct from Importer's Warehouses, London Manure Company's Wheat Manure and Urate, Sulphate of Ammonia, Phosphate of Ammonia, or Ammoniacal Phosphate; Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone Sawdust, and every other Artificial Manure.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

DR. RYAN'S AZOTIC MANURES, prepared under his immediate superintendence. The attention of Agriculturists is earnestly directed to these well-known Fertilisers, the preparation of which is based upon a careful examination of the requirements of the crop and the condition of the soil. The Manufacturers of these Manures, which are made entirely of rich animal matters, have received numerous testimonials to prove them to be equal to the best Guano. Prices, 6l. and 6l. 10s per ton.—Offices, 24, Mark-lane, London.

SOWING OF WHEAT, &c.

COMPOUND CARBONISED ANIMAL MANURE.—This Manure, which is particularly well adapted for the drill, and contains in its composition a variety of highly invigorating artificial substances intimately united with certain organic and inorganic animal products, is now ready to be delivered, specially prepared for the autumn or winter sowing of Wheat, Barley, Beans, Vetches, and other crops, at from 5l. 5s. to 10l. per ton, according to the description or richness wanted. The quantity per acre recommended to be used, in general, is 5 to 6 cwt., the better plan being, one-half with the seed, and the other half as a top dressing in the spring.

Orders to be addressed to the Superintendent at the MANUFACTORY, Middle-yard, Great Queen-street, Lincoln's-Inn-fields; or to either of the following Agents. *In London:* Mr. H. COLES, 83, Cranbourn-street, Leicester-square; Mr. MARK FOTHERGILL, 201 A, Upper Thames-street; Mr. GEORGE LAWRENCE, 18, Piccadilly; Mr. G. CHARLWOOD, 14, Tavistock-row, Covent-garden; and—*In Hartlepool:* Mr. STEPHEN HORNER.

N.B. To insure punctuality in the delivery, when the quantity required is considerable, a few days' previous notice is requested to be given.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

EDENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 8 feet long, furnished, and the Houses when completed charged from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.

HEATING BY HOT WATER.

BURBIDGE AND HEALY respectfully inform their Friends and the Public, they are at this time prepared to undertake the warming of Hothouses, &c., upon their superior system of Hot Water Apparatus. They refer to the under-mentioned places, where they have erected most extensive works.

Royal Botanic Gardens, Kew.
Horticultural Gardens, Chiswick; particularly the new boilers applied to the large Conservatory.
Large Conservatory, Royal Botanic Gardens, Regent's-park.
Duke of Devonshire's, Chatsworth Gardens.
Earl of Gainsborough's, Oakham, Rutlandshire.
Earl of Zetland's, Upleatham, Yorkshire.
Robert Hanbury, Esq., Poles, near Ware, Herts.
Mr. Glendinning's Nursery, Turnham-green.
And at least 500 other important places.

BURBIDGE and HEALY, 180, Fleet-street, London.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of

THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Sheddings, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
HONOURABLE EAST INDIA COMPANY,
HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'Neill and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

AUTUMN SOWING.—POTTER'S GUANO.

MR. POTTER particularly recommends this season for using his Guano, as, if now committed to the earth, it is better adapted, when the spring returns, to yield to the growing crops the food they require in a fit state for immediate assimilation. The increase of chemical knowledge, as applied to agriculture, has enabled Mr. POTTER to make some important improvements in the manufacture of his Guano, which he now most confidently recommends to the use of all who wish to grow luxuriant crops at small expense.

In consequence of some unprincipled persons, once acting as Mr. POTTER'S agents, substituting their own compounds for the genuine article, the Proprietor is induced to recommend a direct application to himself. Where the quantity taken is adequate, an arrangement, as to carriage, will be made to the satisfaction of the purchaser.

PURE GYPSUM, in a state peculiarly adapted for the farmers' use, at the usual low price.—Please direct your orders, per post, to the following address.

28, CLAPHAM ROAD PLACE, LONDON.

OIL-CAKE, GUANO, AND OTHER MANURES.—Foreign and English Oil-cake on sale; also Peruvian Guano of the finest quality, Superphosphate of Lime, Bone-dust, Sulphuric Acid, Animal Cake, Wheat Manure, Gypsum, Rape-cake, Salt, and all other Manures of known value.

Apply to MARK FOTHERGILL, 201 A, Upper Thames-street, London, Agent for Collins's Patent Disinfecting Powder.

About 30 tons Dried Sewage Manure, suitable for mixing in Composts and Dung-heaps, at a moderate price.

SEED WHEAT.—For Sale, at 50s. per quarter, good and genuine seed of the RED-STRAW WHITE and HOPETOUN varieties. Samples of grain and ear will be sent on receipt of stamps to cover the expense of postage. No orders for less than 4 bushels can be executed; those from unknown correspondents must be accompanied by a remittance. Sacks 2s. each. WINTER BEANS, for seed, can be supplied at 5s. per bushel. JOHN MORTON, Whitfield, Berkeley, Gloucestershire.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 29, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Oct. 4—Agricultural Imp. Society of Ireland.
THURSDAY, — 11—Agricultural Imp. Society of Ireland.
FARMERS' CLUBS.—Oct. 1: Great Oakley, West Hereford. — Oct 2: South Devon.—Oct. 4: Burton-on-Trent.

WHEN we expressed fears that the Society of Friends had distributed seed Potatoes in Ireland, we had the impression of having seen a statement emanating from themselves implying that they had done so in 1848; and of having read in the notes of an individual Friend, who had made a tour through the west of Ireland last spring, remarks, conceived in a congratulatory tone, on the breadth of Potatoes planted. We regret that such a fear was expressed without more closely investigating the grounds of it, but rejoice to have been the means of eliciting a declaration that the planting of the Potato is discouraged by those whose opinions will have such well-merited influence in Ireland.

In one sense, both they and others who assisted the small farmers to crop their land, may be said to have indirectly distributed seed Potatoes, however unwittingly. Knowing, as we do, how that class and the profit-rent landlords in Ireland cling to the Potato, like drowning men to a plank, and knowing, as we do, the barefaced attempts made by jobbing landlords to impose on the benevolent in 1847, we have no doubt that Oats, Beans, &c., supplied by charitable associations would be exchanged for Potato sets. In illustration of the abuses to which all the efforts of these associations are liable, we present the following statement by one of the inspecting officers under the Temporary Relief Act. "During my whole career in this capacity," he says, "the British Association referred to me all the numerous applications made to them from the district under my charge. In reporting on these, even when proceeding from the most respectable and well-intentioned, I was frequently obliged to reduce figures of rhetoric to the arithmetical form of the area of the district, its valuation, its population, the number of persons employed on the public works, and the number of rations issued under the Act 10 Vic. cap. 7. It was only towards the close of the Temporary Relief that I was requested by the Committee of the Society of Friends to report on applications made to them. I have now before me copies of my comments on the replies made by one 'Squireen' to the queries which applicants were required to answer. The case was this—after the Baronial Committee and Sub-committee under the Labour Rate Act, the Electoral Division under the 10 Vic. cap. 7, and the parishes composing them had received liberal grants from the British Association and the Society of Friends, he had applied to the latter for a donation to the district of——. This I found to be a single townland, his own property, containing 378 acres, valued (GRIFFITHS' valuation) at 198*l.* per annum. He was asked what relief was distributed in the district—he replied little or none. I gave the names of the Electoral Division Committee, of which the applicant was a member, the number of daily rations issued by them (1082), with the proportion the recipients of relief bore to the population, adding, 'I receive frequent complaints from the rate-payers who are not on the committee, that persons not destitute of means of support are receiving relief; and I am engaged in a struggle to keep off the relief lists farmers rated above a certain value. The parties of this description, on whose behalf application is made for the bounty of the Society of Friends, are the tenants of the applicant.' In answer to the question 'Hast thee a boiler?' the applicant replied that he would do anything to keep the people from starving. On this I remarked, 'The Committee of which the applicant is a member, have hitherto resisted the distribution of cooked food; the most refractory Committees of this Union are, however, now preparing boilers, under an intimation that if they do not, the supplies will be stopped. He was asked whether he proposed to distribute the grant in association with others, or single-handed. He replied, single-handed. Was there much sickness in the district? Answer, not much, 'thank God;' while, in answer to another question, he descanted on the number of deaths from destitution which came to his knowledge in his official capacity. I remarked on this as one of those anomalies which English Inspecting Officers, who he said did not understand the country, found so difficult to comprehend. The reason why fever was represented not to prevail was, that at this time the government had given notice that advances for Fever Hospitals would cease after a certain day, and that they would then be supported by rates levied in the district. With applicants like this gentleman, the Society of Friends were greater favourites than the British Association, from a belief that the former were not unfavourable to the distribution of their bounty among occupiers of land, whereas the latter wished theirs distributed in conformity with the Government regulations, by which it was attempted to prevent the abuses incident on the establishment of a class of pauper landholders. Most of the applications to the Society of Friends which came before me were of a similar character."

On another application reported to the same officer, we find he reported as follows: "This appears to be an application for aid to a part of the Electoral Division of ——, situated in the parishes of —— and ——. In the names of the parishes, and in the names of the gentlemen composing the Committee, I have no doubt the Central Committee of the Society of Friends will recognise those of several to whom they have already made donations. If the Committee wish their donations distributed among the farmers, that is the way in which relief is generally appropriated, when not distributed by a Relief Committee, acting under the Government regulations. Even then they come in for a share, though not to the extent which some people desire. I think all charitable associations will do well to reserve further distribution of relief till after the 15th of August, when, the Government advances ceasing, and the support of the poor being by means of local rates, relief will be given on a much more limited scale than at present. The poorer classes will very soon suffer even more from want of clothing than they suffer now from want of food. If charitable associations could organise a system for giving them the materials for making their own clothing, and furnishing industrial occupation for them in making it, a greater benefit would be conferred than by the distribution of food to farmers, to enable them to pay their rents. *Assistance to emigrate, to those who are desirous of emigrating, and have not the means, would be most thankfully received.*"

A READER of our columns has expressed his dissatisfaction with the manner in which we have spoken of the BUSINESS OF FARMING: and an agricultural contemporary who quotes from us as the "GARDENERS' CHRONICLE," when he has occasion to borrow our matter, willingly accords to us our true title when we are made the subject of this attack in his pages. "A Farmer" has given him certainly an amusing exposure of the sentiment which he asserts us to advocate; and if it be true, as he says, that we look upon the destruction of rats* as all that is needed to set agriculture firmly on her feet again, then we really have no good reason to offer why that should not be attempted, as he suggests, by blocking up their holes with AGRICULTURAL GAZETTES. This is the climax of his pleasantry, and we willingly damage our case by republishing the joke here.

At the same time we are not willing to abandon what we really did say without an attempt at re-assertion and explanation. We have enjoyed nearly as many years' experience of the business as "A Farmer" professes to have suffered, and happening to have some little knowledge of other professions too, it is with perfect confidence in our accuracy that, arranging our various manufactures according to the intensity and activity of mind and body they display, we assert that of food to stand as low as any, perhaps the lowest in the scale. Let us not be mistaken: to many of our readers we would not venture to speak thus, but we ask them to compare the assertion with the *average* condition of agriculture in this country, and remember, too,

* See *Agricultural Gazette*, page 489.

that it is not of the importance, but of the condition of the art that we speak; it is one thing to affirm the axiom, that the land of this country is essential to our national existence, and another to say that its cultivation is perfect. Surely it is absurd to assert the latter; and it is as absurd to be angry with any one for denying such an assertion, for on the very imperfections which evidently belong to it, there justly rests the hope of overcoming our difficulties. It is only fair to add, that while of all trades and professions in this island we believe our own to be the most open to obvious improvements, we readily acknowledge that it is much easier to advocate than (under the circumstances in which many are placed) to execute the improved practice we recommend; and we have no intention of publishing our own farm, in illustration of the perfection at which we aim, or of hazarding, with Mr. Hodgson, of Whitehaven, all confidence in agricultural truth on the determination of a wager! *

We stated our opinion that agriculture is not so skilful and precise an art as even our fickle climate would permit it to be. Does any one differ from us in this? Let him take a thousand acres in any county he chooses, and try to ascertain whether, and in what degree, the cultivator has gained or lost by the cultivation of them during the past year. Where will he find this information? Can the farmer furnish it? Does "A Farmer" think it possible to obtain this information regarding his business as it is generally carried on? No such information, we are bold to say, exists with respect to ninety-nine-hundredths of English land; and when we speak of the slovenliness of farming, as it is generally carried on, why should it excite the ill feeling of any of its practitioners? But we appeal to our readers if, in this, we speak without reason.

Compare the farmer with the man who turns out broad cloth as the product of his labour and capital; he can tell you of the profit or the loss upon every piece; he can say, too, whether it be in the wool or the spinning, or the weaving or the dyeing, that the loss or the gain has arisen; he can trace every defect it exhibits to the cause of it, and for every extraordinary excellence he can award the credit where the credit is due. He can thus aim with confidence at the avoidance of future losses, or at the attainment of future improvement. And if the contrast between him and the farmer be still disputed, we may hereafter publish specimens of his 'books,' in proof of our assertion.

Where will you find the parallel to this in the business of agriculture? No doubt such accuracy of detail is not possible in the field as may be employed in the factory: we cannot trace the materials of our Wheat crop from the earth, the manure, the air, in which they originally reside, to their ultimate position in the ear: but where will you find anything approaching to the nicety and particularity of superintendence and manipulation on which the profits of the manufacturer depend. We have little doubt that his profits will be *our* experience also, when his care and skill shall attend our practice.

* Mr. Hodgson wishes to determine between the merits of good practical farming and "scientific agriculture," by offering to show his farm in Cumberland against those of Messrs. Davis, Huxtable, and Mechi, for 100*l* a side.

PRACTICAL APPLICATION OF THE LAW POINTED OUT BY DR. R. D. THOMSON, OF THE PROPER BALANCE OF THE FOOD IN NUTRITION.

By Dr. C. Remigius Fresenius, Professor of Chemistry at the Agricultural Institute of Wiesbaden.†

In reference to the question concerning the relation which must subsist between the nitrogenous and non-nitrogenous nutritive substances in the food of men and animals, it is but due to Dr. R. D. Thomson to acknowledge, that he considers this the most important circumstance in nutrition, and was the first to call attention to it. This relation is obviously different in various classes of animals, and besides it must be different even in the same class of animals, according to their mode of life and to the amount of exercise they undergo.

An animal which is hard worked will require a different proportion to one which stands at rest in a stable; still more different must be the proportion when our object is to fatten the animal. I consider it to be one of the most important tasks of dietary and the feeding of cattle, to fix the requisite proportions suited to the various modes of life, for it may be understood that these limits cannot be overstepped on either side without injury. Let us suppose, for instance, an animal requires, under certain circumstances, the proportion of one nitrogenous (nutritive) to five non-nitrogenous (calorifiant) constituents in its food; but if we give it food in which the proportion of one to ten prevails, there will be, in the process of nutrition, for every one part nitrogenous only five parts non-nitrogenous assimilated; the other half of the non-nitrogenous (calorifiant) aliment will be wasted. But it is not the pecuniary loss alone which arises through this, that deserves consideration; for it is clear that the animal will be burdened with the process of getting rid of the unassimilated half; for this object strength is required, which might otherwise have been spared. If we give it food containing too large a proportion of nitrogenous aliment, in favourable circumstances it will consume the dearer instead of the cheaper non-nitrogenous aliment; but in unfavourable circumstances it will become diseased, by being compelled to act in opposition to Nature. Taking it for granted that the requisite proportions for different circumstances were ascertained, the choice of aliment could be regulated on the most rational basis. [We speak here primarily only of the absolute strength of nourishment, without noticing the greater or less degree of digestibility possessed by equally nutritious substances, and the proportion of unassimilable constituents which they contain.] We observe, for instance, that cows on a meadow, feeding only upon Grass, enjoy good health. Now let us endeavour to ascertain how we can produce the same proportion of non-nitrogenous and nitrogenous aliment with other descriptions of food. The proportion which exists in Grass or hay is 1 to 6.3, as in the following table:

	Relation of one part nitrogenous to non-nitrogenous. 1.	Relation of one part nitrogenous to salts. 2.	The following quantities contain one part of nitrogenous matter. Nitrogenous, non-nitrogenous, and salts. 3.	Dried at 212°. 4.	Dried in air. 5.	Fresh substance. 6.
French Beans...	1.81	0.15	2.96	3.45	4.00	
Lentils	1.87	0 09	2.96	3.45	4.00	
Field Beans ..	2.08	0.16	3.23	3.66	4.29	
Peas ...	2.14	0.11	3.25	3.86	4.28	
Wheat	2.42	0.11	3.53	4.21	4.85	
Oats	4.08	0.24	5.32	6.41	7.35	
Barley	4.25	0.27	5.52	6.53	7.57	
Rye	4.42	0 13	5.55	6.29	7.24	
Red Turnips	5.08	0.42	6 50	6.45	....	35.3
Red Clover	6 18	0.60	7.68	7.68	9.72	32.0
White Turnips	6 59	0 55	7.94	7.91	.	65.1
Indian corn	6.55	0 10	7.66	8.13	9.34	
M. Wurzel	7 26	0.44	8 70	8.65	..	48 8
Carrots... ...	7.84	0.55	9 89	9.39	..	67.6
Meadow Grass.	8.30	0.73	10.03	10.73	12.47	32.8
Potatoes	9.	0.40	10.40	....	....	41.2
Oat-straw	12.5	2.01	15.54	40 00	55.55	
Wheat-straw .	14 2	2 48	17.68	49.00	54.05	
Rice	14.8	0.10	15.90	16.61	18 41	
Rye-straw .	24.4	1 98	27.33	53.18	65 79	
Barley-straw .	29.3	3.08	33 88	52.35	58.82	
Cherries .	41.	0.18	42.18	.....	.. ..	175.4
Pears	121.6	0.40	125.00		.....	1250.

This Table, as given by Fresenius, is derived from German authorities, including several results obtained and published by Dr. Thomson in his "Researches on Food," p. 167. See also "Philosophical Magazine," vol. xxxii., p. 459. There is therefore some discrepancy when compared with English grain, the German being richer in nitrogen. See Dr. Thomson on the Composition of German and English Bread, "Philosophical Magazine," vol. xxiii., p. 321.

Were we then to give them Carrots, in which 1 part nitrogenous is contained for every 7.84 parts of non-nitrogenous constituents, the proportion would not be materially disturbed; but were we to give them Potatoes (1.9), we disturb the proportion somewhat more. It is therefore expedient to feed them with a substance which is richer in nitrogen; this proper proportion may be obtained with exactness by mixing 1 nutritious equivalent of red Clover with 3 nutritious equivalents of Potatoes:—

$$1 \times 1 : 6 = 1 : 6$$
$$3 \times 1 : 9.00 = 3 : 27$$
$$4 : 33 \text{ or } 1 : 8.25$$

To produce this mixture, we feed them by [giving them 9.7 lbs. of dried Clover for every 123 6 lbs. of Potatoes. If we wished to give them the same proportion in white Turnips and Oat straw, we must supply for every 2 nutritious equivalents of the former, 1 nutritious equivalent of the latter; for this mixture gives the proportion of 1 to 8.4; that is, they must be fed with 130 lbs. of fresh white Turnips for every 55.55 lbs. of dried Oat straw.

A horse that works hard requires the proportion of 1 to 4. For this we give him Oats which represent that proportion. But if we wished to give him the same proportion in field Beans and Hay, we must take for every 2 alimentary equivalents of the former 1 alimentary equivalent of hay, for such a mixture has the proportion of 1 to 4.1. We feed him therefore with 8.58 lbs. of dry field Beans for every 12.47 lbs. of dry hay.

A man requires for a certain mode of life the proportion of 1 to 3. He wishes to eat beef and Potatoes; he must, therefore, for every 2 alimentary equivalents of beef eat 1 alimentary equivalent of Potatoes, for this mixture gives the proportion of 1 to 3 01; he must therefore use for every 2 lbs. of boiled beef (reckoned without water) 41 lbs. of Potatoes (reckoned in the fresh state). If he wished to produce the proportion of 1 to 4 with Carrots and raw bacon, he will attain it by mixing 5 alimentary equivalents of the former with 6 alimentary equivalents of the latter, which represent the proportion of 1 to 3·99. For this purpose he must eat 536 pounds of fresh Carrots for every 61 pounds of lean bacon (reckoned free from water).

Concerning the question, as to what is the proper quantity of aliment (possessing the due proportions) which is to be given under different circumstances, experience alone can determine it. For the computation, how the necessary quantity may be given in diverse properly assorted alimentary mixtures, we would refer to the divisions 3, 4, 5, and 6, of the foregoing table. If a cow requires in 24 hours 10 kilogrammes (22.05 lbs. avoirdupois) of air-dried hay, how many kilogrammes of the mixture given above of Clover and Potatoes would it require to replace it? 10 kilogrammes of air-dried Clover contain in all 8.08 kilogrammes (17.728 lbs. avoirdupois) of nutritious matter, for

$$12.47 : 10.03 = 10 : x$$
$$x = 8.04$$

That mixture will consist of 9.7 kilogrammes (21.38 lbs. avoirdupois) of dry Clover, which contain in all 7.68 kilogrammes (16.93 lbs.) of nutritious matter, and 123.6 kilogrammes (272.5 lbs.) of Potatoes, which contain in all 31.20 kilogrammes (68.79 lbs.) of nutritious matter. 133.3 kilogrammes (293.93 lbs.) of the mixture contain accordingly 38.88 kilogrammes (85.72 lbs.) of nutritious matter. 38.88 kilogrammes (85.72 lbs.) of the joint nutritious matters are equal to 133.3 kilogrammes (293.93 lbs.) of the mixture. How many are 8.04 equal to? $x = 27.5$ (60.63 lbs.). 27.5 kilogrammes (60.63 lbs.) of the mixture in question are equivalent to 10 kilogrammes (22.05 lbs.) of hay in the proportion and quantity of nitrogenous and non-nitrogenous alimentary substances. In a precisely similar manner the kind and quantity of the salts must be attended to in practice.

Conclusions from the foregoing.—We have approximated much more closely to the object we had in view, viz., a completely rational system of nutrition, than it has hitherto been possible to do, and can answer the proposed questions with perfectly accurate average numbers; and we have now only duly to consider the influence which the unappropriated portions of food exert on the body (the getting rid of them involves a waste of strength); and further, the greater or less degree of digestibility (*der leichteren oder schwereren, schnelleren oder langsameren Verdaulichkeit*) of each species of aliment, in order to do it with perfect precision. But we can even now, from what has already been stated, educe safe and weighty conclusions, namely the following:—1. It is an impossibility to sustain either a man or a beast on food entirely devoid of nitrogen, however great in quantity it may be. 2. All that has been said in the older as well as in many of the newer books on husbandry, respecting the relative nutritive value of different kinds of forage, cannot, inasmuch as it was not arrived at by experience, but deduced from theoretical views, possibly be correct, because these views do not accord with facts. 3. The discovery of the true relative value of aliment, and of the proportion in which it may be replaced, may be ascertained without much difficulty, so long as chemists and farmers work hand in hand for the exact solution of the above questions. 4. A completely rational system of nutrition, that is, such a one as combines the greatest amount of strength with the least consumption of nourishment, will then be possible. 5. A loss of nutritious matter and of strength often takes place where it would be least expected, namely, by the consumption of all kinds of food (or forage) where the due proportion between nitrogenous and non-nitrogenous constituents does not exist, say by eating only fruit or Potatoes. 6. It can with safety be decided by the above under what circumstances substitutes for bread may be employed, and what is their respective value for each desired proportion.

Raw and cooked Articles of Food.—Many kinds of food cannot be eaten raw by man; others, although they may be eaten raw, agree much better with us when cooked. Hence boiling, roasting, baking, &c. has a twofold effect; primarily, it converts indigestible or food difficult of digestion into a digestible or more easily digestible condition. Thus, starch is converted into gelatinous starch, into dextrine or sugar; cartilaginous substances into glue; and chondrine, fibrine, into changed fibrine, &c. Secondly, it frequently confers upon them an agreeable taste. But can the real nutritive value of food be augmented by cooking? Impossible! Still it may be of the greatest benefit in feeding cattle to cook their food. The advantage accrues in this way: that Potatoes, Turnips, &c. are more quickly and more easily digested when boiled than raw; and thus there is much less chance for any portion to be thrown off in an undigested state (unassimilated). Its warmth gives also a slight advantage to cooked food; it deprives the body of no heat; and the non-nitrogenous substances, which in the cold food would have been required to afford heat, can be used for the production of fat. But whether cold or warm food is to be preferred in a practical point of view cannot from all this be conclusively deduced. It is a question only to be answered by experience, for the result is entirely dependent on the nature and requirements of the animal. *From the London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science for August* 1849.

† Translated from the "Lehrbuch der Chemie für Landwirthe, Forstmänner und Cameralisten," von Dr. C. Remigius Fresenius (1847), page 480, by William Augustus Perston.

* The original passage is "So wird es beim Ernährungsprocesse auf je 1 Thl stickstoffhaltige eben doch nur 5 Thle stickstofffreie Bestandtheile verwenden, die andere Hälfte der stickstoffhaltigen Nahrungsmittel wird vergeudet." The true reading it is apprehended ought to be *stickstofffreie Nahrungsmittel*, and it has thus been rendered in the English version. Trans.

AGRICULTURE IN IRELAND.

My deep anxiety for the general improvement of Ireland induces me to avail myself of your usual courtesy in allowing me to express my opinions, and to ask permission to lay before your readers the reasons that have induced me to form an opinion that the most

of England presents advantages for the introduction of British capital that no other portion of this empire can now offer. I hope I shall be enabled to prove that it affords the strongest inducements to the British proprietor and farmer to settle there.

A combination of causes has led me to form this judgment. A distressed and a careless proprietary (nominal inheritors of large tracts of country, but in reality either the crippled agents of their creditors, or totally disabled with properties wasting away under the dominion of the Courts of Chancery), and a population locally superabundant from the want of capital to supply employment, have hitherto been the main impediments to the improvement of that portion of Ireland. There was no intermediate tenant farmer class (but in many instances the obnoxious class of middlemen held large tracts of land which they let under rack-rents to a very poor tenantry); nor did there exist the means of forming one. This was occasioned by the state of the law. No leases for a longer period than seven years could be granted by the Court of Chancery, and an embarrassed proprietor could grant no lease that might not be set aside by a prior mortgagee—an incumbrancer that generally existed—nor, at the utmost, one the duration of which was not limited by a leasing power contained in a family settlement, and the proprietor, generally strict tenant for life, had no power to bind his successor to make compensation for improvements.

The landowners of the west of Ireland, though a peculiar and in many instances an improvident class, were very much the victims of circumstances over which they had no control. The property which they inherited incumbered, they could not sell by private contract, from the strictness of their family settlements, and the impediments to the transfer of land which existed, from legal difficulties; and a judicial sale through the medium of a court of equity was tedious, and so expensive as to be ruinous. Imperfect interior communication, and an iron-bound coast, rendered a knowledge of, and interchange with, the people of that province, and of England, comparatively infrequent. Agrarian outrage, however, never formed a bar to the settlement of British farmers. A good employer was certain of a welcome. Murders connected with the occupation of land were nearly confined, with a few terrible exceptions in Roscommon, to parts of Munster, where the competition for land was excessive.

Nor in the enumeration of causes which retarded the advance of the province, can the circumstance that the estates of the proprietors were very frequently unpartitioned, and the farms of the tenantry held in *rundale*—that is, each tenant in the townland was liable, not only for his own rent, but for that of each occupier of the townland—be overlooked. Thus I trace the wretched state of Connaught generally—there are pleasing exceptions, as on the estates of the Earl of Clanricarde, Lord Clonbrock, and others might be honourably distinguished—to the want of a tenant farmer class, and to the existence of an incumbered proprietary and a pauper peasantry.

I look for its amelioration to the introduction of the first, and the removal of the two other classes. The latter event has already partially taken place. The late famine has so thinned the population that it is nowhere even locally superabundant; the small farmers have been either ruined or have emigrated, and thousands of cultivable acres lie waste in the midst of a hardy and industrious population, who are idle occupants of poor-houses, but ready and willing to work. The combined effects of famine and the poor-houses have nearly worked out the occupiers of small allotments. In attestation of this I give the following extract from the Dublin *Evening Post*:—"Up to the close of 1847 the cottier class alone were broken up; but, in 1848, the ruinous effects of the general calamity extended amongst all holders below 30 acres. In the four provinces there were more or less suffering; but, in Connaught, the smallest and least populous of the provinces, the reduction in all classes of holdings below 30 acres was out of all proportion with the other provinces. That deeply-afflicted province felt the full weight of the calamity. Whilst the diminution of farms, ranging from 5 to 30 acres, amounted to 26,499 acres, there was an increase of only 597 in the farms above 30 acres.

As to the remaining class, an Act for the Sale of Incumbered Estates was passed last session, by which, to a large extent, the deeply incumbered properties of which I am treating may be sold very speedily, and a Parliamentary title, as lawyers term it, conferred upon the purchaser. By a Parliamentary title, I mean one by which the purchaser can acquire an indefeasible title against the world by a deed executed by the new Commissioners, which will not occupy a skin of parchment. The design of the Legislature has been to emancipate the land, and transfer from it to the purchase money the complicated claims and rights to which the land had been previously subjected. The same statute gives great facilities to proprietors of lands hitherto undivided to partition them. Thus, properties can be acquired perfectly free and unincumbered in the one case; and, in the other, each owner may make himself sole proprietor of the portion of the estate hitherto held in common with others, who either could not or would not co-operate for its improvement.

Land which in former times would have sold for 20 or 25 years' purchase, will not now realise more than 10. Observation has shown that for the last 50 years land has risen or been depressed in value at intervals of 10 years; and although the point of depression has never been so extreme as at present, I am by no means an over-sanguine prophet of the future in auguring that it will, in 1860, have attained the value it possessed 10 years ago. What an inviting opportunity for the capitalists! As to communication, the Government have advanced 250,000*l.* for the completion of a railway from Dublin to Galway, and it is no longer visionary to expect that this port will become very extensively engaged in commerce with America, if it do not indeed become the medium of all our trans-Atlantic intercourse.

The interior of the west of Ireland is well traversed with roads, which were planned and laid out under the able superintendence of Mr. Nimmo; and as a proof that the agriculturists have been prompt in availing themselves of them, it is enough to state that "When he was engaged in the construction of the Connemara roads, his workmen were actually inconvenienced by the country cars conveying produce and objects of traffic, even up to the spot which the engineers were at the moment commencing to render passable."* The most desolate parts of Clare, previously to the formation of roads by the Board of Works, have, by means of these roads, become fertilised and productive, and capable of supplying the deficiencies of food elsewhere. "The town of Clifden, in Connemara, and the surrounding country, were, in 1815, in such a state of seclusion, that it contributed no revenue whatsoever to the State, and up to 1822, its agriculture was so imperfect, that scarcely a stone of Oats could be got. In 1836 Clifden had become an export town, having sent out 800 tons of Oats, and it produced to the revenue annually 7000*l.* [From the expenditure in Connaught, in 11 years, of 160,000*l.* in public works, the increase of annual revenue derivable from the province has become equal to the entire amount."†

Travelling communication is now complete through Connaught, and principally by means of Mr. Bianconi's well-known Irish cars.

Having shown, by these general observations, that legal and physical barriers to the improvement of Connaught are rapidly being removed, that no danger need be apprehended from agrarian outrage—not from the labourer, for the peasant of the West, stricken by adversity and pinched by the hard gripe of famine, will welcome with gratitude the individual who will give him employment and money wages—and not from the small farmer, for the class has ceased to exist, I shall in another letter state some particulars relative to the province and the people, which in my judgment justify my recommendation, in an agricultural point of view, to the British farmers to locate there. *Martin Doyle.*

* "Industrial Resources of Ireland," by Sir Robert Kane.
† Ibid.

Home Correspondence.

Sex of Eggs.—Having read "D.'s" letter on "V. S.'s" communication, I am induced to tell you that, without pretending to any knowledge of abstruse mysteries, I have learned to discover which eggs will produce pullets, and have pursued the practice through this season with uniform success. I met with the hint either in your own useful periodical or some other. It consists simply in this: To avoid setting the long-shaped eggs (which always produce cocks), choosing the rounder and plumper ones. Generally, too, I have found that the very largest eggs produce male birds. I select therefore the most promising rounder-shaped eggs, without taking the very largest. It is certainly an important matter to succeed in this department, having myself often had the mortification to have a whole brood of cocks, or nearly so; the avoidance of this inconvenience is truly a desideratum. *Maria.*

Agricultural Education.—As you have invited your correspondents to express their opinions on the subject of education, and as the scheme of the Lichfield diocesan board of education may have escaped your notice, I will briefly state its outline. Not having an institution of their own adapted for the purpose, they granted 200*l.* to one of the National Society's colleges to purchase chemical apparatus, and to educate six young men for schools in that diocese. In these schools it is proposed to place within the reach of the farmer the means of giving to his sons a superior education at a moderate expense, and at the same time to educate the children of the poor. At an examination of the model school belonging to the Battersea Training Institution, some time since, the Earl of Harrowby, when speaking of these proposed schools, expressed the following sentiments. He said that by means of the superior masters who were now being sent out from the different normal schools, the poor man was enabled to give his children an education, at a mere nominal cost, of a superior kind. And from the fact of middle class schools being so thinly scattered in rural districts, a farmer could not obtain such an education for his sons, unless by sending them to an expensive boarding school, where, after all, the education they would receive would perhaps be but little adapted to their wants in after life. If they were to offer them an education of an eleemosynary kind it would be rejected with disdain, but by combining the middle and lower class schools, and charging to the farmer and those similar in station a fair price for what they receive, it was hoped, and he did not doubt, but that the farmers had sufficient good sense to support such schools. For there was no fear, though the servant and master should be educated together, of the servant being made above his station, or equal to his master. The superior grade of society in which the one would walk, combined with his power of staying at the schools for a longer period, would still keep him above the other. If we look to our public schools and universities, we shall there find the sons of clergymen and private gentlemen being educated and associating with the sons of peers of the realm; and why should not the farmer's son be educated with that of the poor man? Surely the servant will not respect the master any the less; but by spending a certain portion of their youthful days together, they will have a sympathy for one another; each one will study the other's welfare, and in proportion as they do this will they prosper. *J. S.*

Agricultural Education.—This subject is one of the most important that can be canvassed in your pages; and since you have left it open for discussion in a recent Number, I shall take the liberty of troubling you with a few remarks, feeling satisfied it is only by beginning at the beginning—by educating the youth destined to become members of this profession, in a sound practical and scientific course of study, we can hope to raise ourselves to that position in society which is our due. Some may tell us that such knowledge is useless, or at least not necessary; and as proof will adduce examples of excellent practical farmers who are tilling their acres to perhaps the greatest advantage—men of little or no education; yet such cases will form the exception rather than the rule, and until the principles upon which sound practice is based be understood, the mass must go on groping in the dark. Until the wants of a plant are known, how can we apply suitable food for its growth? while ignorant of the ingredients of our soils, how can we grow the crops best suited to them? Again, I can hear some say, "All this knowledge is obtained by experience." True, by innumerable failures, by great loss of capital, and by many long, weary years of failure—alternate failures and successes; and even when a man has thus arrived at important rules without the aid of science, all his experience is local, chained to the spot upon which he lives, and should circumstances compel him to seek another situation where the soil possesses a different character, he must in many respects be as ignorant as at first. We can never keep pace with the age of progress in which we live till we acknowledge the vital importance of a sound, practical, and scientific education. Such education should commence at the school. Agriculture should there hold equal importance with the classics and mathematics, and though it may not always be practicable to attach a small portion of land to such establishments, yet first truths should be instilled, which will be best effected by a general outline of the various sciences connected with the art, *viz.*, chemistry, vegetable and animal physiology, geology, &c. The young beginner would thus become acquainted with general principles, with the nomenclature of science, he would understand the various properties of bodies, and would be in a measure prepared to learn how such bodies act upon one another, forming the most valuable or deleterious compounds. Having progressed thus far upon the threshold of knowledge, the finish must be given at an institution entirely devoted to the purpose, such an one as is now rapidly progressing to a high state of perfection at Cirencester. I allude to the Royal Agricultural College, of which I am proud to say I was a student for upwards of three years, and though there at the commencement, when a want of practical experience in the best methods of carrying out details prevented the student benefiting by the instruction afforded, to that extent which he does at present, yet I for one feel the utmost gratitude to its originators and supporters for affording me an opportunity of acquiring much valuable knowledge, which I am perfectly certain could not have been obtained elsewhere; and it is a stigma on the British character that such a noble institution, so directly beneficial to the welfare of this country, has not hitherto met with that support which it deserves, and has been clogged in its movements for want of adequate funds to meet the unavoidable expenses incurred in its formation. And let me advise those of your readers who have not yet visited this institution to take an early opportunity of doing so, since it is open to exhibition, and I will confidently undertake to say the time, &c., spent in so doing will not be looked upon as misspent. The course of instruction is varied between lectures delivered by the different professors, and practical work in the laboratory, where students are taught to analyse soils, manure, &c., on the Continental system, and field practice. But were I to enter at this time into details, I should be encroaching on your valuable space, and must therefore bring to a conclusion this very imperfect outline of an institution destined to become one day of the utmost value to the agricultural community. *John Coleman, Ferris Cottage, near Newbury.*

Expense of Feeding.—Partridge shooting prevented me from attending last week to the request of your correspondent "R. W. B.," for the data on which I founded my remarks on the relative values, for feeding purposes, of Linseed and oilcake. My statement was to the effect that the cake contained half as much oil as the seed, considering the seed to average 20 per cent., the cake 10. In Professor Johnston's "Lectures on Agricultural Chemistry," the analysis of Linseed is stated at from 11 to 22 per cent. of oil, and of Hemp seed at from 14 to 25, of English cake at 11.93, and of American at 12.38. In Solly's useful little work on "Chemistry for Farmers," the per centage of oil in both English and foreign cake is stated at from 10 to 11. It is observable that although the analyses of the seeds give a very variable amount of oil, 20 per cent. being a very liberal average, those of the cake vary but little, 10 per cent. being a moderate average. I estimated the value of oil for feeding purposes at 2½*d.* per lb.

and the residual constituents at ¾d. per lb., the differences being 1½d.; it follows, if we assume 10 per cent. more oil in the seed than the cake, that the seed is one-sixth more valuable than the cake, and not more, or at the rate of 1s. 6d. per cwt. Your correspondent thinks 10 per cent. a large proportion of oil to remain after pressing. If he distrust analysis, let him contrast the cake with oatmeal, which contains from 6 to 7 per cent. of oil, and the greater richness of the cake in oil will be sufficiently obvious. Whether, as he surmises, there is in oilcake a mixture of other seeds, is perhaps a question more of curiosity than of moment. The oily seeds are very alike in their nutritive capacity, though they differ widely in their per centage of oil, and in their flavour. Rape seed, from its exceeding richness in oil, forms the great temptation, but if mixed in any considerable quantity would be easily detected, and the great value of pure Linseed oil would seem a sufficient guarantee against injurious intermixtures. And here allow me to remark, that the value of Rape-cake as cattle food seems to have been very much overlooked, having hitherto been used only as a manure. From experiments, however, detailed in the last Number of the Journal of the Royal Agricultural Society, it appears that if gradually introduced in mixture with oilcake, it may be substituted for the dearer cake to the extent of from one-third to one-half. This is worthy the farmer's consideration, especially as it has been abundantly proved that in passing through the bodies even of growing and of fattening stock, the nitrogenous constituents of the food—so valuable as manure—are only exhausted to the extent of from one-fifth to one-tenth, and the phosphates and other salts scarcely at all. So that by a little management on his part, Rape-cake, as well as the straw and husks of grain, may be made to serve as food for stock, without any appreciable diminution of their value as manure. *P.*

Scheme for Agricultural Instruction by Lending Libraries.—Some short time ago, the Society of Architects, in London, formed the very laudable purpose of publishing at their own cost everything connected with architecture, in order that no idea might be lost from want of being made public. And they have extended the idea by forming a lending library, by which the books are made accessible to all. This very excellent purpose might be very beneficially extended to the publishing of everything connected with agriculture, and thereby furnishing a lending library for the use of the agricultural public. The entertainment belongs to the Royal Agricultural Society of England, who have the means that are necessary, and also the ramified influence, of carrying the purpose into effect. It would form a very valuable addition to the useful labours of that Society. The writing part of the living world is, and ever has been, proverbially a poor one, and wholly unable to usher their ideas into the presence of the public by reason of the want of the necessary means. And the publishing is left to the capriciously estimated merits of the work paying cent. per cent. upon the outlay. Consequently, many most valuable ideas and conceptions are wholly lost, and condemned to oblivion. If such an arrangement be adopted, profits must be utterly abandoned, and some suitable recompense given to the author, instead of enriching the stationary bibliopoles. And no hypercritical observer must be allowed to condemn any effusions because they strangle his ideas, or jostle his prejudices. The very utmost liberality must be exercised in bringing forward every idea, whether narrow or liberal, crude or refined, free or dogmatical. Discussion would be engendered, errors would be detected, and truth would be settled. *J. D.*

Indian Corn.—In your Number for May 19, page 15, of this year, I asked Mr. Keene if he would inform me from what varieties he had raised his new hybrid, called by himself Forty-day Maize, but this he never has. I also stated that, in my opinion, they would eventually prove to be the same varieties as those grown by the Messrs. Page, seedsmen, &c., Southampton; for this reason, that when it pleases Nature to produce new varieties by the aid of man's ingenuity, or her own freaks, she not only changes the habit and character of those varieties, but, by her fundamental principles, the seed produced by the same also. To what extent Nature may be indebted to Mr. Keene I cannot say, or why, as a solitary individual, he had so merited her good graces as to have been allowed to bring into existence a new race without either her permission or authority; and the consequence is as I anticipated, she has refused to acknowledge them as the production of Mr. Keene's handicraft, and they are compelled to own themselves the legitimate offspring of the three kinds known to me as the Zea Mays Tuscorora, the tall variety of Quarantine, and rostrata. Now, I should think it but reasonable, after the strong assertions made by him of the superiority of his special-raised hybrids over all others cultivated in England, that he point out that superiority beyond refutation. When he can make me disbelieve what I have this day seen, the result of experiments made by the Messrs. Page, who have paid great attention during a period of 20 years to select those varieties best suited to our fluctuating climate, as well as regards earliness of maturity; also those that will yield the greatest weight of green food for cattle; in fact, some of them are quite acclimatised. It is not only for me to say so, because any one of a doubting mind may have ocular demonstration of the facts, which bear their own testimony, would he pay a visit to Southampton. Among several varieties, two seem to appear to merit particular attention—the one an Early Dwarf, the most prolific in cultivation, not only producing from four to eight cobs on a plant, but the whole spike of bloom appears to be fecundated, and numerous small cobs of beautifully-ripened grain was shown me as the produce of what I always believed to be the male organ of the plant (how do you account for this?) It was sown on the 8th of May, and gathered on the 20th of August, as stated, with sample of cobs, much to the gratification of the public, who viewed with curiosity such a well-ripened produce in such a short period of time; it is full three weeks earlier than the new Forty-day Maize, and certainly much more prolific; and, from its dwarf and compact habit, it is the only variety likely to be at all times sure in our climate. Three weeks gained over the supposed earliest, and precisely the same treatment, will, I should imagine, give it every preference. The other is called Agricultural Maize, for green food, plants of which also were exhibited, producing the enormous weight of 92 tons to the acre, and that too in the short space of three months from the time of sowing. What can be so valuable to the box-feeder as such a nourishing thing as this? The cattle will devour it without avidity even to the very roots; all stock, pigs excepted, seem particularly fond of it, which chew and extract the juices, but do not swallow the substance. It is the enormous bulk yielded by the growth of this that enables the foreigner to export his beast to our market at a cheaper rate than we can fatten them at home, because it is not generally known, which it only requires to be to make it the most valuable boon ever obtained by all that make cattle farming a profession. It has many advantages: 1, The very short period taken to produce such a bulk; 2, That it does not impoverish the soil; for its roots appear so constructed as to keep it in an upright position, while it luxuriates upon the atmosphere; and 3, That it can be consumed sufficiently soon to take a crop of winter Tares, or any other autumn sown crop suitable to the necessity of the cultivator. I fear I am trespassing upon your valuable space, but am so prepossessed with its value that I trust the Messrs. Page will confirm my statement, and furnish any details their long experience must have proved to a certainty. *H. Hants, Sept.* 18.

Steam Engines.—I hope your correspondent "J.J.H." will follow up his kindness and give us further particulars of his steam engine, viz., the diameter of the cylinders, the length of the stroke, number of revolutions per minute, and the pressure of steam on the square inch of the safety valve; likewise, the diameter of the boiler, the length and diameter of the tubes under the boiler, and the method they are joined to the boiler. The value of the information would be greatly enhanced if he could conveniently give a diagram showing how the flues are arranged about the tubes, the size of his grate, the height of his chimney, and the area of the opening at its top; and if, when opportunity offers, he would prevail on Mr. Powell to give us what other information on the subject required in my former communication. *Richard Nicklin, Isle of Man.*

Sex of Poultry.—In reply to the enquiry of "D.," p. 555, for the name of the old woman who superintended the poultry establishment I alluded to July 21, I have made further enquiries, and copy the answer—"The farm where so many chickens are raised is near Luton, in Bedfordshire, but I have since heard that the old woman who managed them was to leave, and the poultry given up; and that 150 chickens had died from some disease among them. I believe they hatched none but pullets, except when they wanted cocks to keep, as the pullets came ready for sale earlier. I do not know the reason of the poultry being given up, probably it did not pay. It was only an appendage to a large farm." I beg to thank "D. S. E." for his information on the subject, No. 31, p. 490. If "D." has overlooked it, I would refer him to it. Of the fact that there is a method by which the sex of the chick may be ascertained by signs discoverable from the inspection of the egg, I entertain not the least doubt; and should be glad, if there be any other criterion than those mentioned by "D. S. E.," the possessors of the secret would favour us with it. *Lusor.*

Societies.

AGRICULTURAL IMPROVEMENT OF IRELAND.

In correction of the Premium List at the late annual exhibition of this Society in Dublin, we have to extract the following:

West Highland Kerries, &c.—For the best Cow in calf, or that has had a calf in the year 1849, 3*l.*, to D. C. La Touche, Newtown, Mount Kennedy. And in the Poultry and Dairy produce departments, not previously reported, the following awards were made:

POULTRY.

Fowl.—2*l.* to Mrs. Perrin, Dalkey, Spanish cock and two hens.
1*l.* Do. Do. bantam cock and hen.
Turkeys.—2*l.* to Wm. Tod, Tranent, American breed.
1*l.* to Lieut.-Col. Hill, Castleknock, do. do.
Geese.—2*l.* to Wm. Tod, Tranent, Scotch breed.
1*l.* to E. Ruthven, Enfield.
Ducks.—2*l.* to H. L. Prentice, Caledon, Aylesbury breed.
1*l.* to W. De Salis, Filgate, Ardee, do. do.

DAIRY PRODUCE.

Butter (London Market).—5*l.* to S. Kenny, Sarsfield, Cork.
3*l.* to J. Alexander, Ballyclare.
2*l.* to P. B. Mosse, Carlow.
Do. (Foreign Market).—5*l.* Mrs. O'Toole, Baltinglass.
3*l.* to J. Campbell, Templepatrick.
2*l.* to J. Tweed, Larne.

Farm Memoranda.

High Farming in the County Down.—Having had an opportunity of inspecting several farms in this county last week, as one of the judges appointed by the Newtownards and Comber Farming Society, to examine the farms entered for competition in that district, it is with great pleasure, indeed, that I am enabled to lay before your readers a report on the state of one farm visited by us, and which I consider as being well worthy of imitation. The farm of Ballywilliam, occupied by Mr. Robert Boyd, is situated about a mile from the town of Comber, and closely adjoining the lands held by the Messrs. Andrews, whose superior management is so well known. Mr. Boyd's farm consists of 60 Cunningham acres, divided into five fields. Four of these contain 13 acres in each, and one, adjoining the house, contains 4 acres, laid down with permanent Grasses, and used as a paddock, into which the cows are turned out for an hour or two every day, merely for exercise. The other fields we found cropped in the following manner.

First 13 *Acres*, Green Crops: Turnips, 6 acres; Cabbages, 1½; Carrots, ½; Mangold Wurzel, ½; Beans, 1½; and Potatoes, 3 acres. One acre of Potatoes had been dug out and disposed of; but, as Mr. Boyd does not like his land to lie idle, the ground from whence the Potatoes were dug is now carrying a promising crop of transplanted Swedes.

Second 13 *Acres.*—Wheat, after last year's green crops. One-half of this division, or 6½ acres, has been sown down with Clover and Italian Rye-grass, and the other half is left for the purpose of carrying a crop of winter and early sown spring Vetches. The object which Mr. Boyd wishes to obtain by this is, that in the course of the succeeding rotation, when this field is again sown down, the Clover and Rye-grass will then be sown where the Vetches are now intended to be grown; and thus, by having the Grasses coming on only once in eight years in the same ground, there is much less likelihood of a failure in the Clover crop than if it were grown on the same land in every four years. Practical farmers will understand the importance of this.

Third 13 *Acres.*—As will be seen from the foregoing remarks, one-half of this division is under Clover and Italian Rye-grass, sown down with the previous crop of Wheat. This has been twice cut, and a third crop is now coming on very rapidly. A great portion of the first cutting was consumed by the cattle; of the second, a portion was made into hay, for the purpose of securing the seed, whilst the third cutting will be entirely consumed by the house-fed stock. The remaining half of this division has been occupied by winter and spring Vetches, of which there is still 1½ acre coming into use. The 5 acres from which these Vetches were removed are carrying a crop of Turnips, sown as the Vetches were cut.

Fourth 13 *Acres.*—In this break there are 10 acres of Oats; originally 11 acres had been sown with Oats, but 1 acre missed, and it has been ploughed down, and the land sown with drilled Rape. The remaining 2 acres had carried a crop of spring Vetches, and are now being sown with Rape. Such is the arrangement of the crops on 56 acres of the farm, the remaining 4 acres being taken up in yards, roads, &c.

Stock.—The stock on Ballywilliam farm consists, at present, of 46 cows, 2 calves, 15 pigs, 6 horses, 1 mule, and 1 pony. During winter this stock is increased by four or five additional cows. The stock of horses appears to be large for the size of the farm; but, in explanation of this, I have to state, that Mr. Boyd holds two other farms, one of which (Ballycreely), consisting of 20 acres, is entirely in Grass; and the other (Ballynickle), containing 40 acres, is worked on a regular five-shift course. These farms are, however, perfectly unconnected with Ballywilliam (farther than that the horses employed at Ballynickle are kept at Ballywilliam), and are reserved entirely for rearing young stock, and for fattening off-cast cows. The crops grown on Ballynickle are consumed on that farm; and whenever any cows are drafted from Ballywilliam to either of these places, their place is supplied with others better suited for the dairy.

During the winter and spring months, Mr. Boyd uses a quantity of distiller's grains, in feeding his immense stock of cows; but, during the summer, when the distillery is idle, he is entirely dependent on the resources of his farm. I have no doubt but that some parties would be very ready to seize hold of this statement, and endeavour to make use of it, for the purpose of raising objections to a system of management very different, perhaps, from that which they have been accustomed to follow; and, therefore, I shall endeavour to show such individuals what would be the result, if their objection were tenable. First—If Mr. Boyd fed his cows at the distillery, about 1½ mile distant from his farm, and then carted the manure to the land, no one would ever think of raising an objection on this ground; or else he must carry it out, and object to the use of guano, bones, and other manures, not derived from the immediate resources of the farm. But, instead of drawing manure, Mr. Boyd thinks, very properly, that it is the better plan to draw that which forms part of the food given to his cattle, and thus to make the manure at home. This objection, too, would rest on the assumption, that distillery grains formed the whole of Mr. Boyd's means of feeding his cows; whereas, it is only a part of their food, and that during a limited portion of the year. But, if the objection is carried farther, in like manner must the use of oilcake, linseed-meal, &c., be condemned, when such does not form a part of the regular produce of the farm. Carry this objection into effect, and the practice of the best farmers in the kingdom is condemned; for they all use food for their cattle which has not been grown on their farms. Instead of being brought forward as an objection, it is invariably considered by practical farmers that the use of purchased food, for stock, when such is profitable, is an argument in favour of the farmer, and not an objection against him; because he is enabled to obtain a much larger supply of rich manure than he could otherwise have

down, and thus he increases the fertility of his farm. For example, we find that in Mr. Caird's account of the farm of Auchness ("High Farming," &c.), the very fact, that 270*l.* per annum was laid out in the purchase of "hay, Linseed, Beans, and other feeding stuffs," is brought forward as an argument to prove the superior style of management now pursued on that farm from what it formerly was, when no extraneous food was purchased. Mr. Boyd's cows being selected for their milking properties, without reference to breed, his stock cannot be called a "fancy one;" but they show that every care is bestowed on them. To one minute particular I would refer. In the small paddock into which they are turned for exercise there is no regular watering-place, but a sufficient supply is carted to it every day. This is run into a large trough, and, in this trough, a quantity of Bean-meal is mixed with the water. There are many owners of cows who never think of so doing; but I merely mention it, in order to show the careful attention which is paid to the most minute details.

Houses, Fences, and General Management.—The farm-offices on Ballywilliam, although, perhaps, not arranged in the manner which is usually the case in such buildings, are commodious enough, and are nearly sufficient for all purposes. When it is understood, however, that these were erected at Mr. Boyd's expense, it will be evident that great care was necessary in economising outlay. The cow-houses are well kept and ventilated, the cattle being all fed by means of passages at their heads. The dairy is a perfect model for cleanliness and good order; the churn, one of Robinson's, is driven by a mule. At the lower part of the dung-pit there is a large tank, which receives all the liquid escaping from the general manure heap. This is carted out and applied wherever the Clover and Rye-grass is cut, and thus the produce is greatly increased; it is used, also, in other ways, and proves sufficiently the great importance of this valuable assistant to the farmer. On a cursory examination of this farm, there would appear to be more fences than are necessary, from the system of management pursued; but, with the exception of one fence, all the rest are march fences, in consequence of two public roads running through the farm. The hedges are neatly kept, free from weeds, and occupy very little space. In the general management of the farm, it is quite evident that the most careful attention is paid to every particular. Not only are the existing green crops cleared of all weeds, but the grain crops show that such has been the regular practice, for neither in Wheat nor Oats can weeds be discovered. The crops are good, some of them particularly so, the only deficient crop being Carrots; but the soil is not well suited for this crop; and, in most parts of this county, Carrots are not a promising crop this season. The farm is very hilly; and from its being intersected by the roads already mentioned, and by a large water-course, it is cut up in a very awkward manner; still every division of cropping is kept as much as possible by itself. As in most of the County Down farms there has been no lack of large stones, and rocks cropping out near the surface, but these have been removed, and soil carried to cover the barer parts. All this has been attended by considerable labour and expense, but the result has shown that such can be done with profit. With a trifling exception, the whole of the farm has been thorough-drained and subsoiled.

General Remarks.—I have thus endeavoured to lay before you a correct statement of the system of management pursued on Ballywilliam; and, let it be borne in mind, that Mr. Boyd is no mere "amateur farmer," who can afford to have his whims, as some people would call them. He is a hard-working industrious tenant-farmer, dependent on his farm alone for the means of his support, but determined to make the source of his means as productive as he possibly can do. Mr. Boyd possesses no peculiar advantages; his farm, as I have already said, is hilly, and lies awkwardly; he has never received any assistance from his landlord, and his rent is not so low as to give him any advantage over his neighbours. Together with interest on permanent improvements, it amounts to 50*s.* per Cunningham acre. In my humble opinion, I do think that the example furnished by Mr. Boyd is of the greatest importance at the present time. It shows what active, energetic, and thinking men may do; and his success affords ample encouragement to those who would adopt a different system of management from that which they have been accustomed to follow, and which they now find to be so very unprofitable. In the every-day details of Mr. Boyd's management, a young man would learn more of real practical farming in one year than he would in a whole lifetime at some of the so-called model farms. In conclusion, I hope that the foregoing plain statement of facts may be carefully considered by many who may, perhaps, at present, imagine their case a hopeless one, and that it will have the effect of causing them to "do likewise." *R. Oliphant Pringle, Castleward, Strangford, Aug. 23, in the Irish Industrial Journal.*

Farmers' Clubs.

NEWCASTLE, *July 7: Does the Eating of Wheat in the Spring injure or improve the Crop?*

Mr. JOHN ROBSON said the answer to the question must vary with circumstances. The crop might be improved or injured as the period was early or late at which it was eaten down, or the Wheat was thick or thin on the ground, or the land was in high heart or in poor condition. It seldom happened, on the clay lands of this district, where they grew from 20 to 30 bushels an acre, that the Wheat was so prematurely advanced as to justify its being eaten in the spring. On rich land, bearing heavy crops, which were apt to lodge, the young Wheat might be eaten down by cattle with some degree of safety. A [illegible] crop was thereby retarded, and prevented from expending its strength in straw, and there was less liability to lodge. He said cattle, because sheep would eat too close. He agreed with the secretary that on poor lands the practice was inadmissible; and on good lands, if adopted at all, it must be carried out with caution and judgment.—Mr. LAYCOCK understood that whatever advantage was derived from the practice arose from the pressing down of the soil about the roots of the Wheat; and this would be better done by Crosskill's roller—in April or March, if the weather permitted.—Mr. W. STEPHENSON could speak from an experience of 25 years. He had sometimes found the practice beneficial, and sometimes lost by it; it depended very much on the weather which followed. This year he was going, from all appearances, to be benefited by it. One field, which had been eaten close to the ground, now bore a heavy, luxuriant crop, but was 10 days or so later than it might otherwise have been. It seemed at one time like a spindling crop, but now promised well. Sometimes, however, as he had before observed, the practice did harm; the crop dwindled away, and died. No general rule could be laid down—as to strong soils or light. He commonly pursued the plan, and thought, on the average, that he benefited by it.—The SECRETARY said that several communications had been made to him. One was from Mr. HUGH TAYLOR, of Cramlington, who said: In considering this question we will take for granted that everything is favourable to the putting on of sheep, as regards the state of the land, &c. We shall then have the question in this form—Can the depriving the young plant of a certain portion of its blade be favourable to its production of seed under any circumstances? In Balfour's "Manual of Botany" it is laid down as a received principle that "in a rich soil the tendency of a plant is to produce branches and leaves rather than flowers; in such cases cutting the roots or pruning the young twigs may act beneficially." And again, that "a plant by being constantly deprived of its leaves will ultimately be destroyed." We may infer from this that in a rich soil the Wheat plant will throw out a long stem and broad blade. Now too broad a blade is held by all experienced farmers to be a bad omen for a gifty crop. We may also infer that the pruning or shortening of this blade, whether by sheep or otherwise, might give a tendency to the plant to throw out flowers; but that this must not be carried too far, as there is a danger of injuring the plant. We are told in Johnston's lectures that "previous to flowering the chief energy of the plant is expended in the production of wood, of which its stem and growing branches mainly consist; that the most important of its remaining functions is the production of the starch and gluten of the seed;" and that "the protein compounds, contained in the sap at all periods of the plant's growth, and carried up in great quantity to the flower and seed vessel;" but that "in the leaves of the flower they are partly decomposed and their nitrogen given off, causing a loss of nutritive matter." The giving off of ammonia and nitrogen, here limited to the flower leaves, is extended, in another part of the same work, to the leaves in general. From these quotations is not the inference fair that if we could prevent the plant's making so much wood, greater energy would be devoted to the production of seed? and that if the number of leaves, or extent of surface of blade, was lessened, the nitrogen, which would otherwise be lost, might be retained to favour the development of, and increase the nutritive properties in, the seed? From these and other considerations I should be inclined to suggest that the eating of corn on good land, moderately, with sheep in the spring might be of advantage; but that it would be hazardous on poorer soils, by which the blade is not so fully developed.—The CHAIRMAN remarked that the subject required careful consideration. Most of them seemed to think that if they could choose their soil, time, and weather, they should like to follow the practice. It was once universal, and he had seen it attended with excellent success, when the corn was gross, and the weather was dry, and the shepherd kept the sheep moving about, and did not allow them to eat one part of the field bare and leave the other untouched. He liked, himself, to eat a crop down, if it were gross. The corn was apt otherwise to spindle up; and then, if the land was light, it tumbled over. The practice tended to shorten the straw; and from this circumstance, and the land being trodden down, the crop had a better chance of standing. He must say he had seen good results from the practice, especially with some kinds of Wheat, to which it was more particularly suited. There was one thing in which he thought it was very beneficial, and that was the treading in of the Clover-seed. It would be well if several of the members would hurdle off an acre or two in a field of Wheat and try the experiment, to see whether injury or improvement ensued, as compared with the rest of the crop. There could be little loss: and, from a number of experiments, a satisfactory solution of the question, one way or other, might be attained. He had little doubt himself that the practice was beneficial, if resorted to early in spring. It kept down the straw and improved the standing corn. The straw often ran up long, and there was little corn. He was afraid that they were not likely, under any circumstances, to have such crops as were grown in Cambridgeshire, which required to be cut down. [Mr. ROBSON: What they call "flagging"] Yes. The Wheat was cut down, just as a gardener cut off his Beans to improve them. In the north they would expect to be ruined by such a practice. Even Barley was sometimes flagged. A farmer told him in the south that he had done it in June. They could not flag in this part of the country, but they might eat early in the spring. But they must be guided by circumstances—by the quality and state of the soil, and particularly by the weather.

The Secretary read the second question on the card: "*What is the Cost of Cultivating an Acre of Fallow Land for Wheat,* exclusive of rent and manure, but including every other expense?" On this subject (he said) he had received a communication from Mr. Hugh Taylor, which was in these words:

The following calculation is intended to show the present cost of production on the clay soils of South Northumberland, under the present system of management, and on an average of years; though no duobt, in a short time, by taking advantage of those improvements already practised in other districts, and those which every year is introducing, that cost must be considerably reduced. As it does not seem just that the whole expense of the bare fallow should be borne by the Wheat (the method usually followed), an average amount of labour has been given to that crop, and the cost of the extra working divided over the course; the Wheat crop being charged with half the amount, as it occupies the land for a longer period, and gets the full advantage of the labour and manure which has been given to the fallow. The wages of a man is supposed to be 13*s.* per week, and in harvest 18*s.*; of a boy, 1*s.* per day; of a woman, 10*d.*; and the value of a horse 3*s.* per day all the year round.

EXTRA WORK DONE IN THE YEAR OF FALLOW.

	£	s.	d.
Five ploughings, one acre per day	£2	0	10
One rolling	0	1	0
One four-horse harrowing	0	2	0½
Two double harrowings	0	4	1
Three women quickening one acre	0	2	6
One ditto spreading dung	0	0	10
One lad leading quickens off five acres	0	0	9
Four men, three lads, and five horses dunging 6 acres	0	4	5½
Twelve tons of dung, at 2*s.* 6*d.*	1	10	0
Interest of capital, and wear and tear for four years	2	0	0
Rates	0	2	6
Total	6	9	0
One-fourth	£1	12	3

REMAINDER OF WORK TO ACCOUNT OF WHEAT.

	£	s.	d.
One ploughing	£0	[illegible]	[illegible]
One ribbing, two acres per day	0	2	7
Two double harrowings	0	4	1
One man sowing 12 acres, at 2*s.* 6*d.*	0	0	2½
One man water-furrowing 20 acres	0	0	3
Cutting out land	0	0	6
Two bushels of Wheat seed	0	12	6
Rates	0	2	6
Four women shearing one acre, at 2*s.* per day ...	0	8	0
One man binding two acres	0	1	6
Five men, one woman, and six horses will lead and stack 15 acres	0	2	3
Four men, four women, and six horses to thresh and dress 4 acres	0	7	8
Delivery, including all tolls	0	6	0
Covering and roping stacks	0	0	7
Total	2	16	11¼
Add one-half cost of fallow	3	4	6
Total	6	1	5¼
Cost per quarter (yielding three quarters per acre)...	2	0	5¾
Rent of land 30*s* per acre, and half of fallow year's rent, per quarter	0	15	0
Cost per quarter	£2	15	5¾

EXPENSES OF HAY CROP.

	£	s.	d.
Rolling and sowing	£0	1	0
Brushing	0	1	0
Cost of seeds	0	6	0
Hay harvest	0	12	0
Rates	0	2	6
Total	1	2	6
One quarter of the cost of fallow ...	1	12	3
Fog taken into account as extra hay (two tons)	2	14	9
Cost per ton	1	7	4½
Rent of land, and quarter of fallow year's rent, p. ton	0	18	9
Cost per ton	2	6	1½

EXPENSES OF OAT CROP.

	£	s.	d.
One ploughing, three quarters of an acre per day ...	0	10	0
Two double-harrowings, four acres per day ...	0	4	1
Four bushels of Oat seed	0	10	0
Sowing	0	0	2½
Harvest	0	18	0
Rates	0	2	6
Total	2	4	9½
One quarter of the cost of fallow	1	12	3
Land will yield per acre five quarters	3	17	0½
Cost per quarter	0	15	4½
Rent of Land, and quarter of fallow year's rent, per quarter	0	7	6
Cost per quarter	1	2	10½

Mr. WEEKS observed, that Mr. Taylor made the cost per acre of cultivating fallow land for Wheat to be only 1*l.* 12*s.* 3*d.*; but he had found his land to cost him .*l.*—Mr. ROBSON said, few farmers took the trouble to ascertain the cost of cultivation. It would be found, he believed, to exceed what most of them, offhand, guessed it to be. It varied, too, according to the tenacity of the land, its cleanliness, &c. On strong land he had calculated the cost of a bare fallow to be 4*l.* 12*s.* per acre, exclusive of rent-charge or tithes, rates, or taxes, or manure; which would bring it up to 7*l.* 12*s.* 6*d.* The following were the items:

	£	s.	d.	£	s.	d.
Five ploughings, at 7*s.*				£1	15	0
Five harrowings, at 2*s.*				0	10	0
Rolling				0	2	6
Hand-picking				0	2	6
Laying on dung and spreading				0	10	0
Drilling, or sowing broadcast, and harrowing seed...				0	2	6
Reaping, binding, leading, stacking, thatching, threshing, winnowing, and marketing				0	17	6
Seed				0	12	0
				4	12	0
Rent (two years) at 25*s.*	2	10	0			
Rent charge (ditto) at 4*s.*	0	8	0			
Rates and taxes	0	2	6			
				3	0	6
				7	12	6

Mr. COLBECK next read a table of cost, of which the following is a copy, viz.:

	£	s.	d.		£	s.	d.
Ploughing in autumn	0	7	0	Brought forward	3	0	10
Cross ploughings in autumn	0	5	0	Water-furrowing			
End-long ploughing .	0	5	0	Cutting, &c.			
Harrowing with large harrow . . .	0	1	9	Rolling in spring			
Do. with small harrow	0	1	6	Weeding			
Rolling	0	1	0	Reaping	0	6	0
Harrowing with small harrow	0	1	6	Binding	0	1	6
Cleaning land ...	0	2	6	Carting and stacking	0	2	6
Carting manure ...	0	7	0	Covering and roping .	0	2	0
Spreading ditto . .	0	1	0	Threshing and winnowing	0	7	8
Ploughing	0	5	0	Marketing, gates, tolls, &c.	0	5	0
Harrowing	0	1	0		3	15	10
Cleaning land ...	0	1	0				
Seed furrow ...	0	4	0	2 years' tithe (say) ...	0	10	0
Sowing	0	3	0	,, poor rate ...	0	6	0
Woman sowing seed .	0	0	1	,, highway and church-rate	0	2	0
Seed (say)	0	12	0	,, income tax (say)	0	2	0
Harrowing	0	1	6				
Carried over ...	3	0	10		£1	0	0

A brief conversational discussion succeeded the reading of these statements, and the meeting then broke up.

Calendar of Operations.

SEPTEMBER.

DORSET FARM, *Sept. 24.*—After one of the finest seasons that could have been wished for, we have got the harvest work finished, and have every reason to be satisfied with both quantity and quality. Turnips are looking very fair in most cases, and, as there is a large quantity of good hay, there will be plenty of fatting materials for stock. The only drawback is, that many of the Turnips were sown late, and cannot be expected to be so good as they would otherwise have been, but we have had some very favourable showers for them lately. We have got our Potatoes dug; they are a light crop, but they are perfectly sound to eat, which was not the case last year. Mangold Wurzel is a very good crop. We are now employed ploughing and cleaning land for Wheat, and will sow some in a few days. There is still a great quantity of weeds to get out of the land, and we have as yet had the weather suitable for the work; but, on the whole, there ought not to be much dependance placed on autumn cleaning, for it is not often that it can be well done, but ought in all cases to be done in the spring before putting in Turnips, and then if the horse-hoe is kept going during the summer, they will be kept pretty well

union. Our farmers by some time will be ploughing for Wheat, and getting it in, and after that we shall be ploughing for the next year's root crop; and also applying chalk to some of the land intended for Turnips, as in some parts they are liable to get what is called clump fingled, and I have no doubt but a liberal supply of chalk, which we have on the farm, will entirely prevent it. On those farms that have no chalk near it will be best to apply lime, for although it may be more expensive, yet a great saving will be effected in carriage, as the less weight of it per acre will answer the purpose; but either that can be got most conveniently will serve the purpose sufficiently. Our cattle are now feeding in the water meadows, which have produced very good crops of after Grass, and our object is now to get them eaten as short as possible, that the spring Grass may come the sweeter. Some of the best of our beasts will be tied up soon, as the Grass after this has not strength sufficient for keeping up those that are large or in good condition. Some of our sheep are eating Turnips (green-top Scotch), and most of the ewes have gone to ram. Our labourers will be employed in collecting, and if possible, burning rubbish from the hedge banks, providing food and litter for the cattle, preparing reed for cottage thatching, and getting out dung for the Wheat. *G. S.*

SUSSEX FARM, *Sept.* 24.—The harvest being now completed, and the corn secured in excellent order, we are now engaged ploughing Grass land and Bean stubble for Wheat, and as soon as we have a shower of rain we shall commence to sow. We are now scarifying Wheat and Oat stubbles for the next year's green crops. After scarifying, we give a good deep ploughing; this is what every good farmer ought to adopt; the land is laid open and dry to the winter's frost, which reduces the spring work. We have threshed part of the Wheat and Oat crops of 1849—white Wheat, the seed of which we had from Whitfield Farm two years ago, and as far as we have threshed the yield is 46 bushels per acre, and weighs 63 lbs. per bushel. The Oats we have threshed were grown on a very poor piece of land, formerly not worth 2s. 6d. per acre, mown occasionally as rough litter, but lately improved; the field is 17 acres, of which we have threshed 3 acres, and the yield is 12 qrs. per acre. This crop will pay all the expense of improving. *J. B.*

Notices to Correspondents.

ASHBURY: *Thomson.* The dry summer is probably the cause. Get your land full of nutritive matter for the plants, and enable, by drainage, the right circulation of this food throughout its substance, and if climate does not fail, you will never be troubled with fingers and toes.

CARROTS: *M O.* You appear to have done all that was possible, and we must attribute the malformation of the roots to the dryness of the weather.

DRAINAGE: *A D C.* The drains may be 3½ feet deep and 24 feet apart. Pipe tiles are quite as good as tiles and soles, and they are cheaper. The drains should run into a main conducting with the culvert you mention.

DRILLING *versus* BROADCAST: *R S.* On "very rich land," as on any other, we should certainly drill rather than scatter the seed. Garrett's drill and horse-hoe are among the best implements of their kind; the prices vary with the size, the two together costing from 30*l.* to upwards of 40*l.* You need not sow more than 4 pecks per acre on rich land.—The work will shortly be advertised.

GORSE: *J King.* We do not know where plants are to be had, and do not know what passage you refer to. You had better consult some of the large nurserymen, and if they cannot help you, advertise. See Mr. Jeasop's advertisement in our columns.

HOSE: *To* ADVERTISERS: We have inquiries to the following effect: "Can you say where and at what price per yard I can obtain hose for attaching to a fire-engine or manure-pump, of flexible, water-tight, and cheap material. I have lately seen in the Royal Gardens at Potsdam, near Berlin, excellent hempen hose without seam, several hundred yards of which I understood, although I could not find the exact price, cost very little money. It is a great desideratum for agriculturists to get a *cheap* hose, flexible, light, and strong, and neither Indian rubber nor gutta percha can be compared in utility (if they were not entirely out of the reach of moderate means) with the hose I speak of. *W. C.*"

ROTATION OF CROPS: *C.* A good paper on the theory of the matter was published piecemeal in our volume for 1847, and the subject generally is discussed in our volumes for 1846 and 1847; see their indices.

TARES: *F M.* Sown now they would be hardly more than just above ground before winter.

WINTER BEANS AND WHEAT: *Clericus.* As to sorts for seed, we do not suppose you can do better than consult our advertising columns. Of Beans, 6 to 8 pecks per acre, sown in October, in rows 2 feet apart on land previously cultivated, manured broadcast and ploughed in; then ribbed into drills at the requisite interval, the seed to be sown and covered by the heavy harrows. If artificial manures be added, let it be done in spring; and the probability is that, if the land be already well dressed with dung, manure of an alkaline sort, such as wood-ashes, common salt, &c., will be the most suitable. As to Wheat, sow from 4 to 6 pecks per acre, in rows 12 inches apart, in October and November, and give a dressing of common salt in spring. This has been found to check the falling of the Wheat. Silicate of potash has also exhibited this tendency. You will get that at any chemical manufacturers.

Markets.

SMITHFIELD, MONDAY, Sept. 24.

The supply of Beasts is unusually large; in consequence all kinds are rather lower; however, the best kinds not being over abundant are pretty readily disposed of, but several second-rate remain unsold. The number of Sheep is about the same as of late, but the demand has considerably decreased; lower prices are consequently taken, notwithstanding, a pretty good clearance is effected. The price for Calves is again lower. From Holland and Germany there are 850 Beasts, 1860 Sheep, and 89 Calves; from Leicester and Northampton, 2200 Beasts; from Lincolnshire, 600; and from Cambridge, 300.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	8	to 3	10
Best Short-horns	3	4	— 3	6
2d quality Beasts	2	8	— 3	2
Best Downs and Half-breds	3	10	— 4	0
Ditto Shorn				

Beasts, 4809; Sheep and Lambs, 30,090; Calves, 180; Pigs, 162

FRIDAY, Sept. 28.

Although a considerable number left over from Monday are not in to-day, the number of Beasts is large, owing to extensive arrivals from abroad. The demand is very small, and comparatively few are sold. Monday's quotations are scarcely realised. The supply of Sheep is large, consisting principally of foreign and middling qualities. Very few Downs are on offer; 3s. 10d. is the outside price. We cease to quote Lamb, the season being nearly closed. Calves are again lower; we cannot quote more than 3s. for the best. From Holland and Germany we have 453 Beasts, 2270 Sheep, 89 Calves, and 10 Pigs; and 105 Milch Cows from the home counties.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	8	to 3	10
Best Short-horns	3	4	— 3	6
2d quality Beasts	2	8	— 3	2
Best Downs and Half-breds	3	8	— 3	10
Ditto Shorn				
Best Long-wools	3	4	to 3	6
Ditto Shorn				
Ewes & 2d quality	2	6	— 3	2
Ditto Shorn				
Calves	2	6	— 3	0
Pigs	3	0	— 4	0

Beasts, 1157; Sheep and Lambs, 8,690; Calves, 290; Pigs, 210.

COVENT GARDEN, Sept. 26.

Hothouse Grapes are plentiful. Pine-apples and Nectarines scarce and dear. Pine-apples have not altered since our last account. Filberts and foreign Walnuts are abundant. Oranges are scarce. Lemons moderately plentiful. Among Vegetables, Turnips may be obtained at from 3d. to 6d. a bunch. Carrots the same. Cauliflowers are less plentiful. Green Peas fetch about 6s. per bushel. Potatoes have not altered since our last account. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1s. to 1s. 6d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropæolums, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb.,	8s to 5s	Lemons, per doz.,	1s to 3s
Grapes, hothouse, p. lb.,	9d to 3s	— per 100,	8s to 16s
— Portugal, per lb.,	9d to 1s	Almonds, per peck,	6s
Peaches, per doz.,	8s to 12s	— sweet, per lb.,	2s to 3s
Nectarines, per doz.,	8s to 12s	Walnuts, p. 100,	1s 6d to 2s
Plums, per hf. sieve,	4s to 6s	— p. bush.,	16s to 24s
Pears, per doz.,	2s to 4s	Filberts, per 100 lbs.,	45s to 55s
— per half sieve,	4s to 6s	Nuts, Bar., p. bush.,	20s to 22s
Apples, kitchen, p. bsh.,	2s to 4s	— Brazil, p. bsh.,	12s to 16s
Oranges, per doz.,	4s to 6s		

VEGETABLES.

Cabbages, p. doz.,	6d to 1s	Onions, p. bunch,	2d to 6d
Cauliflowers, p. doz.,	2s to 6s	— Spanish, p. doz.,	1s 6d to 4s
Broccoli, p. doz. bundl.,	10s to 12s	Shallots, per lb.,	3d to 6d
Peas, per bush.,	1s 6d to 4s	Garlic, per lb.,	3d to 6d
Sorrel, p hf. sieve,	6d to 9d	Artichokes, p. doz.,	1s 6d to 3s
Potatoes, per ton,	50s to 100s	Vegetable Marrows, doz.,	6d to 1s
— per cwt.,	3s to 6s	Lettuce, Cab., p. sc.,	4d to 9d
— per bush.,	2s to 3s	— Cos, do.,	6d to 1s
Turnips, p. doz. bun.,	2s to 5s	Endive, per score,	1s to 1s 6d
Red Beet, per doz.,	1s to 2s	Tomatoes, p. hf. sieve,	4s to 6s
Horse Radish, p. bdl.,	2s to 6s	Mushrooms, p. pot.,	1s to 1s 6d
French Beans, p. hf. sieve,	1s 6d to 2s	— per bush.,	8s to 6s
Cucumbers, each,	2d to 6d	Small Salads, p. pun.,	2d to 3d
Leeks, per bunch,	2d to 3d	Fennel, per bunch,	2d to 3d
Celery, p. bundle,	8d to 1s 3d	Savory, per bunch,	2d to 3d
Radishes, p. 12 bunches,	1s to 2s	Thyme, per bunch,	2d to 3d
Watercress, per doz. bunches,	4d to 6d	Parsley, p. doz. bun.,	3s to 4s
Carrots, per bun.,	4d to 6d	— Roots, p. bdle.,	1s to 1s
Spinach p. sieve,	1s to 1s 6d	Marjoram, green, p. bun.,	4d to 6d
		Mint, green, per bunch,	3d to
		Basil, green, p. bunch,	4d to 6d

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Sept. 27.

Prime Meadow Hay	66s to 72s		Clover	60s to 90s	
Inferior ditto... ...	50	63	New Clover	—	—
Rowen	55	60	Straw	25	30
New Hay	—	—		J. COOPER.	

Trade heavy.

CUMBERLAND MARKET, Sept. 27.

Prime Meadow Hay	70s to 75s		Inferior	65s to 84s	
Inferior ditto ...	50	65	New Clover	—	—
New Hay	—	—	Straw	28	33
Old Clover	90	95		JOSHUA BAKER.	

WHITECHAPEL, Sept. 27.

Fine Old Hay ...	65s to 70s		New Clover	80s to 86s	
Inferior ditto ...	50	65	Inferior ditto... ...	50	60
New Hay	60	65	Straw	24	28
Old Clover	90	95			

MARK LANE.

MONDAY, Sept. 24.—The supply of English Wheat by land carriage samples this morning from Essex was small, from Kent good, and the whole was cleared off on the terms of this day se'nnight. The arrivals of foreign grain are considerable, and buyers acting cautiously; the sale for Wheat was very limited at last week's prices, excepting Polish Odessa, which was taken freely at fully late rates.—Barley, Beans, and Peas are unaltered in value.—The Oat trade is heavy, and prices the turn lower, excepting for finest qualities.—Canary Seed is again 4s. to 6s. per qr. dearer.

FRIDAY, Sept. 28.—The arrivals of English grain since Monday have been small, those of foreign good; but the little English Wheat fresh up for this morning's market was neglected, and there was a general disinclination on the part of millers to purchase foreign, unless at some reduction in price. —Barley is a free sale at our quotations.—Beans and Peas are unaltered in value.—The sale of Oats is slow, and the turn cheaper.—Flour meets a moderate inquiry on about the same terms. Indian Corn is rather lower, but there are still buyers at 25s. to 25s. 6d. for Ibratla and Galats.—The Wheat trade during the week has been heavy, and prices in many of the provincial markets declined 1s. to 3s. per qr. for new. Egyptian Beans are the turn dearer. Barley, Peas, and Oats unaltered, but the latter a heavy sale. Maize is also less inquired after, and the accounts from Ireland respecting Potatoes more favourable. From Scotland complaints are still loud. In New York, on the 10th, Flour had declined about 1s.

LIVERPOOL, FRIDAY, SEPT. 28.—The demand was limited at this day's market. We make no change in prices, but the tendency was towards a small decline. Indian Corn was dull, and rather lower. The parcels of new Wheat by steamers were sold slowly at 5s. 2d. to 5s. 6d. for undried, at 5s. 6d. to 5s. 9d. for prepared, and at 6s. for one or two samples of extra quality. Undried new Oats, 2s. 2d. to 2s. 4d. per 45 lbs.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Aug. 18.....	46s 3d	26s 1d	18s 0d	27s 5d	31s 9d	29s 2d
— 25.....	44 8	26 4	18 10	26 5	32 2	28 8
Sept. 1.....	44 8	26 3	19 3	27 0	32 3	28 6
— 8.....	44 6	26 9	18 4	25 11	31 2	29 7
— 15.....	45 0	27 1	18 6	26 7	30 8	30 1
— 22.....	41 9	27 1	17 10	25 11	29 9	30 6
Aggreg. Aver.	44 2	26 7	18 8	26 0	31 4	29 4
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	AUG. 18	AUG. 25.	SEPT. 1.	SEPT. 8.	SEPT 15.	SEPT 22.
46s 3d		...	...	...	...	..
44 8	...		...	...	...	...
44 8	...	...		..	...	...
44 6	...	...	...		..	...
43 0	...	...	...	...		...
41 9	...	...	...	...	...	

PRICES CURRENT.	London. Sept 17 qr.	London. Sept. 24 qr.	Liverpool. Sept. 18. 70 lbs.	Liverpool. Sept. 25. 70 lbs.	Wakefield. Sept 14 qr.	Wakefield. Sept 21 qr.	Boston. Sept 19 qr.	Boston. Sept 26 qr.	Birmingham. Sept. 20. 62 lbs.	Birmingham. Sept. 27. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	38 to 43	38 to 43	6 0 6 6	6 0 6 6	41 to 45	43—48	40 to 44	38 to 42	5 4 5 9	5 2 5 8
„ white ...	42—45	42—48	6 4 6 9	6 4 7 0	41—48	45—51	42—45	40—46	5 8 6 2	5 8 6 0
Old, red ...	38—42	38—44	6 4 6 8	6 4 6 9	40—42	42—46	—	—	5 3 5 8	5 3 5 9
„ white ...	41—43	41—43	7 0 7 4	7 0 7 6	—49	—50	—	—	5 10 6 4	5 10 6 3
Foreign	36—50	36—50	4 2 7 8	4 3 7 2	35—49	35—49	—	—	4 8 6 2	4 8 6 2
			480 lbs.	480 lbs.						
Rye—Old ...	22—24	22—24	—	—	—	—	—	—	—	—
Foreign...	20—22	20—22	—	—	—	—	—	—	—	—
Foreign meal	5*l.*—6*l*	5*l.*—6*l*	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	24—26	24—26	—	—	20—22	20—22	24—25	21—23	22—24	22—24
Malting... ...	25—28	26—28	30s—31s	30s—31s	27—33	28—33	—	—	29—32	29—32
Foreign... ...	18—26	18—26	—	—	21—26	21—26	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	37—40	37—40	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	18—25	18—25	3s 0d 3s 2d	3s 0d 3s 2d	—	—	16—20	14—19	19—27	19—27
Black...	17—22	17—22	2 1 2 5	2 1 2 5	—	—	—	—	18—20	18—20
Foreign ...	13—20	13—20	2 3 2 4	2 3 2 4	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	25—32	25—30	34s—	34s—	26—30	26—30	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—25	23—25	28 —29s	28 —29s	—	—	—	—	11—12	11—12
Foreign ...	24—32	24—32	29 —32	29 —32	—	—	—	—	—	—
Beans—										
New, small ...	25—27	25—37	—	—	32—35	32—34	32—34	32—34	12—13	12—13
Old	23—33	23—33	32 —35	33 —37	—	—	—	—	14—15	14—15
Foreign ...	21—36	21—36	24 —35	24 —35	30—31	30—31	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	36—41	36—41	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9*l.* 12s	9*l.* 12s	8*l.*—8*l.* 5s	8*l.*—8*l.* 5s	—	—	—	—	—	—
Foreign ...	7*l.*	7*l.*	—	—	—	—	—	—	—	—
Indian Corn—	22—26	22—26	27s—30s	27s—29s	—	—	—	—	12—13	12—13
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	34—44	32—40	31—32	30—32	—	—	32—38	32—38	34—36	31—34
Weekly Averages and Imports.	Aver. Sept. 25	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	44 2	10750	43 0	2524	44 3	12240	42 4	4982	42 6½	—
BARLEY ...	31 9	6790	27 1	1520	29 6	1379	23 3	265	—	—
OATS... ...	20 5	15080	18 6	709	19 4	1699	15 7	1229	19 4½	—
RYE	26 5	—	26 7	—	—	—	—	—	—	—
BEANS ...	28 3	—	30 8	—	30 0	1076	24 0	40	—	—
PEAS... ...	35 6	—	30 1	—	—	663	—	—	—	—
SIGNED {	KINGSFORD and LAY.		SEGAR and TUNNICLIFFE.		SANDARS and DUNNS.		THOMAS WRIGHT.		J. and C. SUTTON.	

MESSRS. PROTHEROE AND MORRIS have received instructions from the Assignees of Mr. James Cutbush, to submit to public Auction, on the premises, at Salford, near the Railway Station, about the middle of October, the whole of the NURSERY STOCK, consisting of Fruit and Forest Trees, Ornamental and American Plants, &c.; also the Household Furniture, a 6-light Pit with glazed sashes, a very unique Rustic Summer-house with tables, seats, and chairs, Pony Chaise and Harness, Iron Roller, and sundry other effects.—May be viewed, and Catalogues had, a week prior to the sale, on the Premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, NURSERYMEN, BUILDERS, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction on the premises, Mile-end Nursery, Bow-road, on TUESDAY, Oct. 9, 1849, at 12 o'clock, by order of Mr. Howcroft, retiring from the business, the whole of the NURSERY STOCK, consisting of Evergreens; Ornamental, Fruit and Forest Trees; American Plants; a quantity of New Flower Seeds, Herbaceous Plants, and Box-edging; also three capital Greenhouses, Pit, Brickwork, an excellent Chaise, set of Chaise Harness, Rotten Dung, &c.—May be viewed prior to the Sale, and Catalogues had on the Premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone, Essex.

WOOLWICH.

MESSRS. PROTHEROE AND MORRIS are instructed to submit to public competition by Auction, on the premises, Royal Dockyard, on MONDAY, October 1, 1849, at 12 o'clock (by order of W. Jenkins, Esq., removing), the remaining HOUSEHOLD FURNITURE; also the GREENHOUSE PLANTS, consisting of double Camellias, Orange Trees, Azalea indica, Cactus, Neriums, Geraniums, Myrtles, Aloes, Euphorbias, Fuchsias, Gloxinias, Hoyas, Chrysanthemums, Pinks, &c.; and a capital Gig, Saddles, Bridle, &c. The large Camellias, Azaleas, Orange and Lemon Trees, are to be seen at the Conservatory, Shrewsbury House, on this day; and those at the Dockyard, on the morning of Sale.—Catalogues may be had on the premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone.

SALE BY AUCTION—AT THE MART.

MR. W. HASLAM begs to inform Amateurs and the Public generally, that he is instructed to offer to public competition, at the Auction Mart, London, on TUESDAY next, October 2, and FRIDAY, October 5, at 12 for 1 o'clock each day, a magnificent selection of Liliums, Tulips, &c., 500 Dwarf and Standard Roses, and a large importation of Dutch Bulbs, which will be fully described in Catalogues, to be had at the Mart, and of the Auctioneer, Epping and Ongar, Essex.

N.B.—W. H. begs to observe that in the notice of sale last week, Mr. Groom's name was inserted in a manner which might possibly have induced the impression that the sale of Liliums, &c., was on his account, though it was only intended to intimate that the Liliums, &c., were selected from his unrivalled stock, and which it is hoped will be considered a sufficient guarantee for their correctness.

SUFFOLK.

HIGHLY IMPORTANT SALE AT FROSTENDEN HALL, NEAR WRENTHAM.

TO BE SOLD BY AUCTION, by GIRLING AND SON of Peasenhall, near Yoxford. Commencing on THURSDAY and FRIDAY, the 4th and 5th of October, 1849, the SPLENDID FARMING STOCK of James Hingeston, Esq., retiring from Agricultural pursuits, 20 first-rate Chestnut Cart Mares and Geldings of admirable symmetry and colour, chiefly under eight years old; two Chesnut Cart Colts, Bay Harness Cob, 20 Short-horn Bullocks, 40 Head of Swine, nearly new Threshing Machine and Chaff Engine, seven Waggons, eight Tumbrils, Ploughs, Harrows, Rolls, Cart and Plough Harness, adapted for this extensive occupation. The proprietor's aim has been by skilful selection to surpass other Agriculturists in his Horse Stock. Therefore more distant buyers, as well as Suffolk Agriculturists, will doubtless attend the Sale, so renowned as the Stock has been. Upon few Farms in the county will be found better Horses; and the Entire Stock, because all is good, cannot fail to be satisfactory and attractive.—Second Day's Sale, a portion of the Genteel Household Furniture.

WOKING, SURREY.—VALUABLE NURSERY STOCK.

MR. WATERER begs to announce that he has received instructions from Mr. William Jackman, who is declining business, to Sell by Auction, on MONDAY, Oct. 22, and following day, all his valuable NURSERY STOCK on Hook Hill Nursery, near the Woking station on the South-Western Railway, comprising 1,500,000 Evergreen and other Shrubs; Forest, Plum, and other Trees; 950,000 Transplanted and Seedling Quick, &c. Further particulars will appear in future Advertisements; and Catalogues will be forwarded on application by letter, enclosing four postage stamps, to Mr. Waterer, Chertsey, Surrey.

TO MARKET GARDENERS.—Mr. MARSH has instructions to Sell by Private Treaty, or to Let on Lease, a PLOT of productive GARDEN GROUND, consisting of nearly two acres, with three Dwelling Houses and Cottage adjoining.—For further particulars, apply to Mr. Marsh, Auctioneer, 27 Bucklersbury, London.

FARM TO LET, in the parish of Croydon, Surrey, about 140 acres, with good buildings.—Apply by letter to J. S., 5, Upper Wellington-street, Strand, London.

TO NURSERYMEN, SEEDSMEN, AND OTHERS.

TO BE DISPOSED OF, by Private Contract, an old and long established NURSERY and SEED BUSINESS, within 15 miles of London, doing an excellent Trade, consisting of about 15 acres of Valuable Young Stock, in a very flourishing condition; also two Greenhouses, one Hothouse, Pits, and Lights. The whole to be taken at a valuation, with immediate possession.—For particulars, apply to Messrs. Protheroe and Morris, Leytonstone, Essex.

IMPORTANT DISCOVERY TO MANUFACTURERS OF MANURE.

TO BE DISPOSED OF, for a moderate Royalty, the exclusive Right of a RECIPE for the ECONOMICAL MANUFACTURE of a MANURE or FERTILISER for CORN CROPS, by which the return may be quadrupled on the most barren soils. For particulars, apply (post-paid) to Dr. Jones, Lancych, near Newcastle Emlyn, South Wales.

TO NURSERYMEN AND OTHERS.

TO BE DISPOSED OF, by Private Contract, the whole of that excellent and improving NURSERY BUSINESS, established for 20 years, situate in the parishes of Pilton and Marwood, contiguous to the well-supplied Market Towns of Barnstaple, Southmolton, and Bideford, consisting of 18 acres of valuable young Stock, now growing in a very flourishing condition; the property of Mr. William Ireland. The principal portion of the Nursery Grounds are held on a Lease of 30 years, 20 of which are unexpired. The present proprietor will retain a portion of the business, as a partner, if required. All letters to be addressed to W. Gaisman, Esq., Solicitor, Barnstaple; or to Mr. W. Ireland, Stanhope Arms, Holsworthy.

There is a good greenhouse on the premises.

A VERY LARGE GARDEN, PRESTON.—SELLING OFF, AT VERY REDUCED PRICES, at the Nursery and Gardens now occupied by Mr. Charles Jackson, who is retiring from business, the whole of the STOCK of EVERGREENS and other SHRUBS, FRUIT TREES, and PLANTS, GREEN-HOUSES and FRAMES. The Hardy Stock consists of an immense number of fine Rhododendrons, Variegated Hollies, Portugal and Common Laurels, Laurustinus, Yews, Araucarias, Deodaras and other Pines, Aucubas, Box, Azaleas and other American Plants, Roses, Deciduous Shrubs, and Evergreens of all sorts and sizes. The Greenhouse Stock comprises a large quantity of fine Camellias, Lilium lancifolium, Geraniums, Fuchsias—some 6 to 10 feet high for lawns, China Roses, Azalea Indica, Rhododendrons, &c., &c. As it is desirable that the grounds should be cleared by the end of October, the Plants will be sold at very low prices.—Preston, September 29.

TIMSBURY, SOMERSET, situated about 8 miles from Bath, 10 from Shepton Mallet and Frome, 11 from Bristol and Wells, and 6 and 7 from the Keynsham and Salford stations of the Great Western Railway.

TO BE LET, by Tender, for a term of 7 years from March 25th, 1850, TIMSBURY SLEIGHT FARM, comprising within a ring fence about 200 acres of rich Dairy, Orchard, and Arable Land. All the fields are abundantly supplied with water, and most of them contain, at a depth of from 3 to 5 fathoms beneath the surface, very rich beds of black shell marl. The estate also abounds in lime. The Farm House, most pleasantly situated in the centre of the estate, has been recently erected, and is replete with every convenience.—Further particulars may be learned of Mr. Moore, of the New Inn, Timsbury, who will show the estate.

JAMES PHILLIPS AND CO., 116, BISHOPSGATE STREET WITHOUT, LONDON, offer the following:

GLASS.

	s. d.		Glazed. s. d.
12 in.	3 0	...	6 0
14	3 6	...	7 0
16	4 0	...	8 0
18	4 6	...	9 0
20	5 0	...	10 0
24	6 0	...	12 0

If open at top 1s. extra.

HAND GLASSES.

HYACINTH DISHES.

12 inch diameter, 2s. 6d.; 9 inch, 1s. 6d.; 6 inch, 1s. each.

MILK PANS.

12 in.	2s. 0d.	20 in.	4s. 0d.
14	2 6	22	4 6
16	3 0	24	5 0
18	3 6	26	6 0

Glass Tiles and Slates, Propagating and Bee Glasses, from 2d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d.; 6 tubes, 10s.—JAMES PHILLIPS AND CO., 116, BISHOPSGATE STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

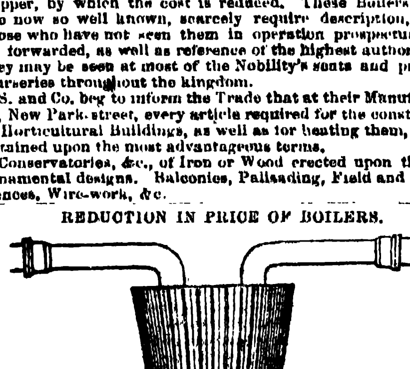
See the *Gardeners' Chronicle*, first Saturday in each month.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in. will warm	59 ft. 4 in. pipe	...	£1 15 0
12 in. do.	75 ft. 4 in. do. ...	...	2 5 0
14 in. do.	100 ft. 4 in. do. ...	...	2 15 0
16 in. do.	150 ft. 4 in. do. ...	...	3 10 0
18 in. do.	250 ft. 4 in. do. ...	...	4 10 0
21 in. do.	350 ft. 4 in. do. ...	...	5 10 0
24 in. do.	450 ft. 4 in. do. ...	...	7 0 0
New Pattern Boilers.			
30 in. will warm	800 ft. 4 in. pipe	...	15 15 0
36 in. do.	1500 ft. 4 in. do. ...	...	20 0 0

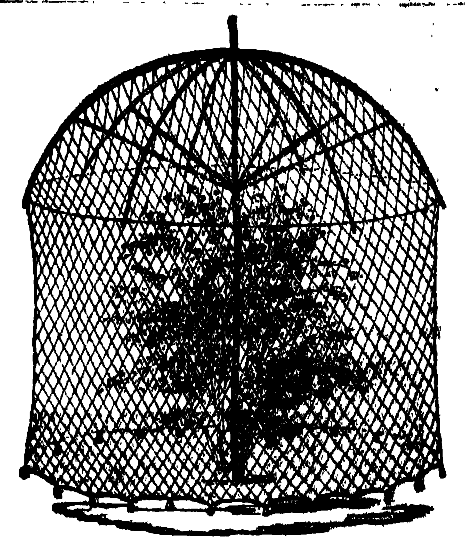
All Boilers with double arms, up to 18 in., 5s. extra; to 24 in., 10s. extra; all above, the same price.

139, Fleet-street, London, Sept. 29.

PORTLAND CEMENT.—Testimonials received from all quarters prove this CEMENT to possess the rare property of withstanding the severest frost, and to be consequently superior to every other for hydraulic purposes, such as building and lining of Reservoirs, Cisterns, Baths, Fish-ponds, &c. For external plastering and ornamental castings it requires neither colour nor paint. It never vegetates, and will carry from three to four times its own body of sand.

Manufacturers, J. B. White and Sons, Millbank-street, Westminster.

PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, Charles Francis and Sons, Nine Elms, London.



THE ABOVE IS A SKETCH OF A FRAMED NET to protect a single Gooseberry or Currant Bush from Bullfinches and Sparrows in the Winter and Spring, and from Blackbirds and Thrushes in the Summer. This Net is 4½ feet high, 12 feet in circumference, and 1 inch from knot to knot; being made waterproof, it will last many years, although constantly exposed to the weather. This Frame may also be used for fumigating plants, by covering it, when wanted for this purpose, with a loose bag of cheap calico. Being made to fold up as an umbrella, the *Frame Net* is conveniently packed for carriage.

Prices for Ready Money.

4½ feet high, 12 feet circumference ... ... 5s. each.
4½ do. 14 do. ... ... 6s. „
For 1 dozen and upwards, 10 per cent. discount.

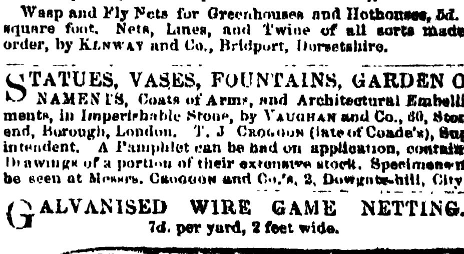
Netting of all sorts for Fruit Trees, and of any size, at the following prices:

1 inch from knot to knot ..	...	2d. per square yard.
1⅛ do. do. ..	...	1⅞ „
1¼ do. do. ...	...	1½ „
Rabbit Nets, set to line 5 feet deep		4d. per yard.
Sheep Nets, 5 feet deep ...		6 „

Wasp and Fly Nets for Greenhouses and Hothouses, 5d. per square foot. Nets, Lines, and Twine of all sorts made to order, by Kenway and Co., Bridport, Dorsetshire.

STATUES, VASES, FOUNTAINS, GARDEN ORNAMENTS, Coats of Arms, and Architectural Embellishments, in Imperishable Stone, by Vaughan and Co., 60, Stones-end, Borough, London. T. J. Croggon (late of Coade's), Superintendent. A Pamphlet can be had on application, containing Drawings of a portion of their extensive stock. Specimens may be seen at Messrs. Croggon and Co.'s, 2, Dowgate-hill, City.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7d. per yd.	5d. per yd.
2-inch „ strong „	...	9 „	6½ „
2-inch „ extra strong „	...	12 „	9 „
1½-inch „ light „	...	8 „	6 „
1½-inch „ strong „	...	10 „	8 „
1½-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 50 years, and by the numerous (between 400 and 500) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a copy of the testimonials, will be sent on application to Walter Carson, 15, Tokenhouse Yard, back of the Bank of England.—No Agents.—All orders are particularly requested to be sent direct.

ROYAL VETERINARY COLLEGE, LONDON.—The LECTURES will COMMENCE at the above Institution on Monday, October 1, 1849, at 12 o'clock, when the Introductory Lecture will be delivered by Professor Spooner.

Anatomy, Physiology, and Pathology of the Horse—Professor Spooner.

Particular Anatomy and Diseases of Domesticated Animals—Professor Simonds.

Chymistry and Materia Medica—Professor Morton.

Anatomical Demonstrations—Mr. Varnell.

Perpetual Fee to all the Lectures, with Infirmary Practice and Anatomical Demonstrations daily, 20 guineas.

EDINBURGH VETERINARY COLLEGE.—The Committee of the Highland and Agricultural Society of Scotland, appointed to superintend the Veterinary College, hereby intimate that the Session will commence on Monday, the 5th of November.

The Course of Study will be conducted as follows:

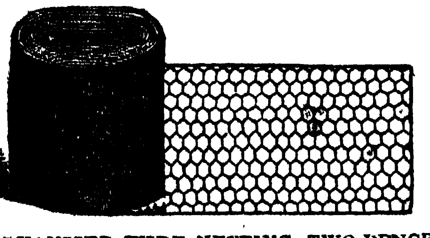
1. Zoïatrica, including the Anatomy, Physiology, and Pathology of the Horse, Neat Cattle, Sheep, Pig, and Dog; Stable Management, and the Business of the Forge; by Professor Dick.
2. The Principles of Chemistry and Pharmacy, by Dr. George Wilson, F.R.S E.
3. General Zootomy, and Demonstrations, by Mr. Barlow, V.S.
4. Zootherapeutics, comprising Veterinary Materia Medica and Dietetics, by Mr. Dun, V.S.
5. Practical Pharmacy, by Mr. Worthington, V.S.

By order of the Committee, Jn. Hall Maxwell, Secretary. Highland and Agricultural Society, Edinburgh, Sept. 29.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm-servants, or unpractised persons. Price 1d. per square foot. CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel. Samples and Testimonials sent by post on application to Croggon and Co., 2, Dowgate-hill, London.

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



GALVANISED WIRE NETTING, TWO-PENCE PER SQUARE FOOT.—This article requires no painting, the atmosphere not having the slightest action on it. It was exhibited at the late Metropolitan Cattle Show, and was highly eulogised both for its utility and pretty appearance, and acknowledged to be the cheapest and best article ever produced. It forms a light and durable fence against the depredations of hares, rabbits, and cats, and is peculiarly adapted for Aviaries, Pheasantries, and to secure poultry; and by the galvanised requiring no paint, it answers admirably for training all kinds of creeping plants. Large quantities always kept in stock, of 18, 24, 36, and 48 inches wide; it can, however, be made to any dimensions desired. Patterns forwarded free of expense.

12 inches wide 3d. per yard		30 inches wide 7½d. per yard	
18 " "	4½d. " "	36 " "	9d. " "
24 " "	6d. " "	48 " "	1s. " "

Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c.; Window Blinds, 1s. 10d. per square foot, with bolts complete, in mahogany frames; Gothic garden bordering, 6d. per running foot; Flower Trainers, from 3d. each; Garden arches, 20s. each; Flower Stands, from 3s. 9d. each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper-makers, millers, &c.—At the Manufactory of Thomas Henry Fox, 44, Skinner-street, Snow-hill, London.

GREY GOOSE FEATHERS, 1s. per lb. — Bed Feathers were never so cheap as at present.

HEAL and SONS' Present Prices are:—

Poultry	0s 8d	Best Grey Goose ...	1s 10d
Grey Goose	1 0	White ditto	2 2
Foreign ditto	1 6	Best Dantzic ditto ...	3 0

Purified by Steam, and warranted sweet and free from dust.

Heal and Sons' List of Bedding, containing full particulars of weights, sizes, and prices, sent free by post, on application to their Factory, 196, Tottenham-court-road, London.

METCALFE and Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose—1s. An improved Clothes Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes of improved graduated and powerful friction. Velvet Brushes which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at Metcalfe, Bingley, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Holles-street.

Caution.—Beware of the words "From Metcalfe's" adopted by some houses.

FINE HEAD OF HAIR.

ROWLANDS' MACASSAR OIL insinuates its balsamic properties into the pores of the head, nourishes the Hair in its embryo state, accelerates its growth, cleanses it from Scurf and Dandriff, sustains it in maturity, and continues its possession of healthy vigour, silky softness, and luxurious redundancy, to the latest period of human life. In the growth of Whiskers, Eyebrows, and Mustachios, it is also unfailing in its stimulative operation. For Children it is especially recommended, as forming the basis of a beautiful head of hair, and rendering the use of the fine-comb unnecessary. A small pamphlet accompanies each bottle of ROWLANDS' MACASSAR OIL, wherein important hints and advice will be found on the Culture of the hair of Infancy, and on its preservation and beauty through the several stages of human life. Price 3s. 6d.—7s.—Family bottles (equal to four small), 10s. 6d.; and double that size, 21s. per bottle.

☞ Each bottle of the genuine article has the words ROWLAND'S MACASSAR OIL Engraved in two lines on the Wrapper; and on the back of the Wrapper nearly 1500 times, containing 29,028 letters.

Sold by them at 20, Hatton Garden, London, and by all Chemists and Perfumers.

THE EXHIBITION OF WORKS OF MANUFACTURE AND ART.—The Exhibition of Manufactured Art, now open in Birmingham, will be treated at considerable length in the October Number of the Art-Journal.

It will be illustrated by upwards of one hundred and fifty Engravings on Wood, comprising a majority of the leading works contained in the Exhibition, [illegible], electro-silver, bronze, brass (cast and pressed), iron, porcelain, earthenware, and glass; of objects in papier-mâché and Japanned goods; carvings in wood; and the several productions in metal which constitute the main staple of British industry, and render Birmingham the great capital of British manufactures.

These will evidence an astonishing advance in Art within the last few years; and sufficiently prove the power of the English manufacturer to compete with the best fabricants of France.

The Exhibition at Birmingham cannot fail to have great influence on the future course of Manufactured Art in England—extending its repute and augmenting its mercantile value.

The Editor of The Art-Journal has, therefore, considered it his duty to make arrangements for reporting this Exposition on a scale somewhat commensurate with the magnitude and liberality of the enterprise.

The October number of The Art-Journal will also contain three engravings on steel—"Malvolio," engraved by Staines, from the painting by Maclise, R.A.; "The Truant," engraved by Phillibrown, from the painting by Webster, R.A.—both in the "Vernon Gallery;" and of "Sabrina," engraved by Artlett, from the statue by Marshall, A.R.A.

The Art-Journal of the past eight months contains, besides several hundred engravings on wood, no fewer than twenty-five engravings on steel; each of which may be regarded as a fine and beautiful specimen of Art: they consist chiefly of line engravings from the best pictures of the best British artists, contained in the Vernon Gallery—the collection presented by the late Robert Vernon, Esq., to the British people.

To the amateur, the connoisseur, the artist, and the public generally, this work cannot fail to be an acquisition of considerable value; the purest and best Art is thus circulated at the smallest possible cost to the purchaser: "Mr. Vernon's magnificent gift is thus made doubly the property of the people. To the humblest classes throughout the whole kingdom it becomes in some degree accessible, and a source of enjoyment and instruction"

The Art-Journal may be ordered of any bookseller in town or country.

Publisher, George Virtue, 25, Paternoster-row.

NEW WORK BY PROFESSOR JOHNSTON.

In October will be published,

EXPERIMENTAL AGRICULTURE: being the Results of Past, and Suggestions for Future Experiments in Scientific and Practical Agriculture. By James F. W. Johnston, F.R.SS.L. & E., &c. &c. In One Volume Octavo.

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William Blackwood and Sons, Edinburgh and London.

Just published, price 5s., Part IV., Vol. IV., of

THE JOURNAL OF THE HORTICULTURAL SOCIETY OF LONDON.

Contents.—The Vegetation of the Indian Archipelago. By Dr. C. Reinwardt—Chinese Cultivation. The Tchou-ma, or Chinese Flax—On the Pickfork. By R. Glendinning—On some Moulds referred by authors to Fumago, and on certain allied or analogous Forms. By the Rev. M. J. Berkeley—Memoranda concerning new Plants recently introduced. By John Lindley, Ph. D., F R.S.—Notes on some varieties of Peas grown in the Garden of the Society in 1849. By R. Thompson—On the Cultivation of Brunsvigia Josephinæ. By Charles Leach—Note respecting the "Josling's St. Alban's" Grape. By R. Thompson—On the Management of Forest-trees, considered in relation to the Durability of Timber. By G. Lovell, gardener to the Marchioness of Hastings—On Marl Hexagons, a new material for Garden Walks, with Slabs of the same for Edging. By Alexander Forsyth—On the Cultivation of Vines in Greenhouses. By J. Hutchison, gardener to Colonel Scudamore—New Plants, &c., from the Society's Garden—Proceedings at Meetings, from May 22 to September 4, 1849.

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Our Weekly Gossip.—Invitation of the British Association to Hull—Anniversary of the Ray Society—Meeting of the American Association for the Advancement of Science—Projected Railway across the American Continent—Movements of Father Mathew—Dr. Layard's Expedition to Nimroud—Working Men's Association for Promoting National Secular Education—Death of Herr Steiglitz, at Venice—Yorkshire Antiquarian Club—The Grave-yards of London.

Fine Arts.—Exhibition of Manufactures and Art at Birmingham.

Fine Art Gossip.—The Nimroud Marbles—Antiquities in the British Museum—Sheffield School of Design—Sale of Thorwaldsen's Works—Impositions on Artists.

Music and the Drama.—Notes on the Musical Festivals (Birmingham Festival)—Marylebone Theatre ('Velasco')—Sadler's Wells ('Measure for Measure')—Surrey ('Rose of Arragon').

Musical and Dramatic Gossip.—Native Art—Bankruptcy of Mr. Delafield—Appointment of Dr. S. Wesley as Organist to Winchester Cathedral—Foreign Gossip.

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"Contains a good deal of useful information, pleasantly presented, interspersed with picturesque sketches, and varied by disquisitions of the Naturalist."—*Spectator.*

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"By far the best work on Poultry that has ever been published. It is delightfully written, and full of practical knowledge. The author has, for some time, been a close observer of the habits and characteristics of poultry; and he has had the assistance of numerous active friends in different parts of the country."—*Midland Counties' Herald.*

"At length the poultry-loving public have obtained a book on which they may depend for full and accurate information on the breeding, rearing, and management of fowls. It is evidently the work of a gentleman, a scholar, and a naturalist; and will, we have no doubt, in future be the Text-Book of all admirers of the feathered tribes domesticated by man for the sake of profit or pleasure. An additional guarantee for the excellence of the work is given in the fact, that most of the Essays it contains appeared as a series in the '*Gardeners' Chronicle and Agricultural Gazette.*'"—*Leeds Intelligencer.*

"We are glad to have the opportunity of drawing attention to a subject much neglected in farming operations, but calculated to afford considerable profit, if proper attention be given to it, viz., the breeding and rearing of domestic poultry. The present state of things in most of our farm-yards in this respect is most deplorable, and has induced the impression that the management of poultry will never pay. That their mismanagement does not pay, and never will, we are quite ready to admit and believe: but a trial in the right direction would soon afford proof that no portion of the farming operations of the country would show a clearer gain than a careful reformation of the abuses which prevail in this department. In confirmation of these opinions we may refer to Mr. Dixon's very valuable and useful book, which is published most opportunely for our purpose of again urging upon our friends the importance of this branch of their employment. The work itself has already been printed in the *Gardeners' Chronicle*, and is now given to the public in an amended and improved form. Simple as the subject of that work may be supposed to be, we can assure our agricultural friends that they will find it a most useful and interesting manual. It gives the evidence of practical investigation, and is totally free from all theoretical notions. It is written from the results of careful and continued observation of the habits of domestic animals, and throws light upon their peculiar instincts. If due appreciation be given to Mr. Dixon's efforts, the present treatise will be henceforth quoted and referred to, not only as a standard book, but the only one which, as yet, has appeared to elucidate the important subject of which it treats."—*Old Bell's Messenger.*

"The title of this book might lead a person to suppose that it is a mere hand-book to the poultry-yard—an essay on the treatment of fowls. It is something more than this, however; it is a most entertaining book for the general reader, evincing great observation of nature, and the working of a most inquiring mind. It reminds us much of 'White's Natural History of Selbourne,' and we cannot give it higher praise."—*Weekly Chronicle.*

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By Edward Solly, Esq., F.R.S., F.L.S., F.G.S.;

Hon. Memb. Roy. Agr. Soc. Eng.; Professor of Chemistry to the Horticultural Society of London; Lecturer on Chemistry in the Hon. E. I. Co.'s Military Seminary at Addiscombe, &c.

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London: J. Matthews, 5, Upper Wellington-street, Strand.

Printed by William Bradbury, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be Addressed to the Editor.—Saturday, September 29, 1849.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 40—1849.] SATURDAY, OCTOBER 6. [Price 6d.

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GARDENERS' BENEVOLENT INSTITUTION.—NOTICE is hereby given that an ELECTION of TWO PENSIONERS on the Funds of this Charity will take place in January next. All persons desirous of becoming Candidates are requested to send in their petitions to the Committee on or before the 31st inst. (after which time they will not be received), together with full testimonials as to age, length of servitude, income, and means of subsistence, without which petitions will be rejected. By order of the Committee,
EDWARD R. CUTLER, Secretary,
October 2. 97, Farringdon-street
Printed Forms of Petition may be had upon application to the Secretary.

MANCHESTER BOTANICAL AND HORTICULTURAL SOCIETY.—The Exhibitions for the year 1850 will be held at the Society's Gardens, Old Trafford, on the following days—Wednesday, the 15th of May; Wednesday, the 26th of June; and Wednesday, the 11th of September.
By order of the Council,
Cooper-street, Oct. 6. JOHN GUNSON, Secretary.

AMERICAN NURSERY, BAGSHOT, SURREY.
JOHN WATERER has much pleasure in announcing he has published a Descriptive Catalogue of his extensive collection of RHODODENDRONS and other American plants, &c., which will be forwarded on application.

HERTFORD NURSERIES.
E. P. FRANCIS'S New Descriptive Catalogue of ROSES for the ensuing season is now ready, and will be forwarded free on application.

DOUBLE HOLLYHOCKS
ROBERT COOPER, Sion Nursery, Croydon, has to offer the following good Double Hollyhocks, separate sorts, at 9s. per dozen. Double black, blush, buff and red, crimson, lilac, pale lilac, pink, puce, purple, red, scarlet, white, yellow.
Mixed Double Hollyhocks, 5s. per dozen.

Double Crimson Pæonies	Double White Pæonies
" Pink ditto	" White Sweet do.

Strong roots at 1s. each.

DANECROFT EARLY GREEN PEAS.—This superior early PEA, with a dark green glossy pod, being hardy, and of a most distinct habit to all other early Peas, as well as a superior flavour, can be had of FREDERICK WARNER, Seedsman, Wholesale and Retail, 28, Cornhill, and 3, Laurence Pountney-lane, Cannon-street, London

SPLENDID NEW GERANIUMS.
MESSRS. VEITCH AND SON have now ready for delivery strong, well-established Plants of the following beautiful varieties, which they can confidently recommend.

	s.	d.		s.	d.
Aspasia, Gaines' ...	15	0	Lady Clementine, Gaines'	15	0
Belle of the Village, Hoyle's ...	10	6	Lyra, Gaines'	15	0
			Meleager, Gaines' ...	15	0
Berengaria, Wood's	7	6	Refulgent, Beck's	10	6
Brilliant, Topping's	10	6	Rolla, Hoyle's	10	6
Crusader, Hoyle's	15	0	Sparkler, Hoyle's	10	6
Elegans, Topping's ..	10	6	Star, Beck's	10	6
Flamingo, Hoyle's ...	7	6	Superlative, Hoyle's	7	6

This set of 15 for 6l. 6s., or a selection of any 12 for 5l. 5s.—Parties taking Geraniums to the amount of 5l. 5s. will have a strong plant of Symons' Field Marshal sent gratis on the lot.—A general list can be had on prepaid application.
Exeter, Oct. 6.

ALEXANDER LAING, NURSERYMAN, Beverley, begs to inform the public that he will send Atkinson's new Seedling FUCHSIA "ALBONI" out the second week in October, at 5s 6d. each; no discount, but one plant will be given over for every three ordered. A. L. begs to refer to extracts from the *Gardeners' Chronicle*, also to the Gardeners' and Farmers' Journal.

(From the Gardeners' Chronicle.)
"FUCHSIAS: *A. L.* Very much reflexed in the lobes of the tube, and distinct on that account from most others; colours of the tube pale blush; corolla rosy pink; flowers good in texture, colours, and proportions, but rather small."

(From the Gardeners' and Farmers' Journal.)
"Atkinson's Alboni, an excellent variety of unusual attractions; tube short, stout, but well proportioned; colour, blush; sepals broad, obtuse, and well expanded, the same tint as the tube, tipped with pale green, flushed a shade or two deeper on the inner portion; corolla excellent, describing half a circle. The peculiar attraction of this flower consists in each petal of the corolla being beautifully and distinctly margined with bright rosy scarlet on a pale blush ground, the inner portion being beautifully tinted with the same. We consider this a novelty, for such decidedly is an acquisition to any collection."

TO MARKET GARDENERS, NURSERYMEN, and Others.—A large quantity of CAULIFLOWER Plants for sale, from a superior stock.—Enquire of Mr. T. COAX, Jamaica Level, Bermondsey.

RENDLE'S CHEMICAL PLANT MANURE should be used by all who wish for a good bloom of Hyacinths, Tulips, and other Dutch roots. Sold in tin canisters at 2s., 3s. 6d., and 5s each. For further particulars apply to
WILLIAM E. RENDLE and Co., Union-road, Plymouth.
Our extensive premises are adjoining the Plymouth Station of the South Devon Railway, and our sales of Guano have exceeded 6000 tons during the last five years.

FIRST-CLASS GERANIUMS AT VERY REDUCED PRICES.
HENRY WALTON begs to inform his Friends and the Public that his AUTUMN CATALOGUE is now ready, and may be had for one stamp, containing the leading varieties of Geraniums, Fuchsias, Petunias, Pinks, Carnations, &c. 12 of the best Geraniums sent out last autumn for 2l. 2s., including Hoyle's Crusader and Arnold's Virgin Queen.

NEW SEEDLING GERANIUM.
ANTAGONIST (Walton).—Upper petals deep claret, margined with rose, lower petals blush, with pure white centre. The great consistency of the petals of this flower constitute its great claim to admiration. Price 15s. The usual allowance to the Trade, with one over on every three ordered.
H. W., in offering the above Seedling Geranium, feels confident of its giving entire satisfaction, having this season been seen by competent judges, who have pronounced it first-rate in its class. Strong plants now ready.
PINKS.—The finest first-rate show flowers, post free, 6s., 9s., and 12s. per dozen.
All orders must be prepaid, and be made payable at Burnley Edgend Marsden, near Burnley, Lancashire.—Oct. 6.

PINUS (ABIES) DOUGLASII, DOUGLAS PINE.—The Subscriber having succeeded in raising from seed a fine stock of this most MAGNIFICENT CONIFER, now offers them for sale, and which is thus described by Dr. LINDLEY, in the *Gardeners' Chronicle* of October 17, 1846, page 693—"Height, 215 feet; greatest circumference, 57 feet 9 inches; at 187 feet high, 17 feet 5 inches, which by calculation must contain 247 loads of timber." This description of its magnitude, the several beautiful specimens now growing at Dropmore (and some few other places), and planted when first introduced 18 years since, seem likely to realise, having made an average growth of 3 feet per annum on ungenial soils. Strong healthy plants, 6 inches high, in pots, 2 years old, 10l. per 100; 30s. per dozen; 3s 6d. single plants. A few fine specimen plants, 2 to 5 feet, 7s. 6d. to 42s each.—W. ROGERS, Nurseryman and Contracting Planter, Red Lodge, near Southampton.

NEW AND STRIKING CINERARIA AND VERBENA.
ARTHUR MACKIE begs to offer the undermentioned to the attention of Florists, with the fullest conviction that they will give entire satisfaction.
CINERARIA, MACKIE'S OTHELLO.—Good and robust habit, with very fine dark purple flowers. See *Gardeners' Chronicle*, May 26, 1849.—"A. Mackie: A first-rate variety, with deep purple flowers." Plants on and after the 15th October, at 5s. each; where three are ordered four will be sent.
VERBENA, WOODCOCK'S MAGNIFICENT.—A. M. having purchased the entire stock of this unrivalled Verbena, offers it to the Public with the utmost confidence, being fully persuaded that it will surpass everything yet out in its class. The individual flowers will frequently cover a sixpence. It is of a very free habit and growth, and well suited for grouping. See *Gardeners' Chronicle*, Sept. 15, 1849.—"W. K. B.: Colour bright rose, fading to pink; a remarkably fine variety, with much the largest flowers we have yet seen." Plants, the 1st of April, 1850, at 5s. each; where three are ordered four will be sent.
Norwich Nursery, October 6.

WARNER'S EARLY EMPEROR PEAS.—These Peas, being large croppers and fine in flavour, well merit the attention of Podders and Farmers who are growers of early Peas; they are decidedly much earlier and better podded than the generality of early Peas, as a proof of which they were gathered at Windsor on the 18th of May.—May be had of FREDERICK WARNER, Seedsman, Wholesale and Retail, 28, Cornhill, and 3, Laurence Pountney-lane, Cannon-st., London

TULIPS, HYACINTHS, RANUNCULUSES, ANEMONES, AURICULAS, GERANIUMS, AND LILIUM LANCIFOLIUM
H. GROOM, CLAPHAM-RISE, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN and to HIS MAJESTY THE KING OF SAXONY, respectfully informs the Nobility, Gentry, and Amateurs, that he has a fine selection of the above Flowers, which he can offer at the following very moderate prices:

	£	s.	d.
100 TULIPS, in 100 fine sorts, named ..	7	7	0
100 Ditto in 50 ditto ditto ...	5	5	0
Superfine Mixtures, per 100, from 7s. 6d. to 21s.			
25 HYACINTHS, in 25 superfine sorts, named	1	5	0
Ditto, fine kinds, per dozen	0	9	0
100 RANUNCULUSES, in 100 superfine sorts, named	2	10	0
Superfine Mixtures, per 100, from 5s. to 21s.			
100 DOUBLE ANEMONES, in 50 superfine sorts, named, new collection	2	2	0
Superfine Mixtures (double), p 100, 7s. 6d. and 10s. 6d.			
25 AURICULAS, in 25 superfine sorts, named	2	10	0
Ditto, good varieties, per dozen ..	0	18	0
25 GERANIUMS, in 25 superfine sorts, named ...	3	3	0
Ditto, good varieties, per dozen, from 12s. to	0	18	0
LILIUM LANCIFOLIUM ALBUM, 1s. each or 10s. p doz.			
Ditto Ditto Ditto, for planting in shrubberies, per 100 ..	3	[illegible]	0
Ditto Ditto, punctatum, each from 3s. to	0	[illegible]	6
Ditto Ditto rubrum or speciosum, from 3s 6d to	0	15	0
Ditto Ditto roseum, from 3s 6d. to	0	10	6
Ditto Ditto cruentum, from 5s. to	0	10	6
A NEW COLLECTION OF HYBRID SEEDLING LILIES, six sorts for	0	18	0

H. GROOM begs to say that his Catalogue of BULBS, &c., is ready, and will be forwarded by post on application.
*** The usual discount to the Trade.

GAINES' SEEDLING FANCY AND OTHER GERANIUMS, to be sent out in October.
GEM.—Upper petals rosy purple, belted with white; lower petals white, with a spot in each of rosy purple; 10s. 6d.
DELIGHT.—Upper petals crimson purple, belted with white; lower petals white, with purple spot in each, 10s. 6d.
MADAME MALIBRAN.—Rosy lilac, edged with white, with a white spot in the upper petals; 10s. 6d.
ORESTES.—Upper petals bright rosy crimson, with purplish spot, under petals crimson purple, with white centre; the best of its class; 21s.
MADAME ALBONI.—Upper petals shaded crimson, under petals rosy lilac; 7s 6d.
NIMROD.—Upper petals crimson purple, with crimson spot; lower petals crimson purple, veined; 10s. 6d.
HERO OF SURREY.—Upper petals nearly black, belted with pure white; lower petals white, with a carmine spot in each; 10s. 6d.

SEEDLING SHOW GERANIUMS.
ELECTRIC.—Upper petals fine rose, with crimson spot, margined with orange, centre pure white; 42s.
URSA MAJOR.—Upper petals crimson, belted with rose; under petals rose, excellent shape, colour of [illegible]; 31s. 6d.
LADY EVELYN.—Fine pink, with a dark crimson spot in the upper petals, very distinct, fine form; 31s. 6d.
FLYING DUTCHMAN.—Upper petals rosy scarlet, with dark spot, margined with orange, under petals rose—a perfect model, 31s. 6d.
PRINCESS HELENA.—Orange, with crimson spot in the upper petals, fine form, 21s.
GRENADIER.—Bright crimson, with a dark spot in the upper petals, the best of show flowers; 21s.
DUCHESS OF ARGYLL.—Bright pink, crimson spot in the upper petals, 21s.
THE MOOR.—Upper petals nearly black, edged with rose; under petals rose, shaded with scarlet, a dark spot in each; finely pencilled, quite a novelty; 31s. 6d.

NEW AND DISTINCT SCARLET GERANIUM.
CERESE UNIQUE.—This is the greatest novelty of the season, the flower is a bright cherry colour, perfectly round, very large truss, free bloomer, a fine horse-shoe leaf; the stem and foot-stalks of the flowers are transparent, like a coral. It obtained a prize at the Royal Botanic Exhibition, and a first-class Certificate at the Floricultural Society; 10s. 6d.
Many of the above also obtained prizes at the same societies.
A Descriptive Catalogue will be ready for distribution early in October.—Nursery, Surrey-lane, Battersea.

ROCK PLANTS.
J. R. AND A. PEARSON having a large number of the above, offer them at 6d. each, if 12 or more are ordered. The following are part of the collection:

Antennaria supina	Myosotis nana	Sedum anacampseros
Artemisia sericea	Œnothera Fraseri	" [illegible]
Arenaria cæspitosa	" parviflora	" [illegible]
" balearica	" pumila	" virens
Ajuga genevensis	Primula integrifolia	" virescens
Arabis bellidifolia	" villosa	" Jacquinii
Aretia Vitaliana	Rhodiola rosea	" populifolium
Bellium minutum	Saxifraga ceratophylla	" dentatum
Cerastium suffruticosum	" muscoides	" Forsterianum
Chrysosplenium alternifolium	" oppositifolia	" pallens
	" ditto alba	" rupestre
Campanula nitida	" retusa	" dasyphyllum
" garganica	" juniperina	" telephium
" muralis	" pigmæa	" formosum
" pumila azurea	" lævis	" ternatum
" ditto alba	" lanceolata	" oppositifolia
" pulla	" hirta	" Ewersii
" alpina	" stellaris	" stellatum
" ditto rubra	" Sternbergii	" roseum
Cardamine trifoliata	" tricuspidata	" hybridum
Cortusa Matthioli	" elegans	" spurium
Dianthus hyssopifolius	" Icelandica	" Sieboldii
	" lingulata	" monstrosa
" cæsius	" cuneifolia	" album
Draba aizoides	" pallida	" Aizoon
" incana	" Geum	" reflexum
Epilobium latifolium	" crustata	" anacampseros
Erinus hispanicus	" intacta	" sempervivoides
Erigeron alpinus	" aizoides	" anglicum
Fragaria variegata	" polita	Sempervivum globiferum
Farsetia deltoides	" pyramidalis	
Frankenia lævis	" rosularis	" montanum
Glaux maritima	" umbrosa variegata	" flagelliforme
Gypsophila prostrata		" soboliferum
Glechoma hederacea variegata	" hypnoides	" arachnoideum
	" Hirculus	Schivereckia podolica
Hypericum humifusum	" ditto latifolia	
	" nivalis	Stachys corsica
Lysimachia nummularia	" dentata	Senecio abrotanifolius
	" platypetala	
Linaria alpina	" Bucklandii	Thymus azureus
" hepaticæfolia	Soldanella alpina	Tussilago variegata
" cymbalaria	" montana	Thalictrum alpina
" ditto alba	" minima	Viscaria vulgaris pleno
" ditto variegata	" ditto alba	
" pilosa	Silene maritima pleno	Veronica montana
Lychnis alpina		" taurica
" viscaria	" alpestris	" alpestris
" ditto alba	" quadridentata	" fruticulosa
Linnea borealis	" acaulis	" saxatilis
Mitella diphylla	" ditto excarpa	

Chilwell Nurseries, near Nottingham.

YARMOUTH BLOATERS—GENUINE AND OF THE FINEST QUALITY.
Yarmouth has for centuries been justly celebrated for its well-known "Yarmouth Bloaters," the delicacy of which, when obtained in their genuine state, requires no comment. Such an opportunity is now offered; and they can be forwarded to any part of the kingdom, or for exportation (on receipt of a post-office order), at 12s. per 100, package included.—All orders to be addressed to Mr. FREDERICK BROUGHTON [illegible], Church-square, Great Yarmouth

A ... from ... magnificent ... more than 380 EXPANDED BLOSSOMS ... on them at one time; amongst which immense number only one imperfect flower was to be seen.

It can be strongly recommended, and will be sure to give the greatest satisfaction. Price 7s. 6d. each, or, including a plant of that excellent flower, Hoyle's Crusader, for 12s.

Apply to WILLIAM E. RENDLE & Co., Union-road, Plymouth. Our Dutch Bulbs have just arrived in excellent condition. Catalogue on application, gratis.

DOUBLE ROMAN AND PAPER WHITE NARCISSUS, 4s. per dozen.—The above Bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have been just received at A. CORBETT's Italian and Foreign Warehouse, 18, Pall-mall, near Waterloo-place. Also Dutch Hyacinths, Crocus, Tulips, Anemones, Ranunculus, &c.; priced Catalogues of which may be had per post.

NEW FANCY GERANIUM.

EDWARD GEORGE HENDERSON, Wellington Nursery, St. John's Wood, London, has to offer the exceedingly beautiful and very distinct new fancy Geranium ALBONI, at 10s. 6d. each, which he will commence sending out on the 15th of October. The upper petals are of a deep rosy purple, with a light edging of blush, the under petals blush white and sometimes blotched. The flower and truss large, a most profuse bloomer, and retains its flowers as long as the Queen Victoria Geranium. A drawing of the flower (by Holden) may be seen at the Nursery.

E. G. H. can strongly recommend the above Geranium, and has no doubt it will prove one of the greatest favourites ever sent out, as it continues in one sheet of bloom for such a lengthened period.

N.B. The usual allowance to the Trade, and for every three plants ordered four will be given.—Oct. 6.

NEW CINERARIAS.

EDWARD GEORGE HENDERSON, Wellington Nursery, St. John's Wood, London, will, on the 15th of October, commence sending out the following new Seedling CINERARIAS, raised by him, and would advise intending purchasers to lose no time in sending their orders, as the strongest plants will be sent off first, and all orders executed in strict rotation.

ADELA VILLIERS, a beautiful rosy crimson and white flower, in equal proportions, of first-rate form, large size, and surpassing in all its points every other flower known	10s.	6d.
ANGELIQUE, carmine, white disc, distinct and novel colour	5	0
BESSY, fine rich plum, a beautiful, distinct, and striking colour	5	0
CARLOTTI GRISI, a clear white, slightly tipped with light blue, fine form	7	6
DELIGHT, rosy lavender, distinct and new colour, a neat dwarf flower	5	0
EMPEROR, rosy crimson, large bold flower, and very showy	5	0
FLORA M'IVOR, rich brilliant crimson, one of the best of its colour, of free growth, and excellent habit	7	6
LADY GERTRUDE, bright dark blue, large flower, fine form	5	0
NYMPH, a clear white, violet-purple disc, form good, flower cupped, a very desirable variety ...	5	0
PAULINE, a violet plum, shaded with crimson, fine broad petals, exquisite shape	10	6
WEDDING RING, petals divided with white and crimson, the latter predominating, fine dark disc, neat chaste flower, of fine form, and a striking variety	5	0
WELLINGTON, petals equally divided with white and purplish crimson, maroon disc, flower of fine form, large, and beautifully cupped ...	5	0

N.B. When the above set is taken, the price will be 3*l.* 10s., and if three sets are taken, four will be given, or three plants of any one sort, four plants will be given.

E. G. H. begs to observe that the above may be relied on as possessing the desirable qualities necessary for a good Cineraria, being compact in their habit, and producing a fine mass of flowers equally expanded. The usual allowance to the trade.

GERANIUM, "THE QUEEN OF SUMMER."

EDWARD GEORGE HENDERSON, Wellington Nursery, St. John's-wood, London, is now receiving orders for the above beautiful SCARLET GERANIUM, which will be sent out on and after the 15th October, at 7s. 6d. each. This is a very fine free blooming and ornamental variety, equally suitable for pot culture or bedding. It partakes of the close habit of Tom Thumb, but is much superior in point of growth, and very distinct. The stems are variegated, the flower-stalks white, the leaf beautifully transparent in appearance, and quite ornamental in itself. It blooms most profusely in large trusses of dark scarlet flowers, thrown well out from the foliage; and with all its good qualities will certainly prove one of the most beautiful, unique, and desirable scarlets for bedding yet out.

N.B. The usual allowance to the Trade; and when three plants are ordered, four plants will be given.

TO PANSY GROWERS.

ROGERS'S UTTOXETER HERO.

GEORGE ROGERS, SEEDSMAN and FLORIST, has great pleasure in offering this distinct and first-class variety, feeling assured it will prove a valuable acquisition. It has merited the favourable opinion of the following: the editors of the *Gardeners' Chronicle*, Gardeners' Journal, Floricultural Cabinet, and Midland Florist. G. R. considers any further description unnecessary, further than to quote the following.

Gardeners' Journal, May 26, 1849.—"G. R., Uttoxeter: Your seedling, Uttoxeter Hero, is a very beautiful flower, form good, upper petals puce, margined light lavender, lower ditto to correspond, centre bright yellow, blotch dense and exquisitely defined, eye perfect, light gold colour, brow well raised and arched, silvery white, size usual average."

Strong plants 5s. each, now ready. The usual discount to the trade when three are ordered at once. The above may be had by applying to Messrs. Hurst and M'Mullen, Seedsmen, 6, Leadenhall-street, London; Messrs. Low and Co., Nurserymen, Upper Clapton; Messrs. Backhouse, Nursery, York; Mr. E. G. Henderson, Nursery, Wellington-rd., St. John's Wood, London.

PANSIES.—Turner's Caroline and Example, Gossett's Alexis and Orestes; Major's Attraction, Indispensable, Jullien, William Henry, and Sultan; Scotcher's Lucy Neal; Hunt's Disraeli, and Brown's Cossack. The 12 first-class show flowers, 20s.; and 1 plant Uttoxeter Hero added, for 24s.

CINERARIAS.—Henderson's Cerito, Alboni, Annie, Climax, and Amanda, Rogers's Lady Tamworth, Lady Outram Sheppard, Beauty of Uttoxeter, and Newington Beauty. The set of 9 splendid kinds, 20s.

Salvia patens alba, Salvia azurea compacta, [illegible] Californica, Dahlia bicolor, Pleroma elegans, [illegible], Plumbago Larpentae and Weigela rosea. The set of [illegible] new plants, for 12s.

Deutzia spectabilis, a beautiful plant, 7s. 6d. to 10s. 6d. each.

The above are now ready for delivery in strong healthy plants. No charge for packing, when the order contains a remittance, which is expected from unknown correspondents.

Uttoxeter, Staffordshire.

J. & J. FAIRBAIRN ... beg to inform the Nobility, Gentry, Nurserymen, and others who have so liberally ordered the La Delicieuse Strawberry, that in consequence of the very limited supply they can obtain from the grower, they are very reluctantly compelled to defer sending it out until August, 1850, to which date they hope their friends will allow them to retain their liberal orders.—Nurseries, Clapham, Oct. 6.

ROSES.—The Descriptive Catalogue of H. LANE and SON, Great Berkhampstead, with a Supplementary List of those best suited for Forcing, Grouping, Training on Trellis, Weeping, &c., is now ready, and applicants will be supplied with a copy by enclosing two postage stamps.

FINE CAMELLIAS WITH FLOWER BUDS, at 30s. per Dozen, comprising the following superb varieties: Picturata, Ruckerii, Horsphallii, King, Monarch, Imperialis, Ranunculiflora striata, Nobilissima, Penduta, Thomson's Susannah, Lombardii, Juliana, Eliza, Queen Victoria, Sieboldii, with every other fine variety worthy of cultivation.

YOUELL and Co., Great Yarmouth Nursery.

TULIPS, RANUNCULUSES, ANEMONES, HYACINTHS, CARNATIONS, PICOTEES, PINKS, &c.

CAREY TYSO, FLORIST, Wallingford, Berks, respectfully invites the attention of cultivators to his extensive collection of FLORISTS' FLOWERS, and begs to inform them that Descriptive Priced Catalogues will be sent to any address on receipt of two postage stamps.

THE RANUNCULUS: HOW TO GROW IT, may be had of any Bookseller, price 6d.; or direct, on application, enclosing eight postage stamps.

Prime Ranunculus Seed 5s. per packet, post free.

BENJAMIN R. CANT, St. John's-street Nursery, Colchester, has now ready for delivery, strong well-established plants of the following:

GERANIUM, HOYLE'S CRUSADER ...	... 7s. 6d.	each.
,, TOPPING'S BRILLIANT ...	... 7s 6d.	,,
FUCHSIA SPECTABILIS	... 7s. 6d.	,,

The Three for 18s., carriage and package free to London. Post-office orders, or reference, requested from unknown correspondents. The usual discount to the trade.

JOSEPH BAUMANN, NURSERYMAN, Ghent, Belgium, begs to inform his friends and the public in general, that his New CATALOGUE of PLANTS is just published, and may be had gratis, or will be sent post-free on application to Mr. JOHN BETHAM, Custom House and Shipping Agent, Cox and Hammond's Quays, Lower Thames-street, London.

DESCRIPTIVE CATALOGUES, BY THOMAS RIVERS: OF ROSES for 1849. In this only the most select sorts are inserted. Sent post-free on receipt of two postage stamps.

OF FRUITS for 1849, sent post-free for four postage stamps.

OF TREES AND SHRUBS, with prices for the present season. Sent post-free for six postage stamps.

THE MINIATURE FRUIT GARDEN, or Culture of Pyramidal Fruit Trees, Directions for Root-pruning, &c., sent post free for 24 postage stamps.

Nurseries, Sawbridgeworth, Herts.

TALL, HANDSOME EVERGREENS, & DECIDUOUS TREES, well rooted in an adhesive soil, for immediate effect.

J. J. FOSTER, of the Edgware Nurseries, has an unusually fine Stock of the above, at very low prices, which can be delivered in London, cost-free. They consist principally of Portugal Laurels, Green Laurels, Arbor Vitæ, Yews, Hollies, Spruce, Scotch Fir, Weymouth Pines, Larch, Laburnums, Maples, Limes, Horse Chesnuts, Hornbeam, Beech, &c., with a quantity of small Spruce, for evergreen hedges. Roses, also, and Fruit-trees of the best kinds, are extensively grown. Omnibuses leave the Old Bell, and Black Bull, Holborn, and pass the Nurseries, five times a day; fares, outside 1s., inside 1s. 6d. Prices forwarded on application to the Edgware Nurseries.

Saffron Walden, Oct. 6, 1849.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER is now sending out good strong Plants of his unequalled collection of Hollyhocks, comprising his new and choice seedlings of 1848 and 1849, which took the first prizes at the London and Norwich Horticultural exhibitions, open to all England, and wherever shown this season.

W. C. has also the entire stock of the late Mr. C. Baron.

A descriptive and priced list may be had, on application, by enclosing a postage stamp.

Cash is requested on delivery of Plants. Post office orders payable at Saffron Walden.

SPLENDID NEW GERANIUM.

SYMONS'S "FIELD MARSHAL."

THIS is a Striking and Noble Flower, with a remarkably fine habit, great freedom of bloom and substance of petal. The truss is large and thrown well above the foliage, on stout erect foot-stalks; the colour of the upper petals is a deep rich scarlet, with an intense dark spot, the lower petals are fine crimson. It is a most decided improvement, and will make an admirable show variety. Its only fault is an occasional unevenness in the upper petal. It was exhibited at the Seedling Geranium Exhibition at Upton Park, on the 15th of June last, when it was one of the four that received prizes. See report of the Exhibition, and description of flower, in No. 10 of the "Florist."

Messrs. VEITCH and SON are now prepared to send out strong well established plants of the above at Six. 6d., with the usual discount to the trade.—Exeter, Oct. 6.

IVY FOR SALE.—Some of the finest IVY grown in England, of different sorts, at a very moderate rate, as the proprietor intends to clear it off his grounds.—Apply to CHARLES WARE, Carpenter, Sutton, Surrey.

WHEEL BAROMETERS, all Sizes and Patterns, from 1*l.* 5s. to 8*l.* 8s.

PEDIMENT OR UPRIGHT BAROMETERS, 1*l.* 1s. to 6*l.* 6s.

STANDARD BAROMETERS for minute observation, 5*l.* 5s. to 20*l.*, according to the size of the tube. The above Barometers may be sent into the country without fear of injury, being made portable for carriage.

THERMOMETERS for Registering the extremes of heat and cold, of the best construction, 1*l.* 10s., 18s., and 15s.; ditto for Registering Cold only, 4s. 6d. to 6s. 6d.; ditto for Baths or Hot Water in Copper or Japan Cases, 2s. 6d. to 14s.; ditto for Hot-beds, to show the bottom-heat, 10s. to 1*l.* 5s. Superior Achromatic microscopes, price 6*l.* 10s., 5*l.* 15s., and 9*l.* 10s. Compound Microscopes, 10s. to 2*l.* 10s. Telescopes, 1, 2, and 3 draw, from 15s. to 2*l.* 2s.; ditto for the pocket, 12s. to 6*l.* 3s. Mason's Hygrometer for showing the degree of humidity in greenhouses, sick chambers, &c., 15s. and 1*l.* 10s. Lactometers for showing the quality of Milk, 5s. Drawing Instruments, in sets, from 10s. to 4*l.* 4s. Magic Lanterns, with 12 slides, from 10s. to 2*l.* Dissolving View Apparatus, lent out for the evening, 7s. 6d. and 10s.

Every instrument warranted and exchanged, if not approved of. Gentlemen wishing for the prices and descriptions of any of the above, may have them by writing to that effect.—HENRY BAKER, Instrument Maker to the Board of Admiralty, 90, Hatton Garden, London.

GLASS FOR CONSERVATORIES, &c.

JAMES PHILLIPS and Co. beg to call attention to their Reduced Prices of GLASS, &c.

CUT TO SIZE.	SHEET SQUARES.
16 oz. from 2d. to 3½d. per foot.	In boxes of 100 feet. s. d.
21 ,, 3¼ ,, 5 ,,	Under ... ... 6 by 4...12 6
26 ,, 3½ ,, 7½ ,,	6 by 4 and under 7 by 5...16 6
32 ,, 4 ,, 8½ ,,	7 by 5 ,, 8 by 6...18 6
	8 by 6 ,, 10 by 8...20 6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ... 10s. 6d.	7 by 5 and 7½ by 5½ ... 11s. 6d.
8 by 6 ,, 8½ by 6½ ... 13 6	9 by 7 ,, 10 by 8 ... 15 0

MILK PANS, from 2s. to 6s. each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d.; 6 tubes, 10s. Self-Registering Thermometers for Greenhouses.

Estimates and List of Prices forwarded on application to their Warehouse, 116, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes. Inches.				Inches.				Per foot.	Per 100 feet.		
			Under	6 by	4	at		1½d.	is £0	12	6
From 6	,,	4	,,	7 ,,	5	,,		2d.	,, 0	16	8
7	,,	5	,,	8 ,,	6	,,		2¼d.	,, 0	18	9
8	,,	6	,,	10 ,,	8	,,		2½d.	,, 1	0	10
10	,,	8	,,	12 ,,	9	,,		2¾d.	,, 1	2	11

Larger sizes, not exceeding 40 inches long.

16 oz. from	3d.	to 3½d.	per square foot,	according	to size.
21 oz. ,,	3½d.	5d.	,,	,,	,,
26 oz. ,,	3½d.	7½d.	,,	,,	,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 35, Soho-square, London.

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15*l.* 10s.; a do. do. 15 by 10, 22*l.* 10s.; a do. do. 18 by 12, 28*l.* 10s.; a do. do. 21 by 12, 32*l.* 10s., including a plan for brickwork. 1½-inch Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 11½d. per foot; 2-inch do., 1s. per foot.—J. LEWIS's Machine Hothouse Works, Stamford-hill, Middlesex.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, bernacle, brent, and laughing geese, sheildrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs; and at 8, Half-moon-passage, Gracechurch-street.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, FERNS, &c.

J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. They have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. By means of these houses, they are enabled to grow Stove, Greenhouse, Ferns, and other Plants, in such immense numbers, that they are sold at LESS THAN HALF-PRICE. Mats, Mushroom Spawn, and everything connected with the Nursery and Seed departments; Plans, Estimates, and Catalogues forwarded on application.

TO NOBLEMEN, GENTLEMEN, AND OTHERS.

E. ELEY AND CO., HOTHOUSE WORKS and HOT-WATER APPARATUS MANUFACTURERS, beg to call attention to their improved works of every description, as the most perfect and reasonable ever offered to the public. Being practical and working men, they are enabled to manufacture the same at lower cost than by machinery. Hot-water Apparatus at less than the cost of them, old work taken down and arranged on improved principles. Can be highly recommended by several noblemen and gentlemen where the work has given the greatest satisfaction. Plans, Models, and Estimates, sent to any part of the country.—E. ELEY and Co., Hothouse Works, Pentonville-hill, near King's-cross, London.

N.B. Work done for the Trade.

CHOICE GERANIUMS AT LOW PRICES.

WILLIAM E. RENDLE and CO., Plymouth, have this season a very excellent stock of the following Geraniums, which will be ready the first week in October.
Purchasers' selection of TWENTY, from the following list, for 30s.

HOYLE'S CRUSADER, ARNOLD'S VIRGIN QUEEN, Sir Robert Sale, Black Prince, Star of the West, Lady Rivington, Mercury, Jenny Lind, Scarlet Defiance, Rosy Circle, Nourmahal, Mount Etna, Desdemona, Remembrance, The Peri, Hebe's Lip, Pluto, Forget-me-not, Sir W. R. Gilbert, Flora's Flag, Zenobia, Isabella, Standard of Perfection, Sirius, Duchess of Leinster.

HOYLE'S CRUSADER and ARNOLD'S VIRGIN QUEEN, for 12s.

Early orders are desired, as some of the sorts are scarce.

Apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

Our New Catalogue of Hyacinths and other bulbs is now ready, and can be had on application.

AMERICAN PLANTS.

HOSEA WATERER begs to announce he has just published a New and Complete Catalogue of his AMERICAN and CONIFEROUS PLANTS, which may be had on application, inclosing two stamps for postage to
HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

MYATT'S NEW STRAWBERRY, "ELEANOR."

J. MYATT AND SONS are prepared to send out plants of this and the following varieties at the prices annexed: Myatt's Eleanor, 10s. 6d.; Fertilised Hautbois, 10s. 6d.; British Queen, 3s. 6d.; Globe, 3s. 6d.; Mammoth, 3s. 6d.; Hooper's Seedling, 3s. 6d.; Keens' Seedling, 3s. 6d.; Pelvilain's Comte de Paris, 7s. 6d.; Princess Royal, 7s. 6d.; Cuthill's Black Prince, 15s. per 100.

Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford, Kent.—Oct. 6.

THE BLACK PRINCE STRAWBERRY.—Strong Plants of this STRAWBERRY are now ready for delivery. Price, per 100, 15s.; 50, 10s.; 25, 5s. It is hardy, *very* early, prolific, well flavoured, and a first-rate preserver. If the blossoms are picked off it in Spring, an abundant crop may be obtained from it in Autumn. For Dr. Lindley's opinion, see *Gardeners' Chronicle*, p. 483, 1849. CUTHILL'S "Treatise on the Strawberry, Potato, Cucumber, Melon, and Lisianthus," price 1s. Post-office Orders on Camberwell.—JAMES CUTHILL, Camberwell, near London.

PLANTING SEASON.

ALFRED BALSTON begs to inform planters he has still a large proportion of his Nursery Stock to dispose of, which, in consequence of having relinquished the trade, he offers at very reduced prices. The Stock comprises every variety of ORNAMENTAL, FRUIT, and FOREST TREES, and all the best kinds of SHRUBS in cultivation, no expence having been spared in the collection, and from the light nature of the soil in which it has grown, the plants have all a mass of fibrous root, which causes them to grow most luxuriously after being transplanted.

A. B. particularly recommends the following common Laurel, 9 inches to 1 foot, 15s.; 1 to 2 feet, 30s.; 2 to 4 feet, 40s.; 4 to 6 feet, 80s. per 1000. Portugal Laurels, 1 to 2 feet, 10s. per 100. Rhododendron ponticum, 1 to 2 feet, 30s.; 3 to 4 feet, 60s.; 4 to 5 feet, 100s. per 100. Ghent Azaleas of all the finest kinds, specimen plants, 2s. 6d. each; smaller ditto, 6s. per dozen. Rhododendron campanulata, caucasicum, catawbiensis, &c., 100s. per 100. Standard Roses of all the finest sorts, 12s. per dozen. A large stock of Evergreen Oak in pots and transplanted; also common Oak, Elm, Beech, Birch, Berberis, Hornbeam, Privet, &c.

Orders must be accompanied by remittances. Orders amounting to 5l. delivered free.—Poole Nursery, Dorset.

KITLEY'S GOLIAH STRAWBERRY.

JAMES KITLEY begs to announce to Strawberry Growers and the Public generally, that he has now ready to send out, strong well-rooted Plants of the above Seedling Strawberry, at 12s. per dozen, or 4l. per hundred, and feels confident that, taking it in all its combined merits, it is the very best of all Strawberries, and as a criterion, he has tested it with the best that is out, viz., the British Queen.

1st. Flavour—if not superior, is equal with the above-named variety, though more resembling that of the Pine-apple.*
2d. Size—larger than the Queen.
3d. Shape—not so flat as the Queen; more conical.
4th. Colour—bright scarlet; not having that white unripe tip which prevails in the Queen, and very prolific.
5th. Foliage—villous, and very much resembling the Queen, from which it is raised, but stronger in its growth.
6th. Hardiness—it stands the winter much better than the Queen; at least, in this neighbourhood.

J. K. having fruited this very superior Strawberry three years, feels perfectly confident that any person once having it in their possession, will not find fault or regret having ordered it. It has gained three Prizes at the Bath, and one at the North Wilts Horticultural Societies' Exhibitions; and as a further proof of its goodness, begs to refer to extracts from the *Gardeners' Chronicle* and the *Gardeners and Farmers' Journal*:

(From the *Gardeners' Chronicle*.)

"Strawberries.—J. K.—Your Seedling Strawberry, 'Goliah,' judging from its size and appearance, is worthy of cultivation."

(*From the Gardeners and Farmers' Journal.*)

"Strawberries.—J. K., Lyncombe Vale.—We have great pleasure in bearing testimony to the exquisite flavour of your Seedling Strawberry, 'Goliah.' In our opinion, it combines the piquant flavour of the Strawberry with the richness of the Pine,* the delicious aroma of which it partakes in equal proportion with the taste. Apart from the Queen of Fruits, we certainly do not remember anything in this way that conveyed to our senses so delicious a treat as the noble fruit to be known to the world as 'Kitley's Goliah Strawberry.'"

To be had at Lyncombe Vale Nursery, Bath, and of Messrs. Garraway, Mayes, and Co., Bristol, who can testify to the superior quality and flavour of the fruit.

FLOWERING BULBOUS ROOTS, &c.—HYACINTHS, TULIPS, GLADIOLUS, IRIS, NARCISSUS, JONQUILS, CROCUS, RANUNCULUS, ANEMONES, LILIES, &c., may be had, of sound quality, from WM. HAMILTON, SEEDSMAN and FLORIST.

HYACINTHS, superior varieties (named), 9s., 12s., and 18s. per dozen; common (named), 6s. per dozen; mixtures, 3s. per dozen. TULIPS, 1s.; JONQUILS (large), 1s.; NARCISSUS, 4s. to 6s. per dozen. Mixed CROCUS, 1s. 6d.; in colours, 2s. 6d. per 100. SNOWDROPS, 2s. 6d. per 100. GUERNSEY LILIES, 9d. each. A Priced Catalogue may be had GRATIS on application.

26 varieties of Hardy Annuals, for autumn or early spring sowing, 5s.; 12 varieties, 2s. 6d.; free by post, 6d. extra.

CALCEOLARIA, GERANIUM, and PRIMULA SINENSIS FIMBRIATA, saved from the best varieties, and warranted very fine. Vegetable Seeds of all kinds, Garden Implements, Bird Seeds, &c.

WM. HAMILTON takes this opportunity of recommending his IMPROVED FLOWER SUPPORTER for Hyacinths, Narcissus, &c. The "Florist's Directory" remarks—"A more simple, useful, and cheaper support for Hyacinths, Narcissus, &c., whether grown in pots or glasses, can hardly be imagined." Price 6s. per dozen.—Address, 166, Camberwell, London.

A Post-office Order requisite from unknown correspondents.

BECK'S PELARGONIUMS, AND OTHER RAMBLER FLOWERS.

Now ready for selection and going out. Twelve of the following Varieties, including box and carriage to London, will be forwarded in exchange for Post-office Order on Brentford for 2l. 2s. They are well rooted in 3-inch pots, and ready for an immediate shift into a larger size:—Blanche, Centurion, Cracker, Forget-me-not, Ariel, Cassandra, Cruenta, Gustavus, Sulieman, Grandiflora, Junii, Negress, Rosamund, Sundown. Or, nine of the above, and Hoyle's Crusader, or Topping's Brilliant, or Foster's Victory.

EDWARD BECK, Worton Cottage, Isleworth.

BECK'S SEEDLING PELARGONIUMS OF 1848.—The above, for which remittances have been received, will be sent off on Tuesday the 10th inst., and the remaining portion, consisting of good plants in 4-inch pots, will be open for selection after that date. Catalogues may be had on prepaid application to JOHN DOBSON, Worton Cottage, Isleworth, Middlesex. Post-office orders are requested upon Brentford.

N. B. The stock of Vanguard having shown symptoms of blindness, the whole has been destroyed, and the remittances will be returned, or any other plant in E. B.'s Catalogue given in its stead.

LANDSCAPE GARDENING.

W. H. ROGERS, having had considerable practice in the above department of his profession, and given the greatest satisfaction to his numerous employers, can with confidence offer his services in designing, laying out, and remodeling Parks, Flower-gardens, and Pleasure-grounds of every size and description, according to the most approved taste. Terms, two guineas per day, exclusive of travelling expenses, this, when necessary, to include a Working Plan, clearly defined, and drawn to scale. Every information is also given relative to the sorts of trees and shrubs best adapted for certain situations. All communications addressed to W. H. ROGERS, Nurseryman and Landscape Gardener, 180, High-street, Southampton, will meet with prompt attention.

ROSES, &c.

EDWARD DENYER, NURSERYMAN, Loughborough-road, Brixton, near London, informs his Patrons his fine collection of AUTUMNAL ROSES may now be seen in full bloom; also his annual importation of DUTCH ROOTS have arrived in fine condition. He also invites attention to his extensive stock of FRUIT AND ORNAMENTAL TREES AND SHRUBS of the finest growth, of all sizes. Gardens and Pleasure Grounds laid out and planted to any extent.

E. D. is desirous of informing his customers he has no seed shop in London. A general list sent on a prepaid application, by inclosing a twopenny stamp.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 6, 1849.

THE Newspapers tell us that a gardener near London has been fined for poisoning the neighbourhood by carting offensive matter to his master's hothouses. The material was gas lime, and the gardener said that he used it in the hothouses "for disinfecting the Vines and other things growing there, which were in a very diseased and unhealthy condition." We should be curious to know how that which infects a neighbourhood can disinfect a hothouse, or what reason the ingenious gentleman in question had for supposing that sulphuretted hydrogen and other most offensive emanations could destroy the mildew on his Vines.

We have here a striking example of that foolish habit which ignorant men are apt to acquire, of trying experiments with materials of whose properties they are profoundly ignorant. We suppose it is argued that because gas lime is useful on Grass land, it will therefore kill mildew; the notion probably was that it would invigorate the Vines. Possibly the gardener had heard that sulphuretted hydrogen will kill insects; and he may have fancied his Vine mildew to be an insect. Some such bright idea must have entered his head, or he could scarcely have hit upon the expedient which ended in his appearance in a police court.

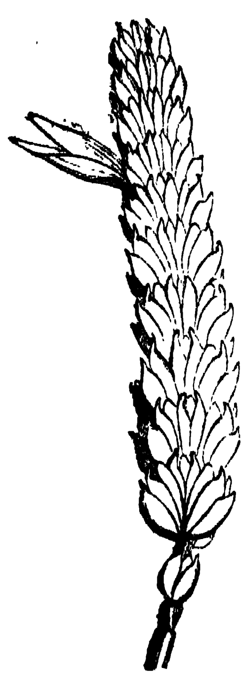
It is true that sulphuretted hydrogen in large quantities will destroy all life, whether animal or vegetable. But then if it was to kill the mildew in this case it must also have killed the Vines. It is fortunate that the "experiment" was not tried in the spring when the Vines were making their growth. Had that happened the result would have been more serious than being fined by a magistrate.

No wonder that plants are "in a very diseased and unhealthy condition," when such doings take place. It cannot be otherwise if in other respects there is the same total want of understanding. Had the gardener kept his eyes open, instead of shutting them and trusting to experiments, he would have stopped this mildew, on its first appearance, by the application of sulphur, which is a certain remedy, as has been long ago shown in our own columns. But like many others, he neglected it till it was too late, and then in desperation threw himself into a cart-load of gas lime.

A procrastinating friend of ours complained the other day of his Vines too having been attacked; and when he was asked what he had done, his answer was that he "intended to set about them." The mildew had been ravaging his plants, according to his own account for three weeks, probably for three months, and at the end of that time he was *intending* to do something. It is this wretched habit of putting things off that ruins gardens more than any other cause. One time is thought to be as good as another; "to-morrow is soon enough;" "any time will do;" "there is plenty of time;" "I'll set about it directly" (meaning some time hence); these are the phrases which are perpetually issuing from the mouths of those whom we shall presume to call THE UNREADY; and all their skill and talent goes for nothing under this most unhappy and destructive vice. Their lives are spent in intentions instead of acts, and yet they wonder how nothing succeeds with them as with their active stirring neighbours.

The first principle of action which a good gardener lays down is never to put off till to-morrow what can possibly be done to-day; on the other hand the practice of an Unready is "never to do to-day what can possibly be put off till to-morrow," a pleasant maxim certainly, for all except the masters who suffer by it. In the case of the Vine mildew, not a day, not an hour, not an instant should be lost in attacking it when the first white specks are visible. In the beginning it may be stopped; if neglected it is irresistible. The gardener who puts off attending to it is like the man who, his house being in a blaze, leaves the doors and windows wide open, and then, when the flames are mastering everything, sets about looking for the water-engine.

SOME quick-sighted correspondent sent us the other day an EAR OF WHEAT, with an Oat-flower growing out of it. The Wheat had grown in an Oat-field, *ergo*, the Wheat had changed. The annexed figure represents very well the appearance of the phenomenon.



Sure enough there was here some apparent evidence of the transmutation of corn, about which so much has been written and said. The Wheat was Wheat, the Oat genuine Oat; there was no doubt about it. At first we suspected the Oat to have been stuck on by some ingenious person, desirous of mystifying the philosophers, but a careful examination showed the suspicion to be unfounded; glue was then taxed with being a party to a trick, but not a trace of glue was there. At last we determined to pull the ear in pieces; chaff after chaff of the Wheat came away, the origin of the Oat was laid bare; but its stalk had turned round the central axis of the ear; more chaff was pulled away, another turn was discovered. At last, after destroying the chaff both above and below, off dropped the Oat. Its stalk had twisted itself round the ear of Wheat when both were very young; they had grown up together, linked in strict embrace; the chaff of the Wheat had completely hidden the stalk of the Oat, which at last, by some accident or violence, was snapped from its parent, and left clinging to its supporter, all trace of its origin being hidden.

Can such accidents as this have led to the positive assertions that one kind of corn will change into another? It must be confessed that, in the present case, the union was to all appearance so perfect that it would have been almost certain to deceive every eye except that of an unbelieving naturalist. In this point of view, the example in question must be regarded as being "very instructive," by which term we last week ventured to describe it.

Two or three matters which were brought before the last meeting of the HORTICULTURAL SOCIETY demand something beyond the usual notice by our reporter.

A number of bunches of the famous Chasselas Grape of Fontainebleau, of which it is said that 30,000 lbs. are sent daily to Paris, were exhibited. Their condition showed the reason why we never see them in London; they will not bear carriage. Although packed in Fontainebleau with much care, they were bruised, broken, and greatly injured. They showed, however, how Grapes alter their appearance according to their treatment; for no one could have recognised our Royal Muscadine in the little sun-burnt bunches from Paris. A letter which accompanied these specimens stated that, in the old kitchen garden at Versailles, the heavy damp clay soil produces this Grape of very inferior quality; whence the writer seemed to infer that the light loam of Thomery was necessary to it. But we should rather say that the soil was immaterial, and the dryness and warmth of Thomery the real cause of the excellence of its Grapes. The same letter also contained the following paragraph, which

we translate for the especial benefit of those who poison their neighbours with putrid odours in the expectation of benefiting their Grapes:—"The manure which we sometimes must give, in order to keep up the full vigour of the Vines, invariably injures the quality of the fruit. It is therefore evident that manure should always be withheld, except when indispensable to the health of the Vine; and this is seldom the case, except in hot, dry land."

Another exhibition of Grapes was from Mr. James Davidson, the Gardener at Aldenham Abbey. The bunches were good, the berries black, and well swelled; in short, they were equal to the best of the average samples of Black Hamburgh. The circumstances respecting their production are thus described by Mr. Davidson, and we hold up his success as an example to those "unready" gentlemen who complain that they cannot get any Grapes because their houses are so bad.

"These Grapes," said Mr. Davidson, "were grown in a house which, owing to the recent alterations and improvements carried out by Mr. Stuart, have been suffered to fall into the last degree of dilapidation; while the flues have been for more than a year actually done away with. The houses have for many years been forced, and every precaution taken to insure success in an early crop without any good results; but since the removal of the flues the Vines have been subject to drip from the glass, *a free circulation of air, and a low night temperature*, varying with the seasons, and, indeed, have been anything but killed with kindness. Notwithstanding, the whole crop has been better than for several years past, and has well ripened off; the quantity of wood the Vines have made, and their general appearance, sufficiently indicate that, with proper care, a crop, under the same circumstances, may be expected in future years." We perfectly agree with Mr. Davidson—whose Grapes, thus obtained, well deserved any commendation which we can bestow.

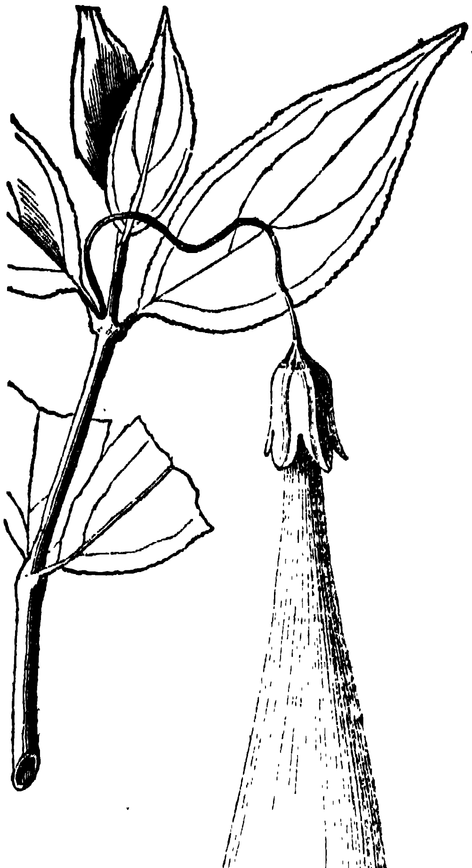
An ingenious contrivance, by Captain Martin, for enabling plants in pots to bear the dry climate of a drawing-room, and also to hide the pots, seemed to deserve favourable mention. The invention consisted of a bottomless zinc case, painted ornamentally, and having the form of a common flower-pot; together with a zinc pan to hold it. Water being poured into the pan, and the pot covered by the zinc case, its sides will be necessarily kept moist by the damp air passing over them from the pan below. As far as we can judge, the contrivance is the best we at present possess for plants in sitting-rooms. Of course, its principle is that of the hollow-sided or double pot.

The lion of the day was a Ripley Queen Pineapple, from the garden of the Duke of Sutherland, at Trentham. This beautiful fruit weighed *seven pounds ten ounces;* and yet its crown was as small as it could be, if the proportions of the fruit were to be preserved. This is eleven ounces heavier than the largest Queen Pine ever exhibited to the Horticultural Society on any former occasion, and the fruit had all the appearance of being as good as it was handsome. It was grown on the Meudon plan, which we brought into notice two or three years since, and, as we are informed, was not the heaviest which Mr. Fleming has this year produced. The finest is reported to have been sent to Her Majesty while at Balmoral. A fourteen pound Providence was also, we believe, a part of this year's crop. And thus we see that two short years have sufficed to accomplish a feat in cultivation which dull-witted unready gardeners pronounced impossible. No doubt they judged correctly of their own capabilities; but to measure everybody by their own low standard was an absurdity of which only such men could be guilty.

The many friends of Dr. Joseph Hooker will rejoice to know that the last Indian Mail has brought intelligence of his perfect safety amidst the dangers of his adventurous journey. On the 5th of July he was encamped in a fine country, in the Sikkim Himalaya, where the ground was carpeted with splendid plants. The rains were incessant, food scarce, and the Bhoteeas troublesome; the bridges between his camp and Darjeeling had been swept away by the floods, and communications could only be maintained by a most circuitous route. His collections will prove of the highest interest. Among other things, his Rhododendrons amounted to at least 30 species, many of which are much finer than those already published; no botanist had previously ventured to attempt the examination of the Rhododendron region east of Kamaon, an operation surrounded with most serious difficulties, for these plants can only be studied during the rains. He had also found a magnificent Rose, with scarlet flowers larger than the palm of a man's hand, and crowds of other remarkable species.

The same mail has also brought letters from Mr. Fortune, dated Shanghae, July 12. He had made very large collections of Tea plants for the East India Company, from the famous Woo-e-san district, as well as from the green Tea country of Whey-chow. The plants already sent by him to Calcutta are reported to have arrived in excellent order, and had been forwarded by Dr. Falconer to the N. W. provinces.

The Prince of Lisianths* is of too much importance to the lovers of fine plants to be left in obscurity until time shall reveal his merits. What they are is sufficiently told by the annexed cut, and from the following extract from the new number of the *Journal of the Horticultural Society.*



"Some idea may be formed of the beauty of this plant from the dimensions of one of its flowers. The cup of the calyx is ½ an inch deep; the corolla is 5 inches long, and rather more than an inch wide in the thickest part. These flowers hang on long terete stalks singly from the axils of the leaves, which are ovate, acute, deep green, and perfectly smooth. M. Linden, of the Luxembourg Nursery, has raised it from seed, but it has not yet flowered with him. To me it is only known in a dried state, when the colours cannot be ascertained; but they appear to have been either orange or crimson. It belongs to the section called Calolisianthus, and is undoubtedly one of the finest things in cultivation."

It is a native of New Grenada, and will probably be found a mere greenhouse plant, requiring, however, complete protection from a low temperature in winter. The whole genus abounds in handsome things, and it is surprising that so little should be known of them in cultivation.

* *Lisianthus princeps*, Lindley, 1, Journal of the Horticultural Society, Vol. IV.

ON LOAM.

The term "loam," comes from an ancient word in different languages, signifying a fat, unctuous, tenacious earth. Under the name of "loam" there is comprehended a class of compound or mixed earths, composed of dissimilar particles—hard, stiff, dense, harsh, and rough to the touch—not easily ductile while moist, readily diffusible in water, and usually composed of sand and a tough viscid clay. Loams are very concisely divided into two kinds—the friable and crumbly sorts, composed of sand and a less viscid clay—and the tough and viscid in texture, that are composed of sand and a more adhesive clay. The colours have also been used to distinguish loams—the black and white, which are not acted upon by acids; yellow loams, some of which are affected by acids; the alkaline brown loams, that are acted upon by acids; and the green loams, that suffer no disturbance.

According to Woodward, loam consists of clay mixed with fine sand; or of clay with a superabundance of sand; and Mr. Bergman found a good loam to contain 87 per cent. of a reddish grey sand, as fine as meal, and 13 per cent. of argil. Supposing clay to contain, as it most frequently does, 70 per cent. of fine sand and 30 of argil, we shall find, as Mr. Kirwan observes, that loam of the best kind contains an excess of sand amounting to 17 per cent.; if the excess of sand be greater it will form a "sandy loam," if smaller, a "clayey loam." When anything calcareous is found in the loam, it inclines to the nature of marl, or a "marlaceous loam," which may be either sandy or clayey, according as the proportion above-indicated is exceeded on either side. But loams most frequently contain a portion of the calx of iron, which is more or less oxygenated, a circumstance which produces a considerable variety in the colour, and also very probably in the vegetative powers of the loamy earth, if its proportion be considerable, viz., 4 or 5 per cent.; they often contain, also, some proportion of the vitriolic acid. The sandy part of the loam often has much effect in giving the colour. When gravels and pebbles are mixed with loams, the distinctions arise of "gravelly, stony, siliceous, and limestone loams," according as the substances predominate.

Loams are generally understood to consist of clay, siliceous sand, and the carbonate of lime. The quantity of iron, magnesia, and various salts, is so inconsiderable, as never to alter materially the texture of the loam. Decayed vegetable and animal matters in the form of humus are often found in loams in very considerable quantities, and the soil is fertile in proportion. Loams vary in quality, according as they are composed; those composed of loose sand with little humus, and with an impregnation of iron, are very unproductive; and those which contain too much clay, and lie upon an impervious subsoil, are very difficult to cultivate. Between these two extremes there are soils that form the very best that are found on the face of the globe. Loam seems to be naturally formed for the purposes of fertility; the pure earths are in themselves almost entirely barren; sands receive and discharge moisture much too quickly; clays retain it too long in its own substance, refuse it when wanted, and starve the roots of plants in a cold impervious mass; chalk has the same mechanical quality, and contains very little organic or soluble matter. Sand and clay alone would not make a rich soil, but a portion of calcareous matter and of humus being added, the mass is rendered open and porous, and the clay and sand are prevented from forming a mortar, which hardens too rapidly, and prevents the influence of the air from reaching the roots. The invaluable quality of loams is the texture allowing the due circulation of air and moisture. Moist climates require a greater portion of sand to make a fertile loam, which will be less necessary in proportion as humus abounds. All fertile soils contain some portion of calcareous earth. The climate of England requires one-half of the soil to be sand, one-third clay, and the rest chalk, to form a good loam, and rather light than heavy. Loams require less tillage than stiffer soils, and will bear more stirrings to clean them than sands—the produce is always certain and abundant. Every kind of manure can exert the proper action in loams, as they find a variety of substances on which to apply their influence. All kinds of crops that are known, thrive well on loams, and animals may be safely depastured upon them during the whole year. The best subsoil for loams is a compact gravel, which receives the moisture downwards, so as not to starve the upper soil, and retains a sufficiency to be given out in drought, as the upper soil may require it for use. A dry porous clay is often seen to support a good loam.

The composition of a fruitful loam suggests some very important considerations in the science of agriculture. Every article of commerce possesses some property by which its quality is judged, and according to the quantity of which, the relative marketable value is ascertained; and by increasing or diminishing the criterion of quality, the value is raised or depressed. Nature affords the inherent mark of value, and when it is wanting it becomes the object of cultivation to create it artificially. The constituent parts of a good loam being correctly ascertained by chemical analysis, and the deficiencies of inferior soils being also learned from the same source, it only remains to supply the wants in the latter as they appear from a comparison with the former. If clay be in excess, chalk and sand may be added; and a portion of the clay may be burned, in order to destroy the attraction for water, and thus act the part of sand in helping to form the loam.

Limestone, gravel, and sand are also very useful for this purpose, as they equally correct too great porosity, or too much tenacity. If there be too much sand in any loam, clay and chalk will be the remedy; and though the utmost art of man is able to effect "only" a mechanical mixture in place of the chemical combination of the substances that are sought to be amalgamated, yet the repeated stirrings which the land undergoes in the process of time, and the opportunities that are thus afforded for the effecting of reciprocal unions, may tend to lead to the more perfect blending of the mixed ingredients, and the assimilation of the elemental matters. It might be an interesting and highly useful inquiry to ascertain the effect of the contact of various kinds of earth, moistened with water, in exciting galvanic action, which no doubt, greatly influences the chemical affinities of the elements from which the plants derive their increase. This subject has scarcely ever been noticed, but no part of vegetable physiology deserves more attention. *J. D., Sept.* 26.

ON THE ODOURS OF PLANTS, AND THE MODES OF OBTAINING THEM.

As before mentioned, it is not intended to speak of all the flowers, &c., that yield a perfume; already it will be noticed that we have passed over many in their alphabetical place that are familiar as much on account of their fragrance as their beauty. To abstract the odour of such, it may be inferred the same treatment will apply as to those that are noticed, or that, though sweet in their native state, they become rank or acrid during the process of abstraction. The delightful fragrance of the hay-field is admitted even by the most fastidious, and gloried in by the lovers of scents, yet on distilling hay an oil comes over which is positively nauseous. Next in the order we have laid down comes the

Lemon.—This fine perfume is abstracted from the Citrus Limonum by expression from the rind of the fruit; it is sufficiently known without description. It is seldom used in perfumery alone, but frequently in combination with Cloves, Caraway, Bergamot, &c., for perfuming powders to dry the skin, hair powders, and others; it is also used in certain handkerchief perfumes, where freshness and pungency are required, in combination with Orange and Lemon-thyme.

Lavender.—The climate of England appears to be better adapted for the perfect development of this fine old favourite perfume than any other on the globe; hence we export this odour, but import all the rest. Mitcham, in Surrey, is the seat of its production in a commercial point of view. The flowers of Lavandula vera yield the perfume, and to the greatest perfection, by distillation. The oil of Lavender, which comes over with the water, is separated in the usual way; it enters into a thousand compositions which the perfumer manufactures, but is consumed more particularly in scenting soap, and in the preparation called Lavender water—a misnomer, as it should be called extract of Lavender to be in keeping with the names of other essences which are prepared in the same way, namely by the addition of oil of Lavender to spirits of wine or alcohol. Several forms have been suggested for preparing this perfume. One that is much approved of is this: English oil of Lavender, ½ oz.; extract of Ambergris, 2 oz.; pure spirit, 1 pint. It should be kept at least three months before using. Another, and which we think the best, is to use the proportions as above directed, with the addition of 1 drachm of oil of bergamot and a little storax. The famed Lavender Millefleur may be prepared thus:

Pure Spirit	1 gallon.	Extract of Vanilla...	½ pint.
Extract of Musk ...	1 pint.	Oil of Lavender ...	4 oz.
" Ambergris ...	2 pints.	" Neroli	¼ oz.
" Rose	2 pints.	" Bergamot ...	¼ oz.

Add a spoonful of magnesia and filter if not quite clear. Keep at least three months before use.

Magnolia.—In the perfumer's trade this fine odour is only known by name; the small demands for the article induce the Parisian perfumers to imitate the real with Orange flowers and Rose.

Mignonette or Reseda.—But for the fine odour this flower yields it would scarcely be known to the *élite* otherwise than as a weed. Sweet as it is in its natural state, and prolific in odour, we are not able, however, to abstract and maintain its character as an essence. Like many others, during separation from the plant the fragrance is more or less modified; though not perfect it still reminds the sense of the flowers; to give it that sweetness which it appears to want, the French distillers add Violet to bring it up to the market odour. The Pommade au Réséda is prepared by absorption or *enfleurage*, as described previously; to every second repetition of Mignonette a layer of Violet is used; when melted for exportation it should be done at the lowest temperature possible, to prevent loss of odour, and before cold a few drops of oil of Rhodium is often used to increase the fragrance. The Extrait de Réséda, so much prized by the ladies of England, is prepared by digesting the Mignonette pommade in pure alcohol. As this plant is so very prolific, we think something might be done with it in England; gather the flowers at noon and throw them into cold oil of Olives, would be as simple a way to try as any we know of.

Myrtle yields a pleasant odour from the leaves by distillation. It is not used, but is imitated.

DISEASES OF PLANTS.

(*Continued from page* 614.)

Genus XI.; *one species.* Lethargy.—A transplanted tree, after the season has passed when it should in ordinary course have put forth new leaves and roots, shows as yet no external signs of life. It is only by examining the bark, under the epidermis, that we can be certain that it has not perished. Here we find the cellular tissue green and in perfect health. The roots give scarce any sign of life, and the fibres which have appeared are but very few and small, and yet there is no appearance of disease. This state of the plant lasts a year. The following year it produces some shoots, but of the poorest kind. Thus the plant is gradually extenuated and finally perishes. This phenomenon occurs not only in trees, but examples are seen in tuberous, and perhaps even in bulbous-rooted plants. I have observed it in what we call the Nocturnal Geranium (Pelargonium tribe of botanists). I had a large pot full of old roots. I divided them in order to plant several pots of them, of which I gave away several. But neither in those I kept in my garden, nor in any of the others, were any signs of vegetation observed. I examined them all, found all the roots perfectly sound, having here and there put forth a few small fibres, but with all that they did not during the whole year produce a single leaf. I thought I had lost them all. However, I repotted them in winter, and in spring they again put forth their leaves as usual. Those only perished which had been too much watered.

This state of infirmity cannot, I think, be cured in tubers, which will of themselves in due time resume their vigour; but in the case of trees it may be remedied. Grafting has been found to assist wonderfully in restoring vegetation. Can it be that the large wound inflicted by the operation, by suddenly setting the stagnant sap in motion, causes the whole system of organic functions to resume their vigour?

Genus XII.; *one species.* Langour.—In the public walks outside the gates of Reggio, my native town, are four avenues of that common species of Poplar, which we Italians call *Cipressius*, but which in other countries goes by the name of Italian or Lombardy Poplar. They first gave me an opportunity of determining this disease. I observed for some successive years that there were some amongst these trees which after having assumed their foliage and passed the first months of spring with every appearance of robust health, began to turn yellow, and by the middle of summer had cast all their leaves and appeared dead. But at the return of the following spring, and again every year at the same season, became green again, and the same phenomenon was repeated. The course which they followed varied in different individuals, although all those affected showed strong symptoms of languor. Some were not attacked till late, whilst others commenced every year much earlier. After some years a considerable number of them had perished, although some of them are now in their natural robust health. It is this morbid state in which the plant cannot enjoy the full powers of its vegetating faculties during the ordinary period, which I term languor, and it may be of several degrees. In some cases vegetation may go on during the whole year, but very feebly, and there may be no symptom of any other disease. In transplanted individuals in gardens this phenomenon is very frequent.

It has appeared to me that the principal cause of this malady is the want of nutriment. The careful observation of the above-mentioned Poplars convinced me of the fact. The promenade in question is in a great measure formed on the ancient bed of the Crostolo, which stream now adjoins it. Under the walk is every here and there a tract of gravel. As soon as the roots penetrate into this, they find themselves in a soil which supplies but a very scanty aliment, which becomes more imperceptible as the drought increases in a sandy soil. The winter rains and the overflowings of the torrent in spring bring down again enough to revive the plants for a time the following season. If by any accident heavy rains fall in the summer, the roots then take advantage of the water rising from the bed of the torrent. The same thing being repeated every year, with such modifications as are caused by the diversity of seasons, renders the Poplars sometimes more, sometimes less, infirm. Those individuals which have found the stratum of gravel so thin that their roots can penetrate beneath it, have recovered, and are now luxuriant; but those, on the contrary, which the more they extended only penetrated deeper into the sand and gravel, have of necessity perished.

The same phenomenon may be observed in the rows of trees planted about the country. During the first two or three years they vegetate with extraordinary vigour and seem to promise a rapid increase. After that they are checked, and during a considerable number of years they do not appear to have increased in size beyond what they did in the first three. This languor, from badness of soil, must be ascribed to the carelessness of the proprietor. This is a practical point, which, from what I have observed in some places, requires some explanation.

The quality of the soil is seldom looked to before planting. It has often too little depth to allow the roots to extend. Or a rich surface is spread over a barren subsoil. In these cases the same thing happens to the Elms in the country as to the above-mentioned Poplars; but whilst the latter, being in gravel, which is absolutely adverse to their existence, must perish, the former finding some small quantity of nutriment, continue to vegetate, although they do not grow sensibly. Sometimes the bad selection of the individuals planted causes the plantations to languish. He who has no nursery of his own must buy. The seller naturally wishes to give his trees every appearance of vigour, and for that purpose lavishes manure and water upon them. The plants removed to the fields in circumstances where they can no longer receive the same stimulants to vegetation, suffer to a certain degree, but taking advantage of the nutritious matter, of which more or less is to be found on the surface of the fields, continue to grow for a time. But when the roots come to extend below that, it can be no matter of astonishment to see the miserable state of debility to which they are reduced.

From all this results the necessity of studying the nature of the soil before planting, and to be careful in the choice of the trees, which ought to be born, raised, and planted in circumstances suited to their nature. It will always be found advantageous, when it can be done, to plant trees in a soil better than that in which they have been raised.

It will be readily understood how difficult, and often how impossible, any remedy will be to him who has burthened himself with a large extent of plantations under such circumstances. If the evil only affects a few individuals, especially if they are herbaceous, irrigation and other means of fertilising the soil may restore them, especially if applied early. Otherwise, in case of trees, the only remedy is the axe and a change of cultivation, which may render the soil more fruitful. The great heat of summer, by drying up the water which is the vehicle by which all fluid alimentary principles are conveyed to the plant by its roots, may sometimes cause it to languish; but in such cases either rains or artificial irrigations are a sufficient remedy.

There is also another cause of languor, which is originally the fault of the cultivator. This happens when two plants of different natures mutually rob each other. It is of the utmost importance not to cultivate together plants which cannot thrive together without injuring each other. The horticulturist especially is required to pay attention to this point, the neglect of which so often proves fatal to both, or at any rate prevents their ever attaining the vigour he desires to see.)[

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(*Continued from p.* 613.)

Sept. 13.—Section D, Natural History, including Physiology. The following is a list of officers and committee in this section. President: W. Spence, F.R.S. Vice-Presidents: J. Hodgson, F.R.S.; J. G. Jeffreys, F.R.S.; Prof. W. H. Acland, F.R.S.; Dr. Roget, F.R.S.; C. C. Babington, F.R.S.; Prof. E. Forbes, F.R.S.; Prof. W. P. Alison, M.D.; R. Fowler, M.D., F.R.S.—Secretaries: Dr. Lankester, F.R.S.; Dr. Russell.—Committee: Bishop of Oxford, F.R.S.; Prof. Knowles; Dr. Palmer; Prof. W. S. Cox; Prof. Westcott; John Hogg, F.R.S.; J. S. Bowerbank, F.R.S.; R. Taylor, F.L.S.; B. Maund, F.L.S.; C. W. Peach; Prof. Milne Edwards; C. L. Bonaparte (Prince of Canino); A. Strickland, F.L.S.; W. Clear; J. E. Winterbottom, F.G.S.; Prof. Daubeny, F.R.S.; H. E. Strickland, F.L.S.; R. Austen, F.G.S.; Dr. Grosbans (Rotterdam); Dr. Boogaard (Rotterdam); Dr. Macdonald, F.L.S.; Prof. Allman, M.R.I.A.; Dr. G. Lloyd; J. W. G. Gutch; R. Ball, M.R.I.A.; A. Henfrey, F.L.S.; Dr. Royle, F.R.S. The first communication read at this section was one by Dr. Daubeny, *on the action of carbonic acid on plants allied to the fossil remains found in the coal formation.*

The experiments undertaken by Dr. Daubeny were performed at the request of the Geological Section, in order to determine the probability of the truth of the theory of the existence of larger quantities of carbonic acid gas in the atmosphere during the coal period, than at present by the action of that gas on plants, more particularly Ferns, supposed to resemble those now fossil in coal beds. The apparatus used in these experiments was a closed glass case, so constructed that a constant supply of carbonic acid could be kept up, and plants or animals enclosed were exposed constantly to the same quantity of the gas. From a number of experiments it appeared that a quantity of carbonic acid in the atmosphere, not exceeding 5 per cent., did not perceptibly influence the character of the vegetation of plants exposed to it, as compared with those in the ordinary atmosphere. The plants which were exposed in these experiments, were several species of Fern and some of the commoner species of Pelargonium. In the next place the air in which these plants vegetated with larger quantities of carbonic acid, was submitted to examination, in order to ascertain if the amount of carbonic acid gas, taken up by the plant, was greater, or the quantity of oxygen exhaled increased. The result of the examination was that there was no increase of oxygen in the air, and probably no increase of absorption of carbonic acid. On submitting plants to the action of an atmosphere containing 20 per cent. of carbonic acid, it was found that the leaves speedily faded, and their vitality was ultimately destroyed. Animals were also exposed to the action of atmospheres impregnated with varying proportions of carbonic acid, when it was found that, although some fish perished with 3 per cent., frogs and tadpoles, with many species of fish, lived perfectly well in atmospheres containing 5 per cent. of carbonic acid. From these experiments Dr. Daubeny drew the conclusion, that no objection could be offered to the theory of the existence of a larger quantity of carbonic acid in the atmosphere during the coal period than exists at present.—Mr. R. Austen did not think the theory of larger quantities of carbonic acid in the atmosphere during the coal vegetation, first introduced by M. A. Brongniart, tenable or necessary to the explanation of the phenomena of the

great vegetable growth of the coal-period. It was not at all a matter of certainty that the great mass of that vegetation did really consist of Ferns. He had cultivated Ferns extensively, and found that they were greatly influenced by the kind of soil in which they were placed. It had been supposed that the temperature of these regions of the world was greater during the period of the coal deposit than at present, but he did not think this was the case. As a confirmation of this view he might state that the Ferns of the coal beds were never seen in a state of fructification, and he had found, in the cultivation of Ferns, that those which ordinarily bore spores in warm climates would not do so when exposed to a lower temperature. He believed the chief growth of Ferns in the coal period arose from the production of suckers.—Dr. LANKESTER stated that Brongniart's theory accounted for more than the vegetation of the coal period. It accounted for the deposition of the peroxide of iron in the old red sandstone, and the deposition of carbonate of lime in the mountain limestone, both of which must have been held in solution by carbonic acid. In order to account for the great increase of vegetables and animals on the surface of the earth, we must have constant supplies of mineral carbonic acid. As Dr. Daubeny had shown, this was abundantly supplied from volcanic sources. At periods when volcanic action was greatest, this gas would be in larger quantities in the atmosphere, and there was no proof at all that its presence in the air bore a fixed relation throughout all time to the oxygen and nitrogen there. With regard to Dr. Daubeny's experiments, it would be interesting to know the relation between the growth of plants and the soil in which they were planted when placed in carbonic acid. It appeared to him that the soil, as a physical agent, capable of absorbing carbonic acid and other gases, had more to do with the nourishment of plants than had been hitherto supposed. —Professor MILNE EDWARDS stated that with regard to the theory which explained the deposition of mountain limestone by the chalk held in solution by carbonic acid, that it was opposed to the fact that zoophytes generally died very rapidly in water tainted with carbonic acid.—Several instances were related by various members of the power plants possessed of purifying water so as to allow marine and fresh-water animals to live in it, when otherwise they would have speedily died. — Mr. PEACH stated that this property of purifying sea water was possessed in the most remarkable degree by green sea-weeds. The olive-coloured and red sea-weeds were not so effectual.

VILLA AND SUBURBAN GARDENING.

AFTER the operation of propagating for the following summer's flower garden decoration is over, prepare the plants to withstand the winter by exposing them to the sun and gradually withholding water, with a view to ripen and harden the stems and foliage; for fleshy succulent plants, where little artificial heat can be supplied during severe frosts or dull damp weather, are very liable to die. Young shoots largely charged with watery matter are hardly capable of resisting frost or damp. An excellent contrivance for ripening off plants of this description could readily be erected in any odd corner of the garden. It might consist of a few common boards set upon bricks or empty pots, one rising above the other in the form of a stage, and placed in full sunlight. In such a place, garden-stuff well-rooted might be dried off for winter quarters very successfully: this temporary stage should also have some temporary covering, rather as a protection from wet than frost. Should any apprehension be entertained of severe weather, a mat or two suspended in front and at the ends would preserve the plants from frost. A thatched hurdle also forms good protection. A few large slates could be employed with facility, or a piece of old oil-cloth; but perhaps the readiest and cheapest covering would be a few yards of patent felt. The latter would require little trouble or ingenuity in its application; for a few tile-laths would be sufficient for its support. A temporary house of this kind would be found extremely useful for plants that dislike wet. Auriculas and Polyanthuses, once the pride and pleasure of amateur gardeners, might be wintered in such quarters; for, like most fleshy-leaved plants, these are much injured by damp; their destruction is traceable more to this than to any other cause.

The secret of wintering bedding plants successfully lies, as I have already stated, in having them well ripened and hardened off, and this is effected by withholding water, and exposing them to the full force of the sun's rays; active growth is inimical to their well-being. Should they assume a brownish tinge, so much the better, and if, during this process of maturation, they lose a portion of their foliage, it will do no harm, so long as the stems are sound and the roots healthy. It must not, however, be supposed that they are to be allowed to die for want of moisture, that must not be permitted; what is wanted is to put them upon a kind of workhouse dietary—just enough to keep life in them—in order that they may be perfectly prepared for their winter hibernatory. *Pharo.*

Home Correspondence.

Protected Trellises.—I am glad to see that Mr. Bailey speaks encouragingly of the protected trellis, especially as regards some modification of it for the culture of Apricots, and refers to the moveable glass houses of Holland. How is it that the Dutch in many kinds of horticulture are (said at least to be) before us? As regards climate and cold and damp atmosphere, I take it we are in advance of them. Has it not been mainly from the cheapness of glass which made its use not an object of mere luxury, but has enabled them to apply it to all the ordinary purposes of gardening, whilst we have had only a few Cucumber lights!—an early Cucumber being an essential in English gardening, and nearly the only one until you get into the class of Pine-apple gardens, and then come bark beds, succession pits or houses, &c., and 300*l.* or 400*l.* a year garden establishments. How is it that we cannot produce as cheap as the Dutch, now that glass in this country is cheap, and timber is cheap, with labour at least as cheap as in Holland? You must feel mortified at the little success your exhortations have produced with regard to the use of cheap glass as soon as the duty was taken off. I always thought that your exertions were praiseworthy to a great degree; try again. As regards Apricot culture (the least satisfactory fruit tree we grow), I have heard that Lord Hill has the late Mr. Labouchere's Dutch gardener, and that he yearly forces fine crops of Apricots in small frames, and in many other respects continues the Dutch mode of culture of vegetables, particularly as regards salading. Is this so? Can any of your correspondents give us any account of this? Why does not the Horticultural Society send Mr. Thompson this autumn to Holland, as they did last year to France? I think he would learn more than at Paris. Pray urge your readers to make experiments with the protected trellis with different fruits, especially Apricots; but I think the main point will be the obtaining some slight bottom-heat on some plan similar to what Mr. Fleming has so well explained in your columns. One advantage of the trellis is that not having the tree nailed on a south wall the blossoms do not appear quite so quick as those brought into premature bloom by the heat of the wall in the early spring, and thus the roots and the bloom are more in harmony. I dare say moveable houses like those mentioned by Mr. Bailey will be better than the fixed trellis, and be made applicable to more varied purposes; but recollect that even the fixed trellis is very useful as a harbour for half-hardy plants wanting protection from rain, &c., such as the potted Strawberries, Hydrangens, rock plants, &c. *Dodman.*

Potatoes in decayed Tan free from Disease.—Having plenty of old tan in which my Pines were grown last autumn, I determined to use it in planting my Potatoes, Shaws and Regents. In November I had the ground—a tenacious clayey wet loam—thrown up in ridges 2 feet apart, in order that they might receive the benefit of the weather. In February I had the sides of the ridges slightly chopped down, and a quantity of old tan laid between them. I commenced planting the last week in the same month, each set being planted whole, about 16 inches apart, rolled up in a lump of rotten manure, and covered with about a quart of old tan; a slight sprinkling of mould was added from the tops of the ridges, and from their first appearance above ground up to the present time they have not had the slightest symptoms of disease. They were the admiration of all who saw them while growing, and also since they have been stored. They were an abundant crop, very large, and when dug from the tan they were as clean as though they had been washed. Nearly 60 bushels were grown on the plan just alluded to. *C. Bennett, gr. to P. Novelli, Esq., Wood-house, Dulwich, Oct. 3.*

Gaultheria Shallon.—I am surprised that few if any of our great game preservers have planted this very beautiful evergreen to the extent that its excellence in affording both food and shelter for pheasants deserves. In my suburban garden where no game, except a stray partridge now and then, is to be seen, its fruit forms the food of small birds and mice from this period till late in winter. When the ground is covered with snow, their "prickings" converging towards the various clumps, show how great a favourite it is with them. Not only is the plant one of the most beautiful of our evergreens, but its flowers, whether forced or gathered from the open ground, form one of the prettiest bouquets; whilst at this season the innumerable strops of ripe fruit give the plant a purple hue. Its produce is enormous, for on taking the average of the weight it bears in my garden, without any attention, I find the calculated crop would weigh at least 20 tons per acre. In spite of its various merits, the plant appears to be either unknown or neglected, for on noticing a large square of the plants in the nursery of Messrs. Finney and Co., of Gateshead, I asked if they sold much of it. The reply was, "It is never asked for, and we shall be glad to sell it very cheap." Ten or twenty acres of it as undergrowth in a wood, would concentrate the pheasants of a district, and it spreads so fast, and grows so thick, that in a few years the whole would become a dense mass of evergreen. *An Old Shot.*

Soil for Dahlias.—Do you consider peat a good material to grow Dahlias in? I ask, because this season, after I had planted out the best of my stock, and filled up my usual Dahlia beds, which I keep for this purpose (and which I take a good deal of trouble with), I planted the rest of my cuttings, some 20 plants, in a Rhododendron border, amongst the shrubs, leaving them to take their chance, and although those in the Dahlia beds were regularly watered twice a week (from the time of planting them out), with liquid manure made of fowls' dung, their flowers bear no comparison, either in size or perfection, to those grown in the Rhododendron border, which did not receive a tenth part of the trouble, and which were watered perhaps once a week only; the peat of the border was filled in about three years ago, and has had no attention given to it since. *A Subscriber.*

Hazel Hoops.—Can any of your readers give me any information as to the method of converting the produce of Hazel copse wood into hoops, more especially those used for the repairing of tea chests, viz., the time of year and age to cut, and the instruments used in splitting, &c. *F. T. R.*

The Grape Mildew.—Having heard of the disease with which Grapes have been so much affected of late, I have been using sweet oil as a remedy, and in my greenhouse in which I have an abundance of Grapes (black Hamburgh), I find it to be most effectual. I look over them every day and saturate the stems with a large camel's-hair brush, dipped in the oil. I am quite satisfied that it is an effectual cure for the disease, as every bunch in our house was rapidly spoiling, and now they are looking most healthy, and are ripening beautifully. I have always used the oil when I saw any unhealthy appearance on the Vine, and I have never had any ill consequence arising from it, but on the contrary I have always a most lovely crop of fine Grapes. *Mary Andrews, Leyton, September 28.*

My Seed Potatoes were kept in a cool and dry outhouse during 1848 and 1849, and they were turned over frequently, so as to prevent their either heating or growing, and covered with just sufficient to keep the frost from them. I recommenced planting in February, 1849, in a stiff soil, previously prepared by deep digging, and dressed with a compost of rotten farm dung, road dirt, and ashes. The rows were 20 inches apart. The ground was kept well hoed, and the Potatoes were earthed up as soon as they were ready, in order to protect them from the weather. The sorts cultivated were Early Purples, Oxford Kidneys, and Manleys. I had my crop housed about the first week in September, and there was not one bad one amongst the whole lot—20 sacks. A day or two ago I had them all sorted over, not a faulty one was discovered. I recommend the following rules to be observed: 1st. Never put either seed or eating Potatoes in heaps, smothered with soil, to heat. 2d. Never allow the sets to grow before planting, which endeavour to finish by the end of February. 3d. Never use fresh manure from the stable or yard, but rather look to the well-turned heaps. 4th. Have all the ground in which you place the tubers well turned, to catch the frost and receive the full benefit of the weather. 5th. Where Potatoes are planted early in the year, they must be deeper than usual, compared with the old custom of April and May. I am inclined to believe that no kinds of Potatoes should be set after March. The crop from which I saved my seed was much diseased, so much so that I lost one-third of the whole in 1848. *Falcon.*

Cabbage Plants: Grubs Prevented.—Our method is to prick the plants out in beds dredged with slacked lime. In so small a space if any plants are attacked, the depredators may be sought for and destroyed, whereas if finally planted from the seed bed on a large space, in a tender state, they are subjected to hosts of destroyers. By the period the plants are large, and have nice bushy roots, the grub season is over, and the plants are more safely removed. To prevent grubs, a tailor in Suffolk puts stockings on the plants by winding a small skein or needleful of worsted round their legs when he plants them; we have tried this plan with success. *Hardy and Son, Maldon.*

Societies.

HORTICULTURAL, *Oct.* 2.—J. R. GOWEN, Esq., Secretary, in the chair. M. Jean Pierre Pescatore, of Rue St. Georges, Paris, was elected a Fellow. On this occasion a large number of interesting subjects was brought together. From Mrs. Lawrence's garden at Ealing Park came a nice specimen of Aphelandra cristata, with some six or seven heads of bloom on it; a good plant of the purple Statice puberula, the ever-blooming New Holland Babingtonia Camphorosmæ, an immense bush of Crowea saligna covered with pretty pink flowers, and various Orchids, consisting of a cut flower-spike with eight blooms on it of Cattleya bicolor, a tall plant of C. guttata, the seldom seen Oncidium Harrisoni, Dendrobium formosum, Miltonia Clowesiana, the now pretty well known Phalænopsis rosea, Paphinia cristata, and Galeandra Baueri. A Banksian Medal was awarded for the Cattleya guttata, Dendrobium formosum, and the rosy Phalænopsis. A similar award was also made for the huge Crowea saligna.—Messrs. Henderson, of Pine-apple-place, sent nice bushes of three species of Crowea, viz., C. saligna, elliptica, and stricta. The latter was much better coloured than the other two. The same establishment also furnished an Oncidium, apparently Barkeri, and Cologyne fuliginosum. A Certificate of Merit was awarded for the Crowea stricta.—From Mr. Glendinning, of Chiswick Nursery, came Browalia speciosa, a rather pretty violet-flowered plant.—Messrs. Rollisson, of Tooting, sent Solandra lævis and a handsome Ipomœa limbata, something in the way of Pharbitis Nil, with rich purple flowers bordered with white. The same nurserymen also contributed the violet-flowered variety of Miltonia spectabilis.—From Mr. Summerfield, gr. to J. S. Vena, Esq., of Highbury Park, came a small but nice specimen of Odontoglossum grande.—Messrs. Paul, of Cheshunt, showed two nice boxes of autumnal Roses, among which we remarked Acidalie, Buist, Bréon, Abricoté, Elise Sauvage, Adam, Cornet, Dr. Marx, Safranot, Robin Hood, Madame Angeline, Jacques Laffite, La Reine, and Duchess of Sutherland. —Of Pine-apples, some fine specimens were exhibited, but by far the best was the Queen furnished by Mr. Fleming, some account of which will be found in another column, and for which a Large Silver Medal was awarded. The other Pine-apples, although

much inferior to this one, were nevertheless all good fruit. Mr. Brown, gr. at Wilton House, Salisbury, sent four Queens, weighing respectively 4 lbs. 2 oz., 4 lbs. 3 oz., 4 lbs. 5 oz., and 5 lbs. 1 oz.; for the latter a Certificate of Merit was awarded. Mr. Bray, gr. to E. Lousada, Esq., of Peak House, Sidmouth, had two Queens 4 lbs. 8 oz. and 5 lbs. 3 oz., and a Black Antigua 5 lbs. 12 oz. A Certificate of Merit was awarded for the heaviest Queen.—Of Grapes. Mr. Rust, gr. to J. Maclaren, Esq., sent a dish of Black Hamburgh, large in the berry and well coloured. They were stated to have been grown in a lean-to greenhouse, without the aid of fire-heat. A Certificate of Merit was awarded them.—Mr. Munro, gr. to Mrs. Oddie, St. Alban's, produced a box containing eight bunches of well-ripened Muscat of Alexandria; and Mr. Davidson, gr. to W. Stuart, Esq., had four bunches of Black Hamburgh, whose history is given in a Leading Article of to-day, as is also that of the Chasselas Grape of Fontainebleau, received by the Society from Paris. —Mr. Fleming exhibited two specimens of his Trentham hybrid Melon, weighing 3 lbs. 6½ oz. and 3 lbs. 3 oz. This is an oblong, bright yellow coloured sort, raised between the Ispahan and Hoosainee. Specimens of it from Trentham are generally well flavoured; but it is rarely grown so fine elsewhere. —Mr. Turner, gr. to W. Blake, Esq., Danesbury, contributed a Gourd of the Potiron jaune kind, which weighed 116½ lbs.; not a very large specimen of the sort. It may not be generally known that this kind of Gourd makes good soup; it is used for that purpose in France.—Mr. Ivison, gr. to the Duchess Dowager of Northumberland, sent a fruit of Trichosanthes colubrina or Serpent Cucumber. It was green, with lighter stripes of the same; but when ripe it becomes red, and very ornamental. Some have endeavoured to obtain a cross between this and the common Cucumber, with the view of getting long Cucumbers; but it should be recollected that all Snake Cucumbers are poisonous, and that such a cross might prove dangerous to eat.—Capt. Martin, of Rutland-street, Regent's-park, sent specimens of his patent ornamental flower-pot cases mentioned at page 628, and Mr. Stuart produced a new kind of garden roller, which is stated to effect a perfectly level surface on walks. It consists of two common iron garden rollers placed in a frame, with a small horizontal cylinder moving on the walk between them. It will be tried in the Society's garden, and its merits reported on at the meeting in November.—From the Garden of the Society came two plants of Sedum Sieboldii, which answers well for vases and other out-door culture, but it must be kept free from slugs; Duranta Plumieri, a blue flowered greenhouse shrub of no great beauty in England, but stated to become very handsome in the south of Spain, on account of the multitude and increased size and brightness of its flowers; Gardenia Rothmanni; a broad leaved Balsam; Siphæa oblonga, and a worthless species called rubida; Begonia fuchsioides, from a cool greenhouse, a mass of red flowers; Abutilon venosum; Loddiges' Acropera; Achimenes venusta, a species of fine colour; the broad leaved Aloe; Opuntia polyantha; Mr. Fortune's blue autumn flowering Aconite, a handsome kind; a purple blossomed Statice; the scarlet flowered Geissomeria longiflora; and Anemone japonica and vitifolia; together with a fine specimen of a cross between these two species, intermediate in colour, and with better formed blossoms than those of the Japan Anemone.

Paris Horticultural Show.—The revolution of last year appears to have paralysed the energies of the Paris gardeners, for it is hardly possible to conceive a poorer show than that which was held at the Jardin d'Hiver on the 21st and 22d September. The company, flowers, and fruit were all upon the same scale; the aristocracy and smiling faces which some few years since thronged these exhibitions are no longer to be seen; the few persons who were present at the show wandered about the noble building more like spectres than gay Parisians, to such a state has Socialism reduced the most luxurious city in the world; for although order is restored, confidence does not return; all seem to be agreed that the republic cannot be of long duration, but what may come next is mere matter of speculation. Under such circumstances, it is no wonder that people are not [illegible]lined to incur any extra expense in preparing for [illegible]er shows; indeed, the same observations are [illegible]ally applicable to other branches of industry, for the [illegible]nd exhibition of arts and manufactures, held during [illegible] summer in the Champs Elysées, was not at all to [illegible] compared to that which was held some few years [illegible]nce. On the present occasion the Horticultural Society offered prizes for Roses, Dahlias, China Asters, various fruits, and some few other things. The only class in which I could discover any improvement was in China Asters. All the collections of these were good, and three or four very fine; there were flowers of beautiful colours and perfect form, such as the most fastidious critic of florists' flowers would have found but little fault with, being large and of fine circular form, with well arranged petals, high centre, and distinct colours, very far superior to any I have ever seen in England. Some of the Roses were good, but the generality were not equal to former years. It is, however, right to say that about a fortnight since Paris was visited by a violent storm, which lasted several days, and greatly damaged most of the gardens. M. Marest exhibited a very brilliant seedling Rose named Comte Bobrinsky, a hybrid Bourbon, something of the colour of Gloire de Rosamène and Géant des Batailles, but brighter; medium size, double, and tolerably good in form. The other seedlings were not worthy of any particular notice. Among the older varieties were some good specimens of Souvenir de la Malmaison, Chromatella, Jacques Lafitte, Bougère, Souvenir d'un Ami, Géant des Batailles, Paul Joseph, La Reine, Adam, Caroline, Noisette Desprez, La Pactole, Reine des Iles Bourbon, Smithii, and Comice de Seine et Marne.—The Dahlia class was the most numerous. In seedlings the judges awarded two prizes for flowers not worth growing in England: one, a dirty blush—flat, and third-rate in form, from M. Laloi; and the other a white, with a large green centre. In the collections were many of the English flowers of last spring; among others, I noticed good flowers (but not equal to the size they attain in England) of Duke of Wellington, Fearless, Sussex Hero, Valerie, Mr. Seldon, Beauty of Macr, Rival Bathonia, Lord Mayor, Confidence, Glorioso, Dauntless, Gem of the North, Black Prince, Purple Standard, Etendard de Tournay, General Negrier, Lilac Standard, Frederic Jerome, and Queen of the East. In the Fancy Class were some decided acquisitions, such as Œillet de Boheme, Œillet striata perfecta, Keepsake, Gasparine Furstein Reuss, Conspicua, Dr. Horner, Miss Jane, Miss Stevens, Dubureau, Dowager Queen, Cornus, and Bou Maza. The fruit was very inferior to former seasons, more particularly the Grapes, which were not even ripe. Some of the Pears of M. Jamin were splendid specimens, the best comprised Royale d'Angleterre, Doyenné d'hiver, Bergamotte Crassane, Incomparable, Colmar d'Aremberg, Beurré d'Aremberg, Leon Leclerc, Duchesse d'Angoulême, and Beurré Magnifique. There were also some fine specimens of Apples, Canada Pippin and Alexander. The Pine-apples were not equal to those exhibited at Chiswick in June and July. The finest fruit was exhibited by a gentleman's gardener, of Marly, consisting of Pears and Apples of enormous size; his Beurré Magnifique, Doyenné gris, Bon Chrotien Turc, Beurré d'Aremberg, Belle Angevine, Royale d'Angleterre, Incomparable, and Colville blanc, and Canada Pippins, were fine specimens of successful culture. Prizes were awarded to MM. René, Marest, and Jamin, for Roses; MM. Soutif, Simon, Chereau, Dufoy, and Vincent for Dahlias; MM. Jamin and Durant, and Dufray Jamin, for Apples and Pears; M. René, gr. to M. Blacque, for Apples and Pears; MM. Barbot and Jamin and Durant, Grapes; M. Tollit, for Petunias; MM. Leloi and Guenot for seedling Dahlias; and M. Marest for seedling Rose.

Review.

A Familiar Introduction to the study of Polarised Light; with a Description of, and Instructions for, Using the Table, and Hydro-oxygen Polariscope and Microscope By Charles Woodward, F.R.S. London: Van Voorst. 8vo, pp. 40.

The present work contains a familiar explanation of the phenomenon of polarised light, and of the advantages of using it in the examination of delicate tissues and other transparent substances by means of a microscope. Those who have a polarising apparatus belonging to their microscopes, and do not understand its use, will find in the little book now before us, all that is necessary to enable them not only to employ the apparatus in their microscopical researches, but also to understand the principles on which its use depends.

Curtis's Beauties of the Rose. Part I. 4to. Groombridge.

The author of this quarterly periodical is Mr. Henry Curtis, of the nursery at Moorend, near Bristol. He proposes to make it the vehicle of representing "the principal varieties of the choicest perpetual Roses," with instructions for their cultivation. The plates, of which each number is to contain four, are coarsely executed, but characteristic, and will serve to guide purchasers in their selections, *as far as it is safe to be guided by figures of any quality, where florists' flowers are concerned.*

Miscellaneous.

Note respecting the "Josling's St. Alban's" Grape. —A notice of the Grape sent to the Society by Mr. Josling, as a seedling raised by him, and named Josling's St. Alban's, was published in vol. i., p. 296, of this Journal. The bunches sent had not the usual character of any known Grape; and, after various inquiries as to when and how it was raised, it was concluded to be distinct. Having found its quality excellent in two seasons in which I had an opportunity of tasting it, I endeavoured to do justice to its merits. When obtained in full perfection it is generally acknowledged to stand unrivalled in point of flavour. But considerable doubts have lately arisen with regard to its being distinct from the Chasselas Musqué. I have been favoured with communications from various parties to whom application had been made for their candid opinions on the subject. The matter, however, was still left in doubt; and if I could not immediately clear it up, I considered it necessary to obtain and state all the particulars I could respecting the Grape in question. With this object in view, it was thought advisable to go and inspect the situation of the original Vine; compare its fruit and leaves with those of the Chasselas Musqué grown in the Society's Garden; and ascertain under what circumstances and by what mode of culture the Vine under Mr Josling's care produced fruit free from cracking, a liability to which is the only fault ascribed to the Chasselas Musqué. The Vine is growing in the garden of A. M. Timperon, Esq., New Barns, near St. Alban's. This garden has been under Mr. Josling's management for many years. It lies low, near the river Ver or Muse, and damps arising from the river are said to be prevalent; perhaps they are unfavourable to the red spider. The Vine border has, however, a dry gravelly bottom, and is, moreover, well raised above the general level of the garden; it was made 2½ feet deep, and of good turfy soil, leaves, and some lime rubbish. I consider it worthy of being well remarked, that sheep were penned on the turfy soil after it was dug up, and before it was introduced into the Vine border. The Vines are planted outside. The house is 80 feet in length, but is divided in the middle, so as to form two compartments; the width is 15 feet; the height of the back wall about 13 feet; the upright sashes in front 3 feet. The rafters are straight; these and the sash-frames are all iron. There is no wood-work in the roof, front, or ends; consequently the temperature of the house is not easily kept up. The heating is by means of flues, the arrangement of which is not the best that might have been adopted; for one runs across by the partition in the middle of the house, then along the front; but without traversing the cold farther end it returns, the return portion being closely bedded on the other, so that the air of the house does not come in contact with the upper surface of the hottest flue. Another flue runs across on the other side of the middle partition, and in a similarly imperfect manner heats the other apartment. It will be understood from this arrangement that two flues, nearest the fire, run parallel across the middle of the house, whilst the two iron and glass ends have no flue to counteract their cooling effects. Altogether the house is not adapted for early forcing. A Vine is trained up each rafter; and each established Vine has generally a seedling of some sort alongside. One seedling, I observed, has variegated white and green foliage. The Vine which was the object of my visit (August 24) was growing about the middle of one of the divisions of the house. It was stated in the notice of it in the Journal that it had been planted by the side of a Black Hamburgh, which was afterwards cut down: the stump is still to be seen. On comparing the fruit and leaves of the "Josling's St. Alban's" with those of the Chasselas Musqué no difference could be observed. Mr. Josling himself agreed that no decided difference could be seen; but he was certain his Vine was a seedling raised by himself. He had cut part of the crop; some good bunches, with berries free from cracking, still remained, and the quality was excellent. The bunches, however, had not such very long shoulders as those from which the description was made in 1846, probably in consequence of the border becoming partly exhausted of that nourishment which its soil derived from the sheep-pens. That some fruits are more liable to crack than others is well known; and unfortunately the Grape in question, according to various accounts, is one of those with this disposition. But under favourable circumstances Grapes do not exhibit this defect. This fact cannot be disputed; and it leads to the question whether it is more advisable to study, and endeavour to command these circumstances, or hopelessly throw away some of the richest varieties of Grapes? Rather than adopt the latter alternative, I have no doubt some gentlemen would go to the expense of building a house, or large pit, expressly for the purpose of growing these kind of Grapes, should other means fail. Too much moisture, either at the root or in the atmosphere, and more especially after too much dryness, appears to me to be the principal cause of the evil. Mr. Josling merely keeps the inside of his Vinery as dry as possible after the period when cracking is to be apprehended. The construction of his houses renders early forcing inexpedient; and this being the case, long-continued watering to keep down the red spider is not so necessary. *Robert Thompson, in the Journal of the Horticultural Society.*

Calendar of Operations.

(For the ensuing week.)

FORCING DEPARTMENT.

As the length and strength of daylight is now so rapidly diminishing, all the glass sashes of the different structures should be washed; and that they may keep clean the longer, the mats, &c., which are used for covering should be carefully removed to the sheds during the day, and kept perfectly clean, or the sashes will soon be as dirty as ever. Pineries.—Take great care of any Montserrat Pines which are now showing or flowering, as they will be invaluable in early spring. A steady bottom and top heat must be maintained, and the most careful attention paid to watering. Let them have all the light possible, especially while they are in flower, at which time air must be liberally admitted during the day to dry the atmosphere, and to prevent the monstrous growth of the crown. Mushrooms.—Continue to make up successional beds as the season advances, and spawn and soil the earlier ones as soon as they are ready. Keep the floor constantly moist, and the house quite dark. Let the admission of fresh air be from the lower part of the house, and have ventilators so arranged that the evaporation may pass freely off. Vineries.—In the Vineries containing winter Grapes, every exertion must be made to prevent damp. Any faulty places on the roof which admit drip, should be repaired, and slopping of water should be entirely avoided. Where there are beds of tan or leaves for plunging plants in during the summer, it is

a good plan to surface the beds with dry sand, to keep down evaporation. If any Grapes are not yet ripened, they should be kept a little warmer during the day, which will at the same time assist to ripen the wood; and to afford additional facilities for the admission of light, let all growing laterals be constantly removed. In cutting the fruit from spurs, prune back to the most promising eye near the base.

FLOWER GARDEN.

Very little can be added to former Calendars in reference to this department, except that the general taking up of choice half-hardy plants should be proceeded with. There are thousands of plants taken up and potted every autumn, which, if they survived, would prove invaluable in spring, from their producing a greater amount of bloom than young plants; but, generally speaking, it is not the fortune of more than a tenth of them to live, owing to the careless manner in which they are taken up and after-treated. Some certainly survive, such as are handled less roughly, and find themselves placed, more by accident than skill, in favourable circumstances. This proves that by taking a little more pains, and exercising more judicious management, any quantity might be preserved. The plants should be taken up with their roots as perfect as possible, and with as much soil as will adhere to them, taking care to get all plants up with a ball that will admit of it. The soil in which they are potted should be light and sandy, and of such a quality as is likely to encourage the roots without stimulating the tops. Unless very large bushes are wanted for next year, let the sides of the plants be pruned in, so that the pots may stand close together. All flowers should be removed; but, with the exception of side pruning, every healthy leaf should be preserved until the plants are established in the new soil, after which they may be cut down to any convenient height. If the soil is moist at the time of potting, Geraniums, Crassulas, Mesembryanthemums, and other succulents should have no water till they have commenced to root: it is by the abuse of this agent that hundreds of plants are killed. After potting, the plants should be placed in a cool dry frame, where sufficient air must at all times be admitted to prevent a damp stagnant atmosphere.

FLORISTS' FLOWERS.

There cannot be a better time than now to plant out Pansies and Pinks for next year's blooming; of the former, we would advise such flowers as Bell's Duke of Norfolk, Youell's Supreme, Neilson's Magnificent, Thompson's Zabdi and Constellation, and Bell's Nobilis and Climax, with Russell's Hector (a Scotch flower), and a few others of the same stamp. We at all times prefer quality to quantity, and especially where it is desirable to raise seedlings. Laterals may still be slipped off and planted out; these will bring fine flowers in the spring. In Pinks, if not already purchased, we think the following would be a great addition to most collections: Willmer's Laura, Smith's Whipperin, Costar's Lola Montes, Read's Jenny Lind, Looker's Achilles, and Headley's Duke of Norfolk; these are good and beautiful. CARNATIONS AND PICOTEES.—Those which have been potted off, and kept in a close frame, will have again struck root, and may be hardened off; they will require keeping regularly moist, with abundance of air, but secured from autumnal rain. Few plants are more hardy than Carnations, and they are extremely impatient of being kept close, or smothered up in frames; and, if closed when the foliage is wet, canker and black spots on the foliage is the certain consequence. Get in offset Tulips, and give the last turn to the soil of the beds preparatory to planting. We usually leave ours in small ridges, which can be levelled down at any time.

HARDY FRUIT GARDEN.

Let the different varieties of Apples and Pears be carefully gathered as they ripen, and labelled. The drawers in which they are placed should be quite clean and dry, and the atmosphere of the fruit room should be kept perfectly sweet by allowing a free current of air to enter below, and pass through the roof, thereby carrying away with it all the exhalations which, if allowed to stagnate within the room, would materially injure the keeping qualities of the fruit. In placing the fruit in the drawers, all inferior or damaged ones should be rejected and kept for immediate use; if this be not attended to, such fruit will soon begin to decay, and if not immediately detected will be liable to communicate the disease to their neighbours. The fruit room should be cool and dry, and variations of the temperature should be carefully avoided; it should be provided with efficient means for excluding frost, either by shutters or curtains to the windows; when it is sufficiently near one of the plant houses or early forcing houses which are furnished with a boiler, a small hot water pipe properly supplied with stop taps may be carried round the room; this would ensure the exclusion of the frost, and in very wet weather would be useful to drain out the damp, also; while the stop taps would place it under perfect control. If the planting or removing of any hardy fruit trees is contemplated, immediate preparations should be made for this purpose, that they may be planted by the end of November. If any new trees are wanted from the nurseries, it is advisable to order them immediately, that they may be amongst the earliest selections from the nurserymen's stock.

KITCHEN GARDEN.

The frequent mild rains have made the weeds flourish amazingly, and every favourable opportunity should be taken advantage of to destroy them. Carrots are now nearly as large as they will be, and taking them up is about the best method of preventing them from being spoiled and destroyed by worms. The smallest of the Cauliflowers not planted in hand-lights should be planted in a cold frame where they can be protected from frost. Cold frames and covers for them should be immediately prepared and filled with Endive and Lettuce for winter and early spring. Let the ground beneath the frames be well drained, and a layer of coal ashes beneath the soil will help to keep it dry, and prevent the upward progress of slugs, &c. Take advantage of wet weather to rub seeds out, rope Onions, and twist haybands for Cardoons; and let the most useful men help forward with the work in the other departments.

State of the Weather near London, for the week ending Oct. 4, 1849, as observed at the Horticultural Gardens, Chiswick.

Sept. and Oct.	Moon's Age.	Barometer. Max.	Barometer. Min	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 28	11	29.855	29.730	68	51	59.6	S W.	.07
Satur.. 29	12	29.678	29.497	68	55	61.5	S W.	.46
Sunday. 30	13	29.216	29.184	62	10	56.0	S W.	.37
Monday 1	14	29.268	29.127	67	45	61.0	N E.	.02
Tues. .. 2	15	29.221	29.086	65	28	46.5	N E.	.12
Wed. .. 3	16	29.520	29.206	61	46	53.0	S W.	1.01
Thurs... 4	17	29.479	29.027	58	33	45.0	W.	.07
Average ..		29.577	29.304	65.5	45.7	52.9		2.12

Sept. 28—Clear, very fine, overcast; rain.
— 29—Overcast, fine, rain at night.
— 30—Rain throughout
Oct. 1—Drizzly, with thick haze, fine; overcast.
— 2—Drizzly; cloudy, partially overcast, and cold at night.
— 3—Constant heavy rain throughout.
— 4—Heavy rain; showers, rain at night.
Mean temperature of the week, 1¼ deg below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Oct. 13, 1849.

Oct.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 7	62.7	41.6	52.1	14	0.55 in	1	3	1	2	4	9	2	1
Mon. 8	61.1	43.6	52.4	12	0.64	—	4	0	2	4	5	5	—
Tues 9	60.0	43.5	52.4	12	0.52	—	4	1	1	3	4	4	2
Wed. 10	61.6	41.2	52.8	11	0.65	—	1	3	—	7	7	3	2
Thurs. 11	62.9	43.7	53.3	11	0.91	—	2	2	2	3	8	4	2
Friday 12	60.4	43.0	51.7	13	1.00	2	2	1	—	4	5	7	2
Satur. 13	60.8	42.5	51.5	11	0.31	3	3	2	—	5	4	8	2

The highest temperature during the above period occurred on the 7th 1834—therm. 74 deg, and the lowest on the 13th, 1838—therm. 24 deg.

Notices to Correspondents.

ANALYSIS OF SOILS *C. A.* Apply to the College of Chemistry, in Oxford-street

BEES: *Trod* Your strong colonies are plundering the weak ones, therefore close the doorways of the whole of the hives in the evening, but keep a little hole open for air. In a few days the excitement will be over *B.*

BOOKS. *Z.* Donn's "Hortus Cantabrigiensis," published in 1845, or Paxton's "Botanical Dictionary" with Supplement, just published.‡—*J. R S* Moore's work on Ferns is cheap and good. Newman's is much larger, better printed, and dearer. For Mosses, we must refer you to Hooker's "Muscologia" Your booksellers will give you prices.—*H.* "School Botany" will suit you perfectly ‡ *H R M.* Loudon's "Suburban Gardener," the "Manse Garden," or M'Intosh's "Practical Gardener." ‡

CONIFERS: *Edinensis* says we might gratify some of our readers, who are admirers of Coniferæ, by letting them know where, in a continental trip say in France, Belgium, or Germany, collections of Coniferæ may be found in Pinetums or nurseries. Perhaps some correspondent could give him advice.

COVERING FOR VINE BORDERS: *John Patterson.* The best and cheapest covering for a Vine border is concrete, consisting of one part lime and eight of unscreened gravel, mixed with sufficient water to give it the consistency of stiff mortar. A portion of charcoal dust, or coal ashes, may be used instead of part of the gravel, this will give a better colour to the mixture, which should be laid on 3 inches thick. One small load of lime, with 6 or 7 loads of gravel, will be sufficient to cover your border (56 square yards), and the expense of mixing and laying it on will not exceed 1*d.* per square yard You will be best able to tell what the gravel and lime will cost when delivered. If you think it necessary to remove it at any time, the old materials should be preserved, as they may be worked up again with some fresh lime. A tarpauling is more easily applied or removed, but it will not last more than four years, and the first expense is considerable—2*s.* per square yard. If the border has a good incline, it might be thatched with Wheat straw, provided always that the appearance is not objectionable. A border of the size you mention would require about 14 cwt. of straw, and will cost in labour about 8*s. F.*

DISEASE: *W H.* The Rose leaves are blotched in consequence of the attack of some fungus—probably an Erysiphe. Do not you see the radiating threads? Burn the infested leaves now, and when the fungus again *first appears*, attack it with flowers of sulphur.

DRAINS: *J H* Roots usually afford no better than negative evidence of the plants to which they belong. The microscope in your case shows that what you have sent do not belong to any tree, some weed is the parent of them, and we suspect Rushes or plants of that kind.

FIG TREES: *Inquirer.* You state that your Fig trees against a wall are covered with fruits of all sizes, from 2 inches down to that of a pea. Now, this will happen: All above the size of a pea will perish with the foliage; those of the size just mentioned, or still less developed, may retain their vegetation and ripen next summer if you protect them from frost, and for this purpose straw is the best material. ‖

FILBERTS: *Inquirer.* These should be kept with a single stem, free from suckers, and spurred like Currant trees. ‖

FRUIT TREES: *A B.* Peach, Pear, and Cherry trees may all be planted 20 feet apart against walls. ‖

GARDENERS' ADVERTISEMENTS: *An Advertising Gardener's* complaints are just enough; but we know that they cannot be removed by our interference. We cannot compel people to act wisely or well; on the contrary, interference only makes them worse. If gardeners will not state the wages they demand, they have no right to hope their advertisements to be successful.

GLASS: *Sub.* Patent rough plate will suit you perfectly ‡

GRAPE MILDEW: *Q.* Why have you permitted it to gain a head? Get rid of it by sulphur as fast as you can. Turning out of doors will do more harm than good. Keep them in doors, and dry well the air in which they grow.

GREENHOUSE: *E M G.* The back wall of your lean-to greenhouse, having a frontage of 6 feet, should be 12 feet high ‡

INSECTS: *J S.* We know no more effectual mode of destroying cockroaches than by placing hand-basins on the floor at night-fall, with some crumbs of bread in them, and some rags at the side, to enable the insects to creep in, the polished surface of the inside preventing their escape; they will be thus trapped by scores, and must be scalded to death in the morning. *W.*—*J G.* You had better employ children immediately to catch the daddy-long-legs by scores. The surface of the Grass may be swept with an angler's bag-net at the end of a stick, the bag being formed of lawn, which must be examined occasionally, when the contents must be destroyed. You will thus prevent annoyance next year by the progeny of the present generation. *W.*—*E D.* The grubs on your lawn are the larvæ of the cockchafer. See our Notices to Correspondents of last week. *W.*—*M G.* The small grey insect found on the Potatoes is the Haltica ochroleuca, allied to the Turnip flea-beetle, which we should not consider likely to prove at all injurious to the crop. *W.*—*X Y.* The minute "beasts" found on a wall belong to a species of the spring-tailed insects (Podurida), which are reared in decaying vegetable matter. *W.*—*W D F.* The minute ant from Hastings is the Myrmica domestica, which has become so annoying to the inhabitants of the west end of London. We shall shortly publish a paper, with a figure and description of it, in our series of entomological articles. *W.*

MULCHING: *W S.* We know that loose stones will act as mulching in this climate. They not only prevent evaporation, but they condense moisture whenever they are colder than the air, which is almost sure to be the case, for a longer or shorter period, once in every 24 hours. But this may not happen on your estate in the West Indies, where of course there is much less difference between the temperatures of day and night. In order to answer your important question satisfactorily, some experiments require to be made. Your lime and flints are probably useful rather than otherwise. The Sugar-cane is partly composed of flint. ‖

NAMES OF FRUITS: *A B C.* Your Grape is decidedly not the Chasselas Musqué; you have, instead, the Royal Muscadine. ‖ —*W T.* Appears to be the Wormsley Pippin. ‖

NAMES OF PLANTS: *M B.* It is impossible to name your Fern from such an imperfect specimen; all we can say is that it is a normal leaf of some common free-veined Fern. It has nothing to do with Lonchitis, which genus is characterised by anastomosing veins. When your plant is of age to produce perfect fronds then send a specimen. *S.*—*M B.* Lastrea dilatata. *S.*—*Mathe* It is Heracleum sibiricum, also called the gigantic Cow Parsnip. It may be had of some of the seedsmen, but we never recommend dealers.—*C Rae.* 1, Stanhopea, apparently some variety of Wardii, or perhaps new, 2, S. graveolens.—*J Moore.* Stanhopea Wardii, a dark variety; the colour is greener than it should be.—*Althæa* Gomphocarpus fruticosus.—*J F C.* Purple Orach, Atriplex hortensis; a common kitchen garden plant, grown instead of Spinach.—*P R W.* Nicandra physaloides—not a Datura! We see nothing to distinguish the Ranunculus from Flammula, which often creeps.—*J R M.* The leaf seems to belong to some Solanum, an immense genus, the species of which can only be determined by the examination of perfect specimens in flower.—*S. jil,* You cannot possibly quote another authority so bad as that of Mr. George Don.—*G W R.* Ipomœa tuberculata; a well-known species.—*Erzeroum.* 94 Orchis latifolia.—*T E B.* Eucalyptus pulverulenta, Physalis peruviana, and Castor oil plant.

PELARGONIUMS: *W D.* No; the over luxuriance of your Pelargoniums was no doubt the cause of their not flowering well. With such rich soil as yours is, guano-water was unnecessary. It was probably that which did the mischief; we would advise you to be more sparing of it next year. Tobacco smoke effectually destroys green fly, and sulphur will kill mildew if it be applied early enough—that is the point. ‡

PRIZES FOR COTTAGE GARDENS: *Fortuna.* You mistake the proposition, which was strictly confined to *cottagers'* gardens, about which there is no difficulty.

THE CHERTSOW SHOW: We have received from Mr. John Saul another letter on this subject, but we must decline any further consideration of it. The principle which ought to be observed in making awards—which is a public question, has been explained. The squabbles of exhibitors must be settled in private.

MISC: *Claptoniensis* We have no idea where the *Garten Zeitung* can be seen. Probably not at all near London.—*Esto.* Seeds of Lily of the Valley will go out to New Zealand very well if gathered now, dried in the pulp in a dry room or in the sun, packed in a coarse bag, and kept in a well ventilated place. Air is what they want. People generally suffocate their seed. —*G W.* Send your package to America now. Rooted Gooseberry plants will answer best. ‡—*A B.* Shorten back your trees in mid-winter.

SEEDLING FLOWERS.

DAHLIA: *W and A B.* Orange scarlet: size, shape, and texture good; petals broad and well formed, but a little depressed; eye a little sunk and crowded; a good showy flower with great depth of petals.*

FUCHSIAS: *J Veitch and Son.* Duplex: tube short, bright red, corolla dark violet and double; good in texture and colours, and singular on account of its double corolla. Unique: tube short and thick, lobes broad and rather large, corolla dark violet purple, well shaped, and ample; a very nice middle-sized flower, good in texture and colours. Mirabilis: tube rather short, colour bright red, lobes very long and pointed, corolla well shaped, ample, and of a deep violet colour; a good showy variety, but too long in the lobes. Striata: tube short, bright red; lobes long and pointed; corolla violet, striped irregularly with pale blush; a novelty on account of its carnation-striped corolla, but only middling in other respects. Multifida: tube short and small, bright red; lobes long and pointed, and well reflexed; corolla double and dark purple; good in colour and texture, singular, but very small. South Devon: tube rather long, slender, and bright red; lobes very long and pointed, and nearly twice the height of the tube; corolla rather ample, dark violet, large and showy, but badly proportioned. Ignea: tube long, but not very stout, dark red; lobes broad and large; corolla large and good in shape; a very nice high-coloured variety of good texture.* —*W A and A B.* Tube short, bright scarlet; lobes rather broad and longer than the tube, and quite reflexed; corolla deep violet, very large, and well shaped; a nice bright-coloured little flower, good in texture, and well contrasted in colours.*—*G C B.* Sontag: tube bright red, short, and a little globose; lobes broad, long, and well reflexed; corolla ample for the size of the flower, bright reddish-violet, well shaped, and good in texture; a nice small bright-coloured variety. Orion: tube short, bright red, and good in texture; lobes broad, well expanded, and rather longer than the tube; corolla deep violet, but only middling in shape, and rather common in colours.*—52 is a very slender and long-tubed variety of F. fulgens, very singular and distinct, although not so handsome as the original.*

GLOXINIAS: *W H.* Both your seedlings are nice varieties, and although very similar in colour, the largest is the best in shape; colours, bright reddish purple, with a crimson and violet stain on the inside of the lower lip, and a white stripe in the inside full of small dots.*

PENTSTEMON GENTIANOIDES: *W and A B.* 1, bright red, fading on the under side to a pale blush; bright, but too small. 2, flower large, bright crimson; a very nice variety, of intense colour. 3, purple, tinged with crimson; flowers large, and produced in abundance; a good variety. 4, red, with a white throat; small, and rather common in colour. 6, dark purplish crimson; a nice high-coloured variety. 2 and 6 are the most novel and distinct.*

PHLOX: *J P.* Flowers rosy lilac, white in the centre, large in size and bright in colour; a very nice variety, and remarkably handsome.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

LANDOWNERS' WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY. Established 1844. Incorporated by Act of Parliament. This Company is prepared to Contract with Landowners for the Drainage, Inclosure, Irrigation, or Improvement of Lands in any part of England, Ireland, or Scotland. Owners of Settled Estates in England may, through the Company, DRAIN, INCLOSE, BUILD ON, or IMPROVE their Lands, and charge the Inheritance with the permanent value.—Apply to Mr. THOMAS MAY, Secretary, 9, Bedford Circus, Exeter.

WHEAT SOWING.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure sent out by them shall be free from the slightest adulteration. Peruvian Guano direct from Importer's Warehouses, London Manure Company's Wheat Manure and Urate, Sulphate of Ammonia, Phosphate of Ammonia, or Ammoniacal Phosphate; Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone Sawdust, and every other Artificial Manure.
EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

AUTUMN SOWING.—POTTER'S GUANO.

MR. POTTER particularly recommends this season for using his Guano, as, if now committed to the earth, it is better adapted, when the spring returns, to yield to the growing crops the food they require in a fit state for immediate assimilation. The increase of chemical knowledge, as applied to agriculture, has enabled Mr. POTTER to make some important improvements in the manufacture of his Guano, which he now most confidently recommends to the use of all who wish to grow luxuriant crops at small expense.

In consequence of some unprincipled persons, once acting as Mr. POTTER'S agents, substituting their own compounds for the genuine article, the Proprietor is induced to recommend a direct application to himself. Where the quantity taken is adequate, an arrangement, as to carriage, will be made to the satisfaction of the purchaser.

PURE GYPSUM, in a state peculiarly adapted for the farmers' use, at the usual low price.—Please direct your orders, per post, to the following address.
28, CLAPHAM ROAD PLACE, LONDON.

DR. RYAN'S AZOTIC MANURES, prepared under his immediate superintendence. The attention of Agriculturists is earnestly directed to these well-known Fertilisers, the preparation of which is based upon a careful examination of the requirements of the crop and the condition of the soil. The Manufacturers of these Manures, which are made entirely of rich animal matters, have received numerous testimonials to prove them to be equal to the best Guano. Prices, 6l. and 6l. 10s per ton.—Offices, 24, Mark-lane, London.

OIL-CAKE, GUANO, AND OTHER MANURES.—Foreign and English Oil-cake on sale; also Peruvian Guano of the finest quality, Superphosphate of Lime, Bone-dust, Sulphuric Acid, Animal Cake, Wheat Manure, Gypsum, Rape-cake, Salt, and all other Manures of known value.

Apply to MARK FOTHERGILL, 201 A, Upper Thames-street, London, Agent for Collins's Patent Disinfecting Powder.

About 30 tons Dried Sewage Manure, suitable for mixing in Composts and Dung-heaps, at a moderate price.

SMITHFIELD CLUB, 1849.—The Annual Show of FAT STOCK will take place on Tuesday the 11th, Wednesday the 12th, Thursday the 13th, and Friday the 14th of December, 1849, at the Bazaar, Baker-street. The Printed Forms of Certificates for the entry of Stock and Implements, must be obtained from the Honorary Secretary, and returned to him, filled up and complete, on or before Saturday the 17th of November, 1849. B. T. BRANDRETH GIBBS, Hon. Sec., Corner of Half Moon Street, Piccadilly, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA. EDENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1s. 3d. to 1s. 6d per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.
HEATING BY HOT WATER.

TO ORCHID GROWERS.

BURBIDGE AND HEALY, 130, Fleet-street, respectfully call attention to their method of warming Orchid Houses. They have had the honour of warming the Orchid Houses at the undermentioned places:
Royal Botanic Gardens, Kew
Horticultural Gardens, Chiswick, additions to the House.
Also the Orchid Houses of the following distinguished growers of this interesting class of plants.
The Bishop of Winchester, Farnham Castle.
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The Agricultural Gazette.

SATURDAY, OCTOBER 6, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Oct. 11—Agricultural Imp. Society of Ireland.
THURSDAY, — 18—Agricultural Imp Society of Ireland.
FARMERS' CLUBS.—Oct. 8 Claydon —Oct. 13 Peterborough.

IT is not to the Agriculturist alone that the subject of AGRICULTURAL EDUCATION is either interesting or important. The more it is examined, the more it is turned about and looked at from every point of view, the more will it be found to attract and carry with it the sympathy and good wishes of every thinking member of the community.

It does so already. It is a difficult subject, and a new one: difficult chiefly because it *is* so really new. The sword is unhacked, the shield is spotless, and the spurs unblooded; and amidst the ready jeers and hooting of many an old-stager, the stripling comes forth, diffidently it may be, yet nerved and sustained by inward knowledge and purpose, and the whisperingly uttered 'God speed you!' of more voices than reach the public ear. Other Arts have beaten roads of education or apprenticeship: much there may be in them that wants alteration or repair, much that is antiquated, and much for energy to encounter in the way of prejudice or mere inertness; but still there is *a track* to go by: the old causeway exists, and to suggest improvements of detail we all know is not the most difficult of human efforts.

But in Agriculture, strange as it may sound, the very land-marks of education have to be posted. The road is not a road but a common, where every footstep went its own independent way, where no two vehicles have made the same wheel-track in succession. Beaten roads and ruts there are indeed in the neighbourhood, but of a kind *the avoidance* of which is the very condition and contract of the outset; exactly on the principle that forbade the first mariner who sailed by the Compass, to follow the shore-hugging lines and landmarks of all preceding navigators.

A curiously timed political stroke—the last (and lucky that it is the last) that British Agriculture, whether for good or ill, can ever know,—has brought the whole matter to its last issue. The advocate of the old system says 'It is all over with Farming:' the reply pronounced not by tongues or pens but by Practical Necessity is that now, for the first time, the race of 'Progress' *must* really *begin;* that at this point, dreary as it may look, all the tried and acknowledged elements of discovery, economy, advancement, and ultimate success, are for the first time let loose into imperative action. The fluctuating dynasty of 'price-per-bushel' has passed away: we do not *make* it so: we only take the case as it stands before us, unavoidable and undeniable. The question that remains,—the only one that can remain—is the regular trade-question of 'Cost of production.' From the death of the political question arises the new and deathless life of the Scientific one. What has hitherto been a matter of advice or invitation, is now a plain demand, resistless, and without alternative. If this be true—was there ever a moment when the question of education was more appropriate, or more importunate?

For Science *is* Education. The education to an art is nothing more, and surely nothing less, than the attainment of the Science, or Sciences, by which that art is governed. And surely when this point is once truly and practically admitted and understood, the whole horizon of the question in some measure begins to clear. We look around us in a country where almost in every department of trade and industry we are either positively in advance, or prominently distinguished, among the nations of the earth. Our shipping scours the seas to bear the produce of our Looms, our Forges, our Mines, our Factories, our Steam-engines, and, most important of all, our Industry, backed by unrivalled skill, resolute purpose, and practical science guiding and directing all, to the farthest limits of the globe. It is impossible to walk through one of our great National Workships, one of our Mills, or large Iron Foundries, to see the Power Loom or the Steam Engine at work, and not feel a proud and meritorious sense of real national eminence and distinction. How was it obtained? Was it necessary to urge upon the Cotton spinner the importance of mastering and applying the Science of Mechanics? did the Calico-printer or the Dyer need to be urged, and *worried*, about the value to his art of the science of Chemistry? Why the very sight of the detail of his establishment, the half-hour's walk through the various chambers each devoted to its respective process, perfect of its kind, as far as scientific discovery has proceeded, is itself the highest lesson in each Science that could be afforded to any listener and beholder in the given time.

And how stands the case with Agriculture? How many farms in each county of England, as we walk through field after field, as we look at the implements, and mark the state of the tillage and the crops, as we watch the progress of the work and the men employed upon it—and cast up mentally the whole economy of the whole concern—will suggest a corresponding sense of pride and admiration, that feeling of the *ne plus ultra* which an Englishman in the inmost heart of him delights to feel?

'Look now upon this picture—and on this:' fairly, calmly, dispassionately, and apart from prejudice; apart from that angry indisposition to face the truth which constitutes the Pride of Ignorance, and ever makes the very name of 'learning' an abomination and an offence to him who most needs to begin.

What can be the secret cause which develops before our eyes the strange anomaly of a nation driving and thrusting the productions of its industry, in almost every other branch of art and manufacture, into the remotest harbours of the world,—and shrinking timidly, with beaten heart and confidence, from the very thought of measuring its strength with other nations in the matter of Agriculture? What is the co-existing cause which, while the eye and mind are justly gratified with the spectacle of active Intellect pre-eminently alive and vigorous in the one—makes the other a bye-word of slowness and unintelligence in all its processes?

We do not assume the question: we ask only is it, or is it not supported; does it, or does it not arise from the comparison we have adduced. Some answer there must be to it; and that answer must be found in the history of the Past. Even at the very time when we are marking and lamenting its truth, the cause may have been removed, and the gem which is said to lie hid under the ugliness of Adversity may have silently begun to assert itself, and to have thrown out its first faint ray even in the humiliation of that universal enquiry, 'Why is our Agriculture depressed and down-hearted?'

Surely it is time to be up and doing; to ask ourselves sincerely, Do we really and truly understand our business? Have we *learnt* it? Have we studied and made our own the sciences on which it depends? or do we scoff at them in our heart as mere closet lore, denying to this one branch of industry the aid of that admirably applied knowledge which has impregnated like an instinct our energy and *force of* WILL, in other pursuits more complicate and more difficult, yet through all impediment *surmounted*.

Surely it is not industry that we want. Nobody denies that our farmers or our labourers are industrious; that they rise early, and eat the bread of carefulness. But, unhappily, it does not always follow that ten, nor twelve, nor even fourteen hours a day, even of the hardest work, is necessarily work that pays, or labour that is most profitable. True it is—most true—that Nature itself has a blessing for *mere* labour. It is ever worthy of its hire; it is ever worthy of respect; and to see it unprofitable, or less than *in the highest degree profitable*, is one of the most painful sights presentable to the eye. Every new invention, every improvement in mechanical or chemical art, exhibits an inherent tendency in the direction of the saving and economising of *mere labour*. Every experience of life discloses more and more of the great truth, that high as may be the

blessing upon labour, there is a higher blessing attainable by *man*—the blessing upon KNOWLEDGE. It is vain to urge that the labour of the field is as great—greater, if you please, than that of the manufactory, the counting-house, or the shop; unless you can show that it is directed by a corresponding knowledge and a corresponding *economy of detail*, arising from that knowledge, and specifically addressed to every part and every process of the subject matter on which it is called upon to act. If the word 'Science' is offensive, strike it out; substitute some word that has not been hacked and badgered about from mouth to mouth till it has become a reproach and a quarrel, a thing of angry bets and personal defiances. Call it by what name you will. Never mind the name. Go and look at it in its tangible and concrete shape, in our mills, our manufactories, our world-work-shops, in all the arts (and, thanks to *something*, they are many) in which we excel, and ask to what that excellence is owing.

"People laugh at the noble cyclopædist's ideas," says the *Spectator*, referring to Lord BROUGHAM's prophecy, or hopes, of the further introduction of Steam-power into Husbandry, "but there is nothing in this view discordant with the general progress of human arts. On the contrary, the whole tendency of improvement is to substitute for rough and random methods, a minute, pains-taking, and exact dealing with the smallest particle. From the unpacking of the raw cotton to the folding of the finished cloth, in this country, every fibre of cotton goes through some eight or ten or more processes, and may be said to pass under review as often. There appears no reason why similar attention should not be bestowed on every seed of Corn, every fibre of the plant, and every particle of the soil that is to nourish it. There can be no doubt that raw material, in the shape of Seed, Manure, and Soil, is wasted to an incalculable degree."

Are this comparison, and this assertion, true or not true? If not true,—then Agriculture has, all England over, arrived at the highest point of human art, and there is no further improvement to be hoped for. If true—then there remains much indeed to be done, and before that can be done, much indeed to *be learnt*. And how learnt?—From the 'Practice' of our forefathers? We do them an injustice by the question. Their own answer would be 'We were *improvers* in our day, *according to our light*: be, you, the same: you have examples of amazing progress around you in cotemporary arts which in our day were as yet undeveloped: you have Sciences growing, and bearing their fruits around you, which in our century were unborn. Do not idly and invidiously refer yourselves to our practices or our attainments, making the dimness of our lights an excuse for not following your own. Do as we *did*: not by imitating our modes, but by accepting and acting up to the responsibilities of the generation in which you are cast.' The highest compliment that can be paid to the Past is to accredit the improvements we *inherited*, by carrying on the ratio in the highest degree, ourselves; avenging the martyr-spirits that in every age have endured the spite and worrying of the backward, by a kindlier welcome to every symptom of pioneering intelligence, in our own.

ON AGRICULTURAL EDUCATION.

(*Continued from p.* 603)

Now for a few words upon system. What system can be introduced likely to produce the general effect that is desired? A professional education has been spoken of. Is it meant that agricultural colleges and experimental farms are to be the schools of resort for such practical and scientific training? Not entirely so. They are liable to heavy objections. The nature of agriculture precludes the possibility of teaching the practice and science in combination; and if the practical operations be made to accompany the scientific studies by means of local institutions, it only constitutes an education for the particular circumstances of the situation. One scientific institution might be sufficient for a whole country, but the fields of practice are numerous and variable, and a distinct institution would be required for each locality. We are pleased to see, from a late report of Scottish farming, that a committee for agricultural education was formed about two years ago for promoting the introduction of agricultural education into all our elementary schools in the rural districts. Who can tell us a reason why such plan may not be resorted to with good effect in England? Why should not the elements of agriculture be taught as a part of general education in all public schools? The student could apply the knowledge thus acquired, as well as other knowledge. Physical variation would require a large amount of attention, and to apply rules it is necessary that there should be discrimination.

There must be general education. It is the only method of imparting knowledge that can be attended with comprehensive benefits. A collegiate education would be too expensive for the generality of farmers. But the general education would call forth genius to the development of which these higher seminaries would be useful. Our rural schoolmasters will have to be knowing in rural affairs. They must not only be able to give instruction in grammar, geography, arithmetic, writing, book-keeping, and practical geometry and trigonometry, but they must also be competent to give lectures on the theory and practice of agriculture, on botany, and on agricultural chemistry. The elements of natural philosophy should also be presented to the minds of the students. Mechanics and machinery should be treated of, and the combination and application of mechanical powers. This knowledge would be given in order to render the explanation of the principles of work, and the use and construction of farm implements, familiar, and to give the scholars means of judging of the real merits of new inventions. The mechanical laws of fluids should also be made to engage the attention. As to chemistry, in such schools as the one for which we are sketching a plan, a foundation for future progress can only be laid. A practical knowledge of the chemical laws and operations which are at work around us in daily life, it will be requisite to impart. These laws and operations should be illustrated by experiment. The master must therefore be possessed of a museum of substances and chemical agents, with appropriate apparatus. Geology may be taught by lectures and diagrams; mineralogy should precede the study of it, however. The study of Botany can be made very practical; specimens may be collected, their peculiarities mentioned; they may be classed, named, and preserved. We should also be acquainted with animal physiology. The external appearance of the human frame is familiar to all, but its internal parts are generally unknown, together with the manner in which their important functions are performed. To those who have so much to do with live stock, and so much interest in the preservation of health amongst it, such information would be invaluable. This would be a thorough foundation for the veterinary art. The master must then be able to lecture on this subject, and he must illustrate and explain chiefly by means of diagrams, however rough they may be.

Subsequent to such elemental training, the parents of those students that discover ability must draft them to some one of the larger scientific institutions, at least provided the expense be not too great. Under the direction of the agricultural chemist a course of analyses must be threaded. With the professor of geology they may read in the wonderful book of nature, for he will unclasp it to them, turning over leaf by leaf, opening forth to their eye the treasures of the earth. Thus they may come forth equipped for the service of time, as chemists, botanists, geologists, and mechanists—useful, working practical men, bringing to bear vast ingenuity into agricultural operations, remodelling old customs, and suggesting new arrangements. It may be said that we would have the simple practice of farming neglected by the lads thus otherwise busied. By no means. During the elementary course which would be carried on in rural schools, abundant opportunity would be afforded for maintaining an acquaintance with such details. Besides, were it not so, the training to which we have alluded would fit the mind of the student for the formation of a speedy intimacy with those methods of cultivation peculiar to his own district. All else he would know, since the theory and practice of agriculture has been already noticed as to a part of our agricultural course.

But it may be asked, What are the young men of the present time to do? These schools are not yet erected; they will only be of use for another generation, for the schoolmasters have to be trained, and all things made ready. It is not designed that the present race of young men should stand one moment idle; they are the hope of the future. The coming generation may bear upon it the stamp of their character, be it good or bad, if it be but energetic. As they would rather live in the esteem than in the execrations of their posterity, let them drop an unspotted mantle—let them work. It may not be within the power of all parents to secure for their sons an education at one of the agricultural colleges. The expense may be too great; but these institutions have failed to take the standing they were expected to occupy; and we would prefer advising that 18 months should be spent at the Royal College of Chemistry at London, where opportunities would be found of carrying forward, also, the other branches of science to which we have alluded. There are at the present time several young farmers at work here from day to day. Many have gone to their farms from thence, and by the experiments and improvements they have already introduced, and the sagacious manner in which they conduct their affairs, fully justify whatever laudation may be passed upon such education.* To those who cannot obtain access to these superior benefits, there is yet left a resort to books. Few of this class are so poor that they cannot buy books. A thorough acquaintance with Johnston's Chemistry would be a broad field of wealth to any young man. This work is wonderfully comprehensive, abounding in all sorts of useful information concerning the daily concerns of life. Daniel's, Turner's, or Brand's treatment of chemistry may follow. From amongst books on geology we would excerpt the following. Lyell's Principles, Professor Hitchcock's work, Morton on Soils, &c. The volume published by the Society for the Diffusion of Useful Knowledge is the simplest treatise on Botany that we can recommend. Their four volumes on Natural Philosophy contain also the cheapest and simplest abstract of the subjects classed under this head. Moseley's "Illustrations of Mechanics," is a cheap and useful book; and upon Animal Physiology we would mention Carpenter's admirable abstract. Indeed we could find it easy to lengthen this paper considerably with a list of books that may be studied by young farmers with the utmost advantage. It will be sufficient to speak of more when these are mastered.

Young men, look to it, that these matters have your consideration. Learn to be jealous of the many hours spent at the market table—of the money and time lost at fairs. Let not evenings be spent in senseless conviviality; be above such things. Shun, above all things, the abuse of leisure time. Write in large characters above the door of your chamber the vigorous line of Dante,

"Think that to-day shall never dawn again."

In the morning as you go out, and in the evening as you come in, it shall remind you of your duty.

There may be perceived on all sides of us an unwearied industry exerted in promoting the advancement of knowledge in every department of human affairs, all done with the view of improving the moral and social condition of the human race. Why is there no attention paid to the acquirement of knowledge to cultivate the earth, the most essential of all arts? Let us look to it. "The high roads are broken up, the waters are out, a new and troubled scene is opened—the file affords no precedent. A far more extensive comprehension of things is now requisite than ever experimental skill gave, or can give." *F. R. S.*

* Let us advise such young men to establish an agricultural chemistry association. Let them diffuse knowledge by lectures and otherwise among the agricultural body, guide the farmer in the use of manure, and have for their view the enlargement of the store of actual knowledge.

POLITICAL ASSISTANCE.

In your leading article of the 8th inst., you state "that the permanent welfare of the (agricultural) profession depends far more upon its own efforts and resources than on assistance from any other quarter." That you "do not object to the efforts of allies on its behalf, but you do object to everything tending to distract its attention from the main source of relief."

But few, I think, will question the correctness of that opinion, or find fault with the objection you express. Recently, however, the legislature has not acted as an ally of the profession, but rather as an enemy. For, surely, to deprive British agriculturists of their privileges, and give them to foreigners, to admit the produce of foreign lands to our markets untaxed, and at the same time increase the taxation upon our own produce, to give advantages to foreigners which Englishmen are and must be denied, was inconsistent with the duties and obligations of an ally, to say the least of it, more especially as the "comfortable income-tax," with the imposition of which the generous transfer of benefits was attended, is not to be appealed against.

To tell persons thus circumstanced to "build their hopes of relief not on promises of parliamentary assistance, but on the better directed efforts and truer economy, of a more skilful practice," can avail but little as a means to the very desirable end—the fullest possible development of the resources of our soil. They feel that they are wronged, and whatever seems to justify the wrong done them has an evil rather than a good tendency.

If agricultural topics be discussed politically, as they frequently have been in your columns, they are expected to be treated fully and fairly, without reserve or partiality. To do otherwise, I respectfully submit, is to prejudice the minds of agriculturists against your views, whilst you are urging the adoption of them. As stated by your correspondent, "I. A. C.," I believe that "until confidence is felt and future safety believed in, there will be little increase in the amount of skill and energy applied to the work of cultivation." But to the question, how shall that confidence be given, the needful safety be ensured? I answer; by putting the farmer in possession of his just rights, equal and proportionate privileges with others. Let him be placed in a position that he shall feel that he is justly dealt with, and judicious suggestions will be attended to; agriculture will improve rapidly; the produce of our own soil will feed our population; abundance will ensure cheapness, in a manner which will enlarge the home demand for manufactures, not diminish it as at present; and put our manufacturers in a position to supply the foreign market on terms they will attempt in vain under other circumstances.

As yet the imports of foreign grain have greatly diminished the industrial resources of this country, and the ability of those who are engaged in, or dependent upon agriculture, to increase their outlay, either in improvements or living; consequently we are comparatively at a stand rather than advancing, and manufacturers are complaining of a falling off in the demand from us. If the supply of food during the last several years had been wholly of home growth, or as nearly so as it had been previously in average seasons, that would not have been the case; neither money nor employment would have been wanting, as unhappily they have been. A large demand for foreign produce always has resulted, and we have too much reason to believe ever will result, in distress and difficulty to our manufacturers and commercial men, no less than to our farmers; and the sooner we get into a position to supply ourselves the better for all classes of the community. That we might do this, there is no doubt in the minds of the best informed. Indeed, if our produce be increased to the extent we are told it must be, we certainly shall supply the demand, and more than do so. What will then become of the foreign trade which our

importations were to lead to? Those who used the argument must supply the answer. I certainly cannot see how foreign trade can be extended by means of importations of agricultural produce, now that we are told our very existence requires that we should raise enough for ourselves. This is an enigma, certainly.

But it is not merely with regard to importations that I complain. Farmers, and the middle classes generally in the rural districts, want the means of giving a good education to their children. Mr. Mechi has stated that Government has been appealed to herein, and refused to give assistance, yet it supports schools of design for manufacturers. Agricultural statistics are most important to us; none, however, are provided, or likely to be, it would appear, for some time to come. Capital invested in land is taxed heavily, otherwise invested it is either not taxed or assessed disproportionately. The farmer, then, and the landowner too, has a right to ask for fair play in entering on the task before him. Exclusive privileges I would be the last to advocate, as they tend to indolence and composure rather than to activity and exertion. Equal and just privileges are what I plead for, as tending to encourage and stimulate. Injustice discourages, irritates, and provokes to sullenness and rebellion, and cannot long be inflicted with impunity. There should be no "antagonism" amongst us. Large capitalists—the favoured few—are interested, however little they may think so, in the welfare of the community at large. Industry cannot be made to suffer long without that which it creates being diminished in its value, if not in its amount. The British empire is large enough, and rich enough in its resources, for the employment of all its inhabitants, and for the supply of all their wants. Let it, then, have its due share of our attention, our enterprise, and our money, and (with the blessing of God thereon, whose providence it is England's highest privilege, and her greatest glory, to acknowledge and regard, and without which, as we have been shown by famine and pestilence, all our efforts, our wealth and greatness, are as nothing) we shall prosper and be at peace both at home and abroad. *A. L. A.*

P.S. Lest it should be imagined that I would screen the landlord, I beg that it may be clearly understood that I by no means desire to do so, except from wrong. He has his duties to perform, and those I shall be glad to point out to the best of my ability in a future letter. Nor do I wish to reflect upon the present Government, for I believe that, with some exceptions (the repeal of the Navigation-laws in particular), they have acted wisely, considering the circumstances under which they entered office. All I aim at is to have that amended which has been done amiss, and that effected which, as yet, has not been done—our country made the best of. Union of purpose and effort is required for this. Since I wrote the above, I have received your Number of the 22d inst., and read with much interest and satisfaction the article on "Agricultural Education," by "F. R. S.," which I trust will receive the attention it so well deserves.

AGRICULTURE IN IRELAND.—No. II.

I now propose to show, in detail, that the west of Ireland affords great inducements to the British farmer to settle there, for the following reasons:—1, the fertile quality of the soil, and its general capability of improvement; 2, the present cheapness of land and wages; 3, favourable tenures.

Let me take a glance, more particularly in an agricultural point of view, at the area on the west of the River Shannon, which comprises the counties of Mayo, Galway, Roscommon, and I will add Clare in Munster; with the exception of Roscommon, these are maritime districts. Some statistics respecting them may not be useless. Mayo contains 1,355,048 statute acres, of which 871,984 are cultivated; the remainder is unprofitable bog (covered with heath, and various sorts of carex) and mountain; and nearly 57,940 acres are under water. Galway contains 1,510,592 acres; of which 955,713 are cultivated, 476,957 are unprofitable bog and mountain, the remainder is under water. Roscommon * comprises 649,405 acres; of which 453,555 are cultivated, 131,063 uncultivated mountain and bog, and 24,787 under water. Clare contains 802,352 acres; of which 524,113 are cultivated, 259,584 uncultivated bog and mountain, the remainder under water. We have a total of 2,805,365 acres of cultivated land in those four western counties, with 1,292,728 of mountain and bog, a considerable proportion of the latter being reclaimable at little expense, if ever the prosperous state of the country, the advancement of agricultural skill, and abundance of money, shall render every rood of Irish soil an important possession. Under existing circumstances, I believe that the reclaiming of the red bogs (that is, the deep ones) should be postponed to every other kind of agricultural improvement. The abundance of limestone or limestone gravel in many peat moss districts, with facilities for conveying it to localities where it is naturally deficient, by canals and railways, will, I hope, at no very distant day, afford temptations for reclaiming them; but where there is so much good, yet almost waste land, the reclaiming of bogs may be postponed to a period when land may become more valuable and capital more available. There will be for years to come abundant occupation in fertilising the already arable portions. I am not prepared to recommend the western bogs of Ireland as the portions of the soil in which any capital should first be invested, unless the wonderful chemical discoveries of the purposes to which peat may be applied should render that material of sufficient value to demonstrate that this enormous mass of inert matter is convertible to the various uses to which it is said to be so profitably applicable. In such case the gradual removal of those mighty bogs which contribute so much to the humidity of the climate of Connaught, will become, as a thing of course, the raw and exhaustless material of manufactures, and be therefore cut off from the ground which it now "cumbereth," exposing a subsoil which, like much of the surface, already stripped and bare—soliciting in its misery CAPITAL clothing—may be cheaply and at once converted into a dry, warm, and prolific earth. That many parts of Connaught (and of Clare) are naturally very fertile, will appear from the report of Mr. Wakefield, an experienced professional farmer, who published in 1812 his well-known report of an agricultural tour through Ireland. "A great portion of the soil of Ireland throws out a luxuriant herbage, springing from a calcareous subsoil, without any considerable depth. This is one species of the rich soil of Ireland, and is found throughout Roscommon, in some parts of Galway, Clare, and other districts. Some places exhibit the richest loam I ever saw turned up with a plough. * * * Where such soil occurs, its fertility is so conspicuous that it appears as if Nature had determined to counteract the bad effects produced by the clumsy system of its cultivators. On the banks of the Fergus (county of Clare) and Shannon, the land is of a different kind, but equally productive, though the surface presents the appearance of marsh. These districts are called Caucasses (or Corcasses): the substratum is a blue silt, deposited by the sea, which seems to partake of the qualities of the upper stratum, for this land can be injured by no depth of ploughing."

Crops have been taken from these alluvial tracts for many successive years without manure, and as may be supposed, from the nature of such a soil, cattle are fattened on it when in pasture to a great weight. Much of it is black in colour, showing that it abounds in humus. Mr. M'Culloch* gives this favourable testimony of the soil of Ireland: "A large proportion of the surface of Ireland is covered with bogs and mountains, but notwithstanding this deduction it contains a great deal of most excellent land. The luxuriance of the pastures, and the heavy crops of Oats that are everywhere raised, even with the most wretched cultivation, attest its extraordinary fertility. This is the more singular since the soil is generally thin." Among the most rugged parts of Clare, Roscommon, and Galway, and on a thin soil, but resting on limestone, there are spots of sweet and verdant pasturage, which though apparently yielding very scanty herbage, fatten sheep, and impart an admirable flavour to the mutton.

The *Times* Commissioner has given the following report of the most mountainous and rocky, and probably the most poor and neglected county in the province of Connaught. "It is a singular fact that the farther you travel westward in Ireland, the more bountiful does Nature appear to have been in heaping upon the country natural resources, and the less has been done by the hand of man to use and improve them. I speak advisedly when I say that there is no part of England which possesses one-tenth of the means of creating wealth and prosperity which are to be found in this very county of Mayo, which in the best of times exhibits a degree of degraded wretchedness such as will be in vain sought for in any part of England. In the sixth annual report of the Board of Public Works in Ireland, p. 6, is a description of the half barony of Erris, which embraces the north-west portion of the county Mayo. 'This district is 29 by 23 miles in extent, and contains 230,016 acres; 34,654 acres are under tillage and pasture; 184,013 acres mountain and bog, all capable of being highly improved; the remainder lakes and high mountain tracts.' It is 'so deeply indented by bogs, creeks, and inlets, that no point in it is more than six miles from the sea;' and 'it is so intersected by several rivers and streams, the available water power of which, though sufficient to work the machinery of 250 mills even in the driest season, flows uselessly to the ocean.' The deep sea fishing banks of Erris 'swarm with fish of every kind, especially cod and ling.' 'There is anchorage in the different creeks and bays covering a space of 84 square miles.' The report goes on: 'It is much to be deplored that this inexhaustible source of national wealth is almost entirely neglected; at this time there is not a single wherry or fishing smack in the entire barony; and all the fish taken by small boats and curraghs scarcely suffices for domestic consumption. The soil of Erris with ordinary cultivation yields excellent crops, its Oats being an advance of 2*d.* to 4*d.* in the 45 lbs. in the English and Scotch markets, and its beef and mutton are greatly prized.' The report goes on to attribute the want of improvement to high rents and the 'lack of all enterprise.'"

I have now shown from distinct opinions, given by independent authorities (it would be easy to multiply them), given at different intervals of time, and with no design of puffing Connaught estates for the English market, that the soil of that province is of sufficient fertility to induce the farmer to cultivate it, and that the earth will reward him plenteously for his labours. The people and the lands are equally out of heart; but the hearts of both under fostering care are susceptible of healthy and vigorous reanimation. Every capitalist who purposes to make an investment can, without giving any credence to my testimony, or that of any class of evidence, no matter how respectable or disinterested, judge for himself from documents that cannot err; he can acquire the most minute and accurate information of any property offered for sale, and of every farm advertised to be let, without leaving his own home, by means of the admirable maps of the Ordnance survey, which show not only the superficial area, but the geological formations, the natures and qualities of the soil; he can form his own conclusions as to its productiveness, and if leisure permit, he can make a personal inspection of the land; he can visit the district in 48 hours from any part of England, and I promise him scenery, which the late Mr. Inglis—no incompetent judge—described, when speaking of the blue hills of Connemara, as the finest in Europe. Where land is cheap and labour is cheap, there requires but capital to turn them both to a profitable account. It would be disingenuous, however, in me not to state that the climate of the west of Ireland is inferior to that of England generally. It is more humid and less sunny, and therefore less genial for Wheat growing, or any tender cereal plant. It has often occurred to me that this difference of climate—not considered merely with respect to Connaught—has not been always sufficiently attended to by farmers. Those grains, for instance, which thrive well in Middlesex are often assumed to be well adapted to every other portion of the British Isles, though the latitude and local circumstances vary considerably. The climate of Connaught, generally, is unsuited to the finer or any kinds of Wheat; but it is as well adapted to the production of green crops as any part of her Majesty's dominions, and on the whole much better suited to them than many parts of England. Oats flourish luxuriantly and weigh heavily, as appears from one of my quotations; and by attention to the characters of the soil and the climate, the farmer can raise as abundant crops as can be produced in the most favoured parts of Great Britain. Though the sensations of a bilious man are often uncomfortable in a district moistened with frequent showers, the climate is healthful, and the hardy agriculturist exposed to the fresh breeze of the Atlantic can no where inhale more bracing air. The bathing places on the west coast are very favourite places of resort, and whoever has once bathed in the strong saline of the Atlantic, and felt its invigorating powers, will consider the waters of the eastern coast as weak and brackish, compared with the brine of the western. I therefore deduce this conclusion, that though the climate of Connaught may offer no temptation to the man of indolence to settle there, it certainly presents no serious impediment to the industrious one. A fertile soil, within two days of London, should not be permitted to remain half waste, when millions of capital are locked up, lent at a minimum of interest, or lost in bubble foreign securities.

Its capability for improvement is evident from the nature of the soil, and the facilities of obtaining lime, marl, sea-sand, or sea-ware, by means of the rivers and roads, which exist as channels of transit, and from the abundance and cheapness of labour. Owing to the want of capital, and the subdivision of land amongst a cottier tenantry, those capabilities have never been tested. In the most prosperous period of Irish agriculture the produce from the same extent of area was two-thirds less than that of England; whilst the amount of labour in extracting that produce was greater. What a prospect then to the skilful farmer of realising two-thirds more than has been yet produced in Connaught, and at a less outlay! I shall not occupy, sir, your valuable space at present with the discussion of the other two points which I have proposed to consider. In my next letter I hope to conclude the subject. *Martin Doyle.*

* Part of Leitrim, adjoining Roscommon on the east side, is within the province of Connaught, but as it is a very mountainous country, it holds out little inducement for location to an emigrant farmer from Great Britain, though its iron, sulphur, marble, and coal mines may render it a suitable settlement to manufacturers and industrial operatives.

* Statistical Account of the British Empire.

Home Correspondence.

Will High Farming Pay with Low Prices?—This is a question at the present moment of the utmost importance to the British farmer, and one which the *Agricultural Gazette* would do the public much service if they could answer. My doubts upon the subject have arisen as much from reading the many published statements as to improved farming as from experience. I take the increase of good root and green crop cultivation in this country to be, generally speaking, a fair test of the improved system of farming; for wherever green crops are largely and successfully grown, there, of necessity, must exist high cultivation, and a large outlay of capital in labour and stock, and probably in artificial manures. Now, what return does the farmer get for this outlay? Do the green crops themselves pay? I think all those farmers who have been discussing in these columns the value of a ton of roots, whether with them it has proved to be 7*s.* or has only realised 3*s.* 6*d.* per ton will answer, No! The green crops cannot have repaid their expenses, in the case published in these columns of July 21 last, where green crop cultivation having been energetically carried out no doubt with skill, intelligence, and capital, the return given is only 670*l.* net profit upon cattle in four years, to pay for a consumption of between 4000 and 5000 tons of roots, with interest on an outlay of upwards of 6000*l.* The articles citing the case feelingly concludes with these words:—"We hope that many farmers succeed on the large scale in making a far better thing of their green crops than this, and, if so, may we suggest to some of them the humanity of coming forward to the assistance of others who have failed in the attempt." Unfortunately no one as yet

seems to have publicly responded to this call, so that those who have been taught to look to high farming as a substitute for protection are left in suspense, whether there is any profit in that system or not. It is true we have had Mr. Caird's pamphlet, and have been told of the large profit made by Mr. M'Culloch: no doubt the latter gentleman deserves the highest credit for the energy and skill he has displayed, which has made his farm a sort of model, and well worthy the attention of any farmer. But, as to his extraordinary profits, when we find he has been growing 80 acres of Potatoes, and during the last five years, owing to the peculiarity of his soil or other fortuitous circumstances, has grown good crops and escaped the disease which has desolated other Potato fields, our surprise at any profits must cease; for even at 40*s.* per ton, we know that a good crop of Potatoes will produce a larger money return than can be realised by any other crop ordinarily grown by a farmer. Mr. M'Culloch's profits, therefore, do not help the farmer in his present difficulties, as who would advise any prudent English farmer to risk a large breadth of Potatoes in the present state of that plant. The question, therefore, still remains, how is the high farmer to be remunerated, with grain at a low price? He has hitherto found the profit of his high cultivation for roots in the increased produce of his grain crops, which, at the old average of prices, have repaid him with a fair surplus. But, will free-trade prices afford him such remuneration? If not, this artificial system of growing Wheat and Barley at the expense of other and losing crops must gradually cease, and thus the home growth of grain diminish rather than increase, unless some mode be discovered of making the intermediate crops more profitable than they would hitherto appear to have been. *C. H.*

Royal Agricultural Society.—On the question of excluding subscribers from the trial of implements, thus virtually depriving them of a day they have hitherto regarded as one of the most interesting and attractive of the show "much may be said on both sides," but certainly it has excited a pretty considerable sprinkling of dissatisfaction. I can readily imagine that the presence of the public on such occasions may have its inconveniences, but are not these balanced by countervailing advantages? On the one hand, a judge will do his duty none the worse for having a crowd of witnesses to his decisions. On the other, the implement makers will look to the public, as, after all, their best, and most important judges. I make every allowance for the arduous position of those who are called on to decide in such matters; the appointment is anything but an enviable one, but surely it is no part of their duty to condemn, without trial, any implement, merely because it may be new and strange to them. Give it a trial, and then, but not till then, adopt, or set it aside. I am puzzled about what I hear and read of the Society's proceedings on the dinner ticket questi[on]. According to Mr. Johnson (one of the Norwich c[om]mittee), a guinea is charged for what cost the Society but 12[s.], and half a guinea for what they pay but 7*s.* 6*d.*! Surely visitors have quite enough to pay at their inns on these occasions, without being victimised by a wealthy body like this! If these extra prices be defended on the ground of the expence of providing a suitable building for so large a company, the excuse does not apply to Norwich, whose ample accommodation for both dinners was provided by the citizens in their noble Hall of St. Andrew, thus dispensing with the Pavilion altogether, a circumstance which had never occurred at any previous meeting of the Society. Mr. Shaw (a member of the London Council) has attempted to whitewash his colleagues, by blackening the Norwich Committee. He asserts that the society not only paid the contractor all he asked, but of their great liberality, declined his offer of turtle soup into the bargain! Here Mr. Shaw, as many an over-zealous advocate has done before him, goes beyond his brief, and proves too much. He is choked with his own turtle soup—for, if the contractor would have set before his guests all these goodly viands, turtle soup inclusive, for the sum of 12*s.* 6*d.*, I ask, with Mr. Johnson, by what hocus pocus can the Society transmute this 12*s.* 6*d.* into 21*s.*, or the 7*s.* 6*d.* into 10*s.* 6*d.*, minus the soup so magnanimously and meritoriously relinquished by Mr. Shaw! The substance of the defence is, that the contractor was not cheated. No Mr. Shaw! but the public were, and it is of this that the public complain, and with reason; for, look at it how you will, it is a paltry way of getting money; one of those transactions about which the less said the better, but which happily is of too flagrant a character not to insure its own redress. *Samuel Taylor, Barnwood, Gloucester.*

The Potato Crop in Ireland.—There are so many conflicting accounts of the prospects of the Potato crop in Ireland, that I am induced to send you the result of my own observations during a few days I spent in that beautiful country within the last fortnight. In the neighbourhood of Dublin the crop looked very promising indeed, the tubers were particularly good and well flavoured, and, except on very highly-manured ground, the foliage seemed free of the plague spot. On the worst plot I saw (a field of Lord Charlemont's), which had been very highly manured, the tubers were not at that time affected; and the steward stated to me that he had some time previously marked the worst spots, for the purpose of ascertaining the fact, and that the disease was not extending so as to cause any alarm; but, in the south and west, matters are not so satisfactory. On the Great Southern and Western Line of Railway, as you approach Thurles, the blackened leaves and stems become more and more prevalent, and assume a more malignant appearance. Still, as you near Limerick, to the westward, the tubers are very bad; in one field I entered where an old woman was digging them; in answer to my enquiry on the subject, she replied, that although the stems were black the tubers themselves were quite sound; but, on examination, nearly one-half were found to be badly diseased. It is somewhat curious that the peasantry invariably deny the existence of the disease, although they have it so palpably present to them. A landlord near Killaloe also informed me that it undeniably existed to a very serious extent in that district, and he greatly feared that the coming winter would be nearly as disastrous as the last, although, from the great breadth of land planted with the Potato, the people could undoubtedly spare a portion of the crop with less inconvenience than for several previous years. There is another cause, I think operating in the same direction; while a greater extent of land has been planted, the population has materially decreased by emigration and removal to the unions; therefore it may be hoped that the heat of the fiery furnace, through which Ireland has been made to pass, is abating. With respect to the future prospects of Ireland generally, I found a very prevalant opinion existing that the race of Irish landlords (that is to say, those who are more immediately dependent on their Irish property) must become extinct before much good can arise for that unhappy country, I cannot see the justice of this opinion, as they, like all other classes, have but attempted to maintain their position in society, and, having no other resources, were doubtless more clamorous with their tenants than others having large rent-rolls in England or Scotland; indeed, one gentleman stated to me that some of the English landlords were the best they had, and at the present moment had scarcely any rent over due. The great hope, which is expressed by all classes, even down to the car drivers, seems to be that her Majesty, by repeating her visits, will attract her wealthy subjects to follow in her wake; and then, as the Irishmen say, having seen our country and ourselves, they will assuredly be induced to invest in Irish soil, and thus displace those who appear to have been hitherto unable and unwilling to place the tenantry in that position of comfort and comparative independence whereby a country can alone prosper. I was informed by a Limerick gentleman, who travelled in the same carriage with me, that land could be bought at present at 15 or 16 years' purchase, but, he added, a year or two it will be 20 per cent. higher. With regard to the quietude of Ireland, I was shown an estate on the shore of Lough Derg, where two or three years ago, it was stated, that any one could hire another to commit a murder for 20*s.*! I was speaking of this to my fellow traveller in returning from Limerick to Dublin, when he coolly informed me that we were then passing through a district (Tipperary) where half the sum would have sufficed!! But I was glad to hear his account of the improvements in the morals or habits of the people; he stated that the peasantry had become so completely subdued and c[ow]-fallen, through suffering, that the former deplorable state of feeling had entirely disappeared, and that they would welcome as their best friends those who came to take their lands and employ them as labourers. To this desirable consummation, I see one great obstacle, and that is, the fictitious value which the violent competition for land has given to it in the neighbourhood of almost every town in Ireland. It is certainly true that the [soil] naturally fertile to an extent not dreamed of by [the] farmers in England and Scotland, and labour is cheap, too cheap for the welfare of the country, but, for want of the remunerative markets which we possess on this side of the water, the produce is of very much less value; but if the proprietors of the soil would look at the matter in its true light, and let the land at such rent as to leave a fair margin for the tenant, I have no doubt a few years would do much towards changing the aspect of the country, for its capabilities are great. In comparing it with the south of England, the green crops quite amazed me. Ten days ago the Swedes on the model farm at Glasnevin, near Dublin, promised a crop of at least 35 tons per acre (English), and on Lord Charlemont's farm, also near Dublin, the Swedes and Mangold Wurzel surpassed anything I ever saw so early in the season; they could not have been less, at that time, than 25 to 30 tons per English acre. I also saw a field of Oats, which was certainly the best I have seen this season anywhere, which I was assured was the third crop of Oats taken in successive years from that field! Bad farming notwithstanding. In the neighbourhood of Dublin land bears a rent of from 10*l.* to 6*l.* per acre, Irish, which is to English as 7*l.* to 4*l.* *Edgar Slade.*

Lucerne.—The following extract of a letter just received from a relative in Genoa, may be interesting to Lucerne growers. "Having a small half acre of unemployed ground (2200 square yards), I sowed it with Lucerne last year. I have already (Sept. 12) cut five crops from it: viz.—May 1st, June 1st, July 1st, Aug. 1st, and Sept. 1st, each cut being three cart loads. This has been more than sufficient to keep my two coach horses, which are in very fine condition. Another good cut will be ready on Oct. 1st, and I do not despair of one on the 1st Nov. The plant is perfectly clean, and without weed. Can you match my farming by any similar example within your knowledge. Another friend, speaking on this subject, says, I saw something of the same kind in Lombardy, viz., the fourth crop of Lucerne cut in July; but then I attributed it in a great measure to the irrigation which is there so largely and systematically practised. At Genoa this can be very little practised, if at all." *S. T.*

Decision of Judges at Norwich: Horses.—I thank "N. B." for giving me an opportunity of saying that I did not mean to give any offence to the Council of the Royal Agricultural Society, or to the judges appointed by them; but only to bear testimony to the soundness of judgment expressed by Mr. Beale Browne in his letter, and the correctness of his remarks. I do not know whether "N. B." is one of the council, or was one of the judges. He says, "*we* are of opinion that it is highly proper that decisions of judges should be commented on with the utmost latitude, &c." Being of the same opinion myself, I thought it right to make my comments; and in reply to his remarks characterising mine "as a piece of bad breeding," without further offending him or provoking any personal remarks, I will only say that the bad breeding appeared to be in the horses selected for the prizes, and the bad taste in attempting to shift the responsibility of the council to the shoulders of the mistaken judges. *Veritas.*

Cumberland One horse Carts.—I am surprised that none of your correspondents has commented upon "A. B. C.'s" letter on this subject, which I consider to have been written in an altogether mistaken spirit. Your readers, I imagine, are farmers and landowners—not machine makers, and do not sympathise with any one of that body who may consider that the incidental mention of his rival in the trade is calculated to injure himself. "L. V. R.," I take it, means and meant nothing but good-will to all in general, and to farmers in particular, when he transmitted the description of this cart to your columns, and he could not have done better than obtain the assistance of Messrs. Ransome to make the article known, whether their general eminence as machine makers, or their proximity to the scene of the English Agricultural Society's ensuing show be considered. I have not seen this cart, which, however, I have no doubt is well fitted for the circumstances out of which it has arisen; and from Messrs. Ransome's description I should deem it as probably deserving a much wide use than it now obtains; but whatever the truth on this point may be, I have no bt that the letter of "A. B. C." about it, written, one would almost imagine, in fear for his own business as cart-maker, for the spirit of his communication indicates as much, is calculated to discourage future publications of probable benefit to our class, if not condemned by some such testimony, as I believe the above to be, of the general feeling regarding agricultural discussion in your columns. *X.*

Box-feeding.—I am perfectly satisfied that box-feeding is a very admirable plan for bringing forward young stock, and the wonder is that it is not more generally followed by farmers. To test the value of the method, I had bought for me at a neighbouring fair, by a friend of mine, a yearling, for which I gave the sum of 3*l.* 6*s.* For the first month the animal had only Grass from a small paddock cut into chaff, with the addition of a little hay, and one rod of Tares. On the 22d of June I began to give him a pint of Linseed meal a day, ground very fine, and a week after, two pints a day; he improved amazingly. Ten days after this, I changed the system a little, and gave him a compound of Linseed and chaff, as directed by Mr. Warnes, in his work on the cultivation of Flax. On the 8th of July I substituted oil-cake for the Linseed, giving him at first a cake a day, weighing 2 lbs. 2 oz, and 13 days after I increased the oil-cake to a cake and a half a day. During the whole time he had all the chaff he could eat, consisting of one-third hay and two thirds Wheat-straw. He was in the box six weeks before he was cleaned out, and I found no inconvenience from disagreeable effluvia; he was slightly littered every day, cleaned with a brush, and some pains have been taken to have him regularly and properly attended to. The box was cleaned out about a week since, when 19 very large barrows full of good manure was carted out. I have been and still am very particular in minutely noting down all the cost and management, as many of my neighbours are very sceptical as to the results; several boldly told me that the stench would be so great that the place would be unbearable, others that it would be too wet, and some that the animal would be so unhealthy that I could do nothing with it. I am happy to say that he is in a fine healthy state, getting flesh and size apace, and bids fair to be a beautiful animal, and, judging from what he has already eaten, I think he will pay me well for outlay and trouble. The box the animal is confined in is the stall of a stable railed off, whose dimensions are 11 feet by 7½ feet. There is one circumstance I regret in this experiment, namely, that the animal, a cross between a short-horn bull and a Suffolk cow, was so low in condition when put into the box; as I am convinced, that had he been, during the first 11 months (the period before I had him), well kept, he would have paid much better. Can any of your numerous readers inform me whether cows can be profitably kept in the same manner, and whether in box or stall-feeding they are more subject to gargret? *An Amateur Farmer.*

Climate a Hindrance to Agricultural Progress.—The valiant manner of your Peterborough correspondent would tempt me to quiz him, but I will merely say that he will find few farmers rejoicing at the clouds dropping fatness whilst their corn stooks are out, and still fewer of such an imaginative cast of mind as to be able to dispel, as if by the hand of a magician, "the bugbear of the seasons," and transmute every

seeming evil into a blessing. They have much to learn before they will be capable of "turning all weathers to account," and though skilled in horsemanship, they are as yet unfit to "ride on the whirlwind and direct the storm." Thus far by way of commencement, and now to the object of my letter, which is to declare and prove those seasons to be no bugbears, but stern realities. In the south of France the harvest is five or six weeks earlier than in England, and thus the French farmer in the south has that much time in the hottest part of the summer, in addition to what the English farmer is allowed, for growing other produce than that of grain from the same land. In short, the southern has a summer equal to one and one fifth of an English summer, which is equal to somewhere about 8*s.* per quarter. Then, again, he is favoured above his northern brethren by his harvest occurring in the driest and hottest season of the year, when there are long days for reaping and treading out the corn, without the loss attendant on securing grain in this country during a rainy or stormy season. As it may not be unacceptable to your readers to have my authority on the subject of the French harvest, I give it in two extracts from a private journal: "Toulouse, 19th, 20th, 21st, and 22d July, 1823.—As we passed up the Garonne, we found the agricultural people very busy at various employments, but chiefly at those connected with the grain harvest. Many were reaping and not a few mowing the stubbles; some were preparing a threshing-floor by ploughing a space in the open field, harrowing, and then beating it to make a smooth surface; others, both men and women, were threshing out the grain with flails resembling ours, or with long pliant rods, much curved, and composed of three or four pieces tied together side by side." "Montpellier, Tuesday, 29th July.—Last week we found the harvest completed in the country we passed through, and the farmers busily employed in getting grain out of the sheaf by means of horses, mules, or oxen. The animals, in pairs, are driven round in a circle upon a floor strewn with loosened sheaves, with frequently a large thin bell, like an old can, suspended from the neck. By the time a floor-full of corn is completed the straw is almost trodden into chaff, after which it is shaken and thrown in a heap on one side, and the grain sent up into the air with a spade to clean it in some measure before passing it through a riddle, suspended from the centre of a three legs." The reader will require to be informed, perhaps, that the harvest was a late one in England in 1823. *R. T., near Garstang.*

Farmers' Clubs.

North Cornwall Experimental Club: *Culture of Wheat.*—Mr. Adams said, the first care was the preparation, and here he believed, in many instances, much expense and real loss was entailed on the cultivator, by the practice of burning so much peat, a proceeding which was rendered necessary by allowing the arable land to remain so long in pasture. By breaking land earlier, at two or three years old, they obviated the necessity of burning, and struck at the root of a still greater evil; he meant the practice of allowing tillage land to remain four, five, and six years old, which rendered it necessary to make and burn peat, and considerably lessened the value of their pastures. If they took into consideration the value of the first and second years' crop of Grass seeds and compared it with the third and fourth years' produce, they would find a considerable falling off both in quantity and quality. These were times to oblige them to make the best return on their farms, that their skill and capital would allow, and it was his firm belief that this object would be the best accomplished by a constant succession of crops. Let them depasture their seeds for two years, and in July or August of the second or third year turn the land down with a skirting or veil share about 1½ or 2 inches thick; let it remain for a month, then put the drags or harrows over it, and they would find no turf left to impede the plough. Meanwhile the dressing should be in course of preparation, which ought to be laid on liberally. Depend upon it, for the poorer soils in their district, nothing paid better interest than a good coat of dressing for Wheat. His practice had been to plough the land into 10 furrow ridges, which, on thin soils, he considered preferable to flat ploughing, as it gave greater depth of earth to the plant. For cliff farms, and steep hills on inland farms, there was a most useful plough brought into the neighbourhood by the Rev. Mr. Wright, of Marham-church; it was shown at the last agricultural meeting, and a prize was awarded for it. It is a shifting plough with a skim coulter. These ploughs appeared to answer well in hilly ground, turning the turf most perfectly under the furrow. The usual methods of preparing hills were to spade and burn, or turn them down in the spring, give them another ploughing in the course of the summer, and in the autumn plough again before sowing. The expense of the first was considerable, and turning the earth two or three times the same way was a strong objection, as it would have to be brought from the bottom to the top of the hill again. Compared with either of these plans, the skim coulter-shifting plough was certainly much the cheapest; and this mode would require nothing further but to top-dress and sow. With regard to sowing Wheat, his practice had been, with one exception, to sow broadcast; the great objection he had to drilling on their exposed lands was, that it required the soil for autumn Wheat to be worked too fine; but for spring Wheat this was not an objection, and there were good reasons why the drill should be used for spring Wheat. The varieties of Wheat demanded much of the farmer's attention. He had had some experience in the cultivation of different varieties of that grain for the last 40 years, during which time he had seen many different sorts introduced into the neighbourhood. About 40 years since, there was a fine full-grained sort, called the Orange Wheat; so called from the colour. The first year he remembered it, it was said to be 40 bushels per acre. It continued to be sown a few years, and gradually declined both in quantity and quality. Then came a white Wheat, imported from Spain, called the Talavera Wheat—a very fine grain, and the yield of flour, from its thin skin, fine in sample. It was considered superior to most other sorts, and was extensively sown for several years, until there came a wet harvest, when, from its natural quickness to vegetate, almost the whole sprouted, and it was discontinued altogether. Next came a spring Wheat, which for a time was thought highly of, from its requiring so short time to be in the ground. It was said, if sown in April, it would be ripe in August, and be just the sort to sow where winter Wheat had failed. This grain was sown but a few years before it became very small, and infected with smut, and then was discontinued. During this time the principal sorts sown were the old red, and a large long-eared white Wheat; then came the red straw Wheat, which appeared to answer well in almost all soils; and for spring sowing, a short white Wheat, called the Winslow White, had been extensively sown. He was of opinion that these two sorts, like the North Devon bullocks, carry the greatest weight in the smallest compass. Lately there had been several new sorts introduced. The only one he was acquainted with worth mentioning was the red straw white, which produces large crops, but he doubted if it were profitable to the consumer. One essential point in the management of Wheat was to procure seed from a colder and poorer soil than our own. This in some measure would prevent smut, which, when abundant, was an indication that the vigour of the plant was degenerating, for want of a change of soil. Before Wheat changes its root, in the spring, the principal anxiety is to watch the progress of the wireworm, and as soon as the work of destruction begins, treading with all the flock well, and rolling with a very heavy roller or clod crusher were the best expedients to save the crop; and the greater the pressure the better. They next approached that part of the subject, in which they had shortly to engage, when they looked for the reward of their former labours, and after a good preparation with a good soil and good seed, they might expect a good crop. Where these had been attended to this year, he believed none of them should have reason to complain, for Providence had blest them with the promise of an abundant crop, and their care should be to harvest it well. The first step was reaping, which should be done before it became dead ripe. When left too ripe, there was a considerable loss both in the field and in the stack-yard, and the grain did not produce so white flour as when cut in proper season. *Cornwall Gazette.*

Review.

Table, shewing the number of Pipes, or Tiles, and the number of Roods, Yards, &c., in Agricultural Draining. By Edward Pond.

Eight inches square of cartridge paper, strengthened by a calico patch, containing useful information: no doubt—but which any schoolboy could calculate in half an hour, and offered to purchasers for at least 12 times the real cost of the article.

Calendar of Operations.

OCTOBER.

Bedfordshire Farm.—Wheat sowing has now commenced, and will for some time be the chief occupation, demanding the most attention on all arable farms. The weather at present, and for some days past, has been wet, and unsuitable for doing much on heavy soils. The ravages of slugs are also to be apprehended after so much rain, and should as much as possible be guarded against. A few quarters of slacked lime spread upon either Bean stubble or Clover ley, before ploughing, is in general a safe preventative against them, and less costly than the more usual practice of sowing lime at night, after the vermin have attacked the young Wheat plants. Two ploughings or effectual stirrings of Bean stubbles at intervals are also a good preventative of slugs. Light land Clover leys should be well harrowed after sowing, and properly consolidated by Crosskill's or some other heavy roller. We never saw much damage done where such precautions were used. Dr. Newington's dibble is finding its way around us, and less seed than usual will be more effectually applied. Our usual quantity has been from 4 to 6 pecks per acre, but this year we think less will be sufficient. Some of our neighbours still continue to use from 2 to 3 bushels of seed per acre, and to reap but from 20 to 25 bushels per acre. For several years past we have adopted an easy method of testing the yield of the Wheat crops after harvest. The result has been found so generally correct and satisfactory that it may interest some in detail. On entering a field we select a number of green twigs from the hedges or trees, and in going along each row put a twig in every thirtieth shock. The marked shocks are then left until the others are carried, when the average number are immediately threshed out or stacked by themselves for a convenient time. The produce of these in measured corn is then multiplied by 30, which gives the gross produce of the whole field, and that again divided by the number of acres at once shows the average agreable yield. We conceive such a test, so early in the season, interesting, and frequently important, not only as regards the whole crop, but single fields, which can seldom be stacked separately, so as to know the result of any change of cultivation. We have tied up some fatting beasts, which live upon Turnips, meal, and hay chaff. Nineteen steers have been soiled in the yards during the summer upon Grass, Clover, &c., and have thriven well upon a much less extent of land than they would have done if allowed the run of the pastures. They have also made about 160 tons of manure, which has been applied on the Wheat stubble for Tares. It is now full time to assist all grazing cattle with dry food, which are intended for winter fatting. Our sheep have for some time been living upon Clover, and folded at night upon the poorest land, preparatory for Wheat. The fatting sheep are now at Turnips, and the store flock have the run of the stubbles and pastures through the day, and at night folded on the stubbles intended for green crops. When wet the flock are not folded. The pigs have been lately running over the stubbles, and will now live chiefly upon steamed Potatoes, boiled Rye, and Barley. Small Potatoes are selling for from 8*d.* to 10*d.* per bushel of 60 lbs., in this quarter. The greater part of the crop is now generally raised. There is much less disease than usual; some of the crops also yield very largely. The common price of sound Potatoes is 50*s.* to 55*s.* per ton. Turnips are an average crop on the whole; the early ones have in most cases become mildewed, the late sown look very thriving. Mangold Wurzels are generally very fine. Hay and straw is plentiful and cheap in our neighbourhood. There is every appearance of an abundance of cattle food for the winter. Our labourers will prospectively be employed in planting Wheat and winter Beans, turning heaps of compost, digging up odd corners, threshing, getting up Turnips, attending upon stock, &c. The usual wage is from 9*s.* to 11*s.* per week; hours of labour, from 6 o'clock to 6 o'clock, with an hour and a half for meals. When the days get shorter, lower wages will generally be given, without a great alteration in the prices of agricultural produce. There are few unemployed men at present, and, as labour well directed is reproductive, it is to be hoped that those who are able will also be willing to give all the employment in their power. *R. V.*

Notices to Correspondents.

Barn Floor *Old Sub.* See "Gas-tar" below. They are sometimes made of lime grits, sand, and coal-ashes

Blood: *Norfolk.* Dried blood is worth as much as woollen rags, *i. e.* about 4*l.* a ton. One ton of dried blood is contained in five tons of liquid blood. Ordinary farm manure contains nearly ½ per cent. of nitrogen, liquid blood contains 3 per cent. of nitrogen.

Bone-dust in Compost: *Novice.* Nothing can be better. Add about 12 bushels to the quantity of earth and lime which you intend applying on an acre.

Buckwheat *Brentwood.* It is worth less than Barley as food. We do not know what the price of it may be "per peck;" but you may buy it wholesale of any corn merchant for 26*s.* to 32*s.* per quarter. We do not happen to know how the price rules at present.

Chalk: *R. W.* The chalky stratum will be an excellent dressing for the sandy top soil. Possibly it and all the beds above it are of diluvial origin, transported from different quarters according to the direction of the flood water which brought them

Cochin China Fowl: *J. K.* Mr. Nolan, of Dublin, can, no doubt, supply you. We know nothing of prices. See our advertising columns.

Cows: *H. T.* They are better for being turned out into an adjoining yard for an hour or two daily. "Chopped hay and straw, Linseed, and grains," are very good food. We have never used grains as food, and are unable to name a suitable quantity. Of Linseed we would not give more than 1½ lb. daily to a cow, and that should be boiled to a mucilage, and thrown over the chaff

Gas Tar, or Asphalte Floor: *J. P. R.* says, "Dig sifted gravel, such as is used for topping walks, and use coal-gas tar; level the ground perfectly; mix gravel and tar, two quarts of the latter to each bushel of the former, till every particle of gravel is saturated with tar. This is best done on a boarded or stone floor, spread evenly, about one inch thick; roll till hard with a heavy garden roller. When dry, add from two to five inches more, according to the purpose for which the floor is required. Roll as soon as laid, and frequently, until it is quite solid. Cost, at 6 inches deep, 9*d.* per square yard, at the following high prices: gravel, 1*d.* per bushel; gas tar, 4½*d.* per gallon; labour 1*s.* 6*d.* per day.

Horse Chesnut: *O. S.* We are not aware that the poison they contain hinders their use as food for cattle. We find it stated in the *Gardeners' Chronicle* for 1843, that in Switzerland they are crushed and given to sheep, 2 lbs. to each, in the morning and evening.

Interest on Capital *Scotia.* What share *ought* your tenant to pay of the 6½ per cent. interest which Government charges for its loan invested in the drainage of your farm? It is not, rightly, a question of partnership. Suppose your investment should not improve the land at all, you could not justly call upon him to pay any additional rent. If the land be let on lease, you will, of course, ascertain what the tenant is willing to do in the matter; and he will, no doubt, gladly pay the 6½ per cent. himself. If you have full command over the land, then you are entitled to receive from a tenant the market value of the occupation, whatever it be; and if any investment of yours should improve its value, it should increase its rent just in the same proportion, no matter what the cost of the investment, or the result of it may have been to yourself.

Potatoes on Wheat: *A. B.* Guano next spring on land which was heavily manured for Mangold this season, will grow anything. It, therefore, you prefer Potatoes, you may ensure a crop, so far as quantity goes: but it may be a 'quantity' of rotten tubers.

*** Communications reaching town after Wednesday cannot be answered till the following week.

Markets.

SMITHFIELD, Monday, Oct. 1.

The supply of Beasts is again large, but the choicest qualities are not very plentiful. The demand is exceedingly small; however, the best kinds do not suffer much reduction, but many second-rate remain unsold. The number of Sheep is rather less; it is, however, more than adequate to the demand. A few choice Downs still make 4*s.* The trade for Calves continues very bad. From Holland and Germany there are 943 Beasts, 4710 Sheep, and 58 Calves; from Leicester and Northampton, 2000 Beasts, from Lincolnshire, 400; and from Cambridge, 100.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	8 to 3	10	
Best Short-horns	3	4 — 3	6	
2d quality Beasts	2	6 — 3	2	
Best Downs and Half-breds	3	8 — 4	0	
Ditto Shorn	...	...	...	

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	3	4 to 3	6	
Ditto Shorn	...	...	...	
Ewes & 2d quality	2	8 — 3	2	
Ditto Shorn	...	...	...	
Lambs	...	...	—	...
Calves	...	...	2	0 — 3 0
Pigs	...	...	3	4 — 4 4

Beasts, 4700; Sheep and Lambs, 28,080; Calves, 171; Pigs, 190.

Friday, Oct. 5.

We have not so large a supply of Beasts as of late, and consequently trade is more cheerful. Owing to the favourable weather a tolerable clearance is effected, and the choicest kinds make rather more money. For the time of year the number of Sheep is a fair average, the demand has increased, and prices have advanced about 2*d.* per 8 lbs. We have but few Calves on offer. They are readily sold at fully 6*d.* per 8 lbs. more money. From Holland and Germany we have 276 Beasts, 1720 Sheep, and 25 Calves; from Leicester and Northampton, 400 Beasts; and 105 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	8 to 3	10	
Best Short-horns	3	6 — 3	8	
2d quality Beasts	2	6 — 3	2	
Best Downs and Half-breds	3	10 — 4	0	
Ditto Shorn	...	...	—	...

Best Long-wools	3	6 to 3	8	
Ditto Shorn	...	...	—	...
Ewes & 2d quality	2	8 — 3	4	
Ditto Shorn	...	...	...	...
Lambs	...	...	...	...
Calves	...	...	2	6 — 3 6
Pigs	...	...	3	6 — 4 8

Beasts, 1914; Sheep and Lambs, 6,960; Calves, 201; Pigs, 195.

COVENT GARDEN, Oct. 6.

Hothouse Grapes are plentiful. Peaches and Nectarines scarce and dear. Pine-apples have not altered since our last account. Filberts and foreign Walnuts are abundant; and there are also some good English Walnuts. Oranges are scarce. Lemons moderately plentiful. Among Vegetables, Turnips may be obtained at from 3d. to 6d. a bunch. Carrots from 4d. to 6d. Cauliflowers are less plentiful. Green Peas fetch about 4s. per bushel. Potatoes have not altered since our last account. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1s to 1s. 6d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropæolums, Fuchsias, and Roses.

FRUITS.

Pine-apples, per lb., 3s to 8s
Grapes, hothouse, p. lb., 9d to 8s
— Portugal, per lb., 9d to 1s
Peaches, per doz., 8s to 12s
Nectarines, per doz., 8s to 12s
Plums, per hf. sieve, 4s to 6s
Pears, per doz., 2s to 4s
— per half sieve, 4s to 6s
Apples, kitchen, p. bsh., 2s to 4s
Oranges, per doz., 4s to 6s
Lemons, per doz., 1s to 3s
— per 100, 8s to 16s
Almonds, per peck, 6s
— sweet, per lb., 2s to 3s
Walnuts, p. 100, 1s 6d to 2s
— p. bush., 16s to 24s
Filberts, per 100 lbs., 45s to 60s
Nuts, Bar., p. bush., 20s to 22s
— Brazil, p. bsh., 12s to 16s

VEGETABLES.

Cabbages, p. doz., 6d to 1s
Cauliflowers, p. doz., 2s to 6s
Broccoli, p. doz. bundl., 10s to 12s
Peas, per bush., 1s 6d to 4s
Sorrel, p. hf. sieve, 6d to 9d
Potatoes, per ton, 80s to 100s
— per cwt., 3s to 6s
— per bush., 2s to 3s
Turnips, p. doz. bun., 2s to 5s
Red Beet, per doz., 1s to 2s
Horse Radish, p. bdl., 2s to 6s
French Beans, p. hf. sieve, 1s 6d to 2s
Cucumbers, each, 2d to 6d
Leeks, per bunch, 2d to 3d
Celery, p. bundle, 8d to 1s 3d
Radishes, p. 12 bunches, 1s to 2s
Watercress, per doz. bunches, 4d to 6d
Carrots, per bun., 4d to 6d
Spinach p. sieve, 1s to 1s 6d
Onions, p. bunch, 2d to 6d
— Spanish, p. doz., 1s 6d to 4s
Shallots, per lb., 3d to 6d
Garlic, per lb., 3d to 6d
Artichokes, p. doz., 1s 6d to 3s
Vegetable Marrows, doz., 6d to 1s
Lettuce, Cab., p. sc., 4d to 9d
— Cos, do., 6d to 1s
Endive, per score, 1s to 1s 6d
Tomatoes, p. hf. sieve, 4s to 6s
Mushrooms, p. pot., 1s to 1s 6d
per bush., 3s to 6s
Small Salads, p. pun., 2d to 3d
Fennel, per bunch, 2d to 3d
Savory, per bunch, 2d to 3d
Thyme, per bunch, 2d to 3d
Parsley, p. doz. bun., 3s to 4s
— Roots, p. bdle., 1s to 1s
Marjoram, green, p. bun., 4d to 6d
Mint, green, per bunch, 3d to
Basil, green, p. bunch, 4d to 6d

POTATOES.—Southwark, Oct 1.

The arrivals of Potatoes up to the present time have been so few that we can hardly say the season has commenced at the wateraside. Those from the Continent have come very free of disease, and are selling at a low figure, considering their good quality. There is no doubt the quantity of Potatoes in England this year is greater than it has been since the first appearance of the disease. The following are this day's prices:—York Regents, 70s. to 80s. per ton; Scotch, 65s. to 70s.; foreign whites, 60s. to 65s.

HOPS.—Friday, Oct. 5.

Messrs. Pattenden and Smith report that there is a steady trade for the new growth, at the following prices. Yearlings are dull of sale, except for the finest sorts: those of 1846, 1847, and 1848 are in good demand, at rather more money. Duty, 80,000*l.*

Mid. and East Kents ... p. cwt. 130s to 210s
Weald of Kents ... 130 — 168
Sussex ... ... 126 — 147
Farnhams, p. cwt. 210s — 231s
Yearling Kents ... 70 — 110
Yearling Sussex 56 — 110
Old Hops 20 — 80

HAY.—Per Load of 36 Trusses.

Smithfield, Oct. 4.

Prime Meadow Hay	68s to 72s		Clover	60s to 90s	
Inferior ditto... ...	50	63	New Clover	—	—
Rowen	55	60	Straw	25	28
New Hay	—	—		J. Cooper.	

Cumberland Market, Oct. 4.

Prime Meadow Hay	70s to 78s		Inferior	65s to 84s	
Inferior ditto... ...	50	65	New Clover	—	—
New Hay	—	—	Straw	28	33
Old Clover	90	94		Joshua Baker.	

MARK LANE.

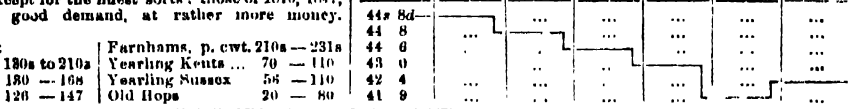
Monday, Oct. 1.—The supply of Wheat from Essex this morning by land carriage samples was moderate, from Kent good; the former was disposed of on about the same terms as this day se'nnight, but on the latter a reduction of 1s. per qr. was submitted to. Red foreign met a fair inquiry at slightly reduced rates.—Barley, both English and foreign, was a free sale at our quotations.—English Beans and Peas are each 1s. per qr. cheaper. Foreign are unaltered in value.—The Oat trade is slow, and prices 6d. per qr. lower for inferior qualities.—Floating cargoes of Indian Corn are held with increased firmness.

Friday, Oct. 5.—The arrivals of English corn during the week have been moderate, those of foreign Wheat and Barley large. English Wheat commands the extreme prices of Monday. Foreign meets a good inquiry, and red qualities must be noted 1s. per qr. dearer, but it is difficult to obtain any advance upon Dantzic.—We observe no alteration in the value of Barley, Beans, or Peas.—The Oat trade is rather heavy, but not lower.—Flour is in fair request, and held firmly at full prices.—Maize is in demand, and 28s. asked for floating cargoes. The weather has been excessively wet in this neighbourhood, and caused rather an increased inquiry for old foreign Wheat, chiefly red qualities, which enabled factors on Wednesday to obtain slightly enhanced prices. Letters from Scotland represent the harvest as being brought to a favourable conclusion.

Liverpool, Friday, Oct. 5.—There was a fair attendance of dealers at this day's market, and the demand took off all the new Wheat at Tuesday's prices; there was also a moderate sale for old Wheat on the same terms No change in Flour. Oats were steady, and in limited supply; but Oatmeal was very dull. Few transactions in Barley, Beans, and Peas.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Aug. 25.....	44s 8d	26s 4d	18s 10d	26s 5d	32s 2d	28s 8d
Sept. 1	44 8	26 3	19 3	27 0	32 3	28 6
— 8.....	44 6	26 9	18 4	25 11	31 2	29 7
— 15	43 0	27 1	18 6	26 7	30 8	30 1
— 22	41 9	27 1	17 10	25 11	29 9	30 0
— 29	42 4	27 4	17 11	25 2	29 5	31 3
Aggreg. Aver.	43 6	26 10	18 5	26 2	29 11	29 8
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.



Prices Current.	London. Sept 24 qr.	London. Oct. 1 qr.	Liverpool. Sept. 18. 70 lbs.	Liverpool. Sept. 25. 70 lbs.	Wakefield. Sept 21 qr.	Wakefield. Sept 28 qr.	Boston. Sept 26 qr.	Boston. Oct. 3. qr.	Birmingham. Sept. 27. 62 lbs.	Birmingham. Oct. 4. 62 lbs.
Wheat—										
New, red ...	38 to 43	38 to 43	6 0 6 6	6 0 6 6	43 to 48	41—46	38 to 42	36 to 41	5 2 5 8	5 0 5 7
„ white ...	42—48	42—48	6 4 6 9	6 4 7 0	45—51	43—49	40—46	40—45	5 8 6 0	5 6 6 6
Old, red ...	38—44	38—44	6 4 6 8	6 4 6 9	42—46	40—44	—	—	5 3 5 9	5 3 5 8
„ white ...	41—43	41—43	7 0 7 4	7 0 7 6	—50	—48	—	—	5 10 6 3	5 8 6 2
Foreign... ...	36—50	36—50	4 2 7 8	4 3 7 2	35—49	33—47	—	—	4 8 6 2	4 8 6 2
			480 lbs.	480 lbs.						
Rye—Old ...	22—24	23—26	—	—	—	—	—	—	—	—
Foreign...	20—22	20—22	—	—	—	—	—	—	—	—
Foreign meal	5*l.*—6*l.*	5*l.*—6*l.*	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	24—26	24—26	—	—	20—22	20—22	21—23	21—23	22—24	22—24
Malting... ...	26—28	26—28	30s—31s	30s—31s	28—33	27—33	—	—	29—32	29—33
Foreign... ...	18—26	18—26	—	—	21—26	21—26	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	37—40	37—40	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	18—25	18—24	3s 0d 3s 2d	3s 0d 3s 2d	—	—	14—19	14—19	19—27	19—27
Black...	17—22	16—22	2 1 2 5	2 1 2 5	—	—	—	—	18—20	18—20
Foreign ...	13—20	13—20	2 3 2 4	2 3 2 4	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	25—30	28—31	34s—	34s—	26—30	26—30	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	23—25	25—30	28 —29s	28 —29s	—	—	—	—	11—12	11—12
Foreign ...	24—32	24—32	29 —32	29 —32	—	—	—	—	—	—
Beans—										
New, small ...	25—37	23—29	—	—	32—34	32—33	32—34	32—34	12—13	12—13
Old	24—33	—	32 —35	33 —37	—	—	—	—	14—15	14—15
Foreign ...	21—36	21—36	24 —35	24 —35	30—31	28—30	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	36—41	36—41	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9*l.* 12s	9*l.* 12s	8*l.*—8*l.* 5s	8*l.*—8*l.* 5s	—	—	—	—	—	—
Foreign ...	7*l.*	7*l.*	—	—	—	—	—	—	—	—
Indian Corn—	22—26	22—26	27s—30s	27s—29s	—	—	—	—	12—13	12—13
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	32—40	32—40	31—32	30—32	—	—	32—38	32—38	34—36	31—34

Weekly Averages and Imports.	Aver. Oct. 2.	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	44 9	21050	44 9	—	45 3	10473	39 7	4651	42 4½	2122
BARLEY ...	30 2	7860	27 1	—	29 4	4023	23 0	255	—	2891
OATS... ...	20 3	13930	17 10	—	19 1	1352	15 5	2118	19 3½	564
RYE	24 10	—	25 11	—	—	—	—	—	—	—
BEANS ...	27 1	—	29 9	—	30 0	1003	32 10	105	—	382
PEAS... ...	31 11	—	30 0	—	31 1	452	—	—	—	1974
Signed	*Kingsford and Lay*		*Regar and Tunnicliffe*		*Sandars and Dinns*		*Thomas Wright*		*J. and C. Sturge.*	

Sales by Auction.

TO GENTLEMEN, NURSERYMEN, BUILDERS, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS will sell by Auction on the premises, Mile-end Nursery, Bow-road, on TUESDAY, Oct. 9, 1849, at 12 o'clock, by order of Mr. Howcroft, retiring from the business, the whole of the NURSERY STOCK, consisting of Evergreens; Ornamental, Fruit and Forest Trees; American Plants; a quantity of New Flower Seeds, Herbaceous Plants, and Box-edging; also three capital Greenhouses, Pit, Brickwork, an excellent Chaise, set of Chaise Harness, Rotten Dung, &c.—May be viewed prior to the Sale, and Catalogues had on the Premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS are instructed to submit to public competition, by Auction, on the premises, the Lion and Lamb, Lewisham, on THURSDAY, October 11th, 1849, at 11 o'clock, by order of the Executrix of the late Mr. Joshua Meade, the choice Stock of CARNATIONS and PICOTEES, PINKS, HEARTSEASE, and DAHLIAS; also Standard ROSES, CAMELLIAS, and a variety of other Plants; together with several two, four, and six-light Boxes, glazed Sashes, Hand lights, Sieves, Carnation-glasses, Iron Pump, capital Carnation Stage, 36 feet by 7½ feet, with canvas, &c; Carpenters' Benches, Nest of Drawers, Scales and Weights, Ladder, Barrow, a quantity of Manure Compost, and sundry effects. May be viewed prior to the Sale.—Catalogues may be had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

NURSERY STOCK.

MESSRS. PROTHEROE and MORRIS have received instructions to submit by Public Auction, on FRIDAY, Oct. 12 and following day, on the Premises, King's-road, Chelsea, opposite Cremorne Gardens, a portion of the VALUABLE NURSERY STOCK of W. Dennis and Co., the ground being required for building purposes. The Stock consists of fruit bearing Mulberry and smaller trees, very choice and varied collection of Gooseberries; Standard, Dwarf, and Pillar Roses; Evergreens and Flowering Shrubs, Cacti, Aloes, Camellias, and other Greenhouse Plants, &c. May be viewed prior to the Sale, and Catalogues had of the principal Seedsmen, on the premises, and of the Auctioneers, American Nursery, Leytonstone.

ASHFORD, KENT.

MESSRS. PROTHEROE and MORRIS have received instructions from the Assignees of Mr. James Cutbush, a bankrupt, to sell by Auction, on the premises, at Ashford, near the Railway Station, on WEDNESDAY, October 17th, the whole of the NURSERY STOCK, consisting of Fruit and Forest Trees, Ornamental and American Plants, &c.; also the Household Furniture, two 6-light Pits with glazed sashes, a very unique Rustic Summer-house with tables and chairs, Pony Chaise and Harness, Iron Roller, and sundry other effects.—May be viewed, and Catalogues had, a week prior to the sale, on the Premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS will sell by Auction, on the Premises, Brompton Nursery, Brompton, on Friday, Oct. 19, 1849, and following day, at 11 o'clock, by order of the Proprietor, the valuable NURSERY STOCK, consisting of a very large quantity of Evergreens, Standard and Dwarf Roses, Fruit and Forest Trees, Ornamental and Deciduous Shrubs, Large Specimens of Choice Ornamental Trees, A capital One-horse Cart, &c.—May be viewed prior until the Sale. Catalogues had on the premises; of the principal Seedsmen in London; of the Auctioneers, American Nursery, Leytonstone, Essex.

DALSTON.

MESSRS. PROTHEROE and MORRIS are favoured with instructions by Mr. J. Smith to offer to public competition by Auction, on the premises, Dalston Nursery, Middlesex, on MONDAY, October 22d, and following days, at 11 o'clock each day, in consequence of the Land being required by the London and Birmingham West India Dock Junction Railway Company, the valuable NURSERY STOCK, consisting of a very superior assortment of large Evergreens, American Plants, Ornamental Trees, Deciduous Shrubs, and Fruit and Forest Trees, in great variety.

*** From the adhesive nature of the soil, the plants will remove safely, and from their extraordinary size and magnificent growth, they well deserve the attention of Noblemen, Gentlemen, and the Trade. Further comment is superfluous. The stock being long well known as one of the finest, if not the best, in the trade.—May be viewed prior to the sale. Catalogues may be had, 1s each (returnable to purchasers), on the premises; the Shop, Covent-garden; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

WALLINGTON LODGE, close to the Carshalton Station, on the London and Epsom Railway.

MESSRS. BLAKE are directed to sell by Auction, upon the Premises, on THURSDAY, October 18th, at 12 o'clock, a valuable Collection of STOVE, ORCHIDEOUS, and GREENHOUSE PLANTS, the property of R. G. Loraine, Esq., who is declining further Horticultural pursuits, in consequence of his having disposed of the above estate. The above Plants, many of which are Specimen Plants, have for some years past been exhibited at the shows of the Horticultural and Botanical Societies with success, and are well worthy the attention of Plant-growers.—May be viewed three days before the sale, on application to Mr. Evan Jack, the Gardener on the Premises, of whom Catalogues may be had. Catalogues may also be had at the Inns in the neighbourhood; at Garraway's Coffee-house, Change-alley; of Mr. Chariwood, 14, Tavistock-row, Covent-garden; and of Messrs. Blake, Croydon, Surrey.

WOKING, SURREY.—VALUABLE NURSERY STOCK.

MR. WATERER begs to announce that he has received instructions from Mr. William Jackman, who is declining business, to Sell by Auction, on MONDAY, Oct. 22, and following day, all his valuable NURSERY STOCK on Hook Hill Nursery, near the Woking station on the South-Western Railway, comprising 1,000,000 Evergreen and other Shrubs; Forest, Plum, and other Trees; 250,000 Transplanted and Seedling Quick, &c. Further particulars will appear in future Advertisements; and Catalogues will be forwarded on application by letter, enclosing four postage stamps, to Mr. Waterer, Chertsey, Surrey.

TO NURSERYMEN AND OTHERS.
EDWARDS' NURSERY, BARNET.

MR. PHILIP PAGE will sell by Auction, on the Premises, on FRIDAY, Oct. 12, 1849, at 10 for 11 o'clock, without reserve, the valuable NURSERY STOCK: comprising 2000 Large and Ornamental Laurels, Handsome Green Hollies, Privet, Box, Arbutus, Roses, Gooseberry and Currant Trees, Large Standard and Trained Fruit Trees, &c.—May be viewed on the day before, and morning of sale, and Catalogues had on the Premises; Cross Keys, St. John's-street, Smithfield; and of Mr. Philip Page, Land and Timber Surveyor, Estate Agent, and Auctioneer, St. Alban's.

EXHIBITIONS AT THE GARDEN OF THE HORTICULTURAL SOCIETY OF LONDON, FOR THE YEAR 1850.

THE EXHIBITIONS WILL TAKE PLACE ON THE FOLLOWING SATURDAYS :—

MAY 18, JUNE 8, AND JULY 13.

SCHEDULE OF THE PRIZES.

FLOWERS.

Division I.—In which Nurserymen and Private Growers exhibit independently of each other.

A Pelargoniums ; in collections of 6 new and first-rate varieties, with perfectly distinct colours, cultivated with superior skill, in 8-inch pots. SG—CE—LS

N.B. The collections in which the varieties are most distinct *will have the preference.*

B Pelargoniums ; in collections of six varieties, in 11-inch pots. SG—CE—LS

N.B. Any plant that shall not have been actually grown in 11-inch pots will be disqualified.

C Roses, in pots ; in collections of 12 distinct varieties. GB—SG—CE

N.B. To be shown in May and June only, and in 18-inch pots. The Judges will disqualify any collection that shall be found to contain a plant which has been recently placed in the pot from the open ground, or that is shown in a pot of any other size than 18 inches.

D Yellow Roses, best six varieties. SK—SB—C

N.B. To be shown in June only, and really to be yellow; pale cream colours are inadmissible.

E Cape Heaths, in collections of 10 entirely distinct varieties. GB—SG—CE

N.B. It is expected that the same plant shall not be exhibited on more than one occasion. The Judges, in making their award, will give, both in this and the next letter, a marked preference to plants grown in their natural forms, without stakes or stays ; and will also take distinctness of species into favourable consideration. No duplicate will be allowable.

F Cape Heaths ; in collections of 10 entirely distinct varieties in 11-inch pots. SG—CE—LS

G Carnations, in pans of 24 distinct varieties. SB—C. *(In July only.)*

H Picotees, in pans of 24 distinct varieties. SB—C. *(In July only.)*

I Pinks ; in pans of 24 distinct varieties. SB—C. *(In June only.)*

N.B. Carnations, Picotees, and Pinks must be shown without cards, in boxes of four sixes, of the following dimensions :—From centre to centre, 3⅞ ins. ; from centre to outside, 2¼ do. ; depth at back, 7 ins., ditto front, 3½ ditto. The face to be painted light green. *No collections will be allowed to exhibit in which these conditions are not complied with.*

Division II.—In which Nurserymen alone can show.

K Exotic Orchids ; in collections of 15 species of superior cultivation. GB—SG—CE.

Division III.—In which all persons are admitted to equal competition.

L Calceolarias, in sixes ; in 11-inch pots. LS—SK—SB

N.B. To be shown in May and June only.

M Single specimens of very superior cultivation, excluding everything which can be shown singly in other letters, and plants not in flower. CE—LS—SK

N Stove or Greenhouse plants ; in collections of 20 plants. LG—GK—GB

N.B. Calceolarias, Fuchsias, Orchids, Pelargoniums and duplicates are excluded from all the four classes of Stove or Greenhouse plants.

O Stove or Greenhouse plants ; in collections of 15 plants. GK—GB—SG

P Stove or Greenhouse plants ; in collections of 10 plants. GB—SG—CE

Q Stove or Greenhouse plants ; in collections of 6 plants. SG—CE—LS

N.B. Exhibitors cannot show in more than one of the classes of Stove or Greenhouse plants.

R Greenhouse Azaleas ; in 12 distinct varieties. GB—SG—CE

S Greenhouse Azaleas ; in six distinct varieties. SG—CE—LS

N.B. No one can show in both classes of Azaleas.

T Greenhouse Rhododendrons ; in six distinct varieties. *(In May only.)* SG—CE—LS

U Collections of 6 New Hardy Evergreens grown in pots ; Conifers excluded. LS—SK—SB

N.B. Nothing will be regarded as new which has been in the nurseries more than three years.

V Conifers, in sixes, of new or very rare species, in not less than the third year of their growth. LS—SK—SB

N.B. *U* and *V* can only be shown at the exhibition in July.

W Exotic Orchids ; in collections of 20 species of superior cultivation. LG—GK—GB

X Exotic Orchids ; in collections of 10 species of superior cultivation. GB—SG—CE

Y Exotic Orchids ; in collections of six species. SG—CE—LS

N.B. Nurserymen cannot show in either of these three classes of Orchids. No exhibitor can show in more than one of them.

Z Exotic Orchids ; single specimens displaying *very* superior cultivation. SK—SB—C

N.B. No duplicate Medals can be here awarded.

AA Fuchsias ; in threes, of three distinct colours ; *in July only.* LS—SK—SB

BB Pelargoniums ; in six DISTINCT SPECIES, exhibiting superior cultivation. CE—LS—SK

N.B. By the word species is meant the wild kinds imported from the Cape of Good Hope, or New Holland, tuberous species inclusive, and not garden cross-breds.

CC Fancy Pelargoniums ; in sixes, in 8-inch pots. SG—CE—LS

N.B. No duplicate Medals can be allowed here.

DD Achimenes, in collections of six distinct varieties, exhibiting superior cultivation. CE—LS—SK. *(In July only.)*

EE Six distinct varieties of Tall Cacti in flower. GB—SG—CE

FF Roses of 50 varieties in loose bunches, each consisting of three trusses as they are gathered, so as to exhibit, as far as possible, the habit of the variety. CE—LS—SK

N.B. In July only. No one who exhibits in this letter can also compete in the following.

GG Roses, exhibited as in the letter *FF*, and in 25 varieties. LS—SK—SB. *(Private growers only can exhibit here).*

N.B. In June and July only. If Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to compete.

HH Helichrysums. CE—LS—SK

II Kalosanths ; in sixes. *(In July only.)* LS—SK—SB

KK Statices ; in collections of six species. CE—LS—SK

LL Ferns, in collections of 10 hothouse species of very superior cultivation. LS—SK—SB.

N.B. To be shown in July only.

MM New Hybrid Plants, exclusive of Roses, Rhododendrons, Azaleas, and Garden cross-breds, such as Gloxinias and the like. SG—CE—LS

N.B. It is certain that much may be effected by hybridising plants in common cultivation, such as Lilacs, Honeysuckles, &c. &c. This class will be judged by the Society's officers.

NN Epacrises ; in sixes. *(In May only.)* CE—LS—SK

OO Newly introduced or extremely rare ornamental plants in flower, not introduced by the Society. SG—CE—LS

N.B. These Medals will be awarded by the Society's Officers, and not by the usual Judges. Exhibitors will particularly observe that none but new or rare plants can be exhibited under this letter. *Nothing will be regarded as new which has been exhibited in the Garden or Regent-street in a previous season,* nor garden seedlings, hybrids, nor domesticated varieties of any kind. No prizes will be given to New Plants which have been introduced through the Society.

PP Miscellaneous subjects, exclusive of Ferns. SK—SB—C

N.B. Exhibitors under *P P* will not be thereby *entitled* to a pass ticket. Cockscombs, Heartsease, Hydrangeas, and bouquets, together with all plants for which separate prizes are offered as single specimens, are altogether excluded.

QQ Seedling Hybrid Pelargoniums, of entirely new crosses. SB—C

N.B. Every seedling must be shown singly, and marked with the name it is to bear. The same seedling cannot gain a prize more than once in the season. The plants must be shown in pots, and not in a cut state.

RR Alpines ; in twelves. SK—SB—C

SS Cinerarias ; in sixes, in 6-inch pots. *(In May only.)* SK—SB—C

N.B. Prizes will only be given to extremely fine specimens.

TT Hardy Heaths, in sixes. SB—C.

UU Seedling Florists' Flowers.

A tent will be provided for the exhibition of these ; but no medals will be awarded ; the Society not wishing to express any opinion upon the merits of seedlings.

FRUIT.

Market Gardeners, or Growers (not Fruiterers), in the habit of supplying the Market, and Private Gardeners, exhibit independently of each other. Fruiterers are not allowed to exhibit at all. No duplicate awards can be made in any case whatever, except in F. No person can take more than one award in each letter, except in B, E, K, M, O, P.

N.B. All Fruit must be sufficiently ripe for Market, WELL COLOURED, and PROPERLY NAMED by the Exhibitor, as far as practicable ; if the contrary, it will be disqualified.

A Peaches or Nectarines in pots. SK—SB—C

B Pine Apples, in single specimens :—
1. Queens. LS—SK—SB.
2. Envilles, Cayennes, Sugarloafs, Black Jamaicas, Otaheites, &c. LS—SK—SB
3. Providences. LS—SK—SB
4. Muscats. LS—SK—SB
5. Other sorts, distinct from the foregoing. LS—SK—SB

C Grapes in pots ; three specimens to be shown. CE—LS—SK

D Grapes, the heaviest single bunch of any kind. SK

E Grapes ; in three bunches for private growers, and six bunches for Market Gardeners :
1. Black Hamburgh, Black Prince, &c. LS—SK—SB
2. White Muscadines, Sweetwaters, &c. LS—SK—SB

F Peaches, in sixes. SK—SB—C

G Nectarines, in sixes. SK—SB—C

H Apples and Pears of the previous year. SB—C

I Figs, in sixes. SB—C

K Cherries, in dishes of 1lb. each :
1. Black. SB—C 2. White. SB—C

L Strawberries, in pots ; six pots to be shown. SK—SB—C

N.B. They must have grown in the pots in which they are shown.

M Strawberries, one dish each :
1. British Queen, &c. SB—C
2. Keens' Seedling, &c. SB—C

N Oranges, Citrons, &c., in pots ; no one to show more than one pot. LS—SK—SB

N.B. This class of Fruits is excluded if gathered.

O Melons, one specimen each :
1. The heaviest. SK
2. The best flavoured. SK—SB—C

P Other kinds of fruit of peculiar excellence and value.

N.B. The medals under this head will be given at the discretion of the Society's officers.

DUTCH BULBS, ROSES, &c.

MR. WM. HASLAM will sell by Auction, at the Auction Mart, London, on THURSDAY, October 11, at 12 for 1 o'clock, a fine assortment of HYACINTHS, CROCUSES, TULIPS, NARCISSI, ANEMONES, RANUNCULUSES, &c., the property of Mr. Corsten, of Haarlem ; also a large quantity of Standard and Dwarf ROSES, described in Catalogues, to be had at the Mart, and of the Auctioneer, South Essex Nurseries, Epping and Ongar.

IMPORTANT DISCOVERY TO MANUFACTURERS OF MANURE.

TO BE DISPOSED OF, for a moderate Royalty, the exclusive Right of a RECIPE for the ECONOMICAL MANUFACTURE of a MANURE or FERTILISER for CORN CROPS, by which the return may be quadrupled on the most barren soils. For particulars, apply (post-paid) to Dr. Jones, Lancych, near Newcastle Emlyn, South Wales.

FARM TO LET, in the parish of Croydon, Surrey, about 140 acres, with good buildings.—Apply by letter to J. S., 5, Upper Wellington-street, Strand, London.

TO BE SOLD, THE LEASE of the Old-established Twickenham Nursery. The Stock, or part of it, at the option of the Purchaser, to be taken at a valuation.—Apply to Messrs. Protheroe and Morris, Leytonstone, Essex, or Mr Laing, Twickenham, Middlesex.

TO NURSERYMEN AND SEEDSMEN.

TO BE DISPOSED OF, a Small Nursery and Seed Business, in a good neighbourhood, about 100 miles from London ; the present occupier is about to remove to a distant part of the country, to a vacancy caused by the death of his father. To any person who can command a small capital, the above will be found a very desirable situation. For further particulars, apply, post-paid, to A. B., Office of this Paper.

SLATE WORKS, ISLEWORTH.— The following articles, manufactured in Slate for Horticultural purposes by EDWARD BECK, may be seen in use at WORTON COTTAGE, upon application to the Gardener, Sundays excepted. Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot Water Tank Covers, Flower-beds for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c.

Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates ; can be laid on with great facility by farm-servants, or unpractised persons. Price 1d. per square foot. CROGGON'S PATENT NON CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel. Samples and Testimonials sent by post on application to CROGGON and Co., 2, Dowgate-hill, London.

AGRICULTURAL DRAINING : THE DERBY LEVEL.—A Very Superior Draining Level, of great simplicity, price 3l. 5s., to be had of the maker, JOHN DAVIS, Optician, Derby. The above is securely packed and sent to any part of the empire.

WIRE-WORK, HOT-WATER APPARATUS, GREENHOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS on improved and economical principles.

Parties waited on in Town and Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

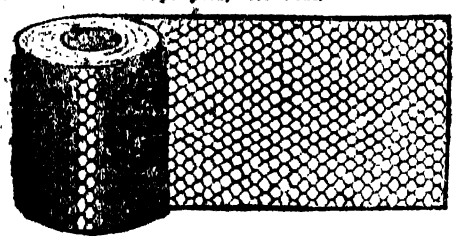
PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, CHARLES FRANCIS and SONS, Nine Elms, London.

IMPROVED FOUR-HORSE PORTABLE STEAM ENGINES AND BOXING OR THRESHING MACHINES.

FREEMAN ROE AND HANSON, Southwark Iron Works, and 70, Strand, beg to call attention to their Steam-Engines and Threshing Machines, which are more economical in fuel, for the quantity of work done, than any before the public. They may be seen any day at their works, Sumner-street, Southwark Bridge-road.—Water-rams for raising Water. Deep Well Pumps; Baths, Hot-water Apparatus; Fountains. Towns supplied with Gas or Water.

BIRMINGHAM CATTLE EXHIBITION, 1849.—The Birmingham and Midland Counties Exhibition of FAT CATTLE, SHEEP, PIGS, and POULTRY, will be held on Tuesday, Wednesday, Thursday, and Friday, the 11th, 12th, 13th, and 14th of December next. Printed Certificates for the several Classes may now be obtained, together with copies of the Prize Lists, on application to the Honorary Secretary. All entries must be made on or before Saturday, the 17th of November.—T. B. WRIGHT, Hon Sec., Union-st., Birmingham.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.

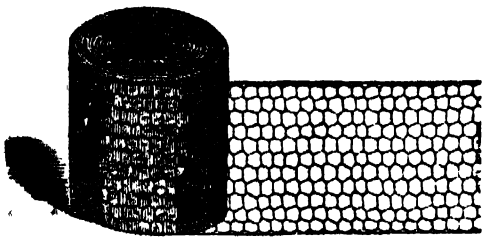


	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d. per yd.
2-inch " strong " ...	9 "	6½ "
2-inch " extra strong " ...	12 "	9 "
1½-inch " light " ...	8 "	6 "
1½-inch " strong " ...	10 "	8 "
1½-inch " extra strong " ...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough Hull, or Newcastle.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c., 22, PARLIAMENT-STREET, WESTMINSTER, LONDON; CASTLE-BUILDINGS, DERBY-SQUARE, LIVERPOOL; 128, HIGH-STREET, EDINBURGH; and 32, ST. ENOCH-SQUARE, GLASGOW, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9d.; 24 ins., 1s.; 30 ins., 1s. 3d.; and 36 ins., 1s. 6d per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost ..	£3	15	0
Do. of 100 yards, 24 ins. wide	5	0	0
Do. of 100 yards, 30 ins. wide	6	5	0
Do. of 100 yards, 36 ins. wide	7	10	0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

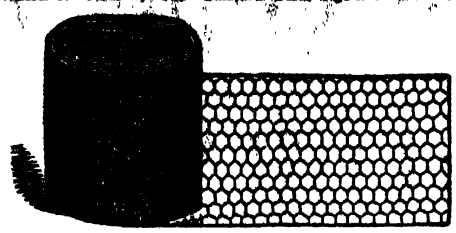
C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s. is equal to 2½ yards of another article in the market, the same width, at 9d. per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

METCALFE'S ALKALINE TOOTH-POWDER will be found to be the best that has yet been produced; it contains no acids, nor anything (that can injure the finest enamel; it thoroughly removes the tartar and all impurities, produces that beautiful white appearance so much to be desired, and its fragrant perfume tends to sweeten and purify the breath. M. and Co., from the many years they have been celebrated as Tooth-brush Makers, have had opportunities (that occur to few) of testing the relative merits of those powders that have been brought before the public. They have now succeeded in procuring the receipt from which the above Powder is prepared, and confidently recommend its universal adoption. Wholesale and retail at METCALFE, BINGLEY, & Co.'s, Brush-makers to H.R.H. Prince Albert, 2s. per box. Caution.—The genuine powder will have the Royal Arms, combined with those of H.R.H. Prince Albert, on the lid of the box, and the signature and address of the firm, thus: "METCALFE, BINGLEY, and Co., 130 B., Oxford-street, London."

WIRE NETTING, ONE PENNY PER SQUARE FOOT.



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THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 41—1849.] SATURDAY, OCTOBER 13. [PRICE 6d.

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GARDENERS' BENEVOLENT INSTITUTION.—NOTICE is hereby given that an ELECTION of TWO PENSIONERS on the Funds of this Charity will take place in January next. All persons desirous of becoming Candidates are requested to send in their petitions to the Committee on or before the 21st inst. (after which time they will not be received), together with full testimonials as to age, length of servitude, income, and means of subsistence, without which petitions will be rejected. By order of the Committee,

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All other American Plants at equally low prices, printed Catalogues of which may be had.

Dwarf Rose Stocks, fit for working, 8s. per 100, or 2s. 6d. per dozen.

WM. ROGERS sen., Nurseryman and Contracting Planter, Red Lodge, near Southampton

NOW SENDING OUT BY YOUELL AND CO.

THE FINEST CARNATIONS, PICOTEES, AND PINKS.

YOUELL AND CO.'S Extensive and Celebrated Collection of the above are this season unusually strong and healthy, and are now ready for sending out, in fine well-rooted plants, to any part of the United Kingdom, or for exportation, at the following prices:

25 pairs of finest first rate show varieties of Carnations and Picotees		£5	0 0
12 pairs do do. do.		2	10 0
25 pairs of very fine show varieties of do. do.		3	0 0
12 do. do do do.		1l. 4s. to 1	10 0
Fine mixed border ditto—per dozen pairs		0	12 0
True old Clove per pair		0	2 0

PINKS, finest first-class show flowers, 12s., 18s., and 24s. per dozen pairs.

PANSIES, do do., 10s. to 18s. per dozen.

CAMELLIAS of the newest and best kinds, with flower-buds, 30s. per dozen.

CINERARIAS, do. do, 12s. to 18s. per dozen.

ERICAS, comprising the best autumn and spring-flowering kinds, 12s to 18s. per dozen.

ROSES, Standards, Half-standards, and Dwarfs, of the finest kinds in cultivation, 12s to 18s per dozen.

THE FINEST DUTCH HYACINTHS, &c.

YOUELL AND CO. have received their importation of the above in the finest condition, and are enabled to offer very superior HYACINTHS by name, comprising double and single Red, Blue, White, and Yellow, at 6s., 9s., and 12s. per doz.

HERBACEOUS PLANTS (hardy), of the very best sorts, 6s. and 9s. per doz.

TRUE FASTOLFF RASPBERRY.

Y. and Co. beg to announce they are now executing orders for the above in fine strong Canes of the same stock as they had the honour of supplying Her Majesty's Gardens and most of the Nobility. 15s. per 100.

Fine large WHITE RASPBERRY, 24s. per 100.

STRAWBERRIES.

YOUELL AND CO. beg to offer the following to Growers of this highly esteemed Fruit, all of which are warranted correct to name:

	per 100—s.	d.		per 100—s.	d.
Alpine White	3	6	La Liegeoise	5	0
,, Red	3	6	Martham Scedling, fine and early	7	6
Austrian Scarlet	3	6	Myatt's Eleanor	10	6
Carolina	3	6	,, Globe	7	6
,, round white	5	0	,, British Queen	3	6
Coul, or Sir G. Mackenzie's late scarlet	3	6	,, Pine-apple	5	0
Cuthill's Black Prince	10	6	,, Eliza	3	6
Downton	5	0	,, Prolific	5	0
Elton Pine	3	6	,, Mammoth	7	6
Grove End Scarlet	3	6	Prince Alice	3	6
Hooper's Seedling	5	0	Roseberry	3	6
Hautbois (prolific)	5	0	,, black	5	0
,, large fruit	5	0	Royal Pine (fine)	5	0
Keens' Seedling	3	6	Swainston's Seedling Pine	3	6
Kitley's Goliah, p. doz.	12	0	Turner's Pine	5	0

Agents for the sale of Kitley's Goliah Strawberry, very hardy, large, and of delicious Pine-apple flavour, at 12s. per doz.

Fine Giant Asparagus, 2 and 3 years old, strong, 2s. 6d. and 3s. 6d. per 100 Sea Kale, strong, 2s. per dozen.

RHUBARB, Youell's Tobolsk, the earliest known, 9s. 12s. per dozen; Linnæus (Myatt's), 2s. each; Prince Albert (Mitchell's), 2s each; and Queen Victoria, 1s.

Post-office orders are respectfully requested from unknown correspondents.—Nursery, Great Yarmouth.

RENDLE'S CHEMICAL PLANT MANURE should be used by all who wish for a good bloom of Hyacinths, Tulips, and other Dutch roots. Sold in tin canisters at 2s., 3s. 6d., and 5s. each. For further particulars apply to

WILLIAM E. RENDLE and Co., Union-road, Plymouth.

N.B. Our extensive premises are adjoining the Plymouth Station of the South Devon Railway, and our sales of Guano have exceeded 6000 tons during the last five years.

BROMHAM HALL MELON.—It is requested that all persons wishing to procure seeds of the above Melon, should make application to Mr. E. TILEY, 16, Pulteney-bridge, Bath, as he is now in possession of the entire stock.

H. BUNDY, Dynevor Castle.

PELARGONIUM "FOQUETT'S MAGNIFICENT."

Strong plants, well established, in 4-inch pots, now ready, price 2l 2s. each; and as more stock has been realised than was anticipated, four plants will be given for every three ordered by the Trade.—Direct to Major WILLIAM FOQUETT, Shide House, near Newport, Isle of Wight.

LAUREL PLANTS.—FOR SALE, several Thousand very fine healthy well rooted Laurel Plants, of various heights. Will be delivered at the Railway Station, Salisbury, at 25s. per thousand, in quantities not less than 1000.—Apply to Mr. JEFFERY, Wardour, Salisbury.

SPLENDID NEW GERANIUM.

SYMONS'S "FIELD MARSHAL."

THIS is a Striking and Noble Flower, with a remarkably fine habit, great freedom of bloom and substance of petal. The truss is large and thrown well above the foliage, on stout erect foot-stalks; the colour of the upper petals is a deep rich scarlet, with an intense dark spot, the lower petals are fine crimson. It is a most decided improvement, and will make an admirable show variety. Its only fault is an occasional unevenness in the upper petal. It was exhibited at the Seedling Geranium Exhibition at Upton Park, on the 15th of June last, when it was one of the four that received prizes. See report of the Exhibition, and description of flower, in No. 19 of the "Florist."

Messrs. VEITCH and Son are now prepared to send out strong well established plants of the above at 5l. 5s., 6d., with the usual discount to the trade.—Exeter, Oct. 13.

GAINES' SEEDLING FANCY AND OTHER GERANIUMS, to be sent out in October.

GEM.—Upper petals rosy purple, belted with white; lower petals white, with a spot in each of rosy purple; 10s. 6d.

DELIGHT.—Upper petals crimson purple belted with white, lower petals white, with purple spot in each, 10s 6d.

MADAME MALIBRAN.—Rosy lilac, edged with white, with a white spot in the upper petals; 10s. 6d.

ORESTES.—Upper petals bright rosy crimson, with purplish spot; under petals crimson purple, with white centre; the best of its class; 21s.

MADAME ALBONI.—Upper petals shaded crimson, under petals rosy lilac; 7s. 6d.

NIMROD.—Upper petals crimson purple, with crimson spot; lower petals crimson purple, veined; 10s 6d.

HERO OF SURREY.—Upper petals nearly black, belted with pure white; lower petals white, with a carmine spot in each; 10s. 6d.

SEEDLING SHOW GERANIUMS.

ELECTRA.—Upper petals fine rose with crimson spot, margined with orange, centre pure white; 42s.

URSA MAJOR.—Upper petals crimson, belted with rose; under petals rose, excellent shape, colour of Orion; 31s. 6d.

LADY EVELYN.—Fine pink, with a dark crimson spot in the upper petals, very distinct, fine form; 31s 6d.

FLYING DUTCHMAN.—Upper petals rosy scarlet, with dark spot, margined with orange; under petals rose—a perfect model; 31s. 6d.

PRINCESS HELENA.—Orange, with crimson spot in the upper petals, fine form; 21s.

GRENADIER.—Bright crimson, with a dark spot in the upper petals; the best of show flowers; 21s.

DUCHESS OF ARGYLL.—Bright pink, crimson spot in the upper petals; 21s.

THE MOOR.—Upper petals nearly black, edged with rose; under petals rose, shaded with scarlet, a dark spot in each, finely pencilled, quite a novelty, 31s 6d.

NEW AND DISTINCT SCARLET GERANIUM.

CERISE UNIQUE.—This is the greatest novelty of the season, the flower is a bright cherry colour, perfectly round, very large truss, free bloomer, a fine horse-shoe leaf; the stem and foot-stalks of the flowers are transparent, like a coral. It obtained a prize at the Royal Botanic Exhibition, and a first-class Certificate at the Floricultural Society, 10s. 6d.

Many of the above also obtained prizes at the same societies. A Descriptive Catalogue will be ready for distribution early in October.—Nursery, Surrey-lane, Battersea.

PELARGONIUMS "GIPSY BRIDE," "CONSTANCE," &c.

W. BRAGG begs to inform his Patrons and Cultivators in general that he is now sending out these new and superb varieties, raised by EDMUND FOSTER, Esq., of Clower Manor, for description of which, and flowers of other raisers of former years, see Catalogue, which can be had on application; likewise of Carnations, Picotees, Pinks, Pansies, Roses, Hollyhocks, Dahlia roots, &c.

LADY GRENVILLE, FANCY DAHLIA, having gained 11 first-class certificates, viz., Royal Sound London, London Floricultural Society, Highgate, Wycombe, Thame, Teddington, Aylesbury, Norwich, Newbury, Birmingham, and Slough; first in class showing at the London Floricultural Society twice, extra first prizes in money at Aylesbury, South London, Teddington and Slough, will be let out in dry roots, should there be enough subscribers in the trade.

Star Nursery, Slough, October 13.

VIOLA ARBOREA—the PERPETUAL TREE VIOLET (true).—In answer to the numerous inquiries for the above, and the great satisfaction given by the plants sent out last season by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful double Violet now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented, the blooms are as large as the double blue Hepatica, they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation, and in loose soil, as the Violet will thrive and bloom finer there than in wet or clayey borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads, and hundreds of blooms on them at the same time. Large bushy plants, 6s. per dozen; smaller do., 3s. per dozen, or 2l. per 100.

E. T. has this year a fine stock of plants of the VIOLA ARBOREA ALBA, or Double White Tree Violet, which can be highly recommended. Plants 1s. 6d. each.—Also plants of that splendid YELLOW VIOLET, which has been so much admired at the London exhibitions; in colour it is equal to the Crocus. Strong plants 2s. 6d. each; or a plant of each of the two distinct varieties ordered with either dozen of the above will be inserted for 5s. for the two plants. A remittance must accompany the order, either in cash or in penny postage stamps to the amount.—Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney Bridge, Bath.

DANECROFT EARLY GREEN PEAS.—This superior early PEA, with a dark green glossy pod, being hardy, and of a most distinct habit to all other early Peas, as well as a superior flavour, can be had of FREDERICK WARNER, Seedsman, Wholesale and Retail, 28, Cornhill, and 3, Laurence Pountney-lane, Cannon-street, London.

SPLENDID NEW GERANIUMS.

MESSRS. VEITCH AND SON have now ready for delivery strong, well-established Plants of the following beautiful varieties, which they can confidently recommend.

Aspasia, Gaines'	15s. 0d	LadyClementine,Gaines'	15s. 0d
Belle of the Village, Hoyle's	10 6	Lyra, Gaines'	15 0
Berengaria, Wood's	7 6	Meleager, Gaines'	15 0
Brilliant, Topping's	10 6	Refulgent, Beck's	10 6
Crusader, Hoyle's	15 0	Rolla, Hoyle's	10 6
Elegans, Topping's	10 6	Sparkler, Hoyle's	10 6
Flamingo, Hoyle's	7 6	Star, Beck's	10 6
		Superlative, Hoyle's	7 6

This set of 15 for 6l. 6s., or a selection of any 12 for 5l. 5s.—Parties taking Geraniums to the amount of 5l. 5s. will have a strong plant of Symons' Field Marshal sent gratis on the lot.—A general list can be had on prepaid application.

Exeter, Oct. 13.

TO MUSHROOM GROWERS.

SAMUEL CHEESE begs to inform Gentlemen, Gardeners, Nurserymen, and the trade in general, that they can be supplied with his Superior MUSHROOM SPAWN at 5s. per bushel, usually charged 7s.; warranted the best that can be produced. Any quantity can be safely packed and forwarded to any part of the known world on the receipt of a Post-office order for the amount. As the supply is limited early orders would be advisable. No order can be attended to unless for ready money.—Address, Flora Gardens, Bayswater, London.

AUG. VAN GEERT, NURSERYMAN, Ghent, Belgium, offers the following fine specimens of CONIFEROUS PLANTS at moderate prices:

	£	s.	d.
2 Cryptomeria japonica, 9 feet high, each	6	0	0
2 Dammara australis, 9 feet high, each	4	0	0
1 Dacrydium taxifolium, 10 feet high	3	0	0
1 ,, cupressinum, 10 feet high	10	0	0
1 Araucaria Cunninghamii, 8 feet high	12	0	0

A. V. G. also begs to inform his friends, and the public in general, he has still a good stock of Camellias, with flower buds, of the best sorts. Plants from 3 to 5 feet, from 7s. 6d. to 20s. each; and smaller, from 7l. to 10l. per 100. Fine Camellia Stocks at 25s. per 100.

N.B. His printed Catalogue will be sent free, on application to Mr. J. BETHAM, Shipping and General Forwarding Agent, Cox and Hammond's Quay, Lower Thames-street, London.

DOUBLE LILY OF THE VALLEY.

J. REID begs to offer plants of the above Flower, so justly esteemed for its fragrance and delicate blossoms. It only requires to be seen to secure for it a place in every garden.

	s.	d.	
Fine strong roots of the above	1	6	per dozen
Double Snowdrops	1	6	per 100
Large yellow Crocus	1	3	per 100
Large Scotch do.	1	6	per 100
Feathered Hyacinths	3	0	per doz., or 4d. each
Lilium auratiacum	2	6	per doz, or 3d. each
,, Martagon flore pleno, scarlet, large roots	5	0	per doz., or 6d. each
,, flavum	2	6	per doz, or 3d. each
Crown Imperials, fine mixed	3	0	per doz., or 4d. each
Double yellow Tulips	2	6	per dozen
,, brown and yellow striped do.	2	6	per dozen
20 fine late Tulips in 20 varieties	4	0	

Delivered free to the Bath or Chippenham stations on the Great Western Railway.

J. R. also begs to inform the public that he will commence sending out early in November the true GERMAN PRUEN PLUM, the best in cultivation for Preserving, and also for Table use, in November and December, when fruit is scarce. I succeeds well as a Standard. This season, when all other Plums are a failure, the Pruen is groaning under its violet load.

Small Trees 2s 6d. | Second size ... 5s.
In full bearing ... 10s.

Samples of the Fruit will be sent in exchange for four postage stamps.

N.B. The Stock being limited, J. R. can only guarantee to supply early orders.—Post-office orders are requested to be made payable on the Bath office, to JOHN REID, Mount Scilla Nursery, near Chippenham, Wilts.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, FERNS, &c.

J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. They have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. By means of these houses, they are enabled to grow Stove, Greenhouse, Ferns, and other Plants, in such immense numbers, that they are sold at LESS THAN HALF-PRICE: Mats, Mushroom Spawn, and everything connected with the Nursery and Seed departments; Plans, Estimates, and Catalogues forwarded on application.

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15l. 10s.; a do. do. 15 by 10, 22l. 10s.; a do. do. 18 by 12, 28l 10s.; a do. do. 21 by 12, 32l. 10s., including a plan for brickwork. Light Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 11½d. per foot; 2-inch do., 1s. per foot.—J. Lewis's Machine Hothouse Works, Stamford-hill, Middlesex.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm-servants or unpractised persons. Price 4d. per square foot. CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel. Samples and Testimonials sent by post on application to CROGGON and Co., 2, Dowgate-hill, London.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—This description of Glass has been greatly improved, and we can now supply it free from strings and all irregularities of surface, perfectly flat and at the same price as charged by the Patentees, cut to order in panes of

14 by 10 under	1½ foot...	5½d.	1½ foot under 2 feet... 6d.
3 feet ,,	4 feet..	6½d.	4 feet ,, 5 feet... 7d.
5 feet ,,	6 feet...	7½d.	6 feet ,, 8 feet... 8½d.

PACKETS IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10s. 6d. 7 by 5 and 7½ by 5½...12s.
8 by 6 and 8½ by 6½...13s. 6d. 9 by 7 and 10 by 8 15s.

Milk Pans from 2s. to 6s. each, Metal Hand-frames, Tiles, and Slates; Propagating Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d; 6 tubes, 10s. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

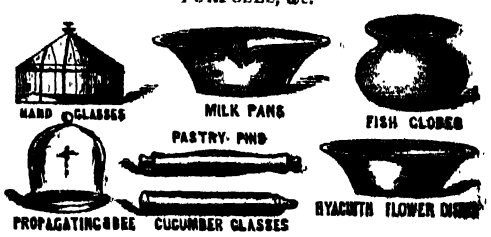
JAMES PHILLIPS and CO., 116, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES, &c.

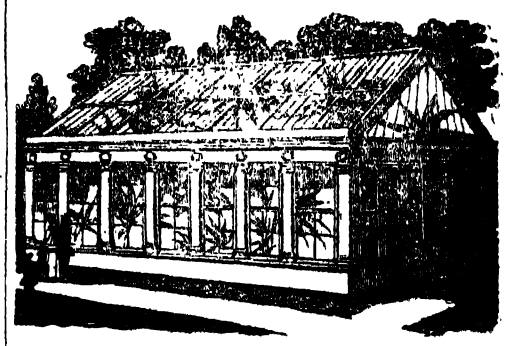
HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 38, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4d per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had on application at the warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.



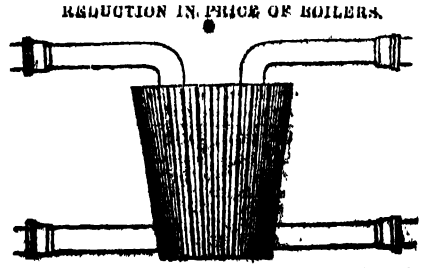
GRAY, ORMSON, AND BROWN, Denvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Hughorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

GRAY, ORMSON, and BROWN, have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.

REDUCTION IN PRICE OF BOILERS.



BURBIDGE AND HEALY beg respectfully to inform their Friends, in consequence of the present reduced price of iron, they are enabled to make a considerable reduction in the price of their Boilers. The price will be, now:

10 in. will warm	50 ft.	4 in.	pipe	£1	15 0
12 in.	do.	75 ft.	4 in. do.	2	5 0
14 in.	do.	100 ft.	4 in. do.	2	15 0
16 in.	do.	150 ft.	4 in. do.	3	10 0
18 in.	do.	250 ft.	4 in. do.	4	10 0
21 in.	do.	350 ft.	4 in. do.	5	10 0
24 in.	do.	450 ft.	4 in. do.	7	0 0

NEW PATTERN BOILERS.

30 in. will warm	800 ft.	4 in.	pipe	15	15 0
36 in.	do.	1500 ft.	4 in. do.	22	0 0

All Boilers with double ashes, up to 18 in., 5s. extra; to 24 in., 10s. extra; all above, the same price.

180, Fleet-street, London, Oct. 13.

TULIPS, HYACINTHS, AND DUTCH BULBS.

HENRY GROOM, Clapham Rise, near London, by appointment, FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to state that he has received his usual assortment of HEACINTHS and other BULBS from HOLLAND in very fine condition. He also begs to say that his CATALOGUE OF BULBS, &c., for the Autumn, is ready, and will be forwarded by post on application.

HERTFORD NURSERIES.

E. P. FRANCIS'S New Descriptive Catalogue of ROSES for the ensuing season is now ready, and will be forwarded free on application.

AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER has much pleasure in announcing he has published a Descriptive Catalogue of his extensive collection of RHODODENDRONS and other American plants, &c., which will be forwarded on application.

DOUBLE ROMAN AND PAPER WHITE NARCISSUS, 4s. per dozen.—The above Bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have been just received at A. CONSETT'S Italian and Foreign Warehouse, 18, Pall-mall, near Waterloo-place. Also Dutch Hyacinths, Crocus, Tulips, Anemones, Ranunculus, &c.; priced Catalogues of which may be had per post.

BENJAMIN R. CANT, St. John's-street Nursery, Colchester, has now ready for delivery, strong well-established plants of the following:

GERANIUM, HOYLE'S CRUSADER	...	7s. 6d. each.
,, TOPPING'S BRILLIANT	..	7s. 6d. ,,
FUCHSIA SPECTABILIS	...	7s. 6d. ,,

The Three for 18s., carriage and package free to London. Post-office orders, or reference, requested from unknown correspondents. The usual discount to the trade.

IVY FOR SALE.—Some of the finest IVY grown in England, of different sorts, at a very moderate rate, as the proprietor intends to clear it off his grounds.—Apply to CHARLES WARE, Carpenter, Sutton, Surrey.

JOSEPH BAUMANN, NURSERYMAN, Ghent, Belgium, begs to inform his friends and the public in general, that his New CATALOGUE of PLANTS is just published, and may be had gratis, or will be sent post-free on application to Mr. JOHN BETHAM, Custom House and Shipping Agent, Cox and Hammond's Quays, Lower Thames-street, London.

TALL, HANDSOME EVERGREENS, & DECIDUOUS TREES, well rooted in an adhesive soil, for immediate effect.

J. J. FOSTER, of the Edgware Nurseries, has an unusually fine Stock of the above, at very low prices, which can be delivered in London, cost-free. They consist principally of Portugal Laurels, Green Laurels, Arbor Vitæ, Yews, Hollies, Spruce, Scotch Fir, Weymouth Pines, Larch, Laburnums, Maples, Limes, Horse Chesnuts, Hornbeam, Beech, &c., with a quantity of small Spruce, for evergreen hedges. Roses, also, and Fruit-trees of the best kinds, are extensively grown. Omnibuses leave the Old Bell, and Black Bull, Holborn, and pass the Nurseries, five times a day; fares, outside 1s., inside 1s. 6d. Prices forwarded on application to the Edgware Nurseries.

ALEXANDER LAING, NURSERYMAN, Beverley, begs to inform the public that he will send Atkinson's new Seedling FUCHSIA "ALBONI" out the second week in October, at 5s. 6d. each; no discount, but one plant will be given over for every three ordered. A. L. begs to refer to extracts from the *Gardeners' Chronicle*; also to the Gardeners' and Farmers' Journal.

(*From the Gardeners' Chronicle.*)

"FUCHSIAS: *A. L.* Very much reflexed in the lobes of the tube, and distinct on that account from most others: colours of the tube pale blush, corolla rosy pink; flowers good in texture, colours, and proportions, but rather small."

(*From the Gardeners' and Farmers' Journal.*)

"Atkinson's Alboni, an excellent variety of unusual attractions; tube short, stout, but well proportioned; colour, blush; sepals broad, obtuse, and well expanded, the same tint as the tube, tipped with pale green, flushed a shade or two deeper on the inner portion, corolla excellent, describing half a circle. The peculiar attraction of this flower consists in each petal of the corolla being beautifully and distinctly margined with bright rosy scarlet on a pale blush ground, the inner portion being beautifully tinted with the same. We consider this a novelty, for such decidedly is an acquisition to any collection."

NEW GERANIUMS, STRONG PLANTS NOW SENDING OUT AT VERY LOW PRICES.

BASS AND BROWN have a large, strong, and vigorous stock of the following, well established in 4-inch pots. They are prepared to receive an immediate shift, and will make fine specimen plants for exhibition.

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The set of 18 in the following list	...	..	£3 10 0
12 varieties of ditto, our own selection	...		2 2 0
12 ditto, purchaser's selection	.	.	2 15 0

Or less than 12 at the prices attached.

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,, Elegans	...	5 0	,, Ditto, No. 2	...	5 0
Beck's Emelia	...	5 0	Hoyle's Flamingo	...	5 0
,, Princess	...	5 0	,, Prometheus	..	5 0
,, Refulgent	...	5 0	,, Rolla	...	5 0
,, Star	...	5 0	,, Sparkler	...	5 0
,, Symmetry	...	5 0	Whomes' Princess Helena		3 6
,, Sundown	..	5 0	,, Queen Victoria.		5 0
,, Harlequin (Nancy)		3 6	,, Windsor Castle		5 0

Selections from the following first-rate varieties.

20 varieties, of our own selection	...	£1 5 0
12 Ditto ditto	..	0 15 0
20 Ditto, selected by purchaser	...	1 10 0
12 Ditto ditto	...	1 0 0

Viz.: Armada, Aurora, Banchus, Folly's Black Prince, Blanche, Cavalier, Camilla alba, Centurion, Cassandra, Clara, Competitor, Cracker, Duke of Hamilton, Empo, Fair Rosamond, Flora's Flax, Forget-me-not, Gigantic, Guillaime, Gustavus, Horace, Isabella, Jenny Lind, Minna, Mrs. Milman, Mrs. Brock, Negress, Painted Lady, Perl, Perfoles, Priory Emperor, Rachel Superb, Rebecca, Rosamond; Rosa Mundi, Scarlet Defiance, and Star of the West.

A LARGE COLLECTION OF FINE OLDER VARIETIES, at 9s. per dozen, our own selection, such as Josephus, Rosy Circle, Orion, Desdemona, Isabella, Mustee, Margarette, &c.

NEW CHRYSANTHEMUMS.

12 strong and bushy plants, best new varieties of last season, for flowering fine this autumn	...	...	£0 15 0
40 new and select (including the above)	...	...	1 0 0
24 ditto, 15s.; 12 ditto...	...	...	0 9 0

Goods carriage free to London, or any station on the London and Birmingham, and extra plants sent gratis with orders of 40s. and upwards.

Our Autumn Catalogue is now ready, comprising our splendid collections of Ranunculuses, Gladiolus, Iris, early and other choice Tulips, Anemones, imported Dutch Hyacinths, and other roots; select Roses, herbaceous plants, &c. &c.

Remittances requested from unknown correspondents. Post-office orders payable to HARE and HARPER, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

ROSES, &c.

EDWARD DENYER, NURSERYMAN, Loughborough-road, Brixton, near London, informs his Patrons his fine collection of AUTUMNAL ROSES may now be seen in full bloom; also his annual importation of DUTCH ROOTS have arrived in fine condition. He also invites attention to his extensive stock of FRUIT AND ORNAMENTAL TREES AND SHRUBS of the finest growth, of all sizes. Gardens and Pleasure Grounds laid out and planted to any extent.

E. D. is desirous of informing his customers he has no seed shop in London. A general list sent on a prepaid application, by inclosing a twopenny stamp.

PINUS (ABIES) DOUGLASII, DOUGLAS'S PINE.—The Subscriber having succeeded in raising from seed a fine stock of this most MAGNIFICENT CONIFER, now offers them for sale, and which is thus described by Dr. LINDLEY, in the *Gardeners' Chronicle* of October 17, 1846, page 693—"Height, 215 feet; greatest circumference, 57 feet 9 inches; at 167 feet high, 17 feet 5 inches, which by calculation must contain 287 loads of timber." This description of its magnitude, the several beautiful specimens now growing at Dropmore (and some few other places), and planted when first introduced 18 years since, seem likely to realise, having made an average growth of 3 feet per annum on ungenial soils. Strong healthy plants, 6 inches high, in pots, 2 years old, 10*l.* per 100; 30*s.* per dozen; 3*s.* 6*d.* single plants. A few fine specimen plants, 2 to 5 feet, 7*s.* 6*d.* to 42*s.* each.—W. ROGERS, Nurseryman and Contracting Planter, Red Lodge, near Southampton.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 13, 1849.

THE attention of those interested in combining sanitary improvement with improved cultivation, was last week called to some experiments performed by Mr. JASPER ROGERS, at the Mechanics' Institute, on the properties of PEAT CHARCOAL. The result of the experiment was to convince most of those who were present, that peat charcoal is at least a powerful deodorising agent. This subject, however, is one of so much importance, that we are anxious to draw special attention to it, in order that further experiments may be tried, and a larger number of facts placed before the public.

It has long been known to chemists that both animal and vegetable charcoals have a remarkable affinity for the vapour of water and for various gaseous bodies. Although it appears that this absorbing power varies according to the texture of the wood from which the charcoal is made, the denser the wood the greater being the amount of gaseous matter absorbed, yet the following estimate of the quantities of various gases absorbed in 24 hours by charcoal of boxwood, and given by DE SAUSSURE, will be found near enough to the truth to assist judgment for all practical purposes.

	Volume.
Hydrogen	1.75
Nitrogen	7 5
Oxygen	9 25
Carbonic oxide	9.42
Olefiant gas	35
Carbonic acid	35
Nitrous oxide	40
Sulphuretted hydrogen	55
Sulphurous acid	65
Muriatic acid	85
Ammoniacal gas	90

It will be seen, at a glance from this Table, that a body capable of absorbing such large quantities of carbonic acid, sulphuretted hydrogen, olefiant and ammoniacal gases, must be a powerful deodoriser. This was fully demonstrated in Mr. ROGERS's experiments. Two parts by weight of charcoal, with one part by weight of night-soil, were mixed together in a machine made for the purpose, and the result was the production of a compound which gave out little more odour than the charcoal itself.

We shall not stop to inquire here in what form the gases of night-soil are held by the charcoal, so as to prevent their escape: for whether they undergo chemical change, or are held by some physical force, their tendency to diffuse themselves is very small indeed. As a deodoriser, then, there can be little doubt of the power of charcoal, but still if it had no further value, and the question was between it and some of the various preparations of chlorine, we should unhesitatingly give our preference to the latter.

The process of deodorisation, however, is mostly demanded for substances which have a value as manures. Hence it becomes a matter of first-rate importance that the body used as a deodoriser should not be injurious as a manure. It has been often shown in the pages of the *Gardeners' Chronicle* that many of the chemical reagents recommended as disinfectants and purifiers of decomposing animal and vegetable matter are not only themselves injurious to vegetation, but frequently arrest those processes which alone can make manures useful. It is then a subject of great interest to ascertain with regard to charcoal, whether in virtue of its own properties, or any it may derive from being mixed with decomposing vegetable and animal matters, it is fitted to act as a manure.

With regard to unmixed charcoal, whether animal or vegetable, there is abundant evidence to prove that it is a valuable manure. It was at one time supposed, and this opinion was held by Sir HUMPHREY DAVY, that charcoal and wood-ashes acted favourably as manures on account of the carbon of the charcoal uniting with the oxygen of the air, and thus forming carbonic acid gas, which was thus directly supplied to the roots of plants. Most chemists maintain, however, that this does not take place whilst the carbon retains the form of charcoal, and we must look for an explanation of the beneficial effects of charcoal to other causes. In the first place, then, it appears that all charcoals contain in them the inorganic constituents of the plant from which they are obtained. Hence they may become a source of supply of some of the inorganic elements required by plants. In the next place charcoal exerts its affinity for gaseous matters without being directly mixed with them. Like clay, chalk, magnesia, humus, and garden mould, it has the power of absorbing moisture, carbonic acid, ammonia, and other substances from the atmosphere, and thus of conveying them directly to the roots of plants. We are not aware that any extended series of experiments has been made on the relative absorbing powers of soils, but we know from SCHUBLER'S* experiments that humus possesses the power of absorbing moisture in the highest degree, and humus in its physical character and chemical composition closely resembles charcoal.

Although we have no direct experiments to prove what is the way in which such substances as clay, chalk, and humus act beneficially in soils, yet we know that they are powerful absorbents of water, carbonic acid, and ammonia; and as these are the very constituents which plants most need for food, and as plants flourish best in soils of this kind, we conclude that it is on account of their supplying these elements of the food of plants that such soils are beneficial. This argument leads therefore to the conclusion that charcoal acts a manure by first absorbing moisture, carbonic acid, and ammonia from the atmosphere, and then yielding them to the plants which it surrounds.

Now, if charcoal is thus adapted to act beneficially alone, there can be little doubt of the advantage to be gained if we can so mix it, before applying it to the soil, as to make it yield at once, not only an additional quantity of the inorganic matters required by plants, which matters it does not itself possess, but also that moisture and those gases which, when applied in its pure state, it must obtain from the atmosphere. This appears to be effected by mixing charcoal with animal excretions in the way proposed by Mr. ROGERS. We understand that his compound has been tried as a manure, and we are not surprised to hear very favourable accounts of its success.

The first point upon which any question can be raised is that of expense. The advantages of charcoal, as a manure, may be purchased at too high a price. For the ordinary kinds of charcoal burned in stoves, 8*l.* or 9*l.* a ton is given, but this is an absurd price to give for a passive manure, such as charcoal. The project, however, of burning peat in Ireland is represented to afford a prospect of obtaining peat charcoal at much less than this; Mr. ROGERS mentions 50*s.* a ton as a probable sum, to which we presume must be added cartage, freight, and sundry other expenses. Provided peat charcoal acts in the same way as other charcoals, that price might put it within the reach of the farmer and gardener as a manure. But this is, as we have formerly observed, exactly what we shall not believe until it is actually in the market at that price.

From the following composition of peat charcoal, as given by Mr. PHILLIPS, we should not infer that its effects would be different from that of other charcoals.

Carbon	79.24		
Hydrogen	2.20	88.42	combustible matter.
Nitrogen	0.54		
Oxygen	6.44		
Land and clay	2.48		
Oxide of iron	1.66		
Phosphoric acid	0.34	11.58	incombustible matter.
Silicate of potash	0.98		
Chloride of sodium ...	2.53		
Carbonate of lime ...	1.85		
Sulphate of lime	1.44		
Loss	0.30		
	100.00		

We have, however, heard urged against the use of this substance the very serious objection that from the large quantity of sulphur and iron it contains, a sulphuret is almost certain to be formed, which would inevitably lead to spontaneous combustion. We have been assured that such accidents have occurred, and we venture to solicit information on the point from some of our Irish correspondents. The quantities of sulphates and iron, as recorded in the analysis given by Mr. PHILLIPS, strike us as being too small to give rise to spontaneous combustion.

With regard to any plans for using charcoal as a deodoriser in our towns and cities, or the best

* Agriculturchemie.

time, place, and means of mixing it with the refuse for use, these are points for discussion hereafter, when the article which Mr. Jasper Rogers has brought before the public shall be in the market at a price which will make it worth using,—an event about which we are not particularly sanguine.

Cholera has nothing to do with Gardening, say most men; others maintain that it belongs to vegetable as much as animal physiology—the Potato disease being mere vegetable cholera! Be that as it may, the attempts now making to identify Cholera with the attacks of Fungi bring the question directly under our cognizance, and we make no apology for admitting it to our columns.

The independent researches of at least three observers, confirmed by several competent persons, in whose hands the objects have been placed, go a great way to prove that in rooms and districts infected by Cholera, certain bodies are found in the atmosphere and water, which occur also in the rice-gruel evacuations, characteristic of the disease, and under other concomitant circumstances; that these bodies increase in number and size, in accordance with the virulence of the attack; and at last, as the patient recovers, entirely vanish. Exceptions indeed occur, as mentioned by Dr. Brittan, in the "London Medical Gazette;" and we have a letter from a very intelligent practitioner and excellent naturalist at Bristol, in which he informs us that he has had patients where the water was supplied by pipes from a healthy district, though he does not lay very great stress upon the point, as one barely negative. The questions which interest us most are, first—What is the nature of the bodies spoken of? and, secondly, Are those which are found externally and internally, identical?

As regards the first, we have had an opportunity of examining fresh specimens, and find a perfect accordance, as far as our observations go, with the rather undecided figures of Dr. Brittan, making a protest, however, against his interpretation of the corpuscles as annular or cup-shaped. A very powerful microscope is by no means necessary for their examination, for a doublet of about 250 linear will show their structure with the greatest precision. In a specimen of rice-gruel evacuations which we have examined, we find generally dispersed, but more especially in the sediment, cells of various sizes, mostly elliptic, but sometimes subglobose, or irregular, with even by no means plicate or collapsed walls, containing evidently a second membrane filled with a grumous mass, and occasionally one or two cytoblasts. Many of these cells are ruptured, but even in this state the walls have sufficient strength to prevent their collapsing. In one instance, which we have figured, we observed a cell presenting a curious form, exactly corresponding with what we have seen occasionally in germinating spores of Mucor and Oidium. So far, no one the least acquainted with fungi could have a doubt as to their nature. There is indeed no mode of increase apparent, such as is observed in the growth of yeast fungus, but no great weight would be attached to this circumstance. Dr. Brittan, however, states that these cells increase considerably in size, produce young cells within their walls, and at length give birth to a number of new individuals, on the absorption of the mother vesicle. His figures are not, indeed, very clear, though sufficiently so, with the help of the text, to leave no doubt as to the author's meaning.

If, then, the connection between these compound bodies and the smaller cells be established, their nature becomes extremely doubtful. No such mode of propagation exists, as far as we know, in fungi. There would be then nothing analogous to mycelium, but each sporangium would give rise to a number of encysted sporangia, very much after the fashion of hydatids. We must have recourse to the lower Algæ for analogous forms, such as *Protococcus* and *Microcystis*, but without finding any perfect identity; not to mention the fact that the discoveries of Mr. Thwaites and others have been daily showing that these and allied genera are more complicated as to the structure of their gelatinous thallus, and its connection with the reproductive organs, than has been hitherto acknowledged, and that it is very improbable that vegetables of this class should be propagated under such circumstances.

We do not wish for a moment to throw cold water on Dr. Brittan's discoveries; our own observations, as stated above, up to a certain point, confirm what he has published, and we mean only to recommend due caution. Those persons who have decided positively as to the fungoid nature of the bodies have, we think, been far too hasty. The true method of ascertaining the relation of the several objects in question, would be to watch their growth in the way we have formerly recommended, by placing a small drop of fluid, containing the corpuscles, on a slip of glass, covering it with a plate of microscopic glass sufficiently large to leave a ring of air round the compressed liquid, and simply luting the edges of the upper glass with wax, so as to cut off all communication with the external air. It will soon appear, by their further progress, whether the bodies from condensed air, water, and the several choleraic secretions, &c., are identical. If the elliptic bodies, which so strongly resemble the spores of fungi, germinate and produce fruit, it will be seen that they are not identical with the compound encysting cells, and their fungous nature will be established; if, on the contrary, they proceed to a further degree of development without germinating, producing the compound cells, we may be sure that they are no form of animal cellular tissue nor hydatids, and may then consider whether they are Algæ, or whether they really belong to some new type of Fungi, in which the mycelium is altogether repressed.

The experiments may be varied so as to show what chemical compounds retard or prevent their development, and if it be shown that they have actually anything to do with the propagation of Cholera, curative plans of treatment may be suggested. We do not trouble ourselves with questions as to the possibility of the disease being thus propagated, or whether the bodies may be merely present accidentally, and not necessarily. Such enquiries may be left to the consideration of those whose peculiar province it may be to make such investigations. It is well, however, in such matters, not to jump too hastily to conclusions; and these remarks may help to show that the matter, however interesting, is at present too imperfectly studied to warrant any very general deductions.

THE EFFECT OF PRUNING ROSES, AND ON THE VARIOUS MODES OF PERFORMING IT.

The pruning of the Rose is a most important process in the general culture of the flower. Very few standards are properly treated, and they always take three seasons to bring them into form, if they are maiden trees, which means one year's growth from the bud. Generally speaking, they have one strong rod, as it were, the season's growth from the bud. However strong this rod may be, it should be cut down to the two or at most three lower eyes. These will the first year give you two or three strong branches, which at the end of the second season should be also cut down to two or three eyes each, and the third year there will be something like a head. After this you have not only to cut back all the branches to the lowest two eyes, but you have to cut clean out any that are in each other's way, or grow inwards, and fill up the centre of the head, for the branches should never be allowed to crowd each other, and the head should be thinned so as to give plenty of light and air.

In pruning avoid leaving snags, but cut close to the eye, in a sloping direction, with the eye at the upper part of the slope on the opposite side. In cutting branches out, cut close to the base, and on no account leave bits of shoots sticking out; they die back and often cause canker. In all pruning, the less there is left beyond the eye the better, for the shoots all decay back to the eye and often further. In pruning standards there is one rule that may be adopted with advantage, although neither practised nor thought of by a great many people—cut so that the end eye left shall be outwards or downwards, even if you have to leave an eye more than you wish; it is so essential to the good form of the tree, that an eye more or less is not of so much importance; by not attending to this the head takes an awkward direction. It is a good plan also to examine the trees when they are pushing out their buds, and to rub off any that you see ill placed, such as would grow inwards or cross other branches, for it is far better to prevent them coming than to have to remove them at pruning time.

The short-jointed smooth-barked varieties of Rose that bloom all the year nearly, only require to be thinned; invariably cut out all those weakly shoots, and prevent the head from being crowded, but no branches should be shortened, except to preserve a good form, instead of permitting them to ramble; weakly shoots never do any good, and they exhaust the nourishment that would help the stronger ones. All through the summer the decayed flowers should be instantly removed. If the pods of seed are allowed to swell, the plant will cease to bloom until the seed is full grown, but remove them daily as they fade, and the plant continues vigorous, the bloom abundant.

In pruning, treat dwarfs the same as standards; at first cut within two or three eyes of the ground, the next season cut the branches back to two eyes each, and so continue with the secondary growths, with this difference, that you allow them to continue growing inwards instead of thinning out the centre so much, because we require a dwarf Rose to be well covered; simply abide by the rule to cut away all weakly shoots, and if any young wood comes from the bottom, cut it down to two or three, instead of doing as hundreds do, cut it nearly down to the same height as the bush. Let every bud of new wood that starts from the bottom produce the same as the parent, and as you get new healthy wood in this way, cut out some of the oldest branches to make room for it.

The training of the climbing sorts on walls, houses, pillars, and on arches, depends much on the sorts. The first two branches that come should be laid down right and left, the distance they are to cover. If they will not reach, they must be lengthened by the end shoots till they will. This being done, the shoots at every eye may be trained upwards until they reach the end of their journey. Of course this is a work of time, and some care is requisite. The shoots must be gently restrained in the direction they are to go, and when the wood is strong enough, must be nailed firmly with shreds. When the shoots have reached the extremity of the place they are to cover, the tops may be pinched off, and from time to time, wherever the side shoots come too thick, they must be thinned. The branches must not be allowed to hang about and get confused, but the lateral shoots should be spurred in, and the plant kept within bounds by occasional pruning during the summer, especially cutting back all the shoots that have flowered, to make fresh growth. When the bloom is over in the autumn, all the side or lateral branches may be cut in to one, or at most two eyes, so that the whole length of the Rose rods will be nothing but short spurs.

Some of the so called climbing Roses make extraordinary growth, and do best almost running wild; but these should never be planted where neatness and precision are at all necessary; they would do well to ramble up old trees, or cover the thatch of an old barn or shed, but they make too much growth to be at all adapted for pillars, house-fronts, or arches intended to be kept in high order.

As a general rule, it should be remembered that close pruning produces noble flowers, but that where number rather than the size of the blooms is an object the use of the knife may be relaxed a good deal. Every eye that breaks produces its quantity of flowers, according to the habit of the Rose; and if we cut the branches back to only two eyes, we of course limit the quantity, whereas if we allow half a dozen to break, we have three times the quantity, and there are cases in which Roses may be allowed to grow apparently wild, especially in those wilderness-like borders which distinguish many approaches to mansions. In such cases the treatment of the bushes or climbers would be approaching total neglect. A wandering or hanging branch of a climber might require fastening up; and with regard to the bushes, the cutting out of old wood might be of service, but beyond this they might be allowed to do as they like. Tree Roses, too, may be less rigidly pruned where they are not prominent features, and seen only at a distance, because the size of the flowers is of less consequence than the quantity.

Roses in pots require much the same style of pruning as those in the ground, but as they are generally more restrained as to size, the sort should be carefully selected for the purpose of pot culture, and the rambling kinds as well as very robust growers avoided. *Crito.*

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(*Continued from p.* 630.)

Sept. 13.—Section D.—Dr. Russell read a letter to the Section from Mrs. Whitby, of Newlands, *On the Culture of Silk in England.*—It is well known that the great difficulty of rearing the silkworm in England arises from the common species of Mulberry not producing its leaves sufficiently early to feed the young worms as they are hatched. There can be no doubt that, could the production of silk become an occupation of our peasantry, it would be a source of great comfort to them; and to those who are interested in this question, the following extract from Mrs. Whitby's communication to the Section will be read with pleasure:—"From the period when I had the honour to place before you an account of my early trials, I have paid attention to the cultivation of the Mulberry, especially of that species which I introduced in 1846, viz., the Morus multicaulis of the Philippine Islands. I have three other kinds of white Mulberry, which all grow well at Newlands; but as none are so easily propagated as the multicaulis, or bear so great a weight of leaf, I have increased my plantation with them chiefly. I said, in my letter to the Royal Agricultural Society in 1844, that it was as easy to do so as to propagate the Willow. I now say that it is much easier, and the produce is more abundant. The produce of leaf this year has been immense; and even now, after having plucked them closely to feed my silkworms, they are strong and vigorous, and present a luxuriance of growth scarcely to be credited unseen. I find the cuttings which are rooted in the open ground produce stronger and healthier plants than those struck under glass. One of my early pupils has a productive nursery at Godalming of the Morus alba; many others in different parts of England are planting; and if gentlemen in England and Ireland, who have a few acres or roods of land to spare, would plant Mulberries for posterity, as they do their Oaks, we should in a few years be independent of other countries for our supply of raw silk. With regard to the rearing of the silkworm (as their habits become more practically known to me), I find less and less difficulty in bringing them to perfection; and am confirmed in my belief, that, with due attention to their peculiarities, they may be reared in England as easily as in any other country, and with as little loss by death. Equable warmth throughout the period of their existence (which may be shortened or prolonged at pleasure) cleanli-

ness, classification, and ventilation, with the adaptation of the food (as to its maturity) to the different ages of the insect, will insure success. I have been this season very successful in rearing the worms I was able to hatch; they had no disease of any kind; they made their cocoon in 30 days, and the silk I have been able to wind off is as strong, and bright, and beautiful, as that which, in 1844 and 1845, was pronounced superior to the best Italian raw silk."

ON THE ODOURS OF PLANTS, AND THE MODES OF OBTAINING THEM.

Neroli or Orange Flower.—Few odours have a more extensive use in the art of perfumery than this; it is in no way altered by separation from the plant, hence, when on the handkerchief, it does not alter or become faint like many other perfumes; it forms the basis of the famed eau de Cologne. It is procured from the Citrus Aurantium flowers by distillation; also from the same by maceration in any fat body; the former yields what is found in the market under the name of oil of Neroli, and as such is used in scenting soaps and for other secondary purposes; the latter being somewhat finer in fragrance, has a more delicate use. By digesting in alcohol it gives Extrait de Fleur d'Orange or extract of Orange Flowers, a handkerchief perfume surpassed by none. It resembles the original so much that with closed eyes the best judge could not distinguish the scent of the extract from the flower. In the first process, namely, by distillation, the water which comes over is put back into the still upon fresh flowers, and the operation is repeated several times; the oil of Neroli finally floats on the surface, and is separated by a funnel. The water being left is filtered, and as it is highly charged with the odour of the flower finds a sale under the name of Orange flower water, and is used, like Elder water, for the skin, and as an eye lotion.

Orange procured from the same plant as the above, but from the rind of the fruit instead of the flower, is expressed in the same way as Lemons; the peel of the fruit is rasped, in order to crush the little vessels that imprison the oil or odour; it may also be procured by distillation. Its abundance in the peel is shown by pinching a piece near the flame of a candle; the true essential oil that spirts out ignites with a brilliant illumination. It has many uses in perfumery, more particularly in that preparation called "Lisbon water," also in "Eau de Portugal," both of which are solutions of the oil of Orange peel in proof spirit, to which is added a small quantity of Lemon and Vervain and Ambergris by the Parisians; it is what is called a particularly clean scent, sharp and refreshing.

Patchouly, *Poyostomon Patchouly*.—It has been said by a very eminent French perfumer that this odour was "a disgrace to the art;" such, however, is the result of fashion, that a year or two ago no lady of *ton* was perfect unless she was enveloped, as it were, in the fragrance of this Indian plant, the odour of which is very peculiar—a sort of dry, mouldy, or earthy smell—not very enticing, certainly, by description, and much less so in reality; the characteristic smell of Chinese or Indian ink is owing to an admixture of this plant in its manufacture In the vegetable world it is the most permanent of odours. The origin of its use is this: a few years ago real Indian shawls bore an extravagant price, and purchasers could always distinguish them by their odour; in fact, they were perfumed with Patchouly; the French manufacturers at length discovered this secret, and u ed to import the plant to perfume articles of their make, and thus palm off home-spun shawls as real India! Some people put the dry leaves in a muslin bag, and thus use it as we do Lavender for scenting drawers in which linen is kept: this is the best way to use it, as this odour, like Musk, is most agreeable when very dilute. The oil or true odour part of Patchouly, may be readily procured by distillation; the leaves and stalk alone are used. "The extract of Patchouly" is prepared by digesting the plants in pure alcohol, or better by adding the oil as above prepared to the spirit, in which it is very soluble, in the proportion of about ½ oz. of the former to a pint of the latter; when this "extract" is sweetened by the addition of two measures each of Rose, Jasmin, and Verbena, it forms an agreeable bouquet for the handkerchief. Patchouly does not combine well with soap, at least, the alkali in the latter destroys its odour; it has no other use in the arts but as a perfume, and in the shawl trick.

Pink (*Dianthus superbus and Caryophyllus*), emits a most fragrant odour, "especially at night," says Darwin.

"The lavish Pink that scents the garden round,"

is not however at present applied in perfumery.

Pea.—A very fine odour may be abstracted from the Chick Vetch, by maceration in any fatty body, and then digesting the pommade produced in spirit; not being very fashionable, it is but rarely prepared, when in demand it is mostly an imitation that is sold, made with extracts of Orange flower, Tuberose, and Rose. *P.*

BENTHAMIA FRAGIFERA.

We have been favoured by a friend with the following representations of Benthamia fragifera. This plant was raised, in 1825, in the garden of J. H. Tremayne, Esq., at Heligan, in Cornwall, from seeds received from his relation, Sir A. Bulwer, during his residence in the East Indies. It flowered and fruited for the first time in Europe, at Carclew, in 1832, producing large, globular, reddish fruit, at a little distance, offering considerable resemblance to the fruit of the Strawberry.

Fig. 1 is a sketch of the parent tree, as seen at Heligan, in September 1848. Its height was then 22 feet 6 inches. The circumference of the stem, at 5 feet from the ground, was 1 foot 9 inches, and at 3 feet, 1 foot 11 inches. Fig. 2 measured 21 feet in height; a handsome tree, richly clad with branches and foliage, of a greyish aspect, to the very ground. This was younger.

Fig. 1

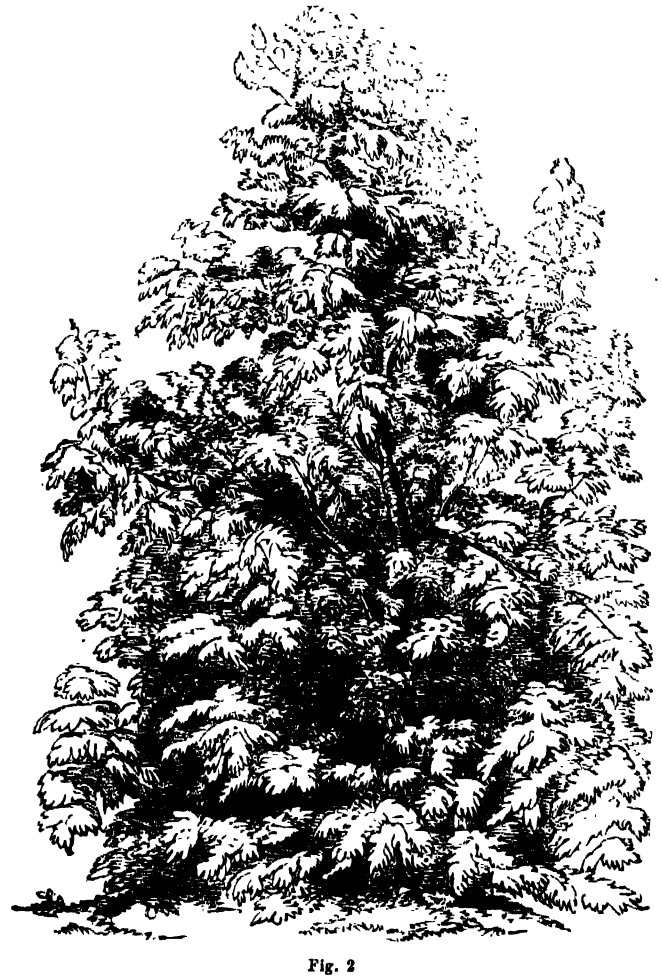


Fig. 2

This very showy and ornamental Himalayan evergreen, whether seen in flower or in fruit, would form a highly desirable addition to our shrubberies if it were hardy, but unfortunately it is not so, except in some parts of South Wales and in Cornwall and Devonshire, where it is very handsome, flowering in profusion during summer, and producing abundance of fruit in autumn. It accommodates itself to any common garden soil, but it requires to be eight or ten years old before it comes into blossom.

DISEASES OF PLANTS.

(*Continued from p.* 629)

Genus XIII.; *one species.* The Quadrant.—Some trees of the largest size, as long as they are standing, have all the appearance of robust health and perfect conformation; but when felled by the axe and cut horizontally, a number of fissures are observed in the woody substance, which, parting from the centre, radiate towards the circumference, representing in some measure the horary lines of a dial-plate or quadrant. I had read that young trees were never subject to this disease, and endeavoured to verify the assertion on the occasion of the cutting a wood of some size, in which I examined a great number of the trees. I found several Oaks, not of a very large size, which had the quadrant; but possibly they may have been old trees, though they showed no appearance of age externally. What I have said applies to trees which usually attain a large size.

This evil has indeed no cure. Its origin is as yet doubtful. It has been equally attributed to excessive heat and to excessive cold. Some persons have adopted this opinion on observing that Oranges and Lemons have also the quadrant, both after very hot summers and after frosts. But here I would ask, is this quadrant of the Orange really the same? Is there not an external longitudinal fissure? I have never myself observed an Orange tree attacked with the quadrant that does not show the disease externally. I shall therefore suspend my judgment, and in the mean time incline to the opinion of those who with Duhamel derive it from cold alone. The having observed that calorie, as it is withdrawn by the increasing severity of the weather, takes from the vegetable fibres their elasticity, and causes lacerations of the tissue, makes me class this disease amongst those which are derived from the want of the stimulants necessary for keeping the tree in the full exercise of its functions. The fact that severe cold produces fissures much more frequently than ardent heat, and that the quadrant attacks chiefly trees growing in cold situations, has occasioned the general belief that it is caused by frost. It appears certain that it was never known previously to the terrible winters of the commencement of last century, especially that of 1709. I may refer to an admirable memoir on this subject by MM Duhamel and Buffon amongst those of the old Academy of Sciences of Paris.

Genus XIV.; *one species.* Circular Fissures. (*Rotolo.*) — In cutting some trees horizontally, it may be observed that the concentric circles of wood are not all united together. They will be found to be separated, either in their whole circumference, or in part only. In the first case, in cutting a transverse section, a whole cylinder of the woody tissue will fall out, leaving a void in the inside. Sometimes these loosened inner zones will rot, and fall to powder when the tree is cut down. It cannot be doubted that this disease, for which there is no cure, arises from the debility of the vessels contained in the woody tissues, which are unable to assist in their union with the new layer supplied by the bark. The general opinion is, that this debility is occasioned by excessive cold.

Genus XV.; *one species.* Double Alburnum.—We owe to M. Duhamel the description of this and the two following maladies, all equally irremediable, and arising

from a diminution of caloric in the interior of the plants. In some trees, after the alburnum, may be seen a zone of woody tissue, then again one of alburnum, after which the remainder of the stem is heart wood, as usual. In tenacious soils, and old and dense woods, these double alburnums are very rare, but are found much more frequently in open, clear woods, situated in light and friable soils. The false alburnum is not always of the same colour or consistence. It is never observed but in the stem above ground. The roots remain perfect, and there is no outward sign of the disease.

VILLA AND SUBURBAN GARDENING.

At the approach of winter the floral display of our flower gardens begins to decrease, and where they depend almost exclusively for their beauty on what are termed bedding plants, their baldness in winter and spring becomes apparent, unless some means are adopted to secure a succession of flowers, as Fuchsias, Pelargoniums, Verbenas, Calceolarias, and similar ornamental summer plants fade; their places should be immediately supplied with the numerous cheap bulbs which flower in spring, for nothing can be more enlivening to the man who toils in our great commercial cities then to see, in his hours of leisure, the Snowdrop, Crocus, or Jonquil thrusting themselves through the snowy wreath; and now is the season to make preparation for an interesting vernal display. In the case of Crocuses they should be planted so that their colours may contrast well with one another, and this may be effected even in a single bed. If the bed is circular let each colour occupy converging circles from the centre to the edge. Again, if there is a number of beds forming a pattern, the colder colours, such as blues, stripes, whites, &c., may be planted separately, and each bed edged with yellow; this will create an effective display. Should a higher, more varied, and more lasting exhibition be aimed at, then Polyanthuses and Narcissi of different hues may be planted, together with Winter Aconites, Jonquils Dogstooth Violets, Early Tulips in variety, and last, but not least, the Hyacinth, a noble flower when well bloomed; these combined and planted with a little taste are delightful in early spring.

If any of my readers are desirous of producing a bed of Hyacinths in perfection let them excavate the bed at least 15 inches deep; fill in the bottom 6 inches of thoroughly decomposed cow-dung, then 6 inches of half cow-dung and half road scrapings or light loam well incorporated, and on this place 3 inches of pure friable sandy loam, in which the bulbs are to be planted. Let their crowns be 1 inch under the surface, and if the bulbs are sound no disappointment need be apprehended. *Pharo.*

PROFITABLE CUSTOMERS.

We insert the following letters for the benefit of the public, which is now about, as it would seem, to be operated upon by a new candidate for Australasian pleasures.

"Liverpool, No. 4. Davies-street, Dale-street, Sept 27, 1849.
"Messrs. Rendle and Co., Plymouth,

"Gentlemen,—Being informed that you have a large quantity of New Winter Vetches, and in want of the Articles, please inform me what is your lowest price per bushel; but as I will require to see quality, as well as know the price, you may forward as Sample order 20 Bushels, say per first Steamer, and should I approve of the quality at the price, will forward you my order; same time remit you for the present sample order.

"I am, Gentlemen, your Obdt. St.,
(Signed) "J. B Macgregor.

"P.S. When you ship the 20 Bushels, Please advise per same day's post, stating name of conveyance. J. B. M."

"Liverpool, Oct. 3, 1849.

"Dear Sirs,—Yours of the second inst., just to hand. I recognise in the name of Macgrigor a very old acquaintance, and a man that we have exposed very often in six different names at as many different addresses. He has no place of business here, but calls for his letters at 4, Davies-street, which is a dirty little cottage in a dirty little street.

"Yours, faithfully,
"Jas. Reay.

"Messrs. W. E. Rendle and Co., Plymouth."

Home Correspondence.

Roses and their Classification.—I agree with "J. S." that the present arrangement of these flowers had best be let alone; for I consider the catalogues of the leading Rose growers, especially that of Mr. Rivers, as perfect as they can well be made, where such intermixtures of species and varieties have taken place. To adopt the plan suggested by "Crito," would cause inextricable confusion; and even the joining of hybrid Chinas with hybrid Bourbons, and of Damask Perpetuals with hybrid Perpetuals, as proposed by "R.," would mix plants as different in their habits in the garden as Apples and Pears. Every one who has paid the least attention to Roses can assign any variety its proper class without being obliged to see the plant in flower; though to do this by the inspection of a single cut flower, I admit requires much greater tact, and even the most skilful may make mistakes. In my opinion the greatest desideratum in Rose catalogues is the marking of the most prolific blooming varieties, and Mr. Rivers would confer essential benefit on all growers of this flower if he would supply this information. I grow a few hundred sorts, which were selected in consideration of their fine flowers, but I have long made up my mind that such as make a splendid bush, covered with bloom, *e. g.* Charles Duval, are far more worthy of cultivation, except for mere exhibition, than even such gems as Kean. When on the subject of Roses, I may add, in corroboration of "J. S.'s" remarks, that in my garden (Northumberland) the old "Four Seasons" Rose is the only Damask Perpetual that gives a second crop of flowers. *N. W. G.*

Dr. Hooker.—You were so kind as to give some information of Dr. Hooker's botanical success in the last Number of the *Chronicle*. My own letters are of later date ("Tungu, N E. of Sikkim, elevation, 13,500 feet, July 25, 1849"), in which he tells of his carrying his point (contrary to the expectatiops of his most sanguine friends) with the authorities on the frontier, and of his having been on the great table land of Thibet, and measured its height above the level of the sea, 15,500 feet! The difficulties and obstructions he met with are inconceivable, partly from the nature of the country, but still more from the unfriendly character of the chiefs, especially of the Rajah of Sikkim. When threats were of no avail his personal safety was represented at stake; "should he be lost in a stream or come to hurt," such was the affection of the Rajah represented to be, "nothing short of a shrine at Lhassa and annual worship could be thought of. The Rajah's anxiety in his behalf alone induced him to pray his return to Darjeeling," &c. Dr. Hooker, had, therefore, no alternative but to tire or starve out his persecutors, and wait his opportunity. Happily the place where he was encamped was most favourable for plants, at an elevation of 11,600 feet. The Soubah of (Singtam), visited him every day, and was as communicative as he dared to be. "Talking one morning of the mountain chains, I asked him to give me a rude sketch of those bounding Sikkim. He called for a large sheet of paper and charcoal, and wanted to form his mountains of sand. I ordered Rice, of which we had some little, but scattered it about wastefully. It had its effect, he stared at my wealth, and after bidding thim good bye (the custom is you know always to send your visitors away), I saw no more of my Rice, which was ominous as to the state of his own granary; and not long afterwards, finding I was not to be defeated, the offer to take me a-mile into 'Cheen' (Thibet)." The entrance was by the Lachen Pass. Samdong, the name of the last place of his detention, is about eight miles north of the fork of the Zemu and Lachen, in a stunted forest of Junipers and of Abies Webbiana. It is on the Lachen river, and the mountains on either side are low and grassy, teeming with good plants. Marshy flats border the stream, good yak grazing grounds, and Dr. Hooker added from 50 to 60 species to his collection in a very short time. Thence north to Tungu (the place whence he writes), is five or six miles more; the valley broader and hills lower and still more grassy, with lots of new plants in all directions. They entered the pass 10 miles north of Tungu on Thibetian ponies. Here the Lachen is flanked by two stupendous mountains, although the bed of the river is in a flat, or having only low grassy hills at its margin. A little Juniper and a Rhododendron accompanied them some way up, beyond which in the pass all is short turf, with stones, marshy flats, and rocky spurs; the vegetation scanty but very varied. Thibotians come across the frontier in summer and feed their yaks, living in black horse-hair tents. Our traveller came across two of these, and entering one of them found it inhabited by a jolly laughing Chinese-looking girl, who presented him with a slice of curd. These people make butter all the summer, eating the curd with herbs, milk, and Fagopyrum bread. They have two sorts of churns; one a great skin, in which the cream is inclosed and stamped upon and rolled; the other an oblong box, a yard long, full of Rhododendron twigs placed upright, which, upon inspection, are beautifully frosted with butter, but all alive with maggots. The tents are roomy and water-tight when wet, though of so loose a texture as to be pervious to smoke from below and rain from above. Some miles higher up Dr Hooker came to the tents of the Lachen Soubah, and was most graciously received by his squaw and family the whole party squatting in a ring inside the tent, the Singtam Soubah and the stranger at the head, on a beautiful Chinese mat. The Soubah's lady then offered tea (Buick-tea), with salt and butter, and each presented his or her Bhotea cup, which was always kept full; and parched Rice and beaten Maize were handed round liberally, and the party fared sumptuously. The fire was of Juniper wood, the utensils of clay, moulded at Dijarchi, except the churn (of Bamboo), in which the tea, salt, and butter were churned before boiling. They continued up the glen during a severe storm, and for five or six miles in a thick fog; the roar of the falling rocks from Kinchin-jow on the right and from Chomoino on the left, were for an hour truly awful. Heavy rain soon fell. Gradually the valley widened, and at 1600 feet they emerged (this was on the 24th July) on a broad, flat table-land, or rather, there was range after range of inosculating flat, stony terraces, with a little herbage, amongst which the Lachen meandered. Five hundred feet higher, and they were on the top of a large flat ridge, connecting the North-west extreme of Kinchin-jow with Chomoino, and on this was the border mark, a cairn. Happily the weather cleared. North, the plateau dipped by successive very low ridges, overhung with a canopy of vapour. East, blue sky, and low ridges of the lofty plateau, which here backs the great range. West, spurs of Chomoino and much mist concealed the horizon. South-east, Kinchin jow, a flat-topped mass of snow, 20,000 feet elevation, rose abruptly from low rocky cliffs and piles of debris. South-west, Chomoino, equally snowed; and South, between them, the plateau united itself, as it were, with the funnel-shaped mouth of the Lachen valley. Here, then, after two months of toil and obstacle, at the very entrance, as it were, of the pass, Dr. Hooker attained the great object of his ambition; he stood upon the great Thibetian plateau at the back of the Himalayan range, at its most northern end in this quarter; and remained long enough to ascertain the elevation, by good barometrical observations and others obtained by means of boiling water. Here, too, he solved another problem, the height of the snow line on the northern declivities. There was not a particle of snow anywhere *en route*, or on the great mountains, for 1500 feet above his position (Tungu). The snow line in Sikkim, on the Indian face of the Himalaya, is at 15,000 feet; on the Thibetian side, at 16,000 feet. At elevations above 15,000 feet, in the pass (where, however, the rarified atmosphere was excessively oppressive to our traveller, the temples feeling as if pressed in a vice, and retching coming on, as from sea-sickness), the plants were of a very novel character; but the moment the plateau is attained, nine-tenths of them disappear, and a Potentilla, Ranunculus, Morina, Cyananthus, a Grass, and a Carex, constitute nearly all the vegetation. There is no Caragana, no shrubby Astragalus in this part of Thibet, as in the North-west; and Brishaurus, which is found at from 12,000 to 13,000 feet on the Indian approaches to Thibet, did not ascend to the top of the pass. Still, at the turning point, where the Alpine Himalayan vegetation suddenly passes into Thibetian sterility, there is a marked change in the Flora, and a development of species not found further south at equal altitudes of the Himalaya. For example, 10 Astragali were gathered in the last five miles, and eight Ranunculi, six species of Pedicularis, several Potentillae, and Fumarias—all new to me—at between 14,500 and 15,500 feet. A fire was made on the plain, of yak droppings dried, blown up with bellows of goat's skin and a snout of yak horn, for the shivering lepchas were numb with cold. Returning, the weather cleared up and proved very fine, and the views of the great mountains already named, rising perpendicularly 6000 feet elevation, were the grandest imaginable, looming through the mist overhead; their black wall-like faces patched with ice, and their table-tops capped with beds of green snow, perhaps 200 to 300 feet thick. The return was in the dark, but the Tartar ponies never missed a foot; sharp rocks, deep stony torrents, slippery paths for 80 miles were all alike to them. Dr. Hooker proposed proceeding from Tungu to the Lachoung Pass, not above 12 miles east, which is said to be 17,000 feet of elevation. He did not contemplate returning to Darjeeling till November; and, if for the sake of science only, it is to be hoped he may pass the third year of his absence from Europe in the further investigation of so rich a field, rather than visit Borneo, as originally contemplated, for that short period of time. *W. J. H.*

My Salvia opposiflora, planted out in spring on a dry warm south border, has grown into a fine shrubby plant, about 3 feet high; all the side shoots produced flower spikes, but the buds, as the spikes extended, gradually dropped off; now and then, here and there, a bud expanded into a flower, but at no period this summer did the plant carry at once more than two or three blossoms. It was in perfect health and vigour, and produced abundance of flower spikes, but no flowers. Is this the general character of this Sage, when planted out in the open borders? *L. M. N.*

Alkali Works.—Why does not Mr Waterton indict the works which have done so much injury to his neighbourhood? This is the short way of dealing with them where, as in his case, money is no compensation for the mischief. It was resorted to with success in some cases on the River Tyne, when less summary proceedings were unheeded. With a verdict of "guilty" he will know how to abate the nuisance. As the manufacturers can now (vide Dr. Muspratt's evidence in his own case) completely condense the noxious gas, I would suggest that either after a verdict of guilty on an indictment, or by legislative enactment, they be compelled to pull down their tall chimneys—an easy task—since they are quite unnecessary and only afford their owners the opportunity of rendering more difficult the proof of the mischief they have done to their neighbours, and would do again, if they dared. *N. W. G.* [*An excellent suggestion, which we trust will meet the eye of some of her Majesty's Ministers.*]

Plumbago Larpentæ.—Will you allow a few remarks on this calumniated plant? Every person conversant with decorative gardening is but too well aware how desirable are masses of blue, or any of the delicate approaches to that colour which the atmosphere seems to monopolise, and which are yet so necessary to complete the *tout ensemble*. The very promising accounts given of Plumbago Larpentæ by Messrs. Knight and Perry, who "sent it out" (as the phrase is), and by the leading floricultural journals at the period of its introduction, very generally led us to believe that the void not was only to be filled up, but in a manner that would put the fields of azure blue above us to the blush; hence many became possessed of the plant, taxing their imaginative powers largely as to the effect it would produce, and as these sanguine ones were almost necessarily to some extent disappointed, they now as generally condemn the plant as "worthless," "not good for any thing," &c. Now, while I admit having seen this plant, in the hands of some of these noisy ones, in a wretched looking state, I know instances in private establishments where it is now a gem of perfect beauty; these I could readily particularise were it proper to do so, but such a course is unnecessary, as I have this day seen at Messrs. Knight and Perry's nursery, in the King's-road, the original plant, of which, speaking correctly, I should say it has covered

hundred leaves on it unpacked, standing conspicuously forth from its lovely green foliage, and forming altogether an object resplendent with beauty. Those who doubt the desirability of cultivating this charming plant should see the specimen I allude to. I can promise them much gratification therefrom, and will answer that their conviction of its desirability as an autumn plant for the conservatory, or for almost any conceivable situation, will be complete. *E. B. R., Lower Brook-street.*

How to convert Hazle Copse into Hoops, and the time for Cutting.—The first thing is to have the wood cut when the cutters trim out all the rods that are suitable for hoops, roughly, and lay them in heaps: next come the hoop-shavers (whose trade is one of their own, they serving an apprenticeship to it when boys), who trim all the knots off quite close with a hacker they have for the purpose, and cut them into lengths, so as to make the most of them, either firkin, barrel, pipe, &c. They then split them with a tool very like a cooper's adze, only much lighter and thinner, always commencing at the top or small end of the stick. As they get a little way into it, they force it on to a round piece of wood that is fixed in a vertical position, into a contrivance called a horse, which is part of a pole about 4 inches in diameter and 5 feet long, fixed in the ground at one end, and the other supported on two stout stakes for legs. The hoop is next fixed on this "horse," by being laid on a fork, and under a wooden hook, which is fastened into the horse by means of an auger-hole bored through, and then wedged. A wedge with a round handle is then pushed under the hoop, in a groove made for the purpose near the hook, which fixes it quite tight. They then commence shaving it, beginning at the part nearest the horse, with a broad drawing-knife, which must cut very well. The workman is also furnished with a breastplate formed of leather, and having a small piece of wood fastened to it, about the centre, against which he finishes the ends. The wood may be cut from October till March (the hoop-shavers following the cutters), but October and the two following months are the best. *A. Purchas, Worcester.*

Effect of Cutting off the Stems of Potatoes, &c.—Having seen an account, some months back, of the wonderful effects in preserving the Potato produced by cutting off the stalks when in blossom, and then covering up the drills, I tried the experiment; and the result was, that the produce was little more than the seed put into the ground. On each side of the drill so treated, I tried another experiment. I left one without doing anything save the usual tillage, and from the other I cut off the blossoms. The three drills have just been dug out; a perch of the drill from which the blossoms were cut produced in weight 2 stones 5 lbs., while one from the drill left to Nature produced only 1 stone 9 lbs; a few Potatoes were bad in the latter, not one in the former. The kind is that called here Strawberry Red, and has turned out an excellent sound crop. *W. H. Tighe, Woodstock, Inistiogue, Oct 8.*—I do not plant many Potatoes; but this year I had a few, and all planted early, and some were self-planted. The self planted are entirely free from disease. Some Kidney Potatoes, full of eyes, are nearly free from disease, but not quite; they are a very excellent kind indeed, and some Goldfinders, which are all more or less diseased. On the last I tried the experiment, on a small scale, recommended by the Belgian gentleman, of cutting off the tops as soon as they showed symptoms of disease, and covering over the ground a foot deep with earth, but the effect has been *nil*; all those Potatoes are diseased just as the others of the same kind are, the tops of which were not cut off. Perhaps the Belgian would say I had no faith in the operation, and for want of that it failed; and if so, he is quite right. The disease comes first in the root, long before it is seen in the haulm. *Geo. Wilkins.* [If you will refer to the statement made by Mr. Tombelle Lomba, you will find that you have not followed his directions in any one particular.]—As I think the account given by Mr. Lomba, with respect to cutting off the haulm of Potatoes as soon as they have bloomed is likely to mislead, I send you the result of my own experience. Having observed the Botrytis infestans in one or two patches on my Early Shaw Potatoes, I had the haulm cut off at once, as I was desirous of keeping a portion for seed quite free from the gangrene, which after four years' investigation I do not entertain a doubt proceeds from the mildew. I however left a few rods, in order to test the effect, which was in the words of my men so perceptible, that it seemed as if the ware or large Potatoes had all been picked off where the haulm had been cut and left on the ground as far as the path extended, where the haulm was not cut. A person to whom I sold the adjoining piece also estimated his increase at 2 tons per acre. I thought it inconsistent with the laws of vegetation to expect any other result; but, as I wanted an untainted sample rather than a great yield, I was content, not having an unsound tuber; and I am convinced that, had an unfavourable season set in, I should still have been a gainer in sound produce, as there were some bushels unsound where the haulm was left growing. I have just dug the Farmer's Profit Potatoes, of which I sent you an account last year, as having resisted the disease in a very remarkable manner; and out of 17 tons 14 bushels, from 2 acres, I have had but 1 bushel affected. *F. J. Graham, Crawford, Oct. 10.*

Societies.

ENTOMOLOGICAL: *October 4.*—H. T. STAINTON, Esq., in the chair.—Amongst the donations to the cabinet were specimens of the rare Agrophila sulphuralis from Brandon, presented by Mr. Dunning. Mr. Stainton exhibited a small species of Tineidæ, of remarkable structure, new to Britain, communicated by Mr. Henry Doubleday. Mr. Westwood stated that the species of Aphidæ found on the Lettuce, recently described by him under the name of Pemphigus Lactucæ, had been previously noticed by Sir O Mosley in the *Gardeners' Chronicle* for 1841, p. 827, and by the Rev. L. Jenyns, in his "Observations on Natural History." Mr. Dunning exhibited specimens of Cosmopteryx pedella, Linn. (angustipenella, Hübner), a species of Tineidæ, new to the British lists. A paper was read by Mr. Dallas, consisting of descriptions of new species of Hemiptera, from Bootan, in the East Indies. Mr. Westwood also read a paper containing descriptions of some new exotic Dipterous insects, including a new species of the singular genus Achias from India.

BOTANICAL, OF LONDON, *Oct. 5*—The President in the Chair. Mr. H. Bidwell presented specimens of Lastrea cristata (Presl) collected by him at Boxley decoy near Ipswich, in August last. The continuation of Mr. W. H. Coleman's Paper, "On the Plants indigenous to the neighbourhood of Horsham, Sussex," was read.

Review.

Adventures in the Libyan Desert. Murray. 12mo, pp 175. No LXVII. of the Colonial Library.

DESERTS have so little to do with gardening that Mr. St. John's book would seem to be beyond our cognisance. It is, however, a part of that field of observation in which those who desire to understand the relation of climate to vegetation must be content to become diligent gleaners. The book, as a mere story of what happened to some bold travellers through a region hardly trodden by Europeans, is very interesting. It gives a truthful picture of what is meant by deserts and oäses, of which we suspect that few know the real import. Wretched enough are the former, rich enough the latter; but neither so wretched nor so rich as some imagine.

A desert is not all sand; but plants peculiar to the soil make a shift to exist there among huge stones and rocks. We can imagine such a place as the pass of Llanberis, after a scorching summer, to be a pretty good representation of a desert. An oäsis is not a paradise; but, in comparison with the desert, would no doubt have charms, if it were not for the savages that occupy it. We shall give Mr St. John's graphic sketch of each. And first of the desert.

"I had often heard and read descriptions of the Desert as a 'sea of sand,' but we now found ourselves in what might almost be called a 'sea of stones,' with, it is true, here and there at wide intervals a patch of bushes, and the contorted form of the ligneous plant called Shïa dotting the ground. This plant exhales a strong odour something resembling Rue, and is cultivated in pots at Alexandria on that account. In the Desert its more tender extremities serve as food for the gazelles, small troops of which were now and then seen browzing out of gun-shot. As we approached, they raised their heads and appeared to listen and watch, but the result of their examination was never, it seemed, encouraging, for off they invariably went, cocking up their tails, at first gently trotting, but by degrees lengthening their steps, then bounding, scudding, flashing along, as it were, over the vast level, now huddling together, now spreading into a long irregular line, seeming at times to outstrip the sight, but coming again in view, flitting away swiftly like uncertain shadows, until at length they faded into nothing; as a prolonged echo, after quivering through the air, subsides into a faint murmur, and dies away in the distance. On one occasion a mother and its fawn lingered to nibble a green shrub, and our Bedawïns began to manœuvre to get a supply of fresh meat, one crouching down, and another advancing obliquely; but the cautious creature took the alarm and made away with her young charge in double quick time."

The town of Siwah, which our travellers visited, lies in lat. 29½° N., and long 26½° E; something less than 150 miles from the Mediterranean. It is approached by a dreary route like that just described, consists of houses built of salt mud, and is surrounded by sluggish, fetid streams, which render it very unhealthy. The following paragraphs include most of what is worth knowing respecting the vegetation and climate.

"Some old writer, in describing the Oäsis, forgets the springs, and will have the vegetation to be supported entirely by the dews of heaven. It is certain that there were heavy falls of dew during our short stay. At sunrise the thermometer generally stood about 64°, rising to 92°, 95°, and 105°, a little afternoon. The air was seldom perfectly still, warm blasts being common in the day-time, whilst at night there was usually a violent northerly wind. Not the slightest resemblance of a cloud was seen. We asked about rain, and were told it rarely fell—a fortunate circumstance, as otherwise their earth and salt houses might melt down some day like a snow ball at the approach of spring. Slight shocks of earthquakes are said to be very frequent, and to render the flow of water from the springs more copious. A large part of the wall of the town had fallen in, probably from some recent shock, and men were employed repairing it. As to the mode of life of these people, it seems quite agricultural, and I could not learn that they manufactured anything but baskets and mats. Formerly they grew Indigo, but seem entirely to have abandoned this profitable branch of production, for which they had so excellent a market in Egypt, nearly all their care being now devoted to the culture of Dates. About their modes of procedure I could learn nothing, except that, contrary to the usage in many other countries, they both water and manure the trees. Most of the woods or groves are surrounded with walls chiefly composed of salt-earth, with fences of reeds, with a camel's bone stuck here and there as a charm. In many places there are orchards, nay perfect gardens, much more beautiful than those of Rosetta—the Apricot and the Olive, the Pomegranate and the Banana, intermingling their leaves and branches at the feet of the Palm-trees, which in some places rise to a stupendous height, and contribute, with the variegated tints of their trunks, their leaves, and their fruit-clusters, to increase the pleasure of the eye. I have mentioned the beds of *bursim* and Lucerne that here and there occur. I believe the Siwahïs also grow a little Barley, Dhourra, and perhaps Wheat, but the greater part of what they consume comes from Upper Egypt, whilst their Rice is brought from the Wah. Among the vegetables produced are Onions, some of them really magnificent. The evening we arrived one was brought as a present, quite 5 inches in diameter. The Cucumbers are large but watery, and the Melons insipid. I must not forget to mention that the oil of Siwah is quite famous in this part of the world. We could learn nothing of their mode of preparing it, but from what we saw believe it to enjoy too good a reputation. It is not, however, bad. We brought back, as a present to the Nazïr of Abu-ïr, a small skinful, which was highly appreciated. Our Bedawïns also procured a supply, which served them as sauce to everything they ate upon the road. The live stock of the Oäsis does not appear to be very extensive. For a long time we were under the impression that there was but one cow among them all; a few others, however, afterwards made their appearance. They have some fowls, goats, and sheep; and a great number of little asses. These diminutive creatures are constantly employed carrying Dates, which they would eat off their backs were not their necks kept straight by two flat pieces of stick crossed on each side. Several of the Sheikhs ride on horseback; and I believe that some Siwahïs possess camels of their own, though the Bedawïns supply the greater number of those employed in exporting the produce of the place."

In another place we learn that—

"To my left were the dense Palm-woods with numerous clumps at their outskirts; to my right the undulating and hilly desert rising gradually in the distance. Here and there were a few cabins of Date-branches, the refuge at night of the men and boys who watch the Melon trenches that occur on all sides. It is a curious sight to see the bright green snake like stalks and broad leaves of this beneficent plant with its gigantic fruit spreading over the parched surface of the sand. The trenches are dug in order to reach the richer soil below. A similar practice is observable in the neighbourhood of Alexandria, especially on the road to Aboukïr."

We must not omit a scrap which tells of the climate of the coast of Barbary, 150 miles west of Alexandria. Here among Bedouins, who, by the way, are very like unready people, always leaving "a great part of their arrangements to the last," whence the designation of a Bedouin might not be improperly applied to some gardeners—here, at a place called El-Gerâb,

"The air was rather cooler than we had been accustomed to, as there was a slight north breeze, and the thermometer did not rise in the tent above 82°. It is true that the contrast now between night and day was greater than it was at Abusïr, where we never had it lower than 72° at sunrise, or than 79° at sunset, whilst it only once rose to 93° at noon, and was generally between 85° and 88°. Since that time the temperature of the morning had sunk as low as 65° and 68°, whilst at mid-day it was sometimes up to 91°. I must observe that these figures give little or no idea of the terrific heat to which we were subjected during some of our rides, and in particular places. We seldom exposed the thermometer to the sun, but it once rose at Abusïr to 128°, and I am persuaded that at various points even along the coast the heat was still greater."

And yet there was a temperature of only 65° at night. At Siwah it was found to be as low as 58°.

Miscellaneous.

An Indian Hothouse.—Dr. Hooker gives the following account of the management of Betel-pepper, in the neighbourhood of Darjeeling, in a climate much colder than that which is natural to it. "Some curious long low sheds at Kallyagunje puzzled me very much, and on examining them they proved to be for the growth of Paun, or Betel pepper, which I here for the first time saw cultivated,—another indication of the moisture of the climate. These sheds are 20 to 50 yards long, 8 or 12 or so broad, and scarcely 5 high; they are made of Bamboo, wattled all round and over the top. Slender rods are placed a few feet apart, inside, up which the Betel Vine, alias Pepper, climbs, and quickly fills the place with its deep green glossy foliage. The native enters every morning by a little door, and carefully cleans the plants. Constant heat, damp, and moisture, shelter from solar beams, scorching heat, and nocturnal radiation, are thus all procured for the creeper which would certainly not live 24 hours, if exposed to the climate of this treeless district. Great attention is paid to the cultivation, which is very profitable. Snakes

frequently take up their quarters in these hot-houses, and cause fatal accidents." *Hooker's Journal of Botany.*

Calendar of Operations.

(For the ensuing week)

FORCING DEPARTMENT.

PINERIES.—Where the plants are now swelling their fruit, let the temperature be well kept up. Where the succession plants are grown, a gradually hardening process should be adopted, not suddenly to check or prevent their growth, but to reduce its rate by gradually lowering the night temperature, and admitting as much air during the day as the strength of sunlight will allow. The heat, however, during this month, should not be allowed to fall below 60° in the morning. Plants swelling their fruit may still, with advantage, be supplied with liquid manure. VINERIES.—In applying fire heat to drive damp out of those houses where ripe Grapes are hanging, let it always be accompanied by air, or it will defeat the end aimed at; and let it be very moderate, or the Grapes will soon begin to shrivel: it is a nice point to steer between the two extremes, but if it be desired to preserve the fruit in good condition till January or February, no care or trouble must be considered too much. If any Vines have been prepared in pots or boxes for early forcing, a portion of them should now be pruned and well washed; and any loose soil from the surface should be scraped off and replaced by a top dressing of rich loam and dung. The plants should then be introduced into a forcing-house or pit, with a temperature of about 50° This must be gradually increased at the rate of 3° or 4° in a week. If the pots can be plunged in a bed about 15° hotter than the temperature of the house, it will be a decided advantage, as the roots will be thereby kept in advance of the tops. Let the plants be syringed once or twice every fine day; and if a quantity of fermenting material can be introduced, the exhalation arising therefrom will considerably assist the development of the buds. PEACH-HOUSES.—The later forced houses will now be ready for cleaning and retraining, in the manner formerly described. The work should be done as soon as possible, that it may not interfere with the out-of-doors training, which should be commenced next month. FORCING PITS.—Rhubarb, Seakale, and Asparagus should now be in progress. The two former may be managed very well in any place possessing the characteristics of a Mushroom-house, namely, moderate warmth and exclusion of light. For Asparagus, a pit or bed should be prepared, furnished with bottom heat by dung or some other means. If glass cannot be spared for the pit, it may be covered with wooden shutters, and the young growths greened by setting their ends in water, and exposing them in a glass house after cutting.

FLOWER GARDEN.

PITS AND FRAMES - Cuttings which are only partially rooted should be kept warm, and as close and moist as can be without running into the opposite and dangerous extreme of damp. The additional warmth and moisture here recommended is to encourage them to make a little growth both at top and bottom before they are hardened off; and that more time may be afforded for the latter purpose, the former should be effected with all consistent speed. Cuttings which were propagated earlier, and are now fairly rooted, should be gradually hardened, that they may retain their health and strength during winter in a comparatively cool temperature; this should be managed by keeping them quite cool at night, merely excluding the frost, and by exposing them fully in all dry open weather, excepting during frost, which must be carefully excluded from amongst the more tender plants both by night and day. During the hardening process water should be sparingly applied, and only in the morning; and as increase of size is not the object aimed at, but sturdiness of plant, growing points should be stopped and all flower-buds carefully removed. Aphides or other insects must be destroyed, and upon the first signs of mildew the plants so affected should be syringed on a dry morning, and dusted over with flower of sulphur. Take great care of autumn sown seedlings of any kind by placing them close to the glass, and where they will be exposed as little as possible to extremes or sudden changes of heat or cold, drought or moisture. Dahlias, if so far injured by frost as to be no longer ornamental, may be cut down preparatory to their being taken up in a few days' time. Tigridias and other summer bulbs may be taken up and laid in a cool dry shed till they will part easily from their haulm Salvia patens should be taken up and potted, or planted in a frame of moderately dry soil, where it will keep without any trouble except that of excluding the frost. FLOWER BEDS.—Now that the summer flowering half hardy plants are removed, make the best amends in your power by drawing upon the reserve garden. All the important beds should be filled with dwarf evergreen shrubs or spring flowering plants, as Hepaticas, Primroses, Polyanthus, Alpine Auriculas, Double Rockets, Wallflowers, &c. These will supply the beds with foliage, and in spring the flowers of the latter will considerably assist the display produced by the Crocus and other bulbs already planted.

FLORISTS' FLOWERS.

Frost has given Dahlias their *quietus* for the season, and care must now be taken that the crowns of the roots are not injured by the coming severe weather. When the tops are blackened, the sooner the roots are out of the ground the better, as the buds round the stem are liable to start when the foliage has received injury. We would advise, as a precautionary measure, that the soil should be put to the stems; this will prevent injury, except in very severe weather. AURICULAS must now be in their winter quarters. The frame should face the south, and every possible exposure given to the plants in mild weather. Rain should be avoided, as the plants being in a comparative state of quiescence require very little moisture. A casual glance at the surface soil of the pots will tell how the drainage of each operates, and should a dampness appear in one or more of the pots, the sooner the plants are repotted the better. POLYANTHUSES on borders will often at this season, even if the root is large, be reduced to a few leaves. The beds should be lightly forked over and top-dressed with decayed leaves, the roots being carefully covered. PINKS.—After the last week in this month, we would not advise these flowers to be transplanted. The plants do not, when set at a later period, get well hold of the ground, and defective lacing is sure to be the consequence. TULIPS.—All offsets should be in the ground, and the first favourable opportunity taken to plant the main beds.

KITCHEN GARDEN.

Let the autumn-sown Onions, Cabbages, Cauliflowers, and Lettuces be protected from the ravages of snails, by dusting them with lime and soot. Any spare frames should now be filled with Lettuce and Endive for winter use. A soil consisting of charred loam and leaf-mould, which should be moderately dry and free from insects, is best for this purpose. The plants should be lifted from the borders with good balls, and transferred to the frame, taking care not to break or injure the leaves. The latest crop of Cabbage Lettuce, intended to stand during winter, and come in for early spring use, should be planted in the driest, warmest, and most sheltered border, as it is an object of no small importance to secure a continuous supply of this favourite salad. In very severe weather they may be protected by Fir boughs. Proceed with the final earthing of Celery with all possible despatch, as the weather is becoming too severe to admit of longer delay. The same remark applies to Cardoons, the earthing of which should be completed, if possible, by the end of this month. If of the autumn Broccoli or Cauliflowers there is a considerable quantity of heads ready for use, a part of them should be taken up and laid in under the shade of a north wall, where they will be retarded, and may be protected by some covering in severe weather.

State of the Weather near London, for the week ending Oct. 11, 1849, as observed at the Horticultural Gardens, Chiswick.

Oct.	Moon's Age.	Barometer. Max.	Barometer. Min	Thermometer. Max	Thermometer. Min.	Thermometer. Mean	Wind.	Rain
Friday.. 5	18	29.749	29.682	56	47	46.5	W.	.03
Satur.. 6	19	29.770	29.664	55	44	49.5	S W.	.46
Sunday . 7	20	29.296	29.128	64	49	56.5	N E.	.02
Monday 8	21	29.316	29.040	54	29	41.5	N W.	.00
Tues. .. 9	0	30.018	29.951	56	28	42.0	W.	.00
Wed. .. 10	23	29.877	29.6 2	56	31	43.5	N E.	.00
Thurs ...11	24	29.526	29.175	54	42	48.0	N E.	.00
Average .		29.736	29.589	55.4	37.1	46.7		0.50

Oct. 5—Cloudy, deep blue sky in intervals; fine; overcast.
— 6 Clear, fine, heavy rain at night
— 7—Hazy, heavy masses of white clouds; showery.
— 8—Cloudy and cold, very clear at night.
— 9—Clear, very fine; clear at night
— 10—Dense fog, very fine, cloudy, clear
— 11 - Overcast, heavy clouds, clear at night.
Mean temperature of the week, 5 deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Oct. 20, 1849.

Oct.	Average Highest Temp.	Average Lowest Temp	Mean Temp.	No of Years in which it Rained.	Greatest Quantity of Rain	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 14	60.0	41 5	50 8	11	0.50 in.	1	2	2	1	7	2	3	5
Mon. 15	58 4	41 6	50.0	10	1.01	1	1	2	1	7	2	5	0
Tues 16	58.7	42.8	50 8	10	0.52	—	1	2	3	1	3	6	7
Wed. 17	57.8	42.4	50.0	7	0.18	—	1	2	4	—	1	6	6
Thurs. 18	57.6	42 4	50.0	12	0.86	—	1	2	1	1	4	4	9
Friday 19	59.4	39.2	49 3	10	0.14	—	2	2	3	2	4	6	4
Satur. 20	59.1	40.3	49.7	11	0.34	1	3	—	3	4	6	5	1

The highest temperature during the above period occurred on the 20th 1848—therm. 72 deg.; and the lowest on the 19th, 1843, and 20th, 1842—therm. 22 deg.

Notices to Correspondents.

ASPARAGUS: *T G.* Your beds must have been sadly mismanaged. The materials employed are good, but the result shows serious error in some way. Asparagus, being a maritime plant, delights in salt. You had better consult some machine-maker about a mill in which to grind your flour.

BOOKS: *B R C.* Loudon's Repton, or Downing, on Landscape Gardening.

BEES: *S W J* You are not the only one who has been misled by books which state that bees may be prevented from swarming by allowing them more room. We have observed that heat and want of room have caused bees to swarm, but neither being the primary cause, little reliance can be placed on the above statement. In your case, however, the young queen bees were in a forward state before the colony had additional room, consequently the bees followed their own way of swarming. *W.*

CACTUS: *E L C.* It will not injure your Cactus to allow it to flower now. After it has done blossoming, keep it rather dry, with a view to rest it, during the winter months.

CINERARIAS: *P Q R.* Countess of Zetland, red; Fascinata, blue; Cerito, light pink; Rosy Circle, red edged; Beauty of St. John's Wood, purple edged; Grandissima, blue, light centre.¶

FRUIT: *Henry.* We quite agree with you that there is no reason why a gentleman should not sell his fruit as well as a farmer his crops. You will easily find parties who are in the habit of buying such fruit, by inquiring in Covent Garden. We never recommend tradesmen.

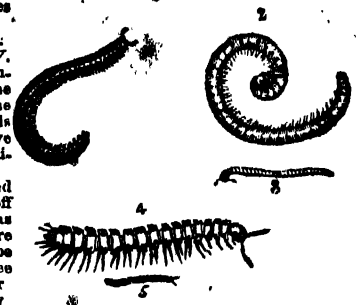
FURRED UP BOILERS: *L.* Sal ammoniac (or muriate of ammonia), in the proportion of about an ounce to 90 gallons of water, will have the effect of keeping them clean; but to clear one furred up, you had perhaps better use a larger proportion of the muriate.‡

HEATHS: *C D.* Your soil does not appear to be very suitable for Heaths; but possibly the immediate cause of failure was the plants being over-watered.‡

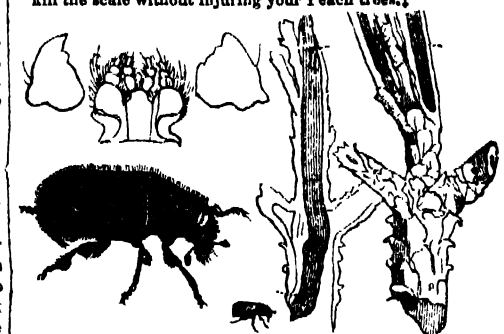
LAWNS: *W M.* We have no experience of laying turf on chalk, and must refer you to our former columns.‡

MANURE: *A Constant Sub.* You will find many analyses of it in books on manure. Its quality is excessively variable. No injury to health is connected with its distribution on land, but it certainly ought to be sweetened in the first instance by mixture with gypsum, or peat, or charcoal-dust, or some kind of humus.

INSECTS: *S F.* The insect sent is not a wireworm. It is one of the Millepedes (Polydesmus complanatus): See woodcut. *W.—R M.* The insect found in the shoot of the Pinus patula is the destructive Hylurgus piniperda. The shoots attacked must be cut off and burnt as soon as they are perceived to be attacked. See figure. Your former query



was answered at the time. See p. 344. *W.—A Const. Reader.* Your insects are the common thrips. See several of our recent answers to correspondents. *W.—A Young Sub.* Your Carrots are infested with the larvæ of a small two-winged fly, Psila Rosæ. The plants most seriously affected should be pulled up and burnt. Try watering the others with gas-tar water. *W.—Beginner.* Hot water from 150° to 160° will kill the scale without injuring your Peach trees.‡



NAMES OF FRUITS: *R B.* 4, Leadington; 6, 7, Fearn's Pippin; 11, Court of Wick; 13, Yellow Ingestrie; 14, Ribston Pippin; 8 appears to be Powell's Russet.‖—*S M W.* 1, Napoleon; 2, 21, Beurré Rance; 3, Duchesse d'Angoulême; 4, Autumn Bergamot; 6, Knight's Monarch, false; 7, 9, 12, Easter Beurré; 8, 16, Gansell's Bergamot; 10, Marie Louise, 13, Vicar of Winkfield; 14, Louise Bonne (of Jersey); 15, Beurré Diel; 17, 19, Beurré de Capiaumont; 18, Bishop's Thumb; 22, Chaumontel; 23, Beal de Montigny; 20, 25, something bad.‖

NAMES OF PLANTS: *Old Sub* No. 1 not a Woodsia, but apparently a barren frond of Cystopteris dentata, which is by some considered as another form of Cystopteris fragilis, which No. 2 is. *S. —G T.* We believe the Oncidium Rigbyanum of Paxton's last number to be the same as O. sarcodes.—*S W W.* We know nothing about the matter. If a Spanish Chestnut was really mistaken for an Oak, it must have been by mere accident. Mr. M. has a right to his opinions, as well as others; the only thing that we regret is that they should be so wholly erroneous. —*X Y Z.* Is it not rather unreasonable to send such a batch of things, unarranged, and twisted up like a band of straw? 1, Œnothera odorata; 2, not found; 3, 4, Œnothera cruciata; 5, Agapanthus umbellatus minor; 6, Some Silene, not determinable without perfect flowers; 7, Apparently some Diplopappus, but we are unacquainted with it—send it again when the seeds are ripening; 8, Stachys lavandulifolia; 9, Mirabilis dichotoma; 10, Amaryllis Belladonna; 11, Eupatorium ageratoides; 12, Coelestina ageratoides; 13, Polygonum amplexicaule; 14, Indian corn! 15, Solanum nigrum, with yellow berries; 16, Malva pusilla.—*E W T.* With such small and imperfect specimens as those sent we are unable to say whether your Fern is Lastrea recurva or a form of L. dilatata. In fully developed fronds the two species (?) are more obviously distinct in habit than can be given in words. *S.—Expectant.* 1, some Elæagnus; 2, Aster argophyllus.—*Reader.* Begonia discolor.—*T M C.* Certainly the single state of Clerodendron fragrans.—*T P.* Althæa frutex.

ORNAMENTAL AND DOMESTIC POULTRY, by the Rev. E. S. Dixon, price 5*s* 6*d*., is now ready, and may be had at the Office of this Paper, and of all booksellers.

RHUBARB: *R E C.* It is not a fruit but a vegetable.

SENSITIVE PLANT: *J G.* We will tell you what causes the falling of the leaves of the Sensitive Plant when touched, as soon as you can tell us *why* you go to sleep.

TIMBER: *Ballandine.* A solution of corrosive sublimate constitutes the "pickle" in which timber is steeped in Kyan's patent. If it is forced into the pores of the wood it prevents decay; but it renders timber brittle, and cannot be used for the roofs of small greenhouses, because of the volatility of this poisonous salt—unless the woodwork is extremely well painted.

TREE VIOLET: *E T.* The flowers which we have received are very fragrant ‡

VINES: *J W* You had better stop till the leaves and wood have ripened before you prune your Vines.‡

VINES IN POTS: *J K.* See page 253 of our volume for 1847 ‡

MISC.: *G G, Clifton.* Drawings of the flowers you mention are not obtainable any where that we know of.‡—*T H.* The roots of Salvia patens can be preserved through the winter, and plants propagated from them in spring, in the same manner as Dahlias.‡—*Expectant.* If the point of your long Wisteria shoot is unripe, you had better shorten it back to a plump bud on the firm wood.‡

SEEDLING FLOWERS.

DAHLIA: *W H.* Colour bright crimson, with good depth of petals; petals rather long, thin, flat, not rounded enough, and a little crowded; eye well filled, but a little sunk; size rather small.*

FUCHSIAS: *M and Co.* Light flower: Tube short and thick, rosy blush; lobes broad and well expanded; corolla bright rosy pink, good in form, and of a nice waxy texture; flowers small, but very neat and distinct in colour. Dark flower: Tube bright crimson, a little inflated; lobes broad and tolerably well expanded; corolla dark violet, ample, and well-shaped; a nice small flower, good in texture, and having a pretty bright appearance.*

HOLLYHOCKS: *J P.* Rose coloured: size, shape, and colour excellent; a very fine variety. Dark purple with a pale edging: centre confused, colour novel, but not pretty.*

ROSES: *C.* The flowers of both your seedling Perpetual Roses had partly fallen to pieces when received, but judging from what remained, and the season of the year, they promise well, particularly the dark rose kind, both being very fragrant.*

VERBENAS: *W A A.* Colour pale blush, fading to white; flowers very large, but narrow in the lobes; a good variety, on account of the size of its flowers, both individually and collectively.*

SMITHFIELD CLUB, 1849.—The Annual Show of FAT STOCK will take place on Tuesday the 11th, Wednesday the 12th, Thursday the 13th, and Friday the 14th of December, 1849, at the Bazaar, Baker-street. The Printed Forms of Certificates, for the entry of Stock and Implements, must be obtained from the Honorary Secretary, and returned to him, filled up and complete, on or before Saturday the 17th of November, 1849. B. T. BRANDRETH GIBBS, Hon. Sec., Corner of Half Moon Street, Piccadilly, London.

WHEAT SOWING.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure sent out by them shall be free from the slightest adulteration. Peruvian Guano direct from Importer's Warehouses, London Manure Company's Wheat Manure and Urate, Sulphate of Ammonia, Phosphate of Ammonia, or Ammoniacal Phosphate; Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone Sawdust, and every other Artificial Manure.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

AUTUMN SOWING.—POTTER'S GUANO.

MR. POTTER particularly recommends this season for using his Guano, as, if now committed to the earth, it is better adapted, when the spring returns, to yield to the growing crops the food they require in a fit state for immediate assimilation. The increase of chemical knowledge, as applied to agriculture, has enabled Mr. POTTER to make some important improvements in the manufacture of his Guano, which he now most confidently recommends to the use of all who wish to grow luxuriant crops at small expense.

In consequence of some unprincipled persons, once acting as Mr. POTTER'S agents, substituting their own compounds for the genuine article, the Proprietor is induced to recommend a direct application to himself. Where the quantity taken is adequate, an arrangement, as to carriage, will be made to the satisfaction of the purchaser.

PURE GYPSUM, in a state peculiarly adapted for the farmers' use, at the usual low price.—Please direct your orders, per post, to the following address,

28, CLAPHAM ROAD PLACE, LONDON.

DR. RYAN'S AZOTIC MANURES, prepared under his immediate superintendence. The attention of Agriculturists is earnestly directed to these well-known Fertilisers, the preparation of which is based upon a careful examination of the requirements of the crop and the condition of the soil. The Manufacturers of these Manures, which are made entirely of rich animal matters, have received numerous testimonials to prove them to be equal to the best Guano Prices, 6l. and 6l. 10s. per ton.—Offices, 24, Mark-lane, London.

OIL-CAKE, GUANO, AND OTHER MANURES.—Foreign and English Oil-cake on sale; also Peruvian Guano of the finest quality, superphosphate of Lime, Bone dust, Sulphuric Acid, Animal Cake, Wheat Manure, Gypsum, Rape-cake, salt, and all other Manures of known value.

Apply to MARK FOTHERGILL, 201 A, Upper Thames-street, London, Agent for Collins's Patent Disinfecting Powder.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

BENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.

HEATING BY HOT WATER.

PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, CHARLES FRANCIS and SONS, Nine Elms, London.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND CO., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
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ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

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Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

TO FARMERS AND BAILIFFS.

TO BE LET, with immediate possession, A FARM of 200 acres, with a comfortable Residence, situated seven miles from Shrewsbury and one mile from the Chester Railway. The Proprietor would have no objection to join a small capitalist in the farm, and furnish a portion of the funds.—Apply to J. P., Office of this Paper.

SEED WHEAT.—For Sale, at 50s. per quarter, good and genuine seed of the RED-STRAW WHITE and HOPETOUN varieties. Samples of grain and ear will be sent on receipt of stamps to cover the expense of postage. No orders for less than 4 bushels can be executed; those from unknown correspondents must be accompanied by a remittance. Sacks 2s. each. WINTER BEANS, for seed, can be supplied at 5s. per bushel. JOHN MORTON, Whitfield, Berkeley, Gloucestershire.

The Agricultural Gazette.

SATURDAY, OCTOBER 13, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Oct. 18—Agricultural Imp. Society of Ireland.
THURSDAY, — 25—Agricultural Imp. Society of Ireland.

THE united exertions of Landlords and Tenants must now be heartily and faithfully given, if agriculture is to triumph over the difficulties with which it is at present surrounded. No fitful efforts will avail for the speedy attainment of that end. It will require the steady, intelligent, painstaking, and persevering co-operation, of both the parties principally interested; and with such an union, we have no fears for the result. We have beaten the rest of the world in almost all other manufactures, it now only remains for us to show that we can beat it in that of food as well.

We have said that it will require the united exertions of both landlords and tenants, to upraise agriculture from the very humble position which it occupies among the arts, in so far as its practice is concerned. We must not have, on the one hand, landlords draining and otherwise improving their estates, only that their tenants may more thoroughly impoverish and injure their land by a slovenly and scourging system of husbandry, nor, on the other, liberal and careful tenants, willing to improve, bestowing their lime and manure, only—as has been aptly remarked—to make brooks of lime water in the one case, or of liquid manure in the other.

In order that the manufacturer of food may be placed in a like position with his fellow-labourers in the other departments of the arts, it is fair and reasonable that he should be furnished with the proper appliances for carrying on his business to the best advantage. It is unreasonable to expect that large crops can be raised on land which is, for three-fourths of the year, in a state of puddle, and like a hardened brick for the remaining fourth; or that cattle can be fed cheaply and well, exposed, without shelter, to every blast of winter. Yet such are the conditions under which much of the agriculture of the British Islands is conducted.

Agriculture is a profession which, in this country at least, has always been overstocked: partly from the very mistaken notion that he who is unfit for anything else is fit for a farmer, partly from the disinclination which the sons of the country have to leave it, or the anxiety they feel to return to it after having realised a competency in other professions. This redundancy of would-be farmers has always supplied the landlord with numerous applicants for every piece of land he has to dispose of. No matter how wet or foul the soil; no matter how dilapidated the buildings, some one is sure to make his appearance, ready to promise to pay the rent, and put up with things as they are. The present low rates of prices of agricultural produce are, however, beginning to interfere with this state of things, and rent courts are now giving tokens of yielding in future a much larger proportion of promises to guineas than they used to produce.

We have freely stated our opinion of the mode in which their business is carried on by a great majority of the practical agriculturists of this country, and we now as freely give it as our opinion, that if present prices continue, one of two things must happen; either landlords must afford their tenants the proper facilities for carrying on their business to the best advantage, and aid and encourage them in adopting the most improved methods of husbandry, or rents must fall.

The laws of inheritance have hitherto opposed great obstacles to the outlay of money on improvements by landowners. Few possessors of land in this country have it in fee. They are for the most part mere life-renters. When estates in land have been got together, marriage settlements, or settlements by will, or the laws of entail in Scotland, speedily tie them up beyond the control of the possessors; while the laws of primogeniture, and the demands of their position, make it not only the interest, but the necessity of a great majority of proprietors, to get as much out of their estates as they can, with as little outlay as possible.

In 1846 an Act was passed by Parliament, authorising the advance, on loan, to the proprietors of Great Britain and Ireland, of three millions of public money; to be expended in draining: and enabling the proprietors of settled estates—with the sanction of the Enclosure Commissioners—to burden their properties with rent-charges, calculated to repay the sums expended, with interest, in 22 annual instalments. The whole of this sum was speedily applied for, and absorbed; to the great advantage of those who were fortunate enough to obtain a share of it. Demands greatly beyond the limits of the large sums named in the bill have been received by the Commissioners; but as the principle involved—the state becoming a money-lender—was held to be contrary to sound political economy, no indefinite extension of the measure could be obtained.

The advantages of enabling the proprietors of settled estates to improve their lands by draining, and that without injustice to their younger children, are so obvious, that during the last session of Parliament, an Act has been passed, differing but little from the Drainage Act of 1846 in its details, but authorising the money to be obtained from private instead of public sources. By this Act money may be borrowed for the drainage of lands, no matter how tied up or encumbered the estates may be; or how defective the titles; provided only that it be certified by the proper authority, that the improved state of the land will repay the outlay, and a profit over and above, in 22 years. It is thus put within the reach of every landlord, in all cases where it would be prudent to drain his land, to do so; not only without burdening himself, but with the full assurance that it is the most likely means he can employ to enable his tenants faithfully and punctually to keep their engagements to him.

The new Drainage Act, 12 and 13 Vic., Cap. 100, is termed shortly, "The Private Money Drainage Act, 1849." It provides, "that it shall be lawful for the owner of any land in Great Britain or Ireland, who shall be desirous of borrowing or advancing money for the improvement of such lands, by works of drainage, under the provisions of this Act, to borrow or advance money for such purpose; and to have the money expended in such improvement, and in defraying the expenses incident thereto, charged on the inheritance of such land; in manner and with the priority herein mentioned." It further provides that the Inclosure Commissioners are to be entrusted with the carrying out of the Act; and that application is to be made to them by all parties desirous of taking advantage of the provisions of the Act. The Commissioners have already arranged and issued the form in which such application is to be made, of which the following is a copy.

"PRIVATE MONEY DRAINAGE ACT, 1849."

TO THE INCLOSURE COMMISSIONERS FOR ENGLAND AND WALES.

I, the undersigned, being owner of the lands herein particularly specified, the same being in Great Britain, and being desirous of borrowing (or advancing) the sum of £ for the improvement of such Lands, by Works of Drainage under the provisions of "The Private Money Drainage Act, 1849," hereby apply to you to authorise such Loan.

PARTICULARS.

Name, residence, and description of Applicant.	Name of Estate proposed to be drained.	Acreage	Parish.	County.	Estate in land proposed to be drained, vested in applicant, whether in Fee, Tail, or for Life.	Nature of soil and subsoil.	Proposed manner of effecting Drainage, materials proposed to be used, and nature of outfall.	Estimated expense	Estimated increase of value calculated by rental.	Amount proposed to be borrowed (or advanced.)
If the land proposed to be drained is glebe-land, the consent of the bishop and patron should be attached.										

Witness my Hand this day of 18

N.B. It must be distinctly specified by the party making an application, whether he proposes to borrow the money, or advance it.

The Act goes on to provide that on the Commissioners being satisfied by the report of an Assistant Commissioner that the proposed works are expedient, shall certify under their seal, "whether any or what amount of money shall be authorised to be borrowed or advanced under this Act, in respect of the land specified in such application; and they shall by the same or subsequent certificate, fix the rate of interest, not exceeding 5 per cent. per annum, to be paid in respect of any money to be so borrowed or advanced." After the application is allowed by the Commissioners, the parties willing to lend the money required are to pay it into the Banks of England or Ireland, or some chartered bank in Scotland, as the case may be, to the credit of the Commissioners; and in exchange for the banker's certificates, they are to receive from the Commissioners grants of rent-charges, calculated to repay principle and interest in 22 years. These rent-charges will of course vary with the rate at which the money is borrowed, but the highest rent-charge which can be sanctioned under the Act is 7*l.* 12*s* per cent., which, with money borrowed at 5 per cent., will repay principal and interest in 22 years.

Where the owner of the land is willing to advance the money himself, the proceedings are somewhat modified; as, after the proposed works are allowed, he is to lay out the money, and receive the grant of a rent-charge, without the necessity of placing the money in the bank.

The rent-charges granted by the Commissioners are to be considered *personal* property; and "shall, without reference to the title of the parties making such application (as to which the allowance of such application by the said Commissioners shall be conclusive), be a valid and indefeasible charge upon the land comprised in the grant thereof, by the said Commissioners, subject only to tithe-rent-charges, land tax, local taxes and rates, quit or chief rents incidental to tenure, and charges created, or to be created, under any act authorising advances of public money for drainage and the improvement of lands; and prior to all other charges whatsoever."

The Act further provides, that the rent-charges may be apportioned upon separate farms or divisions of the land; that the rent-charges on lands in Middlesex or Yorkshire, Ireland or Scotland, are to be registered; that the rent-charges in England and Ireland are to be recoverable in the same way as tithe-rent-charges, and, in Scotland, in the same way as fine duties or rents; that tenants may join in *application for drainage* works, and become chargeable with the whole or a part of the rent-charge during their occupation; that arrears of rent-charges are not to be recoverable after three years; that rent-charges under the Act are not to prevent trustees from investing trust funds in mortgage of the lands; that the expense of securing outfalls for the drainage, and of fencing, trenching, and clearing the surface of lands to be drained, for the purpose of converting the same from waste or pasture into arable or tillage,—where such shall appear to be necessary, to secure and render productive the proposed improvement by drainage, may be included among the expenses; that the cost of the works, and the expenses of the Commissioners and their officers, shall be paid by cheques on the bank, where the money is deposited, drawn from time to time, as each portion of the work (complete in itself) is finished; that any balances of money which may be remaining after the works are completed, or abandoned, are to be applied to the indemnification of the parties liable to the rent-charge—the owner, on whose application the charge was granted, coming last, however, in such indemnification. The Act concludes with the usual clauses of interpretation, &c., and gives to the word "owner" the very extensive signification given to it by the Tithe Commutation Act.

From the explanation we have now given, it will be evident that it is now within the reach of all parties to have their lands drained, and we hope to find that the Act is extensively taken advantage of during the present and following seasons. The only practical difficulty we can see in its provisions is one which may perhaps tend to restrict the money-lenders to the insurance offices, or the proprietors themselves. We refer to the peculiar mode of repayment. Most parties who lend money desire to leave it undisturbed, and to receive from time to time the mere interest, leaving the principal untouched. If the circumstance to which we have adverted should turn out to be a practical disadvantage, we have no doubt it will be remedied in the ensuing session of Parliament, as otherwise the provisions of the Act hold out great inducements both to lender and borrower. To the former, from the indefeasible title of the security, to the latter in the absence of those lawyers' charges which form so serious an item in all borrowing transactions. *G.*

THE ALBERT MODEL FARM.

As the public mind is now apparently awakening to the necessity of agricultural education being imparted to those who are to follow the profession of agriculture, will you permit me to direct the attention of your English and Scotch readers to the circumstance that Ireland, in the midst of her penury and distress, has entered upon a course which, if I do not greatly err, will very shortly give her agriculture an impetus that will carry her ahead of large districts of the United Kingdom, unless the praiseworthy example is speedily followed. Although no doubt well known to yourself, I believe it is not generally known, either to the landlords or tenants of England and Scotland, that there has been for several years a National Model Farm at Glasnevin, near Dublin, and which in future, in token of royal approbation, is to be styled the Albert Model Farm. The farm used to consist of about 70 acres, but within the last year has been augmented to 130 acres. It is worked by a number of young men, recommended as pupils from the national schools by their superior attainments and intelligence, who at the expiration of about two years, spent in acquiring a well-grounded knowledge of scientific agriculture, go forth into all parts of the country as stewards and bailiffs.

But the feature of most promise in the prospective improvement of Irish agriculture is the system originated by Dr. Kirkpatrick, to whose philanthropic mind the idea suggested itself of blending instruction in agriculture and agricultural chemistry with the usual branches taught in the national schools; he accordingly procured that the teacher of the school at Larne, where he then resided, should undergo a course of preparatory training at the Glasnevin Model Farm; here, Mr. Donaghy (the teacher) laboured for two years, at the termination of which period he returned, so competent and so zealous that his little pupils at Larne soon became the wonder of all who saw them, or rather heard them, under examination; the system was found to answer even beyond expectation, and is now an acknowledged part of the system pursued by the commissioners of education; there are at present about 50 national schools, scattered throughout all parts of Ireland, in which the practice and theory of agriculture are taught, with so much success that, without witnessing it, one could scarcely credit that so much information upon such subjects could be acquired by pupils so young, and without interfering with their literary education, which is also of a much higher character than is customary with us. Each of these schools has a farm attached of from 5 to 30 acres, and so sensible are the proprietors of the soil becoming to the vast advantages to be hoped for from the knowledge thus spread throughout every corner of their estates, that applications are continually being made to the commissioners of education, for the erection of suitable model buildings, to be attached to the national schools of their neighbourhoods; the expense of the buildings are borne conjointly by the proprietors and commissioners the former paying one-third, the latter the remaining two-thirds of the cost.

In proof of the working of the system, I was informed recently, while in Dublin, that in some of the remote districts where a green crop had never before been seen (*excepting the Potato*), there are this season very promising crops of Swedes and other roots, which have been sown, and subsequently managed, entirely under the direction of the sons of the tenants and cottars, lads of 14 and 16, who have recently left these model schools. Dr. Kirkpatrick has very properly been appointed inspector of agricultural schools, and Mr. Donaghy, the original teacher at Larne, is now the superintendent of the Albert Model Farm; his duties are arduous—in addition to the active superintendence of the farm and all its concerns, he has the entire instruction of the pupils in every branch of farming, delivers a lecture to them every morning at 8, and he also lectures at 3 in the afternoon to the young men at the Victoria Training Establishment in Marlborough-street, who eventually go forth as teachers themselves. Who shall say there is no hope for Ireland? When we recollect the natural aptness of the Irish character, it is not too much to anticipate that in a very few years a knowledge of the most improved practical and scientific agriculture will pervade the minds of a large portion of the peasantry of Ireland, even while the farmers of England, aye and of Scotland also, are yet stumbling at the threshold of knowledge.

I believe the benefits of the "Albert Model Farm" are not confined to the class of pupils already spoken of, as, while I was in Dublin, there might be seen the son of an English baronet, plodding over the fields, taking a share of the manual labour on the farm. I believe he lodges in the neighbourhood, and repairs to the farm daily. This is as it should be—would that the example were generally followed, would that the sons of our aristocracy and landed gentry were sufficiently alive to their own true interests as to flock to Cirencester College till its walls could contain no more, then might each county have its own agricultural college, and each village or parish contain its own little model farm, for the instruction of the labourer's son in that knowledge whereby he is to earn his future subsistance.

As it is of some importance that misstatements should not go forth to the prejudice of so eminently useful an establishment as the Albert Model Farm uncontradicted, will you permit me to refer to a letter which appeared in *Saunders' News Letter* of 27th August, from Mr. M'Farlane, one of the guardians of the North Dublin Union, purporting to have been originally addressed to our own Poor-law Commissioner, Mr. Baines. The subject of the letter was agricultural establishments attached to the Unions. I shall not allude to the general subject, but merely correct one or two errors into which Mr. M'Farlane must have inadvertently fallen in reference to the Model Farm at Glasnevin (to which Mr. M'F. seems rather inimical); he states that the land is rented at 10*l.* per acre; the rent is about 7*l.* 10*s.*, and, what is of consequence, pays that rent and leaves a profit, even after a liberal allowance for labour, which however is not paid for. I believe the commissioners intend to publish the balance sheet next year. Mr. M'F. also deprecates the expenditure of 8000*l.* on farm buildings; that sum is higher by 2000*l.* than the reality, and the buildings include dining hall and sleeping rooms for the pupils, with all the offices worthy of the object—of a national model establishment. Another error seems also to be the implied statement that the cost is defrayed out of the rates, whereas the requisite amount is obtained from the consolidated fund. Mr. M'Farlane is also under the impression that the cropping of the farm is faulty. He should inspect it. It is devoutly to be desired that the friends of Ireland would unite, and not impede the good that is doing, by disunion among themselves. *E. Slade, Chislehurst.*

NOTES OF FARM PRACTICE IN 1776.—No. II.

I send you No. II. of Agricultural Notes, in 1776. I have a good deal of material which is almost all worth publishing, and shall furnish you with several extracts, which I think may be the most interesting to your readers. I will give the names of the parties my traveller meets in with, as it may give additional local interest to the extracts. *N. B.*

Journey from Edinburgh to Norwich, &c., *Friday, Dec.* 29, 1775.—I left Edinburgh at 6 in the morning, in the Newcastle stage-coach; there were other four passengers, two of whom slept for the first stage, and the other two talked in the dark. I sat thinking on what was to come.

Morpeth, *Saturday, Dec.* 30.—Here, being tired of the inside of the coach, I got upon the top; at first I was afraid of falling, but, by-and-bye, I found it the easiest seat in the machine. The driver was a sensible fellow, and master of the inn; he told me the farmers always keep their horses at Grass during the winter, and have a small shed in the corner of the field, where they get some straw but no Oats, and that they are much fresher this way than in the house. He told me, likewise, that they always give their calves Turnips in the winter time, to keep them growing, and think it a great advantage.

January 1, 1776.—About Darlington the country is very rich and beautiful; all inclosed, being mostly in Grass. Rents are 50*s.* per acre. Turnips they reckon of great advantage for saving hay. I saw, for the first time, sheep folded in sheds, and done at very little expense, by building straw upon couples. The wool of sheep is of very great value; some have a stone of wool in a fleece, which sells about 10*s.* per stone.

Jan. 2.—I left York at 4 in the morning; it was dark and rainy, which joined to the account we had got of the coach we were in having been robbed once at York and thrice at London within a fortnight, made it a dull scene till we got to Ferrybridge. Here it was that I first saw the fine chalk bottoms that they have in many places in England, and to which, I imagine, is owing much of the fertility of the country; about this place the appearances to me were very remarkable. Large, extensive fields, both inclosed and uninclosed, were covered with a fine braird of Wheat, and not a drop of water could be seen standing on the ground, though it was quite level, and many places without furrows. Almost their only crop seemed to be Wheat, and it was as rare to see a piece of Grass near the road as in West Lothian to see a piece of Wheat. About Bawtry the country turns worse, and about Burnley Moor, where we dined, it was almost all moor; but there I had a very strong instance of what an advantageous crop Turnips must be. Some farmers, more enterprising than the rest, have taken small pieces of the moor, where, although they can get no corn crop, they have the finest Turnips I have as yet seen. It struck me much, and I was sorry that I could not stop to inquire into their method of preparing the moor for Turnips. In Nottinghamshire they are bad farmers. Here they give their calves oatmeal in old milk; "But," says I to the man who told me so, "we give our servants only oatmeal in water." "Oatmeal in water!" says he; "Lord preserve me from such a country, I should be absolutely starved." "Oatmeal in water!" says he again. We travelled all night, and breakfasted at Budgeen. There is a farm-yard close by the inn, and while breakfast was getting ready I stept into it, and found it divided by stakes put close together, so as to keep in swine and poultry. There were horses in one division, cows in another, young cattle in a third, geese among the horses, swine among all. They were cleaning Barley in the barn, in a manner very uncommon to me. A man with a handle fixed to a wheel, turns about four leaves, to which 4 pieces of canvas are annexed, these gather a great deal of wind. Another man has hold of a large riddle, the opposite side of which is fixed to a long stick stuck into the ground, the elasticity of which draws back and shakes the riddle when the man pulls it to him, and riddles the corn without fatiguing the riddler at all. I thought this a simple and excellent method of cleaning the grain. We got into London this evening, about 6 o'clock.

Jan. 5.—Set out from London. That part of Essex through which our road lay seemed to be very wet, strong land, and their farming did not appear to be very good, but at this season everything in the country looks so bad, that we should make allowances. In Suffolk things look better, though still very wet; but this, I believe, was owing to the great quantity of rain which fell yesterday, for wherever there was a level piece of ground it was covered with water. Their Wheat lands in Suffolk have a very pretty appearance, all done up into 4-furrow ridges, which looks like a ribbed silk stocking, for it is done up so neat and straight, that in a whole field you cannot see a bit of earth in a furrow, or a drop of water standing; the coachman told me they always do up their wet lands so, but lay their dry lands in broad ridges, and by this means they manage to get Wheat upon very wet land.

Jan 6.—Leaving Norwich I walked out to Bexley, and found my Lord and Lady Rosebery very well. In the evening I was introduced to Mr Leeder, who is to be my guide and preceptor, so far as I choose to follow him. He is a good-looking, jolly man, very sensible and discreet, so I hope we will do well together. He tells me that they plough four, five, and six times for their Turnips, giving the first furrow at this time; they begin sowing at Midsummer, old style, and continue sowing till the end of July or later, and they give dung to all they can—they hoe twice, which costs 6*s.* 6*d.* per acre, feed them off mostly with black cattle in the fields, but reckon that they feed much faster in the shed, and that the Turnips go much further; but they have such a quantity that it is impossible for them to feed them all in the house. Upon his telling me this, I asked him whether they thought shelter an advantage to feeding cattle, for with us some people insisted that cattle would feed as well on an exposed place, provided they had plenty of meat, as they would do in the house. "Not at all," says he, "they will feed twice as fast in a house as without."

Jan. 8.—Mr. Leeder and I resolved last night that we should have a walk this morning, let the weather be what it would, and accordingly set out about 8 in the morning to see his Turnips and Turnip cattle. Going along, I was inquiring about the profits of his feeding cattle. "There is no profit in feeding cattle," says he, "and if it was not for keeping the ground in heart I would not keep a single beast. These cattle cost me, Michaelmas was a year (1774), 8*l.* a piece. I gave them straw and the refuse of the Turnip the first winter; they got plenty of Grass all summer, and now they are getting the best of Turnips, and when I come to sell them I will not get above 12*l.* 10*s.* a head; nor do I think they have thriven badly either, but we can make no profit of feeding, and we are much better to sell our Turnips, as I have done a field this year, at 2*l.* 10*s.* per acre, to be eaten on the field."

Home Correspondence.

Cumberland One Horse Carts.—In your Paper of Sept. 8, p. 572, your correspondent "A. B. C" criticises my remarks on the subject of the light Cumberland carts, and asks a variety of questions—as, for example, whether I do not know that "horses draw heavier carts than ponies" which being a problem better suited to the capacity of "A. B C." students than to any one further advanced in the alphabet I leave for the querist himself to solve. I thought in stating the fact that carts capable of containing a ton of lime or coal, weighing 6½ and 7 cwt., were continually drawn over the roads of the Cumberland mountains; and in remarking that carts seldom loaded with more than a ton, weighing 8½ and 9 cwt. were the "prize," and Scotch carts of our best agriculturists, I had not said anything likely even to rouse the wrath of the maker of "Scotch," or the winner of "prize" carts, one or both of which from your correspondent's remarks, it is plain as "A. B C" to me, he himself is. Else why his touchiness about my "puffing" Messrs. Ransome and May, gentlemen with whom I am totally unacquainted? and who, I dare say, would as much scorn to receive any puff, that is, undeserved praise, as I would to offer it. And why his assertion that the makers of "Scotch" and "prize" carts can and will make better, lighter, and cheaper carts than those of the Cumberland cartrights, whose names were mentioned? To which I have only to say, why does not "A. B C." do it? For really some of the lumbering masses of wood and iron which have been called "prize" carts, do neither their makers nor "A. B. C.," their defender, much credit. My only wish, however, is, that your correspondent or any good manufacturer of the wonderful 9 cwt. carts, and ton weight waggons, which he says last half a century, no one part yielding before another, but all going off at once, like the flame of a candle, which for so heavy and durable an article is quick enough at last:—My only desire is that those who think a ton of goods a fair weight for a horse, would consider whether they shall not desire "A. B. C." to make them carts weighing 7 instead of 9 cwt. Messrs. Ransome and May gave the dimensions of the cart they received from Cumberland, the capacity of which can be increased without increasing the weight, and with the proper adaptation of the proper materials, that any good manufacturer can produce the cart which has been found so useful for the general operations of the farm, must be as clear to "A. B. C" as to *I. V R.*

The intrinsic Value of Politics to Agriculture.—You are to be lauded for eschewing politics in the *Agricultural Gazette*. Of what real use are they to agriculture as an art or science? Your correspondent "Q" evidently considers the political aid as the very heart and soul of the art of manufacturing bread and meat; whereas, it is so subordinate to the main point to be held in view, that it may well be dispensed with altogether. Will a fiscal regulation lighten or cheapen the labour of production, or will it cause two stems of Wheat to grow where but one grew before? Will the lopping and topping of taxes ever grow a coomb of corn cheaper, or extract an additional coomb from the soil? [It might the one, but not the other, certainly.] What would your friend "Q." do with the corn-feeding, beef-eating mouths 10 years hence? Can he hope to fatten a bullock on a cwt. of Acts of Parliament? No doubt "Q" feels the pinch at present, like the rest of us, but his ideas are all past and present, never looking to the future. Is the future to take care of itself? Very shortly, I have reasons for suspecting, I shall be classed amongst the enthusiasts; would that we could infuse a little of the so-called enthusiasm into the hearts of the desponding lay-upon-your-oar class. It is rather remarkable that to no other art or science but the art agricultural has that odious word "plodding" been applied; it is as curious a word as any in our language, and very significant; its very sound to the ear indicates the essence of monotony. Let your correspondent "Q" take a more lively view of farmers' prospects, and aim at higher ground than that of repairing the agricultural fabric by Acts of Parliament. What should be the main question or subject of inquiry? Why, whether the art be capable of profitable improvement as a manufacturing business. Is it capable? It is, and the first and most important item is its mechanical deficiencies, when compared with the sister arts. The first item farmers have to pay for, and from which every other important business in this country is exempt is 30,000,000*l.* for horse power. Now this would be a nice round sum to put into the farmers' pockets; aye, or even 20,000,000*l.* What would be the profits of the mines, collieries, travelling, cotton, silk, worsted, and pottery manufactures; what would be the expense of Plymouth, Portsmouth, and Deptford dockyards, if all their labours were executed by a power that was eating when it was not working, and consumed a food of the most expensive description? From this item alone "Q" will see that there is yet something to be done for agriculture, without seeking the subsidiary aid of an Act of Parliament. But "Q" will say this is not accomplished; but will he deny that it ought not to be, or will he venture to say that in these "utilitarian" times such things may not be effected? I think he can with greater profit to himself and others employ that mind and those talents I see he possesses, in endeavouring to assist these worthy aims. By improved mechanical practice he can help to cheapen production, and by studying these valuable books on high farming, and by diving a little into chemistry, he may help to increase production. What study has ever proved itself so useless, so profitless and vexatious, as the political? Tell me of improved practice, and not of the resuscitation of bygone politics; the political soil is indeed fertile in words; I wish the natural soil were one half as fertile, and could be made to produce as many quarters of corn. Continue to address your Paper to the "practice" and not to the "politics" of agriculture, and you cannot err, except on the right side. "Q" wants to force the political upon us as the principal, whereas it can but be a collateral aid or injury to any art. I hold that no art, practice, profession, or even nation, can even have approached perfection, when it cannot stand its ground on its own merit; in confirmation, we may adduce the cotton, silk, glass, pottery, cutlery, iron and the metallic manufactures, &c, every one of which could maintain its position, at home and abroad, solely by its own merit. Will "Q." attempt to assert that agriculture has attained this position, or will he say that it has reached its culminating point, and cannot be improved? He will hesitate before he states this. When they work on the soil by the same or similar means to those employed in Deptford Dockyard, then I shall say we are approaching perfection, but not till then. When the cultivation of an acre of Turnips costs shillings instead of pounds, the thermometer of my hopes will begin to rise (and "Q's" also, I suppose); and I have reason for thinking that, if we mind our "P.s" and "Q.s," it will yet be the case. Why, the cultivation of an acre of Turnips costs as much as the crop is afterwards worth. Will an act of parliament remedy this? There is but little doubt I shall be classed by "Q." among his enthusiasts. I certainly intend contributing my mite, amongst the rest, towards diverting his mind from his political panacea, by affording him some material to cogitate upon, other than fretting over those happy days and good old times "when George the Third was king." *C. B., Heacham, Norfolk.*

Dr. Newington's Patent Dibble.—A piece of Wheat here, dibbled the latter part of last October, has yielded at the rate of 59 bushels to the acre. A plot of Barley done last April yielded 71 bushels per acre, the seed put in being a little more than 2 pecks to the acre. I have been told that a Mr. William Gibson, of Eydon, Daventry, Northamptonshire, has had 80 bushels this season from 5 quarts of seed, put in with Dr. Newington's patent machine. We have tried other experiments here with the patent dibble; of Wheat, Barley, and Peas, all of which have been highly satisfactory, with the exception of two; one was Wheat put in in the autumn (Nov. 1, at 1½ peck per acre), and unfortunately mice were very numerous and got part of the seed; I killed 90 mice myself upon about three quarters of an acre. After all, the crop was an average one. The other was a piece of Barley overrun with rabbits, which of course could never make headway. The Peas done were very superior to those done by drilling, but I cannot speak as to the exact yield per acre. I think every effort ought to be made to bring the system into general practice. Its advantages must be obvious to every intelligent, reflecting person, viz., the employment of a vast amount of labour in this country, which cannot find a market; and the payment of that labour doubly over, or more, by the seed which would be saved. The calculation has been made that the amount of seed which would be saved by the general adoption of dibbling would be equal to the annual importation of corn into this country; and, moreover, I am persuaded, from the experiments I have made, and others have made, that the crops would very much exceed those under the present system of seeding and cultivation. These are grave questions for farmers and landowners and ought to occupy their attention. Every facility is now offered to the system by Dr. Newington's invention, and I am glad to know they are being thoroughly established. Last year I gave a description of working the patent dibble in this paper, and would now add a little further information to those who have or may have these machines. I was never very fond of the regular use of the line to dibble by, and therefore thought it best, after setting out the first rows by a straight side of the piece or field to be done, to leave all the rest to the operator's eye, by way of making straight lines or rows. It requires a great deal of practice, however, before a person can accomplish this well, and crooked lines look badly. The following simple contrivance, I think, is all that is needed to fully meet the case. Take two pieces of iron bar, say 14 or 15 inches long, and ½ by ¼ inch thick. Turn up one end of each 2 or 3 inches, and fasten them in front of the dibble, near each end, about 3 inches from the bottom of it, with screws. They will thus project out in front of the machine like two arms, about 12 inches long. In these arms should be made (previous to fastening them on to the machine) screw holes at inch distances, measuring from the centre of the dibble rods; the first being 7 inches from the centre of the rods, the next 8, and so on, up to 12 inches, which I presume will be as many as will be needed for grain; for Beans, &c., they would require to be longer. To these two arms fasten a lath, or piece of wood by screws to the holes in the arms, according to the distance you wish to have your rows, 7, 8, 9, or 12 inches. The lath need not be stouter than a person's little finger, and may project out beyond the ends of the machine 3 or 4 feet, tapering towards the ends. Thus you will need no line or marks at all, if you have a straight side to begin at; the lath will set out your rows at first, any distance you require, by altering the screws and when once your first rows are set out correctly, the pointers, by extending over them, will keep you in a straight line. If anything interfered with the pointers in setting out the rows, this could be done with a string, fastened to the screw holes, and stretched from arm to arm. I think this far more simple and expeditious, and equally as true, as lines can be, if the first rows be correctly set out. *G. Rymer, East Ayton, Pickering, Yorkshire.*

Societies.

Royal Norm Lancashire.—The annual meeting and show of this Society took place last week at Preston. We regret our inability to give a full report of the proceedings. The following report of the discussion *on the Best Method of Preparing and Laying Down Land to Grass* is abridged from the *Preston Chronicle*. We are sorry we can only give the remarks of the two first speakers. The Chairman, T. Clifton, Esq., of Lytham, said:

The first gentleman who will have the kindness to address you on the best method of preparing and laying down Grass, with reference to the different soils found within the limits of the Society, is Mr. Grey, of Dilston.—Mr Grey said, the cultivation of Grasses, and the laying down of land to Grass, is, as you know, a subject of extreme importance generally, and in no district more so than in the county in which we are now, because its climate and soil render the cultivation of Grass a subject of great importance in its agriculture. There are certain principles connected with the cultivation generally, which attach to this as well as to the cultivation of other descriptions of crop. It is a great desideratum in agriculture, and in the tilling of the soil, that we should, as much as possible, rid our land of every description of root and weed injurious to the crop, and calculated to rob the soil of those properties which should be applied to the crop we intend to grow. But this is a point of perfection never yet attained, and perhaps is more difficult of attainment in a humid climate, such as the climate of this district, than in other places. Our main object should be to get our land so clear of weeds and roots injurious to the crop and pernicious plants, that we should let the land grow nothing but the crop itself which we wish to see in it. And if it is of importance in the growth of other crops to rid the land of everything we wish to clear it of, and if it is essential that the soil should undergo the best description of preparation for any particular description of crop we wish to put in it, it is still more essential in the case of laying down the land to Grass; because the seeds, as they go into the soil, are so delicate that they require every nourishment we can give them in the amelioration and pulverisation of the soil, as their growth is particularly slender. At first they are sometimes overcome by plants of a robust nature, and we find that the strong plants which we allow to remain in the land, are the plants which usurp the soil, to the injury and detriment of those which are the plants we wish to encourage. In the remarks which I shall now have to make to you, on the laying down of the land to Grass, I take it for granted that the land is properly prepared by pulverising and manuring—by previous hoeing and cleaning, and by getting rid of the pernicious roots and weeds, which is the first step necessary towards the successful sowing of the land to Grass. The first object is then to prepare the land for

the reception of the seed; the next to select the kind of seeds most likely to succeed, and the most fitted to the soil in which they are sown; and the next is the manner in which the seeds ought to be sown. In a company of gentlemen such as I see here assembled, it is hardly necessary to dwell much on the manner in which the land ought to be prepared for the sowing of the seed. That land is the best that will produce the finest sorts of Grass, and which is the mellowest and most rid of weeds and roots injurious to the growth of a Grass crop. It is an object in the sowing of small seeds such as Grass seed that they should not be too deeply inserted in the soil. From my own observation of the growth of Grass seeds, I am convinced that a great quantity of seeds is lost by deep harrowing, and by placing them at too great a depth in the earth. Some of the Grass seeds, such as the Rye-grass, and that description of seeds, will not grow unless they are covered to some extent by the soil, but I believe the error is far greater to cover them too deeply than to cover them too lightly. After the land has been sufficiently prepared for the reception of the Grass seeds, there arises this question—in what way, and at what season, is it best they should be sown? It is not perhaps always thought well to sacrifice a crop of corn in the sowing of land to Grass; but yet, if the land is intended to remain permanently in Grass, and if considerable expense has been employed in the preparing of the land to that object, it is being, I think, "Penny-wise and pound-foolish," to sacrifice the permanent good of the pasture to the present crop. Therefore it is that in such a case I should sow land to Grass without any reference whatever to any corn crop. If a corn crop is sown with Grass, so as to succeed, it ought to be sown with a crop of Barley, to run no risk of being lodged, so as to destroy or make the field at all patchy, and so as not to take away too much of the nourishment of the soil, which you wish the first Grass crop to derive. On light soils, usually of a sandy or light top nature of any kind, opinions have been expressed that the wisest course to be taken in sowing it to Grass is to sow among it sparingly a thin crop of Rape seed—say 1 lb. of seed to the acre. Where this plan has been adopted it has been found to succeed admirably, and in fact when we consider the matter, we find that it could not well be otherwise. In the first place the Rape grows up and affords shelter to the Grass, without taking away much of the nourishment from it, and in the autumn it affords food to the sheep, which may be turned in to pasture on it. Another benefit is also derived from this latter circumstance, for while the sheep are consuming the Rape for food they are treading this light land and giving it consistency by the action of their feet upon it, while at the same time the process of manuring the land is also going on, much to the benefit of roots of Clover and other Grasses. This has the effect of bringing the land through the winter without the injury loose land is found to sustain. I think gentlemen must have observed the effect, and in fact every farmer must have done so, that in seasons when the Clover fails among his corn it is best upon the headlands and on those parts of fields where the soil is trodden down. I know that many of my friends who are addicted to fox hunting say that fox hunting is of great benefit to the fields, and I have seen their remarks borne out upon the headlands where the land has been trodden down by the horses' feet, and which the next year have been found to produce the best crops of Clover. This does not, however, carry out a principle of continually treading down the soil, for it is a very different thing to having a number of horses riding down a ridge and beating down the fields, to having a score of horses ploughing through a field and leaving a pool of water where their feet have trodden upon. The very best and most successful system of sowing land to Grass is by mixing the seed with one pound or so of Rape seed and grow the whole in the autumn. With regard to the description of seed to be sown, I do not think I can enter on the subject minutely here, because the difference in the nature of soil must always operate upon the quality and quantity of Grass which land must produce. On a dry soil, intended for sheep, the white Clover, Cocksfoot, Timothy Grass, different Fescues, and those kinds of Grass upon which sheep thrive, should be sown on this description of land—they will be found to produce best. On colder soils I would recommend red Clover and other kinds of Grasses of a stronger character. In the management of farms it is essential that every description of Grass should be eaten down smoothly at one season of the year. It is the habit in the best grazing counties in England, Northamptonshire, Leicestershire, Lincolnshire, &c., to fill the pastures as full as possible with sheep or lean cattle, which eat every thing before spring, and they then have a new growth more nutritious; and by this means they tend to keep the pastures in a better condition than they otherwise would be in. Having entered so far into the discussion I cannot pretend to say anything which is not of a general nature here, but I must leave it to gentlemen who are better acquainted with this district than I am, to say what soil is the best and what are the best modes of treating it, whether it be a peaty or strong clay land. There are gentlemen, no doubt, present who know the best modes of cultivating such land and the best description of Grass to sow upon it. If in the course of the discussion it should be in my power to answer anything that may be put to me with reference to my experience as an agriculturist, I beg to say in conclusion that I should be extremely glad to be questioned, and to give answers such as I am enabled to give to any inquiries that may be made of me.—Mr. Binns, of Lancaster, said: I am thoroughly convinced that the produce, not only of the soils of North Lancashire, but of the kingdom at large, might be increased, by superior cultivation, to double their present amount, with very little increase of capital; the people would be better fed, the farmer receive a larger profit, the landlord more rent, and the labourer be fully employed, and, of course, happier, and the poor-rates would be lessened. I shall endeavour therefore to describe the kinds of Grass most suitable for heavy and light soils, and the moory and high districts. A considerable portion of the land in that part of North Lancashire lying between the Ribble and the Lune, not at present under the plough, is in miserable condition, and cannot be honoured with the name of pasture. It has often occurred to me that it could not return the value of rent and taxes. The lands I allude to have been exhausted by a succession of grain crops, till they would no longer respond to such extravagant and unreasonable demands. When the grasping and ungrateful hand of man has exhausted all the bountiful provisions of Nature, they are left to her to supply, in her boundless generosity, that which has been so recklessly and improvidently extorted from her. After this scourging process they are then left without Grass or any seeds being sown. The blue tint of these lands, which may be observed by the traveller passing along the public roads and lines of railway, may be nothing disgusting to the eye of the casual observer, unexperienced with the character of the various plants of which they are composed; but the agriculturist at once sees that the produce is composed of Carex and Juncus, provincially "Pink Grass," which all animals refuse to eat, if not compelled by hunger. These worthless plants, combined with Couch Grass and the worst kind of Agrostis, have for years held possession of the soil, even when in grain. These unprofitable pastures ought, in my opinion, to be again ploughed, and undergo, without delay, a course of fallowing and manuring, and be brought into a regular rotation. This exhausted land, covered with the vegetation described, is exceedingly difficult to restore, even with great expense, without ploughing and loosening the soil, and incorporating the manure with it. The effect produced the first year of pasturage, upon being properly prepared and sown with a sufficient quantity of suitable seeds, even upon previously exhausted land, could not be believed by those who have not experienced it. Upon the farm that I entered on, succeeding a most slovenly tenant and exhausting system of cropping—as proof of which I need only mention that several fields of Oats, the crop of the off going tenant, when ready for reaping, were valued to me at 2l. the statute acre, and one field of Beans of 12 acres, at 2l. per acre—one of the fields of this farm, equally impoverished (for not one yard of land escaped), was cleaned and well manured for Turnips and Mangold Wurzel, four years after I entered on the farm, and the next year sown with Barley and Grass seeds. The seeds were Rye-grass (I believe the leafy kind called Solihull Stickney), from William Stickney, a celebrated agriculturist in Holderness; he calls it "Old Holderness," from its being selected from the best old pasture in that district. This was combined with white Clover. I turned what I considered an extraordinary number of sheep into this field in spring, but the Grass increasing upon them, one addition after another was made; but the Grass still gaining, on the 15th of April I had 65 ewes of the large Leicester breed and their lambs (mostly double) upon rather less than four statute acres, for several weeks. I am not sure if the field was ploughed after the first or second year, but I know it produced when ploughed between five and six loads of meal per statute acre. It is very rarely that a sufficient quantity of seed is sown; the ground is not half covered, leaving space for inferior indigenous Grasses and weeds to occupy a portion of the land. In very few cases are they sown with regularity; the "cast," as it is called, is easily discerned—that is, there is much more vacant space between each deposit of seed from the hand. Having introduced the foregoing remarks, I will now proceed to that part of the subject more immediately under discussion. Assuming that all land, provided the elevation be suitable, if properly drained, is capable of growing profitably the various green crops of Turnips, Potatoes, Mangold Wurzel—these ought to be drilled and well manured, and thoroughly horse-hoed, and kept free from weeds. If the land be tenacious, the whole of the crop should be transported to the yard, either at home or in a temporary yard contiguous to the place where the crop is produced, by a wooden moveable railway. If it be light land, a few rows alternately may be removed to the yard; the remainder be left to be eaten upon the ground by the sheep—the rows taken away affording to sheep convenient lying ground. At the latter end of March, or beginning of April, let the Barley be sown by the drill, at 9 or 10 inches distance between the rows; the land, if dry, being as near as possible kept on the level. However clean it has previously been made, annuals will make their appearance. The drilling, therefore, gives opportunity for the horse-hoe to be passed through the rows. If the weather be moist and warm, a second crop will soon appear, and it will be advisable to run through the ground again with the horse-hoe. Immediately after the ground has been thus stirred and pulverised, sow the Grass seeds with the sowing machine, and roll without delay. It is strange that the machine should not be in more general use; the seed is sown by it with perfect regularity, far more so than could be done by the most expert sower by the hand, even in the calmest weather; and we know that a fine season is often missed owing to the high wind; but the wind does not prevent this machine from being used. If the seed be good, it must vegetate and prosper under this management, and the Barley will be all the better for the horse-hoeing. In all agreements that I am concerned in, the tenant is restricted from turning cattle or horses into the sown Grass till the month of March or April. This restriction is unnecessary in well cultivated districts. On the contrary, in Lancashire, where it is all but an uniform rule to turn heavy cattle and horses into the seed Grass all winter, and allow them to tread the land into holes, destroying many of the plants, and which holes in heavy land retain the water all winter, some restriction, I am sorry to say, is necessary. A very important consideration is the kind of Grass seeds to be selected. As I before stated the land alluded to, instead of being sown with any kind of Grass, is left to Nature. I was once inspecting an estate not far from Garstang, belonging to a large landed proprietor, and as I went along through the farm writing down the state of each field, I came at one where I found nothing but a bad miserable sprinkling of the very worst kinds of Agrostis, mixed with Carex and a small kind of Juncus. I was at a loss what to call it; it was not worth the name of pasture; and I asked the tenant what he called it. He replied "O we let it lig," that is, he let it lie after several crops without any seeds, that kind Nature might have the opportunity after a few years to bestow a covering of Grass. In passing through many fields of this description, I noted down "Let Lig" as the most convenient term. Thus he has a growth of rubbish that will assist in neither paying a rent, putting money into his own pocket, or providing food for the increased population. It is no wonder, then, we require the assistance of foreign nations to support the people. The kinds of Grass before mentioned which would grow or rather exist upon these "let lig" fields, for I will not designate it by the name of pasture, is, though very deficient in quantity, still more deficient in quality, in comparison with the best Grasses. In recommending a variety of Grasses, we shall simplify the question materially, if we take it for granted that the land is in a proper state for cultivation, and that it has been made sufficiently dry by draining; if subsoiled, of course, so much the better. A mixture of Grasses arriving at perfection at different times during the season, and adapted to all kinds of weather, filling up every vacancy, and forming a close, full, leafy sward, is most advantageous. Of such Grasses I consider the following, and I have attempted to give a short description of their qualities. *Rough Cocksfoot* will be found to prevail in all the richest and best pastures and meadows, and where the land is sufficiently stocked, its foliage, which in many cases is coarse, is only to be distinguished by an experienced eye from some of the finer leaved Grasses with which it is combined; but when sown by itself, or improperly managed, it presents a coarse, hassocky appearance, and if allowed to grow old, from want of sufficient stocking, contains half less nourishment than that which is of recent growth. The aftermath is of very rapid growth, shooting up in favourable seasons as much as from 1 to 2 inches in 24 hours. The roots are fibrous, and penetrate to a considerable depth; and in ground not too moist, the plant flourishes, is very productive and permanent, it perfects an abundance of seed, and the plants arrive at a productive state as soon as Rye-grass, hence its superiority over Rye-grass is equally great for permanent pasture and alternate husbandry. It stands drought well. *Meadow Fescue* constitutes a very considerable portion of the herbage of all rich natural pastures and meadows; it makes excellent hay, and will thrive on almost any land in good condition; it is more particularly adapted to moist, loamy meadows. There is a great loss in allowing it to stand till the seed is ripe. Its value at the time of flowering is said by Charles Sinclair to exceed that when the seed is ripe, three to one. As to earliness in spring, this Grass is next to Meadow Foxtail, and is superior in this respect to Cocksfoot. *Crested Dogstail.*—There is a difference of opinion with regard to this Grass. When the seed is ripe, and afterwards, it is provincially called Windlestraws, from the white and wiry nature of the culms; it does not furnish so early a bite in spring as many other Grasses. It is inferior for alternate husbandry, but for permanent pasture it forms a close turf of nutritive herbage, and is little affected by extremes of weather. It is very desirable for sheep pastures, and constitutes a considerable portion of herbage in the best pastures. *Perennial Rye grass.*—Much difference of opinion has prevailed amongst farmers as to the value of Rye-grass. Not many years ago it was condemned by nine out of ten Lancashire farmers. Some said it was nothing but Couch Grass; others that it produced only windlestraws, and nothing would eat it. This arose from want of understanding its properties; being accustomed to the old slow-growing Grasses, its rapidity of growth took the farmers by surprise, and before they had sufficient time to consider how to stock it, it was up into flower and seed, and thus, after June, it exhibits nothing but withered straws. The growth is then nearly over. It is inferior in nutritive quality to Cocksfoot, Foxtail, and Meadow Fescue. The following remarks I have got from "Gramineæ Woburnenses," of Sinclair, the head gardener to the Duke of Bedford, and his agent afterwards. Sinclair made many very valuable experiments, and obtained the aid of a very clever chemist to assist him in determining the nutritive matter contained in the various Grasses. He also states the given quantity of nutritious matter in their classes, and the times of flowering, and the difference of being cut at the time they are ripe with being cut previously. He says, Mr. Stick, a very celebrated cultivator in Holderness, has introduced into practice a variety of Rye-grass, said to have great merit, and which passes under his name. This Grass is more inclined to be leafy, and run less into culm, than other Rye-grasses. *Meadow Foxtail* thrives better in rather heavy loam than in light siliceous soil. It does not attain to its fullest productive powers till four years, hence it is not suitable for alternate husbandry, but is one of the best Grasses for permanent pasture. The herbage contains more nutritive matter than that of Cocksfoot, though the weight of Grass produced in one season is considerably less. It thrives well under irrigation, and is permanent and constitutes part of the produce of many of the best pastures. *Meadow Catstail*, or Timothy Grass, is of great value, mixed with other Grasses, for permanent pasture or alternate husbandry. The culms of this Grass, at the time the seed is ripe, contains more nutritive matter than any other species of Grasses. It is superior to Cocksfoot for early herbage in spring, in the proportion of nine to eight. Its valuable early foliage may be cropped to a late period of the spring, without injury to the culms, which cannot be done with those Grasses which flower earlier in the season, without incurring a loss of nearly half the value of the crop. The Meadow Catstail is deficient in after Grass, being slow in growth after being cut; this may arise from the quantity of nutriment produced in the culms. *Marl-clover, or Cow-grass.*—The true Marl-clover or Cow-grass is perennial, and grows on rather clayey or marly soils. It is frequently found on the sides of marl-pits that have never been ploughed. It withstands the effects of severe dry weather, which gives it additional value. It will continue to thrive upon strong lands as permanent pasture, when the white Clover will be insignificant. It is unsuitable for alternate husbandry, as the cultivated red Clover is much more abundant in produce. *Rough stalked Meadow Grass (Poa trivialis).*—This is most valuable as a Meadow Grass, especially upon moist rich soils, as it answers well for permanent pasture, except on dry and exposed situations: but is it suited to alternate husbandry? The following I consider the Grasses best adapted for laying land down to permanent meadow, namely, Rough Cocksfoot (Dactylis glomerata), Meadow Fescue (Festuca pratensis), Meadow Catstail (Phleum pratense), Rough-stalked Meadow Grass (Poa trivialis), Meadow Foxtail (Alopecurus pratensis). *For Permanent Pasture:* Rough Cocksfoot, Meadow Fescue, Perennial Rye-grass, Crested Dog's-tail, Rough-stalked Meadow Grass, white Clover, Meadow Foxtail. *Pasture for alternate husbandry:* Rough Cocksfoot, Meadow Fescue, Meadow Catstail, Italian Rye-grass, broad-leaved red Clover, white Clover. *For Mowing:* Red Clover and Italian Rye-grass. Many, I have no doubt, will object to the trouble and expense of procuring these various seeds; the latter will be in part obviated when these seeds are in more ordinary cultivation; but the farmers will be repaid by the increase of the quantity and quality of the produce. I do not know a more penny-wise and pound-foolish principle than that of scantily supplying the land with Grass seeds. What is the difference between doing it well and sparingly when compared with the difference in the produce? There is no better mode for farmers to become acquainted with the best Grasses, and those adapted to the soil and climate, than for them to take up a sod from the best part of their meadows or pastures, or from those of their neighbour (if superior to their own), and to plant it in the garden and allow the Grasses to seed; they will thus ascertain what their best pastures and meadows are composed of, and may venture to order them from the seedsman. At the same time a more intimate knowledge of the nutritive and other valuable and peculiar qualities of the Grasses, ought to be the study of every farmer. Some Grasses are more nutritive if cut when in flower others when in seed. For instance, the rough-stalked meadow Grass is of superior value when the seed is ripe; some other Grasses are more nutritive when they are cut at the time of flowering; this is the case with the Cocksfoot and Meadow Fescue. Some are valuable for permanent pasture—others for alternate husbandry, because some do not arrive at maturity and productiveness for several years, others in one year. Grasses are more productive when mixed, but it requires a knowledge of the nature of the various Grasses to mix them in the most profitable manner. The kind of crop in which Grasses are sown is important. Grain with a stiff clear straw, that will admit the sun and air and not fall down and smother the seeds, is durable. It has been the practice with some to sow the seeds without grain, but the advantage of this plan is questionable, except in cases where it is desirable to lay down a piece of permanent Grass in a very superior way, independent of expense. It was recommended by the late Lord Leicester to transplant good turf—that is, pare a piece of excellent turf, chop it into small pieces, spread it on the land intended for pasture, or meadow, and roll it. One important question still remains to be mentioned, that is, as to the time that the pasture should continue before being again ploughed, seeing that we all know that where properly laid, the first year produces often double what the second does, and the second more than the third, and that when ploughed for Oats after the first year, the crop is superior to what it would be afterwards. It is important to keep the ground open and friable, that the atmosphere and rain may be readily admitted, and the fibrous roots be allowed to spread with ease in search of food. On the other side of the question, I do not place any dependence upon rest for land, because I believe it is ever ready to yield its produce to the industry of man, if he will make use of it in a proper manner. I consider that the country is losing an immense amount of food and profit by continuing many old pastures in worthless Grass. Mr. Blacker, the celebrated Irish agriculturist, to whom the country is greatly indebted, exclaimed to me when he visited this country—"What a waste of land in England!" Let landowners, then, not put any unnecessary bar to their tenants ploughing these unprofitable lands in rotation, provided they will do it properly.

Farm Memoranda.

An Experimental Pauper Farm.—At the commencement of the recent depression of the trade of Sheffield, which had its origin early in 1847, the proposition to commence a farm in connection with the Sheffield Union workhouse was originated with Mr. Watkinson, the union clerk, who, besides having a knowledge of agriculture, had previously designed and carried into operation a similar plan while acting in connection with the guardians of the Chorlton union. Mr. Watkinson's proposal, when first broached at Sheffield, met with the opposition of several members of the board of guardians; but encouraged by the approval of other members of the board, he persevered, till the board at length consented to make the experiment. The design was to render pauper labour reproductive by the reclaiming of waste land—a description of work upon which unskilled workmen may be employed to advantage. To this end

a negotiation was early last year opened with Mr. Ellerson, steward to the Duke of Norfolk, the result of which was that a tract of moor-land, 50 acres in extent, the property of his Grace, was transferred to the guardians on a lease for 21 years, at a yearly rental of 4*s.* per acre. This land is situate at Hollow Meadows, some six or seven miles west of Sheffield, and on the road to Glossop. The aspect of the site is as sterile and unpromising as can be imagined, and it is obviously of such a character, considering also its distance from any considerable town, as to deter anyone from attempting to bring it into cultivation unless it was insured to him at a very low rent, and he had at command an abundance of unprofitable labour. Operations were commenced at the union farm in May, 1846. That part of the country is but very thinly peopled, and the first requisite, therefore, was a house for the labourers. A substantial building, situate near the eastern extremity of the new possession, within a few score yards of the Surrey Arms, was forthwith erected, at a cost of about 100*l.*, and in the month of October had arrived so nearly at completion as to be partially habitable. At this period there were nearly 400 able men receiving parochial relief, for the employment of whom there existed only very inadequate provision, consisting of grinding corn by handmills, and picking oakum, both of them branches of employment at once irksome and unprofitable. In the month of October, then, a qualified superintendent of farming operations having been engaged, some 50 men were drafted out of the ranks of the able-bodied paupers, and sent to the farm. The mode of employment, although to many entirely novel, was greatly preferred to the corn grinding and oakum picking, and the farm became in a short time the abode of the privileged, scarcely any being sent thither besides those whose general conduct was deemed worthy of reward and encouragement. At present there is no farm-yard, the operations having yet scarcely advanced so far as to require the erection of that part of the plan. The farm is inclosed on one side by a good stone wall, upon which an immense amount of labour has been bestowed. It is 880 yards in length, 5 feet high, and about 1½ foot in thickness. The whole of the stone was bared and quarried by the pauper labourers, and by them conveyed to the spot where it was required, the only labour having to be paid being the dry walling. The opposite or south side of the area is bounded by the turnpike road, which previously was walled on both sides; and a short wall at each end enclosed the entire farm. There is plenty of stone on the land adjacent, the free use of which is allowed. To facilitate the conveyance of the stone from the quarry, a tramroad has been laid, along which the stones for the erection of the house were conveyed, having been got by the men themselves, and laid on the building site ready for the masons. They have in a similar manner contributed to the erection of a spacious shed, about midway between the house and the quarry, intended to be occupied during inclement weather by the men in the rough-dressing of stone for the numerous outbuildings yet to be reared. Another important operation performed by the labourers is the construction of the water-works, a line of pipes having been laid under ground to the house from a fine spring of pure water, at the distance of several hundred yards. The work of clearing has been accomplished upon about 2 acres adjacent to the homestead. The superficial stone, which is only too abundant, has been used in the formation of deep underdrains. These 8 acres having been well broken up by the spade, thoroughly cleared, and efficiently drained, are now the first time under cultivation. With the exception of a garden plot, the land is cropped with Potatoes, Oats, Wheat, Barley, Turnips, and Mangold Wurzel. The tillage used has been carted from the union establishment at Sheffield. The produce of these crops generally promises to be quite an average. The Oats in particular, as they appear in certain places, would do credit to a well-managed farm in the best cultivated part of England. The portion of the 50 acres not yet broken up is used as pasturage for the farm house, and a number of cattle taken in to gist, the receipts from which exceed at the end of the season the year's rent of the whole 50 acres. The main force is still employed in clearing the land, every small portion of which, as soon as prepared, is at once made available for produce. The hours of labour are from half-past seven in the morning to six in the evening, deducting the usual meal times. The week's operations are brought to a close at noon on Saturday, when each man, after partaking of dinner, returns to his family and friends, with whom he is at liberty to spend the Sabbath, but he must return to the farm by Monday at mid-day. When we visited the farm last Saturday afternoon the men had left off work; we had not, therefore, the advantage of observing whether or not they appeared cheerful and contented. Of this, however, we are assured, that while compelled to remain dependent on the parish, they greatly prefer being at the farm. More than this is not desirable. The active labour and corresponding food suits well their habits and constitution, and almost every man, when sent to the farm, speedily becomes healthy and robust. *Sheffield Times.*

Review.

***Profitable Investment of Capital, or 11 years' Practical Experience in Farming*:—a Letter from Lord Kinnaird to his Tenantry. Blackwood, Edinburgh; Ridgway, Piccadilly, London.**

MANY of our readers will be disposed to understand the phrase which are of widely different meaning. Eleven years of practical experience in farming have not generally, we must confess, hitherto very satisfactorily illustrated the profitable investment of capital. In Lord Kinnaird's case, however, farm experience very fairly admits of being adduced for this purpose. It appears that on a farm of 300 imperial acres, paying a rent of 600*l.*, and employing a capital, the amount of which is not very intelligibly stated to have varied between 1100*l.* and 2000*l.*, the following sums have been cleared, after payment of manures purchased, salary of farm manager, wages, expenses, seed, stock, and rent, draining, and other improvemen s, &c.

In the year	1837	...	...	...	...£130 18*s.*10*d.*
,,	,, 1838	...	...	...	... 21 19 1
,,	,, 1839	...	...	...	... 262 19 5
,,	,, 1840	...	...	...	... 254 16 9
,,	,, 1841	...	...	...	... 106 17 8
,,	,, 1842	...	...	...	. 112 0 6
,,	,, 1843	...	.	...	... 228 11 0
,,	,, 1844	...	...	..	... 304 7 3
,,	,, 1845	...	...	...	... 523 7 8
,,	,, 1846	...	...	...	... 242 8 7
,,	,, 1847	...	...	..	.. 285 13 3
In 11 years		...	...	..	... £2413 15 0

Averaging 219*l.* 8*s.* 7½*d.* annually, or more than 10 per cent. on the capital employed, taking that at the largest named sum. This we believe to be fully above the average experience of farmers employing any considerable capital in their business, though we know very well it is not near the average experience of men who have invested capital in other trades.

In discussing the merits of Lord Kinnaird's pamphlet, however, we are far from desiring to confine attention to the meaning of mere words and figures. We shall not be any the more disposed to condemn Mr. Caird's pamphlet on Auchness farming, even though the *Marklane Express* should ultimately succeed in proving that Mr. M'Culloch does not reap 1000*l.* a year with his crops—a task to which for some weeks past it appears to have devoted its energies: we do not mean to measure the merit of that or any other performance by the arithmetical accuracy with which its author may have performed the various "sums" in addition or subtraction that have come in his way: we are not inclined to estimate the value of a lesson applying to all agriculture by the standard of its development in any one case, under any *one* set of circumstances, or to confine our discussions regarding a farm to the exact amount (in pounds, shillings, and pence) of annual profit derived from it.

We imagine that there is a better example for imitation in this matter than that which our contemporary, already alluded to, has lately offered. Let our landowners follow that of Lord Kinnaird—advise with their tenantry, setting (by example as well as precept) the best methods of cultivation before them, and encouraging the adoption of these methods by ample security for invested capital; let our cultivators follow that of Mr. M'Culloch, receiving the truth frankly and intelligently, and acting upon it, according to their circumstances, energetically; and let our writers follow that of Mr. Caird, and, disregarding the taunts and the sneers of incompetent critics, make known to their agricultural brethren whatever appears to deserve their examination or adoption; and we shall yet see Agriculture what, for any length of time, she has never been yet, a prosperous profession in this country.

Lord Kinnaird's pamphlet contains, besides the letter to his lordship's tenantry, a lecture on agricultural chemistry by Mr. White, and the speech on agricul tural chemis ry associations by Mr. Finnie, of Swanston, to which we have already alluded in these pages. We hope the work will have the large circulation it deserves

Miscellaneous.

Birmingham and Midland Counties Exhibition of Fat Cattle, Sheep, Pigs, and Poultry.—The first exhibition will take place on Tuesday, Wednesday, Thursday, and Friday, the 11th, 12th, 13th, and 14th, of December next. The certificates for the several classes are now ready, and may be had, with the prize lists, on application to the Honorary Secretary, at Birmingham.

Calendar of Operations.

SEPTEMBER AND OCTOBER.

FEN FARM, *Sept* 29.—The main business of autumn is to clear the land of weeds and rubbish, and prepare for Wheat seeding. The first operation is best performed during dry weather, when, after skimming or scuffling the stubbles, the roots of Nettles, Buttercup, and Twitch, should be picked off, and as soon as dry enough, we would strongly advise them to be burnt, and not, as frequently recommended, gathered into "compost heaps," composed of rubbish, with seeds and hungry offsets, that multiply on a rich tilt, so as to baffle calculation or extirpation. Some writers are so very saving as to advise the side scrapings of ditches and hedge bottoms to be also stored away for manure. They must be hard "put to" for muck, to poison their land with such filth. Stephens says in his excellent "Book of the Farm," Part 2, pp. 471-2, "having been impressed with the utility of composts, and possessing abundance of materials at my command for making what I conceived should be good manure, I persuaded myself that composts might be made to any extent on a farm. Two years convinced me that it was no child's play to collect together these materials into one or two places, and cart them out again to the fields destined to receive them in the amended form. I put together the materials in the best manner I could devise or hear of, turned them at the proper times with the greatest care; but notwithstanding its favourable appearance, unless very large quantities were applied, little benefit was derived from it, so that even from 40 to 50 cart loads to the imperial acre did not produce so good an effect as 12 cart loads of good muck." He further on relates how, with one compost, a piece of Turnips became covered with Thistles. By slowly burning all refuse material, a good quantity of ashes may be procured to drill with bones for Turnips or Rape. Potatoes are good in quality, but do not yield so well as was anticipated; they cost 4*s.* per sack digging. There are great quantities of Carrot they will cost 25*s.* an acre digging and topping. The weeding during the summer two or three times over, is usually taken at between 3*l.* and 4*l.* per acre, or they are sown, cleaned, and cleared for half the crop, the tenant receiving half for the use of his land. Complaint is made of mildew among the early sown Swedes, though excellent crops of Turnips and Rape promise plenty of "keep" for the winter and spring. Old ewes culled from the breeding flock have their teeth cut, and are put upon Swedes, while the tops are abundant and growing; they do the land as much good as if a moderate crop of Colesseed had been consumed on it, and in five or six weeks the Turnips may be carted off the land, and stored away in pits or heaps, and the land ploughed for Wheat. Wages, for ordinary labourers, now 10*s.* per week. *J. W.*

SUSSEX FARM, *Oct.* 8.—We have had some very heavy rains of late, which have now put a stop to Wheat sowing; we have sown 9 acres, and shall return to Wheat sowing again as soon as the land is dry enough: the scarifier is still at work on some of the dry stubble fields preparing for Beans and green crops in the spring. The teams are for the most part engaged carting faggots to the brick and lime-kilns and litter to the yards, preparing for the cattle coming in, part of which we shall tie up in stalls to fatten for Christmas. Men are engaged threshing Wheat for seed and Oats for horses, mowing brakes, cleaning and cutting hedges, &c. We have cut our Clover for seed, but at present have no prospect of getting it in. *J. B.*

Notices to Correspondents.

APPORTIONMENT OF FARM PRODUCE: *A B.* The shares of landlord, tenant, and labourer depend upon their relative standing, skill, &c. The question—What ought to be? is in this case determined by the question—What is? And an answer to that we shall shortly attempt.

CHALK: *R W.* The substance mentioned by your correspondent must be calcareous tufa, a deposit from springs charged with bicarbonate of lime. That it should be covered by peat is not surprising; how it became covered with the yellow sand is another question. I would not, without seeing the spot, hazard a conjecture that this yellow sand may be "warp" of the drift. I have a case in the Isle of Wight of a calcareous tufa full of land-shells, of species now inhabiting the vicinity, filling a hollow in the "Eocene" strata, and covered by 3 to 4 feet of brown sandy loam, which I call warp of the drift, though others will not admit it to be such. The tufa is more than 12 feet thick, and passes in parts into a marl with seams of peaty clay and a few fresh-water shells. There is a layer of angular flints between it and the Eocene tertiaries. I should like to know the depth and extent of the calcareous deposit in this case, the depth of the yellow sand, and where situate. I should think, for the land, the calcareous deposit as good as any other soft carbonate of lime. *J. T.*

CLOVER LEA: *Inquirer.* If you plough it under now it will rot before April, and you will have all the reality of a vegetable dressing, though perhaps not the satisfactory appearance which the compost heap might furnish.

FOR PIGS. *Inquirer.* Indian corn, Barley, Rye, are good, better, best. If you can get Wheat so cheap, without being *damaged* in any way, probably it would be the best food of all.

GRAIN. *Mowbray.* We should prefer rich land to poor for thin seeding, as blanks are not to be expected when individual plants are in circumstances likely to fully develop their parts.

HOSE: *W C* may obtain an answer if he will send us his address.

MACHINES: *T.* We know of no machines used in farming to wind up and set to work as a watch; excepting cases where there is no more work to be done than the mere overcoming of friction, as in moving the recording scroll of a dynamometer, or in the revolving of an alarum apparatus. We think the Society might usefully direct the attention of machine makers to instruments or machines for reaping.

PEAT: *Inquirer.* If that plot of peat were ours, we should gradually take it all or nearly all away, using it in compost with lime—or charring it for use in liquid manure tanks and farm composts—as a dressing on the other parts of the farm.

SPX OF LOGS: *A Subscriber.* The subject has already been exhausted.

SHREI: *Cheshire.* Your letter has been forwarded to our veterinary authority; but it is impossible he can be of use to you unless you give him further information. Have you had no *post mortem* examination made?

SOOT AND SALT: *A Spade Farmer.* It is a good top-dressing for Wheat; 20 bushels with 2 cwt. per acre, applied in March.

STEEL MILLS: *E M G* should apply to Zachariah Parkes, Birmingham

STIFF *v.* LEVEL LAND: *E L.* Thanks, but we must not open that question again just now.

WIREWORM: *W Barlow* and *A Constant Reader.* We would not attempt autumn sowing. If the soil is of an open character plough it up, apply 150 bushels of quicklime and 5 cwt. of salt per acre, scarify them into the land, open water furrows, and leave it for the winter.

Markets.

COVENT GARDEN, OCT 13.

Hothouse Grapes are very plentiful. Peaches and Nectarines scarce and dear. Pine-apples are plentiful, and promise to become cheaper. Filberts and foreign Walnuts are abundant; and there are also some good English Walnuts. Chestnuts have just made their appearance. Oranges are scarce. Lemons moderately plentiful. Among Vegetables, Turnips may be obtained at from 3d. to 6d. a bunch. Carrots from 4d. to 6d. Cauliflowers are less plentiful. Potatoes are a trifle dearer. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1*s.* to 1*s.* 6*d.* per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropæolums, Fuchsias, Primulas, and Roses.

FRUITS.

Pine-apples, per lb., 3*s* to 5*s*	Lemons, per doz., 1*s* to 3*s*
Grapes, hothouse, p. lb., 9*d* to 3*s*	— per 100, 8*s* to 16*s*
— Portugal, per lb., 9*d* to 1*s*	Almonds, per peck, 6*s*
Peaches, per doz., 8*s* to 12*s*	— sweet, per lb., 2*s* to 3*s*
Nectarines, per doz., 8*s* to 12*s*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
Plums, per bf. sieve, 4*s* to 6*s*	— p. bush., 16*s* to 24*s*
Pears, per doz., 2*s* to 4*s*	Filberts, per 100 lbs., 45*s* to 60*s*
— per half sieve, 4*s* to 6*s*	Nuts, Bar., p. bush., 20*s* to 22*s*
Apples, kitchen, p. bsh., 2*s* to 4*s*	— Brasil, p. bsh., 12*s* to 16*s*
Oranges, per doz., 4*s* to 6*s*	

VEGETABLES.

Cabbages, p. doz., 6*d* to 1*s*	Spinach p. sieve, 1*s* to 1*s* 6*d*
Cauliflowers, p. doz., 2*s* to 4*s*	Onions, p. bunch, 2*d* to 4*d*
Broccoli, p. doz. bundl., 6*s* to 10*s*	— Spanish, p. doz., 1*s* 6*d* to 4*s*
Greens, per doz., 1*s* 6*d* to 2*s* 6*d*	Shallots, per lb., 4*d* to 8*d*
Brussels Sprouts, p. bf. sieve, 1*s* 6*d* to 2*s*	Garlic, per lb., 4*d* to 8*d*
	Artichokes, p. doz., 1*s* 6*d* to 3*s*
Peas, per bush., 1*s* 6*d* to 4*s*	Vegetable Marrows, doz., 1*s* to 2*s*
Sorrel, p bf. sieve, 6*d* to 9*d*	Lettuce, Cab., p. sc., 4*d* to 9*d*
Potatoes, per ton, 60*s* to 100*s*	— Cos, do., 6*d* to 1*s*
— per cwt., 3*s* to 6*s*	Endive, per score, 1*s* to 1*s* 6*d*
— per bush., 2*s* to 3*s*	Tomatoes, p. bf. sieve, 3*s* to 4*s*
Turnips, p. doz. bun., 1*s* 6*d* to 2*s* 6*d*	Mushrooms, p. pot, 1*s* to 1*s* 6*d*
Red Beet, per doz., 1*s* to 2*s*	— per bush., 3*s* to 6*s*
Horse Radish, p. bdl., 2*s* to 4*s*	Small Salads, p. pun., 2*d* to 3*d*
French Beans, p. bf. sieve, 1*s* 6*d* to 2*s*	Fennel, per bunch, 2*d* to 3*d*
Cucumbers, each, 2*d* to 6*d*	Savory, per bunch, 2*d* to 3*d*
Leeks, per bunch, 2*d*	Thyme, per bunch, 2*d* to 3*d*
Celery, p. bundle, 8*d* to 1*s* 6*d*	Parsley, p. doz. bun., 3*s* to 4*s*
Radishes, p. 12 bunches, 1*s* to 2*s*	— Roots, p. bdle., 1*s* to 1*s*
Watercress, per doz. bunches, 4*d* to 6*d*	Marjoram, green, p. bun., 4*d* to 6*d*
	Mint, green, per bunch, 3*d* to
	Basil, green, p. bunch, 4*d* to 6*d*

SMITHFIELD, Monday, Oct. 8.

The number of Beasts is large, but the average quality is very indifferent; consequently the choicest qualities make 4s. pretty readily; indeed, all kinds are rather dearer, the demand having increased. The supply of Sheep is not quite so large as last week, especially for fat Sheep. The trade is brisk at about 2d. per 8 lbs. advance on most descriptions. The trade for Calves is slow, but Friday's quotations are pretty well maintained. From Holland and Germany we have 1203 Beasts, 4800 Sheep, and 37 Calves; from Leicester and Northampton, 2150 Beasts; from Lincolnshire, 300; and from Cambridge, 150.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	10 to 4	0	
Best Shorthorns	3	6 — 3	8	
2d quality Beasts	2	8 — 3	4	
Best Downs and Half-breds	3	10 — 4	2	
Ditto Shorn				

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	3	6 to 3	8	
Ditto Shorn				
Ewes & 2d quality	2	8 — 3	4	
Ditto Shorn				
Lambs			—	—
Calves			2	8 — 3 8
Pigs			3	4 — 4 6

Beasts, 4620; Sheep and Lambs, 27,740; Calves, 284; Pigs, 180

Friday, Oct. 12.

The supply of Beasts is large and the demand has decreased. Notwithstanding, the choice qualities being proportionately scarce, make as much as on Monday, but it is difficult to support that day's quotations for any other kinds. The number of Sheep is for the time of year considerable; trade is very slow; it is difficult to obtain Monday's prices for the best, and second-rate are rather lower. The late advance in the price of Calves has caused a large supply; prices have fallen considerably for middling descriptions, and 3s. 4d. is the outside quotation for the choicest. From Holland and Germany there are 360 Beasts, 780 Sheep, 61 Calves, and 13 Pigs; from Leicester and Northampton, 400 Beasts; and 109 Milch Cows from the home counties.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	10 to 4	0	
Best Shorthorns	3	6 — 3	8	
2d quality Beasts	2	8 — 3	4	
Best Downs and Half-breds	3	10 — 4	2	
Ditto Shorn				

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	3	6 to 3	8	
Ditto Shorn			—	—
Ewes & 2d quality	2	6 — 3	2	
Ditto Shorn				
Lambs				
Calves			2	0 — 3 4
Pigs			3	4 — 4 6

Beasts, 1218; Sheep and Lambs, 7,980; Calves, 359; Pigs, 240.

HOPS.—Friday, Oct. 12.

Messrs. Pattenden and Smith report that the trade continues firm at late prices, and the market barely supplied with new Hops, planters holding for higher prices; and, as the feeling seems more against the duty reaching 80,000*l.*, we think them justified in so doing. Yearling and old Hops more in demand.

HAY.—Per Load of 36 Trusses.

Smithfield, Oct. 11.				
Prime Meadow Hay	68s to 75s		Clover	60s to 90s
Inferior ditto	55	65	New Clover	— —
Rowen	55	60	Straw	24 30
New Hay	—	—		J. Cooper.

Trade brisk.

Cumberland Market, Oct. 11.				
Prime Meadow Hay	70s to 74s		Inferior	55s to 84s
Inferior ditto	50	65	New Clover	— —
New Hay	—	—	Straw	28 32
Old Clover	90	95		Joshua Baker.

Whitechapel, Oct. 11.				
Fine Old Hay	65s to 68s		New Clover	—s to —s
Inferior ditto	50	55	Inferior ditto	50 60
New Hay	60	65	Straw	24 28
Old Clover	80	88		

POTATOES.—Borough, Oct. 8.

The Committee report that there are still very few arrivals from Yorkshire or the Continent, but they are at present quite equal to the demand. The following are this day's prices:—York Regents, 70s. to 80s. per ton; Scotch, 65s. to 70s.; foreign whites, 55s. to 65s.

MARK LANE.

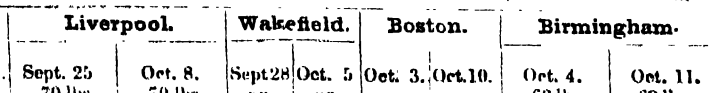
Monday, Oct. 8.—The supply of Wheat from Essex this morning was again small, and large from Kent; the former was cleared at last week's prices, but the inferior qualities of the latter were disposed of on rather lower terms; foreign met a moderate retail inquiry at the rates of Friday last.—Barley is a free sale at our quotations.—White Peas are 1s. per qr. cheaper.—Beans are fully as dear.—We observe no alteration in the value of old Oats, but low qualities of new are the turn lower.

Friday, Oct. 12.—The arrivals of grain this week, both English and foreign, have been moderate, and Wheat of either sort is a tolerably free sale at the prices of Monday.—Foreign grinding and superior English malting Barley is in demand at our quotations.—Beans and Peas are unaltered in value.—Old Oats maintain their rates, new are difficult of disposal.—Barrel Flour must be written 6d. dearer.—The weather during the early part of the week was cold and frosty; this has kept the new Wheat in better condition than might have been expected from the excessive wet of last week; prices have undergone little variation, and the general tone of the market is firm. In Dantzic fine Wheat is becoming very scarce, which enables holders to obtain a high price in proportion to our quotations; 44s. per qr., f. o. b., has been again paid there. In Konigsberg and the lower ports farmers' supplies are yet small, but may shortly be expected to increase. In the latter, 62 lbs. Wheat is obtainable at 36s. per qr., f. o. b., but some abatement may be expected ere long. In Rotterdam prices of new Wheat are again 1s. per qr. lower.

Liverpool, Friday, Oct. 12.—At this day's market we had a fair demand for all good Wheats; the better kinds of foreign were 1d. per bushel higher, and prime qualities of Irish were fully as dear. Barley, Beans, and Peas were unaltered in value. There was a moderate inquiry for Indian Corn, which was, however, checked by the rates demanded. Oatmeal sold steadily at former prices.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Sept. 1	44s 8d	26s 3d	19s 3d	27s 0d	32s 3d	28s 6d
— 8	44 6	26 9	18 4	25 11	31 2	29 7
— 15	43 0	27 1	18 6	26 7	30 8	29 1
— 22	41 9	27 1	17 10	25 11	29 9	30 0
— 29	42 4	27 4	17 11	25 2	29 5	31 3
Oct. 6	42 4	27 7	17 5	24 9	29 0	29 5
Aggreg. Aver.	43 1	27 0	18 3	25 11	30 5	29 11
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.



Prices Current.	London. Oct. 1. qr.	London. Oct. 8. qr.	Liverpool. Sept. 25 70 lbs.	Liverpool. Oct. 8. 70 lbs.	Wakefield. Sept 28 qr.	Wakefield. Oct. 5 qr.	Boston. Oct. 3. qr.	Boston. Oct. 10. qr.	Birmingham. Oct. 4. 62 lbs.	Birmingham. Oct. 11. 62 lbs.
Wheat—										
New, red	39 to 43	38 to 43	6 0 6 6	6 0 6 1	41 to 46	40—45	36 to 41	36 to 41	5 0 5 7	5 0 5 8
„ white	42—48	42—48	6 4 7 0	6 2 6 9	43—49	42—48	40—45	40—45	5 6 6 0	5 6 6 1
Old, red	38—44	38—44	6 4 6 9	6 4 6 8	40—44	39—40	—	—	5 3 5 8	5 0 5 9
„ white	41—43	41—43	7 0 7 6	7 0 7 6	—48	—47	—	—	5 8 6 2	5 8 6 2
Foreign	36—50	36—50	4 3 7 2	4 3 7 2	33—47	32—46	—	—	4 8 6 2	4 8 6 2
			480 lbs.	480 lbs.						
Rye—Old	23—26	23—26	—	—	—	—	—	—	—	—
Foreign	20—22	20—22	—	—	—	—	—	—	—	—
Foreign meal	5*l.*—6*l.*	5*l.*—6*l.*	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley—										
Grinding	24—26	24—26	—	—	20—22	20—22	21—23	21—23	22—24	22—24
Malting	26—28	26—28	30s—31s	30s—31s	27—33	27—33	—	—	29—33	29—33
Foreign	18—26	18—26	—	—	21—26	21—26	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship	—	—	—	—	37—40	37—46	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White	18—24	18—24	3s 0d 3s 2d	3s 2d 3s 3d	—	—	14—19	13—18	19—27	19—27
Black	16—22	16—26	2 1 2 5	2 1 2 5	—	—	—	—	18—20	18—20
Foreign	13—20	13—20	2 3 2 4	2 3 2 4	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	28—31	28—30	34s—	33s—	26—30	26—30	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding	25—30	25—30	28—29s	28—29s	—	—	—	—	11—12	11—12
Foreign	24—32	24—32	20—32	29—30	—	—	—	—	—	—
Beans—										
New, small	23—39	23—29	—	—	32—33	32—33	32—34	32—34	12—13	12—13
Old	—	—	33—37	33—37	—	—	—	—	14—15	14—15
Foreign	21—36	21—36	24—35	25—30	28—30	28—30	—	—	11—13	11—13
Linseed—Feed	—	—	40—42	40—42	32—40	32—40	—	—	—	—
Foreign	36—41	36—41	—	—	—	—	—	—	—	—
Linseed Cakes										
British	9*l.* 12s	9*l.* 12s	8*l.*—8*l.* 5s	8*l.*—8*l.* 5s	—	—	—	—	—	—
Foreign	7*l.*	7*l.*	—	—	—	—	—	—	—	—
Indian Corn—	22—26	22—26	27s—30s	27s—29s	—	—	—	—	12—13	12—13
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	32—40	32—40	30—32	30—32	—	—	32—36	32—38	31—34	31—34
Weekly Averages and Imports.	Aver. Oct. 9	Impts	Averages.	Imports.	Aver.	Impts	Aver.	Aver.	Gloucester Averages.	Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT	43 8	4580	42 4	12568	46 2	28163	39 5	2952	38 0½	—
BARLEY	30 2	3080	27 4	2733	30 9	4806	23 9	117	—	912
OATS	20 3	21550	17 11	2604	18 4	1951	14 8	1107	18 11¼	—
RYE	27 2	—	25 2	—	—	—	—	—	—	—
BEANS	27 2	—	29 0	886	—	1170	33 0	10	31 8¼	—
PEAS	34 4	—	31 0	1246	26 0	567	—	—	—	—
Signed	KINGSFORD and LAY.		SEGAR and TONNIOLIERE.		SANDARS and DUNNE.		THOMAS WARDE.		J. and C. STURGE.	

Sales by Auction.

ASHFORD, KENT.

Messrs. Protheroe and Morris have received instructions from the Assignees of Mr. James Cutbush, a bankrupt, to sell by Auction, on the premises, at Ashford, near the Railway Station, on WEDNESDAY, October 17th, the whole of the NURSERY STOCK, consisting of Fruit and Forest Trees, Ornamental and American Plants, &c.; also the Household Furniture, two 6-light Pits with glazed sashes, a very unique Rustic Summer-house with tables and chairs, Pony Chaise and Harness, Iron Roller, and sundry other effects.—May be viewed, and Catalogues had, a week prior to the sale, on the Premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO BUILDERS, NURSERYMEN, AND OTHERS.

Messrs. Protheroe and Morris will sell by Auction, on the Premises, Brompton Nursery, Fulham-road, Brompton, on FRIDAY, Oct. 19, 1849, and following day, at 11 o'clock each day, without reserve, the NURSERY STOCK, consisting of a large quantity of very fine Evergreens, Roses, Fruit-trees, American Plants, &c.; also a quantity of Poplars, Limes, Acacias, &c., and a capital One-horse Cart.—May be viewed prior to the Sale. Catalogues had on the premises; of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone, Essex.

DALSTON.

Messrs. Protheroe and Morris are favoured with instructions by Mr. J. Smith to offer to public competition by Auction, on the premises, Dalston Nursery, Middlesex, on MONDAY, October 22d, and following days, at 11 o'clock each day, in consequence of the Land being required by the London and Birmingham West India Dock Junction Railway Company, the valuable NURSERY STOCK, consisting of a very superior assortment of large Evergreens, American Plants, Ornamental Trees, Deciduous Shrubs, and Fruit and Forest Trees, in great variety.

*** From the adhesive nature of the soil, the plants will remove safely, and from their extraordinary size and magnificent growth, they well deserve the attention of Noblemen, Gentlemen, and the Trade. The stock has long been well known as one of the finest and best.—May be viewed prior to the sale. Catalogues may be had, 1s. each (returnable to purchasers), on the premises, the Shop, Covent-garden; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

AMERICAN NURSERY, LEYTONSTONE.

Messrs. Protheroe and Morris respectfully announce to their Friends and the Public that they will submit to public competition by Auction, on the premises, on MONDAY, October 29, 1849, and five following days, at 11 o'clock each day, a selection from this extensive NURSERY STOCK. It will consist of the leading and choicest varieties of Fruit and Forest Trees, Evergreens, Ornamental, Deciduous, and American Plants, of every variety, in considerable quantities. P. and M. respectfully invite an early inspection of the varied lots, suited to Gentlemen planting, and to the Trade, and they feel assured it will be more gratifying than any verbal description. The American Plants are particularly attractive, from their great variety and beauty; among them are lotted 1000 Andromeda floribunda (fine, bushy plants), and numerous Azaleas, Kalmias, and Rhododendrons, well set for bloom, and adapted for forcing.

P. and M. again invite a personal inspection as the best means of appreciation of this Nursery, known for the safety with which its stock can be moved.—Can be viewed any time before the Sale, and Catalogues had of the principal Seedsmen in London, at the Auction Mart, and on the Premises, Leytonstone, Essex.

WOKING, SURREY.—VALUABLE NURSERY STOCK.

125 000 Shrub, Forest and other Trees; 900,000 Transplanted and Seedling Quick, Roses, and other Valuable Nursery Stock.

Mr. Waterer will sell by Auction, on MONDAY, Oct. 22, 1849, at 10 o'clock, at Hook Hill Nursery, near the Woking Station (by order of Mr. William Jackman who is declining business), comprising 2000 Roses, of sorts; 9000 Rhododendrons, Kalmias, and Aucubas; 1000 Striped and Green Hollies, from 1 to 3 feet; 2000 Laurestinus, from 1 to 2 feet; 1000 Chinese Privets, from 2 to 4 feet; 10,000 Yews, from 1 to 4 feet; 9000 Portugal and Common Laurels, from 1 to 5 feet; 12,000 Spruce and other Firs, from 1 to 6 feet; 6000 Sweet Bays and other Evergreens; 500 Standard Plums, of sorts; 13,000 Mossy Cup and other Oak; 8000 Standard, Purple, and Common Beech; 79,000 Ash, Birch, and Alder, from 3 to 4 feet; 900,000 Transplanted and Seedling Quick; and other Valuable Nursery Stock, the whole of which is in a safe moving condition, and well worth the attention of persons about Planting. May be Viewed three days previous to the Sale; Catalogues to be had on the premises; of Mr. Charlwood, Seedsman, Covent-garden; and will be forwarded on application by letter, enclosing four postage stamps to Mr. Waterer, Auctioneer and Estate Agent, Chertsey, Surrey.

FOR SALE WITHOUT RESERVE.

Mr. Waterer begs to announce that he has received instructions from Mr. Geo. Chapman to sell by Auction, without reserve, on TUESDAY, Nov. 6th, 1849, and following day, at 11 o'clock, upon the Premises, situate one mile from the Woking Station on the South Western Railway, all his truly valuable and well grown NURSERY STOCK, consisting of a large quantity of variegated Hollies of the best sorts, Evergreen, Flowering, and other Shrubs, from 1 to 8 feet high, Rhododendrons, Kalmias, Azaleas, Aucubas, and other American Plants, 5000 Dwarf and Standard Fruit Trees, 10,000 Limes, and other large magnificent Plants, the whole of which are in a safe moving condition, and well worth the attention for Ornamental and other Planting. Further particulars will appear in future Advertisements, and Catalogues will be forwarded on application by letter, inclosing four postage stamps, to Mr. Waterer, Auctioneer, Chertsey, Surrey.

WALLINGTON LODGE, close to the Carshalton Station, on the London and Epsom Railway.

Messrs. Blake are directed to sell by Auction, upon the Premises, on THURSDAY, October 18th, at 12 o'clock, a valuable Collection of STOVE, ORCHIDEOUS, and GREENHOUSE PLANTS, the property of R. G. Loraine, Esq., who is declining further Horticultural pursuits, in consequence of his having disposed of the above estate. The above Plants, many of which are Specimen Plants, have for some years past been exhibited at the shows of the Horticultural and Botanical Societies with success, and are well worthy the attention of Plant-growers.—May be viewed three days before the sale, on application to Mr. Evan Jack, the Gardener on the Premises, of whom Catalogues may be had. Catalogues may also be had at the Inns in the neighbourhood; at Garraway's Coffee-house, Change-alley; of Mr. Charlwood, 14, Tavistock-row, Covent-garden; and of Messrs. Blake, Croydon, Surrey.

TO NURSERYMAN AND SEEDSMEN.

To be disposed of, a Small Nursery and Seed Business, in a good neighbourhood, about 100 miles from London; the present occupier is about to remove to a distant part of the country, to a vacancy caused by the death of his father. To any person who can command a small capital, the above will be found a very desirable situation. For further particulars apply, post-paid, to A. B., Office of this Paper.

Second Edition, Revised and Enlarged, price 4s. 6d.,

RURAL CHEMISTRY:

An Elementary Introduction to the Study of the Science in its Relation to Agriculture.

BY EDWARD SOLLY, F.R.S, F.L.S., F.G.S.,

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Honorable East India Company's Military Seminary at Addiscombe, &c., &c.

PREFACE TO THE SECOND EDITION.

"In preparing a Second Edition of this little book, the opportunity has been taken of correcting several errors which the First Edition contained. The whole has been carefully revised, and such additions have throughout been made, as the advanced state of knowledge rendered necessary. In particular, the Tables of Analyses have been greatly extended, by the addition of the latest and most complete Analyses of almost all those plants which are cultivated as crops, as well as of the principal substances employed as manure."

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PUBLISHED AT THE OFFICE OF THE GARDENERS' CHRONICLE, 5, UPPER WELLINGTON STREET, STRAND, LONDON;
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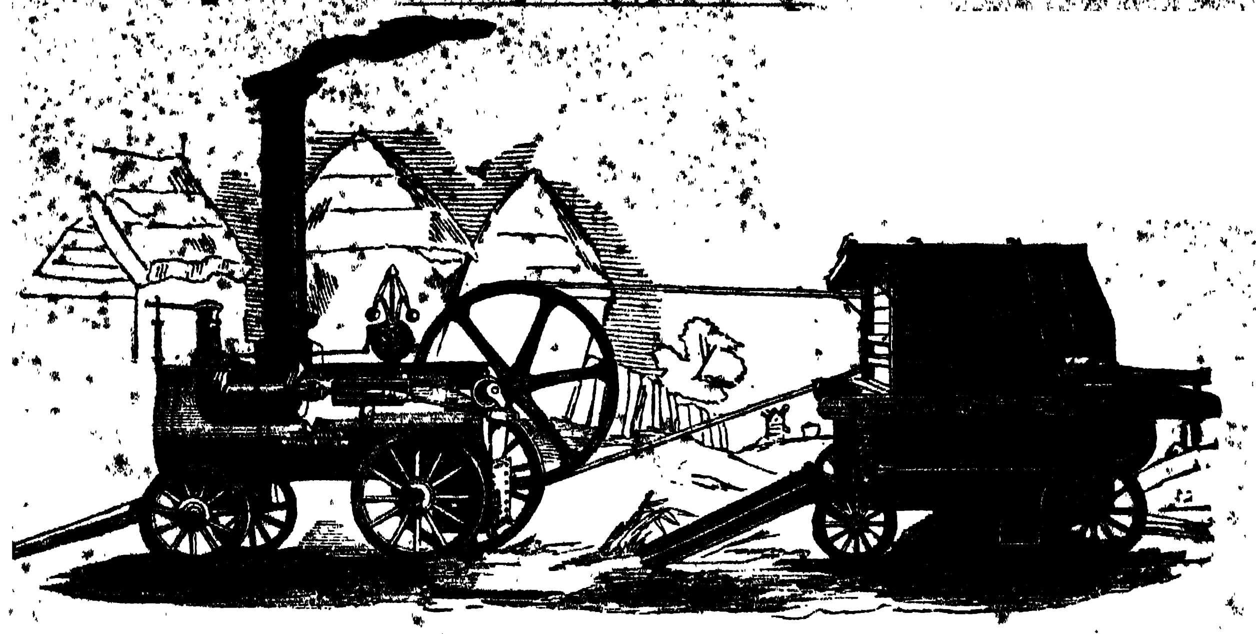

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Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, OCTOBER 13, 1849.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 42—1849.] SATURDAY, OCTOBER 20. [PRICE 6d.

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WM HAMILTON takes this opportunity of recommending his IMPROVED FLOWER SUPPORTER for Hyacinths, Narcissus, &c. The "Florist's Directory" remarks—"A more simple, useful, and cheaper support for Hyacinths, Narcissus, &c., whether grown in pots or water, can hardly be imagined." Price 6s. per dozen.—Address, 156, CHEAPSIDE, LONDON.

A Post-free Order requisite from unknown correspondents.

AUG. VAN GEERT, NURSERYMAN, Ghent, Belgium, offers the following fine specimens of CONIFEROUS PLANTS at moderate prices:

	£	s.	d.
2 Cryptomeria japonica, 9 feet high, each	0	0	0
2 Dammara australis, 9 feet high, each	4	0	0
1 Dacrydium taxifolium, 10 feet high	3	0	0
1 " cupressinum, 10 feet high	10	0	0
1 Araucaria Cunninghamii, 8 feet high	12	0	0

A. V. G. also begs to inform his friends, and the public in general, he has still a good stock of Camellias, with flower buds, of the best sorts. Plants from 3 to 5 feet, from 7s 6d. to 20s. each; and smaller, from 7s. to 10s. per 100. Fine Camellia Stocks at 25s per 100.

N.B. His printed Catalogue will be sent free, on application to Mr. J. BETHAM, Shipping and General Forwarding Agent, Cox and Hammond's Quay, Lower Thames-street, London.

SPLENDID NEW GERANIUM.
SYMONS'S "FIELD MARSHAL."

THIS is a Striking and Noble Flower, with a remarkably fine habit, great freedom of bloom and substance of petal. The truss is large and thrown well above the foliage, on stout erect foot-stalks; the colour of the upper petals is a deep rich scarlet, with an intense dark spot, the lower petals are fine crimson. It is a most decided improvement, and will make an admirable show variety. Its only fault is an occasional unevenness in the upper petal. It was exhibited at the Seedling Geranium Exhibition at Upton Park, on the 15th of June last, when it was one of the four that received prizes. See report of the Exhibition, and description of flower, in No. 19 of the "Florist."

Messrs. VEITCH and Son are now prepared to send out strong well established plants of the above at 31s. 6d., with the usual discount to the trade.—Exeter, Oct. 20.

NOW SENDING OUT BY YOUELL AND CO.
THE FINEST CARNATIONS, PICOTEES, AND PINKS.

YOUELL AND CO.'S Extensive and Celebrated Collection of the above are this season unusually strong and healthy, and are now ready for sending out, in fine well-rooted plants, to any part of the United Kingdom, or for exportation, at the following prices:

25 pairs of finest first-rate show varieties of Carnations and Picotees	£3 0 0
12 pairs do. do. do.	2 10 0
25 pairs of very fine show varieties of do. do.	3 0 0
12 do. do. do. do.	1l. 4s. to 1 10 0
Fine mixed border ditto—per dozen pairs	0 12 0
True old Clove—per pair	0 2 0

PINKS, finest first class show flowers, 12s., 18s., and 24s. per dozen pairs.
PANSIES, do. do., 12s. to 18s. per dozen.
CAMELLIAS of the newest and best kinds, with flower buds, 30s. per dozen.
CINERARIAS, do. do., 12s. to 18s. per dozen.
ERICAS, comprising the best autumn and spring-flowering kinds, 12s. to 18s. per dozen.
ROSES, Standards, Half-standards, and Dwarfs, of the finest kinds in cultivation, 12s. to 18s. per dozen.

THE FINEST DUTCH HYACINTHS, &c.

YOUELL AND CO. have received their importation of the above in the finest condition, and are enabled to offer very superior HYACINTHS by name, comprising double and single Red, Blue, White, and Yellow, at 6s., 9s., and 12s. per doz.
HERBACEOUS PLANTS (hardy), of the very best sorts, 6s. and 9s. per doz.

TRUE FASTOLFF RASPBERRY.

Y. and Co. beg to announce they are now executing orders for the above in fine strong Canes of the same stock as they had the honour of supplying Her Majesty's Gardens and most of the Nobility. 15s. per 100.

Fine large WHITE RASPBERRY, 24s. per 100.

STRAWBERRIES.

YOUELL AND CO. beg to refer to their fine collection of these, in last week's Advertisement.

Agents for the sale of Kitley's Goliah Strawberry, very hardy, large, and of delicious Pine-apple flavour, at 12s. per doz.

Fine Giant Asparagus, 2 and 3 years old, strong, 2s. 6d. and 3s. 6d. per 100, Sea Kale, strong, 2s. per dozen.

RHUBARB, Youell's Toboisk, the earliest known, 9s. 12s. per dozen; Linnæus (Myatt's), 2s. each; Prince Albert (Mitchell's), 2s each; and Queen Victoria, 1l.

Post-office orders are respectfully requested from unknown correspondents.—Nursery, Great Yarmouth.

IVY FOR SALE.—Some of the finest IVY grown in England, of different sorts, at a very moderate rate, as the proprietor intends to clear it off his grounds.—Apply to CHARLES WADE, Carpenter, Sutton, Surrey.

CHOICE GERANIUMS.

J. HOLDER AND CO. begs to offer Twelve of the following varieties, strong plants, for 30s. Armida superb, Aurora, Belle of the Village, Ariel, Undine, Sylvia, Meleager, Alonzo, Marian, Norah, Jenny Lind, Lalla Rookh, Phyllis, Minna, Terpsichore, Lamartine, Forget-me-not, Crusader, and Victory.—Wellington Nursery, Bedford-road, Clapham, Surrey.

P.S. A remittance or reference required from unknown correspondents.

R. LANGELIER, Clarendon Nursery, Jersey, begs to say that his DESCRIPTIVE CALALOGUE OF PEARS (with true descriptions of each sort), is now published by Messrs. PITERS 23, Paternoster-row, London, price 1s 6d. It will be handy for Amateurs, as descriptions are given in full, with time of maturity, as well as the stock which will suit each sort best

BROMHAM HALL GREEN FLESH MELON.

EDWARD TILEY begs most respectfully to inform the Nobility, Gentry, &c., that he has been favoured with the whole Stock of Seed of the above beautifully-flavoured MELON, from Mr. Rundy, Gardener, Dynevor Castle, which has obtained such high repute at the London great exhibitions during the summer, and has obtained two medals during the season. It has been sent to Dr. Lindley twice, and pronounced by him and others to be the finest-flavoured Melon they ever tasted. Every particular will be given in future Advertisements. Sold in packets of six seeds, 2s. 6d; Larger packets of 15 seeds, 5s., postage and package free to any part.

WINTER CUCUMBER, LORD KENYON'S "FAVOURITE."—This has proved to be the best Winter Cucumber yet in cultivation. It is a very handsome fruit, good bearer, free tester, and never shanks off. Sold in packets, 2s. 6d. each., postage and package free to any part.

Sold by EDWARD TILEY, Nurseryman and Florist, 16, Pulteney Bridge, Bath. A remittance must accompany the order, or the amount in penny postage stamps.

PELARGONIUMS "GIPSY BRIDE," "CONSTANCE," &c.

W. BRAGG begs to inform his Patrons and Cultivators in general that he is now sending out three new and superb varieties, raised by EDMUND FOSTER, Esq., of Clower Manor, for description of which, and flowers of other raisers of former years, see Catalogue, which can be had on application; likewise of Carnations, Picotees, Pinks, Pansies, Roses, Hollyhocks, Dahlia roots, &c.

LADY GRENVILLE, FANCY DAHLIA, having gained 11 first class certificates, viz, Royal South London, London Floricultural Society, Highgate, Wycombe, Thame, Teddington, Aylesbury, Norwich, Newbury, Birmingham, and Slough; first in class showing at the London Floricultural Society twice, extra first prizes in money at Aylesbury, South London, Teddington and Slough, will be let out in dry roots, should there be enough subscribers in the trade.

Star Nursery, Slough, October 20.

BURROUGHES'S TWO UNRIVALLED PICOTEES "LORINA" and "DUCHESS OF SUTHERLAND," being by far the best the above successful raiser has produced.

CHARLES TURNER has strong plants of the following ready for delivery.—PICOTEES.

BURROUGHES'S "DUCHESS OF SUTHERLAND," light red edge, the finest in its class, took first-class certificates at Slough, Royal South London, and Metropolitan shows, and the premier prize at Slough, as the best seedling of the days flowering and very constant, being quite free from bars. 10s. 6d.

BURROUGHES'S "LORINA" (light purple edge), very pure white, with a delicate margin, which does not extend the least into the white; took first-class certificates at Slough, Royal South London, and Derby, six blooms at the latter place. 10s. 6d.

LADY HARRIETT MOORE (TURNER).—Medium, at times a heavy purple edge, large fine petal, smooth and constant; took first-class certificates at Slough, Royal South London, and Derby. This variety, as well as "Lorina" and "Duchess of Sutherland," was shown in each of C. TURNER'S winning stands this season. 10s 6d.

CARNATION.

CLARK'S "REV. C. BRAMHALL."—Purple flake, full, smooth, and finely marked. 10s. 6d.

PINKS.

COSTAR'S "LOLA MONTEZ."—Purple, petal of the finest form, large, and evenly laced; long pod; took two first prizes. See description in the "Midland Florist" for August. 6s.

TURNER'S "ATTILA."—Dark, finely-formed petal, long pod, and constant flower. 6s.

PANSIES.

TURNER'S "MRS. BECK."—White ground, dark purple top petals, lower petals margined with the same; fine bold eye, without radiating into the margin, fine size, form, and has the good quality of blooming in clusters throughout the summer. Took first-class certificates at the principal exhibitions and shown in all C. TURNER'S winning stands throughout the season. Figured in the "Cottage Gardener" for May, 1849. 3s.

"TURNER'S "VICEROY."—Gold ground, bright orange rod, margin very distinct; first-class certificate at the Royal South London Society. 6s.

NEMOPHILA MACULATA, in packets, 2s. 6d. each, or strong plants 1s. each or 9s. per dozen.—A fine collection of imported Bulbs.—Catalogues on application.

Royal Nursery, Slough.

YARMOUTH BLOATERS—GENUINE AND OF THE FINEST QUALITY.

Yarmouth has for centuries been justly celebrated for its well-known "Yarmouth Bloaters," the delicacy of which, when obtained in their genuine state, requires no comment. Such an opportunity is now offered; and they can be forwarded to any part of the kingdom, or for exportation (on receipt of a post-office order), at 12s. per 100, package included.—All orders to be addressed to Mr. LAWRENCE SAUNDERSON YOUELL, Church-square, Great Yarmouth.

VIOLA ARBOREA.—the PERPETUAL TREE VIOLET (VIOLA).—In answer to the numerous inquiries for the above, and the great satisfaction given by the plants sent out last season by EDWARD TILEY, he begs to state that he has this year a fine stock of the above beautiful double Violet now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented, the blooms are as large as the double blue Hepatica, they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation, and in loose soil, as the Violet will thrive and bloom finer there than in wet or clayey borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads, and hundreds of blooms on them at the same time. Large bushy plants, 6s. per dozen; smaller do., 3s. per dozen, or 1l. per 100.

E. T. has this year a fine stock of plants of the VIOLA ARBOREA ALBA, or Double White Tree Violet, which can be highly recommended. Plants 1s. 6d. each.—Also plants of that splendid YELLOW VIOLET, which has been so much admired at the London exhibitions; in colour it is equal to the Crocus. Strong plants 2s. 6d. each, or a plant of each of the two latter varieties ordered with either dozen of the above will be included for 3s. the two plants. A remittance must accompany the order, either in cash or in penny postage stamps to the amount. The whole, or any part of the above, will be sent postage and package free.—Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney Bridge, Bath.

NEW AND UNRIVALLED SEEDLING FUCHSIAS, "YORKSHIRE ECLIPSE," "BEAUTY OF RICHMOND," AND "DISTINCTUS."

WM. RUMLEY AND SONS having been successful in raising the above splendid FUCHSIAS, have great pleasure in announcing to the Nobility, Gentry, Nurserymen, and the Public in general, that they intend sending them out in May next. They can confidently recommend them as the most beautiful, distinct, and showy varieties yet sent out, and their undoubted merits must ensure satisfaction to every purchaser. For Dr. LINDLEY'S opinion of the above see *Gardeners' Chronicle* of August 18th, p. 520, under the initials "G. R—y."

No. 1, YORKSHIRE ECLIPSE, a large, elegant, and handsome variety; its stout and robust habit, combined with the graceful form and novel colours of its flowers, contribute to render it a most desirable addition to those in cultivation. It is also an abundant bloomer, and one of the most showy varieties yet sent out. Dr. LINDLEY'S opinion: "No. 1, tube pale blush, lobes the same colour, tipped with green at the points, broad and well expanded; corolla bright orange purple, petals small in proportion, and rather narrow; a nice, waxy, light-coloured variety, good in size, with well contrasted colours." 10s 6d. each.

No. 2, BEAUTY OF RICHMOND.—This matchless variety is perfect in every respect; its excellent habit and ample foliage tend to show off the flowers, which are produced in great profusion, to the utmost advantage. It has long been considered that a Fuchsia possessing the peculiar properties of Venus Victrix, of large size, would be a great desideratum, and in this fine variety we have this desirable result realised. Dr. LINDLEY'S opinion: "No. 2, tube and lobes white, stained with pale purple; corolla deep violet; texture, shape, size, and colours good; a nice variety, with the colours of Venus Victrix; the best of your seedlings." 10s. 6d. each.

No. 3, DISTINCTUS.—A novel, distinct, and beautiful variety, tube and sepals of the finest rosy red, the sepals beautifully expanding, with deep violet blue corolla, of excellent habit, and free bloomer, and has been greatly admired by all who have seen it. Dr. LINDLEY'S opinion: "No. 3, flowers small with very long reflexed lobes and remarkably short corolla, a neat and singular shaped little flower, with bright, well contrasted colours." 7s 6d. each

One plant over on every three ordered by the trade. Orders are now being taken and will be executed in strict rotation in May next, of which due notice will be given, when a remittance or post-office order, payable at Richmond, will be required prior to the plants being sent out.—Gilling, Richmond, Yorkshire.

CHOICE FLOWER ROOTS.

BASS AND BROWN'S Descriptive Priced Catalogue of the above, embracing their Superb Collections of SEEDLING RANUNCULUS, GLADIOLUS, EARLY TULIPS, 1118 IMPORTED DUTCH HYACINTHS, and other roots, may be had on application. The following selections are offered.

RANUNCULUS, by post, with instructions for planting.

100 roots, in 50 splendid new varieties	...	£3	10 0
50 " in ditto ditto	...	2	0 0
100 " in 50 fine varieties	...	1	8 0
50 " in ditto ditto	...	0	15 0

HYACINTHS, imported with instructions for pots, glasses, &c.

12 fine vars., 6s. and 9s.	24 fine ditto	0	15 0
12 splendid, 18s.	24 splendid ditto	1	5 0

EARLY TULIPS, 20 fine named varieties ... 0 8 6
12 ditto, 3s.; 20 ditto, 3 roots of each ... 1 1 0
DOUBLE TULIPS, 10 vars., named ... 0 4 6
10 ditto, 3 of each ... 0 12 0
IRIS, 12 splendid named English, 6s. 24 ditto ... 0 10 6
Fine mixed ditto, per doz., 2s. per 100 ... 0 15 0
12 Salter's superb German varieties ... 0 2 0
Ditto ditto mixed, per doz. ... 0 5 0
CROCUS, 500 roots in 25 fine named varieties ... 0 12 6
250 ditto, ditto, 9s. 100 ditto ... 0 5 0
ANEMONES, 12 fine named dbl. vars., 3s. 6d., post free ... 0 4 3
Best mixed double, per doz., 2s.; fine mixed, per doz. ... 0 1 3
Fine single, per lb. ... 0 4 0
GLADIOLUS, 12 splendid named early varieties ... 0 10 6
Ditto, post free ... 0 11 6
12 fine selected early hybrids, 6s. post free ... 0 6 9
Fine mixed ditto, per dozen, 3s. 6d. do. ... 0 4 3
Gandavensis, 7s. 6d. per doz.; splendens, each ... 0 3 6
TRITONIA AUREA, beautiful new Cape bulb, each 0 7 6

Also collections of Narcissus, Jonquils, Lilliums, late and Parrot Tulips, and a great variety of other roots.

NEW CHRYSANTHEMUMS.

12 fine varieties of last season, large and well set with bloom	...	£0	15 0
12 new and select varieties for	...	1	10 0
12 fine vars. for 2s. 24 ditto	...	0	15 0

Our Catalogue also comprises lists of Select Roses, Hardy Evergreen and Flowering Shrubs and Climbing plants, and an extensive collection of Hardy Herbaceous and Alpine plants, including new Phlox, Antirrhinums, &c.

Goods carriage free to London, and with all orders amounting to 40s. extra plants will be added gratis.

Remittances requested from unknown correspondents. Post-office orders to be made payable to BASS and BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

CUCUMBER AND MELON BOXES AND LIGHTS.—One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 6s. Garden Lights of every description. Conservatories, Greenhouses, and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England

JAMES WATTS, Hothouse Builder, Clermont-place, Old Kent-road, London.

PLANTS AND SEEDS.

ALFRED BALSTON begs to inform planters he has still a large proportion of his Nursery Stock to dispose of, which, in consequence of having relinquished the trade, he offers at very reduced prices. The Stock comprises every variety of ORNAMENTAL FRUIT, and FOREST TREES, and all the best kinds of SHRUBS in cultivation, no expence having been spared in the collection, and from the light nature of the soil in which it has grown, the plants have all a mass of fibrous root, which causes them to grow most luxuriously after being transplanted.

A. B. particularly recommends the following common Laurel, 9 inches to 1 foot, 15s.; 1 to 2 feet, 30s.; 2 to 4 feet, 40s.; 4 to 6 feet, 60s. per 1000. Portugal Laurels, 1 to 2 feet, 10s. per 100. Rhododendron pontticum, 1 to 2 feet, 30s.; 3 to 4 feet, 60s.; 4 to 5 feet, 100s. per 100. Ghent Azaleas of all the finest kinds, specimen plants, 2s. 6d. each; smaller ditto, 8s. per dozen. Rhododendron campanulata, caucasicum, catawbiensis, &c., 100s. per 100. Standard Roses of all the finest sorts, 12s. per dozen. A large stock of Evergreen Oak in pots and transplanted; also common Oak, Elm, Beech, Birch, Berberis, Hornbeam, Privet, &c.

Orders must be accompanied by remittances. Orders amounting to 5l. delivered free.—Pogle Nursery, Dorset.

NEW ROSE CATALOGUE.

COPIES OF WM. WOOD AND SONS' New Descriptive ROSE CATALOGUE may still be obtained, GRATIS, on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

MESSRS. J. AND H. BROWN have to offer the following, which they will forward to any part of the United Kingdom or the Continent.

	s.	d.
Fine Dwarf and Standard Trained Peaches, Nectarines, Apricots, Plums, Pears, and Cherries; the best and most approved sorts of these respective kinds, true to name, 2s 6d. each, or, per dozen	24	0
Untrained or maiden ditto, 1s. 6d each, or, per dozen ...	15	0
Fine Gooseberries, Currants, and Raspberries, per dozen	3	0
Strong Vines, Figs, and Apples, per dozen	15	0
Filberts, new, thin shell and red skin, per doz. ...	3	0
CHOICE AMERICAN PLANTS.		
Andromeda floribunda, fine established plants, well set with bloom, per dozen	20	0
25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name ...	20	0
25 American Azaleas, do. do. do. ...	15	0
6 Andromedas of sorts, including floribunda ...	3	0
6 Kalmias, one of a sort, by name ...	6	0
6 Leduma, do. do.	6	0
25 Hardy American Shrubs, one of a sort, by name ...	10	6
12 Rhododendrons, including scarlet, white, and rose, hardy varieties	12	0
New Hardy Yellow Rhododendrons, each 7s. 6d. to	10	6
6 Fine Hardy Magnolias, one of a sort, by name ...	10	6
50 Dwarf Roses, on their own roots, by name	16	0
12 Tea-scented Roses, one of a sort, by name, in pots ...	9	0
Standard and half-standard Roses, per dozen, 12s. and	15	0
Moss Roses, per 100	25	0
New Crimson Moss Rose, per doz.	6	0
Bourbon Roses, superior sorts, Rose La Reine and Perpetual Queen, per dozen	10	6
12 Greenhouse Azaleas, one of a sort, blooming plants...	25	0
12 Choice Camellias, by name, ditto ditto ...	30	0
50 Choice Greenhouse Plants, one of a sort, by name ...	45	0
24 Choice Ericas, one of a sort, by name	15	0
Chrysanthemums of newest and best kinds, per dozen ...	6	0
Ditto 6 New Dwarf China varieties for	10	0
Fine New Yellow Picotees and Carnations, of best sorts, per pair	2	6
Cinerarias new choice varieties, per dozen, 6s. to	9	0
6 of the following beautiful Lilies, viz, Lancifolium album, punctatum, rubrum speciosum, intermedium, vennstum, sanguineum, eximium superbum, canadense, belladonna, longiflorum, and japonicum, for	12	0
Cyptomeria japonica and 6 Choice Hardy Pinus, for	10	0

Lists of Greenhouse, Stove, and Orchidaceous Plants, and Garden Seeds of all kinds by post.

Albion Nursery Stoke Newington, London.

HEDENHAM ROSARY, NORFOLK.

A DESCRIPTIVE CATALOGUE of about 300 of THE BEST ROSES in cultivation, propagated for sale by ROBERT BENJAMIN BIRCHAM, and will be forwarded by prepaid application.

R. B. B. begs to offer the following SUPERB HOLLYHOCKS.

Name.	Colour.	Price per plant—s.	d.
Abd-el-Kader	Plum colour	7	6
Atropurpurea	Dark purple	2	6
Aurantia	Salmon	3	6
Bicolor	Purple and white	2	6
Black Prince	Black	2	6
Coccinea	Bright scarlet	3	6
Commander-in-Chief	Light-edged rose	5	0
Comet	Ruby-red, fine large flower	10	0
Defiance	Crimson purple	5	0
Delecata	French white	3	0
Desdemona	Fine pink, large and full	2	6
Elegans	Delicate blush	5	0
Enchantress	Beautiful deep pink	7	0
Formosa	Claret	2	6
Fulgens	Dark shining crimson	2	6
Magnum Bonum	Dark maroon	7	6
Model of Perfection	White, with chocolate ground	5	0
Mount Etna	Fiery crimson	7	6
Mulberry Superb	Dark claret	5	0
Napoleon	Red and buff	1	0
Nigra Superb	The best black		
Obscura	Grey purple	5	0
Purpurea Elegans	Light purple	1	6
Queen of Roses	Large rose	2	6
Queen	Beautiful light blush	5	0
Rosea Alba	Rose and white	2	6
Rosea Grandiflora	Fine pink	5	0
Rosea Superba	Deep pink	2	0
Scarlet Globe	Fine crimson	2	6
Sulphurea Perfecta	Fine sulphur	2	6
Sulphurea Palmata	Light yellow	3	6
Susanna	Fine cream colour	5	0
William Tell	Dark lilac	5	0

When the selection is left to R. B. B.

Superior sorts ... at 30s. per dozen.
Good double flowers ... at 12s. "
Common border flowers ... at 6s. "

NOTICES OF THE PRESS.

IPSWICH SHOW.—"The Hollyhocks from Hedenham Rosery were extremely fine, of beautiful and rare tints, and particularly attracted the attention of the judges."—*Suffolk Chronicle*, Sept. 8.

YORK SHOW.—"A noble tray of Hollyhock spikes were highly recommended by the judges for their superior merit, and had a special prize awarded them."—*Yorkshire Gazette*, Aug. 18.

"Some splendid Hollyhocks were exhibited by Mr. Bircham, which had an extra prize for their superior excellence."—*York Herald*, Aug. 18.

"We cannot omit particular mention of a tray of beautiful Hollyhocks, from Hedenham Rosery, Norfolk. These flowers were far superior to anything of the kind ever before seen in this city."—*The Yorkshireman*.

LEAMINGTON SHOW.—"A new genera of Hollyhocks, from Hedenham Rosary, Norfolk, excited unusual admiration, as far exceeding any specimens of this flower hitherto exhibited."—*Leamington Courier*.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND CO. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.			SHEET SQUARES.	
16 oz. from 3d. to 3½d. per foot.			In boxes of 100 feet.	s. d.
21 " 3½ " 5 "			Under ... ... 6 by 4	12 6
26 " 3½ " 7½ "			6 by 4 and under 7 by 5	16 6
32 " 4 " 9½ "			7 by 5 " 8 by 6	18 6
			8 by 6 " 10 by 8	20 6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 3d. to 2s. per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ... 10s. 6d. | 7 by 5 and 7½ by 5½ ... 12s. 6d.
8 by 6 ... 8½ by 6½ ... 18 " | 9 by 7 ... 10 by 8 ... 15 0

MILK PANS, from 2s. to 3s. each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 3d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d.; 6 tubes, 10s. Self-Registering Thermometers for Greenhouses.

Estimates and List of Prices forwarded on application to their Warehouse, 116, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES, &c.

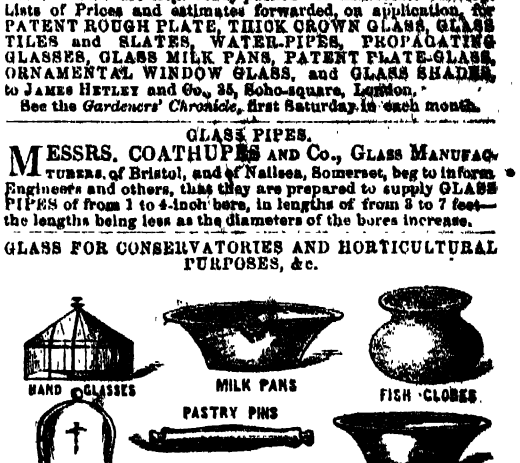
HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 3d. to 8d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

GLASS PIPES.

MESSRS. COATHUPES AND CO., GLASS MANUFACTURERS, of Bristol, and of Nailsea, Somerset, beg to inform Engineers and others, that they are prepared to supply GLASS PIPES of from 1 to 4-inch bore, in lengths of from 3 to 7 feet—the lengths being less as the diameters of the bores increase.

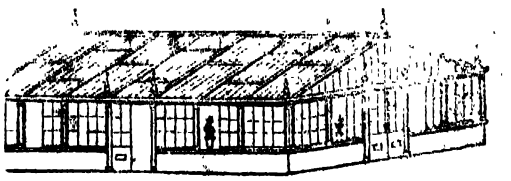
GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 10 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had on application at the warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, FERNS, &c.



J. WEEKS AND CO., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. They have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. By means of these houses, they are enabled to grow Stove, Greenhouse, Ferns, and other Plants, in such immense numbers, that they are sold at LESS THAN HALF-PRICE. Mats, Mushroom Spawn, and everything connected with the Nursery and Seed departments; Plans, Estimates, and Catalogues forwarded on application.

ARTIFICIAL HATCHING APPARATUS.—The Inventor of this perfectly novel and useful Apparatus is desirous of meeting with a friend who would lend capital to the amount of 300l. or 400l., receiving from the inventor 5 per cent. interest, with a share in the profit, for the purpose of bringing before the public this unequalled invention for Hatching and Rearing Poultry, Game, &c., at all times of the year, in any room, with great facility, and without any additional building. The Apparatus requires but little attention, is both amusing and profitable, and being so reasonable in price, the poor, as well as the rich, may benefit by it in case of sickness. When poultry is in request, it will be found valuable in winter.

The Apparatus answers four purposes, viz., Hatching and Rearing Poultry, as a Night-light, for Keeping Water Hot, and as a Stove for Warming or Airing a Room or Cold Room in winter. Chickens are reared with the greatest ease, as proper directions are given with the Apparatus.

The inventor prefers parting with the invention if a fair price is offered, not being in business or desirously circumstanced for bringing it before the public. It will deserve notice as a means of augmenting food for an increasing population at home or abroad; would be found most useful on board a ship, or for game. The small apparatus will hold 50 to 100 and 200 eggs.

Any persons desirous of entering into this novel and lucrative speculation with the inventor are requested to address by letter to R. S. T., care of Mr. Dobson, St. Gregory's, Norwich. The Model, which is now in London, will be shown on satisfactory security being given; this precaution being requisite to prevent piracy.—Oct. 20.

RENDLE'S CHEMICAL PLANT MANURE should be used by all who wish for a good bloom of Ranunculus, Tulips, and other Dutch roots. Sold in tin canisters at 1s., 2s. 6d., and 5s. each. For further particulars apply to

WILLIAM L. RENDLE and Co., Union-road, Plymouth.

Our extensive premises are adjoining the Plymouth Station of the South Devon Railway, and our sales of Guano have exceeded 6000 tons during the last five years.

MYATT'S NEW STRAWBERRY, "ELEANOR."

J. MYATT AND SONS are prepared to send out plants of this and the following varieties at the prices annexed: Myatt's Eleanor, 10s. 6d.; Fortilised Hautbois, 10s. 6d.; British Queen, 3s. 6d.; Globe, 3s. 6d.; Mammoth, 3s. 6d.; Hooper's Seedling, 3s. 6d.; Keens' Seedling, 3s. 6d.; Pelvelain's Comte de Paris, 7s. 6d.; Princess Royal, 7s. 6d.; Cuthill's Black Prince, 15s. per 100.

Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford, Kent.—Oct. 20.

AMERICAN PLANTS.

HOSEA WATERER begs to announce he has just published a New and Complete Catalogue of his AMERICAN and CONIFEROUS PLANTS, which may be had on application, inclosing two stamps for postage to

HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER has much pleasure in announcing he has published a Descriptive Catalogue of his extensive collection of RHODODENDRONS and other American plants, &c., which will be forwarded on application.

PELARGONIUM "FOQUETT'S MAGNIFICENT."

Strong plants, well established, in 4-inch pots, now ready, price 2l. 2s. each; and as more stock has been realised than was anticipated, four plants will be given for every three ordered by the Trade.—Direct to Major WILLIAM FOQUETT, Shide House, near Newport, Isle of Wight.

RHODODENDRONS AND AMERICAN PLANTS.—The Advertiser having an extensive tract of Heath Land adapted for their growth, has always on hand an unlimited supply of the various sizes, and at the low scale of prices quoted, delivered in London; if ordered in quantity, free of expense of carriage.

RHODODENDRON ponticum, 1 to 2 inches } bedded; strong } 20s. per 1000
" " 2 to 4 " } and well } 40s. "
" " 4 to 6 " } rooted. } 80s. "
" " 1 foot (single stems, fit for working), 10s. per 100.
" " 1½ foot, 20s. per 100; 2 feet, 40s. per 100; fit for planting out at once for cover.
" hybrid, fine large flowers, 4 to 6 feet, 30s. to 40s. per dozen.
" " 4 to 6 feet, standard, single stems, fit for grafting or working the fine scarlet and other semi-hardy species. "Tree Rhododendrons" may thus become as generally cultivated as "Tree Roses."
RHODODENDRON ponticum, white, 18s. per dozen.
" " roseum, 2 feet, 40s. per 100.
" " " large plants, 3 to 4 feet, 50s. per 100.
" scarlet (3 or 4 varieties), 1 to 2 feet, 18s. per dozen, on own roots.
" arboreum album, 2 feet, 24s. per dozen.
" new silver striped, 2 feet, 18s. per dozen.
" hybridised with arboreum and catawbiense, producing large handsome trusses of flowers of various hues, from scarlet to blush, lilac, and white, 4 to 6 inches, 25s. per 100; 1 foot, 40s. per 100.
KALMIA latifolia, 2 to 4 inches, 12s. 6d. per 100.
" " 6 to 9 " 25s. per 100.
" " 1 to 2 feet, 50s. per 100 } Blooming.
" " 2 to 3 " 12s. per dozen }
AZALEA pontica, 1 foot, 40s. per 100.
" " fine large plants (blooming), 3 feet, 30s. per doz.
ERICA repens, 6s. per dozen, fragrant, and forces well.

All other American Plants at equally low prices, printed Catalogues of which may be had.

Dwarf Rose Stocks, fit for working, 8s. per 100, or 2s. 6d. per dozen.

WM ROGERS, sen., Nurseryman and Contracting Planter, Red Lodge, near Southampton.

SLATE WORKS, ISLEWORTH.—The following articles, manufactured in Slate for Horticultural purposes by EDWARD BECK, may be seen in use at WORTON COTTAGE, upon application to the Gardener, Sundays excepted. Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot Water Tank Covers, Flower-beds for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c.

Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

GAINES' SEEDLING FANCY AND OTHER GERANIUMS, to be sent out in October.

GEM.—Upper petals rosy purple, belted with white; lower petals white, with a spot in each of rosy purple; 10s. 6d.

DELIGHT.—Upper petals crimson purple belted with white, lower petals white, with purple spot in each, 10s. 6d.

MADAME MALIBRAN.—Rosy lilac, edged with white, with a white spot in the upper petals; 10s. 6d.

ORESTES.—Upper petals bright rosy crimson, with purplish spot; under petals crimson purple, with white centre; the best of its class; 21s.

MADAME ALBONI.—Upper petals shaded crimson, under petals rosy lilac; 7s. 6d.

NIMROD.—Upper petals crimson purple, with crimson spot; lower petals crimson purple, veined; 10s. 6d.

HERO OF SURREY.—Upper petals nearly black, belted with pure white; lower petals white, with a carmine spot in each; 10s. 6d.

SEEDLING SHOW GERANIUMS.

ELECTRA.—Upper petals fine rose, with crimson spot, margined with orange, centre pure white; 42s.

URSA MAJOR.—Upper petals crimson, belted with rose under petals rose, excellent shape, colour of Orion; 31s. 6d.

LADY EVELYN.—Fine pink, with a dark crimson spot in the upper petals, very distinct, fine form; 21s. 6d.

FLYING DUTCHMAN.—Upper petals rosy scarlet, with dark spot, margined with orange; under petals rose—a perfect model; 21s. 6d.

PRINCESS HELENA.—Orange, with crimson spot in the upper petals, fine form; 21s.

GRENADIER.—Bright crimson, with a dark spot in the upper petals; the best of show flowers; 21s.

DUCHESS OF ARGYLL.—Bright pink, crimson spot in the upper petals; 21s.

THE MOOR.—Upper petals nearly black, edged with rose; under petals rose, shaded with scarlet, a dark spot in each; finely pencilled, quite a novelty; 31s. 6d.

NEW AND DISTINCT SCARLET GERANIUM.

CERISE UNIQUE.—This is the greatest novelty of the season, the flower is a bright cherry colour, perfectly round, very large truss, free bloomer, a fine horse-shoe leaf; the stem and foot-stalks of the flowers are transparent, like a coral. It obtained a prize at the Royal Botanic Exhibition, and a first-class Certificate at the Floricultural Society; 10s. 6d.

Many of the above also obtained prizes at the same societies. A Descriptive Catalogue will be ready for distribution early in October.—Nursery, Surrey-lane, Battersea.

BENJAMIN R. CANT, St. John's-street Nursery, Colchester, has now ready for delivery, strong well-established plants of the following:

GERANIUM, HOYLE'S CRUSADER ... ... 7s. 6d. each.
" TOPPING'S BRILLIANT ... ... 7s. 6d. "
FUCHSIA SPECTABILIS ... ... 7s. 6d. "

The Three for 18s., carriage and package free to London. Post-office orders, or reference, requested from unknown correspondents. The usual discount to the trade.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 20, 1849.

IT is reported that in a garden in Hampshire the TEMPERATURE OF THE SOIL has been raised 15° by draining heavy land 4½ feet deep. This if true is a prodigious gain—beyond anything that we could have anticipated as a permanent result—even in summer. Winter is of course excluded from the statement. Circumstances prevent our examining the statement in the case alluded to; but, allowing for some exaggeration, there can be no doubt that a result sufficiently approaching it to be of the greatest value, is attainable.

It is not now, for the first time, that public attention has been drawn in the *Gardeners' Chronicle* to this highly important subject. On the contrary we have on several previous occasions pointed out the undoubted fact that an increased temperature is one of the most valuable results of deep drainage; a more probable cause of the immediate improvement of the health of crops than the mere removal of water, or introduction of air into the soil. The nature of deep draining is in fact such as to render additional access of air to the roots of plants too inconsiderable to be appreciable. It is only when deep draining and deep trenching accompany each other that any great access of air to roots beyond what is customary can be anticipated. Where both are secured the effect is certainly magical.

We have now before us a piece of land which in 1845 was trenched and drained to the utmost depth which the nature of the situation would permit. The trenching was through London clay down to gravel to about 3½ feet; the draining was the same. It could be no deeper. In the winter of 1845-6 it was planted; and the following is now the height of some of the trees after four seasons' growth. Ashes, 13 to 15 feet; Elms, 12 to 13 feet; Oaks, 12 feet; Alders, 15 feet; Larch, 13 to 15 feet; Mountain Ashes, 11 to 13 feet. Yews have made from 11 to 24 inches growth; Douglas Firs, *transplanted between August and October* 1848, 15 to 31 inches; Cryptomerias, 21 to 24 inches; and Hollies 18 to 24 inches, during the last summer; and what is not a little remarkable, a Fuchsia has lived in this place without any protection, only dying annually down to the ground level. All the plants now measured were common nursery stuff when planted. Of course the whole plantation does not consist of trees that have grown at the same rates as those just mentioned; such a thing never occurred; but the trees are in general in the highest possible health and vigour in a cold tenacious clay, which before being trenched would hardly bear Grass enough to make it worth cultivation.

The improved condition of the land has no doubt contributed to this result; but we think it impossible to doubt that a considerable increase of temperature of the soil must have mainly contributed to produce such exuberant growth. Unfortunately this cannot now be made matter of proof, because no register was kept of the temperature before the trenching and draining were resorted to.

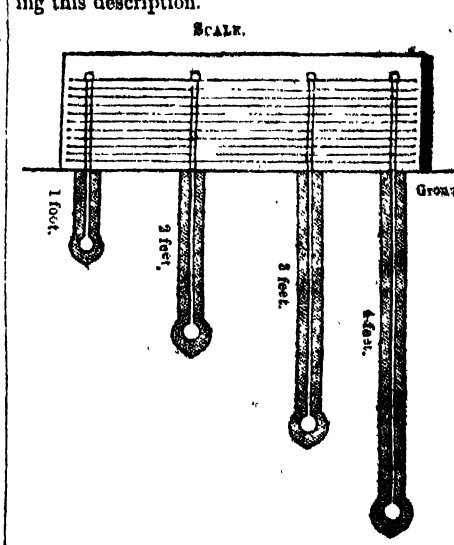
There exists in Essex, not a hundred miles from Brentwood, an orchard of Apples, Pears, Plums, and Cherries, which was planted about 22 years ago in a heavy clay trenched down to an iron pan on which it lies. For a few years the trees grew pretty well, that is to say, as long as their roots were near the surface and received the warmth of the summer's sun; but as they advanced downwards the growth became "small by degrees and beautifully less," till at last it ceased, and nothing flourished but an abundance of grey lichens, with which the branches were covered. The owner was advised to drain it 3 feet below the pan. In the first year afterwards vitality was roused so effectually that the lichens began to disappear, cast off by the swelling bark, and the last stage of decrepitude had been exchanged by the end of the first six months for youthful vigour. In the second and third seasons after the draining, the trees made shoots from 4 to 5 feet long.

We have no doubt that the main cause of this remarkable and sudden change was the elevation of temperature consequent upon very deep drainage. Rain becomes heated by the surface soil, and carries its temperature with it as far as it sinks into the soil. The gain in this way is variously estimated at from 10° to 15° in summer—an enormous gain, which places plants on a hotbed—for soil heated 10° above the ordinary temperature is nothing else. Deep draining, therefore, not only offers considerable security against the introduction of roots into the water channels, but has the great and unsuspected advantage of considerably raising the temperature of the earth which is in contact with the drains, deep as they may be, for water cannot soak rapidly into earth without carrying warmth along with it. This is now so well understood by men of intelligence that it is superfluous to dwell upon it.

Nevertheless there are many persons who entertain doubts of the elevation of temperature being at all considerable at such a depth as 4 feet; and it must be admitted that we possess no positive evidence upon the subject. We would, therefore, suggest to our country friends that it would be highly desirable to investigate the subject in such a way as to leave no room for doubt. It is only by comparing a variety of results in different places that evidence wholly satisfactory can be obtained. The expense need not be considerable; very delicate instruments would not be required; for we do not need, in a question like this, to arrive at the minute accuracy demanded by a delicate question in physics. All that is wanted is a comparative result which can be relied upon. It is of no consequence, for instance, whether the thermometers to be employed are as exact in their indications as those in the Observatory at Greenwich; the material point would be that all the thermometers in each experiment should agree with each other, any little error that may exist in their indications being common to them all; for it is not so much the *actual temperature* of soil that we want to ascertain as the *difference between the temperatures of different depths*. We say this in order that observers may not be deterred by the cost of valuable apparatus. Very cheap thermometers might be constructed for this purpose. Of course, however, the more exact the observations the better.

Four thermometers should form a set. In each set one thermometer should have its bulb 1 foot below the surface, a second 2 feet, a third 3 feet, and a fourth 4 feet. Each should also be covered over with metal (tin or copper) tubes from the level of the ground, the space between the thermometer tubes and casing being well filled with fine charcoal or dry loam. In the sides of the casing, next the bulbs of the thermometers, holes should be cut. Above the ground level the tubes should rise to the same height, and be adjusted to a scale by which the fluctuations in the temperature might be indicated. The following cut will assist in explaining this description.

SCALE.



This would be an apparatus exact enough for the purpose; or various other contrivances might be thought of; even a few "BREGAZZI" thermometers might answer.

Each experiment would require two sets of apparatus. Two pieces of land, as near each other, and as similar in texture as possible, should be selected; one piece should be drained at least 4 feet deep; the other piece should be undrained. An apparatus should be sunk in each, and guarded from accidents by a wire cover. It should then be the business of the gardener, or of some trusty person, to examine the apparatus every afternoon at (say) 5 o'clock throughout the year, and to register the indications thus:

	1 foot.	2 feet.	3 feet.	4 feet.
Jan. 1, 1849.	29°	27°	25°	22°
" 2, "	—	—	—	—

And so on daily.

A comparison of the two registers would give the result desired.

We trust that some public-spirited gentlemen, in different parts of the country, will set about this experiment in good earnest. The cost, inconsiderable in itself, does not deserve a thought when the importance of the results to which it must lead is

considered. The experiment would determine, not a mere point of abstract science, but a question more intimately connected with the cultivation of land than any other that has been raised. The disputants respecting the relative value of deep and shallow draining would thus, and thus only, be able to adjust their differences in a manner satisfactory to the public. For the present we vote for the deepest draining; the proposed trial will show whether we are right.

Our readers will probably remember that we published a few weeks since some figures of CORRODED LEAVES which appeared to have been BORED FULL OF HOLES by insects, and which such witnesses as were produced in the late trial concerning the Walton alkali works would of course have sworn were so pierced. A friend, whose attention was drawn to the subject by the remarks then made, has just sent us some leaves in exactly the same state, pierced with holes *by the oxide of lead from a refining furnace*, distant a few hundred yards from their place of growth. The gardener described it as falling in a white powder, *and eating through the leaf in a few hours*. This is no doubt a circumstance of continual occurrence in the neighbourhood of all works from whose chimneys acrid vapour is allowed to escape.

VILLA AND SUBURBAN GARDENING.

The season is now approaching when the various tender plants which have adorned the villa garden will be put upon their trial. I take it for granted that the preparatory advice which I have deemed it judicious to offer has been acted upon. Those who may be fortunate enough to possess frames, pits, and other glass structures, have the means of security in their own hands, not so those who possess neither; and this I fear is the most numerous class. To them, therefore, I will devote this chapter, which may be termed a chapter of expedients.

Do not become down-hearted because the winter is at hand, and your tender plants are every night apparently doomed to destruction. Let your cellars and store-rooms be routed out. Old empty casks and boxes are not to be despised as greenhouses, if properly managed; and it is not less astonishing than true that thousands of the flowering plants which every year adorn the stalls in Covent-garden are so housed in winter. Let these boxes or casks be placed upon their sides, first removing part of the soil from underneath them. Then place them close together, and heap soil all over and around the sides and back: if turf can be procured this will be more readily applied. Whatever material is employed let it be so managed as to carry off the rains. In stowing the plants away in their winter quarters take care that all are in a perfectly dry state—in that condition which I have already insisted upon with much urgency. Some coal-ashes or dry sand will next be required, in which the pots are to be carefully plunged to their rims; when this is completed, the mouths of these receptacles must be kept open as long as possible, when there is no danger from frost. A mat thrown over the mouth of the boxes at night, will be all that is required in ordinary weather. When severe frosts set in, of long duration, greater care and a thicker covering will be necessary. It is seldom that we have frosts of longer duration than a fortnight; therefore these boxes may remain shut up without much injury for that period; on no occasion expose the plants to sunlight, if they are frozen; on the contrary, let them gradually thaw in the dark, and only expose them by degrees. By those precautions being strictly attended to, Pelargoniums and all the principal flower-garden plants may be preserved through the winter months with success—of course not with the same luxuriant foliage as in a greenhouse, but in a good state for planting in the open ground next summer. *Pharo.*

ENTOMOLOGY.

The Small Ermine Apple Moth.

There are no species of insects more injurious to the foliage of various trees than the caterpillars of the pretty little moths known to collectors under the names of the small ermine moths, from the brilliant whiteness of their four wings, relieved by numerous small dots of jet black.

Nothing is more common in the early summer months than to observe the Whitethorn hedges covered with what is generally termed blight, or, in other words, exhibiting the effects of the attacks of a species of insect belonging to the order Lepidoptera, and consequently proving that blights are not always aphides. The young shoots are enveloped in thick webs; their leaves more or less gnawed or sometimes entirely devoured, and what remains looking as if scorched, whilst in the midst of the mass are perceived a number of small ashy-white coloured caterpillars covered with black dots, which on the slightest disturbance let themselves down to the ground by means of a thread which they spin from the mouth, and which is the origin of the web with which the twigs are enveloped. Instances have been mentioned to us in which Whitethorn hedges have been killed by the attacks of these insects, repeated for several years. When full grown the caterpillars spin their cocoons within the web which they have formed, and within which they are transformed to chrysalids, the moth appearing in the perfect state about the end of June. In the species which feeds on the Whitethorn (Yponomeuta Padella, the larva also feeding on Prunus padus), the cocoons are sufficiently loose and transparent to allow the enclosed chrysalis to be seen; and the wings of the moth which we have reared from the former tree are of a leaden or slaty-white, with black dots.

Until very recently several of the species of the genus to which these insects belong have been confounded together, and it has been supposed that the Whitethorn insects were identical with those which are attached to the Apple. In the most recently published work on the family Tineidæ, to which the genus belongs (Mr. Stainton's "Systematic Catalogue of British Tineidæ and Pterophoridæ," March 1849), seven species are introduced into the genus, including—Padella of most authors (changed by Zeller, in the "Isis" for 1844, to Variabilis), which feeds on the Sloe and Whitethorn; Malivorella, which feeds on the Apple; Cognatella of most authors, Euonymi of Zeller, which feeds on Euonymus Europæus; and Euonymella of most authors, Padi of Zeller, which feeds on Prunus padus; Mr. Stainton adding the following note, "I fully believe we have another species—an Apple-feeder, smaller than Padella, and which I at one time thought Malinella Z., but it is not that species, and I do not feel justified in naming it as a distinct species without further examination of its larva and pupa. Last summer it swarmed on Apple trees in the Kent-road."

The specimens of Yponomeuta Malivorella which we have reared from the Apple, in our garden at Hammersmith, differ from the Whitethorn species in the pure brilliant white colour of their upper wings, marked with minute black dots, whilst the cocoon is equally different from that of the Whitethorn species, being also white, and so opaque that it is impossible to perceive the inclosed chrysalis; they are arranged side by side within the masses of web and half-consumed leaves, as represented in our woodcut, which also exhibits the caterpillar and moth of the natural size, as well as the caterpillar magnified.

It is lamentable, in certain seasons, to observe the devastation caused by this insect to the foliage of some varieties of the Apple. Not only have we observed the whole of the leaves of trees devoured, but the trunk and branches, as well as the small twigs, covered with a strong, shining white web, which the caterpillars have spun, whilst festoons of the same material hung from the branches. Of course, it will be at once perceived that this strong coating of web over the young shoots must render it difficult, if not impossible, for young leaves to develope themselves. Our friend, M. Guérin Méneville, who is now occupied in France, under a Government commission, in investigating the habits of insects injurious to cultivators, has just published some notes on this insect (which he, however, still confounds with Y. padella), which are well worthy attention from their practical utility. "The inhabitants of the departments where this malady appears have no notion that the caterpillars are the first state of the innumerable small white moths which fly about the fields towards the end of summer, and, being ignorant of the change which caterpillars undergo in order to become perfect insects, they regard the moths as quite harmless, and as having no connection with the Apple trees. In excursions made with various landlords, with their tenants and peasants, attracted by the desire to learn the nature of the enemies of their fruit trees, we endeavoured to give them sufficient information on this subject in familiar language and in their own *patois*, so that they easily understood how serviceable it would be to attack these injurious tribes at the period when they are inactive, and whilst they remain in the chrysalis state within the webs attached to the branches. This they considered might be effected by passing blazing straw rapidly under the branches, so as to roast the chrysalids; great care must be taken, however, and experiments made, so as not to injure the main branches. If a few of the smaller branches or twigs were injured, they might be easily removed. An objection of great force was however made, that unless this process were generally adopted, the trees of those orchards which had not been so treated would supply fresh hosts of the moths ready to replace those destroyed by the more careful grower; and hence was evident the necessity of general measures, such as the putting into stricter force the law of *échénillage*, compelling persons to destroy the caterpillars." (Annales Soc. Ent. de France, 1848, p. lxvii.)

It appears to us also by no means difficult to destroy the perfect insects as soon as they have made their appearance, and before they have deposited their eggs. The general simultaneous appearance of the whole brood in the winged state, together with the very conspicuous appearance of the moths, will render this easy. A sheet may be laid beneath the branches in the day time, which should then be sharply struck with a stick, when the moths, which are at that time sluggish, will fall into the sheet, and may be easily destroyed; the destruction of one moth thus preventing the injuries which would otherwise arise from one if not several colonies of caterpillars in the following season. It is this species whose history in the early states was traced by Mr. Lewis (in the 1st volume of the Transactions of the Entomological Society), as noticed in our recent article on the Lettuce aphis.

We have observed that this species is kept in check by a very minute Hymenopterous parasite belonging to the genus Encyrtus, such numbers of which are bred in the body of a single caterpillar, that its skin, instead of shrivelling up, is distended and dried, so as to retain its proper form. *J. O. W.*

DISEASES OF PLANTS.

(*Continued from page 646.*)

Genus XVI.; *one species.* Paralysed Alburnum.—It is not uncommon to find in the middle of the stems of trees portions of dead alburnum, with its dried-up bark, entirely covered over by wood. This alburnum usually extends through a quarter of the circumference in the part of the wood where it is found; and varies in colour more or less white. It is sometimes of the purest white, and I have seen it dispersed in lumps through the whole of the stem. In winter it may often be seen in the wood used for fuel, and it is in this kind of wood, of an inferior quality, that it exists the most frequently. It is more especially common in Elm and Poplar wood. Duhamel asserts he found it more frequently in trees exposed to the south than in others. He attributes it to the frost of 1709. It appears to me that a little attention in investigating the matter would show that it depends necessarily on some debility of the machine. The frost had disturbed and suspended the vital functions precisely in that part which by not being yet matured was more likely to suffer. And as Nature is constantly endeavouring to resume her rights, the succeeding growth has enabled the tree to cover over these alburnums, so to say paralysed, with fresh layers, without any sign usually appearing externally. I say usually, because sometimes external scars indicate the presence of the dead wood withinside.

Genus XVII.; *one species.* Seams (*Striscii, Striæ*).—On the stems of various arborescent plants, not only forest trees but on those that may be found scattered over the country, may be seen raised longitudinal seams or strimæ, which follow the direction of the fibres, and look like the scars of a wound. On following these to the inside of the wood it will be found that to every seam corresponds a fissure in the woody tissue of more or less depth. Frost is supposed to occasion this evil, for which there is no remedy. The diseases referred to the four last genera, which may not perhaps in all cases be owing to frost alone, are found in all soils and at all exposures, but more frequently in moist places with a western or northern aspect. I am not surprised at this. The winds blowing from those quarters are the coldest we have. Trees planted in marshy ground have the texture of their fibres weaker, and their juices have less substance than in dry situations. For the same reason, resinous trees are those which resist frost the best.

Genus XVIII.; Carcinoma,* *or fungous excrescences.*—It is certain that trees growing in marshy lands, inundated during a part of the year, are subject to several peculiar maladies which are fatal to them. Such is the present one. On their trunk may often be observed tumours from which exude acrid humours, even in the heart of the driest summer, which corrode the circumference of the tumour. Those plants which naturally abound in gum, and which are placed in aquatic situations, are often reduced to the last extremity by such *Carcinoma.* This is the disease often called *canker.* I distinguish two species.

First species. Superficial Carcinoma.—In this case, not only is the excrescence external, but the humour is seen to flow. Willows planted in aquatic situations show very frequent examples of it.

Second species. Concealed Carcinoma.—The tumour is visible externally. The bark, however, covers it entirely, and is of a yellowish colour; and it is usual for some insect to endeavour to settle in it. The corroding humour is distilled between the inner layers of bark and the woody tissue—that is, between the alburnum and the liber. It cannot be doubted that the primary causes of this disease are the deficiency of the aliment in nutritive qualities, and the nature of the soil, in which, on account of the great quantity of humidity, the caloric is not sufficient for the wants of the plant. In some places a concurrent cause, I cannot say whether merely accessory, or a principal cause joining with the wet, is the immoderate pruning. Willows (that is, some species), naturally love a wet situation; which means that they are provided by nature with organs so constituted as not to suffer from a superabundance of humidity. But if this wet is forced to remain in the plant by the continual irregular wounds opened, it must necessarily produce disease. The only remedy for *Carcinoma* is its extirpation by cutting off the affected parts to the quick, and covering the wound with an appropriate cement. On the occasion of explaining the mode of healing wounds, I shall enter into some details on this important process.

GOSSIP ABOUT GRAPES.

Rose.—In some remarks in a former number of the *Gardeners' Chronicle* upon a deformed bunch of Grapes

* The Greek word for a tumour or cancer.

which I once mentioned in your hearing, you observed, that "the disease known by the name of 'rust,' which evidently caused the unsightliness in question, might be produced by various causes; by anything, in fact, which checks the proper development of the epidermis of the berry." In that opinion I quite concur, and by way of corroboration I will mention some instances which have occurred in my own practice, of the rust being produced by different means.

Some years ago I had the management of very extensive Graperies, one of which was nearly 200 feet long; and in addition to a Vine to each rafter, there were others on the back wall, and also what might be called an espalier of Vines trained between the front wall and the flues which heated the house; it is, therefore, easy to imagine the immense labour of thinning even a moderate crop in such a house. All hands were consequently employed when this work pressed, and on one occasion one of the men happened to be very near-sighted, which defect in his vision caused him to handle and rub the young fruit very much, and the consequence was, that all the Grapes thinned by that person were more or less rusted; this, then, is a proof that rough handling when the berries are young and tender produces rust. This has been observed by others, who have thence concluded that rough handling with sweaty hands is the sole cause of the evil, which is wrong, as the following case will show.

There are at this place two Vineries, each containing several sorts of Grapes. In one the Vines were deeply planted in cold, heavy soil, and in consequence only the more hardy kinds, such as the Black Hamburgh and the White Muscadine, produced tolerably good fruit; the White Frontignans invariably shanked, about which I shall have more to say hereafter. The Grapes in this house were not subject to rust, which proves that disease to be unconnected with deep planting, although by some that circumstance is supposed to be the cause of it. But in 1847 all the Grapes in this house, as well as those in another where the Vines were younger, and growing in a better border, were more or less rusted, some of them to such an extent as to cause the abortion figured in the *Gardeners' Chronicle*. Now, rough handling could not in this case have produced this excessive state of the disease, because it manifested itself as soon as the berries were fairly set; neither could it have been brought on by syringing, to which some maintain that rust is solely to be ascribed, for the Vines had never been syringed after the buds broke into leaf. As, therefore, none of the causes to which rust is usually ascribed could have generated it in this instance, some other source of the evil must be discovered; and after much cogitation on the subject, I came to the conclusion that the tender skin of the berries had been injured by the fumes of sulphur with which the atmosphere of the house was strongly impregnated whenever fires were made, through that substance having been too liberally mixed with the whitewash used by the bricklayers after cleaning the flues. Further observation strengthened this opinion, which has since been confirmed by a conversation with an excellent Grape grower (Mr. Frost, of Dropmore), who says that if sulphur is spread over the heating apparatus of a Vinery, in quantity sufficient to kill the red spider, before the seeds are formed in the fruit, rust will invariably follow; but if the application of the sulphur is deferred till after the stoning process is completed, and when, consequently, the skin of the berries has become more hardened, no bad effects will follow, provided the fumigation is not carried too far. The foregoing facts therefore abundantly prove that rust on Grapes might be produced by different causes.

Red Spider.—The vapour of sulphur, or, I believe, sulphurous acid gas, is the only effectual destroyer of the red spider; for although water applied by the syringe displaces all the insects which it touches, they are not killed by it, and as they increase with wonderful rapidity, any small colonies that may have escaped the syringe will in a short time supply brood enough to overrun the whole plant after syringing has been discontinued, in consequence of the commencement of the ripening process. It is therefore best to "take the bull by the horns," and use sulphur in time—that is, as soon as the Grapes are stoned; but in doing this, very great care is necessary, for a slight excess of the gas would destroy the leaves as well as the spider. Mr. Frost's method of applying sulphur is a safe one, therefore I shall describe it here, for the benefit of those among your readers who are unacquainted with it: Shut up and make a fire in the house which is to be fumigated, in the afternoon of a gloomy day, when there is no likelihood of the sun shining upon it, and when the flues or pipes have become warm, sprinkle a little sulphur upon them, and continue the fire till the person who performs the operation (who of course must remain in the Vinery all the time) feels a pungent sensation in his nostrils, when the fire must be immediately damped; and if the heating apparatus is so warm that danger is apprehended from the fumes of the sulphur getting too powerful, a little air should at once be given to the house. It is better to keep on the safe side, and not volatilise too much of the sulphur, even though it should be necessary to repeat the dose a few days afterwards. Some say that it is safer to saturate the atmosphere of the house with moisture before using the sulphur in this way. Those who syringe Vines regularly, with a view of checking the red spider, should be careful that the water they use is clean, and not colder than the atmosphere of the house at the time; also that the nozzle of the syringe is not so coarsely perforated as to throw a strong stream of water against the tender foliage. I have seen the leaves of Vines cut to tatters by being syringed with unnecessary force. *J. B. Whiting.*

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(*Continued from p. 645.*)

Friday, Sept. 14.—Section D.—Mr. H. E. Strickland read the ninth report of a committee, consisting of himself, Prof. Daubeny, Prof. Henslow, and Prof. Lindley, appointed for the purpose of making experiments *on the Vitality of Seeds*. During the past summer a portion of each kind of seed collected in 1841 and 1846 were sown at Oxford and Chiswick, together with a few others contributed by Miss Molesworth, of Cobham Lodge, Surrey. No experiments were performed this year at Cambridge, on account of the absence of Mr. Murray, the curator of the Botanic Garden. The committee are very desirous of having seeds sent them whose age can be authenticated. A list of the names of the plants, from which the seeds which were sown had been obtained, was given with the report.—Dr. Lankester expressed a hope that as the committee had now been in existence nine years, that they should give something like a summary of results. From the number of experiments they had performed, some interesting general results might be looked for, as to the species or families of plants which produced seeds which for the longest time resisted the action of the vital forces. The relative quantity and nature of the albumen, the form and composition of the embryo, were all points which might have an influence on the greater or less protracted vitality of the seed, and which the committee might now approximatively determine.—Mr. H. E. Strickland said that he felt the time had come when an arrangement of the facts might be made, although on previous occasions the committee felt that the data they possessed were too few to yield anything like satisfactory results.

Sept. 17.—Section B, Chemistry.—*Report on the Action of Carbonic Acid on the Growth of Plants*, by Dr. Daubeny.—This report, having emanated from the combined recommendation of the Chemical and Natural History Sections, was read in Section B to-day. An outline of this report is given above.—Mr. Hunt, who was associated with Dr. Daubeny in this inquiry, offered a few remarks in general confirmation of the results obtained in the Botanic Garden at Oxford. He, however, stated that the difficulty experienced in growing the plants in perfectly air-tight vessels was so great, owing to the Ferns becoming unhealthy under those unnatural conditions, that he feared all the results were somewhat vitiated thereby.—Professor Rogers, alluding to some remarks made by Dr. Daubeny on the presence of carbonic acid in water, stated that carbonic acid was invariably absorbed by water at the normal pressure of the atmosphere, and that even at the temperature of ebullition this gas was absorbed in considerable quantities. It had been objected against the theory of the vegetable origin of coal that no potash could be found in the ashes of either bituminous or anthracite coal. Professor Rogers and his brother had proved that, by incineration, the alkali was volatilised; but that, if coal was finely powdered and mixed with water, potash could be invariably detected. Even powdered lignite when thus treated gave indication of its presence.

Section C, Geology.—Mr. H. E. Strickland exhibited some specimens of vegetable remains in the Keuper Sandstone of Longdon, Worcestershire. They are for the most part fragmentary and obscure, but some of them appear referable to the genus Calamites, and one specimen seems to be of the genus Voltzia, found in the new red sandstone of the Continent, but only once before met with in Britain (Lindley's Foss. Flo., pl. 195). The state of preservation of these remains is remarkable; for, instead of being black and carbonaceous, as is usual with fossil plants of so great antiquity, they are of a light brown colour and highly elastic, resembling recent dead leaves. When viewed under the microscope, these vegetable fragments exhibit the cellular texture in great perfection. The only other locality in Great Britain where plants have been found in the Keuper Sandstone is at Ripple, three miles east of Longdon, where Calamites occur, but the sandstone is not quarried there at present. The only animal remains found at these localities are small teeth and dorsal spines of the Hybodus.

Home Correspondence.

Orchids from Seed.—I have read with interest the previous communications on the crossing and raising of Orchids from seed, which have appeared in your pages, and, from what has come under my notice, I have not the least doubt of the practicability of the affair. Dendrobium nobile crossed with D. chrysanthum produced me a pod of seed, and when the latter appeared to be ripe, I sowed it in three ways: some on a log, with natural moss growing on it, suspended in a shady part of the Orchid-house; some was sown on an inverted flower-pot, the inside of which was stuffed with sphagnum, and placed in a pan of water, which answered well, as far as keeping the pot moist was concerned, but neither of these two sowings vegetated. For the third sowing I procured a pan similar to the double flower-pot, but without a hole at the bottom. It was 12 inches in diameter and 3 inches deep. A cavity about an inch wide run all round between the outer and inner rim of the pan; this was filled with sand. The inside of the pan was about 10 inches wide and 2½ inches deep; it was filled with water, in which was placed a piece of cork about 8 inches wide and 1 inch thick. I sowed the remaining portion of seed on the cork, which was then gently pressed under the water, and after being held there a short time, it was allowed to float; this caused the seeds to adhere the better to it. A few pins were placed round the outer rim of the cork, in the lower edge, a little bent downwards, so as to be under the water; these pins prevented the cork from coming to the side, and caused it to form a floating island, on which no slug, centipede, or woodlouse could establish itself, and by which means the tender seedlings were preserved from the ravages of these destructive pests in an Orchid house. The whole was covered with a bell glass, which rested on the sand between the two rims of the pan, and placed in a shady part of the Orchid house. In about three weeks two seeds had vegetated, and ultimately five plants appeared; they continued to grow, and seemed to be going on very well, the roots had fast hold of the cork; they were then about four months old. At that time I began to take the glass off them at night, covering them again in the morning; after doing this for about three weeks, I took the cork out of the water and suspended it to the roof of the house, in which place it remained about three weeks: at that time the plants looked healthy, but the roots had ceased to grow, and their points turned brown. I then placed the cork in water and covered it over with the glass, in hope that the plants would recover; but they never made any progress, on the contrary, every time I looked at them they appeared to be getting less: the leaves withered and hung down, and in about three weeks the plants were all dead. I believe that I did wrong in taking them out of the water when they were in active growth. Cork appears to be suitable for sowing Orchid seed on, for two reasons—first, it imbibes just sufficient moisture to cause the seed to germinate, and the roots to adhere to it; and secondly, when the plants require to be separated the operation can be done without breaking or injuring them, as the cork can be divided with a sharp knife, and the plants placed on a log or in a pot or basket without harm. *Richard Gallier, gardener to J. Tildesley, Esq., West Bromwich, Staffordshire, Oct.* 6.

Potatoes on Hillocks.—The following plan of cultivating Potatoes was given in the *Belfast Northern Whig* of October 2d; but it appeared first, I believe, in the *Drogheda Argus*:—"In our last Number we stated that Mr. Kelly would dig out Potatoes, which he had planted on a new principle, on the following Monday. Accordingly, we attended at the place named to witness the result of the experiment, and we must say we were highly gratified at the success of the new system. Mr. Kelly described to his hearers his experience, for the last four or five years, of the blight—which amounts to this, in short, that the blight of the Potato stalks is a distinct calamity from the calamity of the Potato rot. That, in fact, the blight of the stalks was caused by frost, and the rot of the tuber was caused by rain. He mentioned many instances in corroboration of this doctrine, which were most convincing, and seemed to be assented to fully by his audience, some of whom came many miles to witness the result of his experiment. He then pointed to the Potatoes, which were then dug out in the presence of them all, as an evidence of the correctness of his opinions. He described his mode of planting, so that the rain could not, under any circumstances, rot the Potatoes. After the land was harrowed, and the manure carted out, he had it placed in small hillocks, 3 feet apart, on each of which he placed a spadeful of loose earth. He then placed a whole Potato, with the eyes upwards, on the top, and had a sufficient quantity of clay put on to cover both seed and manure. This was on the 22d of March.—In May, each set had produced from four to eight young stems, about 8 inches high, rising from the top of each hillock. He then had the stems gently bended from the centre towards the circumference, and had a small quantity of mould placed in the centre of the stems, so as to keep them in that position. In about a fortnight the stems began to turn up their crowns, and he had them more mould placed in the centre. In this way he had them moulded five or six times, during June, July, and August. When we saw them they had the appearance of rows of large bee hives, with the stems of the Potatoes growing out all round about half way up from the base, and the pointed tops of the little mounds solid mould, down which the rain water would run into the furrow, and therefore could not rot the tubers in the centre. Mr. K. showed, by ridges in the same field, how the rain water descended by the aperture, caused by the wind blowing about the Potato stalks, and it then lay amongst the young tubers, and they, consequently, became rotten. Mr. Kelly stated that he had other Potatoes, which he planted in drills, and when they came up to a proper height he had divided the stalks to each side, and had the mould placed in the centre, and he expected he would have them all sound. He said, any mode of planting that would prevent the rain from getting to the young Potatoes would save them from the rot. We must say, we never saw such a produce turned out of the ground before, and they were all perfectly sound, clean, large, and beautiful." In this part of the country I think that there will be a good residue, notwithstanding the indubitable partial failure that has taken place. The "Cups" that stood us in such good stead before, have failed us this year. *J. M'Cormac, M.D., Belfast, Oct.* 4.

When will Nurserymen and Seedsmen pay due attention to correctness in naming the subjects they have to

offer for sale? It is not many days since, in passing a well-known seed-shop in the vicinity of Covent Garden, that I saw exposed for sale, at the door, and labelled Belladonna Lilies, a quantity of bulbs in blossom of the Nerine sarniensis or Guernsey Lily. One would think, in this instance, the error could not be the result of ignorance but of carelessness; but, whether arising from carelessness or ignorance, such misnomers ought to be avoided by respectable tradesmen, for they become the source of much wide-spread error in the popular identification of flowers. Probably nine-tenths of the tyros who might have seen the bulbs alluded to, and the name attached to them, would be content to justify their own use of it by some such expression as "I saw this flower so labelled in Mr.——'s seed-shop, and the name must be right." There is a moral responsibility for correctness of nomenclature, resting upon tradesmen who profess respectability. *Argus.*

Seedling Grape.—I have sent for your opinion my seedling Grape, which is a hybrid between the Muscat and the Black Hamburgh. Last year was the first of its fruiting, when it was of a good black colour—I thought blacker than the forced Black Hamburgh from which it was raised. I took particular pains in crossing it with the Muscat of Alexandria. You will find in the small berries the exact flavour of the Muscat. It was grown in an old Vinery, which has not been repaired for nine years, and into which the rain penetrated very much. There has been no fire for the last two years. The Black Hamburgh Grapes growing by the side of it in the same house are just the same bad colour as the Grapes sent. I find it to be a good setter and a good bearer. My opinion is that it will prove one of the best Grapes grown. *J. E. L.* [Berries large, oval; flesh of the consistence of that of the Black Hamburgh, with a rich, decidedly Muscat flavour. Appears highly deserving of further trial. ||]

Salvia splendens often grows many feet in height without flowering, but when it does flower well it is a truly splendid object. I have plants of it in pots, not exceeding a foot in height, covered with blossoms. They were struck from cuttings put in pots filled with a mixture of sand and leaf-mould. *H. M., The Priory, Ireland.*

Mildew on the Vine.—I have noticed for some time back disastrous accounts from many of your readers as to the great prevalence of mildew on their Vines and fruit, to the great detriment of the present year's crop and wood, as well as to their future well-doing. I have been a cultivator of the Vine for some years, and have taken much interest in it, as some of your readers know, but I must confess that I am totally ignorant of this of late too prevalent disease. Be sure that there is something radically wrong, and I have no doubt that if one of the many of your correspondents who have suffered from it would give a true account of his course of culture for the season some of his more fortunate brethren would be able to assist him, and that too without the aid of soap-boiler's ashes, hot water, sulphur, lime, or any nostrums of that kind. I have 10 houses planted with Vines, all of which except six have their roots outside, in borders varying from 18 inches to 5 feet in depth. Some of the borders I can heat as recommended in my treatise on the Vine; others it is not convenient to do so, yet I have no mildew, no shanked or sour Grapes—no, they have only one fault (which is mine) they carry too heavy crops and never fail. In my treatise I had hoped I had given an antidote for the perfect development and fruitfulness of this delicious fruit; but let me remind those in this dilemma, that let the physician be ever so skilful, if the patient won't follow his prescriptions there are no hopes of his recovery. *James Roberts, Raby Castle, Oct.* 15.

Ornamental Shrubs for Hedgerows.—As the season for the removal of trees and shrubs is fast advancing, I beg to draw attention to the importance of planting ornamental shrubs to form hedgerows, &c., for gardens and pleasure grounds, or even as substitutes for our common hedge plants. The advantages of our own day are far beyond those possessed by our ancestors in this respect. The many beautiful things we now have were unknown to them—Box, Yews, variegated Hollies, Lilacs, and a few common Roses, were all they were acquainted with, even as late as the reign of George II. But with all our beautiful introductions, the aspect of our hedgerows has altered little. I would, therefore, recommend the following shrubs as suitable for forming ornamental fences: Cornus of different sorts, Syringas, Ribes sanguineum, aureum, and other species; Spiræas, more particularly hypericifolia, opulifolia, salicifolia, corymbosa, and Douglasii; Deutzia scabra, the Spanish Broom, Gueldera Rose, Buddlea globosa, Sweetbriar, and the Bird Cherry. The common Broom makes a handsome hedge, and it grows very fast in poor soil. Berberis dulcis would form a beautiful variation; the berries are sweet, about the size of a black Currant, and might be used for table. Cotoneaster frigida, a robust-growing shrub, bearing rich scarlet fruit during winter, is very pretty. The Tamarix would flourish in situations exposed to the sea, as would also the Elder. The Evergreen Privet, and Purple-leaved Berberry, when well grown, are fine shrubs. Pyrus (Cydonia) japonica would make a very ornamental hedge, and likewise Euonymus latifolius, which produces deep scarlet fruit in October. The Syringa named Charles X. bears handsome and fragrant flowers in spring, and would form a good hedge, and the finer varieties of Thorns worked on the common hedgerow would improve its appearance. The principal part of the shrubs mentioned above may be procured in large quantities at a cheap rate. If there was once an increased demand for them, nurserymen might be enabled to supply them still cheaper, in consequence of their attention being more directed to their propagation. *C. M.* [Yes, yes; but what *is* cheapness? Very few of these are fit for *fences*, if they are to guard enclosures.]

Autumn planting Potatoes.—In accordance with your suggestion, I planted out the following kinds of Potatoes without manure in October and November last, viz., Forty-folds, soundest; Kemps, about a fourth diseased; Clusters, a sixteenth; York Regents, one-half; Cops, two-thirds. Clusters dug out when the tops were fading were less diseased than those dug out some days ago, in the end of September. The sound Potatoes of these kinds are of a remarkably fine quality and good size. The field was in Potatoes, and manured, in 1844; Barley in 1845, and meadow the three succeeding years. *D. Miller, Londonderry, Oct.* 5.

Rough Plate Glass.—Since this sort of glass, so highly recommended in your columns, has answered, British sheet of 21 oz., and upwards, is losing ground, and not without reason; therefore those who have given rough plate a trial, are, I think, in duty bound to give the results of its merits, or demerits, to the public. I have tried it on a small scale this season against common crown and 16 oz. sheet, for the growth of Melons; it has answered well; it superseded by far the 16 oz. sheet, but I could not perceive any difference betwixt it and crown, as far as the growth of the plants and maturity of the fruit were concerned. The rough plate and crown were put in a 6-light Macphail pit, three lights of each, side by side; eight lights glazed with the 16 oz. sheet, occupied a separate range, but they showed no comparison with the above, as regards the health and vigour of the foliage, &c., both pits receiving the same treatment. The properties possessed by rough plate in diffusing light are astonishing. Before I tried it a gentleman from Sunderland called here, and he recommended it highly for this property, which he had proved to his satisfaction. He stated that he had some larder windows glazed with 21 oz. sheet, which spread too glaring a light; to obviate this the 16 oz. sheet was removed, and the windows were reglazed with rough plate, but it was found that the latter diffused the light even more powerfully than the sheet had done. Now that manufacturers are improving this glass, I have no doubt that it will become valuable for the general purposes of horticulture. Has any one given it a trial for Vines, Peaches, &c., or for a conservatory; I have little doubt of its answering. I saw a sample a short time ago of double crown, which was strong, clear, and beautiful. *James Roberts, Raby Castle, Oct.* 15.

Fuchsias Serratifolia and Napoleon.—In the spring of 1848, I tried a few plants of F. serratifolia in the front border of a conservatory, and I found them to answer well. I lifted these plants with care in October, whilst they were in bloom, and they continued blooming the greater part of the winter. This induced me to propagate a number of plants of this Fuchsia, and to get them well established for the coming season, and also for winter blooming. This year I had a bed of serratifolia and Napoleon, both of which succeeded beyond my expectations. In my opinion, these are the two leading Fuchsias for bedding. I had four plants of serratifolia propagated in April, 1848, which, when stopped in July, this year, were 10 feet high. These formed beautiful objects, and, with proper care, they will continue in bloom the greater part of the coming winter. *T. R. Forgan, Hadlow.*

Mr. Tombelle Lomba's Plan of saving Potatoes.—On the 16th of August, four days after the disease had first showed itself in the field, I had the tops cut off and the ridges earthed up on a fair spot of ground, measuring about 4 land yards, the Potatoes being just off the bloom. The crop has just been dug, and the produce of the spot treated according to Mr. T. L.'s plan has been carefully weighed against two equal spots, one just above, and the other just below it. Here is the result:

	Market Potatoes.	Seed Potatoes.	Small.
	lbs.	lbs.	lbs.
1. Above	413	67	46
2. Cut down	425	84	58
3. Below	464	85	67

The tubers were alike sound, so this proves nothing in that respect, but it is satisfactory (No. 2 being the Tombelles), as showing that growth certainly does go on in the tuber after the haulm is removed. *F. E.*

Pruning Forest Trees.—Although the old controverted subject of forest tree pruning has been for some time in abeyance in your columns, its interest, as concerns the future stock of sound timber trees in the country, has by no means subsided; and as the season is now fast advancing when the mischievous operations of the pruners are generally in practice, I feel somewhat anxious to draw the attention of your readers who are proprietors of growing timber, to the subject, before these operations commence. Notwithstanding all the specious things that have been said and written to the contrary, my opinion remains as strong as ever, that the pruning system (if system it can be called) is injurious in two ways; first, it retards the increase of growth, which it professes to promote, and secondly it encases uncovered timber in the interior of growing trees, however fair they may appear externally, in this way—that however the face of a cut may be hidden by subsequent growth, no union takes place. I lately witnessed a remarkable confirmation of my views on this latter particular on a visit to the Museum at Kew, where are to be seen some specimens showing in a very striking and remarkable manner the evil effects of pruning. To these I beg to invite the special attention of all concerned in the culture of young growing timber trees! I feel anxious that all interested should see, with their own eyes, the evil effects of forest pruning, whether on the system of Mr. Cree or others. When on this topic may I beg to enquire what species of Pinus is it that produces the immense logs imported from America? Some of these are of great length and thickness, with hardly a knot to be seen; who pruned them? *Quercus.* [Pinus palustris and strobus are the source of the largest sticks.]

Societies.

MICROSCOPICAL, *Oct.* 17.—G. Busk, Esq., President, in the chair.—A large meeting took place in consequence of the President having signified his intention of making some remarks on the recent announcement of the discovery of a fungus as the cause of cholera. In commencing his remarks, Mr. Busk stated that he should confine his attention to the papers of Dr. William Budd, Dr. Brittain, and Dr. Swayne, each of whom had written papers and given drawings of bodies which they supposed to be fungi. In the first place he remarked that amongst the varied bodies figured by these gentlemen there was only one set that bore so close a resemblance to each other as to claim anything like a common character. With regard to the figured bodies from air and water, they were not definite enough to yield any possibility of classing them with one body or another. With regard to the more definite bodies figured by Drs. Budd, Brittain, and Swayne, and seen in their preparations, he had with one exception found these in the matters passed by cholera patients on board the Dreadnought. These bodies which were described as fungi were of three different kinds,—1st, There existed a cellular body which was more particularly figured by Dr. Swayne, and existed in two of his preparations, one in the possession of Dr. Lankester, and the other in his own, which evidently exhibited the characters of the spore of a Uredo; and on examining some specimens of Uredo from a loaf of bread bought at a baker's, it was found to correspond precisely with the spore from the cholera patients. As this species of fungus was very common in bread that had been kept, and easily resisted the digestive action of the stomach, the presence of it in a few cases was well accounted for. The second class of bodies, and which under a high magnifying power, with a bad light, looked exceedingly like the last, consisted of small portions of the inner membrane of the grain of Wheat. In the coarser kinds of flour this membrane was not separated, and he made no doubt that these bodies were introduced with the bread eaten as food. A third form of these more definite bodies was evidently due to the presence of undigested starch granules. Drawings of all these bodies were exhibited, and their strong resemblance to the bodies figured by the Bristol observers was at once recognised. In conclusion, the author stated that he did not wish to pronounce an opinion that the existence of a vegetable organism as the cause of cholera was impossible, but from the observations he had now laid before the Society, he considered that such a cause for the production of cholera had certainly not yet been demonstrated. —Mr. C. Woodward, of Islington, said that he believed that things which persons took into their stomachs might produce some of the appearances described by Dr. Brittain and others. Mr. Topping had shown him, under the microscope, the ordinary chalk mixture, and the appearance presented by this substance was precisely similar to some of the things figured in the drawings from Bristol.—Mr. Varley, in support of the probability of the truth of the fungoid theory, gave an account of the rapid development of fungi in the bodies of flies, and exhibited drawings of the same.—Dr. Lankester said that he did not think the supporters or rather reproducers of the fungoid theory would have thought their observations sufficient to warrant their conclusions, if there had not already existed the hypothesis of the fungous origin of cholera. From the first time he had seen the drawings of Dr. Brittain he had doubted the correctness of the conclusions of Dr. Budd, and the subsequent advocate of the fungous theory. In the published drawings of Drs. Brittain, Budd, and Swayne, many things had been evidently confounded under the common term fungus—inorganic as well as organic bodies of various kinds could be easily identified. He had at first failed to detect any bodies resembling fungi at all, but in the preparation he had received from Dr. Swayne he recognised the spore of a Uredo, as had been described by Mr. Busk. He had obtained the same appearances as exhibited in some portions of Dr. Swayne's preparations and the drawings of Dr. Brittain from gruel, which was not an unlikely substance to supply the materials for the phenomena described. Some of the bodies figured as fungi by the Bristol observers were evidently epithelial scales in different stages of disintegration, and the same bodies which had also been said to be fungoid had been found in the contents of the bladder.

Review.

Portraits of Honorary Members of the Ipswich Museum. Published by George Ransome, F.L.S., Hon. Sec.

We have before us in this collection the likenesses of a number of living naturalists, drawn on stone, with great care and admirable fidelity by Mr. Maguire. The series has been executed at the cost of Mr. George Ransome, of Ipswich, a most liberal patron of art and

[illegible], to which the town of Ipswich is indebted for one of the best provincial museums in this country. Mr. Ransome's object in establishing this institution, of which we have formerly given some account, was that of contributing towards the free instruction of the working classes in the science of Natural History, by providing for them a good museum, library, lectures, and classes. In acknowledgment of the co-operation of his friends among naturalists, Mr. Ransome's gratitude induced him to present to the members of the Museum the portraits of those to whom he felt indebted for the prosperity which has attended the progress of the Institution. It was originally intended to confine the issue of these prints to the members of the Museum, but so many applications for copies have been made by the friends of those whose portraits have been taken, that a limited number of large India proofs has been placed for sale in the hands of Messrs. Rowney, of Rathbone-place, and Mr. Hanhart, of Charlotte-street, Rathbone-place. With characteristic generosity, Mr. Ransome devotes any profit that may arise from the disposal of the prints exclusively to the funds of the Institution.

Among the portraits already issued are those of the Prince of Canino, Mr. J. S. Bowerbank, Dr. Buckland, Mr. Gould, the Rev. Prof. Henslow, Sir William Jardine, Rev. William Kirby, Sir Roderick Murchison, the late Bishop of Norwich, Mr. Prideaux Selby, Mr. Spence, Dr. Wallich, Mr. Yarrell, and Professor Lindley. They are to be succeeded by portraits of Professors Owen, Sedgwick, Forbes, and others.

Of many of the prints it is difficult to speak too highly. Those of Professor Henslow, the late Bishop of Norwich, Sir R. Murchison, Mr. Yarrell, and others, are faultless as resemblances, and, wherever Mr. Maguire has had the opportunity of drawing from the original, are beautiful specimens of lithographic art.

We believe that no such collection of contemporary portraits has ever before been offered to the public, which will prove most ungrateful if it does not second Mr. Ransome's benevolent intentions by speedily carrying off the whole of the small impression that can be purchased.

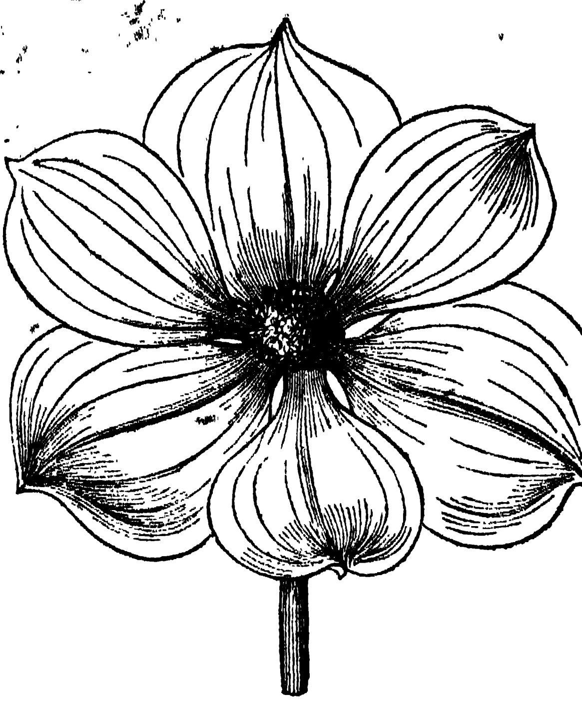
Garden Memoranda.

HORTICULTURAL SOCIETY'S GARDEN, TURNHAM-GREEN.—The Orchid house here has become too small for the plants which it contains. So greatly have they increased in size during these last few years that they prevent a free passage along the paths. The large Phalænopsis which Mr. Fortune obtained for the Society from Manilla is finely in flower, and it promises to go on blooming yet for some time to come. Of all the Orchids this is the most suitable for small collections, on account of its ever flowering habit. A fine specimen of Miltonia candida was in flower, and another of the beautiful Dendrobium sanguinolentum, the fragrant Epidendrum ceratistes was just coming into bloom, and there was also here Nepenthes Rafflesiana, whose curiously formed, large, brown mottled pitchers are the admiration of every one who sees them. The huge Lælia superbiens in the large stove has thrown up nine strong flower stems, which may be expected to be in flower about Christmas. Before we leave this part of the garden we must not forget to notice a little frame in front of the Orchid-house, which is now quite a blaze of pink flowers. This has been effected by introducing Oxalis Bowiei plentifully among dwarf Cacti, which grow here among stones and brick rubbish. This interesting little frame, which runs the whole length of the Orchid-house, is not warmed, and it receives no other care than that of putting a mat or two on it now and then to keep out frost; the Cacti, nevertheless, thrive well in it. Under favourable circumstances, the Oxalis will keep it gay till November or even later, after which time its tops will die down and be removed.

In a cold pit we observed Fuchsia serratifolia in blossom, a valuable species, on account of its flowering well at a season when every fugitive blossom is an acquisition; further on, and gracing the doors of Messrs. Hartley's conservatory, were beautifully pendent specimens of Sedum Sieboldii, than which there is no prettier autumn flowering plant for vases, and it is so easily managed, that even the uninitiated in plant cultivation could not fail to grow it successfully. When the blossoms have fallen, the heads of the plants are cropped close in, and the pots containing the roots are stowed away in some cold frame, or under the stage of a greenhouse, till spring recals them into activity, when they are placed under circumstances to encourage growth. The principal point is to keep them free from slugs, which are very fond of them. This Sedum is quite hardy. In a span-roofed house, in front of the conservatory we have just mentioned, we remarked a plant or two of the Californian Evergreen Chestnut, as well as a nice collection of Cyclamens, which were bought at the late Dean of Manchester's sale. The latter promise to yield some new and choice sorts. The house next this will soon be occupied with Begonias, which keep it gay in winter, and which are now coming forward in a pit, where they are kept during summer. The value of the Begonia as a winter-flowering plant is not so well known as it should be; for what plant is handsomer during the dull season! And it is almost as easily managed as Dr. Siebold's Sedum. They should be cut back after they have done blooming and rested in summer.

In the large conservatory, the noble red-flowered Brugmansias which it contains have been pruned "hard in," and they are just breaking again. These flower [illegible] a year, as do also the orange-flowered Cestrum, of which this conservatory possesses fine specimens. Luculia gratissima—a plant about 12 feet high—promises to blossom well about Christmas, and a little tree of Benthamia fragifera is producing fruit nearly as large as a Tangerine Orange. The following woodcut will give some idea of the size of the creamy white blossoms of this tree, of which we gave an account last week. The sides of the paths are lined with Chrysanthemums, which bid fair to blossom well this year.

On the lawn, in the arboretum, is a bushy plant, some 8 or 9 feet high, of Cupressus macrocarpa, a Californian species of great beauty. It was sent out, we believe, by the Society under the name of C. Lambertiana. Pinus Pinsapo, from the mountains of Malaga in Spain, is also a very handsome Conifer, and it seems to escape uninjured by spring frosts.



An opening has been cut through the Peach-wall which divides the orchard from the arboretum, so as to form a gateway into a space 50 feet wide and 400 feet long, which has been taken off the upper part of the orchard for the better accommodation of vans, &c., on the days of exhibition. This space is fenced in by a Holly hedge, which, previously to being transplanted, divided the flower garden from the arboretum during a period of 25 years.

The Melloca tuberosa has been tried in the garden, with the view of proving its capabilities as a substitute for the Potato, but at present we can only report that it has thriven well, that it has escaped the late frosts (3° and 4° below freezing) almost uninjured, and that it is forming tubers, but to what extent it is at present impossible to say.

We understand that in consequence of the frosts in spring having killed the blossoms of nearly all the varieties of Apples and Pears, the garden committee have resolved to suspend for this season the distribution of specimens of these fruits.

GORDON CASTLE, NEAR FOCHABERS, N.B., THE SEAT OF THE DUKE OF RICHMOND.—There is at present in the conservatory here a superb specimen of Brugmansia (Datura) arborea, the stem of which reaches the height of 12 feet, where it branches off gracefully, forming a complete canopy over the tops of its less lofty associates. It has been in blossom since the middle of June, and even now its flowering energies do not seem to be the least impaired, for hundreds of flower-buds are still in various stages of development. Associated with it is another plant remarkable for the quantity of flowers it produces, viz., Rosa sanguinea—an old-fashioned plant to be sure, but, when properly treated, one that never fails to yield us abundance of flowers. This valuable China Rose is planted against a pillar, and, after being carried to a sufficient height, it is disposed on arches, over which it has a pretty appearance. From its base to the extreme points of its various ramifications it is loaded with rich-coloured blossoms. *E., Oct.* 13.

Miscellaneous.

Brunsvigia Josephinæ.—In March, 1844, I received three fine bulbs, among various others, of Brunsvigia Josephinæ from the Cape. They were at once potted in good fresh turfy loam, and in a month the leaves appeared. They did not, however, grow finely; and in November, beginning to turn yellow, water was withheld, but resumed in December, new leaves again showing themselves. The pots were also plunged in water for a few hours, to ensure the ball of earth being fully saturated; the top mould was also taken off, and replaced with leaf-mould. During the winter they were kept in a warm greenhouse, in a temperature often down as low as 35°, and making leaf well. In May they were placed in a pit, kept dry, and exposed to the sun, the lights being kept closed. In the September ensuing one of the bulbs flowered, and, the treatment being precisely similar, another flowered in 1846. The first again flowered in 1847, and the second in 1848, appearing thus to require a year to recover their exhausted strength. This year forms, however, an exception, all three being now in flower, one of which is that now exhibited; and although at first the largest bulb, and always producing the finest foliage, is blooming only for the first time. I cut the flower-stem always off as soon as the last flower begins to wither, in order that strength may not be exhausted in perfecting seed, and I then place the pots out of doors, and keep them there as late into the autumn as possible, and until the leaves are grown so long as to make them liable to injury from strong winds or heavy rain. I have only further to add that these bulbs have never been re-potted since I first planted them, but that liquid manure is occasionally given them when the leaves are approaching and have attained maturity. Under similar treatment I have twice bloomed the Buphane ciliaris, and last year I had also two or three other Brunsvigias in flower. There is, therefore, not so much difficulty in blooming these plants as has hitherto been thought. *Chas. Leach, in the Journal of the Horticultural Society of London.*

On the causes which determine the fall of Leaves. By Dr. Inman, in Proceedings of the Literary and Philosophical Institution of Liverpool.—The articulations are those parts of the plant where, at a certain period of their growth, solutions of continuity are made so naturally and regularly as to preclude the supposition that the dislocation is produced by accident. If we examine them when the shoots are young and vigorous, in the early spring, we shall find that there is a faint line externally that marks the position of the future joint, but that internally there is scarcely any indication of its existence. At this time, if we call in the microscope to our aid, we shall find that, at the exterior line of demarcation, there is simply an increased deposit in the cells composing the bark, and a very minute process passing from its inner surface. The line of junction in the interior rarely presents any change more marked than a larger deposit of raphides or crystals there than occurs elsewhere, or occasionally a deposit of some dark resinous material. Iodine, at this time, stains the whole tissue yellow, and scarcely detects the existence of a single granule of starch either in the leaf or stem. At this time the leaves require considerable force to separate them from the branches—so much so, that we sometimes find that they bring with them some of the wood from the parent stem; and if a branch is cut off and dried, the leaves cannot be torn from their attachment without great skill and management, showing that the joint is not yet complete. By and by, however, a change begins to take place; with the advance of the season, or from some other cause depending upon the situation and idiosyncrasy of the plant, the line of demarcation becomes well marked, and the eye can detect it throughout the whole of its course, internally as well as externally. The microscope shows at the same time that the process of bark, which was at first rudimentary, has gradually increased, and that an evident change is taking place in the nature of the cells which contain the raphides. Iodine now tinges the proximal side of the junction a deeper hue than the distal, and we begin, here and there, to see a blue dot marking the existence of a starchy mass. As the season advances this change becomes more apparent. The process of bark increases perceptibly till it reaches the fibro-vascular bundles, when it receives a slight check, but soon continues its progress until these are nearly eaten through or absorbed, and the prolongation of the epidermis has entirely covered the surface of the articulation. At the same time (in the Poplar very distinctly, and in other plants more obscurely), a great change is taking place in the contents of the cells, on both sides of this prolongation, in the formation of a large quantity of starch, probably for the nutrition of the young leaf-bud when it begins to expand next year. In the Poplar this deposit of starch takes place in the bark and wood at the base of the leaves to a great extent, so much so, that iodine renders a section completely dark; and not only at this spot, but for a very short distance also on the distal side of the joint. If we now make a separation of the base of the petiole and the stem under the microscope, we shall find that the disruption takes place invariably through the cellular tissue external to the prolongation of the epidermis, so that when it has been effected, the tree does not suffer from the effects of an open wound. The change that takes place in the cellular tissue prior to its disruption, appears to me to be simply a sort of self-disintegration; the cells contract and become rounder, and separate their walls from each other so as to destroy their cohesion. I am very greatly inclined to think, from the generation of starch in their interior, that the process is altogether a *vital one;* that it is, in fact, the last act of life at the base of the petiole. We are strengthened in the belief of the vital character of the act, when we consider that the provision for the fall of the leaf, the formation of the articulation, has been going on

from the earliest existence of the petiole, that it advances with the growth of the leaf, and is not complete until the leaf itself is of no more use. It must be borne in mind too, that it is not necessary that articulated leaves should be dead when they *fall*, as we frequently find them lying upon the ground green and apparently vigorous for a time; and if we examine any of them that have fallen naturally, we shall frequently, if not always, find that the base of the petiole is plump, fresh, and apparently living, which it would not be were its vitality entirely gone. The provision for the separation being once complete, it requires little to effect it; a desiccation of one side of the leaf-stalk, by causing an effort of torsion, will readily break through the small remains of the fibro-vascular bundles; or the increased size of the coming leaf-bud will snap them; or if these causes are not in operation, a gust of wind, a heavy shower, or even the simple weight of the lamina, will be enough to disrupt the small connexions, and send the suicidal member to its grave. Such is the history of the fall of the leaf. We have found that it is not an accidental occurrence, arising simply from the vicissitudes of temperature and the like, but a regular and vital process, which commences with the first formation of the organ, and is completed only when that is no longer useful: and we cannot help admiring that wonderful provision that heals the wound even before it is absolutely made, and affords a covering from atmospheric changes before the part can be subjected to them. In the Copper-Beech, and some other trees whose leaves die some time before they fall off, the development of the starch-bearing cells on the distal side of the articulation does not take place; nor is there that disruption or disintegration of the cell walls which is ordinarily met with. The joint, however, consists of laxer tissue, which is readily broken through by any accidental violence, such as wind and storms of rain, or by the growth of the new leaf at the base of the petiole at the commencement of spring. *Botanical Gazette.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY.—Admit a free circulation of air when the weather permits. Use fire-heat with caution, and only in conjunction with air, for the purpose of excluding frost and driving out damp. FLOWER-HOUSE.—Keep the house in which the principal display of plants in flower is made somewhat warm and closer than an ordinary conservatory, as many of the plants having been brought forward in heat will not bear cold currents of air. In all cases, however, it is better to admit the necessary amount of air by opening every ventilator, and every moveable sash, a little, than to admit sweeping volumes of the cold elements by the lazy fashion of opening a few only to a greater extent. PITS AND FRAMES.—Forcing of plants into flower will now occupy a portion of these ranges, where a considerable display is required during the two last months of the year. In all cases let the excitement be very gradual at first, and by means of bottom heat keep the roots a little in advance of the tops. If the Hyacinths were potted at the time and in the manner recommended, they will now have filled the pots with roots, and a portion of them may be taken up and plunged in a bed of leaves, or in some other place, where there is a slight bottom heat; but unless they are wanted very early, let it be very moderate, and accompanied by a free admission of top air. Encourage Mignonette with manure water, and remove the flowers from later successions, to give greater strength to the plants. IXIAS, SPARAXIS, and other Cape bulbs of that kind, should be repotted and plunged in a cool frame, or they may be planted out in a frame of prepared soil, and their elegant blossoms used for decorative purposes. It is not by any means a good plan to part these plants too frequently, as it causes them to produce weaker and fewer flower-stalks in the following season. If grown in pots, therefore, unless they are very much crowded, it will be better merely to turn the ball out of the pot, and after carefully removing as much of the soil as can be managed without disturbing the bulbs, to replace them in the same or a larger pot, and surround them with fresh soil. For the smaller growing kinds, the compost should be light and sandy, containing a considerable admixture of peat; but for Gladioli, and others of similar growth, a soil somewhat richer may be used. These plants should be carefully guarded from cold or damp, as their leaves are very liable to be injured thereby. In all the plant-houses let most scrupulous cleanliness and neatness prevail, and spare no pains to give them a gay and cheerful appearance, that the contrast between them and the external desolation which reigns around may be more conspicuous. This is the season when, by really good management, plant-houses may be made a luxury indeed, and will afford pleasure to their proprietors. Let immediate attention be paid to the collecting of a good stock of the most useful soils within reach. By getting them into the compost-yard at this season, opportunity is afforded of turning and exposing them to the action of the atmosphere during winter, and thus taking advantage of the frost to destroy the insects with which fresh soil naturally abounds.

FORCING DEPARTMENT.

PINERIES.—Keep a constant eye to the bottom-heat, as at no season is it more liable to vary, and at no season is it more essential to prevent such variations, especially with fruit in progress. To assist in maintaining an equable state of heat and moisture about the roots during winter, it is a good plan to surface the bed with a couple of inches thick of half spent tan or leaves taken from a pit where they have heated and are partially decomposed. This mulching will in a great measure do away with the necessity of watering the roots of Pine plants during the dark months. Let the quantity of water introduced be very much restricted, as the consequent evaporation if produced in excess is liable to condense and run into the hearts of the plants. This evil may be prevented, in a great measure, by due attention to ventilation, and by keeping the laps clean, as the excessive vapour will be then carried off. Where dung linings are used for Pine frames, a covering of mats will be necessary in severe weather, and as these tend to prevent any escape by means of the laps, a little air should remain on all night. VINERIES.—Once more we mention the propriety of adopting some efficient mode of protecting Vinery borders from autumnal rains, and the cold produced by consequent evaporation. However well drained the borders may be, and however porous the constituent materials may be, the continual wetting and partial drying of the soil, besides keeping the roots miserably cold and wet, will so injure the mechanical texture of the soil that it will cease to part so freely with its surplus water, and must depend more and more upon evaporation, which will of course draw in similar proportion upon the natural or acquired warmth of the border. Proceed vigorously with the pruning and cleaning of the Vines from which the fruit is cut, and at the same time let any needful painting or other repairs be done, that the houses may have an orderly and finished appearance, and likewise be in perfect readiness for their next year's campaign. By getting this work speedily out of hand, they may be made immediately available for sheltering Chrysanthemums, Geraniums taken up from the flower garden, and other similar plants, which merely require to be protected from the frost. Let a good stock of leaves be collected in dry weather, and if possible let them be placed under cover. If properly and carefully housed, before the rains cause decomposition, their fermenting power is very considerable, and a great saving is effected by using them instead of tan, which although not very expensive at the tan-yard, becomes very costly when it has to be carted 10 or 12 miles; and besides economising their fermenting power, they are much lighter, cleaner, and more convenient for use, than when they have been exposed to a winter's rains. A range of shedding for the purpose may be constructed at a very trifling cost, as a rustic thatched roof, formed of rough spars, thatched with heath or furze, and supported by rustic poles, is all that is necessary. If the erection of such a place is not convenient, the next best thing to do is to lay the leaves under the shelter of some of the thickest evergreen trees, as Yews, Spruce Firs, &c.

State of the Weather near London, for the week ending Oct. 18, 1849, as observed at the Horticultural Gardens, Chiswick.

Oct.	Moon's Age	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain
Friday 12	25	29.614	29.511	54	37	46.0	N.E.	.02
Satur. 13	26	29.964	29.690	49	38	43.0	N.E.	.06
Sunday 14	27	30.071	29.978	51	30	41.0	N.E.	.00
Monday 15	[illegible]	30.014	30.005	60	34	47.0	N.E.	.00
Tues. 16	●	30.007	29.991	55	37	46.0	E.	.05
Wed. 17	1	29.955	29.858	66	52	59.0	S.	.01
Thurs. 18	2	30.151	30.150	67	44	55.5	S.	.00
Average		29.972	29.891	55.7	40.4	48.1		0.16

Oct. 12—Partially overcast; cloudy and cold; clear at night.
— 13—Rain, overcast and cold, cloudy.
— 14—Cloudy and cold throughout.
— 15—Partially overcast, fine, cloudy; clear at night.
— 16—Foggy, overcast, rain at night.
— 17—Overcast, cloudy and fine, overcast and warm.
— 18—Fine, exceedingly fine, clear at night.

Mean temperature of the week, 2½ deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Oct. 27, 1849.

Oct.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained	Greatest Quantity of Rain.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 21	[illegible]	44.1	49.9	9	0.71 in.	1	3	1	..	4	4	7	–
Mon. 22	56.4	41.0	51.2	15	0.80	–	–	8	1	5	8	1	3
Tues. 23	57.7	40.7	49.1	16	0.44	4	1	–	2	4	7	7	1
Wed. 24	56.1	40.4	48.2	11	0.83	1	1	1	–	7	7	1	2
Thurs. 25	55.3	38.0	46.6	9	0.72	4	1	3	3	4	3	4	4
Friday 26	54.4	35.4	45.4	8	0.52	5	2	1	1	4	5	3	2
Satur. 27	54.5	39.7	47.1	18	0.80	2	5	2	..	4	2	6	2

The highest temperature during the above period occurred on the 21st 1826—therm. 72 deg.; and the lowest on the 21st 1843—therm. 20 deg.

Notices to Correspondents.

ANNUALS: *M J.* It is too late to sow them now. You had better wait till spring and then sow them in a little heat. After they are up prick them off into pots or pans, still keeping them for a time in a little heat; and harden them off by degrees preparatory to their being finally planted out.‡

ASPARAGUS: *T G.* You may use any manure you find most convenient. Some fluid night-soil applied in November is what the Biscayans use, and their Asparagus is perhaps the finest in the world. Or *guano*, if it be the true Peruvian, is better still.

BACK NUMBERS: *The Rev. T W F* is informed that the volumes for 1847 and 1848 may be had, price 30s. and 30s. 6*d*. The former years are out of print.

DR. NEWINGTON'S DIBBLE: *A B.* We do not think garden seeds, such as Cabbage, could be advantageously sown by this implement.‖

FRUIT TREES: *R W.* The plan is a good one, but you must not expect quick growth with such an arrangement. It is a contrivance to ensure the roots being damp only, not wet, during all the growing season. If your garden is very dry and warm, the plan is needless.—*E C.* In planting an orchard, flag stones placed under the trees will prove advantageous, or slates may be employed, bedded in mortar. Your selection will be improved by striking out the Belliga Pippin and Minshul Crab, and substituting the Blenheim Pippin and Bedfordshire Foundling. For your early Vinery you may choose the Black Hamburgh, White Sweetwater, Royal Muscadine, Black Prince, and White Frontignan. In your late house you had better substitute the Black St. Peter's (Oldaker's) for the Black Frontignan.‖—*Brentwood.* Transplant as soon as the leaves have mostly fallen. The Kentish Cherry will do very well as a standard; but all sweet Cherries are best grown as espaliers, because in this way they can be protected from the birds. If you cannot afford a wall for the Jargonelle, then an espalier is the next best mode for it.‖

HEREMAN'S LIQUID: *Exoniensis.* The reason why this cannot now be procured is probably that it did not answer the purpose. Mr. Dean was mistaken in its effects; at least the same advantageous results have not been obtained by others. Hot steam will kill the mealy bug, and may be applied with advantage in cases where the skin of a plant is hard enough, as, for example, with Pine-apples. Its presence at all is a symptom of lazy gardening. A man's plants need not be infested with vermin more than his own person; the cause of their presence is the same in both cases.

ICEHOUSES: *T W F.* You will find in former volumes long discussions about icehouses. The general cause of their failure is the access of air through the drain that carries off the water. That drain should be formed like an ∽.

INSECTS: *Tweedside.* The caterpillar sent is that of the scalloped oak moth (Geometra elinguaria). The other mentioned was probably that of the swallow-tailed moth (Geometra sambucaria) *W.*—*R L.* The spots on the Wheat grains do not appear to have been caused by the attacks of insects. Probably they are the result of checked disease at an earlier period. *W.*—*T C.* The grubs inclosed are those of the meal worm (Tenebrio obscurus) found in flour, biscuits, &c., and which is even more injurious than the Tenebrio molitor. *W.*

NAMES OF FRUITS: *Albert.* 1, Boston Russet; 2, 47, Alexander; 29 appears to be Dutch Mignonne; 30, probably Old Nonpareil; 31, Bedfordshire Foundling; 32, Summer Golden Pippin; 33, Margil; 34, Foxley Crab; 38, Scarlet Crofton; 46, London Pippin. The Pear is quite worthless and unknown.‖—*J C F.* 1, Dumelow's seedling; 4, Bedfordshire Foundling; 6, Good Year Pippin; 8, Northern Greening; 9, Autumn Bergamot; 10, Bellissime d'Automne; 11, unknown, handsome, but tough-fleshed. The seedling resembles the Dutch Mignonne, but earlier, and somewhat richer.‖—*Thomas Gee.* 1, like Black Prince, not set; 2, Royal Muscadine; 3, Chasselas Musque, sound and excellent. With regard to the want of colour in Grapes, various opinions have been entertained. It appears to have been of more frequent occurrence latterly than it was when houses were glazed with open laps and heated by flues. It seems not to depend entirely on light, although the latter ought to be as freely admitted as possible. A very free admission of air and sufficient fire heat at the time the Grapes are beginning to change colour is, we believe, the best remedy.‖

NAMES OF PLANTS: *A B.* Oncidium unguiculatum and Liparis elata.—*J H G.* Tropæolum pentaphyllum. You can do nothing with the red spider except expose it to the vapour of sulphur in the usual way. It must be mixed with whitewash, smeared over flues or hot-water pipes, and thus driven into the atmosphere. If you have not this convenience heated bricks will do.—*W L.* Cassia lævigata.—*Lady C L.* Hydnum auriscalpium, the earpick fungus.—*M H A.* Your specimens are huddled together, broken to pieces, and detached from their labels.—*T M.* An Aplopappus called gracilis in gardens; 2, E. serotinum; 3, E. ageratoides.—*E H M S.* Stenactis speciosa, Senecio viscosus, Origanum Dictamnus. Address the returns to Dr. Lankester, No. 22, Old Burlington-street.

ŒNOTHERA MISSOURIENSIS: *J H C.* When frost threatens to become serious, cut back the youngest and softest parts of the shoots, and then cover the plants with dry leaves for the winter. Of course the bed is *thoroughly* drained. That is essential, but not easily managed at Shepherd's Bush.

PEARS: *H E.* To suit your situation the hardier kinds of good Pears only should be planted. Try Knight's Monarch, Eyewood, Broom Park, Bacon's Incomparable, Thompson's, Seckel, Althorp Crassane, Louise Bonne of Jersey, Jersey Gratioli, Hessel. Quince stocks are better adapted for dwarfs than standards.‖—*Dr Miller.* Such of your Pears as will part from the tree by merely raising them to a horizontal position, should be immediately pulled, in all cases. The late kinds may be allowed to hang to the beginning of next month, as there is little danger of frost in your climate. After being gathered they will keep longest in a cool, dry, dark situation, but they will become more melting if kept in a temperature of 60°. The fruit may be thinned so as to average two on every square foot of wall.‖

SEEDLING FRUITS. We have received from Mr. Wood, of the Coppice, near Nottingham, a seedling Apple called the Burton Pippin, said to be "an early and abundant bearer, and extremely handsome on the tree. It bears quite as well as the Keswick Codlin." We find the fruit to be large, oblong-ovate; eye close; stalk short, rather slender; skin smooth, pale lemon yellow, with a faint blush next the sun; flesh whitish, hollow at the core; sub acid; probably a good kitchen Apple.

THE POTATO DISEASE: *A Sub.* The paper read by Mr. Smith at a recent meeting of the Liverpool Polytechnic Society, on the disease of the Potato, is a mere repetition of statements long since made by us with reference to the cultivation of the plant in the Calf of Man.

VINES: *E F L.* Give your Vine borders a good soaking of manure water, and in a few days after you may cover it. The covering may remain till the end of March. It is not necessary to remove the glass in winter. The Royal Muscadine is a better Grape than the Parsley-leaved. You may also introduce the Black Prince, White Frontignan, and Oldaker's St. Peter's. The Royal Muscadine is to be preferred for the back wall.‖

MISC.: *A Hughes.* The Cotyledon Umbilicus belongs to the order of Houseleeks. It is very common in damp places in all the west of England. You will not find it at Deal.—*Inquirer.* Pots in cold frames will be all the better for being plunged in ashes or some other material during winter. Move your Gladioli as soon as the tops have died down, and replant them in spring. Roses next week.‡—*L.* It is possibly red spider which causes the leaves of your Brugmansia to turn yellow and drop off. We would advise you to keep it rather dry during winter, and in spring to shake it out of the pot, prune it "hard in," and repot it in nice sandy loam and leaf-mould.‡—*Rosa.* Forsythia viridissima, Wiegela rosea, and Jasminum nudiflorum will probably grow near Edinburgh on a wall with a north-east aspect. The best covering for such a wall is Ivy. We have no experience with phosphate of lime and animal charcoal for Roses.‡—*Brentwood.* You may transplant all the things you mention with advantage now.‡—*P T O.* Double Furze is propagated by cuttings or layers. Two buds are not too many to allow to grow close together on Camellias. Generally speaking, Achimenes should be kept dry in winter. The double-flowering Peach is hardy; but if you have room, you may winter it in-doors. It requires the same treatment as other Peaches. Atragene and Clematis are generally increased by layers.

SEEDLING FLOWERS.

DAHLIA: *W D.* Size, form, and depth of petals good; colour dark crimson on upper side of petals, lower dull purple; petals good in shape, size, and regular; eye well filled, texture thin.*

PETUNIA: *W D.* Colour milk white, a little stained with purple towards the outer edge, and veined with violet in the centre; texture and outline good, size middling—a nice variety, but somewhat common in colour.*

, As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

OIL-CAKE, GUANO, AND OTHER MANURES.—Foreign and English Oil-cake on sale; also Peruvian Guano of the finest quality, Superphosphate of Lime, Bone-dust, Sulphuric Acid, Animal Cake, Wheat Manure, Gypsum, Rape-cake, Salt, and all other Manures of known value.

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EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

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SEED WHEAT.—For Sale, at 50s. per quarter, good and genuine seed of the RED-STRAW WHITE and HOPETOUN varieties. Samples of grain and ear will be sent on receipt of stamps to cover the expense of postage. No orders for less than 4 bushels can be executed; those from unknown correspondents must be accompanied by a remittance. Sacks 2s. each. WINTER BEANS for seed, can be supplied at 5s. per bushel. JOHN MORTON, Whitfield, Berkeley, Gloucestershire.

SMITHFIELD CLUB, 1849.—The Annual Show of FAT STOCK will take place on Tuesday the 11th, Wednesday the 12th, Thursday the 13th, and Friday the 14th of December, 1849, at the Bazaar, Baker-street. The Printed Forms of Certificates, for the entry of Stock and Implements, must be obtained from the Honorary Secretary, and returned to him, filled up and complete, on or before Saturday the 17th of November, 1849. B. T. BRANDRETH GIBBS, Hon. Sec., Corner of Half Moon Street, Piccadilly, London.

The Agricultural Gazette.

SATURDAY, OCTOBER 20, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS

THURSDAY, Oct. 25.—Agricultural Imp. Society of Ireland.
THURSDAY, Nov. 1.—Agricultural Imp. Society of Ireland.

WHAT IS AGRICULTURAL TRUTH? Unquestionably there is such a thing. Creeds, we know, are many and widely opposed to each other, and each, no doubt, has its conscientious adherents—honest men doubtless often earnestly differ in opinion: but we must not forget that error and truth are *realities* notwithstanding they are not mere matters of sentiment, varying with the circumstances or tendencies of individual minds. And we must remember that in agriculture, as in other departments of knowledge, whatever may be the differences between men of greatest experience and of apparently equal authority—whatever incongruities be evident in the speculations regarding it of equally intelligent minds—the *truth* is not inconsistent or incongruous—it is in every case an individual, recognisable reality, and one which is attainable by all who shall honestly seek it. And is it not worth the search? Agricultural truth is no bare catalogue of notions for the entertainment or mere occupation of the mind: it is not matter for the consideration of the theorist merely, or of the "book farmer": it is pre-eminently a "practical" subject—directing the energies, indicating the methods, and exhibiting the results of all skilful and intelligent cultivators—*cramping* the energies, *marring* the methods, and *exposing* the results of the men who in ignorance neglect it: it is the only key to the one great problem of agriculture—the profitable development of fertility; and a farmer is successful in business or not just in proportion as he possesses it.

The question—What is agricultural truth?—thus deserves an anxious consideration. Let us look at some of the many answers it has already received. "It is this," says one, "that, at the present prices of agricultural produce, nine farms out of every ten in this country are rented beyond their value—that 'a great head of game' is a moral nuisance and a direct injustice—that capital will not be freely invested in farming till its owners be sufficiently assured of its safety—that the 'imperial average' price of corn by which our corn rents and rent charges are ascertained is *not* the price at which our corn is sold—that parochial rates and many other taxes on the occupier and on his business are so heavy because the poor-laws have not encouraged self dependence among our labourers; because ratepayers are not represented at county boards; because in many cases, as in that of road management for instance, funds are gathered expensively and administered wastefully—all this is *agricultural truth*." And so it is—we quite believe it; but do not let us imagine that this is all, or indeed any considerable fraction of what the question implies: it receives, as we shall see, many an answer besides these—some of them, in our opinion, by no means so unexceptionable.

"What is agricultural truth?"—How many there are among our writers and thinkers on agricultural subjects who appear to regard it as being nearly all wrapped up in the proposition, that Wheat cannot be profitably grown by British farmers unless foreign produce be kept out of their markets! We do not believe this to be political truth—we do not believe it to be truth at all. Possibly, a majority of our readers may differ from us on this point, and, so far as the matter is agricultural, we do not object to their discussing it here; but we do object to that *à priori* method of discussion, adducing or questioning the principles of political economy, and employing abstract terms in illustration of its argument, which may be political, but certainly is not agricultural controversy; and we must beg our correspondents to avoid the example of those who have considered the subject in relation to that of political honesty or of political obstinacy, rather than in the much nearer relationship which it bears to that of agricultural economy. Every one will admit that it would be far more advantageous to cheapen the production of home-grown Wheat than to enhance the price of that which is imported; at the least, the result would be alike to us in both the cases, with this clear benefit in the former—cheap food for the people; and the methods by which the former is to be attained are peculiarly appropriate for our discussion, for we must say that it is far more properly our place to furnish and investigate agricultural information, in order that it may tell upon our landowners, our farmers, and our labourers, than to foster and propagate political opinions, in order that they may influence the conduct of our Government.

Let us return therefore to the question, What is agricultural truth? Listen to the reply of another party:—"It is the practice of our ancestors, modified, perhaps, in some degree, by the experience of their posterity. Do not look for it in the writings of chemists and theoretical enthusiasts; you will find it in the practice of our successful farmers, breeders, and cattle-dealers; it is exhibited in the alternate husbandry of our soil, in the drill husbandry of our crops, in the skilful management of our live stock, in the sharp dexterity of our salesmen." The unfortunate thing is, that as soon as we leave the abstract or notional forms of truth, and examine cases in which it is developed in fact, such a variety of circumstance occurs to influence results, that the opinions of separate observers rarely agree. Take any one of the party who answer as above, and he will carry away your conviction by an irresistible series of illustrations, each taken from his personal experience; but listen to any number of them together, and you will be confounded by the singular want of agreement they exhibit. It is rarely that the intelligence exists which is capable of fully estimating the influence of disturbing causes in agriculture, and thus among the practitioners of no other art is there greater variety of sentiment or more arbitrary confidence of opinion. "What is agricultural truth?" They will tell you, "It is perfectly well known by every one with a few years' experience of farming." And if you inquire farther, you will find that it includes propositions such as these: that hedgerow timber is incompatible with good arable farming—that Grass lands may be ploughed up with advantage to all parties—that success during a rotation depends upon the abundance of the manure-producing crop with which it commences; that industrious cultivation and 30 loads of rotten dung will raise an acre of good Turnips—that the main purpose of fallowing is to destroy weeds—that deep ploughing, deep draining, and deep cultivation generally, are a great deal more than half the battle the farmer has to fight; assertions, on the accuracy of which perhaps nearly all parties are agreed, but on the details of which there is the greatest possible variety of opinion. Hedgerow timber is still defended by some, Grass lands are defended by many, deep cultivation is not advocated by all, and among the recusant minority are to be found names of sufficient authority to puzzle those who may be interested only as spectators in the condition of the art. But it is on matters of detail that the hardest fights between practical men ensue. Engage a short-horn breeder and a Devonshire farmer, and a Herefordshire man in conversation on their respective breeds of cattle—or a Leicester and a Southdown breeder of sheep—and judge of what little chance there is of a mere spectator obtaining any confident opinion on the subject; and yet the truth must exist on one side or the other, though, certainly, it has not hitherto been correctly ascertained. Indeed, let any one but venture to assume that whatever the difficulty of determining with which of all these parties the superiority lies, at all events the palm must properly belong to one of them, his decision will be immediately disputed by hundreds of intelligent men, who confidently claim superiority for themselves, and thoroughly believe this or that race of cattle or sheep—of which more than half the farmers in the country, perhaps, have hardly heard—to be the best the country affords.

Such is the state of the art and business of agriculture! Is it not one of the most significant of all the marks it displays, that there are men who believe it to have already attained a standing so nearly perfect, that but few resources remain unexhausted from which it may meet the extraordinary difficulties it has lately had to encounter?

But let us ask once more—What is agricultural truth? Who can give a complete answer to the question? or rather, who can even index the contents of the statement which such an answer must involve? Certainly no one within the limits to which we are confined. The truth affecting the farmer, and which he therefore ought to know, embraces probably all the physical sciences, and much beside. It teaches the properties of the raw material on which the art operates; it shows us the actual atoms of which future crops are to be built, now resident in the soil and in the air; it instructs us how to concentrate them in those forms which indicate fertility; it asserts and explains the influence of atmospheric heat and moisture, and the other elements of climate, on the processes of agriculture. And we may descend a step and say that it tells us too of the machines which the farmer employs—of the earth as at once the store room and the vehicle of the food of his plants and the laboratory in which it is prepared—of the vegetables which organise this food for the use of animals—of the animals by which it is still further concentrated for the use of man. And we may descend to minutiae particularly still, for it includes the knowledge of the farm labourer as well as of the philosopher; and the details of cultivation and of feeding, of dairy management and of marketing, are as strictly within the range of agricultural truth as is the structure of a plant or the composition of a manure. Talk of "scientific farming"—as if the little superiority of knowledge which some amongst our body possess deserved the distinction of a nickname! Are not our many failures sufficient proof of the *absence* of correct science amongst us? When we shall have perfected our soil both as storehouse and as machine, when our plants shall have developed their wealth in forms of the greatest utility, when our animals shall assimilate with perfect economy the food that is provided for them, then perhaps may we be permitted to speak of our scientific agriculture. But till then, the designation is a misnomer, for a successful practice is just the development of sound theory, and all our errors and losses are the simple result of unscientific proceedings. The word "science" means well arranged knowledge, and certainly no one will sneer at that.

Undoubtedly then a *scientific* education is what agriculturists should receive. The whole range of the truth which concerns it should be laid open to those who undertake a business now for the first time left to seek its reward unassisted. The dissemination of agricultural truth—the furtherance of agricultural education—is the proper object of all agricultural societies, publications, and improvers generally. There is nothing so proper for a national agricultural society as to assist and guide our national agricultural seminaries, nothing so right for our agricultural journals as to encourage any writer who would relate what may interest or benefit their readers—nothing so appropriate for a good farmer in any locality as to make known with satisfaction the energetic efforts of those who may elsewhere be treading in his steps. But what do we see? The English Agricultural Society will have no dealings with the Cirencester Agricultural College—the *Mark Lane Express* encourages those who would silence Mr. Caird if they could—and Mr. Hodgson of Whitehaven sends a hostile message to "Messrs. Davis, Huxtable, and Mechi." Of the two first of these phenomena we have not room at present to speak; of the third we will only say that friendly rivalry may be a very good thing in itself, though, by the way, the "challenge" appears to be dictated by anything but this—but except under a rare equality of circumstances it has not much power to elicit agricultural truth; it will no doubt determine the relative merits of crops, but it will rarely determine the relative skill of their cultivators. And to suppose that by comparing crops or farms in the north and south of England either sanction or condemnation could arise of what some are pleased to call "scientific farming," is simply absurd. It may excite considerable local interest, and county or perhaps even national feeling amongst farmers; and, among the ill-informed, it may possibly unhinge a confidence which has nevertheless been justly bestowed; but the circumstances of the cases are too various to allow that the truth they may respectively develope can be elicited thus. Agricultural truth is not to be gathered thus; there is no such royal road as this to learning here or in any other business; laborious education, both at the desk and on the scene of labour is the only method by which artists can be rightly equipped for successful effort in any art whatever.

THE FARMERS' PROSPECTS.

Your correspondent "Q." speaks the sentiments of the majority, I fear, of the tenant farmers of England; they feel themselves ill-used, consider they have no chance in competition with the foreign grower, and are resting in fatal inactivity, on their oars, waiting the advent of better times. Their eyes are fixed on the legislature, and their prospects cannot be discussed altogether apart from political bearings.

I will not seek to defend the modern policy of free competition. I concede at once that it has involved the tenant farmer in difficulty and distress; that his capital, if he seek to remove it into some other calling, is already sunk one third, and that the produce of his future industry must be disposed of full 20 per cent. below former averages. The change, if honestly intended, was, to my mind, badly introduced—the three years of moderate protection was a mockery, for it would take the foreigner three years to prepare for importation on a large scale; and free competition being made remote, appeared to the farmer uncertain. He trusted to the chapter of accidents, made no preparation for meeting it, and now finds himself in a sea of troubles, doing nothing, because unresolved what to do.

I say, if honestly intended, free trade was badly introduced; if the object was to develope an enormous amount of foreign importation, that we might hereafter tax it, no terms of indignation would be too strong to mark our sense of such heartless policy. The former system of legislation, partial, and therefore unjust, as it was, had been long maintained, and had established artificially high prices. In changing it we gave too great a boon to the foreign grower; a duty of even 1s. on foreign Wheat, and of 2s. on other grain, would have given a handsome revenue, and if it did not sustain to any appreciable extent our home prices, would have inspired confidence, and the farmer would have felt that he had fair play. It would have been a boon too to the colonies, binding them to us by the cheap ties of self interest, and inducing much of the produce of the Western States of America, to take the line of the St. Lawrence. But above all, it would have compensated for some local burthens on land which public policy imperatively forbids to be thrown on general industry. Fearful would be the prospects of our common country, if admitting, as nominally we do, the right of the indigent to relief, we should destroy or weaken the practical limitations of local supervision, the jealous vigilance of direct interest, and the lingering sense of shame in the pauper, claiming to show the hard-earned fruits of his neighbour's industry. Were that nobody, the exchequer, bound to satisfy the pauper, his demands would be limited when all industry had ceased to be fruitful, but not till then.

Conceding to the farmer that he has much cause of complaint, let me ask him to consider whether there is the remotest chance of a return to protection in any shape. Is it not indelibly impressed on the existing generation, that protection means "taxing me the consumer for the benefit of you the producer;" that it *is* the same thing to him, the consumer, whether the cost of home produce be raised by prohibitive laws, or by the imposition of duties on produce from abroad. In either case he is convinced that what the home grower gains, he, the consumer, loses, and if you speak of duties for revenue, he tells you that food is the raw material of all industry, and must not be taxed.

Admitting, as it is safest to do, that free competition prices are inevitable, we proceed to enquire if there are any public taxes or other burthens of a legislative character, which unduly press on agriculture, and enhance the cost of cultivation. The farmers have a very general impression that they bear an undue weight of public burthens, and are invited to combine for "equal taxation." If general taxes be included, this is obviously an error. On what other manufacturer do the assessed taxes on dwellings, business premises, and plant fall so light? Excepting perhaps the Hop duty, I am not aware of any tax which the farmer pays from which other branches of industry are exempt, or which forms an impediment to the profitable cultivation of land. If any exist, I shall be glad to have it pointed out.

The land-tax is admittedly a landlord's tax; the malt tax is borne by all who consume malt liquors, and only affects the farmer in particular, inasmuch as it lessens consumption. The price of Barley being regulated not by home demand but by foreign supply, to gain from its repeal more than the common advantage, the farmer must first close the ports. The power to malt for feeding purposes has been proved by abundant experiments to be of no value; if the farmer thought otherwise there is no law to prevent his sprouting his Barley or other grain, and so converting their starch into saccharine matter or malt. For home consumption there would be no object in kiln-drying.

The question of local taxation is one of much moment. Public policy, by placing on realised property the burthen of the poor, of parish roads, or the fabric of our churches, of the police, and of prisons, has thrown on land an undue proportion of local taxation, and the excess of such burthens forms a part of the cost of cultivation which the agriculturist has a just claim to be relieved from. But when I go into the details of the claims, I confess I am ashamed to say too much about it. The local burthens on land, as distinct from other real property, may in England be taken at 8 millions; and if one fourth be the proportion unfairly thrown on land, there would be a claim on the community for compensation to the extent of 2 millions. This, on an assumed production of 40 million quarters of grain of all sorts, would be met by an average advance in price of 1s. per quarter—exactly the amount of protection which now exists. If it could be shown, as possibly it may, that so much as one-half the local burthens on land should fall elsewhere, a duty of 2s. a quarter might be claimed, and should I think be imposed. For a concession such as this, it is obviously not worth the farmer's while to have his temper ruffled, and his attention distracted.

Has he any peculiar burthens, other than local taxation? That crying grievance, the tithe, is gone, and it is well perhaps for the tithe-owner that the commutation took place before the stern justice of free competition had been dealt to the farmer; only imagine a claim increasing with the gross produce, the result of skill and capital, and payable out of the net profits. The tithe-lord now is part owner with the landlord, and the price of produce being now regulated by foreign competition, it is no longer in the landowner's power to throw on it the tithes or any other charge on his land. The landlord's timber, which impedes the growth of the farmer's produce, and the game which consumes it, have now become in reality deductions, like the tithe, from the landlord's rent. And this brings us to the important question of rents, and to the enquiry whether they are too high, and what prospect there is of their reduction.

Theoretically, farm rents are much too high. Existing engagements with landowners were entered into under a state of things which has been changed by legislation. The farmer calculated the cost of cultivation and the value of the expected produce, and he looked to the surplus for his own remuneration and for payment of rent. The division was regulated by the every-day principles of competition, and the landowner was offered for the use of his farm the entire surplus less the ordinary returns for farming industry. The basis of the arrangement has been changed without his consent, and he has an undeniable theoretical right to a reduction of rents or re arrangement of terms.

It is by no means clear that were existing engagements cancelled the farmer would gain anything by a fresh arrangement of terms. In the first place, when he took the farm there was a lurking distrust in the permanence and real value of protection, which entered into the calculation on both sides, and somewhat kept down the rent. The tenant felt that if he went to work earnestly, and prices remained equal to promise, the surplus would greatly exceed his calculations, but distrust of the juggling friend, Protection, would not let him throw his whole heart into the business; like a timid mariner anticipating a storm, he kept near at home, with sails partially furled. In the second place, the science that has recently been brought to bear on agriculture has shown that the capabilities of the soil are infinitely beyond what had been generally supposed, and that the produce may be immensely increased without any corresponding increase in the cost of cultivation. In many cases the landowner, rather than lower rents, will take land into his own occupation. New competitors for land are springing up—men, who having observed the great want of economy in the usual practice of agriculture, the waste in the preservation and the use of manures, the loss from surface water, from weeds, and thick sowing, and the too general disregard of ascertained principles in the feeding and care of stock, and seeing what greater skill and economy may produce, by what it has produced, will be tempted to enter on the business of farming, encouraged by the low price of stock, and that sense of security which springs from freedom of industry. Indeed, it is the opinion of many well informed land agents and agriculturists that rents will rather rise than fall—that they are not in fact too high; that the tenant obtains at an easy rate of interest the use of the capital sunk in buildings, roads, fences, and other improvements on his farm, and that the rent actually paid in respect of the natural powers of the soil is, generally speaking, very moderate. In America, in most parts of Europe, and even in Ireland, the cultivator would have himself to provide a large portion of the capital which here he obtains the use of at a low rate of interest. This is no trifling advantage possessed by the British farmer. If the landowner judiciously expend 1000*l.* on his farm, its sale value is increased to that extent or more, and 40*l.* a year of additional rent amply remunerates him. A tenant if he had to expend that amount to make his farm complete, would require 200*l.* a year of additional profit to replace the capital within the currency of a moderate lease, and give him business interest in the mean time. If he could command the capital, he would most probably shrink from risking it, and so farm on to a disadvantage.

It is in this direction—in the facilitating by powers of charge, judicious outlay in improvements on the part of the landowner, and in securing to the tenant more certainty of property in expenditure on his part, that legislation can most usefully interfere. In truth, the tenant had no interest in protection, as a moment's reflection must show him; if it increased the surplus after payment of expenses, it increased the competition for farms, and the landowner got the whole advantage in the enhancement of rent. Competition necessarily limited the tenant to the ordinary profits of farm industry. But having entered into engagements under the promise, and partly under the expectation, of protective prices, the withdrawal of protection has involved him in difficulties, and compels him to look his position in the face, and to consider calmly the course that is open to him.

I have no fear for the farmer who does look his position in the face, and acts as a clear-headed, stout-hearted yeoman should act. He will not join in vain appeals to the legislature, or to the landlord; he will see at once that no relief worth his seeking can be obtained from either; but he will overhaul his whole system of husbandry, and see where it is inconsistent with established improvements; and he will, to the full extent of his means, adopt all such improved modes of economising cost, and increasing results, as the experiments of other agriculturists have firmly established.

To him it will be a satisfaction to reflect that the cheapness of food will immensely increase consumption, that he, his family, his horses, and his oxen, are all consumers—that cheapness, while it ensures him a market, sets limits, and those far more narrow than he once supposed, to importations from abroad—that the more he produces this year, the more, by avoiding waste of manure, he can produce the next, and that every ship load of foreign productions consumed in this country increases the sources of future production here, and diminishes them in equal degree abroad. He will begin to perceive that agriculture may yet flourish, as it never flourished before, and will lament that through a mistaken, though perfectly natural feeling, so many of his brethren of the plough, sacrificing the substance to delusive shadows, should allow themselves to sink into poverty and despair. *P.*

AUCHNESS FARM.

A FIRST perusal of Mr. Caird's pamphlet, entitled "High Farming, under Liberal Covenants, the best Substitute for Protection," produced in the minds of most readers an impression highly favourable to the writer's ability and honesty of purpose, and also to the practical skill of the gentleman whose farming operations form the theme of remark. A more minute analysis, while it has not weakened this impression, has led to a very general conclusion that the circumstances connected with the occupation of Auchness Farm by Mr. M'Culloch are so different from those in which most other farms are placed, as, in a great measure, to disqualify the case from being admitted as a proper illustration of the principle which Mr. Caird wishes to establish. That high farming is the farmer's best safeguard eventually, not only against the effects of foreign competition, but also against the many contingencies of a changeful climate, is a truth that sooner or later will force itself into general acceptance, and both be believed and acted on; it is in fact the only anchor that will prevent the vessel from drifting to leeward.

One point of difference with Mr. Caird is not connected with the proposition expressed in the title of his pamphlet, but with the inept and unfortunate case adduced in illustration. In justice to him, however, it must be frankly conceded that he has nowhere attempted to conceal facts necessary to be known, and at the same time he has not, in applying these to farmers generally, made sufficient allowance for the singularity of the case upon which his argument is grounded, and thus unwittingly he has supplied a most formidable weapon to the lovers of protection to wield against himself. The case, as stated by Mr. Caird, brings out the following facts: Auchness farm, consisting of 260 acres, is let by the proprietor, Colonel M'Douall, to his own factor, Mr. M'Culloch, at 200*l.* of yearly rent, being an advance of 110*l.* over the previous rent. Of this sum 48*l.* is payable for drainage. A new steading has been built by the landlord, the interest on the cost of which falls to be deducted from the rent. No data, further than a plan of the offices, are given to indicate the cost of these buildings, but, judging from their extent, the outlay cannot have been less than 1500*l.*, which at 7½ per cent. building interest, amounts to 112*l.* 10*s.* This sum added to the permanent charge, 48*l.* for drainage, and both deducted from the present rent, leaves as the landlord's share of Auchness Farm 101*l.* 10*s.* or scarcely 8*s.* per acre. Let us now examine the tenant's case, in order to judge how far it bears a resemblance, or can be applied by way of encouragement, to the present position of other farmers. In the first place Mr. M'Culloch pays 20*s.* per acre for his land, which, even admitting its inferiority, is at least 15*s.* per acre below its present marketable value. In the second place, he has some 40 acres of moss land peculiarly adapted for producing every year about 10 tons of sound Potatoes per acre; and in the third place, the sea makes him an annual present of 500 loads of manure, while at the same time his so-called inferior moss land requires to have several inches of the surface removed every year, in order to prevent over-luxuriance in the Potato plant. This vegetable earth being mixed with seaweed and farm-yard dung, yields a grand total of 5000 loads of manure annually upon a farm of only 260 acres in extent! Where is there another farm in Scotland possessing such advantages, at a rent of only 20*s.* per acre? None certainly that we are acquainted with. The annual income of the farm is stated in the pamphlet at 2518*l.* 15*s.* The expenditure is not given so clearly or fully as to show Mr. M'Culloch's real profit, and doubtless the outlay is very much more than is made to appear; still, after deducting every likely and unlikely item of expense, a sufficiently wide margin of profit is left to tantalise many an industrious farmer whose last year's profits have been *nil*, and to produce an impression in the minds of every reader that, so far as the farm of Auchness is concerned, it would be more desirable to be Mr. M'Culloch than Colonel M'Douall.

When all the landlords and tenants in the country are like these two gentlemen, the halcyon days of agricultural prosperity will truly have arrived; but unfortunately there are at present few farms like Auchness—few farmers like Mr. M'Culloch, both a favourite and a factor; and still fewer landlords able, like Colonel M'Douall, to drain land, build commodious steadings, and rest satisfied with only 20*s.* per acre, the greater part, 12*s.*, of which is required to pay the interest of permanent improvements.

Some critics of Mr. Caird's pamphlet have decried its publication as being calculated to excite extravagant ideas of the value of land, and thus to make landlords more difficult to please with their rents; but if we are to take its statements as they stand as a model for general imitation, it follows that not only must the landlords launch out more freely in supplying the ready means for permanently improving the land, but they must also reduce their rents to the Auchness standard. We have, however, no sympathy with those who cavil at Mr. Caird's free-trade ideas; our cause of complaint is the extraordinary nature of the case he has cited to illustrate the applicability of his principle to the circumstances of farmers generally. What we want is an authentic instance of a tenant farmer paying a high Corn-law rent, and continuing to do so through his own skill and industry, premising also that his landlord supplies the necessary accommodation for feeding stock and capital for draining the land, &c., on guaranteeing remuneration at the end of the lease for the adjudged value of all permanent improvements made by the tenant. If success do not follow such an arrangement—if skill and capital combined fail to leave a profit or a decent maintenance to the tenant, no alternative remains but a reduction of rent.

In Mr. Caird's pamphlet there are many valuable remarks on Mr. M'Culloch's system of farming, especially the mode of managing the feeding stock and the manufacture and application of manure. But, laying these points aside, it will not be difficult to prove that the gross income of the farm rests very much on adventitious circumstances. Thus, were the number of acres of Potatoes reduced to the proportion usually grown on most farms, a very considerable sum would disappear from the bright side of the ledger; and were the sea to deny its annual contribution to the dung-heap, another sum of not less than 60*l.* would require to rank as expenditure, if the condition of the land is to be maintained unimpaired. The recommendation to grow green crops largely is sound, but when we find more than one-half consisting of Potatoes, it can scarcely be called cavilling to say that while this mode of cropping may be found profitable at Auchness, it would be ruinous in 99 cases out of 100 elsewhere. If it be true that Turnips are only worth 3*s.* 6*d.* to 4*s.* per ton to the grower, consume them how he may, it follows that the principal part of farm expenditure falls to be paid by the corn crops, and hence it is that any reduction of the price of grain comes to be so severely felt. If Mr. Caird would, in any subsequent edition of his pamphlet that may yet appear, give a more apt instance of successful farming—his own, perhaps—he would confer a greater boon upon his brethren than adducing a case which all feel can never be theirs. *J. H.*

A FEW WORDS ON DEEP DRAINING.

So much depends upon the physical texture of soils, and their position, that I believe it will be found impossible to lay down any fixed rule which shall apply to all lands, as to the depth at which drains should be laid. There are, however, certain fixed principles upon which drainage depends, these being known, I imagine the rest should be left to individual judgment. It cannot be gainsaid that the depth of the soil, other things being equal, has in every way to do with its fertility. In every case the first step towards attaining depth, is thorough drainage. In a very sandy soil, animal and vegetable matters decompose rapidly; water passes through them as through a sieve. Such soils should obviously be manured frequently, rather than abundantly at one time; and although it is impossible to remedy such an evil in the physical texture of a soil, except by mechanical means yet the deeper it is the longer will it retain those substances which afford nutriment to the plant. In argillaceous soils, a large amount of manure may be applied at one time, but its duration and availability will depend more upon the depth of soil than the nature of the crop. The state of division, the firmness of soils, their power of retaining and attracting water, capillary attraction, and the power of soils for absorbing heat, depend fortunately upon constituents which are insoluble in water. On the contrary, those salts which we find in all fertile soils, and which are so necessary to the healthy development of the plant, are soluble in water, and contained in comparatively but small quantities. The natural tendency of all soils is to become poorer in these constituents; the continuance of them is dependent upon time. I am not attempting to prove the necessity of drainage; that, I take it, will be granted me. And even should some be found who do not deem it necessary, I would refer them to the many able papers that have from time to time found a place in the columns of the *Agri Gazette*. But I wish to bring forward some facts which should prove to demonstration the advantage of deep over shallow drainage. Mr. William Sanday, of Holme-Pierrepont, Notts, a farmer of intelligence and enterprise, a man of much experience in draining, sent me, to my laboratory, two waters to analyse; the one of which had been taken from an 18 inch, the other from a 3 feet drain. The land, which had been recently manured for Beans, was a rich loam.

The water from the shallow drain was much discoloured, and held a considerable quantity of a brown sediment in suspension. This latter amounted to 8⅔ grains. I submitted it to further analysis, and found it to consist of 5¼ grains of organic and 3½ grains of inorganic matter. The organic portion contained much nitrogen, evolving ammonia, on employment of the proper tests. The inorganic part consisted mainly of very finely-divided silica, clay, together with traces of phosphate of lime and oxide of iron.

The specific gravity of the filtered water was 1.00054. It abounded in lime, common salt, sulphuric acid, and carbonic acid, and in 12 ounces of the water I could distinctly discover the presence of magnesia, potash, and phosphoric acid. I estimated quantitatively the amount of lime, sulphuric acid, common salt, and phosphoric acid, a gallon of the water contained:

Of lime	10½ grains.
Of sulphuric acid	5½ ,,
Of chloride of sodium	8½ ,,
Of phosphoric acid	½ ,,

A water of such a description must be considered very rich in those constituents which furnish food to plants. Such a water might, with advantage, be employed as a liquid manure. The water from the 3 feet drain was perfectly clear. At the bottom of the bottle I found a whitish flocculent sediment, amounting to $\frac{1}{10}$ of a grain in a gallon of water. The specific gravity of the water was 1.00034. The clear water was tested, and furnished results somewhat similar to the former, with the exception of quantities. I carefully tested it for phosphoric acid, but the amount was far too small to be weighed, although it was certainly present. A gallon of the water contained:

Of lime	7½ grains.
Of sulphuric acid	2½ ,,
Of common salt	4½ ,,

Now, when we bear in mind that the rain-water in passing out of the shallow drain had become hard, we find that by its passage through a greater depth of soil, a hard water has become soft. This is just what we should expect. But in order still further to show the advantage of a deep over a shallow soil, in respect to its retaining its soluble salts, we made another set of experiments. Mr. Sanday and I made a strong solution of brine, each ounce of which I found to contain 49½ grains of salt. This brine was passed through tubes of various lengths, closely filled with a strong soil. The liquid as it passed through the tubes was collected by ounces, in different bottles. The first experiment was made with a soil 10 inches in depth.

The first ounce of liquid contained	8¼ grains of salt
The second ,,	37½ ,,
The third ,,	37½ ,,
The fourth ,,	43 2 5ths ,,
The fifth ,,	46½ ,,

It will be seen that the fifth ounce contains nearly by 1 grain more salt than the original brine. The second experiment was made with a soil 18 inches in depth.

The first ounce of liquid contained	7 2-5ths grains of salt.
The second ,,	28½ ,,
The third ,,	38½ ,,
The fourth ,,	45 ,,
The fifth ,,	48½ ,,

The third experiment was made with a soil 2½ feet in depth.

The first ounce of liquid contained	6¼ grains of salt.
The second and third ounces contained	13¼ ,,

These experiments clearly prove the advantage of a deep over a shallow drain. They show how much greater is the loss of important constituents in shallow drained soils; but they show likewise that no system can entirely prevent waste. Of one fact we may be well assured; not only does a deep soil naturally afford a larger amount of nutriment, not only does it enable the farmer to grow deep-rooted crops, but likewise he is far more likely to reap the benefits arising from plentiful manuring in his re-obtaining most of those salts in his crops which are so easily removed by rains from a shallow drained soil. *Albert James Bernays, Chemical Laboratory, Derby.*

Home Correspondence.

Irish Farms.—I have seen without wonder the attempts of Mr. Martin Doyle and other Irish correspondents to induce English farmers to settle in Ireland; but my wonder would be great indeed if they should succeed in such endeavours. Let your correspondents look in any English or Welsh provincial paper, let them enquire of any land agent, and they will find that there are farms enough to be let in England and Wales for any man who can bring capital to work them. If Ireland is to have English farmers, they will not go there, one here and one there, but in numbers, on the plantation system, with muskets as well as ploughs, and determined, if legally called upon, to use the former as well as the latter. A man will not go by himself amongst a people who have yet to learn the very rudiments of order. Where is the Peel scheme—has it evaporated? *Cadvan.*

Price of Bread.—I beg to enclose you an article on the price of flour, a matter now of the utmost importance to the consumer, especially the agricultural labourer, who, in this neighbourhood, is now paying 6½*d.* for first quality, and 5½*d.* for "seconds" bread, the price of the best Wheat being 40*s.* per quarter, inferior 37*s.*, at St. Ives market last Monday. Some observations on this subject in your influential Paper might confer a benefit on the labourer, whose wages must of necessity this winter be very low. *H.* "*The Price of Flour.*"—Six or eight months ago there was a good deal of correspondence in our columns upon the subject of the price of flour, and it was shown, we think, conclusively, that the 'middle men,' by exorbi-

tant profits, cut off from the poor whatever advantages there may be in a cheap loaf. Assuming as the price of Wheat an offer of 5*s.* per bushel made by a firm of millers in Cambridge to an extensive agriculturist, and allowing the 'offal' for the cost of grinding, a sack of flour (made from 6 bushels of Wheat) was calculated to stand the millers 30*s.*, and they were then selling it at 44*s.* If this was a hard case upon the poor, still worse is the strait they are now placed in. Wheat is lower: instead of 5*s.* a bushel, 4*s.* may be taken as nearer the mark; and at this rate a sack of flour will be produced for 24*s.* at the utmost. The retail price this week is 2*s.* 3*d.* per stone, or 45*s.* per sack; so that after the Wheat leaves the farmer's hand the 'middle men' contrive to extract a profit of 21*s.* upon each 6 bushels before it reaches the labourer's table. This is a matter which certainly calls for explanation. There must be something very wrong in a state of things when so glaring a wrong can be permitted to exist.—*Cambridge Chronicle.*"

Climate a real Hindrance.—The "stern realities" of "R. T., near Garstang," melt down into a pretty description of rural life in France; most interesting, and no doubt correct to the letter; such details are always acceptable of customs and features of agriculture abroad, as we generally get them scarce and second hand. They appear to make the best use of their fine weather, threshing on the earth with flails or jointed rods, by both men and women—the corn must have been very ripe, or the maidens very muscular. At Montpellier "the straw trodden to chaff by horses, mules, or oxen, with a thin bell, the grain sent into the air with a spade, to clean it in some measure before passing it through a riddle." If the threatened quizzing had been harmless as these practices, I need not have sheltered myself under the "stern" injunctions to improvement so powerfully enforced in your able appeals to the alarmists. Excessive wet is sometimes a visitation so calamitous as to be the subject properly of public prayer for dry weather; and dry weather, in the spring of 1848, was so prolonged as to be productive of great loss. Nevertheless an inquiry might be hazarded, without the risk of being thought fanciful or ignorant, whether the yield and condition of corn in such districts as the wolds of Lincolnshire or on the Holkham estate in Norfolk, is not for a series of years on an acreable average equal to or better than any in France, or at least so good as to leave no excuse for a maud in complaint of the climate of England being unfit for the purposes of the farmer, or an insurmountable obstacle to his profitable competition with the foreigner. The period, too, chosen for threshing would imply (as they say is the practice) that the "metayer" had to look sharp after returning his seed Wheat lent him by the landlord. Corne's chaff cutter would have been of no use to the party, but Hornsby or Cooch would evidently have been an acquisition to his dressing apparatus. It would be acceptable to have more particulars adduced of meteorological phenomena, and description of operations in France, and be informed if it is the fashion there to sow Wheat during wet weather, if it is ever "winter proud," or if more than six weeks elapse from "caring to shearing," as some people like it, "mauled in" at home, and a month's frost after it is "well up." Wheat ripened very slowly during the present season; in threshing it proves to be heavy and abundant; and though a late harvest, very little injury has been reported as sustained by the crop anywhere south of Yorkshire. *J. W., Peterborough.*

Manuring for Wheat.—The practice of manuring for the corn instead of the green crop, is much followed about this neighbourhood, particularly where the soils are either sterile clays, black sands, or of a gravelly nature. It is not for the purpose of canvassing the utility of such a course, but rather to try and learn the most economical plan of applying the manure for the Wheat crop, that I shall trouble you with a few remarks. Being in conversation with a practical farmer a short time since, on the present depressed condition of agriculture, and the most probable means of remedy, I mentioned the value of a knowledge of principles upon which practice is founded, and as an instance of the benefit which would accrue from a good scientific education, adverted to the great waste of manure destined for the supply of the corn crop, from spreading it upon the leys often as much as four or five weeks before ploughing in, and leaving it exposed to the effects of sun and air during one of the hottest months of the year (*i. e* September, and often August), which loss would be avoided were farmers made acquainted with the volatile nature of its most valuable ingredient. My friend did not agree with me, but said that from his own experience, which had been considerable, he believed that the corn crop was better when the manure had been spread and left some weeks, than when ploughed in directly; he believed that the ammonia was absorbed by the earth, and, as proof, reminded me of the rapid growth of the lea, which growth he considered of great value as a green dressing. If the farmer is right, science must be wrong, or rather our knowledge of the value of manure is at fault, for although when spread much of the ammonia may be absorbed by the soil and the leaves of the Clover, yet a great portion drawn upwards by the heat of the sun must be dissipated in the atmosphere As proof of which we have only to examine such manure, when the upper surface is often no better than straw. Not having had sufficient experience to have been able to satisfy myself practically on this important subject, would you, or any of your practical correspondents, favour me with the results of their experience, through the medium of the *Agricultural Gazette;* since it is said that muck is the mother of money, we cannot be too careful in making the most of it.—*John Coleman, Fenix Cottage, near Newbury, Berks.*

On the Value of Land as affected by the Employment of Capital.—With a view to induce more active encouragement being given to the improvement of land, it may be useful to remind landlords and tenants that the value of land in cultivation, either to purchase or rent, is often less based on its natural qualities than on its usefulness as developed by invested capital and the ability of the tenant to make the most of it. To bring land into cultivation, it has, in the first instance, to be inclosed, laid out, fenced, intersected with roads, provided with buildings, drained, and brought into condition. These are matters that the landlord must, in the first instance, do to place his property in position to be made use of by a tenant; and on the extent and perfection of these works will greatly depend its usefulness and value. Were the importance of these preparatory works in adding to the resources and increasing the eligibility of land as a security better understood, much additional capital would be invested by landowners, not in adding to the extent of their estates, but rather in effecting those improvements that are so essential to high cultivation. If the difference in the farming and in the rents paid in different districts throughout Britain be contrasted, both the amount of produce raised and rents paid will generally be found to have greater reference to the useful condition of the farms, as developed by the invested expenditure of the landowners, and the employed skill and capital of the occupier, rather than on what may be termed the natural quality of the land. The rent of the cultivated land of Britain, including rates and tithe, may be said to range from 15*s.* to 50*s.*, and the gross returns from 4*l.* to 11*l.* an acre per annum; the tenant's capital being from 5*l.* to 15*l.* an acre. Although the returns differ so much, we shall rarely find evidence from the growth of the trees, Grasses, weeds, and other natural productions, of a fertility so varying as to account for the great differences in the farming returns; and in many instances it will be difficult to say whether or not the larger produce and higher rent be not wholly due to the better condition of the farm, the superior skill of the occupier, and the larger amount of capital engaged in the land. If the farmers of highly cultivated farms in the districts that yield the highest rents are told that in many parts of England corn crops are raised on farms having only a very small portion of the land annually appropriated to growing of cattle crops, that little stock is there fatted; no oil cake used; no manure bought, and the land gets little or no other dressing than what comes from stock wholly fed on the produce of the farm; and the straw is thrown into the yards, exposed to wet weather, to be trodden into dung by lean stock, and the manure lies exposed half the year, washed by every rain. Their impression will be that soils so ill treated, yet returning produce enough to pay for cultivation, must by nature be far superior to their own, which they have to use so differently, to make it productive, for they find it necessary to devote half their farms annually to raising of produce for stock feeding, to be returned to their land, improved by the addition of purchased food of a more enriching quality. They cannot afford any waste of straw, nor the loss of any of the soluble matter of their manure, and by a system so opposite, they are enabled to give higher rents, and to gain for themselves much larger returns. If we contrast with these the condition of the farmers of low-rented land, and whose practice we have been instancing, we shall find them comparatively ill off, complaining of the poverty of their land and the difficulty they find in raising enough produce to cover their expenses, and they will listen to accounts of stock keeping and high feeding for the sake of the manure, of the purchase of large quantities of oilcake and dressing, as an expenditure they cannot afford, and they will argue as if the ground for so employing capital in one district would not apply to another; and they rather look to a reduction of a few shillings an acre in their rent as a means of relief in times like these, than to making the returns of their farms larger, not seeing how inadequate to meet the occasion must any such relief be. They have yet to learn that the tenant who pays 30*s.*, and raises five quarters of Wheat an acre, has his land cheaper than he who pays but 18*s.*, and grows only three quarters an acre. If the incomes from farms were what they are too often taken to be—perennial and wholly arising from the land—a landlord receiving 300*l.* a year from three farms would be on an equal footing with another drawing the same income from only one farm; but this is not so, for of the incomes from farms a considerable portion is due to the invested capital expended in the buildings, fences, roads, &c., which the landlord has to maintain and replace; and as the extent of building requisite has reference rather to the number of acres than to the rent, every improvement that makes the land more productive raises the character of the estate as an investment, and gives additional security for the rent, in times like these, when the low price of produce has so reduced the farmer's means, is of the first importance. How much wiser will it be in landlords to seek to give their tenants relief by improving their farms, and so to enable them by increased returns from the land to gain an equivalent for the loss they sustain in the lessor prices they are receiving for their produce! Let them improve the buildings, give greater accommodation for keeping of stock, sacrifice unnecessary hedges and hedge-row timber, reduce the game, drain the land, make new roads where wanted, improve the communication between the fields and the homestead, allow the poor pasture to be broken up, introduce modern implements and machinery, and establish farmer's circulating libraries for their tenants to acquire information. In this way may free trade be met, and thousands saved from the ruin that must otherwise overtake them. *Hewitt Davis, 3, Frederick's-place, Old Jewry, London, October 9.*

The Chartist Land Scheme: Sad Condition of the Lowbands Colony.—In a former *Herald* we stated that Lingsend and Lowbands Chartist colonies had turned out complete failures, and we now add some particulars connected with the actual condition of the latter. Last year the allottees were not called upon to pay anything in the shape of rent, being manifestly unable to do so, but during 1848 Mr. O'Connor has obliged them to give 11*l.* for the houses and 2 acres attached, and 15*l.* for the 3 acre pieces, and the exact sum fixed for the 4 acre lots we have not heard. He does not prove a more beneficent or kinder landlord than other people. The schoolmaster, Mr. O'Brien, has nothing else to do now, as far as the estate is concerned, than to look after the others, and see that they do not run away in arrear. His occupation as a teacher to the children of the allottees has long since been gone, and he gets his own livelihood partly, we are told, by teaching music in the neighbourhood. Bailiffs have been put into two of the houses whose inhabitants were behind-hand with their rents; and, indeed, we are at a loss to know how any of them manage to pay. Very few of them take their produce to market—that does not answer, and they consume the crops themselves, taking the Wheat a mile off to be ground, and then another half mile to a cottager's oven to be baked. The Potato crops looked well upon the estate, but of other things the produce is scanty, because the ground has not been manured or properly prepared. The poor creatures, and especially the children, are some of them very badly off for clothes, and will speedily descend to the level of the most miserable Irish cottiers. The clergyman of the parish and some of the neighbours are very kind to these unfortunate people; but we believe they feel no gratitude whatever to Mr. O'Connor or to any others who were the means of inveigling them to Lowlands. As we cannot too thoroughly expose the utter failure of this most reckless, if not wicked scheme, we insert here the following statement from the *Morning Chronicle*, in which we entirely concur:—"The entire failure of Mr. O'Connor's land scheme may now be considered to be an admitted fact. He is sued for losses occasioned by it, and he can only plead that the affair was *bonâ fide*, and not fraudulent on his part, and that he has reaped no pecuniary benefit from it. With a most edifying ignorance of the law, he assumes that if he cannot be proved to have committed an actual fraud, he is free from all civil responsibility to those whom he has induced to spend money on his representations. It is true that the men who trusted in his scheme have been ruined; but then, he says, that was by no fraud of his, and they must submit to bear the consequences of a simple misfortune. The law does not take quite Mr. O'Connor's view of such a matter, for, when a projector assures people that if they will pay him so much money they shall receive such and such advantages, the law holds him liable to make good his promise, or to take the consequences. One part of the plea now set up by Mr. O'Connor is itself the strongest condemnation of his project. He says that he is not liable to make good pecuniary losses in respect of a scheme from which he has received no pecuniary benefit. If he has not benefited by it who has? If nobody is the better for it, then it is clear that this mighty plan, which was to regenerate the whole community—to secure them profit—nay, wealth—to convert them, in fact, from a working into a proprietary class, was one enormous deception. It was not the less so because the original schemer has been (supposing such to be the case) as much deceived as anyone else." *Worcester Herald.*

Farmers' Clubs.

Pronus.—Mr. Karkeek delivered a lecture on the "*Breeding, Rearing, and Feeding of Cattle.*" He estimated the number of cattle generally kept on the various farms at 130,000—these included cattle of all ages—such as calves reared, one year old and upwards, and valuing them at about 6*l.* and 7*l* each on the average, gave 845,000*l.* as their net value. He made his estimate of the number of cattle by calculating the stock generally kept on the various farms, which he said was about 20 on 100 acres on the average, which estimate he arrived at from the returns of some 20 resident farmers in different districts of the county. Of the cattle kept in the county he calculated that between 19,000 and 20,000 were annually fattened and sold, and the annual loss of cattle in the county, from various causes, he estimated at 5 per cent. on the total amount, which made a loss of 42,250*l.* sustained by the Cornish farmers in one branch of agricultural economy only in one year. He was confirmed in this calculation by the opinion of some dozen farmers, as well as by the calculations of the "Farmers' and Graziers' Mutual Cattle Insurance Association"—which society estimated the annual loss all over England at 5 per cent. When we consider, he said, how much of the loss proceeds from mismanagement, it really becomes an object of importance for the Cornish farmer to endeavour, by every possible means, to keep his stock in a healthy condition, by attending more to their general comfort. The statistics given also showed the importance of more attention being paid to the breeding department—not only as regards the keeping of a healthy stock, but also a profitable one. Here the lecturer entered deeply into the subject of breeding, and showed that there was annually an immense number of cattle bred, on which great labour and much money were expended in the rearing and feeding, and proved anything but profitable to their owners; and also that it was not so much the quantity or quality of food which caused an animal to attain a heavy

weight in a short period, as the peculiar disposition, derived from inherited and transmissible tendencies to acquire flesh and fat, and come early to maturity. He reprobated the system of breeding from cross-bred animals, and said that in all cases where a cross was attempted be certain to have pure blood on one side. "Breeding in the line" he considered the safest way—that is, by first selecting the best of that particular breed, both males and females, which it is intended to propagate from, and maintaining the same (changing occasionally from one family to another), in the greatest purity. He considered that the size and general appearance of a bull was not of so much importance as the general size of the family to which he belonged; and also as it respected cows, that more perfect animals were produced by breeding from those of a small size, than when they exceeded the ordinary size of the race to which they belonged. In the management of the pregnant cow, he recommended that all petted cows, and high-bred ones particularly, when in a high condition, should have a gentle purgative administered some three or four days previously, and repeated, with moderate bleeding, immediately after calving. This prevented dropping after calving. With respect to rearing of young stock, the lecturer enforced the necessity of more attention being paid to this part of the general management of cattle in the county. He said that the profit derived from cattle generally in Cornwall was very considerably reduced by a disregard of the proper medium in which they are placed, as it respected temperature, whether in the open fields—in the state of the yards—or buildings in which they were confined. He then described particular cases of mismanagement, and enumerated the various diseases produced. *Red water*, he considered, was frequently caused by turning young stock that have been warmly housed during the winter into the fields just as the spring sets in. From the hothouse system they have undergone, they are prematurely preparing to put on their summer coats, which were invariably formed at the expense of the constitution, and the exposure of their almost naked backs to cold and wet, at that period, produces frequently constitutional disturbances of the digestive organs; and red water, which is primarily a disease of those organs, and not of the kidneys, is the result. *Hoose*, he considered also an affection engendered by crowding young cattle together during the winter, and brought into action by exposure to a few cold stormy nights shortly after being turned out. Diseased lungs were also commonly produced by the same cause. He considered it dangerous to breed from a consumptive cow, as it is commonly communicated to the offspring. The heifer of a consumptive cow may rear her first calf, but very rarely a second one.—The lecturer then described some of those pestilential diseases, murrain, pleuro pneumonia, &c., and said he frequently traced their source to the crowded state of cattle houses, and the exposure of the inmates to dirt, filth, and want of proper ventilation as well as exposures to damp and cold. The "felon,"—a disease known in some other counties as "joint murrain," or "quarter evil" was very common in Cornwall. This he considered to be caused more frequently by an error in diet, and to be the consequence of pushing the vital energies of young stock too fast and too sudden. "I have witnessed it more commonly," he said, "on farms where the stock are started and stuffed by turns, than where regular and judicious feeding is practised; and we more commonly find the complaint make its appearance in the spring and autumn, consequent on an early or late flush of Grass." As one means of preventing so many serious losses in the rearing department, he strongly enforced that all stock intended to be depastured the following summer should never be tied up in close ill-ventilated cattle-houses during the winter, but kept in small yards having sheds attached sufficiently large to accommodate four or five steers, or two or three heifers in calf. Those yards, which are called nammels in the south of Scotland, should have a southern aspect, and the floor of the shed should be raised about 2 feet above the floor of the yard, and well littered, to keep the young stock dry and warm. Alluding to farmers who do not possess these conveniences, he said they were in the habit of turning their young beasts out in their farm-yards two or three hours during the day when the weather permitted, and when it was not a very uncommon sight to see them scampering about the lanes and parish roads. He could not too forcibly impress on the landed interest of the county the necessity that in all new farm buildings about to be erected, or in the alteration and improvement of old ones, the hammelding system should not be lost sight of. Those yards would be found convenient for many purposes, such as summer soiling, where it is practised, &c., and he believed that few tenants would refuse paying 5 per cent. on the outlay to the landlord for the accommodation.—Respecting Fattening Cattle, he spoke of the new method lately introduced on several estates in this district, by feeding cattle in boxes, as on the estate of Mr. Daubuz, of Killow, Mr. W. Hodge, Callestock Veor, and the Messrs. Davey, Tywarnhayle farm. He described the method of feeding, as adopted by Messrs. Davey, very minutely. The daily cost of each bullock was about 1*s.* 5½*d.* per day on the average. Thus—

2 lbs. of Linseed, 44*s.* per qr.	...	.. 2½*d.*
6 lbs. of Barley meal, or Rye, at ¾*d.*	..	4½
84 lbs. of Turnips, at 10*s* per ton.	..	... 4½
14 lbs. of hay, at 3*s.* per cwt.	.. ..	4½
Attendance and fuel	.. .. .	... 1½
		1*s* 5½*d.*

The chaffed hay or straw was first mixed with the meal in a shallow wooden cistern, and was incorporated with the Linseed mucilage in a boiling state. The cattle were fed six times a day—three times with Turnips and three times with the Linseed compound, and on this system they were enabled to fatten oxen, averaging 10 cwt. of the very best quality meat, in 16 weeks. Thus the farmer is enabled to feed three animals instead of one on the old plan, and thereby make a quicker return of his capital, which was the life of trade. The lecturer said, that there was a good policy in using chaff of some kind or other as a vehicle for the Linseed mucilage into the stomachs of cattle. If the stomachs of cattle were not moderately filled by a meal, notwithstanding it be a rich and nutritious diet, the muscles, whose exercise tend to produce a healthy digestion, are not called into action by the food being kept in constant motion in the stomach, and indigestion, with all its various train of evils was the consequence. After this the lecturer proceeded to point out many diseases in cattle produced by mismanagement in the feeding department, such as distention of the rumen, called roven; also diseases of the third stomach, the manyplus—such as fardel bound. Speaking of the third stomach, he said there were very few diseases by which cattle were afflicted in which it is not involved. It was frequently diseased from being overloaded with hard indigestible food, such as straw-chaff, fibrous Turnips, and in most cases of death, which occur from this cause, portions of indigested food have been found in a hard baked state between the leaves of the manyplus. Respecting cooking food for cattle, he showed, both by the peculiar digestive apparatus of the ox, as well as by the experience of farmers, that steaming of roots, hay, and straw was unnecessary. And he strongly recommended the bruising of grain of every kind. This part of the lecture was confirmed by several experiments which were lately conducted on the feeding properties of grain of different descriptions, given in a whole or bruised state. —In regard to rearing cattle, Mr. James thought they subjected themselves to great loss in the early days of rearing calves, which were generally taken from the cows when four, six, or eight days old, and then are put entirely on skim milk. If they were allowed to remain on the cows eight days, and then had raw milk for the next eight weeks, it would make a very considerable difference in their appearance. But sometimes the calves had not even a sufficient supply of skim milk, consequently they were impoverished, and their improvement impeded for months to come.—Mr. Downing recommended that two calves should be put on a cow, and that no skim milk should be given to calves, but let them suck the cow from the time they are born till they are taken from the cow altogether.—Mr. Doble agreed that the giving calves skim milk was a wrong system; the putting two calves on a cow was a very good plan, but they could not always practise it; if, however, they gave them raw milk instead of scalded, it would be much the same thing. He approved of the hammelling system, as described by Mr. Karkeek; his father introduced it 30 years ago, when he took Bartoliver farm. Then as to rearing—at Carvazza they had two linhays, with two fields adjoining one, and one field adjoining the other. Their yearlings were put there in the winter, and they go into the fields by day or by night, whenever they liked; they go out into the linhays to eat hay, and Turnips were carried for them to eat in the fields; the older ones had no Turnips, but only hay. They answer very well, and in the spring, when turned out to Grass, they do not feel the weather, because they are used to it. The second year they are put into other yards, with a linhay attached to run in and out, giving them straw and Turnips, or hay and Turnips. In the third year they were sometimes fed in those yards or were tied up.

The Wenlock Agricultural Reading Society has been honoured by a donation from the Marquis of Anglesey, of the Duke of Wellington's Despatches, in 13 volumes, richly bound, and each containing the noble marquis' autograph.

The books were presented to the Society at a public meeting, held September 17th, William Winstanley Hull, Esq., of Tickwood in the chair, when the following address of thanks from the Society to the Marquis was read and carried unanimously. "To the most Noble the Marquis of Anglesey. We the undersigned trustees and members of the Wenlock Agricultural Reading Society, beg to express our gratitude for your lordship's handsome and most acceptable present of the Duke of Wellington's Despatches. The association of your lordship's name with the most brilliant and eventful period of British history, imparts to the splendid volumes, bearing your lordship's autograph, an almost priceless value."

Farm Memoranda.

Mr. Wilson's Farm at Newton.—This gentleman was one of the first to set the example of draining in this part of the country, when living some years ago on a farm of Mr. Greenall's in Winwick. His present farm contains 250 statute acres, with a good house upon it; but the farm-buildings are old, and quite inadequate to the wants of the present day. When he came to it, about two years ago, he found the land in a wretched state; his first object was to get it all drained, and this he has nearly accomplished with horseshoe tiles and soles, which he obtains from a tilery close to Newton. The soil being a strong heavy loam, he has cut the drains 3 feet deep and 5 yards apart, but made no air drain, and, with the help of some Irish workmen, he was enabled to do this at a cost of 4*d.* the rood of 8 yards, the tiles being laid by the day at 13*s.* per week; he has grubbed up the old irregular fences, and filled up the ditches, so as to divide the farm, where practicable, into fields of about 25 acres each, or more. His plan is to plough up the old rushy sward for Oats; 2d, Turnips, with farm-yard manure and guano; 3d, Wheat or Barley, with seeds to remain as pasture for two, three, or more years, according to the price of corn or other circumstances. The land being foul for the Turnips, he cleaned them by hand-labour for five or six weeks, and succeeded in getting a crop of Swedes, about 30 tons to the acre; in preparing the land for the Turnips, he found the Norwegian harrow a most useful implement: he ploughs with a common iron plough and two horses, and sows for Wheat 2 bushels to the statute acre. But he unfortunately lives under the shadow of a large chimney, more than 300 feet high, which is continually vomiting forth its pestilential breath from some extensive chemical-works in the neighbourhood, to the certain damage of all vegetable life within its range, and that this is not confined to a small extent may be judged from the withering effects visible upon the trees for miles round. *Journal of the Royal Agricultural Society of England.*

Calendar of Operations.

OCTOBER.

Lammermuir Sheep Farm, Oct. 15.—Harvest operations commenced with fine scythes on the 7th of September, and the carting of the grain was completed on the 5th of October. One woman lifts the corn after each mower and lays it into sheaves, while one man binds and stacks or two scythes where the grain is light; but when the crop is heavy it is better to set two men to three scythes, as in this way the work is much better done—a matter of great importance in the after drying of the corn. The cutting, lifting, and setting up of an acre has, in our circumstances, cost about 3*s.*, besides food, while reaping would have cost us 4*s.* with food; and we consider that brown grain is at least three days sooner ready for carting than the other. Although we can scarcely say of the past it has been a bad harvest, yet the weather has been somewhat unfavourable for drying the cut grain. The wind has maintained an easterly direction during most of the time, which kept our hills enveloped in dense fogs for days. However, we have got it all under cover now, though some of it not in such good condition as could have been desired, but by keeping the stacks small, and making a chimney in each, we expect it to keep safely, and must just trust to the drying frosts of winter to put it into condition. At this altitude (800 feet), and with our climate, we find from experience that by cutting the grain whenever it will at all do, we not unfrequently avoid losing a crop altogether. The present year's crop in this district is considerably above an average. Besides being injurious to grain, mists are also unfavourable for sheep grazing on moist grounds. When the Grass is kept wet day after day, for some time, foot rot is a certain corollary. This troublesome and highly infectious disease has been unusually prevalent this autumn, though by carefully attending to those infected, it is now very much on the decrease. In other respects the flocks are unusually healthy. The east Cheviot ewes were disposed of three weeks ago, at about 5 per cent. below last year's prices. The small lambs are now nearly all sold, and have paid well for the extra keep bestowed on them. Our stock of roots is provided, and we have taken Turnips for them elsewhere; that they may be out of the way of mischief, and be in good condition when they are required, about Martinmas. The bathing of the sheep will commence in about ten days, and will occupy our shepherds for a fortnight. The cows are brought into the byres during the night, and are turned out to their pasture during day. The horses are at present carting manure to Oat stubbles to be ploughed in. Thin and the carting of the wool to the nearest sea-port, will occupy them for some time. Turnips promise well, if the sharp frosts we have had be not too severe for them. Potatoes in this neighbourhood are much affected by disease. Our own were just beginning to spot on the leaves, when the frost laid them low. The roots appear to have escaped as yet. —*A Lammermuir Farmer.*

Notices to Correspondents.

Beer: *T C.* Chalk or carbonate of soda will correct acidity.

We will answer next week.

Composite Barley: *H U.* It is new to us; presenting the same structure of ear as the Egyptian Wheat.

Ditch Manure: *Innocent.* The parings of a ditch would be fit to put on as manure at once, but they are full of the seeds of weeds. Mix it with gas-lime, which will become gypsum by exposure to the air, and will probably kill the weeds.

"Domestic Animals:" *M. Dalton.* The illustrated edition is too costly for most agricultural students; and the other is sufficiently instructive without the pictures.

Duration of Manures: *Half Manners.* Guano, and lime and salt, supposing the latter to contain no great excess of lime, may be supposed to more than repay their cost in the first crop, though no doubt a portion, probably one-third of their substance, remains in the soil after harvest.

Food for Cattle: *A B.* Sea-damaged Linseed will feed cattle; but you must not give them any that may be putrid. We should not consider it a good plan to keep a boar, unless you have 8 or 10 breeding sows, or unless you could find employment for him in the neighbourhood.

Gas Lime: *H Foden.* In its fresh state it is mischievous to vegetable life, but by exposure to air it undergoes a process analogous to combustion and becomes gypsum. Mix it in the proportion of 2 tons with such a quantity of light vegetable compost as you may be able to spare per acre. Turn the heap repeatedly, and in a month or two spread it over the land at the above rate, *i. e.* including 2 tons of the material per acre.

Lime. *Bigler.* It appears to be a deposit from lime-water; such as is common in the neighbourhood of calcareous spring. The carbonic acid water which falls in rain, when it finds its way to a spring through a calcareous soil or rock, dissolves a good deal of lime, and appears at the spring as a solution of bicarbonate of lime. On exposure to the air it gives off carbonic acid, and the insoluble carbonate of lime is deposited. If the process be slow, the result is a hard crystalline carbonate of lime—if rapid, a loose incoherent mass, such as you have sent. And in the latter case use may be made of the material on sandy or clayey soils—by spreading it abroad in autumn, and knocking it to pieces, or rolling it after frost, so as to reduce it to a state in which it will mix with the soil.

Old Ewes. *Cheshire.* In the absence of a more minute account including the appearance of the various organs after death, we presume the disease must be attributed to the stimulating effect of the fresh spring Grass or other food, and we would advise a more frequent change of food, with the use of a bare pasture, where a little Linseed cake may be given. Sometimes a disease, similar to that mentioned, is produced by the Swedes running to Greens. *W. C. S.*

Potatoes *Innocent.* The earliest are the best sorts among Potatoes. There is a sort called "the Prolific."

Seed Wheat *Innocent.* Spalding's red is a most prolific kind, but not of good quality. Morton's red-straw white Wheat is good as to both yield and quality.

Slugs. *L C Marton.* Try dressing the land thickly with slaked lime some moonlight evening, when they are at work. If the ground is level, a roller would crush a great many at that time. Slugs on Wheat can be checked only by strewing Turnip-tops, and other feeding them till frost comes, or gathering them in the mornings, and destroying them with salt.

Sundries: *A B.* Rye is better than Barley per lb. as food for pigs.—We have not seen Mr. Keene's Maize, but the reports are certainly more favourable than we had anticipated.—You may dibble in Wheat after Mangold Wurzel without any preliminary cultivation of the land.

Watercourse: *L H.* The law will protect you, if you choose to appeal to it, but this you must do through your lawyer. No doubt, no one may divert the natural course of a stream, to the injury of any one who may hitherto have benefited by it.

Markets.

COVENT GARDEN, Oct. 20.

Hothouse Grapes continue to be very plentiful. Peaches and Nectarines are nearly over. Pine-apples plentiful, Filberts and foreign Walnuts abundant, Chestnuts more plentiful, Oranges scarce, Lemons moderately plentiful. Among Vegetables, Turnips may be obtained at from 4d. to 6d. a bunch. Carrots from 4d. to 6d. Cauliflowers are less plentiful. Potatoes have not altered since our last account. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1s to 1s. 6d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropæolums, Fuchsias, Primulas, and Roses.

FRUITS.

Pine-apples, per lb., 3s to 5s	Lemons, per doz., 1s to 3s
Grapes, hothouse, p. lb., 9d to 3s	— per 100, 8s to 16s
— Portugal, per lb., 9d to 1s	Almonds, per peck, 6s
Peaches, per doz., 8s to 12s	— sweet, per lb., 2s to 3s
Nectarines, per doz., 8s to 12s	Walnuts, p. 100, 1s 6d to 2s
Plums, per hf. sieve, 4s to 6s	— p. bush., 16s to 24s
Pears, per doz., 2s to 4s	Filberts, per 100 lbs., 45s to 60s
— per half sieve, 4s to 6s	Nuts, Bar., p. bush., 20s to 27s
Apples, kitchen, p. bsh., 2s to 4s	— Brazil, p. bsh., 12s to 16s
Oranges, per doz., 4s to 6s	

VEGETABLES.

Cabbages, p. doz., 6d to 1s	Spinach p. sieve, 1s to 1s 6d
Cauliflowers, p. doz. 2s to 4s	Onions, p. bunch, 2d to 4d
Broccoli, p. doz. bundl., 6s to 10s	— Spanish, p. doz., 1s 6d to 4s
Greens, per doz., 1s 6d to 2s 6d	Shallots, per lb., 4d to 8d
Brussels Sprouts, p. hf. sieve, 1s 6d to 2s	Garlic, per lb., 4d to 8d
Peas, per bush., 1s 6d to 4s	Artichokes, p. doz., 1s 6d to 3s
Sorrel, p. hf. sieve, 6d to 9d	Vegetable Marrows, doz., 1s to 2s
Potatoes, per ton, 60s to 100s	Lettuce, Cab., p. sc., 4d to 9d
— per cwt., 3s to 6s	— Cos, do., 6d to 1s
— per bush., 2s to 3s	Endive, per score, 1s to 1s 6d
Turnips, p. doz. bun., 1s 6d to 2s 6d	Tomatoes, p. hf. sieve, 3s to 4s
Red Beet, per doz., 1s to 2s	Mushrooms, p. pot., 1s to 1s 6d
Horse Radish, p. bdl., 2s to 4s	— per bush., 3s to 6s
French Beans, p.hf. sieve, 1s 6d to 2s	Small Salads, p. punn., 2d to 3d
Cucumbers, each, 2d to 6d	Fennel, per bunch, 2d to 3d
Leeks, per bunch, 2d	Savory, per bunch, 2d to 3d
Celery, p. bundle, 8d to 1s 3d	Thyme, per bunch, 2d to 3d
Radishes, p. 12 bunches, 1s to 2s	Parsley, p. doz bun, 3s to 4s
Watercress, per doz. bunches, 4d to 6d	— Roots, p. bdle., 1s to 1s
Carrots, per bun., 4d to 6d	Marjoram, green, p. bun., 4d to 6d
	Mint, green, per bunch, 3d to
	Basil, green, p. bunch, 4d to 6d

ENGLISH TIMBER AND BARK.—Oct. 20.

	Round Timber. Per Load.	Plank. Per Foot Cube	Inch Board. Per Foot Superf.
Oak ..	15 10 0 to £8 0	0 3½ to 5s. 0d.	0s. 4½d. to 0s. 6d.
Ash ..	4 15 0 — 7 0	0 2 9 — 4 0	0 3 — 0 4
Elm	3 10 0 — 4 10	0 2 0 — 2 6	0 2½ — 0 3½
Beech ..	2 15 0 — 3 10	0 1 9 — 2 3	0 2 — 0 3
Lime	3 0 0 — 4 0	0 2 0 — 2 6	0 3½ — 0 5

Bark is still declining in value, timber being 12*l.* 10*s.* to 13*l.* 10*s.*, and coppice 13*l.* to 15*l.* per load of 45 cwt. J. S.

SMITHFIELD, Monday, Oct. 15.

We have a very large supply of Beasts to-day, and the demand is unusually small, owing to the glutted condition of the dead markets. Prices are for everything lower, and a considerable number remain unsold. A few choice Scots are said to make 4s., but in so few instances that we cannot quote so high. The number of Sheep is also larger, and for the above reason fewer wanted. There is a reduction of fully 2d. per 8 lbs. on all qualities. Trade continues very dull for Calves, and prices are still very low. Pigs sell slowly, at lower rates. From Holland and Germany we have 1018 Beasts, 2500 Sheep, 66 Calves, and 10 Pigs; from Leicester and Northampton, 2400 Beasts; from Lincolnshire, 200; and from Cambridge, 100.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	8 to 3	10	
Best Short-horns	3	4 — 3	6	
2d quality Beasts	2	8 — 3	2	
Best Downs and Half-breds	3	10 — 4	0	
Ditto Shorn				

Per st. of 8 lbs.	s	d	s	d
Best Long-wools	3	4 to 3	8	
Ditto Shorn				
Ewes & 2d quality	2	8 — 3	2	
Ditto Shorn				
Lambs				
Calves	2	4 — 3	4	
Pigs	3	4 — 4	4	

Beasts, 4919; Sheep and Lambs, 29,240; Calves, 141; Pigs, 248

Friday, Oct. 19.

The supply of Beasts is by no means large, still it is quite adequate to the demand; however, choice Scots being scarce make 4s. Monday's rates are with difficulty supported for second-rate. The number of Sheep is small, but there are very few wanted. Prices are about the same as on Monday last. We have again an abundant supply of Calves, trade is very slow, at a reduction of 4d. per 8 lbs. Pigs are lower, owing to the glutted state of the dead markets. From Holland and Germany there are 211 Beasts, 590 Sheep, and 54 Calves; from Leicester and Northampton, 400 Beasts; and 114 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	8 to 3	10	Best Long-wools	3	4 to 3	8
Best Short-horns	3	4 — 3	8	Ditto Shorn			
2d quality Beasts	2	8 — 3	2	Ewes & 2d quality	2	8 — 3	2
Best Downs and Half-breds	3	10 — 4	0	Ditto Shorn			
Ditto Shorn				Lambs			
				Calves	2	0 — 3	0
				Pigs	3	0 — 4	0

Beasts, 333; Sheep and Lambs, 5,040; Calves, 322; Pigs, 260.

HOPS.—Friday, Oct. 19.

Messrs. Pattenden and Smith report that there is an increased demand for Kents, which realise 5s. per cwt. more money. Sussex Hops are also in good demand at late prices. Full half the new growth is already sold. Duty, 85,000*l.*

HAY.—Per Load of 36 Trusses.

Smithfield, Oct. 18.					
Prime Meadow Hay	68s	to 75s	Clover	60s	to 90s
Inferior ditto	55	65	New Clover	—	—
Rowen	55	60	Straw	24	28
New Hay	—	—		J. Cooper.	
Cumberland Market, Oct. 18.					
Prime Meadow Hay	70s	to 78s	Inferior	65s	to 81s
Inferior ditto	50	65	New Clover	—	—
New Hay	—	—	Straw	27	32
Old Clover	90	95		Joshua Baker.	
Whitechapel, Oct. 18.					
Fine Old Hay	65s	to 68s	New Clover	—s	to —s
Inferior ditto	50	55	Inferior ditto	55	60
New Hay	—	—	Straw	24	28
Old Clover	80	90			

POTATOES.—Southwark, Oct 16.

The Committee report that the arrivals during the past week have been rather limited; they have a ready sale at the following prices:—York Regents, 70s. to 85s. per ton; Wisbeach, 65s. to 70s.; Scotch, 65s. to 70s.; foreign whites, 50s. to 70s.

MARK LANE.

Monday, Oct. 15.—The supply of Wheat from Essex and Kent this morning was small, and consequently taken off at an improvement of 2s. per qr. Foreign was held for higher prices, which checked business, but the late gradual advance obliges us to raise our quotations 1s. to 2s. per qr.—Fine malting Barley and best grinding are the turn dearer.—Beans fully support our quotations. Peas of all sorts are a slow sale. —The Oat trade is dull, excepting for best qualities, for which late rates are realised.—Rye is inquired after for Ireland, at 21s. to 21s. 6d. cost and freight.

Friday, Oct. 19.—The arrivals of grain since Monday have been small. This morning's market was thinly attended, and bare of English Wheat, which is fully as dear. Foreign was in limited demand, but commanded late prices.—Barley and Oats are inquired for, and fine qualities the turn higher.—In Beans and Peas we observe no alteration.—Flour is unaltered in value, as also Indian Corn.—During this week the weather has improved, and become more favourable for Wheat sowing. In the markets of the interior Wheat has been held with increased firmness, and in many instances slightly enhanced rates are obtained. Foreign Barley for grinding and distilling purposes has commanded rather more money; other articles have not varied in value, excepting Canary Seed, which continues to decline.—In Memel and Konigsberg prices of grain have not undergone any variation. In Dantzic the market is now cleared of fine Upper Polish Wheat, the nominal value is 48s. to 45s. per qr., f. o. b. In Stettin and the Lower Baltic ports very little old Wheat is left, supplies of new continue small, and prices remain as last quoted.

Liverpool, Tuesday, Oct. 15.—At this day's market we had a good attendance of dealers, and there was a fair retail demand for all kinds of Wheat, at an advance of 1d. to 2d. per bushel. Prime Oats were ½d. per bushel dearer. Barley, Beans, and Peas made full prices. Flour was sold on rather easier terms. Indian Corn being held for extreme rates few sales were made.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Sept. 8	44s 6d	28s 9d	18s 4d	25s 11d	31s 2d	29s 7d
— 15	43 0	27 1	18 6	26 7	30 8	30 1
— 22	41 9	27 1	17 10	25 11	29 9	30 0
— 29	42 4	27 4	17 11	25 2	29 5	31 3
Oct. 6	42 4	27 7	17 5	24 9	29 0	29 5
— 13	41 4	28 0	17 2	24 5	28 10	31 8
Aggreg. Aver.	42 7	27 4	17 10	25 6	29 10	30 5
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Sept. 8	Sept 15.	Sept 22.	Sept 29.	Oct. 6.	Oct. 13.
44s 6d	...	...	...	...	..	..
43 0	...	...	...	...	...	...
42 4	.	...	...	...	...	...
42 4	..	...	...	.	...	...
41 9	...	..	.	...	..	..
41 4	...	...	...	...	..	

PRICES CURRENT.	London. Oct. 8. qr.	London. Oct.15. qr.	Liverpool. Oct. 8. 70 lbs.	Liverpool. Oct. 15. 70 lbs.	Wakefield. Oct. 5. qr.	Wakefield. Oct.12 qr.	Boston. Oct.10. qr.	Boston. Oct.17. qr.	Birmingham. Oct. 11. 62 lbs.	Birmingham. Oct. 18. 62 lbs.
Wheat—										
New, red	38 to 43	38 to 45	6 0 6 4	6 0 6 1	40 to 45	39—45	36 to 41	36 to 42	5 0 5 8	5 1 5 8
„ white	42—48	44—50	6 2 6 9	6 0 6 10	42—46	42—48	40—45	40—46	5 6 6 1	5 6 6 1
Old, red	38—44	38—45	6 4 6 8	6 4 6 8	39—40	39—40	—	—	5 0 5 8	5 3 5 9
„ white	41—43	43—45	7 0 7 6	7 0 7 6	—47	—47	—	—	5 8 6 2	5 8 6 2
Foreign	36—50	36—52	4 3 7 2	4 3 7 8	32—46	32—46	—	—	4 8 6 2	4 8 6 2
			480 lbs.	480 lbs.						
Rye—Old	23—26	23—26	—	—	—	—	—	—	—	—
Foreign	20—22	20—22	—	—	—	—	—	—	—	—
Foreign meal	5*l.*—6*l.*	5*l.*—6*l.*	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley—										
Grinding	24—26	24—26	—	—	20—22	20—22	21—23	21—23	22—24	22—24
Malting	26—28	26—28	30s—31s	30s—31s	27—33	27—33	—	—	29—33	29—33
Foreign	18—26	18—26	—	—	21—26	21—26	—	—	—	—
					6 bush.	6 bush				
Malt—Ship	—	—	—	—	37—40	37—40	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White	18—24	18—24	3s 2d 3s 3d	3s 2d 3s 3d	—	—	13—18	13—18	19—27	19—27
Black	16—26	16—22	2 1 2 5	2 2 2 5	—	—	—	—	18—20	18—20
Foreign	13—20	13—20	2 3 2 4	2 3 2 4	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	28—30	28—30	33s—	33s—	26—30	26—30	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding	25—30	25—30	28 —29s	28 —29s	—	—	—	—	11—12	11—12
Foreign	24—32	24—32	29 —30	29 —30	—	—	—	—	—	—
Beans—										
New, small	23—39	23—29	—	—	32—33	32—33	32—34	32—34	12—13	12—13
Old	—	—	33 —37	33 —37	—	—	—	—	14—15	14—15
Foreign	21—36	21—36	25 —30	25 —35	28—30	28—30	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign	36—41	36—41	—	—	—	—	—	—	—	—
Linseed Cakes										
British	9*l.* 12s	9*l.* 12s	8*l.*—8*l.* 5s	8*l.*—8*l.* 5s	—	—	—	—	—	—
Foreign	7*l.*	7*l.*	—	—	—	—	—	—	—	—
Indian Corn—	22—26	22—26	27s—30s	28s—29s	—	—	—	—	12—13	12—13
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	32—40	32—40	30—32	30—32	—	—	32—38	32—38	31—34	31—34

Weekly Averages and Imports.	London. Aver. Oct.16		London. Impts.	Liverpool. Averages.		Liverpool. Imports.	Wakefield. Aver.		Wakefield. Impts.	Boston. Aver.	Boston. Aver.	Gloucester. Averages.		Gloucester. Imports.
	s.	d.	qrs.	s.	d.	qrs.	s.	d.	qrs.	s.	d.	qrs.	s.	d.	qrs.
WHEAT	44	9	3540	42	4	7579	45	0	17559	39	9	5875	41	3	146
BARLEY	30	7	3520	27	7	1317	29	9	3241	23	10	149	28	2½	—
OATS	20	7	10460	17	5	5435	18	7	1313	14	2	1515	18	6¾	1021
RYE	25	5	—	25	11	21	—		—	—		—	—		—
BEANS	26	4	—	29	0	3030	30	4	759	30	5	136	—		—
PEAS	32	5	—	29	5	41	—		651	—		—	—		—

Signed { *Kingsford and Lay.* | *Segar and Tunnicliffe.* | *Sandars and Dunns.* | *Thomas Wright.* | *J. and C. Sturge.*

STATUES, VASES, FOUNTAINS, GARDEN ORNAMENTS, COATS OF ARMS, and ARCHITECTURAL EMBELLISHMENTS in Imperishable Stone, by Vaughan and Co., 60, Stonea End, Borough, London. T. J. Croggon, late of Coade's, Superintendent. Specimens may be seen at Croggon and Co.'s, 2, Dowgate-hill, City. A pamphlet of Drawings forwarded on application.

IRISH PEAT CHARCOAL.

THE IRISH AMELIORATION SOCIETY,

Established by a Royal Charter of Incorporation, dated January 20, 1849, which limits the responsibility of Subscribers to the amount of their respective Subscriptions.

The Lord de Mauley, Chairman to the Court of Directors.
Major-General Maclmod (late Chief Engineer in Bengal), Chairman of the Committee of Works.
Chief Office, 9, Waterloo-place, London.

Capital Stock, 500,000*l.*, divided into Shares of 10*l.* each, to be paid up, in pursuance of the provisions contained in the Charter and Deed of Settlement, by a deposit of 10s. a Share, and Calls not exceeding 10s. each, nor to be made within less than three months' time after the payment of any previous Call. Twenty-one Days' Notice of every Call is to be given to each Shareholder, by letter from the Secretary. The First Call was payable on the 25th September, 1849.

This Society was formed for the purpose of beneficially employing the Irish peasantry in the manufacture of Peat Fuel and Peat Charcoal from the Peat Bogs of Ireland, and, in the gradual, but permanent, reclamation of the Bog Lands.

The Peat Charcoal thus produced is an article of considerable commercial value for many purposes; and it has been shown by recent public exhibitions, and any person who doubts may satisfy himself privately, that it is of inestimable value as a deodoriser and disinfector of night soil, which immediately on being mixed with the charcoal becomes a dry inodorous powder, capable of being handled without inconvenience, and packed in bags and transmitted by railway or any other conveyance.

The manure thus produced is deemed by scientific men to be equal if not superior in quality to Guano, and may be purchased at one-fourth of the cost of that well-known manure.

The Directors have established these facts at their own risk, having for some months past had an experimental Station at work at Derrymullen, in the county of Kildare, where, in addition to having satisfied themselves that they can make Peat Charcoal and sell it in London with a satisfactory profit at from 40s. to 50s. a ton, their operations have proved, that, if duly supported by the public, they will be able to employ constantly and most beneficially thousands of the half-starved and half-naked Irish peasantry.

The system adopted and proposed to be acted upon by the Society, in the employment of the labourers, is task-work, with a fair remuneration in money; and the Directors feel bound to state, that so far as they have been enabled to carry out this system, they have experienced from the labourers a degree of industry, alacrity, and docility, for which they were totally unprepared. The people employed have by severe labour clothed themselves and their families, cultivated their patches of land, previously lying waste for want of seed, and in some cases have purchased pigs; and they say all they want to make them happy is constant employment.

The Directors earnestly appeal to the public for support. To those desirous of promoting the permanent welfare of Ireland, the opportunity is offered, by contributing to the funds of this Society, of opening up in that country a new field of useful and profitable labour, to which a limit can scarcely be assigned.

Those who feel interested in removing from the densely populated towns of England the cause of pestilence and death, may further that object in the only rational, because the only natural way, by assisting to provide the antidote.

The aid of Agriculturists is looked for, because the labours of this Society promise to render available to them millions of tons annually of the most valuable manure, now worse than wasted.

And though this Society was formed rather on philanthropic than on commercial principles, the Directors assure Capitalists who may feel inclined to invest in the Stock of this Society, that that they will receive a quick and satisfactory return for any capital they may so employ. By order of the Court,

James Blake, Secretary.

To whom application for Shares may be made.

GREAT EXHIBITION OF THE WORKS OF INDUSTRY OF ALL NATIONS, 1851.—At a meeting of the Merchants, Bankers, Manufacturers, Traders, and others, held at the Mansion House of the City of London, on the 17th day of October, 1849.

The Rt. Hon. Sir James Duke, M.P., Lord Mayor, in the Chair.

It was moved by H. J. Prescott, Esq., Governor of the Bank of England, seconded by John Dillon, Esq., and carried unanimously, That this meeting tenders its best thanks to his Royal Highness Prince Albert, President of the Society of Arts, for his proposal to establish an Exhibition of the Works of Industry of all Nations in 1851, and expresses its cordial readiness to co-operate with his Royal Highness in carrying the same into effect.

It was moved by Joseph Hume, Esq., M.P., seconded by Mr. Alderman Salomons, and carried unanimously, That this meeting is of opinion that the cost of the proposed Exhibition should be provided by voluntary subscriptions, and not by the general taxation of the country; and that a Royal Commission is necessary to invest the undertaking with a national sanction, and to give the world the utmost confidence that the prizes will be awarded impartially.

It was moved by John Masterman, Esq., M.P., seconded by Sir J. Henry Pelly, Bart., and carried unanimously, That a General Committee be formed of the Merchants, Bankers, and Traders of the metropolis, to promote the proposal of his Royal Highness, to consist of the following gentlemen:

The Lord Mayor	John Masterman, Esq., M.P.
The Lord Mayor elect	Raikes Currie, Esq., M.P.
The Alderman present	George Moffatt, Esq., M.P.
The Sheriffs	Thomas Baring, Esq., M.P.
The Governor of the Bank of England	Matthew Forster, Esq. M.P.
	S. J. Loyd, Esq.
The Deputy-Governor of the Bank of England	W. Cotton, Esq.
	Samuel Gurney, Esq.
The Chairman of the East India Company	R. L. Jones, Esq.
	William Tite, Esq., F.R.S.
The Deputy-Chairman of the East India Company	Andrew Caldecott, Esq.
	Robert Williams, Esq.
Joseph Hume, Esq. M.P.	John Dillon, Esq.
Baron Rothschild, M.P.	Joshua Bates, Esq.
Baron Goldsmid	George Carr Glyn, Esq., M.P.

With power to add to their number; and that the Rev. Stephen Reed Cattley, and Mr. Under-Sheriff D. W. Wire, be the Honorary Secretaries of such committee, and that such committee be instructed to co-operate and correspond with the various towns in the kingdom in promoting the great object of the meeting.

It was moved by William Cotton, Esq., seconded by Mr. Alderman Copeland, M.P., That the above resolutions be duly advertised in the London papers. James Duke, Mayor.

It was moved by William Tooke, Esq., F.R.S., seconded by C. Wentworth Dilke, Esq., and carried by acclamation, That the cordial and sincere thanks of this meeting be given to the Right Honourable the Lord Mayor for his efficient services in promoting the object of the meeting, and for the ability and courtesy with which he has presided over it.

Stephen Reed Cattley, David W. Wire,
9, St. Swithin's-lane, Lombard-street. Hon. Secretaries.

Sales by Auction.

DALSTON.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by Mr. J. Smith to offer to public competition by Auction, on the premises, Dalston Nursery, Middlesex, on MONDAY, October 22d, and following days, at 11 o'clock each day, in consequence of the Land being required by the London and Birmingham West India Dock Junction Railway Company, the valuable NURSERY STOCK, consisting of a very superior assortment of large Evergreens, American Plants, Ornamental Trees, Deciduous Shrubs, and Fruit and Forest Trees, in great variety.

. From the adhesive nature of the soil, the plants will remove safely, and from their extraordinary size and magnificent growth, they well deserve the attention of Noblemen, Gentlemen, and the Trade. The stock has long been well known as one of the finest and best.—May be viewed prior to the sale. Catalogues may be had, 1s. each (returnable to purchasers), on the premises; the Shop, Covent-garden; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

AMERICAN NURSERY, LEYTONSTONE.

MESSRS. PROTHEROE AND MORRIS respectfully announce to their Friends and the Public that they will submit to public competition by Auction, on the premises, on MONDAY, October 29, 1849, and five following days, at 11 o'clock each day, a selection from this extensive NURSERY STOCK. It will consist of the leading and choicest varieties of Fruit and Forest Trees, Evergreens, Ornamental, Deciduous and American Plants, of every variety, in considerable quantities. P. and M. respectfully invite an early inspection of the varied lots, suited to Gentlemen planting, and to the Trade, and they feel assured it will be more gratifying than any verbal description. The American Plants are particularly attractive, from their great variety and beauty; among them are lotted 1000 Andromeda floribunda (fine, bushy plants), and numerous Azaleas, Kalmias, and Rhododendrons, well set for bloom, and adapted for forcing.

P. and M. again invite a personal inspection as the best means of appreciation of this Nursery, known for the safety with which its stock can be moved.—Can be viewed any time before the Sale, and Catalogues had of the principal Seedsmen in London, at the Auction Mart, and on the Premises, Leytonstone, Essex.

WOKING, SURREY.—VALUABLE NURSERY STOCK.
125,000 Shrub, Forest, and other Trees; 900,000 Transplanted and Seedling Quick; Roses, and other Valuable Nursery Stock.

MR. WATERER will sell by Auction, on MONDAY, Oct. 22, 1849, at 10 o'clock, at Hook Hill Nursery, near the Woking Station (by order of Mr. WILLIAM JACKMAN, who is declining business), comprising 2000 Roses, of sorts; 9000 Rhododendrons, Kalmias, and Aucubas; 1000 Striped and Green Hollies, from 1 to 8 feet; 2000 Laurestinus, from 1 to 2 feet; 1000 Chinese Privets, from 2 to 4 feet; 10,000 Yews, from 1 to 4 feet; 9000 Portugal and Common Laurels, from 1 to 5 feet; 12,000 Spruce and other Firs, from 1 to 6 feet; 6000 Sweet Bays and other Evergreens; 500 Standard Plums, of sorts; 13,000 Mossy Cup and other Oak; 8000 Standard, Purple, and Common Beech; 29,000 Ash, Birch, and Alder, from 3 to 4 feet; 900,000 Transplanted and Seedling Quick; and other Valuable Nursery Stock, the whole of which is in a safe moving condition, and well worth the attention of persons about Planting. May be Viewed three days previous to the Sale; Catalogues to be had on the premises; of Mr. CHARLWOOD, Seedsman, Covent-garden; and will be forwarded on application by letter, enclosing four postage stamps to Mr. WATERER, Auctioneer and Estate Agent, Chertsey, Surrey.

ADDLESTONE, CHERTSEY, SURREY.

MR. WATERER will Sell by Auction, at the Duke's Head Inn, Addlestone, on MONDAY, October 29, 1849, at 2 o'clock, by order of the Proprietor, a genteel freehold newly-erected COTTAGE RESIDENCE, called "Mount Cottage," containing two parlours, three bed-rooms, kitchen, wash-house, and offices, with a large Garden, and a neat iron fence in front, well situate, being in the most elevated and central part of the dry and salubrious village of Addlestone, within 10 minutes' walk of the Church and Railway Station, now let to a respectable tenant at 18l. per annum. Also a piece or parcel of Copyhold Building Land, equal to Freehold, adjoining the former estate, and commanding a frontage of 50 feet to the road, now on hand.—For further particulars apply to J. CELL, Esq., Solicitor, 28, Craven-street, Strand, and at Chertsey, Surrey; or of Mr. WATERER, Auctioneer and Surveyor, Chertsey, Surrey.

FOR SALE WITHOUT RESERVE.

MR. WATERER begs to announce that he has received instructions from Mr. GEO. CHAPMAN to sell by Auction, without reserve, on TUESDAY, Nov 6th, 1849, and following day, at 11 o'clock, upon the Premises, situate one mile from the Woking Station on the South Western Railway, all his truly valuable and well grown NURSERY STOCK, consisting of a large quantity of variegated Hollies of the best sorts, Evergreen, Flowering, and other Shrubs, from 1 to 8 feet high, Rhododendrons, Kalmias, Azaleas, Aucubas, and other American Plants, 5000 Dwarf and Standard Fruit Trees, 10,000 Limes, and other large magnificent Plants, the whole of which are in a safe moving condition, and well worth the attention for Ornamental and other Planting. Further particulars will appear in future Advertisements, and Catalogues will be forwarded on application by letter, including four postage stamps, to Mr. WATERER, Auctioneer, Chertsey, Surrey.

SALE BY AUCTION AT THE MART.—HOLLYHOCKS, DUTCH BULBS, ROSES, &c.

MR. WILLIAM HASLAM begs to inform the Public that he will sell on WEDNESDAY, 24th Oct. and FRIDAY, 26th Oct., a MAGNIFICENT ASSORTMENT of DOUBLE HOLLYHOCKS (from the Stock of Mr. Chater), Dutch Bulbs, Roses, &c. Catalogues at the Mart, and at the Auctioneer, South Essex Nurseries, Epping, Essex.

TO GENTLEMEN, CONTRACTORS, AND OTHERS.
CHOICE NURSERY STOCK

MR. PEACOCK is instructed to Sell by Auction, on the Premises, on MONDAY, Nov. 19, 1849, and following day, at 11 o'clock, the choice NURSERY STOCK, standing on five acres of land, being a detached part of Mr. WILLIAM YOUNG'S extensive Nursery, at Milford, near Godalming, Surrey, comprising a great variety of Healthy Evergreen and Deciduous Forest and Shrubbery Plants, native and exotic; upwards of Two Millions of strong four years seedling and bedded Quicks, several thousands of twice transplanted (4 feet and upwards) Larch, Spruce, Weymouth, Pineaster, Austrian, and other Firs; Hemlock Spruce, Cedar of Lebanon, Deodara, Taxodium sempervirens, and other choice and ornamental trees. The above plants are of the most healthy description, and will be sold, without reserve, in suitable lots for the convenience of purchasers, as the land is wanted to be cleared for other use. The Stock may remain till the first week in March, if required. Further particulars and printed Catalogues to be had 10 days before the sale; at the Mart; the principal Inns; in the adjacent County Towns; at Mr. Young's Nursery; and the Auctioneer's Agency-office, Godalming. To be viewed two days previous to the sale.—The Chichester and Portsmouth roads pass the Nursery, which is within 1½ mile of the South Western and South Eastern Railways.

SUPERIOR HOUSEHOLD FURNITURE.
ALBANY HOUSE, BYFLEET, SURREY.

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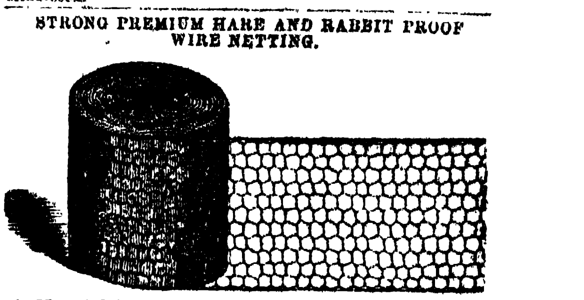

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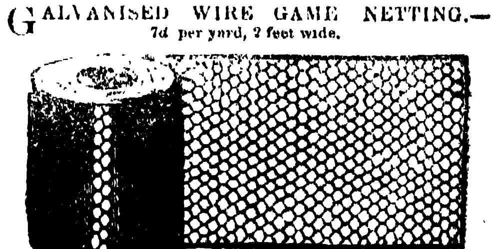

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" " 3 to 4 ft., transplanted, each	...	1 6
ABIES alba, 2 ft., transplanted, each	... ...	1 0
" canadensis, Hemlock Spruce, transpl., 3 ft., each		1 6
" excelsa, Norway Spruce, 1 to 6 ft., transplanted, each	... ...	1d. to 1 6
" Morinda, Himalayan Spruce, 1½ to 2 ft., transplanted, each	... ...	1 6
PICEA balsamea, Balm of Gilead, 1 to 6 ft., transplanted, each	... ...	1d. to 1 6
" cephalonica, transplanted, 2 ft., each	... ...	2 6
" Fraseri, transplanted, 3 to 4 ft., each	... ...	3 6
" pectinata, Silver Fir, transpl., 1 to 3½ ft., each,		1d. to 1 6
" Pinsapo, transplanted, 1 to 2 ft., each	...	3 6
PINUS austriaca, Black Austrian Pine, transplanted, 3 to 6 ft., each	... ...	1s. to 2 6
" Ayacahuite, 2 ft., in pot, 1 plant	... ...	42 0
" calabrica, 6 to 7 ins., in pots, each	... ...	1 0
" canariensis, 8 ins., in pots, per doz.	... ...	4 0
" cembra, 1 ft., in pots, each	... ...	1 0
" " 1½ to 2½ ft., transplanted, each	...	1 6
" Edgariana, 6 ins., in pots, each	... ...	21 0
" excelsa, 15 to 20 ins., in pots, each	... ...	1 6
" " 2 ft., transplanted from pots, each	...	2 0
" filifolia, 2 ft., 1 plant, in pot, each	... ...	21 0
" " 6 ins., in pots, each	... ...	3 6
" Gerardiana, 8 ins., in pots, each	... ...	3 6
" " 9 ins. to 1 ft., transpl. from pots, each		5 0
" Grenvillæ, 6 ins., in pots, each	... ...	10 6
" halepensis, 6 ins., in pots, per doz.	... ...	4 0
" insignis, 8 ins., in pots, each	... ...	3 6
" laricio, 4 to 8 ft., transplanted, each	...	1s. to 2 6
" maritima, from Corte, 9 to 12 ins., new, in pots, per doz.	... ...	9 0
" Montezumæ, 8 ins. to 1 ft., in pots, each	...	5s. to 7 6
" Mugho, 2 to 3 ft., bushy, transplanted, each		1 6
" pinea, 5 ins., in pots, each	... ...	0 6
" " 12 to 16 ins., in pots, each	... ...	1 0
" pumilio, 4 ins., in pots, per doz.	... ...	4 0
" " 2 to 3 ft., bushy, transplanted, each	...	1 6
" pyrenaica, 4 ins., in pots, each	... ...	1 0
" strobus, Weymouth Pine, 1 to 8 ft., fine, transpl., each	... ...	3d. to 2 6
" sylvestris, Scotch, 1 to 6 ft., fine, transpl., each		1d. to 1 0
" " Haguenisis, 5 ins., in pots, per doz.	...	4 0
" Winchesteriana, 6 ins., in pots, each	... ...	10 6
TAXUS baccata, common Yew, 1 to 3½ ft., transplanted, each	... ...	6d. to 1 6
" " Irish Yew, 1 ft., transplanted, each	...	1 0
" " do., 5 ft., transplanted, each	... ...	10 6
CEDRUS Libani, Cedar of Lebanon, 6 ins., in pots, each		0 9
" " 3 to 7 ft., transplanted, each	2s. 6d. to	10 6
CRYPTOMERIA japonica, 2 ft., in pots, each	... ...	7 6
TAXODIUM sempervirens, 15 ins., in pots, each	... ...	5 0
ARAUCARIA imbricata, 4 ins., in pots, each	... ...	1 0
" 8 to 10 ins., in pots, each	... ...	2 6

BEAUTIFUL TEETH.

ROWLAND'S ODONTO, or PEARL DENTIFRICE. A white Powder, compounded of the choicest and most *recherché* Ingredients of the Oriental Herbal, of inestimable value in preserving and beautifying the Teeth, strengthening the Gums, and in giving sweetness and perfume to the Breath. It extirpates all tartarous adhesions to the Teeth, and ensures a pearl-like whiteness to the enamelled surface. Its Anti-Septic and Anti-Scorbutic properties exercise a highly beneficial and salutary influence; they arrest the further progress of decay of the Teeth, induce a healthy action of the Gums, and cause them to assume the brightness and colour indicative of perfect soundness; while, by confirming their adhesion to the Teeth, they give unlimited enjoyment and fresh zest to appetite, by perpetuating effective and complete mastication. The Proprietors of this Dentifrice pledge themselves that its efficacy in preserving and embellishing the Teeth far surpasses anything of the kind ever yet offered to the public, and has, in consequence, obtained its selection by Her Majesty the Queen, the Court and Royal Family of Great Britain, and the Sovereigns and Nobility of Europe.—Price 2s. 9d. per box.
CAUTION.—To protect the public from fraud, the Hon. Commissioners have directed the Proprietors' Name and Address, thus—"A. ROWLAND and SON, 20, HATTON GARDEN," to be engraved on the Government Stamp, which is affixed on each box. Sold by the Proprietors and by Chemists and Perfumers.

METCALFE AND CO.'S NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose—1s. An improved Clothes Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh Brushes of improved graduated and powerful friction. Velvet Brushes which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Holles-street.
CAUTION.—Beware of the words "From METCALFE'S" adopted by some houses.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Churchrow, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, OCTOBER 20, 1849.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 43—1849.] SATURDAY, OCTOBER 27. [PRICE 6*d.*

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NEW AND CHEAP.

J. G. HINE'S LIST OF PELARGONIUMS, containing most of the leading varieties, is now ready, and may be had on application. Per dozen, purchaser's selection, 21s. Plants very strong. No charge made for hamper or package, and plants put in to compensate for carriage.
Providence Nursery, Ramsgate, Kent.

V. SCHERTZER AND SONS, SEEDSMEN, Haarlem, in Holland, beg to inform their Friends and the Trade that their CATALOGUE OF GARDEN SEEDS is now being sent out, and can be had on prepaid application. They give the assurance that all orders with which they may be favoured will meet with strict attention. A reference or remittance is requested from unknown correspondents.—Haarlem, Oct. 27.

WM. IVERY, Hanover Nursery, Peckham, near London, begs to offer the following: Fine Standard and Wall-trained PEACHES and NECTARINES of the best selected varieties from 7s. to 10s. 6d. each; also VINES from eyes of the best leading sorts, from one to three years old, 2s. 6d. to 5s. each.
W. I. has a large stock of Chinese Arbor-Vitæ, Laurustinus, Aucubs, Garrya elliptica in pots, Evergreen Oaks ditto, in various sizes; also a general Nursery Stock, worthy the attention of Planters, at very moderate prices.

W. FROMOW begs to inform his friends and the public, that he has 300 yards of BOX EDGING, large FOREST TREES, DECIDUOUS SHRUBS, FRUIT TREES, and EVERGREENS in great variety.—Turnham-green Nursery, near London.

AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER has much pleasure in announcing he has published a Descriptive Catalogue of his extensive collection of RHODODENDRONS and other American plants, &c., which will be forwarded on application.

MITCHELL'S ROYAL ALBERT RHUBARB still maintains its supremacy over every other kind, it being the earliest, finest-flavoured, and best coloured ever yet grown; a most prolific bearer, and free grower. For early forcing, it far surpasses every other kind. If planted in a wine-cellar, or any place where the frost and light are kept from it, it will produce large stalks, of a magnificent red colour, in five weeks. W. M. has a large stock of roots, at 1s 6d each; also Myatt's Linnæus, 1s. 6d., and Victoria, 9d. The usual allowance to the trade. Post-office orders made payable to W. MITCHELL, Enfield Highway, Middlesex, will meet with every attention.

NEW EARLY DWARF BLUE MARROW PEAS.—STUBBS' EARLY DWARF BLUE MARROW PEAS grow from 15 to 18 inches high, flavour of the Knight's Marrow, very prolific, and within one week of the earliest frames; well adapted for the north, being quite hardy; time of sowing from November till May. The produce of the above Pea was 61 bushels 1 peck per acre. Price 21s. per bushel.
The Trade only supplied with the above Peas.
Nemophila maculata and Salvia speciosa, each 1s. per packet; 100 named Anemones, show flowers, 15s.; Gladiolus gandavensis, 6s. per dozen.
N.B.—Prices of every seed in cultivation can be had on application.—J. G. WAITE, Seed Establishment, 181, High Holborn, London.

TO PEAR AMATEURS.—In his Descriptive Catalogue of Fruits, T. RIVERS has given a list of 171 of the finest sorts of Pears, with a descriptive paragraph to each variety, and directions as to the stocks to be employed, their culture, &c.; sent, free, by post, for four postage stamps. A Descriptive Catalogue of Roses, for two postage stamps. A Descriptive Catalogue of Trees and Shrubs, with prices for the present season, for six postage stamps. The Miniature Fruit Garden, or the culture of Pyramidal Pear-trees, with directions for root-pruning, &c., for 24 postage stamps. So'd also by Longman and Co., Paternoster-row, London, price 2s.
Nurseries, Sawbridgeworth, Herts.

PELARGONIUMS "GIPSY BRIDE," "CONSTANCE," &c.

W. BRAGG begs to inform his Patrons and Cultivators in general that he is now sending out those new and superb varieties, raised by EDMUND FOSTER, Esq., of Clewer Manor, for description of which, and flowers of other raisers of former years, see Catalogue, which can be had on application; likewise of Carnations, Picotees, Pinks, Pansies, Roses, Hollyhocks, Dahlia roots, &c.

LADY GRENVILLE, FANCY DAHLIA, having gained 11 first-class certificates, viz, Royal South London, London Floricultural Society, Highgate, Wycombe, Thame, Teddington, Aylesbury, Norwich, Newbury, Birmingham, and Slough; first in class showing at the London Floricultural Society twice, extra first prizes in money at Aylesbury, South London, Teddington and Slough. Will be let out in dry roots, should there be enough subscribers in the trade.
Star Nursery, Slough, October 27.

HOYLE'S SUPERB GERANIUMS FOR 1849.

MESSRS. MAYLE AND Co. have sent out all the orders received, and have remaining a few plants of each variety. Cheques can be had on application.
12 extra fine varieties, including Crusader, Brilliant, &c., 2l. 2s.
N.B. Their four Seedling FUCHSIAS of 1849—Dark, Standard of Perfection and Prince of Wales; White, Hebe and Diadem of Flora, both twice the size of their Purity, and perfect models—will not be sent out until after the two first exhibitions at Regent's-park and Chiswick, where they will be shown. Feeling confident that they will prove by very far the most superb varieties ever raised, they hope other growers that have superior sorts to send out will also attend; it is but justice to the public, and if very superior, amply pays the raiser.
55, New-street, Birmingham.

HENRY CORSTEN, Florist to her Most Gracious Majesty the Queen, Queen Adelaide, and His Royal Highness Prince Albert, 8, Grand Hall, Hungerford market, begs to inform the Nobility, Gentry, and Amateurs, that his relations in Holland again obtained the large gold medal for forced Hyacinths and early Tulips, at the great exhibition in March last, at Amsterdam. H. C. is supplied by his friends with a large and very splendid assortment of Dutch Bulbs, under which are a great many very rare, and only in H. C.'s possession. He has now for sale boxes containing 25 double and 25 single Hyacinths, all of the best varieties, good for water or pots; 25 single early Tulips, Van Thol, 25 double do. do.; 25 double yellow Rose Tulips; 25 double Tulips Tournesoll, 25 white Bouquet Narcissi, Grand Primo; 25 do. Soleil d'or, yellows; 25 do. State-General, white, 25 do. orange-coloured Lions; 25 true double Jonquils; 25 single do.; 50 mixed Turban Ranunculus, 50 Romano Ranunculus; 50 mixed splendid double Anemones; 50 do. single, mixed, 6 Crown Imperials; 100 large yellow Crocus; 100 do. blue; 100 do. striped; 100 do. mixed; 50 Gladioli, Hybrids; 50 Iris Angelica, spotted and striped, 50 Iris Hispanica, mixed; at 5l. each box, half box, 2l. 10s.; one-third box, 1l. 11s. 4d.; quarter box, 1l. 5s. Early orders are particularly requested, as a great many sorts are very limited.—Remittance required.

AN UNLIMITED STOCK OF SEEDLING AND TRANSPLANTED LARCHES, of the Finest Quality, at reduced Prices.

WM. WOOD AND SON beg to solicit attention to their very extensive stock of the above, prices of which will be furnished on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

PELARGONIUMS.

J. G. HINE (late WM. MILLER) has much pleasure in offering to the Public the following SEEDLING PELARGONIUMS, which he strongly recommends:

Brilliant	7s. 6d	Triumph	7s. 6d
Magnum Bonum	5 0	Nobilissima	7 6
Childe Harold	7 6	Rodolphus (extra)	10 6
Venusta	7 6	Surprise	5 0
Ave Maria	10 6	Delight	5 0

Or the Ten for 50s.

*** Cash to accompany all orders from unknown correspondents. Post-office orders to be made payable to the name of JOHN HINE.
J. G. HINE, Providence Nursery, Ramsgate, Kent.—Oct. 27.

T. BARNES (Successor to the late SAMUEL GIRLING), has a Priced List of DAHLIA roots now ready, which may be had on application, including those splendid seedlings T. B. has to offer for 1850.—Danecroft Nurseries, Stowmarket, Oct. 27.

PLANTING SEASON.—NURSERY GROUNDS, RED LODGE, NORTH STONEHAM, NEAR SOUTHAMPTON. — An unlimited supply of every description of FOREST, FRUIT, AND ORNAMENTAL TREES, AMERICAN PLANTS, AND FLOWERING SHRUBS, may be procured from these extensive grounds, at the most reasonable prices, printed Catalogues of which may be had of the proprietor, WM. ROGERS, Sen., NURSERYMAN AND CONTRACTING PLANTER.
Transplanted Forest Trees, 1 to 2 feet, adapted for extensive Forest or Coppice Planting, usually sold by the thousand; and also of a larger size, for Ornamental Planting or immediate effect, from 3 to 12 feet, the prices varying from 25s. to 5l. p. 100.
Ash, Beech, Birch, 15s. to 30s. per 1000; Spanish Chestnut, 20s., 30s., and 40s.; Larch Fir, 7s. 6d. to 20s.; Spruce, 20s., 30s., and 40s.; Scotch, 10s., 15s., and 20s.; Pinaster, 10s., 15s., and 20s.; Sea Pine, adapted for exposure to the sea, 15s., 25s., and 40s.; Mahonia, for cover, 40s. to 80s.; Hazel, 15s., 20s., and 35s.; English Oak, 15s., 20s., and 40s., Poplar, 20s., 30s., and 40s.; Quicks, 5s., 7s. 6d. and 10s.
Planting contracted for to any extent from 5l. to 20l. p. acre.

ORNAMENTAL TREES AND SHRUBS.

Rhododendron pontucum, 2 to 6 inches, 20s., 40s., and 80s. per 1000; 1 foot, single stems, fit for working, 10s. per 100; 1½ to 2 feet, strong, 20s. to 40s. per 100, fit for planting out at once to cover; 4 to 6 feet, single stem, for working the beautiful scarlet and other fine kinds, 5l. per 100. Tree Rhododendrons may thus become as generally cultivated as Tree Roses. Scarlet Rhododendrons, 18s. per dozen, hybrid scarlet, blue, lilac, and white, with large handsome trusses of flowers, 4 to 6 inches, 25s.; 1 foot, 40s. per 100; Kalmia latifolia, 2 to 4 inches, 8s. to 12s. 6d per 100; 1 to 2 feet, blooming buds, 50s. per 100; 2 to 3 feet, fine, 75s. per 100; Epigæa repens, 50s. per 100; and all other American plants at equally low prices.
Dwarf Rose Stocks for working, 8s. per 100; Single Camellias, 25s., 40s., and 50s. per 100, fit for working; Double Camellias, of sorts, on own roots, 6 to 9 inches, 12s. per dozen; Pinus (Abies) Douglasi, from seed, 6 to 9 inches, 10s. per 100 or 30s. per dozen; Arbutus, 6 to 12 inches, 8s. to 12s. per 100; 1 to 1½ foot, 20s. per 100; 2 feet, 30s. per 100; Laurel, 8s. to 20s. per 100; Laurustinus, bedded, 40s. per 1000, 8s. per 100; Variegated Holly, 1 foot, 25s. per 100; Clematis azurea grandiflora, 6s. per dozen, 42s. per 100; Deutzia scabra, 2 feet, 12s. 6d. per 100; Common China Rose, 12s. 6d. per 100; Tree Roses of the most select kinds, 5l. per 100; Dwarf Roses, 50 sorts named, 30s. per 100; Double White, Double Red, and New Crimson Thorns, 40s. per 100, 6s per dozen; Large Dutch Honeysuckles, 12s. 6d. per 100; Giant Irish Ivy, 8s. per 100.
The prices are for wholesale, if ordered in less quantities a higher price will be charged. All orders above 5l., carriage paid to London.

RENDLE'S CHEMICAL PLANT MANURE should be used by all who wish for a good bloom of Hyacinths, Tulips, and other Dutch roots. Sold in tin canisters at 2s., 3s. 6d., and 5s. each. For further particulars apply to
WILLIAM E. RENDLE and Co., Union-road, Plymouth.
Our extensive premises are adjoining the Plymouth Station of the South Devon Railway, and our sales of Guano have exceeded 6000 tons during the last five years.

TO GENTLEMEN, NURSERYMEN, &c.

BARTER.—A Nurseryman, near London, having a large stock of Evergreens, Standard and Trained Peach and Nectarine Trees, would exchange them for large Greenhouse or Hothouse Plants.—Address (post paid) A. B., Mr. Pearce, 15, Hart street, Covent garden, London.

R. LAING begs respectfully to acquaint the Nobility, Gentry, and Patrons, that he has come to arrangements by which his Business will be carried on as formerly.
R. L. also takes this opportunity of returning his thanks for the liberal support he has received, and hopes to conduct business in a way that will merit a continuance.
Twickenham Nursery, Oct 27

GEORGE JACKMAN, NURSERYMAN, Woking, Surrey, 1¼ mile from Woking Station, South-western Railway, begs to announce he has just published a new and complete CATALOGUE of his Ornamental Evergreens and Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., which may be had on application, inclosing two postage stamps.
G. J. wishes to remind his friends and the public the sale of Nursery Stock on the 22d inst. was at his brother's, Mr. Wm. Jackman, who has declined business.

NEW ROSE CATALOGUE.

COPIES OF WM. WOOD AND SONS' New Descriptive ROSE CATALOGUE may still be obtained, GRATIS, on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

AVENHAM GARDENS, PRESTON.

SELLING OFF, AT VERY REDUCED PRICES, at the Nursery and Gardens now occupied by Mr. CHARLES JACKSON, who is retiring from business, the whole of the Stock of EVERGREENS and other SHRUBS, FRUIT-TREES, and PLANTS, GREENHOUSES, and FRAMES. The Hardy Stock consists of an immense number of fine Rhododendrons, Variegated Hollies, Portugal and Common Laurels, Laurustinus, Yews, Araucarias, Deodaras and other Pines, Aucubas, Box, Azaleas and other American Plants, Roses and other Deciduous Shrubs, and Evergreens of all sorts and sizes. The Greenhouse Stock comprises a large quantity of fine Camellias, Geraniums, Fuchsias, China Roses, Azalea Indica, Rhododendrons, &c. 20,000 Scilla siberica, at 8s. per 100. As it is desirable that the grounds should be cleared immediately, the plants will be sold at very low prices.—Preston, Oct. 27.

HEDENHAM ROSARY, NORFOLK.

A DESCRIPTIVE CATALOGUE of about 300 of THE BEST ROSES in cultivation, propagated for sale by ROBERT BENJAMIN BIRCHAM, and will be forwarded by prepaid application.
R. B. B. begs to offer the following SUPERB HOLLYHOCKS.

Name.	Colour.	Price per plant—s.	d.
Abd-el Kader	Plum colour	7	6
Atropurpurea	Dark purple	2	6
Aurantia	Salmon	3	6
Bicolor	Purple and white	2	6
Black Prince	Black	2	6
Cheshire	Bright scarlet	3	6
Commander-in-Chief	Light-edged rose	5	0
Comet	Ruby-red, fine large flower	10	0
Dehanee	Crimson purple	5	0
Dchesta	French white	3	0
Desdemona	Fine pink, large and full	2	6
Elegans	Delicate blush	5	0
Enchantress	Beautiful deep pink	7	6
Formosa	Claret	2	6
Fulgens	Dark shining crimson	2	6
Magnum Bonum	Dark maroon	7	6
Model of Perfection	White, with chocolate ground	5	0
Mount Etna	Fiery crimson	7	6
Mulberry Superb	Dark claret	5	0
Napoleon	Red and buff	1	0
Nigra Superb	The best black		
Obscura	Grey purple	5	0
Purpurea Elegans	Light purple	1	6
Queen of Roses	Large rose	2	6
Queen	Beautiful light blush	5	0
Rosea Alba	Rose and white	2	6
Rosea Grandiflora	Fine pink	5	0
Rosea Superba	Deep pink	2	0
Scarlet Globe	Fine crimson	2	6
Sulphurea Perfecta	Fine sulphur	2	6
Sulphurea Palmata	Light yellow	3	6
Susanna	Fine cream colour	5	0
William Tell	Dark lilac	5	0

When the selection is left to R. B. B.
Superior sorts ..... at 30s. per dozen.
Good double flowers ..... at 12s. "
Common border flowers ..... at 6s. "

NOTICES OF THE PRESS.

Ipswich Show.—"The Hollyhocks from Hedenham Rosery were extremely fine, of beautiful and rare tints, and particularly attracted the attention of the judges."—*Suffolk Chronicle*, Sept. 8.

York Show.—"A noble tray of Hollyhock spikes were highly recommended by the judges for their superior merit, and had a special prize awarded them."—*Yorkshire Gazette*, Aug. 18.

"Some splendid Hollyhocks were exhibited by Mr. Bircham, which had an extra prize for their superior excellence."—*York Herald*, Aug. 18.

"We cannot omit particular mention of a tray of beautiful Hollyhocks, from Hedenham Rosary, Norfolk. These flowers were far superior to anything of the kind ever before seen in this city."—*The Yorkshireman*.

Leamington Show.—"A new genera of Hollyhocks from Hedenham Rosary, Norfolk, excited universal admiration, as far exceeding any specimens of this flower hitherto exhibited."—*Leamington Chronicle*.

MYATT'S NEW STRAWBERRY, "ELEANOR."

J. MYATT AND SONS are prepared to send out plants of this and the following varieties at the prices annexed: Myatt's Eleanor, 10s. 6d; Fertilised Hautbois, 10s. 6d.; British Queen, 3s. 6d.; Globe, 3s. 6d.; Mammoth, 3s. 6d.; Hooper's Seedling, 3s. 6d.; Keens' Seedling, 3s. 6d.; Pelvelain's Comte de Paris, 7s. 6d.; Princess Royal, 7s. 6d.; Outhill's Black Prince, 15s per 100.

Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford, Kent.—Oct. 27.

AMERICAN PLANTS.

HOSEA WATERER begs to announce he has just published a New and Complete Catalogue of his AMERICAN and CONIFEROUS PLANTS, which may be had on application, inclosing two stamps for postage to

HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

BENJAMIN R. CANT, St. John's-street Nursery, Colchester, has now ready for delivery, strong well-established plants of the following:

GERANIUM, HOYLE'S CRUSADER	..	... 7s. 6d each.
,, TOPPING'S BRILLIANT ...		... 7s 6d. ,,
FUCHSIA SPECTABILIS	.. ..	.. 7s. 6d. ,,

The Three for 18s., carriage and package free to London. Post-office orders, or reference, requested from unknown correspondents. The usual discount to the trade.

PELARGONIUM "FOQUETT'S MAGNIFICENT."

Strong plants, well established, in 4-inch pots, now ready, price 2l. 2s. each; and as more stock has been realised than was anticipated, four plants will be given for every three ordered by the Trade. Direct to Major WILLIAM FOQUETT, Shide House, near Newport, Isle of Wight.

CHOICE FLOWER ROOTS.

BASS AND BROWN'S Descriptive Priced Catalogue of the above, embracing their Superb Collections of SEEDLING RANUNCULUS, GLADIOLUS, EARLY TULIPS, IRIS, IMPORTED DUTCH HYACINTHS, and other roots, may be had on application. The following selections are offered

	£	s.	d.
RANUNCULUS, free by post, with instructions for planting.			
100 roots, in 50 splendid new varieties	£3	10	0
50 ,, in ditto ditto	2	0	0
100 ,, in 50 fine varieties	1	8	0
50 ,, in ditto ditto	0	15	0
HYACINTHS, imported with instructions for pots, glasses, &c.			
12 fine vars., 6s. and 9s. 24 fine ditto	0	15	0
12 splendid, 15s. 24 splendid ditto	1	5	0
EARLY TULIPS, 20 fine named varieties	0	8	0
12 ditto, 5s., 20 ditto, 3 roots of each	1	1	0
DOUBLE TULIPS, 10 vars., named	0	4	6
10 ditto, 3 of each	0	12	0
IRIS, 12 splendid named English, 6s. 24 ditto	0	10	6
Fine mixed ditto, per doz., 2s. per 100	0	15	0
12 Salter's superb German varieties	0	9	0
Ditto ditto mixed, per doz.	0	5	0
CROCUS, 300 roots in 25 fine named varieties	0	12	6
200 ditto, ditto, 9s. 100 ditto	0	5	0
ANEMONES, 12 fine named dbl. vars., 3s. 6d., post free	0	4	3
Best mixed double, per doz., 2s., fine mixed, per doz.	0	1	3
Fine single, per lb.	0	4	0
GLADIOLUS, 12 splendid named early varieties	0	10	6
Ditto, post free	0	11	6
12 fine selected early hybrids, 6s. post free	0	6	9
Fine mixed ditto, per dozen, 3s. 6d. do.	0	4	3
Gandavensis, 7s. 6d. per doz.; splendens, each	0	3	6
TRITONEA AUREA, beautiful new Cape bulb, each	0	7	6

Also collections of Narcissus, Jonquils, Liliums, late and Parrot Tulips, and a great variety of other roots.

NEW CHRYSANTHEMUMS.

	£	s.	d.
12 fine varieties of last season, large and well got with bloom	0	15	0
40 new and select varieties for	1	10	0
12 fine vars. for 9s. 24 ditto	0	15	0

Our Catalogue also comprises lists of Select Roses, Hardy Evergreen and Flowering Shrubs and Climbing plants, and an extensive collection of Hardy Herbaceous and Alpine plants, including new Phlox, Antirrhinums, &c.

Goods carriage free to London, and with all orders amounting to 40s. extra plants will be added gratis.

Remittances requested from unknown correspondents. Post-office orders to be made payable to BASS and BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

PLANTING SEASON.

ALFRED BALSTON begs to inform planters he has still a large proportion of his Nursery Stock to dispose of, which, in consequence of having relinquished the trade, he offers at very reduced prices. The Stock comprises every variety of ORNAMENTAL, FRUIT, and FOREST TREES, and all the best kinds of SHRUBS in cultivation, no expence having been spared in the collection, and from the light nature of the soil in which it has grown, the plants have all a mass of fibrous root, which causes them to grow most luxuriously after being transplanted.

A. B. particularly recommends the following common Laurel, 9 inches to 1 foot, 15s; 1 to 2 feet, 30s.; 2 to 4 feet, 40s; 4 to 6 feet, 80s. per 1000. Portugal Laurels, 1 to 2 feet, 10s. per 100. Rhododendron ponticum, 1 to 2 feet, 30s.; 3 to 4 feet, 60s.; 4 to 5 feet, 100s. per 100. Ghent Azaleas of all the finest kinds, specimen plants, 2s 6d. each; smaller ditto, 6s. per dozen. Rhododendron campanulata, caucasicum, catawbiensis, &c., 100s. per 100. Standard Roses of all the finest sorts, 12s. per dozen. A large stock of Evergreen Oak in pots and transplanted; also common Oak, Elm, Beech, Birch, Berberis, Hornbeam, Privet, &c.

Orders must be accompanied by remittances. Orders amounting to 5l. delivered free.—Poole Nursery, Dorset.

VIOLA ARBOREA—the PERPETUAL TREE VIOLET (TRUE).—In answer to the numerous inquiries for the above, and the great satisfaction given by the plants sent out last season by EDWARD TILLEY, he begs to state that he has this year a fine stock of the above beautiful double Violet now to dispose of, which he can highly recommend, this being the proper time for making beds or potting. They are beautifully scented, the blooms are as large as the double blue Hepatica, they bloom freely from August till the end of May, and are perfectly hardy. Twelve of these plants grown in pots will scent a large greenhouse; and a small bed, 9 feet long by 3 feet wide, will be sufficient to furnish a family with bouquets the whole of the winter and the spring. They should be planted in rather a dry situation, and in loose soil, as the Violet will thrive and bloom finer there than in wet or clayey borders.

E. T. has been informed by the gentleman that introduced it into this country, that he has seen them growing in the thickets of Persia to the height of 4 feet, with large bushy heads, and hundreds of blooms on them at the same time. Large bushy plants, 6s. per dozen; smaller do., 3s. per dozen, or 1l. per 100.

E. T. has this year a fine stock of plants of the VIOLA ARBOREA ALBA, or Double White Tree Violet, which can be highly recommended. Plants 1s. 6d each.—Also plants of that splendid YELLOW VIOLET, which has been so much admired at the London exhibitions; in colour it is equal to the Crocus. Strong plants 2s. 6d. each, or a plant of each of the two latter varieties ordered with either dozen of the above will be included for 3s. the two plants. A remittance must accompany the order, either in cash or in penny postage stamps to the amount. The whole, or any part of the above, will be sent postage and package free.—Sold by EDWARD TILLEY, Nurseryman, Seedsman, and Florist, 16, Pulteney Bridge, Bath.

JOSEPH BAUMANN, NURSERYMAN, Ghent, Belgium, begs to inform his friends and the public in general, that his New CATALOGUE of PLANTS is just published, and may be had gratis, or will be sent post-free on application to Mr. JOHN BETHAM, Custom House and Shipping Agent, Cox and Hammond's Quays, Lower Thames-street, London.

ROSE CATALOGUE.—NEW EDITION FOR 1849-50.
NURSERIES, CHESHUNT, HERTS.

ADAM PAUL AND SON beg to inform their friends and the public in general, that their new ROSE CATALOGUE may now be had, gratis, on enclosing two stamps for postage. The prices are low as possible, and they ensure the supply of well-cultivated plants.

Notices of previous Editions by the Horticultural Press.

"Messrs. Paul and Son's descriptive Catalogue of Roses is before us, and deserves to be made known."—*Gardeners' Chron.*

"Messrs. Paul's is a very nicely-arranged Catalogue, containing the fullest description of any we have seen."—United Gardeners and Land-Stewards' Journal.

"Paul's Catalogue of Roses is remarkable alike for the great variety it comprises and the low prices at which they may be purchased."—Gardeners' Gazette.

"Mr. Paul is the most successful Rose grower in England."—Journal of Agriculture.

MYATT'S LINNÆUS RHUBARB.

J. MYATT AND SONS can confidently recommend this variety as the best in cultivation. The most satisfactory proof of this assertion is the fact that the Market Gardeners round London and Manchester have planted the Linnæus Rhubarb more extensively than any other variety. It is extraordinarily productive, and about a fortnight earlier than the Victoria; added to this, it is held in general esteem for preserving and all culinary purposes. One-year planted roots, 1s. 6d.; ditto, Mitchell's Royal Albert, 1s. 6d.; Victoria, 9d. The usual Trade allowance.—Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford, Oct. 27.

HALF-BRED JUNGLE FOWL.—Several young Cocks bred from English Game Pullets, with Gallus Sonneratii and Gallus æneus, may be obtained at the Gardens of the Zoological Society, Regent's-park. For particulars and price, apply to the Superintendent.

RHODODENDRONS AND AMERICAN PLANTS.—The Advertiser having an extensive tract of Heath Land adapted for their growth, has always on hand an unlimited supply of the various sizes, and at the low scale of prices quoted, delivered in London; if ordered in quantity, free of expense of carriage.

RHODODENDRON ponticum, 1 to 2 inches, 2 to 4 ,, 4 to 6 ,, } bedded, strong and well rooted. { 20s. per 1000, 40s. ,, 80s. ,,

,, ,, 1 foot (single stems, fit for working), 10s. per 100.

,, ,, 1½ foot, 20s. per 100; 2 feet, 40s. per 100; fit for planting out at once for cover.

,, hybrid, fine large flowers, 4 to 6 feet, 30s. to 40s. per dozen.

,, ,, 4 to 6 feet, standard, single stems, fit for grafting or working the fine scarlet and other semi-hardy species. "Tree Rhododendrons" may thus become as generally cultivated as "Tree Roses."

RHODODENDRON ponticum, white, 18s per dozen.

,, ,, roseum, 2 feet, 40s. per 100.

,, ,, ,, large plants, 3 to 4 feet, 50s. per 100.

,, scarlet (3 or 4 varieties), 1 to 2 feet, 18s. per dozen, on own roots.

,, arboreum album, 2 feet, 24s. per dozen.

,, new silver striped, 2 feet, 18s. per dozen.

,, hybridised with arboreum and catawbiense, producing large handsome trusses of flowers of various hues, from scarlet to blush, lilac, and white, 4 to 6 inches, 25s. per 100, 1 foot, 40s. per 100.

KALMIA latifolia, 2 to 4 inches, 12s 6d per 100,
,, ,, 6 to 9 ,, 25s. per 100.
,, ,, 1 to 2 feet, 50s. per 100 } Blooming.
,, ,, 2 to 3 ,, 12s per dozen } Blooming.

AZALEA pontica, 1 foot, 40s. per 100.
,, ,, fine large plants (blooming), 3 feet, 30s. per doz.

EPIGÆA repens, 6s. per dozen, fragrant, and forces well.

All other American Plants at equally low prices, printed Catalogues of which may be had.

Dwarf Rose Stocks, fit for working, 8s. per 100, or 2s. 6d. per dozen.

WM ROGERS, sen., Nurseryman and Contracting Planter, Red Lodge, near Southampton.

CHARLES DALY AND SON beg to inform the Trade and Public that they are determined to sell their stock of THORN QUICKS. 1-year Seedling Thorns, 1s. per 1000; ditto, fine, 1s 6d. per 1000; 3-years ditto, fine, 2s. 6d. per 1000; 1-year transplanted, 3s. per 1000, 2 years ditto, 4s. per 1000; 1-year Seedling Ash, 1s per 1000; 2-years ditto, 1s. 6d. per 1000; Common Laurel, 1 to 12 feet, 9s. per 1000, Portugal Laurel, 1½ foot, 6s. per 100; Broad-leaved Irish Ivy, 2s. 6d. per 100, Furnished Rhododendron ponticum, 25s. per 100, Irish Yews, 1 to 1½ foot, 20s. per 100; ditto, ditto, good plants, 24s. per 100; ditto, 2 to 2½ feet, 50s per 100; ditto, 3 feet, 100s per 100; ditto, 4 to 5 feet, 5s. each, Common Yew, 2 feet, 25s. per 100, Scarlet Limes, 6 to 7 feet, 8s. per 100; 1 year Evergreen Cypress, 2s. per 100; 2-years old, ditto, 3s per 100; Haws, 1s per bushel; Holly-berries, 4s. per bushel; 1-year Seedling Larch, 1s. 6d. per 1000; 2 years ditto, 3s. per 1000; 1-year Seedling Alder, 1s. 6d. per 1000; 2-years Seedling Beech, fine, 2s. 6d. per 1000; 1-year Seedling Birch, 1s 6d per 1000, 1-year Seedling Sycamore, 1s. 6d. per 1000, 2-years Seedling Scotch Fir, 1s. 6d per 1000; Evergreen Oak, good plants, 3d. each; Andromeda, of sorts, 6d each; Ledums, ditto, 6d. each; Kalmias, ditto, 6d. each; Azaleas, ditto, 6d. each; Cotoneaster microphylla, large plants, 6d. each; Erica, of sorts, hardy, 6d. each; Juniper, 2 feet, 2d. each; Evergreen Barberry, 18 inches, 2d. each; Variegated Holly, fine plants, 1s. each; Chinese Arbor-Vitæ, 6d. each; Aucuba japonica, 2 feet, 6d. each; Sweet Bay, 1d. to 2d each; 2-years transplanted Hazels, 20s. per 1000; 3-years ditto, 25s. per 1000; Forest Trees, 2 and 3-years transplanted, 10s. per 1000; fine Trained Pears, Plums, and Cherries, 2s. 6d. each; ditto Peaches, 5s. each; Cabbage Seed, Drumhead, 1s. per lb.; ditto, Early York, 1s. 6d. per lb.; Seed Potatoes, Golden Dwarfs, 1s per stone; ditto Fox's, 1s. per stone; ditto, Clusters, 1s per stone; ditto, Early Wellingtons, 1s. per stone; ditto, 40-Folds, 1s. per stone. Garden Rakes, 1d per tooth; ditto Reels, 1s. 6d. each; Shop Twine, 7d. per lb.; Garden Line, and Sash Cord, 9d. per lb.

N.B. Free to Liverpool or Glasgow. We do not pay Freight for Forest Trees, Hazels, nor Laurels. Five per cent. for cash, or the usual credit given by naming any respectable Seed Merchant in London.—Coleraine, Oct. 27.

HOT-WATER PIPES AND TROUGH PIPES, with all the usual connexions.—A very large stock of Hot-water Pipes, Elbows, Tee Pieces, Syphons, Collars, Valves, &c., as usual, at J. JONES'S CAST-IRON WAREHOUSES; also Rain-water Pipes, Gutters, Sash Weights, Air Bricks, &c., Socket and Flange Pipes, Retorts, and Lamp-posts. The above and numerous other Castings at very low prices, and of excellent quality.

N.B.—Men sent (if required) to any part of the kingdom to do the work, and the Pipes and Connexions found, for a stated sum. Iron-bridge Wharf, No 6, Bankside, London, Oct 27.

DANECROFT'S RIVAL EARLY GREEN PEAS.—This superior early PEA, with a dark green glossy pod, being hardy, and of a most distinct habit to all other early Peas, as well as a superior flavour, can be had of FREDERICK WARNER, Seedsman, Wholesale and Retail, 28, Cornhill, and 8 Laurence Pountney-lane, Cannon-street, London.

WARNER'S EARLY EMPEROR PEAS.—These Peas, being large croppers and fine in flavour, well merit the attention of Podders and Farmers who are growers of early Peas; they are decidedly much earlier and better podded than the generality of early Peas. Height, about 2 feet. May be had of FREDERICK WARNER, Seedsman, Wholesale and Retail, 28, Cornhill, and 8, Laurence Pountney-lane, Cannon-street, London.

BURROUGHES'S TWO UNRIVALLED PICOTEES "LORINA" and "DUCHESS OF SUTHERLAND," being by far the best the above successful raiser has produced.

CHARLES TURNER has strong plants of the following ready for delivery.—PICOTEES.

BURROUGHES'S "DUCHESS OF SUTHERLAND," light red edge; the finest in its class, took first-class certificates at Slough, Royal South London, and Metropolitan shows, and the premier prize at Slough, as the best seedling of the day; fine grower and very constant, being quite free from bars. 10s. 6d.

BURROUGHES'S "LORINA" (light purple edge), very pure white, with a delicate margin, which does not extend the least into the white; took first-class certificates at Slough, Royal South London, and Derby, six blooms at the latter place. 10s. 6d.

LADY HARRIETT MOORE (TURNER).—Medium, at times a heavy purple edge, large fine petal, smooth and constant; took first-class certificates at Slough, Royal South London, and Derby. This variety, as well as "Lorina," and "Duchess of Sutherland," was shown in each of C. TURNER'S winning stands this season. 10s. 6d.

CARNATION.

CLARK'S "REV. J. BRAMHALL."—Purple flake, full, smooth, and finely marked. 10s. 6d.

PINKS.

COSTAR'S "LOLA MONTEZ."—Purple, petal of the finest form, large, and evenly laced; long pod; took two first prizes. See description in the "Midland Florist" for August. 5s.

TURNER'S "ATTILA."—Dark, finely-formed petal, long pod, and constant flower. 5s.

PANSIES.

TURNER'S "MRS. BECK"—White ground, dark purple top petals, lower petals margined with the same; fine bold eye, without radiating into the margin; first-rate form, and has the good quality of blooming in character throughout the summer. Took first-class certificates at the principal exhibitions and shown in all C. TURNER'S winning stands throughout the season. Figured in the "Florist" for May, 1849. 5s.

TURNER'S "VICEROY."—Gold ground, bright bronze red, margin very distinct; first-class certificate at the Royal South London Society. 5s.

NEMOPHILA MACULATA, in packets, 2s. 6d. each, or strong plants 1s. each or 9s. per dozen.—A fine collection of imported Bulbs.—Catalogues on application.

Royal Nursery, Slough.

PROVIDENCE NURSERY, RAMSGATE.

J. G. HINE (late WILLIAM MILLER), has much pleasure in offering to the public his SEEDLING PELARGONIUMS, which he strongly recommends. To form a first-rate collection, distinct, and possessing all the qualities requisite to constitute a first-class flower, these must be had, on account of their distinct, clear, and brilliant colours.

NEW SEEDLING PELARGONIUMS,

For the Autumn of 1849, and Spring of 1850.

*ATTRACTION.—Large bold dark crimson-scarlet flower, with white centre; free flowering variety, of fine habit. Price 15s.

SUNSET.—Fine rich scarlet, with broad under petals, very fine form, rather weak habit, a great improvement on Scarlet Defiance. Price 10s 6d.

ROSA ALBA.—This variety is very attractive; lower petals rose, with large white centre; upper petals, dark rose, with fine dark spot. Price 15s.

KENTISH BEAUTY.—Pale pink, of very fine form, and free bloomer. Price 15s.

AURORA'S FLAG.—This flower is of extra size, novel and attractive colours, very bright. This flower is much after the style of Aurora. Price 21s.

BEAUTY OF THANET.—Lower petals, delicate pink; upper petals black, of fine form. Price 10s. 6d.

*EXACTUM.—Pure white lower petals; upper petals crimson purple, with a fine margin of white. This flower is a perfect model, and was admired by all who saw it. Price 21s.

*MAJESTICA.—Superb dark purple flower, very round, equal to the best blooms of Distinctus, very true and free bloomer, of fine dwarf habit. Price 15s.

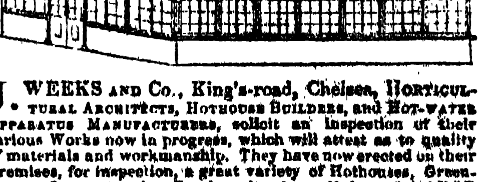
The set of eight for 5l. 5s. Usual allowance to the trade.

Those marked thus * have obtained first class certificates.

Cash to accompany all orders from unknown correspondents. Post-office orders to be made payable to JOHN HINE, Providence Nursery, Ramsgate, Kent.

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15l. 10s.; a do. do. 15 by 10, 22l. 10s.; a do. do. 18 by 12, 28l 10s.; a do. do. 21 by 12, 32l. 10s., including a plan for brickwork. 1½-inch Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 11½d. per foot; 2-inch do., 1s. per foot.—J. LEWIS'S Machine Hothouse Works, Stamford-hill, Middlesex.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, FERNS, &c.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. They have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. By means of these houses, they are enabled to grow Stove, Greenhouse, Ferns, and other Plants, in such immense numbers, that they are sold at LESS THAN HALF-PRICE. Mats, Mushroom Spawn, and everything connected with the Nursery and Seed departments; Plans, Estimates, and Catalogues forwarded on application.

NEW GERANIUMS AT VERY LOW PRICES.

BASS AND BROWN have still fine strong plants of the following new varieties, just sent out, ready for immediate shifting into larger pots.

Princess, Beck's	...	5s. 0d	Prometheus, Hoyle's	...	5s. 0d
Sundown, do.	...	5 0	Sparkler, do.	...	5 0
Symmetry, do.	...	5 0	Mont Blanc, No. 2	...	5 0
Harlequin, do.	...	5 6	Windsor Castle, Whomes		5 0
Elegans, Topping's	...	5 0	Queen Victoria...	...	5 0
Rollo, Hoyle's	...	5 0	Princess Helena	...	3 6

Or the 12 varieties for 2l. 2s.

90 other first-rate sorts of our own selection ... £1 5 0
12 ditto ditto ... 0 15 0

A large collection of older varieties at 6s. and 9s. per dozen. Goods free to London, and extra plants sent gratis with orders of 40s. and upwards.

Seed and Horticultural Establishment, Sudbury, Suffolk.

TULIPS, HYACINTHS, AND DUTCH BULBS.

HENRY GROOM, Clapham Rise, near London, by appointment, FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to state that he has received his usual assortment of HYACINTHS and other BULBS from HOLLAND in very fine condition. He also begs to say that his CATALOGUE OF BULBS, &c., for the Autumn, is ready, and will be forwarded by post on application.

CHOICE GERANIUMS.

J. HOLDER AND CO. beg to offer Twelve of the following varieties, strong plants, for 30s. Armida superb, Aurora, Belle of the Village, Ariel, Undine, Sylvia, Meleager, Alonso, Marian, Norah, Jenny Lind, Lalla Rookh, Phyllis, Minna; Terpsichore, Lamartine, Forget-me-not, Crusader, and Victory.—Wellington Nursery, Bedford-road, Clapham, Surrey.

P.S. A remittance or reference required from unknown correspondents.

R. LANGELIER, Clarendon Nursery, Jersey, begs to say that his DESCRIPTIVE CALALOGUE OF PEARS (with true descriptions of each sort), is now published by Messrs. PIPER, 28, Paternoster-row, London, price 1s. 6d. It will be handy for Amateurs, as descriptions are given in full, with time of maturity, as well as the stock which will suit each sort best.

INFORMATION WANTED ON CUTHILL'S PLAN OF GROWING EARLY POTATOES.

JAMES CUTHILL, FLORIST, Camberwell, London, will feel much obliged if all those Gentlemen and Gardeners who have purchased his TREATISE ON THE POTATO these last two years, will have the goodness to inform him how they have succeeded with his plan, and whether late Potatoes have been tried on the same plan, and with what success.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 27, 1849.

WE last week exemplified the effect of deep trenching and draining by the case of a little plantation of whose history we happened to have exact knowledge. To us it appeared that some considerable increase in the ground temperature could alone account for the progress the trees have made in four years. Others, however, loving conjecture better than a search after truth, indulge in the fond imagination that the growth described has been in reality owing to some peculiar virtue in the system of pruning. We can assure them that they are mistaken; no occult processes have been employed; no sylvan magic has been practised. The trees have not been pruned at all.

Many years since we had the misfortune to offend men who have much experience in woodcraft, by maintaining that the true principle of plantation management is to throw away the axe and knife, and to use no tools more formidable than the finger and thumb. PRUNE NOT AT ALL, if you can help it, was the cry we then raised; and that cry we will venture to raise once more. Of course, we did not mean to ruin Mr. BARNES, of Sheffield, by putting an end to the sale of his excellent pruning knives. No person who exercises his understanding could suppose that our words were to be interpreted literally. There is no rule without exceptions; and the knife may no doubt be occasionally required to aid the finger and thumb; but such cases are rare. The maxim of common forestors is the reverse; prune, prune, prune; chop, chop, chop; saw, saw, saw. This is their alpha and omega; and they will allow the finger and thumb no other value than that of a pair of pincers by which tools may be held firmly in the grasp.

Why must forest trees be pruned? The common reason, and the best reason, is, because they have been neglected and ruined when young. We have a right to inquire, before such a reason is discussed, why they were ruined when young. It is, moreover, a perfectly legitimate conclusion from this reply that, if they had not been neglected when young, they would not have required the assistance of the timber surgeon. We admit that when plantations have been allowed to fall into decay, pruning may sometimes have its advantages; not, however, so often as is believed. It is probable, indeed, that in many cases it would be better to root up ruined plantations than to prune them; the reason whereof the curious may see if they consult Professor HENSLOW's preparations in the museum at Kew.

But why must *young* forest trees be pruned? To make them straight; to make them grow fast; to get a clean bole, is the reply. Now we affirm, and without fear of contradiction from unprejudiced observers, that pruning is not required to produce such an effect; nay, more, that it is apt to produce the contrary effect.

When trees are young, most, except Conifers, have a tendency to form bushy heads, or many branches of equal strength; and, if neglected, such plants are long in forming timber, if they ever do form it: and they will seldom produce one clean straight trunk. When an Oak is in that state the pruner is in his element; he brandishes his knife, and, presto, off drop all the little limbs save one which is to be the main stem hereafter. And this is what men call pruning; upon this atrocity they pride themselves. Some indeed perform such evolutions with variations. Mr. A. only cuts off the upper limbs; Mr. B. prefers the lower; while Mr. C. will be satisfied with nothing less than the whole. What they would do, if they considered well the nature of plants, would be—nothing at all, except stopping or breaking back a few laterals while in a growing state. When branches are removed much of the vigour of a tree is removed too; its power of growth is more or less impaired; and the operation defeats the object it is intended to serve. But when branches are merely stopped, no loss is incurred; all that happens is, that growth ceases in the direction of the stoppage; and the sap which would have been expended in forming the shoots whose growth is arrested is impelled into other shoots, or, more correctly, into that one which is intended for a leader. By this means the object sought is gained without the slightest loss of vital power in the patient operated on. Where minute attention can be given weekly to the progressive growth of young plantations, stoppage is best secured by merely removing with the finger and thumb the terminal bud of the growing branch. But as this is impossible in large plantations, and not very practicable anywhere, rival leaders will be found after many weeks' growth; in such cases the removal of a terminal bud will not result in the conveyance of food enough into the selected leader. It then becomes necessary to break the branches which are superfluous. We say break, not cut; nor do we say break *off*; the branch should be simply snapped across, and allowed to hang downwards from the limb, retaining its vitality as long as it can. If the operation is performed skilfully, the broken end will remain alive for several weeks. The reason of the practice is this; if a portion of a growing branch is suddenly removed, the buds below it are almost certain to break into secondary laterals, and to consume the sap intended for the leader; but if the branch is broken it slowly consumes the sap that reaches it, prevents the buds below from pushing into laterals, and thus compels all the superfluous sap to travel into the leader where it is wanted.

But it is pretended that trees will never become straight-stemmed unless they are pruned well. In reply to this dogma we humbly enquire in what way the edge of a pruning-knife sliding over the surface of a stem can straighten that stem. Pruning does nothing of the sort. We venture to say that more trees have been made incurably crooked by the pruning-knife than have ever been straightened by it. Trees will straighten of themselves if the ascending sap is forced into the centre of growth; and they will not straighten if it is directed into lateral channels. Look at the Deodar and its flaccid drooping point; no pruning is required to straighten that; pruning would keep it bent. Having naturally the principal current of sap in the main axis or centre, it straightens and stiffens as that sap consolidates into wood. So will an Oak, or an Elm, or a Sycamore, or a Lime; all that is wanted is to keep the main force of vegetation in the centre, and at the same time to keep vegetation in full activity. Pruning to a bare pole does the first, no doubt, but it destroys the last. The most crooked trees may be compelled to straighten by mere stopping, if the operation is performed when they are young. Some indeed may not be worth the trouble; but neither are such trees to be straightened by a pruning-knife.

Now that hones and whetstones are in request, and knives are getting in order for the winter's campaign against the inhabitants of the forest, it seems desirable to call attention to these considerations. In a few weeks the work of mischief will have begun. Nor let it be said, because plantations can be found in great health and beauty, in which the pruning system has been strenuously followed for half a century, that therefore pruning is beneficial. We have seen such plantations, know something of their private history, and we entertain no doubt that they would have been far more healthy and more beautiful if the same care had been bestowed upon them in the absence of the pruning-knife.

A SINGULAR paragraph which appeared a few days since, in a Maidstone Journal, deserves a few moment's attention. Whether it be founded more or less on fact, or whether it be a mere newspaper fabrication, such as frequently excite a passing stare in the papers of the United States, we know not, but as it bears upon a very obscure and important subject, that of the propagation of certain forms of MILDEW, we shall consider it so far worthy of observation, without at all vouching for the truth or even for the probability of the matter in question. The substance of the paragraph may be stated thus: It is the practice of the American planters, when their Hops are very mouldy, to leave the bines unpicked. The dry searching winds of November, it is asserted, when the mould has become perfectly ripe, cause it to drop off, so that not an atom is left upon the plant. The haulm is then cut off, and as the particles from which the mould originates circulate with the juices of the bine, every possibility of the reproduction of the mould in the ensuing season is prevented; it is quite certain, therefore, that there will be no mould the following year, and most likely none for the next six or seven years; but when the bine is cut while it has its sap still flowing, a portion of the reproductive corpuscles still remain in the plant, and will be sure to propagate it during the following year, and as mouldy Hops are now of little or no value in this country the writer considers this information most essential to the British Hop grower. Such is the real meaning of the paragraph, though it is worded somewhat obscurely. The logic of its argument is not indeed very clear, for if the juices of the stem be infected, we see no reason why those of the root should be free.

The truth, however, seems to be, with this and several other noxious parasites, that it is propagated in the first instance from within. When they are once established, we have evidence to show that they will spread from the spores previously perfected; but still on their first appearance, it is through the stomates that they first make their way from the subjacent tissue into the surrounding atmosphere. How they are propagated within, whether by particles circulating in the intercellular cavities, or by a subtle mycelium penetrating between the walls of the cells, we know not. Certain it is, at least, that the spores are in almost every case, if not universally, larger than the passages they are generally supposed to traverse, or frequently than the cells themselves. It is then possible, at least, that when the mould is suffered to run its course the whole powers of the mycelium, however generated or propagated, may be exhausted, and the portion of the mother plant beneath the soil left free from taint, whereas when the bine is cut off while propagation is still active, the juices of the parts beneath are still in a condition to propagate it on the first favourable opportunity. On some such consideration we conceive it just possible that there may be a foundation for the report.

ADVICE TO GARDENERS AND THEIR MASTERS.

I SENT you formerly some few observations on gardeners and their masters. I had hoped that the subject would have been taken up in the spirit in which it was commenced; but I collected from your notes and answers to some apparently angry correspondents, that in some degree the object was misunderstood and not likely to be discussed fairly. I now send you a few hints to gardeners and their masters, in the same spirit as the first observations were written in. I shall continue them from time, to time if you think they are likely to do good service. Most likely some of the hints may show that I ought rather to be a learner than a teacher, but this will do no harm; either you as a vigilant editor or some of your correspondents will easily set me right.

As some great man said that the three necessary things in oratory was action, action, action, so I say drain, drain, drain, and drain deep. If you do not know the reason and will not learn, take it upon trust, as we all do a great many things, as you will see if you like to read Mr. Cornwall Lewis's book on the influence of opinion. Make your drains sound and firm; take care to have a good system of drainage, and let them run straight with one main drain across to carry off the water well away from the ground. If you do not know the best way, learn, read. Mind a shallow drain is of no use. If your master will not go to the expense, the sooner you live with one who will, the better for your credit. If you have any doubt about the necessity of draining, dig a few holes about 3 or 4 feet deep in different parts of the garden, and leave them open; if the water stands in them you may be sure that draining is wanted, because the roots of your trees and crops are standing in water.

It is of very little use to trench deep if you do not drain deep; but if you have a well-drained ground, trench deep at least once in three years.

Next to trenching is digging and hoeing between your crops, and therefore always, when you can, plant in drills. There are many gardeners that do not hoe their crops and stir the ground round the growing crops so much as a good farmer does to his field crop; in fact, as regards many crops, Turnips, Peas, Beans, Cabbage, &c., these are better grown by good farmers than by middling gardeners. The baked soil round the roots cracks and lets in the air in dry weather to the roots, and when the rain comes, it sheds off without entering the soil, and only hardens the crust, to make it more so

during the next drought. If you have not a deep soil, take every opportunity of getting in soil from scourings of ditches, old banks, turf, if you have a common near, &c., and raise these up in slanting beds to the south; this is the best substitute for a deep soil, and ensures good drainage, &c. There are other reasons than what are stated; if you will not learn, then you must, as above stated, take this also upon trust; but a few evenings' reading of Lindley's "Theory of Horticulture," or some such book (if there be any half so good, which I doubt), will tell you the reason of this and of a number of other things. Whilst on this subject of reading take in the *Gardeners' Chronicle* and the "Cottage Gardener," or persuade your master to do so, and if he will not, and you are too poor, join with some of your neighbours.

Do not believe all you read, but give it consideration; try such of the things suggested, about which you are ignorant, but do this with discretion; do not turn your master's garden into an experiment hospital, and do not turn your own head with the notion that you are to be a great horticulturist in half a year. However, read all that Mr. Errington writes about kitchen gardening and fruit trees, and indeed about anything else.

If your fruit trees on the walls do not look healthy, look to the roots and look to the draining; do not begin by cramming the borders with dead dogs and horses, &c. If you have any doubt, even if the trees are old, take them up after the wood is ripened; if you should be so lucky as to get it to ripen in an undrained border, or where the roots are driven down deep in the soil, try careful digging over the fruit border at least once a year for early crops of Peas, salad, French Beans, &c. Having well drained your border, make a platform of brick rubbish of some 2 yards wide, and at least 6 feet distance from the wall, or pave or slate the bottom; then have a good layer of loam or turf, never mind its not being rotten, and in this plant your trees high, not deep down in the soil; mulch in the spring and water once or twice during the summer; do not, however, mulch too deep, if you do you will prevent the heat and air getting to the soil. Put no crop in the border whatever. Never mind any difference of opinion on this point, not even the being shown (as I have been) a good crop of wall fruit, with a crop of Peas or Cauliflowers in the border.

I do not recommend you as soon as you get to a place to begin a radical reform, very often the case with gardeners going to a new place; neither should you propose discarding this sort of Apple or Pear, suggest a new mode of treating the Vines, upsetting this border and remaking the other. But if you go to a garden where it is nearly filled with old Apple and Pear trees, Filberts, Plums, &c., move what you can, and, as soon as you are able, outside the garden, and get your master's leave to cut down the rest. A few root-pruned Pears, or conically trained Apples and Plums, do little harm, and are handsome in the kitchen garden, and are amusing to those who frequent it, which should (unless it is quite away from the house, and forms no part of the establishment seen by visitors), have some of the borders devoted to old spring and autumn flowers, Narcissus, white Lilies, Lavender, &c. On going to a new place, as I have said, do not begin a radical reform; but yet where there are absolute evils, state them fairly, with your reasons, to your employer—do not immediately want more glass, more hands, more pots, &c. See what the establishment is—what is expected of you—what the assistance allowed, and the expense devoted to the garden, and arrange this as well as you can. This is what Sir C. Wood, the Chancellor of the Exchequer, does with the nation's money. If you find more is expected of you than the ground or the staff will furnish, say so at once. Do not undertake too much, it will only lead to dissatisfaction. If your master or the cook will have forced vegetables, and a dish of Spinach and a Cucumber for every day in the year, duto a good salad, it will be very easy to do this with plenty of glass, plenty of dung or other artificial heat, and plenty of labour, but do not undertake or profess impossibilities. If your master is ignorant or indifferent, why you must make the best of it; if he says he does not care about the garden, all he wants is "to have plenty of everything, and no complaints from the cook," you must honestly show him what you can give him for his money. Now, old Dickson, the seedsman, used to recommend all young gardeners to *sow thick and keep friends with the cook*. I would not sow thick in order to increase the seedsman's bill, nor would I curry favour with the cook, though I would, as far as human frailty will admit, keep good friends with every one. But as regards the cook, unless the establishment be small, I would send in every day a bill of the vegetables and fruit ready, in my own defence, and there is nothing so likely to interest your employer in the garden as this.

To save trouble, a printed list might be prepared and copies for two years struck off for 5*s*. In any but a very large establishment, one list might serve for a week. *Dodman.*

BELLADONNA LILY.

This showy and truly splendid bulb has, I fear, not been treated with that attention which its merits as a late autumn flowering bulb deserve. It is true that we may here and there see a few imported plants of it in flower in pots, decorating the greenhouse or conservatory at this season; but they afford but a poor idea of the gorgeous flowers which this Lily produces when cultivated out of doors.

About 12 years ago I had a number of imported bulbs, and after they had blossomed in pots, they were planted out close to the front wall of a greenhouse, but they had no more protection there than they would have had at the bottom of any south wall. The holes in which they were planted were about 18 inches deep, and wide in proportion, 4 feet apart, and filled up with good sandy loam. In these holes four bulbs were planted, 4 inches deep; they were then covered with 10 inches of leaf-mould in a conical form; they remained in this condition during the winter. As spring advanced, I stirred and removed a portion of the leaf-mould, in order that the heat from the rays of the sun might penetrate to invigorate the languid and blanched foliage, which at that season makes an effort to reach the genial air. This should be done until the bulbs are within 4 or 5 inches of the surface. If the weather is dry and warm let them have some good waterings, with a view to encourage a rapid and strong growth of the foliage. Care should be taken that no plants of tall growth be planted in front of them to shade their foliage from the full effect of the meridian sun, nor a leaf removed until the ripening process has been fully accomplished, which, in favourable seasons, will be about the beginning of August. It was not until the third year after planting that these bulbs flowered with me. They are impatient of removal, and therefore the greatest care should be taken when offsets are removed not to interfere with the general mass of bulbs. When once established they produce offsets freely and flower abundantly, so much so that I have now, Oct. 10, masses of them in full bloom, containing from 12 to 18 flowering stems, with from 8 to 12 blooms in each umbel.

About the first week in September let the ground be stirred deeply around the bulbs without interfering with their roots, and thoroughly watered with dilute manure water once or twice. This will induce torpidity, and accelerate the protrusion of the flowering stems. One objection may be made against these Lilies, and that is, that they are without foliage during their blooming period; but this may be greatly obviated by planting them in alternate patches with the Jacobæa Lily, which flowers splendidly at Midsummer, and whose fine green foliage will be in perfection during the flowering season of the Belladonna Lily. *Tussell.*

DISEASES OF PLANTS.

(*Continued from p.* 660)

Genus XIX. Leprosy.—This name has been variously applied to different maladies by those who have occupied themselves with vegetable pathology. It appears to me best defined to be a softness which supervenes on the bark or epidermis of trees, herbs, or leaves, which facilitates the vegetation of Cryptogamic plants on their surface. I candidly confess that I have not been enabled to make any series of observations absolutely convincing, but as far as I have seen in the examination of the bark of trees, both clean and covered with Cryptogamic plants, I have always found it in the latter case more voluminous and of a softer consistence. This has determined me to establish the present genus of malady, of which the symptom is indicative of the different degrees or species was not in the nature of the plants which occupy the surface. It is certain that leprous plants are for the most part old, in low situations, and more loaded with Cryptogamic plants on the side most exposed to winds. Poor soils have more leprous trees than others.

Whoever has observed the outer bark of old trees, may have seen that what it exhibits to the observer's eye is no longer the epidermis, but the union of the several epidermises which have conglomerated in the course of a number of years, and formed a head of crust full of fissures. Through these fissures the water penetrates. It causes the crust, which is a dead substance, gradually to decompose, and thus to prepare, in the ingredients which detach themselves, a nutriment for the minute plants which may fasten upon it. In the meantime the real epidermis cannot but suffer from this external accumulation of humidity, and the strata of which it consists, acquire, as it has seemed to me, an increased volume.

First species. Moss-Leprosy. — A quantity of mosses cover the trunks of the trees. None are seen upon herbs. In proportion as the situation is closer, and the free action of light and air is less felt, the trees are more closely covered; more especially in the thickest portions of old forests. Detached trees also bear many in moist situations.

Second species. Lichen-Leprosy. — This is the most common. It may be said that there is not a tree without it, unless some precaution has been taken to prevent the vegetation of these little plants. Our peasants call it scab (rogna). It abounds not only on aged individuals, but also on the vigorous and as yet young trees. I may well assert that this disease is universal, especially in those countries which are not properly drained. In avenues of trees, those which have not grown in proportion to their age are more covered than the others. These are the most difficult to cure, as it is almost impossible to restore to them an active vegetation, which shall cause the bark to resume its former vigour.

The remedy for this species of leprosy is as well known as it is certain. It suffices to scrape it off every year. The operation is indeed long and tedious, but it must be recollected the neglect of it will soon have a pernicious effect on all trees which, from their natural constitution, or from the quality of the soil, are prevented by these little plants from duly performing their respiratory functions, or are checked by them in their growth. Scraping or rubbing the trees, or in some cases washing them, will be found very useful. It will be best done with a coarse canvas, or with an iron rasp, if the trees be full grown, with a rough bark.

I think it essential to commence the operation when the trees are still young. The waiting too long is wasting the remedy. The young trees must be carefully observed. They must be washed with cold water, and, if very young, rubbed with a bunch of tow; if older, with a horse-hair scrubber; or, finally, if necessary, with an iron rasp. Let no one be alarmed at the tediousness of the process, two-thirds of it will be saved if my advice be followed and the rubbing commenced the second year after planting. And I would here give a hint, which I trust may be useful: When a purchaser is selecting his trees, let him be careful to avoid such as are attacked by lichens. Young individuals once attacked get rid of them with great difficulty. Of this fact I can give the most positive assurance.

The beginning of spring and from that time to the beginning of summer are the best seasons for these frictions, as at that season the lichens are more easily detached. One man tried an experiment on a young Beech, washing it first with water and then scrubbing it with a brush from the ground to the commencement of the branches, two or three times a week as long as the season was dry. He diminished the frictions as the autumn rains came on. In the course of nine months the tree thus treated had not only become quite free from all leprosy, but had increased a full inch in diameter, a growth far beyond that of any similar trees around. Let no one be afraid of any injury to the plant by any excoriations caused by the operation, unless they are numerous and deep they are of no account. They soon heal and the tree is more vigorous than ever.

Third Species. Fungus-Leprosy. — Those plants which breed fungi on their trunks generally show symptoms of other diseases, and particularly of old age. There is then no remedy but to renew them. It is in fact only on very old trees that are found the Boletus igniarius (which supplies the amadou or foreign tinder), and all those Agarics which have a woody consistence like the bark of the Cork tree. The only way in which the trees so affected can be sometimes cured is by cutting out these fungi, and cleaning them down to the healthy epidermis.

Fourth species. Mixed Leprosy.—The leaves of vegetables are sometimes covered with Cryptogamic plants, which belong to the tribes of *byssi*, of *moulds* &c., that is to say, to the classes of Algæ and Fungi. One year when the summer was very wet, this disease was very generally spread, the Vine-leaves were covered underneath with an Æcidium, as indeed most herbaceous plants had one or another Cryptogamic plant on the backs of their leaves. One kind of mould is known to form on the underside of the leaves of corn, or even at the bottom of the ear after a rain of several days. Hales observed one on the Hop. Hyacinths are much subject to mould, and they have supplied me with data in confirmation of my general definition of leprosy. The exterior scales of the bulb increase in thickness, and soften previously to the appearance of the mould.

The above species of leprosy might, strictly speaking, be considered as varieties, but according to the plan laid down in my preliminary discourse, I have preferred separating diseases as much as possible, in order to excite the more attention in their investigation. Everything that contributes to the wholesomeness of the soil will tend to keep off leprosies. But when the moisture of the atmosphere promotes the growth of the evil, it cannot be entirely avoided.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(*Continued from p.* 661.)

Section D, Natural History.—The greater part of Sept. 17 was devoted to the reading of botanical papers. — R. Austen, Esq., of Chilworth Manor, read a paper, *On a Series of Morphological changes observed in Trifolium repens.*—In a paper by Dr. Lankester read before the Natural History Section of this Association last year, he referred to instances he had recently observed of proliferous Clover. In consequence of some remarks which fell from the several gentlemen named in that paper, at the time the specimens were observed, my attention was drawn to the subject; the results I here offer, in the shape of a few notes, to explain the drawings. To such as seek for illustrations of this branch of botanical inquiry, instances will rapidly accumulate from a large list of plants. Some genera, however, seem to present such changes more readily than others; and, again, in some species of a genus they will be frequent, in others, rarely, if ever, occur. Morphological changes are very common in Trifolium repens, occasional in Tr. pratense, but in this species they seldom extend beyond the calyx, whilst in Tr. incarnatum I have never yet detected an instance, though I have cultivated it for some years.—Mr. C. C. Babington, in his Manual, after the description of Tr. repens, observes, "that in damp seasons the pod is often protruded in the form of a horn, or changed into a small leaf;" this is an exact description of an appearance which the flower-heads frequently present, but the formations of pod or leaf seem to be exhibitions of contrary tendencies;—in the one the plant hastens to accomplish its end, in the other it breaks away, and reverts to the production of leaves. About the end of May in this year the flowerets consisted of a calyx of the usual size, the petals and stamens were rudimentary,

and the plant, as if passing over two stages of its flower-structure, proceeded directly to the production of a pod. These pods contained ovule-like bodies, and were very much larger than the ordinary seed-pods of the plant. About the beginning of June, the Clover heads with enlarged pods had a very different appearance; one of the white petals was to be seen protruding beyond the calyx, and partly enclosing the pod; this petal was always the vexillum, the remaining parts of the flower being suppressed, as before. As the season advanced it was then principally that the substitution of leaves for flower-organs was to be observed. From this it would seem, that according as the conditions at any particular moment may be favourable to vigorous growth, or otherwise, the plant advances to the production of floral organs, or reverts to leaves; and as the formation of the several parts of the flower follow in succession, from the calyx upwards to the part of the flower exhibiting the change, will be higher according as the plant's flowering-season has advanced. The changes observed were as follows: 1. Calyx: the calyx-teeth often rise into single leaves, but when compound leaves are formed, the division seems to be as follows; the two large equal teeth, which are opposite the vexillum, form one ternate leaf; and another leaf is formed from the three remaining teeth. 2. Corolla: The part which here most frequently reverts to a leaf is the vexillum, and this a perfect one. Of these leaflets, the alæ are often seen forming simple leaves, as also the carina, but their perfect union into a ternate leaf is less common. 3. Stamens: Whatever changes the flower may exhibit, these organs are always in a state to be recognised, and their reversion to leaves less frequent than any other portion, so that there is more difficulty in determining the number of leaves which go to form this portion. As two ternate leaves form the calyx and corolla, it might be supposed that the stamens were constructed out of the same number. Cases represented a stamen reverting to a leaf, with a true stamen attached to its stalk on either side. The single anterior stamen, when it reverts, seems always disposed to form more than a simple leaf, and it is therefore probable that the 10 stamens (9+1) may be formed out of four sets of ternate leaves. 4. From the well-known character of the pod and pistil in Leguminosæ, it might be expected that instances of reversion to leaf would be most frequent in this part of the flower; and a series might easily have been produced which would have represented it in every stage of passage. (Some of these were here exhibited.) From these it is clear that the pod is not formed of a whole compound leaf, as either two scales, or two abortive leaves, are constantly to be seen at the base of the imperfect pod on either side; the pod is therefore usually formed out of the middle leaflet. In one flower head, however, each division of the pistil leaf had become a pod, with a distinct stem and the ovules inwards. Ovules seem to be produced only when junction of the edges of the pistil leaf takes place; in other cases leaflets are produced in the place of ovules. In cases where every other part of the floral series has been regularly developed, the pistil occasionally will take the form of a perfect ternate leaf, and then the axis of the plant is continued through the flower. Some of these changes have been already noticed and described, but one complete series extending from the calyx through every part of the flower has not, that I am aware, been recorded as to this, or indeed any other plant. With respect to the leaves of Trifolium repens, it is stated by M. Moquin Tandon that they occasionally take additional leaflets, and quotes instances of four, five, and seven. In Link's Report on Botany (Ray Society, p. 100, translation) Mr. Walpers is quoted for a notice of a "monstrous seven-leaved leaf of this species," who considers the three leaves as well as the simple leaves as shortened pinnated leaves. From the very common occurrence of three simple leaves in the place of the compound one, from the instance already noticed of the termination of the axis in three opposite pistils, as well as from the structure of the base of the stalk of the ordinary leaves, it would seem rather that they consisted of unions of eight simple ones. Though directed to look for instances of pinnated leaves by these notices of MM. Moquin Tandon and Walpers, I was not able to meet with any.—Mr. HENFREY remarked that this paper was interesting, inasmuch as it furnished an instance of all the floral envelopes being converted into leaves. The conversion of the legume into a leaf was opposed to Schleiden's view that this fruit originated in a stem pistil. In this case the stamens would appear to have been formed from the leaflets upon the plan of *dedoublement*.

VILLA AND SUBURBAN GARDENING.

To increase the fertility of the soil, and to destroy the swarms of insects which injure the various crops that have been anxiously looked for as the reward of careful supervision, is a very important matter, and, at the same time, easy of attainment. We often find the villa kitchen garden, when denuded of the autumnal crops, left unheeded and neglected during winter, the soil itself being a hard unbroken and impenetrable body, with insects and their eggs sealed up against all approach of frost, yet such ground under this treatment is expected to produce an equal return with other and similar soil which has had the best means employed which industry and skill could devise to improve and restore its latent powers of production. The great benefit which all soil derives by exposure to the action of frost, is obvious to every one, however superficially he may have looked at the subject. Frost sets loose the cohesive particles, which otherwise bind up in clods the nutritious matter, so that no root can get at it, and no air reach it. Ground also left thus unheeded holds within itself the eggs of insects which often prove destructive to all that grows upon it. These insects, or their larvæ, are thus carefully kept from frost until the season of warmth arrives, when the heedless cultivator alone thinks of digging his garden and planting it. When increased temperature arrives, he sets to work and exposes the fatal pests, which increase with fearful rapidity, and often spoil his crops.

If it is of importance to keep the soil in a loose and friable condition during the growing season, it is most assuredly not less essential during the period of repose. Deep trenching and deep digging are important matters in securing productiveness. All ground unoccupied with crops should be thrown into deep narrow ridges as roughly as possible. A dressing of hot lime previously applied will do good service, and a sprinkling of salt two or three times during winter will also improve it, as well as assist in extirpating insects. Ground so treated may be said to be half manured; indeed for many crops wholly so. In spring the condition and texture of the staple will be found not only improved, as regards productive capabilities, but also much drier and in better temper to receive the spring crops; such treatment wonderfully ameliorates the nature of stiff and tenacious soils; the masses of clayey earth fall to pieces like unslacked limestones when water is poured over them, and they are rendered ready to receive in a kindly manner the seeds or plants intended for the crops. If "Amateur" will fulfil these instructions now, they may be of service to him; but they will be of little use to him if he leaves the work until spring. *Pharo.*

Home Correspondence.

Rose Catalogues.—I am glad to see that attention has been roused by the suggestions which I offered upon the subject of the present Rose catalogues, and although I shall not at present attempt to combat any of the arguments employed against me, sufficient has been admitted to justify much of my assumption in the first article. I may not have taken a proper view of the whole question; indeed, it is not unlikely that if the discussion be carried on in a proper spirit I may be a convert to some of the notions which have most differed from mine. The principle I contended for in my first suggestions was a reform of the catalogues and a lessening of the number of families or sections, which now perplex many. All I desire is that those who know so much, and who can perhaps fully understand the present arrangement, will bear in mind, before they finally reject the proposal, that others do not know so much as they do, that some are unacquainted with botany, and are perfectly unable to appreciate differences which may, nevertheless, be very plain to the experienced. In conversation the subject has been handled by many of different opinions, and it is admitted that the splitting of families has, like many other things, been carried to excess, so that an alteration is necessary. However slight the change may be it will be on the right side, and every little in the right line will be an encouragement to new growers. *Crito.*

Nuphæa rubida. — In the report of the October meeting of the Horticultural Society (p. 631), Niphæa rubida is mentioned as a "worthless species," and certainly the specimen there produced, from having been too much drawn, in some measure justified that character. Under different treatment, however, the Niphæa rubida, though, like its near relation N. oblonga, not a showy plant, is certainly pretty. It is altogether a smaller plant than N. oblonga, consequently the blossoms are something less than those of that species; but they are freely produced, as a mass grown here in a small seed-pan has for nearly the last month borne evidence. This plant, or rather mass of plants, was managed in the following manner: in spring, towards the end of March, the scaly tubers were planted rather thickly over the pan, in compost which contained a considerable proportion of peat earth; they were started in a warm pit, where they stood close to the glass; after they were fairly started, they received very little fire heat. During the summer they were set in a house along with various duplicate stove plants, which were kept rather cool. In consequence of this cool treatment, up to the middle of September scarcely any flowers had been produced; the plants form a dense surface of foliage quite close to the soil. The pan was then set in an ordinary stove, where, of course, the temperature was higher, and this increase of heat induced the development of the blossoms, which have been produced in profuse succession ever since, the neat clear white flowers standing on the slender stalks just clear of the closely-set foliage, the extreme height not being more than 3 inches. There are still a considerable number of blossoms to be developed. When grown in a mass, therefore, and grown on the cool system, with a little more heat at the flowering season, Niphæa rubida may be classed in the same rank with N. oblonga as to its ornamental properties; that is, neat, pretty, but nothing more. *Thomas Moore, Chelsea.* [This N. rubida was published by Lemaire in Van Houtte's "Flora," where it was stated to have been received from England, origin unknown.]

Terrestrial Temperature.—The effect of draining in raising the temperature of the soil, even to the extent stated in the leading article of your last Number, is by no means incredible. The withdrawing so powerful a conductor of caloric as water, is no doubt the principal cause of this increase of temperature; and entirely agreeing with you that the higher temperature occasions the prodigious difference in the growth of plants on drained or undrained ground, I cannot so unhesitatingly subscribe to the explanation, that the freer descent of rain into the soil occasions the higher temperature. During the last summer I have frequently had occasion to remark the very warm condition of garden ground to several inches below the surface, after a few dry sunny days; but the first rain has been immediately followed by a striking reduction of temperature, and more decidedly in the porous than in the stiffer soils. The fact, however, and a most important one it is, that the temperature of soils is increased in a very considerable degree by deep-draining, is beyond doubt, and is quite independent of the question *how* it *is* produced. The series of experiments proposed by you to ascertain the exact difference, would remove any doubt that may still exist on the subject, but I beg leave to suggest that a single experiment, judiciously made, might be sufficient to show that there is a decided difference. Let, on the same day and hour, the bulbs of two well matched thermometers be applied to drained and undrained soil at the same depth, say 3 or 4 feet, the soil being of the same obvious qualities, *i. e.* the same physical texture, loam, clay, or chalk. This, though not so perfect as your mode, would at least decide the question as to difference or no difference, with little trouble or loss of time. *Cæteris paribus*, the result would be as conclusive, I conceive, as the extended series of experiments, though for comparison the latter would be more valuable. *D., Prestcign, Oct.* 22. [We do not think that the experiment as proposed would be satisfactory. It would be necessary that the instruments employed should have been buried at least a week before being observed, in order to be sure that error is avoided.]

Potatoes in New Zealand.—I am glad to see that New Zealand Potato seeds have been successfully reared in this country, and I hope that a race of Potatoes more impervious to disease than any hitherto in cultivation will be obtained from among them. Mr. Cox speaks of his Potatoes being very shallow-eyed, and, to the best of my recollection, all the Potatoes which I saw in New Zealand had the same characteristic; but I am sorry to say that I did not taste a really good Potato while I was in the colony: they had all a waxy appearance when cooked, but probably this might be owing to the mode of cultivation [climate?]. The best Potatoes I ever tasted in any country were grown in Van Diemen's Land, from which island the Sydney market is copiously supplied; I attempted to bring a sample of them home, but during a long and tempestuous voyage they all perished, with the exception of two or three, and those I only saved by introducing them into a plant-case, but I am not aware whether the London nurseryman with whom I left them succeeded in propagating them or not. The New Zealander's system of Potato cultivation simply consists in selecting his ground, and, during the dry season, cutting down and burning the underwood, the flames from which so scorch the trunks of the large timber that death is sure to follow, and they stand in that condition for many years to come. The fuel exhausted, and the ashes spread, the ground is ready for the sets, which are merely introduced below the surface by a long-handled piece of wood, the only spade the "Maori" possessed previous to the introduction of European implements. In harvesting the crop, the largest tubers only are gathered, the others are left to produce another crop, and after that a fresh piece of ground is selected. The leafless giants of the forest, with beautiful green Grass growing below them, have, to a stranger, a singular appearance as he approaches the shore, and views those "old Potato grounds." The New Zealander displays much patience when disposing of his produce among Europeans; not unfrequently will those athletic savages retrace their way to their "pah," with a heavy burden upon their backs, rather than come down a halfpenny in the price they first ask. *A. Burnett, Gardener, Roby Hall, Oct.* 15.

Roots in Drains.—From observations that I have made, I am induced to believe, that when it is desired to prevent the ingress of roots in drains, a tolerably copious use of coal tar, mixed with the soil surrounding the drain, would be almost certain to effect it. Of course this remedy would be inapplicable where it is desirable that water should percolate through the sides of the drain. I have had drains choked by roots myself, and I know therefore how great an annoyance it is. Whilst on the subject of the power of roots to penetrate through small orifices, I may mention having seen an instance of the fibres of a Rose root finding their way upwards through a half-rotted stump of a stake, from 8 to 9 inches long, that had been left in the ground. These fibres, for there were several of them, were as fine as the finest sewing silk. *T. H.*—I can bear ample testimony to the frequency of drain-pipes being choked by roots where drains pass through plantations, hedgerows, or near large trees, having been obliged to take up many drains completely stopped with roots and fibres several yards in length; but I must confess that with many years' experience I never knew this evil to occur in any cropped field whatever; therefore your recommendation of "keeping the land clean" will no doubt be a certain preventive in open fields. As regards drains through plantations, hedgerows, and near trees, the following remedy will possibly prove effectual. In the manufacture of salt a great quantity of coal-ashes is produced; these are usually sifted, and the very fine ashes used for agricultural purposes, chiefly for mixing with compost or sowing over crops, to destroy slugs or wireworms. The larger ashes are sold to make footpaths, roads, or to bottom fold-yards. These ashes, but

particularly the last, are generally very strongly impregnated with salt. In laying drains, therefore, where danger may be apprehended from roots and fibres, if from 4 to 5 inches of these ashes were to be first put on the tiles no fibres would dare to approach or touch the drain, for they would either die off at their extremities or take another direction; the extreme saltness of the ashes would not suit their taste. These ashes would also be an excellent covering for the tiles, being sufficiently porous to allow the water to percolate through them into the drains, and yet sufficiently close to stop any earthy sediment; they also possess another excellent quality, which is that of durability, even when exposed to atmospheric changes. These ashes are sold cheap at the works, as they accumulate fast; perhaps the price may be stated at about 2*s.* per ton; a large waggon, loaded high, would carry about 4 tons. Where the distance is great, and the cartage would render them too expensive, a good substitute may be made as follows:—Make a strong solution of brine, by putting water to agricultural or other salt; with this thoroughly saturate any kind of charcoal, or burnt clay well calcined, so as to be red and hard, similar to the sorts used as ballast on railroads for making the permanent way. Use these substitutes in lieu of the ashes. If these precautions are strictly adopted, there need be little fear of a successful result. *Richard Smith, Westacre, near Droitwich, Oct.* 10.

My Balsams being very tall, I cut the tops off a number of them, put each in a pot singly, and kept them moist and warm till they had made good roots. I then gave them a shift into good large pots filled with rich soil, and I have now a fine display of flowers and nice dwarf plants, which I once believed would prove good for nothing. *H. M., Gardener, Priory, Ireland.*

Effect of cutting the Haulm off Potatoes attacked by Disease.—In the second week of March, I planted, in a piece of newly-trenched meadow, on a sandy soil, a bushel of Mr. Graham's Farmer's Profit Potatoes: the sets weighed about 2 ounces each or rather less; they were cut from tubers weighing about half a pound each, and which are usually cut into five sets. They were planted rather more than a yard apart every way, and the sets from one bushel occupied full a rood of land. They all grew and flourished most luxuriantly, and on the 7th of August every hill exhibited the dark spot on the leaves, and occasionally a brown stain on the haulm. One day was suffered to pass for further examination; on the 9th the haulm was cut off with very sharp knives from all except five hills, and the whole were freshly and well earthed up. This day, October 19th, the five hills produced 85 lbs. of Potatoes, amongst which there was not a single diseased tuber. One tuber weighed 4 lbs. 2 oz., another 3¼ lbs, another 3¼ lbs., many a little more or less than 2 lbs., and the tubers generally from those five hills were very large-sized. Five hills have been dug up to-day, where the haulm was cut off, and they produced 21 lbs. of Potatoes, no single tuber exceeding ¼ lb. in weight, and there was but one diseased Potato amongst them. The untouched five hills appear to have had strength to outgrow the disease, and have produced well. I cannot suppose that there was any increase in weight or tubers in those hills from which the haulm had been cut; and in future I intend to leave the haulm to recover or not, and take every other care I can. *John Cox, Clinton House, Weybridge, Surrey, Oct.* 19.

The Belgian Mode of saving Potatoes.—I have tried the plan recommended by Mr. Tombello Lomba, and out of my usual quantity, about 30 to 35 bushels of Potatoes, I have never exceeded 20 tubers diseased in all. I have just raised my winter crop of Shataburies, and have a fine crop of 37 bushels, and only five bad, where I had cut off the haulm directly after flowering. A small piece where I neglected to cut the haulm off is considerably affected. I first tried this plan in 1846, and have continued to do so the other two seasons. My Potatoes this year are very numerous and very large. I always manure in the autumn directly after raising any crops, and I plant the second week in Feb. 3 inches deep, ridging the earth over the sets till the frost has disappeared. I then have the earth raked level. The manure I use is thoroughly decayed stable dung and cinder dust. *T. A. Carr.*

Storing Potatoes.—I fear that our Potatoes will not keep in pits. Any one who has coal ashes, should try mixing them through the Potatoes. I am doing so, and I think that it will answer. *R. Musgrave, Co. Waterford, Oct.* 2.

Large Apples.—The following is the weight and size of three Apples sent me by a friend. They were grown in this neighbourhood, and I am informed there were several more in the tree of the same size. They are called Everlasting Beauties, but appear not to be known or described in the Horticultural Society's Catalogue by that name. They resemble Shepherd's Fame in form, but are more like the Emperor Alexander in colour.

No.		lb.	oz.		ft.	in.
1	Weight	1	0½	Circumference ...	1	2¾
2	,, ...	0	14	,, ...	1	1½
3	,, ...	0	12	,, ...	1	0

George Wood, Rochford, Oct. 6.

Societies.

Ghent Horticultural and Agricultural Show.—Belgium has long been celebrated for its extensive nurseries and numerous botanical gardens; but of all its cities, Ghent stands pre-eminent. The horticultural exhibition, which was held on the 16th September at the Casino, gave ample proof of its determination to maintain the character it has so justly merited for skill and enterprise. There is perhaps no city in Europe able to compete with it in collections of Palms, Cycads, Ferns, and Pandanus, to say nothing of Orchids, Camellias, and Azaleas, which are here propagated on a most extensive scale; the orders for Camellias from England alone are supposed to average between 10,000 and 20,000 plants per annum. On this occasion every one seemed to feel it his duty to uphold the reputation of his country, and they had the satisfaction of seeing not only the noble *salons* of the Casino entirely filled with plants and fruit, but numerous collections of Camellias, Conifers, Oranges, Hardy Evergreens, and flowering plants, tastefully arranged in the front and back of the building, while the amphitheatre in the rear was specially set apart for agricultural produce. The whole was well got up, and great credit is due to the managers for the taste displayed, particularly at the grand entrance under the dome, which represented a "Jardin Anglais," composed of noble Palms, Conifers, Cycads, Camellias, and Orchids. The exhibition was honoured by the presence of the King, Queen, and royal family, who came in state, with the Prince Royal of Sweden and many of the Belgian nobility. The weather was fine and the company as numerous as the most ardent lover of flowers could desire.

In a brief notice like the present, it is impossible to give anything more than a slight sketch, I will therefore confine myself to some few of the finest plants which attracted most attention, and for which prizes had been offered by the Society. Araliads: 1st prize, Mr. A. Verschaffelt, for very fine specimens of A. trifoliata, crassifolia, Guatemalensis, quinquefolia, speciosa, and other species; 2d, Mr. De Saeger, for equally fine plants of crassifolia, diversifolia, elliptica, longiflora, trifoliata, pulchra, quinquefolia, and palmata. Bromeliads: 1st, Mr. A. Verschaffelt, for Bonapartea juncea, gracilis, gracilis glauca, juncea pendula, hystrix, and filamentosa. 2d, Mr. Van Geert, for large plants of Bonapartea gracilis, hystrix, juncea, pendula, and serratifolia. Cacti: 1st, Mr. A. Verschaffelt. In this lot were two splendid Cereus senilis, C. monstrosus, Echinocactus Pfeifferii, E. aulacogonus, Mammillaria nivea, and M. dædalea; 2d, Mr. A. Van Geert, who had a splendid Pilocereus comates, Echinocactus piliferus, and E. Pfeifferii. Conifers: 1st, Mr. A. Verschaffelt, for large plants of Araucaria Cunninghamii, A. excelsa, Podocarpus elongatus and Totarra, Phyllocladus trichomanoides, Dacrydium taxifolium, and Cryptomeria japonica; 2d, Mr. A. Van Geert, for Damnara orientalis, Dacrydium cupressinum and excelsum, Cryptomeria japonica, Podocarpus longifolius and Totarra, Araucaria brasiliana, Taxodium Horsfieldii, Cupressus Lamberti, and Phyllocladus trichomanoides. Conifers (hardy): 1st, Mr. De Spae; 2d, Mr. Verschaffelt. Cycads: special prize, Mr. Van Houtte, for two magnificent plants of Cycas revoluta; 1st prize, Mr. A. Verschaffelt, for splendid specimens of Dion edule, Zamia species nova, Z. pungens, Z. debilis, Z. horrida, Cycas circinalis, C. revoluta, and Ceratozamia mexicana; 2d, Mr. De Saeger, for Zamia debilis, elongata, and mexicana, Dion edule and aculeatum, and Cycas revoluta. Laurels: special prize, Mr. Van Houtte, for Laurus nobilis; 1st prize, Mr. Verschaffelt. Liliaceæ: 1st, Mr. Byles; 2d, Mr. Mechelynck. Orchids: special prize, Mr. Mechelynck, for Grammatophyllum multiflorum; 1st prize, Ghent Botanic Garden; in this collection were fine specimens of Stanhopea tigrina and oculata and Aerides odoratum; 2d, Mr. Henderix, for Phaius Tankervillæ, Stanhopea tigrina and oculata, Cattleya granulosa and Harrisonii, &c. Palms: 1st, Mr. Verschaffelt, for capital plants of Sabal stellata, Thrinax longifolia, Plectocomia elongata, Corypha rotundifolia, Chamærops lutea, Sarabus subglobosus, Dæmonorops melanochætes, and Chamædorea mexicana, &c.; 2d, Mr. De Saeger, for Thrinax multiflora, Sabal Adansonii and stellata, Chamærops excelsa and lutea, Phœnix dactylifera, Corypha rotundifolia, and Latania borbonica; special prize, Mr. Donkelaer, for a magnificent specimen of Sabal Blackburniana. Pandani: 1st, Mr. De Saeger, for P. longifolius, utilis, Candelabrum, reflexus, pedunculatus, latifolius, &c. Ferns: Special prize, Mr. Van Houtte, for a large Balantium antarcticum; 1st, Mr. De Kirklowe. Proteads: 1st, Mr. Van Geert. Camellias: 1st, Mr. A. Verschaffelt; 2d, Mr. Vanaker; both these collections were composed of large plants. Finest plant in bloom: 1st, Mr. De Saeger, for Dichorisandra ovata; 2d, Mr. Verschaffelt, for Erica retorta major. Finest new plant in bloom: Prize to Mr. Mechelynck, for Medinilla speciosa. Finest new Palm: Prize, Mr. De Saeger, for Chamærops fenestrata. Finest collection of rare plants in bloom: Prize, Mr. Mechelynck, for Echites bicolor, Miltonia Clowesiana, and a Peristeria with orange flowers. Finest collection of new plants introduced into Belgium from their native localities: 1st, Mr. Dallière, for Lycopodium umbrosum, Erythrina mexicana, Cineraria speciosa, Phaius vittatus, Eranthemum variegatum, and Serjania Brasiliensis, &c.; 2d, Mr. Verschaffelt, for a Java Æschynanthus, a Brazil Brugmansia and Spathoden, Bignonia (Brazil) and Aristolochia (St. Catherine). Hard-wooded Cape plants: 1st, Mr. Verschaffelt. Yucca: Prize Mr. Louis Verschaffelt, for two splendid plants, 10 feet high, of Y. gloriosa variegata. Mr. Van Houtte exhibited a large general collection, consisting of some splendid seedling Gloxinias, Achimenes, Orchids, Cupheas, Gesneras, &c. Mr. Linden had also several new plants, among which I noticed two new Fuchsias—venusta and nigricans; the former with foliage in the way of serratifolia, but longer and narrower, and the other with leaves in the style of fulgens, but smaller; Puya maidifolia, with large heads of reddish yellow blooms; Cuphea verticillata, Bomarea edulis, a pretty climber, with large bunches of orange-red flowers. The fruit department was not equal to that which I saw two years since at the Brussels show, but this may have arisen from the fact of Brussels being an open show, while this was confined to the province of West Flanders. General collection of Fruit: 1st, to Mr. Jean Verschaffelt, for Pears, Apples, Grapes, Peaches, and Plums. Apples and Pears: 1st, Mr. De Latour, in which were some fine specimens of Apples De Canada, Calville blanc, Rambour d'été, Reinette d'Espagne, gris, de Hollande and d'Amerique; Pears: Royale d'Angleterre, Calebasse, Catillac, Angelique, Passe Mansuette, Gros Romaire, Beurré Chaumontel, d'Angleterre, d'hiver, Passe Colmar, Diel Magnifique, Bergamotte d'hiver, Doyenné d'hiver, Bezy Chaumontel, Bon Chretien Napoleon, Louise bonne, Doyenné doré, and Duchesse d'Angouléme. Grapes: 1st, Mr. De Buyen, for Chasselas de Fontainebleau, Gloire de Bordeaux, Muscat d'Alexandrie, Gros Maroc, Frankentahl and Olivier blanc. Melons: 1st, Mr. Verschaffelt, for Cantaloup, Triomphe de Metz, Valence, Pastêque, de Carmes, de Perse, &c. Messrs. Jamin and Durand brought a large and fine collection of fruit from Paris; in it was perhaps the largest Pear ever seen—it was Belle Angevine Royale d'Angleterre, and weighed 5 lbs. I will not attempt any description of the agricultural department; it was upon a grand scale, and considered to be highly flattering to the skill and enterprise of Belgian farmers.

Review.

Aspects of Nature, in Different Lands and Different Climates; with Scientific Elucidations. By Alexander v. Humboldt. Translated by Mrs. Sabine. 2 vols. 12mo. Longman and Murray.

An excellent translation introduces the English reader to one of those amusing and instructive works, which none, except the experienced traveller and profound philosopher, and few except the brilliant Humboldt could write. His sketches of nature are those of a great master. Like those of an accomplished artist, they throw off the most admirable likenesses by half a dozen touches of the pencil. The niggling and hatching, and stippling, to which an inferior painter has recourse in order to produce a laboured effect, are neglected by men like Humboldt, who know how to represent the great outlines of nature by a few clever touches, in which, however, nothing that is essential is neglected.

It is in works like these that a student should search for the important facts of physical geography. In the writings of Humboldt he runs no risk of gathering errors instead of truths, but he knows that he may place all but implicit faith in the narrative of his great teacher. He who has mastered the facts in Humboldt's "Aspects" may have much to learn, but he will have little to unlearn. A paragraph like the following hurries along the reader as the traveller is forced onward in the rapids of some mighty transatlantic stream:

"These African plains occupy an extent nearly three times as great as that of the neighbouring Mediterranean sea. They are situated partly within, and partly in the vicinity of the tropics; and on this situation their peculiar character depends. In the eastern part of the old continent, the same geognostic phenomenon occurs in the temperate zone. On the plateaux of central Asia, between the gold mountains or the Altai and the Kuen-lun, from the Chinese wall to beyond the Celestial mountains, and towards the sea of Aral, there extend, through a length of many thousand miles, the most vast, if not the most elevated, steppes on the surface of the globe. I have myself had the opportunity, fully 30 years after my South American journey, of visiting a portion of them; namely, the Calmuck Kirghis steppes between the Don, the Volga, the Caspian, and the Chinese lake Dsaisang, being an extent of almost 2800 geographical miles.

"These Asiatic steppes, which are sometimes hilly and sometimes interrupted by Pine forests, possess (dispersed over them in groups) a far more varied vegetation than that of the Llanos and Pampas of Caraccas and Buenos Ayres. The finest part of these plains, which is inhabited by Asiatic pastoral tribes, is adorned with low bushes of luxuriant white-blossomed Rosaceæ, and with Fritillarias, Tulips, and Cypripedias.

"As the torrid zone is characterised on the whole by a disposition in all vegetation to become arborescent, so some of the Asiatic steppes in the temperate zone are characterised by the great height attained by flowering herbaceous plants, Saussureas and other Synantheræ, and Papilionaceæ, especially a host of species of Astragalus. In traversing pathless portions of these steppes, the traveller, seated in the low Tartar carriages, sees the thickly crowded plants bend beneath the wheels, but without rising up cannot look around him to see the direction in which he is moving. Some of the Asiatic steppes are grassy plains; others are covered with succulent, evergreen, articulated soda plants: many glisten from a distance with flakes of exuded salt which cover the clayey soil, not unlike in appearance to fresh fallen snow.

"These Mongolian and Tartarian steppes, interrupted frequently by mountainous features, divide the very ancient civilisation of Thibet and Hindostan from the rude nations of northern Asia. They have in various ways exercised an important influence on the

changeful destinies of man. They have compressed the population towards the south, and have tended, more than the Himalaya, or than the snowy mountains of Srinagur and Ghorka, to impede the intercourse of nations, and to place permanent limits to the extension of milder manners, and of artistic and intellectual cultivation in northern Asia.

"But, in the history of the past, it is not alone as an opposing barrier that we must regard the plains of central Asia: more than once they have proved the source from whence devastation has spread over distant lands. The pastoral nations of these steppes—Moguls, Getæ, Alani, and Usuni—have shaken the world. As in the course of past ages, early intellectual culture has come like the cheering light of the sun from the East, so, at a later period, from the same direction, barbaric rudeness has threatened to overspread and involve Europe in darkness. A brown pastoral race, of Tukiuish or Turkish descent, the Hiongnu, dwelling in tents of skins, inhabited the elevated steppe of Gobi. Long terrible to the Chinese power, a part of this tribe was driven back into central Asia. The shock or impulse thus given passed from nation to nation, until it reached the ancient land of the Finns, near the Ural mountains. From thence Huns, Avari, Ghazarés, and various admixtures of Asiatic races, broke forth. Armies of Huns appeared successively on the Volga, in Pannonia, on the Marne, and on the Po, desolating those fair and fertile fields which, since the time of Antenor, civilised man had adorned with monument after monument. Thus went forth from the Mongolian deserts a deadly blast, which withered on Cisalpine ground the tender long-cherished flower of Art."

From this the brilliant style of Baron Humboldt in these volumes will be understood; but we must not leave it to be conjectured that such meteoric gleams are all that this work contains. On the contrary, a very large quantity of explanatory memoranda is introduced at the end of every chapter, and fills up the picture with details which would only have ruined the main narrative. To some these memoranda will appear the most interesting part of the work; their value is undeniable. Take the following as an example:

"The northern Mauritanian boundaries of the widely extended low region of the Sahara, as well as its southern limits towards the fertile Soudan, are still but little known. If we take on a mean estimation the parallels of 16½° and 32½° as the outside limits, we obtain for the Desert, including its oases, an area of more than 118,500 square German geographical miles; or between nine and ten times the area of Germany, and almost three times that of the Mediterranean, exclusive of the Black Sea. From the best and most recent intelligence, for which we are indebted to the French Colonel Daumas and MM. Fournel, Renou, and Carette, we learn that the desert of Sahara is composed of several detached basins, and that the number and the population of the fertile oases is very much greater than had been imagined from the awfully desert character of the route between Insalah and Timbuctoo, and that from Mourzok in Fezzan, to Bilma, Tirtama, and Lake Tschad. It is now generally affirmed that the sand covers only the smaller portion of the great lowland. A similar opinion had been previously propounded by the acutely observant Ehrenberg, my Siberian travelling companion, from what he had himself seen (Exploration Scientifique de l'Algérie, Hist. et Geogr. t. ii. p. 332). Of larger wild animals, only gazelles, wild asses, and ostriches are to be met with. 'Le lion du désert,' says M. Carette (Explor. de l'Alg. t ii. p. 126-129; t. vii. pp. 94 and 97), 'est un mythe popularisé par les artistes et les poètes. Il n'existe que dans leur imagination. Cet animal ne sort pas de sa montagne où il trouve de quoi se loger, s'abreuver et se nourrir. Quand on parle aux habitans du désert de ces bêtes féroces que les Européens leur donnent pour compagnons, ils repondent avec un imperturbable sang froid, il y a donc chez vous des lions qui boivent de l'air et broutent des feuilles! Chez nous il faut aux lions de l'eau courante et de la chair vive. Aussi des lions ne paraissent dans le Zahara que là où il y a des collines boisées et de l'eau. Nous ne craignons que la vipere (lefa) et d'innombrables essaims de moustiques, ces derniers là où il y a quelque humidité.'

"Whereas Dr. Oudney, in the course of the long journey from Tripoli to Lake Tschad, estimated the elevation of the southern Sahara at 1637 English feet, to which German geographers have even ventured to add an additional thousand feet, the Ingenieur Fournel has, by careful barometric measurements based on corresponding observations, made it tolerably probable that a part of the northern desert is below the level of the sea."

Such a book as this should be in the hands of every one desirous of becoming acquainted with the great natural phenomena of our globe. To schools and reading rooms it is indispensable.

Garden Memoranda.

Messrs. Henderson's Nursery, Pine-apple Place.—We observed in the show-house here some nice plants in flower of Myosotis azorica, a useful greenhouse plant, which deserves to be more extensively cultivated than it is. It is easily managed, and a good sized specimen of it (three or four plants in a pot), covered with small rich purple blossoms, has a handsome appearance. Loam and peat, with a little silver sand, suits it perfectly. A span-roofed house, on the right of the show-house, contained some finely-flowered Guernsey Lilies, whose vivid pink blossoms render our greenhouses so gay at this season; and near them, small plants of Acacia platyptera, a valuable sort, on account of its blooming late in the autumn. The different species of Leschenaultia contributed not a little to the floral beauty of this house, as did also Chironia decussata. Among bright yellow flowers, Coronilla glauca was conspicuous. Though hardy, or nearly so, this well deserves a place in the greenhouse, on account of its fine colour and season of flowering. Oxalis Bowiei was in blossom in the stove, where, though pretty, it lacked the brilliancy and display which it made planted out in a cold pit in the Horticultural Society's garden, as mentioned last week—there its effect was truly striking. In the stove it was overgrown and out of character, but still not without a considerable amount of gaiety. Several sorts of Gesnera were in bloom in this house, among which macrantha appeared to be a very good one. Its flowers are nearly 2 inches long and brilliant scarlet. Among Achimenes, which with a little management may be made to flower nearly all the year round, were plants of A. Ghiesbreghtiana, a pretty orange-scarlet kind, and of a sort called intermedia, apparently a hybrid between A. rosea and coccinea. Siphocampylus glandulosus was producing its purple blossoms here, as were also the bright crimson scarlet Sericographis Ghiesbreghtiana, which makes a pretty winter flowering plant; the deep crimson Æschynanthus pulcher, Begonia fuchsioides, which also blossoms well in a common greenhouse; Justicia oblongata, Aphelandra cristata, Pentas carnea, very suitable for cutting from; and last but not least the pretty little blue-flowered Ruellia elegans. The introduction of a plant here and there of the red leaved Dracæna terminalis also imparted a gaiety to the house at this season which it would not otherwise have possessed. The Camellia house has just been rearranged, and the plants are in capital condition and well set with bloom buds. At one end of it we remarked some nice plants of the fragrant Magnolia fuscata, which promised to flower well. In a small stove behind this house Barleria alba was in blossom, together with Thunbergia aurantiaca Doddaii, a curious variegated variety, but with much smaller flowers than those of Thunbergia aurantiaca superba, a handsome large-flowered sort, which occupied a place beside it. Batatas Waldeckii was producing purple blossoms, broadly margined with white here; and, associated with it, Schweiggeria pauciflora, in the shape of a little shrub, covered with white Pansy-like flowers. The violet and red-flowered Cuphea miniata, though small, tended much to enliven this house by its striking contrast of colours, and the handsome mottled foliage of Pavetta Borbonica could not fail to interest all who saw it. In the specimen house, which contained many beautiful plants, nicely trained and arranged, were some fine Croweas, more especially C. strictа, whose flowers are darker coloured than those of C. saligna or elliptica, which were associated with it; and along with these was a beautiful plant of the New Holland Babingtonia Camphorosmæ, producing numerous gracefully bending spikes of delicate pink flowers; some of these spikes measured 18 inches in length. This is certainly one of the most useful greenhouse plants we possess, for it is nearly always in bloom. A good plant of Miltonia candida was in flower in the Orchid-house, together with the ever-flowering Phalænopsis amabilis; Cattleya bicolor, with its purple lip and brownish green sepals and petals; a handsome variety of the same, with a much better lip; several Oncids, the best of which was O. Barkeri; various Stanhopeas, Zygopetalon maxillare, and some other plants. In the open ground we remarked that a small tree of Aralia japonica had been going to flower well, but its blossoms had been killed by the recent frosts.

Miscellaneous.

Cupressus macrocarpa.—"Leaves ovate, imbricated, in four rows, bright grass green, and closely set upon

the old plants; they are expanded, awl-shaped, sharp pointed, and thickly set upon the young plants. Branches irregularly spiral, but sometimes alternate or opposite, younger ones and laterals opposite, dense, and quite green, older branches dark brown and nearly horizontal from the main stem. Cones in clusters of three or four together, oblong, 1½ inch long and 1 inch broad, with 10 scales, the larger of which are in the middle, and generally six-sided. Seeds large, dark brown, and more or less angular. Seed-leaves in fours, but sometimes only in threes. In the year 1838 the late Mr. Lambert gave the Society a few seeds of this Cypress without any name or indication of whence he had obtained the seeds; from these plants were raised, which, when large enough, were at once seen to be very distinct from any previously known. The name of *C. Lambertiana* was applied to them, both in compliment to Mr. Lambert, and also to mark from whence they were first obtained; and as the plant was very easily increased by cuttings, it was soon to be found in all good collections under that name. Nothing, however, was ascertained concerning the country from whence it came until some two or three years afterwards, when I observed, on visiting Mr. Low's nursery, at Clapton, a plant of the same kind which they had received from Dr. Fischer, of St. Petersburgh, as a new species of Cupressus from California. At a later period, Mr. Hartweg, when in Upper California, discovered it, and finding it had very large fruit, gave it the name of C. macrocarpa, which, having been published in the Society's Journal, takes precedence of the unpublished, though general, name of C. Lambertiana. It is one of the finest plants yet introduced as an evergreen tree, not only on account of its beautiful bright green aspect, but for its great size and hardiness. Mr. Hartweg found it forming a tree 60 feet high, with a stem 9 feet in circumference, on the wooded heights near Monterey in Upper California, and with far-spreading branches, flat at top, like a full-grown Cedar of Lebanon, which it very much resembles when old. It is perfectly hardy, and will grow in almost any kind of soil which is not very poor." *Journal of the Horticultural Society, Oct.* 1.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Take advantage of the present season, when potting and similar operations are almost suspended, to wash carefully all plants which are or have recently been infested with insects, with soft soap dissolved in warm water, as the gummy matter by which the eggs of many of these pests are attached to the branches is thereby loosened, and they are more easily removed. The latter part of the business should be managed by syringing the plants with water at a temperature of about 120° or 130°, which will also destroy any living insects which may be lurking about them. Much more good is done by carefully cleaning plants in this way, at this season, than many are aware of. Let any necessary pruning, especially amongst creepers, be done before the cleaning commences, as it is injudicious to waste time in cleaning shoots which are afterwards to be cut away. Have all dirty pots washed and their surface soil loosened, and examine carefully any of which the surface has a green or sodden appearance, which is an evident sign that water has been too liberally used, or that the drainage is inefficient; if the latter, it should be immediately examined and rectified, as considerable damage is soon done at this season, when the soil gets in an unhealthy state. Many of the greenhouse Geraniums, and other plants of similar texture, which are in the course of preparation for next spring and summer, will require repotting. In this do not allow the time of year to be any impediment, as nothing in the successful cultivation of such plants is more indispensable during their period of growth, than shifting them into larger pots before their roots become too much matted. Greater care in watering is necessary after repotting at this season.

In the Heathery the plants must be carefully watched and dusted with sulphur upon the first appearance of mildew. Keep these plants as hardy as possible by a free circulation of air, and by removing the lights every fine mild day. Forcing Plants.—With regard to these every one must be guided by the particular requirements of his case, but even here a hint may be useful; let every gardener who is preparing for the reception of his employers at their winter residence, make every exertion to render the place under his charge as gay as possible, especially on their first arrival, for contrasts tell most forcibly at that time; by straining a few points he will make them more delighted with their own garden, and he himself will be valued accordingly.

FORCING DEPARTMENT.

Pineries.—We now look forward to every day dawning duller and later than its predecessor, and as the power of the sun declines, so also must our artificial temperatures be somewhat decreased, and in exact accordance with the latter must the amount of moisture be regulated. Till our hothouses are furnished with hygrometers of a simple construction, this matter must still be managed according to the best of our judgment, aided by practical experience. Take care that the quantity of moisture is not so excessive as to condense upon the glass, &c, close up the laps, or run down into the hearts of the plants. To prevent this, the

evaporating trough should be more sparingly filled, and the open tanks closed with moveable tops, giving you the power to confine the vapour or permit its escape. In fine clear weather, when a greater quantity of air can be admitted, the amount of moisture should also be slightly increased. Watering should be done with great care, and syringing is only admissible on the mornings of very fine days. It should be done with a very fine rose, and driven, not into the plants, but into the atmosphere of the house or pit with such force that they may receive it in the shape of fine very dew. VINERIES.—In the anxiety to keep those houses containing fruit sufficiently dry, be careful to avoid the extreme, even in that direction. If the houses are kept too dry by fire heat, the berries will shrivel, an evil nearly as bad, with regard to some kinds, as decay, the result of opposite management. It is easy to comprehend what is wanted, viz., a dry but not an arid atmosphere; but to regulate it to this nicety requires more care and judgment than is generally found, except in a very experienced practical gardener.

HARDY FRUIT GARDEN.

Planting and root pruning of fruit trees, where necessary, should now be in rapid progress, to the exclusion of all other work of secondary importance, in order that the work may be completed before severe weather sets in. Those planted on this side of Christmas have a decided advantage over those moved at a later period; as their roots require a very short season of repose, and are on the move again, especially if assisted by a little mulching on the surface of the ground, long before the tops evince the slightest evidence of activity. With regard to soil the most common errors are to make it too deep or too good. For Apples, Pears, and all stone fruits, good loam mixed with sand or burned clay, if too tenacious, is all that is necessary; but if the loam has been charred, or at least a portion of it, so much the better. When any additional stimulus is necessary, it can be supplied in the shape of mulching or liquid manure. Do not allow the depth of the soil to exceed 12 or 18 inches, and let the bottom if not naturally impervious be made so by artificial means. Where the situation is very damp, let the border for the choicer fruit trees, as Apricots, Peaches, and Nectarines, be made entirely above the ordinary level, as it is well worth while to sacrifice a foot at the bottom of the wall, if by so doing the utility of the remaining portion is ensured.

FLORISTS' FLOWERS.

TULIPS.—Take the first opportunity of planting the main or best bed; we by no means advocate a dibble for this purpose, as the soil is compressed very much immediately below the bulb, and, when retentive, this is a positive evil. We would advise the beds being raked level, and either making small trenches across or planting on the surface, and then covering with soil to the depth of 4 inches. PINKS.—These may still be planted, and yet it is late enough. If any deficiencies or casualties have occurred, let the vacant places be filled up on the bed immediately; and if Narborough Buck, Hark forward, Attila, and Criterion are not in the collection, we should say, try them.—As for Auriculas and Polyanthuses in pots, they ought to be safe; let them stand on coal ashes (if not on wooden stages), and on all possible occasions let them have full exposure; in wet or rough weather, keep the glass over them, but still with a current of air, either by side shutters or by tilting the lights. Keep a watchful eye on the attacks of insects; in mild weather slugs are apt to be very mischievous, and amongst Polyanthuses mice will often commit sad ravages. Seeding Auriculas will yet throw up flower-stems; pull the flowers off as soon as they open.—Take up Dahlia roots, should they get blackened with frost; allowing them to stand under an open shed for a few days, we have found of much service.

KITCHEN GARDEN.

Let Cauliflowers, under handlights, have all the air possible, protecting them only from frost, rain, and very cold winds; the lights should only be quite closed during severe weather, and the tops should be tilted in wet, but during fine mild weather they should be lifted off and set on bricks, to keep them clean. Watch closely for slugs, and check their ravages by a timely application of soot. A little finely sifted, clean coal ashes is an excellent thing to cover the surface of the soil with between young plants of any kind; as our slimy friends have an insuperable objection to crawl over it. The same remarks will apply to the Endive and Lettuce in frames for winter use. Let dead or decaying leaves be carefully removed, and the surface of the soil loosened, to allow the free action of the atmosphere. It is an excellent but by no means a common practice, to plant Garlick and Shallots in autumn; the advantage is in their commencing to root immediately, and to continue growing below ground in all favourable weather during winter, while their tops are not emitted till the usual time in spring. We have often dwelt on the importance of this point, as a general principle, viz, affording the roots of any plant an opportunity of getting in advance of the tops.

State of the Weather near London, for the week ending Oct 26, 1846, as observed at the Horticultural Gardens, Chiswick.

Oct.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday .. 16	3	29.963	29.944	69	46	57.5	S.	.09
Satur... 17	4	29.901	29.854	65	48	56.5	W.	.12
Sunday . 18	5	29.914	29.780	57	39	48.0	W.	.08
Monday 19	6	30.071	30.054	59	36	47.5	S.W.	.00
Tues. .. 20	7	30.124	30.094	63	50	56.5	S.W.	.00
Wed. .. 21	8	30.124	30.096	60	49	54.5	S.W.	.00
Thurs. .. 22	9	30.073	29.973	62	52	57.0	S.W.	.06
Average....		30.036	29.951	62.1	47.0	54.5		0.36

Oct. 19—Slight fog; exceedingly fine; clear at night.
— 20—Fine, very fine; rain at night.
— 21—Hazy clouds; rain; clear.
— 22—Foggy; very fine; overcast.
— 23—Cloudy and fine; overcast; slightly clouded at night.
— 24—Overcast; cloudy and fine.
— 25—Overcast and fine; showery; rain at night.
Mean temperature of the week, 5½ deg. above the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Nov. 3, 1846.

Oct. and Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 25	53.2	37.5	45.3	10	1.06 in.	—	5	2	—	4	7	2	3
Mon 26	53.0	40.0	46.9	10	0.42	2	3	3	1	5	7	1	1
Tues 30	54.6	39.3	46.9	10	0.80	—	3	1	3	2	9	1	3
Wed. 31	54.1	39.2	46.1	14	0.88	—	3	2	3	—	9	6	3
Thurs. 1	54.2	38.6	46.4	14	0.38	2	1	4	—	3	4	7	2
Friday 2	53.1	39.1	46.8	10	0.49	—	2	4	2	2	8	2	3
Satur 3	53.2	38.6	45.9	12	0.82	—	2	6	1	5	4	6	—

The highest temperature during the above period occurred on the 29th and 30th, 1833—therm. 67 deg.; and the lowest on 3d Nov., 1845—therm. 20 deg.

Notices to Correspondents.

BEES: *H T.* There is no difference between virgin honey and other honey obtained from fresh combs that never contained pollen or brood. It is only from such that pure honey can be had, on whatever plan bees are kept. *W.—S W.* You may take honey from a common hive without destroying the bees, by turning it up and cutting out about two combs from each side, but previously to the operation a few whiffs of Tobacco smoke should be introduced amongst the bees. The operation should be done in the evening, but it is too late to perform it now; it should have been done in July, in order that bees might have time to repair the damage. Another plan is to drive the bees into an empty hive by placing it upon the full one, which should be inverted on the ground; the mouths of both hives should fit closely together, then tie a cloth round both, where they meet, in order to prevent the bees from escaping. Tap on the under hive, in order to cause the bees to rise into the upper one. Then put the robbed colony in the old place to begin again, as with a fresh swarm. This plan is only suitable in heath countries, where bees have plenty of late pasturage. But you would save both much hazard and trouble by adopting the depriving plan, which is merely cutting a hole at the top of the hive and covering it with a cap put on about the end of April, or later, according to the strength of the colony. *W.*

BOOKS: *Nonagh* The "Vegetable Kingdom" contains an account of all the uses to which known plants are applied, and of the source of known products. It also fully explains the principles of the Natural System, and is, we imagine, the very book you want.—*A A.* James's "Gardening" is an old 4to, by no means rare; price uncertain Your London bookseller will easily procure it for you, after a little search. Dublin is an unlikely place. Loudon's "Encyclopædia of Gardening" and other works also contain a few plans; but James's is *the* book.

CHOLERA. *A Z* will thank some our correspondents to inform him what is the greatest elevation above the sea in the British Islands to which the cholera has ascended. He means where it has been virulent and fatal.

DEODARA *A B.* By herbaceous grafting you may propagate it upon the Cedar of Lebanon. But why take the trouble when seedlings are so cheap?

DISEASES. *Z* Your Sweet William leaves are attacked by the parasite called Puccinia Lychnidearum—cause and cure unknown. Plant Gladiolus roots now if you can keep them from frost. If not, stow them away in dry loam, and plant in March.

FLOWER GARDENS: *An Occasional Sub.* We regret to say that the information you request cannot be communicated through the columns of any newspaper Wood engravings are indispensable, and they are so very expensive that they can only be given in illustration of matter which possesses *general* interest, You should consult some professional man in aid of your own good taste.

FORCING HOUSE *J M.* You will gain little if any advantage by iron rafters in so short a span You had better get the woodwork in the rough from Montgomery's saw-mills, Brentford, and set your country carpenters to put them together. Use horticultural rough plate. Moveable metal sashes do not answer unless they are coerced by machinery. It Polmaise is properly executed it is all that can be wished, but we regret to find that it is seldom properly managed. Perhaps in such a house as you describe there would be, under all circumstances, advantages in the employment of hot water

FUMIGATION: *C S.* Nothing else will answer the purpose of tobacco. Perhaps your Celery was sown too early; perhaps it is a bad sort, perhaps it was starved when young, and overloaded with food suddenly when it became older.

GAS-LIME *Bromley.* The crowded streets of a metropolis are very different from country roads. When cholera is the apprehensions (unfounded may be) are excited, which produce danger by their mere presence. The magistrates were, we presume, guided in their decision by such considerations. Whether gas-lime is dangerous or not depends, no doubt, upon its freshness; after having been exposed for some time to the air it loses much of its poisonous quality, and also upon whether it is placed in a room or an open field We should be sorry to stand many minutes in a Vinery poisoned by "green" gas-lime. No doubt it is a good manure, so is night-soil, but are men justified in carting that under their neighbours' noses?

GERANIUMS. *L P.* The leaves and soft tops should be pruned off them before they are stowed away, and the earth partly shaken from their roots. They need not be quite dry when stored, but they should not be so wet as to cause them to damp. In spring, encourage them to grow previously to planting out.‡

GESNERA ZEBRINA: *P I. C.* Your plant has suffered from the want of heat and moisture, either at its roots or in the atmosphere, when it was young, and latterly from the dry atmosphere of a sitting room. Its leaves soon curl and lose their beautiful markings when exposed in such a situation. It requires a strong heat and plenty of moisture to keep it in health. "Plenty of air," as you state, has caused the evil you complain of.¶

GLASS: *S L S* Rough plate is not stronger than other glass, weight for weight. Curvilinear roofs have no advantage over wood, except when there is a very long bearing. Rough plate is best for plants, undoubtedly. We never recommend tradesmen.

GREENHOUSES: *F.* An angle of 45° is enough for the roof. As much more steep as you like, not flatter than 35°. Cover it with rough horticultural plate glass. Heat it with hot-water pipes.

HYACINTHS: *T A C.* Double Reds: Bouquet Royal, Triumph Blandina, Sans Souci. Double Blues: Alfred the Great, Grand Sultan, Bouquet Pourpre. Double Whites: La Vesta, Ne plus Ultra, Sultan Achmet. Double Yellows: La Favorite. Herman Sange, Bouquet d'Orange. Single Whites: Grand Blanche Imperiale, Queen Victoria, Catherine. Single Blues: Oscar, Quentin Durward, Nimrod. Single Reds: Mars, Monsieur de Taesch, L'Ami du Cœur.*

INSECTS: *C H.* The flies which have occurred in such numbers on the ceilings of your rooms are Chloropsæ lineata. The larvæ from which they are bred, feed at the base of the stems of cereal plants. *W.—W H.* Your Cinerarias are infested with aphides. The plants should be washed with tobacco-water or fumigated beneath a cover with burnt tobacco, and then washed with water. *W.*

KEW GARDEN; *G S.* The wiseacre who wrote to the *Daily News* respecting what he was pleased to take for puffing in the museum there, has shown one thing which he did not intend to expose, and that is his own wrongheadedness. The museum is perfectly in the right.

NAMES OF FRUITS: *D, Chichester.* Pears: 1, Chaumontel; 2, Marie Louise. Apple: 3, Paradise Pippin.‖—*J L H.* Grapes: White Frontignan, and Violet Frontignan. Apples: 1, Dumelow's Seedling; 2, 11, 15, Golden Pippin; 3, 16, 19, Hollandbury; 4, Downton; 5, Minchall Crab; 6, 20, Alexander; 7, 8, King of the Pippins; 9, 18, Fearn's Pippin; 10, Northern Greening; 13, Court of Wick; 20, Alexander. You have the Brown Beurré correct, but the one marked Easter Beurré is the Beurré Rance.‖—*W G.* The Apple is probably the Blenheim Pippin.‖—*A Young Gardener.* Apples: 1, 5, 15, King of the Pippins; 2, Minchall Crab; 3, Blenheim Pippin; 4, 8, Beauty of Kent; 6, Court Pendu Plat; 9, 11, Reinette du Canada; 10, Dumelow's Seedling; 12, Lemon Pippin; 13, French Crab; 14, Dutch Mignonne. Pear: 1, Beurré Bosc.‖—*E M G.* Your Apple, rather small, long Pearmain-shaped, bright scarlet, is not known. The flavour is pleasant, subacid, but not sufficiently rich for being accounted first-rate.‖

NAMES OF PLANTS: *Erzeroum.* 576, Solidago virgaurea; 367, Inula Oculus Christi.—*D C.* Sollya heterophylla.—*A B.* Grobya Amherstiæ.—*J A.* Æcidium cancellatum.—*H M.* Ceterach officinarum has no proper English name, but it is called by some "Scaly Hart's Tongue." *S.—G W.* Your "flower from the E. Indies" is a fruit from the Cape of Good Hope—the seed-vessel of a species of Mesembryanthemum. Such things are common enough. Your Chasselas has at some time or other had, suddenly, too much water when the Grapes were swelling. That is all. Such Grapes are apt to burst. Of course your reasoning respecting tall chimneys is perfectly correct.—*Anne Roper.* Boronia serrulata (?); not recognisable without flowers; Eutaxia myrtifolia.—*A F F,* 1, Urtica dioica; 2, Urtica urens; 3, Inula Conyza; 4, Origanum vulgare; 5, Clinopodium vulgare; there is no English name for Leycesteria.—*B A.* Stevia ivæfolia.—*C W D.* Tuberculatia vulgaris.—*F H S.* All correct except Populus canescens, which is monilifera, aclades on is nigra viridis, grandidens is nigra, heterophylla and divaricata are both Balsamifera, var salicifolia; nivea is acerifolia. There are several other kinds, of which the names are to be found in Loudon's "Hortus Lignosus Londinensis."¶—*Gallacus.* It is the Longan, and nothing else; see "Lindley's Medical and Economical Botany," p. 101, fig. 151. If Latin names are preferred to familiar ones, then it is the fruit of Euphoria Longana, *alias* Dimocarpus Longan. The plant has fruited in England; not long ago at Syon.—*B D.* Notylia punctata. —*John Varley.* Your Gooseberry is Physalis peruviana; No. 1, Chrysanthemum grandiflorum; 2, Chr. frutescens; 3, Alyssum maritimum.—*R Bilott.* You ask what is Bulberry rabosus? How on earth should we know? Perhaps your learned correspondent means Ruscus racemosus.

PHILIPS'S FIRE ANNIHILATORS: The various correspondents who inquire about these important engines are requested to wait until they are advertised. We cannot undertake to answer questions privately.

PLANTATIONS: *Ogden.* In making your plantation observe these rules. Dig and drain deep; plant thick and young; thin carefully; pinch as much as you like; prune not at all.

PLEROMA KUNTHIANA: *T J.* Place your plant in rather a dry part of the stove, and give little water to it for two or three weeks; afterwards shorten the young shoots back freely, and when they begin to show signs of breaking, shift and place it in a moist atmosphere with a strong bottom-heat; but if it is in very bad health, you had better throw it away, procure a fresh healthy one, and treat it as above. It is a plant that requires a strong bottom-heat, plenty of moisture during the growing season, and afterwards it should be kept rather dry at the roots It soon becomes sickly if freely supplied with moisture in a low temperature.¶

SALVIA SPLENDENS: *A Correspondent* suggests that it might be useful if the gardener at the Priory, Ireland, would favour our readers with his mode of cultivating this plant.

TACSONIA PINNATISTIPULA: *J D M D.* Yes; probably its fruit can be eaten with safety †

TOWN GARDENS *Incidents.* Your letter has been sent to the author of "Villa and Suburban Gardening."‡

TRICHOSANTHES: *A Sub.* Apply to the seedsman with whom you deal, and he will procure them if he can. We really *cannot* recommend tradesmen.

VIOLETS: *R S, Bath* We think it better to defer our opinion till we have had some experience with the Violets. They will be grown in a cold greenhouse, in the manner you describe, and reported on hereafter. We can only say for the present that the Russian Superb *looks* like a fine variety.

MISC: *C W.* Much obliged, but we have no use for them at present.—*Beginner.* You may mix leaves, coal ashes, and plasterer's rubbish with your yellow London clay; lime is not so good. The best way, however, would be to burn the clay and coal ashes first. Whatever you do, you had better mix the ashes and clay and burn them.‡—*Constant Reader.* Cut your Acacia hard in, and then apply hot water, as mentioned in the Calendar of Operations for this week; that will clear it of scale. The white-flowering creeper is Physianthus albus. Beaumontia grandiflora and Stephanotis floribunda are stove plants. Keep them rather dry in winter. ‡—*P T G.* The Egyptian Arum (Calla æthiopica), requires the protection of a greenhouse in winter. We should think you will not succeed in wintering it out of doors. Arum esculentum cannot be cultivated in England, except in heat†—*A B.* If you cannot cover your Vine border as mentioned at p. 632, you had better thatch it with straw. Weigela rosea is perfectly hardy. ‡—*A H.* You can apply nothing to the tips of young Larch trees that will prevent hares and rabbits from eating them without at the same time injuring the trees. Try the effect of fencing them in with sulphured rags on short sticks stuck into the ground.‡

SEEDLING FLOWERS.

AURICULAS: *Alpha.* A fine large flower with a clear yellow centre, and crimson shaded with purple round the outer part; large, but a little crumply near the edge.*

DAHLIAS: *H B.* Colour light yellow; petals well shaped, good in depth, and nicely arranged; a pretty show flower, not over large.*

FUCHSIAS: *J N.* 1, tube pale, waxy white, rather short and stout; lobes broad and rather pointed, corolla rosy red, well shaped, and equal in proportion to the size of the flower; a very nice little flower, well contrasted in colours and good in texture. 2, very similar in colours and size to 1, but a little longer in the tube, and not so well shaped in the corolla. 3, tube pale blush and short; lobes very broad, tipped with green; corolla pale pink and rather small; flowers too small and not distinct in colours; 4, tube waxy white; corolla pale pink; a very small flower and certainly very distinct.*

HEARTSEASE: *A Y.* Received in bad condition; but, judging from what remained, and the bad time of the year for such things, they are very promising, both as regards texture, shape, and colours.*

HOLLYHOCKS: *Althæa.* A very good class of flowers, with one exception; but as you have not sent any numbers to the flowers, we cannot point out the best, which are amongst the deep reds and rose-coloured ones.*

PETUNIA: *Althæa.* Thin in texture, dull, and run in the colours.*

, As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

SMITHFIELD CLUB, 1849.—The Annual Show of FAT STOCK will take place on Tuesday the 11th, Wednesday the 12th, Thursday the 13th, and Friday the 14th of December, 1849, at the Bazaar, Baker-street. The Printed Forms of Certificates, for the entry of Stock and Implements, must be obtained from the Honorary Secretary, and returned to him, filled up and complete, on or before Saturday the 17th of November, 1849. B. T. BRANDRETH GIBBS, Hon. Sec., Corner of Half Moon Street, Piccadilly, London.

OIL-CAKE, GUANO, AND OTHER MANURES.—Foreign and English Oil-cake on sale; also Peruvian Guano of the finest quality, Superphosphate of Lime, Bone-dust, Sulphuric Acid, Animal Cake, Wheat Manure, Gypsum, Rape-cake, Salt, and all other Manures of known value.

Apply to MARK FOTHERGILL, 201 A, Upper Thames-street, London, Agent for Collins's Patent Disinfecting Powder.

DR. RYAN'S AZOTIC MANURES, prepared under his immediate superintendence. The attention of Agriculturists is earnestly directed to those well-known Fertilisers, the preparation of which is based upon a careful examination of the requirements of the crop and the condition of the soil. The Manufacturers of these Manures, which are made entirely of rich animal matters, have received numerous testimonials to prove them to be equal to the best Guano. —ORGILL, WILLIAMS, RYAN, and Co., 24, Mark-lane, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA. E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.

HEATING BY HOT WATER.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

IRISH PEAT CHARCOAL.

THE IRISH AMELIORATION SOCIETY, Established by a Royal Charter of Incorporation, dated January 26, 1849, which limits the responsibility of Subscribers to the amount of their respective Subscriptions.

The LORD DE MAULEY, Chairman to the Court of Directors
MAJOR-GENERAL MACLEOD (late Chief Engineer in Bengal), Chairman of the Committee of Works.

Chief Office, 9, Waterloo-place, London

Capital Stock, 500,000*l*, divided into Shares of 10*l*. each, to be paid up, in pursuance of the provisions contained in the Charter and Deed of Settlement, by a deposit of 10s a Share, and Calls not exceeding 10s. each, nor to be made within less than three months' time after the payment of any previous Call Twenty-one Days' Notice of every Call is to be given to each Shareholder, by letter from the Secretary. The First Call was payable on the 20th September, 1849.

This Society was formed for the purpose of beneficially employing the Irish peasantry in the manufacture of Peat Fuel and Peat Charcoal from the Peat Bogs of Ireland, and, in the gradual, but permanent, reclamation of the Bog Lands.

The Peat Charcoal thus produced is an article of considerable commercial value for many purposes; and it has been shown by recent public exhibitions, and any person who doubts may satisfy himself privately, that it is of inestimable value as a deodoriser and disinfector of night soil, which immediately on being mixed with the charcoal becomes a dry inodorous powder, capable of being handled without inconvenience, and packed in bags and transmitted by railway or any other conveyance.

The manure thus produced is deemed by scientific men to be equal if not superior in quality to Guano, and may be purchased at one-fourth of the cost of that well known manure.

The Directors have established these facts at their own risk, having for some months past had an experimental Station at work at Derrymullen, in the county of Kildare, where, in addition to having satisfied themselves that they can make Peat Charcoal and sell it in London with a satisfactory profit at from 40s. to 50s. a ton, their operations have proved, that, if duly supported by the public, they will be able to employ constantly and most beneficially thousands of the half-starved and half-naked Irish peasantry.

The system adopted and proposed to be acted upon by the Society, in the employment of the labourers, is task-work, with a fair remuneration in money; and the Directors feel bound to state, that so far as they have been enabled to carry out this system, they have experienced from the labourers a degree of industry, alacrity, and docility, for which they were totally unprepared. The people employed have by severe labour clothed themselves and their families, cultivated their patches of land, previously lying waste for want of seed, and in some cases have purchased pigs; and they say all they want to make them happy is constant employment.

The Directors earnestly appeal to the public for support. To those desirous of promoting the permanent welfare of Ireland, the opportunity is offered, by contributing to the funds of this Society, of opening up in that country a new field of useful and profitable labour, to which a limit can scarcely be assigned.

Those who feel interested in removing from the densely populated towns of England the cause of pestilence and death, may further that object in the only rational, because the only natural way, by assisting to provide the antidote.

The aid of Agriculturists is looked for, because the labours of this Society promise to render available to them millions of tons annually of the most valuable manure, now worse than wasted.

And though this Society was formed rather on philanthropic than on commercial principles, the Directors assure Capitalists who may feel inclined to invest in the Stock of this Society, that that they will receive a quick and satisfactory return for any capital they may so employ. By order of the Court,

P. R. SHERIDICHE, Hon. Sec.

To whom application for Shares may be made.

SEED WHEAT.—For Sale, at 50s. per quarter, good and genuine seed of the RED-STRAW WHITE and HOPETOUN varieties. Samples of grain and ear will be sent on receipt of stamps to cover the expense of postage. No orders for less than 4 bushels can be executed; those from unknown correspondents must be accompanied by a remittance. Sacks 2s. each. WINTER BEANS, for seed, can be supplied at 5s. per bushel. JOHN MORTON, Whitfield, Berkeley, Gloucestershire.

WHEAT SOWING.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure sent out by them shall be free from the slightest adulteration. Peruvian Guano direct from Importer's Warehouses, London Manure Company's Wheat Manure and Urate, Sulphate of Ammonia, Phosphate of Ammonia, or Ammoniacal Phosphate; Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone Sawdust, and every other Artificial Manure.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

AUTUMN SOWING.—POTTER'S GUANO.

MR. POTTER particularly recommends this season for using his Guano, as, if now committed to the earth, it is better adapted, when the spring returns, to yield to the growing crops the food they require in a fit state for immediate assimilation. The increase of chemical knowledge, as applied to agriculture, has enabled Mr. POTTER to make some important improvements in the manufacture of his Guano, which he now most confidently recommends to the use of all who wish to grow luxuriant crops at small expense.

In consequence of some unprincipled persons, once acting as Mr. POTTER's agents, substituting their own compounds for the genuine article, the Proprietor is induced to recommend a direct application to himself. Where the quantity taken is adequate, an arrangement, as to carriage, will be made to the satisfaction of the purchaser.

PURE GYPSUM, in a state peculiarly adapted for the farmers' use, at the usual low price. Please direct your orders, per post, to the following address.

28, CLAPHAM ROAD PLACE, LONDON.

PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, CHARLES FRANCIS and SONS, Nine Elms, London.

The Agricultural Gazette.

SATURDAY, OCTOBER 27, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS
THURSDAY, Nov. 1—Agricultural Imp. Society of Ireland.
THURSDAY, — 8—Agricultural Imp. Society of Ireland.

DURING the farmer's avocation there are no materials with which he has to deal that should engage his attention more than MANURES, or those substances which act as the food of plants.

Although it is of great importance to have the land in a proper mechanical state for the crop intended to be raised, that is, well drained, ploughed, harrowed, &c.—although it is of equal moment to have good and proper seed, clean and free from the eggs of destructive insects—yet that which is paramount, or should be the farmer's chief care, is to have the best materials he can possibly obtain as food for the plants he is raising; that is, he should use the best manures.

It is obvious that in however good a condition, in a mechanical point of view, land may be, unless it contains sufficiency of the right description of food for the plants desired to be raised, it cannot be expected that the crops will arrive at maturity, much less be "fruitful and multiply," as every farmer desires them.

The best manure for a plant is that which contains, or yields by its decomposition (heating), those substances which it requires as food; we have therefore only to inquire what such and such a plant eats, and the answer will give the best compound (compost) for that or succeeding plants (crops). It is of great importance to bear in mind that no *one* material can afford food for a plant by itself, any more than for an animal, which, we know, if fed upon a single material for a continued length of time, eventually dies; a plant can no more form its different organs (as leaves, flowers, seeds, &c.) from one substance, such as lime, than the human frame could produce hair, bone, muscle, and nerve, from such a matter as arrow-root. The more complex or the greater number of substances that are mixed to form a compost, the more likely is it to contain those materials which each plant delights in. All plants that belong to the same class or family (that is, those whose habits and growth are nearly alike) partake of nearly the like food, and the same analogy is noticed among animals. The plants cultivated by farmers have, by general consent, been divided into two classes, called exhausting crops and fallow crops; all grain and seed crops are classed with the former, and all green crops with the latter. Now, the reason why grain crops exhaust the land so much more than fallow crops is simply this: the former requires a much larger quantity of those saline ingredients which occur in small quantity in the soil than the latter. The phosphates, for instance, which are required by every plant, are used to a much greater extent by grain crops than by any other; and one grain crop will not succeed well after another, because the first takes so much of these phosphates out of the land as to leave comparatively little for the second crop. Of the matters which plants abstract from the soil, the "phosphates" are, doubtless, the *most* important, yet the land of England is more deficient in this material than in any other, arising from the circumstance that for a long course of years Wheat and Barley (the most exhausting of grain crops) have been carried to the cities and towns of the kingdom, taking with them the "phosphates" they have obtained during their growth *without an equivalent return of the same matter* in any other shape to the land whence they were obtained. Nearly all the phosphate consumed by horses and cattle in Oats, Straw, Hay, Beans, Mangold Wurzel, Turnip, &c., is *returned* to the land, for every farmer, stable, and cowkeeper, carefully preserves the excrements of his cattle, which contains the phosphates of the food, and eventually it is put on the land again. Not so, however, is the case with the phosphates in the Wheat and Barley consumed in bread and beer; here the excrementitious matters are allowed to *run to waste* through the sewers, and to contaminate the waters of our rivers. Farmers should take every opportunity to obtain this material, which, if properly applied, is beyond price.

The following experiment, which may be tried by any one for the value of a penny, will give an idea of the immense quantity of "phosphates" that are annually consumed in England through the medium of Barley alone: that which is taken from Wheat (bread) is much greater. To a tall glass of bright ale add, drop by drop, till it becomes cloudy, liquid ammonia, commonly called hartshorn, give it a stir with the feather of a quill, and then let it stand still for a time; shortly, the whole of the "phosphate" which was in the malt that was used to brew that quantity of ale, will settle at the bottom of the glass.

In the ordinary course of events the Barley which attracts the phosphates and other salts from the land, is grown by A, malted by B, brewed by C, and drank by D, who throws off the phosphate which it contained, which thence runs to the sewers, and from thence to the rivers, and is lost for ever; it is obvious that this yearly sacrifice cannot go on without a proportionate loss to the land of its, to the farmer, most useful element: we may make the same observations with regard to Wheat. Now, unless the farmer makes good this loss of phosphate, &c., by the use of bone-dust, urine, night-soil, guano, &c., he will find greater difficulty every year in producing crops.

Farm-yard manure is, doubtless, a most excellent substance as a food for plants. We know of no material that possesses so many good qualities and real intrinsic merits, whether of natural or artificial production, for one especial reason, viz.: It contains almost all the substances that are necessary for the food of the different crops raised by farmers; but still it has a fault, that is, a want of strength in two of its most important ingredients, in phosphate and in ammonia; if it contained more of these two substances, then nothing could be compared to it. In order, therefore, to improve farm-yard muck in this particular, we would recommend that it should be mixed with such materials as will yield the above substances to it. The most common are night-soil, bones, guano, and the refuse of the sewers. Why should not the farmers assist the efforts now making to collect the sewage matter of cities?

The ashes of the grates are collected, and the waste of the streets are the sources of an enormous revenue. All these matters will yield by their decomposition what the plants most desire; which ever is used care should be taken that it is well mixed with the muck, and as much liquid as the muck will soak up; nitrate of soda, sulphate of ammonia, &c. &c., in like manner are much better if mixed with the farm manure than if put on the land by themselves, for thus they are not so liable to waste.

THE *Mark Lane Express* says that, in speaking of agricultural truth, we have forgotten that there is such a thing as editorial truth; and that when charging it with "encouraging those who would silence Mr. CAIRD if they could," we made a statement which we must have known was "utterly at variance" with every thing it had written upon the subject.

So it appears that we have been all along under an entire misapprehension; our cotemporary's object has not been to "encourage those who would silence Mr. CAIRD." "Utterly at variance with this," he must have desired to encourage those who supported him. Well; this was a better object than the other. When one who is not likely to be mistaken comes forward to relate an instance in which energetic and intelligent farming has been well rewarded, an agricultural journal ought to defend him from attack rather than encourage his assailants. And that the former has been the object of whatever our cotemporary has written upon the subject, we dare not deny, after his unmistakeable assertion of the fact.

The design of the *Mark Lane Express*, having been declared by those who alone can have known

it, is, we readily admit, no longer open to variety of opinion; but our cotemporary errs if he thinks that the execution of that design is not as fairly open to discussion as if he had never announced the spirit which had animated it. And as a man may easily fail of his aim—as many an arrow intended for a foe has nevertheless reached the heart of a friend—so we confidently re-assert our belief that the *Mark Lane Express*, notwithstanding its anxiety to defend Mr. Caird, has unfortunately "encouraged those who would silence him if they could." A collection of extracts from his columns would, we believe, fully justify our opinion; but the easier method of determining its accuracy would be to apply to the gentlemen who have conducted the controversy on this subject. Shall we ask the opinion of Mr. Caird or of Mr. M'Culloch, or of them defenders? Does the editor of the *Mark Lane Express* object to receive their judgment of his arbitration between them and their opponents? Then we are perfectly ready to appeal to those on the other side—will they say that they have not been encouraged—that the editor of their Paper is not obviously with them and against their opponents? We are perfectly ready to submit to their decision on our accuracy, or, as our cotemporary will have it, on our veracity.

But the gist of the difference between us may arise from an error of description. "Those who would silence Mr. Caird if they could," are not encouraged by the *Mark Lane Express*: that is, the men encouraged are not accurately described in these words. "It is not our object to silence Mr. Caird," says our cotemporary, "it is our objection that he remains silent." Now we did not mean that Mr. Caird was always coming to the charge with fresh arguments and additional facts to repel the arguments and facts of his opponents in the columns of the *Mark Lane Express*, while the editor was taking every opportunity of keeping him in the background, and advocating the views of those who opposed him. Mr. Caird has hardly done more that we are aware of, than publish the statement which, as an eye-witness, he had originally prepared; but as we have heard of one who "though dead yet speaketh"—and as we have heard a single voice, uttered loud enough, echoed and re-echoed repeatedly—living long in proportion, not only to the volume of its original utterance, but also to the frequency of the repellent surfaces with which it came in contact, so we imagined that an unanswered pamphlet might be considered a voice unsilenced—that a pamphlet whose reputation has been extended by every fresh attempt to turn its statements upon their author, might be considered a voice which such attempts were endeavouring to extinguish. And the charge we make upon the *Mark Lane Express* is, that whereas in times of danger and difficulty to the agricultural interest every agricultural writer ought to endeavour to inspirit those whose all depends upon hearty and intelligent exertion being made, it has been the means—unwillingly, if we understand its rejoinder of Monday last aright—but unfortunately been the means of discouraging any who might hereafter have been willing to expose his farm experience for the information and encouragement of his agricultural brethren. We only add that in so far as this charge is made the subject of a personal dispute between two agricultural journals, we do not desire to discuss it here; but in so far as it turns upon the proper office and duties of agricultural journalists, we make no apology for occupying our space with these remarks upon the matter.

AGRICULTURE IN IRELAND.—No. III.

It remains for me to endeavour to prove that the land of Ireland can be obtained on favourable terms by the farmer, and that labour is cheap. As to the first of these points, some of your correspondents entertain the opinion that rents in that country are enormously high, and I believe, sir, that such is your own opinion; others, that where rents are reasonable, rates are high; others, who are of a more confident character—amongst whom I may more especially distinguish your intelligent correspondents, "Falcon," and Mr. Hewitt Davis—recommend emigration to Ireland (the term has a strange sound when applied to an integral portion of the United Kingdom), the former in very vigorous language, the latter with qualifications, and under the favourable circumstance of a large property, under the control of a British proprietary, and improved by an outlay of capital, but he is of opinion that the turbulent habits of the people, and the wild condition of the districts where low-priced land is to be had, do not admit of individual settlement. Mr. Dorant, another correspondent, admits that he has dissuaded several English tenant farmers from thinking of engaging in agriculture in Ireland at present. I hope to be able to show him that the grounds upon which he has acted are insufficient. He gives me encouragement to address him, as he has stated that he has farmers ready to settle in Ireland, if he can be convinced of the advantage of their doing so. He has stated two reasons for his opinion; first, that Irish farmers emigrate to America and the colonies, which they would not do if they had encouragement to remain at home; and secondly, because the tenant farmers of Carlow held a meeting recently, and resolved that rent and the other burdens upon land were so excessive, as to be ruinous to the landholder. To take his last point first; I know that county well; it abounds with resident gentry; is blessed in many parts with a very fertile limestone soil; is traversed by the river Barrow, along the banks of which are rich alluvial meadows and the largest mills in Ireland, which afford a ready market to the farmer for his produce. A railroad and canal also combine to make its proximity to the metropolis advantageous. It is therefore not surprising that the leaseholders of a period when agricultural produce was high, and the fee of the soil sold for 28 and 30 years' purchase, and when the acquisition of land held by lease was desirable, from political causes—that land, moreover, being situated in one of the most favoured counties in Ireland, and taken before poor rates were imposed—should now complain in a period of agricultural depression, and after a three years' famine, of the dearness of rents. I do not deny that the recent changes in the laws regulating the importation of corn, and the introduction of the poor laws into Ireland, in all future lettings will affect the price of rents, and that, in all probability, they must be lowered. This result must be anticipated when it is remembered that the value of land has not been increased by any perceptible introduction of manufacturing wealth, and that the excessive competition which formerly existed in Ireland for land has now ceased, within at least the geographical limits to which I have, in my previous letters, confined my observations. In those instances in the north and east of Ireland, where the habit has been for the tenant to take a lease for 31 years, or three lives, and where all the improvements have been made by him, it is not unnatural to expect that this class should now feel severely the depreciated value of their holdings, occasioned by a duplicate cause, lowness in the price of produce, and increase of local taxation.

In England, after the war had ceased in 1815, the leaseholders, at war prices, were ruined; but the new tenants adjusted their rents to the lowered value of the land. So now in Ireland the leaseholders complain that rents are high, but this does not prove that in cases of new tenancies farms cannot be had on most advantageous terms. It might as well be alleged that rents must be high in the western highlands because they are so in the Lothians.

It has been stated as a truth in political economy, that scarcity is the test of value. Land tested by the demand for it—was scarce in Ireland, it was therefore dear; it is now tried by the same test—it is now abundant, and therefore cheap. For example, Mr. Carter, who is possessed of about 70,000 acres in Erris (in the county of Mayo), has published a prospectus of a number of farms which he can let at an almost nominal rent, and for a period of 21 years, covenanting to allow the tenant to continue in possession at the expiration of that period, at the rent at which he commenced; or, if evicted, to allow him compensation for his improvements. Here is a combination of low rents and favourable tenure. It appears from this prospectus, which contains an enumeration of 24 farms in Erris, varying from 2054 to 260 acres, principally grazing land (three only being under 1000), and from 102*l.* to 18*l.* yearly rent—that on the whole extent of this property (containing 23,823 statute acres, at the ordnance value of 1255*l.* per annum), there were only 1000 families receiving relief from the poor-rates, so that if each 230 acres should give employment to one family, it would leave no poor on the rates, "a clear proof that nothing but employment is wanting to set the country to rights," as Mr. George R. Crampton,* the clever and very zealous agent of Mr. Carter's vast property has recorded. Many of those farms are adjacent to good harbours and bays, with abundant facilities of obtaining seaweed and fish—salmon in a river with many branches, inclusive. One farm of 1200 acres, grazing and arable, has been taken, at 70*l.* a year, on the favourable condition of being allowed 10 years' purchase on the value of his improvements, if he should not continue in occupation after the expiration of his lease of 21 years. And this instance is by no means singular; those of the existing proprietors who can maintain their position are anxious to give the most favourable terms in their power, as to rent and tenure, to an improving tenant; but I look to very important results from the rapid transfer of land to new hands, the acquisition of a new proprietary, and the creation of a new tenant farmer class.

The recent changes in the law of real property in Ireland are not perhaps sufficiently understood in England, and yet for a thorough knowledge of this subject they require to be so.

A very frequent species of tenure in Ireland was that of leases for lives, renewable for ever; that is, as each life expired, a new one was added to the lease on payment of a fine. This species of tenure led to frequent litigation; as a matter of course it never could be ascertained either when the lives dropped or what should be the amount of fine paid. Neglect to renew led to attempted forfeitures on the part of the landlord, and these again led to a suit in Chancery on the part of the tenant. The tenure was altogether vexatious and unsatisfactory. By an act of the last session the lessee of such a lease as I have mentioned is now enabled to commute his tenure into a perpetual fee farm, on payment of an increased rent, calculated according to the value of the fines hitherto payable. If, therefore, an English farmer capitalist become assignee of such a lease, he can either purchase the fee farm at once, or if he have not sufficient capital to do this and improve his land, he can do the latter first, and then apply his available resources to the acquisition of a perpetual tenure. This gives one species of very favourable tenure. And that low rents and long terms of years will be granted by the purchasers under the Encumbered Estates Act I conclude for the following reasons: These purchasers must in many instances be the last creditors upon the estate; thus where land was mortgaged 10 years ago for 20,000*l.*, it is not now worth 15,000*l.* The creditor (and this will be found a frequent case), must either make up his mind to bid for the land or lose 5000*l.* I think he will adopt the former course and become the purchaser, in the strong, and, in my opinion, well grounded assurance that the soil of Ireland cannot be permitted to lie waste in the face of British unemployed capital; his own being sunk in his purchase, he naturally looks about to see how he can best attract the capital of others, and he will welcome that British farmer who has the power and the will to improve the soil, and he will be ready to give an inducement to settle, if that can be accomplished by low rent and a long lease.

But suppose a creditor not to purchase; the new proprietor will prefer a good solvent tenant; he purchases either from patriotic or interested motives, it does not matter which; he has an article to dispose of which is rather a drag, and the British farmer can make his own terms. Suppose a company to buy—and why should not private individuals associate for this object? it is inviting as a mercantile speculation, it is honourable in a philanthropic sense. Though I should prefer a resident proprietary, yet individuals and companies have their separate advantages. The character of the British merchant is generous, the tenants upon their estates would be treated with kindness. Should occasion of difficulty arise abatements might be made in rents, greater encouragements held out to locate, more comprehensive improvements set going than could be expected from private individuals. The diffusion of commerce might be the result of a proprietorship through the merchant princes of Great Britain. It would be indifferent to the great London merchant whether Liverpool or Galway were the consignees of the barter between England and America, whilst the value of land in the latter district would be enormously enhanced. Let it not be said that I assume a state of things and then argue from my assumption. The corporation of London may not purchase lands in Ireland, nor any private company, but the property west of the Shannon must be sold. The English public are not aware of the fearful state of an immense mass of the real property of Ireland; they probably do not know that the whole rental of Ireland being 13 millions, nearly two millions of that rental, according to the calculation of Mr. M'Cay, in his very valuable evidence before the receiver committee, is under the control of the Courts of Equity in Ireland, and the management of their receivers. A great proportion of the area of that rental is in Munster and Connaught, and in every acre of it, so soon as a receiver has been appointed, the relation between landlord and tenant is severed. The Court of Chancery has neither power to improve nor to grant a lease beyond the term of seven years; the tenant has no interest in improving, and thus these neglected Chancery estates have become a plague spot in the country. Miserable themselves, they have been the sources of misery to the adjoining properties upon which the burden of their poor has been cast. This state of things cannot continue, as will be evident from the consideration that a considerable mass of this property has been placed under the Irish Equity Courts for purposes of sales, and is now ripe for transfer and must be sold, and it is presumable that purchasers will come forward with greater alacrity when they know that they can procure good tenants. I believe the extinction of many an ancient family in Ireland as land proprietors to be inevitable. No humane man can reflect upon the sufferings which many of that class have undergone, and the efforts they have made within the last four years to support the people upon their estates, without feelings of the deepest sympathy. It is not with composure that I can think of the annihilation of the ancient gentry of that part of Ireland—the last of a time-honoured race. They have had their faults—what class is exempt from them? but in these, the days of their calamity, I would only recall their frank and generous hospitality, their cordiality of manner, their unbounded good nature and warmth of heart, and I lament for their sakes the stern necessity of the decree which has been pronounced for their expulsion.

The visitation of Providence, which has decimated the population, and driven the small farmer from his home to escape for his life, has been in truth terrible. I may point out to Mr. Dorant that it is the small farmer who has suffered most intensely, and who has emigrated. He failed with the Potato; as that was the lowest food for civilised man, so his was the lowest grade of the farming class—the decay of the one brought in the extinction of the other. The returns published by Capt. Larcom prove that the number of farms above 30 acres has increased, whilst the number of those under five has decreased to a very fearful extent; for how-

* The address of this gentleman is George R. Crampton, Esq., Belmullet, Mayo.

ever desirable the removal of the race of small farmers may be, one cannot witness a tremendous loss of human life and of a hardy population without the deepest commiseration. Whilst I unaffectedly deplore the miseries of Ireland, I cannot serve her by lamentation. I must endeavour to see the uses to which her afflictions may be turned, and I think I see that by the introduction of a new proprietary I may expect the advent of a tenant farmer class, with capital which they can invest in land to be leased at a moderate rent and a favourable tenure.

Having given these reasons, which are I hope sufficient to prove that rents must be moderate, I shall now consider whether the burthens upon land are so excessive as to deter the farmer from undertaking its cultivation. It will be borne in mind that in Ireland there are no assessed taxes and no income-tax. The tithe-rent charge is included in the rent and paid by the landlord. There are in fact but two taxes paid by the Irish tenant—county cess and poor-rate. The former is a tax for the repair of roads and other county charges, including the repayment by instalments, spread over a period of 20 years, of one-half the amount granted for the relief of distress in Ireland during the first years of the famine. The police force used to be paid by the several counties, but since 1843 that body are paid from the consolidated fund. I should not suppose that the county rate on the average of years can exceed 3*s.* on the statute acre. It has never yet been so high. The poor-rate is the only remaining burthen. The amount of this must depend on the condition of the electoral division. Where there is employment it will be trifling; where there is none it will of course be considerable.

In estimating the probable amount of future poor-rate, it must not be forgotten that it will depend on the amount of population and the employment given to that population. In the west of Ireland, the population—from the lamentable causes which I have stated—is by no means superabundant; and if employment were brisk I feel satisfied that the inmates of the poor-house would be few, and there need be no out-door relief whatsoever. In Carlow, where the rate-payers complain of the excessive burden of poor-rates, I venture to assert that no tenant-farmer has ever paid within the year 5*s.* an acre—a common sum in England; nay, that amount has never been struck in any one year; and one-half of the rate—and where the lands were rack-rented more than that, was borne by the landlord. And why should not districts in the west of Ireland be as Carlow? they need but the hand of the improver and the employer to make them so. Before the famine, the rate in Carlow and Wexford did not exceed 1*s.* in the pound, very frequently not so much. When the famine shall have passed away, why should not the same amount suffice for the support of a thinned population? By the old law, any contract in a lease between landlord and tenant whereby the landlord should be exempt from poor's-rate was void. By an act of last session, that prohibition has been repealed, and the tenant may agree with his landlord to throw either the whole burthen upon him, or whatever portion may exceed a fixed limit, or *vice versa*. It is true that no maximum clause—that is, no clause declaring the maximum to which any district can be taxed, has been enacted; but each tenant by contract with his landlord can limit his liability. If there be no agreement, the law throws one-half the rate upon the landlord. In an electoral division where the properties are redeemed from the court of Chancery, and have passed into the hands of an unembarrassed proprietary, the future liabilities of the tenant for county cess and poor-rate will not probably exceed 6*s* in the pound; a small sum compared with the taxation of England, where the charges fall exclusively upon the tenant.

On the point of labour:—The labourer in the remote parts of the west of Ireland has hitherto earned but 6*d.* a day. I trust, however, we shall see an improvement in his position in the social scale, but he will not expect more than from 10*d.* to 1*s.* a day as wages. Labour, therefore, may be estimated at one-fourth less than it is in England. At piece work the Irish peasant is the most industrious animal on the face of the habitable globe; he is not naturally turbulent, though his excesses do often dishearten and discourage me. He is like the rest of the human race, improvable; he has senses, organs, and passions like other men; with him as with them the influence of good manners and good morals will be felt, but it must descend to and not be expected to come from him. He is patient of fatigue, patient too under suffering. What race of the human family above the lowest savage tribes would have endured the privations he has latterly undergone, and with the same degree of exemplary fortitude? It is true that crowds of half-famished beings pilfered Turnips and Potatoes, and confessed that guilt to procure transportation from a land in which they had been born to suffer. But how many did not pilfer nor rob, and yet who died of utter want! And during this period of utter want there were no organised schemes nor illegal associations for plunder; and in the midst of one of the sorest famines ever felt in Europe, the rights of property have been in the main jealously observed. Would the people of England or of France have borne as much without tumults? Would there have been no bread riots, no *jacqueries*?

I do not mean to assert that the Irish peasant is a perfect character—he is far from perfection; he wants honesty, manliness of character, and a feeling of sturdy independence, with a desire to raise himself from the mire into which he has fallen, naturally, for his inheritance has been but filth and rags. Nor would I recommend isolated instances of settlement by Englishmen little removed from the grade of the peasant. These would probably be looked on with jealousy; but I believe that the gentleman farmer who would treat his workmen with kindness—Paddy likes coaxing—though he should keep a firm hand also, would be as secure from acts of lawless violence in the wilds of Connaught as in England.

Such are the reasons that I venture to suggest as demonstrating the advantages which the west of Ireland now presents for the adventurous farmer possessed of capital. There never was a fairer opportunity than the present for his investing it there. The minds of the people of that country are prepared for his settlement among them; they look forward to it with anxiety. I, too, partake of that feeling; I may have viewed the subject through the sanguine hues of hope, but I have considered it also with sober reflection. The British farmer, if he coincide in opinion with me, must make up his mind to endure some hardship, to exchange the cultivated and rich landscapes of his own quiet land for the wild and bolder scenery of a mountainous country. He must endure a damper and less genial climate. He must build his own habitation; but having pulled on his strong boots and his thick coat (Irish *frieze* is a very cosy envelope), he will be enabled to defy all weather, and will be consoled for any privations he may be obliged to endure by the certainty that he is realising an honourable independence, and contributing to raise the land of his adoption from the desolation of her former condition. *Martin Doyle.* [The allusion to the good proprietors of Galway, at p. 619, accidentally omitted Lord Clancarty's name.]

ENGLISH FARMER *versus* FOREIGN FARMER.

In the *Agricultural Gazette* of the 8th September, there is an article with the above title, purporting to assuage the anxiety of "nervous neighbours," by proving to demonstration the fallacy of their apprehensions, and the practicability of still farming with success.

To desponding farmers such assurance would be especially welcome, could their reason be convinced that the hopes held out are at all likely to be realised; but I fear the arguments adduced are only calculated further to puzzle and perplex them, and, if listened to, to induce a totally mistaken confidence. Your correspondent premises by giving the reason for abolishing protection, viz., the lowering the price of our home produce, or native industry, in order to extend our foreign trade, which however has unfortunately had quite a contrary effect, notwithstanding the sacrifices that have been made, for, like the dog in the fable, we, in catching the shadow, are letting the substance go; there cannot be a doubt, that so long as this country is so heavily taxed, or in so artificial a state, we must be greatly dependant on our native products for the greater part of our revenue; all other modes by which the resources of a country are enlarged, sink into insignificance before one by which wealth is made to spring up from the soil, the unalienable and indefeasable property of our inhabitants. This is not the mere interchange of commodities, by which the precious metals are shifted from one scale to the other, in the balance of national rivalship, an interchange which, though it may throw into the hands of our nation a great deal of what it may deem wealth, by the comparative impoverishment of another, bears no increase of the real, in opposition to the merely representative constituents of riches; an interchange dependant on the caprice of fashion menaced by the chances of manufacturing competition from abroad, and still at best, however profitable, subsisting mainly in exchange for value received, by restoring an equivalent (at least what our customers deem such), and the more they advance in civilisation, it ever approaches nearer to a veritable return, really equal in value to what we receive in lieu of it. Now seeing that we are laid open to competition with the whole world, "foreign farmers with rich soil and beautiful climates, labourers who live on black Rye bread, with low rents, no tithes, and taxes remarkably light, are competing with us," as your correspondent tells us, "who have a less favourable climate, labourers who live on good wheaten bread, bacon, and mutton; higher rents, burdensome tithes, heavy rates of numerous kinds, and taxes not only to defray the expenditure of a costly government, but the interest of a stupendous debt. To succeed with such circumstances against us, we have only one course left to follow, *i. e.*, we must obtain as much produce from a certain outlay as they do, so that supposing an acre of our land has one-third more expenses attending its occupation and management than an acre of theirs, we must raise a proportionate quantity from it, either in vegetable or animal food."

Now, asks "I. A. C," "Are we able to do this?" He very justly remarks, that the prosperity or ruin of British agriculture depends on the solving of this question, and with boldness he states his conviction that we are. But unfortunately the only proof he is able to adduce, is the very lame one, that we have done it before, forgetting that it was under very different circumstances; and he asserts that this requires no other demonstration than the fact of our having under these circumstances paid much heavier expenses upon our land than any other country has done; and by a peculiar sort of argument he assumes that we must have produced more per acre than they, as we have paid more per acre than they; overlooking that it is just as much the price received for an article as its cost of production, which determines the amount of gain or loss to the producer; and to make his argument more plain, or more properly more complex, he states that it is only necessary to reflect that price is merely an indication of relative and not of actual value, and supposes an acre of land in some foreign country yields 4 qrs. of Wheat, and the expenses are equal to one-half of the produce, and another acre in England to be under the same conditions, the value for a quarter of Wheat in the foreign country to be 30*s.*, then the produce would be 120*s.* and the expenses 60*s.* In this country, suppose the price to be 60*s.* owing to a duty on corn, then the produce will be 240*s.* and the expenses 120*s.*

Now, this and his subsequent remarks sound very well in theory, but no practical man, I think, will attempt to reduce it to practice, for we well know that our expenses have amounted to much more than half the produce, and the farmer has not made 5 per cent. on his capital after allowing him a fair wage for his personal labour; and how is he to proceed when his crop produce is to be reduced to half its former marketable value, for that is its actual value which it brings in the market, and its relative value to labour or money I will not attempt to determine. In America a bushel of Wheat is not equal to a day's work of a man, and in England to about a week's. Now, to return to the question. Can we grow corn at these prices? Is it to be done by lowering the wages of the labourer, and reducing him from his comfortable clothing, wheaten loaves, and mutton, to the black Rye bread and almost primeval clothing? The foreigner can meet us in this respect. Is it by lowering our rents and throwing our crushing taxes to the wind? The foreigner has comparatively neither rent nor taxes. Is it by our superior soil or climate, or by a further investment of money in the soil, in draining and manures? The money spent on manures alone in a year would buy as much land in fee simple as would annually produce as much as we can do. No; I think it is not likely any sane man with capital will embark in land in this country, if he has no advantages to compensate for these drawbacks, but will rather leave taxes, climate, poor's-rates, rent, wages, and starvation behind, and try to do for his family in other climes what is denied him in his dear native land. I know I speak the sentiments of a good majority of farmers when I give expression to these views, and numbers are anxiously waiting in the expectation that something will be done before the country is irretrievably lost. I think these ought to be the sentiments of noble minds, to make farmers alive to their prospects, and not to lull them into a too lethargic and reprehensible indifference, by representations quite chimerical and impossible to be realised, and if persisted in will have the effect of ruining and expatriating the farmers as a class, and throwing the country into a state of anarchy, bankruptcy, and confusion, to which Ireland, indeed no country in the world at the present time, can bear a comparison. Believing the article alluded to will do harm, and wishing farmers to know their real position, I have reluctantly expressed these sentiments, which I am persuaded are generally entertained, and for which I humbly claim a place in your valuable journal. *T. M.*

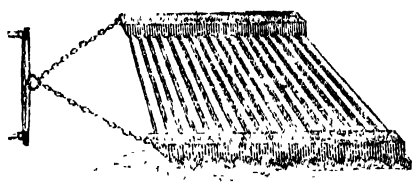
Home Correspondence.

What is the Cause of the High Rents Paid in Scotland?—Mr. Caird's pamphlet on "high farming" deserves careful perusal, and is very valuable, for although few farms have exactly the same advantages as that at Auchness, yet many of them have other as great, and in all cases deductions and alterations can be made in comparing the results obtained there with those possible to be obtained off any English farm; yet the pamphlet does not answer a question most important to every English farmer. How do the Scotch farmers pay their high rents and prosper, and what means should an English farmer take to obtain equal profits, for it is obvious that if, by adopting the Scotch system, we could afford to pay the Scotch rents, and yet continue to pay our own, there would need no grumbling at free trade or low prices—and no calling to the landlord for reduced rent, or to the Government for renewed protection. I therefore beg the favour of some farmer holding one of these high rented farms, or some one well conversant with every particular to inform us English farmers how these high rents are raised. This may be done by an abstract or tabulated view of the average cost of each crop, and the average product, giving the various items of expence, as ploughing, sowing, harvesting, &c., separately, so that we could compare the results and cost with our own. The usual reasons, superior education, enlightenment, and knowledge in farming, besides savouring of vanity in the Scotch speaker, and not being over complimentary to the English hearer, are useless, because such vague language gives us no information, nor does that of plentiful capital and long leases, because even those English districts possessing long leases or tenant right, plentiful capital, and intelligent practical men as farmers (take Norfolk and Lincolnshire as examples), do not appear to pay more than half or one-third of the reported Scotch rents, and even those gentlemen farming their own land with Scotch bailiffs, often make no profit at all, and never one equal to the Scotch rents of 3*l.* 10*s.* to 7*l.* per acre. I have been led to make these remarks, from reading Mr. Rawstorne's observations on Scotch farming in his "New Husbandry," and his quotations from Mr. Hyde Grey's pamphlet. From this it seems that the high rent per acre is not owing to the Scotch farms

being larger than the English, because he observes "the Lothian farms consist of from 200 to 500 Scotch acres." Nor from the farmers being more economical and parsimonious, "they are men of superior education, few of them without a handsome phaeton, and excepting for a month at seed time, have company at home or dine out three times a week." Nor from the labourers being worse paid, "actual wages as high as in England, 10*s.* or 11*s.* a week for 10 hours' daily work." In short, the northerns assert, that with no better soil, an inferior climate, a further distance from markets, equal or greater wages to labourers, in fact with every disadvantage, they pay double or quadruple the rent an English farmer does. The southerns assert that no English farmer, however scientific or intelligent, can or does pay such high rents, except on extremely rich soils, or near large towns where all the green crops can be sold and manure purchased. How are these two assertions to be reconciled? Therefore my question is, "Why are the rentals in the north-east of Britain, viz., Northumberland, Berwickshire, and the Lothians, so much higher than those in the south-east, as Lincolnshire, Norfolk, Suffolk, Essex, &c.?" as the agricultural practices are much alike; the ridge or drill system, two-horse ploughs, thorough draining, &c.; and from the prices of piece work in both districts, I find the labourers are equally good, that is, do an equal quantity of work per day at an equal cost. It is I confess a complete paradox to me, which I should much like to have explained. *W.*

The Poor.—The fearful pestilence which has been making such havoc in our country clearly points out the localities in which our poorer neighbours have herded together, in sties, not fit even for the brute creation. In some districts, more cleanliness might be observed by the inhabitants; but what inducement is offered to preserve common decency, of either body or mind, where human beings are congregated in rooms, regardless of the separation of sexes; where the filth, even offensive beyond endurance in the open air, is permitted to ooze through the flooring, under the very noses of the unfortunate creatures, doomed to inhale the noxious vapours during sleep, by way of refreshment after a day's toil? Is it justice to our fellow-creatures to compel them to live where disease in some shape or other always exists? Is it charitable or neighbourly to receive high rent for houses breeding death in its most dreaded forms? Is it right to leave premises without drainage, and to encourage, rather than prevent nuisances; thus destroying the health of those to whom it is most precious, being their all, for without such a blessing a man cannot "earn his daily bread by the sweat of his brow?" By breathing a tainted atmosphere the constitution is vitiated, the blood becomes impure and heated, which, acting on the brain, leads to drunkenness and debauchery of every description. The debilitated frame, not being able to throw off the lethargy caused by inhaling fœtid air, and the immoderate use of fermented liquors, the animal flies to the excitement of the gin-palace and beer-shop, and there steeps his senses in poison, till all propriety is banished from the thoughts, and the human being becomes a confirmed toper, devoid of any of the finer feelings of our nature. The degraded state of the working classes in our large towns reflects little credit on the upper ranks of society. In the country the dwellings of the labourers are not better than those of their brethren in the cities, with one exception, they enjoy fresh air—perhaps rather too much of it, sometimes, their dilapitated houses admitting a plentiful supply of the outward breeze. Then again a man and his family are obliged to sleep in one room, a mixture of all ages and sexes. It is melancholy to witness the contamination of young women, thus, as it were, educated in profligate and dissolute habits of life. Human nature is corrupt and unable to withstand temptation, unless guarded by the strongest religious sense of duty. But where the passions are excited by evil example, without wholesome restraint, the only surprise is that one female out of twenty should remain virtuous The morals of the poor are at a low ebb, from the want of judicious training in childhood, and the rising generation do not promise much amendment in point of conduct. It is too much the custom to condemn persons in distressed circumstances to parish relief, instead of providing them with profitable employment. The result of this short-sighted policy is to increase pauperism, as well as create dissatisfaction amongst the artisans and labourers. The first plan to be considered is the saving of all town manure by the labour of those who would otherwise be idle and come upon the parish. The profit derived from the sale of the refuse, if any, after paying the cost of collecting, to be credited to the union, and appropriated to the wants of the establishment. There can be little doubt a scheme of this sort would, in the course of a few years, reduce the rates to a nominal figure. Secondly, the encouragement of emigration by private subscription, the parties to be sent out in Government vessels, the society defraying half the necessary outlay. Thirdly, a labour committee might be formed in every union or parish, for the purpose of promoting industrious habits. Another source of evil is the idleness and impertinence of boys 12 to 16 or 18 years of age, and the difficulty of keeping them at work. Masters should have the power of correcting lads for misconduct. It is no punishment sending them home to resume their usual indolence, as the parents never think of admonishing the delinquents and administering a good thrashing. In such cases, "Spare the rod and spoil the child" is painfully true. The gaol returns show that a large majority of criminals trace their first transgression against the laws to drink. Agriculturists would do well to ponder over these returns, and use their authority and influence to put an end to a system so injurious to health as that of allowing their labourers quantities of beer and cider, instead of paying them higher wages. A few more years of neglect and indifference to the degraded state of the lower orders will involve this country in fearful difficulties. Should it please God to spare my health, I will keep this subject before the public, and however little influence an anonymous writer may have, I must recollect that "water, continually dropping, will wear away the hardest stone." *Falcon.*

Mr. Hodgson's Challenge.—I was no little amused, and at the same time gratified, at the challenge that lately appeared in the *Mark Lane Express*, from my neighbour William Hodgson of Low-walton, Saint Bees, to Messrs. Huxtable, Mechi, and Davis. I was glad to find there was so goodly a number of West Cumberland farmers ready to advocate their hitherto dormant claims, to stand amongst the improving farmers of England; and from my knowledge of the excellent farming in the neighbourhood of Saint Bees, I feel assured that the gentlemen who met at the Golden Lion Inn at Whitehaven were perfectly sincere in their offer of competition. In one point, however, I think they err, where they state that it was to test the old system, which they profess to follow, with the modern practice of others. I should say the farms of these gentlemen are cultivated on the modern principle of what is called high farming. I would inquire of Mr. Hodgson, how much of his farm is drained and subsoiled? What proportion of his farm is under green crop? How much artificial manures he annually buys? How much oil-cake he consumes annually? And how much Oats grown on the farm, is used in feeding his stock; my belief is that he uses nearly the whole for this purpose. When he answers these questions, we shall be able to judge whether he shall rank with the new or the old school. Let Mr. Hodgson offer to compete with the professed bigwigs of the south or north, and I shall have no fear of him, whether the competition be for Turnip growing, for stock feeding, or for the general good management of his farm. I am glad to see quiet retiring men, like Mr. Hodgson, coming forward to assert their claim to notice, and not give way to the puff of conceited individuals, who are too apt to demand all praise as due to themselves. In this expression I do not wish it to be understood for one moment that in that category I would include the names of Huxtable, Mechi, or Davis, for to them I think a great national debt is due, but I would more particularly allude to national puffing, from overweening national conceit, so prevalent in some countries. But enough of this. Let me draw your attention to other matters—to an instrument used here in Cumberland, an instrument of the simplest construction, cheap in its original cost, and most effective in its application. I mean the "Cumberland clod crusher." I call it by this name, not knowing that it has any other, and I am also ignorant from whence it came, or whether Cumberland has any title to its paternity. It is so easily constructed, that any hedgeside joiner can make one; nay so simple is it, that a neighbour of mine made a temporary one of his harrow sledge, that answered on his soil as well as the Crosskill crusher he already had on his farm; and so effective are they for all the purposes of clod-crushing, that farmers are laying aside their Crosskills to adopt them. They are made by cartwrights at a cost of 30*s.* to 40*s*, according to their size and the quality of the wood employed. Perhaps the best size is 6 feet square. For this size, two, three or four horses are used, according to the state and character of the soil, and the weight applied. For ordinary land, the weight of the crusher is enough; if the clods are more stubborn, the driver, to give additional weight, steps upon it and rides at his ease to the end of the field, stepping out at the turning, and resuming his station as the horses proceed. Should the land be one mass of large clay clods, he further increases the weight, by adding a few stones. The implement is made of two or three rails of Ash or Oak, as a frame 6 feet long, and laid parallel to each other, to make the frame 6 feet wide. Each rail being about 8 inches deep, and 4 inches broad, notched at the bottom to receive the cross boards. Across these rails are nailed 18 boards, perhaps 2 inches thick, and so broad as to overlap each other, thus elevating one of their angles 2 inches above the one on which it is laid, and along each of these angles, the whole length, a piece of hoop iron is nailed, to prevent the angles chafing; this being done, the implement is finished. It is dragged by two chains, one from each rail, joined to a swivel; the sloping sides of the boards forwards, the perpendicular sides following. The board next the drawing chains is sloped high up to the top of the frame, to prevent the soil from dragging. I annex a rude sketch; being however a poor draughtsman, it may be a lame attempt, yet it may enable you to understand the above. *A. B. C., Cockermouth, Sept.* 27, 1849. Since writing the above, a joiner tells me he uses boards of different widths and thickness, often 4 inches thick, as the farmers' wood will allow; this of course will cause a difference in the number required. [This implement was referred to some time since by our correspondent "L. V. R."]



Corn Rents. — Some short time back I was called upon to value an estate in this county, where the owner was desirous of adjusting his rents on a corn basis, so as if possible to meet the fluctuation of times. After much consideration of the matter, I framed the accompanying scale, and if you think it worth a place and notice in the *Agricultural Gazette*, I should be glad to have its defects or accuracy canvassed. My own impression is that as far as a corn rent can be acceptable to English occupiers on Wheat land farms, it seems tolerably correct. The only objection I see in it is in the poorer lands, where (and especially if very strong and wet) I am disposed to think a much greater proportionate difference in rental value should be made than is usually done, from the much greater precariousness of a crop on them, than on the dry lands, and a greater amount of horse and other labour; but if drained and dry, then I think the scale may be regarded as tolerably correct. You will see that I have made the pivot price 48*s.* per quarter, instead of 60*s.*, which has hitherto been the point.

A Scale for regulating Rent according to the Average Price of Wheat.

Average price of Wheat per Quarter.	Average produce of Wheat per Acre, in Bushels.																			
	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48		
	s.	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*	*s.*		
Rise.	60	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	
	58	19	22	25	28	31	34	37	40	43	46	49	52	55	58	61	64	67	70	
	56	17	20	23	26	29	32	35	38	41	44	47	50	53	56	59	62	65	68	
	54	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	
	52	13	16	19	22	25	28	31	34	37	40	43	46	49	52	55	58	61	64	
	50	11	14	17	20	23	26	29	32	35	38	41	44	47	50	53	56	59	62	
Pivot.	48	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	
Fall.	46	7	10	13	16	19	22	25	28	31	34	37	40	43	46	49	52	55	58	
	44	5	8	11	14	17	20	23	26	29	32	35	38	41	44	47	50	53	56	
	42	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	
	40	1	4	7	10	13	16	19	22	25	28	31	34	37	40	43	46	49	52	
	38	0	2	5	8	11	14	17	20	23	26	29	32	35	38	41	44	47	50	
	36	0	0	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	

Rent per Acre in Shillings.

J. H. Charnock, York, Oct. 6.

To Correct Acidity in Beer or Cider.—Take 4 lbs. of calcined chalk, and put it into a 100-gallon cask; in a week the liquor will have become mild and pleasant. *Ignoramus.*

American Churn.—The enquiry you were so obliging as to insert in No. 28 of your Paper for a description of an American churn, has failed to procure me the information I was in quest of, but I have since accidentally stumbled on it in an old paper; and as the machine is somewhat singular, both in its principle, construction, and results, the description, which I append, may perhaps interest some other of your readers. "*Impromptu Butter.*—We lately saw," says the *New York Mirror*, "sweet milk converted into butter in four minutes; probably a dash of iced-water would have brought the butter in less time. This wonderful effect was produced by one of the most simple churning machines that we have ever seen. It consists of a square box, having a hollow perpendicular shaft with two hollow arms or tubes at the lower end. The shaft rests on a pivot and is turned by a small crank and cog wheel, the motion causes the air to rush down the tube into the milk and produces a commotion like boiling water. The butter began to come immediately, and after it was made the milk was as sweet as new. By this process good churn butter may be made for breakfast by any family after the milkman has come in the morning, and the luxury of pure fresh butter enjoyed the year round. While the cakes are baking or the muffins toasting, the head of the family may be amusing himself by churning the butter to eat with them.—*Philadelphia Courier.*" Perhaps some of your correspondents can communicate more on the subject, or furnish a sketch. Unless the ends of the two hollow arms are covered with some substance, so perforated as to exclude the milk from them and the shaft, but permitting the air to pass through, they will, of course, be all at once filled with milk, to the exclusion of the air—unless indeed the rapidity of the revolution dispels the milk, and replaces it with air. There seems to be little doubt, that if the quantity and quality of the butter thus obtained are equal to what is made in the usual way, the saving of time, and preservation of the sweetness of the milk, are decided advantages. *R. S.*

Show of Horses at Norwich.—As a breeder of horses I cannot but express my opinion with your correspondent "Veritas" that the decision of the Judges of the Royal Agricultural Society on the merits of the horses exhibited at their shows is generally contrary to all reason, if the object is to keep up a breed of useful horses. I believe that the judges are generally veterinary surgeons, who, though frequently scientific men, and understand the treatment of diseased horses, yet have never bred a horse in their lives, or even ridden one many miles. Within the last five years the first prize was awarded to a great flashy looking horse, so infirm that he was taken out of training before he was three years old, his legs having failed; he was also a very bad roarer, and altogether a worse stallion to breed from could not easily have been found. The canny Yorkshiremen were also of the same opinion, and

the horse soon disappeared from his northern locality. The Royal Agricultural Society should profit by the strictness and care shown by the Americans, Germans, and other foreigners who come to England for horses; they never overlook roaring, and many other faults, *quæ nunc* described, &c. *Eques.*

Societies.

BEDFORDSHIRE AGRICULTURAL ASSOCIATION, *Oct.* 5, 1849.—At the annual meeting of this Society, at Bedford, Sir H. VERNEY made the following observations. "The town and county of Bedford, I think, afford a fair type of the connection between the agricultural and manufacturing interests—it will show that the prosperity of the one depends upon that of the other. If agriculture was depressed it was impossible that the manufacturing and commercial classes could be prosperous; if, on the other hand, manufacturing and commercial men got rich, improvement must take place amongst the other classes of society. Then came the question, how can the present agricultural, commercial, and social condition be improved? In the course of my travels I have resided in a country which was suffering under very deep depression and difficulty, but it appeared to me that the inhabitants had the remedy in a great degree in their own hands, but declined to avail themselves of it. It was a common thing there to see great numbers of poor persons standing idle, passing day after day doing absolutely nothing. The industrious inhabitants were by the laws obliged to maintain them. In all parts of that country you might see whole districts uncultivated. Close to the chief town, a most populous place, were such tracts. Thousands and thousands of acres within an hour's journey. If on those barren wastes a poor man obtained an acre or two of land, you saw the green fertile spot as a bright oasis amid the wide brown waste of heath or moor. In many cases the owners of these districts desired to sell them—others were ready to purchase, but the regulations of that country forbade the bargain. The land, if reclaimed and cultivated, would have afforded employment and food to the peasantry. The labourers were needed to till the soil—but the owners of the land and the authorities in the country did not only not so employ them, but they held out every inducement to the poor to go away. Much money was spent in paying the expenses of whole families who quitted their homes, often much more than would have sufficed to cultivate the soil. At the same time there were vast accumulations of the richest manure existing in many parts of the country, especially where it was most populous. Spread over the wide wastes to which I have alluded, it would have brought fertility where hitherto barrenness prevailed. It would have produced food for thousands who were torn from home and sent off to the ends of the earth. The authorities of that country suffered the manure to drain away into their rivers, or to stagnate in foul pestilential pools and ditches, among the dwellings of the poor. I was myself there when the pestilence broke out, and thousands were every week destroyed. Powerful chiefs in distant parts of the land pulled down the dwellings of the peasantry to force them away from their native soil, and others converted districts that had been fertile, that had supported flocks and herds and human creatures, into waste land again—they drove away the men and women and brought back wild animals into newly created forests. Such was a strange state of things to exist in a country—it would seem that some infatuation possessed the authorities if they did not seek to remedy such evils. What country and what period, continued the hon baronet, have I been endeavouring to describe? England and Scotland, in 1849. If what I have advanced is not perfectly correct, if it is in the smallest degree exaggerated, I desire nothing better than to be corrected. But I am sure that those best informed well know that my description is true, and that the authorities in this country have it in their power to introduce great improvement into our laws, which would better the condition of all classes. If the life-owners of landed property were permitted to sell land to the amount of their incumbrances, additional capital would be available for agricultural purposes. This will be the more obvious if you consider the great advantage to a district of possessing wealthy landlords instead of poor ones. It seems so advantageous to all parties that riches accumulated by commerce should be invested in the purchase of land, and in rendering fertile land tilled by others. If the land were more generally owned by wealthy men and cultivated by means of their capital, the uncultivated wastes of this island [15,000,000 acres, I believe, of which there are 60,000 in Surrey] would be brought into tillage, and the country would be relieved of many burthens which want of employment for the agricultural population must necessarily bring upon the community. I hope that the legislature will consider these things, and that at this time when the Government has leisure to mature plans for the ensuing session, these evils will obtain their attention, and that means will be devised for bringing more capital to aid in the cultivation of the soil, and by affording assistance to the farmers themselves, induce them to venture on what is called high farming (cheers). England and Scotland have, at the present time, an enormous amount of the demands of agricultural prosperity. Land, labour, manure, capital—for the purposes of agricultural improvement I must add, waste land, waste labour, waste manure, waste capital—I wish to see these elements of prosperity brought together, to co operate under wise regulations, for the good of the country."

Miscellaneous.

Farmers, their Prospects and Friends.—At the close of a harvest not less remarkable for the quantity than the marketable quality of its produce, and for an almost unprecedented continuance of fine weather until its close, the farmers of the south ought to feel deeply grateful. At the commencement of that series of operations which will only be terminated by another harvest, they may fairly pause for a moment to consider their future prospects, and reflect upon the advice which is so liberally tendered to them by those who are termed "their friends." To look no further than your own paper, your weekly columns teem with gratuitous advice, challenges offered and refused, and anticipations as to the inability of farmers to employ labourers during the ensuing winter, not only gloomy in themselves, but of such sinister import in too many instances as to amount almost to moral incendiarism. Those who thus appear before the public are, for the most part, whether as theorists or practical men, the Tritons of the agricultural community; that class whose operations, if conducted with judgment, must, as in all other trades, command larger returns than can fall to the lot of the minnows, the smaller farmers, whose attention I am more particularly anxious to engage at a moment which, whether it be termed one of transition or sharp experience, is fraught with anxiety to every class. It especially demands the resolute application of all the energies, moral and physical, of those interested in the cultivation of the soil. Of these I am one; and, having been actively engaged for some years in this occupation, I would urge farmers to consider whether there is truth in the following proposition, which I consider to be of universal application, and in which may be said to consist the first round of the ladder of real progress, viz., "That the rigidly clean cultivation of the soil must be not only the basis of all sound agricultural improvement, but that in every district of England, and amongst farmers of every class, it still forms too often the exception, not the rule; and to such an extent that in many instances even where superior stock, expensive implements, and a liberal supply of manures are employed, the cultivation of the soil might and ought to be improved." If it be true that the average success of green crops—the sheet-anchor of the farmer—is too generally prejudiced by the neglect of autumn cultivation, and that much valuable time in spring is still wasted in an expensive attempt, which must be dependent upon an unseasonable continuance of dry weather, to clean land which ought not to have been allowed to become so foul; it may fairly be inferred that a large proportion of holdings, both large and small, are not in that condition which is inseparable from an efficient system of progressive improvement; for many occupiers must admit that certain weak points of their practice are not to be defended upon principle; and it is also undeniable that no practical remedy could be applied without the employment of a large amount of manual labour. The attention of such men, and such there are, ought not to be diverted either by crude theories or the vague hope of relief at the hands of their *soi-disant* friends in Parliament. Let them rather devote themselves to the more efficient carrying out of those first principles which are not only indispensable as a preliminary step to every experiment, but invariably prove, whilst they are nearest at hand and the most easy of application, to be the soundest economy in the end. All those means by which the results of improved practice or science can be made public, and thus generally useful, deserve liberal and constant encouragement. It is to be regretted that our agricultural societies too often narrow the area of competition by injudicious restrictions, and but seldom apply more than a comparatively insignificant portion of their funds to those operations and crops which test directly and immediately the cultivation of the soil. Why are the suggestions of those who are termed theorists received occasionally in a somewhat illiberal spirit? Farmers can show the real value of their own experience in no more becoming and even profitable manner, than by bringing their own practical knowledge to bear upon those imperfectly-developed principles which have originated with more scientific minds. I feel confident, sir, that I can make good the general views I have here briefly stated, by a reference to individual practice. All who point to those really available means by which an increasing population may be more profitably and generally employed, and who urge the disadvantages under which those who adopt only half measures labour, have some claim upon attention. The broad question of the probable results of past legislation can at this moment receive neither a satisfactory nor immediate answer; but the complaints of those whose practice is not proved to be in accordance with the principles of truth, will receive, and are entitled to, but little sympathy. *A Subscriber, and Member of the Royal Agricultural Society, in the Mark Lane Express.*

Calendar of Operations.

OCTOBER.

BERWICKSHIRE MAINS FARM, *Oct.* 19.—We have lately carried our Beans, and have got them in in good condition, as the weather has been favourable; we have been ploughing the fallow land and sowing Wheat; we have been threshing Wheat for market and seed, and feeding Turnips for the cattle and sheep. *J. B.*

SOUTH HAMPSHIRE FARM, *Oct.* 20.—Since our last report, the weather we have experienced has proved highly favourable for agricultural operations, and in consequence farm labour is generally in a very forward state. The horses have been employed chiefly in drawing manure for Wheat and ploughing lea and fallow land. We commenced sowing Wheat on the 12th inst. upon some of our coldest land; but during the next week, should the weather prove fine, we intend to sow the chief portion of our Wheat, and although it is rather early, yet we like to secure a good season when it comes early, for it often happens if the first season is missed, the land must be sown in bad condition, or deferred to a late period. Some of the horses have been employed at the threshing-machine, threshing Wheat and Oats. The yield of Wheat has proved good, from 40 to 46 bushels per acre, and Oats from 56 to 60 bushels per acre, the quality of both very good. The labourers have been engaged mostly in the preparation for Wheat sowing, filling and spreading manure, and also water-furrowing in Turnip fields, attending the threshing-machine, and winnowing the corn. The manual labour upon the farm is in a very forward state, including the threshing of grain, which will induce us during the winter to reduce the number of labourers, which plan we fear will be too generally adopted, as the low price of farm produce holds out no inducement for the employment of extra labour. We have finished raising our crop of Potatoes for some time past, but we find that the roots which showed but little or no disease at digging time have gone off very fast since, the loss amounting to a fourth of the crop, is general in this neighbourhood, of all except the very early sorts. The Tares and Trifolium are come up well this season, and look remarkably well, as do the root crops generally, except Turnips in some places where they are thin of plant; late sown Turnips look very promising. Carrots and Mangold Wurzel have made great progress since the late rains, and will be a good crop where regularly planted; Grass for the cattle is short, owing to the dryness of the season—our milch cows are rather lower in condition than usual, in consequence; our young cow stock are now getting an allowance of cut Swedes and Oat straw, upon which they are doing well, being kept continually in open sheds. Our stock of breeding ewes lately purchased are doing well, and we hope will pay better, being bought in at prices from 7*s.* to 9*s.* per head under those of last year. Our horned ewes are lambing fast, we having now upwards of 100 lambs fallen during the past fortnight; they appear strong and healthy, and more free from the epidemic than in some former seasons. *J. B.*

Notices to Corrospondents.

BACON HOGS: *H T.* We have given them 28 lbs. of Potatoes or other green food, boiled and mashed, with 6 or 7 lbs. of Barley-meal, apiece; and you may adopt a like proportion between the "green" and farinaceous food you supply, with the certainty that they will thrive upon it.

BOOKS: *S T E.* Low's "Elements of Agriculture," and Blacker's "Essay on Small Farms."

BOXES: *F H S.* Nine feet by eight give the smallest size that can be recommended. Each may be excavated 1 foot or 2 feet, dwart walls being built round the sides; and the posts and railing separating each from each may be carried about 6 feet high above the surface of the ground. The division should be mere railing.

DAIRY PRODUCE: *Homs.* A moderately good cow on moderately good keep may be expected to make 200 lbs. of butter in the course of the year. The quantity per week depends not only on food and season, but on the time she is expected to calve.

FEEDING CATTLE *A B.* Our custom is in winter to feed four times a day; early morning with green food, 10 A.M. with Linseed and chaff, 3 P.M. with green food, and 6 P.M. with Linseed and chaff. Fat pigs receive their food in a tolerably firm condition; certainly not liquid.

HORSE CHESTNUTS: *D J.* We have no experience; but we understand that sheep will eat them readily, and we see no reason why pigs should not thrive upon the same food.

LAND DRAINING: *R Randall.* Stephens's book on the subject, published by Blackwood, Edinburgh.

LEGAL QUESTIONS: *W S.* We really cannot answer legal questions.

MANURES. *F K.* They are free of toll, and the charge is an imposition.

PRICE FOR DIGGING: *B* Free working land may be dug 9 inches deep for 1½*d.* to 2*d.* a perch, and the men earn between 1*s* 6*d.* and 2*s.* a day.

ROCK-SALT FOR HORSES: *A Subscriber.* We believe it has rather a tendency to prevent than to cause crib biting. *W. C. S.*

SEX OF EGGS: *A R* says that the lady's method referred to in past Numbers, of judging of the sex of eggs, is at least as old as the time of Horace, who writes:

"Longa quibus facies ovis erit, illa memento
(Ut sueet melioris, et ut magis alma rotundis)
Ponere, namque marem cohibent callosa vitellum."

SMALL FARM: *A Sub* would be obliged to any one who could inform him where to find a detailed account of John Bamford's five-acre farm mentioned by the Labourers' Friend Society.

ERRATUM.—For "Mr. Wm. Gibson, of Eydon, near Daventry," at page 651, col. *b*, read "Mr. Wm. Grillin, of Eydon," &c.

Markets.

COVENT GARDEN, OCT. 27.

Hothouse Grapes continue to be very plentiful, and the supply of Pine-apples is well kept up. Filberts and foreign Walnuts are abundant, Chestnuts plentiful, Oranges scarce, Lemons moderately plentiful. Pomegranates may be obtained at 4d. each. Among Vegetables, Turnips realise from 3d. to 6d. a bunch; Carrots from 4d. to 6d. Cauliflowers are less plentiful. Potatoes have not altered since our last account. Lettuces and other saladings are sufficient for the demand. Mushrooms fetch from 1*s* to 1*s.* 6*d.* per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropæolums, Fuchsias, Primulas, Camellias, and Roses.

FRUITS.

Pine-apples, per lb., 3*s* to 5*s*	Lemons, per doz, 1*s* to 3*s*
Grapes, hothouse, p. lb., 9*d* to 3*s*	— per 100, 8*s* to 16*s*
— Portugal, per lb., 9*d* to 1*s*	Almonds, per peck, 6*s*
Peaches, per doz., 8*s* to 12*s*	— sweet, per lb., 2*s* to 3*s*
Nectarines, per doz., 8*s* to 12*s*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
Plums, per hf. sieve, 4*s* to 6*s*	— p. bush., 16*s* to 24*s*
Pears, per doz., 2*s* to 4*s*	Filberts, per 100 lbs., 45*s* to 60*s*
— per half sieve, 4*s* to 6*s*	Nuts, Bar., p. bush., 20*s* to 22*s*
Apples, kitchen, p. bsh., 2*s* to 4*s*	— Brazil, p. bsh., 12*s* to 16*s*
Oranges, per doz., 4*s* to 6*s*	

VEGETABLES.

Cabbages, p. doz., 6*d* to 1*s*	Onions, p. bunch, 2*d* to 4*d*
Cauliflowers, p. doz., 2*s* to 4*s*	— Spanish, p. doz., 1*s* 6*d* to 4*s*
Broccoli, p. doz. bundl., 6*s* to 10*s*	Shallots, per lb, 4*d* to 8*d*
Greens, per doz, 1*s* 6*d* to 2*s* 6*d*	Garlic, per lb., 4*d* to 6*d*
Brussels Sprouts, p. hf. sieve, 1*s* 6*d* to 2*s*	Artichokes, p. doz., 1*s* and 3*s*
Peas, per bush., 1*s* 6*d* to 4*s*	Vegetable Marrows, doz., 1*s* to 2*s*
Sorrel, p. hf. sieve, 6*d* to 9*d*	Lettuce, Cab., p. sc., 4*d* to 9*d*
Potatoes, per ton, 60*s* to 100*s*	— Cos, do., 6*d* to 1*s*
— per cwt., 3*s* to 6*s*	Endive, per score, 1*s* to 1*s* 6*d*
— per bush., 2*s* to 3*s*	Tomatoes, p. hf. sieve, 3*s* to 4*s*
Turnips, p. doz. bun., 1*s* 6*d* to 2*s* 6*d*	Mushrooms, p. pot., 1*s* to 1*s* 6*d*
Red Beet, per doz., 1*s* to 2*s*	— per bush., 3*s* to 6*s*
Horse Radish, p. bdl., 2*s* to 4*s*	Small Salads, p. pun., 2*d* to 3*d*
Cucumbers, each, 2*d* to 6*d*	Fennel, per bunch, 2*d* to 3*d*
Leeks, per bunch, 2*d*	Savory, per bunch, 2*d* to 3*d*
Celery, p. bundle, 8*d* to 1*s* 3*d*	Thyme, per bunch, 2*d* to 3*d*
Radishes, p. 12 bunches, 1*s* to 2*s*	Parsley, p. doz bun., 3*s* to 4*s*
Watercress, per doz. bunches, 4*d* to 6*d*	— Roots, p. bdle., 1*s* to 1*s*
Carrots, per bun., 4*d* to 6*d*	Marjoram, green, p. bun., 4*d* to 6*d*
Spinach p. sieve, 1*s* to 1*s* 6*d*	Mint, green, per bunch, 3*d* to
	Basil, green, p. bunch, 4*d* to 6*d*

SMITHFIELD, Monday, Oct. 23.

The supply of Beasts to-day is very large; a considerable proportion are, however, of second-rate quality; on this account the choicest kinds find purchasers, but 3s. 10d. is an extreme quotation. A great many remain unsold. The number of Sheep is also large. Some of the choicest Downs make 4s., but the instances are rare; long-woolled Sheep are with difficulty sold at lower rates. Calves are not so plentiful as of late; the demand is very limited, and prices are no better. Trade is very bad for Pigs. From Holland and Germany we have 1214 Beasts, 5090 Sheep, 64 Calves, and 36 Pigs; from Leicester and Northampton, 2460 Beasts; and from Lincolnshire, 300.

Per st. of 8 lbs.—s	d	s	d
Best Scots, Herefords, &c. ...	3	6 to 3	10
Best Short-horns	3	2 — 3	6
2d quality Beasts	2	6 — 3	0
Best Downs and Half-breds ...	3	8 — 4	0
Ditto Shorn			

Per st. of 8 lbs.—s	d	s	d
Best Long-wools	3	4 to 3	6
Ditto Shorn			...
Ewes & 2d quality	2	8 — 3	2
Ditto Shorn			...
Lambs		—	...
Calves	2	0 — 3	2
Pigs	3	0 — 4	0

Beasts, 5283; Sheep and Lambs, 29,260; Calves, 120; Pigs, 321.

Friday, Oct. 26.

Although the number of Beasts fresh up to-day is small, it is larger than the demand. Good qualities being scarce are freely bought, but trade is very dull for all other kinds, and Monday's rates are barely supported. The supply of Sheep is small, but there are more than can be sold; the average quality is very inferior, and prices about the same as on Monday. We are again more scantily supplied with Calves; trade is consequently brisk, at an advance of fully 2d. per 8 lbs. From Holland and Germany there are 278 Beasts, 1250 Sheep, and 66 Calves; and 136 Milch Cows from the home counties.

Per st. of 8 lbs.—s	d	s	d
Best Scots, Herefords, &c. ...	3	6 to 3	10
Best Short-horns	3	2 — 3	6
2d quality Beasts	2	6 — 3	0
Best Downs and Half-breds ...	3	8 — 4	0
Ditto Shorn ... ... — ..			

Per st. of 8 lbs.—s	d	s	d
Best Long-wools	3	4 to 3	6
Ditto Shorn			...
Ewes & 2d quality	2	8 — 3	2
Ditto Shorn			...
Lambs			...
Calves	2	4 — 3	4
Pigs	3	4 — 4	4

Beasts, 882; Sheep and Lambs, 4,380, Calves, 187; Pigs, 288.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Oct 25.

Prime Meadow Hay	66s	to 74s	Clover	60s	to 90s
Inferior ditto... ...	50	63	New Clover	—	—
Rowen	55	60	Straw	24	28
New Hay	—	—		J. Cooper.	

CUMBERLAND MARKET, Oct. 25.

Prime Meadow Hay	70s	to 75s	Inferior	70s	to 80s
Inferior ditto... ...	50	65	New Clover	—	—
New Hay	—	—	Straw	28	32
Old Clover	88	92		Joshua Baker.	

WHITECHAPEL, Oct. 25.

Fine Old Hay ...	65s	to 70s	New Clover	—s	to —s
Inferior ditto ...	50	55	Inferior ditto.	60	70
New Hay	—	—	Straw	24	28
Old Clover	80	88			

POTATOES.—Southwark, Oct 22.

The Committee report that there have been but few arrivals coastwise during the last week, and only a moderate supply from the Continent, which, in consequence of the very mild weather, are selling heavily at the following prices:—York Regents, 70s. to 85s. per ton; Wisbeach, 65s. to 70s.; Scotch, 65s. to 70s.; foreign whites, 50s. to 70s.

HOPS.—Friday, Oct. 26.

Messrs. Pattenden and Smith report that the market continues very firm. Duty estimated at 75,000*l.* to 80,000*l.*

MARK LANE.

Monday, Oct. 22.—Notwithstanding the supply of English Wheat by land carriage samples this morning was moderate, it could only be disposed of by submitting to a decline of 1s. to 2s. per qr. Foreign met a slow retail inquiry, but was held firmly for former rates.—English malting Barley must be written 1s. per qr. cheaper. Foreign grinding is in good demand and the turn dearer.—Beans and Peas are scarce, and command full prices.—Oats are a slow sale, but fine qualities and old are not lower.

Friday, Oct. 26.—The arrivals of English and foreign grain since Monday have been moderate. English Wheat has been disposed of on barely so good terms; the demand for foreign is very limited, but prices of old are nominally unaltered.—Fine English malting and foreign grinding Barley is the turn dearer. —Beans and Peas remain the same.—Oats are in good demand, and command fully former rates.—Flour is a dull sale, and the highest prices barely maintained for foreign.—Since the 19th inst. the Wheat trade has been dull throughout the United Kingdom, and with few exceptions prices have declined 1s. to 2s. per qr. The supplies of malting Barley having increased, prices retrograded a trifle, but all descriptions of corn for feeding purposes meet a fair inquiry at late rates. In Dantzic prices of Wheat declined 1s. per qr. for the general qualities. In Memel, Konigsburg, and also in the Pomeranian and Mecklenburg ports, supplies of new Wheat continue to be very small, and some decline in prices was anticipated. In Rotterdam Wheat is again the turn dearer. In Antwerp business is inactive, 62 lbs. new Louvain Wheat is still quoted 38s. 6d. to 39s. per qr., f. o. b.

Liverpool, Tuesday, Oct. 23.—At this day's market there was a poor attendance of dealers, and a limited business at a reduction of 2d. per bushel on Irish and fully 1d. on foreign Wheat. Barley, Beans, and Peas went very slowly. Oats were in tolerable request at previous rates, but Oatmeal was dull, and 3d. per load cheaper. We make no change in Indian Corn. Flour was rather cheaper.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas
Sept. 15.....	43s 0d	27s 1d	18s 6d	26s 7d	30s 8d	30s 1d
— 22	41 9	27 1	17 10	25 11	29 9	30 0
— 29	42 4	27 4	17 11	25 2	29 5	31 3
Oct. 6	42 4	27 7	17 5	24 9	29 0	29 5
— 13	41 4	28 0	17 2	24 5	28 10	31 8
— 20	41 1	28 2	17 4	24 9	29 5	30 3
Aggreg. Aver.	42 0	27 6	17 9	25 3	29 6	30 6
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Sept 15.	Sept 22.	Sept 29.	Oct. 6.	Oct. 13.	Oct. 20.
43s 0d	—	...	...	...	...	...
42 4	...	...	...	...	...	...
42 4	...	..	...	...	...	...
41 9	...	...	...	...	...	...
41 4	...	..	...	..	...	
41 1	...	...	...	..	...	

MARK LANE EXPRESS PRICES CURRENT.

	London. Oct. 15. qr.	London. Oct. 22. qr.	Liverpool. ½ Oct. 16 70 lbs.	Liverpool. Oct. 23. 70 lbs.	Wakefield. Oct. 12 qr.	Wakefield. Oct. 19. qr.	Boston. Oct. 17. qr.	Boston. Oct. 24. qr.	Birmingham. Oct. 18. 62 lbs.	Birmingham. Oct. 25. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	38 to 45	38 to 43	6 0 6 4	6 0 6 4	39 to 45	39—45	36 to 42	34 to 40	5 1 5 8	5 0 5 8
„ white ...	44—50	42—48	6 0 6 10	6 0 6 10	42—46	42—48	40—46	38—45	5 6 6 1	5 6 6 0
Old, red ...	38—43	38—43	6 4 6 8	6 4 6 8	39—40	39—43	—	—	5 3 5 9	5 3 5 9
„ white ...	43—45	43—45	7 0 7 6	7 0 7 6	—47	—47	—	—	5 8 6 2	5 7 6 1
Foreign	36—52	36—52	4 3 7 8	4 4 7 3	32—46	32—46	—	—	4 8 6 2	4 8 6 2
			480 lbs.	480 lbs.						
Rye—Old ...	23—26	23—26	—	—	—	—	—	—	—	—
Foreign...	20—22	20—22	—	—	—	—	—	—	—	—
Foreign meal	5*l.*—6*l.*	5*l.*—6*l.*	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	24—26	24—26	—	—	20—22	20—22	21—23	21—23	22—24	22—24
Malting... ...	26—28	26—28	30s—31s	30s—31s	27—33	27—33	—	—	29—33	29—33
Foreign... ...	18—26	18—26	—	—	21—26	21—26	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	37—40	37—40	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	18—24	18—24	3s 2d 3s 3d	3s 2d 3s 3d	—	—	13—18	13—18	19—27	19—27
Black...	16—22	16—22	2 2 2 5	2 2 2 5	—	—	—	—	18—20	18—20
Foreign ...	13—20	13—20	2 3 2 4	2 3 2 4	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	28—30	28—30	33s—	33s—	26—30	26—30	—	—	33—40	33—40
									196 lbs.	196 lbs.
Grinding...	25—30	25—30	28—29s	28—29s	—	—	—	—	11—12	11—12
Foreign ...	24—32	24—32	29—30	29—30	—	—	—	—	—	—
Beans—										
New, small ...	23—29	23—29	—	—	32—33	32—33	32—34	32—34	12—13	11—12
Old	—	—	33—37	33—37	—	—	—	—	14—15	14—15
Foreign ...	21—36	21—36	25—35	25—35	28—30	28—30	—	—	11—13	11—13
Linseed—Feed	—	—	40—42	40—42	32—40	32—40	—	—	—	—
Foreign ...	36—41	36—41	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9*l.* 12s	9*l.* 12s	8*l.*—8*l.* 5	8*l.*—8*l.* 5s	—	—	—	—	—	—
Foreign ...	7*l.*	7*l.*	—	—	—	—	—	—	—	—
Indian Corn—	22—26	22—26	28s—29s	28s—30s	—	—	—	—	12—13	12—13
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	32—40	32—40	30—32	30—32	—	—	32—38	32—38	31—34	31—34

Weekly Averages and Imports.	Aver. Oct. 23	Impts.	Averages.	Imports.	Aver.	Impts	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	44 9	6860	41 4	11920	42 5	8103	39 1	4727	41 11½	1760
BARLEY ...	31 2	2030	28 0	858	27 0	3006	24 6	433	—	1942
OATS... ...	18 11	1460	17 2	5711	18 9	1328	15 5	1585	18 4	—
RYE	27 0	—	24 5	—	—	—	—	—	—	—
BEANS ...	25 11	—	28 10	875	28 6	249	31 2	59	32 10½	807
PEAS... ...	35 8	—	31 8	481	22 8	73	—	—	—	180

Signed { KINGSFORD and LAY. | BEGAR and TUNNICLIFFE. | SANDARS and DUNNS. | THOMAS WRIGHT | J. and C. STURGE.

WANTED TO RENT, in the neighbourhood of London, Bristol, Birmingham, or other large town, about 30 acres of LAND, of deep sandy loam, suitable for Market Gardening, &c. A Dwelling House and suitable Buildings are also required.—Address by letter (prepaid), to A. B., No. 7, Tower-street, Westminster-road, London.

TO THE CORN TRADE, AND OTHERS CONNECTED WITH AGRICULTURISTS.

WANTED, by one of the oldest dealers in GUANO and other MANURES, Agents to sell by commission or otherwise, in the Southern, Eastern, and Western Counties. None need apply who cannot give undeniable references and security.—Address, for further particulars, to A. B., Post-office, Knight-rider-street, Doctor's-commons, London.

BIRMINGHAM CATTLE EXHIBITION, 1849.

THE BIRMINGHAM AND MIDLAND COUNTIES EXHIBITION of FAT CATTLE, SHEEP, PIGS, and POULTRY, will be held on Tuesday, Wednesday, Thursday, and Friday, the 11th, 12th, 13th, and 14th of December next.

Printed Certificates for the several Classes may now be obtained, together with copies of the Prize Lists, on application to the Honorary Secretary.

All Entries must be made on or before Saturday, the 17th of November. T. B. Wright, Hon. Sec.

Union-street, Birmingham, Oct. 27.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm-servants, or unpractised persons. Price 1d. per square foot. CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel. Samples and Testimonials sent by post on application to Croggon and Co., 2, Dowgate-hill, London.

STATUES, VASES, FOUNTAINS, GARDEN ORNAMENTS, COATS OF ARMS, and ARCHITECTURAL EMBELLISHMENTS in Imperishable Stone, by Vaughan and Co., 60, Stones End, Borough, London. T. J. Croggon, late of Coade's, Superintendent. Specimens may be seen at Croggon and Co.'s, 2, Dowgate-hill, City. A pamphlet of Drawings forwarded on application

LONDON AND NORTH-WESTERN RAILWAY.

MILK TRAFFIC.

THE LONDON AND NORTH-WESTERN COMPANY NOW CONVEY MILK from RUGBY, NORTHAMPTON, AYLESBURY, and Intermediate Stations to LONDON, by Passenger Trains, at the undermentioned Rates:

Willesden,	Pinner,	Langley,
Sudbury,	Bushey,	Boxmoor,
Harrow,	Watford,	Berkhampstead.

Tring.

Under Nine Gallons, 9*d.*; above, 1*d.* per gallon.

Cheddington,	Woburn,	Roade,
Aylesbury,	Ridgmount,	Blisworth,
Leighton,	Lidlington,	Northampton,
Dunstable,	Ampthill,	Weedon,
Bletchley,	Bedford,	Crick,
Stratford,	Wolverton,	Rugby.

Under Nine Gallons, 1*s.*; above, 1½*d.* per gallon.

The following are the conditions upon which the Company undertake the daily conveyance of Milk:

Each FILLED Can will be subjected to the usual charge of 2*d.* for booking; the empty Cans will be returned FREE OF CHARGE.

The Cans must be very legibly stamped with the name of the Station whence they may be despatched, in order to facilitate the delivery on their return. The consignments of the filled Cans must also be distinctly marked, and it is recommended that the tallies, or address labels, be composed of wood or metal.

The Company will not undertake either the collection or delivery, neither will they be responsible for any detention arising from accidental delay to their trains.

If requisite, the servants of the senders and consignees will be expected to assist in the loading and unloading.

The Milk will be conveyed by all, except Express Trains, from any of the Stations at which they may be advertised to stop. By order, Mark Huish.

General Manager's Office,
Euston Station, October, 1849.

GREAT EXHIBITION OF THE WORKS OF INDUSTRY OF ALL NATIONS, 1851.—At a meeting of the Merchants, Bankers, Manufacturers, Traders, and others, held at the Mansion House of the City of London, on the 17th day of October, 1849.

The Rt. Hon. Sir James Duke, M.P., Lord Mayor, in the Chair.

It was moved by H. J. Prescott, Esq., Governor of the Bank of England, seconded by John Dillon, Esq., and carried unanimously, That this meeting tenders its best thanks to his Royal Highness Prince Albert, President of the Society of Arts, for his proposal to establish an Exhibition of the Works of Industry of all Nations in 1851, and expresses its cordial readiness to co-operate with his Royal Highness in carrying the same into effect.

It was moved by Joseph Hume, Esq., M.P., seconded by Mr. Alderman Salomons, and carried unanimously, That this meeting is of opinion that the cost of the proposed Exhibition should be provided by voluntary subscriptions, and not by the general taxation of the country; and that a Royal Commission is necessary to invest the undertaking with a national sanction, and to give the world the utmost confidence that the prizes will be awarded impartially.

It was moved by John Masterman, Esq., M.P., seconded by Sir J. Henry Pelly, Bart., and carried unanimously, That a General Committee be formed of the Merchants, Bankers, and Traders of the metropolis, to promote the proposal of his Royal Highness, to consist of the following gentlemen:

The Lord Mayor	John Masterman, Esq., M.P.
The Lord Mayor elect	Raikes Currie, Esq., M.P.
The Alderman present	George Moffatt, Esq., M.P.
The Sheriffs	Thomas Baring, Esq., M.P.
The Governor of the Bank of England	Matthew Forster, Esq. M.P.
	S. J. Loyd, Esq.
The Deputy-Governor of the Bank of England	W. Cotton, Esq.
	Samuel Gurney, Esq.
The Chairman of the East India Company	R. L. Jones, Esq.
	William Tite, Esq., F.R.S.
The Deputy-Chairman of the East India Company	Andrew Caldecott, Esq.
	Robert Williams, Esq.
Joseph Hume, Esq. M.P.	John Dillon, Esq.
Baron Rothschild, M.P.	Joshua Bates, Esq.
Baron Goldsmid	George Carr Glyn, Esq., M.P.

With power to add to their number; and that the Rev. Stephen Reed Cattley, and Mr. Under-Sheriff D. W. Wire, be the Honorary Secretaries of such committee, and that such committee be instructed to co-operate and correspond with the various towns in the kingdom in promoting the great object of the meeting.

It was moved by William Cotton, Esq., seconded by Mr. Alderman Copeland, M.P., That the above resolutions be duly advertised in the London papers. James Duke, Mayor.

It was moved by William Tooke, Esq., F.R.S., seconded by C. Wentworth Dilke, Esq., and carried by acclamation, That the cordial and sincere thanks of this meeting be given to the Right Honourable the Lord Mayor for his efficient services in promoting the object of the meeting, and for the ability and courtesy with which he has presided over it.

Stephen Reed Cattley, David W. Wire,
9, St. Swithin's-lane, Lombard-street. Hon. Secretaries.

Sales by Auction.

AMERICAN NURSERY, LEYTONSTONE.

MESSRS. PROTHEROE AND MORRIS respectfully announce to their Friends and the Public that they will submit to public competition by Auction, on the premises, on MONDAY, October 29, 1849, and five following days, at 11 o'clock each day, a selection from this extensive NURSERY STOCK. It will consist of the leading and choicest varieties of Fruit and Forest Trees, Evergreens, Ornamental, Deciduous, and American Plants, of every variety, in considerable quantities. P. and M. respectfully invite an early inspection of the varied lots, suited to Gentlemen planting, and to the Trade, and they feel assured it will be more gratifying than any verbal description. The American Plants are particularly attractive, from their great variety and beauty; among them are lotted 1000 Andromeda floribunda (fine, bushy plants), and numerous Azaleas, Kalmias, and Rhododendrons, well set for bloom, and adapted for forcing.

P. and M. again invite a personal inspection as the best means of appreciation of this Nursery, known for the safety with which its stock can be moved.—Can be viewed any time before the Sale, and Catalogues had of the principal Seedsmen in London, at the Auction Mart, and on the Premises, Leytonstone, Essex.

CAMELLIAS.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King-street, Covent-garden, on FRIDAY, Nov. 2, at 12 for 1 o'clock, an importation of about 300 CAMELLIAS, cultivated by Mons. Souchet, fils, of Versailles; it comprises many new varieties and most of the old and favourite sorts, well furnished with flower-buds, varying from 4 to 6 feet in height.—May be viewed the day prior and morning of sale and Catalogues had.

TO GENTLEMEN, FLORISTS, SEEDSMEN, AND OTHERS.
Nineteenth Annual Sale of Dutch Bulbs; direct from Haarlem.

MR. IZOD will Sell by Auction, at the Auction Mart, Bartholomew-lane, Bank, on MONDAY, Oct. 29, at 1 o'clock, a case of very fine assorted DUTCH BULBS, comprising double and single Hyacinths, double and single named Ranunculas, double and single named Van Thol Tulips, 1200 very fine assorted named Tulips, Crocus, Amaryllis, Gladiolus, Snowdrops, Jonquils, Polyanthus, Crown Imperials, Anemones, Iris, and a select Assortment of other choice Bulbs.—May be viewed on the morning of Sale, and Catalogues had at the Mart, and of Mr. Izod, Sheriffs' Sale Rooms, 46, Watling-street, City, London.

FOR SALE WITHOUT RESERVE.

MR. WATERER begs to announce that he has received instructions from Mr. Geo. Chapman to sell by Auction, without reserve, on TUESDAY, Nov. 6th, 1849, and following day, at 11 o'clock, upon the Premises, situate one mile from the Woking Station on the South Western Railway, all his truly valuable and well grown NURSERY STOCK, consisting of a large quantity of variegated Hollies of the best sorts, Evergreen, Flowering, and other Shrubs, from 1 to 8 feet high, Rhododendrons, Kalmias, Azaleas, Aucubas, and other American Plants, 5000 Dwarf and Standard Fruit Trees, 10,000 Limes, and other large magnificent Plants, the whole of which are in a safe moving condition, and well worth the attention for Ornamental and other Planting. Further particulars will appear in future Advertisements, and Catalogues will be forwarded on application by letter, inclosing four postage stamps, to Mr. Waterer, Auctioneer, Chertsey, Surrey.

TO GENTLEMEN, CONTRACTORS, AND OTHERS.
CHOICE NURSERY STOCK.

MR. PEACOCK is instructed to Sell by Auction, on the Premises, on MONDAY, Nov. 12, 1849, and following day, at 11 o'clock, the choice NURSERY STOCK, standing on five acres of land, being a detached part of Mr. William Young's extensive Nurseries, at Milford, near Godalming, Surrey, comprising a great variety of Healthy Evergreen and Deciduous Forest and Shrubbery Plants, native and exotic; upwards of Two Millions of strong four years seedling and bedded Quicks, several thousands of twice-transplanted (4 feet and upwards) Larch, Spruce, Weymouth, Pinaster, Austrian, and other Firs; Hemlock Spruce, Cedar of Lebanon, Deodara, Taxodium sempervirens, and other choice and ornamental trees. The above plants are of the most healthy description, and will be sold, without reserve, in suitable lots for the convenience of purchasers, as the land is wanted to be cleared for other use. The Stock may remain till the first week in March, if required. Further particulars and printed Catalogues to be had 10 days before the sale; at the Mart; the principal Inns; in the adjacent County Towns; at Mr. Young's Nursery; and the Auctioneer's Agency-office, Godalming. To be viewed two days previous to the sale.—The Chichester and Portsmouth roads pass the Nursery, which is within 1½ mile of the South Western and South Eastern Railways.

TO BUILDERS, NURSERYMEN, AND OTHERS.

MR. D. A. RAMSAY will sell by Auction, on the premises, Brompton Nursery, Fulham-road, Brompton, near London, on MONDAY, Nov. 27th, 1849, and following day, at 12 o'clock, without reserve, the NURSERY STOCK, consisting of a very large quantity of fine Evergreens, Standard and Dwarf Roses, Fruit Trees, American Plants, &c.; a quantity of large Poplars, Limes, Acacias, &c., and about 150 Dwarf trained Peaches, Nectarines, &c., from the Stock of a country Nurseryman.—May be viewed prior to the Sale, and Catalogues had of the principal Seedsmen, and on the premises.

CHELSEA, OPPOSITE CREMORNE GARDENS.

MR. D. A. RAMSAY will Sell by Auction, on the Premises, King's Road, Chelsea, on TUESDAY, Nov. 21, and following day, at 12 o'clock, without reserve, by order of Messrs Dennis, all the uncleared lots of NURSERY STOCK consisting of 2000 Aucubas, Laurestinus, Laurel, Holly, &c. a large quantity of Mulberry Trees of all sizes, the purse collection of Gooseberries, standard and dwarf Roses, new silver-striped Ivy and other Creepers, a choice collection of large Camellias, standard Geraniums and Azalea indica, with about 100 species of Yucca, Aloes, Echinocactus, Cereus, and Mammillaria.—May be viewed prior to the sale; Catalogues to be had on the premises; of the principal seedsmen; and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, near London.

THE LATE MR. CLEMENT HOARE'S STOCK OF GRAPE VINES.

MR. HASLAM will sell by Auction, at the Mart, on WEDNESDAY, Nov. 7th, and SATURDAY, Nov. 10th, 10,000 VINES, consisting of Black Hamburgh, Muscadine, Burgundy, Sweetwater, Black Cluster, &c., grown from the eye, a few of them being in pots; worthy the attention of those who, by a perusal of the late Mr. Hoare's admirable Treatises, have become interested in the culture of this inestimable fruit; at same time a case of Dutch Bulbs, and 200 Standard Roses.—Catalogues may be had at the Mart, and of the Auctioneer, South Essex Nursery, Epping, Essex.

TO BE DISPOSED OF, by Private Contract, a quantity of succession and FRUITING PINE PLANTS, warranted perfectly clean and healthy, and of the choicest sorts in cultivation; many of the fruiting plants with suckers on them.—Application to be made to Mr. Kennan, 4, Great Russell-street, Covent Garden, London.

SURREY.

TO BE LET, within 16 miles of London, a useful FARM of about 180 acres, with good Farm Buildings and three cottages; the land is in high condition, a very considerable outlay having been recently expended. May be viewed, and particulars had upon application to Mr. W. Butcher, Estate Agent, Epsom, Surrey.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—This description of Glass has been greatly improved, and we can now supply it free from strings and all irregularities of surface, perfectly flat and at the same price as charged by the Patentees, cut to order in panes of

14 by 10 under 1½ foot	..5½d.	1½ foot under 3 feet	..6d.
3 feet ,, 4 feet	..6½d.	4 feet ,, 5 feet	7d.
5 feet ,, 6 feet	..7½d.	6 feet ,, 8 feet	.8½d.

PACKETS IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½ ...10s. 6d.	7 by 5 and 7½ by 5½ ..12s.
8 by 6 and 8½ by 6½ ..13s. 6d.	9 by 7 and 10 by 8 .15s.

Milk Pans from 3s. to 6s. each, Metal Hand-frames, Tiles, and Slates; Propagating Box Glasses from 2d. each, Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d; 6 tubes, 10s. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

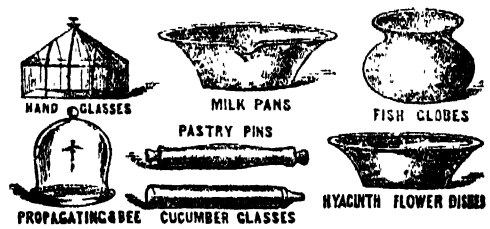
JAMES PHILLIPS and CO., 116, Bishopsgate street Without, London.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had on application at the warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

GRAY, ORMSON, AND BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kingborn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

Gray, Ormson, and Brown, have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.

GALVANISED WIRE GAME NETTING.—
7d. per yard, 7 feet wide.

	Galvanised.	Japanned from.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d per yd
2-inch ,, strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ...	10 ,,	8 ,,
1½-inch ,, extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanized sparrow-proof netting for pheasantries, 3d per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

WALTHAMSTOW.—TO MARKET GARDENERS.

TO BE LET, ON LEASE, a Plot of productive GARDEN GROUND, in good cultivation, consisting of nearly 8 Acres, with convenient Dwelling house and Buildings. —For particulars apply to Mr. Lilley, Walthamstow Essex.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING

Houses, Farm Buildings, Sheddings, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained two Silver Medal Prizes, and is the Felt solely patronised and adopted by

Her Majesty's Woods and Forests,
Honourable Board of Ordnance,
Honourable East India Company,
Honourable Commissioners of Customs,
Her Majesty's Estate, Isle of Wight,
Royal Botanic Gardens, Regent's Park,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the Royal Agricultural Society's House, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

Price One Penny Per Square Foot.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'Neill and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

Note.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

CLARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 400 and 500) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a copy of the testimonials, will be sent on application to Walter Carson, 15, Tokenhouse Yard, back of the Bank of England.—No Agents.—All orders are particularly requested to be sent direct.

FASHIONS OF STARTLING NOVELTY, in the LADIES' GAZETTE OF FASHION for November, price 1s. One Hundred and Fifty New Winter Fashions, double the number given in any other work. All the Paris Fashions, the Royal Ball Dresses, 35 Walking Dresses, 20 Cloaks, 60 Bonnets, 12 Children's Dresses, &c. A superb coloured Giant Plate of Fashions (size 19¾ inches), a grand picture of the Royal Family Ball and other splendid Plates, Descriptions, &c., sent post free for six stamps extra

London: G. Berger, Holywell-street, Strand; and all Booksellers.

On November 1, price 1s., or post free, 18 stamps,

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CALCEOLARIA, GERANIUM, and PRIMULA SINENSIS FIMBRIATA, saved from the best varieties, and warranted very fine. Vegetable Seeds of all kinds, Garden Implements, Bird Seeds, &c.

WM. HAMILTON takes this opportunity of recommending his IMPROVED FLOWER SUPPORTER for Hyacinths, Narcissus, &c. The "Florist's Directory" remarks—"A more simple, useful, and cheaper support for Hyacinths, Narcissus, &c., whether grown in pots or water, can hardly be imagined." Price 6*s*. per dozen.—Address, 156, CHEAPSIDE, LONDON.

A Post-office Order requisite from unknown correspondents.

NEW PANSY—"FRANCE CYCOLE."

ROBERT GRIEVE, FLORIST, begs to inform the lovers of the Pansy that he is now prepared to send out the above unique Flower, which was twice submitted to the [illegible] of the Journal. See Journal 5th August, 1848:—"... flower large, form first-rate, petals dark puce, very ... texture; indeed, we might almost fancy that our correspondent had impressed a portion of the far famed Genoa fabric, so thick and beautiful is the appearance of the flower; lower petals broadly belted with exactly the same tint; centre pale primrose, black, dark puce, eye gold colour, forming altogether a superb variety." 1st Sept., 1849:—"R. G. The bloom forwarded would prove an ornament to any stand of flowers in the United Kingdom." It has also received the following first class certificates: the Scottish Pansy Society's Meeting, held at Perth, 15th June; North British Professional Gardeners' Meeting, [illegible] July; Scottish Floricultural Meeting, 10th July; and the Roslin Horticultural Meeting, 19th July.

This is the best Pansy yet offered to the public. Plants, 5*s*. 6*d*. each. The usual allowance to the trade when three or more are taken. Also, a superb Collection of the leading sorts of the day, at 18*s*. per dozen.

A remittance from unknown correspondents.
Kaimes Cottage, Libberton, Edinburgh.

MYATT'S NEW STRAWBERRY, "ELEANOR."

J. MYATT AND SONS are prepared to send out plants of this and the following varieties at the prices annexed: Myatt's Eleanor, 10*s*. 6*d*.; Fertilised Hautbois, 10*s*. 6*d*.; British Queen, 3*s*. 6*d*.; Globe, 3*s*. 6*d*.; Mammoth, 3*s*. 6*d*.; Hooper's Seedling, 3*s*. 6*d*.; Keens' Seedling, 3*s*. 6*d*.; Pelvelain's Comte de Paris, 7*s*. 6*d*.; Princess Royal, 7*s*. 6*d*.; Outhill's Black Prince, 15*s*. per 100.

Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford, Kent.—Nov. 3.

JACKSON'S IMPROVED KIDNEY, THE MOST PROLIFIC OF EARLY POTATOES.

THOMAS JACKSON AND SON have much pleasure in announcing that in consequence of their having a very heavy crop of their IMPROVED KIDNEY POTATO, they have reduced its price from 15*s*. to 10*s*. per bushel. All orders of one bushel or more delivered free in London, or at any station on the South Western Railway.
Nursery, Kingston, Surrey, Nov. 3.

HENRY LITTLE, King's-road, Chelsea, NURSERYMAN, FLORIST, &c., to the Queen, is now selling the very best Dutch Hyacinths named, at 6*s*. per dozen; finest Crocus, in varieties, at 2*s*. per 100.

Lilium lancifolium album (flowering roots), at 6*s*. per doz.

The true Hautbois Strawberry, at 2*s*. 6*d*. per 100; splendid standard Wall-trained Peach Apricot, and Nectarine Trees, at 5*s*. each; ditto Dwarf-trained, very fine, at 30*s*. per dozen. A very large Ficus elasticus for Sale.

THE LARGE FRUITED MONTHLY RASPBERRY.—This fine autumnal Raspberry has been all the autumn in full bearing, and its canes are at this moment loaded with Fruit large as the Antwerp, and of fine flavour. It differs from the "Double Bearing Raspberry" in giving larger fruit, and in not only bearing twice, but in giving a succession from the end of August till November. It requires a sunny exposure, for in the shade it does not ripen its fruit late in the season. Canes, 9*s*. per dozen; 60*s*. per 100. Carriage paid to London. THOS. RIVERS, The Nurseries, Sawbridgeworth, Herts, Nov. 1.

WILLIAM GREGORY begs most respectfully to offer the undermentioned NEW GERANIUMS and FUCHSIAS.

CHOICE SEEDLING GERANIUMS.

To be sent out on and after the 10th of November next.

LUCILLE BELMONT.—Of very dwarf habit, a free bloomer, upper petals blotched with dark puce, the lower petals striped with the same colour, good for bedding or pot culture. Price 7*s*. 6*d*. each.

LUCIA ROSEA COMPACTA.—A seedling from Lucia rosea, a great improvement upon its parent, being a very free bloomer, of a compact habit of growth, well adapted for bedding or pot culture, and as a Rose-coloured Geranium, not surpassed. Price 5*s*. each.

SPLENDID NEW FUCHSIAS.

To be sent out the first week in May next.

DIANA.—The purest White Fuchsia yet introduced; a pure white tube, of wax-like consistency, stout and well proportioned. Sepals slightly tinged with pale blush, tipped with a pretty shade of green, corolla brilliant scarlet, flushed with crimson at the extremity. Price 10*s*. 6*d*. each.

ACTÆON.—An extraordinary fine large dark flower, tube and sepals of rich crimson, the sepals measuring 4 inches across, placed horizontally; corolla very large, bright purple, and of the beautiful barrel shape, so desirable, a very free bloomer, and of excellent habit; confidently recommended. Price 10*s*. 6*d*. each.

CORINIUM.—A well-shaped dark flower, tube and sepals bright crimson, of desirable consistency; corolla beautiful rich purple, a free bloomer, and of rather dwarf habit. Price 7*s*. 6*d*. each.

The usual discount to the trade upon all the above.
Royal Nursery, Cirencester, Nov. 3.

BURROUGHES'S TWO UNRIVALLED PICOTEES "LORINA" and "DUCHESS OF SUTHERLAND," being by far the best the above successful raiser has produced.

CHARLES TURNER has strong plants of the following ready for delivery.—PICOTEES.

BURROUGHES'S "DUCHESS OF SUTHERLAND," light red edge; the finest in its class, took first-class certificates at Slough, Royal South London, and Metropolitan shows, and the premier prize at Slough, as the best seedling of the day; fine grower and very constant, being quite free from bars. 10*s*. 6*d*.

BURROUGHES'S "LORINA" (light purple edge), very pure white, with a delicate margin, which does not extend the least into the white; took first-class certificates at Slough, Royal South London, and Derby, six blooms at the latter place. 10*s*. 6*d*.

LADY HARRIETT MOORE (TURNER).—Medium, at times a heavy purple edge, large fine petal, smooth and constant, took first-class certificates at Slough, Royal South London, and Derby. This variety, as well as "Lorina," and "Duchess of Sutherland," was shown in each of C. TURNER'S winning stands this season. 10*s*. 6*d*.

CARNATION.

CLARK'S "REV. J. BRAMHALL."—Purple flake, full, smooth, and finely marked. 10*s*. 6*d*.

PINKS.

COSTAR'S "LOLA MONTEZ."—Purple, petal of the finest form, large, and evenly laced; long pod; took two first prizes. See description in the "Midland Florist" for August. 5*s*.

TURNER'S "ATTILA."—Dark, finely-formed petal, long pod, and constant flower. 5*s*.

PANSIES.

TURNER'S "MRS. BECK"—White ground, dark purple top petals, lower petals margined with the same; fine bold eye, without radiating into the margin; first-rate form, and has the good quality of blooming in character throughout the summer. Took first-class certificates at the principal exhibitions and shown in all C. TURNER'S winning stands throughout the season. Figured in the "Florist" for May, 1849. 5*s*.

TURNER'S "VICEROY."—Gold ground, bright bronze red, margin very distinct; first class certificate at the Royal South London Society. 5*s*.

NEMOPHILA MACULATA, in packets, 2*s*. 6*d*. each, or strong plants 1*s*. each or 9*s*. per dozen.—A fine collection of imported Bulbs.—Catalogues on application.
Royal Nursery, Slough.

RENDLE'S CHEMICAL PLANT MANURE should be used by all who wish for a good bloom of Hyacinths, Tulips, and other Dutch roots. Sold in tin canisters at 2*s*., 3*s*. 6*d*., and 5*s*. each. For further particulars apply to
WILLIAM E. RENDLE and Co., Union-road, Plymouth.

Our extensive premises are adjoining the Plymouth Station of the South Devon Railway, and our sales of Guano have exceeded 6000 tons during the last five years.

AN UNLIMITED STOCK OF SEEDLING AND TRANSPLANTED LARCHES, of the Finest Quality, at reduced Prices.

WM. WOOD AND SON beg to solicit attention to their very extensive stock of the above, prices of which will be furnished on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

NEW ROSE CATALOGUE.

COPIES OF WM. WOOD AND SONS' New Descriptive ROSE CATALOGUE may still be obtained, GRATIS, on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

GEORGE JACKMAN, NURSERYMAN, Woking, Surrey, 1½ mile from Woking Station, South-western Railway, begs to announce he has just published a new and complete CATALOGUE of his Ornamental Evergreens and Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., which may be had on application, inclosing two postage stamps.

G. J. wishes to remind his friends and the public the sale of Nursery Stock on the 22d inst. was at his brother's, Mr. Wm. Jackman, who has declined business.

THE SUBSCRIBER begs to offer the following list, which can be relied on as being the most healthy, vigorous, and well-established stock in the kingdom, and will make fine specimens in the course of the season.

ERICAS OR HEATHS.

Ampullacea vittata	Eximea	Perspicua nana
Aristata ditto	Ferruginea	Propendens
Andromedæflora	Florida campanulata	Retorta major
Beaumontia	Hartnelli	Rubra calyx
Bergiana	Hiemalis	Splendens
Bowieana	Hybrida	Syndriana
Bandonii	Juliana	Tricolor dumosa
Cavendishii	Lambertiana rosea	,, rubra
Cunninghamii	Lactiflora	,, Wilsonii
Colorans	Lycopodioides	Ventricosa, sorts
Depressa floribunda	Longipedunculata	Westcottii
,, rubra	Mirabilis	Willmoreana
Elegans	Metulæflora, true	

And many other varieties 12*s*. to 21*s*. per dozen.

AZALEAS.

Alba lutescens	Duke of Devonshire	Murrayana
,, magna	Directa	Mundula
Apollo	Exquisite	Optima
Ardens	Flora pleno rubra	Obtusa
Aurora	Formosa	Perryana
Broughtonii	Gladstanesii	Rosea superba nova
Blanda	Hebe	Refulgens
Coronata	Lateritia	Variegata
Coccinea superba	Lateritia grandiflora	

12*s*. to 21*s*. per dozen.

GERANIUMS.

Armida superba	Flamingo	Norah
Agricola	Forget-me-not	Ondine
Brunette	Gustavus	Orion
Bacchus	Guaelmo	Phyllis
Brilliant	Gazella	Plutarch
Beauty of Clapham	Hebe's Lip	Prometheus
Black Knight	Jenny Lind	Queen Victoria
Belle of the Village	King Hudson	Rolla
Clarinda	Lamartine	Rosamond
Cassandra	Lalla Rookh	Sparkler
Cavalier	Miss Berens	Superlative
Centurion	Minna	Sylvia
Chimborazo	Mrs. Cavendish	Terpsichore
Cupid	Miss Holford	Windsor Castle

21*s*. to 42*s*. per dozen.

CINERARIAS.

Attila	Cerito	Lilacina
Alboni	Defiance	Marianna
Amanda	Grandissima	Maid of Artois
Aurora	Grand Master	Newington Beauty
Beauty of Peckham	Lady Tamworth	Rosetta
Beauty of St. John's Wood	Lady Cotton Sheppard	Resplendens
Beauty of Uttoxeter	Lord John Russell	Satellite
Crimson Perfection		Standard

12*s*. to 21*s*. per dozen.

STOVE PLANTS.

	s.	*d.*		*s.*	*d.*
Æschynanthus pulcher	1	6	Hoya Cunninghamii ...	2	6
,, speciosus (strong)	3	6	,, imperialis	5	0
,, Lobbii ...	3	6	Impatiens or Balsamina repens, per doz.	6	0
Allamanda cathartica	1	6	Ixora coccinea, strong, 1*s*. 6*d*. to	2	6
,, grandiflora	2	6	Lagerstrœmia indica ...	2	6
,, Schottii	3	6	Plumbago Larpentæ, per doz.	6	0
Achimenes Loudonii	2	6	Rondeletia speciosa major ... 1*s*. 6*d*. to	2	6
,, ocellata	2	6	Stephanotis floribunda, 1*s*. 6*d*. to	2	6
Browallia Jamesonii, per doz.	6	0			
Franciscea hydrangeæformis ...	3	6			
,, acuminata ...	2	6			
Hibiscus hybrida ...	2	0			

Select Greenhouse Plants, 12*s*. to 24*s*. per dozen.

Select Epacrises, 12*s*. to 21*s*. per dozen. Select Chrysanthemums, inclusive of all the new varieties, 6*s*. to 18*s*. per doz.

New Verbenas, 6*s*. to 12*s*. per doz. Zauschneria Californica, 6*s*. per doz.

When purchasers make the selection, the higher sum per dozen will be charged. All orders to be accompanied with a post-office order in favour of WILLIAM JAMES EPPS, Bower Nurseries, Maidstone.

COCHIN CHINA and other Fowls for Sale.—Apply by letter, post-paid, to W. O., care of Mr. MacLachlan, 6, Birchin-lane, Lombard-street, London.

AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER has much pleasure in announcing he has published a Descriptive Catalogue of his extensive collection of RHODODENDRONS and other American plants, &c., which will be forwarded on application.

BENJAMIN R. CANT, St. John's-street Nursery, Colchester, has now ready for delivery, strong well-established plants of the following:

GERANIUM, HOYLE'S CRUSADER . ... 7s. 6d. each.
TOPPING'S BRILLIANT .. ... 7s. 6d. „
FUCHSIA SPECTABILIS . . .. 7s. 6d. „

The Three for 18s., carriage and package free to London. Post-office orders, or reference, requested from unknown correspondents. The usual discount to the trade.

PELARGONIUM "FOQUETT'S MAGNIFICENT." Strong plants, well established, in 4 inch pots, now ready, price 2l. 2s. each, and as more stock has been realised than was anticipated, four plants will be given for every three ordered by the Trade.—Direct to Major WILLIAM FOQUETT, Slade House, near Newport, Isle of Wight.

MYATT'S LINNÆUS RHUBARB.

J. MYATT AND SONS can confidently recommend this variety as the best in cultivation. The most satisfactory proof of this assertion is the fact that the Market Gardeners round London and Manchester have planted the Linnæus Rhubarb more extensively than any other variety. It is extraordinarily productive, and about a fortnight earlier than the Victoria; added to this, it is held in general esteem for preserving and all culinary purposes. One-year planted roots, 1s. 6d.; ditto, Mitchell's Royal Albert, 1s. 6d., Victoria, 9d. The usual Trade allowance.—Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford, Nov. 3.

V. S. HERTZER AND SONS, SEEDSMEN, Haarlem, in Holland, beg to inform their Friends and the Trade that their CATALOGUE OF GARDEN SEEDS is now being sent out, and can be had on prepaid application. They give the assurance that all orders with which they may be favoured will meet with strict attention. A reference or remittance is requested from unknown correspondents.—Haarlem, Nov. 3.

CHARLES DALY AND SON beg to inform the Trade and Public that they are determined to sell their stock of THORN QUICKS. 1-year Seedling Thorns, 1s. per 1000; ditto, fine, 1s 6d. per 1000, 3-years ditto, fine, 2s. 6d. per 1000; 1-year transplanted, 3s. per 1000, 2 years ditto, 4s. per 1000, 1-year Seedling Ash, 1s per 1000; 2-years ditto, 1s. 6d. per 1000; Common Laurel, 1 to 1½ foot, 9s per 1000, Portugal Laurel, 1½ foot, 6s per 100; Broad-leaved Irish Ivy, 2s. 6d. per 100, Furnished Rhododendron ponticum, 25s. per 100; Irish Yews, 1 to 1½ foot, 20s per 100; ditto, ditto, good plants, 24s. per 100; ditto, 2 to 2½ feet, 50s per 100, ditto, 3 feet, 100s per 100, ditto, 4 to 5 feet, 5s. each, Common Yew, 2 feet, 25s. per 100, Scarlet Limes, 6 to 7 feet, 8s. per 100; 1 year Evergreen Cypress, 2s. per 100, 2 years old, ditto, 3s per 100, Haws, 1s. per bushel; Holly berries, 4s. per bushel, 1-year Seedling Larch, 1s. 6d. per 1000, 2 years ditto, 3s. per 1000, 1-year Seedling Alder, 1s. 6d. per 1000, 2-years Seedling Beech, fine, 2s 6d. per 1000, 1-year Seedling Birch, 1s 6d per 1000; 1-year Seedling Sycamore, 1s. 6d per 1000, 2-years Seedling Scotch Fir, 1s. 6d. per 1000; Evergreen Oak, good plants, 3d. each, Andromeda, of sorts, 6d each, Ledums, ditto, 6d. each; Kalmias, ditto, 6d. each; Azaleas, ditto, 6d each, Cotoneaster macrophyll, large plants, 6d each; Erica, of sorts, hardy, 6d. each, Juniper, 2 feet, 2d. each, Evergreen Berberry, 18 inches, 2d. each; Variegated Holly, fine plants, 1s each, Chinese Arbor-Vitæ, 6d each; Aucuba japonica, 2 feet, 6d each, Sweet Bay, 1d to 2d each, 2-years transplanted Hazels, 20s. per 1000, 3 years ditto, 25s. per 1000, Forest Trees, 2 and 3-years transplanted, 10s per 1000, fine Trained Pears, Plums, and Cherries, 2s. 6d. each; ditto Peaches, 5s. each, Cabbage Seed, Drumhead, 1s per lb.; ditto, Early York, 1s. 6d. per lb., Seed Potatoes, Gordon Dwarfs, 1s per stone; ditto Fox's, 1s. per stone, ditto, Casters, 1s per stone, ditto, Early Wellingtons, 1s. per stone, ditto, 40 Folds, 1s. per stone. Long White Kidney Potatoes, 1s. per stone. Garden Rakes, 1d. per tooth, ditto Reels, 1s. 6d. each, Shop Twine, 7d per lb.; Garden Line, and Sash Cord, 9d. per lb.

N.B. Free to Liverpool or Glasgow. We do not pay Freight for Forest Trees, Hazels, nor Laurels. Five per cent. for cash, or the usual credit given by naming any respectable Seed Merchant in London.—Coleraine, Nov. 3.

NEW GERANIUMS, STRONG PLANTS NOW SENDING OUT AT VERY LOW PRICES.

BASS AND BROWN have a large, strong, and vigorous stock of the following, well established in 4-inch pots. They are prepared to receive an immediate shift, and will make fine specimen plants for exhibition.

NEW VARIETIES LAST SENT OUT.

The set of 18 in the following list ..	£3	10	0
12 varieties of ditto, our own selection .	2	2	0
12 ditto, purchaser's selection ...	2	15	0

Or less than 12 at the prices attached.

	s.	d.		s.	d.
Topping's Brilliant .	10s	6d	Story's Mont Blanc, No 1,	5s	6d
„ Elegans	5	0	„ Ditto, No. 2 ..	5	0
Beck's Fulvia .	5	0	Hoyle's Flamingo .	5	0
„ Princess	5	0	„ Prometheus	5	0
„ Refulgent .	5	0	„ Rolla .	5	0
„ Star ..	5	0	„ Sparkler	5	0
„ Symmetry	5	0	Whomes' Princess Helena	3	6
„ Sundown .	5	0	„ Queen Victoria .	5	0
„ Harlequin (Fancy)	3	6	„ Windsor Castle	5	0

Selections from the following first-rate varieties.

25 varieties, of our own selection .	£1	5	0
12 Ditto, ditto	0	15	0
20 Ditto, selected by purchaser ..	1	10	0
12 Ditto, ditto . ..	1	0	0

Viz: Armada, Aurora Bacchus, Foly's Black Prince, Blanche, Cavalier, Camilla, Centurion, Cassandra, Clara, Competitor, Cracker, Duke of Hamilton, Empress, Fair Rosamond, Flora's Flag, Forget-me-not, Gigantic, Gulnare, Gustavus, Honora, Isabella, Jenny Lind, Minna, Mrs. M'Lean, Mrs Brock, Negress, Painted Lady, Peri, Peteles, Priory Emperor, Rachel Superb, Rebecca, Rosamond, Rosa Mundi, Scarlet Defiance, and Star of the West.

A LARGE COLLECTION OF FINE OLDER VARIETIES, at 9s per dozen, our own selection, such as Josephus, Rosy Circle, Orion, Desdemona, Isabella, Mustee, Margaretta, &c.

NEW CHRYSANTHEMUMS.

12 strong and bushy plants, best new varieties of last season, for flowering fine this autumn	£0	15	0
40 new and select (including the above) .. .	1	0	0
24 ditto, 15s., 12 ditto	0	8	0

Goods carriage free to London, or any station on the London and Bury line, also extra plants sent gratis with orders of 40s. and upwards.

Our Autumn Catalogue is now ready, comprising our splendid collections of Ranunculuses, Gladiolus, Iris, early and other choice Tulips, Anemones, imported Dutch Hyacinths and other Roots; select Roses, herbaceous plants, &c. &c.

Remittances requested from unknown correspondents. Post-office orders payable to Bass and Brown or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

R. LANGELIER, Clarendon Nursery, Jersey, begs to say that his DESCRIPTIVE CATALOGUE OF PEARS (with true descriptions of each sort), is now published by Messrs. PIPER, 23, Paternoster-row, London, price 1s. 6d. It will be handy for Amateurs, as descriptions are given in full, with time of maturity, as well as the stock which will suit each sort best.

SAFFRON WALDEN.

SUPERB COLLECTION OF DOUBLE HOLLYHOCKS.

WILLIAM CHATER has a large Stock of his unequalled Collection of this splendid flower, and can supply good strong plants either from pots or the open ground. W. C. having been a collector and grower of Hollyhocks for 25 years, has devoted a great deal of time and expense to their improvement, and at the decease of the late Mr. C. Baron purchased his entire collection; also in 1848 and 1849 was very successful in raising several novel and distinct varieties, some of which are of the most brilliant colour and very fine in form. Their merits have been well tested at most of the principal flower-shows in the kingdom in 1848 and 1849, where they have obtained the first prizes, viz., at the Royal South London Floricultural Show, open to all England, and at Norwich, Durham, Darlington, &c.

NAME	COLOUR.	s.	d.
Attraction.	beautiful veined chocolate and white.. ..	3s.	6d
Atropurpurea ..	dark purple ..	2	6
Atrosanguinea . ..	rich dark crimson.	3	0
Aurantia .	salmon	3	6
Black Prince	black	2	6
Blue-beard . .	dark ground, white edged	2	0
Bicolor .	purple and white	2	6
Commander-in-Chief	light edged rose	5	0
Coccinea	bright scarlet	3	6
Delicata ...	French white	3	0
Formosa	claret.	2	6
Fulgens	dark shining crimson ..	2	6
Magnum Bonum .	fine maroon	7	6
Mulberry Superb	rich dark	5	6
Model of Perfection	fine white, chocolate ground	5	0
Napoleon	red and buff	1	0
Purpurea elegans ...	light purple	2	0
Queen .. .	beautiful light blush	5	0
Rosea superba . .	deep pink	2	0
Rosea grandiflora	light pink,	5	0
Rosea alba ..	rose and white	2	6
Rubida	reddish purple	2	0
Rubra	crimson purple	1	0
Sulphurea perfecta	fine sulphur	2	6
Snow-ball	pure white	3	0
Virgin Queen	pure white	1	6
Venora	dark marbled	1	6
Venosa rubra	red mottled	1	6
Wellington	rosy red	2	6

If the selection be left to W. C.:

12 first-rate varieties of the above	£2	0s.	0d
12 good ditto ditto	1	0	0
12 second rate varieties	0	12	0
12 border ditto	0	6	0

Scarlet, rose, straw-colour, white, purple, dark claret, salmon, shaded, and mixed sorts, 1l. 10s. per 100.

NEW AND CHOICE SEEDLINGS OF 1848-9.

Comet (Chater's), bright ruby red, very full compact flower, petals of fine substance and form, and well arranged, noble majestic habit; it has been pronounced by all who have seen it to be the finest Hollyhock ever raised .	0	10	0
Obscura (Chater's), silvery shaded puce, which has a novel and pleasing effect, fine form and very attractive .	0	5	0
Enchantress (Chater's), beautiful deep pink, centre compact and well elevated .	0	7	6
Conspicua (Chater's), colour very much like Comet, fine large flower, and very showy ..	0	7	6
Pallida (Chater's), pale lilac, novel variety .	0	3	6
*Pulchella (Chater's), beautiful light rose, very bold flower, exquisite form .	0	7	6
Sulphurea palmata (Chater's), fine early sulphur, blooms a month earlier than Sulphurea perfecta	0	3	6
*Mr. C. Baron (Chater's), delicate pinkish salmon, fine form, a novel and distinct variety	0	10	0
*Surprise (Chater's), deep rosy crimson, fine flower	0	7	6
Elegans (Chater's), delicate blush .	0	5	0

*These to be sent out in the spring of 1850.

Plants. Warranted true to name.

W. C. has a fine selection of Pansies, from 4s. to 12s. per doz.
Also ditto Carnations and Picotees, 1s. to 3s. per pair.
ditto Standard Roses, 18s. to 30s. per doz.
ditto Dwarf ditto, 4s. to 12s. ditto.

A remittance requested on delivery of Plants.—Post-office orders payable at Saffron Walden.

NOTICES OF THE PRESS.

"Royal South London Floricultural Show.—First prize to Mr. W. Chater, Saffron Walden, for a collection of splendid flowers, forming a *tout ensemble*, which was really a treat to inspect."—Farmers and Gardeners' Journal, Aug. 4, 1849.

"Spikes of Hollyhocks were produced by Mr. Chater, and most excellent spikes they were. So closely were they ornamented with flowers, that some even expressed an opinion that they owed more to art than nature. But that was not the case, and we were pleased to see that by means of skill and perseverance a great improvement has at last been effected in this fine flower."—Beck's Florist, September, 1849.

"Darlington Horticultural Society.—Amongst the flowers, a collection of Hollyhocks exhibited by Mr. W. Chater, Seedsman and Florist, of Saffron Walden, attracted much attention, and their exquisite beauty called forth the admiration of all observers whose knowledge and taste entitle them to be judges in these matters. We have since been given to understand that they are the result of 30 years' careful cultivation, and that they took the first prize at the exhibition of the Royal Floricultural Society, at the Surrey Zoological Gardens on Wednesday, and they attracted our attention so much that we noted their names and colours."—Darlington and Stockton Times, Sept. 15.

"The grand Floral and Musical Fete at Gosfield place.—Mr. W. Chater, of Saffron Walden.—Hollyhocks. Some of the most exquisitely beautiful spikes we have ever seen; we are glad to hear that this noble flower is coming into favour again. The lovers of good flowers owe much to Mr. Chater's successful skill. Among his collection we observe many choice specimens. We advise those who can afford it to buy them."—Essex Standard, September 21, 1849.

"County of Durham Floral and Horticultural Society.—The most interesting feature of the entire show was the magnificent collection of Hollyhocks from the nursery of Mr. W. Chater, of Saffron Walden; for beauty and fulness of growth they infinitely surpassed anything ever seen of Hollyhock cultivation in this part of the country. It is almost needless to say they were a great source of attraction; and we shall, we are sure, be borne out by all who had an opportunity of seeing them, when we state that the public are greatly indebted to Mr. Chater for thus showing to what perfection, with proper culture, this most beautiful flower can be brought."—Durham Advertiser, Sept. 14, 1849.

"W. C.—A very good assortment, some of them very fine. None can be called inferior amongst the flowers sent."—*Gardeners' Chronicle*, September 8, 1849.

"W. C., Saffron Walden.—If our duties at this season are fatiguing, they are not unmixed with pleasures, as in opening your basket of flowers we fully experienced. We were delighted to inspect such an assemblage of elegant blooms. We proceed to describe them, for the benefit of all lovers of this class of flowers, who may thus be able to judge how far their collections stand in need of additions. It is quite evident they maintain the high character given of them, which the blooms before us boldly assert, and to which fact we readily testify."—Farmers and Gardeners' Journal, Sept. 1, 1849.

And other testimonies, which are too much for insertion. See Beck's Florist for October, Midland Florist for October, County Chronicle, Aug. 21; Cambridge Independent Press, Aug. 18; Farmers and Gardeners' Journal, Sept. 8; Gardeners' Chronicle, Sept. 26; Cambridge Chronicle, Aug. 18.

NOW SENDING OUT BY YOUELL AND CO.
THE FINEST CARNATIONS, PICOTEES, AND PINKS.

YOUELL AND CO.'S Extensive and Celebrated Collection of the above are this season unusually strong and healthy, and are now ready for sending out, in fine well-rooted plants, to any part of the United Kingdom, or for exportation, at the following prices:

25 pairs of finest first-rate show varieties of Carnations and Picotees	£5	0	0
12 pairs do. do. do.	2	10	0
25 pairs of very fine show varieties of do. do. ...	3	0	0
12 do. do. do. do. .. 1l. 4s. to	1	10	0
Fine mixed border ditto—per dozen pairs	0	12	0
True old Clove—per pair	0	2	0

PINKS, finest first class show flowers, 12s., 18s., and 24s. per dozen pairs.

PANSIES, do. do., 10s. to 18s. per dozen.

CAMELLIAS of the newest and best kinds, with flower-buds, 30s. per dozen.

CINERARIAS, do. do., 12s. to 18s. per dozen.

ERICAS, comprising the best autumn and spring-flowering kinds, 12s. to 18s. per dozen.

ROSES, Standards, Half-standards, and Dwarfs, of the finest kinds in cultivation, 12s. to 18s per dozen.

THE FINEST DUTCH HYACINTHS, &c.

YOUELL AND CO. have received their importation of the above in the finest condition, and are enabled to offer very superior HYACINTHS by name, comprising double and single Red, Blue, White, and Yellow, at 6s., 9s., and 12s. per doz.

HERBACEOUS PLANTS (hardy), of the very best sorts, 6s. and 9s. per doz.

TRUE FASTOLFF RASPBERRY.

Y. and Co. beg to announce they are now executing orders for the above in fine strong Canes of the same stock as they had the honour of supplying Her Majesty's Gardens and most of the Nobility. 15s. per 100.

Fine large WHITE RASPBERRY, 24s. per 100.

STRAWBERRIES.

Agents for the sale of Kitley's Goliah Strawberry, very hardy, large, and of delicious Pine-apple flavour, at 12s. per doz.

Fine Giant Asparagus, 2 and 3 years old, strong, 2s. 6d. and 3s. 6d. per 100. Sea Kale, strong, 2s. per dozen.

RHUBARB, Youell's Tobolsk, the earliest known, 9s 12s. per dozen, Linnæus (Myatt's), 2s. each; Prince Albert (Mitchell's), 2s. each, and Queen Victoria, 1s.

Post-office orders are respectfully requested from unknown correspondents. Nursery, Great Yarmouth.

GREAT SALE OF NURSERY STOCK.—The Nobility, Gentry, Nurserymen, Market Gardeners, Superintendents of Public Works, &c., are hereby informed that on the 26th of November next (unless previously disposed of by private contract, of which due notice will be given), the whole of the valuable NURSERY STOCK of the BROMPTON PARK NURSERY, Kensington-road, London, will be brought to an unreserved sale by Auction. It will form one of the most extensive of the kind ever submitted to public competition, and includes almost every article comprising the Nursery Trade. To those who this season contemplate any extent of planting, either in the way of Parks, Pleasure Grounds, Approaches, Gardens, or Orchards, this will be found an occasion of very rare occurrence, and one which will enable them to carry out their views to almost any extent with the greatest advantages. This Nursery has for nearly two centuries been celebrated as the greatest seminary of Fruit Trees in the kingdom, the stock of which is unrivalled as regards extent, condition, and correct nomenclature. The trained Trees for walls and espaliers, as well as the Standards for orchard planting, are all well worthy of attention. The stock of Evergreen and Deciduous Shrubs is perhaps the finest in the neighbourhood of London, and includes Plants of every size, to the height of 8 and 10 feet; among these may be mentioned large common and Portugal Laurels, common fan-shaped and Irish Yews of all sizes, American, Chinese, and Siberian Arbor-Vitæ, Red Cedars, Cypress, common and variegated Hollies, Hemlock Spruce, Evergreen Oaks, Laurustinus, Phillyrea, Alaternus, Evergreen and Chinese Privet, Lilacs, &c. There is also a choice collection of ornamental Trees, which includes a valuable assortment of Pinus, Juniperus, and Cupressus; large stocks of Cedrus Deodara, Cedars of Lebanon of all sizes, and other Coniferous Plants, a rich collection of upwards of 80 species and varieties of Oaks, numerous species and varieties of Ilex, Arbutus, Daphne, Clematis, Berberis, Mahonia, Magnolia, Cratægus, Salix, Æsculus, large English Elms, Limes, and Oriental Planes, &c., all of which it would be impossible to enumerate in an advertisement, but of which Catalogues are in preparation, and will shortly be ready for distribution. The soil of this Nursery being of such a nature as to ensure perfect safety in removal, parties at a distance need not be apprehensive of any danger to the trees in transmission; the facilities and expedition of the railways admit of their being conveyed to almost any distance in perfect safety.

All to whom the late firm of GRAY, ADAMS, and HOGG are indebted, may, if they think fit, make purchases before the sale towards the liquidation of their demands, previous to the 17th inst.—London, Nov. 3.

SLATE WORKS, ISLEWORTH.—The following articles, manufactured in Slate for Horticultural purposes by EDWARD BECK, may be seen in use at WORTON COTTAGE, upon application to the Gardener, Sundays excepted. Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot Water Tank Covers, Flower-beds for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c.

Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

CUCUMBER AND MELON BOXES AND LIGHTS.—One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 6s. Garden Lights of every description, Conservatories, Green and Hot-houses, made and fixed in all parts of the kingdom. References given to the Nobility, Gentry, and the Trade, in most of the counties of England.

JAMES WATTS, Hothouse Builder, Claremont-place, Old Kent-road, London.

STATUES, VASES, FOUNTAINS, GARDEN ORNAMENTS, COATS OF ARMS, and ARCHITECTURAL EMBELLISHMENTS in imperishable stone, by VAUGHAN and Co., 60, Stones End, Borough, London. T. J. CROGGON, late of Coade's, Superintendent. Specimens may be seen at CROGGON and Co.'s, 2, Dowgate-hill, City. A pamphlet of Drawings forwarded on application.

RENDLE'S NURSERY, PLYMOUTH.
ESTABLISHED 1786.

THORNS OR QUICKS.—10,000 FINE TRANSPLANTED THORNS from 12 to 15 inches for 3*l*. 10,000 One-year old Seedlings for 15*s*.

LARCH.—10,000 One-year old Seedlings for 20*s*.

SCOTCH.—10,000 One-year old Seedlings for 15*s*.

PEACHES AND NECTARINES.—Fine Dwarf Trees or Maiden at 15*s*. per dozen; small *Trained* Trees from 24*s*. to 30*s*. per dozen; *fine selected Dwarf Trained* at 50*s*. per dozen. Comprising all the best sorts in cultivation, true to name.

RHUBARB, "MITCHELL'S PRINCE ALBERT."—This has been fully proved to be the best early variety known. We have more than 1000 strong, large, and well-established roots, at 20*s*. per dozen. *These will produce abundantly next spring*—Smaller roots, 12*s*. per dozen.

RHUBARB, "MYATT'S VICTORIA."—Very strong roots, 15*s*. per dozen; smaller roots, 9*s*. per dozen.

RASPBERRIES, "RENDLE'S LARGE REFULVE."—This is a large handsome variety, very prolific and delicious flavour, and has given the most complete satisfaction. Strong Canes, 20*s*. per 100 or 3*s*. per dozen. "YOUELL'S FASTOLFF," 10*s*. per 100.

STRAWBERRIES, "MYATT'S ELEANOR," 10*s*. per 100; Cuthill's Black Prince, 12*s*. 6*d*. per 100; Eliza, 5*s*. per 100, Mammoth, 7*s*. 6*d*. per 100; Cole's Prolific, 5*s*. per 100; Cooper's Seedling, 5*s*. per 100.

CEDARS OF LEBANON.—We have a large stock of these in pots. Good Plants, 18 inches, 12*s*. per dozen; 3 feet, 36*s* per dozen. Large handsome Plants in Pots, 4 to 6 feet, 5*s*. each; or, one quarter the price usually charged. *We have a large stock which must be cleared.*

TURKEY OAKS.—Fine, handsome trees, 6 feet high, well transplanted, 80*s*. per 1000, worth 15*s*. per 100.

BEST DOUBLE RUSSIAN MATS, 5*l*. per 100.

BLACK NAPLES CURRANTS.—Very superior to the old sort, 6*s*. per doz.

GOOSEBERRIES.—Some of the very best varieties in cultivation, 30*s*. per 100.

PORTUGAL LAURELS.—An immense stock will be sold unusually low. Fine plants, 18 inch, bushy, 20*s*. per 100; 3 feet, 30*s*. per 100; 4 feet, 40*s*. per 100.

BERBERIS, or MAHONIA AQUIFOLIA.—A very large quantity, 18 inches, 16*s*. per 100. This is a fine shrub for underwood.

Weigela rosea, strong plants, 12 inches, 6*s*. per dozen, Parnettia mucronata and floribunda, 6*s* per dozen; Ribes, double red, and albidum, strong plants, 18 inches, 9*s*. per dozen.

SEAKALE and ASPARAGUS.—In large quantities, from 10*s*. to 20*s*. per 1000.

Our new Autumnal Catalogue is just published, and will be sent, gratis, to any application.

Remittance, or reference in London, from unknown correspondents.

All orders above 5l. will be delivered free of carriage to any of the stations on the South Devon, Bristol and Exeter, or Great Western Railways. Steamers from this port to London, Dublin, Cork, Falmouth, Belfast, and Glasgow, three times a week.

The South Devon Railway is now open to Plymouth, the Station being adjoining our premises. For Catalogues and further information apply to

WILLIAM E. RENDLE and Co., Union-road, Plymouth.
ESTABLISHED 1786.

FORRES NURSERIES.—The Subscribers beg to intimate that they have for sale an extensive stock of all sorts of FOREST, FRUIT, and ORNAMENTAL TREES, &c., adapted to the climate of Scotland. As great care has been bestowed in raising the different kinds from the most approved varieties of their species, the plants are healthy and of fine quality.

The Subscribers have had the honour to receive the numerous premiums hitherto offered by the Highland and Agricultural Society of Scotland for the cultivation of the true native Highland Scotch Pine; and their present stock of this valuable tree, and of Larches, exceeds 16 millions of plants, of every size and age, suitable for being transplanted. Their Foreign Pines, for the raising of which the Highland and Agricultural Society's premiums were also awarded, include many kinds of great beauty, strong of their age, giving promise to become valuable as timber trees in the climate of Britain.

Prices of Leading Sorts:

	s.	*d.*		*s.*	*d.*
Native Pine, 2-years, per 1000	1	3	Pinus excelsa, 8 to 12 inches, per 100	20	0
Do. transplanted, p. 1000	4	0	Do 1 to 2 feet, per 100	80	0
Larch, 1-year, per 1000	1	3	Pinus Gerardiana, 8 ins. per 100	60	0
Do. 2-years per 1000 2*s*. 6*d*. to	3	0	Abies Smithiana, 1 foot, per 100	20	0
Do. transplanted, per 1000 5*s*. to	6	0	Picea pindrow, 10 ins. per 100	60	0
Cedrus Deodara, 1 foot, per 100	80	0	Cupressus torulosa, 1 to 1½ foot, per 100	50	0
Do. 1½ foot, per 100	120	0			

All other sorts of Forest Trees of the finest qualities. The Trade supplied at the wholesale rate. Goods are carefully packed, and, in forwarding Plants, &c, every information required will be readily afforded regarding their mode of treatment; and to those who may desire it, advice will be furnished respecting the formation or management of Plantations, by Mr. J. G., author of the Highland and Agricultural Society's First Prize Essays "On Raising Forest Plants," "On Forest Planting, and on Trees adapted to various soils and situations;" "On Raising and Managing Hedges," "On Forest Pruning," "On the Native Pine Forests of Scotland;" "On Planting within the influence of the Sea," and on various other subjects connected with Arboriculture.

JOHN GILSON and Co., Nurseries, Forres, N. B.

NOW SENDING OUT, SPLENDID NEW GERANIUMS, FUCHSIAS, CARNATIONS, PINKS, PANSIES, &c.

HENRY WALTON begs to offer 12 of the following GERANIUMS last sent out for 2*l*. 2*s*., with a plant of his first-rate Seedling "Antagonist," now sending out at 15*s*. each One over for carriage. The plants are well established in 4-inch pots.

	s.	*d.*		*s.*	*d.*
Abd-el-Kader (Hoyle's)	5	6	Lallah Rookh	5	6
Belle of the Village	5	6	Norah	5	0
Crusader	7	6	Plutarch (Whomes's)	5	0
Promothens	5	0	Jenny Lind (Foster's)	3	6
Terpsichore	5	6	Sparkler	5	0
Alonzo (Foster's)	5	6	Harlequin (Beck's)	3	6
Lamartine	7	0	Virgin Queen (Arnold's)	7	6
Undine (Foster's)	7	6			

Any 20 of the following first-rate varieties for 1*l*. 7*s*., or 12 for 18*s*, with a plant of Hoyle's Prometheus for carriage, viz.: Avenger, Ariel, Aurora, Aurantia, Black Prince, Cassandra, Centurion, Conspicabunda, Distinctus, Desdemona, Forget-me-Not, Flora's, Flag, Gustavus, Gulielma, Hebe's Lip, Honora, Jenny Lind, Lady Ebrington, Luna refulgens, Mercury, Mary Queen of Scots, Miss Holford, Orion, Prince Alfred, Purpurea, Multiflora, Queen of Kent, Rosa Mundi, Star of the West, Scarlet Defiance, Telegraph, and Vulgus.

12 first-rate show Pinks for 6*s*., 9*s*., and 12*s*.

12 first-rate Carnations and Picotees, 12*s*. and 18*s*.

12 first-rate Pansies, 6*s*., 9*s*., and 12*s*. Can be sent by post.

Descriptive Catalogues can be had for one postage stamp. All orders are requested to be prepaid, and made payable at Burnley.—Edgend Marsden, near Burnley, Lancashire.

MITCHELL'S ROYAL ALBERT RHUBARB still maintains its supremacy over every other kind, it being the earliest, finest-flavoured, and best coloured ever yet grown; a most prolific bearer, and free grower. For early forcing, it far surpasses every other kind. If planted in a wine-cellar, or any place where the frost and light are kept from it, it will produce large stalks, of a magnificent red colour, in five weeks. W. M. has a large stock of roots, at 1*s* 6*d*. each; also Myatt's Linnæus, 1*s*. 6*d*, and Victoria, 9*d*. The usual allowance to the trade. Post-office orders made payable to W. MITCHELL, Enfield Highway, Middlesex, will meet with every attention.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 3, 1849.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Nov. 6—Horticultural ..... 2 P.M.
SATURDAY, — 10—Royal Botanic ..... 3*½* P.M.

RUMOUR says that the botanical authorities at the BRITISH MUSEUM are awakening from their gentle slumbers; and that one of the officers has proceeded to Paris to ask questions concerning the manner in which vegetable substances and examples of vegetable structure are exposed to the gaze of the *profanum vulgus* in the gallery of Natural History in that city. We can imagine the amazement of the French naturalists at learning the errand of this gentleman. They will hardly believe in the possibility of anything popular proceeding from the unknown depths at which our national wealth in botany is believed to be lodged—if we have any. We must ourselves confess to similar incredulity. Those who have resisted progress as long as resistance was possible, whose whole lives have been spent in an attempt to appropriate to their personal advantage what should have been devoted to public science, are not the kind of people to be suddenly attacked by a fit of consciousness that there are public interests as well as a public purse. We have no faith in them.

But why should advice in the formation of a public botanical museum be sought in Paris? Ample information might be obtained for a shilling ride to the Royal Botanic Garden at Kew, where we have already a collection of objects of the highest interest to the man of science, of business, or of intelligent curiosity, admirably arranged, and with no other defects in the manner of showing them than belong to the construction of a building originally destined to the humble office of a fruit room. The principle on which the botanical museum at Kew is arranged is capable of much extension, but of no essential improvement. A journey to Paris was superfluous.

And why have a botanical museum at all in dirty smoky London? Why even an herbarium? The foulest atmosphere known in any European metropolis is in the highest degree unfavourable to the preservation of objects of natural history, and especially of articles so perishable as those supplied by the vegetable kingdom. We believe it impossible to keep them in a state fit for public exhibition. The attempt will entail endless renewal and ceaseless expense. To have a public value the objects must be kept in perfect order, perfectly neat and clean, perfectly uninjured: and there must be light enough to see them by at all times. Can these conditions be secured in London? The question will be answered by everybody who has lived in London for a month.

Supposing that these difficulties should appear not to be so serious as we know them to be, supposing that the clang of public opinion has at last awakened *in reality* those whose drowsiness has long been proverbial, why, let us ask, must there be on a sudden two public collections, for the same purpose, within a few miles of each other. What need of two, where *none* was so long regarded as sufficient for the crowds of "ignorant people" fit for nothing but taxation. London might as well have two Treasuries, or two Home offices, or two Museums of Antiquities, maintained by the State. To furnish funds for two metropolitan botanical museums would be not only an unjustifiable expense, but a pernicious measure, injurious to the efficiency of both. Museums must be paid for by the public purse; each must have its separate staff and its separate annual vote; the only effect of the establishment of two Government botanical museums will be to double or treble the necessary expense. That at Kew exists, is admirably managed, is capable of indefinite extension at small comparative cost, and is in the very place most favourable for study as well as preservation. To form another is worse than superfluous. Let us hope that the trustees of the British Museum will refuse their sanction to such a scheme. If the new-born zeal reported to have appeared exists, it can be best directed to the enlargement of the resources of the Kew Museum, by sending thither what remains of the botanical collections in Great Russell-street. A person in want of such information as these collections can furnish desires to find everything in the same place, and not to waste his time in oscillating between the dingy nooks of the British Museum and the brilliant galleries of Kew.

Nor is the present condition of the British Museum calculated to inspire the public with confidence in departments hereafter to be created. The magnificent building, the admirable arrangements of the architect, the liberality of Parliamentary grants, and the treasures of Nature and Art collected in the Museum, are worthy of a great nation. In the condition of some of the departments there is nothing to complain of; as, for example, in that of the shells, which do credit to the diligence and science of the officers in charge of it. But, with such exceptional cases, the present state of the Museum, as a public exhibition, is discreditable to all concerned. If this national establishment is to be looked upon as a raree show upon a gigantic scale, the public would have nothing to complain of. But if it is intended as a place where the public may find instruction as well as amusement, where information may be sought by those whose means debar them from private opportunities of acquiring knowledge, where rude and ignorant people may seek for real learning and find it—if the British Museum is a place where objects of this kind are to be gained (and we know of no other reason why it should be maintained at the public cost)—then we are bound to say that the intentions of its founders and supporters are not fulfilled by the executive.

A public museum is a place where everything is intended to speak to the eye. Catalogues are mere supplemental aids, only valuable for detailed information which cannot be conveyed by written or painted labels. Every thing, therefore, in a museum should be distinctly, though briefly, labelled; and as soon as it is exposed to view. If this is not done a museum can have no interest for the ignorant; and loses much of its value to the well informed. Correct names, or short explanations of the history of the objects exhibited, are quite as essential as fine specimens. Without names and explanatory notes the specimens themselves may as well be restored to the packages in which they were received. This was once the opinion of the authorities of the British Museum, as is evident from the occasional memoranda attached to parts of the Antiquarian collection. That opinion seems, however, to have changed, if we are to judge from the present higgledy-piggledy manner in which many of the objects are now exhibited.

Take, for example, what is called in the Catalogue "Room I of the Gallery of Antiquities." In this place are several compartments, containing about 200 separate objects, scarcely any of which are labelled. Nor are there any numbers in the catalogue by which the objects can be identified. There are numbers indeed upon some of the objects; but the very civil attendants tell you that those numbers *belong to the Townley Collection*, and need not be minded. In this room there would also appear, according to the catalogue, to be five compartments, but in reality there are six, so that one has not been even catalogued.

Look at the vaulted room, in which are placed Mr. LAYARD's marvellous discoveries at Nimroud. Not a word is vouchsafed by the keeper of the antiquities in explanation either of the interesting history of this collection or of any one object which it contains.

Proceed anywhere among the antiquities, it is just the same. Here and there explanatory notices; for the most part no information whatever. The state of the "Bronze room" in particular calls for strong reprobation. Multitudes of most curious and interesting remains are found there, with mysterious numbers attached, and not a syllable of detailed explanation. Perhaps it has been thought sufficient for the crowd that they should be told that they are bronzes. As for the numbers, it would have been just as useful to mark the Bronzes with the cuneiform letters of the Assyrian collection. We are not disposed to criticise the catalogue, because in our opinion its condition has no bearing upon the state of the collections themselves. We must however observe, with reference to this Bronze room, that the catalogue is, in some respects, more like an auctioneer's than that of a national collection. Case 93 is thus described:

Case 93. Part of a lyre, and two flutes of wood, found in a tomb near Athens; gilt myrtle crowns of lead and terra-cotta, from the same place; glass mosaic tesseræ from the ceiling of the Parthenon, when a Greek church, before the taking of Athens by the Turks; leaden sling bullets.

Would any one suppose that this was the scientific description of the curious miscellaneous set of things which that case really contains. Then, again, Case 97, filled with remarkable objects, is not even mentioned in the Catalogue.

Other departments are in the same condition. The ornithological cases contain whole flocks of birds without names; the minerals, thousands of unnamed specimens (Case 33 has but 16 names among about 140 distinct specimens), and so elsewhere.

Let any one compare this state of things, in a

museum prodigiously maintained,* and almost a century old, with its appurtenances at Kew, which has been scarcely two years in existence. There everything is well and usefully labelled; no catalogue is necessary, but the visitor sees at once what is the history of every article presented to his notice. The higgledy-piggledy system is not countenanced; labels are not upside down; a name for one object is not made to suffice for twenty others, different from it, but packed in the same case; in short, there is no confusion, but it is the seat of order, method, and exactness. We are told that it is seriously intended to propose to the trustees that a rival shall be established, in Great Russell-street. What sort of rival we may judge by what is there now; showy, confused, costly, and uninstructive. We submit that public money ought not to be granted for any such purpose; and we recommend that a sharp watch be kept upon the votes in next year's session of Parliament.

We lately drew attention to the insanity of carting into a Vinery the fœtid "blue billy," or Lime obtained from Gas works. The view we then took of the pernicious quality of this substance having been questioned by one or two correspondents, who find it extremely useful on their Grass land, it seems desirable to draw attention to the description of it lately given by Dr. Ure, in a letter addressed to a morning paper.

"Gas lime," he says, "contains and easily affords so much of the cyanic compounds that an eminent Parisian chemist has taken out a patent in France for manufacturing prussic acid and Prussian blue from that refuse. The only obstacle to the profitable working of this patent is the accompanying sulphurets, which discharge a great deal of sulphuretted hydrogen, along with the vapour of prussic and sulphocyanic acids; an aerial mixture of the most intense malignity to breathing animals." And he goes on to say that: "That vile refuse should be buried many fathoms deep in some barren region, for when spread on the farmer's field, after discharging the above gaseous poison for some time, its sulphur gets oxygenated into sulphurous acid, two volatile products alike detrimental to plants." Without going into the minute chemistry of the subject, it is sufficiently obvious that fresh gas-lime is a highly dangerous agent; so wholly unfit for use in confined places, that the gardener who lately employed it in his Vinery may congratulate himself upon his escape from a coroner's inquest.

It must not however be therefore inferred that gas-lime is worthless or dangerous when properly applied. Its deleterious qualities disappear upon exposure to the air; sulphuretted hydrogen and sulphurets are speedily decomposed by contact with air and moisture; and any other pernicious matters which it may originally contain disappear or enter into harmless combinations. Gas-lime is therefore, when old, a good calcareous manure, fit for all purposes in which lime is required—and something more; for the sulphur-compounds which it contains themselves act as valuable manures, as soon as their intensity is destroyed by diffusion through masses of earth. Such at least appears to be the general opinion of practical gardeners: if there is any evidence to the contrary, we venture to ask for information concerning it.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(Continued from p. 677.)

On some Changes in the Male Flowers of Forty Day Maize. — The specimens exhibited were taken from a crop of that variety of the Zea Mais which has recently been introduced into this country as the Forty-day Maize. The seed was said to have been raised on the slopes of the Pyrenees, at an elevation of 3000 to 4000 feet, and the variety was considered as more likely to succeed than any of those as yet cultivated in this country. As is well known, the Zea Mais is a monœcious Grass; the male flowers are borne in distinct terminal panicles, which rise high and clear of the leaves. The female flowers are contained in lateral cobs which consist of bracts enveloping a cone; these consist of several double rows (8—10) of flowers; of these the pistils project beyond the bracts. Several female flowers are grouped together; one only of each group usually perfects its seed; but the abortive ones can be detected, and help to account for the number of valves which are to be found in conjunction with each seed. The external bracts serve to protect the whole cone of associated female flowers of the Maize, and which are not, therefore, provided for by the bordering of the valves of the corolla, as in Phalaris, &c. These envelopes are therefore but imperiectly represented in the ears of Maize, and it will be observed that when the seed is abortive they are developed much more fully. Compared with a crop of four varieties of American Maize, of which the heads of male flowers were all full and branched, the contrast was striking: a large proportion of the flowers of the Forty-day Maize were single, like ears of Wheat; another peculiarity was that it presented a number of heads of naked grain. This change has been noticed, but instances may not have come within the observation of English botanists. M. Turpin, as quoted by Moquin Tandon, thus describes it: "Where the transformation of stamens into pistils takes place, there is sometimes a single supernumerary ear which is usually situated near the summit of the principal axis, sometimes several; in this case each branch bears its own." This is a true description of the appearance which the heads commonly exhibit; it is in the lower portion of the ear that the grain is wanting in Wheat, particularly in cold situations or in cold seasons. With the conversion of stamens into pistils in the terminal panicles, there is frequently a suppression of the lateral cobs. The monœcious Grasses are mostly tropical or sub-tropical, but in the present instance we seem to have an example of a hardy variety of Zea, taking the character of the inflorescence of the Grasses of the temperate and colder zones. —Mr. Henfrey said that monœcious flowers arose from either the suppression or development of the wanting or present organs which characterised the flower. It was not improbable that a change in the external circumstances of a plant might lead to such a change in the flowers as had taken place in the Maize brought forward by Mr. Austen. This might be the true cause of Maize not producing fruit so well in this country as in many other parts of the world.—Dr. Lankester stated his conviction that the reason of the failure of the Maize in this country was the deficiency of temperature at the time the fruit was ripening. Maize had, however, been recently cultivated in Indiana for the purpose of obtaining sugar, and as this was procured before the plant ripened, it was not improbable that it would yield sugar in this country, but whether profitably, was yet to be proved.

* It is to be observed that for the antiquarian department of the Museum there has been a keeper at 600*l* a year ever since 1826; an assistant keeper at 400*l* a year since 1844; a supernumerary assistant at 210*l*. a year from the same date; together with three other assistants, and 11 attendants. And yet the keeper, assistant-keeper, supernumerary assistant, other assistants and attendants, 17 in all, have not yet had leisure to name the objects exhibited to the public; nor even to attach one single memorandum to the wonderful sculptures from Nineveh!

PRUNING.

The Gooseberry.—Left to its natural growth, the Gooseberry becomes an almost impenetrable thicket, not at all adapted for producing such fine fruit as is produced by plants properly cultivated and pruned. The natural habit of the Goosebery is that of a bush, with a strong tendency to renovate itself by suckers, and the more vigorous these are, the more liable are the old branches to fall into decrepitude and decay. To prevent this confusion, arising from a superabundance of shoots and suckers, the pruning-knife must be employed, and that, too, at an early stage of the individual existence of the plant.

a, a, a, a. Wood buds.
b, b, b, b. Fruit buds.
c, c, c. Young shoots cut back.

In the accompanying engraving it will be seen that the wood buds, *a, a, a, a,* are on the last summer's shoot, whilst the fruit buds, *b, b, b, b,* are on two years old wood. The buds marked *a*, are called wood buds, because from them young shoots are produced, but usually not from all of them; for it appears, that of the buds on the two years old wood, which, a twelvemonth back, were similar to those now marked *a*, three had produced shoots, *c, c, c,* and the others formed the fruit buds, *b, b, b, b.*

Gooseberries are usually propagated by cuttings. These may be taken off as soon as the young wood has acquired a tolerable degree of firmness, whilst the fruit is on the tree, and planted with success, if proper shade be afforded. But, generally, the cuttings are taken off and planted in autumn, winter, or spring; but early in autumn is the best time. Cuttings of almost any length may be struck; but where there is choice, those that are moderately vigorous and firm-wooded are preferable; and, if cut off close by their bases, so much the better. They may be shortened by cutting off the points to 10 inches in length; in that case, if inserted in the ground to the depth of 3 or 4 inches, then allowing 3 inches of clear stem, the shoots from the three upper buds of the cutting will form the first branches of the plant. It is not natural for the Gooseberry to have much of a naked stem; one of 3 inches is considered sufficiently long. If the cuttings are too short to admit of this, then the lateral young shoots must be trimmed off closely, when the plants are removed. But whatever length of cutting is used, all the buds ought invariably to be removed from the portion intended to be inserted in the soil; for, if not removed, they will most probably make their unwelcome appearance some day in the form of suckers. Some also dress off the prickles; but this is of less consequence, for being only dead substance, they rot off in the ground.

After the plants have formed shoots, these must be shortened according to their strength; if moderately strong, to about 6 inches. In shortening, care must be taken to cut to a bud pointing the most towards the direction which the branch should follow, in order to complete the form in which the plants are intended to be kept. The general mode is to keep the bush hollow in the middle, and six, eight, or ten branches, at equal distances, or as nearly so as possible. If two branches are likely to approach too near each other, one or both must be cut to buds pointing in the opposite direction; thus, in the accompanying figure, supposing the branch were intended to be prolonged more towards the left, then the young shoot is properly cut, as represented, for the uppermost bud *a* to proceed in that direction. On the contrary, if the uppermost bud *a* had been on the inside of a shoot, of which it would have been desirable that the direction should be outwards, towards the right, then it would have been entirely wrong to cut at that bud.

Observing thus to cut at proper buds, each leading branch may be made to diverge outwards, or to either side, to an extent sufficient for ordinary cultivation. The pruning of one of the leading branches may now be detailed from its commencement. In autumn, or early part of winter, the shoot ought to be shortened to some extent, bearing in mind that generally the three buds immediately below the section will break into shoots; therefore, it will be advisable to cut where another leader is required to originate. This is the first winter pruning. The second will consist in shortening the leading shoot about one-third; and also the other shoot intended for an adjoining leader. If there should be another young shoot growing strongly where not wanted, it may be cut off close; and others, weaker, may be cut like that marked *c* on the right of the engraving. The next season the leader should be shortened, and laterals cut to one eye, if weak, but otherwise three or four eyes may be left on these, some of which will probably break into shoots, and others will form fruit spurs. The other branches will require a similar treatment. Young shoots should be trained up to supply the place of any branch exhibiting symptoms of decay.

In the midland and northern counties an open cup form of bush is generally aimed at in pruning; on the contrary, in some cases in the south, although the branches are pruned and thinned, yet some are left in the centre for the purpose of shade, otherwise the fruit would be scorched. Gooseberries may be trained to a considerable height on trellises, arbours, &c.; but where such is proposed to be done, free, upright growing sorts should be selected. In some places they are trained horizontally, by means of hooked pieces of wood, for pulling down, and forked pieces for pushing the branches up to a horizontal position where necessary.

On again referring to the engraving, it will be observed that the fruit-buds are on the two years old wood; and on wood of this age, the largest and finest fruit is produced. But fruit-buds or spurs may be seen on wood much older. Strong young shoots occasionally break out from old wood, and if they are shortened, to keep them within bounds as short laterals, fine fruit may also be obtained from them. *R. T.*

ROSES.

THE PRACTICE OF FERTILISATION, ARTIFICIAL AND NATURAL.

The fertilisation of the Rose has been carried on by many of the great raisers of seedlings to a considerable extent, and to cross fertilisation we owe many beautiful varieties, which the nurserymen call hybrids; we do not subscribe to the propriety of the term, but it is in general use to distinguish those Roses which partake of the nature of two distinct parents; hence we hear of hybrid China, hybrid Bourbon, hybrid Perpetual, and so forth, which means a cross between the China, the Bourbon, or the Perpetual, and some other Rose. This may be effected artificially, that is, by hand; or naturally, by placing together such Roses as possess stamens and pistil, the natural organs of generation, that they may mix by the agency of flies and bees. The artificial fertilisation is a very simple operation, and consists in taking the yellow powder from the stamens in the centre of one Rose and placing it in contact with the pistil in the centre of another Rose. To effect this properly, you should select the plant you intend to fertilise, and the instant a flower opens, remove all the stamens, that they may not shed the yellow powder on their own pistil; then take the powder from the Rose whose nature in some respects you wish to impart to the other, and shed this powder on the pistil which is ready to receive it, and which, in all probability, but for your interference would have received its own.

The numerous cross breeds obtained by this means are exemplified in any modern Rose catalogue. The object of it is to obtain the better qualities of two separate varieties in one Rose. As, if one Rose is a brilliant colour but a flimsy texture, and it is crossed by another which has nothing striking in colour, but an excellent texture, the cross may produce the fine colour on a much better Rose. If one Rose is a deep red, and another a white, the crossing produces perhaps all the shades between white and red, or a mixture of white and red, and so of any qualities that may be formed separate in two Roses and are desirable in one. It is necessary that for this purpose the organs of generation are perfect, and this is not the case with some Roses which have nothing but petals, or are so extremely double as to destroy them if there were any. The semi-double, all such as when fully expanded show their stamens, seed readily, and our choice must be among the best of these. Attention must be paid to the period of operating, for unless the pistil be in order to receive the powder it is labour in vain. If, however, it be glutinous, and the powder hangs to it, there is no doubt of the success; still, the Rose left to itself to seed will produce great variety; and we would, unless for some particular object, such as obtaining a yellow Moss by cross fertilisation, or some other equally striking feature, rather plant some of the very best Roses in contact with each other, and leave the rest to chance.

In this case we should select none but such as possessed some very distinct valuable quality, and plant all these in a group, the best of the Mosses, the best of the China, or smooth-barked kinds, that were continual bloomers, the most remarkable of the Briars, and so diversify the colours as to lead to a hope of something new. But we certainly would avoid placing in this group any variety that had thin flimsy petals. We think there is nothing to compensate for that deficiency, and therefore should endeavour to avoid producing from the seed any variety with that drawback. The Rose naturally sports. We have had many colours from the seed of a thin white variety called the Globe Hip, and although none of them were double enough to be worth saving, they showed the disposition of the Rose to sport, and in our case it was the more remarkable, because we saw no other Rose in the garden where we gathered the hips. We think, however, that where a dozen good Roses are grouped, the accidental mixture is more likely to work stronger changes than even the premeditated crosses by hand; and there is this satisfaction, that by having none but really good Roses with some striking good quality, it is very improbable that we should get many very bad Roses from seed thus produced. In this attempt we should have the group as far removed from other Roses as possible, or contrive a gauze covering to enclose the whole, and put a hive of bees under it; but there need not be so much trouble taken, because distant bees and flies are not obliged to bring the pollen or yellow powder from Roses, even if they do pay a visit to our isolated group. Upon the whole it will be found that the chances of obtaining good Roses are greater by this means than by artificial fertilisation, unless we have, as we before observed, a distinct object in view. *Crito.*

DISEASES OF PLANTS.

(*Continued from page* 676.)

Genus XX. Decrepitude.—Plants as well as animals are subject to the terrible law of destruction, imposed by Nature on all organised beings. As years roll on, the vessels become contracted or choked, the fluids run slower, are badly filtered, and thicken. Gradually the individual becomes disorganised, by the diminution of energy in the vital stimulus, as the being advances in age. It is this state which is called decrepitude in animals; it leads to inevitable death, but the plant can often for a long period escape the universal destiny and recover its vigour.

We may distinguish two degrees of decrepitude requiring different treatment. Some aged trees, producing but little every year at their extreme summits, will yet flower and vegetate. In these cases pruning out the oldest branches and grafting the more vigorous ones may suffice to restore their vigour. But if the individual is far gone, it must be cut down either half way up the trunk or level with the ground, applying to it Forsyth's composition, and it may well be restored to a new life. All trees, as far as they are known to us, will admit of this mode of cure. Without recourse to what the art of agriculture teaches us, the observation of what takes place in Nature will prove to us the success we have to expect from the operation. In old Chestnut woods we often see large trunks, fallen or broken down, putting forth from the stock fresh shoots, by which the tree is renovated. We must confess that in this respect all analogy between animal and vegetable life ceases. The endeavour to sustain it only leads us into ridiculous absurdities.

Genus XXI.; *one species.* Fungus of the Maize.—Learned essays on the nature of this disease have been published by Signor Balle-Barelli, Professor of Agriculture at Pavia, and by Signor Melandri, Professor of Chemistry at Padua. It is from the observations of the former that I now enumerate it among diseases arising from weakness, having formerly in my Essay on Nosology placed it among those of uncertain origin.

I have not, however, adopted the word *polpe* for its designation. That name is already applied by writers to the disease commonly called *fame*. In my opinion it is most essential to fix the nomenclature of diseases, otherwise we shall always be mistaking one disorder for another, and shall never understand each other. Besides that, the term fungus seems to me to give a better idea of this malady of the Maize than the word *gaine*.* Professor Barelli defines it to be *a whitish fungoid excrescence of various forms and sizes, internally intersected here and there by masses of a black mushy, smelling powder, bursting without twisting or bending, and of an extremely aqueous consistence in proportion to the texture of the remainder of the affected plant.* The learned Professor having followed the course of the disorder from its origin, has come to the conclusion that it originates decidedly in weakness and a successive extenuation of the vascular tissue, and that it is not a mass of minute fungi as some have believed. He saw that plants raised from weak seed were the most subject to it, and he had occasion to observe that those injured or torn by winds were similarly affected. Finally, he has ascertained that the malady is not contagious. The disease is to be prevented, according to the directions of the Professor, by the choice of the best seeds, rejecting those which grow at the summit of the spike, by avoiding to disturb the plants in weeding them whilst in flower, by hoeing and earthing them up without injuring the roots too much, by not over irrigating the field, in order not to produce too much fluid sap, and finally, if the soil is clayey, by keeping the ridges high and well raised in the middle.

Professor Melandre having subjected the morbid matter to a chemical analysis, an analysis which it would have been desirable to have made at an earlier stage of the disease, thus concludes:—"This malady, if classified according to the system of Beaumes, would come under the head of oxygeno carbonetic diseases, and perhaps a classification of that kind would be more applicable to the vegetable than to the animal kingdom, seeing that the vegetable, more simple than the animal in its structure, seems to approach nearer to the mineral kingdom, and to have more relation to the laws of chemistry."

This disease has never been examined on any other plant than the Maize, and I have observed that it is more frequent in low moist plains than in high grounds, and more in cool years than in hot dry seasons. I may add, however, that I have sufficient proof of its attacking other paniculate graminee such as the *Panicum miliaceum*, on which I have observed it. On some Liliaceæ, especially on certain varieties of Hyacinth, I have seen something like it, but I have not sufficient data to affirm it positively.

ON THE ODOURS OF PLANTS AND THE MODES OF OBTAINING THEM.

"Go, crop the gay Rose's vermeil bloom,
And waft its spoils, a sweet perfume,
In incense to the skies."—Collyer.
"Of their sweet deaths are sweetest odours made."
Shakspeare.

Rose.—This Queen of the garden loses not its diadem in the perfuming world. The oil of Roses, or as it is commonly called, the otto or attar of Roses, is abstracted by various processes from the Cabbage Rose in Turkey, Persia, and India; the finest is imported from Ghazepore in the latter country. For obtaining it, the procurers at each place have their own mode of operation, the best method however is to stratify the flowers with a seed containing a fat oil; they will absorb the essential oil of Roses, and swell a good deal if the flowers are changed repeatedly. They are then pressed and the product allowed to stand for a time, the otto rises to the surface, and is finally purified by distillation. Pure otto of Roses from its cloying sweetness has not many admirers, it is moreover likely to produce headache and vertigo in this state; when diluted however there is nothing to equal it in odour, especially if mixed in soap, to form Rose soap, or in pure spirit to form "Esprit de Rose." The former preparation not allowing the perfume to evaporate very fast, we are not so readily surfeited with the smell as in the latter. The finest preparation of Rose as an odour, is made at Grasse, in France; here the flower is not treated for the otto, but simply by maceration in fat, as mentioned with other flowers.

The Rose Pommade thus made, if digested in alcohol, yields Esprit de Rose of the first order, very superior to that which is made by the addition of otto to spirit. It is difficult to account for this difference, but it is sufficiently characteristic to form a distinct odour. It is never sold by the perfumer, he reserves this to form part of his recherché bouquets. Some wholesale druggists have however been selling it to country practitioners for them to form extemporaneous Rose water, which it does to great perfection. Roses are cultivated to a large extent in England, near Mitcham in Surrey for perfumers' use, to make Rose water; the odour of the English flower is not strong enough to use for any other purpose. Though the dried Rose leaves are used for scent bags, they retain but little of their native fragrance. In the season when successive crops can be got, they are gathered as soon as the dew is off, and sent up to town in sacks. When they arrive they are immediately spread out on a cool floor, otherwise if left in a heap they will heat to such an extent in two or three hours, as to be quite spoiled; to preserve them for use they are immediately pickled, for this purpose the leaves are separated from the stalk, and to every bushel of flowers, equal to six pounds, one pound of common salt is thoroughly rubbed in, the whole becomes a pasty mass, and is finally stowed away in casks. In this way they will keep almost any length of time without seriously injuring their fragrance. For Rose water, which is best prepared from time to time, take 12 lbs. of pickled Roses, and 2½ gallons of water, place them in a still, and draw off 2 gallons, this product will be the "double distilled Rose water" of the shops.

Rhodium (*Convolvulus scoparius*).—A fine odour is drawn by distillation from the wood of this plant; it is but little used in perfumery, and is extracted more with an idea of adulterating the otto of Rose, as it somewhat resembles it in odour, than for any other purpose.

Rosemary (*Rosmarinus officinalis*).—The odour is more aromatic than sweet, it is procured from the leaves by distillation, and consumed largely in combination with other scents for perfuming soap. "Rosemary water" and "Rosemary oil" are a good deal used, with an idea that they possess the virtue of restoring hair; how far this is correct we know not, but we have little faith in such nostrums.

Sandal.—

"The Sandal tree perfumes, when riven,
The axe that laid it low."

This is an old favourite with the lovers of scent; it is the wood that possesses the odour. Some of the finest comes from the Island of Timor and China, and on account of its fragrance, is often fashioned into lady's toilette-boxes and jewel cases, &c. Many persons use Sandal wood shavings to make scent-bags for drawers. When distilled the oil of Sandal is easily obtained, it is wonderfully strong and penetrating; the oil of sandal mixed with pure alcohol forms the perfumers' "Extrait de bois de Santal." This preparation requires a little Rose to sweeten it for handkerchief use; it mixes well with soap, and then forms what they call Sandal-wood soap, and with charcoal and a little nitre it forms Sandal pastilles for burning, to perfume apartments, which, however, are but indifferent in odour; the oil of sandal is often used to adulterate otto of Rose, with which it unites favourably; Sandal wood, with its derivations, is one of the most ancient perfumes. *P.*

VILLA AND SUBURBAN GARDENING.

I know of no plant so easy to cultivate, and at the same time so difficult to keep from year to year, as the Pansy. It may be raised from seeds and bloomed in a few months, and an endless variety of colour, marking, and texture, may thus be produced. Choice kinds, either selected from the seed-beds or procured from the florists, are seldom bloomed more than once, unless by some expert amateur, or in some favourable locality. In winter the Pansy is extremely liable to damp off, although protected in frames; and we all know to our mortification the ill effect of a summer's sun on it. It is scarcely possible to point to another tribe of plants so peculiarly the amateur's as this, or one that puzzles him to cultivate more. The following hints may assist him.

Seeds sown in autumn in pans, or even in the open border, will come up readily in a few weeks. The seeds should be slightly covered with fine soil, if covered at all, as half the seeds sown rot in the ground, from being covered too deeply. As soon as they expand the second set of leaves, they should be planted out into beds, in lines, from 8 to 10 inches asunder. If the seed has been carefully saved from good kinds, an interesting display will be the result; and the raising of new varieties is a labour of peculiar interest. As spring advances, the plants so treated will commence flowering. The next point will be to select those which possess good qualities, with a view to perpetuate them. There are many singular and pleasing varieties that do not come within the arbitrary rules by which florists' flowers are judged, which nevertheless are worth retaining for common border decoration; but if a rigid adherence to these rules is determined upon, then the flowers must be as nearly round as possible, expanding their petals flatly; crumpled petals, with ragged edges, are points that will justify their being cast aside. Round flowers, with flat petals, must also have firmness of texture to recommend them; a flimsy flower in the fancy, although possessing other properties, is universally discarded. The eye should be concentrated, and not starry; the colours *soft* and clearly defined. These instructions will enable the amateur to select the right kinds from his seedling beds. As soon as he has determined upon those worth retaining, propagation should be commenced, and this is a simple matter. Cuttings taken off at the second and third joints will root readily, placed behind a hedge or wall on the north side, without any protection whatever. Insert them 2 inches apart, and 1 inch deep, in soil of a light sandy texture, and they will root in a few weeks. Take care that all damp leaves are removed as soon as they appear.

To produce a bed of choice Pansies, select a north aspect, with a cool bottom; soil of medium texture, and moderately enriched, should be preferred for the production of large flowers. Keep the soil frequently stirred around them, and be careful that the border is free from wireworm. If the plants are put out in September, they will be established before winter; and I have frequently found that plants so treated get through the winter quite as well as those coddled in frames. As their propagation is easy, depend exclusively upon young plants for the following season's bloom. Seeds should only be saved from beds of selected flowers possessing the best qualities; for it is only by following this up that improved kinds to any extent can be obtained; and, as seed is readily produced, it is not worth while saving that from doubtful or indifferent sorts. *Pharo.*

* This is the same word as *volpe* (fox), the common Italian name for the smut in corn.

Home Correspondence.

Victoria regia at Chatsworth.—This very extraordinary South American Water-lily, which occupies a large tank, built for the purpose, in one of the stoves at Chatsworth, is just coming into bloom, and will probably open its first flower in the course of two or three days. *Joseph Paxton, Chatsworth, Nov. 1.*

Close pruning Wall and Espalier Fruit-trees.—When I came here (Mayen House) in 1815 I found that the Apple, Pear, and Plum-trees, on walls and espaliers, had been allowed to extend their fruit-spurs some 18 or 20 inches from the walls, &c. The trees were old, having been planted in 1794; nevertheless, I was unwilling, at "one fell swoop," to root out the whole and plant young trees. In January, 1846, I therefore commenced pruning them in the following manner. Having procured good draw-cut shears (which are preferable to a saw or knife, and far more expeditious), I commenced with the branch next the ground, pruning the whole of the old straggling spurs close down to their base. I next took the third branch from the ground, and so on with every alternate one to the top of the wall or rail, leaving the others untouched, with the exception of removing the previous summer's young wood. After vegetation had commenced, a host of young scions burst from the branches whose spurs had been removed. I had the points of these shoots taken off with a pair of box shears, but not too closely. This treatment improved considerably both the size and flavour of the fruit on the unpruned branches. In the spring of 1847, I had the remaining branches pruned in the same way as the others, and the last season's young spray cut off the branches whose spurs were pruned off the previous year. Being aware that the soil in the borders was in good order, and that the roots were now capable of supplying more nourishment than the trees in their then almost denuded condition were capable of appropriating, in the end of March I had the roots cut carefully away by opening a trench round the tree at the distance of 4 or 5 feet from the stem, according to the sizes and age, &c., of the trees. After dressing the ends of the attached roots with a knife, the trenches were filled in again, putting a little leaf-mould next the roots. This had the effect of balancing the supply of sap to the demand. During the second year after pruning there were a few Apples on the first pruned branches, which, being from young vigorous buds, and in close contact with the wall, were of large size and excellent in quality. In 1848 the trees covered the walls with fine healthy foliage, and there was a fair sprinkling of fruit on the branches first operated on, and this year an excellent crop of large fruit was gathered from them. A few trees of the same varieties were left in the state in which I first found them, and the contrast between the fruit on them and that on the thorough pruned trees was very striking. In very cold and dry weather in the early part of summer the quality of fruit is much deteriorated by the sap having to go through all the zigzag ramifications of old clustered spurs, and it is much more exposed to sudden changes of temperature by being at such a distance from the wall, to say nothing respecting the beautiful appearance of both fruit and foliage on close pruned trees. *A. Walker, Mayen, Banffshire, N.B.*

Mealy Bug.—Has any gardener tried a new nostrum for killing the mealy bug on plants, which was advertised some time ago by a foreman in an Exeter nursery? In the last number of the *Gardeners' Chronicle* we are informed that the presence of the mealy bug at all is "a symptom of lazy gardening." I am not myself particularly subject to this last complaint, and yet my stove plants are infested with mealy bug. Did the writer of that very silly paragraph in the *Gardeners' Chronicle* ever experience the difficulty of freeing a miscellaneous collection of stove plants from that most troublesome insect? *J. B. Whiting.* [There are difficulties in removing it when it has once gained a head, but none in preventing its progress when it first appears.]

Seedling Dianthus.—Some years ago I produced a race of seedlings between Dianthus barbatus, of a dwarf habit and brilliant colour, and Dianthus hispanicus; this race has perpetuated itself for years by seeds, and produced many pretty semi-double and occasionally double flowers of great beauty. In nearly all, the deep velvet crimson colour is remarkable, but in one instance this year a deviation has taken place from the ordinary character, and the plant would have been pronounced a different species by persons not knowing its history. The difference will best be shown by referring to the specimens sent—No. 1 being Dianthus hispanicus in its ordinary character; 2, varieties of the hybrid; and 3, seedling with marked distinction of inflorescence and also of calyx. I do not know that I should have troubled you with any account of these, because of the well-known habit of the Pink family to deviate from its normal structure, long ago observed by the older botanists, Parkinson and others; but the variation, No. 4 and 5, is so singular, in a physiological point of view, that I deemed the subject one worthy of notice. As early as June last, the plants from which the specimens 4 and 5 were gathered showed a most robust habit of growth, with such peculiarity that led me to suppose I was about to see the original barbatus return. In process of time one or two buds only were developed in some of the fascicles, which were similar to the flowers of No 2; the remaining, and by far the larger number, kept growing on without producing blossoms: until a character is produced so unlike what has been obtained from seedlings of some years past, that I deem them worthy a passing notice. Indeed, the anomaly forms a good pendant to the budded variety of Plantago noticed in the *Gardeners' Chronicle* a week or two since. *W. Masters.* [Nos. 4 and 5 are merely in that proliferous state which we so often see, but the cause of which we cannot explain. The best analogy to this case is in the Wheat-ear Carnation].

Curious Experiment with Bees.—About ten days since, one of my apiarian friends in Birmingham wrote to inform me that, from the languid and inactive appearance of one of his bee stocks, he had every reason to imagine that it must have lost its queen, and being a hive upon which he set a high value, he begged that I would if possible render him some assistance. Thus appealed to, I proceeded last Tuesday week to a farm-house a few miles from this city, where, by the aid of fumigation, I expelled the inhabitants from a hive, otherwise intended to have been destroyed by brimstone. With some difficulty I succeeded in finding the queen, whom, with 50 attendants, I imprisoned in a small box, with a sufficient provision of honey, and despatched her the same evening by post for Birmingham. As the evening mail is sent via London, she had to perform a journey of 300 miles before reaching her destination. I have this day learned that she not only arrived in perfect safety, but has since been introduced to and most cordially welcomed by her future subjects. The remainder of the expelled bees were afterwards added to one of my own hives. *T. W. W., Exeter, October* 18.

Grapes.—In a letter from Constantinople to the *Illustrated London News*, Mr. Albert Smith states that some Grapes which he saw exposed for sale in the fruit bazaar, were "really and honestly as large as plovers' eggs." They are called *chow cosh*, or at least the name is so pronounced. Such a Grape would be an acquisition to our Vineries, and if any reader of the *Gardeners' Chronicle* has a friend or a correspondent at Constantinople it might easily be introduced. *W.*

Over-crowded Graveyards.—I would recommend persons interested in this subject to stock these with ten thousand times ten thousand more bodies than they at present contain. But they must be living bodies; slow but sure workers, and natural purifiers. Let every graveyard be well stocked with ants; they delight in a dry residence, but they descend to the store-rooms to perform their work, and I have not found the guano they produce to be offensive. *Ignoramus.*

Potato Disease.—Almost every number of your journal confirms the opinion that to escape the Potato disease, dryness of the soil should be carefully attended to, and that this can generally be effectually attained by growing the crops on hillocks, or elevated ridge. My own experience verifies the utility of the latter of these two methods. When the crops on my allotment farm were raised, the general rule was that they were sound on the light soil, and diseased on the heavy; but this rule had three glaring cases of exception. One of the sound crops was on heavy land in a valley; a second having a fifth part diseased, and the third of which only half was sound were on the lightest land of the farm. The first crop was manured with abundance of dung taken from the cow shed, the second with three cwt. of guano to the acre, and the third had been highly manured with pig dung for the previous crop. The two first were planted on the same day in February, with sets taken from the same heap of Regents, and the third soon after with an early growing Potato, resembling the Regent in its character for escaping the rot, and more early in attaining maturity, having in Oxfordshire the name of Early Ball. Thus far then there was no reason to be assigned for the anomalous results. But the first crop was planted very shallow and moulded up by the plough with deep trenches, the bottoms of which were generally below the tubers; the second was planted deep, and slightly moulded up with the hoe, and the last was not moulded up at all. I conceive then that the crop on the heavy low soil was really in the driest position and thus escaped the rot. Two years ago I observed that Potatoes accidentally left in the ground produced often sound tubers in the midst of the succeeding grain crop, and I fancied that the omission of moulding up might be partly the cause of the exemption. But all my subsequent experience and observation are totally at variance with this hypothesis. *Sigma.*

Annual amount of Evaporation greater than that of the Fall of Rain.—I find by reference to Daniel's "Meteorological Essays," that from the result of 17 years' observations at Chiswick, the average amount of evaporation for the year exceeds that of the fall of rain by 4.569 ins. These observations being, as may be presumed, past dispute, whence is the supply derived by which the quantity carried off in floods is furnished, and from which the perennial supply of springs and the flow of rivers is preserved? Can any of your readers furnish the solution of this difficulty? *J. H. S.*

Animals.—I find many holes made in the ground (sometimes in brown earth, sometimes in chalky), with the earth scratched outwards, and exactly resembling mouse-holes. They run from 2 or 3 inches to a foot or upwards in length, but they contain no chamber or nest at the end of them, and no indications of being or having been inhabited; and supposing the bore to be of the size of the animal's body, I do not see how he comes out again, except by backing out. Can any one tell me by whom, or wherefore, these holes are scratched out? They are mostly on banks, not on the level *A. H*

Potatoes in Aberdeenshire.—I had hoped to be able to announce to you that, in the present year, the Potato crop in this district had escaped the mysterious. But that is not the case, though the disorder has been certainly less general and less destructive than it was last year. In its progress, however, it has been attended with some peculiarities, which may be not undeserving of attention. You may recollect that I mentioned to you that, at the time when the Potato disease was spreading, in 1846, we had a succession of dense fogs, followed by sultry heat. This year we have had a similar visitation, only the fogs have been more dense and longer continued, coming generally from the south or south-east, but rising occasionally in the west, and accompanied by a very perceptible sulphury smell. As the season was unusually backward, the Potatoes remained apparently free from taint for a greater length of time than they did last year. In one plot at the bottom of my garden, to which no animal manure had been given for several years, and which had been prepared with only a small addition of vegetable compost, the foliage of the plants showed some indications of blight towards the end of July, and the tubers were found to be partially diseased; but in the other plots they continued sound, and with the stems and foliage entire, till the end of August, when, in the course of a single night, which had been preceded by a foggy and sultry day, the whole of five rows in one of those plots, which had been planted with a kind known here under the name of the Early Manley were completely blighted. Till about this time the foliage of the plants raised from the seed we obtained from New Zealand showed little sign of decay, but it, too, began to blacken and wither; and when the tubers were taken up about a third of them proved to be tainted or rotten. Of the field Potatoes, it has been remarked that some of the sorts which last year were the soundest, such as the Irish Cups and the Regents, have this year been the first affected. On the other hand, the Long Blues, which last year were more or less diseased, are this year nearly all sound. In a small crop of them, grown in a gravelly soil, I did not find one tainted. You know my adherence to the atmospherical theory of the disorder. I have had a proof confirmatory of it, though on a small scale. Last year the tubers obtained from the sets procured from Bermuda were among the most diseased. This year there happened to be a single plant of the Bermuda Potato in a corner of my garden, which was much shaded by the bushes around. Of this plant, the stem and foliage remained green and vigorous after the haulm of all the other Potatoes in the garden was decayed; and when the tubers were taken up, they were all perfectly sound. *A. H., Aberdeen, Oct.* 24.

Tenacity of Vegetable Life.—There is at present, on a road-side on the estate of Mayen, in Banffshire, N.B., an Ash tree (some 30 or 40 years of age), which had the misfortune some three or four years ago to be much stripped of bark; all round the stem, from near its base to the height of about 5 feet, there is not a vestige of bark or any tissue by which the sap could ascend or descend. The lowermost edge of the bark on the stem has formed a callus all round the tree, apparently a secretion of the descending fluid; but by what means is the tree supplied with nourishment? I should say principally from the atmosphere. *A. Walker, Gardener, Mayen, Banffshire.* [Why not through the wood?]

Calla æthiopica has lived through the three last winters without protection, planted in the water of a mill-pond, and flowers and seeds profusely every year. The pond is only about half a mile from the springs, and is never frozen quite over. I intend trying Agapanthus umbellatus in the same situation. *F. H. S., Wingham, Kent.*

Is Guano the Cause of the Potato Disease?—Some affirm that the Potato disease was unknown until the introduction of this manure into this and other countries. Without charging this valuable fertiliser with being the cause of vegetable disease, I will mention the following case. Last year I had the greater part of my annuals manured with guano; all went on well till about midsummer, when many of them (particularly the genus Malva) began to blotch in the stem and foliage, and by degrees died away in the same way as the Potato haulm does. This year I had some of the same flowers manured with farm-yard dung and part with guano; those manured with farm-yard dung were quite vigorous and healthy, while those to which guano was applied were diseased as in the previous season. I had put a quantity of guano into a cask for the purpose of having a supply of it in a liquid form. After being supplied with the necessary quantity, I had the cask emptied of the water and placed below a Thorn hedge out of the way; it still contained a quantity of the guano. In the course of a week or two it was discovered that the leaves on the Thorns immediately over the cask, and for a few feet round, were all blackened; and, ultimately, they fell off. Has any one else observed such things? *A. Walker, Gardener, Mayen, Banffshire, N. B.* [All this shows that guano is too strong to be employed in such quantities as farm-yard manure. No better evidence of its excellence can be desired.]

Advice to Gardeners and their Masters.—I am of opinion that, if this subject is fairly discussed, it will prove beneficial to both parties. I agree with "Dodman" in what he says respecting the necessity of having printed lists struck off for the gardener to fill up with what vegetables and fruits he takes or sends into the house. I have been in situations myself where I have taken vegetables and fruits in sufficient for the day. I used in general to supply them in the morning, say about 10 o'clock; in a short time after that, the cook

would send up to his garden to say that she had not enough; I accordingly sent more. Next morning arrived; I again took my vegetables and fruits in, when, to my surprise, I have seen nearly the whole of what I supplied the day before tumbling about the scullery. Upon speaking to the cook about it, I generally got an impertinent answer to walk off with. By-and-bye vegetables and fruits got scarce, owing to the extravagance in the house. My master came to me to know how it was that there was not sufficient vegetables and fruits for the use of the family. I reasoned with him, and gave him a full explanation, which satisfied him; but I used sometimes to get sharply told of it, when at the same time I was in no fault. I have been called to account by the servants themselves, who said that they were supplied with very few vegetables, when at the same time there had been plenty in the house, but they have been too idle to cook them. If some of your correspondents would give a good plan of a list for the gardener to fill up, and get signed by the person who receives the produce from the garden, it would be conferring a great benefit on him. In Mr. Loudon's "Encyclopædia of Gardening," p. 713, will be found a plan to work by. I believe that if such a thing could be carried out, it would cause gardeners and their employers to be better friends, and set aside much unpleasantness among servants. *Hortulan.* [A very good form of list will be found at p. 723 of our volume for 1846.]

Economy in Heating.—I have no doubt that many of your readers, like myself, have had occasion to complain of the quantity of coals required to heat their hot houses and conservatories; and for the advantage of such, I beg to say that I have lately applied to my own houses an addition, which not only greatly diminishes the consumption of coal, but also increases the power and quickens the operation when the fires are first lighted. The plan is simply this, and the cost of the application is soon repaid by the saving of fuel. My houses are heated by hot-water pipes of, I believe, the best construction; but the waste of heat up the chimney has been in mine, as in most other cases, very great. To prevent this, my gardener suggested that a plain iron pipe should be introduced immediately above the flue, and made to run the length of the hothouse and back again, being then again introduced to the chimney about 2 feet above the place from which it was taken. The pipe is about twice the size of the usual hot-water pipe, or rather less; this, of course, can be regulated by the quantity of firing used. I find that with this pipe we raise the temperature of the house as much as we wish, in a few minutes from the lighting of the fires; and the same quantity of fuel that would be necessary to make the water boil will keep up the requisite temperature for an entire day; and a saving of coal is effected of nearly or quite three-fourths. We thus maintain a fine heat, with less fire than is required to even warm the hot-water pipes; and in case of very severe weather, or requiring the two houses (one of 30 feet and the other 40 feet in length), to be heated at the same time, the new pipe is quite sufficient for the first (a forcing-house), and we have then all the usual hot-water power for the conservatory, or second house. Both houses are thus warmed by less fire than has usually been required for the first house. In fact, I may say one-half the fuel is sufficient now to warm both, that was heretofore necessary for one. Many will naturally say that the accumulation of soot will soon stop the draught through the new pipe; but, this is guarded against by a continuance of chain, attached to round scrapers, which, at any time, remove the soot to a small slide at either end, through which it is easily taken out. A damper is of course placed in the chimney, by which the heat can be either forced into or shut out of this pipe. I am well pleased with the working of the apparatus, and will with pleasure give any further information that may be required by such of your readers as have to pay a high price for their coals. *G. F., Aigburth, Oct.* 24.

Review.

Dr. Brewer's Guide to Science.

[It may be interesting to our readers to have the opinion of a practical gardener upon the merits of a work like this.]

It is a useful little book, containing many simple questions, which would puzzle older and wiser heads than mine to give answers to. A parent might place a work like this in the hands of his son with pleasure—there is much in it that a young gardener (aye, and an old one too), might learn. Heat and cold, light and dark, air and water, are agents well deserving the study of a gardener and farmer. With your permission, I beg to draw the attention of gardeners to it, many of whom may not be aware of the existence of such a publication. I also subjoin a few extracts—it is throughout questions and answers.

Q. Why are some things of one colour and some of another? A. As every ray of light is composed of all the colours of the rainbow, some things reflect one of these colours and some another.

Q. Why do some things reflect one colour and some another? A. Because the surface is so differently constructed, both physically and chemically, and therefore some things reflect one ray, some two rays, some all the rays, and some none.

Q. Why is a Rose red? A. Because the surface of a Rose absorbs the blue and yellow rays of light and reflects only the red ones.

Q. Why is a Violet blue? A. Because the surface of the Violet absorbs the red and yellow rays of the sun and reflects the blue only.

Q. Why are some things black? A. Because they absorb all the rays of light and reflect none.

Q. Why are some things white? A. Because they absorb none of the rays of light, but reflect them all.

Q. Why are the leaves of plants green? A. Because a peculiar chemical principle called chlorophyll is formed within their cells, which has the property of absorbing the red rays and of reflecting the blue and yellow, which (being mixed) produce green.

With two or three more abstracts I must leave the subject to the consideration of your readers.

Q. What is the cause of wind? A. The sun heats the earth, and the earth heats the air resting upon it; as the warm air ascends, the void is filled up by a rush of cold air to the place, and this rush of air we call wind.

Q. Why does the black skin of a negro never scorch or blister with the hot sun? A. Because the black colour absorbs the heat, conveys it below the surface of the skin, and converts it into sensible heat and perspiration.

Q. Why does the white European skin blister and scorch when exposed to the hot sun? A. Because the white will not absorb the heat, therefore the hot sun rests on the surface of the skin and scorches it.

Q. What are clouds? A. Moisture evaporated from the earth and again partially condensed in the upper regions of the air.

Q. Is water a good conductor of heat? A. No; no liquid is a good conductor of heat, but yet water is a much better conductor than air.

Q. Why are east winds in England generally dry? A. Because (as they come over the vast continents of Asia and Europe) they absorb very little water.

Q. Why is snow white? A. Snow is formed of an infinite number of very minute crystals and prisms which reflect all the colours of the rays of light, and these colours uniting before they meet the eye, cause snow to appear white. *W. Brown, Merevale Hall, Oct.*

Garden Memoranda.

Messrs. Lee's Nursery, Hammersmith.—In one of the houses here, Lantana aurantiaca was in bloom. This makes a good bedding plant, its orange flowers remaining in beauty even up to the time when frost sets in. In another house the Heliotrope called Souvenir de Liège was in blossom. It is more robust than the common sort, and a good trusser. This house has been gay all through the summer and autumn with the Shrubland Scarlet Geranium, which is still throwing up large trusses of blossoms. The plants from which these flowers have been produced were lifted out of the open ground last autumn, and placed under the stage of a greenhouse till spring, when they were taken out and encouraged to grow. When the blossom buds first began to show themselves, the tops of the shoots immediately above them were pinched off, and in this way the trusses were induced to come very large and fine. Small plants of Plumbago Larpentæ were in flower here, and added not a little to the general display; for, although in none of the clusters of blossoms could we find more than three perfect blooms, yet these were so bright and clear a blue that they were very attractive. Statice imbricata was in flower, and a useful autumn-flowering plant it is; as is also the small, spreading, many-flowered Chænostoma polyanthum, a pretty suffruticose half-hardy plant. Pelargonium reniforme and echinatum were likewise producing their pink blossoms, together with Acacia platyptera, Mr Fortune's Berberis, Salvia azurea, and a pretty variety of Phlox Drummondii called Leopoldi. Among Heaths, of which there is a good collection here, hiemalis was in full flower, as were also rubens, curviflora lutea, cruenta, and others.

In the propagating house were plants of Lee's variegated scarlet Geranium, a desirable sort, but a very slow grower, and associated with it another variegated kind called "Flower of the Day," a much stronger sort, and stated to have equally handsome flowers. Messrs. Lee have also a scarlet variety of G. compactum. At one end of this house were two or three Ripley Queen Pine-apples, whose history may be worth recording. By some accident they were allowed last winter to become frozen quite hard; they were then kept dry for some time, and ultimately they were planted out where they now are. They have produced fruit 3¼ pips deep, each pip being as large as that of a Providence. One or two fruit are beginning to colour, and the rest are swelling fast.

As an instance of the way in which the season of flowering of some plants may be altered, we may state that a quantity of early Gladioli kept in pots, and planted out in a north border in July, has just done flowering. They would have blossomed even later had they not been injured by the late frosts.

Messrs. Lee cultivate Roses pretty largely, and being planted by the side of the public road, they have been a gay sight to passers by all the season; and even now some of the Bourbons and Perpetuals are in bloom. The rage for summer standard Roses having in some measure been transferred to the more useful autumnal bloomers, which are now universally planted, Messrs. L. have turned their attention to the formation of pillar Roses of these kinds, of which they have many nice specimens. The introduction of these and what Mr. Rivers calls drooping standard or fountain Roses into our gardens cannot fail to have a good effect.

The Pear trees which occupied the sides of the long walk up the centre of the nursery have been removed, and we believe Roses are to be planted in their places. These Pear trees were planted there to illustrate a new system of training; they were allowed to produce an upright stem, and all the side branches from this, as they appeared, were regularly tied down and shortened in to about 2 feet in length, or rather more, and managed in this way they formed fruit-buds in abundance. Trees treated after this fashion occupy little room, which is not the least advantage of the plan. We believe they were slightly root-pruned. The plan of budding instead of grafting Apples and Pears is largely practised here. Many of these buds, put in early in July 1848 have this season made shoots 7 feet in length, and thick in proportion. By this plan time is saved in the production of these fruits.

All the finer and more recently introduced Conifers are cultivated here, as well as choice kinds of longer standing. The sides of a broad walk leading from the public road to the hothouses are lined with Deodars, Cupressus, Araucarias, Cryptomerias, Pinus Webbiana, Douglas Firs, Junipers, Thujas, Taxodium sempervirens, Yews, and Cedars of Lebanon. The latter have the form of pillars some 9 or 10 feet high, so hard are they pruned in; but this is said to improve their appearance in after years. In the American border we observed some fine standard Rhododendrons, and in another part of the grounds a beautiful pyramidal specimen of Minorca Holly, some 13 or 14 feet high. This is stated to thrive here better than in the pure air of Hounslow, though other kinds of Hollies thrive better there than at Hammersmith.

Miscellaneous.

Diseases in Beans.—A short time ago M. Durand, of Caen, sent to the Academy of Sciences at Paris several specimens of Haricot Beans attacked by a disease previously unknown to the Norman Bean growers, and which was supposed to bear some analogy to the Potato murrain. "The disease," says M. Durand, "has only attacked some of the fruit-bearing branches of each plant. The Haricot is, however, so important an article of food with us, that anything which is likely to injure its cultivation cannot fail attracting public notice. I have therefore taken the liberty to call the attention of the academy to the first symptoms of the present disease, in order that it may, if the subject appears of sufficient consequence, depute some of its members to endeavour to ascertain the best way in which further ravages may be prevented." *Comptes Rendus, Sept.* 1849.

Australian Bees.—"Amongst the objects which in this country were quite new to me, were the insects continually buzzing about my tent. Of these a fly as large as a small bee, and of a rich green and gold colour, being a species of *stilbum*, occasionally surprised me with a hum almost as musical as the tones of an Æolian harp. But the habits of the bees there are not the least remarkable, judging from a singular circumstance that occurred respecting my rifle, for I found that a quantity of wax and honey had been deposited in the barrel, and also in the hollow part of the ramrod. I had previously observed one of these bees occasionally enter the barrel of the piece, and it now appeared that wax and honey had been lodged immediately above the charge, to the depth of about 2 inches. The honey was first perceived in the hollow part of the ramrod, and although an empty double barrelled gun lay beside the rifle, neither wax nor honey was found in either of its tubes. The bee, which I frequently observed about my tent, was as large as the English bee, and had a sting." *Mitchell's Eastern Australia,* vol. i, p. 54.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Let water be used with greater caution in this department, giving the little that is required in the morning, when the ventilation is first increased above the ordinary night quantity. To assist in drying up the damp which is unavoidably engendered both by the watering and the natural circumstances of the season, a moderate fire should be lighted at the same time, to warm the flues or pipes, excepting only on those days when the sun's rays are of themselves sufficiently powerful to effect the desired end. This application of artificial heat during the day, will render it necessary to open the ventilators wider, and thereby give a free egress for the evaporated moisture. Extremes however, must in this, as in every other case, be carefully guarded against; in using the pipes or flues during the day the object is merely to free the house and its atmosphere from superfluous moisture, but if the existence of this is calculated to be injurious, a very arid atmosphere is wholly irreconcileable with the well-being of plants which are in the possession of healthy foliage. It is even more detrimental to them than to the ripe fruit of the Vine, as mentioned last week. The middle course must of course be pursued; the amount of fire-heat should be so regulated as to effect the desired purpose by the usual time of reducing the air in the evening, when the fire should be checked by means of dampers or stop-cocks. The heat enclosed within the house will be sufficient during night for greenhouse plants without further aid excepting during very severe weather; as plants will endure a much lower temperature when comfortably dry than when under opposite circumstances. Stove plants require much the same treatment at this season, taking care of course to proportion

the temperature according to their natural requirements. If their wood is properly matured they will stand uninjured in a very cool temperature.

FLOWER GARDEN.

Where the immediate presence of the family does not insist upon constant neatness, it is quite excusable to allow the leaves which are falling so rapidly to remain till all or nearly all are down, as one clearing up will put the place in perfect order, as far as neatness is concerned. It must, however, be borne in mind, that a flower-garden with empty beds, however clean and neat, has a very bleak, chilling appearance, and falls far short of the idea of a pleasure-ground, according to an Englishman's taste. Such a state of things is the less excusable where there is the advantage of a reserve garden, as sufficient shrubs may be kept, in a very small space of ground, to make the landscape during winter cheerful, if not supremely beautiful. We adverted to this subject some time back, but not so fully as it deserved; and we hope that those who have not already done what is necessary, will lose no time in accomplishing it. It is not of course to be expected that the beds can all be filled with flowering plants; but they may with nice dwarf bushy plants of handsome Evergreens. All possible advantage should be taken of the few flowering shrubs we have, such as Laurestinus, Erica carnea, Polygala Chamæbuxus, Menziesia, &c., and these may be helped out by a judicious selection of plants with variegated foliage, the gold and silver tints of which contrast prettily with the dark green, and at a short distance may be easily mistaken for flowers. We have at times mentioned early flowering herbaceous plants, which may be planted nearer the edges of the beds, and outside of these small patches of Crocuses, Snowdrops, Hyacinths, &c., may be introduced. These last should be planted pretty near the edge of the bed, as they will thereby be less in danger of being disturbed when the shrubs are removed, and the beds filled with half hardy plants in May. The shrubs we generally use, in addition to the above, are small bushy plants of Rhododendron ponticum, Pernettya mucronata, Gaultheria, Tree Box, &c. These are removed with good balls of earth, and in spring are returned to their places in the reserve garden. In addition, we take care to have a constant succession coming on of various sizes, so that when any of them are grown too large for the purpose, they are finally planted out in appropriate clumps.

FORCING DEPARTMENT.

PINERIES.—Do not allow the cold weather to seal up the ventilators of these houses; the admission of air must of course be gradually reduced in accordance with the advancing season, but this is a very different matter to almost discontinuing it. Very few nights pass without our plants having at least some portion of air, independent of what obtains ingress by means of the laps. Let water be very sparingly used this dull weather, but have an eye to those plants which stand near the flues or hot water pipes, as they are liable to get dry before their neighbours. VINERIES.—All the houses from which the fruit is cut will by this time be converted into greenhouses; the Vines require to be kept cool and dry, and the plants want very nearly the same treatment; frost, however, must be carefully excluded. While the plants are in these temporary dormitories, particular care should be taken to keep them perfectly clean and free from insects of all descriptions, or these latter will leave broods behind them, which will be very troublesome another season. If possible, avoid putting plants into those houses in which the fruit is still hanging; but if necessitated to do so, let them be of such kinds as require the smallest quantity of water during winter, such as Crassulas, scarlet Geraniums, or other semi succulent plants. As the leaves of the Vines ripen, let them be removed; pinching them off at the apex of the leaf, and leaving the foot-stalk to fall off when its own time comes. FORCING PITS.—Insure a sufficient supply of Rhubarb, Seakale, and Asparagus, by introducing successions at regular intervals, according to the supply required and the quantity of plants to meet it. In selecting Seakale plants take those first which showed the earliest indication of ripeness by casting their foliage. If a frame or pit with glass lights can be spared for Asparagus, it is much more tender and delicate than when grown in a dark place; they should therefore, when their shoots appear above ground, have all the light and air possible. We force this favourite vegetable in frames which, during summer, are occupied by Melons. The bottom heat, produced by hot-water pipes, is turned on very moderately at first, and afterwards gradually increased after the roots are fairly in motion. The sooner a portion of the stock of these three vegetables is mulched over with some decayed litter the better.

FLORISTS' FLOWERS.

POLYANTHUSES.—At this season of the year Polyanthuses are apt to look anything but well; the roots will be bare and the foliage scanty. It will therefore be advisable to give the beds a thorough cleaning, as well as a good top-dressing, earthing up the plants round the ball of the leaves with decomposed vegetable matter. These plants, like the Primrose, delight in a cool and rather sheltered situation. Of all florists' flowers these make the least progress. Great quantities of seed are yearly sown with apparently little improvement. This, then, ought to excite emulation, for assuredly anything out of the common way would be eagerly sought after, in order to improve the breed of this class of plants. As for AURICULAS, give them all the air possible. Keep them rather dry than moist, and above all things see that the drainage of the pots is not defective. This may very easily be ascertained by an occasional examination of the soil. TULIPS should be got in directly; every day after they have protruded a green spike is detrimental. PANSY and PINK beds should be gone over and top dressed, if the soil is of a hard and sour nature. Sometimes at this season, after heavy rains, it will be necessary to stir the surface; and this may now be done with good effect.

State of the Weather near London, for the week ending Nov. 1, 1849, as observed at the Horticultural Gardens, Chiswick.

Oct. and Nov	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday.. 26	10	29.860	29.780	60	42	51.0	S W.	.01
Satur.. 27	11	30.03	29.715	62	51	56.5	S W.	.04
Sunday . 28	12	30.380	30.285	65	41	53.0	N.W.	.09
Monday 29	13	30.650	30.535	60	31	45.5	S.	.00
Tues. .. 30	14	30.115	29.990	61	39	50.0	S	.00
Wed. .. 31	0	29.902	29.496	51	34	44.0	S W.	.00
Thurs.... 1	16	29.605	29.459	57	35	46.0	S.E	.00
Average....		30.112	29.894	59.8	39.0	49.4		0.05

Oct. 26—Slight fixing showers; cloudy.
— 27—Hazy with slight rain, drizzly; overcast and mild.
— 28—Overcast and fine, very fine; clear at night.
— 29—Foggy; exceedingly fine; barometer very high; clear.
— 30—Fine, very fine, slightly clouded at night.
— 31—Overcast; exceedingly fine: overcast.
Nov 1—Fine throughout: clear at night.
Mean temperature of the week, 2½ deg. above the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Nov. 10, 1849.

Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 4	50.6	36.5	43.5	11	0.41 in.	2	3	3	2	3	5	3	2
Mon. 5	52.6	38.2	45.9	11	0.23	3	2	1	4	4	7	2	1
Tues 6	54.1	39.0	46.0	12	0.74	1	2	1	2	1	9	2	1
Wed. 7	51.7	37.4	44.6	13	1.02	—	1	2	3	4	7	3	3
Thurs. 8	50.4	35.0	42.7	11	0.38	1	2	1	2	2	8	3	4
Friday 9	50.5	35.9	42.9	10	0.24	1	1	2	1	4	6	3	4
Satur. 10	50.7	34.0	43.3	11	0.23	2	2	1	3	5	7	1	2

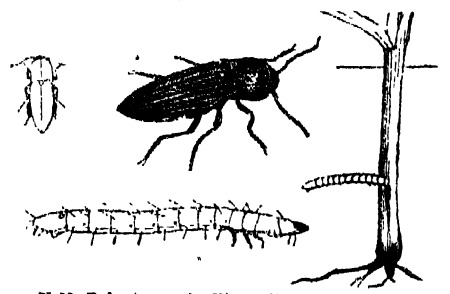
The highest temperature during the above period occurred on the 6th 1834—therm. 63 deg.; and the lowest on 4th, 1845; 7th, 1848, 8th, 1837 and 1848—therm. 23 deg.

Notices to Correspondents.

TO OUR CORRESPONDENTS.—May we beg it to be understood that *we cannot answer inquiries privately through the post.* We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

ASPARAGUS. *A B.* The Biscayan mode of cultivating it, as recorded by Captain Churchill, at p. 147, 1846, is to form beds about 5 feet in width, and of any convenient length, and to sow the seed in March in two drills, 2 inches in depth, and 18 inches from the alleys; thus leaving a space of 2 feet between the drills. When the seedlings are about 6 inches in height, they are thinned to something more than a foot apart. Water is conducted once a day among the alleys and over the beds, so as to give these seedlings an abundant and constant supply of fluid during the season of their growth. This is the cultivation during the first year. The second year, in March, the beds are covered 3 or 4 inches in thickness with town sewerage, which remains on them during the summer, and which is lightly dug in during the succeeding autumn, the irrigation being continued as during the first season. In the third spring after sowing, the Asparagus is fit for cutting, all its energies being doubtless developed by the manure being dug in in the autumn of the second year; and when it does begin to sprout, it finds its roots in contact with soil of inexhaustible fertility. Previously, however, to the cutting, each bed is covered in March very lightly with dead leaves, to the depth of about 8 inches. The cutting does not commence till the plants peep through this covering, when it is carefully removed from the stems, in order that the finest only may be cut, which are rendered white by the leafy covering, and succulent by the excessive richness of the soil. In the autumn of the third year, after the first cutting, the leaves are removed, and the beds are again dressed with town sewerage, and these operations are repeated annually. In addition to this, the Asparagus ground is so situated that the beds are half under salt water at spring tides.‡

INSECTS: *John Pettigue.* It is American blight, and may be killed by wood spirit, train oil, turpentine, or even a thick wash of mud formed by mixing clay and lime in equal proportions. Attack them as soon as the leaves have fallen.—*H S.* The insects respecting which the two gardeners have differed are the real wireworms. See accompanying woodcut, and description, at p. 314, 1845. *Ed.*



BOOKS: *Y M.* Roberts on the Vine will possibly suit you.‡—*G L.* The book you ask about is sent to you by post, with ——'s compliments. Mr. Loudon's intentions were never carried out.

BRUNSVIGIA JOSEPHINÆ: *J B* will thank Mr. Leach, the writer of the article on Brunsvigia, at p. 663, if he will inform him what depth the bulbs should be planted, that having been omitted in his former statement.

CARROTS: *H M.* We are not satisfied that there is any connection between the Carrots, the grubs, and the manure. The former have been unable to grow from some cause; but that cause can only be detected on the spot. It is possible no doubt that the liquid manure may have been too strong. "Weak and often" should be painted up over every manure tank in the kingdom. Syringe your wall trees in the early spring, just before they are breaking into bud, and when in leaf.

CHARCOAL: *E W.* In their present state your Logwood chips are valueless. If you can char them they will be as good as any other charcoal. The sulphate of iron would do no harm. You can have no difficulty in converting the chips into charcoal, if you have a yard and the command of clay or turves for the sides of the furnace.

CRYPTOMERIA JAPONICA: *Sub.* See p. 471 of our vol. for 1848.‡

DAPHNE FORTUNI: *A H.* It is perfectly hardy. It likes a dry situation.¶

EMIGRANTS: *A Sub.* Take out every kind of seed and plant that will bear a warm climate; greenhouse plants will all grow at Port Natal. Tender Vines, Clingstone Peaches, Figs, &c. Common hardy things will not suit. Any good vegetables. Gourds, Melons, Aubergines, Tomatoes, Capsicums will thrive.

FRUIT TREES: *H B.* The General's Bergamot succeeds on a west aspect. Now is the best time to remove it.‖—*E.* For the south wall, you state your master to be two Peaches, one Fig, and one Pear. They may be the Royal George and Noblesse Peaches, the Brown Turkey Fig, and the Broompark Pear. For the west aspect, Knight's Monarch Pear, the Ribston Pippin, Scarlet Nonpareil, and Court of Wick, and the Mayduke Cherry. Morello Cherries and Currants will probably succeed; at all events, if the former should not stand the sea winds, the latter may.‖

GLASS: *J L S.* No glass, whether thick or thin, can be applied to curvilinear roofs without being previously curved at the glass works, unless in short lengths. As curvilinear sash-bars are generally very flat, 9-inch panes may be used without difficulty. We believe that the advantages of curvilinear roofs are much exaggerated. We should use timber, straight, and cut in the saw-mills. We never recommend tradesmen. An application to the parties would procure an answer.

HEATING: *J B.* You had better use 4-inch pipes with a slack fire. What do you mean by 500 *square* feet of air?—*Churchwardens.* The heated air should have been let into the church immediately after quitting the cockle, and carried back when used by underground drains, in the manner of Polmaise. Let the air into the church next the furnace, and close all the gratings except the one most remote from the furnace. This is your plan, and you are right. Make the aperture for admitting the hot air as large as you conveniently can. Such apertures cannot be too large.

HOUSES: *G H N* asks if corrugated iron roofing has been ever used for hothouses in which it is advisable to exclude the light from above, such as Fern-houses? Can some correspondent answer the enquiry? We should fear that there would be some objection to it in point of warmth and the consequent consumption of fuel.

MANURE: *T S P.* The ashes of the various woods you mention will form good manure; but you must take care not to use it unmixed, otherwise you will run the risk of burning the crops with which it may come in contact. Better mix it up with earth and turn it once or twice before applying it.‖—*T N.* There is nothing in the appearance of your furnace flue cleanings which leads to an unfavourable opinion. But their real value can only be determined by chemical analysis. If nothing deleterious is burnt in the furnace, there will be nothing deleterious in the cleanings. They are, however, too fine to produce much mechanical effect unless used in large quantity. Cannot you burn your clay?

NAMES OF FRUITS: *H I.* 1, Rymer; 2, Northern Greening; 3, 12, Blenheim Pippin; 4, Old Nonpareil; 5, King of the Pippins, 6, Court pendu Plat; 9, Ribston Pippin; 10, Yellow Ingestrie.‖—*E M.* 1, Cattillac; 2, Winter Nelis; 4, Brown Beurré; 5, White Doyenné; 1, Crimson Queen; 2, 24, round Winter Nonsuch; 3, 21, Reinette du Canada; 6, Sops of Wine (American); 7, Lemon Pippin; 12, 13, Dutch Mignonne; 15, Minchall Crab; 17, Franklin's Golden Pippin; 18, old Golden Pippin; 20, Alexander; 22, Gravenstein; 26, Blenheim Pippin; 27, Norfolk Beaufin; 28, Hollandbury; 29, Adams's Pearmain; 31, Dumelow's Seedling; 32, Hughes's Golden Pippin.‖

NAMES OF PLANTS: *H W N.* It appears to be the fruit of Passiflora cærulea.—*E Holmes.* Saponaria calabrica.—*Erzeroum.* 465, Saponaria officinalis; 384, Saponaria vaccaria.—*Mark Newton.* Cassia lævigata, a common greenhouse shrub.—*L M.* A wretched specimen of Knol Kohl, or Turnip-rooted Cabbage, commonly cultivated all over Germany and Holland.—*A V.* The common Bladder-nut, Staphylea trifoliata. Sow the seed in March. You may buy it anywhere for 4*d.*—*J Payne.* Phaseolus Caracalla, the Snail-flower.—*P K C.* Ervum Lens is the common Lentil, and may be purchased of all dealers in agricultural seeds.—*Sarah.* 1, British (?); 2, Deschampsia cæspitosa; 3, Festuca gigantea (?); 4, Avena strigosa; 5, Brachypodium sylvaticum; 7, Agrostis vulgaris; 8, Festuca lolhacea; 9, Agrostis vulgaris; 10, Bromus asper (?); 11, Agrostis alba; 12, Holcus lanatus; 13, Agrostis vulgaris; 14, Dactylis glomerata; 15, Bromus arvensis; 16, Phleum pratense, young. Some of these are not in a state for exact determination.

NEW ZEALAND SEEDS: *A H C.* Sow them in February or March.‡

PAXTON'S COTTAGER'S CALENDAR.—The reprint is now ready, price 3*d.* each copy. Parties wishing to have copies for distribution among their tenantry, can be supplied at the rate of 25 copies for 5*s.*

PRUNING, &c.: *E B.* Breaking branches *half* through about August will impede the production of laterals below the wound; that is all you require. Prevention is not possible. In trenching, keep the good soil uppermost, but break up the lower soil perfectly, as deep as you can. Any country labourer will understand how to do this. You will also be able to ascertain from them what they will do it for per rod. The value of work depends so much upon locality, that no price can be given. Do not bate the men down below a fair price, or they will cheat you in the work, which it is quite in their power to do.

ROSES: *A G.* Their being affected with mildew last summer need not prevent you from forcing them the ensuing season. Sulphur will kill mildew, if it be applied the moment the mildew appears. That is the point.‡

ROYAL BOTANIC SOCIETY: *G G.* We have not yet obtained the last year's accounts. They ought to have appeared in August. To the last inquiry the answer was that the accounts were *not ready!* Unless it is necessary to do something "to make things pleasant," the accounts might have been published in a week after the expiration of the year. It is not for us to explain this reluctance to appear in public.

TRICHOSANTHES: *Amicus.* We do not publish advertisements in disguise.

WALLS WITH GLAZED SASHES IN FRONT: *Henry.* If you hang sashes in front of a Peach wall, so as to reach down three parts of the wall, you must close in the space below, but so as to have the means of giving plenty of air when necessary. The same remark applies to glass in front of Vines. This has been tried, but till the sashes were closed at bottom, the Grapes under them, in comparison with others freely exposed, were found to be retarded rather than otherwise.¶

MISC.: *J Abell.* The driving a few spikes into your Oak tree will not harm it; but they should be iron, not copper.‡—*A.* You should consult a lawyer. In our opinion "A." is bound in justice to pay "C."; what may be law we do not know.—*T S P.* Thanks. In our weekly tables of the weather, the maximum temperature is that of the day opposite to which it is placed, and the minimum temperature is that which occurs in the course of that day or night following. With regard to the barometer, the maximum and minimum of three daily observations, 8 A.M., 1 P.M., and 9 P.M. are given. The account, occasionally, of rain in your locality, will be very acceptable.‖

SEEDLING FLOWERS.

CAMELLIA: *J Hand Co.* Colour, clear paper white; petals well rounded, broad, and rather flat, not over large, and closely imbricated, with the centre well filled up; size of the flower, rather less than the old Double White; foliage large and nearly round, regularly but slightly serrated, and dark shining green; a very nice white variety.•

VIOLETS: *R Shackell.* Your white seedling is large and pretty. It is a good white.‡

•.• As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1s. 6d. to 1s. 6d. per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.

HEATING BY HOT WATER.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 88, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.

MR. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.

The terms of the School can be had on application either personally or by letter.

LANDOWNERS' WEST OF ENGLAND AND SOUTH WALES LAND DRAINAGE AND INCLOSURE COMPANY. Established 1844. Incorporated by Act of Parliament. This Company is prepared to Contract with Landowners for the Drainage, Inclosure, Irrigation, or Improvement of Lands in any part of England, Ireland, or Scotland. Owners of Settled Estates in England may, through the Company, DRAIN, INCLOSE, BUILD ON, or IMPROVE their Lands, and charge the Inheritance with the permanent value.—Apply to MR. THOMAS MAY, Secretary, 9, Bedford Circus, Exeter.

WHEAT SOWING.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure sent out by them shall be free from the slightest adulteration. Peruvian Guano direct from Importer's Warehouses, London Manure Company's Wheat Manure and Urate, Sulphate of Ammonia, Phosphate of Ammonia, or Ammoniacal Phosphate; Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone Sawdust, and every other Artificial Manure.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

OIL-CAKE, GUANO, AND OTHER MANURES.—Foreign and English Oil-cake on sale; also Peruvian Guano of the finest quality, Superphosphate of Lime, Bone-dust, Sulphuric Acid, Animal Cake, Wheat Manure, Gypsum, Rape-cake, Salt, and all other Manures of known value.

Apply to MARK FOTHERGILL, 201 A, Upper Thames-street, London, Agent for Collins's Patent Disinfecting Powder.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

WIRE-WORK, HOT-WATER APPARATUS, GREENHOUSES, &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS on improved and economical principles.

Parties waited on in Town and Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

SMITHFIELD CLUB, 1849.—The Annual Show of FAT STOCK will take place on Tuesday the 11th, Wednesday the 12th, Thursday the 13th, and Friday the 14th of December, 1849, at the Bazaar, Baker-street. The Printed Forms of Certificates, for the entry of Stock and Implements, must be obtained from the Honorary Secretary, and returned to him, filled up and complete, on or before Saturday the 17th of November, 1849. B. T. BRANDRETH GIBBS, Hon. Sec., Corner of Half Moon Street, Piccadilly, London.

SEED WHEAT.—For Sale, at 50s. per quarter, good and genuine seed of the RED-STRAW WHITE and HOPETOUN varieties. Samples of grain and ear will be sent on receipt of stamps to cover the expense of postage. No orders for less than 4 bushels can be executed; those from unknown correspondents must be accompanied by a remittance. Sacks 2s. each. WINTER BEANS, for seed, can be supplied at 5s. per bushel. JOHN MORTON, Whitfield, Berkeley, Gloucestershire.

The Agricultural Gazette.

SATURDAY, NOVEMBER 3, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Nov. 8—Agricultural Imp. Society of Ireland.
THURSDAY, — 15—Agricultural Imp. Society of Ireland.

MANY of the DISEASES of PLANTS produced by fungi of the genera Uredo, Puccinia, &c., were regarded, previous to the discovery of their mycelia and mode of germination, as the analogues of eruptions in the human frame. It is, however, clear that affections arising from constitutional disorder cannot be properly analogous to those which depend upon the vegetation of a specific parasite, whatever external resemblance there may be. The real analogues of exanthemata are rather the various spots which appear on vegetables, independent of any cryptogamic growth, or external agents. New instances of such affections occur every day; the present autumn has produced a singular one in Wheat, which, if at all extensively prevalent, will be highly injurious to the samples. The first we saw of it was from the neighbourhood of Hereford, in a variety nearly allied to the Bristol or Spalding Red, if not actually identical with it, and we find precisely the same appearances in Wheat of the above-mentioned variety in the East of England. The grains are sprinkled with little brown dints, as if made by the head of a needle, giving the sample a very unusual aspect, though we doubt whether it is really of much consequence, since it does not affect the starch-bearing cells. On examination the elongated tissue of the cuticle is found to be colourless and unaffected; the layer of vertical cells succeeding this, generally called glutiniferous, is more or less deranged and stained. as in the greater part of such disorders, with some brown matter, which tinges more or less their contents. The fecular cells, however, as far as we have seen, remain perfect and colourless. It is possible that in a damp granary the spots might penetrate more deeply and the effect would then be very injurious, but they do not seem likely to spread in well kept samples. We have in vain searched for traces of fungi, and we feel sure that no insect has been concerned. The rudiments of mildew in some parts of the country exist in every stalk of Wheat, and we believe that but for the dry harvest weather, the result would have been most disastrous, but there is no reason to believe that the spots in question are the rudiments of any parasite; they are simply the result of some inappreciable constitutional derangement.

THE time is rapidly approaching when the agricultural history of the first half of this nineteenth century, in England, will come to be regarded with a degree, and a kind, of criticism, little indulged towards it at present by those who will eventually call it to account the least sparingly. Experience has shown that the most zealous supporters of an erroneous creed, however slow in conviction, are not the most charitable in judgment, when the mask of plausibility has finally fallen away from their idol and left them openly exhibited in a position of all others the most vexatious to the feelings of mankind—namely, that of its victims.

It is not an uncommon thing in social life to see an individual perseveringly resisting and resenting the advice of friends and the sneers of enemies—pursuing in solitary self-deception the ever retreating object of his fatuity throughout a long career of loss and injury, accounting easily and readily to himself and others for all those consequential and collateral evils which spring out and ramify in all directions from a principle radically false,—when awakened at last to the monomania under which he has laboured so long, exhibiting a frantic anger at the mildness of the rebukes he once bore so impatiently, and wondering at the coldness and inefficiency of the friendship that did not drag him, instead of gently inviting him, from his too late discovered error. Such will one day, and that not far in the hereafter, be the language, not of the Farmer, not of the Landlord, not of the Labourer alone, but of every individual connected with the soil and the agriculture of this country, when the singularly eventful series of years, dating from the commencement to the middle of the present century, comes to sit for its picture to that unflattering artist who takes posthumous portraits—to wit, the Historian.

To him will remain the task of recounting the paradoxical and strange-sounding narrative of a fifty-years' period commencing with the *prosperity* of War and Scarcity, and terminating in the *struggles and adversity* of Peace and Plenty! In plainer and more agricultural phrase—the declension of the price of a Bushel of Wheat from Fifteen shillings to Five. Such, without one iota of exaggeration, without an atom of mere rhetorical paradox, will be the curious tale he will have to tell, and, what will be more troublesome, to *account for*. But, troublesome as it may be, this will be a small part, a mere outline, of his task; for if he venture to cast his eye a little wider, over the other arts and industrious pursuits of the nation during the cotemporary period, he will have to meet the bewildering counter-spectacle of a totally opposite system of private and public policy simultaneously developed in every other branch of trade and industry. Whilst laws are made with the view to, and fortunes staked upon the faith of, the maintenance of HIGH PRICES in the one case as the great aim and object of public legislation, and private investment, he will see in the other the diametrically opposite principle of Competition, and of Cheapness, recognised under the cogent argument of unavoidable necessity as the solid and *natural* basis of increased demand and of consequent profit, and each principle respectively tested and verified by the results of large fortunes made upon the latter system, and lost upon the former.

In short, he will have to review a period in which, taken as a whole, the manufacturer was getting rich and the agriculturist getting poor, *upon opposite tactics of procedure*. No matter what the particular politics or persuasion of individuals of each of these great classes. The Trader may have been a warm 'protectionist,' and the grower of home produce a conscientious advocate of 'free trade' doctrines—a cross-brigading by no means the most uncommon to witness, while each of the two divisions was borne away upon their respective line of march in totally opposite directions. '*De Singulis non curat*' is the unavoidable motto of parties who do not make themselves, but are made by circumstances.

Let the day of trial be staved off as it might by legislative enactments, sure it was to come at last. "Foreign Competition" was its portentous name: it loomed ever in the distance, more or less formidable according to the state of the atmosphere it was seen through, and the eyes that looked for it, yet ever there, like a coming thunder-cloud, and (whatever may be said) influencing more or less every contract touching land, and discounting its own ultimate effects by the terror and diffidence it inspired long before it actually arrived.

The day comes at last; its advent hastened, and its hitherto easier gradient broken, by a general scarcity (mistaken for a Famine by speculators who forgot there was a Transatlantic Hemisphere, of vast and varied surface, commissioned by its Creator to modify the local spasms of the older and more thronging Continent), a scarcity, however, severe enough to mask for the moment the coming shock of—a return to Nature. Of a *return to Nature* we repeat: for after all, the low prices we groan under are nothing more, nor less, than the prices of the rest of the world. If it is a shock, and a blow,—and a heavy one it undoubtedly is—the Historian will ask, Who *made* it?

When the human body falls to the ground from some artificial elevation, in obedience to the eternal law of natural gravity, do we blame the Earth it falls on for not being *higher*—for not having raised itself to suit that particular case—or do we blame the hand that raised it, the false position it accepted, and the false security it accredited? Do we arraign Providence because the Staff of Life is not dearer over all the markets of the habitable globe, to suit the convenience of English Farming, English Rents, and English Contracts, made in a reliance, now assumed but never truly felt by any sane man upon the permanence of a System existing only by the breath of Parliament, and there *annually threatened*? If not, the question that remains is, how long will those who have been its dupes *remain its eulogists*?

As long as the faintest, the vainest prospect of its resuscitation continues, hope may smother the outburst of natural expression. In the chamber of the recent dead the voice is *still* stilled into whispers: the departure of the *unreturning* essence that has gone is yet unrealised, impossible, as yet, to be believed. But by-and-bye the stern Truth prevails: the Rule of mortality is made absolute: the long struggle, of fifty years it may be, is ended; and if we will not look FACT in the face—why it stares in ours, instead.

It is but a simple statement of our present position. The Farmer, not the only, not the greatest, but it may be the *first* sufferer, stares bewildered at the sight of a 'price-current' for Corn, long ago common to all the world beyond the narrow limits of the British Isles, now further depressed by the general reaction after a recent scarcity over Europe: he looks about with a stung and confused sense of anger at he knows not whom, or what; like a person who has had the misfortune of breaking one of those tendons the rupture of which, surgeons tell us, makes the patient fall instantly to the ground with the sense that *somebody has struck him a violent blow*,—with exactly such an impression strong upon him, he at once assumes, and rages at, the unequal share of Local Taxation he is burthened with. Sad experience points to a close Parliamentary Scrutiny of five and thirty years trying with all the zeal of County-member-ship—and in vain—to find it out. Then he makes a blundering hap-hazard against 'the Tithes.' Alas! the Commutation Act points significantly to a price-of-corn scale which has tied the Parson's Income to 'the falling wall,' with which down he must come 'without benefit of Clergy.' Foiled here again of a butt for natural wrath to wreak itself upon, he turns, after a moment of desperate thought—upon the Landlords:—THE RENT is too high!—Who made it so?—The landlord?—He has no more power to let an acre beyond what another man chooses to offer for it, than the Farmer has to sell his Wheat in market for more than market-price. For more than one innocent generation past, Rent has been made not by landlords but by—Competition. *What made the Competition?* Aye! there's the rub! If Rents have risen, so have

the liabilities and payments of them that receive it. They are but factors in the great circle set in motion before the present race was born. What made the Competition that made the Rents? All wise men have lamented it, whether owners or occupiers: and few of either class have found permanent or solid benefit from a system which encouraged the frightful mischief of *large holdings with small capitals*, the natural and baneful consequence of competition. *What made the Competition?*

How many of those who in 1815, in 1823, in 1828, witnessed and took part in the inauguration and continuance of that System, under whose fall we writhe, are alive in 1849 to answer to that far seeking question? As well might we rail at the founders of the National Debt. Spare your anger, brother-farmer! the sea is rough to-day, but the wind that vexed it died yesterday. 'The parents have eaten sour grapes and the children's teeth are set on edge.' The *mischief* of five-shillings-a-bushel is born of the mischief of *fifteen*.

But it may be replied, and with truth, that the mischief at present existing, and complained of, is not the whole amount of this fall—*i. e.* the declension of a half century in the price of corn from 120 to 40 shillings per quarter in England, but the more immediate and more practical question of a recent fall of much smaller amount, to wit from *fifty* shillings to forty. The removal of Taxes and Rates and the Reduction of Rents, is not a difficult remedy to propose, nor a very new one, for the evil. It was powerfully ventilated when Wheat suddenly fell from 80*s.* to 70*s.*, steadily and warmly suggested when the 70*s.* gradually sunk to 60*s.*, and kept quietly but prominently alive during the gentler evolution which saw the 60*s.* dissolving into 50*s.* But what was the actual history of Rents meanwhile? Does it afford a very practical evidence of the application of the remedy suggested? Were they *reduced accordingly*? Alas! practical reality points the other way. No sooner has the student of that fifty-years'-history cast one glance down its statistical columns, than he is heard muttering, with astonished look, something about '*inverse ratio*'—that puzzle of puzzles both in words and meaning, to those who tried to *protect their own bargain by enhancing the number of bidders for it*.

To his unbiassed eye the history of the half-century is the history of an 'Inverse Ratio,'—of a Remedy, for a growing mischief, continually proposed, and as continually contravened *by its proposers*. Let us examine it, again, and ascertain if possible its worth, and its practicability; or in default of such, inquire whether in the nature of things, and in the bosom of the Future, there exist indeed an Alternative.

PRICES OF BREAD AND FLOUR.

In your Paper of last week I saw an article on the prices of bread and flour, evidently written by a person who has no idea of what he is writing about; and as he wishes for an explanation on the subject, I can only say as a miller I shall be most happy to give it. Had there been the profit on a sack of flour which he speaks of, I can assure you I should, ere this, through the medium of an advertisement, have stated how deeply impressed I was with gratitude to the public, and have recommended my connection to the tender conscience of my successor, and retired with an ample fortune. The price of Wheat from which that quality of bread is made which constitutes three-fourths of the consumption of this country is now worth on an average 41*s.*—63 lbs. per bush.; this quality of flour is worth and is now selling to the baker wholesale for 30*s.* per sack. Eight bushels of the above weight will make 28 stones of flour, which, with the offals, after deducting the waste in grinding and dressing, leaves a profit of 4*s.* per qr., and a very good one too, the consumer will say, but from that has to be deducted rents, rates, wages, wear of machinery, cost of delivery, loss of sacks, bad debts, &c., which I can assure you consumes by far the greater share of the 4*s.* Of course it would be impossible to state what proportion they bear, as situations and other circumstances will make some difference in those expenses.

The above is a fair statement of the profit on grinding. And now for the baker. A sack of good flour will make 96 4-lb. loaves on an average of seasons, and as the loaf is now selling at 5*d.*, it follows that if the baker gives 30*s.* for his flour, he appears to get 10*s.* per sack profit; but to get 96 loaves he must expend 2*s.* 6*d.* at least in firing, seasoning, &c; then comes his rent, taxes, journeymen's wages, and, in some situations, the keep of a horse, for delivery; but worse than all, comes "his books." I cannot describe my horror of that article; few of the owners are either good writers or have any great knowledge of book-keeping; and, to a person not a little used to the style, they are perfectly unintelligible, and often so to the baker himself; so that what he loses by a bad system of keeping his books, and the large per centage of bad debts he makes, moderately reduces the 10*s.* profits; it may justly be said he should not give credit, where he is not certain of getting his money; but unfortunately there are too many persons who well know that even with the valuable assistance of the county court, small debts under 20*s.* or 30*s.* are still scarcely worth the expense of getting in. He is a fortunate man who can succeed in getting 10*s.* in the pound of his debts; in fact, a more general system of ready money payments is much required; and amongst the few of my customers who have adopted the principle it has been found to answer the purpose both of the baker and the consumer. When you further consider that from 5*s.* to 6*s.* per sack is the extent of a baker's profit when all deductions are made, and the number of sacks worked up by the country trade does not exceed five or six, I think few persons will eat their loaf without acknowledging that what profit there is on it is fairly earned. But now that the price of bread is a subject of inquiry, I would wish to offer a fact for the consideration of both free-traders and protectionists. The present price of Wheat is 41*s.* per quarter, on an average of markets, a price at which it is well known that any large tracts of land cannot pay for farming, and much even of the best districts is scarcely worth holding. Now, if Wheat were to advance 10*s.* per quarter, it would only cause a rise of 1*d.* on the 4-lb. loaf or ¼*d.* per lb. It is needless to say that that would be an immense boon to the farmer, and that he would be highly delighted to pay the extra ¼*d.* per lb for his bread. The calculation, where a man grows 100 acres of Wheat, is easily made, and the result is certain; but are there not others, tradesmen, who would gladly pay the extra price if they could again see their shops frequented as of old, instead of being deserted, as they now are; no sale for their present stock, and the greatest difficulty to get the money for those articles sold last year. Surely ¼*d.* per lb. on the price of their daily consumption of bread, can never make the difference between a good and bad trade. Then, again, ask the labourer who now receives from 2*s.* to 3*s.* per week less himself, besides losing from 3*s.* to 1*s.* each for those two great boys, whose appetite is by no means diminished, whether he would not rather pay the ¼*d.* per lb. extra for his bread, get constant employ for himself, and something for the boys, who are now neither earning anything, and what is worse, are learning nothing, idle habits and their consequences excepted. Then, again, call to mind the state of the union-houses last year; how full they were of men willing to work, but unable to obtain it; and let any one imagine what will be the consequence this and other winters if we still continue to refuse to pay this extra farthing. Surely when the extra difference in the amount of the poor-rates is added to the bread bill, but a poor balance will remain to compensate for so much distress to all parties mentioned. And, lastly, when the landlords receive urgent requests from their tenants for an abatement of rent, which the present price of corn and stock must almost enforce, let them ask themselves for whose benefit they make the sacrifices. I am sure I speak the sentiments of the farmers when I say they would rather remain as they were. No abatement which a landlord, however liberal, can make, can compensate for the loss they have sustained. But, must it not be followed as soon as granted by a curtailment of their comforts and necessaries; trade must suffer, and servants and other dependants must be reduced both in number and salary, and many of those enjoyments and pleasures given up; and for what? To support a reduction in the price of bread of one farthing per pound, which is not of any consequence to the consumer, generally speaking, when put in comparison with the serious loss in the value of farming capital and profit, the loss of trade universally felt in country towns, the falling off in the demand for labour, and the consequent demoralisation of the lower classes. It is only the more wonderful that so many years of severe political contest should have elapsed to gain so small a reduction in the price of bread as one farthing per pound. *A Miller and Farmer.*

POLITICS.

"All scientific progress is slow; but it is also sure, and its benefits lasting. Nor do we recommend the diffusion and enlargement of such knowledge as the only things to be done, or as precluding any other means of improving the prospects of the agriculturist."—*Edinburgh Review*, No. 182. p. 387.

With all due deference to "C. B.'s" love of "practice," and having a great distaste for party politics, I am still of opinion, that the acts of the legislature have so momentous an influence on the immense amount of property invested in land, and the large number of people dependent upon its application, that a journal professing to advance the interests of farmers cannot altogether neglect the opinions of public men, or a survey of the progress and tendency of public measures, or even to stir up the elements of a grievance which may admit of remedy, and so remove an obstacle to improving the position, present condition, or the future prospects of industrious men. Take a farmer, a good, simple man, unimpeachable in all field operations, and tolerably successful in his bargainings of stock, and general management of business; he "eschews politics." I know such a man, and many like him, who in only the common affairs of the parish is little better than a goose; his own labourers are a reflection of himself, sober, comfortable, and contented men, but he cannot deal with refractory ones, and unless they were managed by more "spirited" farmers than himself, the "surplus" labour, in the shape of cunning invalids or worthless reprobates, would evade the constable, harass the relieving officer, and defraud the parish. He votes with his landlord; he would not shoot or course a hare without the agent's permission, for the Indies. In this the soil "C. B." expects to work with advantage in developing "the resources of British industry!" No; give me the enquiring mind, not chilled to subordination even of science. What hope is there of advancement, what power of maintenance, even, in this struggling whirl of life, of a set of men who cannot rise above their "plodding" state and discern how the forthcoming "Bill" is to affect them! How their dearly-bought experience is to tell upon the aristocratic shadows who hitherto have awed the shrinking tenant into a mere echo, a vehicle, and too often as a victim! One of the first effects of free-trade will be to rescue the tenantry of the country from political slavery, and perhaps the first effort of their enfranchisement will be a reduction of the multifarious and contradictory customs belonging to outgoing and incoming tenants into a uniform and well-defined system of valuation, that shall protect enterprise and assert a long required recognition of the "rights of property," *i. e.*, property distinguished as having been employed in permanent unextenuated improvements.

Politics have terrified people because forced upon them at an election, when party strife, family ambition, or dirty jobbing have alternately supplied the motive for a contest, but if such practices continued to sway the world we should get from bad to worse, and honest men would despair of reformation. Surely with a liberal education the modern farmer will imbibe more self-respect, and teach landlords and labourers to respect him also. With such propositions before their eyes as a national assessment, industrial employment of prisoners, pauper farms, statistics of agriculture, emigration, drainage loans, and the *vexatæ questiones* connected with the interminable laws of settlement, the enfranchisement of leasehold tenures, the consolidation of highway acts, &c., affecting the weal or woe of all classes, of both sexes, lightening the burthens of one parish, heaping them on another—all such matters will exercise the intelligence, and, to a variable extent, affect the welfare of the farmers, and therefore demand occasional discussion and explanation from such public instructors as profess to offer a medium wherein may float speculations and suggestions, to be sifted and examined, until something tangible shall appear, without reproach, as the politics of agriculture.

Science cannot alone suffice for the exigencies of the unprepared farmer; even energy itself cannot obviate the troubles consequent upon famine and low prices; pauperism and crime depress industry and intelligence; caution and a faculty of endurance will help to welcome the dawn of a more prosperous period, with tempered judgment and surviving strength to avail him in the market. Look at the great fall in prices of store stock of all kinds during the past month, as contrasted with the unexpected steadiness and upward tendency of Wheat at 40*s.*, and Barley at 28*s.* per quarter, and can any one with corn to thresh and stock to sell disregard the aspect of affairs abroad. If a disastrous war ensues, prices will leap with elastic force. Under any circumstances, it is probable that capital, being gradually drawn to agricultural produce, even peace will give steadiness, and general employment increase the consumption and consequent demand for bread and meat stuffs. *J. W., Peterborough.*

THE FARMERS' PROSPECTS.

In the article which appeared in the *Agricultural Gazette* of the 20th inst., signed "P.," and headed as above, it is admitted that the modern free-trade policy "has involved the tenant farmer in difficulty and distress; that his capital is already sunk one-third, and that the produce of his future industry must be disposed of full 20 per cent. below former averages." And yet in the concluding part of that article it is asserted that, "In truth the tenant had no interest in protection." Inconsistencies like these, and others in the same article, will certainly not reconcile the farmer to his losses, or make him "look his position in the face" with a good heart. Nor is the farmer likely to derive much encouragement from the pamphlet of Mr. Caird. For how many farms are there whereon Potatoes may be grown to the extent they are at Auchness? But few, certainly. By his Potato crops, Mr. M'Culloch makes as much, it appears, as by all his other crops and stock together, notwithstanding the large capital he employs upon these, and the very skilful manner in which he carries out the excellent systems he has adopted. If he should be obliged to limit the growth of Potatoes, as probably he will shortly, to a sufficient quantity for his own use, his marketable produce will be reduced in value one-fourth, and his profits will be small indeed for a person of his intelligence and capital. This may be shown as follows:

In round numbers, one-third of his farm has this year been cropped with Potatoes, the value of which, say 80 Scotch acres, at 17*l.* per acre—a low estimate for a good crop, as it is stated to have been—amounts to	£1462	0	0
Two-thirds of farm cropped with grain, Turnips, Grass, &c.; value thereof, profit on cattle, &c., say 8*l.* 10*s.* per acre—a high estimate	1462	0	0
Total amount of income	£2924	0	0
Deduct, if the entire farm be cropped and stocked as the two-thirds have been, half the value of the Potato crop, that is, the difference between 8*l.* 10*s.* and 17*l.*, or one-fourth of the whole income	731	0	0
Total	£2193	0	0
Expenditure (including interest on capital, wear and tear, &c.), say at least	2100	0	0
Profit, to remunerate for trouble and skill in management, meet contingencies of bad harvests, &c.	£93	0	

"A Practical Down Farmer," writing in support of Mr. Caird's statements, in a letter to the Editor of the *North Lanes Express*, puts the income for the present year at	£2920	0	0
Expenditure ditto, at	2032	0	0
Profit	£888	0	0

In this estimate he values the Potato crop at 7½ tons, worth 2*l.* per ton, which is certainly low for a good crop. The Wheat he puts at 10*l.* per acre, which is unquestionably high at current prices. Profit on cattle he puts at 6*l.* 10*s.* each, which is also high, and cannot, I think, be realised on an average of years. I therefore consider the former estimate, founded upon data which the latter and Mr. Caird's pamphlet supply, to be the more correct of the two. Be this, however, as it may, if all the circumstances be considered impartially and without prejudice, no one can fail, I think, to see that it is not an agricultural truth that high farming, even to Mr. M'Culloch, is a sufficient substitute for protection, "crutch" though it might have been.

Mr. M'Culloch is greatly to be commended certainly for his enterprise and skill, and Mr. Caird is entitled to our thanks for having made us acquainted therewith. But the attempt which has been made to make out a case in support of the free-trade policy, is neither successful nor commendable. It is on this account that Mr. Caird is censured by so many, I think, deservedly. The object of all writers, especially in these days, should be to elicit or disseminate truth—the whole truth. Anything short of this cannot be regarded as truth; it has a tendency to mislead and do mischief rather than good.

In conclusion, I beg to state that I shall be glad to see your columns exclusively devoted to the science and practice of agriculture, or open to full, free, and fair discussion of all political questions bearing upon it. And with respect to the former, I avail myself of this opportunity to suggest that it is very desirable that your correspondents should use no local or provincial terms, which are not generally understood by your readers; and that all estimates or particulars of every kind should be according to the standard weights and measures. I would also suggest that it is most important that we should have none other than standard weights and measures used in effecting sales of any kind. At present there is no uniform practice. The weights and measures are different in almost every town. Thus before the prices can be compared with each other, or with those of London, a calculation must be made of the difference in the weights and measures. Such ought to be the case, and I shall be glad if you will assist in establishing one uniform practice. *A. L. A.*

P.S. Since I wrote the above I have read the following resolution, passed unanimously at a meeting of ironmasters from the various counties in Western Pennsylvania, which has lately been held at Pitsburg, to take into consideration the depressed state of the iron trade: "That the present depressed state of the iron trade has its origin and is entirely caused by the low rate of duty at which English iron is admitted into this country under the tariff law of 1846, and its injudicious and *ad valorem* principles. That five-sixths of the value of pig iron consists of labour; and as this labour can be procured in England at less than one-third of what it usually commands in good times in this country, we, in the United States, can never compete with the English iron masters, except by a reduction of labour to the pauper rates of that country, or protection from its competition. That it is not the wish of any of this meeting, and we hope of no American, to see the rates of labour in this happy country reduced to the rates of poverty in Europe. That to insure a different and more happy state of things among us, the labour of this country, including all its mineral and agricultural products, must be protected in our markets from the redundant labour of other countries. That we pledge ourselves to use the utmost of our exertions to procure such protection, which can only be secured by a duty of specific values."

This requires no comment. I cannot, however, but express a hope that it will have the consideration it deserves. I have always been of opinion that our attempts to monopolise the trade of the world would deprive us of much we have hitherto enjoyed. Every nation and country has its particular and peculiar interests; and these must be attended to and provided for, as circumstances may require, or the community at large will suffer. America cannot—she will not—adopt our policy; nay, I will not say our, but the policy which has lately been acted upon in England, if indeed policy it may be called. She will rather resort to increased protection, and so will other countries, where manufactures are less advanced than ours, or where difficulty may be felt in consequence of English competition. Policy demands it, and experience justifies it; for England owes her greatness to the wise protective laws which she has enjoyed till recently, and which she must enjoy again, if she is to continue great, and cherish her offspring.

Home Correspondence.

High Farming: The Auchness Farm: Deep Draining: Irish Farms.—I agree with your correspondent "J. H." that the local advantages possessed by Mr. M'Culloch, the occupier of the Auchness farm, are so many and so great as utterly to deprive his statement of any material value as a precedent to be acted on by farmers in general. True, he has made the most of those advantages, and there is merit in that; but what sort of farmer would he have been, had he not done so? The sea "makes him an annual present of 500 loads of manure." He seizes it and no questions asked; small blame to him for this! I wish I had a similar chance. But what puzzles me is the 40 acres of moss land, which are said to produce him about 400 tons of Potatoes per annum! 40 acres out of 260 mind! What does he do with them? Sell them? Most English leases compel the tenant to consume all such produce on the farm. If this is done at Auchness well and good; but even in such case it is no great catch; as Turnips, Beet, or any other root crop would yield a greater weight, and be a less scourge to the land. But perhaps the landlord may expect the difference in the money value of the crop to be expended in the purchase of artificial manure? I earnestly wish he may get it. How is such an account to be checked?—"W." is posed with the system of high rents paid in Scotland. So am I, and so are hundreds of English farmers who, at present prices, find it no easy matter to make ends meet, at a third or even less, of the nominal Scotch rents; but even here Mr. M'Culloch is favoured above his countrymen, his gross rent of 20*s.* an acre being reduced by items explained by "J. H." to the low figure of 8*s.*! Eight shillings an acre, in place of the 3*l.* 10*s.* to 7*l.*, so staggering to us poor Southrons. I agree with "W." that the whole thing is a paradox, and wants explanation.—Dr. Lindley has completely converted me to the superiority of deep over moderately deep drainage. Till very lately I always advocated a 2½ feet drain, as amply sufficient to carry off all surface moisture; and so it is, merely looking at the surface; but it seems we must look below the surface, if we would realise all the advantages of deep draining. His proposed experimental scale, with four thermometers inserted at different depths from 1 foot to 4 feet is of easy application, and very effective withal; though I take for granted there is some mistake in the supposed register at foot, wherein the temperature at 1 foot deep is said to be 29° and at 4 feet 22°, directly in the teeth of his own argument, that temperature increases with the depth at which the thermometer is inserted in the ground. Perhaps the figures ought to have been reversed, and the temperature at 1 foot 22° and 4 feet 29°; though I cannot understand this either; seeing that 29° seems a very improbable degree of cold at 4 feet below the surface, even in one of our sharpest winters. The experiments of Mr. Bernays, of Derby, are also very interesting, as confirming the advantages of deep draining. They have clinched the nail of my belief in the efficacy of the system; but with this proviso that deep draining should always be accompanied with proportionately deep stirring of the subsoil, without which it is naught, worse than naught.—Mr. Martin Doyle may write till he is black in the face before he persuades Englishmen who have any value for their lives to take farms in Ireland. Can one take up a paper without encountering one, two, or more murders on this very subject? More than 40 years since, I was offered farms there on the most tempting terms—three lives renewable, &c. I asked myself this home question, Will one life (my own) be renewable in the event of some neighbourly attempt to regain what these poor ignorami may fancy I have filched from them? The answer not being so satisfactory as I could wish, I begged to decline the proffered advantage—a decision of which I have never repented. *Samuel Taylor, Barnwood, Gloucester.*

Maize.—I have seen no mention of the results of this year's crop of Keene's 40 day Maize, which was loudly praised last spring as being suitable for the climate of this country, and sold in very small parcels at 1*s.* each. I brought two of the parcels, intent on giving the new Maize a fair trial, in spite of previous disappointments with other sorts. It was sown in deep rich soil, in the most sheltered part of a garden near the sea shore in the neighbourhood of Edinburgh. The crop grew very irregularly, some parts of the patch being tall and well grown, others small and stunted. The tall and strong growing portion has not ripened, evidently from want of heat. Its smaller cobs, which ripened well, are only sprinkled with perfect seeds, the greater part of the young cob having apparently not been fertilised during the season of flowers. I inclose you a small piece of the barren portion of one of the cobs. In short my patch of 40 day Maize has been a perfect failure, while all around the crops of Wheat and other grain have been finer than the average. I do not believe it will answer except in the South of England, and there more as a garden than a farmer's crop. A correspondent in your paper, some time ago, discredits the fact of its being a new Maize at all, and can find no difference between it and some of the old varieties. Perhaps it may turn out to be something like a new Grape and a new Strawberry which were to have done wonders a short time ago. *Milho.*

What is Agricultural Truth?—This inquiry of yours admits of a great variety of answers. My reply would be, early preparation, deep autumnal tillage, minute division of the soil in spring, and clean cultivation from March till October. We put Garrett's horse-hoe upon the Wheat just as the annual weeds make their appearance in spring, and find the stubbles in consequence perfectly clean, and ready, without any further preparation, for a deep ploughing, followed closely by Read's subsoil plough, stirring from 6 to 9 inches below the first plough, upon which the next furrow slice is turned as rough and hollow as possible. In this state it is left accessible to atmospheric influences, and that best and most effective and economical of all pulverisers winter frost, till spring, when one turn with the cultivator and the harrows will give you the command of opportunities for ridging up, manuring, and sowing. No cleaning will be requisite. As soon as the plants are up, Garrett's horse-hoe, with one horse, will clear such annuals as may appear over 8 acres at least in a day, excepting those in the line of the plants, which will be hand-hoed or singling. This process is repeated in about a month, after which no weeds are seen; just before the leaves of the plants meet, a light iron grubber, with three or four tines, is passed between each row, to stir the soil 3 or 4 inches deep, drawn by a light horse or a stout pony. We have already double ploughed 35 out of 50 acres in course for next year's roots, and all the Wheat sown upon this year's Clover lea is up and looking beautiful. We have found Garrett's hoe so successful in clearing the Wheat of weeds, that we mean in future to drill our Barley 9 inches wide, and put the hoe over it prior to sowing the Clovers. We recommend these proceedings with confidence, having, with the exception of the last, put them in operation in the beginning of 1847, upon a farm in a very foul state, which had been ploughed generally 3 inches, and never more than 4 inches deep, and which at this time is practically free from weeds.—Under an impression derived from observation in gardening, and the seeding by nature, that small seeds should be deposited near the surface, we deferred rolling the Barley until it was up, and the seeds were sown, which were merely rolled down, and not harrowed in. The result is the most perfect covering of the soil I have ever seen at this season, in every stubble in which seeds were sown in the spring. *C. L., Cirencester, Oct.* 29.

Small Farms.—I take the liberty of asking for another article on this subject, believing that your remarks will be found useful by many besides myself. In order, however, to give you an opportunity of prescribing properly, I will state to you my exact case. I am a clergyman, with a small living and an increasing family. My income is about 300*l.* per annum, 46*l.* of which has been hitherto derived from the rental of 16 acres of glebe attached to the living, but which my tenant has now given me notice that he shall quit unless I submit to a great reduction in the rent. Now you may well suppose that what with rates and taxes, subscriptions to schools and local charities, and the numerous other calls upon the house of a rural clergyman, it is an object with me to turn these 16 acres of glebe to the best account. The soil is rich but sandy, except one field of two acres, which has more of alluvial clay in it. It is situated about four miles from a city containing 20,000 inhabitants, and the whole is immediately contiguous to the parsonage. There is also a roomy barn and capital sheds, capable of being converted into stalls for 10 cows, besides stabling for three horses. I might perhaps be able to rent in addition about four acres of adjoining arable or pasture land. The glebe is at present entirely under the plough. I should add that within the last six months it was valued by an eminent land surveyor at a clear rental of 48*l.* 5*s.*; but I very much doubt whether I could get this rent. Will this statement enable you to judge whether, by taking this glebe in hand as a dairy farm or otherwise, I might reasonably hope to prevent a reduction in this branch of my income. Of course my duties as a clergyman would prevent my exercising a very vigilant control at all times. I must trust a good deal to servants, but still, perhaps, not more than an ordinary farmer does. I do not expect extraordinary profits, but I wish to know whether with such care and attention as I can give, 16 acres of good land may be made to yield me a clear 50*l.* worth annually at present prices, or whether I had better let the land at a reduced rent to some safe tenant. Should you think I may safely venture to farm these 16 or 20 acres, would you oblige me by giving or referring me to some scheme by which, at present prices, I may obtain the most encouraging profit. In order to do this, I add a statement of various payments, which would enable you to give an estimate: Farm (16 acres), with barn, enclosed court, stalls for 10 cows, stabling, pigsties, &c., valued at a clear rent of, say 46*l.*; rates, 3*l.* 10*s.*; wages are 8*s.* a week with liquor, say 10*s.*; butter averages 1*s.* per lb; new milk, 1*s.* 2*d.* per gall.; Wheat, say 5*s.* per bushel; average produce 20 bushels per acre. *A. M. A.*

Ireland as a field for the Investment of Capital.—I have lately read with much interest the letters of several of your correspondents upon this subject, but I was sorry to see that of "Cadvan," which appeared in your impression of Oct. 20, wherein he seems still to adhere to the now antiquated notion that any attempt on the part of an Englishman to settle in Ireland would be attended by the risk of life and property; but I am happy to say that those days may now safely be said to be gone by, and I am sure that I shall be supported by all who are at all conversant with the habits and feelings of the Irish in saying that instead of any attempt on the part of the English to assist them by bringing over capital and embarking it in their soil being met by such base ingratitude as "Cadvan" would lead us to suppose; they would be received with a "cead mille fealthe," that would make amends for the want of any of the comforts to which they had been accustomed in their native country. But I feel convinced that it is not any such reason as that to which I have just alluded that deters my countrymen from yielding to their inclination to do good; I know that the numerous reports which are circulated by newspapers as to the enormous amount of poor-rate to be paid out of the land has gone a great way to frighten many whose opinions upon any public subject are those of the particular paper which they

happen to take in, and who either are not able, or do not choose, to take the trouble to form an opinion for themselves; but let me ask whether, admitting these reports to be true, this is a valid objection! We all of us are well aware that we must support our poor by giving them labour or else by giving them relief out of the poor-rates: let us but give them the choice between living at the expense of their neighbours, and earning an honest livelihood by the sweat of their brow, and we shall soon see that they will prefer the latter; but where they cannot get work they are compelled to throw themselves for support upon the poor-rates, and this tends to swell their amount, and, at the same time, the labour being lost to the community, to lessen the chance of improving their country; but let men of capital come forward, and by the investment of that capital in agriculture, give employment to the poor, and they will see the poor-rates decreasing faster than they would imagine possible. In conclusion, let me beg those who have been misled by the thousand tongues of newspaper reports, to come over and judge for themselves whether I am wrong in asserting that there is in Ireland at the present moment a better field for the employment of capital, skill, and industry than in any other country in the world. *M.*

Malt v. *Barley*.—Your correspondent "P." says, "the power to malt for feeding purposes has been proved by abundant experiments to be of no value." If he would be so kind as to state when and where and how these experiments have been made, I can assure him that he would greatly oblige many of the readers of the *Agricultural Gazette*, and numerous other persons. He would be conferring benefit on society, by allaying irritation and discontent. He would show the folly of arguing against, as he says, positive proof; and, it would be hoped, set the question at rest, as it is clear that the Government have not been convinced by these abundant experiments amounting to proof. *G. P. A., Paddington.*

Experiment on Wheat Sowing on the land of the Rev. Mordaunt Barnard, at Little Bardfield, Essex, as detailed at a meeting of the Saffron Walden Agricultural Association, Oct. 19.—Soil, a sandy loam, 35*s*. an acre; a Clover lea, clean and in good heart; ploughed in October; dibbled November 1848. Two stetches adjoining each other were marked out in the middle of the field, each measuring exactly one-sixth of an acre. One of these was thin sown, the other as the rest of the field; both treated exactly alike, and neither suffered from vermin or disease. Seed, Smoothy's red.

Seed.	Produce.	Straw.	Weight of Grain.	Remarks.
3½ pints or 1½ peck and 1 pint over per acre.	5½ bushels or 33 bshls per acre.	593 lbs. or 3558 lbs. per acre.	352 lbs. or 64 lbs. per bushel.	The thin sown was a *little* later. It was sown with great care—two seeds in a hole.
1 bushel 19 pints per acre.	6½ bushels or 37½ bshls per acre.	656 lbs. or 3936 lbs. per acre.	400 lbs. or 64 lbs. per bushel.	The thick sown was *rather* the better sample.

Free Trade: Agriculture: The new Style.—In glancing over your home correspondence of a late week's *Gazette*, the capital "Q." struck me as being one of the most prominent features in a column bearing the initials "C. B., Heacham, Norfolk." The very approving and almost congratulatory tone of your correspondent's letter would almost lead one to suppose he was "pulling an oar" in the same boat with yourself; at any rate he seems resolved "Q." shall no longer "lay on his oars." "C. B.'s" interrogatories, or rather pleasantries, are generally beside the subject discussed in "Q.'s" letters; they seem to be the emanations of a highly fertile imagination, that can doubtless much easier idealise than realise the multiplied produce of the soil, which he is of opinion the science of agriculture, unaided and unprotected by the legislature, can effect. On this point let us dwell for a moment. I will take for granted "C. B." admits, that the beneficial employment of capital is the mainspring of agriculture, as of all other enterprises. Well, then, will "C. B." invest, say, 20,000*l*., or 10,000*l*., or any other sum he likes in the "manufacturing of food" at the present time, with the view of making a safe investment, and one likely to render him a fair rate of interest for his money? This is the test. After all it must be looked upon as a money business, and it is either a paying or a losing one. It is not what may be done by capital expended on the best system of husbandry, or under the most skilful management, for we all know what money can do; but the question is, is there any prospect, or probability, of a return for such an outlay? I maintain there is no such prospect before the agriculturists of England at this time; and, further, that unless Parliament interferes and in some way alleviates the burdens pressing down agriculture, the capital now sunk in it must be lost, or in other words the farmers of England must be ruined. It is all rhodomontade and moonshine to talk of making up for the deficiency in price by an increased production; no such thing is attainable under our present taxation, the price of labour, and the local burdens the land has to bear. But why need we despair? Your correspondent "C. B." has discovered a new California, from which untold gold is to flow into the pockets of your now poor and depressed farmers, a real panacea for all your troubles, and that no other than steam power, by the introduction of which, and the abolition of the old plodding worn out horse system, you, O! lucky race, "O nimium fortunati agricolæ!" are to have the pickings of the small sum of 30,000,000*l*. What a tit bit there is for each of you, if you did but know how to get it. Stupid fellows, don't you see the only thing you have to do is to sell your horses and buy a steam kettle instead, and you will save all the hay and corn those expensive animals are daily and hourly consuming! All that you will want in lieu of such extravagant beasts will be a small heap of coke, a few gallons of oil, a bit of tow, a poker, and a stoker, and your steam kettle will be ready for the field at any time, and as for the cost of this all-powerful team, why it is a mere trifle, and not to be mentioned. Now can there be any faint-hearted or desponding agriculturist, after hearing of this the latest novelty? Can any one, having laid his hand to the plough, look back now? No, the thing is impossible; let him but keep his eye on the steam funnel, and it will bring him through, whether the furrow be deep or shallow, broad or narrow. No matter, all he has to do is to keep up the steam to the right place, and he will never fail, and so long as England can produce such clever heads to contrive, and hands to work out schemes so big with future glory and renown, what man can there be so unpatriotic as not to praise the land of his birth, and to laud the name that has raised our common country from a state of ruin to that of indescribable greatness and prosperity! *Q.*

Societies.

East Berwickshire: *Drains*.—At a late monthly meeting of this club, David Milne, Esq., of Milnegraden, the President, read the following report of experiments he had recently made on this subject. Having to drain a 24-acre field, he took the opportunity of trying the effect of drains varying in depth and distance. He divided the field into four parallel breaks—each about 6 acres in extent. In the westernmost the drains were 3½ feet deep and 30 feet apart; in the next to it, the drains were 3 feet deep and 15 feet apart; in the third, the drains were 3½ feet deep and 15 feet apart; in the fourth, they were 3 feet deep and 30 feet apart. The furrow drains in each break led into a large drain at the ends; and at the mouth of each large drain, a water meter was placed. The field was drained in the winter of 1847-8. It had been 14 years in Grass. Its last corn crop (viz., in 1834) was Wheat, of which the land produced on an average 33 bushels per acre. In the spring of 1848, the field was partly sown with sandy Oats, and partly with black Oats got from Essex. The water meters were set in June, 1848, and were removed in April, 1849. At harvest of 1848, the stooks were counted, and the following was the result—

Sandy Oats.

On 3 feet and 15 feet drains, 558½ stooks per acre.
" 3½ " 30 " 503½ "

Black Oats.

On 3 feet and 15 feet drains, 562½ "
" 3½ " 30 " 512½ "

These crops, on being threshed, yielded as follows:

Sandy Oats.

On 3 feet and 15 feet drains, 44 bushels per acre.
" 3½ " 30 " 63½ "
Weight—41 lbs. per bushel.

Black Oats.

On 3 feet and 15 feet drains, 52⅜ "
" 3½ " 30 " 74⅜ "
Weight—40 lbs. per bushel.

Some modifications of these results were, however, necessary, in regard to the black Oats, in consequence of one of the breaks on which it grew, having been, on nearly one-half of it, shaded by trees. That the trees had the effect of considerably lessening the produce, particularly of grain, is evident from the following statement:

Black Oats.

Break shaded, produced 611 stooks per acre.
" unshaded " 514½ "
" shaded " 70½ "
" unshaded " 34⅛ "

If the shaded break is thrown out of view, the result, as regards black Oats, would be as follows:—

On 3 ft. and 15 ft. drains, 611 stooks per acre.
3½ and 30 " 542⅜ "
3 and 15 " 70⅛ bush.,
3½ and 30 " 75⅜ "

The quantity of seed sown for both kinds of Oats was at the rate of 5 bushels per acre. The water discharged from the two sets of drains was as follows:—

From the 3 ft. and 15 ft. drains, 35,711 gals. per acre.
" 3½ and 30 " 46,510 "

In this calculation, the quantity of water which fell on the few acres shaded with trees was thrown out of view. From these results it would appear that rather more water had been discharged by the 3½ ft. drains than by the 3 feet drains, though the latter were twice as numerous as the former. In those parts of the field, therefore, drained by the 3 feet drains, there was more water left in the land, or went off by evaporation; and there was also less depth of soil for the roots. This fact seemed to explain the produce obtained. If the number of stooks afforded a correct criterion of the quantity of straw, there was most straw on the 3 feet drains, and most grain on the 3½ feet drains; from which he would infer, that a damp soil, though favourable to large produce in straw, was unfavourable to a large produce in corn. The 3½ feet drains probably produced with greater dryness, greater warmth, as the larger quantity of rain which they carried off, would impart to the soil a greater amount of heat. Why the 3½ drains, though one-half as numerous as the 3 feet drains, should carry off as large or a larger quantity of water, was a separate question. Of course, the deeper drains would draw from a greater extent of surface; but he had not anticipated that a 3½ feet drain would have drawn off double, or rather more than double, the quantity of water that a 3 feet drain draws. The water meters, however, showed that this had been the case; unless, indeed, there were springs in those breaks where the deeper drains were. He was not aware that any such springs existed. The subsoil was pretty uniformly retentive throughout the field; and the upper soil was not perceptibly more open in one part than in another. So far, therefore, as his experiments had proceeded, they showed that if drains were made 3½ feet deep, only one-half the number will produce the same or a little better effect than 3 feet drains. The expense per acre of the former, in the field referred to, had been 4*l*. 6*s*. 4*d*.; of the latter 8*l*. 12*s*. 4½*d*. Mr. Milne stated that he had heard of a similar experiment having been tried in East Lothian, by Mr. Hope of Fenton, with an opposite result. He had seen no account of Mr. Hope's experiment; but if correctly reported to him, it would lessen his confidence in the results obtained by himself, and would be an additional inducement to persevere with his observations, in order to obtain further data for coming to a right conclusion. Probably in another year, more correct data could be obtained, as in a few months only after the drains were made the soil could not have been opened very thoroughly. He had last winter put the subsoil plough through the field, and he would endeavour to ascertain what was the produce of this year's crop on the several divisions, and report the result to the club. One thing was quite evident, that with almost any system of drainage the increased produce amply compensated the cost. From the crop which had been yielded on the field above referred to, even after only six months had elapsed from the execution of the drains, he calculated that an increase of about 20 bushels of Oats (equal to about 2*l*.) per acre had been obtained. This result was in conformity with what had been obtained from other fields previously drained by him. But on the general benefits of draining it was unnecessary to dwell. The great question now was: What is the system of drainage which could be done most efficiently, and at the least expense? To this point enquiries ought to be specially directed.

The following is a full account (published originally, we believe, in the *Scottish Agriculturist*) of Mr. Hope's experiments, alluded to by Mr. Milne: "Sir,—In reply to your inquiry as to the result of the experiments made by me in draining with tiles at different depths and distances, I may premise that the field operated on may be described as rather a free loam, but upon a very stiff retentive clayey subsoil, mixed with small stones, quite free from under-water. The ridges were 18 feet in width, and were gathered up from the stubble, leaving every furrow open to save spade labour. Into eight contiguous furrows, each upwards of 330 yards in length, there was put a drain of 3 feet in depth below the plough-furrow. Then one furrow was missed, but in the following another drain of the same dimension was put. After that followed two furrows without any drains, thus leading a ridge which may be said to be undrained. The rest of the field was done with drains 1 foot 8 inches in depth below the plough-furrow. The land since then having been ploughed flat, the drains may be considered as 10 or 12 inches deeper than the depths cut with the spade. The cost of the 3 feet drains was 6*d*. per rood, or 4*l*. per Scotch acre; the ebb drains, 2½*d*. per rood, or 1*l*. 10*s*. per statute acre. The draining the whole field, which contains 15 Scotch acres, was finished early in February, 1841, and in summer was sown with Turnips, the drills running across the drains or ridges. One half was made white Globe, the other half Swedish Turnips; the manure applied being half a ton of Rape-dust and 12 carts of farm-yard dung to each variety per acre. The crop was removed and weighed on the 14th December, and the produce found as follows, per Scotch acre:

	White Turnips. tons	cwt.	Swed. Turnips tons.	cwt.
On 3 feet drains, 18 feet apart ...	... 21	8	13	15
On 1 foot 8 inches do., 18 feet apart	... 24	6	13	17
On 3 feet drains, 36 feet apart ...	... 20	14	15	—
On portion undrained	... 21	8	10	15

"It was only after the white Turnip had finished growing that the land could be said to be wet, and to receive any benefit from the draining. The subsoil, from the deep drains, appeared to be against the white Turnips; but the Swedish were much larger where they came in contact with it—at the same time they were obviously thinner on the ground. About the middle of February, 1842, the field was sown with Wheat, drilled across, that a quantity of seed might be given to each part of it. Three bushels per acre was the quantity sown. The different portions were cut, stacked, and threshed separately, and the following is the result, per Scotch acre, the weight of all being the same, 62 lbs. per bushel:

	Wheat. qrs.	bush.	Straw. tons.	cwt.	lbs.
On 3 feet drains, 18 feet apart ...	... 5	6½	1	11	108
On 1 foot 8 inches drains, 18 feet apart	... 6	4	1	14	56
On 3 feet drains, 36 feet apart ...	... 6	0	1	9	84
On portion undrained	... 6	0	1	11	42

"From the period when the land was sown, until the crop was reaped, there never was more moisture in the soil than what was requisite for the growth of plants. The field was grazed in 1843 and 1844. Little or no difference was observed in the pasture during the first year, though, in the second, appearances were against the portion with deep drains. In the spring of 1845, the whole was ploughed up and sown with grey Angus Oats. Before harvest the effects of the drains were very obvious. The crop on the ground ebb drained being much heavier and bulkiest; at one period it was laid when the crop on the deep drains was all standing. On the latter, and on the ridge undrained, the crop was sooner ripe, though the field was all cut in one day. This accounts, in part, for the weight per bushel being

greasing all these purposes; indeed, the quality improves as the quantity diminishes. The following table exhibits the result, per Scotch acre:

	Oats. qrs.	bsh.	pks.	Weight p. bush. lbs.	Straw. tn.	cwt.	lbs.
On 2 feet drains, 16 feet apart.....	10	0	0	40	2	6	108
On 1 ft. 8 in. drains, 16 feet apart...	12	1	2	39	2	17	96
On 3 feet drains, 36 feet apart	9	4	2	40	2	4	28
On portion undrained	9	0	0	40½	2	4	40

On the removal of the crop there was a marked difference in the condition of the land, the deep drained portion being full of Couch Grass, while the part with the ebb drains was comparatively clean.

"In 1846, the field was sown with Skirving's purple-top yellow Turnip, the manure applied being 5 cwt. of guano, 1 qr. of bone dust, and 16 tons of farm-yard manure, per Scotch acre. No difference was observable by the eye, the whole crop being fine. One-half of the crop was consumed on the ground with sheep, they being allowed at the same time 1 lb. of linseed cake each daily. While the sheep were on the ground, it was found necessary to complete the drainage of the whole, every 18 feet, the water having stood from end to end of the field on the undrained furrows, for even the deep drains had little or no effect on the undrained furrow betwixt them. In 1847 the field was again in spring Wheat (Fenton), and was a most magnificent crop throughout; it yielded, over the whole, 7 qrs. 6 bushels per Scotch acre, and weighed 63 lbs. per bushel. The field was pastured last year, and it kept but a small stock. It is now in Oats, which, unfortunately, are a light, shabby crop, similar to most of the Oats this season in the neighbourhood, and one part of the field cannot be said to be better than another. I have, therefore, no hesitation in giving it as my decided opinion that on land with a stiff clay subsoil, free from under-water, 30-inch drains are all that is required to carry off the surface water. All practical men are well aware that no general rule ever can be laid down for either the depth or the distance betwixt drains; this can only be determined by the nature of the soil and subsoil in each particular case. I have seen material benefit obtained from making drains 4 and 5 feet deep, when 2½ feet drains would have been money thrown away; but, from the above, and other experiments under like circumstances, I am also satisfied that to insist upon it as a rule to go deeper than 30 inches in all cases, the difference of the expense may be worse than money lost, and the crops may be materially hurt into the bargain. *Geo. Hope, Fenton Barns, Aug.* 10."

Miscellaneous.

Use of Rape-cake as Food.—Two kinds of oilcake, as is well known to farmers, are used in high cultivation: one, the refuse of Flax-seed, Linseed-cake, for the feeding of stock; the other, a less expensive article, the refuse of Rape-seed, as a manure for Wheat. Having been informed by a French farmer that it is the practice in French Flanders to mix Rape-cake with oil-cake, in the proportion of one to two, for the nobler purpose, I tried the experiment last winter, when Linseed cake cost about 9*l.*, and Rape-cake about 5*l.* per ton. The cheaper cake, having a hot taste, was mixed with the other at first in the proportion of one-tenth, and the fatting tegs (half-breds chiefly, but a few of them Downs) ate the mixture with little reluctance. The admixture of Rape-cake was gradually increased until it reached the proportion of one to three, or one-fourth of the whole, when symptoms of mutiny showed themselves, and we did not think it expedient further to adulterate the rations, but continued at that proportion; and, among more than 400 tegs so fatted, no mishap occurred from the use of Rape-cake, though occasional symptoms of purging arose. The Rape-cake was tried with some fatting heifers,* but as they did not take to it readily, and were in an advanced state, I did not think it worth while to press the point with them, for fear of throwing them back in condition. In Flanders, however, horned cattle are fed partly with Rape-cake. The most decided success was with about 60 old Down ewes, which, having borne twin lambs, were kept apart as usual to receive better food. These being more sharply set than the fatting tegs, allowed my shepherd gradually to increase the proportion of Rape-cake until no Linseed-cake was given at all. This of course is an important saving, if the cheaper cake be as nourishing as the dearer one. In that important respect my shepherd could observe no difference; but the question seemed to be fit for chemical analysis, and was referred by me to Mr. Way, whose answer was satisfactory, being as follows:

"I have had an analysis made of the Rape-cake you sent me; it contains

Nitrogen	...	5.28 per cent.
Oil or fat	...	11.68 "

In neither of these particulars does it much differ from Linseed-cake, of which I have examined 11 specimens, containing on an average

Nitrogen	...	4.60 per cent.
Oil or fat	...	11.90 "

The oil is in general about from 12 to 14 per cent."

As these two ingredients, nitrogen and oil, represent in Mr. Way's opinion the feeding-properties of cake, science appears to confirm the experiment, and I cannot but hope that it may be useful to farmers, as justifying a saving of some considerable amount in preparing their sheep for market. I will only add, that though the use of Rapecake as food has had no bad consequence with steady fatting sheep of my own, I hope that any one who is disposed to give it a trial, will do so gradually and with caution, lest any unforeseen injury be the consequence. *Mr. Pusey, in the Journal of the Royal Agricultural Society of England.*

Stoppage of Pipe Tiles.—All the farm is drained with horseshoe tiles and slate soles, the latter being the refuse of the Welsh quarries. I was informed by the farm bailiff, who kindly took me over the farm in the absence of Mr. Neilson, that pipes had been tried; but they do not answer in that neighbourhood, inasmuch as the crevices become choked up with a kind of weed or the roots of plants—consequently their use has been abandoned. The drains are laid at a depth of 2 feet 6 inches or 3 feet 6 inches, and the mains, where there is fall, 4 feet, the space between the former being 7 or 9 yards. [The soil here is light, and rests upon a substratum of new red sandstone.] *Journal of the Royal Agricultural Society of England.*

* I propose, however, trying it next winter for cows kept in the yard upon Mangold-Wurzel and Barley-straw, as was done successfully last year on Sir Robert Peel's farm at Drayton Manor. Unless the cake secured the cows, it must, if given in moderation, improve, I should think, the quality of the milk.

Calendar of Operations.

OCTOBER.

Bedfordshire Farm, *Oct.* 30.—The chief occupation of the month has been Wheat sowing, which is now nearly brought to a close. The early sown has come up nicely, and appears to have no enemies as yet. We have tried a few experiments in a large field of Clover lea, by committing the seed to the ground in various ways. Part has been planted with Dr. Newington's dibble at the rate of nearly a bushel per acre, at a cost for labour of 3*s.* 6*d.* Part has been dibbled by a gang of boys, at the rate of 5 pecks per acre, at a cost of 2*s.* 6*d.* Part was drilled at the rate of 6 pecks per acre at a cost of 1*s.* 6*d.*, including horses and attendants; and a part was sown broadcast with 6 pecks, at a cost of 3*d.* per acre. The whole field was about equally harrowed, and the greater part being light land was twice rolled with Crosskill's crusher. The difference of the expense of the various systems is at present very apparent, so far as seed and labour goes; but the true test can only be found in the crop at harvest. There can be no reasonable doubt but that much less seed than is usually sown would be sufficient in all ordinary cases; at the same time, every experimenter is wise in using due caution before going to the extreme of thin seeding, by considering the state and condition of the land, and also the time and nature of the season. We have certainly, as yet, seen more loss on the whole from thin than ordinary or even thick seeding, and believe that Messrs. Davis, Wilkins, and Co.'s success has depended far more upon the due cultivation of the soil around the young Wheat plants, than from any extraordinary merits of the one, two, or three kernel a hole system. We, therefore, strenuously advocate the necessity of following out the whole of the "Mechlonian" system, and to frequently hoe under every circumstance. We have dibbled about 10 acres of winter Beans, after Wheat, at the rate of 3 bushels per acre. The Beans are planted in rows 20 inches apart, which were drawn out by the drill, to admit of horse-hoeing. Some labourers have been engaged trimming up the banks and cleaning young hedges, trenching up odd corners, &c., in addition to those engaged setting Wheat and attending upon stock. We have been carting dung for some days past upon Wheat stubbles, intended for Mangold Wurzel next spring. About 25 tons are applied to the acre, which is regularly spread and immediately ploughed in to lie for the winter's frost. The soil is a stiff clay, free from weeds. Green crops generally succeed better on land dunged through the winter than when the manure is immediately applied before the seed is sown. The growth of the bulb is encouraged more and the top less when the food of the plant is properly disseminated through the soil. It does not answer, however, to winter-dung dirty land, as the growth of the weeds is much encouraged. We shall soon commence getting up and storing Mangold Wurzel and Carrots. All roots require to be well ventilated when first put together in heaps. We have seen many Mangold Wurzels, and Turnips also, lost from close covering with earth. Our fatting Sheep are now upon Turnips, and the stores run over the stubbles and pastures, and fold at night on the lightest Wheat land. The milch cows receive an allowance of hay night and morning, in addition to their Grass. The fatting cattle consume about a bushel of Turnips, 5 lbs. of meal, and 20 lbs of chaff each per day, in a prepared state, by steaming apparatus. The system answered very well last season, certainly much better than the non cooking plan, although some of its early advocates appear to have changed their minds on the subject. Practically we must, as yet, fully agree with it, and so far as we know of science there appears to be more of the fattening properties of the food evolved by heat, for ready assimilation by the animal, than when the food is given in a raw state. *R. V.* [Could not our correspondent furnish this report one day earlier in the week? It reaches the printer now on Friday morning.]

Dorset Farm, *Oct.* 29.—Since last report we have been employed sowing Wheat, a great part of which is after Turnips, and we shall not be able to finish sowing for some weeks to come. We carry off rather more than half of the Turnips for the cattle, and the sheep are folded on the land, to eat the remaining part. Our cattle are fed on Turnips and hay, and will have soon a little Linseed or oil cake (I mean those that are to be fatted this season); the younger beasts are in the field, and will be for some time, as there is a good deal of rough Grass for them to eat off, which, if left, would be hurtful to the spring Grass. We have not yet given our sheep any hay, having had plenty of Grass; but now that the weather will be getting colder they will get a little. We have threshed some of the new Wheat, which turns out very well in every way, and we are making the straw into reed, as it is much superior to last year's crop for that purpose. We are now digging our Carrots, which are not a very heavy crop, but of good quality. Our employment for some time will be getting off the Turnips to make room for Wheat, and ploughing the land for the next Turnip crop. The fine weather that we have had has enabled us to get off a good many of the weeds from the land, which we have destroyed by fire, and will find the ashes very useful for drilling in with various crops. We intend to plant our Potatoes in the autumn, for which we are now preparing the land. We shall plant them on the ridge (or baulk) 17 inches apart, without manure. Our water meadows are now being put under water as fast as the courses are got in order. And we are collecting, as opportunity offers, all road scrapings and other rubbish which will be useful as manure, and we shall take up our Mangold Wurzel in a week or 10 days, which we shall stack in convenient lots in the pasture fields, for the ewes after they lamb. *G. S.*

Sussex Farm, *Oct.* 29.—The weather has been very fine for Wheat sowing, which is very forward in this part, but we have still about 25 acres to sow after Mangold Wurzel and Turnips, which we are clearing the land of, and storing them in pits for the cattle and sheep in winter; we cover the pits with a layer of straw, and then with Furze or Heath, to protect them from wet and frost. The Mangold Wurzel and Swedes are a good crop, and the green-topped yellow Turnips are particularly so. Our teams are engaged ploughing for and sowing Wheat, carting dung for and ploughing the land for the next year's Carrots, scarifying the stubbles for Beans and Turnips, &c. Men are engaged with the Mangold Wurzel and Turnips, cutting and cleansing hedges, and draining 3 feet deep. We commenced to take up our Carrot crop to-day, which is very good. *J. B.*

Notices to Correspondents.

A Reader or Constant: *A Turner.* (1.) There is probably no better season as to time for Wheat in your latitude than the present; that is, the first week in November. (2.) About 1 bushel is sufficient seed on clean land of good quality, where game does not prevail. (3.) Sow in drills, at intervals of 10 to 12 inches. (4.) The Wheat crop will not be improved by subsoiling the land immediately before it. (5.) Manure is better applied to the preceding green crop than directly with the Wheat. But you may apply A top dressing of guano in spring, or of nitrate of soda. (6.) The pressing of land for Wheat is beneficial; and if it be too gross in spring it ought to be mown or eaten down; and you may learn from this to sow less seed next time. (7.) We never saw the land that yielded 50 *or* 60 bushels of Wheat on an average per acre; never heard of it. Perhaps it would be more correct to say that we never enjoyed the *climate* that could do this; though this we will not say, because it is not climate absolutely so much as climate in its relation to the soil that affects the farm. We cannot alter climate; but we can alter its ability to injure us by improving the soil through which it affects us. As to stall feeding we shall speak hereafter. (8.) You cannot afford on 300 acres to keep a bailiff to act as *teacher.*

Beer: *T. C.* The only means whereby beer can be prevented from "turning off," that is, acquiring the acetous fermentation, is a perfect process in brewing from really good malt and hops applied in due proportions. If the malt be insufficiently malted the gluten will superabound, and a due proportion of alcohol cannot be formed. If the bitter principle of the Hop be deficient the beer will not Keep. Again, if the wort be insufficiently boiled, the albumen cannot separate in flocks at the time of boiling; a clear and sufficiently strong solution of the saccharine principle of the malt and of the alkaloid extract of the Hops, boiled for at least half an hour, afford the only safe means of obtaining a keeping beer fit for table use at meals. A temperate cellar always ranging from 48° to 55° is an excellent adjunct. *J. T.*

Birmingham Exhibition of Fat Cattle: *The Secretary* will see that we referred to the matter at p. 653.

Cabbages: *Manxman.* Try giving the cows a little nitre in water over their food immediately after milking; or add a little nitre in hot water to the milk when put in the pans. If that will not do, try some chlorids of lime—a very little in each milk-pan.

Controversy: *Q* should have a little more confidence in our desire to act with fairness. Delay of publication is often unavoidable, the article in question was put in type immediately.

Drainage Act: *Heavy Land Farmer.* If you will forward your name and address, "*G.*" will communicate with you directly.

Hare Rabbits *F S.* See p. 537, vol. 1848 †

Hedges *Topthorn.* See pp. 495, 496, vol. 1847.

Improvements: *Inquirer.* (1.) Iron piping we suppose must be used to bring water from the spring, but you might avoid that expense if the well is a good one, by a pump and trough. (2.) A covered place for manure is a good thing; pantiles are the cheapest roofing with us, but it depends upon whether you are near a tilery, or near slates. (3.) Cows cannot be kept in always on a dairy farm, and we doubt whether it is advisable to do so in the case of old Grass lands; in winter they certainly ought to be under shelter. (4.) We cannot say which is the breed that makes the most butter from a given quantity of food; the Ayrshire breed has a good character. (5.) Swedish Turnips, and especially Mangold Wurzel, on loamy soils; Tares and Cabbages on stiff soils are the best green crops you can grow. (6.) You need not boil them, or otherwise cook them for cows.

Marine Glue. *Jaxus* says, dissolve 1 lb. of caoutchouc in 4 gallons of coal naphtha; mix 1 pint of this solution with 2 lbs. of shellac, the mixture, when cold, resembles sealing wax. Make the parts to be joined very hot, cover them with the cement, and press them tightly together till cold; clean off the superfluous portions with liquor potassæ. Never having met with a tradesman who has worked with this glue, nor having seen any description of the mode in which the parts to be joined are made hot, you would confer an obligation on the public by giving it at your earliest convenience.

Private Money Drainage Act, 1849: *N.* We apprehend that the 9th section will be found sufficient for carrying out the purposes of the act, although we agree with you in thinking that the intention of the measure is not clearly expressed. We have the best reasons for knowing that our explanation coincides with the views of the commissioners themselves. If you will favour us with your name and address, we shall endeavour to obtain an authoritative explanation for you. *G.*

Stall Feeding: *Amateur.* The character of the several contributions on this subject in this *Gazette* must be determined by their readers. We must refer to this subject in a "Leader."

Wheats: *Henry.* The clear white Wheat is the Chidham—the coarse red Wheat the Burrel variety.

*** Communications reaching town after Wednesday cannot be answered till the following week.

Markets.

COVENT GARDEN, *Nov.* 3.

Hothouse Grapes are still plentiful, and the supply of Pine-apples of excellent quality is well kept up. Filberts and Walnuts are abundant, Chestnuts plentiful, Oranges scarce, Lemons moderately plentiful. Pomegranates may still be obtained at 4*d.* each. Among Vegetables, Turnips are good and plentiful, Carrots the same. Cauliflowers less plentiful. Potatoes have not altered since our last account. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1*s.* to 1*s.* 6*d.* per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropeolums, Fuchsias, Primulas, Camellias, and Roses.

FRUITS.

Pine-apples, per lb., 3*s* to 5*s*	Oranges, per doz., 4*s* to 6*s*
Grapes, hothouse, p. lb., 2*s* to 5*s*	Almonds, per peck, 6*s*
— Portugal, per lb., 9*d* to 1*s*	— sweet, per lb., 2*s* to 3*s*
Plums, per hf. sieve, 4*s* to 6*s*	Walnuts, p. 100, 1*s* 6*d* to 2*s*
Pears, per doz., 2*s* to 4*s*	— p. bush., 16*s* to 24*s*
— per half sieve, 4*s* to 6*s*	Filberts, per 100 lbs., 45*s* to 60*s*
Apples, kitchen, p. bsh., 2*s* to 4*s*	Nuts, Bar., p. bush., 20*s* to 22*s*
Lemons, per doz., 1*s* to 3*s*	— Brazil, p. bsh., 12*s* to 16*s*
— per 100, 8*s* to 16*s*	

VEGETABLES.

Cabbages, p. doz., 6*d* to 1*s*	Onions, p. bunch, 2*d* to 4*d*
Cauliflowers, p. dos., 2*s* to 4*s*	— Spanish, p. dos., 1*s* 6*d* to 4*s*
Broccoli, p. doz. bundl., 6*s* to 10*s*	Shallots, per lb., 4*d* to 8*d*
Greens, per doz., 1*s* 6*d* to 2*s* 6*d*	Garlic, per lb., 4*d* to 8*d*
Brussels Sprouts, p. hf. sieve, 1*s* 6*d* to 2*s*	Vegetable Marrows, per doz., 1*s* to 2*s*
Sorrel, p. hf. sieve, 6*d* to 9*d*	Lettuce, Cab., p. sc., 4*d* to 9*d*
Potatoes, per ton, 60*s* to 100*s*	— Cos, do., 6*d* to 1*s*
— per cwt., 3*s* to 6*s*	Endive, per score, 1*s* to 1*s* 6*d*
— per bush., 2*s* to 3*s*	Tomatoes, p. hf. sieve, 3*s* to 4*s*
Turnips, p. doz. bun., 1*s* 6*d* to 2*s* 6*d*	Mushrooms, p. pot., 1*s* to 1*s* 6*d*
Red Beet, per doz., 1*s* to 2*s*	— per bush., 3*s* to 6*s*
Horse Radish, p. bdl., 2*s* to 4*s*	Small Salads, p. pun., 2*d* to 3*d*
Cucumbers, each, 2*d* to 6*d*	Fennel, per bunch, 2*d* to 3*d*
Leeks, per bunch, 2*d*	Savory, per bunch, 2*d* to 3*d*
Celery, p. bundle, 6*d* to 1*s* 3*d*	Thyme, per bunch, 2*d* to 3*d*
Radishes, p. 12 bunches, 1*s* to 2*s*	Parsley, p. dos. bun., 3*s* to 4*s*
Watercress, per dos. bunches, 4*d* to 6*d*	— Roots, p. bdle., 1*s* to 1*s*
Carrots, per bun., 4*d* to 6*d*	Marjoram, per bunch, 2*d*
Spinach p. sieve, 1*s* to 1*s* 6*d*	Mint, per bunch, 2*d*
Artichokes, p. doz., 1*s* 6*d* to 3*s*	Basil, per bunch, 2*d*

SMITHFIELD, Monday, Oct. 29.

The supply of Beasts has considerably fallen off, and trade is consequently brisk, at advanced rates. The improvement is especially apparent in second-rate qualities, which of late have been so difficult to dispose of. The number of Sheep is also smaller. Trade is not brisk, but prices have advanced for all kinds. Trade is also proportionately better for Calves and Pigs. From Holland and Germany we have 1093 Beasts, 3280 Sheep, 99 Calves, and 70 Pigs; and 1790 Beasts from Leicester and Northampton.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3 10 to 4	0		
Best Short-horns	3	8 — 3	10	
2d quality Beasts	3	0 — 3	6	
Best Downs and Half-breds	4	0 — 4	2	
Ditto Shorn				

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	3	8 to 3	10	
Ditto Shorn				
Ewes & 2d quality	3	0 — 3	4	
Ditto Shorn				
Lambs				
Calves	2	8 — 3	6	
Pigs	3	4 — 4	4	

Beasts, 3737; Sheep and Lambs, 22,270; Calves, 149; Pigs, 208.

Friday, Nov. 2.

The number of Beasts is larger than on Friday last; the best qualities are readily disposed of at Monday's quotations, but second-rate are rather lower. The supply of Sheep is also larger; the demand, however, is pretty good, and prices are no lower. Calves are more in request than they have been for a long time past, and a rise of about 6d. per 8 lbs. is effected. Pigs are also dearer, owing to the favourable weather. From Holland and Germany there are 193 Beasts, 520 Sheep, 54 Calves, and 80 Pigs; from Leicester and Northampton, 400 Beasts; and 141 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	10 to 4	0		
Best Short-horns	3	8 — 3	10		
2d quality Beasts	2	8 — 3	4		
Best Downs and Half-breds	4	0 — 4	2		
Ditto Shorn					

Best Long-wools	3	8 to 3	10		
Ditto Shorn					
Ewes & 2d quality	3	0 — 3	4		
Ditto Shorn					
Lambs					
Calves	3	0 — 4	0		
Pigs	3	8 — 4	8		

Beasts, 1660; Sheep and Lambs, 5,620; Calves, 221; Pigs, 310.

HOPS.—Friday, Nov. 2.

Messrs. Pattenden and Smith report that the demand for new Hops continues at improving prices. Duty estimated at 80,000*l*, and by some parties divided as follows:

Kent	£47,500
Sussex	18,300
Remainder	14,200
	£80,000

HAY.—Per Load of 36 Trusses.

Smithfield, Nov. 1.

Prime Meadow Hay	68s to 72s	Clover	60s to 90s
Inferior ditto	55 — 63	New Clover	— —
Rowen	50 — 60	Straw	24 — 28
New Hay	— —		J. Cooper.

Cumberland Market, Nov. 1.

Prime Meadow Hay	68s to 72s	Inferior	50s to 80s
Inferior ditto	50 — 63	New Clover	— —
New Hay	— —	Straw	28 — 32
Old Clover	86 — 90		Joshua Baker.

Whitechapel, Nov. 1.

Fine Old Hay	63s to 68s	New Clover	—s to —s
Inferior ditto	50 — 55	Inferior ditto	55 — 60
New Hay	— —	Straw	24 — 26
Old Clover	80 — 88		

POTATOES.—Spitalfields, Oct 29.

The Committee report that the market has been supplied quite equal to the demand since our last report, particularly from Yorkshire and the Continent. A few very choice Regents made 90s., but we cannot quote the price as general; those from the Continent came to the market in very good condition, and of good quality; but the weather has been so mild that less money has been obtained for them than our previous quotations. The following are this day's prices:—York Regents, 75s. to 85s. per ton; Wisbeach, 60s. to 70s.; Scotch, 60s. to 70s.; French whites, 60s. to 70s.; Rhenish do., 50s. to 65s.; Belgian do., 50s. to 60s.

MARK LANE.

Monday, Oct. 29.—The supply of English Wheat from Essex and Kent by land carriage samples this morning was moderate; the former was disposed of on about the terms of this day se'nnight, but the latter was not cleared at a late hour, although offered at 1s. per qr. decline. Foreign met a retail inquiry, and prices may be considered nominally as last week.—We observe no alteration in the value of Barley or Beans.—New English white Peas must be written 1s. per qr. dearer.—Fine old Oats are a free sale at fully late prices, but new are the turn cheaper.

Friday, Nov. 2.—The market has been moderately supplied with English corn during the week. The arrivals of foreign Wheat are good, and moderate of other grain. We observe no alteration in the value of Wheat, either English or foreign. The trade is dull, and sales limited.—Thin grinding Barley commands an advance of 1s. per qr. on Monday's prices; other descriptions, as also Beans and Peas, are unaltered in value.—Old Oats are in good request, new are a slow sale.—During the last eight days great dulness has prevailed in the Wheat trade, and a decline of 1s. to 2s. per qr. has been submitted to upon new, in several important markets of the United Kingdom. In some a slight reduction has taken place upon old foreign.

Liverpool, Tuesday, Oct. 30.—We had a fair attendance of dealers at this day's market, but a very poor demand for Wheat, at a decline of 2d. to 3d. per bushel on new, and 1d. on old, especially on the middling descriptions. Barley, Beans, and Peas heavy. Oats were dull, and 1d. per bushel cheaper. Indian Corn dull and 6d. per qr. lower. Flour was also rather cheaper.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Sept. 22	41s 9d	27s 1d	17s 10d	25s 11d	29s 9d	30s 0d
— 29	42 4	27 4	17 11	25 2	29 5	31 3
Oct. 6	42 4	27 7	17 5	24 9	29 0	29 5
— 13	41 4	28 0	17 2	24 5	28 10	31 8
— 20	41 1	28 2	17 4	24 9	29 5	30 3
— 27	41 7	28 5	17 2	23 8	28 11	31 7
Aggreg. Aver.	41 9	27 9	17 6	24 9	29 3	30 9
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Sept 22.	Sept 29.	Oct. 6.	Oct. 13.	Oct. 20.	Oct. 27
42s 4d	...	...	...	...	...	...
42 4	...	...	...	...	...	...
41 9	...	...	...	...	...	...
41 7	...	...	...	...	...	...
41 4	...	...	...	...	...	...
41 1	...	...	...	...	...	...

PRICES CURRENT.	London. Oct.22.	London. Oct.29.	Liverpool. Oct. 23 70 lbs.	Liverpool. Oct. 30. 70 lbs.	Wakefield. Oct.19.	Wakefield. Oct.26.	Boston. Oct.24.	Boston. Oct.31.	Birmingham. Oct. 25. 62 lbs.	Birmingham. Nov. 1. 62 lbs.
	qr.	qr.			qr.	qr.	qr.	qr.		
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red	38 to 43	38 to 43	6 0 6 4	6 0 6 2	39 to 45	37—44	36 to 40	34 to 40	5 0 5 8	5 0 5 8
„ white	42—48	42—48	6 0 6 10	6 2 6 8	42—48	40—48	38—45	38—45	5 6 6 0	5 6 6 0
Old, red	38—43	38—43	6 4 6 8	6 4 6 6	39—43	39—43	—	—	5 3 5 9	5 3 5 9
„ white	43—45	43—45	7 0 7 6	7 0 7 1	—47	—47	—	—	5 7 6 1	5 7 6 1
Foreign	36—52	36—52	4 3 7 3	4 6 7 2	32—46	32—46	—	—	4 8 6 2	4 8 6 2
			480 lbs.	480 lbs.						
Rye—Old	23—26	23—24	—	—	—	—	—	—	—	—
Foreign	20—22	20—23	—	—	—	—	—	—	—	—
Foreign meal	5*l*.—6*l*	5*l*.—6*l*	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding	24—26	24—26	—	—	20—22	20—22	21—23	21—23	22—24	22—24
Malting	26—28	26—28	30s—31s	30s—31s	27—33	27—33	—	—	29—33	28—33
Foreign	18—26	18—26	—	—	21—26	21—26	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship	—	—	—	—	37—40	37- 40	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White	18—24	18—24	3s 2d 3s 3d	3s 2d 3s 3d	—	—	15—18	13—18	19—27	19—27
Black	16—22	16—22	2 2 2 5	2 1 2 7	—	—	—	—	18—20	18—20
Foreign	13—20	13—20	2 3 2 4	2 3 2 4	—	—	—	—	—	—
	qr.	qr.	qr.	qr.	qr.	qr.				
Peas—Boilers	28—30	28—31	33s—	30s—	26—30	26—30	—	—	83—40	31—40
									196 lbs.	196 lbs.
Grinding	25—30	25—30	28 —29s	28 —29s	—	—	—	—	11—12	11—12
Foreign	24—32	24—32	29 —30	29 —30	—	—	—	—	—	—
Beans—										
New, small	23—29	23—29	—	—	32—33	30—31	32—34	32—34	11—12	11—12
Old	—	—	33 —37	33 —37	—	32—33	—	—	14—15	14—15
Foreign	21—36	21—36	25 —35	25 —35	28—30	26—26	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign	36—41	41—46	—	—	—	—	—	—	—	—
Linseed Cakes										
British	9*l*. 12s	9*l*. 12s	8*l*.—8*l*. 5s	7*l*. 15s—8*l*.	—	—	—	—	—	—
Foreign	7*l*.	7*l*.	—	—	—	—	—	—	—	—
Indian Corn—	22—26	22—26	28s—30s	27s—29s	—	—	—	—	12—13	12—13
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	32—40	32—40	30—32	30—32	—	—	32—38	32—38	31—34	31—34

Weekly Averages and Imports.	Aver. Oct.30	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT	45 3	11090	41 4	5933	42 7	28143	37 7	5885	39 7	540
BARLEY	30 5	2300	28 2	403	28 6	4991	22 3	265	27 4½	—
OATS	18 8	12s10	17 4	10697	18 3	761	15 0	2090	18 1	—
RYE	23 2	—	24 9	—	—	—	—	—	—	—
BEANS	29 11	—	29 5	800	29 4	1058	30 5	234	33 4	580
PEAS	30 9	—	30 3	126	—	390	—	—	—	—

Signed { KINGSFORD and LAY. | SEGAR and TUNNICLIFFE. | SANDARS and DUNNS. | THOMAS WRIGHT. | J. and C. STURGE.

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2d, or B	4 0 0	0 7 6
3d, or C	5 0 0	0 10 0
4th, or D	6 0 0	0 12 0
5th, or E	7 0 0	0 14 0

The Machines can be made to order of any size, at a proportionate price.

BIRMINGHAM CATTLE EXHIBITION, 1849.

THE BIRMINGHAM AND MIDLAND COUNTIES EXHIBITION of FAT CATTLE, SHEEP, PIGS, and POULTRY, will be held in a temporary building adjoining Hurst-street, Bromsgrove-street, Birmingham, on Tuesday, Wednesday, Thursday, and Friday, the 11th, 12th, 13th, and 14th of December next.

Printed Certificates for the several Classes may now be obtained, together with copies of the Prize Lists, on application to the Honorary Secretary.

All Entries must be made on or before Saturday, the 17th of November. T. B. Wright, Hon. Sec.

Union-street, Birmingham, Nov. 3.

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15*l*. 10s.; a do. do. 15 by 10, 22*l*. 10s.; a do. do. 18 by 12, 28*l*. 10s.; a do. do. 21 by 12, 32*l*. 10s., including a plan for brickwork. 12-inch Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 11½d. per foot; 2-inch do., 1s. per foot.—J. Lewis's Machine Hothouse Works, Stamford-hill, Middlesex.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm-servants, or unpractised persons. Price 1d. per square foot. CROGGON'S PATENT NON CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel. Samples and Testimonials sent by post on application to Croggon and Co., 2, Dowgate-hill, London.

AGRICULTURAL DRAINING: THE DERBY LEVEL.—A Very Superior Draining Level, of great simplicity, price 3*l*. 5s., to be had of the Maker, John Davis, Optician, Derby. The above is securely packed and sent to any part of the empire.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to John Legg, Cheltenham.

IMPROVED FOUR-HORSE PORTABLE STEAM-ENGINES AND BOLTING OR THRESHING MACHINES.

FREEMAN ROE AND HANSON, Southwark Iron Works, and 70, Strand, beg to call attention to their Steam-Engines and Threshing Machines, which are more economical in fuel, for the quantity of work done, than any before the public. They may be seen any day at their works, Sumner-street, Southwark Bridge road.—Water-rams for raising Water. Deep Well Pumps; Baths; Hot-water Apparatus; Fountains. Towns supplied with Gas or Water.

PARIAN CEMENT, for internal Stucco, instead of common plastering, may be painted and papered within 20 hours of its application to the bare walls, and by the use of which rooms may be rendered habitable before the materials commonly adopted would begin to dry. It is worked without the slightest difficulty, the labour being easier and less expensive than with any other stucco whatever. A finer quality is also prepared for Ornamental Plastering, for Encaustic Painting, &c., &c., specimens of which may be seen at the Works of the Patentees, Charles Francis and Sons, Nine Elms, London.

HOT-WATER PIPES AND TROUGH PIPES, with all the usual connexions. — A very large stock of Hot-water Pipes, Elbows, Tee Pieces, Syphons, Collars, Valves, &c., as usual, at J. JONES'S CAST-IRON WAREHOUSES; also Rain-water Pipes, Gutters, Sash Weights, Air Bricks, &c., Socket and Flange Pipes, Retorts, and Lamp-posts. The above and numerous other Castings at very low prices, and of excellent quality.

N.B.—Men sent (if required) to any part of the kingdom to do the work, and the Pipes and Connexions found, for a stated sum.

Iron-bridge Wharf, No. 6, Bankside, London, Nov. 3.

CLARK'S METALLIC HOTHOUSE WORKS, 55, Lionel-street, Birmingham.—Proprietor, Mr. THOMAS CLARK; Manager, Mr. JOHN JONES.

Mr. Clark presents his grateful thanks to the Nobility and Gentry for their liberal patronage of the above Establishment, during a period of thirty years, and begs to state that the repeal of the duty on Glass enables him to offer his METALLIC HOTHOUSES at a greatly reduced price. These Houses are glazed with British Sheet Glass, in panes of from 24 to 30 inches in length, and of such thickness as to preclude all danger of accidental breakage, whilst that which arises from the action of frost is effectually prevented by the peculiar mode of glazing adopted. As a sample of his Metallic Hothouses, in which all the most recent improvements are happily combined, Mr. Clark refers to the magnificent range erected by him in the new Royal Gardens at Windsor, admitted by competent judges to be the most complete of its kind in the world.

BAKER'S PHEASANTRY, Beaufort-street, King's road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert. — ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, Chinabernacle, brent, and laughing geese, shelldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Polish, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

Sales by Auction.

TO GENTLEMEN, FLORISTS, and Others.

MESSRS. PROTHEROE AND MORRIS are instructed to sell by Auction, on the premises, Highbury Nursery, opposite Highbury Barn Tavern, on FRIDAY, Nov. 9th, at 11 o'clock, by order of the proprietor, the selected NURSERY STOCK, consisting of Fruit and Forest Trees, Ornamental and Deciduous Shrubs; also fine Evergreens, together with a few fine Camellias well set with bloom-buds, choice Dwarf Roses, &c. May be viewed until the Sale. Catalogues may be had of the principal Seedsmen; and of the Auctioneers, American Nursery, Leytonstone.

BROMPTON PARK NURSERY.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mr. JOHN SANGSTER and Mr. ROBERT DONALD, trustees for the above estate, to submit to an unreserved Sale by Auction, on MONDAY, Nov. 26 (unless previously disposed of by private contract, of which due notice will be given), the whole of the extensive and valuable STOCK of the BROMPTON PARK NURSERY, lately carried on by GRAY, ADAMS, AND HOGG, consisting of the well-known and celebrated Collection of Standard and Dwarf Maiden and Trained Fruit Trees, in a fine and healthy condition; large Evergreen and Deciduous Shrubs, including large Portugal and common Laurels, common fan-shaped and Irish Yews, American, Chinese, and Siberian Arbor-Vitæ, Laurustinus, Hemlock Spruce, Red Cedars, Green and Variegated Hollies, Evergreen Oaks, Lilacs, Spruce Firs, &c. Also a choice Collection of Pines, Cedrus Deodara, Cedars of Lebanon, and other Coniferous Plants; a valuable Assortment of Oaks, Ilex, Daphne, Crataegus, Æsculus, and other ornamental Trees; with a large Stock of Rhododendrons, Kalmias, Azaleas, &c. The Greenhouses with new and approved hot-water apparatus, Pits, Frames, Carts, and utensils. Also the stock of Seeds, Shop, Counters, and Drawers; Counting-house Desks and fittings, Iron Safe, &c. Catalogues are in preparation, and will be issued in due course.—American Nursery, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, BUILDERS, RAILWAY CONTRACTORS, NURSERYMEN, and Others engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are directed by the proprietor to submit to public competition, by Auction, on the premises, Barnet Nurseries, Barnet, Herts, situated 11 miles from London, on MONDAY, November 12, and two following days, at 11 o'clock each day precisely (owing to the number of lots), the valuable NURSERY STOCK (in convenient lots), consisting of handsome and large Cedars of Lebanon in pots, fine Weeping Ash, Hollies, Evergreen Oaks, Aucubas, Roses, Box, Arbutus, Portugal and common Laurel, Red Cedars, Fruit and Forest Trees in great variety, &c. The stock, which is in a first-rate condition, may be viewed 7 days before the sale.—Omnibuses leave the Archway Tavern, Highgate, at 12 o'clock at noon—Fare, 9d.; and the General Post-office at a quarter past 9 o'clock in the morning—Fare, 1s. 6d. Catalogues may be had on the premises, of the principal Seedsmen, and of the Auctioneers, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, FLORISTS, and Others.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Auction Mart, Bartholomew-lane, on THURSDAY, November 8, a choice collection of Standard and Dwarf Roses, comprising Bourbons, Perpetuals, Hybrids, Noisettes, Chinas, &c.; also a selected assortment of Ornamental Trees, viz., Ailanthus glandulosa, Purple Beech, Worked Thorns, Tulip Trees, Gleditschia, Tragacanths, Pinus excelsa, Cembra, morinda, Cedar of Lebanon, Cedrus Deodara, Arbor-Vitæ plicata, &c.; also a first class collection of DUTCH BULBS, consisting of very fine Double and Single Hyacinths, Tulips, Jonquils, Crocus, Anemones, Gladiolus, Snowdrops, Narcissus, &c.—May be viewed the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, BUILDERS, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by public Auction, on the premises, Caledonian Nursery, Caledonian-road, Pentonville, on MONDAY, Nov. 19, at 11 o'clock, in consequence of the lease being sold for building, the whole of the NURSERY STOCK, comprising fine Evergreens, Ornamental Fruit and Forest Trees, viz., Aucuba, common Laurel, China Arbor-Vitæ, Box, Green Hollies, Privet, Lilacs, Guelder Roses, Laburnums, Poplar, Sycamore, Lime, Mountain Ash, Birch, &c., Standard and Dwarf Apple, Cherry, and Pear trees, with Gooseberries and Currants; Greenhouse Plants, also a capital Greenhouse, Forcing house, nine-light Pit and Brickwork, Boxes, Lights, &c., together with the Dwelling House, consisting of three rooms, Shop, Wash-house, Shed, &c. May be viewed prior to the Sale.—Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

FARMING STOCK, CROPS, IMPLEMENTS, &c., ON "SHROFFOLDS FARM," LEWISHAM, NEAR SOUTH-END, KENT.

MESSRS. DAVIS AND VIGERS are directed by the Proprietor, who is quitting the Farm, to sell by Auction, on the Premises, as above, on TUESDAY, the 6th of November, at 12 for 1 o'clock, the whole of the well-selected and very choice LIVE and DEAD STOCK, viz.,—eight Yorkshire, Ayrshire, and Alderney Milch Cows, a young Bull, eight 2-year-old and three yearling Heifers, three fat Calves, Brood Mare, four Fillies, a 4-years-old Cart Mare, 10 active and seasoned draught Horses, Harness, Waggons, Carts, Ploughs, Harrows, Scarifier, Horse-hoes, Wash-butts, breeding Sows, store Pigs, two Ewes in lamb, Poultry, 75 quarters of Oats, 200 quarters of Wheat, and 80 quarters of Beans, all in the straw, 100 loads of prime Meadow and Clover Hay, 4 acres of Swedes, and 6 of Mangold Wurzel, a Rick cloth and poles, nearly new, a useful Cob, Gig, and Harness, and all other effects in and about the Farm. To be viewed the day before and on morning of Sale. Catalogues to be had on the Premises; at the principal Inns in the district; and of the Auctioneers, 8, Frederick's-place, Old Jewry. N.B.—Messrs. DAVIS and VIGERS are fully authorised to Let the Farm.

TO BUILDERS, NURSERYMEN, AND OTHERS.

MR. D. A. RAMSAY, will sell by Auction, on the Premises, Brompton Nursery, Fulham road, Brompton, on MONDAY, November 26, 1849, and following day at 12 o'clock, without reserve, the NURSERY STOCK, consisting of a very large quantity of fine Evergreens, standard and dwarf Roses, Fruit Trees, American Plants, &c.; a quantity of large Poplars, Limes, Acacias, &c.; and about 150 dwarf trained Peaches, Nectarines, &c.; from the stock of a Country Nurserymen.—May be viewed prior to the sale, and Catalogues had of the principal Seedsmen, and on the premises.

IMMENSE COLLECTION of Hyacinths, Narcissus, Ranunculuses, Anemones, Scillas, Crocuses, Standard Roses, Early Tulips, &c., comprising 100,000, by name, which must be Sold by Auction to the highest bidder, on MONDAY, Nov. 12, 1849, on the premises of Messrs. Lockhart, Florists, Passenham-green-lane, Fulham, without reserve, in consequence of a dissolution of partnership. May be viewed till the day of sale; and all persons who forward their addresses to Mr. Lockhart will be supplied by post with Catalogues as soon as they are printed.

ORCHIDS AND FITCHER PLANTS.

MR. J. C. STEVENS is directed by Messrs. Hugh Low and Co. to submit to Auction, at 38, King-street, Covent-garden, on TUESDAY next, Nov. 6, at 12 for 1 o'clock, a small importation of ORCHIDS which they have lately received from South America, in excellent condition, and comprising fine plants of Cattleyas, Oncidium Papilio, the best variety of O. Lanceanum, and other good things. Included in the Sale will be a few Aerides and some Nepenthes, amongst which are some of the finest plants of N. ampullacea ever imported.—May be viewed the morning of Sale, and Catalogues had.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, & others.
WOKING, SURREY.

Valuable NURSERY STOCK, 75,000 variegated Hollies; Flowering, Evergreen, and other Shrubs; Fruit, Forest, and other Trees. The property of Mr. GEORGE CHAPMAN, declining Business.

MR. WATERER will sell by Auction, on TUESDAY, November 6th, and following day, at 11 o'clock, upon the Premises, situate one mile from the Woking Station on the South Western Railway, the valuable NURSERY STOCK, comprising 9000 variegated Hollies of the best sorts, from 1 to 6 feet; 7000 Green Hollies; 1000 Magnolia grandiflora, from 1 to 4 feet; 4000 variegated and green Box, from 2 to 6 feet; 4000 Yews, from 4 to 8 feet; 5000 Chinese Arbor-Vitæ and Swedish Junipers, from 2 to 6 feet; 100 Sweet Bays; 200 Hemlock Spruce Firs, from 6 to 9 feet; 7000 common and Portugal Laurels and Laurestinus, from 2 to 8 feet; 800 Spruce and Silver Firs, from 3 to 10 feet; 20,000 Rhododendrons, Kalmias, Azaleas, Phillyreas, Arbutus, Alexandria Laurel, Aucubas, and other Ornamental Plants, 5000 Standard and Dwarf Fruit Trees, 10,000 Limes, and other large magnificent Plants; 700,000 transplanted and seedling Quick, and other valuable stock, well worth the attention of persons about planting.—May be viewed three days previous to the sale, and Catalogues had on the premises; of Mr. CHARLWOOD, Seedsman, Covent-garden; and will be forwarded on application by letter, inclosing four postage stamps, to Mr. WATERER, Auctioneer, Land and Timber Surveyor, Chertsey, Surrey.

TO GENTLEMEN, CONTRACTORS, AND OTHERS.
CHOICE NURSERY STOCK.

MR. PEACOCK is instructed to Sell by Auction, on the Premises, on MONDAY, Nov. 12, 1849, and following day, at 11 o'clock, the choice NURSERY STOCK, standing on five acres of land, being a detached part of Mr. WILLIAM YOUNG'S extensive Nurseries, at Milford, near Godalming, Surrey, comprising a great variety of Healthy Evergreen and Deciduous Forest and Shrubbery Plants, native and exotic; upwards of Two Millions of strong four years seedling and bedded Quicks, several thousands of twice-transplanted (4 feet and upwards) Larch, Spruce, Weymouth, Pinaster, Austrian, and other Firs; Hemlock Spruce, Cedar of Lebanon, Deodara, Taxodium sempervirens, and other choice and ornamental trees. The above plants are of the most healthy description, and will be sold, without reserve, in suitable lots for the convenience of purchasers, as the land is wanted to be cleared for other use. The Stock may remain till the first week in March, if required. Further particulars and printed Catalogues to be had 10 days before the sale; at the Mart; the principal Inns, in the adjacent County Towns; at Mr. Young's Nursery; and the Auctioneer's Agency-office, Godalming. To be viewed two days previous to the sale.—The Chichester and Portsmouth roads pass the Nursery, which is within 1¼ mile of the South Western and South Eastern Railways.

THE LATE MR. CLEMENT HOARE'S STOCK OF GRAPE VINES.

MR. HASLAM will sell by Auction, at the Mart, on WEDNESDAY, Nov. 7th, and SATURDAY, Nov. 10th, 10,000 VINES, consisting of Black Hamburgh, Muscadine, Burgundy, Sweetwater, Black Cluster, &c., grown from the eye, a few of them being in pots; worthy the attention of the Trade and those who, by a perusal of the late Mr. Hoare's admirable Treatises, have become interested in the culture of this inestimable fruit; at same time a case of Dutch Bulbs, and 200 Standard Roses.—Catalogues may be had at the Mart, and of the Auctioneer, South Essex Nursery, Epping Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MR. D. A. RAMSAY has received instructions to sell by Auction, upon the Premises, Brompton Nursery, Fulham-road, Brompton (situate one mile from Hyde-park Corner), on FRIDAY, Nov. 23, at 12 o'clock, by order of a Florist declining the Business, and removed for convenience of Sale, a quantity of Camellias and Chrysanthemums of sorts, Lilium lancifolium, &c.; also some large specimens of Azalea indica, Aloes, Yucca, Camellia, &c.; some choice ornamental Trees, with a quantity of Mushroom Spawn, a few Dutch Bulbs, Roots, &c. May be viewed the day prior and morning of Sale.—Catalogues to be had of the principal Seedsmen, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

CHELSEA, OPPOSITE CREMORNE GARDENS.

MR. D. A. RAMSAY will Sell by Auction, on the premises, King's-road, Chelsea, on TUESDAY, Nov. 20, and following day, at 12 o'clock, without reserve, by order of Messrs. DENNIS, all the uncleared lots of NURSERY STOCK, consisting of 2000 Aucubas, Laurustinus, Laurel, Holly, &c.; a large quantity of Mulberry Trees of all sizes, the prize collection of Gooseberries, standard and dwarf Roses, new silver-striped Ivy and other Creepers, a choice collection of large Camellias, standard Geraniums and Azalea indica, with about 100 species of Yucca, Aloes, Echinocactus, Cereus, and Mammillaria. May be viewed prior to the sale. Catalogues to be had on the premises; of the principal Seedsmen; and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, London.

D. A. RAMSAY begs leave to offer his services to the Trade and others, as an AUCTIONEER, VALUER, &c., and trusts that by devoting his personal attention, with strictly moderate charges, to give satisfaction.—References given, and letters addressed to Brompton Nursery, Fulham-road, Brompton, promptly attended to.

N.B. Parcels of Stock received and offered for Sale by Auction on the above premises. Terms sent on application.

TO BE SOLD, by Private Contract, a small NURSERY, within three miles of the General Post Office, having frontage to a high road. The Greenhouses extend about 300 feet in length, comprise about 5000 feet of glass, are mostly nearly new, and heated by first-rate hot-water apparatus. There is a capital Seed-shop and every necessary convenience. The whole filled with valuable stock, well suited for market or home-trade.—Apply (by prepaid letter only), to Mr. R. SMITH, Accountant, 34, Coleman-street, City, London.

TO NURSERYMEN.

TO BE DISPOSED OF, by Private Contract, a NURSERY AND SEED BUSINESS, within nine miles of London, consisting of a good Dwelling-house, five Greenhouses, three long ranges of Pits, and about 7 acres of Land, well stocked.—Direct to A. B., 168, Fleet-street, London.

TO MARKET GARDENERS, NURSERYMEN, & FLORISTS.

TO BE LET, and entered upon immediately, Seven Acres of Prime MARKET GARDEN LAND, at Putney, contiguous to the Railway, well stocked with thriving Fruit-trees, and furnished with a Cottage, Sheds, and Forcing-houses. Held for a term, at only 45l. rent. Coming-in, for Stock, &c., under 100l.—Apply to Mr. BARRETT, 2, Bell-yard, Doctor's Commons, London.

SURREY.

TO BE LET, within 16 miles of London, a useful FARM of about 130 acres, with good Farm Buildings and three cottages; the land is in high condition, a very considerable outlay having been recently expended. May be viewed, and particulars had, upon application to Mr. W. BUTCHER, Estate Agent, Epsom, Surrey.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY AND CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following REDUCED PRICES for cash, A reduction made on 1000 feet.

Sizes. Inches.						Inches.				Per Foot.		Per 100 feet.	
						Under 6	by	4	at	1¼d.	is	20	12 6
From 6	„	4	„			7	„ 5	„		2d.	„	0	16 8
7	„	5	„			8	„ 6	„		2½d.	„	0	18 9
8	„	6	„			10	„ 8	„		2¾d.	„	1	0 10
10	„	8	„			12	„ 9	„		2¾d.	„	1	2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from	3d. to 3¼d.	per square foot,	according to size.	
21 oz. „	3¼d.	5d.	„	„ „
26 oz. „	3½d.	7½d.	„	„ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

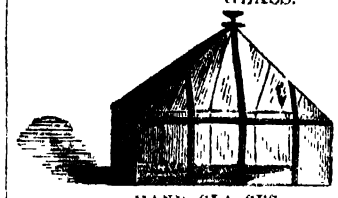
Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., 55, Soho-square, London.

JAMES PHILLIPS AND CO., 116, BISHOPSGATE STREET WITHOUT, LONDON, offer the following:—

GLASS.



		Glazed	
	s. d.		s. d.
12 in.	3 0	...	6 0
14	3 6	...	7 0
16	4 0	...	8 0
18	4 6*	...	9 0
20	5 0	..	10 0
24	6 0	..	12 0

If open at top 1s. extra.

HAND GLASSES.

HYACINTH DISHES.

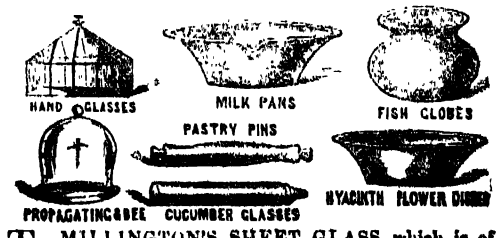
12 inch diameter, 2s. 6d.; 9 inch, 1s. 6d.; 6 inch, 1s. each.

MILK PANS.

12 in.	2s. 0d.	20 in.	4s. 0d.
14	2 6	22	4 6
16	3 0	24 ...	5 0
18	3 6	26	6 0

Glass Tiles and Slates, Propagating and Bee Glasses, from 2d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d.; 6 tubes, 10s.—JAMES PHILLIPS AND CO., 116, BISHOPSGATE STREET WITHOUT, LONDON.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



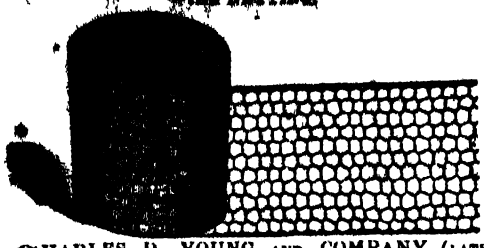
TMILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 3d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had on application at the warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

DIETETIC COCOA.

HOMŒOPATHIC PATIENTS, DYSPEPTICS, and Persons of Delicate Constitutions, are strongly recommended to use TAYLOR BROTHERS' DIETETIC COCOA, as being very superior to any preparation of the Cocoa Nut hitherto introduced. This article is manufactured on a peculiar principle, by which the oily portions of the nut are neutralised, at the same time its flavour, purity, and nutritious properties are maintained. It is an essential article of diet for those under Homœopathic Treatment, agrees with the most delicate digestive organs, is agreeable and soothing to the nervous system, and proves at the same time both invigorating and refreshing.

Sold wholesale by TAYLOR Brothers, at their Mills, Spitalfields, London, and retail, in 1 lb., ½ lb., and ¼ lb. tin-foil packets, at 1s. 4d. per lb., by most respectable Grocers and Tea-dealers in the kingdom; of whom also may be had TAYLOR Brothers' original SOLUBLE COCOA (only one-third the price of Coffee), the consumption of which article exceeds ONE MILLION POUNDS per annum—a fact which has induced many parties to manufacture spurious imitations, which, although somewhat resembling the appearance, are totally devoid of the essential and peculiar properties of the original and only genuine article. To guard against these counterfeits, TAYLOR Brothers recommend the purchase of their article in packets only which bear their name, with directions for use. Sold by all Grocers and Tea-dealers.

STRONG PENNING HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c., 23, PARLIAMENT-STREET, WESTMINSTER, LONDON; CASTLE-BUILDINGS, DERBY-SQUARE, LIVERPOOL; 123, HIGH-STREET, EDINBURGH; and 32, ST. ENOCH-SQUARE, GLASGOW, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

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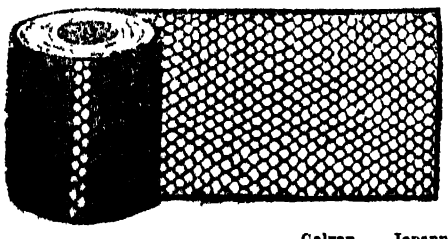

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DEDICATED, WITH PERMISSION, TO HER MAJESTY THE QUEEN and PRINCE ALBERT.

Ipswich Museum, 1849.

In presenting PORTRAITS of several of the HONORARY MEMBERS of the IPSWICH MUSEUM to the friends of its supporters, a brief explanation should be added of the motives which led to their publication. This Institution was established, in December 1847, mainly with the object of contributing towards the free instruction of the Working Classes in the science of Natural History, by providing for them a good Museum, Library, Lectures, and Classes. The object was no sooner known than the most cordial and generous offers of co-operation were made by many eminent naturalists, whose promises have been amply fulfilled, as opportunities have been afforded them.

Under a grateful sense of their disinterested kindness, I have been induced to present to our Members the Portraits of Gentlemen to whom we feel largely indebted for the prosperity which has attended the progress of the IPSWICH MUSEUM, at the same time I have hoped to confer upon them the only tribute of gratitude which it was in my power to offer, for the services and assistance they have rendered us—either by their interesting Lectures, or by their valuable donations to the Museum and Library. It was originally intended to have confined the issue of these Prints to the Members of the Museum, but so many applications for copies have been made by the friends of those whose Portraits have been taken, that I have obtained permission to issue a *limited* number of large India Proofs at 10*s*. 6*d*. each. They have accordingly been reserved for this purpose, and an early application is requested. Any profit that may arise from the disposal of these will be devoted exclusively to the funds of the Institution.

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TESTIMONIALS.

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DAVID EVANS."

"To Mr. JESSE ROSS, 73, New Walk, Leicester."

"Birstall, Feb. 21, 1849.

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"To Mr. JESSE ROSS." Your's, H. PAGET."

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 45—1849.] SATURDAY, NOVEMBER 10. [Price 6d.

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Erratum.—In last week's Paper, in Mr. Henry Shailer's Advertisement, front page, col. *a*, in the 5th line from the end, for "P. name, 1s.," read "per pair, 1s."

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Choice American Plants.		
Andromeda floribunda, fine established plants, well set with bloom, per dozen	20	0
25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name	20	0
25 American Azaleas, do. do. do.	15	0
6 Andromedas of sorts, including floribunda	8	0
6 Kalmias, one of a sort, by name	6	0
6 Ledums, do. do.	6	0
25 Hardy American Shrubs, one of a sort, by name	10	0
12 Rhododendrons, including scarlet, white, and rose, hardy varieties	12	0
New Hardy Yellow Rhododendrons, each 7s. 6d. to	10	6
Hybrid Rhododendrons, extra fine, with 30 to 50 bloom buds, each ... 3s 6d. to	5	0
6 Fine Hardy Magnolias, one of a sort, by name	10	6
50 Dwarf Roses, on their own roots, by name	16	0
12 Tea-scented Roses, one of a sort, by name, in pots	9	0
Standard and half-standard Roses, per dozen, 12s. and	15	0
Moss Roses, per 100	25	0
New Crimson Moss Rose, per doz.	6	0
Bourbon Roses, superior sorts, Rose La Reine and Perpetual Queen, per dozen	10	6
12 Greenhouse Azaleas, one of a sort, blooming plants	25	0
12 Choice Camellias, by name, ditto ditto	30	0
50 Choice Greenhouse Plants, one of a sort, by name	45	0
24 Choice Ericas, one of a sort, by name	15	0
Chrysanthemums of newest and best kinds, per dozen	6	0
Fine New Yellow Picotees and Carnations, of best sorts, per pair	2	6
Cinerarias, new choice varieties, per dozen, 6s. to	9	0
6 bulbs of the following beautiful Lilies, viz., Lancifolium album, punctatum, rubrum speciosum, intermedium, venustum, sanguineum, eximium superbum, canadense, belladonna, longiflorum, and japonicum, for	12	0
Cryptomeria japonica and 6 Choice Hardy Pinus, for	10	0
Glycine sinensis, extra fine plants in pots, 15 to 30 feet each	3	6

Lists of Greenhouse, Stove, and Orchidaceous Plants, and Garden Seeds of all kinds by post.
Albion Nursery, Stoke Newington, Nov. 10.

BARNET NURSERIES, HERTS.

WM. CORNWELL begs to call the attention of Gentlemen and the Trade to his extensive NURSERY STOCK, and solicits an inspection of the same, which is very fine this season, particularly the American Plants; upwards of 100,000 Rhododendrons, many of them from 4 to 12 feet, fine specimens, with a large quantity of Azaleas, Kalmias, Andromedas, Ericas, Ledums, &c. Ornamental Trees of all sorts, from 3 to 12 feet; also a large quantity of Spruce, Scotch, Silver, Larch, and Weymouth Pine Firs, from 2 to 12 feet; a large collection of Evergreen and Flowering Shrubs, Fruit and Forest Trees, Standard and Dwarf Roses, in quantities, of all the leading kinds, with every article in the Trade, at the lowest price.
W. C. begs to remind his Friends and the Public that the Sale by Auction, advertised to take place at the Barnet Nurseries, is not from the above.

HORTICULTURAL ESTABLISHMENT, BRACONDALE, NORWICH.

JOHN BELL, having disposed of the above, begs to inform Nurserymen and the Trade in general that he is SELLING OFF his NURSERY STOCK, at the following low prices, all warranted true and well worth their attention.

	£	s.	d.
Dwarf Maiden Peaches, Nectarines, and Apricots, including all the popular sorts, very fine plants, p. 100—	3	0	0
Dwarf Maiden Plums ... "	2	10	0
Do. Cherries ... "	2	0	0
Do. Pears ... "	2	0	0
Do. Do., on Quince Stocks ... "	2	10	0
Do. Apples ... "	1	10	0
Fastolff Raspberry, strong canes, true ... per 1000—	3	0	0
Cedrus Deodara, one year old, fine ... "	10	0	0
Fine Spanish Chestnut, 8 to 10 feet ... "	8	10	0
Strong 3 years transplanted Whitethorn ... "	0	4	0
If 50,000 are ordered at once ... "	0	3	6

JACKSON'S IMPROVED KIDNEY, THE MOST PROLIFIC OF EARLY POTATOES.

THOMAS JACKSON and SON have much pleasure in announcing that in consequence of their having a very heavy crop of their IMPROVED KIDNEY POTATO, they have reduced its price from 15s. to 10s. per bushel. All orders of one bushel or more delivered free in London, or at any station on the South Western Railway.
Nursery, Kingston, Surrey, Nov 10.

AN UNLIMITED STOCK OF SEEDLING AND TRANSPLANTED LARCHES, of the Finest Quality, at reduced Prices.

WM. WOOD and SON beg to solicit attention to their very extensive stock of the above, prices of which will be furnished on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

RENDLE'S NURSERY, PLYMOUTH.
ESTABLISHED 1786.

THORNS OR QUICKS.—10,000 FINE TRANSPLANTED THORNS from 12 to 15 inches for 3l. 10,000 One-year old Seedlings for 15s.
LARCH.—10,000 One-year old Seedlings for 20s.
SCOTCH.—10,000 One-year old Seedlings for 15s.
PEACHES AND NECTARINES.—Fine Dwarf Trees or Maiden at 15s. per dozen; small *Trained* Trees from 24s. to 30s. per dozen; *fine selected Dwarf Trained* at 50s. per dozen. Comprising all the best sorts in cultivation, true to name.
RHUBARB, "Mitchell's Prince Albert."—This has been fully proved to be the best early variety known. We have more than 1000 strong, large, and well-established roots, at 20s. per dozen. *These will produce abundantly next spring*—Smaller roots, 12s. per dozen.
RHUBARB, "Myatt's Victoria."—Very strong roots, 15s. per dozen; smaller roots, 9s per dozen.
RASPBERRIES, "Rendle's Large Beehive."—This is a large handsome variety, very prolific and delicious flavour, and has given the most complete satisfaction. Strong Canes, 20s. per 100 or 3s. per dozen. "Youell's Fastolff," 10s. per 100.
STRAWBERRIES, "Myatt's Eleanor," 10s. per 100; Cuthill's Black Prince, 12s. 6d. per 100; Eliza, 5s. per 100; Mammoth, 7s. 6d. per 100; Cole's Prolific, 5s. per 100; Cooper's Seedling, 5s. per 100.
CEDARS OF LEBANON.—We have a large stock of these in pots. Good Plants, 18 inches, 12s. per dozen; 3 feet, 30s. per dozen. Large handsome Plants in Pots, 4 to 6 feet, 5s. each; or, one quarter the price usually charged. *We have a large stock which must be cleared.*
TURKEY OAKS.—Fine, handsome trees, 6 feet high, well transplanted, 80s. per 1000, worth 15s. per 100.
BEST DOUBLE RUSSIAN MATS, 5l. per 100.
BLACK NAPLES CURRANTS.—Very superior to the old sort, 6s. per doz.
GOOSEBERRIES.—Some of the very best varieties in cultivation, 30s. per 100.
PORTUGAL LAURELS.—An immense stock will be sold unusually low. Fine plants, 18 inch, bushy, 20s. per 100; 3 feet, 30s per 100; 4 feet, 40s. per 100.
BERBERIS, (MAHONIA) AQUIFOLIUM.—A very large quantity, 18 inches, 16s. per 100. This is a fine shrub for underwood.
Weigela rosea, strong plants, 12 inches, 6s. per dozen; Parnettia mucronata and floribunda, 6s. per dozen; Ribes, double red, and albidum, strong plants, 18 inches, 9s. per dozen.
SEAKALE and ASPARAGUS.—In large quantities, from 10s. to 20s. per 1000.
Our new Autumnal Catalogue is just published, and will be sent, gratis, to any application.
Remittance, or reference in London, from unknown correspondents.
All orders above 5l. will be delivered free of carriage to any of the stations on the South Devon, Bristol and Exeter, or Great Western Railways. Steamers from this port to London, Dublin, Cork, Falmouth, Belfast, and Glasgow, three times a week.
The South Devon Railway is now open to Plymouth, the Station being adjoining our premises. For Catalogues and further information apply to
William E. Rendle and Co., Union-road, Plymouth.
ESTABLISHED 1786.

AMERICAN PLANTS.

HOSEA WATERER begs to announce he has just published a New and Complete Catalogue of his AMERICAN and CONIFEROUS PLANTS, which may be had on application, including two stamps for postage.

HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

MYATT'S LINNÆUS RHUBARB.

J. MYATT AND SONS can confidently recommend this variety as the best in cultivation. The most satisfactory proof of this assertion is the fact that the Market Gardeners round London and Manchester have planted the Linnæus Rhubarb more extensively than any other variety. It is extraordinarily productive, and about a fortnight earlier than the Victoria; added to this, it is held in general esteem for preserving and all culinary purposes. One-year planted roots, 1s. 6d.; ditto, Mitchell's Royal Albert, 1s. 6d.; Victoria, 9d. The usual Trade allowance.—Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford, Nov. 10.

ROBERT M. STARK, NURSERYMAN AND FLORIST, begs to intimate that his Lists for the season of the various articles noted underneath, are now ready, and may be had at his Nursery, or Seed warehouse, in Hope-street, viz.—Ornamental Trees and Shrubs Herbaceous and Alpine Plants, Ferns, &c., Forest Trees, Underwood, and Hedging, Descriptive Lists of Roses, Cinerarias, and Hollyhocks, the latter comprising several choice Seedlings of his own. The above may be had separate or combined. R. S. is desirous to effect changes of dried specimens, or other interesting Botanical objects.—Edgehill Nursery, Edinburgh, Nov. 10.

WILLIAM GREGORY begs most respectfully to offer the undermentioned NEW GERANIUMS and FUCHSIAS.

CHOICE SEEDLING GERANIUMS.

To be sent out on and after the 10th of November next.

LUCILLE BELMONT.—Of very dwarf habit, a free bloomer, upper petals blotched with dark puce, the lower petals striped with the same colour; good for bedding or pot culture. Price 7s. 6d each.

LUCIA ROSEA COMPACTA.—A seedling from Lucia rosea, a great improvement upon its parent, being a very free bloomer, of a compact habit of growth, well adapted for bedding or pot culture, and as a Rose-coloured Geranium, not surpassed. Price 5s. each.

SPLENDID NEW FUCHSIAS.

To be sent out the first week in May next.

DIANA.—The purest White Fuchsia yet introduced; a pure white tube, of wax-like consistency, stout and well proportioned. Sepals slightly tinged with pale blush, tipped with a pretty shade of green, corolla brilliant scarlet, flushed with crimson at the extremity. Price 10s. 6d. each.

ACTÆON.—An extraordinary fine large dark flower, tube and sepals of rich crimson, the sepals measuring 4 inches across, placed horizontally, corolla very large, bright purple, and of the beautiful barrel shape, so desirable; a very free bloomer, and of excellent habit; confidently recommended. Price 10s. 6d. each.

CORINIUM.—A well-shaped dark flower, tube and sepals bright crimson, of desirable consistency, corolla beautiful rich purple, a free bloomer, and of rather dwarf habit. Price 7s. 6d. each.

The usual discount to the trade upon all the above.

Royal Nursery, Cirencester, Nov. 10

TO PLANTERS.

THE SUBSCRIBER has to offer the following:

SEEDLING FOREST TREES, &c.

Ash, 2 years, per 1000 ..	3s. 6d	Elm, English, bedded	
Alders, bedded, 2 years.	5 0	2 years per 1000	12s. 0d
Beech, 2 years ...	5 0	Gorse, 1 year ...	7 0
Broom, 3 years ...	20 0	Hollies, 2 years ..	15 0
Fir, Spruce, bed, 5s. to 8	0	Oaks, 2 years ...	4 0

TRANSPLANTED FOREST AND ORNAMENTAL TREES.

Acacias, 5 to 6 ft., p. 100,	12s. 0d	Chestnut, Spanish, 3 to 4 feet, per 1000	50s 0d
Alders, 8 to 10 feet ..	12 0	Chestnut, Horse, 6 to 8 feet, per 100	12 0
Ash, 3 to 4 feet, p. 1000,	25 0	Do., 10 to 12 feet	25 0
,, 4 to 5 feet ...	30 0		
Birch, 2 to 3 ft., p. 1000,	25 0		

Elms, the true Huntingdon, raised here, 3 to 4 feet, 12s. per 100
,, ,, ,, 4 to 6 feet, 16s. per 100
,, ,, ,, 6 to 8 feet, 35s. per 100
,, ,, ,, 8 to 10 feet, 60s. per 100
,, ,, ,, 10 to 12 feet, 80s. per 100
,, Hertfordshire, at the same prices
,, common English, 3 to 5 feet, 25s. per 1000
Fir, Spruce, 2 to 3 feet, 30s per 1000; 3 to 4 feet, 40s. per 1000
,, Silver, 2 to 3 feet, 50s. per 1000; 3 to 4 feet, 70s. per 1000
Hazel, 3 to 4 feet, 35s per 1000; 4 to 5 feet, 45s. per 1000
Hornbeam, 8 to 10 feet, 30s per 100
Limes, red twigged, from layers, 2 to 8 feet, 12s. to 50s. per 100; 8 to 10 feet, 75s. per 100; 10 to 12 feet, 100s per 100
Maple, 2 to 3 feet, 25s. per 1000; 3 to 4 feet, 30s. per 1000
,, Norway, 8 to 10 feet, 25s per 100
Oak, English, 3 to 4 feet, 35s per 1000; 4 to 6 feet, 50s. per 1000
,, Turkey, 5 to 7 feet, 15s. per 100
Pine, Scotch, 3 to 4 feet, 20s. per 1000; 4 to 5 feet, 30s. per 1000
Poplar, Black Italian, 5 to 7 feet, 40s per 1000
,, Lombardy, 7 to 8 feet, 25s. p. 100; 8 to 10 feet, 30s. p. 100
Sycamores, 3 to 4 feet, 25s. per 1000; 4 to 5 feet, 30s. per 1000
Willows, Bedford, 4 to 5 ft., 30s per 1000; 5 to 6 ft., 35s per 1000

The large sizes of the above are all fine, well rooted stuff, having been twice transplanted, and are admirably adapted for planting where game abounds.

ORNAMENTAL TREES AND SHRUBS.

Acacia (R. binia), several fine species, dwarfs, 9s. per dozen; standards, 12s. per doz.
Ailanthus glandulosus, 8 to 9 feet, 9s. to 12s. per doz.
Althæa frutex, a fine collection, 6s to 9s per doz.
Ash, 12 fine sorts, amongst which are the gold barked, Chinese, heterophylla, &c., 12s. per doz.
Beech, Fern-leaved, 2 to 3 feet, 9s. per doz., 3 to 5 feet, 12s. per doz.; 6 to 8 feet, 18s. per doz.
,, Purple, 2 to 3 ft., 8s. per doz., 50s per 100; 3 to 4 ft, 10s. per doz., 75s per 100; 4 to 5 ft., 18s. per doz., 100s. per 100
,, Weeping, 18s. per doz.
Berberry, several sorts, 6s. per doz, 40s. per 100
Birch, Poplar-leaved, 25s. per 100
Elms, fastigiata, curl-leaved, silver-striped, &c., 6s. to 12s p. doz.
Thorns, 24 varieties, including new double scarlet, dwarfs 10s. per doz. standards, 12s. to 15s. per doz.
Laburnums, standards, fine, 6s. per doz, 40s. per 100
Lilac, sorts, 25s. per 100. Mountain Ash, 5 to 6 ft., 12s. per 100
Maple, Eagle's Claw and several choice kinds, 9s. per doz.
Oak, fine collection of American species, 6s. to 9s per doz., 30s. per 100
Roses, a fine mixture for shrubberies, 21s per 100
Aucuba japonica, 2 to 3 feet, fine, 50s. per 100
Laurels, 2 to 3 feet, 20s.; 3 to 4 feet, fine, 30s. per 100; Portugal, 2 to 3 feet, 50s. per 100; 3 to 4 feet, fine, 100s. per 100
Cedar, Red, 2 to 3 feet, very fine, 8s. per doz.; 3 to 4 feet, 12s.
Arbor-vitæ, Chinese and Siberian, 2 to 3 feet, 9s. per doz.; 3 to 4 feet, 12s. per doz
Other Ornamental Trees, Evergreens, &c., at similar charges, of which a Catalogue may be had.

Not less than 6 will be sold at the dozen price, 25 at the hundred price, and 500 at the thousand price. For smaller quantities a slight increase will be charged.

N.B.—The above charges are for ready money.

SUSAN WOOD, Nurseries, Huntingdon.

GEORGE JACKMAN, NURSERYMAN, Woking, Surrey, 1¼ miles from Woking Station, South-western Railway, begs to announce he has just published a new and complete CATALOGUE of his Ornamental Evergreens and Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., which may be had on application, inclosing two postage stamps.

G. J. wishes to remind his friends and the public the sale of Nursery Stock on the 22d inst. was at his brother's, Mr. Wm. Jackman, who has declined business.

TO NOBLEMEN, GENTLEMEN, RAILWAY CONTRACTORS, AND OTHERS.

JOHN PARTRIDGE has Six Hundred Thousand of good strong WHITETHORN QUICKS for sale this season, all three years transplanted, and he can deliver them at the Leighton Buzzard Station of the London and Birmingham Railway, from whence they can go to any part of the kingdom.

For further particulars direct to JOHN PARTRIDGE, Leighton Buzzard, Bedfordshire.

HOLLYHOCKS.

JAMES KITLEY begs to inform the lovers of this favourite flower that he has a quantity of fine double varieties, varying from white to black, with all the intermediate shades, at 2d. per hundred. Also, a few select show varieties, at 2s. 6d. each.—Lyncombe Vale Nursery, Bath, Nov. 10.

TO PLANTERS, &c.—The Subscribers having a large overstock of the following FOREST TREES, are disposed to sell them at very reduced prices. They have been transplanted, are healthy, and of fine quality. Prices on application.—SAMUEL FINNEY and Co., Gateshead Nursery, Newcastle-upon-Tyne.

Beech, 2 to 3 feet; Weeping Birch, 1½ to 2½ feet; Horse Chestnuts, 4 to 5 feet; Spanish ditto, 1½ to 2 feet and 2 to 3 feet; Bird Cherry, 2 to 3 feet; Hazel, 1 foot and 2 to 2½ feet; Lilac, purple and blue, 3 to 5 feet; Maple, English, 3 feet; Thorn Quicksets, 2 feet; Common Yews, 1½ to 2½ feet; Oak, seedling, 2 years old; Larch, ditto, 1 and 2 years old.

CAMPERDOWN WEEPING ELM.—The Subscribers respectfully invite attention to the above variety of ELM, which originated on the estate of the Earl of Camperdown, near Dundee. It is quite distinct from the common weeping variety, being more pendant; and it forms a very graceful ornament to the Pleasure-grounds. Fine Trees, 7 to 10 feet high, 3s. 6d. to 7s. 6d each.

Priced List, now ready, and to be had on application.

WM. URQUHART and SONS, Nursery, Dundee.

GREENHOUSE.—Wanted to purchase, a second-hand Greenhouse.—Apply by letter, prepaid, stating size, price, and where situate, to J. W., Messrs. Evans and Son, Builders, West-street, Walworth, Surrey.

THE SUBSCRIBER begs to offer the following list, which can be relied on as being the most healthy, vigorous, and well-established stock in the kingdom, and will make fine specimens in the course of the season.

ERICAS or HEATHS.

Ampullacea vittata	Eximea	Perspicua nana
Aristata ditto	Ferruginea	Propendens
Andromedæflora	Florida campanulata	Retorta major
Beaumontia	Hartnelli [lata	Rubra calyx
Bergiana	Hiemalis	Splendens
Bowleana	Hybrida	Syndriana
Bandonii	Juliana	Tricolor dumosa
Cavendishii	Lambertiana rosea	,, rubra
Cunninghamii	Lucitiora	,, Wilsonii
Coloranus	Leopodioides	Ventricosa, sorts
Depressa floribunda	Longipedunculata	Westcottii
,, rubra	Mirabilis	Willmoreana
Elegans	Metulæflora, true	

And many other varieties—12s. to 21s. per dozen.

AZALEAS.

Alba lutescens	Duke of Devonshire	Murrayana
,, magna	Dilecta	Mundula
Apollo	Exquisite	Optima
Ardens	Flora pleno rubra	Obtusa
Aurora	Formosa	Perryana
Broughtonii	Gledstanesii	Rosea superba nova
Blanda	Hebe	Refulgens
Coronata	Ignescens	Variegata
Coccinea superba	Lateritia grandiflora	

12s. to 21s. per dozen.

GERANIUMS.

Armida superba	Flamingo	Norah
Agricola	Forget-me-not	Ondine
Prunette	Gustavus	Orion
Bacchus	Guilaime	Phyllis
Brilliant	Gazelle	Plutarch
Beauty of Clapham	Hebe's Lip	Prometheus
Black Knight	Jenny Lind	Queen Victoria
Belle of the Village	King Hudson	Rolla
Clarinda	Lamartine	Rosamond
Cassandra	Lalla Rookh	Sparkler
Cavalier	Miss Bernus	Superlative
Centurion	Minna	Sylvia
Chimborazo	Mrs. Cavendish	Terpsichore
Cupid	Miss Holford	Windsor Castle

21s. to 42s. per dozen.

CINERARIAS.

Attila	Cerito	Glacina
Alboni	Defiance	Maritima
Amanda	Grandissima	Maid of Artois
Aucuba	Grand Master	Newington Beauty
Beauty of Peckham	Lady Tamworth	Rosetta
Beauty of St. John's Wood	Lady Cotton Sheperd	Resplendens
Beauty of Uttoxeter	Lord John Russell	Satellite
Crimson Perfection		Standard

12s. to 21s. per dozen.

STOVE PLANTS.

Æschynanthus pulcher	1s 6d	Hoya Cunninghamii ...	2s 6d
,, speciosus (strong)	3 6	,, imperialis ...	5 0
,, Lobbii	1 6	Impatiens or Balsamina repens, per doz. ...	6 0
Allamanda cathartica .	1 6	Ixora coccinea, strong, 1s. 6d. to	2 6
,, grandiflora ...	2 6	Lagerstræmia indica...	2 6
,, Schottii ...	3 6	Plumbago Larpentæ, per doz.	6 0
Achimenes Loudonii ...	2 6	Rondoletia speciosa major ... 1s 6d. to	2 6
,, ocellata ...	2 6	Stephanotis floribunda, 1s. 6d. to	2 6
Browallia Jamesonii, per doz.	6 0		
Franciscea hydrangeæformis	3 6		
,, acuminata ...	2 6		
Hibiscus hybrida .	2 0		

Select Greenhouse Plants, 12s. to 21s. per dozen

Select Epacrises, 12s. to 21s. per dozen Select Chrysanthemums, inclusive of all the new varieties, 6s. to 18s. per doz.

New Verbenas, 6s. to 12s. per doz Zauschneria Californica, 6s. per doz.

When purchasers make the selection, the higher sum per dozen will be charged. All orders to be accompanied with a post-office order in favour of WILLIAM JAMES EPPS, Bower Nurseries, Maidstone.

VIOLETS.

ROBERT SHACKELL, of Lansdowne Nursery, Upper Bristol-road, near Bath, begs to inform the Public that he has for sale the plants of a NEW AND DOUBLE VIOLET, which has been named the "RUSSIAN SUPERB." The advantages which this new Violet possesses above all others are, its exquisite fragrance, its robust habit, and profusion of bloom.

From various publications, which speak in the highest terms of the "Russian Superb" Violet, the following need only be given: *Gardeners' Chronicle*, Nov. 11, 1848—"R. S.: Your seedling is highly scented, and appears to be an improvement on the Russian." *Gardeners' Journal*, Oct. 20, 1849—"R. S., Bath: We have much pleasure in testifying to the improvements made by you in this tribe of flowers, as is evident in the comparison invited by a close inspection of the sample sent of the old Russian Violet and your seedling 'Russian Superb.' The following points of difference exist, and to them we call the attention of all lovers and growers of this odoriferous race of flowers: 'Russian Superb' is a better formed flower than the old Russian, and much larger petals, better shaped, and more fully expanded, showing to advantage a nice white centre, the whole bloom being free from that crumpled half-closed appearance so general with these flowers. The perfume is delicious, and the extreme abundance of the bloom passes all question. On the plant before us there are 27 blooms, fully expanded and of brilliant colour, and the potted plant fully bears out your description of its inclination to form a tree-violet. The fact of its beginning to bloom in August and continuing till the end of March, is a recommendation of itself. In our opinion, 'Russian Superb' will entirely supersede the growth of the old Russian for all the purposes this variety has hitherto been cultivated; its extreme pre-eminence in point of beauty, as well as other properties, being indisputable. We thank you for the plants which accompanied the bloom for our opinion, and shall have much pleasure in cultivating them."

A bouquet of the "Russian Superb" Violet was sent recently to the Queen, and has been officially acknowledged to the grower as proving acceptable to Her Majesty.

Price of the "Russian Superb" Violet, 18s. per dozen.

R. S. has also a pure white, sweet-scented, winter-blooming Violet, at 9s. per dozen; also five other sweet-scented varieties, at 3s. per dozen, namely, Double White Violet, Double Red, Neapolitan, Russian, and Double Perpetual Tree-violet.

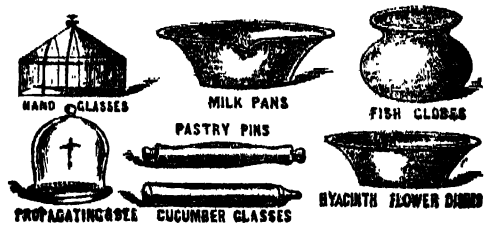
A remittance must accompany all orders. When a dozen are ordered, they are delivered at the Bath station of the Great Western Railway, package free.

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15l. 10s.; a do. do. 15 by 10, 22l. 10s.; a do. do. 18 by 12, 28l. 10s.; a do. do. 21 by 12, 32l. 10s., including a plan for brickwork. 1½-inch Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 11½d. per foot; 2-inch do., 1s. per foot.—J. LAWIE'S Machine Hothouse Works, Stamford-hill, Middlesex.

HEATING BY HOT WATER.

J. WEEKS AND Co., King's-road, Chelsea, Patentees and Manufacturers of HOT-WATER APPARATUS, Economical Boilers of all sizes; the fire warranted to last 15 hours without attention. To be seen in extensive operation at their Show Establishment, King's-road, Chelsea; and also at most of the Nobility and Gentlemen's Seats in the country, and the London Nurseries, &c.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had on application at the warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

GRAY, ORMSON, AND BROWN, Denvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company at London, in their Botanic Garden at Chelsea. Mr. Kinghorn, the Curator, will kindly show the work, and answer any inquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

GRAY, ORMSON, and BROWN, have also the honour of referring to many of the nobility and gentry in the county, and immediately of the London Nurseries.

N.B. Plans and Estimates furnished free.

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Ash, Beech, Birch, 15s. to 30s. per 1000; Spanish Chestnut, 20s., 25s., and 40s.; Larch Fir, 5s. 6d. to 20s.; Spruce, 20s., 30s., and 40s.; Scotch, 10s., 15s., and 20s.; Pinaster, 10s., 15s., and 20s.; Sea Pine, adapted for exposure to the sea, 15s., 25s., and 40s.; Mahoxia, for cover, 40s. to 60s.; Hazel, 15s., 20s., and 25s.; English Oak, 15s., 20s., and 40s.; Poplar, 20s., 30s., and 40s.; Quicks, 5s., 7s. 6d. and 10s.

Planting contracted for to any extent from 5l. to 20l. p. acre.

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Rhododendron ponticum, 2 to 3 inches, 20s., 40s., and 60s per 1000; 1 foot, single stems, fit for working, 10s. per 100; 1½ to 2 feet, strong, 20s. to 40s. per 100, fit for planting out at once to cover; 4 to 6 feet, single stem, for working the beautiful scarlet and other fine kinds, 50s. per 100. Tree Rhododendrons may thus become as generally cultivated as Tree Roses. Scarlet Rhododendrons, 18s. per dozen; hybrid scarlet, blue, lilac, and white, with large handsome trusses of flowers, 4 to 6 inches, 28s.; 1 foot, 40s. per 100; Kalmia latifolia, 2 to 4 inches, 8s. to 12s. 6d. per 100; 1 to 2 feet, blooming buds, 50s. per 100; 2 to 3 feet, fine, 75s. per 100; Epigæa repens, 50s. per 100; and all other American plants at equally low prices.

Dwarf Rose Stocks for working, 8s. per 100; Single Camellias, 25s., 40s., and 50s. per 100, fit for working; Double Camellias, of sorts, on own roots, 6 to 9 inches, 12s. per dozen; Pinus (Abies) Douglasi, from seed, 6 to 9 inches, 10l. per 100 or 30s. per dozen; Arbutus, 6 to 12 inches, 8s. to 12s. per 100; 1 to 1½ foot, 20s. per 100; 2 feet, 30s. per 100; Laurel, 8s. to 20s. per 100; Laurustinus, bedded, 40s. per 1000, 3s. per 100; Variegated Holly, 1 foot, 25s. per 100; Clematis azurea grandiflora, 6s. per dozen, 42s. per 100; Deutzia scabra, 2 feet, 12s. 6d. per 100; Common China Rose, 12s. 6d. per 100; Tree Roses of the most select kinds, 5l. per 100; Dwarf Roses, 50 sorts named, 50s. per 100; Double White, Double Red, and New Crimson Thorns, 0s. per 100, 6s. per dozen; Large Dutch Honeysuckles, 12s. 6d. Per 100; Giant Irish Ivy, 8s. per 100.

☞ The prices are for wholesale, if ordered in less quantities a higher price will be charged. All orders above 5l., carriage paid to London.

CHARLES DALY AND SON beg to inform the Trade and Public that they are determined to sell their stock of THORN QUICKS. 1-year Seedling Thorns, 1s. per 1000; ditto, fine, 1s. 6d. per 1000; 2-years ditto, fine, 2s. 6d. per 1000; 1-year transplanted, 3s. per 1000; 2-years ditto, 4s. per 1000; 1-year Seedling Ash, 1s. per 1000; 2-years ditto, 1s. 6d. per 1000; Common Laurel, 1 to 1½ foot, 9s. per 1000; Portugal Laurel, 1½ foot, 6s. per 100; Broad-leaved Irish Ivy, 2s. 6d. per 100; Furnished Rhododendron ponticum, 25s. per 100; Irish Yews, 1 to 1½ foot, 20s. per 100; ditto, ditto, good plants, 24s. per 100; ditto, 2 to 2½ feet, 30s. per 100; ditto, 3 feet, 100s per 100; ditto, 4 to 5 feet, 5s. each; Common Yew, 2 feet, 25s. per 100; Scarlet Limes, 6 to 7 feet, 8s. per 100; 1-year Evergreen Cypress, 2s. per 100; 2-years old, ditto, 3s. per 100; Haws, 1s per bushel; Holly-berries, 4s. per bushel; 1-year Seedling Larch, 1s. 6d. per 1000; 2-years ditto, 3s. per 1000; 1-year Seedling Alder, 1s. 6d. per 1000; 2-years Seedling Beech, fine, 2s. 6d. per 1000; 1-year Seedling Birch, 1s. 6d per 1000; 1-year Seedling Sycamore, 1s. 6d. per 1000; 2-years Seedling Scotch Fir, 1s. 6d. per 1000; Evergreen Oak, good plants, 3d. each; Andromeda, of sorts, 6d. each; Ledums, ditto, 6d. each; Kalmias, ditto, 6d. each; Azaleas, ditto, 6d. each; Cotoneaster microphylla, large plants, 6d. each; Erica, of sorts, hardy, 6d. each; Juniper, 2 feet, 7d. each; Evergreen Berberry, 18 inches, 2d. each; Variegated Holly, fine plants, 1s. each; Chinese Arbor-Vitæ, 6d. each; Aucuba Japonica, 2 feet, 6d. each; Sweet Bay, 1d. to 2d. each; 2-years transplanted Hazels, 20s. per 1000; 3-years ditto, 25s. per 1000; Forest Trees, 2 and 3-years transplanted, 10s. per 1000; fine Trained Pears, Plums, and Cherries, 2s. 6d. each; ditto Peaches, 5s. each; Cabbage Seed, Drumhead, 1s. per lb.; ditto, Early York, 1s. 6d. per lb.; Seed Potatoes, Golden Dwarfs, 1s. per stone; ditto Fox's, 1s. per stone; ditto, Custers, 1s. per stone; ditto, Early Wellingtons, 1s. per stone; ditto, 40-Folds, 1s. per stone. Long White Kidney Potatoes, 1s. per stone. Garden Rakes, 1d. per tooth; ditto Reels, 1s. 6d. each; Shop Twine, 7d. per lb.; Garden Line, and Sash Cord, 9d. per lb.

N.B. Free to Liverpool or Glasgow. We do not pay Freight for Forest Trees, Hazels, nor Laurels. Five per cent. for cash, or the usual credit given by naming any respectable Seed Merchant in London.—Coleraine, Nov. 10.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 10, 1849.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	Nov.	12	Medical ..... 8 P.M.
			Geographical ..... 8½ P.M.
			Syro Egyptian ..... 7½ P.M.
TUESDAY,	—	13	Civil Engineers ..... 8 P.M.
			Medical and Chirurgical ..... 8½ P.M.
			Zoological ..... 9 P.M.
			Literary Fund ..... 3 P.M.
WEDNESDAY,	—	14	Meteorological ..... 8 P.M.
			Society of Arts ..... 8 P.M.
			Entomological ..... 8 P.M.
			Pharmaceutical ..... 9 P.M.
THURSDAY,	—	15	Antiquarian ..... 8 P.M.
			Royal ..... 8½ P.M.
SATURDAY,	—	17	Geology ..... 2 P.M.
			Pathology, Medical ..... 8 P.M.

WHEN Sir ROBERT PEEL arrested the progress of famine in Ireland by an inundation of INDIAN CORN, he did that which was worthy of so great a statesman. Proprietors and enthusiasts have however inferred that because he found it useful to feed the poor upon such corn, it must necessarily have been his wish to bring it into cultivation in these islands. We will engage to say that the right hon. gentleman wished no such thing; he would as soon have thought of encouraging his countrymen to grow rice or sugar. The project has not even the merit of novelty; it has been repeatedly tried and found impracticable. COBBETT did his best to push the crop into notice, and his powers of persuasion were not small; but he failed, although he brought experience in its cultivation, and a goodly amount of common sense, to aid the cause. The attempts were all failures; COBBETT did not know that climate required to be considered in these matters. He evidently thought that plants were as indifferent to climate as man himself.

The mistake was pardonable at the time when COBBETT wrote. But men of intelligence are better informed on all such points in our day.

To Mr. WILLIAM KEENE, "Engineer of mines and member of the Royal Academy of Bordeaux," as we learn from himself, has been reserved the honour of seriously reviving COBBETT's folly. He has persuaded the Commissioners of Woods and Forests to let him try some experiments in St. James's Park, a good move on his part, inasmuch as simple people will therefore imagine that his scheme is viewed with official favour. Both London and country newspapers have puffed his operations; a corps of seedsmen has undertaken to vend the learned gentleman's "new hybrid," at the modest price of 10*s.* 6*d.* a bag, which is only eight guineas an acre for seed; and he has himself published a pamphlet on the subject, in which he thanks the Royal Agricultural Society for the attention he received from their Council, quotes a *New* Theatre of Agriculture published in 1713, says that "the reason for Maize succeeding so rarely in England is that the cleaned seed only is sown, whereas the writer sows it with the rough pellicle as gathered"—a piece of information which is much too recondite for the comprehension of simple men; and, finally, by way, we presume, of really astonishing his readers, he suggests that "every farmer will find it advantageous and satisfactory to have Maize *bread* in his house and at his table." The only difficulty is how to make it eatable.

Mr. KEENE does not, however, pretend that the Maize which is to make the fortunes of all the fortunate purchasers of his half-guinea bags is any common Maize. Quite the contrary; his is a new hybrid, obtained from the Maize of the Pyrenees—a sort which "has been the food of the Basques from time immemorial, *and in all probability is as ancient with them as their possession of the country;*" a very original conjecture certainly, considering that Maize is a native of America. We should like to know how this "new hybrid" was obtained, a point upon which Mr. KEENE is not so communicative as might be expected.

We should have thought all this beneath notice, and unfit to bring before men of any intelligence, but the Woods and Forests have patronised Mr. KEENE, and patrons give nonsense plausibility. We shall therefore say a few words, and a few only, in seriousness respecting this notable project of introducing half-guinea Maize-bags into fashion—we beg pardon—of introducing to JOHN BULL the "new hybrid," of unknown parentage, but cultivated in the Pyrenees before its discovery in America, whence it was originally imported.

The existence of dwarf and early varieties of Indian Corn in some European countries, is no very notable discovery. *Maïs quarantain*, and *Maïs à poulet*, are names with which we have been familiar from our boyhood, little early sorts cultivated in Lombardy, and some of the more northern Maize districts of France. COBBETT's Corn is another of the same race. These varieties ripen very well in England in gardens, in such summers as the last; and so will others of a larger growth. Ripe specimens of Forty-day Maize, and of COBBETT's Corn, were exhibited on Tuesday last to the Horticultural Society by Mr. CHARLWOOD, the eminent seedsman in Covent-garden; they had been sown in a garden at Putney, in the middle of May, and raised without heat. This has been done before and may be done again. Every gardener of the least experience knows that.

But what then? Will any sane man pretend that such experiments show the cultivation of Maize in England to be *profitable;* that corn, of far better quality than the English growth, being quoted in Mark-lane at 27*s.* per quarter. Can any reasonable being believe that a crop which requires at least 120 days of hot dry weather, and a rich soil, can be grown profitably in a climate like ours, the finest climate in the world, and the richest land, with scarcely rent or taxes to encumber it, being in the field against us. The notion is preposterous. There are pitfalls enough for farmers without baiting a new one with Indian Corn. But possibly Mr. KEENE would have it *protected.*

The nature of Indian Corn is well known. BOUSSINGAULT's description of it is one of the latest and best. "Maize," says this great authority, "succeeds in all kinds of soil, provided they are suitably manured; I have seen excellent fields in sandy land and in the heaviest clay. The treatment which it requires is such as is necessary to other cereal crops; it is *climate alone* which determines its fitness for a given locality; it must have a proper amount of heat, and more especially security against too low a temperature. *The susceptibility of Maize in regard to climate appears to me to be exactly analogous to that of the Vine, and I doubt the wisdom of attempting to cultivate it on a large scale in places where Grapes do not regularly ripen.*"

If Mr. KEENE expects men, in the presence of practical evidence like this—for theory has no part in the statement—*to* listen to romances about Indian Corn, he ought to explain, upon evidence that can be examined, the money profit per acre of its field culture upon an average of years. This he has hitherto shrunk from doing. He merely, in a dashing off-hand way sets down the yield of an acre of Maize as being worth 16*l.* 5*s.*,* while the expenses are not greater than those of Turnips or Mangold Wurzel—a somewhat astounding statement, considering what the cultivation really is, and what the mere cost of husking it. Upon this point we must extract from Mr. KEENE's pamphlet a morsel which, for Arcadian simplicity, is unrivalled in the annals of husbandry. After describing the process, which is to be performed in the evening of the day that the Maize is brought in from the field, he proceeds thus: "The two strongest young men of the party carry away the baskets, and empty them in some dry place. *The whole party sing songs in chorus during the work*, which, supposing you to have three people for every quarter of Maize to be husked, beginning at 8 o'clock, *is finished about midnight, and a plate of hot boiled Chestnuts, a slice of Maize bread, and a cup of wine is given to each at the end of this merrily and* GRATUITOUSLY *performed task.*" Only fancy a Somersetshire labourer, at the end of a hard day's work, sitting down till midnight husking Maize, and the generous master giving him boiled Chestnuts and a glass of wine instead of wages.

> This course shall make our fields to laugh and sing;
> This star its blessings to the plough shall bring;
> This care our valleys crown with golden grain,
> And spread rich cattle over the teeming plain.

Amiable enthusiasm! What a pity that fancy and reality should have such small resemblance to each other.

THE deficiency in AMERICAN COTTON, and the reported discontinuance of the experimental culture in India, having again excited attention to this subject, we resume our observations on this important plant, trusting that we shall be able to detail some successful, instead of the series of unsuccessful experiments, and at the same time point out localities where there is further probability of success.

We have seen in Bengal proper that failure seems to have been chiefly owing to over-luxuriance in a rich soil, and moist, warm climate; while in the north-western provinces failure was due to dryness combined with heat: still, in the former, we thought that success might be attained by selecting poorer soils and the more open situations, attending, at the same time, to drainage and pruning; also to the best times for sowing and to the destruction of insects. In the more northern parts of the province, such as Rungpore, success seems easily attainable, as the American Cotton plants which had been introduced and cultivated even by the natives required to be propped, to prevent the branches breaking down from the weight of produce. In the hotter and drier parts of the north-western provinces, we believe that deeper ploughing and closer planting, with the aid of irrigation, in some cases before the rains, and in others after their cessation, would secure a crop of American Cotton, even in situations where the experiments have failed.

In our account of the experimental culture in the north-western provinces, we stated that even when Dacca was most famous for its Cotton manufactures, Bengal depended much upon the import of raw Cotton from Surat, and upon that which reached Bengal by the Ganges. Some of this was cultivated in the Gangetic Doab and some in Bundlecund, but a portion reached the Ganges from Central India, or, as it was commonly called, the Deccan. We now know that this central region forms a somewhat triangular but irregular surfaced table land, supported on the south-east and west by prolongations of the Indian ghauts, and on the north by the range of mountains which stretch entirely across India from the Ganges to Guzerat. Of the rivers of this region, some, as the Nerbuddah and Taptee flowing to the west fall into the Gulf of Cambay; the Soane and others join the Ganges on the east, while the Godavery and Mahernuddy, meandering to the south-west, run into the Bay of Bengal. It is curious that the Cotton of this region has long traversed the country in these three directions. That carried to the east used to be shipped at Allahabad, but of late chiefly at Calpee and Mirzapore, for transit down the Ganges. The western stream of this commerce has greatly increased, and the Cotton is now well known at Bombay by the name of the Oomrowtee, while that to the S.E. has nearly ceased since the calico manufactures of

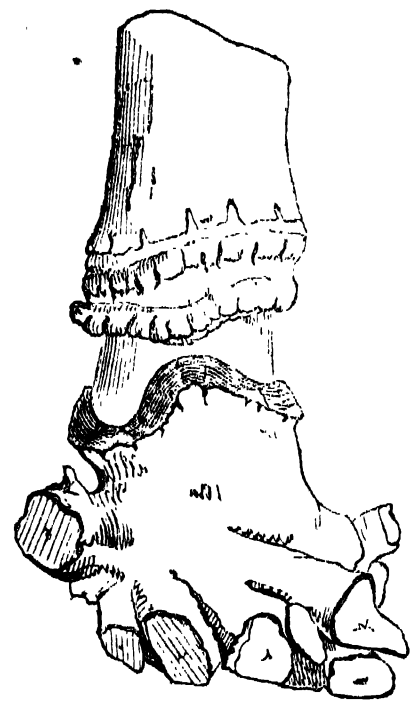
* In order to obtain this result, he values his wonderful hybrid at 35*s.* per quarter; but the last quotation in Mark-lane is 27*s.*, as "the top price of the finest American yellow." He also takes 35*s.* for Haricot Beans; the real value of which, in half our summers, is about the expense of gathering and drying to dry them. Deduct 2*l.* 8*s.* as over-estimate of Corn, and 1*l.* 15*s.* as that of Beans, and his estimate shrinks to about 12*l.*

the coast and circars have been destroyed by the more cheaply manufactured goods of Manchester.

The tracts of country most favourable to the growth of Cotton belong chiefly to the Nizam of Hyderabad and to the Rajah of Nagpore. The valley of Berar is considered the most suitable, though much excellent Cotton is also produced in the country to the eastward, as in the vicinity of Hingunghal. The Cotton which can be had in Berar for about 1½*d.* per lb., can, it has been stated, be used instead of American for more than 50 per cent. of our manufactures—that is, for all yarns under No. 20—if sold for about 15 per cent. less than the American. The quantity which could be cultivated is so much greater than what is now produced, that it becomes both interesting and important to ascertain what are the peculiarities of soil and of climate which cause it to produce this superior Cotton, and to enquire whether they are such as to render it probable that American Cotton could also be produced in the same regions. Before proceeding, it cannot but strike some of our readers, that the fact of good Cotton being produced at a distance of 300 or 400 miles from the sea, militates against the theory of a saline atmosphere being necessary to the production of good Cotton, and also apparently against our inference that a certain degree of atmospheric moisture is essential; for it might be supposed that the dryness would be greater in proportion to distance from the coast, especially as we have seen that drought was the chief cause of failure with American Cotton in the Doab and Bundlecund. But this apparent exception only confirms the rule which we have deduced, and which is confirmed by American Cotton being grown in the dry climate of Egypt with the aid of irrigation. The range of mountains which form the northern boundary of the tract in question seems to arrest the air loaded with vapours from southern regions and to cause its deposition on their sides, and thus the countries in their vicinity are kept in a moister state than would otherwise be the case. Instead of theory, it is more satisfactory for our present purpose to refer to the observations of one of the American planters, who on being transferred from Bengal, marched across the country in question from Mirzapore to Bombay, and made it his especial object to observe its fitness for the growth of Cotton. Mr. MERCER first examined this Cotton at Mirzapore, and thought it better than fair American. During his progress he met with immense droves of bullocks laden with the Cotton of Oomrowtee and with that from Hingunghal. The latter he describes as "like all the Nagpore Cotton he had seen, of fair length and fineness, colour excellent, and, if little better cleaned, would certainly equal good Mobile or Upland Georgian. It has none of the harshness so common in the Cottons of the north-western provinces." Subsequently he states, as he had heard from Mirzapore, that the Hingunghal Cotton fetches 1½ rupees more at that place than the Oomrowtee. "It is to be regretted," as observed by Colonel SLEEMAN, "that Mr. MERCER did not visit Hingunghal and Oomrowtee to ascertain the cause of the superiority of the Oomrowtee Cotton over that of the Nerbuddah valley. But when at Jubbulpoor, he observes that he learned from Mr. M'LEOD 'the following favourable facts in regard to the climate of this region. The hot winds blow here very mild, and not longer than two months at the extreme point. The rains are never later than the 15th of June, and are always abundant.' Again, when at Hoshungabad, in the Nerbuddah valley, he states, 'It appears on all hands here that a scarcity of rain is what never occurs, and that the greatest cause of failure in the Cotton crops is the superabundance of it." "Though grain crops are the staple crops of the valley," Mr. M. further observes, "grain is often a perfect drug;" he found it selling in the bazaars at the rate of 100 lbs. for a shilling; but Cotton is the most important in all the villages bordering the rivers where the land is saving, and it is the crop of all others, probably Hemp excepted, that produces the most ready sale." "The natives consider no land suited for Cotton unless the water runs quickly and thoroughly off. For this reason, it is only sown in the broken country near and among the ravines." He observed "much rich but level land left uncultivated," whence he infers, that as Cotton is not there, as in Bundlecund, "one of the riff-raff crops," the ryots would certainly fall into a plan of cultivation (the American) which would make the very lands they now reject the most productive." Though Mr. MERCER's published journal concludes at Baitool, he seems subsequently to have visited Oomrowtee, in the Berar valley, for in a memorandum he states "that between Ellackpoor and Oomrowtee he found that Cotton formed one-half of the whole cultivation, and that the merchants at the latter place accounted for the superiority of the cotton of Hingunghal to the care in gathering and cleaning, and to the very superior land in that district. The Cotton is planted without admixture of other crops, and is sown in rows of a cubit or a little less in width, thinned to a single stalk in a place. There is nothing, however, like ridging; and the same complaint I heard in the valley of the Nerbuddah, of too much rain, is also made here. From the omission of that one single process, the crop is at the mercy of every shower that falls." In the picking, housing, and cleaning, everything requires to be improved.

In consequence, probably, of the above regions being chiefly beyond the territories of the East India Company, none of the experimental farms seem to have been established there, though both soil and climate seem to promise a favourable result. To the westward some experiments have been made to grow American Cotton in the Deccan, but Dr. GIBSON has observed that the climate is often too hot and dry, and that the plants presented a poor and stunted appearance. Attempts have also been made, and we believe are still in progress, to grow American Cotton in Khandeish, and it is probable that in the moister districts, at the foot of the hills, it will succeed. But the greatest success has attended the experimental culture in the southern Mahratta country, to which we shall next proceed.

A CORRESPONDENT has sent us a CAMELLIA STEM, of which the annexed is a representation, with the



following memorandum: "I send part of the stem of a Camellia; several rather large plants have gone off with us lately, apparently either from a failure in the original grafting, or from some injury wilfully done to the stem. I should be glad of your opinion as to which of these is the probable cause, and of any remedy for the evil, if you can suggest one." Of the cause there can be no doubt. The stems have been "ringed" at the ground level; why we know not; it is for the gardener to explain. Of course the result has been the destruction of the plants, just as it would have been that of the branch, had it been confined to a branch, and practised unskilfully, as in the present instance.

The specimen also presents some interesting physiological evidence on a small scale, and we shall draw attention to it again, without much loss of time.

DISEASES OF PLANTS.

(*Continued from p. 693*)

GENUS XXII.; *one species.* SELONE* OR RICE.—This name is given to a malady by which the whole or part of the panicle of the Rice is destroyed; it only bears very small dried-up grains, containing nothing but the chaff which ordinarily encloses the farinaceous matter. This disorder causes great devastation in Rice grounds sown late, or when the Rice has been long in germinating, and the summer is cool, and interrupted by frequent cold rains. Some persons have assured me that it is caused by certain winds, of short duration it is true, but very cold, which blow towards the end of August at sunrise. The disease can generally be prevented by early sowing.

Sign. Biroli informs us that Rice, if it grows immoderately at the time of putting forth its panicle, suffers from this rapid development, and is proportionately weakened. May not this circumstance also be set down among the possible causes of the *selone?* The drawing off the water so as to fortify the plant by the action of the sun is the remedy for this debility.

* A local term, of which I cannot find the derivation, or any other meaning. *Translator's note.*

GENUS XXIII.; *one species.* SHEDDING OR RAIN.—In this case the Rice plants grow and form their panicles of grain; but the slightest agitation, the smallest breath of air, will cause all the seeds to fall. These are small, badly filled, of a reddish colour, and of a most disagreeable taste. The disease is in some places called *cradatura.** It is a terrible one, inasmuch as if a Rice ground previously healthy is in the slightest degree attacked, it soon spreads over the whole so as to destroy at least a third of the crop. It appears from the observations of the above-quoted Biroli, that this disease is propagated by the diseased seeds which have thus fallen, which are not prevented from germinating, and will even retain that power after lying for two years in the ground, but will carry with them in growing that imperfection which causes the seed to be so slightly attached to the receptacle that the latter cannot retain it, and the disease becomes hereditary." On this account I have thought it advisable to class the malady among those derived from weakness. Unfortunately there is no remedy. The cultivation of Rice must be suspended in the fields attacked, and some good rotation of crops substituted, until there is no danger of any infected grains remaining in the ground. Otherwise, every precaution would be of no avail to prevent the evil.

The two last-mentioned diseases, although hitherto observed on Rice only, may very likely be common to other aquatic plants.

GENUS XXIV.; *one species.* RAGE (*Rabbia*) OF THE CHICK PEA.—Those authors which I have read do not speak in much detail of the cultivation of the Chick-Pea (*Cicer aristinum*), and I find none who make any mention of this disease, which destroys so many of the plants. From a precocious state of luxuriant vegetation, they begin to shrivel and dry up, and in a short time being reduced to a very small volume, they die, and I myself have been a frequent witness of this sad phenomenon in the Pea-fields of my own department. This malady is deserving of a close study. I am now occupied with it, and shall publish in due course the results which I may obtain. If they militate against the statements made by me on the nature of the Rabbia in my essay on Nosology, I will declare it, in all sincerity, for I have no love for the setting up of useless systems. My labours are solely directed to what may be of practical advantage. Theophrastus and Pliny allude in some measure to the peculiar disease which affects the Chick-pea. This plant, as is well-known, exudes from the extremities of the hairs with which it is covered a peculiar acid, called by chemists *ciceric acid.* I think that on some unfavourable turn of the weather, the air being suddenly cooled, the plant is weakened by the privation of a portion of the requisite caloric, and cannot achieve its proper excretions. In such case, the superabundant oxygen, combined with that which serves to form the ciceric acid, remains in the plant, attacking its solid portions and corroding them, in consequence of which the plant shrivels up and dies. In those places where the disease is common the peasantry give it the name of *rabbia* (rage), which I have adopted. As yet we have no remedy for it; for I know not what reliance should be placed on those who assure me that, for its prevention, it suffices to steep the seed for 24 hours in cold water before sowing it.

* Another local term, probably of the same meaning as *crollamento* (shedding).

RAISING ROSES FROM SEED.

THE seed of Roses is inclosed in a scarlet case like the common hips of the hedges, but of larger or smaller size according to the sort; and it is common to bury these hips until they rot, when the seed may be rubbed or washed out for sowing. We have tried all manner of ways; but never having a quantity, we have taken the trouble to dry the hips, and then by bruising them picked out the seeds. When they are buried till they are soft, and the seeds obtained thus, it is the easier mode for any quantity; but we will presume the seed is somehow or other got from the husks, the next thing is to sow it. This may be done in regular seed-pans at any time, but autumn is the best season. They should be covered pretty nearly half an inch, and from that period the soil should never be allowed to dry up. The pans may be placed in a cold frame, or the greenhouse, until they come up. They require occasional watering, and when they are large enough to handle, they may be pricked out in 4-inch pots, half a dozen plants in a pot, and round the edge only; the advantage of keeping them in pots is the facility which it affords for smoking or fumigating the plant when attacked with the green-fly, which is almost a certain consequence, and we have seen seedlings in a bed suffer to a great extent from being infested. In their young state the plants are easily affected so much as scarcely to recover the shock, and that after a very short visitation; otherwise the seedlings might be planted out.

The young plants rapidly progress in these pots, and require a pot to each plant. If any of the plants exhibit much novelty, and we are anxious to hasten the development of the flowers, it may be advisable to take a bud and insert it in a good strong stock, because you frequently get a bloom the same season; the strength of the stock sends on the bud with great vigour, and it is not at all unlikely that you get flowers before the close of the season; but whether this be done or not, the plants grow on, and in the winter are protected in cold frames or pits. If the pots have filled with roots, and they have begun to mat round the sides, it may be necessary to shift them; but if this can be avoided through the winter it is better, because

they like much more room. In May the whole of them may be turned out in a well-dunged bed, 4 feet wide, 1 foot apart across the bed, and 2 feet from row to row; or, if preferred, in long rows 2 feet asunder, and the plants 1 foot from each other. Should they be attacked by the fly, they must be syringed with a fine rose and plain water, which will dislodge them, and the ground must be raked to destroy them, and this must be repeated day after day. If it be not effective, recourse must be had to tobacco-water, but the plain water is more desirable and less trouble, and we have generally succeeded with it.

If any portion of the Roses are completely deciduous, they may be pruned down to two eyes next the ground; but if of the China or smooth-barked kind, merely remove weak spindly shoots and shorten the main shoot a little. They will very likely bloom before the autumn. Upon the choice of those you intend to propagate, as being worthy of a name, a good deal might be said; but it is perhaps enough to observe that a new Rose should possess some very striking quality to warrant its being added to the hundreds already in cultivation. It ought to be, strictly speaking, novel and striking — a distinctly new colour, or a better form and texture, than those we possess of the same colour. It ought to be round, double, symmetrical, thick petalled, smooth edged, of good habit and character; but if it be not all, then it should possess some of these qualities in a high degree, to make up for any deficiency; and when you have decided on which you will propagate, use your own pleasure as to the means. If it be of the China sort, bud on stocks of the common China, or take cuttings, or both, and at the proper season bud on the common Briar. The advantage of China stocks is this, the China Rose continues growing, if you attend to it, all the year round, and therefore is always in a condition to receive the buds of any variety calculated to succeed on it; so that out of the common season of budding on Briars, you may be getting a young stock together by budding on China stocks. It is doubtful whether it is worth while to keep any new sort that is merely a summer Rose. However we may continue to grow some of the kinds which bloom only in June and July, we should not be disposed to entertain the idea of introducing new ones of that character, nor should be inclined to tolerate any new perpetual, so called, for they are shabby looking affairs, except that they partially bloom twice a year instead of once, but never look well above a fortnight at a time. We have already described and condemned them, and we believe they will generally get turned out of good establishments, to make way for more conspicuous varieties with better bedding qualities. The growth of seedlings, after once bloomed, may be the same as other Roses. In fact, except that they are scarcer, they are the same as the more established favourites; they have the same wants, and if neglected in any of these, they will soon exhibit signs of ill health. *Crito.*

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(*Continued from p. 692.*)

On a remarkable Monstrosity of a Vinca, by Prof. EDWARD FORBES.—In this monstrous flower the calyx and petals were normal; the stamens converted into petals with traces of anthers on the margin of their attenuated bases. Within them were 6 carpels arranged in two whorls; the outer three had no styles, and exhibited no sutures on their inner faces; the three inner ones were larger, two were sutured along their inner faces, two bore styles on their tips, the summits of the three styles had united by their basal rings below the stigma, which was common to all three. Two of the styles had been broken away in consequence of the growth of a prolongation of the axis from among the centre of the ovaries: this elongation bore upon its summit a rudimentary flower, consisting of five outer lanceolate segments, equivalent to sepals, five linear bodies alternating with the former, equivalent to petals, a five-lobed fleshy ring which might be regarded as a circle of stamens, but which showed no traces of anthers: these four bodies equivalent to carpels, two of them larger than the other two, and one of the two bearing a style terminating in a stigma. The monstrosity did not end here; in the midst of these ovaries arose another but very short prolongation of the axis, bearing a cup-like disk, bordered by five leaf-like lobes, and within the margin of the cup was a circle of minute ovule-like bodies. All the parts of the prolonged axis were green. The observer was inclined to regard this singular monstrosity as an instance of true folial and true axile placentation, co-existing in the same flower. The monster was found among some flowers brought to Covent-garden this spring.—Dr. LANKESTER said that this paper was interesting in connection with that which had been read by Mr. Austen. It showed how difficult it was to arrive at anything like correct conclusions from examining the abnormal form of plants alone. For instance, if we sought the determination of the origin of the ovule, it would appear to be axial in the monstrous Vinca, but the conversion of the ovules into leaflets in the Trifolium would favour the foliar hypothesis. It was possible that the ovule was developed in some cases from one and in others from the other source.

On the Varieties of the Wild Carrot, by Prof. E. FORBES.—Two species of Daucus, D. Carota and D. maritimus, are enumerated as indigenous in our British Floras, and a third has been indicated with a doubt, and referred to the D. Gingidium. The object of this communication was to show that the characters by which these supposed species were distinguished are by no means constant, but on the contrary extremely variable; that the Daucus Carota passes into the Daucus maritimus as it approaches the neighbourhood of the sea, and that the plant which has been referred to Daucus Gingidium is also a sea-side variety of Carota. There is, however, an unnoticed form, probably of the extreme variation of the supposed Gingidium, occurring on the coast of Dorsetshire, which is remarkable for having dusky yellow petals with ciliated margins, whereas all other forms of our Carrots have white petals with entire margins. To this variety it is proposed to apply the name ciliatus. This plant, which at first sight has much the aspect of a veritable species, is probably the one mentioned by De Candolle as occurring near Dieppe, and referred by that author to Daucus hispidus of Desfontaines. It does not appear probable, however, that the plant so called by Algerine botanists is identical with that from the shores of the Atlantic; nor is there any sufficient evidence that either D. Gingidium, D. hispanicus, or D. littoralis of Mediterranean Floras have been found (as has been asserted), north of the Bay of Biscay. Living specimens of the plants described were exhibited to the section.—Mr. BABINGTON said that many of our commonest plants were the most difficult to determine. The genus Daucus was very puzzling, and now that Mr. Forbes had commenced the inquiry he hoped it would be followed up. He could pronounce no opinion on the subject until he had examined the specimens.—Mr. MUNBY stated that there were several species of Daucus in Algiers. The D. hispidus of Desfontaines was the same as D. Gingidium of Linnæus, and D. hispanicus of De Candolle and might only be a variety of D. Carota.

ON THE ODOURS OF PLANTS, AND THE MODES OF OBTAINING THEM.

"Were not summer's distillation left
A liquid prisoner, pent in walls of glass,
Beauty's effect with beauty were bereft,
Nor it, nor no remembrance what it was;
But flowers distilled, though they with winter meet,
Leese but their show, their substance still lives, sweet."
SHAKSPEARE.

STORAX, obtained from the Liquidambar orientale by incision, and TOLU by the same process, are both odorous gums, somewhat resembling the fragrance of Benzoin; they are used in perfumery, not so much on account of their odour as for the wonderful property they have of "fixing" those that are very volatile, hence they are mixed, more or less, with extract of Violet and many other fleeting odours.

TUBEROSE.—This is a very fine and delicate odour. It is prepared from the flowers by absorption or *enfleurage*, after the manner described for Jasmin; the pommade thus made, on being digested with pure spirit, yields the "Extract of Tuberose" of the shops. Alone it has not many admirers, but mixed with Rose, Jasmin, Sandal, and Orange it forms a charming bouquet, which has the advantage of being quite white and does not stain the handkerchief, an important consideration, seeing that some ladies' pocket handkerchiefs cost from 3*l*. to 8*l*.!!

TONQUIN or TONKA.—The seed or bean of this plant (Dipterix odorata) is very fragrant, and much resembles new hay, and is very permanent; the odorous principle or essential oil, may be obtained by expression, but the mode generally adopted is to cut the bean up and digest it for some few days in proof spirit at a slightly elevated temperature. The "Extract of Tonquin," thus prepared, is used in the formation of several favourite bouquets; it is too expensive to use for other purposes. The whole bean has long been used by snuff takers to keep in their box, to impart its smell to the snuff, which it does for years. Ground Tonquin Beans, with Cloves and a little Vanilla and Orris root, form a most splendid sachet powder, which is put up in muslin or silk for scenting drawers of linen and clothes.

THYME.—Two, at least, if not more varieties of this plant yield an odorous oil used by perfumers, namely the Lemon Thyme and the Thymus Serpyllum. The former may be used in conjunction with other oils, as oil of Lemons, and the oil of Lemon Grass in Spirits, to form a bouquet. The latter has a large consumption for scenting soaps, as in millefleur soap and brown Windsor soap, which is a fine curd soap perfumed with Thyme, Lavender, Cloves, Caraway, and Petit Grain.

VANILLA (Vanilla planifolia). — The pod of this plant is very extensively used in perfumery; the "Extract of Vanilla" is prepared by digesting the pod, cut small, in rectified spirit; it has a fine odour and remarkably permanent; its smell somewhat resembles Benzoin; the spent pod, after making the extract, is profitably used by grinding it with twice its weight of Orris root, to form a sachet for scenting drawers of linen, &c. When Vanilla is kept for a time, it becomes covered with an efflorescence of crystals of the same nature as benzoic acid, but differing from it in composition; few objects are more beautiful to look upon than this when viewed by a microscope with the aid of polarised light. We need scarcely mention that Vanilla is greatly used by cooks and confectioners for flavouring. The plant is a native of South America. The best pods fetch 80*s*. to 90*s*. per pound, first-hand.

VERBENA, OR VERVAINE, gives one of the finest perfumes with which we are acquainted; it is well known as yielding a delightful fragrance by merely drawing the hand over the plant; some of the little vessels or sacks containing the essential oil must be crushed in the act, as there is little or no odour by merely smelling at the plant. On account of the great value of the real article, it is scarcely if ever used by the manufacturing perfumer; but it is most successfully imitated by mixing the oil of Ginger-grass (Andropogon Schœnanthus) with pure spirit, the odour of which resembles the former to a nicety. Ginger-grass, or Lemon-grass, grows abundantly in India, and the oil is procured by distillation. So cheap is it that "Extract of Verbena" is found in every fancy shop in the kingdom; this, however, is but a plain solution of the Ginger-grass oil in spirit. The finest "Extrait de Vervaine," of the French perfumers, contains, besides that oil, oil of Lemons and Oranges, with the addition of a little Essence of Rose; this preparation is really a very delightful and refreshing perfume.

VETIVERT is the rhizome of an Indian Grass called Anatherum muricatum. It has a smell between the aromatic, or spicy odour, and that of flowers; the "Extract of Vetivert" is prepared precisely in the same way as that of Vanilla stated above; it is rarely used for the handkerchief alone, but enters into combination with a few of the much admired and old bouquets, as in "Mousseleine des Indes," for which preparation Delcroix, in the zenith of his fame, created quite a *furor* in the fashionable world. "Maréchale" and "Boqu du Rio," perfumes which have also had their day, owe much of their peculiarity to the Vetivert contained in them. *P.*

VILLA AND SUBURBAN GARDENING.

THE culture of the Peach is one of the many subjects that puzzle the villa gardener. He plants, prunes, trains, and syringes, but he rarely reaps any adequate reward for his labours. I shall explain the chief points on which success in this matter rests. Soil, if not light and friable, should be made so. In the absence of better soil, road-scrapings will help to lighten and ameliorate stiff adhesive land; but turfy loam from a common should if possible be procured, and this may be obtained in the vicinity of almost all towns where building operations are carried on; the expense will be amply repaid. In the formation of the border, the first and most essential point is draining. This indeed is the fundamental principle of all good cultivation, whether it be in the garden or on the farm. Peach-trees especially require a dry shallow border. The roots, if permitted to get into the subsoil, more particularly if that is wet, will soon cease to produce anything except basket wood, and that of a half ripened kind, which will frequently get killed back by the autumn frosts, in consequence of its unripened state, arising from its being overcharged with watery matter. Drainage, therefore, as I have stated, is a cardinal point. Old brick rubbish, or stones of any kind, answer well for this purpose, taking care that the water beneath is carried off by a main drain, provided the soil is clayey and requires it. The depth of soil constituting a Peach border has often, in my opinion, been overstated. A limited amount of soil in a perfectly healthy condition is much more important than a deep border; water or liquid manure is easily supplied, and the quantity administered is so completely under control, that little injury is likely to arise from a shallow border with careful supervision. Under such management and conditions short-jointed shoots, full of flower-buds, will be the result. Canker arises chiefly from causes the opposite of these. If old trees exist at all they will be found on dry healthy borders, never in wet water-logged soils.

The depth of soil for Peaches need not exceed 18 inches. Keep the border higher than the walks, and if possible with a slope outwards from the wall, in order that heavy rains may run off, instead of percolating through the earth into the drainage beneath. Some good gardeners in wet and cold situations concrete the surface of their borders, so as to completely exclude the possibility of any water penetrating them; for they contend that the dry mass of earth will absorb sufficient moisture from beneath and around it to sustain the trees in full vigour. If this is carried out it must only be in localities very moist and cold, more especially during the spring months; otherwise, I prefer the surface left in its natural condition. In forming Peach tree borders, some advise the bottom to be concreted, so as to completely prevent the roots from penetrating the wet or unhealthy soil beneath. A mass of rubble is in general to be preferred to this, as it tends to keep the body of superincumbent soil dry, and at the same time affords a supply of air to the roots,—a material, but too often neglected point.

Having prepared the border agreeably to these instructions, the next point is the selection of varieties most suitable for small gardens. In the first place, never plant a cling-stone Peach; the following are all good sorts, and may be planted with confidence. *Peaches:* Barrington, Bellegarde, Early Admirable, Late Admirable, Grosse Mignonne, Noblesse, Red Magdalen (of Milan), Royal George, Royal Charlotte, Violet Hâtive. *Nectarines:* Elruge, Boston, Hunt's Early Tawny, Imperatrice, Murrey, Pitmaston Orange, Violet Hâtive. White, in favourable situations only. *Pharo.*

TRADE MEMORANDA.

CAN any one say who a Mr. W. Bendall is, who dates from Church Hill, Lower Wallop, Stockbridge? This gentleman favours nurserymen in the west of England with extensive orders; but his correspondence ceases as soon as he is asked for a reference.

Home Correspondence.

Athrotaxis imbricata.—The admirers of Conifers will be pleased to learn that plants of this beautiful tree have arrived safely in England. Four specimens were received by the Messrs. Maule and Son, of the Stapleton-road Nurseries, near Bristol, about 18 months since, in rather a doubtful state, but they soon recovered, and are now in such a thriving state of growth that their permanent establishment in this country may be considered certain. It is described by their collector as a noble Coniferous tree, growing from 40 to 50 feet high, on mountains covered with snow the greater part of the year, and he considers it will be able to endure our climate. *J. G.* [We have no confidence in the hardiness of this plant.]

Transplanting large Cedars.—I have recently transplanted a very fine Cedar of Lebanon, from 20 to 25 feet high, with very wide spreading boughs, and I have succeeded in moving it almost uninjured. You may form an opinion as to its size and weight, when I state that it required the united efforts of 10 horses to draw the sledge on which it was moved. Some of my neighbours recommend me to apply liquid manure to the roots, either from the farm-yard, or guano water, or soap-suds. Others recommend watering it all over with a garden-engine. Will you do me the favour to state how you consider it should be treated? It has been transplanted about a fortnight into a poorer soil than that in which it originally grew, but a considerable quantity of good light earth was put about the roots. *A Beginner, Tonbridge Wells.* [Use no manure. Water copiously next year, if it grows. Sand and leaves are its best food.]

The Plan for "Economy in Heating," suggested by "G. F., Aigburth" appears to me, as far as I can understand it, so likely to be of general utility, that I am sure he would be conferring a great boon upon many sufferers like myself, from the high price of coals, if he would kindly give a few more particulars—viz., the diameter of the pipe, the situation of the damper, and a fuller description of his apparatus for clearing the pipe by a "continuance of chain attached to round scrapers," &c. &c. *F. W. T., Cheshire.*

Storing Potatoes.—For many years I have adopted successfully the following plan in storing my Potatoes, and I have always found them sound, whilst those of my neighbours have heated and perished. I take them up in dry weather, if I can, and suffer them to remain a day or two exposed previously to placing them in the pit or cave, when I cover them with straw or haulm, and finish with earth. At the sides and the top I place, according to the length of the store, more or less, three-inch draining pipes, passing them through the earth into the pit, so as to allow the free escape of heated air, and the result has been perfectly satisfactory. Last year my neighbour and myself had a field of Potatoes in partnership; the whole were of the same sort, and taken up at the same time; but he not adopting the use of the pipes, but covering up the Potatoes closely, as he said, to secure them from frost, found them, on opening the pit, entirely perished, whilst mine were perfect. I do not mention this as a discovery, but as a precaution which is too often neglected, and the Potato disease charged with that of which it is innocent. *B.*

Calla æthiopica.—In 1833 one was placed in a small pond in which gold and silver fish were kept, and where a jet was playing during summer and winter, in the gardens at Castle Semple, Renfrewshire, N.B., and it grew and flowered beautifully. In the third year it threw up seven flowering stems. It received no protection except what the cold water afforded. *J. Hardie.* [There is something in the Calla which requires further elucidation. For one person who succeeds in growing it in an open pond, twenty fail. We should like to hear the opinion of men of experience in regard to this common and beautiful plant.]

The Chaumontelle Pear.—There seems to be a common fallacy that to attempt to grow this Pear in perfection in the British Isles is useless. Now, in refutation of this error, permit me to inform you that I have just gathered the crops from off a tree of 16 years' growth (trained against the wall of my house, and having a N. N. W. aspect), consisting of six dozen of fine Pears, averaging a full 8 ounces each Pear, but out of this number the six largest weighed 4 lbs. 15 ounces, and the heaviest of that six was a full pound weight; of course I cannot yet speak of the flavour, but they are almost without exception well grown healthy fruit. *A Subscriber, Lyme Regis, Dorset, November 1.* [We know of no such fallacy as is here referred to. A very common opinion is, that the Chaumontelle is much finer in the Channel Islands than in England, and that may be true for very obvious reasons.]

Effect of Light on Vegetation.—For some time past we have been making a few observations on this subject, and we would recommend the study to those who want straight trees in their woods. There are some trees, such as Conifers, that will sooner run the risk of losing their heads than bend from the perpendicular; but most of the deciduous trees will seek to go out at the opening where the light is strongest. It is no uncommon thing to meet with a healthy Spruce Fir planted on the south side of an Oak, and near each other, the Spruce probably the taller of the two; the Oak, instead of looking towards the zenith, will be on the look-out for the north pole, in search of a north-west passage. Although the Oak was cut with a magnetic pruning-knife, it will have little effect in making its point look upward while the Spruce remains. *P. Mackenzie, West Plean, Stirling.*

Large Yucca gloriosa.—There is now growing at New Close, the seat of Thomas Cooke, Esq., near this town, the largest specimen of the above-named plant I have yet seen. It stands 10 feet 6 inches high, the girth of the main stem being 3 feet 4 inches near the ground; and where 14 distinct heads branch off, the stem is 2 feet 8 inches round. The circumference of the plant is 32 feet round the top; and as a proof that it is in good health, there are 12 more young shoots breaking from the main stem. *W. W., Newport, Isle of Wight, Nov. 1.*

Layering the tops of Potatoes a preventive of Disease.—The following experiment has proved satisfactory, but it may have been on too limited a scale to warrant the conclusion that it will in all cases be a remedy for the disease. On the 10th of June I potted some "Shaws," and plunged them in a bed of decayed leaves in a Vinery; and as soon as the tops were far enough advanced they were layered in the decayed leaves. On the 10th of August they were sufficiently rooted to be taken up with good balls and planted on a south border. When they were planted they were well watered, and the soil drawn up around them, so that they did not appear to experience any check. Nothing else was done to them, except stirring the soil and keeping off some of the October rains till the crop was taken up last week, when the yield was nearly 2 gallons from, in all, 24 plants. The tubers were perfectly free from disease, but very small, averaging about the size of a Walnut. I think that if I had potted the Potatoes sooner, and got the layers out in good time, the yield would have been greater, as the tubers did not appear to be quite ripe. Two rows, 40 yards long, treated according to Mr. Tombelle Lomba's plan, were not more free from disease than others in the same field, treated in the common way. All were very bad, except some Fox's seedlings, an excellent Potato. The soil here is a stiff cold clay, and the disease has been very bad. *J. L. Middlemiss Gardener to A. Pott, Esq., Bentham Hill, Tonbridge Wells.*

Cultivation of Salvia splendens.—After the cuttings are struck, I pot them off in a mixture of loam, leaf-mould, sand, and a little manure. I then place them in a heat of about 60°. As they advance, I pinch them back a little, but they nevertheless run up to wood, and did not flower with me. My future method of cultivation will be to keep a few good plants for cuttings in a greenhouse, where the wood will have a better chance of becoming firm. Take off small shoots, put them in as cuttings in 7-inch pots, filled with a mixture of loam, leaf-mould, and sand, and plunge them in a little heat, in a rather moist stove. As soon as they are properly struck, I will remove them to a front shelf, where they will have plenty of light. They will show flower in about a month, and will continue a long time in beauty. *H. M., the Priory, Ireland.*

New Grape.—On reading the "Illustrated London News," my first impression was the same as "W.'s" to apply to a friend at Southampton to procure for me, from Constantinople, one of Mr. Albert Smith's Vines; but on turning to the "Gardeners' Monthly Volume," I found in the Catalogue of Vines, under the head "Syrian," the following remark: "Huetius informs us that Crete, Chios, and other islands in the Archipelago, afford bunches sometimes of 40 lbs. weight, and in this country Mr. Speechley grew a bunch of 19½ lbs." Now as Mr. Albert Smith does not appear to possess much knowledge of Vines, though possibly an excellent judge of Grapes, it is probable that when he says, they were called *Chow-oosh* Grapes—at least he says they were so pronounced—he may have mistaken or mis-written the Turkish manner of pronouncing the word Chios. *A. K.*

Royal Botanic Society.—Having observed among your "Answers to Correspondents," in last week's *Gardeners' Chronicle*, an intimation (couched in the most unjustifiable language) that the accounts of the Royal Botanic Society for this year have not yet been published, I beg to inform you that the annual report containing them was as usual printed a short time after the anniversary meeting, and delivered to every Fellow of the Society who applied for it. As the editor of a Newspaper, it is surprising that you should venture to betray your ignorance, with the risk of misleading people, instead of referring them to the quarter where they might obtain correct information. I trust you will set this matter right. *J. De C. Sowerby, Secretary.* [We can only say that a Fellow of the Royal Botanic Society assured us, 10 days ago, that he had not been able to procure his copy of these papers. Will Mr. Sowerby favour us with a copy?]

Societies.

Horticultural, *Nov.* 6.—E. Brande, Esq., in the chair. A paper was read from H. Dobree, Esq., of Beau Ségour, Guernsey. It stated that at the last Guernsey fruit show a Chaumontel Pear of perfect shape, and of the remarkable weight of 2 lbs. 4½ oz. English weight, was exhibited by his neighbour Mr. T. A. Corbin. Some years ago Mr. Dobree transmitted a Chaumontel Pear to the Society of the weight of 1 lb. 13¾ oz. English weight, being the heaviest which had hitherto been produced in the Channel islands. The Pear produced by Mr. Corbin grew on a Quince stock, and no artificial means were employed to increase the weight of the fruit, of which there was in addition a fair crop on the tree. The soil is a deep strong brown loam, which is occasionally manured.—Among subjects for exhibition was a nice collection of Orchids from [illegible] of [illegible]. It consisted of a [illegible] of the [illegible] Oncidium oblongatum, one of the [illegible] yellow-flowered kinds; Odontoglossum [illegible]; various Cattleyas, among which was the [illegible] C. pumila, a dwarf species with lilac flowers, having a deep violet spot on the point of the labellum; Dendrobium formosum; the orange-flowered Epidendrum vitellinum; the large violet-blossomed Miltonia spectabilis; the Vanilla-scented Houlettia Brocklehurstiana; Oncidium Barkeri, a handsome large yellow-lipped kind; C. nebulosum and the pale salmon-coloured Calanthe curculigoides. A Knightian Medal was awarded for these, but more especially for the Oncidium oblongatum.—From Mrs. Lawrence's garden at Ealing-park, came a small group of Orchids, consisting of two new Cycnoches, one with white and the other with yellow flowers, the latter covered with small bright brown spots; also the Gongora-like Cycnoches barbatum, a good specimen of Cymbidium giganteum, Epidendrum vitellinum, the pretty Maxillaria picta, and Cymbidium sinense. A Banksian Medal was awarded for the four first-mentioned plants.—Messrs. Rollisson had a large flowered Oncidium (brown, edged with yellow), Forbesii.—From Messrs. Henderson, of Pine-apple-place, came one of the Feather Grasses (Stipa pinnata elegantissima), and a handsome hybrid Veronica raised by Mr. Anderson, of Maryfield, near Edinburgh, between V. speciosa and salicifolia or Lindleyana; it is named V. Andersonii. The flower-spikes are thicker than those of V. salicifolia, and much less thick than in V. speciosa, while the foliage is just intermediate between the two. When the blossoms first appear they are violet, but they gradually change to white. In the plant exhibited, one half of the spike was white and the other violet, producing a charming contrast. It forms a valuable addition to autumnal flowering plants. A Certificate of Merit was awarded it.—Mr. [illegible]ison, gr. to the Duchess Dowager of Northumberland, produced a white-flowered sweet scented half shrubby Verbena from Santa Martha, for which a Certificate of Merit was awarded. It was mentioned that this would cross with our common garden sorts, and that the result would possibly be a race of sweet-scented Verbenas. The experiment is, therefore, well worth a trial. The same establishment also furnished two Nutmegs, quite ripe, split, and showing the red-coloured mace which covers the seeds—the Nutmegs of the shops. Before they split they look not unlike middle-sized Peaches.

Various Pine apples were exhibited, all of them highly creditable to the growers, though they were of unequal merit. The best came from Mr. George, gr. to W. Long, Esq., M.P., Rood Ashton, Trowbridge, Wilts. These consisted of two well swelled fruit of the old Queen, one 6 lbs. 4 oz., the other 5 lbs. 10 oz. The first of these was awarded a Banksian Medal. Two fruit of the same kind of Queen, over ripe and rather past their best, were sent by Mr. Bundy, gr., Dynevor Castle, Llandilo. They weighed 5 lbs. 5 oz. and 4 lbs 7 oz. They were stated to have been raised on the Polmaise system of heating, and not to have been exhibited as extraordinary specimens of growth, but to show that good Pine-apples can be produced as well by Polmaise as by any other system of heating. Mr. Bundy stated that if they had been Ripley Queens instead of old Queens, he had no doubt they would have been 2 lbs. heavier. He grows his Pines on Hamilton's system, planted out in the bed. The two fruit shown were stated to have been grown upon single plants, by which is meant that one sucker only had been left on the stool instead of two, which is Mr. Bundy's practice, in order that he may obtain a large supply of fruit.—Mr. Bray, gr. to C. Lousada, Esq., of Peak-house, Sidmouth, produced three handsome Ripley Queens, whose weights were respectively 5 lbs. 3 oz., 4 lbs. 5 oz., and 4 lbs. 1 oz. A Certificate was awarded to the heaviest of these fruit.—Mr. Henderson, gr. to Sir George Beaumont, Bart., Coleorton-hall, produced a Queen Pine weighing 6 lbs. 2 oz.; and, finally, from Mr. Davis, market-gardener, Starch-green, Hammersmith, were two Providence Pines, both rather unequally swelled, but good fruit, weighing respectively 7 lbs. 9 oz and 7 lbs. 7 oz.—Of Grapes, J. G. Nash, Esq., of Bishop's Stortford, exhibited beautiful specimens of Muscat of Alexandria and Black Hamburgh. A report of Mr. Nash's grapes, and the way in which he grows them, was given at p. 683, 1847, where their excellence and abundance are very favourably spoken of; it was mentioned that they are even better this year than they were then. The Black Hamburghs exhibited were well swelled and coloured, and the Muscats were quite ripe, large, and fine. A Banksian Medal was awarded them.—Excellent Muscats were also furnished by Mr. Davis, of Oak-hill, East Barnet, but they were, nevertheless, inferior to those just mentioned. A Certificate of Merit was awarded them.—Mr. Groom, gr. to Mrs. Bentley, Eshald-house, Oulton, near Leeds, sent good bunches of Black Hamburgh Grapes from an open-flued wall. They received no protection except what a net, put on to keep the birds off them, afforded. The Vine on which they grew was stated to cover a piece of wall 67 feet long and 11 feet high. Last year it produced 300 bunches, this year the crop is quite 400 bunches. The Vine is about 17 years old, and is stated to have doubled its size during the last three years. It rises from the ground with a clean straight stem 15 inches in length. A branch is then trained horizontally on either side of the stem, and the bearing shoots are led off this perpendicularly 15 inches apart. The young shoots grow the height of the wall

in one season, and ripen perfectly [illegible] this situation good average Grapes are produced [illegible] the rain and frosts spoil many of them [illegible] be used; it is, therefore, contemplated to put a temporary roof over them next season.—W. S. Gray, Esq., Norton, Stockton-on-Tees, Durham, sent a Jargonelle Pear, ripe, and of a fair size, the produce of a second crop from the same tree this year. The tree was stated to grow eight miles north of Norton, against the south side of a house; it is about 25 years old; and was removed into its present place when it was about six or seven years old. After the fruit has well set in summer, it flowers again on the young wood, and perfects a second crop, consisting this year of between two and three dozen fine Pears spread all over the tree. These Pears swell and ripen well, but are seedless—at least the one shown was in that condition, and rather past its best, having been sent to London some time before the meeting took place.—J. Mannington, Esq., of Uckfield, again sent specimens of his seedling Apple, called Mannington's Pearmain. It is a nice-looking sort, Pearmain shaped, tinged with red on the sunny side, well flavoured, and said to bear and keep well.—From Mr. Rivers, Sawbridgeworth, was a boxful of his new Large-fruited Monthly Raspberry. This has been reported to be nothing else but the old Double-bearing Raspberry. Mr. Rivers states, however, that it produces fruit from lateral shoots, which it puts forth at every joint; and in this respect, as well as in the size and flavour of the berry, it differs from the sort we have just mentioned. A Certificate of Merit was awarded for it.—Samples of Cobbett's and of Forty-day Maize, of which some account will be found in another column, were produced by Mr. Charlwood, of Covent-garden; and Messrs. Lawrence, of Parliament-st., sent some zinc labels, which are cheap, and likely to prove useful.—From the Society's Garden came the scarce Epidendrum ceratistes, a sweet-scented species; Brassia cuspidata; Loddiges' Macropera; the rare Oncidium varicosum; the Holly leaved Hovea; Achimenes picta; a pretty Erica hiemalis, and a large E. transparens; various Chrysanthemums; and ripe fruit of Benthamia fragifera, of which an account was given at p. 492, 1848; and p. 645, 1849. This tree, for so it has now become in Cornwall and Devonshire, is too tender to thrive out of doors about London, and it is scarcely worth the protection of a conservatory.

Garden Memoranda.

Dalkeith Palace, the Seat of the Duke of Buccleuch.—While England's greatest kitchen and forcing garden is at Frogmore, Scotland has her's at Dalkeith; and when we consider that the latter has been established for private purposes alone, its extent is quite astonishing, occupying as it does a surface of 20 acres, planned and arranged as perfectly, and at the same time as economically, as any garden within our own personal knowledge. The whole has been planned and executed under the exclusive superintendence of Mr. M'Intosh, whose name and ability are familiar to every gardener. Since we last visited this place, in 1834, the old gardens have been entirely removed, and the site on which they stood thrown into the park, a change striking and important, as regards pictorial effect. The old palace, which appeared hemmed in by long lines of brick walls and other buildings, is now relieved of these unsightly masses of brick erections, and the views into the park have been opened and extended.

The grounds in the vicinity of the palace are exceedingly picturesque, but we should say *overwooded*; nevertheless beautiful views are occasionally afforded of the river (the south Esk) which passes through the grounds. The surface is broken in every direction by deep dells of much beauty, clothed with old timber; and for Scotland the latter is of great size and altitude.

In ornamental gardening little has yet been done at Dalkeith; but we learned from Mr. M'Intosh that something in this way is likely soon to be effected; and if this is carried out in the princely style which distinguishes the works already completed, Dalkeith will then stand, as a whole, greatly in advance of all other places in Scotland. The natural beauties surrounding the palace are highly favourable to ornamental gardening, which is likely to be carried out here with skill and taste, but this can only be done by effecting a considerable clearance of the woody thickets which block up the vistas, and render the atmosphere damp in the vicinity of the palace itself. Mr. M'Intosh is quite capable of carrying out this great work, and we may look forward to see modern ornamental gardening receive an impulse here which is much required in Scotland.

On the outside of the kitchen garden, near the palace, is an ornamental lawn, on which is planted a great number of rare hardy shrubs. This is also bounded by a wall, on which are various choice plants; both on the lawn and wall we observed many plants thriving and healthy, which will not stand the cold in the vicinity of London; several species of Escallonia form bushes and flower finely in the open lawn. Eucalyptus perfoliata and Passiflora cærulea were rambling over the wall, as were also Ceanothus divaricatus and azureus. We observed unusually large specimens of Maclura aurantiaca and Dirca palustris on the turf, the latter 5 feet high and 10 feet across. The interesting Bridgesia spicata was creeping up the wall, and attaching itself to it like Ivy. It might be imagined that evergreens would have but a poor chance in the cold climate of Scotland, but facts prove quite the contrary. Laurels, [illegible] Arbutus, Bays, &c., which are frequently [illegible] to the ground about London, are scarcely ever [illegible] here. The extensive drives and walks are [illegible] with them in the greatest profusion and luxuriance. These walks and drives, as well as everything connected with the gardens at Dalkeith, are kept in high order, and this is the more astonishing when their extent is taken into consideration, *for they extend upwards of* 40 *miles*.

The immense kitchen garden is surrounded and intersected by brick walls 12 feet high, and we were particularly struck with the excellence of the brickwork and its present perfect condition; for although they have been built a sufficient number of years to be clothed with fruit trees, yet no nail-marks, or freckled defaced bricks, or broken joints, are to be seen, the walls being studded on both sides—a practice we strongly commend. The Apricot trees here are very fine; indeed we remarked one wall clothed from end to end without the least evidence of a decayed branch; but this is almost universally so in the north. There is none of that gumming and limb by limb dying off there, which is so common in the warmer parts of England. This evil, therefore, may be caused from extraordinary fluctuations of temperature, or probably from a continuance of intense sunshine, for it is in July and August that this sudden transition from vigorous health to decay occurs. The trees at Dalkeith are protected during the time they are in blossom with canvas coverings, and the wall is warmed by hot water pipes. The crop rarely or never fails. The Peach trees, on the contrary, have suffered severely here, and in some instances they are completely destroyed. This, however, is very general in the middle and southern parts of Scotland. The spring was unusually cold and protracted; the trees made their usual efforts to send forth shoots, and the frosts invariably checked or destroyed them. This being repeated two or three times, the extravasated sap exuded from the old wood in all directions, forming gummy protuberances of the viscous fluid, and eventually the trees died. The American blight which made its appearance here some time ago on the Apple trees has been completely destroyed by the application of spirits of tar.

We observed Celery blanching, encased in two drain tiles; the tiles were about 10 inches long, and such as are commonly used in draining. Two placed together form a tube; the Celery stalks are placed within this tube, and the earth is built up against them. If very large Celery is required a duplicate set of tiles is used, which gives 20 inches of blanched stalk. The soil of the garden is light staple brought from an adjoining field; the top spit alone was used; a great number of acres, therefore, were stripped of their surface in the formation of this immense garden. The soil brought with it multitudes of wireworms, which baffled all attempts to subdue them, until the assistance of the mole was called in. Numbers of moles were let loose in the different quarters, and by them alone this enemy of gardeners is kept under. The mole feeds voraciously upon the wireworm, and the injury it does to the crops is comparatively trifling.

As may be inferred, this garden contains all the various buildings required to produce an abundance of the different popular exotic fruits, which are extensively grown under glass here. Everything, indeed, is cultivated on a large scale, as may be understood when we state that 800 Pine apples are about the average amount produced here every year. The plants are exceedingly healthy; the system of culture reminded us very much of that pursued by Mr. Wilmot, of Isleworth. One of the ranges of hothouses has also a corresponding range of office buildings well deserving of particular notice. This range is 500 feet long exactly; the offices being two stories are consequently equal to a thousand feet in length. The lower story is excavated 5 feet under ground, with windows or shutters along the surface, and just above it, 18 inches deep; the height of the lower rooms is 7 feet in the clear. Beneath this underground story is a tank reaching the whole length of the building, or 500 feet, which receives all the rain-water which falls upon the hothouses and other buildings; consequently an unlimited supply of soft water is always at command. In each of the sheds appropriated to boilers, a pump is fixed, and a large cistern placed over the boilers—these are kept constantly full. Communicating with these cisterns are pipes, which extend the whole length of the hothouses, with taps at convenient distances. A supply of soft tepid water is thus always at command. The warmth of the sheds in which the cisterns are placed being equal to the hothouse, the water is nearly of a similar temperature, the under story is found preferable to the upper one for many purposes. Certain divisions of it are appropriated to root-rooms, which are partitioned off into various divisions, in which are stowed away Carrots (one compartment for each sort), Turnips in winter, Beet, Potatoes, Skirret, Scorzonera, and similar roots. In lengthened frosts, Celery, Broccoli, Cauliflower, &c., are preserved. Another division is occupied with Onions, and not by any means a small one; the quantity harvested appeared to us enormous for one family.

One of the lower sheds is fitted up as a tool-house, and is deserving of special remark. Where a great number of men is kept, the tools are frequently lost or get out of order from carelessness, and it is sometimes difficult to ascertain the delinquent. In this garden every man employed has a complete set of all the implements he may require, and for which he is answerable. The tool-house is subdivided into compartments, boarded off. Each man has a compartment to himself, over which is suspended his scythe. All the implements were in capital order, glittering like an armoury.

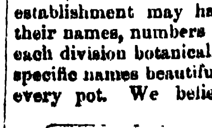
Two other places are fitted up as Mushroom-houses, in a most substantial manner; and it is found that in such houses, under ground, Mushrooms can be cultivated quite as well in the dog-days as at other seasons. The kitchen in which the under gardeners have their victuals cooked is also in this lower range, an important arrangement, as will presently appear. The upper story of these sheds is divided into fruit, seed, and store rooms, together with potting sheds and the living rooms for the young men. When we visited them, which was by accident, just before breakfast, they were a picture of cleanliness and comfort; one long room is set apart as a breakfast and dining-room, with a long table in the centre, covered with a perfectly clean tablecloth, and there was a cheerful fire in the room; another and similar room, with a good library of gardening and other books and newspapers, is set apart for study and the useful employment of evenings; this is carefully supervised by Mr. M'Intosh and his son. There are two large apartments subdivided into rooms of ample capacity for two beds in each, a bed being appropriated to each man. These rooms, together with beds and bed linen, we carefully inspected. They were in every respect clean and wholesome, and well ventilated. Some may ask what so minute an account of these rooms can have to do with gardening? We answer, everything. The moral character of the men, as well as the preservation of their mental and physical energies, depends upon their being well kept. Landed proprietors and their garden architects have much to answer for on this head. We could look upon the abodes at Dalkeith with delight, but in a neighbouring garden which was planned by a celebrated garden architect, we observed that the young men slept within a *few feet* of the fire where their victuals are cooked, and 1 foot from the soil, which is merely covered with a damp tile. This will appear the more astonishing and reprehensible when we state that two large buildings adjoining are raised at least 10 feet above the others, in which are kept the fruit, as if Apples and Pears required a brisk drying wind and plenty of sunlight for their preservation.

With regard to the fruit-room at Dalkeith, Mr. M'Intosh lays great stress upon keeping an even temperature in it; the walls of his fruit-room are built hollow, as, indeed, all the walls in and about these gardens are. Ventilators are placed in the ceiling; the vacuum between the ceiling and slates is stuffed with shavings. By these precautionary arrangements, the fruit is found to keep, not only better but longer.

Another long range of hothouses, which stands on the right on entering the garden through massive ornamental iron gates from the palace, is devoted to exotic plants; one, built upon the ridge and furrow principle, and of considerable height, is filled with large specimen plants; another portion of this range is devoted exclusively to a large collection of tropical Orchids, we should think by far the most extensive of the kind in Scotland. They were in capital health, and a great number of species was in flower; another and similar division is assigned entirely to Cape Heaths; other divisions are filled with New Holland plants, Camellias, &c. The framing-ground is upon a similar extensive scale, and every erection, for whatever purpose, requiring a higher temperature than the natural atmosphere affords, is most substantially and effectively heated with hot-water pipes.

In the pleasure ground stands a circular tropical house, filled with Palms and other large plants. This house was erected many years ago, during the period when our old friend Mr. M'Donald, well known to Scotch gardeners, was at the head of this establishment. The building, which is elevated some feet above the general level, and surrounded by a terrace wall, is beautiful as a work of art. The carvings in stone are of the most elaborate kind, and beyond anything we have ever seen in garden structures. We understand that it is likely, at no distant day, to be appropriated as a museum of all the different kinds of minerals and other geological specimens found on the extensive estates of his Grace in Scotland, for which we would observe it is peculiarly suitable.

The gardens at Dalkeith contain a most extensive and well arranged collection of Alpine plants. We have seen nothing approaching it in any botanic garden. Mr. M'Intosh is remarkably attached to this very interesting and much neglected tribe of plants, and no trouble is spared on them; instead of merely possessing them and keeping them in little pots, they are grown and potted with as much care as tropical Orchids, the object being to develope by culture their natural beauties as much as possible. The extent of the collection has not deprived them of winter protection, an immense range of glazed pits being entirely devoted to them; and in order that all the young gardeners in the establishment may have no difficulty in ascertaining their names, numbers have been entirely abolished, and each division botanically classified, with the generic and specific names beautifully written on a large label, in every pot. We believe that the arrangement and correct nomenclature of this extensive collection has been principally effected by Mr. George M'Intosh.



All the pots used at Dalkeith, which are placed on stone benches, are of a peculiar make. The stone has so polished a surface, that

plants placed upon it cannot get rid of the water, and the ingress of air is also prevented, so close is the connection between the pot and the shelf. To allow the water free egress, and air ingress, Mr. M'Intosh has his pots manufactured with feet, as is represented by the accompanying woodcut.

We conclude a very imperfect notice of a truly ducal garden, in the hope of again referring to it in some observations we shall have to offer some day on the present state of gardening in Scotland. *R. G.*

Miscellaneous.

Sale of Plants.—A small importation of Orchids, which have been lately received from South America by Messrs. Low, of Clapton, was brought to the hammer the other day by Mr. Stevens. What kind of prices they fetched will be gleaned from the following statement. Epidendrum macrochilum, 6*s.*; a Cattleya and an Epidendrum, 10*s.*; Oncidium Papilio, a Mormodes, and Oncidium juncifolium, from 8*s.* to 14*s.*; an Aerides, "most likely quinquevulnera," 13*s.*; a nice plant of Nepenthes Rafflesiana, 15*s.*; N. ampullacea, 1*l.* 1*s.*; two Cattleyas and three Bletias, from 15*s.* to 1*l.* 1*s.*; a good Aerides "odoratum superbum," 15*s.*; some Saccolabium, ditto; Acineta sp., from 7*s.* to 9*s.*; Wallesia picta, from Java, 2*l.*; a few plants of Aerides, Vanda, Cymbidium, spotted-leaved Renanthera, and Dendrobium, from Kandy, fetched from 1*l.* to 2*l.* each.

Soil for Orchids in Pots.—More diversity of opinion obtains upon this point than upon any other item of their culture, and it is certainly one deserving of attention; for although it may be of little or no importance to an air plant whether it is grown in rich or poor soil, so far as nutriment is concerned, still it is necessary to know whether the soil, or whatever its roots may be surrounded by (some use nothing but broken potsherds in very small pieces), is retentive or not of moisture, and whether it parts freely with the same to the surrounding atmosphere when required. The best material is that which is not retentive of moisture, nor liable to become stagnant, or what is termed sour, and that which, under the influence of a damp and warm atmosphere, resists decay longest. It will therefore be found, that very fibry peat, obtained fresh from the common, freed from all small particles of peaty matter, is most suitable for the purpose. The latter process may easily be accomplished by beating it when it is dry. The fibre should be left a few days to dry before it is used, and afterwards, when required, it should be mixed with a few half-decayed leaves, which must be quite dry and free from any small pieces of stick that rot and breed fungi. The soil of plants in pots, when placed upon the smooth surface of slate shelves, is apt to become too moist during winter, owing to the water not being able to pass off freely through the hole in the bottom of the pots, or from their absorbing moisture from the shelves: this evil is, however, easily obviated by placing small square pieces of lathwood under the pots, which allows the superfluous moisture to pass off freely. *From Mr. Gordon's Paper in the Journal of the Hort. Society.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

This damp weather makes it indispensable to give all the air possible, but during rainy weather this should be given by some other means than by sliding down the top sashes, as the damp will be increased instead of diminished thereby. The advantage of ventilators in the back walls will here be apparent, as, by opening those in front, a complete circulation will be secured in all weathers. In the conservatory a fine display ought now to be made with Chrysanthemums, scarlet Geraniums, Cactus truncatus, early Camellias, Cinerarias, &c. Let one point of careful consideration be the proper management of the available stock of winter flowering plants, so as to secure an unvarying display during the time when most required. This will be managed by dividing the stock into a certain number of successions, and introducing them at proper intervals. We do not by this recommend any one to try to make as few plants as possible serve the purpose; for we consider that no pains should be spared to make the display at all times as great and as good as the resources of the place will permit. But the thing should be managed so systematically, that the different periods shall be as much as possible on a par with each other. Pits and Frames.—More careful attention will be daily necessary in these, to preserve the plants from the effects of cold and damp. Examine the plants frequently, and remove all decaying leaves or other impurities. Let them have every ray of light which our gradually shortening days will afford them; and whenever the weather will permit, let the sashes be removed; and even when it is too damp to admit of this, a free circulation of air should be ensured, by tilting the lights. When cold winds prevail this should be done on the leeward side.

FORCING DEPARTMENT.

Fig-house.—Let the shoots be untied, and if any pruning is necessary it should be performed at the same time, but if proper attention has been paid to stopping the shoots during summer very little pruning with the knife will be required; in fact it will be confined to removing a few shoots where they are too crowded to admit of their being properly trained. The shoots should be cleaned and washed over with sulphur and soft soap, taking care not to injure the buds when performing these operations. The walls, woodwork, and glass should be thoroughly cleaned; and any necessary paintings, colouring, or other repairs done forthwith. After these matters are duly attended to, and the trees neatly re-trained, the house will be in good winter order, and ready for the reception of anything which requires keeping cool and dry during that season. Seakale.—When any regard is paid to neatness, convenience, and economy of labour, let the old-fashioned way of forcing Seakale by means of pots and fermented stable litter be abandoned. The pots are expensive, and very liable to be broken; the litter if not wanted for the linings of dung frames, will make a much better manure by being rotted without fermentation, therefore to use it in that way involves a considerable waste. Again, it is inconvenient to gather the produce, and to see an exposed heap of fermented litter in any part of a gentleman's garden is inconsistent with that perfect neatness included in the high order of management which ought to pervade all such establishments. Where there is not a spare pit with the bottom heat supplied by hot water, the most economical method is to make up a small bed of Oak leaves, strong enough to ensure a bottom heat of about 50°, but not exceeding 55°; a light frame about 30 inches high should be placed upon the foundation, and filled with 18 inches of soil, such as is procurable from an old Melon bed. The plants should be taken up with great care, preserving as much as possible of the thick fleshy root, as upon the stored up nutriment concentrated in it the success of the artificial crop very materially depends. The plants should then be watered sufficiently to settle the soil about them, and the frame covered with shutters and mats, to exclude the light. The Seakale forced in this manner is decidedly superior to that produced by the ordinary method, being firmer in texture, and shorter in its growth; it is also a much easier matter either to examine its progress or to gather it for use. By planting the roots 4 inches apart, a superficial yard will produce six or eight dishes; and if the roots are preserved after removal, and laid in till spring, by picking off all the buds but one they make good sets for another season.

KITCHEN GARDEN.

When the texture of the soil is very tenacious, carefully avoid all treading upon the ground while it is wet, as it should be the object at all times, and especially at this season, to render the soil free and open, that it may more freely allow the ameliorating influences of the sun and air to act upon and in it. To this end take advantage of every favourable opportunity to manure and trench all vacant ground, leaving the soil as rough and loose as possible; for every cavity, however small, will be filled full of atmospheric air. Where any full grown plants of Broccoli, Savoys, &c., are occupying a portion of those quarters which it is desirable to trench altogether, they may be taken up and laid in with their heads pointing to the north, on any spare piece of ground. Scotch Kale, Cabbage, or Brussels Sprouts may be similarly removed, taking care, however, to plant these in their original upright position, for the sake of their sprouts. Keep a quantity of work always in view for wet weather, of which, at this season, we may expect a considerable proportion.

State of the Weather near London, for the week ending Nov. 8, 1849, as observed at the Horticultural Gardens, Chiswick.

Nov.	Moon's Age	Barometer.		Thermometer.			Wind.	Rain.
		Max	Min	Max.	Min.	Mean		
Friday .. 2	17	29.607	29.578	58	37	47.5	E.	.00
Satur .. 3	18	29.504	29.345	55	42	48.5	E.	.00
Sunday . 4	19	[illegible]	29.056	54	36	45.0	E.	.02
Monday 5	20	29.304	29.106	53	33	43.0	S W.	.00
Tues. .. 6	21	29.851	29.518	50	31	40.5	S W.	.00
Wed. .. 7	6	30.077	29.973	57	40	48.5	S W.	.01
Thurs.... 8	23	30.114	30.154	59	52	55.5	S W.	.00
Average....		29.609	29.547	55.1	38.7	46.9		0.07

Nov. 2—Foggy; very fine; clear at night.
— 3—Dense fog, foggy throughout.
— 4—Dense fog, cloudy, slight rain at night.
— 5—Cloudless, fine; clear.
— 6—Clear, fine; clear at night.
— 7—Rain, slight rain, overcast and mild.
— 8—Densely overcast and mild throughout.
Mean temperature of the week, 8½ deg. above the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Nov. 17, 1849.

Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 11	50.7	37.4	44.0	13	0.74 in.	1	3	4	—	5	7	2	1
Mon. 12	52.0	36.0	44.0	11	0.40	1	3	3	1	3	5	6	1
Tues 13	51.1	36.6	43.9	14	0.66	2	5	3	1	5	2	3	2
Wed. 14	49.1	36.0	42.6	12	0.67	4	2	2	4	2	4	3	2
Thurs. 15	49.3	34.7	43.0	11	0.82	2	4	3	2	4	6	1	1
Friday 16	49.1	31.7	41.9	9	0.41	4	3	1	2	4	5	3	1
Satur. 17	49.4	36.4	42.9	12	0.40	3	4	1	1	6	5	2	1

The highest temperature during the above period occurred on the 12th 1841—therm. 63 deg.; and the lowest on 15th, 1841—therm. 15 deg.

Notices to Correspondents.

Back Numbers: One shilling will be given for No. 43, 1848.

Bees: *An Old Sub.* We are not acquainted with any apiarian in your quarter who employs Huber's leaf hive, but you may find an excellent drawing of it in Bevan's work on the Honey Bee. This hive, however, is only valuable for trying experiments with. *W.*

Cacti: *Amateur.* Keep your unhealthy Cacti dry or nearly so during winter, and re-pot them in spring. They should be grown in a mixture of lime rubbish and loam, with a little cow-dung and well drained pots ‡

Calceolarias: *F I.* Out door Calceolarias, such as Kentish Hero, Viscosissima, Kayii, &c., will not stand out the winter in Norfolk with any certainty. You were right in thinking that a supply of cuttings should have been secured at the proper time, and that the plants should have been taken up, cut in, and kept rather dry in a cool house till spring, and then started afresh for a further supply of cuttings to furnish plants for bedding out.

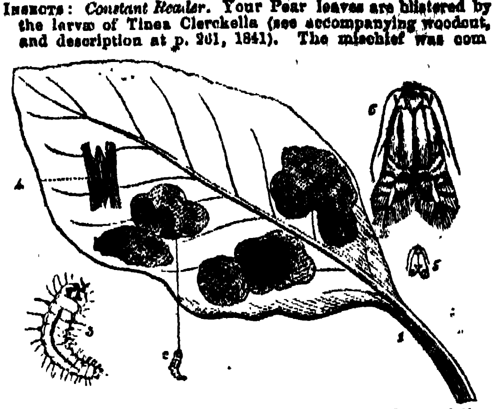
Deodorisers: *Mr Collins*, of Oxford Court, has sent us a bottle of his disinfecting powder, which certainly emits chlorine slowly and continuously, as he states, but which appears to be much too expensive for general use.

[illegible]: *J L[illegible].* We regret to say that they arrived in a very bad condition. You will be written to shortly.

Grapes: *H H* and *Inquirer.* As far as we can judge, your Grapes are attacked by mildew. Sulphur is a remedy for it, if it is applied the moment the mildew appears. It is not so effective if the disease is allowed to get ahead.‡—Will *J E L*, the raiser of the seedling Grape from the Black Hamburgh, crossed with the Muscat of Alexandria, be kind enough to favour us with his address?‖

Hothouse: *A Lady.* We are unfortunately unable to give plans of houses, and mere descriptions would be misunderstood. Your cheapest and best course is to obtain a plan from some professional man, and then to procure a tender from some respectable builder. Use rough plate glass and steam cut woodwork.

Insects: *Constant Reader.* Your Pear leaves are blistered by the larvæ of Tinea Clerckella (see accompanying woodcut, and description at p. 261, 1841). The mischief was com-



mitted two months ago. Collect and burn the leaves fallen from the tree, and watch for the little moths at the end of March, when the young branches should be washed with soap suds. *W.*—*T C.* The aquatic larva is that of Tipula replicata, a species of daddy-long-legs. The smaller ones are the grubs of Psila Rosæ, a two-winged fly, which also causes the rust in Carrots. *W.*—*A K.* The piece of the stem of Vine is infested with the females of a coccus or scale, different from the common Vine scale, but which must be treated similarly. Watch the time when the young nits or larvæ quit the body of the female, and then wash the tree, and especially the young shoots, with *hot* water or some liquid of an oily nature. *W.*—*W W E.* The piece of bark of Silver Fir sent is infested with the larvæ just hatched of some species of coccus (or more probably chermes, which it is impossible at this period to identify). The only way of saving the tree is to wash it with hot water, or with some liquid of an oily nature. We shall be glad of other specimens sent in a living state. *W.*

Kitchen Garden: *W T C.* Converting a piece of pasture, of stiffish clay, on a gravel bottom at the depth of 3 or 4 feet, into a kitchen-garden, you may burn part of the clay with advantage; but if you burn the pastured turf, you will do an almost irreparable injury to your land. No turfy surface soil should be burnt, whether that of pasture-land or that covering a bog. You ought to trench 3 feet deep for your kitchen-garden; and if you sub-trench to the gravel, so much the better.‖

Names of Fruits: *W Ingle.* The Grapes, grown out of doors, were large, and well coloured, but still sour. The variety is nothing but the Black Hamburgh.‖—*H P.* 1, 2, Very like the Minchall Crab, but rather flatter than it usually comes; 6, Dutch Mignonne; 7, Cockle Pippin; 9, Spitzenberg; 10, Trumpington; 11, of crop 1848, quite sound, kept in a dark but dry cellar, merely laid on the stone shelves, appears to be the French Crab. The Pear is not known, it is only fit for stewing.‖—*W F.* 1, Marie Louise; 2, Bishop's Thumb; 3, Catillac; 4, Napoléon. The seedling Apples are not equal in quality to many already in cultivation. The Grape appears to be the Black Morocco.‖—*W B H.* 1, Minchall Crab; 2, appears to be the Dutch Mignonne.‖—*E C.* 1, Rymer; 2, Dutch Mignonne; 4, Beachamwell; 5, Kerry Pippin; 7, Blenheim Pippin; 8, Dumelow's Seedling; 9, Court of Wick; 10, 12, King of the Pippins.‖

Names of Plants: *J G.* Not Conium, apparently Æthusa Cynapium; not Parsnip seed, but some Heracleum; Angelica sylvestris seems right, but the umbels are not simple. You should study "Medical and Œconomical Botany," by Dr. Lindley. There is no such book as you ask for.—*The Hoe.* Calothamnus villosa, a well-known greenhouse plant.—*Albert.* We really cannot waste time on such wretched fragments. Surely we are entitled to request examinable specimens when they are sent for names. Man's life is too short to be spent in guessing riddles.—*Tyro.* Lastrea Filix-mas. *S.*—*A Z.* Your largest specimen is Nephrolepis exaltata, but with respect to the other two, we have never seen them in a living state. The specimen of one of them is barren, it is apparently allied to Nephrolepis obliterata; the other is probably new, but before we can decide, furnish us with perfect specimens, showing the manner of attachment of the frond to the rhizome; also the history of plants, and their native country. If you choose to communicate your address, we will correspond. *S.*—*J H T.* Dorstenia contrayerva. A stove plant.

Peach-house: *J B.* The following are the dimensions of a very good form of Peach-house:—Inside measure, length 37½ feet, width 12 feet; height of back wall 12 feet, and of front, in which place ventilators, 2 feet. Hot-water pipes do very well for heating Peach-houses.‖

Potatoes: *B S, Stoke College.* Your seedling is of excellent quality, and reminds us of what Potatoes used to be.

Tallies: *H.* Send us your address, and we will give you a pattern.

Tanning: *An Inquirer.* Tanner's bark acts in a similar way upon all vegetable fabrics.

Vines: *J H.* Liquid manure used freely upon Vine borders will not prevent Black Hamburgh Grapes from attaining their proper colour; but if it is used very often the water in it may cool down the temperature of the border in a manner injurious to the Grapes.—*G W K.* Use rough plate glass; apply the sashes with as little slope as suits your convenience. It is as well, however, to be able to get between them and the wall. It is of no consequence how they are secured at bottom, provided they rest firmly against the wall at top. Provide, above all things, perfect ventilation, which you may easily do by some contrivance for lowering the sashes by day, and elevating them again at night. In the summer they will be as well removed altogether, provided you can gain an advance upon the season of a month or six weeks in spring, by means of your glass shelter.

Vine Borders: *Novice.* You are right in supposing that "all Vine borders, whether of early or late Vines are meant." Where the Vines are started late it is only necessary to keep their roots dry; but in the case of earlier ones, it is advisable to keep them warm also. *F.*—*E C.* The proposed mode of treating your newly-planted Vines is proper on the whole; but a little heat, with plenty of air, will assist in forwarding them in spring, and in ripening the wood in autumn. Better lay your flag-stones as much lower as will admit of their being covered with several inches of soil, without placing the roots of the trees too high.‖

Misc: *T D B V.* Will be taken into consideration.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES.—This description of Glass has been greatly improved, and we can now supply it free from stripes and all irregularities of surface, perfectly flat, and at the same price as charged by the Patentees, cut to order in panes of

12 by 10 under 15 feet	5½d.	12 feet under 18 feet	6d.
18 feet " 24 feet	6½d.	24 feet " 30 feet	7d.
36 feet " 36 feet	7½d.	36 feet " 48 feet	8½d.

PACKETS IN BOXES of 50 feet each.

6 by 4 and 8½ by 4½...10s. 6d. 7 by 5 and 7½ by 5½...12s.
8 by 6 and 8½ by 6½...18s. 6d. 9 by 7 and 10 by 8 ...15s.

Milk Pans from 2s. to 6s. each, Metal Hand-frames, Tiles, and Slates; Propagating Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d.; 6 tubes, 10s. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

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GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 85, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

EDENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.

HEATING BY HOT WATER.

SEED WHEAT.—For Sale, at 50s. per quarter, good and genuine seed of the RED-STRAW WHITE and HOPETOUN varieties. Samples of grain and ear will be sent on receipt of stamps to cover the expense of postage. No orders for less than 4 bushels can be executed; those from unknown correspondents must be accompanied by a remittance. Sacks 2s. each. WINTER BEANS, for seed, can be supplied at 5s. per bushel. JOHN MORTON, Whitfield, Berkeley, Gloucestershire.

SMITHFIELD CLUB, 1849.—The Annual Show of FAT STOCK will take place on Tuesday the 11th, Wednesday the 12th, Thursday the 13th, and Friday the 14th of December, 1849, at the Bazaar, Baker-street. The Printed Forms of Certificates, for the entry of Stock and Implements, must be obtained from the Honorary Secretary, and returned to him, filled up and complete, on or before Saturday the 17th of November, 1849. B. T. BRANDRETH GIBBS, Hon. Sec., Corner of Half Moon Street, Piccadilly, London.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of

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Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
HONOURABLE BOARD OF ORDNANCE,
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HONOURABLE COMMISSIONERS OF CUSTOMS,
HER MAJESTY'S ESTATE, ISLE OF WIGHT,
ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

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N.B.—Men sent (if required) to any part of the kingdom to do the work, and the Pipes and Connexions found, for a stated sum.

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THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure sent out by them shall be free from the slightest adulteration. Peruvian Guano direct from Importer's Warehouses, London Manure Company's Wheat Manure and Urate, Sulphate of Ammonia, Phosphate of Ammonia, or Ammoniacal Phosphate; Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone Sawdust, and every other Artificial Manure.

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AUTUMN SOWING.—POTTER'S GUANO.

MR. POTTER particularly recommends this season for using his Guano, as, if now committed to the earth, it is better adapted, when the spring returns, to yield to the growing crops the food they require in a fit state for immediate assimilation. The increase of chemical knowledge, as applied to agriculture, has enabled Mr. POTTER to make some important improvements in the manufacture of his Guano, which he now most confidently recommends to the use of all who wish to grow luxuriant crops at small expense.

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PURE GYPSUM, in a state peculiarly adapted for the farmers' use, at the usual low price.

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28, CLAPHAM ROAD PLACE, LONDON.

The Agricultural Gazette.

SATURDAY, NOVEMBER 10, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Nov. 15—Agricultural Imp. Society of Ireland.
THURSDAY, — 22—Agricultural Imp. Society of Ireland.
FARMERS' CLUB.—Nov. 19: Botley.

THE opinion is very prevalent amongst Scotch farmers that they are far advanced in skill beyond their neighbours in the south; and these opinions are confirmed, and their vanity flattered, when those who are held to be authorities, as Colonel RAWSTORNE and others, hold them up as examples to their brethren; and, by selecting and quoting a few extreme instances of very fertile land which yield high rents, attribute to the system of farming a greater degree of merit than, upon strict investigation, it will be found to deserve. It would be out of the question to deny that the Scotch system of farming has hitherto been well adapted for the country, if we take merely rent for a test. Those who have farmed the rich, high-rented lands have been much better rewarded than others who farmed second-rate quality, with the same amount of capital employed per acre, although the difference in rent was enormous. The fertile Lothians, with their extraordinary crops, have long formed a theme upon which agricultural writers have expatiated; but of the light and inferior descriptions of land, which represent the background of the picture, we never have heard much, as these have nothing to boast of. The Norfolk farmer, in respect to these, has long been in advance of the Scotchman. It is more than 80 years since he knew and felt the necessity of the intervention of green crop in the rotation, and their consumption by stock, to maintain the natural force of the soil, whereas the introduction of these is comparatively of recent date in Scotland. Let those who wish to satisfy themselves as to this, compare the numbers of sheep and cattle kept on the Norfolk farms in 1770, when YOUNG made his tour, with the statements of the same, drawn up by the leading agriculturists of the day, in Sir J. SINCLAIR'S Appendix to the General Report of the Agricultural State and Political Circumstances of Scotland, in 1813, and they will at once perceive the difference in the systems; and as there is every reason to believe that the produce in the Lothians was comparatively greater, even at that time, than it is at the present moment on the high-farmed lands in the south, this is sufficient of itself, when rightly viewed, to enable us to apprehend that the land was much more fertile in the one case than the other.

Every one seems so bent on asserting that higher rents are paid in Scotland than in England, that at present we do not mean to dispute the matter; but we have little hesitation in maintaining that, if the net produce is greater in Scotland, the gross produce is less on land of the like quality than it is in the English counties which "W." has enumerated. What, then, is the characteristic feature in the Scotch system of farming which enables them to give a larger proportion of the gross produce to the landlord? It is ECONOMY: but we shall reserve the illustration of this for another article.

The opinion that the farmers in Scotland labour under great disadvantage as to climate, is another constantly reiterated assertion; and we have been lately furnished with a good example in the case of Lord KINNAIRD, who, in writing to a friend in England, says: "Your land, as well as that in many parts of England, is decidedly underlet; and giving way to clamour will only confirm the usual slovenly methods of farming." After giving a statement of 11 years' experience in farming, his lordship sums up: "I feel convinced that with your fine soil and superior climate, there can be no reason why English farmers should not take a prominent part in all agricultural undertakings. In Scotland we have been forced by the difficulties we have had to contend with, in order to overcome natural obstacles, &c."

It is entirely forgotten that it is the peculiarity in the climate which gives force to the whole system of Scotch farming which has been so much applauded, and renders the country, on all the lower districts of it, so well adapted for spring corn and green crops, which have hitherto been the Scotch farmer's main stay; and even in regard to Wheat it would furnish matter for debate whether the normal produce on certain descriptions of soil is not greater, under those circumstances, than it is under the very different climatic conditions of eastern England. High farming furnishes the exception and not the rule, and three-fourths of the cultivators in Scotland stand more in dread of a dry than a moist summer, bad as their climate is represented to be.

Those also fall into a similar error, and one of still greater magnitude, who are continually calling up the imaginary advantages of the "foreign farmers with rich soils and beautiful climates;" there is every reason to believe that these rich soils have not been neglected so far as cropping is concerned; and when they are once exhausted, the fertilising ingredients are difficult to restore. If we take JACOB'S report of the corn-growing countries of Europe for a guide, the results are very sober indeed; and the exactions of the Jew, who is the only banker that Russia can support in her provinces, is a far greater oppression to the foreign cultivator than the rent and taxes are to the British farmer.

Amid all our difficulties we have much for which we ought to be thankful; and we have no doubt if sufficient security be given by landlords for the investment of capital in the soil, this will yet be attracted towards it; for it must be confessed that while high commercial rents have been paid for land, yet corresponding terms and conditions have not been obtained by the tenant, as the abundance of absurd customs and clauses in leases sufficiently testify. And we believe that if free trade shall prove a severe cure for this evil, it is nevertheless a necessary one. *R.*

IN resuming, as an agricultural question, the subject of EMIGRATION FROM IRELAND, now admitted by the most sanguine to be visited with a fourth failure of the Potato crop, we must beg to be understood as advocating it not as a remedy for the evils which are desolating that unhappy country, but as a palliative to the miseries attendant on the social change through which she is passing; as a preliminary to the introduction of a sounder state of tenancy and cultivation; as only one among many measures essential to her regeneration. Ireland is the great difficulty of the Empire, and the Potato is the great difficulty of Ireland. The difficulty of weaning her population from dependence on a root, the exclusive use of which by the peasantry has produced more than half their woes, with more than half the vices by which they have obtained such an unenviable notoriety, and by which their less-known virtues have been thrown into the shade.

Not to insist on the evils which sprang from the Potato in its high and palmy days—the dirt, the idleness, the improvidence which it engendered—it was the principal cause of that subdivision of land and competition for the occupancy of it, which have been the fertile mother of agrarian outrage, essentially the same under all its numerous phases, and all its varying nomenclature.

With the Potato has arisen a dense population, exclusively agricultural; that is, nominally employed in agriculture, but idle during half the year; having nothing to do, after securing their Potatoes and turf, but to sit over their fires, drinking and smoking, talking politics, and planning illegal combinations by which to obtain redress, even by means of assassination, against acts of oppression, real or imaginary, and not always of the latter character. Their agri-

cultural horizon is bounded by the Potato. They either cannot or will not grow anything else. Its continued failure renders necessary an entire change of system; the application of capital, which they do not possess, to cultivation, and the employment of hired labour. It cannot be doubted that, under an improved cultivation, half the present agricultural population, more effectively employed, could extract from the fertile soil under the genial climate of Ireland, so essentially adapted to the growth of forage crops, produce sufficient to support themselves in comfort, and to feed at least twice their own numbers of a non-agricultural population. The question is, how the surplus hands can be employed, so as to enable them to purchase the surplus food. Draining, subsoiling, and other permanent improvements which are the proper work of landlords, or of tenants of capital sufficient to enable them to perform the landlord's work, on conditions which will remunerate them for acting as his substitute, would cause a considerable demand for labour, but it would be but temporary. These operations are important preliminaries to better cultivation. Once completed, their result would be a smaller agricultural population working more efficiently. This source, however, of temporary remunerative employment is in a great measure cut off by the incumbrances of the landowners; accumulated incumbrances of generations, which may be traced, like the *faults* of the peasantry, to the Potato, with its expanding rents and the encouragement they afforded to extravagance in dispositions naturally prone to it. The march of agricultural improvement, slow enough everywhere, is rendered still slower in Ireland by the necessity, now generally admitted, for an extensive change in the ownership as well as the occupation of land. The resources of the Irish wastes, so vaunted by some, we believe to be greatly overrated. In every part of Ireland with which we are acquainted we have seen cultivation extended, by means of the Potato, to situations the natural application of which is to pasture, to which, without the Potato, they must eventually revert. Manufactures, fisheries, and the development of the mineral resources of the country—though we believe that on all these points the capabilities of Ireland are greatly over-estimated by some who are considered high authorities—might in time employ the numbers who must be detached from agricultural pursuits. These, however, are plants of slow growth. An industrious middle class must first be created, who will employ themselves profitably, in giving profitable employment to the class of labourers. A home market for manufactures must also first be opened, by the creation of wants from which a Potato-eating population are unhappily exempt. But the growth of such industrial occupations is slow, and thus the necessity for employment other than agricultural is immediate and urgent. We therefore see no present resource but in extensive emigration. The people appear to be of the same opinion; right or wrong, in conformity with the dogmas of political economy or opposed to them, men will emigrate rather than starve; and the Irish peasantry, adopting a principle which has been acted upon in all ages, whenever the population of a country exceeds its means of subsistence, are emigrating at the rate of at least a quarter of a million annually. They are doomed however to emigrate under the necessity which this unexpected calamity has induced, undirected and unaided, because such an appropriation of the public resources is deemed a misapplication by those who do not consider them misapplied in feeding in idleness, during the winter, a population of pauper occupiers of land, to plant Potatoes in the spring. The consequences of this system are these: those who can least be spared, emigrate, the most burthensome remain. One district is depopulated, while a population excessive for the present means of employment is condensed in another. The cottier who would fly from starvation, the workhouse, or a scanty dose of Indian meal, is compelled to remain. The farmer and the landowner are beggared to support them, and the former takes a moonlight flitting to America with the rent of the latter in his pocket. While Irish agriculture demands increased capital and more numerous employers of labour, both are annually diminishing. The nearest markets for emigrant labour are glutted, whilst the more remote are neglected. The unaided pauper emigration carries pestilence in its train, the result of the privations which the emigrants endure, and has caused Canada to reject them. It would have caused the United States to do the same, but for the new demand for labour which California has occasioned. In the meantime, while we are deranging our financial and commercial system by importing food to feed a pauper population, while we insist on bringing the food to the men instead of sending the men to the food, our own distant colonies are suffering from want of labourers to tend their flocks and herds, reap their harvests, and consume their produce; and while some are dreaming of the trade of Liverpool and Glasgow transferred to Limerick and Ballyshannon, of an Irish Leeds, Birmingham, and Manchester, the manufacturers of Britain have glutted every existing market with their wares; are sighing for new worlds which they may supply with broadcloth, calico, and hardware; are requiring the creation of fresh markets by the extension of our colonies, which experience has proved to be of all markets the best.

Much of the reluctance to assist emigration from Ireland has arisen from the influence of Irish counsels, from a hope that we might tide over the difficulty till the Potato revived, from a predilection for small farms and a desire to maintain the occupancy of land in Ireland as nearly as possible in the state in which the first Potato blight found it. It is contended, and truly, that the population of Ireland is not excessive if the resources of the country were developed and the soil effectively cultivated. The slowness of the process by which these results are to be obtained is overlooked, and the visionary speculation is cherished that Irish Potato-planters can be converted *per saltum* into husbandmen like those of Belgium. This policy has defeated itself. If a portion of the many millions which have been expended in the relief of destitution in Ireland had been applied, and only a portion of them could have been so applied, in assisting the destitute to emigrate to new countries, where land was a drug and labour in demand, the change in the occupancy of land in Ireland would have been less sudden, the poor-rates would not have been so high, and more of the holders of farms, ranging from 20 to 50 acres, would have stood their ground. *T.*

Those of our readers interested in the Show of the Smithfield Cattle Club, to be held early in the ensuing month, at the Baker-street Bazaar, will be pleased to remember that the 17th inst.—this day week—is the last day on which they can enter stock for exhibition. People are so apt to put these things off till the last moment, that sometimes there is scarcely time to get the breeders' signatures, in cases where they live at a distance; and we take the liberty therefore of publishing this memorandum for their use.

THE FARMERS' PROSPECTS.

The task I undertook in my last letter was truly a thankless one. Considering that the first movement in the right direction must spring from a conviction that we are proceeding on a false tack, and that the do-nothing system is certain ruin, I endeavoured to show that, whether justly or unjustly, there is not the remotest chance of our getting from the community at large the contribution of a few millions a year to eke out farmers' profits or farm rents; that the public burthens which unduly bear on the cost of cultivating land, though we hear so much said of them, are, in fact, so trifling as little more than to justify the shilling per quarter already chargeable on the importation of grain from abroad; and that rents being regulated by the common principles of free competition, although they have undoubtedly been enhanced by the delusive system of Protection, will not be reduced, so long as land can be cultivated under them at a profit, or there are tenants to attempt it.

I inferred a continuance of competition for farms from several considerations—from the fact that farming capital, if attempted to be realised, has already depreciated one third; that if transferred to any foreign soil, or even to Ireland, so large a portion of it must be sunk as paid capital; but chiefly from the conviction daily gaining strength, that in England farm rents are rather unequal than high, and that the farmer who commands the capital, and will bring to bear the energy and skill requisite for prosperity elsewhere, or in other callings, may cultivate the land to good profit at home

The above may be matters of opinion, but all are agreed that future prices will be very low, not less, perhaps, than 20 per cent. under former averages; and our first enquiries should naturally be how far does the profit of farming depend on the price of produce? It will occur to the farmer who reflects at all, that he has no concern whatever in the price of such produce as may be consumed at home, either by his family, his horses, or his live stock; and if engaged in mixed husbandry, he will find by reference to his farm accounts, if he has been so fortunate as to keep any, that the amount so consumed is more than one-half the produce of his farm. Free competition being extended more or less to all products, and the cost of food entering largely into the price of labour, being in fact the raw material of all industry, he will find all purchased articles cheaper, his labourers' money wages reduced, and the pauper maintained at less cost. His tithes too will year by year fall with the fall of grain, and he will naturally be forced to the conclusion that he can maintain the same cultivation of his farm at considerably less than the accustomed outlay, and that what low price takes from him as a producer is partially regained by him as a consumer.

But still rates and wages and tradesmen's bills, though reduced, have to be provided for, and rent has to be paid unreduced, and where 4 quarters would formerly meet a payment he must now sell 5. To avoid all debateable ground, let us then assume, for argument sake, that his money payments are not reduced, and that to maintain his former command over the good things of the world, he has henceforth to grow 5 qrs. where he used to grow but 4; and to fatten and rear 50 head of live stock where formerly he only reared or fattened 40. This, then, to increase by one-fifth the produce carried to market, is the extreme task imposed on the farmer by recent legislative changes, and it was for the purpose of showing how this can be done without any increase in his money payments, and without additional command of capital, that I trespassed on the columns of the *Agricultural Gazette*.

The first subject to which I pointed attention was the enormous waste arising from the all but universal system of manufacturing farm-yard manure, and the *Gazettes* for the 14th and 28th July last contain practical suggestions on this head. To induce reflection as to the relative values of fermented and unfermented manures, I referred in a subsequent letter to the recent analyses of guano by Professor Way, showing that the ammonia in one ton of unfermented bird-droppings was of the value of 9*l.* 14*s.*, whilst the ammonia in two or more tons of similar bird-droppings which had been subjected to fermentation was worth only 18*s.* The dung of birds, containing the liquid as well as the solid excretions, is peculiarly rich in that constituent, nitrogen, which forms ammonia, and in the phosphates, especially the dung of those birds which feed on fish; but let the farmer bear in mind that almost his entire crop depends upon certain fertilising elements in his farm-yard manure, and that not less than eight-tenths of the value of these elements consists of nitrogen and of phosphates. Let him further reflect that when a substance containing nitrogen rots, or is decomposed, the nitrogen combining with one of the elements of water, forms the valuable gas ammonia, worth as a fertiliser 50*l.* a ton—that if this gas at the moment of forming does not become fixed, that is combined with some substance, such as sulphuric acid, which will turn it into a solid, it passes at once into the atmosphere, and is lost—that even when fixed it is soluble in water—that the phosphates also are more or less soluble, and that if water reaches his manure and afterwards flows away, it will necessarily carry with it the salts of ammonia and most of the phosphates with which it has come in contact. After maturely considering these facts, and inquiring into their reality if he doubt them, let him for a moment contemplate his own farm-yard, and his system of manure-making. It is a flat, or perhaps on a slope—the rain-water from his buildings, and probably from some neighbouring land, flows over it; he deposits there the droppings of his horses, pigs, and his feeding stock, with the straw that is used as litter, and such additional straw as it is proposed to be trodden into manure by young stock. This accumulating mass of mixed dung and straw, with such of the urine from his stock as can find its way there, lies decomposing during the winter and spring months, washed by every shower, occasionally flooded, and nothing whatever to prevent the gaseous products of decomposition from passing into the air, and the soluble phosphates and other salts from being washed away. That no portion may have a chance of escaping the effects of air and water, it is turned over once or twice, or perhaps carted to a field in readiness for the root crop. It is spread under a June or July sun, and ploughed in, but the straw being dry, or not perfectly decayed, the plough imperfectly covers it, leaving a considerable portion wasting on the surface.

What portion of the gaseous and soluble constituents of the excrements of cattle, of that which in fact is to pay the year's cost of cultivation, the rent, and the profit, can escape dissipation under such treatment as this, and is not this the usual mode of making and of using farm-yard manure? Is it not to be expected that the exposure which in guano brings down the value from pounds to shillings, has robbed the contents of the farm-yard of those fertilising constituents which would have doubled the crop? Would not the avoidance of this waste, which can be done at the cost of a little labour and attention, compensate, and far more than compensate, for the injury inflicted by free foreign competition.

The original richness of cattle droppings in nitrogen and phosphates so greatly depends on the quality of food consumed, that exact calculations can hardly be made. Straw contains about one-third per cent. of nitrogen; Clover and meadow hay, and grain, about 2 per cent.; Peas, Beans, and oilcake, as much as 5 per cent. As nitrogen combines with about one-fifth its weight of hydrogen to form ammonia, and as the quantity assimilated, even by young or feeding stock, does not exceed one-fifth, it may be assumed that the ammonia in the excrements is fully equivalent to the nitrogen in the food. Therefore where beasts are fattened, the farm-yard manure might be expected to contain in the wet state as much as 1 per cent. of ammonia, or constituents producing ammonia; but taking it at only one-half per cent., and the dung produced at 3 tons per acre, there would be on a farm of 200 acres of tillage, 600 tons of farm-yard dung, containing 3 tons of ammonia, worth 150*l.* Estimating the soluble salts at one-third the value of the ammonia, we get at the lowest calculation 200*l.* as the value of these ingredients in the manure made on a farm of 200 acres, or at the rate of 1*l.* an acre. Under the treatment of manures practised at the Auchness farm, or under that unexpensive system I have suggested in former letters,

nearly all those [illegible] will be carried to the fields, to destroy their fertility. But under the system all but universally practised, nearly one-fourth of these ingredients can have escaped air and water, and with these ingredients large quantities of carbonic acid have also vanished, leaving a heavy mass of matter to be carted to the fields, exhausted of those volatile and soluble constituents which constituted its value.

Allow me next to call attention to the prevailing system of cleaning the land, and of shallow ploughing. One acre 12 inches deep contains as much feeding space, and almost as much plant-food, as two acres 6 inches deep, and yet how rarely is the plough made to penetrate more than 6 or 7 inches. If you inquire the reason you will be told that the soil is only so many inches deep, that underneath there is nothing but chalk, or gravel, or nasty cold clay. It is in vain you remark that the cultivated soil is only chalk, or gravel, or clay, more or less changed by frost and sun and rain, and mingled with the remains of roots and stems; that by exposure to atmospheric influences the crude ungenial earths had become oxidised and partially decomposed; that excess of acids had been removed by combination with the liberated alkalies, and with the ammonia which every fall of rain and snow brought down, and that in a short time the under soil, if exposed to these influences, would become as friable and mellow as the upper, and richer in the inorganic food of plants.

If the lands be clayey and undrained, there is nothing to be said; if the tenant cannot afford the cost of draining, or has no lease, and the landowner will not drain, he had better submit to a present sacrifice, and, leaving his farm, seek elsewhere a landlord who better understands his tenant's interest and his own. Excepting chalk soils, there is little land where in our moist climate under-drainage is not essential to perfect cultivation, and on clay lands it must precede deep ploughing. The cost of deep and effectual draining will average perhaps 3*l.* an acre, and under "the Private Money Drainage Act, 1849," no landowner is left an excuse for refusing the outlay. If not the owner of the inheritance he may borrow under the Act, and an increased rent of about 7 per cent. on the outlay will repay principal and interest. If owner in fee, he may borrow at 4 or 5 per cent.; and as lands sell for 30 years' purchase on the net rental, each 100*l.* expended on the farm, if the tenant paid 7 per cent. additional rent, would add 200*l.* to the sale value.

Under-drainage is not sufficiently appreciated, from an impression that if water quickly flow off the surface it is not required, and that its value mainly consists in getting on the land later in autumn and earlier in spring. It is no slight advantage to be able to gain a few weeks in tilling and seeding, and to be rarely debarred by wet from horse-hoeing and rolling; and the reductions in the cost of cultivation hence occasioned would abundantly compensate the extra rent. But it is perhaps as the means of increased productiveness that it should be chiefly valued as the means of raising the temperature of the soil, and carrying warmth and atmospheric influences deeper into it, and so admitting of deeper and less wasteful cultivation, of more luxuriant crops, and earlier, and therefore more complete ripening. Whoever has seen water frozen in a white-hot vessel by dropping on it an evaporating liquid, or cooled a bottle of port by wrapping around it a wet towel, is aware that evaporation is a powerful producer of cold, and that if much of the rain which falls has to pass off by evaporation, the soil must be proportionally chilled, and the warm rays of the sun wasted, not in raising its temperature, but in turning water into vapour. During a considerable portion of the year rain is warmer than the under soil, and in drained land carries warmth to the roots of plants with the ammonia and fertilising gases held in solution. At other periods the surface soil is heated by the sun, and when rain falls, that warmth is, in drained lands, at once carried below, instead of being partially lost by evaporation, and thus our rainy skies, so much decried as the farmer's difficulty, prove on soils, made porous by drainage, the genial sources of increased productiveness.

There is a prejudice against deep-ploughing. I have frequently heard farmers say they had tried it, and having injured their crop would not again meddle with the undersoil, like the cautious schoolboy who vowed he would never go into the water again until he could swim. Undoubtedly the advantages of a deep soil are not to be attained without some care, and the plan I suggest would bring the whole farm into deep cultivation in the course of one rotation.

As the first object is to expose the subsoil to the atmosphere, the land intended for the fallow crop should be trench-ploughed in autumn, taking the plough twice down each furrow, and so throwing to the surface 5 or 6 inches of the subsoil, or, what is better, using two ploughs, one following in the track of the other. Where the subsoil was chalk, or coarse gravel, or indurated clay, the second plough should be preceded by a subsoil-plough, or common plough with the mould board removed. About January, should the weather permit, a cross-ploughing should be given, to change the surface exposed, and in spring the liberal use of the Crosskill and cultivator will complete the pulverisation of the soil, partially mix the old soil with the new, and eradicate all vivacious roots. I assume every farmer to have a Crosskill and cultivator, or to be able to hire them, considering it impossible to bring clay land into profitable condition without them. The spreading and ploughing in of the farm-yard manure would be as usual, and as the only risk of the root crop would be the comparative poverty of the immediate surface, it would be advisable to drill with the seed a sufficient quantity of dry concentrated manure to force the plant rapidly into leaf and sustain its early growth. With the succeeding crops no difficulty need, I think, be apprehended.

The system of following with a second plough in the track of the first must, I think, become generally adopted. How frequently are three or more horses employed to do the work badly which two pair-horse ploughs would do effectually; and whenever long manure is to be covered, or a foul weedy surface turned in, the use of two ploughs would seem to be imperative. With one plough the surface is only partially turned under; whatever force you apply, part of the vegetable matter escapes decay, and vast labour is afterwards required to clean off what, if buried, would have turned into mould. Vivacious roots form but a small portion of the foulness of land, and where they exist the soil should be turned over with two ploughs in autumn, and the roots which did not decay would show in spring, and might easily be eradicated with the cultivator. The spring tillage work would be lightened, and much vegetable matter hitherto wasted converted into manure. *P.*

FARM ACCOUNTS.

Herewith I take the liberty of handing you an estimated Dr. and Cr. account of cultivating an acre of land in a farm of medium quality of soil, according to the common four-course system of this part of the country, which is much at your service. If correct, a profit may still be obtained by farming on the four-course principle; but I conceive that even much greater profit might be realised by a more extended outlay in manure, artificial and home made, by which a much heavier weight of Turnips per acre might be produced, and consequently heavier crops of corn and Clover obtained. *Philo-Agriculus.*

Estimated Debtor and Creditor Account of cultivating a Farm, per acre, of Land of fair quality, on the Four-course system.

FIRST YEAR—TURNIP FALLOW.

Dr.				Cr.			
To Three Ploughings, at 8*s.*	£1	4*s*	0*d*	By Crop of Swedes, say 16 tons, at 10*s.*	£8	0*s*	0*d*
Three Draggings, Harrowings, and Rollings, at 5*s.*	0	15	0	Balance carried the debit of next year	3	13	6
Three Weed and Couch gatherings, at 4*s.*	0	12	0				
One ridging and covering Manure, at 5*s.*	0	5	0				
Drilling and Rolling	0	2	0				
Farm-yard Manure, and leading 12 tons, at 6*s.*	3	12	0				
Bones, 5 cwt. at 6*s.*	1	10	0				
Two Hoeings, at 5*s.* and 3*s.*	0	8	0				
Turnip seed, Swede, 2 lbs. at 1*s.* 3*d.*	0	2	6				
Rent, per acre £1 7 0							
Tithes and Taxes 0 10 0							
Interest of capital, 10 per cent. on 8*l.* an acre 0 16 0							
Hedging, ditching, and contingencies 0 10 0	3	3	0				
	£11	13	6		£11	13	6

SECOND YEAR—BARLEY.

To Balance brought down	£3	13*s*	6*d*	By Crop, 6 quarters, at 32*s.* (The straw to pay for harvesting and marketing.)	£9	12*s*	0*d*
One Ploughing	0	7	0				
One Harrowing and Sowing	0	3	0				
One Rolling	0	1	0				
Seed Barley, 4 bushels at 4*s.*	0	16	0				
Rent, &c., as before	3	3	0				
Balance carried to credit of next year	1	8	6				
	£9	12	0		£9	12	0

THIRD YEAR—CLOVER.

To Clover seed, 14 lbs. at 8*d.*	£0	9*s*	4*d*	By Balance brought down	£1	8*s*	6*d*
Rent, &c., as before	3	3	0	Value of crop on the ground	4	0	0
Balance to credit of next year	1	16	2				
	£5	8	6		£5	8	6

FOURTH YEAR—WHEAT.

To Ploughing and Pressing, at 8*s.*	£0	8*s*	0*d*	By Balance brought down	£1	16	2
Harrowing and Sowing, at 3*s.*	0	3	0	Crop, 4½ qrs. per acre, at 40*s.* (The straw to pay for harvesting and marketing.)	9	0	0
Seed Wheat, 2 bushels at 6*s.*	0	12	0				
Lime, 2 tons at 8*s.*	0	16	0				
Rent, &c., as before	3	3	0				
Balance, being profit on the four years (28*s.* 6*d.* per acre, per annum)	5	14	2				
	£10	16	2		£10	16	2

By Balance to the credit of the four years, equal to 28*s.* 6*d.* per acre, per annum £5 14 2

Home Correspondence.

Use of Lime on Clay Fallows.—The most economical, and by far the simplest and most generally applicable, mode of reducing the cloddy surface of clay lands, is to lay mounds of alternate layers of the rough materials and hot lime, and to ignite the heaps by exposure to the air, or by the application of water. A heap of 7 yards in length, 4 yards in breadth, and 3 feet high, and mixed with 72 bushels of hot lime, has been recommended to be reduced to ashes, when fresh clay may be added so long as sufficient heat remains. The damp heat exhaled from the lime will produce a smothering effect on the clay, that is not easily attained in the open air, either with a large or small quantity of flaming combustibles; in the former case, there is danger of calcination and uselessness, and in the latter of imperfect burning and extinction of the fire from exposure, and the surrounding contact of air. The lime can be got at any time, and the process can go on in wet or dry weather; the means are more at the command of the farmer, and the work can be performed more promptly, on that account, than when it depends on many contingencies that are wholly beyond control. By the bursting and dissolution of the shells, the clods of earth will be pulverised and blended with the lime, the pulverulent mass will be spread over the surface, and incorporated with the fallow. This process will be very effectual in reducing stubborn fallows that often defy the efforts of labour, and will add both lime and ashes to the soil; but the land must be wrought in a certain degree before it can be accomplished, when very considerable attention will be required. The quantity of ashes must be sufficient to cover the whole surface of the ground, when the heaps are spread; if less, the application may be worth little. The ultimate products are a mixture of finely reduced and pulverised substances, to be blended and incorporated with the soil, on which acquisition so very much of the fertility of the earth depends. *J. D., Nov.* 6.

Cumberland Clod-Crusher.—In reference to this implement, figured in your Paper of the 27th October, where the writer is at a loss to know its origin, any person curious in the antiquity of it may see, on my farm, the second implement of the kind ever made, I believe, in Cumberland, or perhaps in England, the first being worn out. Several years ago I saw the machine figured, and its uses described, in a work on Flemish husbandry (sent to me by Wm. Browne, Esq., of Tallantire Hall, and drawing my attention particularly to this figure), where the bottom part was flat; and having had one made similar to the figure, it occurred to me that a ribbed bottom would act more efficiently, and consequently I had another made with the planks notched in, to press obliquely on the surface, as shown in your figure; and it has been of considerable service to me, and to numbers who have copied it. Its action is that of a rasp, but I observe many of them are rendered less effective by having the bevil edges set too perpendicular, thereby losing a great part of the grinding power by driving the clods before them, instead of the slopes mounting and rasping all they come to into powder. The fore-edge ought to be raised a little, to enable it to mount the clods easier, and the bottom planks ought to be broader than is represented in your figure. The Flemish name is "Traineau." *Wm. Dickinson, near Whitehaven, Cumberland, Nov.* 1.

High Rents in East Lothian.—Your correspondent "W." desires to know how East Lothian farmers contrive to pay higher rents than many of their English brethren. A consideration of the following advantages enjoyed by the former may tend to solve the enigma: 1, payment of rent half in grain; 2, payment of wages chiefly in grain and Potatoes (equivalent to 10*s.* a week); 3, a rich soil, mostly drained; 4, an excellent set of farm workers, men and women, hired by the half-year, and generally staying much longer; 5, a steam engine; 6, coal from 4*s.* to 6*s.* a ton; 7, a good steading; 8, a lease; 9, comfortable house. The high amount of capital (10*l.* per acre) and skill which is naturally demanded of the farmer, to meet these advantages, turns them to full account, as is evident to every passing visitor. The high rents mentioned by "W." (7*l.*) occur only in the neighbourhood of towns. From 2*l.* to 4*l.* is more general. There are many districts in England where a judicious expenditure on the part of the landlord would make it to the advantage of the tenant to pay rents as high as these; and where, without this expenditure, the landlord must either lower the rent or take the land into his own hands. *B., East Lothian, Nov.* 1.

The evils of Sowing Grain Broadcast.—The disadvantages of this mode of sowing are more numerous than would at first sight appear; for judging only by the eye, as we pass through the thickly sown grain fields of this country in summer, no crop could appear finer in many cases, as, if the tall weeds have been removed by hand in the spring, nothing is visible but a waving and luxuriant mass of stalk and ear. To discover the real state of the ground, however, one has only to go over it after it has been cleared in autumn, when it is surprising how the surface in general is covered with weeds and Grass, often quite as much of these as stubble. This must always be the case where the practice of broadcast sowing is followed; no matter how clean the ground may have been after a green crop, a fresh supply of weeds are sure to make their appearance and spread vigorously, while undisturbed in the midst of a corn crop. Nor is the evil confined to the field itself, but extends to the crop after it has been housed, for on account of so many green leaves and stalks being among the straw at the bottom of the sheaves, it is nearly impossible (at least in this damp country) to get them thoroughly dried in the inside; the straw being ready to stack long before the sap is dried out of the weed and Grass stalks. The straw is often found long afterwards to be much spoiled from this cause. Then again, when the grain is being cleaned, it requires often nearly double work, on farms where there is no threshing machine, to free it from the seeds of weeds mixed with it in threshing. It will be a very great improvement when drilling and dibbling of corn, with the subsequent careful tillage, become common in Ireland, where, at least in the north, it is at present quite unpractised. *T. Bub, Ulster.*

High Farming and Low Prices.—The Leaders which have appeared in your *Gazette* as to the beneficial effect of a more general application of scientific principles in the practice of agriculture I have read with interest; and although I am not discouraged by the prospect of things, nor would desire to dishearten others, yet I think it behoves each of us to honestly state his experience, if indeed he has any experience to attest. That much remains to be done to the land in some districts in draining and other permanent improvements, as also by a more skilful system of farming, is obvious to every person acquainted with the mere rudiments of agricultural knowledge; but it must be admitted by the advocates of scientific advancement that the great breadth of land in England and Scotland, in regard to cultivation, is worthy of comparison with any like extent of land in the world. Where is the average produce per acre so great as here? The farmers have for the last 30 years been in a state of healthy progression, and although they may not now run in the race of science with the eagerness some of their friends may desire, they are not unmindful of the importance, indeed of the absolute necessity, of adopting the various improvements in cultivation suggested by the superior intelligence of the age. All, however, cannot be luminaries; but the more unlettered of practical farmers will surely follow every course of improved culture fairly tested and sanctioned by the better informed of their neighbours. But can low prices be met by high farming? I am a practical farmer, and although fortunately I am not dependent on the prosperity of agriculture, my earliest associations and present sympathies are deeply rooted in the cause. My experience has been upon a clay farm of 100 acres, 65 acres of which are arable and the other 35 acres are Grass. I have done much to improve the land, and have not grudged any outlay of a reproductive character. The following is the result of my last year's cultivation:

Wheat from the harvest of 1848, 5s. 8d. per bushel	£204	3	0
Profit by horse-keep, exclusive of farm horses ...	28	10	0
Sheep sold ...	37	1	0
Pigs do. ...	32	6	0
Poultry ...	5	6	0
Beans (not consumed on the farm) ...	13	0	0
	£320	0	6

One year's rent ...	£100	0	0
Tithe and rates ...	31	0	0
Labour, exclusive of work done by farm horses ...	142	3	0
Guano and other manures bought	26	0	0
Tradesmen's Bills ...	22	10	0
	£321	13	0
Loss, besides interest of capital ...	1	6	6
	£320	6	6

Such is my experience of last year. Had, however, the old average of prices been maintained, I should have had a moderate profit, but no more.

Total realised as above ...	£320	6	6
Depreciated value of produce, one quarter ...	106	15	6
	£427	2	0
Expenditure as above ...	321	13	0
Assumed balance for interest of capital and profit	£105	9	0

Wheat is the great crop on clay land, and I had 30 bushels to the acre last year. This I consider a fair yield on the average of clay land. If I am wrong in the view I take, I should be glad for any of your readers to correct the opinion and kindly to supply a balance sheet, in order that one may judge of the quantity produced and count the cost of production. I need not refer to the price of produce with which the present season has opened. The fact is too well known. I regret to learn that the farmers in some districts have reduced the wages of the labourer to 6s. a week. In my own neighbourhood the able-bodied man is at present receiving 9s.; but this rate cannot I fear be maintained through the winter. The competition for farms, arising from the increase of population and the death struggle of many for a bare subsistence, will keep up rents for a time. But has not the demand for land in Ireland been as great until recently? And what is now the position of the landlords in that country? The comparison with Ireland will not I admit hold good as to the cause of the evil; but low prices, with the existing payments, in this country, if of long duration, will I firmly believe result in pauper labourers, bankrupt farmers, ruined landlords, and a beggared country. Biding the time, I shall peruse your Leaders with some mental gratification at least, if no pecuniary gain result therefrom, and I hope I shall not be slothful in my little farm of 100 acres. *R. F. W.*

Dear Bread.—I hope you will not allow the jesuitical reply of the "Miller and Farmer," (see p. 698), to settle the question of "dear bread." His statement may be more intelligible to practical men, but he jumps from sacks to bushels, from pounds to stones and quarters, so that I cannot undertake to clear up his calculations; but this I see, that he says the 4lb. loaf is 5*d*. Now for myself, at the time the article was written, we were paying here (Islington), 7*d*.; and the 4lb. loaf is now 6½*d*.; of course we are all speaking of the best quality, and that little convenient error gives 16*s*. per sack more profit than he allows! viz., 26*s*. instead of 10*s*. *J. C.* [Qu. the amount of a baker's profit, after due allowance for alum and water, as well as overcharge?]

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

The Council resumed their sittings, after the recess, on Tuesday last, the 6th of November, when a monthly meeting was held; present, Mr. Thomas Raymond Barker, Vice-President, in the Chair; Hon. H. W. Wilson, Col. Austen, Mr. S. Bennett, Mr. Brandreth, Mr. Burke, Col. Challoner, Mr. Garrett, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Kinder, Professor Sewell, Mr Shaw (Lond), Mr. Shaw (Northampton), Mr. Shelley, Professor Simonds, Mr. W. Simpson, Mr. Tanquerny, and Professor Way.

The following new members were elected:

Wodehouse, The Lord, Kimberley Hall, Wymondham, Norf.
Delves, William, Frant, Tunbridge Wells, Kent
Crabtree, John, Halesworth, Suffolk
Smith, Henry, The Grove, Cropwell-Butler, Bingham, Notts
Bale, S., Flint Hall, East Harling, Norfolk
Hallam, Thomas, Bridlesmith Gate, Nottingham
Tillett, Samuel, Hill House, Lexden, Colchester
Saxby, William, Rottingdean, Brighton.

The names of 26 candidates for election at the next meeting, were then read.

Finances.—Colonel Challoner, Chairman of the Finance Committee, presented to the Council the report on the Finances of the Society to the end of the previous month; from which it appeared that the current cash-balance in the hands of the bankers, on the 31st Oct., was 453*l*. He also laid on the table, for the information of the Council, the quarterly statements connected with the income, expenditure, liabilities, and funded property of the Society. A vote of thanks was unanimously passed to Messrs. Gurney and Co., of Norwich, for the kind manner in which they had accepted the appointment of the local bankers of the Society in connexion with the Norwich meeting, and for the courtesy and exactness with which they had transacted the financial business of the Society on that occasion. The Council adopted the suggestion of the Committee, that the President should be requested to direct a special council to be summoned on Wednesday, the 12th Dec., for the purpose of taking into consideration the financial state of the Society. Agreeably with the order of the Council, lists of members in arrear of their subscription, alphabetically classed in counties, with a statement of the amounts respectively due from each, having been prepared during the recess, were at this meeting suspended on the walls of the Council room, in order that an examination of these names might take place by members of Council residing in the particular localities, and reports made on the subject to the Finance Committee previously to the Special Council in December.

Member of Council.—The Council received, with deep regret, the announcement of the decease of their venerable member, Mr. Hillyard, of Thorpelands, near Northampton.

Prize Essays.—Mr. Pusey, M.P., chairman of the Journal Committee, transmitted to the Council the report of the Judges of Essays, Plans, and Specifications, for farm buildings, from which it appeared that the following adjudications had been made.

I. The Society's prize of 50*l*. for the best Essay on the Construction of Farm Buildings (with plans, elevations, and a working estimate of the farm buildings, exclusive of dwelling-house, in prices, enabling parties to calculate the cost accurately, suited for a farm of moderate size, from 200 to 300 acres, at a reasonable cost, and adapted to the requirements of a practical farmer), awarded to Sir Thomas Tancred, Bart., of Cirencester, Gloucestershire.

II. The "Commendations" of the judges to the Essays bearing the following mottoes.

1. "Concordiâ res parvæ crêscunt."
2. "Pro bono publico."
3. "Ita ædifices," &c.—*Cato.*
4. "The talk of a Farmer is of his Bullocks."

Journal.—Mr. Pusey also reported that the new part of the Society's Journal was in the press, and would be ready for distribution among the members soon after the ensuing December meeting.

Stock Prizes.—On the motion of Mr. Fisher Hobbs, the following committee was appointed to take into consideration, and report to the Council, on Dec. 12, the prizes to be offered for Live Stock at the Exeter Meeting; namely, Lord Portman, Col. Challoner, Mr. Raymond Barker, Mr. Shelley, Mr. Shaw (London), Mr. Fisher Hobbs, Mr. S. Bennett, Mr. Jonas, Mr. Brandreth, and Mr. George Turner.

December Meeting.—Mr. Pusey's report on Lectures for the December meeting having been read, it was moved by Mr. Shelley, and seconded by Mr. Brandreth, that Professor Simonds and Professor Way should be requested to deliver each a lecture before the members in the house of the Society on the occasion of that meeting, a request to which those gentlemen (who were present) kindly expressed their perfect willingness to accede. The following arrangements were then made for the business of the period:

1. Tuesday, Dec. 4. Monthly Council at 12 o'clock.
2. Tuesday, Dec. 11. Weekly Council at 12 o'clock.
3. ...... Professor Simonds's Lectures on the Anatomy and Diseases of the Foot in Domesticated animals; with particular reference to the "Foot-rot" in Sheep, at 8 P.M.
4. Wednesday, Dec. 12. Special Council for Finance, and Committee for Stock Prizes.
5. ...... Professor Way's Lecture: Elementary Illustrations of the Chemical and Physical Conditions of Water, at 8 P.M.
6. Thursday, Dec. 13. Special Council for Stock Prizes, at 11 precisely.
7. Friday, Dec. 14. Audit of Accounts at 11 A.M. Special Council for Report at 1 P.M.
8. Saturday, Dec. 15. General Meeting of Members at 11 A.M.

Devon Cattle.—Mr. H. Manning having laid before the Council a communication from Mr. W. Ewings, inquiring whether the South-Devon cattle would be qualified to compete for the Society's prizes at the Exeter Meeting, the Council decided that all "Devon" cattle (whether bred in the north or south of the county, or elsewhere) would be qualified to compete, provided they were duly entered agreeably with the Society's rules for such competition.

Steward of Implements.—Sir Matthew White Ridley, Bart., communicated his willingness to act as one of the Stewards of Implements at the Country Meetings of the Society, agreeably with the request of the Council.

Farm Accounts.—Colonel Challoner, Chairman of the Farm-Account Committee, laid on the table a complete copy of the Forms proposed for adoption, subject to the comments and suggestions of members of the Council, to each of whom a copy had been addressed for that purpose on the previous day.

Veterinary Inspector.—Professor Sewell communicated the assent of the Governors of the Royal Veterinary College to the proposition made to them by the Council, that Professor Simonds should be allowed to act as the Veterinary Inspector to the Society. The cordial and best thanks of the Council were voted to the Governors of the College, for this instance of their kind co-operation in promoting the great object of the application of veterinary science to the live stock of farmers.

Smithfield Show.—Mr. Brandreth Gibbs reminded those Members of the Council who intended to make entries for the ensuing Smithfield Club Show, that the 17th of November would be the latest day for that purpose.

Numerous donations and communications for discussion were received and referred to the Weekly Council on the 11th of December.

Farmers' Clubs.

Botley: *On the Application of Manures for Wheat.*—At a recent meeting of this Society Mr. Spooner made the following remarks on this subject:

If we compare the produce in this country to that of others, particularly those of the Continent, we find that our average crop of Wheat doubles theirs, and it also doubles the produce in this country 100 years ago. Why is this the case? Not because our land is better or more adapted for Wheat than that on the Continent, but rather the reverse; but because our land is highly manured, whilst theirs depends on nature and the elements for the moderate supply of that food without which a grain of Wheat could not be brought to maturity. Thus, in other countries, long fallows are the invariable rule, whilst here they are the exception. They are imperative there, not more for the purpose of cleaning the land than for the supply of the food of plants for the furnishing the inorganic constituents by the disintegration of the soil, and the organic materials from the sources of the atmosphere. The ultimate constituents of which plants are composed are of two kinds, organic and inorganic or earthy. The former, although composing the principal bulk of vegetables, consist only of four bodies, three of which, viz., oxygen, hydrogen, and nitrogen, are gases; and of carbon, which is a solid body. The inorganic bodies, though forming merely from two to seven per cent., are yet much more numerous, consisting of salts of silica, lime, magnesia, iron, potash, soda, and a few others, which are usually found combined with carbonic, sulphuric, phosphoric, and other acids. A certain number of these are soluble in water, and others are not so.

The Wheat and straw together consist of—

	GRAIN.	STRAW.
Organic matter	835	688
Inorganic matter	20	52
Water	145	260
	1000	1000

According to Boussingault the ultimate composition is—

	GRAIN.	STRAW.
Carbon	461	448
Oxygen	434	389
Hydrogen	58	53
Nitrogen	23	4
Inorganic matter	24	70
	1000	1000

An average crop of Wheat removes in grain, straw, and chaff, per acre, 84 lbs. silica, 20 lbs. phosphoric acid, 4 lbs. sulphuric acid, 8 lbs. lime, 6 lbs. magnesia, 1 lb. peroxide of iron, 23 lbs. potash, and 1½ lbs. soda; it also removes about 59 lbs. nitrogen. To supply 59 lbs. of nitrogen requires 3½ cwt. of Peruvian guano, or 2¾ cwt. of sulphate of ammonia. It cannot be doubted that the best manure for Wheat is farm-yard dung, when such can be obtained in sufficient abundance and of a good quality, and near the homestead. Some years since

It was very properly considered that the best system of manuring was to reserve all the dung for the Turnip crop, and to apply none to Wheat. This was a very good practice when dung was the only manure, inasmuch as though we may raise a very moderate crop of Wheat without manure year after year, we can scarcely raise any Turnips without it after the first year. This is owing to the fact which was then unknown, but is now well understood, viz., that Turnips require an immediate and copious supply of phosphate of lime, and that in as soluble a state as possible; so that in order to supply a sufficient quantity of the phosphate of lime, about 1½ cwt. being required by the crop, it was necessary to supply some 12 to 16 tons of dung in as black and rotten a state as possible, in order that the phosphates might come quickly into action. It was further necessary, in order to secure the decomposition of the dung, that it should be frequently turned, so as to promote fermentation. By this process a considerable quantity of ammonia, at least half of this valuable constituent, was dissipated and lost. This, however, was the only method of raising a good crop of roots, which was most essential, in order to raise more dung. With the general introduction of concentrated manures, a great modification and alteration in the practice of manuring is now gradually introducing itself, viz., to apply the dung to the Wheat crop, and the concentrated manures to the Turnip crop. The advantages of this altered system may thus be summed up:

1. We avoid the labour and expense of frequently turning the dung mixens, which may either remain in the yard well trodden down, or in the field well covered up with earth.

2. We save by this a considerable quantity of ammonia, which would be dissipated by great fermentation.

3. We avoid the great labour and inconvenience of drawing out the dung at that period, when there is so little time to spare, and when to lose the season is often to lose the crop.

4. We reserve the dung for that crop which requires nearly all its constituents, instead of expending it merely to furnish one or two of its elements.

5. By thus furnishing only what the Turnip principally requires, and that in a very soluble form, we are enabled to draw from the atmosphere the principal portion of its other constituents, and we find that the amount of produce raised by concentrated manures over and above the natural product of the soil, without manure, is considerably greater at the same expense with Turnips than with Wheat.—He might here observe that the carbon of the dung, which is not much required for the Wheat, has plenty of time to decompose previous to its being wanted for the Turnip crop. For these reasons we hold it as the best practice to apply what dung there may be on the farm to the Wheat crop; but if there is not sufficient, then, instead of purchasing dung, it is far better to supply concentrated manures. We cannot purchase 20 tons of dung at a neighbouring town and lay it out on the land for a less sum than 6*l.* or 7*l.* an acre. This quantity of dung will supply 170 lbs. of ammonia, the principal element required by grain, which, however, can also be furnished by half a ton of Peruvian guano at the cost of 5*l* 5*s.*, thus effecting a saving of 20 per cent. A very good method of using concentrated manures when there is dung, but not sufficient for the whole extent, is to half-dress a portion, and add half a dressing of concentrated manure. Besides the advantages of this practice, where the field lies at a distance, the cost of the carriage of dung will be as much as the cost of the manure. We have instanced Peruvian guano because it is the best for grain, as it comes from a tropical country where no rain falls, and thus none of the ammonia is washed out, as is the case with African varieties, which being richer in the phosphates, is more suitable for roots. Autumnal application is preferable in most cases, for by this means not only is the young plant nursed well through the winter, but as soon as vegetation takes a start in the early spring, the manure is then ready to come into immediate action, and thus assist materially the efforts of nature, whilst, if the manure is still to be applied, the plant may probably languish for want of it for many weeks. The weather may either be too wet or too dry for its employment; in the former case, much of it will be washed away by the rains, and in the latter it may remain some time on the surface, giving off daily to the atmosphere that costly ammonia for which the plant is languishing. Much of this, however, depends upon the nature of the land; if of a free and porous nature, and lying somewhat flat, top dressings may be applied with advantage, whilst on hilly land liable to be visited by heavy rain, and on wet land with high backed ridges, there is danger of the greater portion of the manure being washed down the furrows. Perhaps, however, as a general rule, the best method of applying artificial dressings for Wheat is to put in about two-thirds in the autumn, and reserve one-third for the spring. Mr. S. here mentioned the objections that had been urged against Peruvian guano as an autumnal application, viz. its forcing vegetation too rapidly, and causing the Wheat to be winter proud, and stated how he considered he had obviated it by fixing much of the ammonia, and adding other substances in which the guano was deficient. The results had been most satisfactory. Practical agriculturists have been somewhat baffled by the contradictory theories propounded by various eminent chemists, and the practical advice they have too hastily ventured to give to the public. Thus Liebig, whose researches in organic chemistry have been greater than any living man, finding that the organic elements of plants are capable of being supplied by the atmosphere, whilst the inorganic parts can only be furnished by the soil, ran into the extreme that it was only necessary to supply these earths, in the form of manure, to enable the plant to extract everything else from the air. Instead of testing his theories by careful experiments in the field, he at once compounded a manure which was manufactured in this country on a large scale. The consequence was a great failure. When applied to the Turnip crop, it appeared dwarfish and stunted as compared with neighbouring manures, and in Wheat lacked that vigorous green which ammonia imparts. Turnips, as we have said, require a bountiful supply of soluble phosphates; it is, as a plant, a quick grower and a ravenous feeder; whilst thus hungry and thirsty, Liebig's manure recommended it patience. It vain the plant called out for food: the manure replied, "Be quiet; you shall have plenty by and bye of everything that is needful—the phosphates, the sulphates, potash, soda, and lime; but you are not old enough for such food just yet." Well, what was the consequence? Why, somewhat like the man who fed his horse upon sawdust. So the plants became stunted from insufficient nourishment, and proved abortive. The case was not exactly the same with regard to Wheat. Here the inorganic elements were all supplied sufficient for a large crop; but, the organic being for the most part denied, a half crop was the result; for, although ammonia is supplied from the atmosphere, it is only in a sufficient quantity for a natural or half crop. The error of Liebig and many other chemists who have followed him has been in relying too exclusively on chemistry and disregarding the nature and peculiarity of plants, and the capabilities of different soils. The lecturer here mentioned an experiment which he had instituted in the autumn of 1846, on land divided into quarters of acres, the result of which, as near as possible, was as follows: 1. Well dunged (20 tons to the acre), 6 qrs. Wheat laid down. 2. Peruvian guano, with superphosphate and other matters, 4 cwt., 6½ qrs. Wheat stood up. 3. Sinews and skin, &c., decomposed with sulphuric acid, 5 cwt., 6½ do. do., but not so well as No. 2. The crop throughout was good, and the remainder of the field was dunged. Here it appears that where the manure supplied abundance of silica, as in the dung, the crop laid down (whilst where none was supplied) it stood up, showing it was not essential to supply this silica in the manure, as some chemists would have us suppose. Mr. Spooner here recited some observations from a paper on certain principles which obtain in the application of manures, which he had read at the meeting of the British Association in 1846. "I have made this quotation lest, it might be supposed that my ideas are borrowed from some very excellent papers by Mr. Lawes, in the Journal of the R.A.S.E. I had previously been thoroughly persuaded that, without discarding other agents, the peculiar manure for Turnips was the soluble phosphates, and the essential food for Wheat was ammonia or nitrogen. In some of the conclusions of Mr. Lawes I cannot agree. He says that it takes manure containing 5lbs of ammonia to produce one bushel of Wheat over the natural produce of the soil, so that to raise 24 bushels of Wheat we must use half-a-ton of Peruvian guano. Now, I maintain that if this 10 cwt. guano is applied to 2½ acres of land, in a clean but exhausted state, alongside of the same land without any manure, we may reasonably expect that if the land without manure produce 2 qrs. per acre, that with 4 cwt. Peruvian will yield 4 qrs., which will give 5 qrs., instead of 9 qrs., for the 10 cwt. Peruvian, besides leaving the land in a richer state where the guano was applied. Mr. Lawes further states that it is more profitable to procure the nitrogen in manure by folding cattle than by purchasing guano or other manures. He says—(Mr. Spooner here read the extract.) So that it appears in Mr. Lawes' opinion that the dung from an oilcake fed ox for the space of 22 weeks was equal in value to half a ton of Peruvian guano. Now, you most of you know much better than I can tell you, how much dung is made by an ox during this period, and I think you will agree with me that if we estimate it at 12 tons, we are by no means under the mark. Now, as the dung will no doubt be of the best kind, we may consider this 12 tons sufficient for an acre of Wheat, though we very much doubt whether it will be sufficient to raise six sacks of Wheat more than would be raised without manure. On the other hand, the 10 cwt. of Peruvian guano will amply manure, as we have said, 2½ acres of land. Again, in this estimate it must be borne in mind that the dung made by the ox, which Mr. Lawes thinks of more value than 10 cwt. guano, is in the yard and cannot be carted on the land without some considerable expense, whilst the cost of the application of guano is very trivial. Mr. Lawes has injured an otherwise valuable paper by this purely theoretical statement, which he advances as boldly as if it had been a truth established by practice. He reasons that if so much nitrogen is supplied in the food, we have only to deduct that which the increased flesh contains, and we have or ought to have the amount contained in the manure. Now, it is all very well to say the dung ought to have it all, but the question is, has it got it? You may all think that you ought to get 15*l.* a load for your new Wheat, but do you get it? No more than the manure gets all the nitrogen of the food not contained in the flesh. Some portion escapes from the body, and we have already seen how vast is the quantity that escapes from dungheaps in the form of ammonia. Mr. Lawes appears entirely to lose sight of this, as well as the heavy carriage which dung entails, not to mention the interest on the money expended in the purchase of cattle, as well as the losses arising from accident and disease. Now, I do not wish to say anything against fatting cattle. Beef must and no doubt will continue to be raised and the green crops of a farm must be consumed. But I do put in my veto against that doctrine which has been so extensively promulgated that there can be no good farming without stall-feeding cattle. I protest against such a doctrine as that maintained by Mr. Mechi, in a speech in which he says that he intends purchasing 1000*l.* worth of corn, to feed cattle on a farm of 200 acres. Such statements as these are calculated to excite distrust. It is the duty of farmers to raise the utmost amount of green crops they can, and to dispose of these crops to the greatest advantage. To do this, in nine cases out of ten, stock must be fatted; and if the land is not adapted for sheep, which are most profitable, cattle must be kept, to whom some portion of oilcake or other artificial food may also be added with advantage. This is all very well, being fair and legitimate farming, and the profit on the cattle must govern the value to be set on the roots. But to fatten an extra and excessive number of cattle at an annual loss, either for the patriotic purpose of supplying the public with beef, or for the purpose of furnishing the farm with dung, as long as concentrated manures can be economically purchased, is a practice neither necessary nor advantageous. It is a money question, and as such alone it ought to be regarded."—Mr. JACKSON, in his management of Mr. Munroe's farm, day by day was more convinced of the utility and profit of artificial manures. He detailed the particulars of its striking advantage over farm-yard dung in a field of Oats, the former being placed on the brow of a field: 4 cwt. of artificial manure, prepared by Mr. Spooner, produced 1 qr. an acre more Oats than the other. The only question with him was this—would the land maintain itself for a second crop, so as to maintain this palpable advantage? He meant to try the experiment, and would ultimately report the result. He should certainly use next year double the quantity of artificial manure.—Mr. J. BLUNDELL made some excellent remarks on the practical management of farms, and, in the course of his address, gave it as his opinion that long fallows were going rapidly out of fashion, and that the system must ultimately pass away altogether. He had some land which had not been fallowed for eight years, and he need not tell them, who knew his farm, as well as his system of managing it, that he had most excellent crops. Fallowing, he was convinced, could be dispensed with in all lands if they could only eradicate the Couch grass, some of which he found, when draining, had penetrated the land to the depth of 1½ foot. But, depend upon it, the day for general fallowing, in spite of very deep-rooted prejudices, had gone by for ever and ever. The question was, whether they should not exercise the talents they possessed in endeavouring to increase the manures at their immediate command. He had not purchased artificial manure for his Wheat crops; but he had done so for his Turnips, and with advantage and profit. Now, he did not stall bullocks for the purpose of getting manure: he thought that the dearest way. But this is what he did—and that was an important subject—for they reckoned to pay their rent out of the stock—it was no part of his plan to heap any manure. No; he drew into the yard, at intervals, good loamy earth, 5 inches in depth; and the earth, amalgamated with the manures, was removed to the fields as it was required to be used. He did not feed the animals indiscriminately in the yard, because he was not disposed to let the stronger overrun and out-eat the weaker. He always had good crops of Wheat from his home-made manure, and he grew Wheat on a fourth part of his land, besides his Wheat after Swedes.—Mr. SPOONER: You mean to say, then, that you dung a quarter portion of the farm.—Mr BLUNDELL: Yes; and I have no escape of ammonia by my heaping and turning. My manure does not, perhaps, act so readily, but it acts, as I think, at the proper time; it does not make the Wheats winter-proud, and at the desired time there is a good and a satisfactory crop.—Eventually the following resolution was passed unanimously:—"That farm-yard manure can be more advantageously applied to the Wheat crops than any other; but, where there is not sufficient dung for the Wheat crop, it is more profitable to apply concentrated manures than to purchase dung. That an equal amount of money expended in the purchase of concentrated manures will raise more Wheat, over the natural produce of the land, than the same amount expended in the purchase of oilcake or corn, and converted into dung by feeding cattle."

Calendar of Operations.

NOVEMBER.

BERWICKSHIRE MERSE FARM, *Nov.* 2.—We have finished sowing Wheat on the fallow land, and have been ploughing the Bean land, and sowing Wheat, threshing Wheat for the market and for seed, delivering Wheat and bringing home coals, ploughing stubble land for fallow and Turnips when the weather was too wet for the Wheat land, and leading Turnips for the ewes and cattle; the workers have been employed in pulling Parsnips, digging Potatoes, assisting in the threshing and dressing, &c. The red Potatoes are nearly all sound, but the white are spoiled. We put the tups to the ewes on the 20th Oct. *J. B.*

SUSSEX FARM, *Nov.* 5.—As stated last week, we have still part of Wheat to sow, which at present we are engaged with, after Mangold Wurzel; but a field of Swedes, 13 acres, we shall not be able to sow for 10 days, as we wish the sheep to have all the benefit of the small Turnips, and part of the tops we leave on the land, the other part we carry off into the Grass land for them. We consider the Turnip land is benefited by the sheep running over it a few days. We have formerly used the tops for the young stock, but the weather being so mild, Grass is very plentiful, and to give tops would be of no benefit. Ploughing in dung for the Carrot and Cabbage crop for next year. We generally preserve the pig dung for the Carrot crop. This year we have about 1½ acre of splendid Cabbages; by appearance the crop will be between 40 and 50 tons per acre. Men emptying tank water on to meadows, spreading dung, ditching, hedging, mowing stubble and brakes, draining, &c. *J. B.*

Notices to Correspondents.

COW CLUBS: *J. Kidlock.* See page 43, 1846. If you have not the paper, we will republish the rules.

CUMBERLAND CLOD-CRUSHER: *O Ruthout.* It is not to be had in London or Birmingham. Will not the drawing suffice. Perhaps "A. B. C." will give such a description of it as would enable a country carpenter to make one.

GAS LIME: *P A C.* No matter whether it be a compost or not, if it be used *bonâ fide* as a manure it is not liable to toll.

GRASS-SEEDS: *F E.* Are they intended for permanent pasture? If so, the following list will suit your clay soil. Aira cæspitosa *lutescens*, 1 lb.; Alopecurus pratensis, 3; Arrhenatherum avenaceum, 2; Dactylis glomerata, 3; Festuca duriuscula, 2; F. heterophylla, 2; F. elatior, 2; F. loliacea, 3; F. pratensis, 2; Lolium italicum, 3; L. perenne, 5; Phleum pratense, 2½; Poa nemoralis, 3; P. trivialis, 2½; Trifolium pratense *perenne*, 4; T. repens, 5. 45 lbs. in all per acre, sown in March. (*Lawson.*)

GREEN-TOP YELLOW: *W B Watson.* We cannot find any certain history of it. It is a very old variety; and though probably selected—not artificially hybridised—is no doubt a hybrid.

GUANO: *P H A.* It is very unlikely indeed that a crop of Turnips sown with guano, and a crop of corn taken the year after, should leave anything for the advantage of the in-coming tenant in the shape of unexhausted guano.

HARVEST WORK: *H M.* The reason why mown corn is sooner 'won' than corn that has been reaped, is this: the former is necessarily tied in looser sheaves; the latter is neatly put together, and can therefore be tied tighter.

HUNGARIAN TURNIP: *A Sub.* We do not know it.

INSECTS: *R A H.* Try a heavy watering with gas water.

LINSEED FOR CATTLE: *R O R.* Give each beast a bushel basketful of chaff on which about half a common bucketful of saltish water has been poured, in which 1½ lb. of Linseed meal has been dissolved. The meal may be dissolved by putting one measure of meal into six of water for 36 hours, and this is afterwards to be diluted with water, so that each beast may have its share in water enough to soak the chaff in.

MANURE: *Inquirer.* In the case of clays, we should greatly prefer manuring in autumn. We would not "rafter" the land, however, but plough it deeply in narrow ridges.

PIGS: *Inquirer.* Pigs fattening in 3 months to 12 score, will require 6 or 7 lbs. of meal daily, with boiled roots.

POPPY CAKE: *T S.* Is there any published analysis of this substance?

RABBIT SKINS: *F E* says "I shall obliged if any of your correspondents will be kind enough to give me, through the medium of your Paper, a receipt for curing white rabbit skins of the Angola breed."

RANCID BUTTER: *H Z.* We do not know how the rancidity is to be got rid of. Possibly a very little chloride of lime might be usefully added to the milk before the cream rises; or a little water in which chloride of lime has stood; but quantities here must be determined by experiment.

SEX OF EGGS: *T B.* We are asked for facts; and accordingly we ask for *facts* on this subject; we do not want opinions. Does any one know of a work on game fowl, entering more fully into the details of their management, characteristics, &c., than Dixon's "Ornamental Poultry," and other works on the general subject.

SHEEP: *Inquirer.* They can be kept on Grass and hay all the year round. A breeding flock will stand it better than a wether flock.

SMALL FARMS: *Falcon* says, if your correspondent "A. M. A." knows anything of farming, and can personally attend to the cultivation of his 16 acres, he might, by eating the produce at home, make it answer very well; but I apprehend if he has to depend upon others to look after his land, and trust to the market for the sale of his stock, it would be more satisfactory to let it at a fair rent.—Will "A. M. A." furnish his address? We have a communication for him.

WINTER BEANS: *Wembly.* They are certainly a distinct variety. They are also called the Russian Bean: perhaps that indicates their origin. As to Winter Tares, &c., there is often no other distinction between them and the corresponding spring varieties than that which is acquired by habit.

Markets.

SMITHFIELD, MONDAY, Nov. 5.

We have but a moderate supply of Beasts and a cheerful demand, consequently prices are rather better; 4s. 2d. is realised in some instances, but it is too much to quote as average for best qualities. The number of Sheep is about the same as on Monday last; the demand has increased, and prices have slightly advanced on all kinds. Calves are readily disposed of at rather higher rates. From Holland and Germany we have 612 Beasts, 2650 Sheep, 65 Calves, and 77 Pigs; from France, 18 Beasts; Lincolnshire, 370; from Leicester and Northampton, 1,00; and from Cambridge, 120.

Per st. of 8 lbs.—	s d s d	Per st. of 8 lbs.—	s d s d
Best Scots, Herefords, &c. ...	3 10 to 4 0	Best Long-wools .	3 8 to 3 10
Best Short-horns	3 8 — 3 10	Ditto Shorn	...
2d quality Beasts	3 0 — 3 6	Ewes & 2d quality	3 0 — 3 6
Best Downs and Half-breds ...	4 0 — 4 2	Ditto Shorn	...
Ditto Shorn	...	Lambs	— ...
		Calves	3 4 — 4 2
		Pigs	3 8 — 4 6

Beasts, 3885; Sheep and Lambs, 22,990; Calves, 171; Pigs, 320.

FRIDAY, Nov. 9.

The number of Beasts for the time of year is not excessive; it is, however, larger than the demand; still the best Scots, &c., make 4s., not being very plentiful. Inferior qualities are lower, and several remain unsold. We have about an average supply of Sheep; trade is very dull, at rather lower prices. Calves are more plentiful, and there is a reduction from Monday of about 6d. per 8 lbs. Pigs are also about 4d. per 8 lbs. lower. The unfavourable change in the weather since Monday is the cause of the sudden reverse in our trade, rather than over-supply. From Holland and Germany there are 259 Beasts, 530 Sheep, 105 Calves, and 18 Pigs; from Spain, 10 Beasts; from Leicester, 800; and 148 Milch Cows from the home counties.

Best Scots, Herefords, &c. ..	3 8 to 4 0	Best Long-wools .	3 6 to 3 8
Best Short-horns	3 6 — 3 8	Ditto Shorn	— ...
2d quality Beasts	2 8 — 3 4	Ewes & 2d quality	2 10 — 3 0
Best Downs and Half-breds ...	3 10 — 4 0	Ditto Shorn	...
Ditto Shorn	— ...	Lambs	...
		Calves	2 8 — 3 8
		Pigs	3 4 — 4 2

Beasts, 1022; Sheep and Lambs, 4,790; Calves, 268; Pigs, 315.

COVENT GARDEN, Nov. 24.

Mulberry Grapes are still plentiful, and the supply of Pine-apples of excellent quality is well kept up. Filberts and Walnuts are abundant, Chestnuts plentiful, Oranges making their appearance in considerable quantity, Lemons moderately plentiful. Pomegranates may still be obtained at 4d. each. Among Vegetables, Turnips are good and plentiful; Carrots the same. Cauliflowers less plentiful. Potatoes have not altered since our last account; they are generally very much diseased. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1s. to 1s. 6d. per pottle. Cut Flowers consist of Dahlias, Pelargoniums, Gardenias, Bignonia venusta, Tropæolums, Chrysanthemums, Fuchsias, Primulas, Camellias, and Roses.

FRUITS.

Pine-apples, per lb., 2s to 5s	Oranges, per doz., 4s to 6s
Grapes, hothouse, p. lb., 2s to 5s	Almonds, per peck, 6s
— Portugal, per lb., 9d to 1s	— sweet, per lb., 2s to 3s
Plums, per bf. sieve, 4s to 6s	Walnuts, p. 100, 1s 6d to 2s
Pears, per doz., 2s to 4s	— p. bush., 12s to 24s
— per half sieve, 4s to 6s	Filberts, per 100 lbs., 45s to 60s
Apples, kitchen, p. bsh., 2s to 4s	Nuts, Bar., p. bush., 20s to 27s
Lemons, per doz., 1s to 3s	— Brazil, p. bsh., 12s to 16s
— per 100, 8s to 16s	

VEGETABLES.

Cabbages, p. doz., 6d to 1s	Onions, p. bunch, 2d to 4d
Cauliflowers, p. doz., 2s to 4s	— Spanish, p. doz., 1s 6d to 4s
Broccoli, p.doz. bundl., 6s to 10s	Shallots, per lb., 4d to 8d
Greens, per doz., 1s 6d to 2s 6d	Garlic, per lb., 4d to 8d
Brussels Sprouts, p. bf. sieve, 1s 6d to 2s	Artichokes, p. doz., 1s 6d to 3s
Sorrel, p. bf. sieve, 6d to 9d	Lettuce, Cab., p. sc., 4d to 9d
Potatoes, per ton, 60s to 100s	— Cos, do., 6d to 1s
— per cwt., 3s to 4s	Endive, per score, 1s to 1s 6d
— per bush., 2s to 3s	Tomatoes, p. bf. sieve, 3s to 4s
Turnips, p.doz. bun., 1s 6d to 2s 6d	Mushrooms, p. pot, 1s to 1s 3d
Red Beet, per doz., 1s to 2s	— per bush., 3s to 6s
Horse Radish, p. bdl., 3s to 4s	Small Salads, p. pun., 2d to 3d
Cucumbers, each, 9d to 1s	Fennel, per bunch, 2d to 3d
Leeks, per bunch, 2d	Savory, per bunch, 2d to 3d
Celery, p. bundle, 8d to 1s 3d	Thyme, per bunch, 2d to 3d
Radishes, p. 12 bunches, 1s to 2s	Parsley, p. doz. bun., 3s to 4s
Watercress, per doz. bunches, 4d to 6d	— Roots, p. bdle., 1s to 1s
Carrots, per bun., 4d to 6d	Marjoram, per bunch, 2d
Spinach p. sieve, 1s to 1s 6d	Mint, per bunch, 2d
	Basil, per bunch, 2d

HOPS.—FRIDAY, Nov. 9.

Messrs. PATTENDEN and SMITH report that the market remains the same.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Nov. 8.

Prime Meadow Hay	66s to 72s	Clover	80s to 90s
Inferior ditto ...	50 68	New Clover	— —
Rowen	50 60	Straw	24 28
New Hay	— —		J. COOPER.

Trade heavy.

CUMBERLAND MARKET, Nov. 8.

Prime Meadow Hay	68s to 72s	Interior	76s to 80s
Inferior ditto... ...	50 63	New Clover	— —
New Hay	— —	Straw	27 30
Old Clover	84 90		JOSHUA BAKER.

WHITECHAPEL, Nov. 8.

Fine Old Hay ...	60s to 65s	New Clover	—s to —s
Inferior ditto ...	50 55	Inferior ditto... ...	50 65
New Hay	— —	Straw	23 24
Old Clover	80 86		

Supply large, and trade very dull at the above prices.

POTATOES.—Covent-garden, Oct 30.

The Committee report that the arrivals have been large since our last week's report, both coastwise and Continental, particularly the latter, which are upwards of 6000 tons. So large a supply has had a great influence upon the prices of English as well as foreign Potatoes. The following are this day's prices:—York Regents, 70s. to 90s. per ton; Wisbeach, 50s. to 60s.; Scotch, 50s. to 60s.; Scotch cups, 40s. to 50s.; French whites, 55s. to 65s.; Rhenish do., 50s. to 60s.; Belgian do., 90s. to 95s.

MARK LANE.

MONDAY, Nov. 5.—The supply of English Wheat by land carriage samples this morning was small, and the stands were quickly cleared at the prices of this day se'nnight. Foreign met a slow retail sale at previous rates.—Fine English malting Barley is inquired after, and commands extreme rates. Foreign grinding we note 1s. per qr. higher than on Monday last; also English Peas and Beans, of which the arrival is small.—Oats are held firmly, and in some instances a trifling advance is obtained for best new and fine old corn.

FRIDAY, Nov. 9.—This morning's market was very thinly attended, and business in all descriptions of grain was on a most limited scale. We observe no alteration in the value of any article.—In England the Wheat trade since the 1st inst. has been firm, and although business has not been extensive, an advance in one or two markets of 1s. per qr. has been obtained on fine English qualities. Old foreign appears everywhere to be fast going into consumption. In Scotland the trade is less buoyant, and in Leith a decline of 1s. to 2s. per qr. has occurred on home-grown descriptions, whilst foreign was neglected. In Memel and Konigsberg prices are well maintained. In Dantzic supplies of new Wheat had considerably increased, and could only be disposed of at a decline of 3s. per qr. The Rotterdam market is 1s. per qr. lower.

LIVERPOOL, TUESDAY, Nov. 6.—We had a fair attendance of dealers at this day's market. The demand for Wheat was not lively, but there was greater firmness in the trade, and the best qualities made former prices; other descriptions were sold at a reduction of 1d. per bushel. Barley, Beans, and Peas are unaltered. Oats were dull, and declined 1d. per bushel. Indian Corn was 6d. per qr. lower. Flour was still heavy, and 6d. to 1s. per sack cheaper.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Sept. 29.....	42s 4d	27s 4d	17s 11d	25s 2d	29s 5d	31s 8d
Oct. 6.....	42 4	27 7	17 5	24 9	29 0	29 5
— 13.....	41 4	28 0	17 2	24 5	28 10	31 8
— 20.....	41 1	28 2	17 4	24 9	29 5	30 8
— 27.....	41 7	28 5	17 2	23 8	28 11	31 7
Nov. 3.....	41 6	28 7	16 10	22 9	29 10	29 7
Aggreg. Aver.	41 8	28 0	17 4	24 3	29 3	30 8
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	SEPT 29.	OCT. 6.	OCT. 13.	OCT. 20.	OCT. 27.	NOV. 3.
42s 4d	...			...	...	...
42 4		...		...	...	...
41 7	...		...			
41 6	...		...		...	
41 4	...	...		...	...	...
41 1	...	...	...		...	

BIRMINGHAM CATTLE EXHIBITION, 1849.—CLOSING OF ENTRIES.

The last day for entering in the several Classes of Cattle, Sheep, Pigs, and Poultry, is Saturday next, the 17th of November. Printed Certificates, with copies of the Prize Lists, may be obtained on application to T. S. WRIGHT, Hon. Sec.

Union-street, Birmingham, Nov. 10.

IMPORTANT TO AGRICULTURISTS.—COLLECTION AND DISTRIBUTION OF MANURES.

STRATTON'S AGRICULTURAL REPOSITORY, BRISTOL.

STRATTON, HUGHES, AND CO., have now ready their PATENT TUMBLER CART for the collection of Night-soil and other offensive matters; also their Iron Mill, to be worked by horse-power, water-power, or steam, for mixing and incorporating Night-soil with Charcoal and other deodorisers. The Tumbler Cart has an iron body with a close cover; can be fitted if required as a Watering-cart with a Valve and Delivery Pipe for distributing water or liquid manure, and also with an Apparatus for distributing dry manures in any given quantities per acre.

STRATTON, HUGHES, and Co.'s Tumbler Carts are used for scavenging purposes in Manchester, Bristol, Worcester, Warwick, Rochford, Cardiff, &c., and they are now building them for Chester, Oxford, Huddersfield, &c., besides many for Agricultural Colleges and private individuals. STRATTON, HUGHES, and Co.'s new illustrated Catalogue of Carts, Waggons, and Agricultural Implements will be forwarded to any address on receipt of six postage stamps.

THE BEST DIBBLE FOR 50s.

JESSE ROSS'S PATENT PRESSING DIBBLE.—These dibbles press the seed into the soil at one operation. A man with a pair may dibble an acre per day with ease, as they may be used with great speed with a certainty of the seed being deposited, and are much improved since last year, and pronounced by mechanical and practical judges the only dibble that merited the prize at the late Royal Agricultural Show at Norwich; and the Patentee's friends are ready to dibble against Dr. Newington's machines at any time for 50s., for doing the most work, regularity of dividing and depositing the seed, and in every other way superior, if fairly tested. See testimonials and Royal Agricultural Catalogue, No. 71 Stand.

TESTIMONIALS.

"High-street, Pwllheli, Carnarvonshire, Oct. 17, 1849.

"Sir,—The part of the field of Wheat I dibbled with the machine obtained from you last year having come up well, and the yield being much more than that sown in our usual way, I have determined to plant the whole of my Wheat with it this season. I will, therefore, feel particularly obliged by your sending me the order herewith immediately. On receiving them I will remit you.—I remain, Sir, your obedient servant,

DAVID EVANS."

"To Mr. JESSE ROSS, 73, New Walk, Leicester."

"Birstall, Feb. 21, 1849.

"Sir,—When I purchased from you last autumn a Dibbling Machine for my allotment tenants, I promised to inform you of its merits. Several have tried it: the corn has come up, and looks well. The seed seems to have been deposited regularly, and of course takes much less than drilling or broadcast, as much so as to save all the labour. The plants are regular, firm in the ground, and will be easier and better hoed than if planted in any other way with which I am acquainted; and I think the implement may be used to advantage wherever labour is not too scarce.

"To Mr. JESSE ROSS." Your's, H. PAGET."

These Dibbles may be had of Deane, Dray, and Co., London; Stratton, Hughes, and Co., Bristol; Mapplebeck and Lowe, Birmingham; Walton, Walker, and Co., Wolverhampton; Richmond and Chandler, Manchester; Coleman and Co., Norwich; the Patentee, 73, New Walk, Leicester; and all other Implement Vendors in the kingdom, at 35s. per pair. Post-office orders required.

DR. NEWINGTON'S IMPLEMENTS.—It was stated in an advertisement in the *Gardeners' Chronicle* of last week, that the friends of a Mr. J. Ross were anxious to have a contest with Dr. NEWINGTON in dibbling corn. However averse Dr. N. may be to giving or accepting a challenge in this instance, nothing would give him greater pleasure than affording the friends of Mr. Ross every facility for gratifying their inclinations. The advertisement having not been long pointed out to Dr. N., he has only just time to send this answer; he will enter into the conditions in next week's *Chronicle*.

Dr. N. regrets that so many applicants have been disappointed in obtaining implements; had he anticipated so great a demand, he would have taken measures to meet it. Many hundreds of these implements are now distributed throughout the country, so that this system of depositing the seed will be generally and thoroughly tested, and arrangements will be made for carrying out the undertaking on a larger scale in the spring. Where the land is not too wet, it is not too late to carry on this system, if 3 pecks be used to the acre, instead of 2. Morgan Thomas, Esq., of Cross-in-Hand, Sussex, only commenced last week dibbling 50 acres of very stiff land; he is depositing on part rather less than 2 pecks per acre, on the rest 3 pecks. Dr. N. has closed his depôt in London; it will be stated in next week's *Chronicle* whom he has appointed to exhibit his implements in London. The duties of this undertaking being very arduous, and other important implements being about to be brought before the public, Dr. N. feels that he is obliged to call in some scientific man, with a thorough knowledge of business, to assist him in carrying out this national work. Should any gentleman be willing to undertake this office, he is requested to apply forthwith.

Knole Park, Frant, near Tunbridge Wells, Kent.

STEPHENSON AND CO., 61, Gracechurch-street London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

STATUES, VASES, FOUNTAINS, GARDEN ORNAMENTS, COATS OF ARMS, and ARCHITECTURAL EMBELLISHMENTS in Imperishable Stone, by VAUGHAN and Co., 20, Stones End, Borough, London. T. J. Cacqueu, late of Cande's, Superintendent. Specimens may be seen at Cacqueu and Co.'s, 2, Dowgate-hill, City. A pamphlet of Drawings forwarded on application.

PRICES CURRENT.	London. Oct. 29. qr.	London. Nov. 5. qr.	Liverpool. Oct. 30 70 lbs.	Liverpool. Nov. 6. 70 lbs.	Wakefield. Oct. 26. qr.	Wakefield. Nov. 2. qr.	Boston. Oct. 31. qr.	Boston. Nov. 7. qr.	Birmingham. Nov. 1. 62 lbs.	Birmingham. Nov. 8. 62 lbs.
Wheat—										
New, red ...	38 to 43	38 to 43	6 0 6 2	6 0 6 2	37 to 44	37—44	34 to 40	34 to 40	5 0 5 8	5 0 5 8
„ white ...	42—48	42—48	6 0 6 8	6 2 6 8	40—45	41—48	38—45	38—46	5 6 6 0	5 6 6 0
Old, red ...	38—43	38—43	6 4 6 6	6 4 6 6	39—43	39—43	—	—	5 3 5 9	5 3 5 9
„ white ...	43—45	43—45	7 0 7 4	7 0 7 4	—47	—48	—	—	5 7 6 1	5 7 6 1
Foreign... ...	36—52	36—52	4 6 7 2	4 4 7 6	32—46	36—48	—	—	4 8 6 2	4 8 6 2
			480 lbs.	480 lbs.						
Rye—Old ...	23—24	23—24	—	—	—	—	—	—	—	—
Foreign...	20—23	20—23	—	—	—	—	—	—	—	—
Foreign meal	5l.—6l.	5l.—6l.	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley—										
Grinding ...	24—26	24—26	—	—	20—22	20—22	21—23	21—23	22—24	21—24
Malting... ...	26—28	26—28	30s—31s	30s—31s	27—33	27—33	—	—	28—33	28—33
Foreign... ...	18—26	18—26	—	—	21—26	21—26	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	37—40	35—38	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	18—24	18—24	3s 2d 3s 3d	3s 2d 3s 3d	—	—	13—18	13—18	19—27	19—25
Black'...	16—22	16—22	2 1 2 7	2 1 2 7	—	—	—	—	18—20	17—18
Foreign ...	13—20	13—20	2 3 2 4	2 3 2 4	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	28—31	28—32	30s—	33s—	26—30	26—30	—	—	33—40	30—36
									196 lbs.	196 lbs.
Grinding...	25—30	—	28—29s	27—28s	—	—	—	—	11—12	11—12
Foreign ...	24—32	24—32	29—30	29—30	—	—	—	—	—	—
Beans—										
New, small ...	23—29	28—33	—	—	30—31	30—31	32—34	32—34	11—12	11—12
Old	— —	— —	33—37	33—37	32—33	32—33	—	—	14—15	14—15
Foreign ...	21—30	23—36	25—35	25—34	26—28	26—26	—	—	11—13	11—13
Linseed—Feed	—	—	40—42	40—42	32—40	32—40	—	—	—	—
Foreign ...	41—48	41—48	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9l. 12s	9l. 12s	7l. 15s—8l.	7l. 15s—8l.	—	—	—	—	—	—
Foreign ...	7l.	7l.	—	—	—	—	—	—	—	—
Indian Corn—	22—26	22—26	27s—29s	27s—29s	—	—	—	—	12—13	12—13
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	32—40	32—40	30—32	30—32	—	—	32—38	30—36	31—34	31—34

Weekly Averages and Imports.	London. Aver. Nov. 6	London. Impts	Liverpool. Averages.	Liverpool. Imports.	Wakefield. Aver.	Wakefield. Impts.	Boston. Aver.	Boston. Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	s. d	s. d.	qrs.
WHEAT ...	43 1	3670	41 7	5827	42 8	17409	36 8	3629	39 1¼	—
BARLEY ...	31 2	1550	28 5	224	28 11	3604	23 0	301	27 2¼	—
OATS... ...	18 4	7620	17 2	7032	18 5	250	15 8	1277	16 4	—
RYE	27 6	—	23 8	—	—	—	—	—	—	—
BEANS ...	26 11	—	28 11	1777	—	592	26 5	239	31 8	—
PEAS... ...	33 2	—	31 7	99	27 2	22	—	—	34 0	—

Sworn { KINNSFORD and LAY. / EGAR and PENNICLIFFE. / BARDARS and DUNNS. / THOMAS WRIGHT / J. and C. STURGE.

Second Edition, Revised and Enlarged, price 4s. 6d.,

RURAL CHEMISTRY:

An Elementary Introduction to the Study of the Science in its Relation to Agriculture.

BY EDWARD SOLLY, F.R.S, F.L.S., F.G.S.,

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Honourable East India Company's Military Seminary at Addiscombe, &c., &c.

PREFACE TO THE SECOND EDITION.

"In preparing a Second Edition of this little book, the opportunity has been taken of correcting several errors which the First Edition contained. The whole has been carefully revised, and such additions have throughout been made, as the advanced state of knowledge rendered necessary. In particular, the Tables of Analyses have been greatly extended, by the addition of the latest and most complete Analyses of almost all those plants which are cultivated as crops, as well as of the principal substances employed as manure."

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Beech ashes
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Embryo
Epsom salts
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Excrements of sea fowl
Exhaustion of soils
Expansion
Explosion of fire-damp
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PUBLISHED AT THE OFFICE OF THE GARDENERS' CHRONICLE, 5, UPPER WELLINGTON STREET, STRAND, LONDON;
AND MAY BE HAD BY ORDER OF ANY BOOKSELLER.

Sales by Auction.

TO NOBLEMEN, GENTLEMEN, BUILDERS, RAILWAY CONTRACTORS, NURSERYMEN, and Others engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are directed by the proprietor to submit to public competition, by Auction, on the premises, Barnet Nurseries, Barnet, Herts, situated 11 miles from London, on MONDAY, November 12, and two following days, at 11 o'clock each day precisely (owing to the number of lots), the valuable NURSERY STOCK (in convenient lots), consisting of handsome and large Cedars of Lebanon in pots, fine Weeping Ash, Hollies, Evergreen Oaks, Aucubas, Roses, Box, Arbutus, Portugal and common Laurel, Red Cedars, Fruit and Forest Trees in great variety, &c. The stock, which is in a first-rate condition, may be viewed 7 days before the sale.—Omnibuses leave the Archway Tavern, Highgate, at 12 o'clock at noon—Fare, 9d.; and the General Post-office at a quarter past 9 o'clock in the morning—Fare, 1s. 6d. Catalogues may be had on the premises, of the principal Seedsmen, and of the Auctioneers, Leytonstone, Essex.

TO GENTLEMEN, BUILDERS, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by public Auction, on the premises, Caledonian Nursery, Caledonian-road, Pentonville, on MONDAY, Nov. 19, at 11 o'clock, in consequence of the Lease being sold for building, the whole of the NURSERY STOCK, comprising fine Evergreens, Ornamental Fruit and Forest Trees, viz., Aucuba, common Laurel, China Arbor-Vitæ, Box, Green Hollies, Privet, Lilacs, Guelder Roses, Laburnums, Poplar, Sycamore, Lime, Mountain Ash, Birch, &c., Standard and Dwarf Apple, Cherry, and Pear trees, with Gooseberries and Currants; Greenhouse Plants, also a capital Greenhouse, Forcing-house, nine-light Pit and Brickwork, Boxes, Lights, &c., together with the Dwelling House, consisting of three rooms, Shop, Wash-house, Shed, &c. May be viewed prior to the Sale.—Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

BROMPTON PARK NURSERY.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mr. JOHN SANGSTER and Mr. ROBERT DONALD, trustees for the above estate, to submit to an unreserved Sale by Auction, on MONDAY, Nov. 26 (unless previously disposed of by private contract, of which due notice will be given), the whole of the extensive and valuable STOCK of the BROMPTON PARK NURSERY, lately carried on by GRAY, ADAMS, and HOOD, consisting of the well-known and celebrated Collection of Standard and Dwarf Maiden and Trained Fruit Trees, in a fine and healthy condition; large Evergreen and Deciduous Shrubs, including large Portugal and common Laurels, common fan-shaped and Irish Yews, American, Chinese, and Siberian Arbor-Vitæ, Laurustinus, Hemlock Spruce, Red Cedars, Green and Variegated Hollies, Evergreen Oaks, Lilacs, Spruce Firs, &c. Also a choice Collection of Pinus, Cedrus Deodara, Cedars of Lebanon, and other Coniferous Plants; a valuable Assortment of Oaks, Ilex, Daphne, Cratægus, Æsculus, and other ornamental Trees; with a large Stock of Rhododendrons, Kalmias, Azaleas, &c. The Greenhouses with new and approved hot-water apparatus, Pits, Frames, Carts, and utensils. Also the stock of Seeds, Shop, Counters, and Drawers; Counting house Desks and fittings, Iron Safe, &c. Catalogues are in preparation, and will be forwarded on application by letter, enclosing 12 postage stamps, to Messrs. PROTHEROE and MORRIS, Leytonstone, Essex; and may be had, 1s. each, returnable to purchasers, of the principal Seedsmen in London, and on the premises, American Nursery, Leytonstone, Essex.

HEATHS, AZALEAS, AND CAMELLIAS.—THE SURPLUS STOCK OF MESSRS. FAIRBAIRN, OF CLAPHAM.

MR. J. C. STEVENS is favoured with instructions to sell by Auction, at his Great Room, 38, King-street, Covent-Garden, on TUESDAY, November 20th, at 12 for 1 o'clock, 80 magnificent plants of ERICA, being specimens of the superior cultivation of the above eminent Firm, and which have been most successfully exhibited by them at the several Horticultural Meetings of the past season. Also 25 INDIAN AZALEAS, from 1½ foot to 3 feet, and 50 fine CAMELLIAS, from 2 to 4 feet.—May be viewed on the day prior and morning of sale, and Catalogues had of Messrs. FAIRBAIRN, Clapham, and of Mr. J. C. STEVENS, 38, King-street, Covent-garden, London.

CHELSEA, OPPOSITE CREMORNE GARDENS.

MR. D. A. RAMSAY will sell by Auction, on the premises, King's-road, Chelsea, on TUESDAY, Nov. 20, and following day, at 12 o'clock, without reserve, by order of Messrs. DENNIS, all the uncleared lots of NURSERY STOCK, consisting of 2000 Aucubas, Laurustinus, Laurel, Holly, &c.; a large quantity of Mulberry Trees of all sizes, the prize collection of Gooseberries, standard and dwarf Roses, new silver-striped Ivy and other Creepers, a choice collection of large Camellias, standard Geraniums and Azalea indica, with about 100 species of Yucca, Aloes, Echinocactus, Cereus, and Mammillaria. May be viewed prior to the sale. Catalogues to be had on the premises; of the principal Seedsmen; and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, London.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MR. D. A. RAMSAY has received instructions to sell by Auction, on the Premises, Brompton Auction Ground, Fulham-road, Brompton (situate one mile from Hyde-park Corner), on FRIDAY, Nov. 23, at 12 o'clock, by order of a Florist declining the Business, and removed for convenience of Sale, a quantity of Camellias and Chrysanthemums of sorts, Lilium lancifolium, &c.; also some large specimens of Azalea indica, Aloes, Yucca, Camellia, &c., some choice ornamental Trees, with a quantity of Mushroom Spawn, 3000 Dutch Bulbs, Tulips, Roots, &c. May be viewed the day prior and morning of Sale.—Catalogues to be had of the principal Seedsmen, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

TO BUILDERS, NURSERYMEN, AND OTHERS.

MR. D. A. RAMSAY, will sell by Auction, on the Premises, Brompton Nursery, Fulham road, Brompton, on MONDAY, November 26, 1849, and following day at 12 o'clock, without reserve, the NURSERY STOCK, consisting of a very large quantity of fine Evergreens, standard and dwarf Roses, Fruit Trees, American Plants, &c.; a quantity of large Poplars, Limes, Acacias, &c.; and about [illegible] dwarf trained Peaches, Nectarines, &c.; from the stock of a Country Nurseryman.—May be viewed prior to the sale, and Catalogues had of the principal Seedsmen, and on the premises.

TO NOBLEMEN, GENTLEMEN, FLORISTS, and OTHERS.

MR. D. A. RAMSAY has received instructions to sell by Auction, on the premises, the Brompton Auction Ground, Brompton Nursery, Fulham-road, London (1 mile from Hyde Park Corner), on WEDNESDAY, December 5, at 12 o'clock, a very choice Assortment of Pinks, Picotees, and Carnations; also a quantity of Chrysanthemums, specimen Camellias, &c.; a quantity of Dutch Bulbs of the usual sorts, about 200 Standard Roses, a few large Rhododendrons, variegated and green Holly, 100 Magnolia grandifloras, &c.—May be viewed the day prior and morning of sale. Catalogues to be had of the principal Seedsmen, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, London.

TO GENTLEMEN, BUILDERS, NURSERYMEN, and Others.

MR. D. A. RAMSAY has received instructions to sell by Auction, on the premises, the Brompton Auction Ground, Brompton Nursery, Fulham-road, one mile from Hyde-park Corner, on MONDAY, Dec. 3, at 12 o'clock, from the Stock of a country nurseryman declining the business, a large quantity of Ornamental Trees, Deciduous Shrubs, Evergreens, Standard Roses, &c.—May be viewed the day prior and morning of Sale, Catalogues may be had of the principal Seedsmen, and of the Auctioneer, Brompton.

D. A. RAMSAY begs leave to offer his services to the Trade and others, as an AUCTIONEER, VALUER, &c., and trusts that by devoting his personal attention, with strictly moderate charges, to give satisfaction.—References given, and letters addressed to Brompton Nursery, Fulham-road, Brompton, promptly attended to.

N.B. Parcels of Stock received and offered for Sale by Auction on the above premises. Terms sent on application.

CAMELLIAS, ORANGE TREES, STANDARD ROSES, RHODODENDRONS, AZALEAS, KALMIAS, 200 LILIUM SPECIOSUM, &c.

MR. HASLAM begs to announce that he will sell by Auction, at the Mart, on TUESDAY, Nov. 13, and FRIDAY, Nov. 16, a large importation of the above, which will be found to comprise none but the best varieties grown in Belgium. The ROSES will consist principally of La Reine, Aimée Vibert, Géant de Batailles, Madame Laffay, Le Roi, and Comte de Paris. Also, in each day's Sale, a Case of DUTCH BULBS.—Catalogues may be had at the Mart, and of the Auctioneer, South Essex Nurseries, Epping, Essex.

STAFFORDSHIRE.

VALUABLE NURSERY STOCK FOR SALE.

MR. HILLIARD will sell by Auction (under an assignment for the benefit of creditors), in several Lots, to suit the convenience of purchasers, at the Nursery Grounds of Mr. WILLIAM NUNNS, at Barn-gates, near or adjoining the town of Leek, in Staffordshire, on THURSDAY, the 22d day of November (and the two following days, if necessary), at 11 o'clock in the forenoon of each day, unless previously disposed of by private contract, of which due notice will be given, all that very extensive and valuable assortment of Fruit and Forest Trees, Thorn Quicks, hardy Evergreen and Flowering Shrubs, Rhododendrons, Azaleas, and other American plants; variegated and other kind of Hollies, common and Portugal Laurels, various sorts of Yews, Araucarias, a variety of Pinus, Aucuba japonica, Dwarf and Tree Box, Standard and Dwarf Roses, Pæonia arborea, Herbaceous and Rock plants; together with the Frames, Hand-glasses, Horticultural Fences, &c., and a great variety of other plants too numerous to mention. The above very valuable stock is in a thriving and healthy condition, and in consequence of the North Staffordshire Railway passing close by, purchasers will have the advantage of removing the plants to any part of the kingdom at a very trifling expense.—The stock may be viewed on application at the Nursery, or to the Auctioneer, in Leek; and further information obtained at the offices of Mr. FRANCIS CRUSO, in Leek aforesaid, Solicitor to the Assignees.—Leek, Nov. 10.

TO GENTLEMEN, FLORISTS, SEEDSMEN, AND OTHERS.

Nineteenth Annual Sale of Assorted Dutch Bulbs, direct from Haarlem.

MR. JAMES IZOD will sell by Auction, at the Mart, on MONDAY and TUESDAY, Nov. 12 and 13, at 1 o'clock, two Cases of very fine assorted DOUBLE and SINGLE HYACINTHS, very fine named Tulips, Crocuses, Anemones, Ranunculuses, Gladioluses, Crown Imperials, Snowdrops, Irises, Jonquils, Grand Monarchs, Primo and other Narcissuses, Amaryllises, and other choice Dutch Bulbs. All warranted roots.—May be viewed on the mornings of Sale, and Catalogues had at the Mart, and of Mr. Izod, the Sheriff's Sale Rooms, 46, Watling-street, City.

NORWICH NURSERY.

IMPORTANT TO PLANTERS.—EXTENSIVE SALE OF FOREST AND OTHER TREES.

MR. WILDE begs to inform the nobility and gentlemen engaged in Planting, and the trade generally, that he has received instructions from Mr. MACKIE, in consequence of his removing a portion of his stock to his new Nursery, at Bracondale, to submit to public competition, on the 3d, 4th, 5th, and 6th of December (weather permitting), ONE MILLION OF FOREST AND ORNAMENTAL TREES, &c., consisting of fine transplanted Beech, 2 to 4 feet; fine transplanted Whitethorn, 3 feet; true red-wood Highland Pine, 1 to 2 feet; very fine transplanted Oaks, 4 to 6 feet; black Italian Poplars, 6 to 8 feet; Elms, Hornbeam, Mountain Ash, common Ash, Levant Oaks, common Laurels, &c. The soil of the Nursery is a light loam, and well suited for producing fibre; and as they have been well and frequently transplanted, the roots are excellent. Large purchasers, that may find it inconvenient to remove the trees at once, can have the opportunity of arranging with Mr. Mackie to leave them on the ground till the 1st of March, 1850. Railway communication to all parts of England.—Catalogues can be obtained on and after the 10th November, of Mr. WILDE, Auctioneer; or of Mr. MACKIE, 10 and 11, Exchange-street, Norwich.

TO PLANTERS AND NURSERYMEN.

TO BE SOLD, without reserve, Two Hundred Thousand finely-rooted LARCH TREES, 2 feet high, and 3 years transplanted. To any gentleman about to plant, this would be a valuable opportunity of obtaining fine healthy trees at a moderate price.—To view, and treat for the same, apply to EDWARD JOHN PEAKE, Land Agent, Woodchester Park, Stroud, Gloucestershire.

TO NURSERYMEN, GARDENERS, &c.

TO BE LET OR SOLD, the Lease of the well known and long established PARADISE NURSERY, Hornsey-road, Islington. The whole or part of the Glass and Stock may be taken at a valuation.—Further particulars may be had by applying to Messrs. PROTHEROE and MORRIS, Leytonstone, Essex; or to Mr. WM. PAMPLIN, jun., on the premises.

FARM TO BE LET.—INKPEN, NEAR HUNGERFORD, BERKSHIRE.

TO BE LET, with immediate possession, a most desirable FARM, of about 400 Acres of Arable, Meadow, and Pasture-land. Rent, Tithes, and Rates moderate.—For further particulars apply to Messrs. WASHBOURNE and KEEN, Estate Agents, 8, Cannon-row, Parliament-street, Westminster, London.

TO NURSERYMEN AND GARDENERS.

WANTED TO PURCHASE, A BUSINESS OR PARTNERSHIP. Full particulars and terms to be sent addressed to F. C., 13, Lower Charles-street, Northampton-square, London. Unexceptionable references given and required.

GREY GOOSE FEATHERS, 1s. per lb.—Bed Feathers were never so cheap as at present.

HEAL AND SONS' Present Prices are:—

Poultry	0s 8d	Best Grey Goose ... 1s 10d
Grey Goose	1 0	White ditto 2 2
Foreign ditto	1 6	Best Dantzic ditto ... 3 0

Purified by Steam, and warranted sweet and free from dust.

HEAL and SONS' List of Bedding, containing full particulars of weights, sizes, and prices, sent free by post, on application to their Factory, 196, Tottenham-court-road, London.

EASTERN COUNTIES RAILWAY.—SEASON TICKETS.—[illegible] Season Tickets between London, [illegible] and Intermediate Stations.—Particulars may be had on application at the General Office, Bishopsgate Station. By order.

Bishopsgate Station, Nov. 10. C. P. ROBEY, Secretary.

EASTERN COUNTIES RAILWAY.—The Directors of the Eastern Counties Railway Company having long been engaged upon a revision of the rates and charges, have to announce that from the 1st of December next the altered rates and charges will come into operation, and the New Tariff Tables will be published at the earliest practicable period before that day. By order, C. P. ROBEY, Secretary.

Bishopsgate Station, Nov. 10.

ROSE CATALOGUE.—NEW EDITION FOR 1849-50.
NURSERIES, CHESHUNT, HERTS.

ADAM PAUL AND SON beg to inform their friends and the public in general, that their new ROSE CATALOGUE may now be had, gratis, on enclosing two stamps for postage. The prices are low as possible, and they ensure the supply of well-cultivated plants.

Notices of previous Editions by the Horticultural Press.

"Messrs. Paul and Son's descriptive Catalogue of Roses is before us, and deserves to be made known."—*Gardeners' Chron.*

"Messrs. Paul's is a very nicely-arranged Catalogue, containing the fullest description of any we have seen."—United Gardeners and Land Stewards' Journal.

"Paul's Catalogue of Roses is remarkable alike for the great variety it comprises and the low prices at which they may be purchased."—Gardeners' Gazette.

"Mr. Paul is the most successful Rose grower in England."—Journal of Agriculture.

JOHNSON AND SHAW'S FARMERS' ALMANAC for 1850, is now published, price 1s., sewed; bound in cloth and interleaved, 2s. Also, new editions of Johnson's Rural Spelling Book, and Rural Reader, price 1s. 6d. each.

London: JAMES RIDGWAY, Piccadilly; and all Booksellers.

JOHNSON'S GARDENERS' ALMANACK.—The GARDENERS' ALMANACK for 1850 will be published in November, with the other Almanacks of the Stationers' Company. The new number will be even richer than any of its predecessors, not only by an increase of matter, from the occasional use of a smaller type, but by having enlisted amongst its contributors nearly all the high gardening authorities who are engaged on the "Cottage Gardener." The lists of plants are brought up to the present state of horticulture.

Published by JOSEPH GREENHILL, Treasurer to the Stationers' Company, at their Hall, in Ludgate-street.

This day is published, price 6d.,

THE HORTICULTURAL ALMANAC and GARDENERS' and FARMERS' CALENDAR for 1850:—GARDENING DEPARTMENT by a Practical Gardener; AGRICULTURAL DEPARTMENT by M. M. MILBURN, Secretary to the Yorkshire Agricultural Society, author of Prize Essays," &c., &c.

London: GROOMBRIDGE and SONS, Paternoster-row, and all Booksellers.

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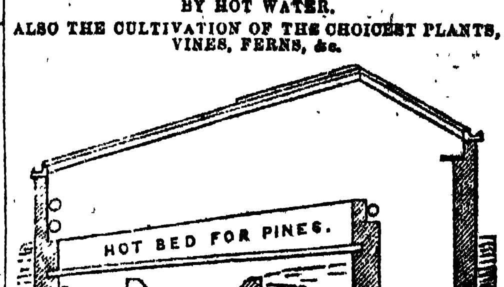

J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. They have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. By means of these houses, they are enabled to grow Stove, Greenhouse, Ferns, and other Plants, in such immense numbers, that they are sold at LESS THAN HALF-PRICE. Mats, Mushroom Spawn, and everything connected with the Nursery and Seed departments; Plans, Estimates, and Catalogues forwarded on application.

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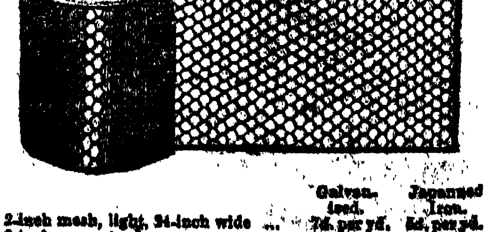

	Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...	7d. per yd.	5d. per yd.
2-inch ,, strong ,, ...	9 ,,	6½ ,,
2-inch ,, extra strong ,, ...	12 ,,	9 ,,
1½-inch ,, light ,, ...	8 ,,	6 ,,
1½-inch ,, strong ,, ...	10 ,,	8 ,,
1½-inch ,, extra strong ,, ...	14 ,,	11 ,,

All the above can be made any width, at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 5d. per square foot.—Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, NOVEMBER 10, 1849.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 46—1849.] SATURDAY, NOVEMBER 17. [Price 6d.

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TO PLANTERS, &c.—The Subscribers having a large overstock of the following FOREST TREES, are disposed to sell them at very reduced prices. They have been transplanted, are healthy, and of fine quality. Prices on application.—Samuel Finney and Co., Gateshead Nursery, Newcastle-upon-Tyne.

Beech, 2 to 3 feet; Weeping Birch, 1½ to 2½ feet; Horse Chestnuts, 4 to 5 feet; Spanish ditto, 1½ to 2 feet and 2 to 3 feet; Bird Cherry, 2 to 3 feet; Hazel, 1 foot and 2 to 2½ feet; Lilac, purple and blue, 3 to 5 feet; Maple, English, 3 feet; Thorn Quicksets, 2 feet; Common Yews, 1½ to 2½ feet; Oak, seedling, 2 years old; Larch, ditto, 1 and 2 years old.

MYATT'S LINNÆUS RHUBARB.

J. MYATT and SONS can confidently recommend this variety as the best in cultivation. The most satisfactory proof of this assertion is the fact that the Market Gardeners round London and Manchester have planted the Linnæus Rhubarb more extensively than any other variety. It is extraordinarily productive, and about a fortnight earlier than the Victoria; added to this, it is held in general esteem for preserving and all culinary purposes. One-year planted roots, 1s. 6d.; ditto, Mitchell's Royal Albert, 1s. 6d.; Victoria, 9d. The usual Trade allowance.—Post-office orders are requested to be made payable to Joseph Myatt, Manor Farm, Deptford, Nov. 17.

RARE AND BEAUTIFUL COLUMBINE.—Stout plants of GRIGOR'S AQUILEGIA GLANDULOSA are ready to be forwarded, post-free, at 2s. per pair, and seeds at 1s. per packet, or for stamps of that value.—John Grigor and Co., Nurseries, Forres, N.B.

HORTICULTURAL ESTABLISHMENT, BRACONDALE, NORWICH.

JOHN BELL, having disposed of the above, begs to inform Nurserymen and the Trade in general that he is SELLING OFF his NURSERY STOCK, at the following low prices, all warranted true and well worth their attention.

	£	s.	d.
Dwarf Maiden Peaches, Nectarines, and Apricots, including all the popular sorts, very fine plants, p. 100—	3	0	0
Dwarf Maiden Plums .. .. „	2	10	0
Do. Cherries .. .. „	2	0	0
Do. Pears .. .. „	2	0	0
Do. [illegible] .. „	2	10	0
[illegible]	1	1[illegible]	[illegible]
[illegible], strong canes, true [illegible] per	[illegible]		
[illegible] one year old, fine..	[illegible]	0	0
Fine Spanish Chestnuts [illegible] 10 feet .. „	3	10	0
Strong 3 years transplanted Whitethorn .. .. „	0	4	0
If 50,000 are ordered at once .. .. „	0	3	6

Strong Dwarf-trained Peaches, Nectarines, and Apricots, 24s. per doz. Plums, Pears, Apples, and Cherries, 20s. per doz.

BECK'S PELARGONIUMS, and other raisers' Flowers.—Now ready for selection and going out. Twelve of the following varieties, including box and carriage to London, will be forwarded in exchange for post-office order on Brentford for Two Guineas. They are well-rooted in 3-inch pots, and ready for an immediate shift into a larger size:

Blanche, Centurion, Cracker, Forget-me-not, Ariel, Cassandra, Ornata, Gustavus, Gulielma, Grandiflora, Junii, Negress, Rosamond, Sundown. Or Nine of the above, and Hoyle's Crusader, or Foster's Victory.

Edward Beck, Worton Cottage, Isleworth.

RICHARD COBDEN, SANSPAREIL, AND PRINCESS.—Fine plants of the above first-class CINERARIAS are now ready to be sent out at 7s. 6d. each. The usual discount to the trade. No higher encomium can be passed upon them than that they were found worthy of being figured in the "Florist" for July, 1849. No orders will be attended to unless accompanied by a post-office order for the amount.

Address, Alfred Kendall, Florist, Stoke Newington.

A Descriptive Catalogue of them can be had on application.

NEW EARLY DWARF BLUE MARROW PEAS—STUBBS' EARLY DWARF BLUE MARROW PEAS grow from 15 to 18 inches high, flavour of the Knight's Marrow, very prolific, and within one week of the earliest frames; well adapted for the north, being quite hardy; time of sowing from November till May. The produce of the above Pea was 61 bushels 1 peck per acre. Price 21s. per bushel.

The trade only supplied with the above Peas.

Nemophila maculata and Salvia speciosa, each 1s. per packet; 100 named Anemones, show flowers, 15s.; Gladiolus gandavensis, 6s. per dozen.

N.B.—Prices of every seed in cultivation can be had on application. — J. G. Waite, Seed Establishment, 181, High Holborn, London.

PLANTING SEASON.—NURSERY GROUNDS, RED LODGE, NORTH STONEHAM, NEAR SOUTHAMPTON. — An unlimited supply of every description of FOREST, FRUIT, AND ORNAMENTAL TREES, AMERICAN PLANTS, AND FLOWERING SHRUBS, may be procured from these extensive grounds, at the most reasonable prices; printed Catalogues of which may be had of the proprietor, WM. ROGERS, Sen., Nurseryman and Contracting Planter.

American purchasers will find great advantages in procuring their supplies from these grounds, from their proximity to the Docks whence the American Steam-packets take their departure, thus saving the delay and expenses of Land Carriage.

BEAUTIFUL GLADIOLI, &c.

WM. DENYER, Seedsman and Florist, 82, Gracechurch-street, London, begs to offer strong roots of the following:

Gladiolus Gandayensis, splendid, 6d. each, or 5s. per dozen.
„ ramosus, beautiful, 9d. each.
Lilium lancifolium rubrum, 2s. each.
„ venustum, very pretty, 1s. each.
Fine mixed late Tulips, from a superb collection, 10s. per 100.
Spanish Iris, mixed, all colours, 4s. per 100.
Dutch mixed Crocus, many colours, 12s. per 1000.
No charge for packages.

Caution.—W. D. begs to intimate that he has no connection with any other person of the same name.

THE BEST EARLY PEAS.
Carriage Free to London, Bristol, or Basingstoke.

	Per Quart.	Per Gallon.
Sutton's Early Champion, 3 feet	1s. 0d.	8s. 6d.
Warner's Emperor, 3 feet	1 0	3 6
Danecroft Rival, 2½ feet	1 4	4 6
Fairbeard's Surprise, 4 feet	1 4	4 6
Fairbeard's Champion of England, 4 to 5 feet	1 9	6 0
Cormack's Prince Albert, 2 to 3 feet	0 9	2 6
Shilling's Early Grotto, 3 feet	1 0	3 6
Early Warwicks, Frames, Mays, and Kents	0 9	2 6

"CONQUEROR OF THE WEST," CUCUMBER, the finest White Spine Cucumber in existence, 2s 6d. per packet.

TRUE ASHLEAF KIDNEY POTATOES, and a new red ditto, both quite free from disease, 2s. 6d. per peck.

JOHN SUTTON and SONS, Reading, Berkshire, confidently recommend the above articles; also many other choice kinds of new Kitchen Garden Seeds, a Catalogue of which is just published.

N.B. Carriage free to London, Bristol, or Basingstoke, for all orders not less than 10s.

THE LARGE FRUITED MONTHLY RASPBERRY.—Fruit of the above were exhibited, Nov. 6th, at the meeting of the Horticultural Society, and a Certificate of Merit awarded. Canes, 9s. per dozen, 60s. per 100; carriage paid to London.—Thomas Rivers, Nurseries, Sawbridgeworth, Herts, Nov. 17.

CEDRUS DEODARA.

WM. MAULE and SONS beg to remind Noblemen, Gentlemen, and the Trade, that they can still supply any quantity of various sizes of this most ornamental and desirable tree. They have also large supplies of the other Himalayan Coniferæ, and the beautiful new Rhododendrons from the same country. Priced Lists will be forwarded on receipt of one postage stamp.

The Pamphlet on the Natural Habits and Quality of the wood of Cedrus Deodara, can still be had by enclosing three postage stamps.—Stapleton-road Nurseries, Bristol.

VIOLETS.

"THE [illegible] SCENTED [illegible] VIOLA ARBOREA," [illegible] Violet has proved itself to [illegible] as large as the double [illegible] showing superior qualities over all others of the class to which it belongs: one bloom is quite as large as half-a-dozen of the single variety, one plant will produce 10 times the quantity of flowers; it will bloom for eight months, and also very long stem to the flower, which is a great advantage in picking; the plant itself will make a beautiful specimen for the greenhouse or conservatory, as they grow to a very large size when grown in pots. I saw a plant in March last, in a conservatory, which had the almost incredible number of 385 expanded blooms on it at one time, with hundreds of buds then to come; it had then been in bloom the whole of the winter. It scented the conservatory so much, that had a person not seen the plant, they would have thought a bed of Violets was growing there. The head of this truly beautiful plant measures 3 feet 8 inches in circumference, and 16 inches in height; the branches do not hang down, but stand out straight from the plant. It is worth notice, that many hundreds of the old double Violet, and others, have been sold for the Viola Arborea, which have turned out a great disappointment to the purchasers. Large bushy plants, 6s. per dozen; smaller ones, 3s. per dozen, or 20s. per 100.

A remittance must accompany the order, either in cash or in 1d. postage stamps to the amount. Any quantity of the above will be sent, postage and package free, to any part.

Sold by Edward Tiley, Nurseryman, Seedsman and Florist, 16, Pulteney-bridge, Bath, Somersetshire.

SPLENDID NEW GERANIUMS.

GEORGE PARSONS, Florist and Seedsman, by appointment, to the Queen, begs to offer the undermentioned beautiful varieties, which he can confidently recommend.

Beck's Refulgent	5s 0d		Hoyle's Belle of the Village	5s 0d
„ Symmetry	5 0		„ Sparkler	5 0
„ Delicatissima	7 6		„ Promethéus	5 0
„ Princess	5 0		„ Abd el Kader	5 0
„ Star	7 0		„ Terpsichore	5 0
„ Sundown	5 0		„ Crusader	7 6
Storey's Mont Blanc	5 0		„ Flamingo	5 0
Hoyle's Rolla	5 0			

G. P. also begs to recommend his fine collection of Iris Germanica (the present being a good time to remove them), in collections of 50 splendid varieties, named, for 1l. 10s.

Western-road, Brighton, Nov. 17.

PINE PLANTS FOR SALE.—The different varieties of Blacks and Queens, warranted clean and well-rooted. Apply to W. Davies, Starch Green, Hammersmith, near London.

JOHN B. SMITH, having a considerable Stock of his new hardy YELLOW RHODODENDRONS, in great variety, enables him to offer them at very reasonable prices, together with a very choice assortment of Azalea indica, Ghent Azaleas, Camellias, and Rhododendrons of all kinds, at greatly reduced prices; Catalogues of which may be had by enclosing a postage stamp.

Norbiton Nursery, Kingston, Nov. 17.

SUPERB NEW FANCY DAHLIA, LIDDIARD'S MISS COMPTON.

E. SPARY, Florist, Seedsman, &c., Queen's Graperies (near the German Spa), Park-street, Brighton, begs respectfully to inform his friends and the Trade, that he has purchased of Mr. Liddiard the entire stock of the above Seedling, which has been successfully exhibited at the Surrey Gardens, Shacklewell, Slough, and Metropolitan Shows, and awarded with First-class Certificates; also half Mr. Staines' money prize, at Slough, being divided between Miss Compton and Lady Grenville (Bragg's), the only places exhibited at. Dry roots will be let out to the Trade at 5l. each, if subscribers enough by the 6th of December next. E. S. has a few roots to spare of "Flora" (Cook's) and "Buffalo Girl" (Cook's) at the below named prices.

MISS COMPTON (Liddiard)—Salmon-scarlet tipped with white, first rate petal and form; being in new colour, will prove an acquisition to the Fancy Class exhibitors. Height, 3 feet 6 inches; plants in May, 10s. 6d.

FLORA (Cook's)—Crimson red, with a slight tip of yellow, excellent form and centre; First-class Certificates at the London Floricultural, Rosherville Gardens, &c., 1849; being nearly lost, was not let out in May. Height, 3 feet; plants, 7s. 6d.; ground roots, 3l. 3s.

BUFFALO GIRL (Cook's)—Drab buff, fine form and substance, most desirable show flower (few plants let out in May last), has proved a successful show flower; see the report of the Metropolitan Shows. Height, 3 feet; plants in May, 3s. 6d.; ground roots, 1l. 1s. Early orders required. Post-office orders from unknown applicants.—Park street, Brighton. Nov. 8.

TO PLANTERS.

THE SUBSCRIBER has to offer the following:

SEEDLING FOREST TREES, &c.

Ash, 2 years, per 1000	8s. 6d	Elm, English, bedded 2 years ... per 1000	12s. 0d
Alders, bedded, 2 years	5 0	Gorse, 1 year	7 0
Beech, 2 years	5 0	Hollies, 2 years	15 0
Broom, 3 years	20 0	Oaks, 2 years	4 0
Fir, Spruce, bed, 5s. to	8 0		

TRANSPLANTED FOREST AND ORNAMENTAL TREES.

Acacias, 5 to 6 ft., p. 100,	12s. 0d	Chestnut, Spanish, 3 to 4 feet, per 1000	50s. 0d
Alders, 8 to 10 feet	12 0	Chestnut, Horse, 6 to 8 feet, per 100	12 0
Ash, 3 to 4 feet, p. 1000,	25 0	Do., 10 to 12 feet	25 0
„ 4 to 5 feet	30 0		
Birch, 2 to 3 ft., p. 1000,	25 0		

Elms, the true Huntingdon, raised here, 3 to 4 feet, 12s. per 100
„ „ „ 4 to 6 feet, 16s. per 100
„ „ „ 6 to 8 feet, 35s. per 100
„ „ „ 8 to 10 feet, 60s. per 100
„ „ „ 10 to 12 feet, 80s. per 100
„ Hertfordshire, at the same prices
„ common English, 3 to 5 feet, 35s. per 1000
Fir, Spruce, 2 to 3 feet, 30s. per 1000; 3 to 4 feet, 40s. per 1000
„ Silver, 2 to 3 feet, 50s. per 1000; 3 to 4 feet, 70s. per 1000
Hazel, 3 to 4 feet, 35s per 1000; 4 to 5 feet, 45s. per 1000
Hornbeam, 8 to 10 feet, 30s. per 100
Limes, red-twigged, from layers, 2 to 8 feet, 12s. to 50s. per 100; 8 to 10 feet, 75s. per 100; 10 to 12 feet, 100s. per 100
Maple, 2 to 3 feet, 25s. per 1000; 3 to 4 feet, 30s. per 1000
„ Norway, 8 to 10 feet, 25s. per 100
Oak, English, 3 to 4 feet, 35s. per 1000; 4 to 6 feet, 50s. per 1000
„ Turkey, 5 to 7 feet, 15s. per 100
Pine, Scotch, 3 to 4 feet, 30s. per 1000; 4 to 5 feet, 45s. per 1000
Poplar, Black Italian, 5 to 7 feet, 40s. per 1000
„ Lombardy, 7 to 8 feet, 25s. p. 100; 8 to 10 feet, 30s. p. 100
Sycamores, 3 to 4 feet, 25s. per 1000; 4 to 5 feet, 30s. per 1000
Willows, Bedford, 4 to 5 ft., 30s. per 1000; 5 to 6 ft., 35s. per 1000

The large sizes of the above are all fine, well rooted stuff, having been twice transplanted, and are admirably adapted for planting where game abounds.

ORNAMENTAL TREES AND SHRUBS.

Acacia (Robinia), several fine species, dwarfs, 9s. per dozen; standards, 12s. per doz.
Ailanthus glandulosus, 8 to 10 feet, 9s. to 12s. per doz.
Althæa frutex, a fine collection, 6s. to 9s. per doz.
Ash, 12 fine sorts, amongst which are the gold-barked, Chinese, heterophylla, &c., 12s. per doz.
Beech, Fern-leaved, 2 to 3 feet, 9s. per doz.; 3 to 5 feet, 12s. per doz.; 6 to 8 feet, 18s. per doz.
„ Purple, 2 to 3 ft., 9s. per doz., 50s. per 100; 3 to 4 ft., 10s. per doz., 75s. per 100; 4 to 5 ft., 15s. per doz., 100s. per 100
„ Weeping, 18s. per doz.
Berberry, several sorts, 6s. per doz., 40s. per 100
Birch, Poplar-leaved, 25s. per 100
Elms, fastigiata, curl-leaved, silver-striped, &c., 6s. to 12s. p. doz.
Thorns, 24 varieties, including new double scarlet, dwarfs 10s. per doz., standards, 12s. to 18s. per doz.
Laburnums, standards, fine, 6s. per doz., 40s. per 100
Lilac, sorts, 25s. per 100. Mountain Ash, 5 to 6 ft., 12s. per 100
Maple, Eagle's Claw and several choice kinds, 9s. per doz.
Oak, fine collection of American species, 6s. to 9s. per doz.; 50s. per 100
Roses, a fine mixture for shrubberies, 21s. per 100
Aucuba japonica, 2 to 3 feet, fine, 50s. per 100
Laurels, 2 to 3 feet, 20s.; 3 to 4 feet, fine, 30s. per 100; Portugal, 2 to 3 feet, 50s. per 100; 3 to 4 feet, fine, 100s. per 100
Cedar, Red, 2 to 3 feet, very fine, 9s. per doz.; 3 to 4 feet, 12s.
Arbor-vitæ, Chinese and Siberian, 2 to 3 feet, 9s. per doz.; 3 to 4 feet, 12s. per doz.

Other Ornamental Trees, Evergreens, &c., at similar charges, of which a Catalogue may be had.

Not less than 6 will be sold at the dozen price, 25 at the hundred price, and 500 at the thousand price. For smaller quantities a slight increase will be charged.

N.B.—The above charges are for ready money.

Susan Wood, Nurseries, Huntingdon.

THE PUBLIC WILLING.

R. TONGUE, of Forton Cottage, near Garstang, Lancashire, will send out his HYBRID HONEYSUCKLES this season, under the names of Forton Honey suckle No. 1 and No. 2, at one florin each. No 1 has the handsomer flower (crim on tube and yellow lips), but No 2 (crimson and orange), is a more abundant bloomer than the other. For favourable notices, see "Beck's Florist," "Midland Florist," "Cottage Gardener," Gardeners' Chronicle, &c.

R. T. has also some double Larkspurs, descendants from Barlow's, on sale at 6d each, and a few plants of Magnolia Soulangiana at 1s. 6d each. Discount allowed to the trade.

THE GREATEST NOVELTY GERANIUM "ROSEA STRIATA."

E. PERKINS, Nurseryman, Leamington, begs respectfully to inform his friends and the public generally that he has strong plants of the above splendid GERANIUM ready to send out, at 10s. 6d. each; the usual allowance to the trade when three or more are taken. This fine variety was raised by H. C. Wise, Esq., in 1847, and proved the last two seasons to have maintained its character without one single exception. It is a rich bright rose, marked in all its petals with regular and distinct bands of pure white; of first-rate shape and good habit.

The following well-known eminent Nurserymen have given orders for it, having seen it in bloom

Messrs. Lowe & Co., Clapton	Messrs. Sangster & Co., Newington Butts
,, Veitch & Son, Exeter	,, Ivery, Peckham
,, Hurst & M'Mullen, Leadenhall street	,, Gregory, Cirencester
,, Widnall & Davis, Cambridge	,, Moore & Son, Birmingham
,, Pope & Sons, Birmingham	,, Cobbett, Horsell
,, Beck & Henderson, Strand	,, Hoses Webster, Knaphill
,, Waite, London	,, Pearson, Chilwell
,, Crowdry & Sons, Birmingham	,, Fairbairn, Clapham
,, Wilson, Warwick	,, Weddell, Leamington
	,, Smith, Worcester.

N.B. Post-office orders to be remitted from unknown correspondents. 47, Bath-street, Leamington, Nov. 17.

TO PLANTERS AND NURSERYMEN.

TO BE SOLD, without reserve, Two Hundred Thousand finely rooted LARCH TREES, 2 feet high, and 3 years transplanted. To any gentleman about to plant, this would be a valuable opportunity of obtaining fine healthy trees at a moderate price. To view, and treat for the same, apply to Edward John Pease, Land Agent, Woodchester Park, Stroud, Gloucestershire.

THE SUBSCRIBER begs to offer the following list, which can be relied on as being the most healthy, vigorous, and well-established stock in the kingdom, and will make fine specimens in the course of the season.

ERICAS or HEATHS

Ampullacea vittata	Eximia	Perspicua nana
Aristata ditto	Ferruginea	Perpendens
Andromedaeflora	Florida campanulata	Persoluta major
Beaumontia	Hartnelli	Rubra calyx
Bergiana	Hyemalis	Splendens
Bowieana	Hybrida	Syndriana
Banksii	Infundibuliformis	Tricolor dumosa
Cavendishii	Lambertiana rosea	,, rubra
Cunninghamii	Lenaeflora	,, Wilsonii
Colorans	Leopoldii	Ventricosa, coccinea
Depressa floribunda	Longipedunculata	Westcottii
,, rubra	Mirabilis	Willmoreana
Elegans	Metulaeflora, true	

And many other varieties, 12s to 24s per dozen.

AZALEAS

Alba latescens	Duke of Devonshire	Murrayana
,, maxima	Dilecta	Smithii
Apollo	Exquisite	Optima
Ardens	Flora pleno rubra	Obtusa
Aurora	Formosa	Perryana
Broughtonii	Gledstanesii	Rosea superba nova
Blanda	Hebe	Refulgens
Coronata	Ignescens	Variegata
Coccinea superba	Lateritia grandiflora	

12s to 21s per dozen.

GERANIUMS.

Armida superba	Flamingo	Norah
Agricola	Forget-me-not	Ondine
Brunette	Gustavus	Orion
Bacchus	Grandis	Phyllis
Brilliant	Gazelle	Plantagenet
Beauty of Clapham	Hebe's Lip	Prospectus
Black Knight	Jenny Lind	Queen Victoria
Belle of the Village	King of the Isles	Rosa
Claranda	Lamartine	Rosamond
Cassandra	Lady Rockingham	Superb
Cavalier	Miss Berners	Superlative
Centurion	Minerva	Sylvia
Chimborazo	Mrs. Cavendish	Topsiel ore
Cupid	Mrs. Holford	Windsor Castle

21s to 42s per dozen.

CALCEOLARIAS.

Attila	Cerito	Glacina
Athos	Duchess	Marmion
Amanda	Grandissima	Maid of Artois
Angelina	Grand Master	Newington Beauty
Beauty of Peckham	Lady Fitzwilliam	Rosetta
Beauty of St. John's Wood	Lady Sidney Shepherd	Resplendens
Beauty of Droxford	Lord John Russell	Satellite
Crimson Perfection		Star Land

12s. to 21s. per dozen.

STOVE PLANTS.

Aeschynanthus pulcher	1s 6d	Hoya Cumingiana		.. 6s	
,, speciosus (strong)	3 6	,, imperialis		5 0	
,, Lobbii	1 6	Impatiens or Balsamina repens, per doz.		6 0	
Allamanda cathartica	1 6	Ixora coccinea, strong, 1s. 6d. to		2 6	
,, grandiflora	2 6	Lagerstroemia indica		2 6	
,, Schottii	2 6	Plumbago Larpentae, per doz.		6 0	
Aphelandra ... Loudonii	2 6	Rondeletia speciosa major 1s 6d. to		2 6	
,, cristata	2 6	Stephanotis floribunda, 1s. 6d. to		2 6	
Browallia Jamesonii, per doz.	6 0				
Franciscea hydrangeaeformis	3 6				
,, acuminata	2 6				
Hibiscus hybrida	2 0				

Select Greenhouse Plants, 12s. to 24s per dozen.
Select Epacrises, 12s to 24s. per dozen. Select Chrysanthemums, inclusive of all the new varieties, 6s to 12s per doz.
New Verbenas, 6s. to 12s. per doz. Verbena ... Californica, ... per doz.

... the selection ... highest ... Orders to be ... with a ... William ... Bower Nurseries, Maidstone.

RENDLE'S NURSERY, PLYMOUTH.
ESTABLISHED 1786.

THORNS OR QUICKS.—10,000 FINE TRANSPLANTED THORNS from 12 to 15 inches for 3l. 10,000 One-year old Seedlings for 15s.

LARCH.—10,000 One-year old Seedlings for 20s.

SCOTCH.—10,000 One year old Seedlings for 15s.

PEACHES AND NECTARINES.—Fine Dwarf Trees or Maiden at 15s per dozen; small Trained Trees from 24s. to 30s. per dozen; fine selected Dwarf Trained at 50s. per dozen. Comprising all the best sorts in cultivation, true to name.

RHUBARB, "Mitchell's Prince Albert"—This has been fully proved to be the best early variety known. We have more than 1000 strong, large, and well established roots, at 20s. per dozen. These will produce abundantly next spring. Smaller roots, 12s per dozen.

RHUBARB, "Myatt's Victoria."—Very strong roots, 15s. per dozen, smaller roots, 9s per dozen.

RASPBERRIES, "Rendle's Large Fruitive"—This is a large handsome variety, very prolific and delicious flavour, and has given the most complete satisfaction. Strong Canes, 20s. per 100 or 3s. per dozen. "Yorell's Fastolff," 10s per 100.

STRAWBERRIES, "Myatt's Eleanor," 10s per 100; Cuthill's Black Prince, 12s 6d per 100; Eliza, 5s. per 100; Mammoth, 7s. 6d. per 100, Cole's Prolific, 5s. per 100; Cooper's Seedling, 5s per 100.

CEDARS OF LEBANON.—We have a large stock of these in pots Good Plants, 18 inches, 12s. per dozen, 3 feet, 36s per dozen. Large handsome Plants in Pots, 4 to 6 feet, 5s each, or, one quarter the price usually charged. We have a large stock which must be cleared.

TURKEY OAKS.—Fine, handsome trees, 6 feet high, well transplanted, 80s. per 1000, worth 15s. per 100.

BEST DOUBLE RUSSIAN MATS, 5l. per 100.

BLACK NAPLES CURRANTS.—Very superior to the old sort, 6s. per doz.

GOOSEBERRIES.—Some of the very best varieties in cultivation, 30s. per 100.

PORTUGAL LAURELS.—An immense stock will be sold unusually low. Fine plants, 18 inch, bushy, 20s. per 100; 3 feet, 30 per 100, 4 feet, 40s. per 100.

BERBERIS, (MAHONIA) AQUIFOLIUM.—A very large quantity, 18 inches, 16s. per 100. This is a fine shrub for underwood.

Weigela rosea, strong plants, 12 inches, 6s. per dozen, Pernettia mucronata and floribunda, 6s. per dozen, Ribes, double red, and albidum, strong plants, 18 inches, 9s. per dozen.

SEAKALE and ASPARAGUS.—In large quantities, from 10s. to 20s per 1000.

Our new Autumnal Catalogue is just published, and will be sent, gratis, to any application.

Remittance, or reference in London, from unknown correspondents.

All orders above 5l. will be delivered free of carriage to any of the stations on the South Devon, Bristol and Exeter, or Great Western Railways. Steamers from this port to London, Dublin, Cork, Falmouth, Belfast, and Glasgow, three times a week.

The South Devon Railway is now open to Plymouth, the Station being adjoining our premises. For Catalogues and further information apply to

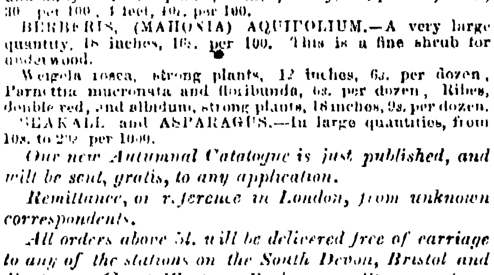
William E. Rendle and Co., Union-road, Plymouth.
ESTABLISHED 1786.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates, can be laid on with great facility by farm-servants, or unpractised persons. Price 1d per square foot. CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel. Samples and Testimonials sent by post on application to Croggon and Co., 2, Dowgate-hill, London.

STATUES, VASES, FOUNTAINS, GARDEN ORNAMENTS, COATS OF ARMS, and ARCHITECTURAL EMBELLISHMENTS in Imperishable Stone, by Vaughan and Co., 60, Stones End, Borough, London. T. J. Croggon, late of Coade's, Superintendent. Specimens may be seen at Croggon and Co.'s, 2, Dowgate-hill, City. A pamphlet of Drawings forwarded on application.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, PLANTS, &c.



J. WEEKS and Co., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. They have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. By means of these houses, they are enabled to grow Stove, Greenhouse, Ferns, and other Plants, in such immense numbers, that they are sold at LESS THAN HALF-PRICE. Mats, Mushroom Spawn, and everything connected with the Nursery and Seed departments, Plans, Estimates, and Catalogues forwarded on application.

AGRICULTURAL DRAINING. THE DERBY LEVEL. A Very Superior Draining Level, of great simplicity, price 3l. 5s., to be had of the Maker, John Davis, Optician, Derby. The above is securely packed and sent to any part of the empire.

WIRE-WORK, HOT WATER APPARATUS, GREENHOUSES &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and several Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS on improved and economical principles.

Parties waited on in Town and Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

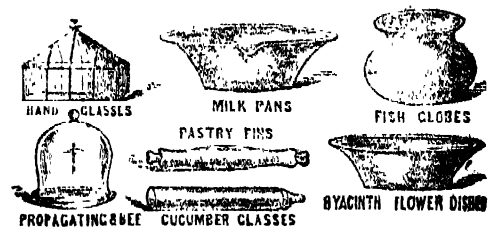
HEATING BY HOT WATER.

J. WEEKS and Co., King's-road, Chelsea, Patentees and Manufacturers of HOT-WATER APPARATUS, Economical Boilers of all sizes; the fire warranted to last 15 hours without attention. To be seen in extensive operation at their Show Establishment, King's-road, Chelsea; and also at most of the Nobility and Gentlemen's Seats in the country, the London Nurseries, &c.

HOT WATER PIPES AND TROUGH PIPES, with all the usual connexions.

J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, keeps a very large stock of Hot Water and Trough Pipes, with Elbows, Syphons Tee Pieces, Collars, Flange Sockets, and Spigots, Throttle Valves, &c., of excellent quality, and at very low prices. Parties requiring the work to be done, can have good workmen sent to any part of the kingdom, with everything requisite for the heating, &c., at a stated sum. Rain-water pipes, Gutters, Sash-weights, Railing Bars, Air Bricks, and numerous other Castings are also kept at J. Jones's, Iron Bridge Wharf, No. 6, Bankside, London.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 1d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had on application at the warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

GALVANISED WIRE GAME NETTING.— 7d per yard, 2 feet wide.

		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide		7d. per yd.	5d. per yd.
2 inch ,, strong	,,	9 ,,	6½ ,,
2 inch ,, extra strong	,,	12 ,,	9 ,,
1½ inch ,, light	,,	8 ,,	6 ,,
1½ inch ,, strong	,,	10 ,,	8 ,,
1½ inch ,, extra strong	,,	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

TO BE SOLD, a small NURSERY, in one of the best situations in or about London, being within four miles of Covent-garden Market. It contains a very excellent Show-house, Propagating, Forcing, and other Houses, Pits, Frames, Seed Shop, &c., with a good stock of the most approved articles for early spring sale.—For particulars apply, by prepaid letter, to P. D., care of Mr. R. Mackay, Nurseryman, Stoke Newington, London.

THE BEST DIBBLE FOR 500l.

JESSE ROSS'S PATENT PRESSING DIBBLE.— These dibbles press the seed into the soil at one operation. A man with a pair may dibble an acre per day with ease, as they may be used with great speed with a certainty of the seed being deposited, and are much improved since last year, and pronounced by theoretical and practical judges the only dibble that merited the prize at the late Royal Agricultural Show at Norwich, and the Patentee's friends are ready to dibble against Dr. Newington's machines at any time for 500l., for doing the most work, regularity of dividing and depositing the seed, and in every other way superior, if fairly tested. See testimonials and Royal Agricultural Catalogue, No 71 Stand.

TESTIMONIALS.

"High-street, Pwllheli, Carnarvonshire, Oct 17, 1849.

"Sir, The part of the field of Wheat I dibbled with the machine obtained from you last year having come up well, and the yield being much more than that sown in our usual way, I have determined to plant the whole of my Wheat with it this season. I will, therefore, feel particularly obliged by your sending me the order herewith immediately. On receiving them I will remit you.—I remain, Sir, your obedient servant,

David Evans."

"To Mr. Jesse Ross, 73 New Walk, Leicester."

"Birstall, Feb. 21 1849.

"Sir,—When I purchased from you last autumn a Dibbling Machine for my allotment tenants, I promised to inform you of its merits. Several have tried it: the corn has come up, and looks well. The seed seems to have been deposited regularly, and of course takes much less than drilling or broadcast, as much so as to save all the labour. The plants are regular, firm in the ground, and will be easier and better hoed than if planted in any other way with which I am acquainted; and I think the implement may be used to advantage wherever labour is not too scarce.

"To Mr. Jesse Ross." Yours, H. Paget."

These Dibbles may be had of Deane, Dray, and Co., London; Stratton, Hughes, and Co., Bristol; Marshbeck and Lowe, Birmingham; Walton, Walker, and Co., Wolverhampton; Richmond and Chandler, Manchester; Coleman and Co., Norwich, the Patentee, 73, New Walk, Leicester, and all other Implement Vendors in the kingdom, at 35s. per pair. Post-office orders prepaid.

AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER has much pleasure in announcing he has published a Descriptive Catalogue of his extensive collection of RHODODENDRONS and other American plants, &c, which will be forwarded on application.

MYATT'S NEW STRAWBERRY, "ELEANOR."

J. MYATT AND SONS are prepared to send out plants of this and the following varieties at the prices annexed: Myatt's Eleanor, 10s. 6d.; Fertilised Hautbois, 10s. 6d.; British Queen, 3s. 6d.; Globe, 3s 6d.; Mammoth, 3s. 6d.; Hooper's Seedling, 3s. 6d.; Keens' Seedling, 3s. 6d.; Pelvelain's Comte de Paris, 7s 6d.; Princess Royal, 7s. 6d.; Duthill's Black Prince, 15s. per 100.

Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford. Kent.—Nov. 17.

AMERICAN PLANTS.

HOSEA WATERER begs to announce he has just published a New and Complete Catalogue of his AMERICAN and CONIFEROUS PLANTS, which may be had on application, inclosing two stamps for postage to

HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

BENJAMIN R. CANT, St. John's-street Nursery, Colchester, has now ready for delivery, strong well-established plants of the following:

GERANIUM, HOYLE'S CRUSADER ... ... 7s. 6d. each.
" TOPPING'S BRILLIANT .. ... 7s 6d. "
FUCHSIA SPECTABILIS .. .. 7s. 6d. "

The Three for 18s., carriage and package free to London. Post-office orders, or reference, requested from unknown correspondents The usual discount to the trade.

JACKSON'S IMPROVED KIDNEY, THE MOST PROLIFIC OF EARLY POTATOES.

THOMAS JACKSON AND SON have much pleasure in announcing that in consequence of their having a very heavy crop of their IMPROVED KIDNEY POTATO, they have reduced its price from 15s. to 10s. per bushel. All orders of one bushel or more delivered free in London, or at any station on the South Western Railway.

Nursery, Kingston, Surrey, Nov. 17.

NEW GERANIUMS AT VERY LOW PRICES.

BASS AND BROWN beg to refer to their Advertisement of New Varieties last sent out, of which they have still fine strong plants, see *Gardeners' Chronicle*, dated October 20th and 27th. They also beg to refer to their Advertisement of CHOICE FLOWER ROOTS, of the same dates. Their Descriptive Priced Catalogue of Flower Roots, Select Roses, Hardy, Herbaceous, and Climbing Plants, &c., may be had on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

MITCHELL'S ROYAL ALBERT RHUBARB still maintains its supremacy over every other kind, it being the earliest, finest flavoured, and best coloured ever yet grown, a most prolific bearer, and free grower. For early forcing, it far surpasses every other kind. If planted in a wine-cellar, or any place where the frost and light are kept from it, it will produce large stalks, of a magnificent red colour, in five weeks. W. M. has a large stock of roots, at 1s 6d each, also Myatt's Linnæus, 1s. 6d., and Victoria, 9d. The usual allowance to the trade. Post-office orders made payable to W. MITCHELL, Enfield Highway, Middlesex, will meet with every attention

FLOWERING BULBOUS ROOTS, &c.— HYACINTHS, TULIPS, GLADIOLUS, IRIS, NARCISSUS, JONQUILS, CROCUS, RANUNCULUS, ANEMONES, LILIES, &c, may be had, of sound quality, from WM. HAMILTON, SEEDSMAN and FLORIST.

HYACINTHS, superior varieties (named), 9s., 12s., and 18s. per dozen; common (named), 6s per dozen; mixtures, 3s. per dozen. TULIPS, 1s; JONQUILS (large), 1s; NARCISSUS, 4s. to 6s per dozen Mixed CROCUS, 1s 6d.; in colours, 2s 6d per 100. SNOWDROPS, 2s 6d per 100. GUERNSEY LILIES, 9d. each. A Priced Catalogue may be had GRATIS on application.

25 varieties of Hardy Annuals, for autumn or early spring sowing, 5s; 12 varieties, 2s 6d.; free by post, 6d. extra.

CALCEOLARIA, GERANIUM, and PRIMULA SINENSIS FIMBRIATA, saved from the best varieties, and warranted very fine. Vegetable Seeds of all kinds, Garden Implements, Bird Seeds, &c.

WM. HAMILTON takes this opportunity of recommending his IMPROVED FLOWER SUPPORTER for Hyacinths, Narcissus, &c. The "Florist's Directory" remarks—"A more simple, useful, and cheaper support for Hyacinths, Narcissus, &c., whether grown in pots or water, can hardly be imagined. Price 6s. per dozen.—Address, 156, CHEAPSIDE, LONDON.

A Post-office order requisite from unknown correspondents.

NOW SENDING OUT, SPLENDID NEW GERANIUMS, FUCHSIAS, CARNATIONS, PINKS, PANSIES, &c.

HENRY WALTON begs to offer 12 of the following GERANIUMS just sent out for 2l 2s, with a plant of his first-rate Seedling "Antagonist," now sending out at 10s. each. One over for carriage. The plants are well established in 4-inch pots.

	s.	d.		s.	d.
Abd el Kader (Hoyle's) ..	5	0	Lallah Rookh .	5	0
Belle of the Village ..	5	0	Norah	5	0
Crusader	7	6	Plutarch (Whomes's) ..	5	0
Prometheus	5	0	Jenny Lind (Foster's) ...	3	6
Terpsichore .	5	0	Sparkler .	5	0
Alonzo (Foster's) ...	5	0	Harlequin (Beck's) ...	3	6
Lamartine	7	0	Virgin Queen (Arnold's)	7	6
Undine (Foster's)	7	6			

Any 20 of the following first-rate varieties for 11. 7s., or 12 for 10s, with a plant of Hoyle's Prometheus for carriage, viz.: Avenger, Ariel, Aurora, Amantia, Black Prince, Cassandra, Centurion, Conspicuanda, Distinctus, Desdemona, Forget-me-Not, Flora's Flag Gustavus, Guilelma, Hebe's Lip, Honoria, Jenny Lind, Lady Ebrington, Luna refulgens, Mercury, Mary Queen of Scots, Miss Holford, Orion, Prince Alfred, Purpureo, Multiflora, Queen of Kent, Rosa Mundi, Star of the West, Scarlet Defiance, Telegraph, and Vulgus.

12 first-rate show Pinks for 6s, 9s, and 12s.

12 first-rate Carnations and Picotees, 12s. and 18s.

12 first rate Pansies, 6s., 9s., and 12s. Can be sent by post.

Descriptive Catalogues can be had for one postage stamp. All orders are requested to be prepaid, and made payable at Burnley.—Edgend Marsden, near Burnley, Lancashire.

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London for 15l. 10s.; a do. do. 15 by 10, 22l. 10s.; a do. do. 18 by 12, 28l 10s.; a do. do. 21 by 12, 32l. 10s., including a plan for brickwork. 12-inch Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 11½d per foot; 2-inch do., 1s per foot.—J. Lewis's Machine Hothouse Works, Stamford-hill, Middlesex.

SLATE WORKS, ISLEWORTH.—The following articles, manufactured in Slate for Horticultural purposes by EDWARD BUCKMAN may be seen in use at WORTON COTTAGE, upon application to the Gardener, Sundays excepted. Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot Water Tank Covers, Flower-beds for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c.

Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

THE JOURNAL OF THE HORTICULTURAL SOCIETY.—It is requested that those who propose to contribute to the next part of this Journal will be so good as send their papers to the Vice-Secretary, 21, Regent-street, before the 24th of November. The authors of papers which are printed receive the Journal gratuitously for the whole year in which their contributions appear, and are otherwise remunerated, if circumstances require it.

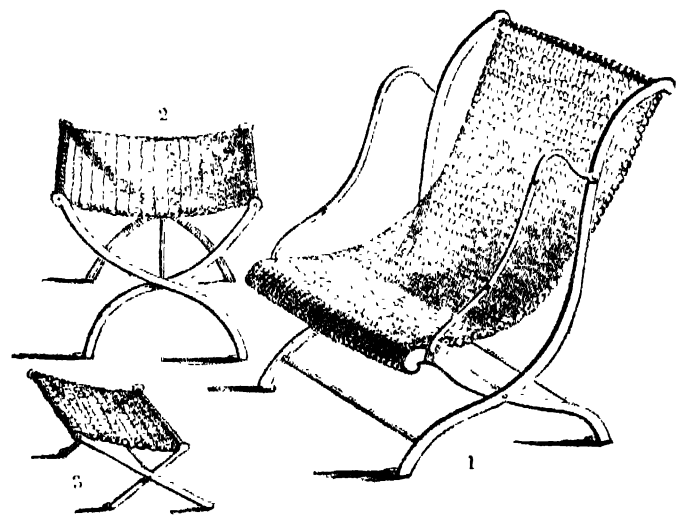
The Gardeners' Chronicle.

SATURDAY, NOVEMBER 17, 1849.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	Nov.	19	Pathological	8 P.M.
			Medical	8 P.M.
			Chemical	8 P.M.
			Statistical	8 P.M.
			British Architects	8 P.M.
TUESDAY,	—	20	Linnean	8 P.M.
			Civil Engineers	8 P.M.
WEDNESDAY,	—	21	Society of Arts	8 P.M.
			Geological	8 P.M.
			Royal Society of Literature	4 P.M.
THURSDAY,	—	22	Numismatic	7 P.M.
			Antiquarian	8 P.M.
			Royal	8½ P.M.
FRIDAY,	—	23	Philological	8 P.M.
			Royal Botanic	3½ P.M.
SATURDAY,	—	24	Westminster Medical	8 P.M.

WE are indebted to the kindness of HENRY THOMAS HOPE, Esq., of the Deepdene, for a sight of a new GARDEN SEAT, which he has imported from Paris. The material of which it is constructed is wrought iron. Iron bars, secured by moveable rivets, form the frames, while iron wire netting furnishes the seat. We have now before us an arm-chair (fig. 1), a folding seat (fig. 2), and a footstool (fig. 3). The seat and footstool fold up without preparation; but the chair is furnished with arms, which screw upon the frame, and which require to be unscrewed before it will fold flat for packing Painted cane colour, these have an extremely neat appearance, and are remarkably steady.



The advantage of wire for such seats over any kind of netting is obvious; it is rapidly dried after a shower. All nets made of vegetable or animal substances absorb water and dry slowly. We fear, however, that iron netting will never be painted so carefully as not to rust. Iron frames are exposed to a similar objection. It will therefore, be a question whether the framework should not be tinned or galvanised before being painted; and whether the wire should not be of zinc or copper. With such improvement, these seats will, we think, prove the most useful yet invented for garden purposes.

At a time when sensible men are acting upon the well known principle that manure is the mother of wealth, and the most effectual substitute for protective duties, it becomes more important than ever to point out the enormous frauds to which incautious persons are subject Under the name of cheap guano and artificial manures, farmers are continually buying at exorbitant prices what is hardly worth the cartage.

We have repeatedly drawn attention to this fact, especially as concerns GUANO. We have shown that by means of loam, various kinds of refuse, sand, pounded limestone, and other substances, guano is brought into the market so ingeniously falsified as to defy detection, except under the unerring analysis of the chemist. In this way materials possessing no intrinsic value, and as manures inert, are bought by unsuspicious agriculturists at from 5l. to 10l. a ton, to the great pecuniary loss of the buyer, and to the discredit of one of the most valuable substances in nature. It is no exaggeration to apply that name to genuine Peruvian or Bolivian guano, in the state in which it reaches this country.

We have at this moment before us a new sample of the matters with which the guano market is just now supplied. At no great distance from one of our metropolitan railways certain stones are collected, which, being roasted in a kiln and then crushed, form a most exact representation of the finest pale guano. Neither by touch nor sight can the most practised eye distinguish it, unassisted by the microscope. This stuff is largely consumed in the falsification of guano at the very moment when these remarks are printed; and there is no doubt that a great deal of the guano that is sold by disreputable dealers consists of it

What are farmers to do, in order to escape this plunder? The answer is, naturally—Consult the chemist—have your samples analysed. But experience shows that men either cannot or will not have recourse to this unerring guide; and therefore those who are desirous of saving the public from the fraudulent practices that abound in all directions are called upon to propose some other test. Such a test is price; that is to say, when guano is offered below a certain price, the buyer may be certain either that roguery has been practised or that the sample is so damaged as to be worthless. The quantity of damaged guano now in the market is too inconsiderable to deserve much attention.

It is to be remembered that the measures taken by the Peruvian Government render the introduction of genuine guano through more than one European firm impossible. That firm is Messrs. Gibbs and Co.. All the Peruvian guano on sale has necessarily been bought of them Now, their price is 9l. 5s. per ton in London or Liverpool, and 9l 10s. at all other ports. No man, therefore, can sell genuine guano at a lower price, without sustaining loss. Nevertheless we hear of it in the north of England at 8l. 10s. and 7l. 10s., prices at which the retailers must lose from 1l to 2l. per ton Does any one suppose the dealers to be patriots, immolating themselves for the sake of agriculture? Buyers may be sure that they are no such thing; and that their patriotism consists exclusively in filling their pockets at the expense of credulous farmers.

Fraud is at the bottom of all these bargains.

We have now before us analyses of two samples, offered considerably below the cost price of the genuine article. In one of these, at 8l. 10s, the quantity of ammonia was something more than 10 per cent.; in the other, at 7l. 10s., it was not quite 6 per cent The first contained nearly one-fourth part of sand, and the other just one-third of black earthy matter resembling ground coprolite, and costing at the most 3l. a ton.

The valuable analyses of guano by Mr WAY prove that the average per centage of ammonia in genuine Peruvian is 17½ per cent. nearly, and that the quantity of sand is not more than 1½ lb. in every hundred pounds, on an average.

In the cheap samples here alluded to the earthy phosphates, a most important part of the guano, were only 7 lbs. in a hundred in one sample and about 10 lbs. in the other. But the average amount of this substance, in genuine Peruvian, has been found by Mr. WAY to be 24 per cent., or thereabouts

The following calculation will show the position of the farmer who buys cheap guanos, such as the market tempts him with.

	Ammonia.	Phosphates.	
Genuine guano, at 9l 10s., contains	17.11	24.12	41.53
Spurious guano, at 8l. 10s.	... 10.19	6.41	16.60
Ditto, at 7l. 10s. ...	... 8.37	10.24	18.61

As the value of guano depends essentially upon its ammonia and earthy phosphates, it will be evident that if genuine guano, costing 9l 10s., contains 41 lbs. of them in every hundred pounds guano containing 17 per cent. only is worth no more than 5l 15s. 6d., so that the dealer who sells such stuff at 8l. 10s., pockets 2l. 11s. 6d per ton at the expense of the simple purchaser.

There is no evading this result, and therefore it is that farmers are cautioned against having anything to do with low priced guano, until a chemical analysis has revealed the truth about it

It is true that he may also buy spurious guano at a high price; but against that he may guard himself by a vigilant scrutiny of the character of the person with whom he deals. There are plenty of respectable men all over the kingdom whose reputations place them above suspicion, and to them we cordially recommend buyers to confine their orders.

Few dispositions are more common than that of generalising from very imperfect data. We see it displayed, in matters which fall within our daily

cognizance, from infancy up to riper years, giving rise to many errors, which a life of observation is scarcely sufficient to rectify. In science it gives birth to system upon system, obscuring often real affinities, and makes mere preliminary studies the business of years. In practice, no less than in theory, the habit of premature generalising, and, indeed, the consequent popular phraseology, is not unfrequently an impediment to the acquiring of just views or of actual improvement. At least one-half of the crudities which were put forth in the thousand-and-one pamphlets on the Potato disease arose from this; and many a vulgar error springs from the same source, as, for instance, that of the influence of the Berberry in producing mildew in Wheat, a notion dependent doubtless on the circumstance that both Wheat and Berberry are extremely subject to mildew, though there is as great a difference as can well be imagined between the intimate structure of the parasites by which the diseases are respectively produced.

The word Mildew, however, is extended to other parasites, especially to those white mealy strata so common on Roses, Hops, &c.; and in the present season on Turnips, especially Swedes. It is especially to this form that the word, considered etymologically, belongs, as is implied by its derivation "mehl-thaü," or meal-dew. There is, however, nothing in common between such mildew and that of Wheat or Berberry, except the circumstance of their belonging to the same tribe of vegetables, and to the same primary division of that tribe, in which the reproductive organs are produced externally on the tips of certain threads, whether more or less developed and complicated, or more or less simple and rudimental, though not to the same family of that division. In Wheat the mildew consists almost entirely of the reproductive organs, which are of a dark rich golden brown, while in the Botrytis and Oidium with which the leaves of Turnips are affected, the fruit forms but a small portion of the plant, the mycelium or else the fertile thread being highly developed, and the spores which separate from them with the greatest ease, and are by no means continuous with the spore-bearing threads, as is the case in Wheat mildew, are of a pure white. Unless all our notions of such matters are wrong, and our observations deceptive, we have no more reason to expect that the mildew of Turnips could produce disease in Wheat, than that the seed of a Ranunculus should produce a Rose. We may, indeed, in some instances, consider the early and mature states of certain mildews as distinct, from not having traced their development with sufficient care, but in the generality of cases there is no room for such a mistake.

On the whole, then, we think that it is quite clear that no danger can arise from a practice which has been adopted with good effect, and respecting which our advice has been required, viz., that of ploughing in the leaves of Turnips and Mangold Wurzel as a dressing for land previous to Wheat sowing, even in in a year like the present, when almost every leaf—at least of Swedish Turnips, is white with mildew. There is no close affinity between the two kinds of mildew with which the Turnip leaves are affected and any of the prominent diseases of Wheat, nor is there any suspicion as to any more latent connection between them; we may, therefore, at once conclude that no risk can be incurred, and that the common name of mildew, though it indicates some common circumstances, by no means declares identity.

Our readers have possibly heard of a certain Rosa Manettii, famous among gardeners as a stock. "Last, but not least," says Mr. Rivers, in his excellent Guide, "is the Rosa Manettii, a Rose I received some eight or ten years since from Como, from Signor Crivelli, who recommended it as the very best of all Roses for a stock. It was raised from seed by Signor Manetti, of the Botanic Garden at Milan; cuttings of this may be prepared and planted exactly as recommended for the Boursault. All the Roses I have budded on this stock have succeeded admirably; above all the Hybrid Perpetuals, which scarcely seem to know when to leave off growing and blooming in the autumn; indeed this stock is remarkable for its late growth: for it may be budded during the whole of September; another excellent quality is, that it never gives any suckers from its roots; and if planted in a stiff loam highly manured, it will, if cut down close to the ground, make shoots, in one season, 6 to 8 feet in height; and will thus form fine standards. I have a stem of three years' growth, larger than a stout broom handle, and apparently increasing rapidly in girth; it seems to flourish equally in light and dry as well as in stiff soils; and it will, I trust, be of much value to the Rose amateur, who, if the soil of his Rose garden is light and dry, is so often troubled with the numerous suckers thrown up by the Dog Rose."

Every year's experience confirms the justice of this statement: and we entertain no doubt that R. Manettii will become as indispensable to a gardener as a pruning-knife or a rake. Of its power as a stock we have before us an example in the form of the hybrid perpetual called Sidonii. Of this Messrs. Henderson, of Pine-apple Place, planted a small cutting in April 1848, and budded it in the end of the September following. It is now 4 feet 6 inches high, with 12 stout limbs; and we understand that Messrs. Henderson have in the same way obtained scores of plants of various sorts—some even larger.

CULTURE OF THE PINE-APPLE.

It is not yet three years since we drew the attention of English Pine growers to the practice pursued at Meudon. The statements then made were considered by many—well meaning individuals, no doubt—to be wild exaggerations, and they received them just in the way in which they have been accustomed to receive the fable of the mouse being turned into a giant. Others, however, were less incredulous; they were men of mettle, and they determined, as we expected they would, that in gardening, at least, no Frenchman, be his pretensions what they might, should long stand with the reward of victory in his hand unchallenged. In England the art of gardening is greatly in advance of that in any other country; but notwithstanding this, the indefatigable, persevering, and intelligent Mr. Pelvilain staggered for a time even the belief of our best gardeners with his wonderful Meudon productions. Some ascribed his success to an unknown virtue in the soil; others to the ammoniacal effluvia given out by the stable litter, as if this latter had never been used in Pine growing in England. But another class of cultivators denied the fact that such large fruit had been produced altogether, or if a Pine was ever grown 8 or 10 lbs. weight it was not a Queen, more especially a Ripley Queen; the thing was an impossibility.

I am glad to be able to state, however, that there are many gardeners who endeavour to overcome an apparent difficulty like this, not with folded hands, nor in a spirit of doubting and disbelief, but with a cool determination not to be beaten. This great question of growing Ripley Queens as large as the one sent from Meudon is decided, and that too most satisfactorily. Mr. Fleming, gardener to the Duke of Sutherland, at Trentham, has, as far as it is recorded, produced the Ripley Queen just 2 lbs. heavier than any other gardener in England. The one lately exhibited at Regent-street weighed 7 lbs. 10 oz. Others have been cut this season at Trentham 8 lbs. 11 oz. The one shown was not a mere accidental production; there were many of similar size, for I went from London to Trentham to satisfy myself on the point. These were planted out as at Meudon, on a warm bed of soil. The air of the pit, and the soil in which they were planted, are both heated by hot-water pipes. No stable litter being used, the secret therefore could not lie in the gaseous emanations in this case. Those, moreover, who are acquainted with the locality of Trentham are well aware that the loam there is only second-rate, and the peat so abominable, that for all valuable plants Mr. Fleming procures it from London.

It might be imagined that these large fruit were produced on immense plants, retarded a year beyond the usual period of fruiting. The contrary is the fact; the plants are young, of very moderate growth—indeed I have seen plants twice their size adorned with 2 lb. fruits; and such plants were, in all likelihood, twice the age of the Trentham Pines, and had probably thrice the care and coddling bestowed on them; and no doubt the actual expense incurred in growing such fruit was double that of the other, because there is the everlasting nuisance of the tan-bed to be renewed, in order that the requisite heat may be maintained. There is the risk also of overheating, and the removal of the plants in consequence, together with the damage the leaves are liable to sustain, which is almost unavoidable when the plants are large. Then, again, we have the potting through all their various stages of progression, until two men are actually required to move one plant. The proper situation for a Pine plant is unquestionably planted out in the free soil, because it is much more favourable for the development of its true character; the roots can then stretch themselves out uninterruptedly in search of proper food, instead of being crammed into a pot with a hatful of soil to feed upon.

We have stated the size which has been already attained in this country by the planting out system of culture, but we by no means admit that this is anything like the size that Pines will yet attain, and in this opinion Mr. Fleming quite concurs. Some contend that a small Pine-apple is more serviceable to them than a large one; but if the small one occupies the same space, and costs the same sum to produce it, I hardly think that in ninety-nine cases out of a hundred much objection would be raised to large Pines in any private family.

The Meudon plan of Pine growing has made, and is making, rapid progress all over the country. Gardeners express their satisfaction with it, because of its simplicity, and the large amount of trouble it saves them. I can state, from my own personal knowledge, that in 20 places where I have seen it adopted this season, not a single failure has presented itself; and although little obstacles may at first appear, they are soon overcome. It is true that where little bantlings only have hitherto been produced, 8 lb. Queens are not likely to be the result of the first trial; common sense tells us, that we should not take dwarfs as a promising stock from whence to breed giants; but no gardener need fear of obtaining equal weights with those at Trentham, or Meudon, by perseverance, neither will a really good cultivator be contented until he has reached the top of the tree, provided the means are afforded him for accomplishing his end. *Mirabile Dictu.*

DISEASES OF PLANTS.

(*Continued from page 708.*)

Genus XXV.; *one species.* Phrigakoptoris, *or disarticulation of Vine shoots.*—Pliny, following Theophrastus, gives the name of *Articulatio* to a disease which attacks the nodes of Vine shoots, by which in severe colds they will separate like the epiphyses of the bones in young animals. I have not retained Pliny's name, because the word *articulations* conveys ideas of analogy between the two kingdoms, which, according to my principles, are not admissible. This disease cannot be prevented except by protecting the Vines, when circumstances admit of it, from the rigour of the season. If the Vines are attacked the diseased part must be pruned down to the quick. The ancients observed that too early pruning promoted the evil; especially where spring frosts were to be feared. It is certain that a plant, surprised by severe cold before it has time to ripen its young wood, is the more sensible to the action of frost. Some cultivators bury their plants at the close of autumn. But it is by no means proved that this is a good practice. It may indeed sometimes be a means of protection to the plant, but when the winter is mild and the spring cold, the plant so treated is the less prepared to bear such a season. The wine made from Vines so treated has less sweetness than usual.

Class III. *Diseases which may be derived as well from sthenia as from asthenia.*—The causes which have produced the diseases described in the two preceding classes, may be the one or the other indifferently the origin of those enumerated in the present one. Thus it will be seen, for instance, that whilst everything tending to stimulate a tree to excess and cause it to vegetate with too great luxuriance, will make it cast its leaves before its time, so the same effect will be produced by the weakness consequent on circumstances diametrically opposite.

Genus I. Aspermia.—There are some plants which produce no seeds, although their fruits (in a gardening sense), that is, their pericarps, are perfect. On this disease, which was well known to the ancients, who prescribed modes of causing Peaches to be formed without stones or Grapes without pips, I sent a memoir to the Societa Italiana. Referring the reader for farther details to that paper, I shall now restrict myself to a few of the principal points. I distinguish two sorts of *Aspermia.*

First Species. Sthenical Aspermia.—In this instance the organs of generation have grown to their full size; the pistils are much larger than usual, and sometimes bear an anther—at others they are doubled; the stamens show nothing remarkable. I have observed it in the Medlar.

Second Species. Consumptive Aspermia.—Old trees sometimes bear fruits which have no seeds. It is quite clear that this is owing to the weakness which the plant has fallen into from the causes I have explained under the head of *Decrepitude.* I think there is some analogy to this in the Aspermia of the Currant Grape, which never forms seeds. The pistil has appeared to me to be in a state of weakness, the surface of the ovary being somewhat shrivelled, a circumstance I have never observed in the pistils of seed-bearing Grapes.

This disease, the promotion of which is as anxiously sought after by many persons as are double flowers, is propagated by grafting. It remains to be tried whether such plants can be restored to their primitive state.* There seem to be two methods. The first, applicable to *Sthenical Aspermia*, would be to restrict the plant in diet, placing it in a less fertile soil whilst it is still young. Perhaps grafting also might be of some avail; I mean grafting the individuals bearing such fruits upon themselves. As to the case of old trees, the remedy is easy, by restoring them as I have said under *Decrepitude.* In regard to the cases where the weakness of the pistil seems to be the cause of the evil, I think it would be difficult to remedy it, unless it were by the increase of nutriment, bending the branches so as to force the sap into the flowers.

In the above-mentioned memoir I have exposed the vulgar error of those cultivators who believe they can cause a plant to bear pericarps without seeds by depriving them of their pith, a belief entertained by the ancients, and by not a few among modern writers who have copied them.

GOSSIP ABOUT GRAPES.

Importance of Leaves.—I may state that after Mr. Frost's early forced Grapes are all cut, he permits the lateral shoots to remain on the Vines, alleging as his reason for doing so that these young shoots, with their fresh foliage, maintain the roots in activity through the summer months, whereas if the Vines are kept clear of laterals after the principal leaves have withered and fallen off, the roots become torpid at an early period, through the want of foliage to excite them into healthy action. This opinion is consistent

* In some hot vineyards of the south of Europe, seedless Grapes are very apt to form, mixed with others on the same bunch; and as they are always much smaller than the perfect ones, the produce of the vineyard is sometimes materially diminished, in which case it is usual to root up the plant and replace it by another. *Translator's Note.*

with science, although at variance with general practice. Many persons who cultivate Vines are not much acquainted with the laws of vegetable physiology, consequently they undervalue, through not understanding the use of, the leaves. I have sometimes seen those who ought to have known better go into a Vinery and indiscriminately pluck off the leaves—even those most particularly needed for the sustenance of the buds which were expected to produce the next year's crop—for the purpose of garnishing dessert dishes; and yet those persons would profess to be astonished when the natural consequence manifested itself the following season, in the form of weak and barren shoots. If it be correct, as I suppose, that each individual bud is fed during its formation chiefly by the leaf in whose axil it is seated, then it follows that the leaves connected with those buds, upon which we reckon for producing fruit in the following season, ought to be preserved with the utmost care until they die a natural death.

Pruning.—All gardeners are aware that the scarcely perceptible buds on the lower part of the shoot, and which are the only ones retained in close spur pruning, never produce such large bunches as the bolder buds situated higher up on the branch, which have been nurtured by large and well developed leaves; therefore, those who desire to have large bunches of Grapes should either adopt the long rod system of pruning, or cut their spurs at the second or third eye. The latter is the method I have always followed, in spite of the objection urged by some persons that in the course of time the spurs get long and unsightly, which to a certain extent must be the case under the best management; but as these long spurs are conspicuously seen only when the Vines are leafless, a period when no great beauty can be discovered in a Vine, in whatever way it may be pruned—the matter seems to me scarcely worthy of consideration, so far as appearance is concerned. Growers of Grapes for market generally practise the close system of pruning, not, however, on account of greater neatness of appearance, but because by that method middle-sized compact bunches are obtained, which are preferable for market purposes to large-shouldered loose bunches. Some persons further object to large bunches because they are more frequently affected than small ones with what is termed "shanking;" and this is no doubt correct; but the reason appears to me to be not because the bunches being large are therefore more liable to that defect, but because 20 large bunches require more support from the Vine they grow upon than the same number of small ones.

Shanking.—It has always been my opinion that shanking is caused by want of food, or in other words that the berries which shrivel and turn sour, or remain of a pale red, while the rest of the bunch acquires its natural black colour, are just so many more than the Vine is able to bring to maturity. I stated this opinion several years since in the "Gardeners' Magazine," and it was urged in opposition that strong-growing Vines not overladen with fruit are sometimes subject to shanking; this, however, rarely occurs, and when it does happen, I conceive it will always be found that something is wrong at the roots; either deep planting or imperfect draining, or soil of a cloggy nature, which holds water like a sponge, or some other defect which prevents the free imbibition of nutriment by the tender spongioles. The Vines alluded to in the first part of these papers afford one strong proof of this, for it was found upon taking out the earth, for the purpose of making a new border, that the main body of the roots were buried about 3 feet deep in heavy adhesive soil, and yet these Vines made good wood.

Borders.—Another instance occurred in a garden near this place, where, several years ago, some very excellent new Vineries were placed by the owner, under the superintendence of Mr. Penn and Mr. Wilmot—the former being authorised to heat the houses by his then new system, and the latter to direct the formation of the border and the planting of the Vines. It is scarcely necessary to state that the heating proved a complete failure, and the pipes have since been removed from the back to the front of the houses. The border was made in the common way, by digging out a pit from 3 to 4 feet deep, laying some stones in the bottom for drainage, and then wheeling in the fresh soil, which fresh soil in this instance consisted of a considerable portion of what might be called pond mud. The Vines grew vigorously in this rich and heavy compost, but although they had the advantages of good houses and good management, they never produced good Grapes; the White Muscats shanked and shrivelled, and the Black Hamburghs never got beyond a brown. So very unsatisfactory was the fruit that it was deemed advisable to remake the borders, which was done two or three years since, and the same Vines are now getting established in the new soil, and bearing good Grapes; yet they are not so luxuriant now as when their produce was inferior in quality and less in quantity. It is therefore evident that Vines might make gross wood and at the same time be deficient in the pabulum necessary to bring the fruit to perfection.

In all the instructions for the making of Vine borders which I have read, "turfy loam" is recommended to form the principal ingredient in the compost, but the particular kind of loam to be chosen is rarely or never specified, although under that vague name soils of widely different nature and quality are comprised. The turfy surface of a pasture is alike called loam, whether the subsoil be clay or gravel, and when first dug there may probably be but little perceptible difference, but when after a few years the herbage and fibrous roots which form the turf have decayed, it will be found that the loam from above the clay is much more retentive of water than that which had gravel beneath it; I would therefore recommend all who have the opportunity of selecting their soil to choose loam that lies upon a porous subsoil, and that feels soft and soapy when rubbed between the fingers. A mixture of such soil with a fourth part of half-rotten farm-yard dung, and another fourth of whole bones and mortar rubbish, will form a border in which Vines cannot fail to do well, if it is made shallow (from 2 to 3 feet deep, according to the situation), wide, and well drained at bottom. The grand secret in growing good Grapes is to get an abundant stock of healthy roots, and this cannot be done in a cloggy, adhesive border. *J. B. Whiting.*

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(*Continued from p. 709.*)

Dr. Lankester read a paper *on some Abnormal Forms of the Fruit of Brassica oleracea.*—The specimens in which the monstrosities were observed were gathered from under the Culver Cliff, in the Isle of Wight. In many of the specimens the fruit exhibited the external form of the silicle rather than the silique. The beak and the stigma which normally are fully developed, were reduced to a mere rounded point, and in many cases the distance from the stigma to the pedicel was not more than the sixth of an inch. On opening these fruits, only a vestige of a replum could be found, and the partly developed ovules adhered on each side to a continuous mass of vascular tissue uniting the two carpels. Each carpel was broader than it was long, and was composed of a little leaf-like bag, which was puckered and contracted at its union with its fellow on the opposite side. Reticulated veins were easily observed on each of the metamorphosed carpels. From the fruits in this state up to those normally developed were a series of transitionary forms, presenting almost every possible variety of form. The author suggested that these changes in the fruit of a Cruciferous plant, suggested the possibility that the replum, the beak, and stigma in the Cruciferæ was not, as had been suggested by previous writers, foliar or carpellary structures, but that they had a true axile origin.

Mr. G. Munby, author of the "Flora of Algiers," read a papor *on the Vegetable Productions of Algiers.*—The author gave an account of the various plants which are cultivated and used by the natives of Algiers as articles of diet. He exhibited some specimens of the Lichen esculentus of Pallas, which he described as a plant of exceedingly rapid growth, frequently covering whole plains in the course of a single night. It has a sweetish agreeable taste, and seems capable of supporting human life, as in many places the Arabs depend almost entirely upon this plant for subsistence. The production of this plant in so large quantities in so short a time, its form also, and its colour, and taste, and uses, suggested the possibility that there might be some relation between it and the "manna" of the ancient Israelites.

Tuesday, *Sept.* 18.—Section A. Mathematical and Physical Science.—*On the Temperature of the British Isles, and its Influence on the Distribution of Plants,* by M. A. Petermann.—The author first adverted to the climate of Western Europe as being comparatively milder than all other countries of a similar latitude. The isothermals of 70° and 30° (Fahr.) were in North America from 30° to 57° N. lat.; in Asia, from 30° to 50° N. lat.; but in Europe, from 30° to 71° N. lat. The British Islands are placed almost in the centre of the latter zone. A diagram of the isothermals of July and January, the hottest and coldest months of our year, founded on observations in 70 places, was exhibited. In this diagram the isothermals for January gave a general direction from north to south, instead of from west to east, as might have been inferred. Between the Shetland Islands and the southern coast of England (except Cornwall and Devon), there is no difference in the winter temperature, but between the eastern coasts of England and the western coasts of Ireland the difference amounts to about 10°, the former being at an average of 35°, the latter probably 45°. The coldest portion of Britain extends from the Naze to the Firth of Forth, comprising to the west all the Pennine chain; in this district an average temperature of 35° to 36° prevails. The average direction of the isothermals of the hottest month (July) is from south-west to north-east. The highest summer temperature in the British Isles—indicated by the isothermal of 64°—occurs in the central portion of the south coast of England, the lowest in the north-west part of Scotland, and the difference appears to be at least 10°, while the difference between the western and eastern coasts is much less. The isothermal of 62° extends to Lincoln, Birmingham, and the southernmost portions of Wales. All Ireland, Wales, northern part of England and Scotland, to the foot of the Highlands, lie between the isothermals of 62° and 60°. North of the Highlands the temperature is very considerably lower, Inverness having only 55° 7′. The author then alluded to the influence of temperature on the distribution of plants, the districts of which he had found to be strikingly corroborative with the general correctness of his isothermals; (for his botanical observations he was indebted to Mr. Watson's "Cybele Britannica.") There are altogether a good number of plants in Britain which botanists are accustomed to regard as western species, being frequently scattered along the western counties, from Cornwall to Scotland, without passing into the eastern counties, unless at the southern or northern extremities of Britain. Compared with each other, these western species present much difference in respect to the area or space of Britain over which they are distributed respectively. But they correspond in the negative peculiarity of being absent from that part of Britain which extends between the Firth of Forth and the Lincolnshire Wash, and mostly absent from the whole eastern side of the island between the Thames and Murray Firth. This class of plants correspond in their districts with the January isothermals. Other plants less impatient of a cold winter, but requiring a higher summer temperature, are found to run parallel with the July isothermals. A great number of species, and the districts where they occur, were named. Among the more important plants, being limited by summer isothermals, is the Vine, the northern limit of which is found to be between the July isothermals of 66° and 67°. In the Valley of the Seine it attains its highest latitude between Louvier and Andelys, in about 49° N. lat., but further east, near Berlin, it reaches nearly 52°, a latitude corresponding with that of Norwich, Birmingham, and Limerick. The author, in concluding his observations, expressed the hope to see this subject further investigated; especially to see the net of meteorological stations over the British Isles extended and completed—as all Ireland and Wales, as well as the north-western part of Scotland, exhibited as yet great blanks on an isothermal map.

VILLA AND SUBURBAN GARDENING.

Having shown the manner of forming and the kind of soil suitable for a Peach-tree border, with a list of the most desirable kinds, I shall now say a word or two on planting. Trained plants from the nurseries having been procured, and the border levelled on the surface, giving it the outward inclination previously recommended, the roots of the plants should then be spread upon the surface, keeping the stem about 3 or 4 inches from the wall; a little of the finer soil should then be scattered over them, and shaken carefully amongst the young fibres until the whole are covered not deeper than 2 inches. It may have been remarked that I have recommended no manure in preparing the border; it is not required. Manure and deep borders are evils to be shunned, for they tend to the production of wood only. A little litter, however, may be sprinkled over the surface of the border, as far as the roots extend, with advantage; it will protect the fibres from drying winds. The plants put in in this manner will have the appearance of having been planted on a little hillock. It has been a common practice in planting fruit trees to dig holes, and to bury the roots a foot or more under the surface, thus placing them out of the reach of the atmosphere. This must not be done, being contrary to the first principle of promoting fruitfulness. Encourage the growth of the roots near the surface of the border by all the means in your power. It is not because if they be buried deep they will not grow, that I advocate shallow planting; they will become more luxuriant deep than shallow, producing shoots several feet in length—a proof the tree is feeding on foul watery matter. Trees on dry borders, with their roots warmed by the sun's rays, will not evince such a tendency to make wood, neither will they be so liable to gum and canker, and from the circumstance of the shoots being short and well matured, will also resist more successfully the injuries arising from a low temperature or severe weather. When the trees are planted, they should be fastened loosely to the wall with a piece of listing or matting. The border being loose and recently moved, it will settle; and if the shoots are tightly nailed or tied, the tree will get uplifted.

When vegetation begins to move in spring, these young trees must be pruned, an operation on which much depends, for young trees well begun is half the battle. The system usually pursued with trees of this kind is, to cut all the young shoots back to the main stem, or at least within two or three eyes of it; but I recommend no such practice. By this treatment the tree sends forth shoots of an unnecessary length and vigour. There ought to exist, however, some proportion between the roots and the head. Supposing, for example, that the young tree has five shoots, two of the intermediate ones should be cut back to within 6 inches of the old wood, the other three should be left a foot long. By adopting this plan the foundation is laid for pursuing the fan system of training, which of all others appears to be not only the most simple, but also the most natural position for the branches of a tree to extend under artificial treatment. When the trees are pruned, they should be secured to the wall, but not too tightly, for when the shoots begin to swell, the ligatures would injure them. *Pharo.*

TRADE MEMORANDA.

We have received a good many letters concerning the Mr. M. W. Bendall who would be a large customer to those who do not require references. Obvious reasons prevent our publishing these letters; their contents may be guessed at.

We have also to announce that John Handford, of Liverpool and Manchester reputation, is again in the field under new names, one of which is Robert Warham.

Home Correspondence.

The appearance of Rings on the Stem of a Camellia, as exhibited at p. 708, may, I conceive, be fairly attributed to the ill effects of a low temperature at some

former period of growth. During the severe winter of 1837-8, when so many half-hardy plants were killed, several of the Capensian growing here, in an open colonnade with a southern exposure, and having the advantage of a covering of mats and Fir boughs during the intensity of the frost, were similarly affected, the only exception being in favour of the more hardy sorts. On the covering being removed a discoloration of an inch or so on the stem immediately above ground was discernible, and from this the bark soon shrivelled and peeled off. The plants lingered for a time, but eventually withered and died. A collection of Orange trees similarly affected was shown to me in the same season; the frost had not been sufficiently excluded in the previous winter, and premonitory symptoms of destruction were very apparent. *James Duncan, Basing-park.*

Animals.—At page 604, "A. H." asks about the "holes made in the ground sometimes in brown earth, sometimes in chalk." These are formed when the bird called the sand-martin is seen. About Aylsham, in Norfolk, I have met with these, and there and elsewhere I have been told (with what truth I cannot say) that the sand martin works them out. As to the *modus operandi* and the purposes of these holes or their makers, I must leave others to explain them. *Addio.*

Calla æthiopica has done well in a stream in the garden at Nettlecombe, the plants being quite as strong as those in a conservatory. *W. C. Trevelyan.*

Rough Plate Glass.—You would confer a boon upon the horticultural world by eliciting and making public the opinions of practical men on the subject of glass for conservatories and other horticultural buildings. I am well aware that Hartley's patent rough plate is now strongly recommended. Has it been tried with Cape and New Holland plants and found to answer in the darker months of the year, as well as sheet glass? In frames where the glass is frequently taken off altogether, I can suppose that it might answer, and yet not be so suitable for fixed lights. You must be well aware that there is, perhaps, a prejudice against it in the minds of many good gardeners, on the ground that less light is admitted, and that as any diminution of light is a serious objection, it ought not to supersede the use of the brighter sheet glass, except in particular cases. If it can be shown that Cape and New Holland plants flourish as well under this glass as under the sheet glass during the winter months, I can see a decided advantage in the rough plate during the summer months of the year. I am about to try it in a Vinery and a Heath house, provided I can satisfy myself that the experiment has already been fairly and successfully made by any good practical gardeners. *J. H. H. H., Henbury Hill, Nov. 13*

Vine Borders and Red Spider.—Shall I be doing right in manuring a Vine border with a quantity of road-scrapings mixed with the contents of some cesspools? I am desirous of using that instead of stable-dung. I find that Speechly speaks very highly of it. I wish that those who have used carrion in their borders would publish the results of their experience. Another season has expired, and some valuable facts may perhaps have been collected with regard to this kind of manure. I should also like to know how people have succeeded with keeping down the red spider during the hottest part of last summer. Being short-handed one week my Cucumbers became affected, and I tried in vain the advice sometimes given—"keep them close and very moist." I have mastered the spider before in this way, but this season it completely beat me. *Reader.*

Mistletoe.—You have sometimes recommended parties to insert the Mistletoe berry in a crack in the bark. I have never succeeded with it in that way, but I have made it grow by pressing it on the clean smooth bark. *C. J.*

Mildew on Vines.—I am convinced from experience that what you have written on this subject is perfectly correct. Sulphur will kill mildew, if it be applied the moment it appears. I mix the sulphur with water, and then use it. Neither hot water nor sweet oil will cure mildew. It has been very bad with us here this year. Mr. Roberts thinks that our borders must be at fault; but I am of opinion that the border has nothing to do with it. It makes its appearance under all circumstances and conditions, and even our best Grape growers have lately been much annoyed with it. *J. K.* [No doubt.]

Plantations in the North of Scotland.—I find in the Pine woods here (Forres) the same destructive "piniperda" which I met with in Somersetshire. One of the greatest enemies to young trees of all kinds here is the roebuck, which abounds in the forest and destroys many thousands annually by rubbing the bark off with the horns. *T.*

Violets.—There are several varieties of these in cultivation, but none more beautiful than the old double purple, so much overlooked of late years, which is probably owing to its being considered a late bloomer, and on that account not worth pot-culture. Such, however, is not the case; I find it, on the contrary, very early, with large very compact flowers, sweeter scented than any of the others, and the very best for winter and early spring blooming. It requires no bottom-heat. In May, when it has done flowering out doors, I dig up roots out of the borders, divide them, leaving a bit of root to each, and immediately plant them again into a rich piece of ground on a south border, there to remain till August. I then lift them with balls, and put each (only one plant) into a 24 sized pot, using a light compost composed of half loam and half horse manure from an old Mushroom bed, or equal parts loam, rotten dung, and sand, plunging the pots in ashes in a cold frame in a shady place. In October I remove them to a north border, where they can have the full sun, again plunging them in ashes, and keeping the tops within 4 inches of the glass in a cold frame, giving plenty of air in the day and covering with mats on very frosty nights. By this means I get a profusion of flowers, which are a blaze of beauty all through the dreary months of January, February, and March. *J. R.*

Aphelandra cristata major.—When well managed, this is truly a magnificent plant; but, because it never flowers before autumn, and then often too late for the proper development of the blossoms, some plant-growers have discarded it. It is a mistake to keep this plant in the stove all the year round, as some do, or to consider it at all delicate as regards food or temperature. It is quite as gross a feeder as the Vine, and I have always found it do best when potted in strong, turfy loam, with a due proportion of well rotted dung; when it has done flowering, I move it to a shelf in a cool house, or under the stage of the greenhouse, where it remains until the beginning of February, when the preceding year's wood is cut back to the first joint, and the old soil shaken from the roots, which are reduced sufficiently to allow it to be put into a pot about half the size of that in which it flowered; it is then plunged in the tan of a Pine-house, and kept as near the glass as possible, until it shows its flower-buds, when it immediately receives a shift into the pot it last flowered in. It is then replunged in the tan bed, and well syringed with clean water and tobacco water occasionally, to keep down green-fly, an insect it is very subject to under this method of treatment it always flowers with me in September. *W S Oct. 15.*

Extract of a Letter from the Island of Madalena (off the north point of Sardinia).—"Everything flourishes here if sheltered from the winds—Sugar cane, Coffee, Cotton. The Geraniums run wild on the rocks. Captain Roberts has a hedge of Ivy-leaved Geraniums, 200 yards long and 5 or 6 feet high. You never saw anything more lovely when it is in flower." *T.*

Garden Fork.—It is, I assure you, with much pleasure that I bear my testimony to the merits of the excellent little tool which has been so strongly recommended in your Paper by "Addio" and others. I cannot say that it has much pretension to novelty, but I do not think it the less valuable on that account. It is just the kind of fork that I wanted. It has a great recommendation, too, in being so easily made, and at so trifling a cost—*2s* at the outside. It is useful in either single hand or double hand work, and there is no amateur lady or gentlemen, nor any gardener, I am sure, but will find it as useful as I do, not only in breaking away a parched or crusted surface of clay, after rains and sunny days; but in the removal of tubers and small plants of all sorts, it will be found at this season of the year most serviceable. *En Verité.*

Plumbago Larpentæ.—I have specimens of this pretty blue-flowered plant producing upwards of 100 clusters, and every cluster containing at one time from three to ten perfect blooms; here it has done this for more than two months past. I consider Plumbago Larpentæ to be one of the most attractive autumn-flowering plants we have, when properly treated; indeed, it has been admired by every one who has seen it in flower here. It has been condemned by many gardeners to be worthless, but this arises from their not knowing the treatment it really requires. *G. Masters, Heaton-park Gardens, Manchester, Nov. 12.* [Pray state your mode of treatment, for the benefit of those who do not understand it.]

Potato Disease.—In this neighbourhood (Forres, N. B), the Potatoes have this season suffered more from the disease than they had done in any previous year; much to the injury of several farmers, who had planted a greater quantity than usual, having found them very profitable when they had failed in other places. We have this morning (November 6th), a hard frost here; the mountains have been for some days capped with snow. *W. C. T.*

Indian Corn.—I have just read with interest your article on the growth of Indian Corn in England, and the profit to be derived from it. [Profit?] It may be grown in England in favourable situations, and thoroughly ripened, however wet and cold the summer may be. This I thoroughly tested last summer; but in order to do this, some trouble and expense were requisite, *so that the cost exceeded the profit.* I have often tried it, but never succeeded so well as last year. I have not had a crop of it this year, as I found, although I could ripen it, I could not grow it advantageously. The plan to adopt is the following: I have furrows drawn out about the depth and width of Potato furrows (do not think I am dictating to you), in this I deposit well rotted farm-yard manure, and cover it in. I then dibble on the ridge the seed, about the end of April, being enabled to deposit the seed on the ridge earlier than on the flat. The plants having their food immediately beneath them, make a great start as soon as the roots are sufficiently abundant to take in a large portion of food. When the plants are about six weeks old, I begin my stirring operations, and keep the earth in the intervals completely pulverised. Stirring every fortnight, the earth, even in this short time, becomes a mass of fibres, stretching across the intervals in all directions. My opinion is, from many instances, that the stirring, if commenced in March, adds six weeks to our summers. This is a most important consideration. The plants never flag in pulverised earth, and are always moist, the air being admitted also to prepare the food, and the fibres being encouraged in proportion to the pulverisation. For the piece of land cropped with Indian Corn last year, I grew at the rate of 80 bushels per acre, but according to my calculations it did not pay. I most cordially advocate the growth of the Giant Indian Corn as a green crop; it appears to me that its large flags feed more on the air than most plants. *S. Newington, Kents, Friend, Tonbridge Wells.*

Parsnip Disease.—I have once or twice observed recommendations of the Parsnip as a substitute for the Potato. I am sorry to say that, both this year and last, my Parsnips have shown unmistakeable symptoms of the genuine Potato blight, both in the foliage and the roots, which last are now getting worse daily. Last year the fruit of a Quince-tree growing amidst Potatoes was affected with a sort of rot, which had all the appearance of the same disease that prevailed in the Potatoes around it. *Cautus.*

To Grow Orchids well, nothing more is required than to place a stratum of charcoal, broken in rather small pieces, at the bottom of the pots, and to have the remainder of the pot filled with small broken potsherds and moderate-sized lumps of charcoal, in equal proportions. *Cantium.* [Orchis growers will, we think, read this assertion with amazement. Will "Cantium" favour us with the name of the place where nothing more is found necessary than what he here describes.]

Ivy.—I could not help admiring, the other day, the persevering nature of the Ivy, as it may be seen among the rocks and battlements of Stirling Castle. A strong wind was stripping deciduous trees and shrubs of their foliage, and carrying them high on the breeze, over tower and town, yet, with respect to the Ivy, it appeared to make it cling with a firmer hold to its rocky fastness. Many an unbroken hurricane from the lofty Ben Lomond has burst upon this home of the Ivy; yet amidst the heat of summer, and the frosts and storms of winter, it holds on its upward course with an energy that many with their reason to guide them might take a lesson from. The Ivy may often be seen growing in a soil that received no preparation from man, with nothing to cling to but basaltic rocks; yet one column of rock after another is surmounted, but it does not stop there, it scales the walls and pushes onwards until its evergreen flag waves in the breeze, and in the storm, upon the ramparts. Mrs. Heman, in her "Ivy Song," says—

High from the fields of air look down,
Those eyries of a vanished race;
Where harp and battle, and renown,
Have passed and left no trace.
But thou art there serenely bright,
Meeting the mountain storms with bloom;
Thou that wilt climb the loftiest height,
Or crown the lowliest tomb.
Ivy, Ivy, all are thine,
Palace, hearth, and shrine.

Although the Ivy may be seen waving where once proud banners hung, and on mouldering ruins, yet it may be seen in more lowly situations, affording shelter to less tender plants, and prolonging our season of flowers. In a frosty night the moonbeams may be reflected in its glossy leaves, but they afford protection to many a plant that lives under their influence. Knight, "Upon the beneficial effects of Protecting the Stems of Fruit Trees from Frost in early Spring," remarks, "I planted, some years ago, in my garden, under a wall in a north-east aspect, and shaded by a contiguous building, a common China Rose tree (Rosa indica), and a plant of Irish Ivy. Both have risen considerably above the top of the wall, which is 13 feet high, and the Rose tree, of which the stem is wholly covered by the branches and foliage of the Ivy, has annually produced more abundant flowers, and exhibited symptoms of more luxuriant health, than any other tree of the same kind in my possession. The soil in which it grows is poor and unfavourable, and I am unable to discover any cause except the protection it receives, from which it has derived its luxuriant health and growth." Ivy is generally known to gardeners as a creeping dependant plant only; but when the trees have acquired a considerable age, and have produced fruit bearing branches, these exhibit an independent form of growth, which they retain when detached, and form very hardy evergreen shrubs, of low stature. If these were intermixed with plants of the more delicate varieties of the China Rose, or other low deciduous and somewhat tender flowering shrubs, so that the stems of the latter would be covered in the winter, whilst their foliage would be fully exposed to the light of summer, it is probable that these might be successfully cultivated in situations where they would perish without such protection; and the evergreen foliage of the Ivy plants in winter would be generally thought ornamental. Detached fruit-bearing branches of Ivy readily emit roots, and the requisite kind of plants would therefore be easily obtained. *P. Mackenzie, West Plean, Stirling.*

Pumpkins.—At page 373, "W. R." requested some information respecting the growth of Pumpkins. I have never cultivated any in this country, but I have no doubt they would succeed very well if treated in spring like a half-hardy annual. If I intended growing Pumpkins in the ensuing spring, I should now procure a packet of good seed, and about the 1st of March I would sow it on a slight hotbed, so as to have nice sturdy plants for turning out early in May; and, as they would ultimately spread to a great distance, they would not need to be planted close; a two or a three-light frame therefore would hold as many as would plant a large piece of ground. That the Pumpkin is a nutritious and wholesome vegetable there can be no doubt. I had ample proof of its excellence while residing in the "bush" of New South Wales, where it is held in high

estimation by each and every; indeed it is to them what the Potato is to us in this country, and an excellent substitute it is. The common way of cooking it is boiling, either in plain water or with meat; it is used in the way in which we use Potatoes or Turnips, and if quite ripe, as dry and mealy as any Potato. When a portion that was left at a previous meal is warmed up in the frying-pan, with a little gravy or dripping, I dare lay large odds that, after a few trials, one-half of the people in England would prefer it to the "lazy root." Even the poor half-starved looking aborigines set great store by their pumpkins, and to them they may truly be called the "lazy root," for the seeds are dropped promiscuously about their camping-ground, and in due time, and without any further care, Pumpkins are produced, but of course these are comparatively small. Under proper cultivation, they attain a large size; I have grown them upwards of 50 lbs. weight. It is well known that Pumpkins are a good sea-store; when hung up, they will keep many weeks, and whether in soup or in company with salt provisions, they always form a relish. Our provisions from Sydney being exhausted when we reached the Brazilian coast, our captain put into Bahia for fresh supplies; and on our gallant barque leaving that lovely spot, to plough her way across the deep, it was pleasing to all on board to see the bulwarks of her quarter-deck hung round with Pumpkins, Pine-apples, Bananas, and other tropical fruits. *A. Burnett, Roby Hall, Nov. 5.*

Kew Museum.—I was glad to see that you noticed the interesting museum at Kew. I saw it for a few minutes only the other day, and saw enough to determine me to pay it a longer visit. It is impossible to praise too much the liberality with which the public are admitted to Kew; indeed, we are getting in advance of the great continental capitals, which, however, taught us the way, and there is still much to improve even here. We ought to have open lectures, as at Paris; but few people know that the Louvre is open only on Sundays for the natives; foreigners being admitted four days in the week, are often ignorant of this. And the free admission to the great library at Paris is very near an imposition; for there is in reality no catalogue, and you cannot see the MSS. without a special application. Our British-Museum reading-room is practically more accessible. Our National Gallery, Hampton Court, and Windsor Castle, rival any similar places (for liberality as regards admission) on the Continent. After seeing Kew I went to see the splendid collection of Orchidaceous plants at Mr. Rucker's. I could not but be struck at the disadvantageous conditions under which the Kew collection was grown, although this is no fault of the very intelligent person who has the management of it. The houses are much too large, and they are constantly traversed, sometimes by 2000 people in a day. Why not put the plants in small houses, to grow them well, where the temperature and moisture could be properly managed, bringing all those in bloom into the show house, keeping the Ferns, &c., as they are. The flowers are all the public will care for; any botanist or amateur might be admitted to the general collection, on application. At present the public see that it is only in a well managed private collection that these plants are well grown. It would be but justice to the person in charge that this should be done. *Dodman.*

Swarming of Bees.—My object (p. 501) was to show that I thought it quite possible to prevent bees from swarming, the result of which would be a larger quantity of honey collected, which can be appropriated without impoverishing the bees. This, I think, any one who tries the plan I advised will allow that I have proved. Your correspondent (p. 518) evidently admits the feasibility of it, as he goes beyond the admission to one side-box, by which the swarming must have been prevented, to ask how he is to manage with the other side-box when the first is filled with honey. He must proceed by closing the entrance of the one which is filled or nearly full of honey, and opening the entrance to the other side-box, to which he will have just admitted the bees. The plan which succeeded on one side will also succeed on the other. The bees will soon be reconciled to the change, and they are just as near their queen as before. In my own case, my boxes are on a stout slab under a shed, and I remedy even this little inconvenience by sliding the boxes on the slab, so that the new entrance is just in the same situation as the old one. The rise of the temperature to anything like swarming heat in the side-box first given, notwithstanding the ventilation, would be a sure indication that nearly every cell was full of honey, in which case the sooner it is removed the better; and if the box has been properly ventilated, there will not be a brood-cell in it, and consequently none of the substance stored up for the grubs, and known as bee-bread, as the bees do not place that where the queen does not lay her eggs. I stated that hives on "Nutt's principle" were necessary without particularly dwelling on "Nutt's hives." That principle I believe to consist in having the power of ventilating a portion of a hive, and thereby so reducing the temperature that the queen will not lay her eggs in that part, which she would undoubtedly do without such ventilation, and which is the evil of Eke's and storifying or placing one box above another. I know of no other plan by which pure, so called virgin, honey can be procured, but by using hives on this principle; and to use the most weighty argument last, its humanity alone should recommend it. *An Old Apiarian.*

——At page 534 "An Old Apiarian" is quietly shelved by one of your correspondents, by what perhaps may be intended to confute sundry statements made at p. 501, such statements being the result of actual experience. At p. 534, your correspondent says, that bees when they swarm do not fly beyond their usual pasturage. Can he really suppose that it is their intention to take up their future abode on the bush on which they may first settle? Has he never seen or heard of the wild second flight for miles in search of a new home, if they are not quickly put into a suitable hive near at hand? It might as well be asserted that an animal does not run away when you take especial pains to tether it to the ground. It is next asserted, that Nutt's plans have been so often exposed, that it is needless to say a word concerning them. Premising that Nutt's plans consist in ventilation, and that any casual observer must have noticed a system of ventilation naturally carried on by the bees in any hive. It would indeed appear needless to say a word to prove its advantage. Your correspondent next recommends the perusal of some of our leading writers on this subject, to learn that bees will not swarm, however hot their hive may be, except the young queens are in a proper state to admit of their departure. Your correspondent's memory must be treacherous, if, after his study of Huber and others, he does not remember that the oldest queen leads the swarm, and that the excessive agitation immediately preceding the exit of the bees is caused by her not being allowed to destroy the young queens as they successively arrive at a state of perfect existence. If, however, your correspondent has discovered that Huber, with all his patient investigation, is wrong, I for one shall be ready to admit the mischief that any false statement in your Paper may cause, and shall be delighted to see it rectified. *C. C. W.*

Althæa frutex.—If the different beautiful varieties of the tree Althæa are trained to one stem, as a standard, and the wood thinned out so as to ripen it well, the plant will always be covered with flowers, which, with the thick bushy shrubs, is rarely the case, except in warm situations and dry soil. I have seen one in a small garden in the Regent's Park, which every year has more flowers on it than six bushes I have in my own garden, and it makes a handsome standard for a lawn. *Dodman.*

Societies.

ENTOMOLOGICAL, *Nov. 5.*—G. R. WATERHOUSE, Esq., President, in the chair. Among the donations announced were books presented by the Society of Natural History of Geneva and Count Mannerheim, and a continuation of the series of Portraits of Naturalists presented by George Ransome, Esq., of Ipswich. A new part of the Transactions (vol. v., part 8), was announced as ready for delivery to the members.—Mr. F. Bond exhibited several very rare Lepidoptera from Yaxley fen, including both sexes of Chilo gigantellus.—Mr. Stainton exhibited various new species of Microlepidoptera, as well as the leaves of various trees within which the larvæ of different species had formed burrows.—Mr. S. Barton exhibited a living specimen of the rare beetle Lamia Textor, which had been kept two months alive by feeding it with Willow leaves.—Mr. Ingpen exhibited an extensive series of fossil insects found in the insect-limestone of Gloucestershire. Many of the specimens showed the markings and veinings of the wings with the greatest clearness.—Mr. W. W. Saunders exhibited some Tobacco from the London Docks which had been much deteriorated by the attacks of the larvæ of a small beetle (Lasioderma testaceum), a species which appears to delight in highly flavoured articles, as it has also been found to attack Cayenne Pepper, Ginseng, &c.—Mr. Shepherd exhibited an extensive series of button-moths bred from the caterpillars, showing that several supposed species were only extreme varieties of one.—Captain Parry exhibited a case of very splendid Coleoptera from Cayenne, and Mr. Douglas a box of Lepidoptera from Folkstone, including a Deilephila Celerio taken on the 23d of October.—Mr. Westwood exhibited specimens of a species of Ptinus, found in the interior of a vase, including human bones, buried within a barrow, and which, from the position of the entombment, were evidently contemporary therewith, and consequently at least 1000 years old. He also exhibited from the collection of Mr. Melly, a number of species of Pselaphidæ, from Melbourne, Western Australia, found in ants' nests, and also two species of Goliah beetles (G. micans and cavifrons) hitherto confounded together. A paper was read by Mr. Douglas, being a continuation of his memoir on the genus Gelechia, and one by Mr. Stainton on the synonymy of Elachista cerasella. It was announced that a prize, consisting of Fischer's work on the Microlepidoptera, had been proposed to be given for the best monograph on a genus of Tortricidæ, consisting of not fewer than 12 species.

Miscellaneous.

Charles Lyell, Esq., of Kinnordy.—In the obituary of our Paper is this day to be found recorded the demise of Charles Lyell, Esq., of Kinnordy, long Vice-Lieutenant of this county (Forfar)—a gentleman held in the highest estimation for his intellectual endowments, his moral worth, and the exemplary manner in which he discharged all the duties of public, private, and domestic life. Mr. Lyell was educated in the College of St. Andrews, and afterwards in the University of Cambridge, at both of which seats of learning he was eminently distinguished for the assiduity and success with which he pursued the various branches of study which there engaged his attention. Having passed many of his early years in England, Mr. Lyell returned to his paternal estate, in the parish of Kirriemuir, in 1826, where he has constantly resided since that time. Mr. Lyell's knowledge was extensive, ripe, accurate, and unostentatious. His taste was pure and delicate; his mind was in all respects well-balanced, and it might truly be said of him "Ne quid nimis." His piety was sincere, enlightened, and devoid of big try; his manners were perfectly elegant. In short, he was universally looked upon as one of the most accomplished gentlemen of the county to which he belonged, and which he honoured; and he will be long remembered for his many virtues, his good sense, and other excellent qualities. For many years Mr. Lyell's pursuits were scientific. He was the discoverer of a great number of British plants previously unknown. How much his labours in promoting botany were appreciated by men of the first eminence is proved by the fact, that two excellent works were severally dedicated to him by botanists of no less distinction than Sir William Hooker and Professor Lindley, and a genus of plants (Lyellia) named after him by Mr. Robert Brown. In the literary world he is known by a translation of the lyrical poems of Dante, the first edition of which, printed at his own cost, was so well received by the public that a London publisher obtained permission to print a second on his own account. Mr. Lyell's essay on "The Anti-Papal Spirit of Dante" shows a profound knowledge of mediæval Italian literature and history, and is full of enlarged and philosophical views. These studies he continued till within a short period of his death. He has left an extensive botanical library, including among them several rare works of the older naturalists, and his collections of the various editions of Dante, and the writings of his numerous commentators, and of authors illustrative of Dante and his times, are such as could hardly be found in any other private library in the kingdom. We have been informed that there is a MS. among the archives of the Church of Scotland, and which is referred to in the New Statistical Account, written by Mr. Lyell, containing an elaborate article on the habitat of the plants of the parish of Kirriemuir, beginning at its lower extremity to the south and extending to the high lands of Glenprosen. Those who have seen the MS. say that it is a production beautifully drawn up and exceedingly valuable. This is a brief and very imperfect account of Mr. Lyell, but we conclude with the words of Claudian: "Si partem tacuisse velim, quodcunque relinquam, majus erit." *Dundee Advertiser.*

Instinct in a Pike.—When he (Dr. Warwick) resided at Durham, the seat of the Earl of Stamford and Warrington, he was walking one evening in the park, and came to a pond, where fish intended for the table were temporarily kept. He took particular notice of a fine pike, of about six pounds weight, which, when it observed him, darted hastily away. In so doing, it struck its head against a tenterhook in a post (of which there were several in the pond, placed to prevent poaching), and, as it afterwards appeared, fractured its skull, and turned the optic nerve on one side. The agony evinced by the animal appeared most horrible. It rushed to the bottom, and, boring its head into the mud, whirled itself round with such velocity that it was almost lost to the sight for a short interval. It then plunged about the pond, and at length threw itself completely out of the water on to the bank. He (the doctor) went and examined it, and found that a very small portion of the brain was protruding from the fracture in the skull. He carefully replaced this, and, with a small silver toothpick, raised the indented portion of the skull. The fish remained still for a short time, and he then put it again into the pond. It appeared at first a good deal relieved, but in a few minutes it again darted and plunged about until it threw itself out of the water a second time. A second time Dr. Warwick did what he could to relieve it, and again put it into the water. It continued for several times to throw itself out of the pond, and, with the assistance of the keeper, the doctor at length made a kind of pillow for the fish, which was then left in the pond to its fate. Upon making his appearance at the pond on the following morning, the pike came towards him to the edge of the water, and actually laid its head upon his foot. The doctor thought this most extraordinary, but he examined the fish's skull, and found it going on all right. He then walked backwards and forwards along the edge of the pond for some time, and the fish continued to swim up and down, turning whenever he turned; but being blind on the wounded side of its skull, it always appeared agitated when it had that side towards the bank, as it could not then see its benefactor. On the next day he took some young friends down to see the fish, which came to him as usual, and, at length, he actually taught the pike to come to him at his whistle and feed out of his hands. With other persons it continued as shy as fish usually are. He (Dr. Warwick) thought this a most remarkable instance of gratitude in a fish for a benefit received; and, as it always came at his whistle, it proved also what he had previously, with other naturalists, disbelieved, that fishes are sensible to sound. *From the Annals and Magazine of Natural History.*

Gigantic Trees in Van Diemen's Land.—Last week I went to see two of the largest trees in the world, if not the very largest that have ever been measured. I had heard of them in 1841, and I think mentioned them to you when in England. The person who found them then had forgotten their whereabouts; but I had a man out for three days in the forest, in the direction intimated, and on the third he came in to say that he had re-discovered them, and I started with a party of five to measure them. They were both on a tributary rill

to the North-west Bay River, at the back of Mount Wellington, and are what are here called Swamp Gums; but I do not know the specific name. I see that Dr. Hooker, in his descriptions of new species of Eucalyptus in the "London Journal of Botany," names the stringy bark Eucalyptus gigantea; this would have been a more appropriate name for the Swamp Gum, which is a much larger tree. One was growing, the other prostrate; the latter measured to the first branch 220 feet; from thence to where the top was broken off and decayed 64 feet, or 284 feet in all; so that with the top it must have been considerably beyond 300 feet. It is 30 feet in diameter at the base and 12 at 220, or the first branch, and to that distance only would, from the stem alone, turn out more timber than any three of the largest Oaks mentioned in London, with their branches We estimated it to weigh with the branches 440 tons! The standing giant is still growing vigorously, without the slightest symptom of decay, and looks like a large church tower among the puny Sassafras trees. It measures, at 3 feet from the ground, 102 feet in circumference, and at the ground 130 feet! We had no means of ascertaining its height (which however must be enormous) from the density of the forest. I measured another not 40 yards from it, and at 3 feet it was 60 feet round, and at 130 feet, where the first branch began, we judged it to be 40 feet; this was a noble column indeed, and sound as a nut. I am sure that within a mile there are at least 100 growing trees 40 feet in circumference.* *Botanical Gazette for Oct.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Stoves.—There are many fine autumn-flowering plants, which have done their duty for this season, and require to be put under such treatment as shall best suit them during their period of rest. Bulbous and tuberous rooted plants of all kinds should be gradually dried off; and in the case of Achimenes and Gloxinias let these be distinctly marked, that they may be reserved for the latest succession next year. Do not on any account allow them to be suddenly or carelessly dried off; they ought to be moderately supplied with moisture as long as their foliage remains healthy, and as they gradually ripen let them also be kept gradually cooler. Allamandas, Vincas, and all plants of a similar nature, should be subjected to a cooler and drier treatment; but they should never be allowed to go altogether dry, or loss of roots and death will be the consequence. If proper precautions have been taken to rear a stock of young plants, many of the older Vincas and other things which attain to a large size in one season may be discarded, and thus make room for other things Where there is a deficiency of stowage room for delicate plants, as Tea-scented Roses, &c., during the winter, if in a dormant state, they may be plunged behind a north wall; and if they can be protected by a temporary erection of shutters, so high above their heads as to shelter them from rain, without excluding air and light, it would be still better. There are hundreds of plants which our frosts will never injure, provided that the sun never shines on them while they are in a frozen state; and the frost will have still less effect upon them if they are kept dry. See that the pots of all plants which are plunged in the ground have their rims covered an inch deep with plunging material, to preserve the pots from the action of frost; and let an extra covering be laid over the Hyacinths and other bulbs which are plunged out of doors.

FORCING DEPARTMENT.

Pineries.—Furnishing bottom-heat by means of hot water has made the management of Pines during winter so simple a matter, that a very brief space will suffice to give all the necessary directions. The moderate bottom-heat required to keep them in a gentle growing state, and top heat, laden with any required degree of moisture, and sufficient to allow of the free admission of air, are given with equal facility. The amount of moisture raised within the pit must never be very great at this season, and the slightest excess in this respect must be carefully guarded against during dull or foggy weather. Where dung, leaves, and tan are still the materials employed to furnish the necessary amount of top or bottom-heat, the impossibility of suddenly increasing or decreasing its power, according to the particular requirements of the weather, render it a necessary precaution to keep up a stronger heat than is generally wanted, and to moderate it in warm weather by a freer admission of air, that there may be less difficulty in keeping up the temperature when a sudden change takes place. In pits where such means are used, air, by back ventilation, must at all times be more liberally furnished, to allow the exhalations to escape. When there is evidence of a decline in the bottom temperature, let a little fresh tan be pushed in amongst the pots, and even over their rims. In such cases it is often necessary to remove a portion of the old surfacing material, before the new is put in. These matters must be done by very careful workmen, without going amongst the plants, that the leaves be not damaged; for nothing is more injurious to the health and appearance of the plants than mutilating their foliage.

FLOWER GARDEN.

Many plants ordinarily turned out during summer into the open ground are scarcely hardy enough to stand the winter unprotected; but, with a very slight assistance, they may be easily preserved. This is more especially necessary on cold, stiff ground, and in low, damp situations. Many deciduous herbaceous plants fall under this head, such as Gladiolus, Sparaxis, Salvias, Stachys, Lobelias, &c., and are best protected by means of some light loose material, such as tan, laid over a few inches thick. Whatever be used for this purpose, it should be such as is least liable to absorb and retain moisture. Many use sawdust or dry leaves for this purpose, and conceal their unsightly appearance by covering with a little soil, but old tan is more convenient, equally serviceable, and forms a very congenial top-dressing in spring. Other plants of a shrubby or sub-shrubby character (as Roses, and the more tender varieties of Pentstemon and Antirrhinum), in addition to a slight mulching for the preservation of the root, require some sort of a shelter to preserve their branches; the neatest material for this purpose is the prunings of evergreens, stuck into the ground round about them, as at a short distance they are not distinguishable from the plants themselves.

FLORISTS' FLOWERS.

Pansy beds will require carefully going over; trim the plants which have made too luxuriant growth. The seedling plants which have been last planted out should also be attended to. Some few, should the weather continue open, will bloom; but as it is a bad time of the year to judge of their merits, we would advise that only those which are radically bad in form, &c., should be pulled up: if there is any good trait in them it will be advisable to see what they will make at the blooming season in spring. Tulips of course ought to be all in the ground; any delay will now be detrimental. Many good growers protect their beds from heavy rain for three weeks or a month after planting, in order that the bulbs may not have too much moisture before they have emitted their fibres. Carnations and Picotees.—Great and decided improvement has taken place in these flowers during the few past years. Those who have seedlings planted out should look them over occasionally, and if any appear weakly the soil should be stirred round them, and a little leaf-soil added; this will invigorate them, and will be worth the trouble; for it often happens that these turn out the most valuable sorts. Potted layers should be kept gently moist; extremes of either drought or damp should be avoided. Give plenty of air. The same may be said of Auriculas. A close, confined, and damp atmosphere, is highly injurious to both.

HARDY FRUIT GARDEN.

We may reasonably suppose that there are no very pressing operations in the kitchen garden at this season, since there are no crops to be put into the ground nor any to take out; and as the existing crops of Celery, Brassicas, &c., are all properly earthed up, it is advisable to turn full force and energy to the important operations which require performing in the fruit garden. The wall trees are generally ranked first in importance, and of these we will speak first. The operation of training is performed with greater ease and comfort, and, consequently, with much saving of time, if advantage be taken of the comparatively mild weather which we are enjoying during the whole or part of nearly every day just now, and as the trees are quite ready for the operation, there is no reason why it should not be proceeded with, and that not merely by half measures, but by setting the entire available force upon it and the work immediately connected with it. The first operation is to unfasten the trees from the walls, and, if it be admissible, the latter should have a coat of colour, that all insects and their embryo may be smothered; but if not, they may at least be well washed with clean water from an engine. Before the old nails and shreds are used again, let the former be made hot, and dipped into linseed oil, for the double purpose of destroying insects and preventing rust; and let the latter be boiled, washed, and dried previously to their being re-used. Those who intend to apply the method of using fixed studs and tying the trees to them with bass matting, will of course take this opportunity of doing so. Where the common nails and shreds have been long used it will be necessary to chip out a portion of the old mortar, and repoint all the joints; the studs are then to be fixed in at suitable distances and the wall is ready for retraining. At the same time any trees which are diseased, or have been proved worthless or inferior varieties, may be removed; and after the stations are carefully prepared, better plants from other parts of the garden, or young trees from the nursery, may be planted in their stead. By thus carrying on all these operations at once, any number of labourers may be usefully employed, and the handier men will of course be selected for that part of the work which requires the greatest care and dexterity. Previous to the trees being retrained, the whole of the shoots should be washed over with the following mixture: To 1 gallon of water add a quarter of a pound of soft soap and half a pound of sulphur, with sufficient lime and soot to give it the colour and consistence of lead-coloured paint. This recipe is very simple, but it is equally efficacious with those which contain many more ingredients.

State of the Weather near London, for the week ending Nov. 15, 1849, as observed at the Horticultural Gardens, Chiswick.

Nov.	Moon's Age	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday .. 9	24	30.350	30.228	50	44	52.0	S W.	.00
Satur. .. 10	25	30.248	30.201	59	32	45.5	S E.	.00
Sunday .. 11	26	30.277	30.200	50	38	47.5	S W.	.00
Monday 12	27	30.168	30.012	55	35	45.0	S W.	.00
Tues. .. 13	28	29.898	29.708	55	39	47.0	S W.	.18
Wed. .. 14	●	29.982	29.576	55	36	45.5	S W.	.19
Thurs. .. 15	1	29.720	29.601	49	35	42.5	S W.	.08
Average....		30.041	29.945	56.0	36.5	46.3		0.45

Nov. 9—Overcast and fine; very mild for the season.
— 10—Fine; exceedingly fine; clear at night.
— 11—Fine; clear and very fine; foggy.
— 12—Foggy; hazy; overcast.
— 13—Fine; rain; clear and fine at night.
— 14—Rain; heavy rain in forenoon; clear at night.
— 15—Clear; cloudy; rain; clear.
Mean temperature of the week, 3 deg. above the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Nov. 24, 1849.

Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 18	49.0	35 0	42.0	15	0.41 in.	1	4	1	1	4	6	3	3
Mon. 19	49.1	36.1	42.6	13	0.67	1	3	2	2	2	9	2	2
Tues 20	49.5	36.4	42 9	8	0.33	—	5	1	—	4	3	6	4
Wed. 21	50 0	39.5	44.7	16	0 37	4	3	3	2	1	5	4	1
Thurs. 22	49.4	36.1	42.9	15	0.62	2	2	4	1	2	6	5	1
Friday 23	48.8	35 7	42 0	8	0.18	—	4	3	1	2	7	3	3
Satur. 24	49.0	33.3	41.2	6	0.50	3	4	2	1	3	6	3	2

The highest temperature during the above period occurred on the 21st 1933—therm. 59 deg.; and the lowest on 18th 1847—therm. 19 deg.

Notices to Correspondents.

African Oak: *Guidhenet.* The plant which produces this timber is not known with certainty. In the "Vegetable Kingdom" it is supposed to belong to some tree of the order of Spurgeworts. It may, however, be a Vitex, as Mr. Bentham suggests in the "Niger Flora," and that corresponds with leaves we have ourselves received. It certainly is not an Oak, but is more like Teak. In the uncertainty that exists upon the subject, we are unable to say whether the dockyard numbers belong to different trees or not.

Bedding Plants: Cuphea platycentra and Zauschneria californica should be taken up, potted, and wintered in the greenhouse. They may be encouraged to make shoots for cuttings in spring; but the latter should have been secured at the proper time.‡

Books: *D M.* We are unacquainted with the names of the authors of the tracts you mention.‡

Cold Pits: *A B.* Build them of 9-inch brickwork. Make them perfectly dry; that is essential. Let them face the north. Glaze with stout glass. As to size, that is a mere matter of taste or convenience. Also take care that the glass is steep enough to throw off the water perfectly. If you can build iron ventilators into the sides, so much the better.

Grapes: *B B.* Four Vines for a greenhouse may consist of the Black Prince, the Black Hamburgh, Royal Muscadine, and White Sweetwater.‖

Manure: *Sub.* The ammoniacal liquor of the gas-works will hasten the decomposition of vegetable matter, so as to render it suitable for manuring your garden in spring—the matter consisting of Bean-stalks, leaves, Turnip tops, &c.

Microscope: *Minimus.* Give us your address and we will send you what you ask about. In return you may perhaps let us have a few scales prepared in the same beautiful way as the objects just received, one of which, however—the hairs—was broken.

Names of Fruits: *Florence.* Your Apple is the Gravenstein.‖ —*G S.* Your Grape is the Esperione; it is a hardy variety, a great bearer, and colours well out of doors; but it is naturally more acid than the Hamburgh.‖—*H S H* F, Old Nonpareil; H, Kentish Codlin; I, Sweeny Nonpareil; M, Dumelow's Seedling; N, Dutch Mignonne; P, Blenheim Pippin; N, Yorkshire Greening; S, appears to be Syke House Russet; C, probably Northern Greening.‖

Names of Plants: *A Learner.* Your drawing appears to represent Salvia cardinalis.—*Exon.* A very remarkable species of Colletia, we believe undescribed.—*G M'Leod* 1, Æthalium septicum, *alias* Reticularia hortensis; 2, Fuvaua dependens. —*P H* 1, Lælia rupestris; 2, Barkeria Lindleyana.—*Erse-rown.* 46, Veronica campylopoda; 457, Scutellaria galericulata; 504, Nepeta heliotropifolia; 478, Stachys germanica; 323, Stachys italica; 480, Galeopsis Tetrahit; 373, Teucrium Polium; 532, Satureia, perhaps new, near S. hortensis; 32, Lamium intermedium; 134, Marrubium leonuroides.—*Lady C L.* Clavaria pratensis; the flower is Ophioporon spicatus.—*T C.* Your Eranthemum seems to be attacked by the common Erysiphe. If, as you say, these attacks are repeated annually, then you had better destroy the plant by fire, and procure another from some unaffected place.—*Albert* Your specimens are abominable. 1, Æthusa Cynapium; 2, Erica cinerea; Ranunculus Flammula; 4, Solidago virgaurea; 5, some Silene, apparently anglica.—*C P.* We cannot undertake to name Mosses; they have no connection with gardening.‡—*Amicus.* Zygopetalum intermedium.

Rhododendrons: *Wells.* Over-luxuriance is no doubt the cause of their not flowering. When they have outgrown that, they will blossom with you.‡

Roses. *Gaschenet.* If the roots were not greatly disturbed, the Roses for forcing will not suffer anything from having been recently repotted. The sooner they are pruned the better.‡

Seedling Fruits: *J Noakes.* Your seedling from the Ribston Pippin is a middle-sized, handsome, round Apple, tinged with red next the sun; but in point of flavour it has no resemblance whatever to its parent, for the flavour is rough and acid ‖—*W A A.* Your seedling Apple No. 1, Hinchingbrook, is of the size and form of the Scarlet Nonpareil; skin smooth, red; flesh too sweet for any purpose, except, perhaps, for cider. No. 2, Mother's Pippin, is middle sized, round and flat, with a shallow open eye; skin pale lemon yellow; flesh tolerably rich, resembles the Bringewood Pippin.‖

Seeds: *W G.* All worthless, except the Nymphæa Lotus and rubra, which are stove aquatics and fine things.‡

Taraxacum: *A Deconian.* The roots should be collected *at this season*, cut into squares, and dried thoroughly in an oven. Whether it is desirable to roast them also we cannot say; we presume that they should be treated like Chicory. In medicine, only the decoction and extract of the *fresh* root are employed. We do not see how you can make coffee of the roots without roasting.

The Calendar: *H Waltham.* We cannot give the names of the writers of the Calendar. If you are a gardener you must know that they are first-rate gardeners; the Calendar proves that. If you are not a gardener, you must be contented with our statement. The names of the writers of the Calendar *were* given till we were compelled to conceal them, in order to save them from being overwhelmed by endless letters from inquisitive correspondents, who find it more easy to ask questions than to exercise their own understanding.

Vinery: *A B.* You may grow other fruit trees below Vines, but it is not a good plan; in that case you must keep your Vines to the rafters. Heat in any way that you please—Fol-maise, flues, hot-water pipes—it is immaterial, provided your gardener manages well. For detailed instructions we must refer you to books on the subject. Mr. Roberts's work on the Vine is good in all except his recommendation of carrion for the borders. Black Hamburgh and White Sweetwater or Royal Muscadine are the great Grapes for general use.

Vines: *A B C.* Your Black Hamburgh, girth of stem 5 inches, which bears so well against a wall, is too old for moving into a greenhouse. This might be done, but a young Vine raised from an eye is to be preferred; and as glass is cheap, you could place sashes in front of the Vine in question.‖

Woodlice, &c.: *E.* A toad would thin them; but it might be objectionable in a Mushroom-house. Dry Bean-stalks form a good trap for earwigs, and perhaps for woodlice also; they creep into them in the morning, and may be secured and destroyed.‡

Misc: *P J B.* Ilex latifolia is perfectly hardy, for anything we know to the contrary.‡—*A G.* Ipomœa Horsfalliæ may be propagated by cuttings, or by "working" it on some of the stronger growing kinds.‡

* In a letter from the Rev. Thomas Ewing, of Hobart Town, communicated by J. Gould, Esq.

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32 „	4 „	9½ „	7 by 5 „	8 by 6...16	6
			8 by 6 „	10 by 8...20	0

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See the *Gardeners' Chronicle*, first Saturday in each month.

GLASS PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, of Bristol, and of Nailsea, Somerset, beg to inform Engineers and others, that they are prepared to supply GLASS PIPES of from 1 to 4-inch bore, in lengths of from 3 to 7 feet—the lengths being less as the diameters of the bores increase.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

London, November 17.

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THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure sent out by them shall be free from the slightest adulteration. Peruvian Guano direct from Importer's Warehouses, London Manure Company's Wheat Manure and Urate, Sulphate of Ammonia, Phosphate of Ammonia, or Ammoniacal Phosphate; Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone Sawdust, and every other Artificial Manure.

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FREEMAN ROE AND HANSON, Southwark Iron Works, and 70, Strand, beg to call attention to their Steam-Engines and Threshing Machines, which are more economical in fuel, for the quantity of work done, than any before the public. They may be seen any day at their works, Sumner-street, Southwark Bridge-road.—Water-rams for raising Water. Deep Well Pumps; Baths; Hot-water Apparatus; Fountains. Towns supplied with Gas or Water.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.

HEATING BY HOT WATER.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

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Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Professor SIMONDS, Lecturer on Cattle Pathology in the Royal Veterinary College, and Professor WAY, Consulting Chemist to the Royal Agricultural Society of England, have each kindly consented to deliver a Lecture before the Members, at the House of the Society, in Hanover-square, on the occasion of the ensuing December General Meeting, namely—

I. Professor SIMONDS: "On the Anatomy and Diseases of the Foot in Domesticated Animals, with particular reference to the 'Foot Rot' in Sheep." At 8 P.M., on Tuesday, the 11th December.

II. Professor WAY: "Elementary Illustrations of the Chemical and Physical Conditions of Water." At 8 P.M., on Wednesday, the 12th December.

The General Meeting of the Members will be held on Saturday, the 15th of December, at 11 o'clock in the forenoon.

By Order of the Council,

London, Nov. 17, 1849. JAMES HUDSON, Secretary.

SEED WHEAT.—For Sale, at 50s. per quarter, good and genuine seed of the RED-STRAW WHITE and HOPETOUN varieties. Samples of grain and ear will be sent on receipt of stamps to cover the expense of postage. No orders for less than 4 bushels can be executed; those from unknown correspondents must be accompanied by a remittance. Sacks 2s. each. WINTER BEANS, for seed, can be supplied at 5s per bushel. JOHN MORTON, Whitfield, Berkeley, Gloucestershire.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H.R.H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, bernacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

The Agricultural Gazette.

SATURDAY, NOVEMBER 17, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Nov 22—Agricultural Imp. Society of Ireland.
THURSDAY, — 29—Agricultural Imp. Society of Ireland.
FARMERS' CLUB.—Nov. 19. Bouley.

IT is not commonly the case that the same stock is fed on a farm summer and winter. Whatever the merits may be of the Berwickshire system, which rears as well as fattens, it is still far from general; and already, of course, throughout the country, great numbers of animals have changed hands—sold by the breeder whose food has now failed, and bought by the feeder whose crops of Turnips and other roots have now attained maturity. The question is, how to convert these crops into meat and manure the most economically?—how to fatten these animals the most profitably? We have, however, no plan to suggest that is not already well known to most of our readers, and we hardly need refer to the subject at all, were it not that the present is the season when it is forced upon the attention of all of us.

The importance of warmth, a dry lair, and healthy air, to profitable feeding, every one acknowledges; the fact that these may be united in the practice of what is called box-feeding is also pretty generally admitted. The importance of a proper union of nourishing food, with bulk and substance enough to admit of healthy digestion, every one knows; and the fact is also known that this is admirably effected by the use of Linseed, to furnish fat—Bean-meal, to furnish flesh—Turnips, to furnish water and other nourishing material—with cut straw or hay, to add bulk and substance to the mixture. The proportions in which these ingredients should be mixed in the daily food of an ox must, of course, differ with the quality and age of the animal. It is an unfortunate thing to be the purchaser of an unthrifty beast, for it is a wasteful machine which, from a given amount of raw material, turns out but a small quantity of the manufactured article; it is well to be able to convert our green crops into meat by the agency of that more economical apparatus which well-bred animals supply; for, letting alone their more rapid action, compared with machines of coarser build, they are able to extract far more of their substance from a given quantity of food. But, given the kind of animal by which the food is to be converted, the question still remains, how this is to be done with the greatest economy? Animals vary in their meat-making power relatively to the food they consume; but the same animal varies materially in the economy of its action, according to the treatment it receives. The same ox, under a constantly increasing nutritiveness of the food administered, will not, by the meat it makes, remunerate the feeder in a constant proportion to the expense incurred. Double the nutritiveness of the food—double the cost of feeding—and it by no means follows that just double the quantity of meat will be made—more or less than this may result; and it, therefore, follows that, given the character of an ox as regards precocity and tendency to fatten, there is a certain nutritiveness of food, a certain relation between the mere bulk and richness of it, from which that animal will extract the greatest profit to its owner. This standard of excellence—its particular status on the scale of nutritiveness—will of course vary with the character of the animal to be fed; it will be highest in the case of the best feeders—lowest in those having the least tendency to fatten; and the actual conditions which it implies are to be ascertained by experiment in all the different instances between these extremes. There is not a more suitable subject for experiment than this: it is just such a case as makes us regret that the English Agricultural Society has no experimental farm, and will not authorise others to conduct practical researches at its expense. The British Association for the Advancement of Science has added greatly to the amount, and the definiteness and certainty of scientific knowledge, by means which our agricultural societies almost wholly neglect. Why do they not follow so successful an example? Why should not our own national Society, for instance, instruct the authorities at Cirencester College to undertake such a research as we are now recommending, and to report the circumstances and results to its members? The College cannot undertake expensive practical investigations with a due regard to the interests of its shareholders; and the suggestion we make recommends just such a course, consistent with the objects of the Society, as would at the same time evince that connection between it and a national agricultural seminary which ought to exist. Meanwhile we just add the following methods of using Linseed and Beans along with other farm produce as food, which have proved profitable in our experience. In the first case the object was to induce a large consumption of straw—and we believe that in the conversion of this into meat, rather than as litter into manure, there is the opportunity on most farms of adding considerably to farm returns. Two lbs. of Linseed meal, and a handful of salt, were boiled in an ordinary sized bucketful of water; and this was thrown hot over about 40 lbs. of chaff—as much as two oxen could eat in a day; and the mess was served up three times a day to the animals—in addition to which they had about 20 lbs. of Turnips daily a-piece at mid-day: they did not fatten rapidly, but were kept in a thriving condition during winter, and increased materially in value on food most of which would otherwise have been converted into manure, with probably great waste of its substance in the dung-heap.

In the second method, twice this quantity of Linseed was boiled and thrown over about half this quantity of chaff, and over that from 8 to 10 lbs. of Bean-meal were dusted. This was served up to two fatting oxen (full-grown Herefords) in two meals, at 10 A.M. and 3 P.M. And besides this, they had 1 cwt. a day of Turnips each, given at morning and night. The result here was the growth of beef enough to pay all expenses of bought food and attendance, and 9s. a ton towards the cost of the green food consumed. In both cases the result was profitable; for in both there was a successful attempt to suit the character of the food to that of the animals to be fed—the former were cross-bred young cattle, by no means kindly feeders—the latter well-bred 3-year-old Hereford oxen.

No doubt one chief advantage of rearing on your farm the animals to be fattened, as they do in Berwickshire, lies in this; that you thus know their quality, and are thus able with tolerable certainty to accommodate your management of them to it: a thing which cannot be so readily done in the case of animals purchased at a fair, with whose previous history you are unacquainted. We should be very glad if those who have information on this subject would allow us to furnish them with a set of questions capable of eliciting it. If any one is willing to do so, he will much oblige by favouring us with his name and address.

THE CAPABILITIES OF LAND.

THERE appears to me something so self-contradictory, not to say absurd, in the statements of some of the correspondents of the *Gazette*, in relation to the present prospects of the farming interest—statements so utterly at variance with facts practically elucidated, from day to day, under our very noses, and the results of which cannot be overlooked but by short-sightedness or sheer cupidity, that I must beg a page of your journal, in which I shall attempt to prove what I have asserted. But it is not the correspondents of the *Gazette* alone who are thus guilty; they are to be found in the pages of every agricultural periodical, and you may meet with verbal disquisitions in abundance for the mere seeking.

If we were to form our opinions from such statements as to the present position of the farmer, or the condition of the land, we must conclude that the man was ruined and his acres had reached their utmost point of fertility; in short, that all has been done that can be done, that free trade has beggared the tenant, starved the labourer, and ruined the country. These are their sentiments, disguise them how they will. Let us inquire how far this is consistent with truth?

I will take as a proposition a short sentence such as I have heard repeated more times than I should like to count, and one that every rational and reflecting man must be weary of hearing. It is this:—"The land now under cultivation cannot be profitably rendered more productive." It is the dogged adherence to this doctrine that clogs the spirit of progress in agriculture. It sits

like a bugs night-mare as it is, the curse and bane of the farmer; and renders nugatory every incentive to renewed activity.

As to the actual capabilities of land, we have yet to solve the problem. Farming as a pursuit, as an art, or science, or a manufacture if you will, is, as a remove from mere empiricism, but a creation of yesterday, comparatively speaking. To see how land can be misused; how the broad face of our common mother and supporter can bear the libel of cultivation, blush though she may, we have only to run through some of the southern counties, Wiltshire or Hampshire for instance. There are oases in the desert, but they only show more forcibly the general desolation. But I must confine myself on the present occasion to a few facts illustrative of the head of this paper.

Mr. A. takes a farm of 150 acres at a rent of 25*s.* per acre. He enters upon it at Michaelmas, and after taking his first crop begins to throw out hints that he cannot live at it, the rent is too high, with the whole host of stereotyped grievances peculiar to his class. The next year matters are worse, and the sequel is soon told. But in the meantime, a field adjoining his farm has been let out in allotments (you do not say half enough about the allotment system, sir) to the labourers of the district at 3*l.* per acre, or probably more. The poor men consider this a boon, as it really is, and with this high rent they obtain a good remuneration for their outlay of capital, which is labour principally.

Now, if the labourer can render land remunerative at a 3*l.* rent, why cannot the farmer live with a rent of less than half that sum? These are not mere assumptions, but positive and visible facts. The only solution I can bring to bear upon the matter is this. A want of capital in the farmers. This, sir, is the great secret as I need not tell you. Men are every day rushing into the responsibilities of land, with not half sufficient capital, and no wonder that they fail, or if they do not fail that they barely vegetate, without credit to themselves, to the land, or their landlords.

That an increased amount of fertility in the land must be induced to meet the present crisis, is self-evident, and that such is by no means impossible, cannot be doubted by reasonable men—by men who have strength of mind enough not to doggedly adhere to an old state of things, and pertinaciously set their faces against modern innovations.

When a manufacturer finds that from competition, or other causes, the prices of his goods are decreasing, how does he meet that depression? By a renewed energy, by the employment of improved machinery, by the application of scientific deductions, by the employment of additional capital. And so must it be with the farmer. More scratching the earth's surface, and burying the seed, with the subsequent mechanical operations, does not constitute the farming that will pay now-a-days. A great portion of the land now under cultivation, in many an English county, does not produce half what it might. If one-half the farmers were to employ the same capital upon half their present quantity of land, a far more remunerative return would result. The great bane of agriculture is embarking with too little capital and too much land. Two moderate farms with separate owners will produce more, and employ more labourers, than the same quantity of land in one farm, and cultivated by one man. I know that many able men hold the opinion that large farms are the blessing of a country, but this is a great fallacy, and there is abundant evidence to prove such. Great farms are great evils, because the land of such is not made to produce what it ought. A tenant with a large quantity of land does not carefully cultivate the whole, he only works upon the best portions. The inferior land is left to its original condition from year to year. And such so-called inferior land is very often found to be capable of producing its load of Wheat to the acre, when properly treated and brought into "heart."

So very many points in relation to the subject here rush in upon me, that I might form a volume, but I have already encroached upon your space. I hope on a future occasion to beg your permission to make a few more observations in connection. I have no doubt said enough to kindle the ire of many of your readers. All I can say is, God speed the right. *G.*

THE HIGHLAND CROFTER.

When the Potato formed the chief food of the Highlander, and was cultivated with little risk of failure, his condition was free from want and misery, though not one of progress for the better; but as the Potato has now failed him, the habits of indolence, and ignorance of agriculture, engendered by the cultivation of that root, are beginning to tell. He is daily becoming more and more depressed; and unless some immediate steps are taken to arrest this rapid deterioration, the Highlands of Scotland will soon become one vast pauper settlement, second only to Ireland in destitution and helpless misery. Now, should we not take some energetic means to avert this great calamity? Most assuredly we ought; and I believe the chief remedy for the evil is to teach the Highland peasant a better system of agriculture than he now practises, and also to enlarge his "Croft" or farm. I insist on the necessity of enlarging his croft, because he cannot earn money wages—there being no paid employment in the district; and if from this source he has no means of buying food, he must grow it for himself and family by cultivating the soil.

The usual size of a croft at present is from 5 to 8 acres, which is far too small, for every Highlander consumes annually on an average 6½ bolls of oatmeal; and if we reckon a family to consist of four persons, 26 bolls of meal is required for each crofter's household. To produce this, at least 4 acres of land must every year be under Oat crop; and to effect a proper rotation of cropping, the "minimum" size of the farm should be 15 acres. I earnestly press this fact on the consideration of Highland proprietors, as, by experience, I am convinced that without an increase of land their crofter tenants cannot live in independence and comfort; and I could easily show that such a change would be highly remunerative to the landlord.

But it is also as clear, that, unless a better system of cultivation be introduced into the Highlands, such an addition to his farm would only add to the embarrassment of the crofter; and the first great step towards improvement is what I now propose to accomplish with the aid of landed proprietors and philanthropic individuals. This first step must be a well-digested system of agricultural teaching, embracing the whole district. I do not allude to the higher and more refined branches of agricultural chemistry, as these would be out of place in such a rudimental state of society; but I mean the best method of cultivating small farms, the raising of green crops, the husbandry of manure, house-feeding cattle, and other points of rural economy, which are essential to the successful culture of a croft. These we can never hope to inculcate by mere precept; we must have an example before the eyes of the people, and in a locality subject to the same peculiarities of soil and climate as their own land. If this be established, I know these small farmers will soon follow the example shown them, landlords will see the charity and prudence of enlarging the crofts, and, ere long, we shall have a thriving and contented population, with a rapid diminution in the poor-rates, and the gratifying feeling to the proprietors of having contributed to so much happiness and well being.

It is also certain that such a step will tend to increase the morality of the people, for landlords (knowing that an additional number of families and crofts will, under the present system, produce only an additional number of paupers) refuse to allow the creation of new crofts, or the residence of more than one family in a house; the consequence is that, when a young man wishes to marry, he can find no house in which to settle; and marriage being thus restricted, a large number of illegitimate children are annually thrown a burden on the parish, and the people are demoralised. But, under the new state of things I wish to see realised, we can hardly have too great a number of families, for there are thousands of acres of land that can be reclaimed to the benefit of both landlord and tenant.

I have briefly shown how the tenant will be benefited, and it is equally clear that the landlord will reap a reasonable pecuniary advantage; and were it not so, I should consider my plan defective, for no scheme of the kind, however benevolent it may appear, will be practicable, or, if commenced, be of permanent advantage, unless it contain within itself the elements of a successful commercial enterprise. The landlord will be repaid, because waste moss land, under ordinary circumstances, can be trenched and drained for 10*l.* per acre, and it may be further prepared for the occupation of the farmer by liming, at an additional expense of 2*l.* per acre. For this land, ready for his farming operations, the tenant will gladly pay from 20*s.* to 25*s.* per acre rent—and when the low value of the land in its unreclaimed state is taken into account, it is obvious that the landlord will obtain a good interest for his expenditure of 12*l.* per acre—and there is little doubt that money to be expended in this desirable manner may be obtained under the Drainage Act.

There is one difficulty that at first presented itself, but which I hope to have overcome, viz., the necessity of the tenant possessing a certain amount of capital, for the sufficient stocking and working of his extended farm; but this may be provided for in the following manner:—Let us suppose a crofter already having 5 or 6 acres of land, upon which he is able to exist (though in misery), and with abundance of time upon his hands; give him the employment of trenching and draining, say an acre of land, adjoining his own croft, which acre, when reclaimed, is to be added to his farm. Suppose the value of his labour on this to be 9*l.*; let him, during the progress of the work, receive one-third—three pounds—in aid of that sustenance which, be it remembered, he already derives from his croft. When the acre is finished, he should be paid the balance—six pounds—but under the strict condition of its being expended in purchasing stock for his farm. A crofter would thus, for his additional 10 acres, possess an increased capital of 60*l.*, and very probably much more, for, as his farm enlarged, he might allow a greater proportion of the labour wages to accumulate for his capital. Now, were he paid in weekly wages for his trenching, the money thus received in small sums would be dissipated; but when paid in one large sum, it will be available for the purposes of his farm.

By adopting the plan I have just detailed, we may at once enlarge the crofts, find capital for the tenant, enrich the landlord, and give employment to the idle. But, to give a proper direction to the awakened energies of the Highland peasant, we must instruct him in the best management of small farms; and I therefore ask your co-operation in establishing a normal school, or model farm croft, in a central district of the Highlands easy of access. This should be superintended by a man well versed in the economy of small farms; and, to such model farm, persons designed to be farm-stewards, or farmers on their own account, as well as school-masters of all sects and denominations, should be invited to resort for instruction in agriculture. It has been objected that it is impolitic or impossible to teach children both book learning and practical agriculture by the same master, and that it would in consequence be useless to make parish schoolmasters agriculturists for the purpose of instructing their boys in farming; but those who thus object do not know how well such combined teaching has already worked, nor do they consider that a change of occupation during the day's instruction enables a boy to apply himself with much more vigour to each branch of knowledge. The model farm must be in the Highlands, because it should be subject to all the peculiarities of soil and climate of the country we wish to improve. It would be folly to learn farming in the Lowlands, and afterwards carry the experience there acquired to another district so totally differing from it in soil and climate as the Highlands.

I propose that the model farm, or normal school, for the instruction of such persons, shall consist of 45 acres, to be divided into three crofts, in the centre of which a residence for the superintendent and his pupils might be erected. On each croft the necessary byre and houses should be built, tanks, and all other appliances for the most rigid economy of manure, and its best application to the land; means of house-feeding cattle, and other "desiderata," for the most economical farming, must be provided. The pupils should, with their own hands, cultivate these crofts, and a system of rewards be given to the most distinguished of them. The cost of such an establishment, even at the first, would be small; and, in less than two years, it would become self-supporting, for the produce of the 45 acres would not only feed the superintendent and his pupils, but would also contribute to, if not entirely defray, the expense of his salary.

The school should be in some central place easy of access; and there is no spot in which all these requisites are so well combined as in Lochaber, near my residence, on Lord Abinger's property; and I know that his lordship feels so deep an interest in the welfare of the population, that he would give a tract of land for the purpose at a very low rent. I trust my residence near the proposed school would be considered of some use; for, being the projector of this movement, I naturally feel warmly for its success, and will aid it to the best of my power. The expense of forming the establishment would be as follows:

Trenching, draining, and liming 45 acres of land, at 11*l.*	£495
Fencing the same	20
Buildings	400
Implements	50
One year's salary to superintendent	60
One year's household expenses	100
	£1125

The enormous outlay requisite to support a nation of paupers, as in Ireland, may draw attention to the fact that it is less expensive, as well as more humane, to stop the progress of distress by teaching people to obtain their own livelihood, rather than allow pauperism to gain such a head as will force the Government at last to a serious expenditure; and we may fairly hope that Government will now aid us in a project which, at so trifling a cost, will arrest the evil. *Martyn Roberts, F.R.S. Edin.* (*of Bryny Caerau.*), *Commissioner to Lord Abinger.* [The above is from a letter addressed to the landowners of the Scottish Highlands.]

DISCUSSION ON FLAX CULTURE AT THE HEREFORD FARMERS' CLUB.

I have read with much pleasure the altered opinions of the gentlemen connected with the Hereford Farmers' Club, and rejoice at the result or conclusion arrived at by its members, viz., "*That in the opinion of this meeting there is a probability that Flax may be profitably cultivated in this county* (*Hereford*), *and therefore it is strongly recommended that experiments be extensively tried*" Although I wrote strongly in support of my views in the *Hereford Journal*, I do not I assure you look upon the result of the discussion as a triumph gained by any feeble efforts I made in my last letter of the 18th of May, referred to by Mr. B. Lloyd, in which I laboured to disabuse the minds of those who might have been prejudiced against growing Flax by the anonymous correspondent "Verax," of the *Hereford Journal*; for, however confident I feel my position when publishing on this subject, I consider in this case the triumph over prejudice must be attributed to the successful experiments and expressed opinions of the gentlemen who addressed the club.

The observations of Mr. Day, of Cradenhill, "who had grown 20 bushels of seed per acre, and considered Flax not an impoverishing crop," has been an answer to "Verax," supported as Mr. Day has been by the statement of Mr. Browne, of Whitfield, who, it appears, "had 103 bushels of Flax seed off 4 acres, or 25¾ bushels per acre, and did not find it an exhausting crop," which, at 6*s.* 6*d.* per bushel, is 8*l.* 5*s.* 9*d.*; a sum sufficient to pay rent, taxes, ploughing, seed, pulling, steeping, and scutching the crop; and, as a consequence, the Flax fibre produced, taking it at Mr. M'Cullagh and Capt. Larcom's average of Irish produce, 45 stones per acre, at 7*s.* per stone, would be value for 15*l.* 15*s.* as net profit per acre. Those authorities average the Flax crop in Ireland at 15*l.* per acre, not including the seed; their statistics are another proof of the error "Verax" committed, when in place of asking advice from parties competent to give him instruction in his

profession as a farmer, he comes before the public in a disguised name, and denounces Flax as a ruinous and unprofitable article to grow.

Mr. Rowan, by his visit to this country, corroborates my assertions respecting the Flax and linen trade of Ulster. I observe he said "he had lately visited Ireland, where it was grown and manufactured to a considerable extent; and whatever his impression might have been previously as to its being an advantageous crop for the agriculturists of Herefordshire to grow, those impressions were now much stronger than they had ever been. The growth of Flax was of great importance in several ways. It was important to the national interests, and it would be important to them in a local point of view, and to the peculiar interests of the agriculturists of Herefordshire. He believed there was no reason why they should not, in this county, grow as good Flax and seed as were grown in any part of the world." I quite agree with the above remarks, as without the assistance of Dr. Hodges of Belfast to whom Mr. Rowan refers, I am prepared to assert the soil of Herefordshire is superior to the soil of the county of Down, and even to most parts of Armagh, where the finest Flax in Ireland is produced. About two years ago I had the pleasure of visiting for some weeks Shropshire, South Wales, and Herefordshire, and I made it my business during several days in the city of Hereford, to examine, in particular, the soil for some miles round Hereford, and I feel satisfied now, as I did then, that the time would come when the Herefordshire farmers would arrive at the knowledge of the value of their holdings if they turned their attention to the cultivation of Flax; in my opinion they should feel themselves under deep obligation to Mr. Rowan, who has so clearly described the object of his visit to this country, which must result in benefiting the agricultural interest of Herefordshire. As in the report of the meeting of the club Mr. Rowan is made to recommend "2 bushels of Flax seed sown per acre," I think, as I differ with him in opinion, and must recommend 2½ to 2¾ bushels to the statute acre, according to the situation and condition of the land, it will not be uninteresting to your readers if you can make room for the document on "Flax, its culture and manufacture," corrected by me and sent herewith, as I consider such corrected information requisite for the farming interest.

Flax, its Culture and Manufacture.—Although Flax is easy of growth, its quality depends very much on soil and fitness of situation. Low grounds and those which have received deposites left by the occasional overflowing of rivers, or where water is found not very far from the surface, are deemed the most favourable situations for its culture. It is attributed to this last circumstance that Zealand produces the finest Flax in Holland. Preparatory to the cultivation of this plant, it is necessary that the ground should be very deeply furrowed by the plough, and it should be reduced to a fine friable mould by the repeated use of the harrow; 2½ or 2¾ bushels of seed are required for every acre of ground, and scattered broadcast. Care is taken to distribute the seed evenly, and the earth is then raked or lightly harrowed over. When Flax is raised to be manufactured into cambric and fine lawn, the quantity of seed sown in the same space of ground should be 3 bushels, the plants growing near each other having a greater tendency to shoot up in long slender stalks; and as the same number of fibres are usually found on each plant, these will of course be finer in proportion. When the crop grows short and branchy it is esteemed more valuable for seed than for its fibrous bark, and then it is not gathered till the seeds are at full maturity. But if the stalks grow straight and long, then all care of the seed becomes a secondary consideration, and the Flax is pulled at the most favourable period for obtaining good fibres. Experience has shown that when the bloom has just fallen, when the stalks begin to turn yellow, and before the leaves fall, the fibres are softer and stronger than if left standing until the seed is quite matured. It has been found from experience that most seeds, though not quite matured when gathered, ripen sufficiently after being pulled, provided they be not detached until dry from the parent plant, all the sap which this seed contains contributing towards further nourishing and perfecting the seed.

Is Flax in general a remunerative crop in Ireland? Yes, when properly managed, it is not only highly remunerative to the farmer, but is of immense value as affording profitable employment to the poor in his neighbourhood.—To how many individuals would an acre of Flax give constant employment for 12 months? If converted into cambric it would afford employment to 70; and if into embroidered lace, to 100.—Is Flax grown on an extensive scale in England? No; its culture is much disregarded by British husbandmen, though it is stated that five millions of money are annually sent to foreign farmers for the purchase of foreign Flax, and nearly three more for oil and seed.—Ought not this to encourage us to cultivate it more abundantly than we do? Yes, as we know we should never fail of finding ready markets and fair remunerative prices at Leeds, Manchester, Preston, and Liverpool, as well as in Belfast, where there are above 20 Flax spinning mills; but at present we have not sufficient to supply our merchants, who are affording every encouragement to Irish Flax growers and weavers.—Have they not for this purpose formed themselves into a society, in connection with many noblemen and gentlemen interested in the welfare of the Irish people? Yes; the society is called the Belfast Flax Improvement Society, and it has already proved a great blessing, particularly to the industrious inhabitants of the north of Ireland.—What is the Flax crop generally called in the north of Ireland? The rent-paying crop; because its cultivators are enabled by the profits to pay their rents without selling their corn crop.—Is it necessary that women should understand the proper cultivation and management of the Flax crop? Yes, it is particularly so, and that children should also be made acquainted with it; because much of the care and attention necessary to bring it to perfection, both while growing and after it is pulled, rests with them.—I should then wish you to tell me in what month or months the seed should be sown? The best time for sowing is from the last week in March to the middle of April. This is called early seed; the late is sown the beginning of May, and is called in the west of Ireland the seed plant, because the fibres are generally coarse, but the seed large and fat; this is from its being sown thin, about 2 bushels per acre.—Are the fibres of the Flax injured by allowing the seed to ripen? Yes; if the Flax be not pulled until the seed ripen, it becomes brittle and dry, from the effect of the sun, as the heat draws up the oil from the stem, and the greater part of the oil or juice becomes lodged in the seed, and, as a consequence, the Flax cannot be oily as it should be to possess good spinning qualities.—What is the usual value of the seed of an acre of Flax? Between 7*l.* and 8*l.* sterling.—What description of land is best suited to the growth of this plant? Deep friable loam, containing a large quantity of vegetable matter, mingled with sand. It should be freed of all weeds, and harrowed and rolled until the surface looks like a well raked garden.—How is the Flax seed sown? Always broadcast, never in drills, as the fibre would be valueless if so sown.—How much seed would an acre of ground require? If it is intended that the fibres should be fine, 2½ to 2¾ bushels are necessary, if not 3 bushels; but if the object be to obtain a large quantity of seed, 2 bushels to the acre will be sufficient, as it will branch off in the top and produce more than if thickly sown.—Is it necessary to keep the ground free from weeds while the plant is growing? All the larger weeds must be carefully removed, but the low growing ones, which the Flax plant readily overtops, are of no consequence, and much injury is often done by attempting to pull them up.—How do we know when Flax is ripe? We know that the plant is sufficiently ripe for the purpose of the spinner, and the seed for the oil-presser, when the stalk becomes yellow at the bottom and the leaves begin to drop off; but if the seed is particularly required, in order to raise new crops, a small portion should be allowed to acquire full maturity, just what may be requisite for sowing purposes.—How do we ascertain when it has reached this state? By the bright brown colour of the seeds and the yellow shade of the whole stem.—Should Flax growers always save the seed of their crops? Except when the fibres are required for the manufacture of fine lawn or lace; in that case the plants must be removed from the ground when quite green; but in every other, the seed may be allowed to ripen as stated above.—How is a Flax crop removed from the ground? It is pulled by handsful in fine weather by women and children, and laid in small bundles, crossing each other obliquely, on the ground. When pulled (or at least all that is sufficiently ripe, for sometimes one part of a field ripens much sooner than another), these small bundles are collected into larger ones, and being tied near the seed end, are placed upright on the ground, with the roots downwards, in such a manner that the air may have free course through them.—Is it necessary to use any particular care in pulling Flax? Yes; the plants should be caught near the bolls, which allows all the short stalks to escape, these are pulled afterwards, and made up into separate bundles.—How long should Flax be allowed to remain in standing bundles or wind rows? Not more than two days, particularly if the weather is either very warm or very bright.—What is the Flax manufacturer's next duty? To ripple through a sort of comb, which will not admit the capsule to pass. This comb is called a "ripple." See Dickson's rippling machines.—Is the seed of any worth or use, supposing it not sufficiently ripened for the purpose of raising new crops? Yes; it is of much value as affording that description of oil so necessary to house painters, and with which we are all acquainted under the name of "Linseed oil." The husk which remains after the process of expressing this oil has been completed is made into cake, and is sold for fattening cattle, while the inferior seed which has been rejected by the oil manufacturer is made into Flax seed jelly.—What is Flax seed jelly? It is a nutritious food given to young cattle, and is thus prepared:—1 quart of seed is steeped in 3 quarts of water for 48 hours, afterwards 3 quarts more are added, and the whole is boiled gently for two hours; when cool it is mixed with Oat or Barley-meal, or bran, and given to the animals.—Suppose, however, that we neither wish to express oil from the seed nor to feed the cattle with it, nor yet to save it for the purpose of raising new crops, is there still a necessity for rippling the plants? Yes, in order that the next process, which is water retting, may be performed without injury to the fibre?—How is it possible that by placing the seed in steep with the plants we cause injury to the fibre? Because the seed is more readily acted on by the water than the stalks, consequently fermentation sets in too rapidly, the water becomes putrid before the fibres are even partially disengaged from the glutinous substance which causes their adhesion; and when at length they are sufficiently freed from it to admit of their being removed from the steep, they are found to have assumed a yellowish brown colour, and to possess little or no tenacity or strength.—Is the process of "water retting" necessary? Yes. It is in order to facilitate the separation of the fibres from the bark, which can only be accomplished by water retting, or by submitting the plants for a long period to the dew, the air, and the rain. This latter method is called dew-retting, and is very little practised, except in Dorsetshire and Somersetshire, where they grow Flax more for the seed than for fine fibre, as they are not aware of the method of producing fine fibre.—Is water retting an important process? Yes, it is most important; and yet it is often most negligently performed in Ireland. The Dutch call the knowledge of it "science," and teach it by means of seven rules.—Then with them it must be a work of great labour, encumbered with difficulties; is it not so? No, it is quite the contrary; for their rules are so simple that any young person may understand and practise every one of them.—Which is the first rule? The first is to prepare, at least a fortnight before the Flax has been pulled, two ponds of soft, clear, standing water, perfectly free from all mineral impurities, and from springs at the bottom or sides.—How are such ponds to be obtained? By forming canals and pits near a stream or river, and avoiding the near neighbourhood of springs, which are usually impregnated with iron and other mineral substances, and therefore cause stains or stripes in the Flax.—Name the second rule. Carefully to remove all the bolls from the stalks.—What is the third? To see that the Flax is made up in small bundles.—What is the fourth? To sort the bundles according to the length of the stalks, in order that the short ones may not be over-retted by being placed in the same pond with those of more mature growth.—What is the fifth rule? To lay carefully, in straight and regular layers, the long bundles in one pond, and the short ones in another.—What is the sixth? To cover the ponds with sods of soft peat moss and plank, so as to keep the Flax from rising to the surface, and also to exclude from it as much as possible air and light.—Name the seventh. To watch carefully the subsidence of fermentation, which generally occurs about the tenth or twelfth day, and afterwards to examine the plants three or four times daily, in order to discover as soon as possible when the textile filaments are easily separable from the boon, or woody parts. The moment they are found to be so, the Flax should be removed, as a few hours' over-retting often destroys the strength of the fibre.—Is water-retting complete when the Flax is removed from the pond? Yes; and then the next process, which is that of grassing, succeeds.—How is Flax grassed? By spreading it as thinly as possible, in perfectly straight lengths, on clean lea or newly mown meadow. It should be spread as soon as taken out of the water, unless there is very heavy rain falling; light rain will not injure it.—How many days does the process of grassing occupy? Generally five or six days. If found to be perfectly dry in that time, and the fibres spring from the wood like a bow and string, it should be carefully gathered into bundles, kept all straight, and brought to the break.—What is a break? See Dickson's portable mill for breaking and scutching Flax, 35 and 36, Skinner-street, Bishopsgate, London.—What is the next operation? That of scutching, which is accomplished by placing the broken Flax in small handfuls over what is termed the scutching stalk, the man who operates holding one end of the handfuls (which is called a streake), whilst the other end or half the streake is so beat by the rapid motion of the scutching swords or handles in the mill until the fibres are altogether cleansed from the hurl or wood on which they are produced. By the mill process of scutching or dressing a man can clean from 5 to 6 stones or 70 to 80 lbs. per day, whilst a man cannot clean by the old system of scutching by hand more Flax than from 10 to 12 lbs. per day; and Flax that would sell from 7*s.* per stone when scutched by the mill would not sell for more than 5*s.* 9*d.* to 6*s.* per stone if scutched by hand. See Belfast market note; for the process of breaking and scutching Flax, see Dickson's portable mills at work on the farms of T. B. Browne, Esq., Salperton, Andoversford, Gloucestershire, and T. H. S. Sotheron, Esq., M.P., Devizes.—The greater portion of the above statement on "Flax, its Culture and Manufacture," has been compiled and arranged, as a catechism for the children of the Irish peasantry, by a Mrs. Mooney; but like all works collected from theoretical writings, many errors were set forth, and I found considerable alterations and corrections necessary to be made, to prevent disappointment to those that may look to such as a guide in cultivating the plant.

Having described the advantage of machinery to dress or scutch Flax, compared with hand labour, and having asserted that mill-scutched Flax will sell from 20 to 25 per cent. higher than hand-scutched Flax, a few observations on the cause may be useful. The Flax fibre being, like our straw, of a tubular form, contains a portion of oil, which the quick revolutions of the scutching swords or handles, when driven by machinery, brings out, and not only makes the Flax more soft and appear to the eye more superior to similar Flax when scutched by the hand, but the oily matter being, from the heat created by friction, completely disseminated through the handful or streake then in course of scutching, makes the fibres all adhesive and damp alike, which, when thrown over the hackle to prepare it for spinning, splits into many cobweb-like fibres, and it is then only that its value is known and appreciated by the spinner. The dressing or scutching by hand cannot be done so as to bring out this oily matter, as the slow stroke of the arm must ever fail to create friction, and as a consequence hand-dressed Flax is husky and dry, and will not split on the hackle, but will fly off the teeth from being dry and open, and will run to waste. This is so well known in the north of Ireland, that many follow the trade of purchasing hand-scutched Flax in Ballyhay and other markets, and, after having it redressed in the scutching mills, sell it very frequently at 1*s.* to 1*s.* 6*d.* per stone profit. As these are facts that Mr. Rowan is likely to be aware of, from his visit to Belfast, it might be worth the consideration of those who have corn mills in Herefordshire to erect machinery for the purpose of scutching Flax, as such would encourage the growth of the plant and be found remunerative; the same power may be made to answer for scutching Flax when grinding corn can be dispensed with, and as the prices of Flax, from the Belfast *Northern Whig*, of the 20th ult., will prove my assertion, I beg to hand the market note of that date. "Flax: The markets are pretty well supplied, with a fair demand at our quotations. Hand-scutched, interior, per 16 lbs., 4*s.* 4*d.* to 4*s.* 7*d.*; middling, 4*s.* 9*d.* to 5*s* 3*d.*; fine, 5*s.* 4*d.* to 6*s.* Mill-scutched, low quality, 5*s.* 3*d.* to 5*s.* 9*d.*; middling, 6*s.* to 6*s.* 9*d*; best ditto, 7*s.* to 7*s.* 9*d.*; fine, 8*s.* to 8*s.* 9*d.*" As Mr. Rowan alluded to "exaggerated statements as likely to have a tendency to destroy the prospects of those that may be induced to cultivate the plant, by a less profit being yielded, than they had been taught to expect," I beg, in conclusion, to say that I quite agree with him on that point, same time I consider that when scientific growers make a hit, such as I shall draw attention to, the fact should be made known, that others who have the same opportunity may go and do likewise.

Extraordinary Produce.—Extract from the *Armagh Guardian*. "At our market on last Tuesday, Mr. George Lester, of Ballarn, disposed of 67 stones of Flax, the produce of one band of Riga seed; the Flax was prepared at Mr. George Henry's mills, and realised its owner the handsome sum of 32*l.* 3*s* 6*d.*, having been sold at 10*s.* 6*d.* per stone. This and similar facts should stimulate the farmers to pay more attention to so profitable a crop." I will suffer the disgrace of being found in error, if I cannot bring forward a dozen such growers as Mr. George Lester. *J. Hill Dickson, Pharmic Hotel, 17 Old-street, Dublin, Nov. 2.*

Home Correspondence.

The Cost of an Acre of Turnips.—Your correspondent, "C. B.," of Heacham, Norfolk, says, "When the cost of an acre of Turnips amounts to shillings instead of pounds, then the thermometer of his hopes will rise." "Why, the cultivation of an acre of Turnips," he again says, "costs as much as the crop is afterwards worth." I am sorry his farm is so unprofitable, or perhaps the soil is at fault. The writer of this has tried for 14 years to raise Swedes as cheaply as possible. I have raised them at a cost of 15*s.*, at 30*s.*, and more, that is for seed and bone-dust only. I presume, as a farmer, he will allow the ploughings, &c., of this crop, to be divided between this one, Turnips, Barley or Oats, and his Grass or hay crop. It is a very expensive crop to prepare land for, but the cost ought to be divided with the subsequent ones in the rotation. This will leave me to discuss only the question of cost of seed, and any artificial manure he may apply, as he perhaps does not apply his farm-yard manure to this crop, or even for that invaluable root for summer food, Mangold Wurzel. Let us, then, come to the question of bone-dust for this crop. Four bushels I found too small a quantity for a yield, 8 or 10 far better, but 2 quarters many good farmers will use. It is of no use to farm stingily or grudgingly, but yet we may farm economically. The land will generally repay a liberal treatment; the reverse management will be attended with equal results. We never yet grew Turnips with so sad a result as our Norfolk correspondent, and if he occupies land within the space of our vision when through that county not long since, he may have such crops as he describes. We will tell him one thing; we never could raise a crop of Swedes with bone-dust to please us without they were well saturated with urine—the difference in yield was great. If his soil is very light, he would obtain far better crops of Mangold Wurzel than Swedes, and pay him better; but if we stick to shillings in raising Swedes, I fear our profits would end in pence. *N. V. Z., Hants.*

Scotch Carts.—Your correspondents, "A. B. C.," and "L. V. R.," are waging a little war upon the respective merits of these and Cumberland one-horse carts. I can only say from experience, my Scotch carts, made by W. Mather, of Kalemouth, but whom I never saw, are

the admiration of every one who has seen them. The price for a pair of wheels and two bodies, one of which is a sparred or harvest cart, cost 15*l.*; a single tilt cart, 12*l.*; the wheels are really beautiful, and though I have used them 12 years, they are as strong as ever; they were used for carrying marl, and would contain 2 tons. The men would tip the loads very roughly, to break them if they could, because they were Scotch, and would never, if possible, take one of them into town, as some fellow-labourer would accost them, by saying, "What sort of a cart have you got there? Something new this?" But an ugly, heavy Hampshire cart, with an axle 6 feet wide, is a vehicle they are proud of. The Scotch cart runs light, holds a ton weight of coals easily. "L. V. R.," I do verily believe, never saw a genuine Scotch cart. I went once to a maker in Oxford street, London, and asked him if he had any Scotch carts? "Yes, Sir," was his reply, and showed me one, as he called it. I said, "That is not a Scotch cart, it is too huge a thing for one of these." "Oh, Sir, it is on the Scotch principle, but built to suit English farms, being stronger." I confess so bulky and ugly a thing I never beheld. I asked the price, "26*l.*" was the reply. This seems to have been the sort of Scotch cart "L. V. R." saw perhaps, as he describes one very like it. Look at the wheels and frame-work of drills, carts, &c, at the agricultural shows, rude and coarse in construction to those made in Scotland. A Hampshire wheelwright of note candidly confessed, "We cannot make them like it in the south, nor even construct one after its fashion, for the same money," viz., 12*l.* Mr. Mather acted honestly and well in all the implements which he made for me, and every one who has seen them admits no one here can equal the workmanship. *Y. Y. Z., Hants.*

Forty-day Maize.—To the members of the Botley Farmers' Club.—How many smiles have been afforded me by the perusal of the discussion upon the Forty-day Maize (so called by Mr. Keene), as given in the *Hampshire Advertiser*. I have been one of the purchasers of that costly article, and I should not grieve at the cost if I found that I had obtained an earlier, and consequently better, sort than that which I have grown for years as "Cobbett's Corn," which you all ought to know; and yet I see that only one person, Mr. W. Warner, produced a cob of that corn at the meeting, and not the slightest notice was taken of it; while attention was directed to what Mr. Keene called "Chicken Corn," and which he stated to be "Cobbett's Corn," though he ought to have known at the time that representation to be entirely erroneous. It will, I think, be admitted, that for years there has not been a season so favourable for the cultivation of Maize as this; it has been an extraordinarily prolonged summer, well calculated to nurture this grain. An estimable lady in this neighbourhood has grown "Cobbett's Corn" for years, and I have been favoured with some of the seed from her stock, and from which I have raised a crop quite equal to Mr. Keene's, but with this advantage, that it has ripened six weeks sooner. Reflecting upon the extravagant price charged by Mr. Keene, I cannot help repudiating the idea of his philanthropy. *C. Oliver, Lymington.* [The above is an extract from a letter sent us by Mr. Oliver, which has already appeared in the Hampshire Papers.]

Manuring for Wheat.—The practice of carrying farm-yard dung into the leas for Wheat early in September is not confined to the neighbourhood of Newbury, Berks; it is much practised on the hill farms in this (the county of Hants). But most of the farmers here, unlike the practical man of which your correspondent John Coleman speaks, always get the manure ploughed in as soon as they can after it has reached the fields, and if the farm-yard manure be used for the Wheat crop, this appears to me to be the most preferable way of using it. The system of spreading it so long before it is ploughed in must, I think, be injurious. In the process of haymaking we spread the Grass on the surface of the field, to dry and evaporate the juices and moisture contained in the Grass, and if we adopt the same means in regard to the manure, we must expect the same results; and there remains to plough in nothing but dry discoloured straw, and the food of the plant which the straw had absorbed has been lost and dissipated "into empty air." Not that I think much soluble food ever reaches the field in farm-yard dung, for if we visit the farm-steadings of this country we will find the buildings with long sloping roofs, in many instances covered with coats of straw one on the other nearly 2 feet in thickness, and, in a wet season, the quantity of water falling from the eaves of such buildings is immense; this, together with the rain that falls directly on the manure in the yard, must carry with it nearly if not quite all the easily soluble portions of the manure. I therefore do not think the loss in the fields is so great as J. Coleman thinks it is. It appears to me that the greatest loss is in the farm-yard, and therefore that first calls for a remedy. Doubtless there is yet much to be learnt both in the manufacturing of manure and the application of the same, and "a knowledge of principles upon which practice is founded," may and will do much for both. But there are many farmers that are convinced of the injurious effects of exposing manure to all weathers, there are many who are convinced of the superiority of box-feeding over other methods that obtain, but few there are who can carry it out in practice for want of the necessary buildings. There are many farmers, too, who are convinced of, and suffering from, the injurious effects of hedgerows and hedgerow timber, and they are convinced too on first principles, and these are evils that are daily pressing more and more on the produce of the land and lessening the income of tenant. But the landlord not possessing "a knowledge of principles on which practice is founded," still permits the evils to remain; but I hope science and education will in time remedy those evils, and also disseminate a knowledge of principles that will lead to a better manufacture and application of manures. *Edward Curtis, Kennel Farm, Kempshott, near Basingstoke, Hants.* [Will you be kind enough to name the date of the machine alluded to.]

Slugs.—Six years ago a friend of mine had his farm much infested with slugs, which not only ate off all the young Wheat that was above the surface, but actually penetrated into the drills and destroyed the stems of the plants. Anxious to put a stop to these ravages, he commenced dropping Turnip tops about 10 yards apart in the furrows of his Wheat fields, and the next morning had them picked off, and on one occasion he took 3 bushels from 9 acres of Wheat; he persevered in this plan and destroyed a great many, but the mornings being very cold and the Turnip tops frosty the children did not at all like the work, and he found so much difficulty in prosecuting it, that he was compelled to abandon the plan. He then heard of what he was assured was a "certain remedy," and this was, to sow slaked lime plentifully on the Wheat. This sure remedy destroyed some, more escaped, for when the lime fell upon them, he observed that they had a peculiar way of drawing themselves up in a heap, and, by a singular movement, cast off a sort of slimy skin—a second dose was generally fatal to them. He then used the Turnip tops again with the same satisfactory result, but had the same difficulty in the execution. He then tried another "cure," which was by throwing 3 bushels of salt per acre; this failed in the same way as the "lime remedy." Various other plans were had recourse to—some of his neighbours endeavoured to extirpate the slugs by passing a heavy roller over the Wheat; others caused ducks to traverse the fields to eat them, and on one occasion I saw a flock of turkeys employed for the same purpose, but none of the remedies were successful in ridding the land of those pests. He now adopts the Turnip remedy as the most successful, but at a different period: he recommends that immediately after the Wheat is planted, and before it appears above ground, that Turnip tops should be dropped in the furrows about 10 yards apart, taking up the tops every morning, and shaking them over a pail, and then dropping the tops as before; proceeding thus until the slugs are entirely destroyed, which will generally be, if properly persevered in, before the Wheat makes its appearance above the ground. *An Amateur Farmer.*

Societies.

Witham Labourers' Friend and Agricultural Society.—At the annual meeting of this Society lately held, Mr. William Hutley produced the following statement of an experiment with farm-yard and artificial manures: "In a field of strong clay land (Clover ley), 15 acres manured with farm-yard dung, 25 loads, containing 24 bushels each per acre; the remaining 10 acres manured with Rape-cake and guano, 400 of each per acre; between the 15 acres manured with dung, I left four eight-furrowed stetches without any dung, containing four-fifths of an acre; I then put Rape and guano on the four stetches, at a cost of 3*l.* per acre. The produce of the four stetches so manured with guano was at the rate of 2½ bushels per acre more than that which was mucked, and I think half a load of straw, but I did not weigh it." He had straw which he was bound to consume, and a valuation, if he were going to leave the farm, would give him 3*l.* an acre for the manure, and 10*s.* for carting on the land. The half-load of straw he put at 10*s.*; and he calculated that altogether there was a gain of 30*s.* an acre. Therefore it was beneficial to them if they could convert their straw and hay by taking it to market, and thus use guano or other artificial manures for producing corn. But Mr. Dixon had put this question to him, What state will the land be in for the next crop without manure? His (Mr. H.'s) opinion was, that the Rape and guano would be equal to producing a crop of Beans, as well as the muck, without any fresh manure; and he thought the question would be, whether it would bring as much Wheat, and then it would all want manuring the next time. He thought that, with the aid of these artificial manures, the farmers should be allowed, if possible, to convert all their vegetables, all their straw and hay, by disposing of them, save and except that which the animals required, instead of being forced to go on as he did last year, when he fatted 100 beasts, some of which went at 1*l.*, some at 2*l.*, less than they cost him, so that he was left more than 500*l.* worse last year by the fatting of that 100 head of beasts. Instead of this he thought they should be allowed to convert those things into money, if they could, by bringing on those artificial manures, with more advantage to themselves, and keep the land in as good a state; and therefore he bought a quantity of Rape-cake and guano last Friday, which he intended to put on the land, for it paid him even at the low price that corn brought now. He considered the course he had pointed out, of converting his straw, hay, and other produce, and bringing on artificial manures, would be an advantage to him; and he trusted the landlords would see the advantage of it; for the tenant must produce his rent; and if he could convert these things into money, it would come to the landlord; it would also come to the labourer, in the shape of more employment; and in these times he (Mr. H.) would take advantage of it, and would not be stopped except by an action at law. He was now selling his Mangold Wurzel at 16*s.* per ton; and he expected to make between 200*l.* and 300*l.* of his roots; but he had bought guano—160*l.* worth of guano and Rape; he had bought 50 guineas' worth of chalk, and put it on, and he was sure that farm would be in as good a state as it ought to be, while he should get 100*l.* more by it. They must, he contended, be allowed to turn every species of matter produced upon the farm into money; and he knew the chairman would say, "If you can produce my rent better in this way, and do no damage to my farm, go and do it." But, in order to carry this well out, they must have a reformation in leases. He had a lease offered him the other day, drawn up by a London lawyer, containing the most nonsensical clauses in the world, the lease occupying 30 sheets, and costing 50 guineas; on which he took two or three of the covenants, which answered all the purpose, and run his pencil through all the rest of it. Then it was said he was too hard upon the landlord; but they did not want all this nonsense; they wanted plain sailing, not a crooked course of proceeding; then they would give that stimulus that was required to capital in this country, and they should go on better. But he had a few things to say to Mr. Mechi, as he knew Mr. Dixon and others were bottled up on that subject; and therefore he would propose the good health of Mr. Mechi, so that they might get into some argument on his improvements and challenges.—Mr. Mechi said before he went to other matters, perhaps they would allow him to state some experiments he had made in thick and thin sowing. They were all aware that for the last four years he had been trying comparisons between 1 bushel and 2 bushels an acre of seed, and having lately publicly reported, and having found invariably a considerable advantage in 1 bushel over 2, he had from all the circumstances given up trying the comparative results of 1 and 2 bushels; but this year he had tried the difference between a bushel and 5 pecks, and a bushel and 6 pecks, changing the drill so as to deposit the desired quantity; and he found there was an advantage in favour of thick sowing this year, the 5 pecks giving an advantage over the bushel of 2 pecks an acre, and the 6 pecks of about 3 pecks an acre (that was as near as he could recollect, not having the figures with him); so that, deducting the difference of seed, the advantage was 1 to 2 pecks in favour of 5 and 6 pecks over the bushel. He thought the state and quality of the land had much to do with thick and thin sowing, for in another field where he put in 6 pecks on the 21st of December, the land being strong with sheep's manure, they had too much straw, and had to flag it; there was a fair crop, but they all thought it would have gone down early in April, if not flagged. With regard to Beans and Peas he had also tried a similar experiment, and he found that the thick sown had a considerable advantage in both cases over the thin. He drilled 4 bushels an acre of Mazagan Beans as the thick sown, and he drilled only three-sevenths of that quantity as the thin sowing—that was, he withdrew four of the coulters—and in one case the distance of the rows was about a foot apart, and in the thin sowing 2 feet 3 inches; they found the thick sowing produced very nearly 2 quarters an acre more than the thin sowing. In the one case he had 56 bushels, not a very bad crop, and in the other case only 48 bushels, showing a very great advantage of the thick sown Beans over the thin. But though that was the case with Mazagan, he did not assume it would be the case with the high growing Beans, because once before he tried the experiment, and he found as much from three rows as he did from five; and he thought much depended on the nature of the Bean. Now, as to Peas, he put three bushels an acre as thick sowing, and three-sevenths of that quantity as thin sowing, being the white Marrow Peas, and he found an advantage of nearly 2 quarters an acre, the thick being 40 bushels produce, and the thin about 16 bushels less. He found that thick sown Beans were forwarder, and higher, and cleaner than the thin sown; the thick sown Peas were the same; and there was a great deal more straw in both cases. With regard to Wheat he should certainly try again the difference between 5 and 6 pecks and 4. Now they would allow him to thank them kindly for drinking his health, which was one of the greatest blessings we had, and he was sure the pursuit of agriculture tended very greatly to its preservation. Mr. Mechi then proceeded as follows:—

They would recollect that two years ago a belief existed amongst the agricultural gentlemen of the county in general that water would not percolate through strong tenacious clays, and a challenge was thrown down by Mr. William Hutley to give him (Mr. M.) a certain number of acres on his farm to drain in order to test it, which he accepted. He drained two acres of Mr. Hutley's land at Wigborough, and he thought the drains had always run during the winter when the land had been saturated with water. But this land being drained by him, he thought it was only right to himself, to him (Mr. Mechi), to the county of Essex, and just to the community at large, that Mr. William Hutley should have measured the crops on those two acres, in order to decide whether there was more or less on the drained land; and he wrote Mr. Hutley a letter requesting him to do so, but he had not done it. It was so important a question to the county, that he considered it no more than just and right that it should be done. When they considered that an addition of a single bushel of Wheat or a truss of Clover would pay 4 per cent. to the tenant on those two acres, he said it was impossible that a man could judge of the addition of one bushel of Wheat or one truss of Clover by mere observation on that land, without measuring; and therefore he said it was an evasion not to measure it.—Mr. Hutley: I did not promise to do it.—Mr. Mechi: But it was your duty to do it. If a challenge is thrown down and I accept it, and drain 2 acres of land, I say, having done my share of the duty, you ought to have done

yours. I say that with the kindest feeling but the utmost firmness. I say this is not the way of doing business; still I have some hopes for the future, for I see that old prejudices are giving way. I remember at a meeting of the farmers' club, in London, our excellent friend, Mr. Hutley, said in a discussion on the application of steam power to the threshing of corn, "I am a flail man."—Mr. HUTLEY: I deny it. I said, if I alter from the flail, I shall not go to the horse. I shall go to steam.—Mr. MECHI: It is reported in the *Mark Lane Express*, and at all events it was said, "I am a flail man." Perhaps Mr. Hutley meant to say, "I am a frail man" (laughter); for in one short year we find him, much to his credit, the purchaser of the prize steam-engine exhibited at the Norwich meeting, and I commend him for it.—Mr. HUTLEY: State what is true. I appeal to Mr. Nesbit if I did not say, "I am a flail man; and if I go from it I will not go to the horse, I will go to steam power."—Mr. NESBIT: I think I recollect something of it.—Mr. MECHI said he must go to these matters, because his friend, who was a good farmer, had always pounced on the weak points of his practice, and he went to these things in retaliation. When he was shooting lately at Abbott's Hall farm, he was struck with the importance of drainage, for they all knew Mr. Hutley spared no money to keep his land clean, but he was beaten by the want of drainage, and he saw more Twitch there than on any farm he saw before.—Mr. HUTLEY: There is 2 quarters an acre more produce than you can grow.—Mr. MECHI: I do not say it to find fault with him, I say it to illustrate the importance of drainage, and I shall never cease to worry—if I may use the word—that subject so long as I see it neglected on wet clays. Mr. Hutley is my great opponent.—Mr. HUTLEY: Not opponent. —Mr. MECHI said he looked upon him as his great opponent, but he had been gradually slipping off the rock of prejudice, and he hoped soon to see him in the clear waters of intelligence. (Cheers and laughter.) At one time Mr. Hutley had no troughs on his buildings, but he (Mr. M.) had a bit at him on the subject, and he had them now, and he hoped he should soon see him a drainer of strong clays. He would observe that, in regard to agriculture, it was a bad thing to assume they were too perfect. They could not go into any part of the kingdom without travelling down green lanes with great fences, 10 or 15 or 20 feet broad—they could not help seeing that the land was not half cultivated, the ditches blocked up, the buildings tumbling down, the manure washed away, &c.; and he did say that state of things must be and would be gradually remedied. Want of capital, want of skill, and want of security, were the causes of this in some cases; but he thought the force of these discussions and of public opinion would have a tendency to take away that fatal feeling in agriculture. They met with a man who was farming in the worst possible way, and if spoken to on the subject he would say: "I a bad farmer! My father farmed in the same way, and I shall keep on with it." Therefore he (Mr. M.) did say that the really go-a-head men, such as Mr. Hutley, Mr. Dixon, and others, who spent a great deal in artificial manures, and in improving their farms, did great injury when they patted on the back and encouraged the bad farmers. And now with regard to his own operations. He was perfectly satisfied with this year's crop; he never had so good a crop; he was sure it was remunerative, and that he was in the right road, and he looked to the pursuit of farming as a profitable one to himself. He was as close an accountant as any man in the room, and he knew where the money was spent, where it went, and where it came in. He did not say he had been perfect in all things, but he said the ground-work of all his operations was good drainage; part of the superstructure was good buildings; and though his 9-inch walls and slated roofs were called by the farmers of Essex extravaganzas (cries of "No, no")—they were called so, for half the farmers that came in said, "What expensive buildings!" Yet if he went into details, and taking one building, stated what it cost, and then asked, will that pay? they said, "Oh, yes! that will pay," and so they went on. But if he said, "Would you like to pay 4 per cent. for them?" they replied, "Our rents are too high now." What he said was this, there was no part of his buildings, no part of his operations that he was not prepared to justify on the pounds, shillings, and pence argument. But when Mr. Hutley advised them to use guano and Rape-cake, he said let them be careful how they dispensed with farm-yard manure, because Mr. Nesbit would tell them that Rape-cake and guano did not contain all that farm-yard manure contained, for the best farm-yard manure contained everything that every plant could require; therefore let them be careful how they parted with it. He admitted that the fatting of animals was very ruinous, and perhaps at times it would be advisable to avail themselves of these artificial manures instead; and as no farmer could make more manure than was sufficient for three-fourths of his farm, he ought to use artificial manures, but they ought not to neglect their farm-yard manure. It did not appear to him that he had anything else to say on these points, but he could not sit down without advocating the cause of agricultural improvement, which was attended with great benefit to all parties in the kingdom, in the progression of capital and the greater application of science and skill to the land. The agriculturists were not a reading class. He said they were a localised and non-reading class, but the next generation would be much improved. The son of his friend, Mr. Hutley, went to the agricultural college, or to Mr. Nesbit's, where he was instructed in science as applicable to farming, and therefore he would be less liable to prejudice than his father. (Laughter.) In conclusion, he would propose the health of Mr. Hutley, for he must say he admired his tendency to go a-head in everything. (Cheers.)—Mr. HUTLEY said he did not mean to spare Mr. Mechi an inch, for he intended to have a shot at him, and he would knock him down with sound argument, and proofs, and facts. (Cheers.) They all knew in the agricultural press, and in agriculture generally, there were three great leviathans, who had been acting and talking, but had never shown their proofs—Mr. Mechi, Mr. Hewitt Davis, and Mr. Huxtable; and we had seen in the agricultural press in the last two or three weeks, a challenge from Mr. Hodgson, of Low Walton, near Whitehaven, to show his Swedes and his farm against theirs for so much money; and he (Mr. H.) meant, before he left Mr. Mechi, to make him a bet. Mr. Mechi had spent hundreds and thousands on his farm, which he (Mr. H.) never had to spend; and he thanked God that he had not, or he should not have fooled it away as that gentleman had done; for, according to the last account, four years ago, he had expended 13,500*l.* on 130 acres of his own and 40 hired acres of land. The offer he made Mr. Mechi was this—the farm he occupied was not the best land in the world, while Mr. Mechi had laid out 13,500*l.* on best land in would measure Beans, Wheat, and Barley for [illegible] his; but he of the society, to be laid out at the committee's [illegible]*l.*, for the good his produce shall exceed Mr. Mechi's [illegible] thought fit, and (Cheers.) He had no money laid out [illegible] 8 bushels an acre, had done; his was in the jog-trot [illegible] his farm as Mr. Mechi manner he thought convenient, [illegible] way—he laid it out in the and tradesmen, yet he would [illegible] and to employ the labourers and then came the straw, [illegible] produce 8 bushels an acre more; acre more than Mr. Mechi [illegible] and he should say he had a load an tion—not of talking [illegible] Mechi. That was the effect of cultivasidered Mr. Mechi [illegible] out it, but doing it. (Cheers.) He conteacher, and we [illegible] as only a learner, though he set up as a be done, but [illegible] about the country and said so and so must see my book [illegible] was not done. At Norwich he said, "You will as much [illegible] on feeding off green Beans, and I will show I make weeks [illegible] mutton in one week, as I did on Clover in three To [illegible]." He (Mr. Hutley) asked, "Are you going on with it?" [illegible] which he replied he was not, and he then said he would not believe it. Notwithstanding what Mr. Mechi had stated as to his heavy land, he would offer to thresh out his Wheat and measure it against his; and then as to the Twitch, they all knew he was going to leave Abbott's Hall, and he should be a fool if he left much capital on it; yet he would undertake to say it was in as good a condition as any farm in a hundred. There was a piece of Rivet Wheat there that was as good as any Mr. Mechi had got; and it should be recollected that Mr. Mechi was a tenant for life, while he (Mr. H.) was a tenant from year to year. Now he would stand by what he had said—he would produce 8 bushels an acre more than Mr. Mechi, and let them have it in black and white—let the result be fairly and strictly ascertained by impartial persons, for he would treat an honest man in deciding such a question as if he were a rogue. Mr. Mechi and the other great leviathans went talking about the country, and they had Mr. Caird, of the Auchness Farm, who had an extraordinary account, and then it was turned to political purposes—the statements were handed to the Chancellor of the Exchequer. Mr. Mechi gave Sir Robert Peel a hint of what he was doing, and it was political altogether, for these men were subservient to their purposes.—Mr. MECHI: I deny it.—Mr. HUTLEY said here was Sir Robert Peel, who had done more hurt to the farmers than any other person, and he was supported by the way in which these free-trade farmers, who lived by mechanics, and not by farming, went talking about the country. —Mr. NESBIT thought Mr. Hutley's experiment strongly showed the necessity for an alteration in those covenants which bound parties down to a ruinous system of farming; for it was clear that if they could, by the introduction of foreign commodities, cause a farm to continue productive, and the value of the produce of the farm was increased in amount, they ought to be allowed to do so. He thought, therefore, the attention of landlords ought to be seriously called, under present circumstances, to an alteration of all those ridiculous restrictions—that they ought to have compensation for their improvements or leases, the tenant having unrestricted liberty to do what he liked with the land till the last four years, for in the first part of the lease the tenant would not for his own interest attempt to injure the land. There was a great deal said about draining. Mr. Mechi said water would percolate through strong clay, and Mr. Hutley said it would not. He thought Mr. Mechi was right—water would percolate; but what Mr. Hutley meant was, that it would not percolate sufficiently quick to answer his purpose. The whole question was this—would deep draining at 33 feet apart supersede shallow draining at half that distance? He was prepared to assert that deep draining on many soils—and he believed there were gentlemen present who would agree with him—was out of the question, as the clay would not allow the water to percolate sufficiently quick through it. He would mention a case which had come under his notice, on the land of Mr. B. Mangles, near Guildford, which had been drained by Mr. Parkes at 33 feet apart; he was asked to go over and see the land in a season that was well calculated to test the efficiency of the drains, and he could trace them 4 or 5 feet on each side of the drain, the crop rising high there, and sinking down in the middle between the drains, and the field was edged all over in this way. That was caused by the great distance at which the drains were placed, which prevented the water percolating sufficiently through them. Deep draining was better than shallow draining, provided the drains would drain the land when put in. But the deep drainers brought it forward on this ground—that they would do it cheaper, as they would do it at double the distance; and he said this had not answered on clays of a certain consistency. —Mr. BLOOD said, some persons might begin to tire of these proceedings, which were generally of the same character. They began with an opening speech, and a fling at the landlords, to show how they could benefit their tenants, then came a gentleman, the best tempered man in the world, who put himself up, like a buck, to be shot at, and was pretty well peppered (laughter); and whether he was right or wrong, he (Mr. B.) could not say. Then came a gentleman who gave them an account of some proceedings they did not know much about; but in the good old times of their meetings they had practical facts from practical men, who had tried them upon their own farms, and these he thought were more likely to benefit agriculture. (Cheers.)—Mr. DIXON said it was perfectly clear that water would go through all soils, and drainage was recommended—the only question was how to do it in the most essential manner; and if men would divest their minds of prejudice, and were careful in their observations, a person that had good judgment would be better able to deal with the particular field he was acting upon, than from reading books or hearing speeches. He was struck by one remark to-night of Mr. Mechi—that the thicker the seeding was the more successful the crop. There had been a great deal of discussion on this subject; one gentleman in the county, he thought, sowed half a pint an acre (laughter and cries of "half a peck"); but Mr. Mechi had given them a detailed account; his experiment this year was against his previous experience as detailed to that meeting, and he seemed to come to this conclusion, that 6 pecks was the minimum, and anything below that was too little.—Mr. MECHI: It depends on the soil.—Mr. DIXON: You have had the same soil for eight years.—Mr. HUTLEY: And the same cultivation.—Mr. DIXON: He seemed to come to the conclusion that thicker seeding than what was called very thin seeding was the best; and he thought that was to Mr. Mechi a matter of practical importance. And now he would say he knew Mr. Mechi used his time, he used his tongue as everybody knew, and he used his money, and he should like to know from that gentleman where Mr. Mechi had failed and where he had succeeded; so that where he had failed they might avoid treading in his steps, and where he had succeeded they might follow him. It might tell against himself, but he knew Mr. Mechi had courage and fairness enough to tell them where he had failed and where he had succeeded, as that would relieve his personal friends of a great deal of anxiety; (laughter); and it would do more. Mr. Mechi was quoted by the landlords in all parts of the kingdom, who said to the tenants, "Why don't you grow such crops as Mr. Mechi does? and you would succeed better than you do." Mr. Mechi was a great authority amongst the landlords; and if Mr. Mechi's influence was injurious to the tenant farmers, he knew no man who would be more willing to relieve them from it. He knew the landlords used Mr. Mechi's name against the tenants; that should only be done with justice, and he hoped they should have the matter clearly understood and stated, and no man, he was sure, would apply any remarks to Mr. Mechi for his failure. Let them have the books of the whole, and they should be content and satisfied. (Cheers.)—Mr. MECHI said he was constantly twitted with the necessity of showing his accounts, and with the difficulty of his making a profit in agriculture. Now, would Mr. Hutley answer him the plain simple question he was going to put to him. He had held Abbott's Hall farm, of 680 acres, for 20 years, and had he not stated over and over again that for years he never made a shilling out of that farm? —Mr. HUTLEY said he produced his books before the tithe commissioner, and by showing that book they were relieved from the compulsory agreement; for the first 12 years it was a dead loss to him.—Mr. MECHI: I feel relieved.—Mr. HUTLEY: It relieved me of something like 50*l.* a year. (Laughter.)—Mr. MECHI said he was relieved by what Mr. Hutley had stated, as he had only farmed since 1844, and had to drain and do everything, and therefore he was placed in a more hopeful condition than Mr. Hutley, for the year before last he got 10 per cent. as a tenant and 3½ per cent. as a landlord; last year he confessed he lost money; this year he had a brilliant prospect, and for the future a still more brilliant one. (Cheers.) He meant to bring out a book, "How to Farm Profitably," which he had in preparation, for he had no secrets on his farm; but it was rather unjust to him, after he had laid out money on things that had benefited the country, to twit him with the unprofitableness of farming, as if that did not extend to hundreds and thousands of the farmers in the kingdom. Let them look to the number of farms to be let, and no one they knew would leave a profitable farm. Therefore Mr. Mechi was not the only one who farmed unprofitably, if he did so. He challenged Mr. Hutley to discuss with him the whole management of the farm. —Mr. HUTLEY: I take you on the books—you have more words than I have.—Mr. MECHI: Mr. Hutley and I have a race in good farming, and when he backs a farm of 21 years of good cultivation against a bad farm of 7 or 8 years, I say it does not become Mr. Hutley. (Cheers.)—Mr. DIXON: Mr. Mechi began in 1844, and I will ask him for the return of 1847, 1848, and 1849, and will ask for no interest for capital, but for the common interest of the capital on the farm of that period, abandoning all his other expenditure, which I do not want to inquire about. I ask him this as a public man, as a teacher of agriculture, who blows everybody up—don't you? (Laughter.) —Mr. MECHI: If they deserve it.—Mr. DIXON: I ask him to give us the three last years of his farming.—Mr. MECHI: I have no objection.—Mr. HUTLEY said he had been in the West of England, where a person, after inquiring if he came from Essex, said to him, "My rent has been raised, and I am to farm as Mr. Mechi does to pay that rent;" to which he replied, "If you farm as he does, you will pay no rent at all." (Laughter.) But they saw from this the injury it did. He looked at Mr. Mechi's farm with contempt. (Hear.) He (Mr. H.) stated here last year what he got from Mr. Mechi's man; then out came a one-sided letter from Mr. Mechi; and therefore he thought he would have him here this year. He repeated, the landlords took advantage of the statements made, and said to the tenant, "You must produce as much as Mr. Mechi does, or you must turn out." (Hear.)—Mr. MECHI said, in answer to that, he could state that at the Saffron Walden meeting last year a farmer observed, he was tied hand and foot not to move tree or pollard; but six months after, his landlord came to him and said he might remove the trees, cut down the pollards, &c.; and when he asked, "What can have made such a change in your opinions?" he replied, "I have been reading Mr. Mechi's book, and I am perfectly convinced it is true." Therefore if he (Mr. Mechi) had done evil, as Mr. Hutley wished them to believe, he had also done good. As to his crops, which Mr. Hutley looked on with such contempt, he would back against that the public approbation, and the opinion of the men who signed his book every day—men of as much intelligence, as much capital, and as much honour as Mr. Hutley.—Mr. HUTLEY: One who signed it said they were the best crops in Essex, and he hardly knew a field of Potatoes from a crop of Beans. (Laughter.) Who dare go to Mr. Mechi, and blow him up, but myself? Once when I went Mrs. Mechi was at me, and said Mr. Mechi had no greater enemy in agriculture than myself.—Mr. MECHI: I believe it.—Mr. HUTLEY: If Mr. Mechi can say how he can make his farming profitable, I will say he is a clever man.—Mr. J. H. PATTISSON said it was important not only to this locality, but to the kingdom at large, that Mr. Mechi should furnish his accounts, and he thought they would find recorded in the *Chelmsford Chronicle* a promise that they should have those accounts. (Hear, hear.) He considered, in fact, they were public property. It was true they were all under great obligations to Mr. Mechi, who had given a stimulus to agriculture which no other man had done; but the question was, whether he had not been an *ignis fatuus*. If Mr. Mechi should say, "With the experience I have now, I could do that for 100*l.* which cost me 500*l.*," he should say allow it at 500*l.*; but let the accounts be produced, for unless the result was profitable, the tenant must be ruined and the landlord impoverished. Therefore, on behalf of this society, and the community at large, he seriously and solemnly confirmed every word that had fallen from Mr. Hutley and Mr. Dixon, for he considered it was a sacred duty on the part of Mr. Mechi, whose name was known through Europe at large, to furnish these accounts, which he believed were in progress. (Cheers.)—Mr. MECHI: In speaking of me as an agricultural improver, you should consider whether you speak of me as a landlord or a tenant, for the landlord's expenditure on that farm is distinct from that of the tenant. Now, I am prepared to say, and I say it guardedly, if I had put up those buildings for an Essex tenant, I do not know one that would have paid me interest for them. I could not find one who would deny their utility—who would deny that the places filled with pigs, or manure, were not profitable; but I should not find a man to pay me interest for the full amount. In the last year's expenditure 300*l.* or 400*l.* was put down for chalk, &c.; how long is that to last, and how am I to put it down in the accounts?—The PRESIDENT said Mr. Mechi had been hard pressed for the accounts. Mr. Pattison had put it almost as a solemn duty, and they must leave it to his conscience to see what that produced.—The following reports of experiments, made by Mr. F. King Thedam, were then read.

The Results of planting Wheat from one Kernel to nine in each Hole, allowing four Holes to each square foot, and 14 feet to each Experiment.

No. of Grains.	No of Holes.	No. in each Hole.	No. of Grains per square foot.	No. of Ears.	Gross Weight.
					lbs. oz.
56	56	1	4	205	3 6½
112	56	2	8	250	3 9½
168	56	3	12	286	3 11½
224	56	4	16	300	3 12½
280	56	5	20	304	3 13
336	55	6	24	301	3 6
392	56	7	28	358	3 11½
408	56	8	32	352	3 2
504	[illegible]	9	36	244	2 2

Nine Experiments with 168 Kernels of Wheat upon 14 square feet net, or 4 pecks of Seed to the acre.

Diagram of 2 feet in each, showing the Holes.		No. of Holes.	No. of Grains in each Hole.	No. of Holes misplant.	No. per sq. foot.	No. of Ears.	Gross Weight.
							lbs. oz.
.....	.....	168	1	Unknown	12	251	3 9½
:::	:::	84	2	26	12	291	3 11½
::	::	56	3	9	12	262	3 11
·:·	·:·	42	4	7	12	264	3 11
··	··	33	5	4	12	241	3 4
··	··	28	6	4	12	234	3 8
·	·	21	8	3	12	258	2 13
·	·	14	12	3	12	252	2 14
		Drilled in two rows.		Unknown	12	288	3 4

N.B. Some calculations give 609,000 grains to the bushel, which will allow 14 grains to the foot, but 12 is nearer the correct number.

The PRESIDENT said they were greatly obliged to Mr. Thedam for his experiment. He (Lord R.) had been an advocate for three grains in a hole, but he now found that seven was the number.—Mr. HUTLEY called attention to the Mangold Wurzel he had produced in the field, some roots weighing 19 lbs. and some 22 lbs.; and said that if it would be of advantage to the Society, he had no objection to weigh a stetch or a rod of them. Green crops were so valuable that they could not too much encourage them; for they could not produce corn without green crops. He believed he had as much as 35 tons an acre on some of that land; but it was a serious cost, for he put on 40 loads of dung from the town, mixed with muck from his yard; 400 of rape, and 200 of guano, which cost 2*l.* an acre.

more; but he had the advantage of the crop he had stated, and he should be willing to weigh it, for he never found a landlord to take advantage of the tenant who could pay his rent.—The PRESIDENT: How long do you think the effects of guano are visible?—Mr. MECHI: Certainly two years very distinctly, and I think longer. Good farm-yard dung is shown for 12 years and upwards. I am sure farm-yard manure is not decomposed and used in less than four years.

Calendar of Operations.

NOVEMBER.

BERWICKSHIRE MERSE FARM, *Nov.* 9.—Since last report we have been employed ploughing Bean stubble land for Wheat. We have been delivering Wheat and threshing Barley for the market; ploughing stubble land for Turnips, and leading Turnips for cattle and sheep; we have 45 cattle feeding on Turnips; we are giving them white Turnips, and shall next use the yellow, before we begin the Swedes; one man with a pair leading the Turnips for the ewes and the cattle; the workers have been assisting in threshing and dressing, pulling Turnips, and digging Potatoes; one man cutting thorns and making a fence to keep the sheep, that are eating the Turnips, from the young Grass; two boys employed feeding the cattle. *J. B.*

EAST LINCOLNSHIRE FARM, *Nov.* 9.—This farm comprises about 500 acres of wold land, of which 150 are in Grass or swathe land, as we term it. The soil varies from heavy to light gravelly loam (with clay subsoil), in some localities approaching chalk, of which we have pits—useful for marling the heavy land—and it is for the most part of good quality, excepting where it becomes loose and mixed with flints. After a little rain, the land generally becomes difficult to work, and may be compared to soap, being likewise most unpleasant for walking on. Having given this slight preliminary sketch of the soil, &c., the system of cropping, and work on the farm, next comes into notice. Of the latter there is not much to report beyond the usual recurrence of Wheat drilling (a rather disheartening labour in these times of free trade). Our corn markets are, of course, as low as in other districts. The quality of our crops (both of this and last year's) was good. We used, this season, as a steep for the seed, some of "Downe's Farmers' Friend," which seems in pretty good repute. Notwithstanding the practice of thin sowing, so much advocated of late, we do not sow less than 10 pecks to the acre; the fact being, in that as in many other theories of the day, a medium is the best to follow, and a judicious application according to soils, seasons, &c. Our crops at harvest are all mown, undoubtedly the speediest and the neatest plan, leaving so little stubble to plough up, especially where one corn crop follows another, which method we this year pursued in the case of Wheat on Oats. The land having been ploughed soon after harvest, to get the stubble well "grounded," and previous to drilling, harrowed at least six times in a place. Where the ground was loose and light, a roller was applied before the harrowing. The usual course with us on the best land is, Turnips consumed on the land with sheep (giving a liberal allowance of cake in their troughs), Oats, Wheat laid down with seeds for one year—and we find the Wheat sufficiently good after the Oats, from the effects of the fold, to continue the system, otherwise the four course is more usual hereabouts on the lighter soils. Our hogs, this autumn, at first did badly on the Turnips, but have now recovered themselves, and have salt added to the Turnips. These number about 360 at present, which, added to 400 ewes put to the rams three weeks back, forms our present compliment. The stock of beasts consist of 60 head of short horns, including the cows (8 in milk and 12 with calves), and the weather is so fine that they still remain out, picking up what rough Grass remains. The steers, however, must soon come in, at all events at night, when we have plenty of Turnips and oilcake for them. The latter our horses also share, with their Oats and cut meat; they do well on it, and it is cheap, as we can buy it now at 6*l.* per ton. Wages with us are 12*s.* per week for ploughmen, and 10*s.* and 8*s.* for inferior servants. *H. E.*

Notices to Correspondents.

CABBAGES: *Clericus.* Transplant in April strong plants of Drumhead Cabbage, one yard apart every way, in a stiff loam, well dunged and deeply dug. You will, in the event of a wet season, have at least 50 tons per acre. Kohl Rabi are to be treated like Swedes.

CLOD-CRUSHER: "A. B. C," of Cockermouth, would much oblige many of our readers by further particulars of his implement. "How broad or wide the boards should be, and how much of one board should be left after the overlap of the next, and how deep should the notches be cut in the side-frames, &c."

FLY ON CHEESE: *Constant Reader.* How are its attacks to be prevented?—The use of salt enough is one method.

KOHL RABI: *W P, South Devon.* Kohl Rabi is best in spring, but only because it has then lost an excessive juiciness, but because it is good policy always to consume the most perishable crops first, and it would stand a frost which would injure Turnips. To [illegible] a good crop of Carrots will cost about 18*s.* per acre. Two men [illegible] in hoeing and digging those that will not come, will keep one [illegible] woman topping. For 18*s.* they should be pulled, topped, and [illegible] into carts.

LIQUID MANURE CART: *H W K.* [illegible]'s, Bristol.

SMALL FARM: *M A.* It would not answer any one's purpose to take a farm into his own hands, unless he were prepared to give it a degree of attention which is, we imagine, altogether incompatible with the position of a clergyman. It would not answer his purpose financially, he had better be satisfied with such a rent as market prices will admit, but he might borrow money, nevertheless, under the Drainage Act, for the purpose of permanently improving the land, for such improvements will increase the rents beyond the amount of charge which they will lay upon the land.

WINTER BEANS: *Sigma.* We hardly understand your question. The last hoeing of winter Beans may be late in May. Do you mean to sow anything then on the land, in order to have a green crop to dig in after the Bean harvest? If you had a good crop nothing would grow, if the interval between the rows were so wide as to let the light in, Italian Rye-grass would probably be the best thing to sow, it would then grow, and would cover the ground well before November.

Markets.

POTATOES.—SOUTHWARK, Nov. 12.

The Committee report that the market continues to be well supplied with every description of Potato, which are selling very heavily, and it is with difficulty last week's prices have been realised. The following are this day's prices:—York Regents 80s. to 90s. per ton; Wisbeach, 50s. to 60s.; Scotch, 50s. to 60s.; Scotch cups, 50s. to 80s.; French whites, 55s. to 65s.; Rhenish do., 50s. to 60s.; Belgian do., 50s. to 60s.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Nov. 15.

Prime Meadow Hay	65s to 72s	Clover	...	63s to 85s	
Inferior ditto ...	50	60	New Clover	—	—
Rowen ...	50	55	Straw	20	28
New Hay ...	—	—			J. COOPER.

Trade exceedingly heavy.

CUMBERLAND MARKET, Nov. 15.

Prime Meadow Hay	68s to 74s	Inferior ...	...	55s to 75s	
Inferior ditto ...	50	63	New Clover	—	—
New Hay ...	—	—	Straw	24	30
Old Clover ...	84	90			JOSHUA BAKER.

HOPS.—FRIDAY, Nov. 16.

Messrs. PATTENDEN and SMITH report that the market continues very firm for new Hops, which are getting very scarce.

COVENT GARDEN, Nov. 17.

Hothouse Grapes continue to be plentiful, and the supply of Pine-apples of excellent quality is still well kept up. Filberts and Walnuts are abundant, Chestnuts plentiful, Oranges more abundant, Lemons moderately plentiful. Pomegranates may still be obtained at 4d. each. Among Vegetables, Turnips are good and plentiful; Carrots the same. Cauliflowers less plentiful. Potatoes have not altered since our last account; they are generally very much diseased. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1s to 1s. 3d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropæolums, Chrysanthemums, Fuchsias, Primulas, Camellias, and Roses.

FRUITS.

Pine-apples, per lb., 2s to 5s	Oranges, per doz., 4s to 6s
Grapes, hothouse, p. lb., 2s to 5s	Almonds, per peck, 6s
— Portugal, per lb., 9d to 1s	— sweet, per lb., 2s to 3s
Plums, per hf. sieve, 4s to 6s	Walnuts, p. 100, 1s 6d to 2s
Pears, per doz., 2s to 4s	— p. bush., 16s to 24s
— per half sieve, 4s to 6s	Filberts, per 100 lbs., 45s to 60s
Apples, kitchen, p. bsh., 2s to 4s	Nuts, Bar., p. bush., 20s to 22s
Lemons, per doz., 1s to 3s	— Brazil, p. bsh., 12s to 16s
— per 100, 8s to 16s	

VEGETABLES.

Cabbages, p. doz., 6d to 1s	Onions, p. bunch, 2d to 4d
Cauliflowers, p. doz., 2s to 4s	— Spanish, p. doz., 1s 6d to 4s
Broccoli, p. doz. bundl., 6s to 10s	Shallots, per lb., 4d to 8d
Greens, per doz., 1s 6d to 2s 6d	Garlic, per lb., 4d to 8d
Brussels Sprouts, p. hf. sieve, 1s 6d to 2s	Artichokes, p. doz., 1s 6d to 3s
	Lettuce, Cab., p. sc., 4d to 9d
Sorrel, p. hf. sieve, 6d to 9d	— Cos, do., 6d to 1s
Potatoes, per ton, 60s to 100s	Endive, per score, 1s to 1s 6d
— per cwt., 3s to 6s	Tomatoes, p. hf. sieve, 3s to 4s
— per bush., 2s to 3s	Mushrooms, p. pot., 1s to 1s 3d
Turnips, p. doz. buns, 1s 6d to 2s 6d	— per bush., 3s to 6s
Red Beet, per doz., 1s to 2s	Small Salads, p. pun., 2d to 3d
Horse Radish, p. bdl., 2s to 4s	Fennel, per bunch, 2d to 3d
Cucumbers, each, 9d to 1s	Savory, per bunch, 2d to 3d
Leeks, per bunch, 2d	Thyme, per bunch, 2d to 3d
Celery, p. bundle, 8d to 1s 3d	Parsley, p. doz. bun., 3s to 4s
Radishes, p. 12 bunches, 1s to 2s	— Roots, p. bdle., 1s to 1s
Watercress, per doz. bunches, 4d to 6d	Marjoram, per bunch, 2d
	Mint, per bunch, 2d
Carrots, per bun., 4d to 6d	Basil, per bunch, 2d
Spinach p. sieve, 1s to 1s 6d	

SMITHFIELD, MONDAY, Nov. 12.

The number of Beasts has largely increased, and the demand is smaller, in consequence the trade is heavy, and prices generally lower. Choice Scots are not, however, very plentiful, and still make 4s. The supply of Sheep is also large; they meet with a dull sale at rather lower rates. Calves and Pigs are also lower. From Holland and Germany we have 925 Beasts, 3130 Sheep, 99 Calves, and 34 Pigs; and 2000 Beasts from Leicester and Northampton.

Per st. of 8 lbs.—s d s d		Per st. of 8 lbs.—s d s d	
Best Scots, Herefords, &c.	3 8 to 4 0	Best Long-wools	3 4 to 3 8
Best Short horns	3 6 — 3 10	Ditto Shorn	...
2d quality Beasts	2 8 — 3 2	Ewes & 2d quality	2 10 — 3 2
Best Downs and Half-breds	3 10 — 4 0	Ditto Shorn	...
Ditto Shorn	...	Lambs	... — ...
		Calves	2 8 — 3 8
		Pigs	3 0 — 4 0

Beasts, 4314; Sheep and Lambs, 26,740; Calves, 189; Pigs, 300

FRIDAY, Nov. 16.

The supply of Beasts is small and trade brisk; there is an advance, but not a quotable one, on the choicest kinds. The number of Sheep is unusually small; the demand, however, is not large, consequently trade is rather dull at a small advance in price, except for choice Downs; these are readily sold, because they are scarce. We are very scantily supplied with Calves; they make fully 6d. per 8 lbs. more than on Monday, and in a few instances 4s. 4d. has been obtained. Pigs are not much dearer. From Holland and Germany there are 233 Beasts, 640 Sheep, 10 Calves, and 82 Pigs; and 138 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3 10 to 4 0	Best Long-wools	3 6 to 3 10
Best Short-horns	3 6 — 3 10	Ditto Shorn	... — ...
2d quality Beasts	2 6 — 3 2	Ewes & 2d quality	2 10 — 3 4
Best Downs and Half-breds	4 0 — 4 2	Ditto Shorn	...
Ditto Shorn	... — ..	Lambs	...
		Calves	3 2 — 4 2
		Pigs	3 4 — 4 4

Beasts, 920; Sheep and Lambs, 3,260; Calves, 93; Pigs, 318.

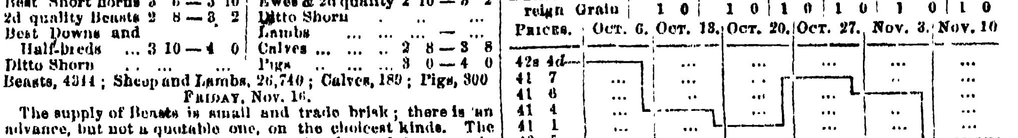
MARK LANE.

MONDAY, Nov. 12.—The supply of Essex Wheat by land carriage samples this morning was the smallest we ever remember at this season of the year; that from Kent was very moderate; the former was quickly taken by the millers at an advance of 2s. per qr., but this improvement could not be fully realised upon the latter. Foreign, both old and new, met a slow retail sale at former prices.—Barley, both English and foreign malting and grinding, was in good demand.—Beans and Peas support our quotations.—Old and fine qualities of Oats are fully as dear, excepting new Irish, which must be written 1s. per qr cheaper.

FRIDAY, Nov. 16.—The arrivals of all Grain, both English and foreign, during the week, have been unusually small. Wheat has met a dull retail sale at the same prices as Monday. —Foreign grinding Barley continues in good demand at fully late rates.—Beans are unaltered in value. White Peas command rather more attention and extreme prices.—We observe no alteration in the value of Oats.—Flour is a slow sale at our quotations.—Maize is neglected, and prices nominally 25s. to 27s. for Ibraila and Galatz.—The Wheat trade throughout England during the week has been flat, in Scotland and Ireland rather firmer. In Konigsberg prices of Wheat have declined 1s. per qr., and are now quoted at 33s. to 37s.

LIVERPOOL, FRIDAY, Nov 16.—The trade this morning was very languid, the transactions were few, and quite in retail. Prices of Wheat and Flour were about the same as on Tuesday. Oats were not plentiful, and made fully previous rates. No change in Barley, Beans, or Peas. There was a fair sale for Indian Corn at rather less money.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Oct. 6	42s 4d	27s 7d	17s 5d	24s 9d	29s 9d	29s 5d
— 13	41 4	28 0	17 2	24 5	28 10	31 8
— 20	41 1	28 2	17 4	24 9	29 5	30 8
— 27	41 7	28 5	17 2	23 8	28 11	31 7
Nov. 3	41 6	28 7	16 10	22 9	29 10	29 7
— 10	40 7	28 8	16 11	22 6	29 4	30 11
Aggreg. Aver.	41 5	28 3	17 2	23 10	29 3	30 7
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0



PRICES CURRENT.	London. Nov. 5.	London. Nov. 12	Liverpool. Nov. 6	Liverpool. Nov. 13.	Wakefield. Nov. 2.	Wakefield. Nov. 9.	Boston. Nov. 7.	Boston. Nov. 14	Birmingham. Nov. 8.	Birmingham. Nov. 14.
	qr.	qr.	70 lbs.	70 lbs.	qr.	qr.	qr.	qr.	62 lbs.	62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d	s. s.	s. s.	s. s.	s. s.	s. d. s. d	s. d. s. d.
New, red ...	38 to 43	40 to 43	6 0 6 2	6 0 6 4	37 to 44	37—44	34 to 40	34 to 40	5 0 5 8	5 0 5 3
„ white ...	42—48	42—50	6 2 6 8	6 4 6 9	41—48	41—48	38—45	38—46	5 6 6 0	5 7 6 1
Old, red ...	38—43	38—43	6 4 6 6	6 4 6 8	39—43	39—40	—	—	5 3 5 9	5 3 5 9
„ white ...	43—45	43—45	7 0 7 4	7 0 7 6	—48	—48	—	—	5 7 6 1	5 8 6 2
Foreign	36—52	35—52	1 4 7 6	4 4 7 1	36—48	36—48	—	—	4 8 6 2	4 8 6 2
			480 lbs.	480 lbs.						
Rye—Old ...	23—24	23—24	—	—	—	—	—	—	—	—
Foreign...	20—23	20—23	—	—	—	—	—	—	—	—
Foreign meal	5l.—6l.	5l.—6l.	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	24—26	24—26	—	—	20—22	20—22	21—23	21—23	21—24	21—24
Malting... ...	26—28	26—28	30s—31s	30s—31s	27—33	27—33	—	—	28—33	28—33
Foreign... ..	18—26	18—26	—	—	21—26	21—26	—	—	—	—
					6 bush.	6 bush				
Malt—Ship ...	—	—	—	—	35—38	35—38	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	18—24	18—24	3s 2d 3s 3d	3s 2d 3s 3d	—	—	13—18	13—18	19—25	19—25
Black...	16—22	16—22	2 1 2 7	2 1 2 7	—	—	—	—	17—18	17—18
Foreign	13—20	13—20	2 3 2 4	2 3 2 4	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	28—32	28—32	33s—	33s—	26—30	26—30	—	—	30—36	30—36
									196 lbs.	196 lbs.
Grinding...	—	—	27—28s	27—28s	—	—	—	—	11—12	11—12
Foreign ...	24—32	24—32	29—30	29—30	—	—	—	—	—	—
Beans—										
New, small ...	28—33	24—30	—	—	30—31	30—31	32—34	32—34	11—12	11—12
Old	—	—	33—37	33—37	32—33	32—33	—	—	14—15	14—15
Foreign ...	23—36	23—36	25—34	[illegible]—34	26—28	26—26	—	—	11—13	11—13
Linseed—Feed	—	—	40—42	40—42	32—40	32—40	—	—	—	—
Foreign ...	41—48	41—48	—	—	—	—	—	—	—	—
LinseedCakes										
British ...	9l. 12s	9l. 12s	7l. 15s—8l.	7l. 15s—8l.	—	—	—	—	—	—
Foreign ...	7l.	7l.	—	—	—	—	—	—	—	—
Indian Corn	22—26	22—26	27s—29s	27s—29s	—	—	—	—	12—13 per sack.	12—13 per sack
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack		
Flour—	32—40	32—40	30—32	30—32	—	—	30—3[illegible]	30—36	31—34	31—34

Weekly Averages and Imports.	London. Aver. Nov. 13	London. Impts	Liverpool. Averages.	Liverpool. Imports.	Wakefield. Aver.	Wakefield. Impts.	Boston. Aver.	Boston. Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	13 2	2290	41 6	15823	42 5	10935	37 5	8093	39 1	—
BARLEY ...	30 3	4960	28 7	2278	28 5	2887	24 5	274	27 2[illegible]	—
OATS... ...	18 5	6750	16 10	8608	—	168	14 11	992	18 4	—
RYE	23 4	—	22 9	—	—	—	—	—	—	—
BEANS ...	29 5	—	29 10	1053	—	982	27 8	336	31 8	—
PEAS... ...	32 7	—	29 7	25	36 0	373	—	—	34 0	—
SIGNED	KINGSFORD and LAY.		SEGAR and TUNNICLIFF		SANDARS and DUNNS.		THOMAS WRIGHT		J. and C. STURGE.	

TO GENTLEMEN, BUILDERS, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by public Auction, on the premises, Caledonian Nursery, Caledonian-road, Pentonville, on MONDAY, Nov. 19, at 11 o'clock, in consequence of the Lease being sold for building, the whole of the NURSERY STOCK, comprising fine Evergreens, Ornamental Fruit and Forest Trees, viz., Aucuba, common Laurel, China Arbor-Vitæ, Box, Green Hollies, Privet, Lilacs, Guelder Roses, Laburnums, Poplar, Sycamore, Lime, Mountain Ash, Birch, &c., Standard and Dwarf Apple, Cherry, and Pear trees, with Gooseberries and Currants; Greenhouse Plants, also a capital Greenhouse, Forcing-house, nine-light Pit and Brickwork, Boxes, Lights, &c., together with the Dwelling House, consisting of three rooms, Shop, Wash-house, Shed, &c. May be viewed prior to the Sale.—Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, at the Auction Mart, Bartholomew-lane, on THURSDAY, Nov. 22, and following day, at 12 o'clock, a selected assortment of FRUIT TREES, consisting of Peach, Nectarine, Apricot, Plums, Pears, Cherries, Raspberries, Currants, &c.; a choice collection of Flowering Shrubs and Ornamental Trees, American Plants, &c., consigned from Mr. P. KOSTER, Nurseryman, Boskoop, near Leyden; also a first-class collection of Dutch Roots. May be viewed the morning of Sale. Catalogues had at the Mart, and of the Auctioneers, Leytonstone.

BROMPTON PARK NURSERY.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mr. JOHN SANGSTER and Mr. RODERICK DONALD, trustees for the above estate, to submit to an unreserved Sale by Auction, on MONDAY, Nov. 26 (unless previously disposed of by private contract, of which due notice will be given), the whole of the extensive and valuable Stock of the Brompton Park Nursery, riding over 30 acres, lately carried on by GRAY, ADAMS, and ROGG, consisting of the well known and celebrated collection of Standard and Dwarf Maiden and Trained Fruit-trees, and a rich assortment of Evergreens and Deciduous Shrubs, Ornamental Trees, American Plants, &c., together with the Greenhouses (with new and approved hot-water apparatus), Pits, Frames, Carts, and Utensils; also the Stock of Seeds, Shop-counters and Drawers, Counting-house Desks and Fittings, Iron Safe, &c.—May be viewed prior to the Sale. Catalogues (1s. each, returnable to purchasers) may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

HEATHS, AZALEAS, AND CAMELLIAS.—THE SURPLUS STOCK OF MESSRS. FAIRBAIRN, OF CLAPHAM.

MR. J. C. STEVENS is favoured with instructions to sell by Auction, at his Great Room, 38, King-street, Covent-Garden, on TUESDAY, November 20th, at 12 for 1 o'clock, 30 magnificent plants of ERICA, being specimens of the superior cultivation of the above eminent Firm, and which have been most successfully exhibited by them at the several Horticultural Meetings of the past season. Also 25 INDIAN AZALEAS, from 1½ foot to 3 feet, and 50 fine CAMELLIAS, from 2 to 4 feet.—May be viewed on the day prior and morning of sale, and Catalogues had of MESSRS. FAIRBAIRN, Clapham, and of Mr. J. C. STEVENS, 38, King-street, Covent-garden, London.

STAFFORDSHIRE.
VALUABLE NURSERY STOCK FOR SALE.

MR. HILLIARD will sell by Auction (under an assignment for the benefit of creditors), in several Lots, to suit the convenience of purchasers, at the Nursery Grounds of Mr. WILLIAM NUNNS, at Barn-gates, near or adjoining the town of Leek, in Staffordshire, on THURSDAY, the 22d day of November (and the two following days, if necessary), at 11 o'clock in the forenoon of each day, unless previously disposed of by private contract, of which due notice will be given, all that very extensive and valuable assortment of Fruit and Forest Trees, Thorn Quicks, hardy Evergreen and Flowering Shrubs, Rhododendrons, Azaleas, and other American plants; variegated and other kind of Hollies, common and Portugal laurels, various sorts of Yews, Aranucarias, a variety of Pinus, aucuba japonica, Dwarf and Tree Box, Standard and Dwarf Roses, Pæonia arborea, Herbaceous and Rock plants; together with the Frames, Hand-glasses, Horticultural Fences, &c., and a great variety of other plants too numerous to mention. The above very valuable stock is in a thriving and healthy condition, and in consequence of the North Staffordshire Railway passing close by, purchasers will have the advantage of removing the plants to any part of the kingdom at a very trifling expense.—The stock may be viewed on application at the Nursery, or to the Auctioneer, in Leek; and further information obtained at the offices of Mr. FRANCIS CRESO, in Leek aforesaid, Solicitor to the Assignees.—Leek, Nov. 17.

NORWICH NURSERY.
IMPORTANT TO PLANTERS.—EXTENSIVE SALE OF FOREST AND OTHER TREES.

MR. WILDE begs to inform the nobility and gentlemen engaged in Planting, and the trade generally, that he has received instructions from Mr. MACKIE, in consequence of his removing a portion of his stock to his new Nursery, at Bracondale, to submit to public competition, on the 27th, 28th, 29th, and 30th of November, *and not as in the previous announcement of the 10th instant* (weather permitting), ONE MILLION OF FOREST AND ORNAMENTAL TREES, &c., consisting of fine transplanted Beech, 2 to 4 feet; fine transplanted Whitethorn, 3 feet; true red-wood Highland Pine, 4 to 6 feet; very fine transplanted Oaks, 4 to 6 feet; black Italian Poplars, 6 to 8 feet; Elms, Hornbeam, Mountain Ash, common Ash, Levant Oaks, common Laurels, &c. The soil of the Nursery is a light loam, and admirably suited for producing fibre; and as they have been well and frequently transplanted, the roots are excellent. Large purchasers, that may find it inconvenient to remove the trees at once, can have the opportunity of arranging with Mr. Mackie to leave them on the ground till the 1st of March, 1850. Railway communication to all parts of England. Catalogues can be obtained, on and after the 19th November, of Mr. WILDE, Auctioneer; or of Mr. MACKIE, 10 and 11, Exchange-street, Norwich.

CAMELLIAS, LILIUMS, AZALEAS, &c.

MR. HASLAM will sell by Auction, on WEDNESDAY, Nov. 21, and FRIDAY, Nov. 23, 1849, at the Auction Mart, a large importation of the above; also a case of Dutch bulbs; Standard, Pillar, and Weeping hollies, on 8 to 10 feet stems; 1000 Vines, grown from the eye, &c. &c. Catalogues at the Mart, and of the Auctioneer, South Essex Nurseries, Epping.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MR. D. A. RAMSAY has received instructions to sell by Auction, on the Premises, Brompton Auction Ground, Fulham-road, Brompton (situate one mile from Hyde-park corner), on FRIDAY, Nov. 23, at 12 o'clock, by order of a florist declining the Business, and removed for convenience of Sale, a quantity of Camellias and Chrysanthemums of sorts, Lilium lancifolium, &c.; also some large specimens of Azaleas, Aloes, Aloes, Yucca, Camellia, &c.; some choice ornamental trees, with a quantity of Mushroom Spawn, 3000 Dutch bulbs, Tulips, Hoots, &c. May be viewed the day prior and morning of Sale.—Catalogues to be had of the principal Seedsmen, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton.

CHELSEA, OPPOSITE CREMORNE GARDENS.

MR. D. A. RAMSAY will sell by Auction, on the premises, King's-road, Chelsea, on TUESDAY, Nov. 20, and following day, at 12 o'clock, without reserve, by order of Messrs. DENNIS, all the uncleared lots of NURSERY STOCK, consisting of 2000 Aucubas, Laurustinus, Laurel, Holly, &c.; a large quantity of Mulberry Trees of all sizes, the prize collection of Gooseberries, standard and dwarf Roses, new silver-striped Ivy and other Creepers, a choice collection of large Camellias, standard Geraniums and Azalea indica, with about 100 species of Yucca, Aloes, Echinocactus, Cereus, and Mammillaria. May be viewed prior to the sale. Catalogues to be had on the premises; of the principal Seedsmen; and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, London.

D. A. RAMSAY begs leave to offer his services to the Trade and others, as an AUCTIONEER, VALUER, &c., and trusts that by devoting his personal attention, with strictly moderate charges, to give satisfaction.—References given, and letters addressed to Brompton Nursery, Fulham-road, Brompton, promptly attended to.

N.B. Parcels of Stock received and offered for Sale by Auction on the above premises. Terms sent on application.

TO MARKET GARDENERS AND FLORISTS.

TO BE LET, with immediate possession, Seven Acres of RICH MARKET GARDEN GROUND, at Putney, Surrey, a quarter of a mile from the Bridge and the Railway, well furnished, with Cottage, Greenhouse, Forcing Pits and Sheds, and Fruit Trees. Coming-in only 60*l.* for the whole, the lowest. Lease, 14 years; rent only 45*l.*—Apply at Mr. BARNETT'S Offices, 2, Bell-yard, Doctors' Commons, London.

ESSEX.—TO NURSERYMEN, HORTICULTURISTS, FLORISTS, AND MARKET GARDENERS.

TO BE LET, with immediate possession, the singularly desirable Estate known as GLAZENWOOD, for many years occupied by Mr. Curtis, and situate near to the towns of Braintree and Coggeshall, and within 2½ miles of a Railway Station. It comprises a Villa residence, a commodious Messuage, a large Conservatory, Counting-house, Barn, Fruit-rooms, Stable, and other convenient Buildings, with about 45 acres of superior Land, of which 10 acres, or thereabouts, form the celebrated American Gardens and Nursery Grounds; the remainder is chiefly planted with the choicest Fruit Trees, and the whole abounds with choice stock in every variety for which these grounds have for so many years been so justly celebrated.—For Rent and other particulars, apply to Messrs. BEAUMONT and THOMPSON, 19, Lincoln's-inn-fields, London; or to Messrs. COOK and SONS, Land Agents and Auctioneers, Stratford St. Mary, Suffolk.

DR. NEWINGTON'S SCIENTIFIC IMPLEMENTS OF AGRICULTURE.—DR. NEWINGTON begs to propose the following conditions with respect to the challenge offered by Mr. J. ROSS in last week's *Gardeners' Chronicle*. Should these conditions not be acceptable to Mr. R., probably he would state his objections in the same public manner as he offered the challenge. Dr. N. does not often indulge fancies of this kind, but as Mr. Ross seems to think the judges at Norwich did not award the prize fairly, Dr N. is willing to give him another opportunity of testing his implements. To save Mr. Ross trouble and expense, Dr. N. will propose conditions, and it is presumed that the party who fulfils most of them will be declared the victor. 1. That each party dibble a certain portion of land in a given time. 2. That a certain number of grains (the number to be agreed on beforehand) be deposited in each hole (the number of grains to be tested by making 500 deposits in a box). 3. That no grains be broken or crushed by the machines. This to be ascertained during the 500 deposits, and the seed to be examined beforehand. 4. That the corn be deposited in rows perfectly straight. 5. That the distance between row and row be precisely uniform, likewise between hole and hole. 6. That all the seed be buried at an uniform depth, the depth to be agreed on beforehand. 7. That the implement which makes the smaller holes be considered the better, the size of the holes being of great consequence in dibbling. Should Mr. Ross wish the contest to come off immediately, he must name the day and a disinterested person to hold the stakes. It is presumed that Dr N., being the acceptor of the challenge, would have the choice of one of his own implements — he would give the preference to one of his recently invented Wheel-dibbles, Mr. J. Ross being allowed to bring any implement he thinks proper against him. As this contest will not of itself be sufficiently exciting to draw together a large assemblage of people, Dr. N. will promise to exhibit at the same time the working of all his new implements, which will also be exhibited at the Smithfield Show. He almost fears to make public these implements, as the labour already is excessive. He trusts no one will write to him on the subject, but wait for the exhibition. It has been no recreation to him of late; but he hopes he shall now be enabled to make satisfactory arrangements with a party to conduct the whole of the business part for him; the undertaking will then be carried on on a scale to satisfy the demand. The first of the new implements he has only patented a few days; with it he intends banishing altogether the barbarous system of casting 3 bushels of seed on to the surface of the earth, which plan is not even adopted by the savages of New Zealand; they do take a little trouble to deposit their seed evenly. However averse farmers may be to deviate from the course of their forefathers, still the pocket is a strong persuader. Dr. N. guarantees to save every broadcaster 2*l.* in seed every sowing day; he imagines that no one with any brains would object to having his corn in rows if he could get it evenly deposited there for 3*d* per acre. Dr. N. proposes to introduce to the broadcasters an implement which shall deposit evenly either 2 pecks or 3 bushels per acre; it is not a Drill, as it has no coulters; but by the addition of coulters it forms a most compact Drop-drill, and no Drill has been hitherto made that will drop the corn so evenly, and no Drill has yet been invented on so simple a principle; even with from 10 to 12 coulters, with shifting boxes to each coulter, the selling price would not amount to more than 6*l.* or 7*l.* The patent covers both Implements. The depositing the seed at stated intervals is to carry out the Inventor's system of allowing the plants to grow in circles. Dr. N. would guarantee that a man should sow 8 acres a day with this implement. If he walks at the rate of two miles and a half an hour, the seed is deposited at intervals of 4 inches, as many grains at each interval as may be required; but if the man walks faster, the grain is sown in a continuous stream. The Inventor will also exhibit a Hand-Subsoiler, with which a man, or even a lad, breaks up the hard and compact soil beneath the plough to the depth of from 3 to 5 inches, according to the nature of the soil. A Single-horse Plough, which he invented accidentally, having discovered the proper draught and form during the construction of a hand-plough, the hand being a good test of draught. The Hand-Plough produces a tilth of 8 inches; if a lad follows behind with the Subsoiler, and if the land be not remarkably stiff and wet, the Hand-Plough takes a slice of 6 inches wide by 4 inches deep. The Hand-Drill-hoes and Scarifiers, with all the fittings, will also be exhibited; likewise a small, but very efficient Horse-Cultivator, shifting both as to depth and width, the draught being the same as that of his Hand-Drill-Hoe. Other implements are also in preparation, and will, if ready, be exhibited. Mr. Mitchell, formerly of 62, Charing-Cross, is no longer Dr. NEWINGTON'S agent, neither is he authorised to receive money or orders. When satisfactory arrangements have been entered into, it will be stated to whom parties may apply.—Knole Park, Frant, near Tonbridge Wells, Kent.

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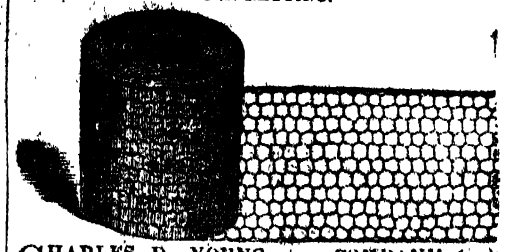

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MESSRS. PLATZ AND SON beg to inform the readers of the *Gardeners' Chronicle* that their LIST of FLOWER, KITCHEN-GARDEN, and other SEEDS, is now ready for delivery, and that copies of the same may be had at the Office of this Paper.—Erfurt, Prussia.

SCOTCH FIR SEEDLINGS.

THE SUBSCRIBERS have this season a large Stock of 2-year Seedling SCOTCH FIR, fine strong plants, which they are prepared to offer to the trade on very moderate terms. Prices (and if necessary samples) may be had on application. There is regular steam communication to Edinburgh and Glasgow, also to London during the greater part of the year.—HOWDEN BROTHERS (late Lawson and Smith), Inverness.
Inverness Nurseries, Nov 24

ROSES.

E. DENYER begs to inform his friends and the public in general that he has a very large stock of Standard Roses, the prices much reduced, 15s to 20s per dozen; also Fruit Trees, Evergreen Shrubs, and Ornamental Trees of the finest growth, in large quantities, at low prices A Catalogue sent on application, on receipt of two postage stamps, to EDWARD DENYER, Nurseryman, Loughborough-road, Brixton, near London.

E. D informs his friends that he has no Seed-shop in London.

QUICK THORN.—Fifty Thousand of the above, three years transplanted, from 2 to 3 feet, extraordinarily fine, bushy, and fibrous rooted, at 8s per 1000, a less quantity, 10s per 1000. *Delivered at any railway station in London free of carriage, for cash only.* A sample sent if required.—ROBERT JOSLING, General Seed Warehouse, St Alban's, Herts

FREE TRADE IN SEEDS

J. G. WAITE'S Prices of GARDEN SEEDS, &c, is now ready, and can be had, on application SCHIZANTHUS RETUSUS ALBA, 2s 6d per packet.—Seed Establishment, 181, High Holborn, London

NEW AND CHEAP

J. HINE'S LIST OF PELARGONIUMS, containing most of the leading varieties, is now ready, and may be had on application. Per dozen, purchaser's selection, 21s Plants very strong. No charge made for hamper or package, and plants put in to compensate for carriage
Providence Nursery, Ramsgate, Kent

TO SEEDSMEN AND MARKET GARDENERS.

W. J. EPPS begs to offer the following SEEDS, which have been grown from the finest selected stocks possible and may be depended on as neat and genuine The prices are exceedingly low, which will be sent on application, also samples if required.

Skirving's Purple-top Swede	BROCCOLI.
White Belgian Carrot	Early Purple Sprouting
Parsnip	Grainge's Early White
Long red Mangold Wurzel	Brimstone. Invisible
Yellow Globe ditto	Winter Imperial
PEAS.	Danish
Knight's dwarf white Marrow	Chapple's Cream
Do. do blue do. do.	Adams' fine Early White
Burbridge's Eclipse or Stubbs' Dwarf	
Scimetar	Shilling's Queen Cabbage
Indented Marrow	Cress
	Green curled Savoy.

High-street, Maidstone, Nov. 24.

TO NURSERYMEN, PLANTERS, &c.

THOMAS KENNEDY AND CO., NURSERYMEN, Dumfries, beg to intimate to the Trade and others, that a part of their extensive Nursery Grounds being shortly wanted for building and other purposes, and in order to have the ground cleared, they have commenced selling off a part of their stock of fine healthy and well rooted transplanted TREES at reduced prices, viz.:

300,000 Larch Fir, 1 to 2 feet.	20,000 Do., 3 to 4 feet.
200,000 Do. do., 2 to 3½ feet.	20,000 Alder, 2 to 4 feet.
250,000 Do. do., twice transplanted, 1½ to 2½ feet.	10,000 Birch, 1 to 2 feet.
50,000 Norway Spruce, 9 to 12 inches.	20,000 Beech, 1½ to 2½ feet.
50,000 Norway Spruce, 1 to 2 ft.	10,000 Do., 2 to 3 feet.
50,000 Scotch Fir, 3 years old.	20,000 Hornbeam, 2, 3, and 4 feet.
50,000 Do do., 4 years old.	10,000 Sycamore, 2, 3, and 4 ft.
50,000 Silver Fir, 9, 12, and 18 inches.	500,000 five years old Whitethorn Quicksets.
10,000 Balm of Gilead.	600,000 six years old Whitethorn Quicksets, extra strong.
30,000 Oak, 1½ to 2½ feet.	

A large Stock of Standard and Dwarf Fruit Trees, Gooseberry and Currant Trees, Evergreen and Flowering Shrubs, &c. Prices and samples will be furnished on application.
Dumfries, Nov. 24.

ROBERT GLENDINNING begs to offer the following GRAPE VINES, RAISED FROM EYES, with 4 feet of ripened wood, 3s. 6d. per plant, except those marked with an asterisk, which are 5s. each.

Hamburgh Black,	Frontignan, Grizzly,
„ Wilmot's,	Esperione,
* „ Pope's,	Grove-end Sweetwater,
* „ Mill Hill,	Large White ditto,
* Muscat, Reeves's,	Old ditto,
* „ Barnes's,	Black Prince,
„ Cannon Hall,	Black Cluster,
„ Alexandria,	Black Damascus,
„ Muscadine,	Raisin de Calabre,
Chasselas Musqué,	West St. Peter's, (Oldaker's),
„ de Fontainebleau,	White or Royal Muscadine,
„ Variegated,	Wortley Hall Seedling,
Frontignan, Black,	Braddick's Sweetwater.
„ White,	

Catalogues of Stove, Greenhouse, Hardy, and Ornamental Plants, and Fruit Trees, may be obtained on application.
Chiswick Nursery, near London.

CORNWELL'S "VICTORIA" RASPBERRIES

G. CORNWELL is now sending out Strong Canes of the above, at 25s. per 100; or 3s 6d. per dozen. To be had at E CHARLWOOD'S, Covent-garden; NOBLE'S, Fleet-street; and of GEORGE CORNWELL, Market-Gardener Barnet, Herts.

W. FROMOW begs to offer to the public the following: Irish Ivy, Virginian Creeper, Climbing Roses, Pyrus japonica, White Jasmine, Evergreens, &c, all in pots, from 6d to 1s per plant, Box Edging 6d per yard, fine Gooseberries and Currants 3s per dozen, also a general Nursery stock at very moderate prices.
Turnham green Nursery, near London.

MYATT'S LINNÆUS RHUBARB

J. MYATT AND SONS can confidently recommend this variety as the best in cultivation. The most satisfactory proof of this assertion is the fact that the Market Gardeners round London and Manchester have planted the Linnæus Rhubarb more extensively than any other variety It is extraordinarily productive and about a fortnight earlier than the Victoria, added to this, it is held in general esteem for preserving and all culinary purposes One-year planted roots, 1s 6d ditto, Mitchell's Royal Albert, 1s 6d., Victoria, 9d The usual Trade allowance.—Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford.—Nov 24

TO ORNAMENTAL PLANTERS.

WHITLEY AND OSBORN, of FULHAM, near LONDON, respectfully solicit attention to their Extensive Collection of HARDY TREES AND SHRUBS, indicated by their Catalogue, the nomenclature of which corresponds as far as practicable with that of Loudon's "Arboretum Britannicum." Their stock on sale is healthy and well grown, and, for collections, the advertisers submit the following rate of prices.

1500 species and varieties	for the sum of	£150
1000 ditto	ditto	65
500 ditto	ditto	27
300 ditto	ditto	13
200 ditto	ditto	7

CONIFERÆ, CUPRESSINÆ, AND TAXACEÆ.

Of these, 150 species and varieties supplied for the sum of 50l For any intermediate number, or individual plants of the above, the prices will be furnished on application.

N B The prices above quoted are upon the assumption that the selection be left to WHITLEY and OSBORN, but if the purchaser desire to make the selection, the prices will vary in proportion to the sorts required

FRUIT TREES.

All the most approved kinds in cultivation true to name, are grown for sale by WHITLEY and OSBORN

Also STOVE, GREENHOUSE, and HERBACEOUS PLANTS in great variety

And a collection of the best varieties of ROSES.—Standards, Climbers, and Dwarfs

AGRICULTURAL, KITCHEN GARDEN, and FLOWER SEEDS, at the lowest prices compatible with their genuine character

Catalogues of the above may be had on application, and WHITLEY and OSBORN think it due to themselves to say that every article enumerated therein is in their possession, and may be seen at their establishment

Men of first-rate ability and character are waiting in this establishment for appointments as Gardeners, or as Gardener and Bailiff.

SUPERB NEW FANCY DAHLIA, LIDDIARD'S MISS COMPTON

E. SPARY, FLORIST, SEEDSMAN, &c., Queen's Graperies (near the German Spa), Park-street, Brighton, begs respectfully to inform his friends and the Trade, that he has purchased of Mr Liddiard the entire stock of the above Seedling, which has been successfully exhibited at the Surrey Gardens, Shacklewell, Slough, and Metropolitan Shows, and awarded with First-class Certificates, also half Mr Staines' money prize, at Slough, being divided between Miss Compton and Lady Grenville (Bragg's), the only places exhibited at Dry roots will be let out to the Trade at 5l. each, if subscribers enough by the 6th of December next E S. has a few roots to spare of "Flora" (Cook's) and "Buffalo Girl" (Cook's) at the below named prices

MISS COMPTON (LIDDIARD).—Salmon-scarlet tipped with white, first-rate petal and form, being in new colour, will prove an acquisition to the Fancy Class exhibitors. Height, 3 feet 6 inches; plants in May, 10s. 6d.

FLORA (COOK'S).—Crimson red, with a slight tip of yellow, excellent form and centre, First-class Certificates at the London Floricultural, Rosherville Gardens, &c, 1848, being nearly lost, was not let out in May, Height, 3 feet; plants, 7s 6d, ground roots, [illegible]

BUFFALO GIRL (COOK'S).—Dark buff, fine form and outline, a most desirable show flower (few plants let out in May last), has proved a successful show flower, see the report of the Metropolitan Shows. Height, 3 feet; plants in May, 5l. 6d., ground roots, 1l. 1s. Early orders required. Post-office orders from unknown applicants.—Park-street, Brighton, [illegible]

THE FIRE ANNIHILATOR COMPANY.
PHILLIPS'S PATENT.

MR. PHILLIPS'S invention for extinguishing fires supplies the ready means of saving not only Property but Life from that destructive element. The Machines sold according to the scale of prices below, are available for Houses, Ships, Manufactories, and Warehouses, as well as for Farming Property, viz., Out-buildings and stacks of Hay or Corn.

The vapour given out from the Machines is producible at pleasure in a few seconds after any fire has been discovered, and extinguishes not only the flames arising from the ignited materials of property in general, but also has the same power over those caused by tar, turpentine, oil, sugar, and other highly inflammable substances upon which, when in combustion, water has no effect.

Stationary Machines fixed for the protection of Mansions, Manufactories, Theatres, Dockyards, and other large premises.

Size of Machine.	Prices including one Charge.	Price of each spare Charge.
1st, or A	£3 0 0	£0 5 0
2d, or B	4 0 0	[illegible]
3d, or C	5 0 0	0 10 [illegible]
4th, or D	6 0 0	0 12 [illegible]
5th, or E	7 0 0	0 14 [illegible]

The Machines can be made to order of any size, at a proportionate price.

Applications to be addressed to the Secretary of the Company, 105, Leadenhall-street, London.

JACKSON'S IMPROVED KIDNEY, THE MOST PROLIFIC OF EARLY POTATOES.

THOMAS JACKSON AND SON have much pleasure in announcing that in consequence of their having a very heavy crop of their IMPROVED KIDNEY POTATO, they have reduced its price from 15s to 10s per bushel. All orders of one bushel or more delivered free in London, or at any station on the South Western Railway.
Nursery, Kingston, Surrey, Nov 24.

AMERICAN PLANTS.

HOSEA WATERER begs to announce he has just published a New and Complete Catalogue of his AMERICAN and CONIFEROUS PLANTS, which may be had on application, inclosing two stamps for postage.
HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

BENJAMIN R CANT, St. John's-street Nursery, Colchester, has now ready for delivery, strong well-established plants of the following

GERANIUM, BOYLE'S CRUSADER	[illegible] each.
TOPPING'S BRILLIANT	7s. 6d. „
FUCHSIA SPECTABILIS	7s. 6d. „

The Three for 15s, carriage and package free to London. Post-office orders, or reference, requested from unknown correspondents The usual discount to the trade.

RENDLE'S NURSERY, PLYMOUTH.
ESTABLISHED 1785.

THORNS OR QUICKS.—10 000 FINE TRANSPLANTED THORNS from 12 to 15 inches for [illegible]. [illegible] One year old Seedlings for 15s.

LARCH.—10,000 One-year old Seedlings for 20s.

SCOTCH.—10 000 One year old Seedlings for 15s.

PEACHES AND NECTARINES.—Fine Dwarf Trees or Maiden at 15s per dozen, small *Trained* Trees from 24s. to 30s per dozen, *fine selected Dwarf Trained* at 50s. per dozen. Comprising all the best sorts in cultivation, true to name.

RHUBARB "MITCHELL'S PRINCE ALBERT."—This has been fully proved to be the best early variety known. We have more than 1000 strong, large and well-established roots, at 20s. per dozen *These will produce abundantly next spring.*—Smaller roots 12s per dozen

RHUBARB, "MYATT'S VICTORIA."—Very strong roots, 12s. per dozen, smaller roots, 9s per dozen.

RASPBERRIES, RENDLE'S LARGE BEEHIVE."—This is a large handsome variety very prolific and delicious flavour, and has given the most complete satisfaction. Strong Canes, 20s. per 100 or 3s per dozen "YOUELL'S FASTOLFF" 10s per 100.

STRAWBERRIES "MYATT'S ELEANOR," 10s per 100; Ochill's Black Prince, 12s 6d per 100, Elton, 5s. per 100, Mammoth, 7s 6d per 100, Cole's Prolific, 5s per 100, Cooper's Seedling, 5s. per 100

CEDARS OF LEBANON.—We have a large stock of these in pots Good Plants, 18 inches, 12s. per dozen, 3 feet, 36s. per dozen Large handsome Plants in Pots, 5 to 6 feet, 5s. each, or one quarter the price usually charged. *We have a large stock which must be cleared*

TURKEY OAKS.—Fine, Handsome Trees, 4 feet high, well transplanted 80s per 1000, worth 15s. per 100.

BEST DOUBLE RUSSIAN MATS, [illegible] per 100

BLACK NAPLES CURRANTS.—Very superior to the old sort, 4s per doz

GOOSEBERRIES.—Some of the very best varieties in cultivation 30s per 100

PORTUGAL LAURELS.—An immense stock will be sold unusually low Fine plants, 18 inch, bushy, 20s. per 100; 3 feet, 30s per 100; 4 feet, 40s per 100

BERBERIS (MAHONIA) AQUIFOLIUM.—A very large quantity 18 inches, 16s per 100. This is a fine shrub for underwood.

Weigela rosea, strong plants, 12 inches, 8s. per dozen; Parnettia mucronata and floribunda, 6s per dozen, Ribes, double red, and albidum, strong plants, 18 inches, 6s. per dozen.

SEAKALE and ASPARAGUS.—In large quantities, from 10s. to 20s. per 1000.

Our new Autumnal Catalogue is just published, and will be sent, gratis, to any application.

Remittance, or reference [illegible] from unknown correspondents.

All orders [illegible] free [illegible] of [illegible] the [illegible], Bristol and Exeter, or [illegible]. Steamers from this port to [illegible], Falmouth, Belfast, and Glasgow [illegible] a week.

The South Devon Railway is [illegible] open to Plymouth, the station [illegible] our premises. For Catalogues and [illegible] apply to

[illegible] RENDLE and Co., Union-road, Plymouth.
ESTABLISHED 1785.

TO PLANTERS.

ARAUCARIA IMBRICATA AND CEDRUS DEODARA.

YOUELL AND CO. most respectfully solicit the attention of the Nobility and Planters of HARDY ORNAMENTAL EVERGREEN TREES to their extensive and healthy stock of the above; and, being the largest holders in the country, are enabled to offer them at the following prices (in pots).

ARAUCARIA IMBRICATA, 1 foot (fine) 18s. per dozen.
" " 1½ foot, 42s. per dozen.
" " 2 to 2½ feet, fine handsome grown plants, 8l. per dozen.

CEDRUS DEODARA, 1 to 1½ foot, 5l. per 100.
" " 2 feet, 10l. per 100.

Catalogues of their collection of rare and Hardy Coniferæ can be had on application.

THE FINEST CARNATIONS, PICOTEES, AND PINKS.

YOUELL AND CO.'S Extensive and Celebrated Collection of the above are this season unusually strong and healthy, and are now ready for sending out, in fine well-rooted plants, to any part of the United Kingdom, or for exportation, at the following prices:

25 pairs of finest first-rate show varieties of Carnations and Picotees		£5	0 0
12 pairs do.	do. do.	2	10 0
25 pairs of very fine show varieties of do.	do.	3	0 0
12 do.	do. do.	1l. 4s. to 1	10 0
Fine mixed border ditto—per dozen pairs		0	12 0
True old Clove—per pair		0	2 0

PINKS, finest first-class show flowers, 12s., 18s., and 24s. per dozen pairs.
PANSIES, do. do., 10s. to 18s. per dozen.
CAMELLIAS of the newest and best kinds, with flower-buds, 30s. per dozen.
CINERARIAS, do. do., 12s. to 18s. per dozen.
ERICAS, comprising the best autumn and spring flowering kinds, 12s. to 18s. per dozen.
ROSES, Standards, Half-standards, and Dwarfs, of the finest kinds in cultivation, 12s. to 18s. per dozen.

THE FINEST DUTCH HYACINTHS, &c.

YOUELL AND CO. have received their importation of the above in the finest condition, and are enabled to offer very superior HYACINTHS by name, comprising double and single Red, Blue, White, and Yellow, at 6s., 9s., and 12s. per doz.
HERBACEOUS PLANTS (hardy), of the very best sorts, 6s. and 9s. per doz.

TRUE FASTOLFF RASPBERRY.

Y. and Co. beg to announce they are now executing orders for the above in fine strong Canes of the same stock as they had the honour of supplying Her Majesty's Gardens and most of the Nobility. 15s. per 100.
Fine large WHITE RASPBERRY, 3s. per dozen.
Also fine trained and maiden Peaches, Nectarines, Apricots, Plums, Cherries, Pears, and Apples of the most esteemed kinds, warranted true to name.

STRAWBERRIES.

Agents for the sale of Ritley's Goliah Strawberry, very hardy, large, and of delicious Pine-apple flavour, at 12s. per doz.
Fine Giant Asparagus, 2 and 3 years old, strong, 2s. 6d. and 3s. 6d. per 100. Sea Kale, strong, 2s. per dozen.
RHUBARB Youell's Tobolsk, the earliest known, 9s. and 12s. per dozen; Linnæus (Myatt's), 2s. each; Prince Albert (Mitchell's), 2s. each, and Queen Victoria, 1s.
Post-office orders are respectfully requested from unknown correspondents. Nursery, Great Yarmouth.

LATE DUKE CHERRY.—This Cherry, which has been so highly spoken of by the Horticultural Society of London, can be supplied, with the following fine dwarf trained Plants, 3s. 6d. each.

Bigarreau	Florence
Elton	Morello
May Duke	Black Heart
Tartarian Black	Guigne, Early Purple
Black Eagle	Royal Duke

DWARF TRAINED PEARS, 3s. 6d. each.

Beurré, Easter	Monarch, Knight's
Beurré Rance	Seckel
Marie Louise	Glout Morceau
Ne plus Meuris	Incomparable, Bacon's
Citron des Carmes	Nans, Winter
Dunmore	Vicar of Winkfield

STANDARD TRAINED PEARS, at 5s. each.

Beurré, Easter	Dunmore
Beurré Rance	Glout Morceau
Citron des Carmes	Passe Colmar

With many other varieties of each.
The Catalogue of Roses, also of Trees and Shrubs, may be had by enclosing a twopenny stamp for each.
Great Berkhamstead Nurseries, Nov. 24.

IMPORTANT TO PARTIES PLANTING OR FENCING.
NURSERY STOCK FOR SALE.

TO BE SOLD, by MR. WILLIAM LAMB, NURSERYMAN and SEEDSMAN, in Selkirk, a large quantity of three years transplanted THORNS, fine, clean, well grown plants, at 5s. per 1000: Strong Seedling Thorns, 2s. per 1000. Also a lot of superior Larch, Spruce and Scotch Firs, two and three years transplanted; Oaks, 1, 1½, and 2 feet, &c., which will be sold at very low prices.
Free to the Galashiels Station of the Edinburgh and Berwick branch of the North British Railway.
Selkirk, N.B., Nov. 24.

INVERNESS NURSERIES.

HOWDEN BROTHERS (late LAWSON and SMITH), NURSERY and SEEDSMEN, Inverness, are prepared to receive orders for every description of FOREST AND ORNAMENTAL TREES, SHRUBS, FRUIT TREES, &c., of which they have a full stock of well-grown plants. In particular, they would recommend to the notice of planters their stock of the more useful varieties of Pines, such as Scotch Fir, Larch, Spruce, &c. Also Austrian and Corsican Pines, which their Nurseries, from their situation and exposure, produce in great perfection, the plants being hardy and well rooted. Prices will be furnished free on application.
N.B. Compensation made for freight and carriage, by adding to the plants ordered.—Inverness, Nov. 24.

TO PLANTERS, &c.—The Subscribers having a large overstock of the following FOREST TREES, are disposed to sell them at very reduced prices. They have been transplanted, are healthy, and of fine quality. Prices on application.—SAMUEL FINNEY and Co., Gateshead Nursery, Newcastle-upon-Tyne.
Beech, 2 to 3 feet; Weeping Birch, 1½ to 2½ feet; Horse Chestnuts, 4 to 5 feet; Spanish ditto, 1½ to 2 feet and 2 to 3 feet; Bird Cherry, 2 to 3 feet; Hazel, 1 foot and 2 to 2½ feet; Lilac, purple and blue, 3 to 5 feet; Maple, English, 3 feet; Thorn, Quickset, 2 feet; Common Yews, 1½ to 2½ feet; Oak, seedling, 2 years old; Larch, ditto, 1 and 2 years old.

NEW GERANIUMS AT VERY LOW PRICES.

BASS AND BROWN beg to refer to their Advertisement of New Varieties last sent out, of which they have still fine strong plants, see *Gardeners' Chronicle*, dated October 20th and 27th. They also beg to refer to their Advertisement of CHOICE FLOWER ROOTS, of the same dates. Their Descriptive Priced Catalogue of Flower Roots, Select Roses, Hardy, Herbaceous, and Climbing Plants, &c., may be had on application.
Seed and Horticultural Establishment, Sudbury, Suffolk.

W. B. PAGE AND SON have to offer from their Agricultural and Horticultural Seed Establishment, Southampton—
PAGE'S PRODIGY PEAS, the earliest and most prolific dwarf variety in cultivation.
STUBBS' EARLY DWARF BLUE MARROW PEAS.—A very abundant cropper.
PAGE'S PROLIFIC LONG-POD BEANS.—Very early and dwarf.
AGRICULTURAL MAIZE, for green cattle food, and the dwarf varieties.
MARTYNIA LUTEA.—A most magnificent annual for the flower garden, producing gigantic leaves, and a spike of yellow flowers.
Forest Trees, Fruit Trees, Roses, Conifers; Stove, Greenhouse, Herbaceous, and Orchidaceous Plants in great variety.
Best Russia Mats, 100s. per 100; Second-hand Mats, 37s. 6d. per 100.
Wholesale and retail prices of Seeds, Trees, Shrubs, &c., may be had upon application.

THE HOPE NURSERIES, near BEDALE, YORKSHIRE.

WILLIAM MAY, F.H.S, begs to offer, at Free Trade prices, the Plants, Shrubs, &c., as below, which he assures purchasers are all of the best quality—young, healthy, strong plants, free and well grown. His collection of Herbaceous Plants has long held a high celebrity for correctness and quality, and comprise upwards of 700 species and varieties, selected by W. M. for display in the flower-garden, as also his stock of Hollyhocks, which he has been collecting and selecting for upwards of 25 years. The Hardy Shrubs are extensive in variety, being upwards of 800 species and varieties, and comprise all that is new and valuable, both deciduous and evergreen. To gentlemen forming Arboretums, this offers a very advantageous opportunity. The nomenclature adopted is after Loudon.

	s. d.
Hardy Showy Herbaceous Plants, by name—per 100	30 0
Hardy flowering Deciduous & Evergreen Shrubs, do. "	40 0
Hardy Dwarf Garden Roses, of select sorts, do. "	30 0
Hollyhocks, fine double sorts, all shades of colour, do. "	30 0
Do., finest double, for exhibition, do. per doz.	20 0
Heaths, fine Greenhouse sorts, bushy plants, do. "	12 0
Hard-wooded New Holland Plants, fine young bushy, do. per doz.	15 0
Indian Azaleas, splendid varieties, do. do. per doz.	18 0
Calceolarias, very select show varieties, do. "	20 0
Do., very good of older sorts, do. "	12 0
Cinerarias, including Henderson's 1848 & '49 vars., do. "	15 0
Currants, May's large late Victoria or Ruby Castle "	6 0

The Selection left to W. M.
Also Seeds collected from the best sorts of 1849 of Pansy, Hollyhock, Antirrhinum, Cineraria, and Calceolaria, in packets at 2s. 6d. and 5s. each.
N.B. A general and extensive supply of every description of Nursery Stock, at very reduced prices.

TO PLANTERS.

THE SUBSCRIBER has to offer the following:

SEEDLING FOREST TREES, &c.

Ash, 2 years, per 1000	3s. 6d	Elm, English, bedded 2 years, per 1000	12s. 0d
Alders, bedded, 2 years	5 0	Gorse, 1 year	7 0
Beech, 2 years	5 0	Hollies, 2 years	15 0
Broom, 3 years	20 0	Oaks, 2 years	4 0
Fir, Spruce, bed, 5s. to 8	0		

TRANSPLANTED FOREST AND ORNAMENTAL TREES

Acacias, 5 to 6 ft., p. 100	12s. 0d	Chestnut, Spanish, 3 to 4 feet, per 1000	50s. 0d
Alders, 8 to 10 feet	12 0	Chestnut, Horse, 6 to 8 feet, per 100	12 0
Ash, 3 to 4 feet, p. 1000	25 0	Do., 10 to 12 feet	25 0
" 4 to 5 feet	30 0		
Birch, 2 to 3 ft., p. 1000	25 0		

Elms, the true Huntingdon, raised here, 3 to 4 feet, 12s per 100
" " " 4 to 6 feet, 18s per 100
" " " 6 to 8 feet, 30s per 100
" " " 8 to 10 feet, 60s. per 100
" " " 10 to 12 feet, 80s. per 100
" Hertfordshire, at the same prices
" common English, 3 to 5 feet, 35s per 1000
Fir, Spruce, 2 to 3 feet, 30s per 1000; 3 to 4 feet, 40s. per 1000
" Silver, 2 to 3 feet, 50s. per 1000; 3 to 4 feet, 70s. per 1000
Hazel, 3 to 4 feet, 35s. per 1000, 4 to 5 feet, 45s. per 1000
Hornbeam, 8 to 10 feet, 30s per 100
Limes, red twigged, from layers, 2 to 8 feet, 12s. to 50s. per 100, 8 to 10 feet, 75s per 100, 10 to 12 feet, 100s. per 100
Maple, 2 to 3 feet, 25s per 1000, 3 to 4 feet, 30s. per 1000
" Norway, 8 to 10 feet, 25s. per 100
Oak, English, 3 to 4 feet, 35s per 1000, 4 to 6 feet, 50s. per 1000
" Turkey, 5 to 7 feet, 15s. per 100
Pine, Scotch, 3 to 4 feet, 30s per 1000, 4 to 5 feet, 35s per 1000
Poplar, Black Italian, 5 to 7 feet, 40s per 1000
" Lombardy, 7 to 8 feet, 25s p 100, 8 to 10 feet, 30s p 100
Sycamores, 3 to 4 feet, 25s per 1000, 4 to 5 feet, 30s. per 1000
Willows, Bedford, 4 to 5 ft., 30s per 1000; 5 to 6 ft., 35s. per 1000

The large sizes of the above are all fine, well rooted stuff, having been twice transplanted, and are admirably adapted for planting where game abounds.

ORNAMENTAL TREES AND SHRUBS.

Acacia (Robinia), several fine species, dwarfs, 9s. per dozen; standards, 12s. per doz
Ailanthus glandulosus, 8 to 9 feet, 9s to 12s. per doz.
Althæa frutex, a fine collection, 6s. to 9s. per doz.
Ash, 12 fine sorts, amongst which are the gold-barked, Chinese, heterophylla, &c., 12s. per doz.
Beech, Fern-leaved, 2 to 3 feet, 9s. per doz.; 3 to 5 feet, 12s. per doz.; 6 to 8 feet, 18s. per doz.
" Purple, 2 to 3 ft., 8s. per doz., 50s per 100; 3 to 4 ft, 10s. per doz., 75s per 100; 4 to 5 ft., 15s. per doz., 100s. per 100
" Weeping, 18s. per doz.
Barberry, several sorts, 6s. per doz., 40s. per 100
Birch, Poplar-leaved, 25s. per 100
Elms, fastigiata, curl-leaved, silver-striped, &c., 6s. to 12s p. doz.
Thorns, 24 varieties, including new double scarlet, dwarfs 10s. per doz., standards, 12s to 15s. per doz.
Laburnums, standards, fine, 6s. per doz., 40s. per 100
Lilacs, sorts, 20s per 100. Mountain Ash, 5 to 6 ft., 12s. per 100
Maple, Eagle's Claw and several choice kinds, 9s. per doz.
Oak, fine collection of American species, 6s. to 9s. per doz., 50s. per 100
Roses, a fine mixture for shrubberies, 21s. per 100
Aucuba japonica, 2 to 3 feet fine, 50s. per 100
Laurels, 2 to 3 feet, 20s; 3 to 4 feet, fine, 30s. per 100; Portugal, 2 to 3 feet, 50s. per 100; 3 to 4 feet, fine, 100s. per 100
Cedar, Red, 2 to 3 feet, very fine, 9s. per doz.; 3 to 4 feet, 12s.
Arbor-vitæ, Chinese and Siberian, 2 to 3 feet, 9s. per doz.; 3 to 4 feet, 12s. per doz
Other Ornamental Trees, Evergreens, &c., at similar charges, of which a Catalogue may be had.
Not less than 6 will be sold at the dozen price, 25 at the hundred price, and 500 at the thousand price. For smaller quantities a slight increase will be charged.
N.B.—The above charges are for ready money.
Susan Wood, Nurseries, Huntingdon.

MITCHELL'S ROYAL ALBERT RHUBARB

with undeniable supremacy over every other kind, it being the earliest, finest-flavoured, and most coloured ever yet grown; a most prolific bearer, and less gummy. For early forcing, it far surpasses all other kinds. If planted in a wine-cellar, or any place where the frost and light are kept from it, it will produce large stalks, of a magnificent red colour, in five or six weeks' time. W. M. has a large stock of roots, 1s. 6d. each; also Myatt's Linnæus, 1s. 6d., and Victoria, 9d. The usual allowance to the trade. Post-office orders made payable to WILLIAM MITCHELL, Enfield Highway, Middlesex, will meet with prompt attention.

MYATT'S NEW STRAWBERRY, "ELEANOR."

J. MYATT AND SONS are prepared to send out plants of this and the following varieties at the prices annexed: Myatt's Eleanor, 10s. 6d.; Fertilised Hautbois, 10s. 6d.; British Queen, 3s. 6d.; Globe, 3s. 6d.; Mammoth, 3s 6d.; Hooper's Seedling, 3s. 6d.; Keens' Seedling, 3s. 6d.; Pelvelsin's Comte de Paris, 7s. 6d.; Princess Royal, 7s. 6d.; Cuthill's Black Prince, 15s. per 100.
Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford, Kent.—Nov. 24.

IMPROVED GIANT ASPARAGUS, FOUR YEARS OLD, EXCELLENT FOR FORCING.

J. CHARTRES has a quantity of the above to dispose of at a moderate price; likewise 2-years old Roots, very strong and healthy.—Seed Warehouse, 74, King William-street, City, London, Nov. 24.

VIOLETS.

THE SWEET-SCENTED "VIOLA ARBOREA," OR, PERPETUAL TREE VIOLET.—This Violet has proved itself to be the best yet in cultivation; the blooms are as large as the double blue Hepatica, and it possesses the following superior qualities over all others of the class to which it belongs: one bloom is quite as large as half-a-dozen of the single variety, one plant will produce 10 times the quantity of flowers; it will bloom for eight months, and also very long stem to the flower, which is a great advantage in picking; the plant itself will make a beautiful specimen for the greenhouse or conservatory, as they grow to a very large size when grown in pots. I saw a plant in March last, in a conservatory, which had the almost incredible number of 385 expanded blooms on it at one time, with hundreds of buds then to come; it had then been in bloom the whole of the winter. It scented the conservatory so much, that had a person not seen the plant, they would have thought a bed of Violets was growing there. The head of this truly beautiful plant measures 3 feet 8 inches in circumference, and 16 inches in height; the branches do not hang down, but stand out straight from the plant. It is worth notice, that many hundreds of the old double Violet, and others, have been sold for the Viola Arborea, which have turned out a great disappointment to the purchasers. Large bushy plants, 6s. per dozen, smaller ones, 3s. per dozen, or 20s. per 100.
A remittance must accompany the order, either in cash, or in 1d. postage stamps to the amount. Any quantity of the above will be sent, postage and package free, to any part.
Sold by EDWARD TILEY, Nurseryman, Seedsman and Florist, 16, Pulteney-bridge, Bath, Somersetshire.

TO NOBLEMEN, GENTLEMEN, AND THE TRADE.

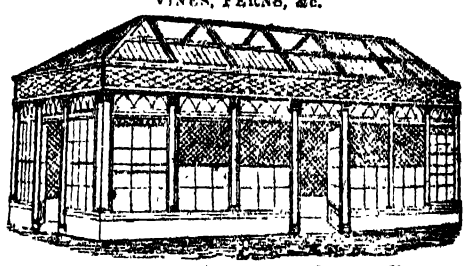
THE ADVERTISER respectfully calls attention to his healthy and superb collection of general NURSERY STOCK, and would at the same time particularly recommend the following, of which he has this season a very large quantity of unusually fine growth, which he can supply at exceedingly low prices, to be obtained on application:—Ash, Beech, Birch, Spanish Chestnuts, Elms, Scotch, Spruce, and Hemlock Spruce Firs, Weymouth Pine, English Oaks, Poplar, Whitethorn, &c.; Lucombe and Ilex Oaks, Common and Portugal Laurels, Berberis aquifolia, Phillyreas, variegated Hollies, Standard and Dwarf Roses, Trained and Quarter Fruit Trees, &c.
JAMES MACINTYRE Taunton Nurseries, Somerset.
N.B.—Railway communication direct to all parts of the kingdom.

COCHIN CHINA FOWLS, and other Fowls, for Sale.—Apply, by letter (post paid), to W. G., at Mr. MacLachlan's, 6, Birchin-lane, Lombard-street, London.

HEATING BY HOT WATER.

J. WEEKS AND Co., King's-road, Chelsea, Patentees and Manufacturers of HOT-WATER APPARATUS, Economical Boilers of all sizes; the fire warranted to last 15 hours without attention. To be seen in extensive operation at their Show Establishment, King's-road, Chelsea; and also at most of the Nobility and Gentlemen's Seats in the country, the London Nurseries, &c.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, FERNS, &c.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. They have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. By means of these houses, they are enabled to grow Stove, Greenhouse, Ferns, and other Plants, in such immense numbers, that they are sold at LESS THAN HALF-PRICE. Mats, Mushroom Spawn, and everything connected with the Nursery and Seed departments; Plans, Estimates, and Catalogues forwarded on application.

YARMOUTH BLOATERS—GENUINE AND OF THE FINEST QUALITY.

Yarmouth has for centuries been justly celebrated for its well-known "Yarmouth Bloaters," the delicacy of which, when obtained in their genuine state, requires no comment. Such an opportunity is now offered; and they can be forwarded to any part of the kingdom, or for exportation (on receipt of a post-office order), at 12s. per 100, package included; or in barrels, containing 250, for 28s.—All orders to be addressed to Mr. FREDERICK BROCKTON YOUELL, Church-square, Great Yarmouth.
The above will keep in fine condition for six months.

THE BEST EARLY PEAS.

Carriage Free to London, Bristol, or Basingstoke:

	Per Quart.	Per Gallon.
Sutton's Early Champion, 3 feet	1s. 0d. ..	3s. 6d.
Warner's Emperor, 3 feet	1 0 ..	3 6
Dancroft Rival, 2½ feet	1 4 ..	4 6
Fairbeard's Surprise, 4 feet	1 4 ..	4 6
Fairbeard's Champion of England, 4 to 5 feet	1 9 ..	6 0
Cormack's Prince Albert, 2 to 3 feet..	0 9 ..	2 6
Shilling's Early Grotto, 3 feet ..	1 0 ..	3 6
Early Warwicks, Frames, Mays, and Kents	0 9 ..	2 6

"CONQUEROR OF THE WEST," CUCUMBER, the finest White Spine Cucumber in existence, 2s. 6d. per packet.

TRUE ASHLEAF KIDNEY POTATOES, and a new red ditto, both quite free from disease, 2s. 6d. per peck.

JOHN SUTTON AND SONS, Reading, Berkshire, confidently recommend the above articles; also many other choice kinds of new Kitchen Garden Seeds, a Catalogue of which is just published.

N.B. Carriage free to London, Bristol, or Basingstoke, for all orders not less than 10s.

SPLENDID NEW GERANIUMS.

GEORGE PARSONS, FLORIST and SEEDSMAN, by appointment, to the QUEEN, begs to offer the undermentioned beautiful varieties, which he can confidently recommend.

Beck's Refulgent	5s 0d	Hoyle's Belle of the Village	5s 0d
,, Symmetry	5 0	,, Sparkler	5 0
,, Delicatissima	7 6	,, Prometheus	5 0
,, Princess	5 0	,, Abd el Kader	5 0
,, Star	7 6	,, Terpsichore	5 0
,, Sundown	5 0	,, Crusader	7 6
Storey's Mont Blanc	5 0	,, Flamingo	5 0
Hoyle's Rolla	5 0		

G. P. also begs to recommend his fine collection of Iris Germanica (the present being a good time to remove them), in collections of 50 splendid varieties, named, for 1l. 10s.

Western-road, Brighton, Nov 24.

HORTICULTURAL ESTABLISHMENT, BRACONDALE, NORWICH.

JOHN BELL, having disposed of the above, begs to inform Nurserymen and the Trade in general that he is SELLING OFF his NURSERY STOCK, at the following low prices, all warranted true and well worth their attention.

		£	s.	d.
Dwarf Maiden Peaches, Nectarines, and Apricots, including all the popular sorts, very fine plants, p. 100		3	0	0
Dwarf Maiden Plums	,,	2	10	0
Do. Cherries	,,	2	0	0
Do. Pears	,,	2	0	0
Do. Do., on Quince Stocks	,,	2	10	0
Do. Apples	,,	1	10	0
Fastolff Raspberry, strong canes, true ..	per 1000	3	0	0
Cedrus Deodara, one year old, fine	,,	10	0	0
Fine Spanish Chestnut, 8 to 10 feet	,,	3	10	0
Strong 3 years transplanted Whitethorn	,,	0	4	0
If 50,000 are ordered at once	,,	0	3	6

Strong Dwarf-trained Peaches, Nectarines, and Apricots, 24s. per doz. Plums, Pears, Apples, and Cherries, 20s per doz.

PLANTING SEASON.—NURSERY GROUNDS, RED LODGE, NORTH STONEHAM, NEAR SOUTHAMPTON. — An unlimited supply of every description of FOREST, FRUIT, AND ORNAMENTAL TREES, AMERICAN PLANTS, AND FLOWERING SHRUBS, may be procured from these extensive grounds, at the most reasonable prices, printed Catalogues of which may be had of the proprietor, WM. ROGERS, Sen., NURSERYMAN AND CONTRACTING PLANTER.

Transplanted Forest Trees, 1 to 2 feet, adapted for extensive Forest or Coppice Planting, usually sold by the thousand; and also of a larger size, for Ornamental Planting or immediate effect, from 3 to 12 feet, the prices varying from 25s. to 5l. p 100.

Ash, Beech, Birch, 15s. to 30s. per 1000; Spanish Chestnut, 20s., 30s., and 40s.; Larch Fir, 7s. 6d to 20s.; Spruce, 20s., 30s., and 40s.; Scotch, 10s., 15s., and 20s.; Pinaster, 10s., 15s., and 20s.; Sea Pine, adapted for exposure to the sea, 15s., 25s., and 40s.; Mahonia, for cover, 40s. to 80s.; Hazel, 15s., 20s., and 35s., English Oak, 15s., 20s., and 40s.; Poplar, 20s., 30s., and 40s., Quicks, 5s., 7s. 6d. and 10s.

Planting contracted for to any extent from 5l. to 20l. p. acre.

ORNAMENTAL TREES AND SHRUBS.

Rhododendron ponticum, 2 to 6 inches, 20s., 40s., and 80s per 1000; 1 foot, single stems, fit for working, 10s. per 100, 1¼ to 2 feet, strong, 20s. to 40s. per 100, fit for planting out at once to cover; 4 to 6 feet, single stem, for working the beautiful scarlet and other fine kinds, 50s. per 100. Tree Rhododendrons may thus become as generally cultivated as Tree Roses. Scarlet Rhododendrons, 18s. per dozen; hybrid scarlet, blue, lilac, and white, with large handsome trusses of flowers, 4 to 6 inches, 25s; 1 foot, 40s. per 100; Kalmia latifolia, 2 to 4 inches, 8s. to 12s. 6d. per 100; 1 to 2 feet, blooming buds, 50s. per 100; 2 to 3 feet, fine, 75s. per 100, Epigæa repens, 50s. per 100; and all other American plants at equally low prices.

Dwarf Rose Stocks for working, 8s. per 100; Single Camellias, 25s., 40s., and 50s. per 100, fit for working; Double Camellias, of sorts, on own roots, 6 to 9 inches, 12s. per dozen; Pinus (Abies) Douglasi, from seed, 6 to 9 inches, 10l. per 100 or 30s. per dozen; Arbutus, 6 to 12 inches, 8s. to 12s. per 100; 1 to 1½ feet, 20s. per 100; 2 feet, 30s. per 100; Laurel, 8s. to 20s. per 100; Laurustinus, budded, 40s. per 1000, 8s. per 100; Variegated Holly, 1 foot, 25s. per 100; Clematis azurea grandiflora, 6s. per dozen, 42s. per 100; Deutzia scabra, 2 feet, 12s. 6d. per 100; Common China Rose, 12s. 6d. per 100; Tree Roses of the most select kinds, 5l. per 100; Dwarf Roses, 50 sorts named, 50s. per 100; Double White, Double Red, and New Crimson Thorns, 40s. per 100, 6s. per dozen; Large Dutch Honeysuckles, 12s. 6d. per 100; Giant Irish Ivy, 8s. per 100.

The prices are for wholesale, if ordered in less quantities a higher price will be charged. All orders above 5l., carriage paid to London.

American purchasers will find great advantages in procuring their supplies from these grounds, from their proximity to the Docks whence the American Steam-packets take their departure, thus saving the delay and expenses of Land Carriage.

AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER has much pleasure in announcing he has published a Descriptive Catalogue of his extensive collection of RHODODENDRONS and other American plants, &c., which will be forwarded on application.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 24, 1849.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	Nov.	26	Medical ..... 8 P.M. Geographical ..... 8½ P.M.
TUESDAY,	—	27	Civil Engineers ..... 8 P.M. Medical and Chirurgical ..... 8½ P.M.
WEDNESDAY,	—	28	Geological ..... 8 P.M. Society of Arts ..... 8 P.M.
THURSDAY,	—	29	Antiquaries ..... 8 P.M. Botanical (Anniversary) ..... 8 P.M.
FRIDAY,	—	30	Royal (Anniversary) ..... 4 P.M.
SATURDAY,	Dec.	1	Horticultural ..... 2 P.M. Westminster Medical ..... 8 P.M.

IT was on New Year's Day, in the year 1837, that the celebrated Water-Lily, to which the name of VICTORIA REGIA was afterwards given, was first discovered by Mr. (now Sir ROBERT) SCHOMBURGK, who thus described the interesting event.

"While contending with the difficulties Nature "imposed in different forms to our progress up the "river Berbice (in British Guiana), we arrived "at a point where the river expanded, and formed "a currentless basin; some object on the southern "extremity of this basin attracted my attention; it "was impossible to form any idea what it could be, "and animating the crew to increase the rate of "their paddling, we were shortly afterwards oppo- "site the object which had raised my curiosity—a "vegetable wonder! All calamities were forgotten; "I felt as a botanist, and felt myself rewarded: a "gigantic leaf, from 5 to 6 feet in diameter, "salver-shaped, with a broad rim; of a light green "above, and a vivid crimson below, resting upon the "water. Quite in character with the wonderful "leaf was the luxuriant flower, consisting of many "hundred petals, passing in alternate tints from "pure white to rose and pink. The smooth water "was covered with the blossoms, and as I rowed "from one to the other I always observed some- "thing new to admire. The leaf, on its upper "surface, is of a bright green; in form almost "orbicular, except that on one side it is slightly "bent in; its diameter measured from 5 to 6 feet; "around the whole margin extended a rim, from "3 to 5 inches high, on the inside light green, "like the surface of the leaf, on the outside "like the leaf's lower surface, of a bright crimson. "The ribs are very prominent, almost an inch high, "radiating from a common centre; there are eight "principal ones, with a good many others, branch- "ing off from them; these are crossed again by a "membrane or bands at right angles, which gives "the whole the appearance of a spider's web, and "are beset with prickles; the veins contain air- "cells like the petiole and flower-stem. The "divisions of the ribs and bands are visible on the "upper surface of the leaf, by which it appears "areolated. The young leaf is convolute, and "expands but slowly. The prickly stem ascends "with the young leaf till it has reached the surface; "by the time it is developed, its own weight de- "presses the stem, and it floats on the water. The "stalk of the flower is an inch thick near the calyx, "and is studded with sharp elastic prickles, about "three quarters of an inch in length. The calyx is "four-leaved, each sepal upwards of 7 inches "in length, and 3 inches in breadth; at the base "they are thick, white inside, reddish brown and "prickly outside; the diameter is from 12 to "13 inches; on it rests the magnificent corolla, "which, when fully developed, completely covers "the calyx with its hundred petals. When "it first opens, it is white, with pink in the middle, "which spreads over the whole flower the more "it advances in age, and it is generally found the "next day altogether of a pink colour; as if to "enhance its beauty, it is sweet-scented. Like "others of its tribe, the petals and stamens pass "gradually into each other, and many petaloid "leaves may be observed which have vestiges of an "anther. The petals next to the leaves of the "calyx are fleshy, and possess air-cells, which "certainly must contribute to the buoyancy of the "flower. The seeds of the many-celled fruit are "numerous, and imbedded in a spongy substance. "We met the plants frequently afterwards, and "the higher we advanced the more gigantic they "became: we measured a leaf which was 6 feet 5 "inches in diameter, its rim 5½ inches high, and the "flower across 15 inches."

Such was the manner in which the zealous traveller spoke of the wonders which this Water-Lily presented to his delighted eyes; nor was there exaggeration in his description, as the event has shown.

Supposing it to be a species of Nymphæa, Sir R. SCHOMBURGK proposed that Her present Majesty should be asked to permit its second name to be that of VICTORIA; a request with which THE QUEEN was graciously pleased to comply. It however proved, upon examination in Europe, not to be a Nymphæa; and it was reserved for the writer of the present memorandum to have the honour of finally establishing it as a new genus, of which VICTORIA became the denomination.

The dispersion, by Professor LINDLEY, of a privately printed memoir upon the subject, elicited some further information, from which it appeared that the same, or a similar plant, had been previously seen in 1828, in a tributary of the River Plate, by M. D'ORBIGNY, a French traveller, and in a branch of the Amazons, in 1832, by Dr. POEPPIG; that its seeds are roasted and eaten by the natives, who call them *Water Maise;* and that it occupies large districts in all the lakes and tranquil tropical rivers of South America. M. D'ORBIGNY was not unnaturally annoyed at the honour of naming the VICTORIA having been taken from him by English naturalists, although unintentionally on their part. He had sent flowers and fruit to the Museum of Natural History in Paris as early as 1828; and there they had lain unnoticed and forgotten. We should be curious to know how long they would have been buried in the rubbish of our own British Museum.

We cannot pursue the botanical history further than by stating that Sir WM. HOOKER, having received seeds and important additional memoranda from Mr. THOMAS BRIDGES, collected the information here alluded to into a memoir published in 1847, and illustrated by four coloured folio plates.

As an English botanist enjoyed the good fortune first to make this plant known in a scientific manner, so has an English gardener had the honour of first causing it to produce its glorious blossoms in a hothouse. So long since as 1847 two plants were raised in the Royal Botanical Garden at Kew; and subsequently many others have vegetated there. Of these, one was obtained by Mr. PAXTON in the beginning of August last, and immediately transferred to Chatsworth. Such means of cultivating it as skill and experience suggested were provided, and in three months a flower appeared above water. On the 10th of August the plant was consigned to its tank; on the 14th of November a flower and leaf were produced before Her MAJESTY and Prince ALBERT, at Windsor; and on the 17th another flower expanded, as if to welcome to Chatsworth the noble Duke on his return from Ireland on that day.

This must be regarded as a very striking example of horticultural skill, and shows the importance of attending carefully to first principles in all experimental cultivation. How Mr PAXTON acted, we now proceed to show.

In a hothouse of sufficient dimensions, a tank was constructed 3 feet deep and 12 feet square, warmed by hot water circulating beneath. To this was added a ledge all round, 9 inches deep, 3½ feet wide, and heated by a triple row of small lead pipes, through which hot water circulated. By these means the tank was rendered 19 feet square, with a deep centre and shallow sides.

In order to keep the water in motion, a small wheel, Fig. III. *a*, was added at one corner; over that wheel water was caused to drop continually with force enough to keep the wheel constantly revolving; the water thus continually flowing into the tank was carried off by a small pipe in one of its corners near the bottom. In this way were secured the important advantages of the water being so often changed that it could not become stagnant, together with ceaseless gentle agitation. Nothing could be more like the natural state of a tranquil river. By the heating apparatus its temperature could also be regulated with facility. The thermometer has generally indicated 85°.

In the centre of the tank was introduced a hillock of earth (Fig. I.), consisting of *burnt loam* and peat. To the burning of the loam Mr. PAXTON attaches great importance; and thus agrees with the daily experience of those who employ burnt or charred materials in gardening. The physical condition of soil is much improved by the process, and the weeds and insects are destroyed. Mr. PAXTON is also of opinion that the removal by fire of all matters ready to enter into fermentation or rapid decomposition, when in contact with water heated to 85°, was in itself no inconsiderable cause of the success of his experiment; in addition to which it preserved the water perfectly translucent.

On the hillock thus prepared, the VICTORIA Lily was planted on the 10th of August; and on the 1st of November the first flower appeared. For some interesting details of the rate of growth, and other circumstances connected with the progress of the Lily, we refer to a paper in another column by Mr. GEORGE EYLES, who has the special charge of the plant at Chatsworth.

The largest leaf yet produced is nearly 5 feet in diameter; the largest flower, 10½ inches in diameter. The latter appears to be the size of those seen by BRIDGES; SCHOMBURGK, however, says that he saw flowers as much as 15 inches in diameter; and D'ORBIGNY says upwards of a foot. The leaves, too, although larger than any mentioned by BRIDGES, are inferior in magnitude to those found in Berbice, one of which measured 6 feet 5 inches in diameter.

It thus appears that, although skill has succeeded in compelling the VICTORIA Lily to expose her blossoms to the gaze of England, there is still something to improve; as might have been expected from the unfavourable circumstances under which the cultivation at Chatsworth was necessarily conducted. In one point, more especially, there is evidently much to accomplish. All travellers speak of the edges of the leaves being turned up; SCHOMBURGK says that he has seen the rim thus formed as much as 5½ inches high; D'ORBIGNY speaks of 2 inches. In the Chatsworth plant there is no rim, except when

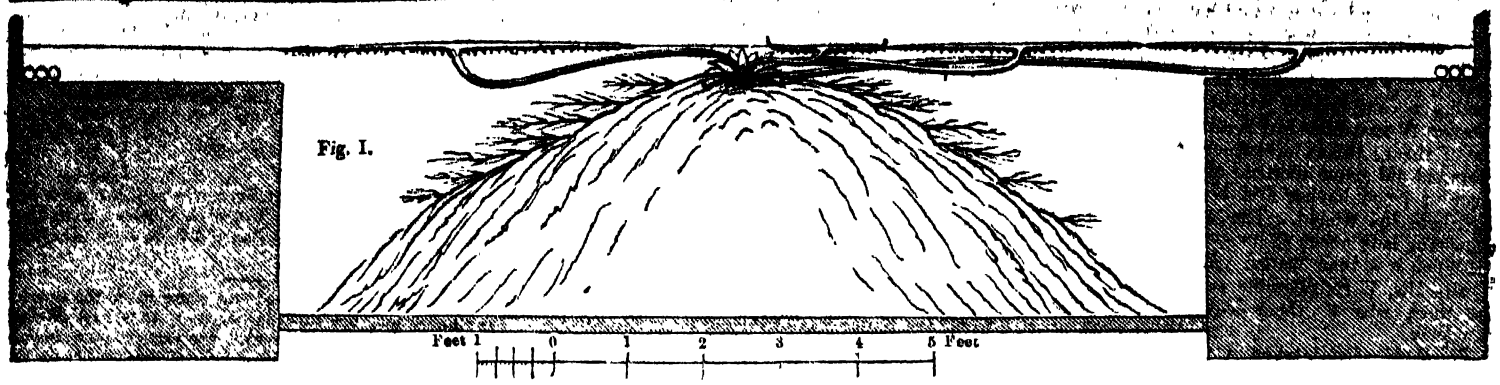
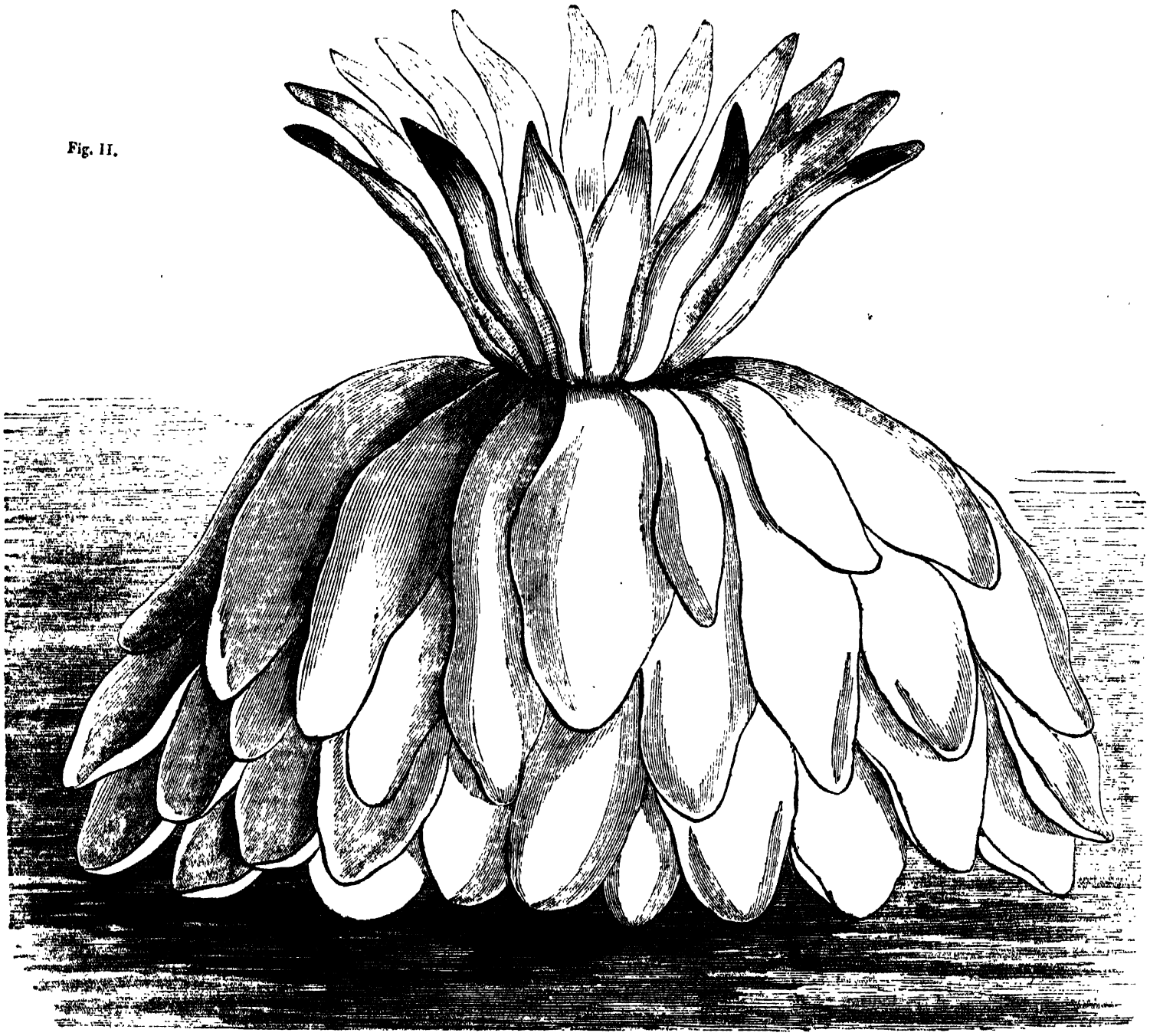


Fig. I.

Fig. II.



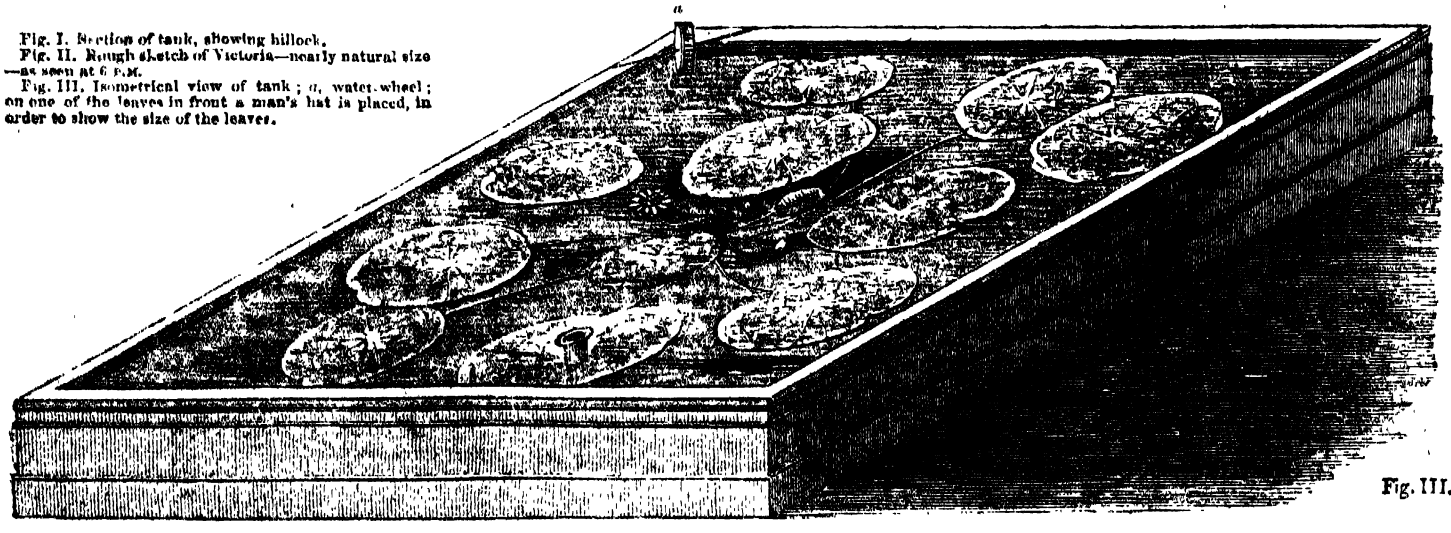


Fig. III.

Fig. I. Section of tank, showing hillock.
Fig. II. Rough sketch of Victoria—nearly natural size—as seen at 6 P.M.
Fig. III. Isometrical view of tank; *a*, water-wheel; on one of the leaves in front a man's hat is placed, in order to show the size of the leaves.

the leaves are very young. The leaves are, in fact, much more tender than could have been anticipated from parts of so large a size, which is perhaps owing to the rapidity of their formation. Nevertheless, they are so buoyant as to be capable of supporting a considerable weight. In the *Illustrated London News* a little girl is represented standing on one of them; this is no exaggeration. A child three years old did stand upon one of the leaves, a circular piece of wood having first been placed upon it to distribute the weight. The wood weighed 15 lbs., the young lady about 42 lbs.—in all, the weight was not much less than 60 lbs. An enormous quantity of air-cells, of considerable size, dispersed through the thick ribs of these leaves accounts for the buoyancy.

The flower itself, when it first opens, resembles the White Water-Lily, of a dazzling white, with its fine leathery petals forming a goblet of the most elegant proportions; but as the day advances it gradually expands till it becomes nearly flat; towards evening a faint blush becomes visible in the centre; the petals fall back more and more; and at last, about 6 o'clock, a sudden change occurs; in a few minutes the petals arrange themselves in the form of a snow-white hemisphere, whose edge reposes on the water, and the centre rises majestically at the summit, producing a diadem of rosy points. It has then the appearance roughly sketched at Fig. II., and constitutes one of the most elegant objects in nature. Shortly after, the expansion of the central parts proceeding, these points fall back; the stamens unfold in an interior coronet, the stigmas are laid bare, a grateful perfume rises into the air, and the great object of the flower, the fertilisation of the seeds, is accomplished. Then fold inwards the petals, the flower closes, the fairest of vegetable textures becomes wrinkled, decay begins, and the flower-stalk withdraws itself beneath the water, as if to veil the progress of corruption. But out of this decay arises a new living body; the fruit, curved downwards, swells rapidly, and in a short time the fruit, a prickly seed-vessel, is observed concealed beneath the floating leaves. Further than this the Victoria has not been watched; but travellers say that at last the ripened fruit rises majestically above the lake in the shape of a goblet of exquisite proportions.

Of the fragrance natural to the plant we have small experience. Bridges describes it in the following terms—"I had an opportunity of experiencing the fragrance of the flowers. Those I collected for preserving in spirits were unexpanded, but on the point of opening; on arriving at the Government House, in the town, I deposited them in my room, and returning after dark, I found to my surprise that all had blown and were exhaling a most delightful odour, which at first I compared to a rich Pine-apple, afterwards to a Melon, and then to the *Cherimoya*; but, indeed, it resembled none of these fruits, and I at length came to the decision that it was a most delicious scent, unlike every other, and peculiar to the noble flower that produced it." We must wait till the Lily blooms in a better month than November to appreciate the justice of this description.

Following the example set by Mr. Paxton, there is no lover of flowers, who has a hothouse at command, that may not hereafter be gratified by the possession of this vegetable wonder. If it should prove to be an annual, as some suppose, the facility with which it seems ready to produce seeds will ensure its permanence in the country. But upon that point there is much room for doubt: and Bridges pronounces himself distinctly in favour of its being a perennial. In the very interesting account of it, to which we have already referred, he says—

"With the assistance of the Indians, we got out of the water two entire plants, and, from their appearance, I should say the Victoria *is decidedly perennial*. Each plant had from 20 to 30 foot-stalks of flowers and leaves, in all stages; some nearly decayed to the base, others half-way down the stem, whilst others had just lost the floating portion. The same was observed in the petioles; some bearing the seed-vessel perfect, with ripe seed; others the expanded flower; and near the crown or centre of the plant was just issuing the tender flower-bud. With a knife we cut or trimmed the footstalks, when the trunk (if I may use the comparison) somewhat resembled a *Zamia*, and in length was about 18 inches or 2 feet. At the base, and between each footstalk, protrudes a mass or cluster of fleshy, hollow roots, about the size of a straw, or larger, and varying in colour from brown to white, or nearly so; a succession of these roots is formed, as the new leaves are thrown out from the centre of the plant, Nature having made a beautiful and wise provision for this plant, as in all her other works. The base of the trunk, or rather stem, situated in the soft mud, appears to decompose in proportion as new leaves and flowers issue from the centre, keeping the plant from elevating itself above water, which, but for such an arrangement, might be the case, from the rapidity of its growth." If these statements can be relied upon, the probability is, perhaps, in favour of its not being an annual.

That its natural habits are such as to render it perfectly well suited to artificial management is pointed out in a striking manner in another passage in this collector's letter to Sir William Hooker.

"The Victoria *grows*," he says, "*in* 4—6 *feet of water*, producing leaves and flowers, which rapidly decay and give place to others. From each plant there are seldom more than four or five leaves on the surface; but even these, in parts of the lake where the plants were numerous, almost covered the surface of the water, one leaf touching the other. The plant occupies almost exclusively the water, with the exception of a few floating aquatics of small dimensions, amongst which I saw a beautiful *Utricularia*. The blossoms rise 6 and 8 inches above the surface, expanding first in the evening, when they are pure white—changing finally (and by exposure to the sun) to a most beautiful pink or rose colour; flowers may be seen, at the same time, partaking of every tinge between the two hues, the recently expanded being pure white, and the adult rosy, almost sinking under water to ripen its seed and produce a new race of plants when required. The largest flowers I saw measured from 10 inches to 1 foot in diameter. From what I observed of the nature and habits of this most interesting plant, I conclude that it cannot and does not exist in any of the rivers where the immense rise and fall of 20 feet would leave it dry during many months of the year, especially in the season when there is no rain. The *lagoons*, being subject to little variation in the height of their waters, *are the places where it grows in all its beauty and grandeur*. The Victoria *appears to delight in parts of the lake fully exposed to the sun, and I observed that it did not exist where the trees overshaded the margins*."

In another column we publish some tables explanatory of the rate of growth of this curious plant. For the present we have only to recommend the plan on which it has been managed at Chatsworth as an example of the way in which all other tropical aquatics should be grown by those wish to see them in perfection. A tank containing Victoria, the *Nymphæas rubra*, *cærulea*, *stellata*, and *ampla*, the *Nelumbiums* of India, some *Sagittarias*, *Limnocharis*, and *Hydrocleys*, a *Papyrus* or two, with the *Pontederas*, would be one of the most beautiful spectacles the eye could rest upon.

ON THE ODOURS OF PLANTS AND THE MODES OF OBTAINING THEM.

"The forward Violet thus did I chide;
Sweet thief, whence didst thou steal thy sweet that swells,
If not from my love's breath?" Shakspeare.

Violet.—Both the white and blue varieties of this flower are used by perfumers for obtaining their delightful odour, which indeed is one of the masterpieces of his art. The true smelling principle or oil of Violet flowers has never yet been separated, but the odour is obtained indirectly in combination with spirits or oil, as mentioned in the process for Orange flowers and others, namely, by absorption or *enfleurage*, first over a fatty body, and afterwards by digesting the pommade thus formed in pure alcohol. As the Violet's odour is very delicate, it is not unusual for the manufacturer to assist its fragrance by digesting roughly-ground Iris or Orris root in the fat body prior to its being used for the *enfleurage* of the Violet, thus giving the latter more potency. The Iris or Orris root (which we have not noticed in its alphabetical place) much resembles the odour of Violet, and hence its preparations are often used in conjunction and as a substitute for that flower. Allowing pure spirit to stand over ground Orris for a few weeks is all that is necessary to abstract the odoriferous principle. The Cassie (Acacia Farnesiana) also resembles the Violet, and is by the perfumers used to increase the odour of the highly-prized "Extrait de Violette."

Wallflower.—Exquisite as the odour of this flower is, it is not used in perfumery, though no doubt it might be, and very successfully too, were the plant cultivated for that purpose. To this flower we would particularly direct attention, as one we consider well adapted for experiments on its odoriferous principle, which might lead to very profitable results. The modes for obtaining its odour that we would suggest to be tried are simple enough; to any quantity of fine and sweet Olive oil throw in daily as many flowers, without any of the green leaf, as can be conveniently procured in one week; strain the flowers from the oil with pressure in a coarse cloth; if it is thought requisite, repeat the operation—in fact, until the oil is sufficiently odorous. If the oil, however, after two or three operations, is still inodorous, or has only acquired a bitter or rancid smell, no further experiments need be tried, the thing is a failure. If, on the contrary, the oil becomes fragrant, we may proceed in good earnest—repeat the experiment, substituting for the oil an equal part of fine mutton suet and lard, kept just, and only, at a melting heat. After macerating the flowers in this for a week or so, and it is strained and cooled, cut it up and digest in pure spirit for a week or a fortnight; this will form, when drawn off (we anticipate), the first in this, or in any other country, real "Extract of Wallflowers" that has ever been prepared. The manufacturing perfumers of Paris and London imitate the Wallflower thus—

Extract of Fleur d'Orange	... ...	1 pint.
,, Vanille	... ...	½ pint.
,, Rose, from pommade	...	1 pint.
,, Orris	... ...	½ pint.
Essence of Almonds	... ...	½ drachm.

Winter Green (*Tricatalis*) is now and then used by the Parisian perfumers. The oil is obtained from the leaf by distillation; in England it is only used for scenting soap.

We have now terminated our remarks on the simple perfumes, and but little is necessary to be said on the compounds or bouquets, which are various mixtures of the above with certain substances of animal origin, as Musk, Civet, Ambergris, &c. The compound perfumes are the most distinct; there is one which is in constant use in the present day, and which takes its name from a Roman nobleman of ancient family, namely "Frangipane" or "Frangipani," who is said to have been the inventor thereof. It is a powder composed of every known spice in equal proportions, to which is added in weight ground Orris root equal to the whole, with one per cent. of musk and civet. A liquid of the same name, invented by a grandson of the above, one Mercutio Frangipani, is also in common use in Paris, prepared by digesting the Frangipane powder in proof spirit, which dissolves out the fragrant principles. It has the merit of being the most lasting perfume made.

Among other bouquets, few have had a more lasting reputation than that sold under the name of eau de Cologne, manufactured to an enormous extent at Cologne on the Rhine; it is difficult to approach the consumption of this article, but we are certainly within the limit in stating that 4,000,000 bottles are prepared annually, averaging to contain 3 oz. each. The forms for preparing it are as various as the inventive faculty of the perfumer or the distiller, as he styles himself. One of the best is the following:

Pure alcohol, 32° B	1 gall.
Essence of Bergamot	2 oz.
,, Lemon	2 oz.
,, Orange peel	2 oz.
,, Rosemary	1½ oz.
,, Petit grain	1 oz.
,, Neroli	2 oz.
,, Lavender	½ oz.
Tincture of Benzoin	1 oz.

Mix the whole with a tablespoonful of magnesia and filter; bottle it and let it remain in a temperate cellar from six to 12 months, it is then fit for use. Another universally admired bouquet is the so called "Hungary Water," which takes its name from one of the Queens of Hungary, who is said to have derived great benefit from a bath of it at the age of 75 years. It is prepared like eau de Cologne, but with more Rosemary and the addition of a little Esprit de Rose, subtracting from the form given above all the Lemon and Orange. With this we for the present conclude.

"Nor the sweet smell
Of different flowers in odour and in hue,
Can make me any longer story tell." Shakspeare.

PLAN OF STRIKING ROSES.

I have succeeded well with striking Roses in the following manner:—Take a pan 1 foot square by 8 inches deep, place in the bottom a few pieces of charcoal, and over this lay about 2 inches of the same broken very small; then fill up with equal parts of leaf-mould, peat, loam, and silver sand; mix the whole well together, and press firmly.

The proper time to select the cuttings I find to be when the wood is approaching ripeness in September; choose a dull day for the operation, and cut to a heel if possible; then insert the cuttings with a small dibble, so that the heel of the cutting may be near the charcoal at the bottom of the pan; press each cutting firmly in the soil, about an inch apart, and when the pan is full, give a good watering, and sprinkle the surface with silver sand and charcoal-dust to the depth of a quarter of an inch. Then plunge them in a well-glazed cold frame, amongst coal ashes, up to their rims; give air occasionally throughout the winter, and keep them clear of decayed leaves and weeds. They will require a little water by March, when they begin to grow.

By the beginning of May they will be ready for planting out 8 inches apart in beds. Introduce a piece of slate or tile under each, and fill up with a handful of material similar to that they were struck in. The soil should be rich and well pulverised previous to planting, which should take place in a warm shady situation if possible; then give them a watering, and shade for a few days from sun and cold winds. The tiles are for causing the roots to take a horizontal direction, in order that the plants may be removed more readily in the autumn to their final destination.

The following is a good method of treating Roses intended to flower the following March and April: pot in the autumn, and plunge the pots in a bed of leaves, with the tops exposed to the atmosphere; they will make roots then, and be in a fit condition for gentle forcing in spring.

The Roses that I struck in the way mentioned above were Chinas, Teas, Bourbons, Noisettes, and Hybrid Perpetuals. If well managed, they blossom freely the first season. *D. Hay, gardener to C. Lawrence, Esq., Cirencester.*

STATISTICAL REMARKS ON THE RATE OF GROWTH OF THE LEAVES, &c., ON THE VICTORIA REGIA, AT CHATSWORTH.

N. B. Each Leaf is numbered, in order to distinguish it from the other leaves.

Days of the Month.	Numbers of Leaves.	Measurement of Leaves. Morning, 9 o'clock.	Measurement of Leaves. Afternoon, 5 o'clock.	Largest Size attained.	General Remarks.
		ft. ins.	ft. ins	ft. ins.	
Aug. 3	5	visible	..	...	When the plant was brought to Chatsworth on the 3d of August it had four leaves upon it; the respective measurements of them were 3, 3½, 4½ and 5½ inches, and another leaf visible.
,, 5	..	0 3			
,, 6	...	0 4½	...	...	This leaf was taken off, perished, on the 10th Sept.
,, 7	...	0 5½			
,, 8	.	0 6½			
,, 9	...	0 7	..	0 7	
,, 9	6	0 2½	...	...	This leaf was taken off on the 15th September.
,, 10	.	0 3½	0 4½		
,, 11	..	0 5	0 6		
,, 12	.	0 6½	0 7		
,, 13	..	0 7½	0 7½	0 7½	
,, 12	7	..	0 3	..	This leaf was taken off on the 15th of September.
,, 13	..	0 4	0 5		
,, 14	..	0 5½	0 6½		
,, 15	..	0 7	0 8		
,, 16	..	0 8½	0 9½	0 9½	
,, 15	8	.	..	.	Not expanded.
,, 16	.	..	0 5	.	This leaf was taken off on the 20th.
,, 17	.	0 4	0 5		
,, 18	.	0 6½	0 8		
,, 19	.	0 8½	0 9½		
,, 20	..	0 10	0 10½		
,, 21	.	0 10½	0 10½	0 10½	
,, 19	9	.	0 4		
,, 20	.	0 6	0 7		
,, 21	.	0 7½	0 9½	.	This leaf was taken off on the 22d of September.
,, 22	...	0 9½	0 10½		
,, 23	.	0 10½	0 11	0 11	
,, 20	10	..	..	..	The leaf visible on the plant.
,, 22	.	0 5	0 5	.	Not expanded.
,, 23	.	0 5½	..		Taken off on the 27th.
,, 24	..	0 8	0 9		
,, 25	.	0 9½	0 10½		
,, 26	..	0 10½	0 11		
,, 29	.	1 1	..	1 1	
,, 24	11	.	.		The leaf appearing on the surface of the water; stem 9 inches.
,, 26	...	0 6			
,, 27	.	0 8½	0 9½		Taken off on the 29th.
,, 28	..	0 11	1 0		
,, 29	.	1 0	1 1		
,, 30	..	1 1½	1 2		
Sept. 1	...	1 2½	.	1 2½	
,, 2	..	1 3½	...	...	[4 ins. long When the leaves only made ½ an inch in 24 hours, I did not deem it necessary to note down the afternoon measurement.
,, 3	.	1 3½			
,, 4	.	1 4			
,, 7	..	.	1 5½	1 5½	
Aug. 27	12	.	.	.	The leaf not expanded; about half expanded.
,, 28	..	.	0 6		
,, 29	...	0 9	0 10½	...	Taken off on 4th October.
,, 30	..	0 11½	1 0½		
,, 31	...	1 1	1 2		
Sept. 1	..	1 2½	1 2½		
,, 2	..	1 3½	...	...	When the leaves only made ½ an inch in 24 hours, I did not deem it necessary to note down the afternoon measurement.
,, 3	.	1 3½			
,, 4	.	1 4			
,, 7	..	.	1 5½	1 5½	
Aug. 30	13	.	.	...	The young leaf had thrown off 1½ inch from the crown of the plant
Sept. 2	...	0 9			
,, 3	.	1 1½	1 3½	..	Taken off on the 9th.
,, 4	...	1 4½	1 5½		
,, 5	.	1 6	1 6½		
,, 6	.	1 7	1 7½		
,, 7	...	1 7½	1 8		
,, 9	.	.	1 9	1 9	
,, 4	14	.	.	.	Half expanded at 8 A.M.
,, 5	.	0 11	1 1½	.	Taken off on the 10th Oct.
,, 6	.	1 5½	1 5½		
,, 7	...	1 7	1 8		
,, 8	...	1 9	1 10		
,, 9	.	1 10½	1 11		
,, 10	.	1 11½	.		
,, 11	.	.	2 0	2 0	
,, 8	15	..	0 11	..	Not quite expanded
,, 9	...	1 6	1 7½		
,, 10	.	1 8	1 11	...	Taken off on the 14th Oct.
,, 11	...	2 0	2 1		
,, 12	...	2 1½	2 2		
,, 13	..	2 3½	.	2 3½	
,, 10	16	.	0 6		Half expanded.
,, 11	..	0 9	1 1	...	Taken off on the 17th.
,, 12	..	1 6	1 9		
,, 13	..	1 11½	2 1½		
,, 14	..	2 3	2 4½		
,, 15	..	2 5½	2 6½		
,, 17	...	2 9	..	2 8	
Sept. 14	17	.	0 7	...	When the plant was brought to Chatsworth on the 3d of August it had four leaves upon it; the respective measurements of them were 3, 3½, 4½ and 5½ inches, and another leaf visible.
,, 15	..	1 3	1 6½		
,, 16	...	1 9	2 1		
,, 17	.	2 4½	2 6		
,, 18	.	2 8	2 9		
,, 19	.	2 10½	2 11		
,, 20	..	3 0	3 0½		
,, 22	...	3 1¼	.		
,, 23	.	3 1¼	3 2		
,, 24	.	3 2½			
,, 25	.	3 2			
,, 17	18	..	..	..	Young leaf thrown off 6 ins [from centre
,, 18	..	1 0	...	...	Partly expanded.
,, 19	..	1 6	2 0	..	Taken off 31st Oct.
,, 20	..	2 0½	2 8½		
,, 21	..	2 5½	2 11½		
,, 22	..	3 1½	3 3		
,, 23	.	3 4½	3 5		
,, 24	.	3 5½	3 7	...	The stem of this leaf was 9 ft. 6 in. long.
,, 26	.	3 7½	.	3 7½	
,, 19	19	1 5	1 10½	...	This leaf was not expanded at the morning measure.
,, 20	..	2 1½	2 8½		
,, 21	..	2 11½	3 1½	.	Taken off Nov. 8. [ment.
,, 25	..	3 5½	3 7		
,, 26	.	3 8½	3 9		
,, 27	.	3 9½	3 10½		
,, 29	.	3 11½	.		
,, 1	.	4 0	.	4 0	
,, 20	20	.	.	.	Half expanded at 8.
,, 25	.	1 6	1 10	..	Not fully expanded at 8.
,, 27	.	2 5	2 9		
,, 28	.	3 0	3 2	...	Taken off Nov. 9.
,, 29	..	3 5½	3 6		
,, 30	.	3 8	3 9		
,, 1	.	3 10	3 10½		
,, 3	.	4 0	4 1		
,, 4	.	4 0½	4 1½		
,, 8	.	4 2½	.		
,, 10	.	4 4			
,, 13	.	4 5	...	1 5	
,, 6	21	.	.	.	About half expanded.
,, 7	.	2 0	2 8	.	Nearly expanded.
,, 8	.	3 0	3 3		
,, 9	.	3 7	3 10		
,, 10	.	4 0	4 2½		
,, 11	.	...	4 3		
,, 12	.	.	4 4		
,, 13	.	4 5½	.	4 5½	
,, 8	24	.	.	.	Thrown off from centre, 6 in.
,, 9	.	.	...	...	Half expanded, stem 1 foot [long.
,, 10	.	2 3	2 9		
,, 11	..	3 3	3 6		
,, 12	.	3 8½	3 10½		
,, 13	.	4 0	4 1½		
,, 14	.	4 3½	4 3		
,, 16	.	4 3½	4 4		
,, 17	.	4 4½	..	4 4½	
,, 11	25	.	.	..	Thrown off about 9 in. from [centre.
,, 12	.	.	1 4	...	Partly expanded.
,, 13	.	2 0	2 6		Not fully expanded at 8.
,, 14	.	3 1	3 6		
,, 15	...	3 7½	3 9½		
,, 16	.	3 11½	4 2		
,, 17	...	4 2½	4 3		
,, 18	.	..	4 3½		
,, 19	..	4 4	4 4½		
,, 21	.	4 4½	.		
,, 24	.	4 5	..	4 5	
,, 15	26	.	.	..	Thrown off 9 in.
,, 16	...	2 0	2 8		
,, 17	..	3 3	3 6		
,, 18	...	3 10	3 12		
,, 19	..	4 1	4 2		
,, 20	.	4 3	4 3½		
,, 22	.	4 4½	4 5		
,, 25	.	4 5½	4 6		[bud.
Nov. 1	.	4 8	..	4 8	Discovered the first flower.
Oct. 17	27	...	...	...	Not half expanded.
,, 18	...	...	...	.	
,, 19	...	1 6	2 2	...	Taken off on the 26th.
,, 20	.	3 0	3 3		
,, 21	..	3 6	3 10		
,, 22	...	4 0	4 1½		
,, 23	..	4 2½	4 3½		
,, 24	...	4 4½	4 5		
,, 25	.	4 6	4 6½		
,, 26	..	...	4 7		
,, 27	...	4 7½	.		[from centre
,, 28	...	4 7½			
Nov. 1	...	4 8	...	4 8	
Oct. 20	28	..	..	...	[centre. Thrown off about 9 in. from
,, 22	.	...	1 10	...	About half expanded.
,, 23	..	2 3	3 0		
,, 24	..	3 5	3 6		
,, 25	..	3 10	4 0		
,, 26	..	4 2	4 4		
,, 27	...	4 4½	4 6		
,, 30	...	..	4 7½		
Nov. 4	.	...	4 8	4 8	
Oct. 23	29	...	...	...	Thrown off about 9 inches
,, 25	..	...	1 4	...	Not expanded. [from centre.
,, 26	.	2 0	2 6	..	Taken off and sent to the Queen, with the third flower, on Tuesday evening, Nov. 13.
,, 27	.	2 10	3 2		
,, 28	.	3 6	3 10		
,, 29	..	4 2	4 3½		
,, 30	...	4 5	4 6		
,, 31	.	4 7	4 7½		
Nov. 1	.	4 8			
,, 2	.	4 8½	4 9		
,, 3	...	4 9½	4 10		
,, 11	...	..	4 10½	4 10½	This is the largest leaf produced.
Oct. 29	30	...	..	...	Thrown off nearly a foot from
,, 30	.	.	2 0	..	Partly expanded. [centre.
,, 31	.	2 10	3 3		
Nov. 1	..	3 8	3 9		
,, 2	...	4 1	4 2½		
,, 3	.	4 4	4 6		
,, 5	.	4 7			
,, 6	..	4 7½	..	4 7½	
Oct. 30	31	.	...	...	Thrown off about 6 in. from
Nov. 2	.	..	0 9	..	Partly expanded. [centre.
,, 3	..	2 3	2 9		
,, 4	.	3 0½	3 4½		
,, 5	.	3 8½	3 10		
,, 6	.	4 1	4 1½		
,, 7	..	4 3	4 4		
,, 8	.	4 5	4 5½		
,, 10	.	4 6½	...	..	There are 14 large leaves on the plant at this time.
,, 12		4 7	.	4 7	
Oct. 31	32	...	..	..	Visible.
Nov. 2			.		Thrown off about 9 inches.
,, 5	.	1 6	.	.	Partly expanded.
,, 6	.	1 10	2 1	...	Not expanded at the morning measurement.
,, 7	.	2 9	3 0		
,, 8	...	3 4	3 7		
,, 9	...	3 9	3 11		
,, 10	.	4 1	4 4		
,, 12	.	4 4½			
,, 13		4 5			
,, 5	33	..	..	..	Visible.
,, 7	.	..	...	..	Stem about 9 inches.
,, 8	.	..	1 6	...	Floating on the water, 9-inch leaf.
,, 10	.	.	1 6		
,, 11	..	2 9	3 0		
,, 12	...	3 4	3 5		
,, 13	.	3 7	3 9		
,, 14	.	3 10			
,, 15	.	3 10½			
,, 17	..	3 11½	4 0		
,, 18	..	4 1			
,, 19	...	4 1½	...	4 1½	
,, 9	34	.	...	...	Visible.
,, 12	...	..	.	..	Lying on the surface; stem
,, 13	..	...	1 4	...	Half expanded. [9 inches.
,, 14	...	2 2	2 6		
,, 15	...	2 9	2 10		
,, 16	...	3 1½	3 3		
,, 17	..	3 4	3 4½		
,, 18	...	3 5			
,, 19	...	3 6	..	...	This leaf has not finished its growth.
,, 12	35	...	..	...	Visible.
,, 16	.	1 0	.	...	Not expanded.
,, 17	...	2 1	2 6		
,, 18	...	2 8	3 0		
,, 19	...	3 3			

The plant was received here on the 3d of August, and was planted out in the tank on the 10th. It showed its first flower-bud on the 1st of November, partly expanded it on the 8th, and expanded finally on the 9th, and on the 10th was again sinking under the water. The base or seed-vessel is again come to the surface. This day, 19th Nov., it has produced four flowers, and the fifth will open for the first time to-night, and there are three others in different stages of development upon the plant. The leaves preserve the curled edge for about a month. The box it came in is about 13 inches square, and the tank it now occupies is 19 feet 1 inch long by 18 feet 8 inches wide. *George Lyles, Nov. 19, 1849.*

THE MANETTII ROSE STOCK.

THE following letter from Mr. Appleby, of York, will perhaps save you a little labour; it is all true.

"When you were here, in September last, you requested me to send you an account of my success with the Rosa Manettii as a stock for Roses generally. I got a few (I believe about 20) from you about four years ago, and having great faith in what you said respecting its capabilities, I was determined to give it a fair trial, and accordingly I endeavoured to make the most of it. I planted them out as stools, and the following winter I took the crop of cuttings and planted them in the usual manner, and I am not aware that I lost one of them. Those I also planted out as stools, and the crop of cuttings this time was planted in rows 18 inches apart and 6 inches in the row. This was in the month of March 1847, and in August following they were all fit for budding. I say all, because I do not think that ten in a hundred died, although they were fully exposed to the weather in an open quarter. Some of these were budded as late as the last week in September, and still they took well generally. They broke freely in the spring following, and by the autumn many of them were as high as myself, which quite delighted me, for I had never seen anything in Rose culture like them. I now valued Manettii cuttings like gold, and I ordered my men not to throw away an inch that was likely to make a plant. In the spring of 1848 I was enabled to make a tolerably good plantation of them; and although they were planted late (I believe in the beginning of April), and the season set in dry, I nevertheless lost but few of them; but they were late in getting hold of the ground, and I did not get them budded until the end of September, still the buds took well as before, and you were yourself a witness to the progress they have made. There are many sorts amongst them that I could never get to thrive—in fact, scarcely to exist—upon the Briar, that are now (in one year) from 3 to 4 feet high, and strong in proportion;

and others (that are free growers) I have 6 feet high, with from 6 to 12 shoots from each bud. I will here enumerate a few sorts that are known to be bad growers upon the Briar, and state the height which they have attained in one season. I will begin with Ehlouissante de la Queue (Gal.), grafted in April last, now 3 feet high and strong; Chateaubriand (Damask), also grafted at the same time, 3 feet; Perle des Panachés (Gal.), budded in September, 1848, now from 3 to 4 feet; Tricolor de Flaadres (Gal.), budded same time, 3 to 4 feet; Cynthie (Gal.), budded same time, 2 feet; La Chérie (Damask), budded same time, 2 feet; Crimson Perpetual, budded same time, 3 feet; Rivers (Laffay's), same time, 4 feet, and many others of similar habit of growth have made the same progress. Then, of stronger growing sorts, the following (which were all budded in September 1848), are now respectively the heights quoted, viz.: Bourbon (Splendens), 5 feet; Comte Plater, 6 feet, very strong; Diane de Poitiers, 6 feet; Madame Stoltz, 4 feet; Dombrowski, 5 feet; Muss Lanelii, 5 feet, and some of them with a dozen shoots from one bud; Do. Lancel, 4 feet; Do. Louis Colet, 4 feet; Do. White Bath, 4 feet; Do. Blush, 5 feet; Do. Crimson, 5 feet; Do. Malvina, 5 feet; Do. Mousaue Partout, 5 feet; Do. Do. Presque Partout, 5 feet; Do. De Metz, 5 feet; Comte de Flandres (Gal.) and Spotted Provence, 5 feet; and in Bourbons, I have Acidalie, 3 to 4 feet; Desgaches, Cardinal Fesch, and Madame Ande, 4 to 5 ft.; Madame Nerard, B. Queen, and Anne Beluse, 2 ft.; (these have been in bloom from last May and are still covered with buds and bloom); Princesse Clementine, Emilie Courtier, and several others are from 2 to 3 feet, and have been constantly in bloom all summer. In the Hybrid Perpetuals I have Robin Hood, 3 to 4 feet, and complete bushes; Cornet, 5 feet, very strong; Sidonie, 4 feet, and most robust. Every plant, if standing singly, would have the appearance (in size) of a large Dahlia plant at this season of the year. Géant des Batailles would have been quite as large had they not been cut down for buds. Baronne Prevost, Mrs. Elliot, Duchess of Sutherland, La Reine, Madame Laffay, Wm. Jesse, and several others are all similar plants; and Jaune Desprez, with some of the new Prairie Roses budded on this stock are 10 feet high in one season. The quarters of stocks which you saw (newly budded) when you were here in September, were all planted in March last, and are now from 3 to 4 feet high, and many of them an inch in circumference. They are budded with all the best sorts of Roses; and I have especially endeavoured to get those sorts worked upon them that have usually been bad growers (though some of the best Roses), and of which I could never get any stock, and I have no doubt but the result will be to my satisfaction. Another year I intend to bud those stocks with Bourbons, Hybrid Perpetuals, Chinas, &c., from 1 foot to 3 feet high, as dwarf standards; and I feel confident they will form beautiful heads. So confident am I of the superiority of the Rosa Manettii over every other stock for Roses, that I shall never again plant any other, excepting for full-sized standards. All other stocks, in my light sandy soil, throw out quantities of suckers, which are constantly robbing the bud of its support, to say nothing of the labour they occasion to get rid of them; but this stock does nothing of the kind, unless a stray bud has been left on in dressing them, and then it merely comes up close to the stem, and is easily got rid of, as they never produce stolons or underground suckers. Another advantage is, that it thrives well on light soils, where the Briar will not thrive at all; and this does away with all the objections that some parties have to worked Roses, as all Roses seem to do well alike on it—better, in fact, than upon their own roots, and no doubt they will bloom better. Besides, many Roses on their own roots are constantly throwing a quantity of root suckers, and ultimately run wild. The above is a faithful account of my success with the Rosa Manettii as a stock for the generality of Roses."

The history of the Manettii stock is as follows. Some 12 or 15 years since a Signor Crivelli, of Como, attracted by an article in Loudon's "Gardeners' Magazine," wrote to me, offering to exchange some seedling Italian Roses for choice named varieties. I sent him a small collection, and in return received from him some seedling Roses; among them were Rosa indica grandiflora and Rosa indica Manettii, two very small plants. These he described as being hybrid China Roses, and most valuable Roses for stocks in the dry climate of Italy. I soon found that although so much alike in habit as scarcely to be distinguished, they differed most materially in this respect; the former could only be propagated by layers, while of the latter every cutting grew. I gradually increased my stock of the latter, and now propagate from 40,000 to 50,000 annually. As with all new articles in gardening, I had to buy some experience, for I found if I grew them in a rich soil and budded them at the usual period, the buds rotted; they appeared to be drowned in the superabundance of sap. At last I saw it was necessary to plant them in poor soils, and bud them in September.

I presume this stock has found favour in America, for last season I received an order from one house for 20,000. *Thos. Rivers.* [We find that the Rose mentioned last week as having been grown by Messrs Henderson, was only forwarded by them. Mr. Appleby, of York, says that it was sent by him.]

VILLA AND SUBURBAN GARDENING.

It has been admitted by the majority of our most eminent practical gardeners that the fan system of training Peach trees is the best, and it is unquestionably the most natural; but, notwithstanding this, there are some evils to which the plan is liable, and which, by a little observation and care, may be avoided, even by persons little initiated in the art of practical gardening. A little observation will readily discover the tendency which the central shoots of the tree have to take the lead, and rob the oblique and horizontal branches of their due proportion of sap. These vertical shoots will gradually, from their position, become stronger and stronger; whereas the others, in like proportion, will gradually get weaker and weaker. The result of such a state of things must clearly be the death of the lower branches; the tree consequently becomes disfigured, and this unbalanced distribution of the sap naturally interferes with the regularity with which the crop is produced, as well as with the quality of the fruit itself. I would therefore particularly direct attention to this important point, with a view to steer clear of the evil, which can only be done by attending early to it; for, if young trees are properly begun, and so continued for the first three years, it may in a great measure be obviated.

First, then, allow no strong shoots to exist in the centre of the tree, and this must be effected in the summer pruning, or rather disbudding. There need be no fear that there will be a deficiency of shoots in the centre. The next point is to give the extremities of the under branches an inclination upwards. This will draw the sap in that direction, and relieve the middle of the tree. Again, never allow the intermedial central branches to extend so far as the others; the sap will, consequently, be controlled and regulated. The tree thus trained will present a much more beautiful and natural form, the crop will be more regular and perfect, and the tree itself will continue to bear for a much longer time. The period selected for pruning the Peach has, in most cases, been the spring. This is, however, the very worst time throughout the whole year for pruning this tree; as much of this kind of work as it is possible to perform may be more advantage usly done in early summer, by regulating the buds, and by not laying in a much greater number of shoots than may be required to secure a sufficiency of bearing wood, keeping in mind that on the current season's growth the following year's crop mainly depends. By careful and continued disbudding during summer, so as to retain no more shoots than the tree's well-being and fruitfulness require, many evils will be avoided which winter and spring pruning obviously inflict.

When the crop is gathered, and the leaves begin to fall in the autumn, then is the time to regulate and shorten back the young shoots, practice having fully proved the advantage of cutting away at least one half of the young growth; and when this is of a weakly kind, two-thirds may be removed with advantage. After the tree is pruned, it may be left in a partially unfastened state until the following spring. *Pharo.*

Home Correspondence.

Calla æthiopica.—Here, in our fragery (a ditch so called), this plant thrives amazingly under the most primitive mode of culture. Indeed the only secret connected with its most satisfactory growth, seems confined to the protection of its root from frost. The water in which it grows may be sheeted over for any ordinary length of time with ice of any reasonable thickness, so that it does not actually reach the root; moreover, it seems equally indifferent about the quality of the water, or description of soil in which it is located. Some 20 years ago, I had four roots planted amongst some other aquatics in the above-named ditch, with about 18 inches of water, supplied from an artesian bore,* in one end of which the mud was at least a foot deep; in this two of the roots were planted. The other end was bare gravel, so much so that we had to put stones upon the two other plants, by way of anchor, to keep them from drifting till they made a few roots to hold themselves to the bottom. Three of them are now large masses (the fourth was killed the first severe winter after planting, the water not being deep enough, about 8 inches, to keep the frost from the root), and grow and flower equally free on the gravel and in the mud; and a splendid appearance they have from five to six weeks every May and June, having from 16 to 20 flowers on each plant. Since first planted they have been two or three times cut down to the surface of the water (foliage as well as flowers), at the end of April or beginning of May, by frost, but without receiving a permanent injury. By the end of July they had completely covered their elegant leaves; and although the second crop of flowers was neither so large nor so plentiful as those cut off, still they made a very tolerable show in the August and September following, and contrasted finely with the very different habit of some yellow and white Water-Lilies, their neighbours; indeed, I think it might be worth while to cut one of the plants down every spring, for the sake of the autumn flower. *Richardia, Nov.* 20.—There are at present growing, in a small pond in the kitchen garden at Castle-hill, two plants of the Æthiopian Calla, which have been in their present situation for at least seven years. They were formerly standing in pots in the greenhouse, and were removed to their present situation in the same pots, merely sinking them to the bottom of the pond. I may observe that since they were removed to their present station they have increased to a large size, and at present stand at least 2½ feet above the water. They are occasionally cut down to the water's edge during winter, but never fail to produce abundant blooms during summer. The pond, in which gold fish are kept, is about 2½ feet deep, is formed inside of brick, and supplied with water from a jet in the centre. *A. Saul, Castle-hill, Nov.* 21.

Garden Chairs.—The large chair is misrepresented in the *Gardeners' Chronicle* of last week, p. 723, the person who attached the arms having reversed them; that is, the one on the right belongs to the left side, and the contrary. When properly placed, they exactly resemble the arms of a common arm-chair; but fixed as represented, they are perfectly useless as a support for the arms, in addition to being unsightly. *J. B. Whiting, The Deepdene.* [We thought them pretty and commodious as they were fixed. The reader can easily judge what the difference in appearance will be by comparing the cuts with this correction.]

Peruvian Guano Trade.—How comes it that Messrs. Gibbs and Co. are the sole importers of Peruvian guano? What is the nature of their "protective" rights to the trade? I am given to understand that the beds of guano in Peru are capable of affording an unlimited supply of manure for many years. Why, then, in these days of free trade, are English farmers content with a single importing house of so valuable a commodity? May I suggest that if Messrs Gibbs and Co. have given a "consideration" for appropriating this branch of trade, it would be desirable that their outlay and "good-will" should be bought up by the public, and the importation of a most valuable manure be subjected to the cheapening effects of competition. *A. P., Nov.* 16. [The guano beds are the property of the Peruvian Government, which has conceded the exclusive right of working them to Messrs Gibbs and Co., for an adequate consideration. That Government will not suffer any interference whatever with the guaranteed rights of these merchants; nor can it, without a breach of faith, which would be fatal to its credit, make any change without the consent of Messrs. Gibbs and Co. If the compensation proposed were really given, the advantage would be doubtful, inasmuch as the great security which we now possess of the genuineness of the imported article would disappear. There can be no reason, however, why gentlemen should not buy out the rights in question, if they think fit; a few hundred thousand pounds would do it.]

Peas.—Last season, having several new kinds of Peas, I was at a loss to know what size sticks they would require, and as it was all guess work, the dwarf Peas had the tallest sticks. I would beg leave to suggest to seedsmen that they would confer a benefit upon purchasers (at very little trouble), by stating, in their advertisements of new Peas, the height to which they will probably grow; by doing so, they will enable the gardener to provide accordingly, and also improve the appearance of the kitchen garden. *Mary, Nov.* 14.

* This water costs everything with rust in an incredibly short time, and many plants we have occasionally watered with it have died. Indeed, one very dry summer, we thought to have our lawn greener than other people's, and used this water very freely; the consequence was that the Grass died out in large patches, and yet these aquatics grow like Willows in it. By the way, some weeping Willows planted by it canker off in large branches.

Societies.

LINNEAN, *Nov.* 20.—The TREASURER in the chair.—A letter was read from Mr. Bicheno, late secretary of the Society, enclosing sections for the microscope of various species of recent Australian wood.—Mr. Hogg exhibited specimens of a variety of Hordeum hexastichon, remarkable for its abundant yield of grain. Collections of Australian plants, made by P. R. Drummond, Esq., were presented by W. W. Saunders, Esq. Viscount Goderich and Alfred Tylor, Esq., were elected fellows. A paper was read from Mr. Henfrey on the structure and development of the elaters and spores of Marchantia polymorpha. The author referred to the researches of Mirbel, Griffith, Bischoff, and others on this subject. The sporangium of Marchantia was formed from the growth of the body, called the pistillidium, which contained in its interior a globule, in the interior of which the elaters and spores were developed. The fully developed sporangium contained in its walls annular cellular tissue, such as is found in the endothecium of anthers. In the early stages of its growth the sporangium contained in its interior oblong cells, one set of which grew fast, became thinner, and developed in their interior two spiral threads, which constituted the elaters. In the formation of the spiral fibre in the interior of the cells it was not formed by the growing together of granules, but the fibres appeared first in the form of fine lines, which eventually united to form the spiral threads of the elaters. The other set of cells went on growing, but become broader than the others, and eventually exhibited a number of septa indicating the points where they eventually broke up, each portion forming a new cell; this cell separated again into four parts or cells, similar to those of the parent cells of the pollen, but without septa; each of these cells contain the true spores. During the observation of this process of development the author did not observe a single instance in which nuclei or cytoblasts were present in the cells. On watching the process of germination in the spore he ascertained that the membrane of the spore was single. At the conclusion of the meeting the chairman announced that the council had unanimously invited Mr. Robert Brown to fill the chair of the Society, vacated by the death of the Bishop of Norwich, and stated that Mr. Brown had expressed his readiness to fill the office

provided it be the wish of the Society. The election takes place at the next meeting of the Society.

Calendar of Operations.

(For the ensuing week.)

FORCING DEPARTMENT.

If the roots of Seakale be taken up and forced in a frame or hotbed, according to the method we described a few weeks since, it is supposed by some that the roots are thereby destroyed or rendered worthless and unfit for future planting. We, however, beg leave to assure our readers that this is a mistake. The growths first produced should be carefully gathered, so that the dormant buds on the crowns of the plants be not injured; and when they are removed from the frame, to make room for another succession, they should be laid into light soil in a sheltered situation, and carefully preserved from snails till the proper season for planting We have even found that very strong roots, which have been taken up early, and produced their first crop in November and December, will bear forcing a second time the same season, and produce a very tolerable crop in March or April; and even after this they will still be fit to plant out in the open ground. The second crop, however, depends particularly on the first being carefully cut, so as not to injure the dormant buds on the crown. In the interval between the first and second forcing, the plants, if laid in as recommended, will slightly recruit their strength, and the buds, if properly protected, will gradually increase in size, and prepare for a tolerably vigorous expansion. Not only the crowns of these plants, but pieces of any parts of the roots which are from half an inch to 1 inch in thickness, and 3 inches in length, will answer the purpose of sets, and will make good plants in one season, if the soil has been properly prepared. Where the soil is naturally stiff and unfavourable to the growth of the Seakale, it can be made more suitable by mixing it freely by fine coal ashes, sand, or road scrapings, and lime rubbish, not forgetting a dressing of good well-rotted farm-yard manure.

FLORISTS' FLOWERS.

The amateur should now "take stock" of his favourites. For instance, he may copy from his last year's register of Tulips, and make a fresh list of those which he has this season committed to the earth, "in hope." We would recommend the system of J. Edwards, Esq., of Holloway, as a perfect specimen of floricultural book-keeping. By noting the class, the row, and number in the row, name, from whom, &c., a most interesting reference is secured to the cultivator, and by which means he can, at a moment's notice, ascertain the amount of stock that he possesses of any given variety. The best cultivators of these splendid flowers seldom cover their beds when planted, supposing, and with great reason, that there is more danger to be apprehended as the bulbs throw up their spikes near the surface; should hard frost then set in, considerable damage is likely to ensue, and covering would be absolutely necessary. Carnations, Picotees, Pinks, Pansies are, or ought to be, all safe. If any require attention, it will be layers received late in the autumn, which have not had time to establish themselves. It often happens that the lower leaves decay, in which case it will be necessary to remove them; placing a hand-glass over them will also accelerate the emission of roots. By all means endeavour to lay up a store of food for the future sustenance of your plants. Leaves, turf, willow dust, cow manure, &c., are all highly necessary, and florists cannot well have too much of them.

HARDY FRUIT GARDEN.

Whenever the state of the weather will permit of the soil being worked, it is an object of importance to get all ground about the fruit bushes lightly forked over, at the same time applying any manure or other material which may be considered necessary. The same operation buries the leaves, and gives the whole a neat, orderly, and finished appearance for a long time to come. But to make the most of the labour employed, all pruning or retraining should be first performed, so as to avoid all treading upon the ground after the surface has been stirred. The Raspberry canes, if it was not done in the autumn, should be reduced to four of the strongest on each stool, rejecting, if they can be spared, all that were half exhausted by producing fruit in autumn. As a matter of course all the old canes should be entirely removed. The stakes should then be examined and renewed where necessary, taking pains to tie them perfectly upright in straight lines, and to cut them to one uniform height, that the good workmanship may be evident throughout. When forking in the top-dressing, which should be of half-rotted farm-yard manure, a little pains should be taken to destroy the embryo suckers which are visible on any of the roots. If on the south fruit-walls there are any bare spaces, even though not more than 12 or 18 inches in width, they may be converted to very useful purposes. Against the smaller of these spaces, a few strong healthy Raspberry canes may be selected and planted, taking care to remove them with good balls of soil. These, with a little attention to watering during dry weather in summer, will produce this delicious fruit some time before it is ripe in the open garden.

KITCHEN GARDEN.

Cardoons and Celery should be gone over again, as some of the beds which were first earthed up have profited by the fine weather we have since had, and will bear a second edition of the soiling process. A time should be chosen for this operation, when both the soil and plants are as dry as we can expect them at this season of the year. Peas and Beans.—Those who reside in favourable localities should now make a sowing of these vegetables, with a view to obtain a very early crop. The seed should be sown on the sides of low ridges, the crowns of which will protect the young plants from cold winds, and the hollows between will aid in keeping the soil dry. Some chopped Furze, or other similar material, should be sown along with the seeds, to prevent the depredations of mice. A dwarf variety of Pea should be chosen, such as Cormack's Prince Albert, or Waite's Queen of the Dwarfs; and of Beans the Dwarf Fan will be found hardy and prolific. There is a chance, that in good localities, these early sowings will produce good crops, a prospect which is sufficient warrant for the expenditure in seed and labour; but in medium or late situations, the chance of success is very small. In the latter case, there is less trouble and more certainty by sowing in boxes or turves early in spring, and planting them out in March. Cauliflowers should be examined every three or four days, and those which have arrived at maturity, if not required for immediate use, should be lifted when dry; and after tying their leaves together, they should be hung up in a cool shed till they are wanted.

State of the Weather near London, for the week ending Nov. 22, 1849, as observed at the Horticultural Gardens, Chiswick.

Nov.	Moon's Age.	Barometer.		Thermometer.			Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean		
Friday.. 16	1	30.047	29.967	48	29	38.5	N W.	.00
Satur... 17	2	30.241	30.209	46	25	35.5	N W.	.00
Sunday . 18	3	30.211	29.987	52	43	47.5	S W.	.05
Monday 19	4	30.068	29.970	52	31	41.5	N E.	.00
Tues. .. 20	5	30.109	30.100	49	41	45.0	E.	.00
Wed. .. 21	6	30.071	30.015	48	34	41.0	E.	.00
Thurs....22	7	29.95	29.749	45	32	38.5	S.E.	.00
Average....		30.098	29.990	48.5	33.5	41.0		0.05

Nov. 16—Fine throughout; clear at night.
— 17—Clear and fine; frost at night.
— 18—Overcast, slight rain.
— 19—Hazy, cloudy at night.
— 20—Uniformly overcast throughout.
— 21—Hazy, cloudy at night.
— 22—Foggy; overcast; cloudy; uniformly overcast.
Mean temperature of the week, 2 deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Dec. 1, 1849

Nov and Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No of Years in which it Rained.	Greatest Quantity of Rain	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 25	46.2	34.3	40.2	12	0.27 in.	3	3	1	2	3	5	2	2
Mon. 26	49.2	33.8	41.5	11	0.54	—	1	0	1	3	9	1	2
Tues 27	47.6	36.3	42.0	11	0.88	—	2	4	1	4	8	8	1
Wed. 28	49.1	38.1	43.6	13	1.21	2	1	2	2	7	4	4	1
Thurs. 29	49.1	38.4	43.8	13	0.56	2	1	3	3	2	9	2	1
Friday 30	49.7	37.5	43.6	14	0.31	1	1	1	2	4	8	5	3
Satur. 1	44.2	37.6	43.4	9	0.25	1	2	2	2	2	6	6	2

The highest temperature during the above period occurred on the 28th 1828—therm. 60 deg., and the lowest on 29th, 1846—therm. 16 deg.

Notices to Correspondents.

Addresses: *A Seedsman, J Silla, and others.* We cannot give the addresses of tradesmen to unknown applicants. A seedsman ought to know them better than we do; if not, he should apply to some other seedsman who knows *him*. Our "Trade Memoranda" explain one of the reasons why we decline communicating the information asked for.

Books: *H R M* Bevan or Wighton on Bees. *W—Y Z.* M'Intosh's "Practical Gardener," if you have not got it already, will possibly suit you; or Neill's "Flower, Fruit, and Kitchen Garden."‡

Calceolarias: *J R.* All the kinds which you name in your list are good, provided they are correct to the names given. You may add the following to your collection: Kingnorn's Masterpiece and Yellow Standard; Holmes's Macbeth, Shylock, Ophelia, and Rosalind; Gaines's Ruby, Madonna, Conrad, Amelia, Duke Constantine, and Punch.*

Carbonate of Ammonia: *Inquirer.* It acts very beneficially in stoves and forcing-houses of all kinds. You can use it with advantage in your Cucumber pit, twice a week, in the following manner. When you close the pit for the night, place a bit of the carbonate (pure), about the size of a large garden Pea, alternately back and front, under each light, on a small piece of glass, but dip the glass first in water, to wet it. The surface of the soil and interior of the pit should also be slightly syringed or otherwise moistened, in order that a quantity of moisture or vapour may be formed in the atmosphere at the time of the application; then shut up close for the night. The only caution required is to take care to procure *pure* carbonate of ammonia, and to use it only in a moist atmosphere, for it is much more caustic in dry than in moist air. ¶

Chirita Moonii: *H C* asks some of our correspondents to inform him how he is to manage this Gesnerwort? He has a plant of it about 8 inches high, from which all the lower leaves have died away, leaving about a dozen quite at the top of the plant alive. From all the joints where the leaves have fallen off, he perceives that it is breaking; shall he leave the plant as it is, and rest it? or, had he better cut it down, and if so, how near the mould?

Climate: *Eboracensis.* Roses, Veronica salicifolia, Geraniums, Mignonette, Canary flowers, Stocks, Sweet Peas, Leptosiphons, and Fuchsias, from an open garden in North Wales, at the height of 600 feet, on the 16th November, show, we should think, sufficiently that the climate that produces them is much more mild than the world supposes.

Cold Frame: *Clericus.* Your lean-to 9-inch brick-walled fowl house roofed with glass tiles will answer the purposes of a cold frame perfectly, provided it is ventilated well, as you propose. We would advise you, however, to leave the door where it is. It is better on the north side than on the south.‡

Cucumbers: *J Holmes.* Cuthill's Black Spine is one of the best sorts for early forcing, as well as for general purposes.‡

Evergreen Climbers for a Greenhouse: *B B.* The following are of different colours, and very dissimilar in appearance. Hardenbergia macrophylla, blue; Hentreya scandens, white; Brachysema latifolium, scarlet; Hoya Pottsii, pale straw-colour. Pergularia odoratissima and Passiflora edulis are too tender, and not strictly evergreens. ¶

Exhibitions: *S Hodges, Cheltenham.* It is not right or just, at an horticultural show, where two sets of censors are chosen, one for amateurs and the other for nurserymen, after the award, and the article ticketed, for the other censors to alter that award. Any collection of plants, shown as such, must be disqualified for having a Pine-apple in it, in a growing state, however handsome the ripe fruit on it. Its having been grown with all the other plants in the same collection makes no difference.

Figs: *G S.* We do not know the Brianzolo Fig. According to Gasparrini, No. 23, Del Rendiconto della R. Accademia delle Scienze di Napoli, the Brianzolo Fig has large leaves, fruit roundish, green, with dark red pulp ||

Flower-beds: *A M A.* We are obliged to say, with much regret, that it is impracticable to answer your question without plans and personal communication, neither of which are within our means. T[illegible] not handsome. As a general principle in [illegible] the compartments should be made to answer [illegible] colour, and the centres may be much higher than the outside beds. The contrasts should be, bright blue and white, deep yellow and white, violet and white, red and green, blue and orange, yellow and violet, yellow and orange, yellow and green; scarlets kill other colours, and should be separated from them by green or black.

Fruit Trees: *C E.* Twenty-four dessert Apples, forming a succession: Early Red Margaret, Early Harvest, Oslin, Devonshire Quarrenden, Summer Golden Pippin, Wormsley Pippin, Early Nonpareil, Golden Reinette, Ribston Pippin, King of the Pippins, Court of Wick, Pearson's Plate, Adams' Pearmain, Golden Harvey, Claygate Pearmain, Syke House Russet, Braddick's Nonpareil, Scarlet Nonpareil, Old Nonpareil, Boston Russet, Court Pendu Plat, Reinette du Canada, Sturmer Pippin, and Cockle Pippin.||—*H W A* and *C E.* The following are good kitchen Apples:—Kentish Codling, Keswick Codlin, Hawthornden, Yorkshire Greening, Bedfordshire Foundling, Waltham Abbey Seedling, Beauty of Kent, Dumelow's Seedling, Alfriston, Norfolk Beaufin, Wormsley Pippin, and Mère de Ménage. Such are usually cultivated as standards, or better, as half standards. If your space is very limited you may train them as espaliers.||—*P S.* The following are varieties of Pears suitable for walls:—Beurré Diel, Glout Morceau, Easter Beurré, Beurré Rance, Passe Colmar, Marie Louise, Gansel's Bergamot, Old Colmar, Broom Park, and Winter Nelis.||—*J B.* Against a good south wall Peaches and Nectarines certainly ought to succeed, if you make the border properly. You state that the border is "well drained, 2½ feet deep at 3 yards from the wall;" that the soil is 18 inches deep, resting upon a bed of clay the same depth, beneath which is marl. Under such circumstances, in order to drain well, you must go much deeper than 2½ feet. You ought to make your drains 4 feet deep; remove the clay stratum, trench up some of the marl and mix it with such good free soil as you can procure to make up the border. You may then expect that your Peach and Nectarine trees will thrive well.||

Galvanised Wire: *S.* We imagine that it will be as strong; but we know nothing of its price, nor how it wears.

Insects: *J M.* The caterpillar which gnaws the skin of the berries of the Grapes, is apparently that of the small moth, Cochylis Amphaciella, Audouin, Ins. de la Vigne, pl. 21. They may be dislodged by smoking the bunches with tobacco. We should be glad of more specimens. *W.*—*L S.* The orange grubs found with the Wheat are those of the destructive Wheat midge (*Gard. Chron.*, 1847, p. 604). The midge-sieve described in our vol. for 1841, p. 52, should be used. *W.*—*F C.* We believe the marine objects sent are the ova of some Molluscous animal, which are similarly fimbriated in some species. Although admiring your devotion to Nature, we must request you to confine your queries to horticultural or agricultural matters. *W.*

Melons: *A S.* It is just possible that Melons could be produced throughout the whole year, but not in perfection, in England They require the summer's sun to give them flavour.||

Monsters. *J D.* Your Timothy Grass is becoming viviparous—that is to say, the parts of the flowers are changing into leaves—probably owing to the mildness and dampness of the place where it was found. It is a curious case.

Names of Plants: An accident having happened to one of the parcels of plants requiring names, we fear some one will be disappointed in not receiving an answer; we must ask him to repeat his inquiry—*Louisa.* The "seeds" are joints of the pod of some kind of Hedysarum, probably H. coronarium, the "French Honeysuckle."—*P B.* 1, Maxillaria scabrilinguis; 2, Fuchsia pentadactyla; 3, Myrtus obscura; all belonging to the family of the Uglies.

Nut Trees: *A Subscriber.* Your Nut trees, 10 to 18 feet high, with no bearing wood within 6 or 8 feet from the ground, should be cut back within 2 feet of the ground.||

Pine-apples. *W M.* "Good *fibry* loam mixed with plenty of leaf-mould" will suit them perfectly. They may be planted out in it now. We cannot recommend dealers.‡

Polyanthuses: *J W J.* 1st, procure kinds with the largest, best-shaped, and finest-marked pips, and endeavour to cross them with some very distinct species. Why not try to effect a cross by the use of the Chinese Primrose, or the Auricula, or some other of the many kinds of the Primula? by so doing you might obtain an entirely new race, a thing much to be desired; for an attempt to raise fine and distinct seedlings, now, from what are termed florists' varieties of the Polyanthus, is like trying to split hairs upon the cat's back, while she is asleep, a thing almost impossible; 2d, the male organs of a Polyanthus are the small powdery parts sitting round the mouth of the tube; the female is a single thread-like body in the centre with a glossy pin-like head. It issues from the bottom of the tube, and when longer than the latter, is what florists term, "the pin eye;" 3d, When crosses are first produced, between two distinct species or forms, they are in general intermediate between them in colour, stature, and habit; but afterwards, when the races become blended or domesticated by recrossings, there is no certainty as to what the result will be. This is now the case with the Dahlia, Calceolaria, and Pelargonium.¶

Seedling Oaks: We have received, from Mr. Wood, of the Coppice, Nottingham, two seedling Turkey Oaks, with unusually cut foliage. They appear to be handsome and worth growing.

Shrubs. *Dunmow.* Pray ask any nurseryman for his catalogue; therein you will find "a list of all the evergreen trees, evergreen shrubs, and flowering shrubs, suitable for a plantation and shrubbery."

Studs for Walls: *X C Y* and *Old Sub.* See page 435 of the current year's volume.‡

Victoria regia: *A Friend.* See a leading article in another column of to-day's Paper.‡

Vines: *C C.* Your climate must be very bleak when the Jargonelle Pears, on a south wall, were only fit to gather in the middle of October. Better plant young Vines inside the house. As the Black Hamburgh and White Sweetwater succeed, so will probably the Royal Muscadine, Black Prince, and, if you require a late Grape, Oldaker's St. Peter's.||—*A Constant Reader.* One bunch from an eye is quite enough. A thermometer should be placed about the middle of the Vinery.||—*H G.* Against a high wall, with a south-east aspect, you may plant the Royal Muscadine and Early Black July. Mix the manure with the old mortar rubbish for the border.||

Misc.: *T A M.* The Weeping Willow will adjust itself without difficulty, if you plant it a little obliquely at first, taking care that it has a tall stem. If you put in a cutting then you must bend it, if necessary; pruning is needless. If it was our case we should plant a "Funereal Cypress," which is evergreen.—*J B B.* As we presume it is only the old thick portions of the roots of your Gooseberries that are out of the ground, and not the small rootlets, it does not matter much whether they are covered or not; but if you wish to cover them, the best way would be to scatter a few leaves over them. We see nothing incorrect in the way in which you have treated your Strawberries; they may perhaps do better with you next year.‡—Will "M. M. D." favour us with her address.

SEEDLING FLOWERS.

Fuchsias: *Cavanensis.* Flowers flat and in an unfit state for examination when received.*

Erratum: In the paragraph headed "Animals," p. 620, 3d line, instead of "These are *formed when* the bird called," &c., read "These are *found where* the bird called," &c.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA. E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.

HEATING BY HOT WATER.

HOT-WATER PIPES AND TROUGH PIPES, with all the usual connexions.

J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, keeps a very large stock of Hot Water and Trough Pipes, with Elbows, Syphons, Tee Pieces, Collars, Flange Sockets, and Spigots, Throttle Valves, &c., of excellent quality, and at very low prices. Parties requiring the work to be done, can have good workmen sent to any part of the kingdom, with everything requisite for the heating, &c., at a stated sum. Rain-water pipes, Sutters, Sash-weights, Railing Bars, Air Bricks, and numerous other Castings are also kept at J. JONES's, Iron Bridge Wharf, No. 6, Bankside, London.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

WHEAT SOWING.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure sent out by them shall be free from the slightest adulteration. Peruvian Guano direct from Importer's Warehouses, London Manure Company's Wheat Manure and Urate, Sulphate of Ammonia, Phosphate of Ammonia, or Ammoniacal Phosphate; Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone Sawdust, and every other Artificial Manure.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

London, November 24.

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15l. 10s.; a do. do. 15 by 10, 22l. 10s.; a do. do. 18 by 12, 28l. 10s.; a do. do. 21 by 12, 32l. 10s., including a plan for brickwork. 1¼-inch Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 11½d. per foot; 2-inch do., 1s. per foot.—J. LEWIS's Machine Hothouse Works, Stamford-hill, Middlesex.

CHEAP AND DURABLE ROOFING.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND Co., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Shedding, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

HER MAJESTY'S WOODS AND FORESTS,
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ROYAL BOTANIC GARDENS, REGENT'S PARK,

And on the Estates of the Dukes of Sutherland, Norfolk, Rutland, Newcastle, Northumberland, Buccleuch (at Richmond), the late Earl Spencer, and most of the Nobility and Gentry, and at the ROYAL AGRICULTURAL SOCIETY'S HOUSE, Hanover-square.

It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

*** Samples, with Directions for its Use, and Testimonials of seven years' experience, with references to Noblemen, Gentlemen, Architects, and Builders, sent free to any part of the town or country, and orders by post executed.

☞ The Public is cautioned that the only Works in London or Great Britain where the above Roofing is made, are

F. M'NEILL AND CO.'S

Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

SEED WHEAT.—For Sale, at 50s. per quarter, good and genuine seed of the RED STRAW WHITE and HOPETOUN varieties. Samples of grain and ear will be sent on receipt of stamps to cover the expense of postage. No orders for less than 4 bushels can be executed; those from unknown correspondents must be accompanied by a remittance. Sacks 2s. each. WINTER BEANS, for seed, can be supplied at 5s. per bushel. JOHN MORROW, Whitfield, Berkeley, Gloucestershire.

The Agricultural Gazette.

SATURDAY, NOVEMBER 24, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Nov 29—Agricultural Imp. Society of Ireland.
THURSDAY, Dec. 6—Agricultural Imp. Society of Ireland.
FARMERS' CLUBS.—Nov. 29. Burton-on-Trent.—Dec. 5; London, Tavistock.—Dec. 7; Newcastle.

WERE we asked to fix upon the system of farming which has yielded the highest rents, under the greatest disadvantages, we should at once refer to Ireland, where this result has been brought about by competition for land, which, in that country, is a competition for life; for land, there, affords the only means of subsistence. The Potato, upon which the whole system rested, enabled the cottiers to descend to a lower level in the scale of existence than the inhabitants of any country in Europe. The failure of this root has, however, in too many instances, involved landlord and tenant, wide as the chasm was betwixt them, in common ruin. And hence the loud cry we now hear—'Come over and help us.'

If we pass into Lancashire, famous as "the worst farmed county between Edinburgh and London," we at once perceive a state of society quite the opposite of the above—the abundance of water plants in the pastures indicates that the capitalist has not appreciated the soil as an investment. Labour there seeks reward in the towns where capital has flowed so freely into every branch of industry—but even here the agriculture can boast of high rents, wherever the produce of the dairy finds a ready market. Mr. GARNETT, in describing the coal district around Bury, says, "Draining is more or less required throughout the whole; the soil is a cold tenacious clay, and the country has a bare and dreary appearance; the land being divided into small properties and holdings lot high, 2l., 3l., and 4l. per acre being a common rent;" and, even taking the more fertile land in the neighbourhood of Penwortham, we believe no Scotch farmer could pay higher rents than the present tenants do, were he to pay interest on a comfortable house, a good steading, and drainage, which are essential for his operations.

If we examine Suffolk, on the east coast of England, it furnishes another contrast, and exhibits to us a highly cultivated county, where the population is exclusively agricultural—and the tenantry are under obligations to support it either in or out of the workhouse—and when we consider that in some parishes one-fourth of the gross produce of the land highly farmed on the four-course shift is expended in manual labour, it bespeaks an advanced state of agriculture. A stranger going into the county would be told that wages were 9s. per week, which is nominally correct, but the practice of paying labourers by taskwork is very common, and deserves to be imitated, as it tends to elevate the labourer, and affords a far better incentive to strenuous industry than the frown of the master. The following extract taken promiscuously from the ledger of a light land farmer will show that the payments for one year of a common labourer are often higher than is suspected.

106½ days, at 1s. 6d.	£7	19s	4d
Task-work	24	14	9
Malt	1	4	0
	£33	18	1

equal to 13s. per week. A Scotchman, on seeing the fine crops growing, and hearing the amount of rent, would be apt to exclaim that it was underlet—but he knows not of the tithes, poor-rates, and high labour bill, of which he has had little experience; and he forgets that more manure is necessary to resist the effects of a drier atmosphere and more scorching sun. Under this system, while drilling for all kinds of crops is almost universal, as it gives facilities for the profitable application of labour, other mechanical inventions which tend to economise labour are rather discouraged.

In Scotland everything is done to economise labour, and it is the weakest point in the system there that so little manual labour is involved. The able-bodied poor have no claim for work, but are left to their own resources, and find employment, as they best can, in the towns and villages. For crude labour, such as hand-loom weaving, they are badly paid; 6s. per week, as average wages through the year, are too common. The agricultural labourers are better paid, but not so well as in the high farmed districts of eastern England. It is of considerable advantage, both to them and the farmers, that about one-half of the yearly wages is paid in kind, consisting of milk, meal, and Potatoes, but, in all, this will not amount to more than 8s. per week; the married men have cottages on the farm, which are not estimated, seeing that they are included in the rent. In some districts, such as the Carse of Gowrie, the bothy system still prevails to a great extent, numbers of unmarried men living in one room, and cooking their own victuals. This practice has been attended with bad results, having done much to demoralise the Scottish peasantry, and neutralise advantages which they possessed in regard to education and religious training. It afforded, however, a ready supply of labour at a low rate, in localities where it was difficult to obtain. So rapid has been the change in the system of farming in the Lothians, consequent on the thorough draining of the land, that for certain sorts of work labourers are scarce, for the farmers have no idea of cleaning and weeding their crops by high-priced labour, and all the lighter descriptions of work are performed by females, a considerable number of whom come down from the Highlands for the spring and summer work. The manual labour bill does not exceed 30s. per acre on the best farmed districts, and if we leave the Lothians, and go into other districts which are not fitted for the six-course rotation, good farming is found where the manual labour is not above 15s. per acre; the expenses are reduced by allowing the land to lie in pasture for two, and even three years, which is deemed the most profitable way to restore its diminished fertility, after a course of cropping. Rents are by no means so high in Scotland as is supposed. A good breadth of beautifully farmed land is let in the Lothians at 7 bushels of Wheat per acre (9 bushels, Scotch measure), and the tenants, under this fluctuating rent, cannot be much worse off in 1849, with Wheat at 40s. per quarter, than they were in 1846, when the price was 65s. per quarter, seeing they have other products than grain and fat stock to dispose of.

MARTIN DOYLE, in his interesting appeals in behalf of Ireland, gives us some idea of the low condition to which her population was reduced, even when high rents were extracted, when he says, "In the most prosperous period of Irish agriculture, the produce from the same extent of area was two-thirds less than that in England, whilst the amount of labour in extracting that produce was greater."

In Scotland there is a totally opposite state of matters existing, where economy in labour is predominant; and Lord KINNAIRD has unwittingly solved the paradox to Englishmen, why a greater amount of the gross produce is given to the landlord. In his published results of 11 years' experience in farming, the outgoings on a farm of 300 acres (excluding permanent improvements) in the shape of "manager's salary" estimated as equal to "the farmer's expenses of living"—"wages," "expenses," "seed, and stock," (!) only amount to 2l. 6s. 6d. per acre, and, with 10s. 7d. for manure added, constitute the total expenditure. It is needless to say, that it does not require a great gross produce to pay a respectable rent in such circumstances. The great crops which are frequently heard of, and unintentionally magnified by confounding customary and statute measure, merely indicate the capabilities of the land, while humbling averages and bad crops are allowed to "blush unseen."

The small amount of capital with which it is possible to farm land in Scotland, conjoined to the opinion which is too common amongst landlords and tenants, that industry will in a great measure make up for deficiency of capital, has always proved a fertile source of suffering. The results obtained in the best farmed districts in England should encourage the Scotsman to employ more labourers, and, on the other hand, the Englishman might profitably take a lesson from him in the economy of labour, which, in our opinion, is the main reason why the former has founded the notion of being superior in every respect in farming details, and we shall endeavour to trace this out in our next. *R.*

PROSPECTS OF FARMING.

A SURVEY of my farm, the crops I have had, the condition it is in, the cost of its cultivation, deduced from the four years' experience I have had of it, leads me to the conclusion that a fair profit may be confidently expected from this and similar farms similarly cultivated. I propose, therefore, to give an account of it, and will, without further preface, endeavour to give the reader a clear conception of the kind of thing my farm is, what my system and its results have been, after which I will make such observations upon the whole as may occur to me to be worthy of notice.

The farm consists of 21½ acres of pasture land and 35 acres of arable land on the chalk hills. The soil is rather stiff, though not always; very stony, its surface not more than a foot from the stony rubble which overlays the chalk. Though well chalked 20 years ago, it is very hard working ground. In wet springs it is very difficult to work the fallows properly. In these two last wet winters it seems to have been very cold and wet for the sheep, but I should think draining could be of no use, and so there is none. Such is the

description of the arable part. The pastures are sandy, and indebted more to art than nature for what fertility they bear.

I took possession by purchase four years ago, the condition being probably better than outgoing occupiers generally leave farms, but still very full of weeds. Its then value may be perhaps judged of thus: an adjoining farm of the same description, with the same rates and tithes (together 10*s.* an acre), I let at that time for a guinea an acre. Or perhaps the following statement may help to form a judgment: the year I entered, a small field, a Bean stubble, was dunged for me by the outgoing occupier and sown with Wheat. The produce was nearly 3½ qrs. to the acre. I sowed Vetches, dunged, on the Wheat stubble, which were partly fed off, partly mowed, the sheep having nothing but the Vetches. It was then sown with Wheat, and the produce was over 3 qrs. per acre, in 1848. This must suffice for the condition and value of the farm when I took it.

Now for my system. I resolved to arrange it as quickly as possible into a regular four-course rotation of Turnips, Barley or Oats, Beans, and Wheat, which will be completed this current year. My reason for entirely excluding Clover was that the pasture would afford me plenty of hay, and Beans would better clean the land. The Turnips to be fed off by sheep, the whole of the Barley to be given to pigs, the Oats to the horses, and the Beans to sheep and pigs, selling nothing but Wheat, sheep, and pigs. I started with 60 ewes, their lambs to be reared and sold as fat tegs, to be put on Beans as soon as they would eat them; when Turnips were gone, to be regularly penned over the pastures, with half a bushel of Beans per day; and when on Turnips again to have the same allowance of Beans with hay. The nature of the land requires three horses to plough it. These, together with my riding horse, were to kept in the stable in summer, and Grass cut for them. The same with two cows. Thus the whole of the pasture was to supply one year's cutting of it to the arable land every year, excepting so much as the sheep would want from the time of leaving Turnips till the aftermath was ready. I was to breed my own pigs and buy offal from the mill for them until they were ready for Barley-meal. Thus was the arable land to be kept in heart. Besides penning the fatting sheep on the pastures, followed by the ewes, these pastures were to be annually dressed with wood ashes (40 bushels per acre), which are very abundant in the neighbourhood. All the yard dung was to be laid on the fallow for Turnips, and the Barley stubble for Beans, the Wheat to be dressed with 40 bushels of soot per acre, and the Turnips having 40 bushels of wood ashes per acre sown or drilled with them. The land was to be ploughed as deep as possible, going lower than formerly, and turning up a yellow clay. To this deep ploughing I attribute much of my good crops.

This system has been rigidly followed, so far as the sheep and pigs are concerned, 60 ewes having borne upwards of 60 lambs yearly, which have been sold as fat tegs; the ewes, however, having now diminished down to 50, which are now in lamb for the fourth time. Of last year's lambs there are at this present moment 29 intended for breeding ewes next year, and 35 wether lambs fatting. Of course I had to begin with buying Barley for pigs, Beans for sheep, as well as hay for cattle. The system, also, has been rigidly adhered to for the cows and horses, except this summer, when the extreme drought prevented a swarth of Grass, and they were turned out to graze. The reason why this did not happen in the dry summer two years ago is, that part of the arable land was Saintfoin, concerning which I will speak presently. Until this year there has not been, owing to the Saintfoin, a fourth part of the arable land in Turnips. From what has been said, it is evident that it is time to judge of the effects of the system upon the land. Now these are the results.

The first field that was in Turnips produced 7 quarters of Barley per acre in the fine season of 1847, 5 quarters of winter Beans in the wet and wretched season of 1848, and 5 quarters (by estimation) of excellent red Wheat in this year, 1849. The grounds for this estimate of Wheat are these: 90 shocks per acre were counted over the whole field (7 acres) which was reckoned the finest field of Wheat round this country. Thirty shocks were threshed out for seed and yielded 14 bushels of clean Wheat. The second field that came under the system produced 5½ quarters of Barley per acre in the bad season of 1848, and, judging by the quantity of Beans already threshed, 6½ quarters of winter Beans per acre in 1849. The third field that came under the system, judging by the quantity threshed, is estimated to yield near 7 quarters of Barley per acre this year. The crops of Oats have been 8 and 10 quarters per acre. In estimating the effects of bad seasons, I think the following fact deserving of mention. Adjoining the small field of Wheat above-mentioned as producing a little over 3 quarters per acre, were two acres of Clover which had been uncommonly well done by my predecessor. It was mowed once by me, lightly fed by sheep with corn, and again the next spring lightly fed by sheep with corn, but not mowed, dunged lightly, then sowed with Wheat and dressed with soot as above. This Wheat was excessively laid and matted down during the wet season of 1848; but, notwithstanding that almost unexampled bad season, the crop was over 5 quarters per acre, and fetched the average price (44*s.* a quarter, at the time it was sold. In fact, this had been virtually treated according to my system.

Now, for the future. The first field that I put under Turnips is come round to be fallowed for Turnips again, increased to 8¾ acres, or one-fourth of the arable land. As to cleaning, it can hardly be said to require it. It must be in better condition than when I took to it, and I may fairly conclude that the crops will be better than the last four years, splendid as those crops have been, and so on continually for this and the other fields, which henceforward will be of equal size. My horses doing nothing so great a part of the year, I consider that 3¾ acres of Oats after Turnips will be sufficient for them, estimating the produce to be near 10 quarters per acre. This year part of a field has yielded 12 quarters per acre. My fat sheep have averaged 9 stones when 16 months old. The two cows have yielded 27*l.* a year for their butter, and skim milk used or sold to the men at a halfpenny a quart. Having fatted 100 hogs to 10 score each and upwards, I have found that 11*s.* a score pays about 27*s.* a quarter for Barley, whence I calculate that 8*s.* a score will pay about 1*l.* a quarter for Barley. From all which I form the following estimate of the future produce of this and similar farms similarly cultivated.

60 fat sheep, at 9 stones, at 4*s.* per stone ...	£108	0	0
120 fleeces	24	0	0
5 acres of Barley, at 6 qrs. per acre, given to pigs, and paying 1*l.* per qr.	30	0	0
8¾ acres of Wheat, at 5 qrs. per acre, at 2*l.* per qr.	87	10	0
Produce of two cows	27	0	0
Keep of riding horse	11	10	0
Net saleable produce	£288	0	0

The outgoings estimated on the past four years' experience will be as follows:

Labour	£90	0	0
Wood ashes and soot	37	10	0
Seed	17	10	0
Tithes and rates...	28	0	0
Tradesmen's bills	10	0	0
	£183	0	0

I have not included the food bought of the miller for the pigs, for it is regularly returned on the sale of the hogs, and the balance is the value of the Barley. This estimate gives me a net return of 105*l.* for my joint character of landlord and tenant. A more experienced farmer would make a much greater return. He would introduce the threshing-machine and the horse-hoe, which would effect a material saving in manual labour, and keep the horses employed during the many months that they are now idle. He would, I think (but should hereupon much like the opinions of others), find that with this expenditure in making manure there would be no occasion to put ashes on the Turnips or soot on the Wheat. But above all, I am certain that the weight of the fat sheep might be greatly increased by different management. My neighbours tell me the hay and corn my sheep have should make them 2 stones heavier. I proceed to point out the cause of this defect. Desirous of thoroughly cleaning the land, I have had very little Vetches on the Turnip fallows, and though I have had a piece of Saintfoin and Clover, yet two ponies having been kept, and two cows purchased and fattened, and three heifers bred and fattened, have caused such a demand for Grass and hay that the lambs have been penned upon the pastures very far too hard. This I am told is the cause they have reached but 9 stones, for they have had plenty of Turnips as well as hay and corn. Hereafter, however, the land being so clean, it will be perfectly easy to have 4 acres of Vetches every year. Moreover, as 5 acres of Beans, at 6 quarters per acre, afford half a bushel a day to 60 sheep for 16 months, the remainder (3¾ acres) which I first intended should be Beans can evidently be Clover. There is still another source whereby the supply of hay, and therefore the increase of pasturage for sheep, will be increased. Hitherto I have used no straw for fodder. Now when there comes to be 26 acres of corn annually, there will be very much more straw than we shall use as litter. 20 trusses a week will litter the cattle well. There is supposed to have been 100 trusses per acre on my Wheat land this year. I think I see here a supply of straw for food, equivalent to 2 or 3 acres of hay.

Many other defects there undoubtedly must be in my management. I have no practical knowledge worth calling such, but am forced to commit to others such things as would make a difference of many pounds if I could do them well myself. So that I am compelled to infer that, if an active, experienced, and intelligent man could not make a much greater profit than I have estimated, then agriculture is an art so easily practised that a living profit from it is not to be expected. But it is not so. I can plainly see that were I able to buy and sell my own stock, and personally to direct all the minor details, I should gain in many ways. One, I am told, would be thus: I should do better to sell the lambs and buy older sheep for the Turnips. But my ignorance is such that I should probably lose 5*s.* a head in the sale and another 5*s.* in the purchase. Perhaps, then, the experience and estimates of one so ignorant may not be worth your notice. I will bow to your decision. I have broached no novelty, but merely narrated the results of a courageous application of manure to the land. I have no liquid manure tank or other costly invention: but the farm-buildings are spouted, hedges thrown down, game eschewed, and last, but not least, the maiden clay, sand, and big stones, which never before saw daylight, are now brought up to contribute to future depth of mould. *Amicus Tull.*

[Many thanks]

Home Correspondence.

Ireland.—I find, in your valuable Paper of the past week, a correspondence signed "Samuel Taylor, Barnwood, Gloucester," upon the subject of Mr. Caird's pamphlet. It seems Mr. Taylor was offered farms 40 years ago upon most advantageous terms, which he refused to accept, because of the murders occasionally arising out of agrarian causes, in this country. As an Irishman, better acquainted with Ireland than your correspondent can be, I beg leave to protest against such silly reflections of unthinking, though perhaps well-disposed, Englishmen. Mr. Taylor knows, or ought to know, that such atrocious deeds were confined to a few portions of Ireland; he ought also to have inquired, before he made this assertion, what share the system of English absenteeism of Irish proprietors of estates has had in increasing this bad feeling between landlord and tenant in Ireland. Such men as Mr. Taylor are doing more damage to Irish property at the present time, by those pretended fears than they are willing to acknowledge. It is but another covert and crafty pretence to depreciate the value of the estates now about being brought to a sale, under the Encumbered Estates Bill, in this country. [Mr. Taylor has nothing "covert or crafty" about him. The price of land must suffer wherever the smallest risk attends the life of a purchaser; and our correspondent would more effectually attain his object by confining himself to proof that there is no such risk, except in a very few localities, than by attempting to malign the motives of those with whom he happens to differ. The question for any one intending to locate anywhere in Ireland, must relate to the *fact* of agrarian outrage, not the *cause* of it. Self-interest must, in all our calculations, be held to be the ruling motive, and this will lead no one among madmen whether their madness have arisen from unjust treatment or not. But then, let any one enquire into the actual disposition of Irish people, labourers, and others, and he will find that over 99-hundredths of the country it is perfectly compatible with his personal safety. People should remember that Ireland is a country two-thirds the size of England, with straight lines in it 300 miles long; they should not visit upon the whole country crimes chargeable only on one or two localities. And this is the style of argument to which our correspondent should confine himself.] I would ask Mr. Taylor to look over the account of the sale of Thomas Barnwell Martin's estates, which took place in London a few days ago. All over this property, of 200,000 acres, not one agrarian murder has been committed these 40 years. All over 19-twentieths of Ireland agrarian murders are unknown, and even where they have been most frequent, I would ask Mr. Taylor to answer, what share the neglect of the British Legislature has had in occasioning those deeds of blood. By the same line of argument it would be easy to show, that in many counties of England it would be equally unsafe to invest money in the purchase of land or farms. We do not forget the malicious and gratuitous burnings with which the English papers occasionally abound. The "poisonings" at present so common in England, are, it seems, excusable in English morality. I will not comment any further upon the present subject than merely to remind him, that the renewal of those charges, especially at the present moment, is tending to do an amount of injury, both to Irish tenants and Irish proprietors, in fact unjustifiable. Mr. Taylor could have found plenty not only of farms, but even of whole counties, in Ireland, where such crimes are, and have been, quite unknown. *An Old Subscriber.*

Manuring for Wheat.—In the *Agricultural Gazette* of the 20th ult. there was a letter from Mr. John Coleman, requesting information as to the manner of manuring for Wheat; and as no person has yet answered his questions, perhaps the following facts and observations may be acceptable. The writer perfectly agrees with Mr. Coleman that manure spread upon a Clover lea in the month of September "and often August will lose the greatest part of its volatile and valuable ingredient;" but if the manure was used as a top-dressing upon young Clover in the early part of the winter season, it would not be subject to evaporation, as it would seldom be dry, and, the ammonia being soluble, it would be carried into the soil by the rain. Mr. Coleman's friend spoke correctly when he stated "that he believed the crop was better when the manure had been spread and left some weeks than when ploughed in directly; and that he believed that the ammonia was absorbed by the earth, and as a proof he spoke of the rapid growth of the lea." This is in conformity to the letter of Mr. Albert James Bernay (which appeared in the same Paper), and in which he proves that the rain carries the manure still deeper into the soil; but at the same time it is questionable, as to whether the ammonia, or the "increased growth of the lea," or the ammonia and Clover root jointly produced the better crop of Wheat. In this country where the four-course system is followed, the Clover lea is broken up for Wheat, and from a good root of the former a good crop of the latter may safely be depended upon, except under some unforeseen circumstances over which we have no power. When a Clover lea has been manured it will be necessary to plough it at least 4 inches deep; and the manure being under, the roots of the Wheat will seldom reach it, and as it has to remain undisturbed for 12 months, the rain will carry the greatest part of its nourishment too deep ever to be recovered. When young Clover has had a top-dressing of farm-yard dung it will increase the quantity of manure and produce a better yield of Wheat than the lea that was manured at the time of breaking it up. Even if a field of Clover was divided into two equal parts, the one grazed and the other mowed (when young), the

latter would not only soil more cattle and make more manure, but grow a better crop of Wheat. Clover of one year's growth will generally produce more Wheat than a three year old ley, in consequence of there being more root in the soil and it contains nearly every chemical ingredient necessary. To increase the stock of manure is one of the first steps to high farming; therefore, drain and clean the land, muck well for green crops, and good white-straw ones will follow. *J. C. H., Croft Farm, Bridgnorth, Salop.*

The Improvement to be gained by Travelling.— My profession has afforded me frequent opportunities for inspecting the farming of England under its many phases and prejudices. I do not pretend in my farming to have originated any new system, but I profess to have greatly benefited by what I have seen and learnt of others. We have fortunately now attained that perfection in travelling which admits of every farmer traversing the island, for the purpose of seeing what others are doing, at little loss of either time or money, and we can hardly sufficiently appreciate the improvement in practice which this will lead to. It has hitherto been a sad hindrance to advancement, that farmers have had little knowledge of the farming practised 50 miles from their homes; and hence it is that the traveller finds himself, in a few hours, transported, as it were, into a fresh country, so different are the stock, implements, and habits, and so conflicting are the principles which are to be found in English farming. But all Britain now lies open to the inquiring agriculturist, as an illustrated book of information, as an example farm for his improvement—and what a ready means is here for his acquiring improvement! At this season the farmer has little to do to require his attendance at home. What a lesson might the raisers of stock in the west of Britain gain as to the finishing of stock and the value of root crops fed with oil-cake, by crossing and visiting the highly farmed districts in Norfolk and Suffolk! They might there see the practice that enables the Norfolk farmers to pay 30*s.* an acre for comparatively poor sands, and that gives to them in six months the returns for their stock that the breeder scarcely realises in twice the period. There are two districts which are as unknown countries to the English farmer, namely, the Scotch Lothians and the Flemish plains. We hear of the thriving of their farmers as we do of the gold pickers in California, as something wonderful, but not to be imitated; we cannot doubt of the fact of their success, and yet how few are curious to make inquiries as to what their success be owing. Why do not farmers go and see? Surely something may be gained from observing practices that may be so readily copied. *Hewitt Davis, 3, Frederick's-place, Old Jewry, London, Nov.* 16.

Ireland.—The extraordinary system now prevailing in Ireland shows the absolute necessity of introducing a new class of farmers into the country—men who have been accustomed to regard their landlords as having some claim on the property which is held by them, either on lease or annually, and fully entitled to enjoy a portion of the value of the crops produced by the cultivation of the soil. The want of principle amongst the farmers in the disturbed districts is so deeply rooted, revenge so common, and thought so little of by those who exercise this barbarous feeling, that nothing will eradicate it without the example of some of the high-minded, intelligent, and industrious yeomen of England and Scotland, who would soon convince the deluded agriculturists of Ireland how much easier and more Christian-like it is to live honestly than to plunder, cheat, and murder. It is quite obvious that famine must succeed famine if the land is permitted to be half cultivated or over cropped. It is also clear that the strong arm of power, in conjunction with disease and scarcity, have not had the effect which might have been anticipated of making the working population more alive to their own interest. The destruction of property cannot be to the advantage of any one. Capital is thus decreased, labour is thrown into the market already full, the union is crowded to overflowing, and an additional rate is levied to meet the wants of the poor, who have lost their employment through the mischievous and wicked conduct of the men who ought to know better. The farmers of Ireland are ruining their country without in any measure promoting their own welfare; they are acting like madmen, and in the attempt to destroy those whom they imagine to be their enemies, they are themselves walking over the brink of the precipice; their blindness and infatuation are beyond the comprehension of the usual cast of intellect. Mistaken selfishness seems to have taken possession of the mind of the Irish agriculturists, and has brought down upon the heads of an unfortunate and short-sighted people the wrath of the Almighty. Absenteeism on the one hand and agitation on the other have nearly swamped the country, and it is only by the most strenuous and immediate efforts she will be able to maintain her position, and preserve her sons from the curse which always follows disobedience to the laws of God and man. There can be no intention on the part of those who call the attention of the young English and Scotch farmers to the fertility of the Irish soil to lead them astray, far from it. My desire is to assist all parties, and place in a true light the advantages and disadvantages of holding land in Ireland. I do not suppose that anyone who is comfortably housed in England will think of changing his home, because land may be had cheaper in our sister country; neither can I fancy our hardy agriculturists will be deterred from crossing the water, because they may have to rough it for a year or two. They would have to do the same, and to a much greater extent, either in America, the States, or Australia. Let us look at both sides of the picture: 1st, against — the dwelling-house and homestead may be both smaller and inconvenient, but surely this would be considered a temporary evil by an enterprising young man resolved to work his way in the world; should trifles of this description frighten a British yeoman, he had better remain at home, as nobody can say he will luxuriate in everything belonging to a well-conducted establishment during the first year of his novitiate. 2. His workmen being unaccustomed to regular labour and tolerable wages, will try his patience by their slovenly and apathetic way of hand ing their tools. The comfort and blessing of receiving their hire in hard cash every Saturday night, will effect a rapid change in the manners of the labourers, and they will become as hardy and obedient as any in the universe, if treated kindly. 3. From centuries of neglect, when other parts of the United Kingdom were progressing towards improvement, certain crude notions have become second nature amongst the Irish agriculturists, and will be difficult to eradicate, and almost impossible to alter by the mere powers of persuasion. The advantage of introducing machinery and scientific knowledge, when once practically demonstrated, will soon disperse the clouds of ignorance from the eyes of our Irish brothren, and they will readily embrace opportunities of mending their fortunes. 4. As to the fear of personal injury, no farmer who pays his men fair wages, and treats them with common humanity, will ever be molested, particularly if he is a stranger, either English or Scotch. Now let us turn to the favourable side of the picture: there are numerous landlords in Ireland who would be only too glad to let land, of excellent quality, on lease, at a very low rent, to respectable men, who could command capital, and produce characters for steadiness and sobriety. Of the fertility of the soil there can be no question, the produce even under imperfect tillage is astonishing, and what might it not become under experienced English and Scotch farmers. At no period could a pains-taking man more advantageously locate himself in Ireland than the present, affairs having almost reached a point at which they must improve. An infusion of common sense with a spirit not easily daunted are ingredients in request for our sister country; we have them to spare, and why should not the exportation be encouraged, for the good of the United Kingdom, and for the benefit of individuals. Let emigration to Ireland be discussed in every point of view, coolly and impartially, without either making the island a paradise or a place of banishment and misery, and I feel quite sure the good things to be obtained will far outweigh toil, trouble, and disappointment. It is too much the custom either to laud an undertaking up to the skies or lower it to the "lowest depths." I would counsel a middle course, the most difficult to steer, but the safest. *Falcon.*

Malt v. *Barley.*—I would refer your enquiring correspondent "G. P. A.," to the experiments on this head recently instituted by Mr. Lawes, and detailed in the last Number of the Journal of the Royal Agricultural Society. They were undertaken for the express purpose of ascertaining whether malted was more valuable for feeding purposes than unmalted Barley—were conducted with the greatest nicety, in order to obtain reliable results, and brought him to a thorough conviction that the expense of malting was simply thrown away. Theoretically the result should be so. Malting does not exactly convert Barley into saccharine matter, but produces a substance, diastase, which induces the conversion; so that if for argument's sake sugar were admitted to be more nutritious, or more fattening, than starch, it could hardly be expected that the food would remain sufficiently long in the animal's stomach for this conversion to take place. It is probable however, though I have not tried the experiment, or seen it tried, that this converting principle, diastase, might be advantageously used for rendering the coarser kinds of cattle food more easy of assimilation. The grain destined for the cattle might be steeped 30 or 40 hours, and spread thick on a floor until it began to sprout, when, the diastase being formed, it is fit for use. In making the usual feeding compound, a quantity of this home-made "malt," thoroughly crushed, might be intimately mixed with the chaff and other feeding stuff, and hot, not boiling, cake or linseed-soup poured over the mass, which should be well pressed and covered over, to prolong the cooling. The action of the diastase on the warm moist mass may very possibly render it more easy of solution in the animal's stomach; at all events if there be any superior virtue in malted grain as food for cattle, every possible benefit may in this way be obtained at no other cost than the trouble of steeping and spreading. *P.*

English Farming in Ireland.—I have read with some attention letters in your Paper, *pro* and *con* from "Martin Doyle" "Cadvan," and others on English farmers' settling in the Irish "far west." Having lived the last three years constantly in Ireland, and having latterly taken (though only a novice) a farm, besides being much interested in the welfare of Ireland, nothing would give me greater pleasure than to see a number of intelligent energetic English and Scotch farmers, with capital, come over to this country; and I am sure if they could obtain a settlement in a peaceful locality, where the rates are low, that they would do well; and, besides giving employment, would confer immense benefit on the neighbouring Celts, by showing what can be done and made by honest farming; for, with few exceptions, the land of Ireland is farmed most dishonestly by the great mass of Irish tenantry, impoverishing the land by their wretched system of farming, and in the end ruining themselves, and then blaming every one but the right person. I allow that the "west" wants settlers of capital more than the north and east, and so far "Martin Doyle" is right in praising the "west," as the best field for capitalists, but still I think it only justice to my English brethren to lay a fair statement before them, to mention some of the drawbacks, and let them look on "this picture" as well as on "that." Without doubt Ireland possesses great advantages to an intelligent industrious agriculturist with capital, a most fertile soil, and none better adapted for green crops and rearing of stock; and when we hear of rent, we must also remember that the Irish acre is about equal to 1½ English, so that 30*s.* an Irish acre is equivalent, say, to 20*s.* an English acre, and rents on large properties (having regard to the difference of the acre, and that the poor-rates are divided between landlord and tenant, and that tithe is payable now by landlord), are not at all high, although they may be so on small estates, or on lands sublet by middlemen. Now after thus much, the only question is, if an Englishman intends settling in Ireland, whither shall he go? to the "west" or to the north and east? I would strongly recommend the latter, not only because I should like to have the chance of benefiting by the example of good Saxon farming in my neighbourhood, but also in common justice to an enterprising settler. If he goes to the far west he will have cheap labour, no doubt, but tremendous rates, and no sympathy from people of his own faith, for few would he find in those parts, and such a state of things would in the end be of much disadvantage to himself and family. Now in the north and east, he would find low rates (in my neighbourhood in the worst of times they did not exceed 1*s.* 3*d.*; the highest in the union 3*s.*, and the lowest 7*d.* or 8*d.* in the pound), and he would find those of his own faith, with whom he could take sweet counsel together, and in whose company he could worship the God of his fathers. I will only briefly allude to the absence of all great crimes in the north and east, and refer your readers to the dreadful accounts of assassinations in other parts; and the worst feature connected with these dreadful murders is, that the whole country is aware of the crime, knows the murderer, and never informs. One more objection to an English settler fixing on any quarter but the north and east, and I have done. The English farmer is famous for his skill and energy in taking advantage of every gleam of sunshine to save his crop. Imagine him settled in his new "western farm," a glorious crop of hay in rough cocks, and only wanting another day to save it—he awakes in the morning, and is cheered by the prospect of another glorious day—he dresses and is off to his labour, but no labourers are there to answer his bell—he rings and storms in vain. He is answered by the chapel bell calling his "cheap labourers" to mass; for it is a "holy-day," and not a man dare work—ere long he will be driven crazy by the number of these holidays, and especially at finding that the greater number happen at haymaking and harvest time. In the north and east, though subject to the same annoyance, the fair sprinkling of Protestants will insure him some labourers in his hour of need. This great drawback has not, I believe, been alluded to by "Martin Doyle," and yet no one farms in Ireland without having been annoyed by it. *X. Y. Z.* [The abridgements we have made in the above are on the ground that those peculiarities of Roman Catholicism which were commented on are hardly a subject of agricultural discussion.]

High Farming and Low Prices.—Your correspondent "R. F. W." inquires "can low prices be met by high farming," and gives last year's result of his own cultivation of 65 acres of arable, and 35 acres of Grass land, in support of his decided opinion that they cannot be so met. It is so rarely we can get at figures that I am obliged to "R. F. W." for those he has given us, and am tempted to look into them, in order to make out, if possible, how it is that he lost his labour, and some money, by his farm of 100 acres. His rent is 1*l.* an acre, and as he had 30 bushels of Wheat to the acre, I assume his land to be of average quality and in fair condition. The money total cost of the year's farming was 321*l.* 13*s.*, the money return 320*l.* 6*s.* 6*s.*; adding 80*l.* to the money return for the value of the food consumed by his horses, we get an average production of 4*l.* an acre. Does "R. F. W." call that "high farming?" Should he be satisfied with any such return from fair average land? Try it in another way, the principal produce was Wheat, which he sold at 5*s.* 8*d.* per bushel, relalising 204*l.* 3*s.*, consequently he had 720 bushels, the produce at 30 bushels per acre, of 24 acres; deducting 204*l.* from 320*l*, the gross money produce, we have 116*l.*, and the feed of 3 or perhaps 4 horses, as the return for 76 acres of arable and Grass land. Can such a result be accounted for by "low prices?" Must it not inevitably have been occasioned by some unexplained if not inexplicable mismanagement? It is by looking into the details of farm management that we can best make out why it is that farmers cannot pay their way without a compulsory contribution from the rest of the community; and as "R. F. W." professes himself anxious that agriculture should prosper, though he very properly congratulates himself that he is not dependant on its prosperity, I venture to ask him to give some further details of his farming in 1848, and to explain how it came to pass that 35 acres of Grass land, and 41 of tillage,

only fed the horses required to cultivate 55 acres, with the insignificant money return of 110l., or just 40s. per acre. *P.*

Auchness Farming.—On the first perusal of Mr. Caird's pamphlet, I own I was surprised that he should have adduced the profits arising from the growth of Mr. M'Culloch's moss land Potatoes in support of his views as to the beneficial effects of "high farming," seeing that the 30 to 40 acres of moss land appear to be cultivated and cropped entirely independent of the remaining portion of the farm; and I therefore deducted from 2518l. (which Mr. Caird states to have been the total value of the annual produce of stock and crop for 1848) the sum of 700l., being the value of 10 tons of Potatoes per acre, at 40s. per ton, for 35 acres of moss land; but then, having done this, I was, in justice to Mr. Caird, under the necessity of making deductions from the other side of the account, for the cost of reclaiming 6 acres of moss for the 1848 crop; for the expenses of working the 29 acres of previously reclaimed land, preparatory to planting the Potato crop; for the expense of carting the manure and guano to the Potato land; for the value of such manure, and the cost of such guano; for the Potato sets, and for the expense of planting, hoeing, and gathering the produce of the 35 acres of Potatoes. I say nothing as to the rent of this land, for Mr. Caird speaks of its being in its unreclaimed state utterly worthless, and I therefore presume that Colonel M'Douall would most probably allow this land to be reclaimed and occupied by Mr. M'Culloch free of rent for a certain term, and that the present rent of 262l. applies solely to the 220 acres of old land. Now, supposing we make a Dr. and Cr. account for this moss land, thus:

Dr.	£	s.	Cr.	£	s.
To cost of draining and reclaiming 6 acres of moss, at 10l.	60	0	By 35 acres of Potatoes, at 10 tons per acre, 350 tons, at 40s.	700	0
To expense of working 29 acres of Potato land for a succeeding Potato crop, say at 20s.	29	0			
To expense of carting manure to 35 acres, at 50 loads per acre, 1750 loads, at 6d.	43	15			
To value of 1750 loads of manure, at 2s 6d.	218	15			
To cost of guano for 35 acres, at 4 cwt. per acre, 140 cwt. at 10s.	70	0			
To cost of Potato sets	43	15			
To expense of planting, hoeing, earthing, and gathering produce of 35 acres of Potatoes, at 50s.	87	10			
Balance	147	5			
	£700	0		£700	0

We find that there is a sum of 147l. 5s. to deduct from 2518l., on account of the moss land Potatoes, which leaves the total annual produce of stock and crop, 2370l. 15s. Then, as it is not every farmer who has the privilege of getting 500 loads of sea-ware annually, I add 2s. 6d. per load for the 500 loads, 62l. 10s., to the annual expenditure for the farm, which, according to Mr. Caird's statement for 1848, was 1205l. 3s. 8d., giving a total expenditure of 1267l. 13s. 8d., and this sum, deducted from 2335l. 15s., leaves 1103l. 1s. 4d. to pay interest on capital invested, and for profit, &c. I do not say that Mr. M'Culloch does realise 1100l. per annum from his farm, exclusively of his moss land Potatoes; but if Mr. Caird's pamphlet be worthy of credit, then it is evident that he does realise something like that amount, and this independent of any adventitious circumstances in his favour, unless the rent at which I suppose the old farm to be let (about 24s. per acre) be considered as such. I should not have troubled you with these remarks, had I not seen from the correspondence in your columns of the last two or three weeks, that Mr. M'Culloch's growth of Potatoes upon the moss land, and his facilities for obtaining sea-ware (both of which are so honestly stated by Mr. Caird) are being made handles of to throw doubts upon the success which he (Mr. C.) so confidently anticipates will follow, and which, in fact, he so distinctly states has followed, the system of high farming, when properly carried out, and backed by sufficient capital. *William Tuke, Bradford, Yorkshire.*

Ireland.—"I want to see Patricks at the looms, cotton and silk factories springing up in the bogs, Ireland a rich happy country! scribbling, carding, cleaning, and making calico, as if mankind had only a few days allotted to them for making clothes, and were ever after to remain stark naked." The above was from the pen of a most talented writer, and the wish must find an echo in every breast; and yet, with facilities for carrying out unbounded and lucrative speculations, the land continues barren, and the natives all poor, wretched, and mischievous. Landlords cheated out of their rents, tenants turned adrift, and society at the lowest ebb of civilisation. This new system of cutting down and carrying away crops on a Sunday, to evade the law, is about the acme of cunning, and points forcibly to the faulty relation between landlord and tenant, requiring the immediate attention of the legislature. The letter of a nobleman which lately appeared in the *Times* is sufficient evidence of the necessity of action. The late examples we have had of the power of parties to annoy each other, is enough to alarm any English farmer, and deter him from embarking his fortune in Ireland; as, however safe he might be in arranging his own affairs, yet no one feels disposed to identify himself with a country where such lawless proceedings are permitted to exist. I am still of opinion, in spite of all untoward occurrences, that men may cultivate Irish farms with great advantage to themselves. Writing and talking will be all in vain to persuade them to cross the Channel, when, instead of discontent and confusion subsiding, new sources of irritation are springing up, and the winter promises to be one of agitation. Surely if one class combine to do evil, another may band together for good, and the latter, in the long run, having justice on their side, will succeed. Owners of property and those interested in the tranquillity of Ireland might, *nem. con.*, divine some means of overcoming the abominable spirit pervading the island; but it must be a combined movement, proposed by men of all parties. Nothing but the most strenuous efforts of the noblemen, gentlemen, and tradesmen of Ireland, will now save the country. Meetings must be held to discuss the critical and difficult question of "What is to be done to change the present alarming aspect of affairs?" The talent and integrity of Ireland must be collected, and, after due deliberation, suggestions should be forwarded to Government to enable ministers to judge of the united feelings of the better classes, and also as a guide to frame measures to meet the serious growing evils; which, if allowed to remain uncared for, can only terminate in the most disastrous results. There is no use shutting one's eyes to facts. There are certain laws of nature which cannot be neglected without doing mischief. There are also rules of society which, if outraged, will bring their own punishment sooner or later. Common sense tells us, as well as experience, that land thrown out of cultivation will not produce food, and the want of aliment will cause famine. This is the case of our brethren on the other side of the water, with the addition of the dog in the manger nature; they will not work themselves, neither will they allow anyone else to do so. There is an old saying, "a child that can sing and won't sing should be made to sing." The idea of a country, within a morning's excursion of the great metropolis of England, having been for the last three years in a state of utter destitution, in many districts, which ought to provide surplus cattle for exportation, is a matter of history, but will scarcely be credited by the next generation. That a country may suffer from a bad season and failure of crops is not an uncommon occurrence, but that a people who are clever, quick, and not wanting in any of the characteristics of a high class nation, should court disease and poverty, and render themselves miserable, is beyond the comprehension of any human being. It is melancholy to watch the atrophy under which Ireland is labouring; her substance is gradually wasting away, her energy is as an unstrung bow, and her case appears hopeless. Is there no physician to heal her malady? Let us hope one will arise ere long. *Falcon.*

English Farmers v. *Foreign Farmers.*—In the *Agricultural Gazette* of the 27th of October there is an article of the above title purporting to upset the arguments of "I. A. C.," published a few weeks ago. Does "T. M." really understand my language to mean that the legislature (in abolishing Protection) seeks to enlarge foreign trade by discouraging home production? Of course our revenue is obtained from our native productions; it is taken either from the native products themselves, or from the foreign products for which we may have exchanged them. To increase the foreign trade is, of necessity, to increase the home production; for how can we sell more to our neighbours abroad unless we make more to sell, and how can we buy more of them unless we produce more with which to pay them? The exchange may be of equivalents in value; but our neighbours may be in want of clothing, we in want of food, and though our respective goods may be equal in value (*i. e.*, have had the same expense of labour bestowed upon them), it will be greatly to the advantage of both parties if an exchange take place. It is to increase this mutual exchange between Britain and other countries, bringing with it such mutual advantage, that our legislature has rendered our productions more worth having than they were before. By cheapening corn labour is cheapened, and therefore more goods are produced from the same amount of labour; and our goods being thus cheaper, the foreigner will get more in quantity for what he brings us. We have cheapened our wares as an inducement to buyers. How an increase of custom is to diminish our production I know not. With regard to "T. M.'s" refutation (?) of my arguments on "still farming with success," I cannot understand why he should attack only one-half of my reasoning, considering as utterly unworthy of notice the other portion upon which the whole hangs. I say "we must have produced as much more per acre than the foreigners as we have paid more per acre than they." But that was when prices of produce were high. True; but I did not intend or imply that the price of our produce could be lowered without the money value of our expenses being lowered simultaneously. I left price out of the question, and affirmed that if we set aside a larger proportion of produce per acre for expenses than anybody else does, and yet have as much remaining as anybody else has, we must be producing a larger quantity per acre than anybody else. Will the lowering of the artificially-held-up price of corn lessen the proportion of corn per acre left after the portion set apart for expenses is subtracted? *If the expenses be not lessened in money cost as much as the price, this will be the case.* But I endeavoured to show that all expenses (not immediately dependent on the price of food) were matters of labour, that labour was a matter of food, and thus either directly or indirectly the lowering of the price of corn lowers the cost of all other things. If all the expenses have not fallen, then I say there is no reason why they should not be made to fall, unless it can be shown that we possess the means of increasing our produce so as to be able to do without further lowering of the expense. I supposed a case; the expenses of growing Wheat in Britain and also in foreign countries were to be supposed equal to half the produce, *i. e.*, just alike as far as quantity is concerned. "T. M." says this will not do in practice, for "our expenses have amounted to much more than half the produce." Will "T. M." read my supposition once more? I imagined two cases, which, if they never did, yet might happen; and they are quite sufficient to show how it is that profit depends upon the quantity remaining in proportion to the quantity gone for expenses, and not solely upon the money value of the whole quantity produced. If we are to grow corn at the present prices, is it to be done by lowering the wages of the labourer? Yes; not by lowering them so much as to diminish by one atom his present comforts, but just as much as the cheaper price of everything he will have to buy will warrant. Is it by lowering our rents? Yes; if we cannot by increased produce maintain the surplus at its present rate. Is it by throwing our taxes to the wind? No; but by passing a brisk wind through them—a thorough winnowing of useless from necessary. Whether the article will do harm or not is a matter of opinion; if its statements are now upset, of course it is henceforward fangless; if, on the contrary, its line of reasoning has not yet been impeached and proved erroneous, it may tend, in some minute degree, to lull the farmers into indifference to representations quite chimerical; and help to inspire logical minds with some small confidence in the harmlessness of low prices. *I. A. C.*

Practice with Science.—Ploughed land, under high farming, may, unquestionably, be made infinitely more productive than Grass land can possibly be. This is placed beyond dispute by the statements made by Mr. Caird in his pamphlet, and also by every-day observation. The question remains, whether the outgoings and expenditure inseparable from the arable system will not more than counterbalance the advantages arising from it. The management of a large arable farm is, no doubt, difficult and expensive, and unless proper judgment be displayed in the conducting of it, with a strict regard to economy, and a vigilant superintendence over the workmen employed, it must end in certain ruin. If anyone supposes that a large district in Grass can all at once be converted into an arable state with advantage, he would, on trial, find himself grievously disappointed. A case in point may be here quoted, taken from Sir John Sinclair's account of Scotch husbandry. In the year 1810 George Fr. Stratton, Esq., placed the whole of the Great Tew estate in Oxfordshire, 3700 acres, under the Scotch husbandry. By this there was an increase of rent of 6660l. per annum. From 4070l. to 10,730l. 3504l. was expended in inducing the tenants to renounce their old leases, and a large sum was laid out in making roads and other improvements. It has been generally understood that this plan proved an entire failure, and after a trial made of it for some years, it was found necessary to revert to the old system, and to lay the land down again to Grass, the great expense incurred having been worse than thrown away, from the impoverishment of the soil which had occurred. It may not be difficult to account from whence this failure arose. The management of Grass and of ploughed land are of a perfectly distinct character. The one may be much left to nature and chance; the other requires the full exercise of intelligence, activity, and skill. The common class of farmers are very glad to break up fresh Grass land, as they will by that means be sure to gain a certain number of good corn crops with little trouble to themselves; and it is to be recollected that, when Mr. Stratton's plan was adopted, Wheat was selling at an enormous price, 120s. the quarter, which would now fetch little more than one-third that sum. The markets suddenly dropped when the peace came (a circumstance little at the time expected), and the vision of high corn prices and the hopes raised thereon vanished into empty air. But, independent of these hopes being disappointed, and the spirit of improvement consequently checked by it, there might be other reasons which would lead to the failure. If the land were of a strong retentive nature, to make it yield well under the plough, it would be absolutely necessary that it should be laid perfectly dry. Draining, at that period, was an act little understood, and still less practised. Even if a better knowledge of it existed than might have been expected, it is not very probable that 3700 acres could be drained in a very short space of time. This alone would defeat the end proposed. The uses of the green crop system have been a matter of late introduction; and from whence has this proceeded? One of the greatest discoveries in farming operations in modern days has been the conversion of strong lands into a friable mould, through the means of thorough draining and deep ploughing. By this, soils which before had to undergo the constant rotation of a fallow, may be brought into perfect order without it; and by the application of the green crop, not only may the land be kept perfectly clean and friable, but a quantity of manure may be raised, which will keep the ground constantly in good heart. Unless the arable system be accompanied with enlarged means of raising manure, such as we have already seen was the principal method pursued by Mr. Caird, in his High Farming, it must most assuredly fail. It is further to be considered that

to effect all this a most extensive set of farm buildings will be required, and those of a perfectly different kind from what would be wanted in a grazing farm. The construction of the farm-yard must be such as to facilitate the making of manure; a proper tank is most efficient for this purpose. It may be a question whether box-feeding, stall feeding, or feeding in open courts is preferable; but all these matters would require attention, and without their being properly carried out, success could not be attained. Then the threshing-machine, such as is attached to all the farms in East Lothian, would be required not only to do its work efficiently, but to bring the corn quick into the market. These, and other circumstances, might lead to the failure of Mr. Stratton's plan; and therefore the failure ought not so much to be attributed to the fault of the system itself, as to the mode in which it was attempted to be carried into effect. Where a combination of such various endowments and qualifications are necessary for making the arable system a remunerative and profitable concern, it may be a matter for consideration to what extent the conversion of Grass land into tillage may be proceeded in. A hasty proceeding should, at all events, be avoided. It must be first considered whether local circumstances are favourable for it; above all things, great caution is necessary in the choice of a tenant. The head to contrive, and the means to execute, are as indispensable requisites in this as in most other important undertakings. Without them, is certain failure; with them, not only may a decent competency be obtained, but a considerable fortune amassed, even under reduced prices of produce. *Law. Rawstorne.*

Thin Seeding.—I have been challenged by the Rev. Mr. Wilkins, of Wix, upon the subject of thin sowing; and, that gentleman having in the *Chelmsford Chronicle* of last week thought fit to renew the subject, I now forward you an experiment just concluded, repeating what I have before stated—that one fact is better than a great many assertions. At the same time I recommend the reverend gentleman to give us a statement of facts arising from experiments carefully made and carried out, and not to withhold them when they tell against his principle, not only in the experiments made upon his own, but also upon the farms of others. Mr. Wilkins must know that the true quantity of seed requisite lies between the two extremes; and, in his advocacy of a system in which the lowest minimum quantity is adopted that can be deposited, he must be aware that great deficiency of plant must in most instances be a consequence: it is not that grains deposited singly 6 inches apart will produce a plant; but will they produce such a plant as will ensure a crop with the greatest certainty? and it was with this view I commenced the investigation. I am free, however, to confess that I now use a less quantity of seed than formerly, and succeed better; but that I should push it to the extreme would, I think, as I shall be able to show, be both injudicious and unsafe. I have just concluded an experiment which has been carefully made and carried out by others in part, and who can speak to the result, upon a Clover ley, mown three times, and where 6 pecks to the acre of white Bentinck Wheat had been drilled in rows 6 inches apart, and the plant perfect, the drill having deposited at the rate of one grain to each inch in length in the rows, and the plants standing singly; early in February I commenced my experiment by accurately measuring, and staking off into three compartments of one rod each, portions of the field, adjoining each other. Upon the compartment No. 1 the plants were carefully singled out with a hoe, leaving them exactly 6 inches apart both ways, so that when completed there was not any deficiency whatever, which accuracy never could have been obtained by first depositing the exact quantity of seed requisite. Upon the second rod I hoed out each alternate row, so that the rows when left stood exactly one foot asunder, the Wheat plants in the rows so left remaining exactly as when first drilled. On the third compartment the rows remained untouched, and were left exactly as drilled in the autumn, being at the rate of 6 pecks to the acre; nor was the land even hoed, for the land having been in Clover the preceding year, it was sufficiently clear from weeds as to dispense with that operation. Notwithstanding the great length of the straw, the whole stood upright until reaped, about the 9th of August; upon cutting, the number of sheaves were found upon No. 3 to be greater than upon Nos. 1 and 2, being eight in number upon the former and six only upon each of the latter pieces. This day I had the produce threshed upon a cloth, measured, and weighed, under the superintendence of Mr. Johnston, my clerk, and with the further assistance of William Pool and his sons, labourers on my farm. The result is as follows:

No.	Pks.	Pints	Weight lbs.	Weight of straw	Qrs. per acre.
1	1	0	18¾	35	5 0
2	0	14	14½	26¼	4 4
3	1	6	22	47	6 7

In the enormous increase of 35,000 grains stated by Mr. Wilkins to be grown from one grain, it should be remarked that the description of Wheat so grown is said to be the many-spiked or Egyptian Wheat, being a variety never cultivated in this country for mealing purposes, but for productiveness being unequalled by any of the others; for if grown on good soil the small ears that project from the bottom of the large centre one will equal some of our varieties in number of grains, and thus, in fact, produce four or five ears on one stem. I am glad to have this opportunity of affording another fact upon the subject, as it especially corroborates the opinion I had before arrived at, of 6 pecks per acre, with the rows 6 inches apart, being the fair medium quantity to be drilled on land in a good state of cultivation. *Robert Baker, Wrixle, Sept. 3.*

Farmers' Clubs.

PETERBOROUGH, *Nov. 19*: *Under what circumstances ought a portion of the previous year's rent to be charged to an incoming tenant?*—Mr. W. E. GRIFFIN, of Werrington, introduced the question, and said, that in his view it was only to be considered in relation to naked fallows, the valuation of which differed so much that scarcely were the customs of two parishes alike; some persons were of opinion that there should be no naked fallows; but it was well known that in this neighbourhood there was a great breadth of heavy land that could not be cultivated without them. He thought a uniform system of charging tillages ought to be observed.—Mr. JOHN GRIFFIN, of Borough Fen, thought that under no circumstances ought any portion of the previous year's rent to be charged to the incoming tenant.—Mr. WARWICK hoped that their calculations would be based upon a Michaelmas entry, according to the terms of a resolution adopted by the club at a former meeting, as being in every way preferable to a Lady-day entry, in which case the outgoing tenant having received nothing from the naked fallow for a whole year, would be entitled to a whole year's rent, in addition to the expenses of cultivation.—Mr. TURVILL, of Sawtry, said that no land rented so high as 2*l.* per acre ought to require or be liable to a dead fallow. Strong clay land at 15*s.* or 20*s.* an acre might be presumed to be unfit for Turnips, and in a regular course to take a dead fallow as necessary to clean and restore the land.—Mr. JAMES WEBSTER, of Penkirk, was anxious to arrive at a more correct definition of the principles of valuation, which were so unsettled and various as to offer no encouragement for good cultivation; but, on the contrary, lent support to bad management and exorbitant demands, instead of adequate compensation for real improvements; tillages ought to be liberally dealt with, after being looked into very particularly; the number of ploughings require careful examination, with the subsequent scuffling, harrowing, and other cleansing operations. He then entered into details of Linseed-cakes consumed, the application of artificial manures, drainage and additions to or alterations of the farm buildings; these points he recommended should be drawn up by a committee, and be submitted to a subsequent meeting of the members, so as to bring all the influence of the club to further the adoption of a general system to be observed throughout the country.—Mr. TEBBUTT said that in the present experience of farmers they must recognise naked fallows on cold clay lands, as in a field occupied by his son at Gidding, 12 bushels of Barley were obtained after a naked fallow, in excess of the other part of the same field, succeeding a good crop of Turnips.—Mr. TRAYLEN, of Chesterton, observed that if they would sow and hoe his fallows for nothing they should not, as he should be so great a sufferer on his land, by taking in rotation a Turnip crop. He would not charge any rent to the incoming tenant, as that was not business like to call it rent, but after paying the expense of the tillages on a naked fallow, he thought there ought to be a further charge of 25 per cent. on the capital employed, as it required a great deal of labour without any return to the outgoing tenant.—Mr. EDOSON, of Etton, proposed a resolution including an outline of the general terms of the valuation. An amendment was then carried by Mr. Turvill, to the effect that 25 per cent. should be charged in addition to the cost of tillage. The following resolution was thereupon submitted by the chairman, Mr. Whitwell, and adopted—there being about 30 members present. That on the question "of a previous year's rent being charged to the incoming tenant," it is the opinion of this meeting, no portion of rent should be charged to the incoming tenant, but that all tillages valued by him should bear a further charge of 25 per cent. calculated upon the cost of such tillages to be paid to the outgoing tenant as a compensation for the capital employed.

Review.

The Farmers' Almanac and Calendar for 1850. By C. W. Johnson, Esq., F.R.S., and W. Shaw, Esq. Ridgway, 169, Piccadilly, London.

A REMARKABLY interesting and instructive number, fully maintaining the character of the periodical as the best of agricultural almanacs. It conveys, along with the ordinary information belonging to an agricultural calendar, a very fair idea of the additions which have been made to agricultural knowledge during the past year

Miscellaneous.

Death of Mr. Santos.—Our readers will regret with us to learn the death of Mr. Emanuel Dias Santos, who has so long contributed to our instruction and gratification, under the signature "D. S E." The health of Mr. Dias Santos had been indifferent for some years, and for several months he had been unable to leave the house, but such was his desire to communicate to the readers of the *Agricultural Gazette* the varied and interesting stores of information with which an acute mind, great observation, and much travel had supplied him, that he ceased not even on his death-bed to indite what he considered might be useful and practical upon the subject of poultry. Mr. Dias Santos, at an early period of his life, took an active part in the struggle for Catholic emancipation, giving that question considerable literary, political, and pecuniary assistance. In all his relations of life he was a man of great probity, generosity, and disinterestedness. By good acts he made many friends, and by a bad act he never lost one.

The Dr. and Cr. Account of the Shallow Land, well managed, is (by the experience of a large farmer) thus rendered:

Year.	Crops.	Rent, Tithes, &c.	Cultivation, and Expenses.	Muck and Lime.	Seed.	Outlay.	Produce.	
		s.	s.	s.	s. d.	£ s. d.		£ s. d.
1	Oats ..	12	25	...	8 0	2 5 0	32 bush. 2s. 9d.	3 12 0
2	Turnips	12	70	75	5 0	8 2 0	15 tons at 5s	3 15 0
3	Barley .	12	30	...	8 6	2 10 6	32 bush. 3s. 3d	5 4 0
4	Grass ...	12	4	...	12 0	1 8 0	Grass, pasture	2 10 0
5	Ditto ...	12	4	...	...	0 16 0	Ditto	2 5 0
6	Ditto ..	12	4	..	...	0 16 0	Ditto	2 0 0
7	Ditto ..	12	4	...	...	0 16 0	Ditto	1 15 0
8	Ditto ..	12	4	...	...	0 16 0	Ditto	1 10 0
9	Ditto ...	12	4	...	...	0 16 0	Ditto	1 5 0
10	Ditto ...	12	4	...	...	0 16 0	Ditto	1 0 0
				Profit 10 yrs		5 14 6		
						24 16 0		24 16 0

Mr. Read's Farming of South Wales, in the Journal of the Royal Agricultural Society of England.

Calendar of Operations.

NOVEMBER.

BERWICKSHIRE MERSE FARM, *Nov. 16.*—Since last report, we have finished sowing Wheat on the Bean land, except the headlands. We are ploughing Oat stubble land for Turnips—one field with three-horse, the others with two-horse ploughs. Threshing and delivering Barley, carting Turnips for the ewes and the cattle. The workers have been employed pulling Turnips, digging Potatoes, and assisting with the threshing and dressing; one man cutting Thorns, and making a dead fence. We have 45 cattle on Turnips, four in stalls, six in small courts, the remainder in three large courts. *J B.*

STIRLINGSHIRE CARSE FARM, *Nov. 9.*—For some time back we have principally been engaged in putting out farm-yard manure, which we intend to plough in on land intended for Beans, putting on about 25 tons per acre; also ploughing land after Beans, intended for Barley, and land after Oats, for Turnips and bare fallow. Our cattle, in dry weather, are still part of the day on the Clover; we take them in at night, when they get an allowance of straw and Turnips, as well as in the morning. The milkers get prepared food once a day. We are about to make tanks for our liquid manure, with which we intend to experiment for various kinds of crops; the result you shall hear of afterwards. As this is our first report since harvest, an account of our harvest expenses may not prove unacceptable. Our harvest operations were completed under the most favourable weather, and on the whole it was both cheap and quick. Cutting by the threave (24 sheaves) is now very little practised in this locality, as it is found much more expensive. Where it was practised this season, 2½*d.* per threave for Barley and Oats, and 3½*d.* for Wheat was given, which for a crop of 35 threaves per acre (which most of crops will amount to at the size which threavers make their sheaves) amounts to 7*s.* 3½*d.* and 10*s.* 2½*d.* per acre respectively, exclusive of binding and stooking, which, at the wages current last harvest, cost 2*s.* 6*d.* per acre more. Cutting, binding, and stooking by the day last harvest cost us 8*s.* 6*d.* per acre. Cutting with reaping scythes, where they can be made available, is the cheapest of the three, as it can be done with them for 8*s.* per acre, including binding and stooking. *J. A.*

SUSSEX FARM, *Nov. 19.*—We have now finished Wheat sowing, with the exception of two acres; all in good order, the most of it is up and looks regular and well. I think it will be a general complaint that Wheat is all too thick sown this year. If weather allow, we shall eat part of our first sown with the sheep. Our teams now are engaged ploughing stubble for the Bean and Pea crops, and also for the root crops in the spring, for which we plough from 10 to 12 inches at one ploughing; carting rubbish off scarified land, scouring of ditches, and scraping roads into heaps, to mix with lime for the land. Men filling earth, ditching, hedging, draining, &c. This week we shall put our young stock into the yards; they will receive a few Turnip-tops or Cabbages, and cut chaff; as the winter advances, we shall give a few Turnips. The cows are housed at nights, but are allowed to run out in days; they receive a feed of Carrot mornings and nights, with cut hay and straw. *J. B.* [You might try whether there is any truth in the assertion that wireworm are destroyed by the moles, and leave the latter undisturbed.]

Notices to Correspondents.

"ADDING INSULT TO INJURY:" *A Tongue.* What is your definition of "insult." We imagine that it must include design in the person chargeable.

CATTLE FOOD: *Amateur.* See Blacker on Small Farms. A cow will eat as much hay as you give her, up to about 20 lbs. a day. She will do pretty well on a good deal less than this, and you may mix Oat-straw among it, cut it up to chaff, and pour a thin Linseed soup over it with good effect.

COW CLUBS: *J Kinloch.* The following are a set of rules—"Brocklesby and Little Limber Cow Club. The object of the club is to secure each member, by a system of mutual assurance, from sustaining individually the whole loss arising from the death of a cow; the loss being thus divided amongst all the members. Rules: 1. A treasurer to be appointed, who shall conduct the business of the club, and with whom shall rest the decision as to the admission of members. 2. Each member to pay to the treasurer, on the first Saturday in every calendar month, his subscription (in advance) of 1*s.* for each cow he may have entered. 3. Any member whose cow shall die, to be entitled to receive from the club the sum of 10*l.* 4. No allowance to be made to any member in respect to any cow above 12 years of age. 5. When a cow dies the skin to belong to the owner of the cow; but if the carcase can be sold, the money to be paid to the funds of the club. 6. If a cow dies in calving, the calf to belong to the owner of the cow. 7. Any member neglecting to pay his subscription for three successive months to be deprived of all benefit from the club, and to forfeit what he may have previously paid. 8. Any member leaving the district, or ceasing to keep a cow, to be entitled to receive from the treasurer his proportion of the funds then in hand, after deducting therefrom 20*l.* which was given by Lord Yarborough to the funds on the establishment of the club. 9. A new member to pay on his admission, for each cow he may enter, such a sum as may be the proportion of the general funds to which each cow in the club would be entitled, after deducting therefrom Lord Yarborough's subscription of 20*l.* 10. If the funds in the hands of the treasurer shall at any time not be sufficient to pay the allowance for any cows that may die, the members immediately to make up the deficiency. 11. The monthly subscriptions to be discontinued at the discretion of the treasurer, whenever he shall consider the funds in hand sufficient as a guarantee, until reduced by

deaths or otherwise. IX. On the first day of January in every year, the treasurer to make out an account, showing his receipts and payments during the preceding year, and the balance remaining in his hands, and cause the same to be printed, and a copy supplied to each member."

Drainage Tiles: *Hatford.* We have received a specimen of drain tile blocked up with clay so completely that it seems impossible to suppose the latter portions could have been brought by any current through the pipe; and we are therefore forced to the conclusion that the tile must have been laid imperfectly—probably in some hollow or bend in the line. The shallowness of drain, also, is a probable cause of the evil. The water from deep drains is always clearer than from shallow drains; it brings no sediment into the tiles and therefore none can be deposited. It is of course an advantage of tiles and soles that they can be more easily cleaned when taken out; but when pipe tiles are well made, so that their ends meet closely, well laid with a uniform fall in the line, and placed so deep that muddy water will not enter, they will not get stopped like the specimen sent. They may be choked by ferruginous deposit, or by the roots of trees or plants, but not by clay and—*stones!*

Fallow: *Reader.* Plough deeply now, and leave open furrows to take the water off. In spring, harrow, work with the cultivator, gather the weeds off, plough with a shallow furrow, harrow, gather weeds, sow the corn, harrow again, open the furrows between the ridges, and leave it.

Oatmeal: *S.* We would rather have all the produce of the crushing process than merely the meal out of it. The former will, of course, go farther as food than the latter. But if you were to give a certain measure of each daily, of course the animal that gets the richer food will thrive the better of the two.

Peat Charcoal: *George Liddle.* The following instructions are given by Mr. Parkes at p. 862 in our volume for 1844: "The clamps which I constructed in Lancashire were small, being about 2 yards square within, and the walls about 1½ yard high. These were rapidly and conveniently built of massive sods cut from the superficial bog-earth, which had been recently turned over by a peculiar plough, in slices 18 inches broad by 9 inches deep. The joints of the walls were plastered, where needed, with soft stuff obtained from adjacent drains. I also formed other clamps or kilns, both square and circular, by raising walls with moist bog diggings, on the plan of Pisa work. Since the purport of all ovens is to keep air out and heat in, it is obvious that any material will serve a temporary purpose which may be handy to the desired spot, cheaply put together, and which does not burn away too quickly. Slabs of unburnt clay would answer well; but my object was to use the materials furnished by the bog itself, and in any part of it. Three or four small holes, say 4 inches square, are left in the walls at bottom, to give air for kindling the fire, which is first made pretty strong with dried peats, in order to establish a mass of red-hot fuel at bottom. These apertures are diminished as the process goes on, and finally stopped up. If the peat to be charred be nearly dry, the clamp may be speedily filled, always using the driest peat first, and covering the top with damp sods or diggings. The air-holes must be quite closed when it is judged, by the appearance of the volume and clearness of the smoke, that sufficient heat is acquired below to carry on the operation. As the contents subside, fresh stuff is added, care being taken to maintain the kiln quite full, to close all interstices in the walls, and to fill up holes at top as they occur from shrinkage produced by combustion. Flame must never be allowed to appear on the surface. The clamp is known to be sufficiently filled with charcoal when the added stuff settles but little. The operation should be stopped when the charred mass approaches within 18 or 12 inches of the top; otherwise, the incumbent air, particularly in windy weather, may reach the charcoal, which would then be quickly reduced to ashes. The fire will gradually go out on carefully stopping the access of air, and smothering the surface with wet stuff; but the best plan is to extinguish with water, which also prevents the finer dust from being blown away when the clamp is emptied."

Pony: *J R H.* One cwt. of hay and 28 lbs. of Oats are enough for it weekly, as it does little, and that little light work. Mangolds should be taken up now.

Root-Crusher: *E. Tilsley.* We do not know the book, and thus do not know the machine referred to; but there is a root-crusher for horse power made by Moody, of Wiltshire.

Weight Ascertained by Measurement: *Inquirer.* Multiply the square of the girth behind the shoulder by 5 times the length from fore-part of shoulder blade to insertion of the tail (both in feet), and divide by 21, the result is the weight of the carcase in imperial stones.

Young Pigs: *J H G.* The disease is evidently a disturbance of the functions of the stomach, or rather excessive action of its acid secretion. The young pigs crave after alkalies, and should therefore be supplied with salt in the troughs, as well as the sow. By way of cure give the following to each young pig affected: carbonate of magnesia, 1 oz.; tincture of rhubarb, 2 drachms, tincture of opium, ½ drachm, warm water, 2 oz.; this is sufficient for eight doses. The sow may have 2 oz. of sulphate of magnesia in her food. *W. C. S.*

Markets.

SMITHFIELD, Monday, Nov. 19.

The number of Beasts is about the same as on last Monday; however, trade is dull, owing to the change in the weather. The best qualities are scarce, and readily make 4s., indeed, in some instances 4s. 2d. is obtained. The supply of Sheep is but moderate, but the mild weather causes a slow trade. A pretty fair clearance having been effected in the dead markets, prevents reduction in price. In a few instances 4s. 4d. is reluctantly given for the choicest old Downs. Calves are scarce, and Friday's rates are fully supported; something small and delicate has made 4s. 6d. Pigs meet with a heavy trade, and prices are with difficulty supported. From Holland and Germany we have 730 Beasts, 2780 Sheep, 43 Calves, and 73 Pigs; from Leicester and Northampton, 2400 Beasts; and 300 from Cambridge and Lincoln.

Per st. of 8 lbs.—	s d s d	Per st. of 8 lbs.—	s d s d
Best Scots, Herefords, &c. ...	3 10 to 4 0	Best Long-wools .	3 6 to 3 10
Best Short-horns	3 8 — 3 10	Ditto Shorn ...	... ...
2d quality Beasts	2 10 — 3 4	Ewes & 2d quality	3 0 — 3 4
Best Downs and Half-breds ...	4 0 — 4 2	Ditto Shorn ...	... ...
Ditto Shorn ...	... ...	Lambs ...	... ...
		Calves	3 8 — 4 6
		Pigs	3 6 — 4 4

Beasts, 4221; Sheep and Lambs, 26,800; Calves, 125; Pigs, 286.

Friday, Nov. 23.

We have a pretty good supply of Beasts to-day. Trade is slow, but Monday's prices are generally maintained. The number of Sheep is considerable for the time of year. We have but few choice Downs on offer; these maintain Monday's quotations, but other kinds are 2d. per 8 lbs. lower. Calves are more plentiful; they meet with dull sale, at fully 6d. per 8 lbs. reduction. Trade is heavy for Pigs. From Holland and Germany there are 270 Beasts, 1640 Sheep, 101 Calves, and 39 Pigs; from Leicester and Northampton, 400 Beasts; and 145 Milch Cows from the home counties.

	s d s d		s d s d
Best Scots, Herefords, &c. ...	3 10 to 4 0	Best Long-wools .	3 4 to 3 8
Best Short-horns	3 8 — 3 10	Ditto Shorn ...	... ...
2d quality Beasts	2 10 — 3 4	Ewes & 2d quality	2 8 — 3 2
Best Downs and Half-breds ...	4 0 — 4 2	Ditto Shorn ...	... ...
Ditto Shorn ...	... — ...	Lambs ...	... ...
		Calves	3 0 — 4 0
		Pigs	3 4 — 4 4

Beasts, 1070; Sheep and Lambs, 5,030; Calves, 253; Pigs, 294.

HAY.—Per Load of 36 Trusses.

Smithfield, Nov. 23.

Prime Meadow Hay	65s to 70s		Clover ...	60s to 80s	
Inferior ditto ...	50	60	New Clover ...	—	—
Rowen ...	50	55	Straw ...	21	24
New Hay ...	—	—		J. Cooper.	

Very little trade.

Cumberland Market, Nov. 22.

Prime Meadow Hay	68s to 72s		Inferior ...	60s to 74s	
Inferior ditto ...	50	68	New Clover ...	—	—
New Hay ...	—	—	Straw ...	27	31
Old Clover ...	84	90		Joshua Baker.	

Whitechapel, Nov. 22.

Fine Old Hay ...	68s to 68s		New Clover ...	—s to —s	
Inferior ditto ...	45	55	Inferior ditto ...	50	60
New Hay ...	—	—	Straw ...	20	25
Old Clover ...	80	84			

HOPS.—Friday, Nov. 23.

Messrs. Pattenden and Smith report that the market continues good for all new Hops, and with the very small stock remaining unsold, prices are expected to go much higher after Christmas. Yearlings and old Hops are also in more demand.

COVENT GARDEN, Nov. 24.

Hothouse Grapes continue to be plentiful. Pine-apples are hardly sufficient for the demand. Filberts and Walnuts are abundant, Chestnuts plentiful, Oranges and Lemons more abundant. Pomegranates may still be obtained at 4d. each. Among Vegetables, Turnips are good and plentiful; Carrots the same. Cauliflowers less plentiful. Potatoes have not altered since our last account. Lettuces and other salading are sufficient for the demand. Mushrooms fetch from 1s to 1s. 3d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropæolums, Chrysanthemums, Fuchsias, Primulas, Camellias, Cinerarias, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Oranges, per 100, 5s to 12s
Grapes, hothouse, p. lb., 3s to 6s	Almonds, per peck, 6s
— Portugal, per lb., 9d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 2s to 4s	Walnuts, p. 100, 1s 6d to 2s
— per half sieve, 4s to 6s	— p. bush., 16s to 24s
Apples, kitchen, p. bsh., 2s to 4s	Filberts, per 100 lbs., 45s to 60s
Lemons, per doz., 1s to 2s	Nuts, Bar., p. bush., 20s to 22s
— per 100 [illegible] to 12s	— Brazil, p. bsh., 12s to 16s
Oranges, per doz., 9d to 1s 6d	Kent Cobs, 60s to 65s p. 100 lbs.

VEGETABLES.

Cabbages, p. doz., 6d to 1s	Onions, p. bunch, 2d to 4d
Cauliflowers, p. doz., 2s to 4s	— Spanish, p. doz., 1s 6d to 4s
Broccoli, p. doz. bundl., 6s to 10s	Shallots, per lb., 4d to 8d
Greens, per doz., 1s 6d to 2s 6d	Garlic, per lb., 4d to 8d
Brussels Sprouts, p. hf. sieve, 1s 6d to 2s	Artichokes, p. doz., 1s 6d to 3s
Sorrel, p. hf. sieve, 6d to 9d	Lettuce, Cab., p. sc., 4d to 9d
Potatoes, per ton, 60s to 100s	— Cos, do., 6d to 1s
— per cwt., 3s to 6s	Endive, per score, 1s to 1s 6d
— per bush., 2s to 3s	Tomatoes, p. hf. sieve, 3s to 4s
Turnips, p. doz. bun., 1s 6d to 2s 6d	Mushrooms, p. pot., 1s to 1s 3d
Red Beet, per doz., 1s to 2s	— per bush., 3s to 6s
Horse Radish, p. bdl., 2s to 4s	Small Salads, p. pun., 2d to 3d
Cucumbers, each, 9d to 1s	Fennel, per bunch, 2d to 3d
Leeks, per bunch, 2d	Savory, per bunch, 2d to 3d
Celery, p. bundle, 8d to 1s 3d	Thyme, per bunch, 2d to 3d
Radishes, p. 12 bunches, 1s to 2s	Parsley, p. doz. bun., 3s to 4s
Watercress, per doz. bunches, 4d to 6d	— Roots, p. bdle., 1s to 1s
Carrots, per bun., 4d to 6d	Marjoram, per bunch, 2d
Spinach p. sieve, 1s to 1s 6d	Mint, per bunch, 2d
	Basil, per bunch, 2d

POTATOES.—Southwark, Nov. 19.

The Committee report that the arrivals at the beginning of the week were few, which enabled salesmen to effect a clearance of some of the old stock. The latter part of the week brought us a liberal supply, which are selling at better prices, particularly choice Yorkshire Regents. The following are this day's prices:—York Regents, 90s. to 100s. per ton; Wisbeach, 40s. to 60s.; Scotch, 50s. to 65s.; Scotch cups, 30s. to 50s.; French whites, 50s. to 65s.; Rhenish do., 50s. to 60s.; Belgian do., 60s. to 65s.

MARK LANE.

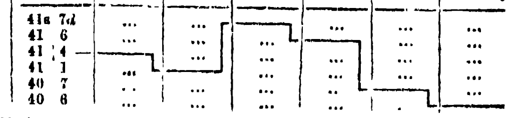
Monday, Nov. 19.—There was a moderate supply of English Wheat from the neighbouring counties at market this morning, of which the best runs were disposed of on about the terms of this day se'nnight, but the advance then quoted was lost upon the secondary and inferior qualities. Of foreign we have a large arrival, and the few sales effected are quite in retail at barely former prices.—The finest samples of malting Barley and good foreign grinding command our extreme quotations; other sorts are neglected.—Beans and Peas are unaltered in value.—The Oat trade is heavy; all excepting the finest qualities of old are the turn cheaper.

Friday, Nov. 23.—The arrivals of English Grain during the week have been moderate, but those of foreign very considerable. This morning's market was thinly attended, and sales of Wheat, either English or foreign, were on too small a scale to admit of our quoting any alteration in their value.—Secondary qualities of English Barley are the turn cheaper, but other descriptions and foreign are fully as dear.—Beans and Peas remain as on Monday.—The Oat trade is heavy, and new or inferior sorts rather lower.—The Wheat trade during the week has been every where very dull, with a general depression in prices, in some markets the decline being as much as 2s. per qr. without inducing any activity in business. In spring corn no material alteration has occurred. In New York prices remained unaltered.

Liverpool, Friday, Nov. 23.—There was a poor attendance at this day's market, and a slow retail business in Wheat at former prices. Oats were firm but not brisk. Barley, Beans, and Peas steady. Indian Corn taken at previous rates. Flour, except of the best quality, was dull. For Oatmeal there was rather a better inquiry. We have wet weather and moderate supplies since Tuesday.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Oct. 13	41s 4d	28s 0d	17s 2d	24s 5d	28s 10d	31s 8d
— 20	41 1	28 2	17 4	24 9	29 5	30 3
— 27	41 7	28 5	17 2	23 8	28 11	31 7
Nov. 3	41 6	28 7	16 10	22 9	29 10	29 7
— 10	40 7	28 8	16 11	22 6	29 4	30 11
— 17	40 6	28 3	16 11	23 7	29 7	30 7
Aggreg. Aver.	41 1	28 4	17 1	23 7	29 4	30 2
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.



PRICES CURRENT.	London. Nov. 12	London. Nov. 19	Liverpool. Nov. 13	Liverpool. Nov. 20	Wakefield. Nov. 9	Wakefield. Nov. 16	Boston. Nov. 14	Boston. Nov. 21	Birmingham. Nov. 14	Birmingham. Nov. 22
	qr.	qr.	70 lbs.	70 lbs.	qr.	qr.	qr.	qr.	62 lbs.	62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d	s. s.	s. s.	s. s.	s. s.	s. d. s. d	s. d. s. d.
New, red ...	38 to 43	40 to 43	6 6 6 4	5 10 6 3	36 to 44	36—44	34 to 40	32 to 39	5 0 5 3	5 0 5 6
„ white ...	42—50	42—48	6 4 6 9	6 4 6 8	41—46	41—48	38—46	36—45	5 7 6 1	5 4 6 1
Old, red ...	38—43	38—43	6 4 6 8	6 3 6 7	39—43	39—40	—	—	5 3 5 9	5 1 5 7
„ white ...	43—45	43—45	7 0 7 6	7 0 7 4	—48	—48	—	—	5 8 6 2	5 6 6 0
Foreign... ...	36—52	35—52	4 4 7 1	4 4 7 2	36—48	36—48	—	—	4 8 6 2	4 8 5 8
			480 lbs.	480 lbs.						
Rye—Old ...	23—24	20—22	—	—	—	—	—	—	—	—
Foreign...	20—23	20—23	—	—	—	—	—	—	—	—
Foreign meal	5l.—6l.	5l.—6l.	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	24—26	24—26	—	—	20—22	20—22	21—23	21—23	21—24	20—24
Malting... ...	26—28	26—28	30s—31s	30s—31s	26—31	26—31	—	—	28—33	25—31
Foreign... ...	18—26	18—26	—	—	21—26	21—26	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	35—38	35—38	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	18—24	18—24	3s 2d 3s 3d	3s 2d 3s 3d	—	—	13—18	13—18	19—25	18—25
Black...	16—22	16—22	2 1 2 7	2 2 2 7	—	—	—	—	17—18	17—18
Foreign	13—20	13—20	2 3 2 4	2 3 2 4	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	28—32	28—32	33s—	33s—	26—30	26—30	—	—	30—36	30—36
									196 lbs.	196 lbs.
Grinding...	—	—	27—28s	27—28s	—	—	—	—	11—12	11—12
Foreign ...	24—32	24—32	29—30	29—30	—	—	—	—	—	—
Beans—										
New, small ...	24—30	24—30	—	—	30—31	30—31	32—34	22—29	11—12	11—12
Old	—	—	33—37	32—37	32—33	32—33	—	32—34	14—15	14—15
Foreign ...	23—36	23—36	24—34	25—34	26—28	26—28	—	—	11—13	11—13
Linseed—Feed	—	—	40—42	40—42	32—40	32—40	—	—	—	—
Foreign ...	41—48	41—48	—	—	—	—	—	—	—	—
Linseed Cakes British ...	9l. 12s	9l. 12s	7l. 15s—8l.	7l. 15s—8l.	—	—	—	—	—	—
Foreign ...	7l.	7l.	—	—	—	—	—	—	—	—
Indian Corn	22—26	22—26	27s—29s	27s—29s	—	—	—	—	12—13	12—13
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	32—40	32—40	30—32	30—32	—	—	30—36	30—36	31—34	31—34

Weekly Averages and Imports.	London Aver. Nov. 20	London Impts.	Liverpool Averages.	Liverpool Imports.	Wakefield Aver.	Wakefield Impts.	Boston Aver.	Boston Aver.	Gloucester Averages.	Gloucester Imports.
	s. d	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	45 1	28850	40 7	7771	40 6	16931	38 6	4009	40 5¼	—
BARLEY ...	29 7	19140	28 8	1326	27 6	5647	22 1	71	—	—
OATS... ...	18 5	35020	16 11	3802	17 11	211	14 5	1127	17 4¼	—
RYE	23 1	—	22 6	—	—	—	—	—	—	—
BEANS ...	29 7	—	29 4	1488	30 2	1163	27 0	323	29 4	416
PEAS... ...	33 5	—	30 11	594	—	872	—	—	29 4	—
Signed	*Kingsford and Lay.*		*Segar and Tunnicliffe.*		*Sandars and Dunns.*		*Thomas Wright.*		*J. and C. Sturge.*	

Sales by Auction.

BROMPTON PARK NURSERY.

MESSRS. PROTHEROE and MORRIS are favoured with instructions from Mr. John Sangster and Mr. Robert Donald, trustees to the above estate, to submit to an unreserved Sale by Auction, on MONDAY, Nov. 26, 1849, and twelve following days, at 11 o'clock, the whole of the extensive and valuable STOCK of the BROMPTON PARK NURSERY, riding over 30 acres, lately carried on by Gray, Adams, and Hogg, consisting of the well-known and celebrated Collection of Standard and Dwarf Maiden and Trained Fruit Trees, a rich assortment of Evergreen and Deciduous Shrubs, Ornamental Trees, American Plants, &c., together with the Greenhouses (with new and approved hot-water apparatus), Pits, Frames, Carts, and Utensils; also the stock of Seeds, Shop-counters and Drawers, Counting-house Desks and Fittings, Iron Safe, &c.—May be viewed prior to the Sale. Catalogues will be forwarded on application, by letter enclosing 12 postage stamps, to Protheroe and Morris, Leytonstone; they may also be had 1s. each (returnable to purchasers), on the premises; and of the principal Seedsmen in London.

STANDARD ROSES, CARNATIONS, PICOTEES, PINKS, &c. FROM A CELEBRATED GROWER.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King-street, Covent Garden, on TUESDAY, 27th November, at 12 for 1 o'clock, 4000 Picotees, Carnations, and Pinks, choice sorts named; 100 Potentillas, 100 Phlox Van Houttii, and 100 Standard Rose Trees, good varieties.—May be viewed the day prior and morning of Sale, and Catalogues had.

NORWICH NURSERY.
IMPORTANT TO PLANTERS.—EXTENSIVE SALE OF FOREST AND OTHER TREES.

MR. WILDE begs to inform the nobility and gentlemen engaged in Planting, and the trade generally, that he has received instructions from Mr. Mackie, in consequence of his removing a portion of his stock to his new Nursery, at Bracondale, to submit to public competition, on the 27th, 28th, 29th, and 30th of November, *and not as in the previous announcement of the 10th instant* (weather permitting), ONE MILLION OF FOREST AND ORNAMENTAL TREES, &c., consisting of fine transplanted Beech, 2 to 4 feet; fine transplanted Whitethorn, 3 feet; true red-wood Highland Pine, 1 to 2 feet; very fine transplanted Oaks, 4 to 6 feet; black Italian Poplars, 6 to 8 feet; Elms, Hornbeam, Mountain Ash, common Ash, Levant Oaks, common Laurels, &c. The soil of the Nursery is a light loam, and admirably suited for producing fibre, and as they have been well and frequently transplanted, the roots are excellent. Large purchasers, that may find it inconvenient to remove the trees at once, can have the opportunity of arranging with Mr. Mackie to leave them on the ground till the 1st of March, 1850. Railway communication to all parts of England.—Catalogues can be obtained, on and after the 19th November, of Mr. Wilde, Auctioneer; or of Mr. Mackie, 10 and 11, Exchange-street, Norwich.

MR. HASLAM will sell by Auction, at the Auction Mart, on TUESDAY, November 27, a large quantity of HEATHS, CACTI, &c., the property of an Amateur declining the fancy. Weeping and Pillar Roses, Ornamental and other Shrubs, Dutch Bulbs, &c.—Catalogues to be had at the Mart, and of the Auctioneer, &c., Epping, Essex.

400 Standard Roses (in 100 Lots of 4 each), 150 Camellias, 200 Lilium speciosa and punctatum, 100 Asclepias tuberosa, Azalea indica, Vines, Weeping and Pillar Roses, Dutch Bulbs, &c.

MR. HASLAM will sell by Auction, at the Mart, on WEDNESDAY next, November 28, as above, without reserve.—Catalogues to be had at the Mart, and of the Auctioneer, &c., Epping, Essex.

TO BUILDERS, NURSERYMEN, AND OTHERS.

MR. D. A. RAMSAY, will sell by Auction, on the Premises, Brompton Nursery, Fulham-road, Brompton, on MONDAY, November 26, 1849, and following day at 12 o'clock, without reserve, the NURSERY STOCK, consisting of a very large quantity of fine Evergreens, standard and dwarf Roses, Fruit Trees, American Plants, &c.; a quantity of large Poplars, Limes, Acacias, &c.; and about 150 dwarf trained Peaches, Nectarines, &c.; from the stock of a Country Nurseryman.—May be viewed prior to the sale, and Catalogues had of the principal Seedsmen, and on the premises.

TO GENTLEMEN, BUILDERS, NURSERYMEN, and Others.

MR. D. A. RAMSAY has received instructions to sell by Auction, on the premises, the Brompton Auction Ground, Brompton Nursery, Fulham-road, one mile from Hyde-park Corner, on MONDAY, Dec. 3, at 12 o'clock, from the Stock of a country nurseryman declining the business, a large quantity of Ornamental Trees, Deciduous Shrubs, Evergreens, Standard Roses, &c., with a quantity of Dutch Bulbs, Camellias, &c.—May be viewed the day prior and morning of Sale, Catalogues may be had the principal Seedsmen, and of the Auctioneer, Brompton.

TO NOBLEMEN, GENTLEMEN, FLORISTS, and OTHERS.

MR. D. A. RAMSAY has received instructions to sell by Auction, on the premises, the Brompton Auction Ground, Brompton Nursery, Fulham-road, London (1 mile from Hyde Park Corner), on THURSDAY, December 6th, at 12 o'clock, a very choice Assortment of Pinks, Picotees, and Carnations; also a quantity of Chrysanthemums, specimen Camellias, &c.; a quantity of Dutch Bulbs of the usual sorts, about 200 Standard Roses, a few large Rhododendrons, variegated and green Holly, 100 Magnolia grandifloras, &c.—May be viewed the day prior and morning of sale. Catalogues to be had of the principal Seedsmen, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, London.

TO GENTLEMEN, BUILDERS, NURSERYMEN, AND OTHERS.

MR. D. A. RAMSAY will sell by Auction, on the Premises, adjoining the Clarendon Hotel, Clarendon-road, Notting-hill, on MONDAY, Dec. 10, at 12 o'clock, about 1500 Evergreens in choice varieties, a quantity of Ornamental Trees and Shrubs, 300 Standard and Dwarf Roses, with a quantity of Dwarf-trained Fruit-trees, &c.—May be viewed the day prior and morning of sale. Catalogues to be had of the principal Seedsmen, and, free by post, on application to the Auctioneer, Brompton Nursery, Fulham-road, Brompton, near London.

D. A. RAMSAY begs leave to offer his services to the Trade and others, as an AUCTIONEER, VALUER, &c., and trusts that by devoting his personal attention, with strictly moderate charges, to give satisfaction.—References given, and letters addressed to Brompton Nursery, Fulham-road, Brompton, promptly attended to.

N.B. Parcels of Stock received and offered for Sale by Auction on the above premises. Terms sent on application.

TO BE LET, a good ARABLE FARM, of 700 acres, in Hampshire, with immediate possession; it is within three miles of a railway station, and at an easy distance from Basingstoke, Andover, and Newbury markets. Rent moderate; tithe and rates very low.—For particulars, apply by letter (stating the experience and capital of applicant) to X. Y. Z., care of George Lamb, Esq., Basingstoke.

TO BE LET, in Somersetshire, distant about [illegible] miles from the Bristol and Exeter Railway, at which there is a Station, where branches lead to two fashionable watering places and a great commercial town, a FARM, comprising an excellent large House, with convenient Offices, 60 acres of Pasture, including Orcharding and about 6 acres of Arable Land, suitable to a person of respectability. Tenancy commencing 25th March next.—Application (post paid) to Messrs. Sturge, Land Surveyors, Bristol.

TO MARKET GARDENERS AND OTHERS.

TO BE LET, the Lease of a MARKET GARDEN, consisting of about 17 acres of Land of good quality, and in excellent condition, partly stocked with choice Fruit Trees, with suitable House and Buildings, in good repair, situate about five miles from London.—For further particulars apply, on the premises, to Mr. A. Jago, Back Common, Turnham-green; or if by letter, post paid, to Mr. Augustus Daws, Market Gardener, near Kew-bridge, Brentford, near London.

ESSEX.—TO NURSERYMEN, HORTICULTURISTS, FLORISTS, AND MARKET GARDENERS.

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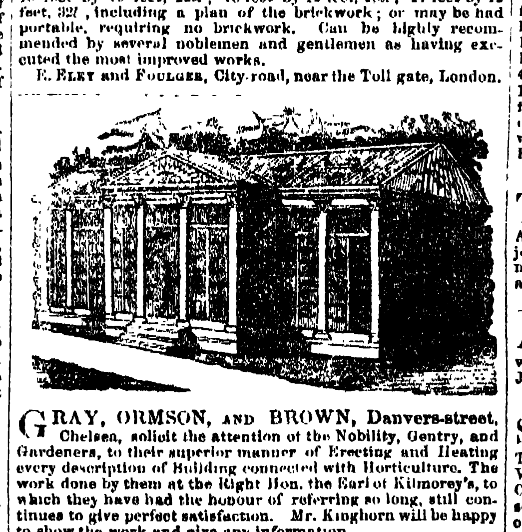

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		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
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[illegible] "	1 7 "	26 oz.	1 0 "
[illegible] "	2 0 "	32 oz.	1 4 "

ROUGH PLATE GLASS.

Sizes.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	In.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Not above 15 inches long	0 10	0 11	1 4	1 8	2 2	2 8	3 6
Above 15 in. and not above 35	1 0	1 1	1 6	2 0	2 6	3 2	4 0
" 35 " " 75	1 2	1 3	1 8	2 4	3 0	3 6	4 8
" 75 " " 100	1 3	1 4½	1 10	2 8	3 6	4 0	5 4
" 100 "	1 5	1 6	2 2	3 0	4 0	...	...

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Union-street, Birmingham, Nov. 21.

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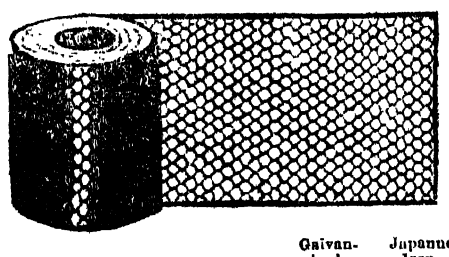

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FUCHSIA [illegible] 7s. 6d.

[illegible] London. Post-office orders [illegible] requested from unknown correspondents. [illegible]

E. [illegible] his friends and the public in general that he has a very large stock of Standard Roses, the prices much reduced, 12s. to 20s. per dozen, also Fruit Trees, Evergreen Shrubs, and Ornamental Trees of the finest growth, in large quantities, at low prices. A Catalogue [illegible] stamps, to EDWARD DENYER, Nurseryman, Loughborough-road, Brixton, near London.

E. D. informs his friends [illegible] Seed-shop in London.

T[illegible]

200,000 [illegible]	20,000 [illegible] 4 feet.
200,000 [illegible]	10,000 [illegible]
200,000 [illegible]	10,000 [illegible] feet.
planted, 1½ to 2½ feet.	30,000 Beech, 1½ [illegible] feet.
[illegible]	20,000 Do., 2 to 3 feet.
[illegible]	40,000 Hornbeam, 2, 3, and 4 feet.
[illegible]	40,000 Sycamore, 2, 3, and 4 ft.
[illegible]	[illegible] four years old White-thorn Quickwood.
[illegible]	500,000, six years old White-thorn Quickwood, extra strong.

[illegible] and Dwarf Fruit Trees, Goose-berry [illegible] and Flowering Shrubs, &c. [illegible] application.

[illegible]

W[illegible] of FULHAM, near London, [illegible] their Extensive Collection [illegible] distinguished by their [illegible] Britannicum. [illegible] and, for collections [illegible] of prices.

[illegible]

Also [illegible] PLANTS.

And a [illegible]

AGRI[illegible] SEEDS, [illegible]

[illegible]

[illegible] begs to offer the following [illegible] with 4 feet of [illegible] with an

[illegible]	[illegible]
[illegible]	Grizzly Frontignan,
[illegible]	Chasselas Musqué,
[illegible]	Grove-end Sweetwater,
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	Black Cluster,
[illegible]	Black Damascus,
[illegible]	Raisin de Calabre,
[illegible]	White St. Peter's, (Oldaker's),
[illegible]	White, or Royal Muscadine,
[illegible]	Wortley Hall Seedling,
Esperione Black.	Bowood's Sweetwater.

Catalogues of Stove, Greenhouse, Hardy, and Ornamental Plants, and Fruit Trees, may be obtained on application.

[illegible]

[illegible] ESTABLISHED 1786.

EARLY PEAS. — WILLIAM E. RENDLE & Co., have a fine stock of the following excellent kinds.

Bedwell's Early Rival, 2½ feet.	Warner's Early Emperor, 3 ft.
Early Prince Albert, 2 to 2½.	Fairbeard's Surprise, 4 feet.
Fairbeard's Champion of England, 4 feet.	Early Kent, 3 feet.
Early Warwick, 3 feet.	Early Frame, 3 feet.
	&c., &c.

These will be sold at their usual low prices. For Catalogues and prices, apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

We are now laying in a most excellent assortment of New and Choice Seeds for the ensuing season.

CEDRUS DEODARA.

WM. MAULE AND SONS beg to remind Noblemen, Gentlemen, and the Trade, that they can still supply any quantity of various sizes of this most ornamental and desirable tree. They have also large supplies of the other Himalayan Conifers, and the beautiful new Rhododendrons from the same country. Priced Lists will be forwarded on receipt of one postage stamp.

The Pamphlet on the Natural Habits and Quality of the wood of Cedrus Deodara, can still be had by enclosing three postage stamps. — Stapleton-road Nurseries, Bristol.

MYATT'S LINNÆUS RHUBARB.

J. MYATT AND SONS can confidently recommend this variety as the best in cultivation. The most satisfactory proof of this assertion is the fact that the Market Gardeners round London and Manchester have planted the Linnæus Rhubarb more extensively than any other variety. It is extraordinarily productive, and about a fortnight earlier than the Victoria; added to this, it is held in general esteem for preserving and all culinary purposes. One-year planted roots, 1s. 6d.; ditto, Mitchell's Royal Albert, 1s. 6d.; Victoria, 6d. The usual Trade allowance. — Post-office orders are requested to be made payable to JOSEPH MYATT, Manor Farm, Deptford. — Dec. 1.

NOW SENDING OUT, SPLENDID NEW GERANIUMS, FUCHSIAS, CARNATIONS, PINKS, PANSIES, &c.

HENRY WALTON begs to offer 10 of the following GERANIUMS that sent out for 1l. 10s., with a plant of his first-rate Seedling "Antagonist," now sending out at 15s. each. One over for carriage. The plants are well established in 4-inch pots.

	s.	d.		s.	d.
Abd-el-Kader (Hoyle's)	5	0	Lallah Rookh	3	6
Belle of the Village	3	6	Norah	5	0
Prometheus	5	0	Plutarch	5	0
Terpsichore	5	0	Jenny Lind	3	6
Alonzo (Foster's)	5	0	Sparkler	5	0

Any 10 of the following first-rate varieties for 1l. 7s., or 12 for 1l., with a plant of Hoyle's Prometheus for carriage, viz.: Avenger, Ariel, Aurora, Aurantia, Black Prince, Cassandra, Centurion, Conspicabunda, Desdemona, Desdemona, Forget-me-Not, Flora's Flag, Gustavus, Gulielma, Hebe's Lip, Hamlet, Jenny Lind, Lady Ebrington, Luna refulgens, Mercury, Mary Queen of Scots, Miss Holford, Orion, Prince Alfred, Pompeia, Multiflora, Queen of Kent, Rosa Mundi, Star of the West, Scarlet Defiance, Telegraph, and Vulcan.

12 first-rate show Pinks for 6s., 8s., and 12s.
12 first-rate Carnations and Picotees, 12s. and 18s.
12 first-rate Pansies, 6s., 9s., and 12s. Can be sent by post.

Descriptive Catalogues can be had for one postage stamp. All orders are requested to be prepaid, and made payable at Burnley. — Edgend Marsden, near Burnley, Lancashire.

VIOLETS.

THE SWEET-SCENTED "VIOLA ARBOREA," OR, PERPETUAL TREE VIOLET. — This Violet has proved itself to be the best yet in cultivation, the blooms are as large as the double Blue Neapolitan, and it possesses the following superior qualities over all others of the class to which it belongs: one bloom is quite as large as half-a-dozen of the single variety, one plant will produce 10 times the quantity of flowers; it will bloom for eight months, and also very long stem to the flower, which is a great advantage in picking; the plant itself will make a beautiful specimen for the greenhouse or conservatory, as they grow to a very large size when grown [illegible]. I saw a plant in March last, in a conservatory, which had the almost incredible number of 285 expanded blooms on it at one time, with hundreds of buds then to come; it had then been in bloom the whole of the winter. It scented the conservatory so much, that had a person not seen the plant, they would have thought a bed of Violets was growing there. The [illegible] of this truly beautiful plant measures 4 feet 2 inches in circumference, and 16 inches in height, the branches do not hang down, but stand out straight from the plant. It is worth [illegible] the old double Violet, and others [illegible] have been sold for the Viola arborea, which have turned out a [illegible] purchaser. Large bushy plants, [illegible] per dozen, or [illegible] per 100. [illegible]

W. [illegible]

[illegible]

[illegible] Yellow Globe, [illegible]

PEAS.

Knight's dwarf white [illegible]
Do. do. blue do. do.
[illegible]
Imperial Marrow [illegible]
High-street, [illegible]

SLATE WORKS, [illegible] by [illegible] upon application [illegible] Tubs, Plant Boxes, [illegible] Edging, [illegible] specifications. A large stock of [illegible] Richmond, Kent, on sale.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES, [illegible] has been greatly improved, [illegible] strings and all irregularities of surface [illegible] consistent [illegible]

[illegible]

[illegible] SASHES IN BOXES [illegible]

[illegible] Milk Pans from [illegible] each. [illegible] Slates; Propagating Bee Glasses from [illegible] Tubes, 3d. per inch; [illegible] 3s. 6d. per dozen; Pastry Slabs, [illegible] Shades for Ornaments, Fish Globes, [illegible] of every description and Hand Glasses. [illegible] the quality of Milk, 4 tubes, 7s. 6d.; [illegible] ing Thermometers for Greenhouses, Horticultural [illegible]

JAMES PHILLIPS and CO., 116, [illegible] out, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, &c.

HETLEY and CO. are supplying 16-oz. Sheet Glass, of British Manufacture, packed in boxes containing 100 square feet each, at the following [illegible] A reduction made on 1000 feet.

Sizes.	Inches.			Inches.		For foot.	[illegible]
	Under	6	by	4	at	1½d.	[illegible]
From 6	„	4	„	7	„	5	[illegible]
7	„	5	„	8	„	6	[illegible]
8	„	6	„	10	„	8	[illegible]
10	„	8	„	12	„	10	[illegible]

Larger sizes, not exceeding 40 inches long,
16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 3½d. 5d.
26 oz. „ 3¾d. 7½d.

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

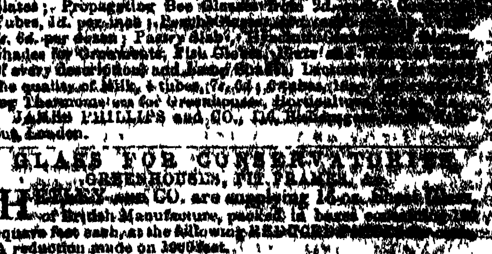
GLASS TILES AND SLATES made to any size or pattern, either in Sheet or Rough Plate Glass.

Propagating Glasses, Bee-hive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in glass.

PATENT PLATE GLASS. — The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental [illegible] and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the Excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY and Co., [illegible] London.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS [illegible] the best description, varying from [illegible] per foot, and upwards. 300 feet [illegible] Rough Plate Glass, for roofing, [illegible] Plate Glass, from 1s. 2d. to 2s. per foot, [illegible] Patent Rough Plate Glass, from ⅛ to 1 inch [illegible] per foot and upwards. [illegible] 12 to 14 inches diameter, [illegible] from 12 to 24 inches long, at [illegible] Warehouse, [illegible] Windows, [illegible] at the [illegible]

JOSLING'S ST. ALBAN'S GRAPE.—Plants may be had 5s. each on the receipt of a Post-office order. Robert Josling, [illegible] Seed Warehouse, St. Alban's.

GREEN AND HOTHOUSES made by machinery, warranted [illegible].—A Lean-to Greenhouse, 12 feet by 8 feet, glass sash, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15l. 10s.; a do. do. 16 by 12, 22l. 10s.; a do. do. 16 by 12, 28l. 10s.; a do. do. 21 by 12, 32l. 10s., including a plan for brickwork. 12-inch Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 1½d. per foot; 24-inch do., 1s. per foot.—J. Lewis's Machine Hothouse Works, Stamford-hill, Middlesex.

BAKER'S PHEASANTRY, Beaufort-street, King's-road, Chelsea, by special appointment to her Majesty and H. R. H. Prince Albert.—ORNAMENTAL WATER FOWL, consisting of black and white swans, Egyptian, Canada, China, barnacle, brent, and laughing geese, shieldrakes, pintail, widgeon, summer and winter teal, gadwall, Labrador, shovellers, gold-eyed and dun divers, Carolina ducks, &c., domesticated and pinioned; also Spanish, Cochin China, Malay, Poland, Surrey, and Dorking fowls; white, Japan, pied, and common pea-fowl, and pure China pigs; and at 3, Half-moon-passage, Gracechurch-street.

HEATING BY HOT WATER.

J. WEEKS and Co., King's-road, Chelsea, Patentees and Manufacturers of HOT-WATER APPARATUS, Economical Boilers of all sizes; the fire warranted to last 15 hours without attention. To be seen in extensive operation at their Show Establishment, King's-road, Chelsea; and also at most of the Nobility and Gentlemen's Seats in the country, the Loudon Nurseries, &c.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

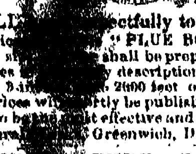
ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, FERNS, &c.

J. WEEKS and Co., King's-road, Chelsea, Horticultural Architects, Hothouse Builders, and Hot-water Apparatus Manufacturers, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. They have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. By means of these houses, they are enabled to grow Stove, Greenhouse, Ferns, and other Plants, in such immense numbers, that they are sold at LESS THAN HALF-PRICE. Mats, Mushroom Spawn, and everything connected with the Nursery and Seed departments; Plans, Estimates, and Catalogues forwarded on application.

HOT-WATER PIPES AND TROUGH PIPES, with all the usual connexions.

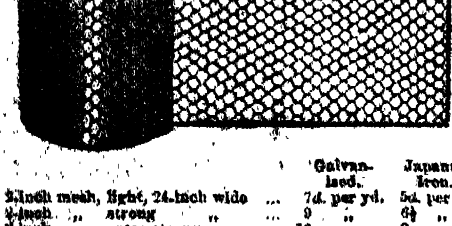
J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, keeps a very large stock of Hot Water and Trough Pipes, with Elbows, Syphons, Tee Pieces, Collars, Flange Sockets, and Spigots, Throttle Valves, &c., of excellent quality, and at very low prices. Parties requiring the work to be done, can have good workmen sent to any part of the kingdom, with everything requisite for the heating, &c., at a stated sum. Rain-water pipes, Gutters, Sash-weights, Balling Bars, Air Bricks, and numerous other Castings are also kept at J. Jones's, Iron Bridge Wharf, No. 6, Bankside, London.

THE IMPROVED "FLUE BOILER," AND FURNACE.



W. HILL [illegible] respectfully to inform the numerous applic[illegible] "FLUE BOILER" of a small and intermediate s[illegible] shall be prepared, early in December, to supply sizes [illegible] description of Apparatus, from that of 100 feet of 3-in[illegible] 2000 feet of 4 inch pipe. A List of Sizes and Prices will shortly be published. W. Hill guarantees his Boilers to be the most effective and economical of any in use. Horticultural [illegible] Greenwich, Dec. 1.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7d. per yd.	5d. per yd.
2-inch „ strong „	...	9 „	6½ „
2-inch „ extra strong „	...	12 „	9 „
1½-inch „ light „	...	8 „	6 „
1½-inch „ strong „	...	10 „	8 „
1½-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

SMITHFIELD CLUB PRIZE CATTLE SHOW, and Exhibition of [illegible], Implements, &c. Will commence on Tuesday [illegible] Wednesday, and close on Friday evening instead of Saturday as heretofore, 11th, 12th, 13th, and 14th December.

Bazaar, King-street, Portman-square.

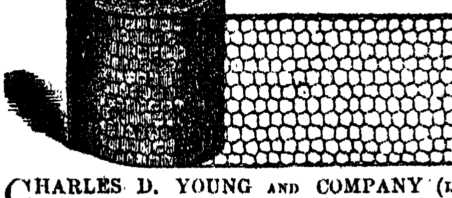
CORN MANURE.—BLASHFIELD'S PATENT COPROS, a New Manure for Corn and other crops, prepared from the Nitrogenous Matter deposited on the banks of the Thames, in combination with Superphosphate of Lime, &c. Sold, in a finely-ground state, at No. 3, New London-street, Mark-lane; also at the Works, Mill-wall, Poplar; Waterloo Dock, Lambeth; and No. 1, Praed-street, Paddington Basin. Patent Copros for Corn crops; also for Turnips, &c. Superphosphate of Lime, Sulphate of Ammonia, Sulphate of Lime, Gypsum, calcined and saturated with liquid manure; Cement for liquid manure tanks, malt-house floors, and barn floors; Drain-tiles, Pipes, &c.

STATUES, VASES, FOUNTAINS, GARDEN ORNAMENTS, COATS OF ARMS, and ARCHITECTURAL EMBELLISHMENTS in Imperishable Stone, by Vaughan and Co., 60, Stones End, Borough, London. T. J. Croggon, late of Coade's, Superintendent. Specimens may be seen at Croggon and Co.'s, 2, Dowgate-hill, City. A pamphlet of Drawings forwarded on application.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm-servants, or unpractised persons. Price 1d. per square foot. CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel. Samples and Testimonials sent by post on application to Croggon and Co., 2, Dowgate-hill, London.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG and COMPANY (late W. and C. Young), MANUFACTURERS OF IRON AND WIRE WORK, &c., 22, Parliament-street, Westminster, London; Castle-Buildings, Derby-square, Liverpool; 128, High-street, Edinburgh; and 32, St. Enoch-square, Glasgow, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet [illegible], peculiarly adapted for rendering [illegible] Fences, *completely impervious* [illegible] cut up into small pieces of three or more [illegible], it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

Prices.—18 ins. high, 9d.; 24 ins., 1s.; 30 ins., 1s. 3d.; and 36 ins., 1s. 6d. per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	£3	15	0
Do. of 100 yards, 24 ins. wide	.. ..	5	0	0
Do. of 100 yards, 30 ins. wide	.. ..	6	5	0
Do. of 100 yards, 36 ins. wide	.. ..	7	10	0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. Young and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s. is equal to 2½ yards of another article in the market, the same width, at 9d. per yard. Samples for inspection sent free of expense.

C. D. Young & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. Nesbit's Academy, in addition to a good modern education.

Mr. Nesbit's works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by Longman and Co., and may be had of all Booksellers.

The terms of the School can be had on application either personally or by letter.

CHATSWORTH ANNUAL SALE.

MR. NICHOLSON begs to inform the admirers of first-rate Stock that he will offer to public competition, on the usual conditions, on WEDNESDAY, the 5th December, at 11 o'clock to a minute, at the Farm Yard, Chatsworth, 60 Scotch and Short-horned Oxen, Cows, and Heifers, fit for the butcher; 220 prime fat Woodland, Leicester, Southdown, Scotch, and Forest Wethers; 20 fat Ewes; 7 very superior young Short-horned Bulls; 10 Improved Short-horned Heifers, in calf to Rothsay (9630); and 10 high-bred, fat, and breeding Pigs; the property of his Grace the Duke of Devonshire.

The above will be found highly deserving the notice of Breeders and Butchers generally. Purchasers of the fat Cow stock will be accommodated with keep as usual.

Catalogues, with Pedigrees of the Bulls, may be had of Mr. Goodwin, Bookseller, Bakewell; of the Auctioneer, Sheffield; and of Mr. Swaffield, Chatsworth Farm, Chesterfield, Derby.

THE FIRE ANNIHILATOR COMPANY. PHILLIPS'S PATENT.

MR. PHILLIPS'S invention for extinguishing fires [illegible] not only the [illegible] Property but Life from that destructive element. The Machines, sold according to the scale of prices below, are available for Houses, Ships, Manufactories, and Warehouses, as well as for Farming Property, viz., Out-buildings and stacks of Hay or Corn.

The vapour given out from the Machines is producible at pleasure in a few seconds after any fire has been discovered, and extinguishes not only the flames arising from the ignited materials of property in general, but also has the same power over those caused by tar, turpentine, oil, sugar, and other highly inflammable substances upon which, when in combustion, water has no effect.

Stationary Machines fixed for the protection of Mansions, Manufactories, Theatres, Dockyards, and other large premises.

Size of Machine.		Price, including one Charge.		Price of each Spare Charge.
1st, or A	....	£3 0 0	......	£0 5 0
2d, or B	....	4 0 0	......	0 7 6
3d, or C	....	5 0 0	......	0 10 0
4th, or D	....	6 0 0	......	0 12 0
5th, or E	....	7 0 0	......	0 15 0

The Machines can be made to order of any size, at a proportionate price.

Applications to be addressed to the Secretary of the Company, 150, Leadenhall-street, London.

THE BEST DIBBLE FOR 500l.—In reply to Dr. Newington's proposition in the *Gardeners' Chronicle* of the 17th Nov., the friends of Jesse Ross consider that many of the propositions named by Dr. Newington are more suitable to the working of his machine than beneficial, namely, the size of the hole being small, as it is impossible for him, Dr. Newington, to make six holes of a large and proper size with his hand machine, when it is a notorious fact that Wheat which is pressed into the soil should have a good solid bed to lay on, and five-eighths to three-quarters of an inch is not too large; it is this that has made Jesse Ross's machines so notorious for the yield of the crop as not to be equalled by any other form of dibbling or drill. The idea of Dr. Newington wishing to bring out his 18-rowed machine on wheels against Jesse Ross's pairs, is a plain proof of the superiority of the latter as to speed; and, although J. R. would not fear meeting Dr. N. with that machine, his friends consider it is not required. Respecting planting in rows, J. R. claims the use of a marker, which, when once straight, will keep the rows continually so; and he is ready to meet Dr. Newington's proposals for the majority of the five events named by Dr. N. to be the victor, namely, the first, second, third, fourth, and sixth, and forming all that is important in dibbling corn. Dr. Newington's machine not to exceed six dibbles, as exhibited at Norwich, or the like as J. R. It is true J. R. is dissatisfied by the partial judgment given at Norwich, and wrote to the Judges on the subject, as Dr. N.'s machine was never tested only on one point, dividing the seed, when the cups varied from one to six and seven grains, when Mr. Taylor, one of the Judges, said, "Dip them down again," showing great partiality, but they were little if any better the next time. J. R. then dibbled some considerable length of ground, the only one that could dibble, and afterwards the dibble was tested as to the dividing and delivery of the seed, making some hundreds of deposits in a hole formed for the purpose, when the seed was delivered as regularly as possible, delivering two to three grains, and but one odd corn appeared, and that very probably was in the seed; not but that it is possible to catch a grain entering the dibbling socket; but, in this, Jesse Ross's machine has the advantage over Dr. Newington's, as J. R.'s delivers its seed when pressing down; it falls into the dibbling chamber, so that when the dibble comes out of the soil the dibbling socket is immediately supplied. But not so with Dr. Newington's; he divides his seed when the dibbles are up, so that a man returning the dibbles at the same speed as the fall of the seed would catch and crush every grain in the dibbling socket, and this was the reason, no doubt, Dr. Newington's machine was not tested in the like manner as to the delivery of the seed. For what, then, has the prize been given to Dr. Newington? It could not be for the dividing and delivering of the seed, as it was clear both these and the novel and mechanical arrangements of the implement, pressing the seed into the soil at one operation, was in favour of Jesse Ross's machine; and he defies the Judges or anyone else to disprove the above statement. Dr. N. will please say if he accepts these propositions, publicly through this Paper, and private address, Jesse Ross, Patent Dibbling Committee, Saracen's Head Inn, Leicester. J. R.'s friends would wish this match to come off in Leicestershire. Dibbling machine makers and others desirous of making machines on the above important principle, may apply for licenses to the Patentee, or W. Gregory, Esq., Solicitor, Leicester, or for purchasing the same. These dibbles will shortly be exhibited at the Polytechnic, and by Deane, Dray, and Co., Smithfield Show.—73, New-walk, Leicester, Nov. 27.

MONEY TO BE ADVANCED.—Any Sum, from 100l. to 30,000l., to be advanced at 4l. per cent. interest, on security of Freehold Lands of ample value.—Apply to Mr. R. T. Head, Solicitor, 9, Bedford Circus, Exeter.

NURSERY BUSINESS.

TO BE DISPOSED OF, by Private Treaty, a NURSERY, about 11 acres, stocked with every variety of Forest and other Trees, a great quantity of Quick, from three to six years' growth, an extensive collection of choice Plants, a large Vinery, and a number of Pits. The whole in a high state of cultivation; situate at Shrewsbury. Application to be made to Mr. Phipps, Nurseryman and Seedsman, Shrewsbury.

TO NURSERYMEN AND SEEDSMEN, &c.

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TO BE SOLD, by Private Treaty, at the Victoria Garden, Bury, Lancashire, either altogether or in lots, upwards of 3000 pairs of CARNATIONS and PICOTEES, 8000 PINKS, 300 AURICULAS, and 300 POLYANTHUSES, all of named varieties. The whole are in the best condition, and will be open to view, on the premises, every day till sold, from 10 o'clock in the forenoon till 4 o'clock in the afternoon. Persons residing at a distance will be furnished with the price of any of the varieties, or any other information respecting them, on application, by letter or otherwise, to Mr. John Dewhurst, Grocer, Bury, Lancashire.

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TO BE LET OR SOLD, the Lease of the well known and long established PARADISE NURSERY, Hornsey-road, Islington. The whole or part of the Glass and Stock may be taken at a valuation.—Further particulars may be had by applying to Messrs. Paterson and Adams, Leytonstone, Essex; or to Mr. Wm. Fairbairn, jun., on the premises.

TO BE SOLD, the FOUR FIRST VOLUMES of the GARDENERS' CHRONICLE, handsomely bound, in the best condition, for 30s. each vol., the owner having given up Horticultural pursuits. Also, several pairs of fine silver-pencilled PHEASANTS, Irish Breed, in full plumage, two guineas per pair; this year's breed, 15s. each.—Direct to Z. Y. X., to the care of Mr. Dawes, Post-office, Maddox-street, Regent-street.

[illegible] AND SON beg to [illegible] Gardeners' Chronicle [illegible] [illegible] GARDEN and other SEEDS, is now ready [illegible] and that copies of the same may be had at the Office of this Paper.—Erfurt, Prussia.

[illegible] "VICTORIA" RASPBERRIES.
G. CORNWELL is now sending out Strong Canes of the above, at 25s. per 100; or 3s. 6d. per dozen. To be had at [illegible], Covent-garden; [illegible], Fleet-street; and of [illegible], Market-Gardener, Barnet, Herts.

AMERICAN NURSERY, BAGSHOT, SURREY.
JOHN WATERER has much pleasure in announcing he has published a Descriptive Catalogue of his extensive collection of RHODODENDRONS and other American plants, &c., which will be forwarded on application.

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THOMAS JACKSON AND SON have much pleasure in announcing that in consequence of their having a very heavy crop of their IMPROVED KIDNEY POTATO, they have reduced its price from 15s. to 10s. per bushel. All orders of one bushel or more delivered free in London, or at any station on the South Western Railway.
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BASS AND BROWN beg to refer to their Advertisement of New Varieties last sent out, of which they have still fine strong plants, see *Gardeners' Chronicle*, dated October 20th and 27th. They also beg to refer to their Advertisement of CHOICE FLOWER ROOTS, of the same date. Their Descriptive Priced Catalogue of Flower Roots, Select Roses, Hardy, Herbaceous, and Climbing Plants, &c., may be had on application.
Seed and Horticultural Establishment, Sudbury, Suffolk.

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STUBBS' EARLY DWARF BLUE MARROW PEA.—A very abundant cropper.
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AGRICULTURAL MAIZE, for green food for cattle, and the dwarf varieties.
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HOSEA WATERER begs to announce he has just published a New and Complete Catalogue of his AMERICAN and CONIFEROUS PLANTS, which may be had on application, enclosing two stamps for postage to
HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

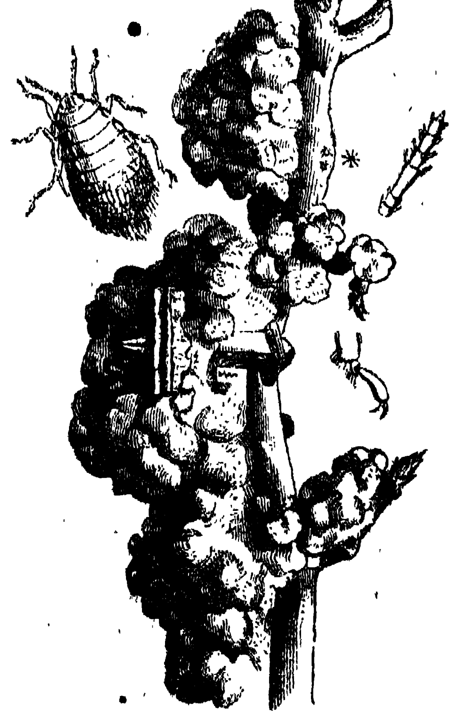
The Gardeners' Chronicle.

SATURDAY, DECEMBER 1, 1849.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	Dec.	3	Entomological	8 P.M.
			Pathological	8 P.M.
			Chemical	8 P.M.
			Medical	8 P.M.
			British Architects	8 P.M.
TUESDAY,	—	4	Horticultural	2 P.M.
			Linnæan	8 P.M.
			Civil Engineers	8 P.M.
WEDNESDAY,	—	5	Society of Arts	8 P.M.
			Geological	8½ P.M.
THURSDAY,	—	6	Zoological	3 P.M.
			Antiquarian	8 P.M.
			Royal	8½ P.M.
SATURDAY,	—	8	Royal Botanic	3¾ P.M.
			Westminster Medical	8 P.M.

THE accompanying figure is a representation of one of the most remarkable instances of the effects of the ATTACKS OF INSECTS upon vegetable structures which has ever fallen under our notice. It is a portion of a branch of a Nelis d'hiver Pear, grown against a wall in the garden of Mr. WILMOT, of Isleworth. The branch sent to us appears to be three years old, and was evidently once in fine healthy growth, but the shoots are now very generally covered, on the *side next the wall*, and in some parts even all round, with a vast number of woody knobs united into solid masses, so that the portion of the branch now before us weighs about half a pound. It is not a little curious that the shreds and nails used in fastening the branches to the wall are also embedded in the solid growth of the tubercles. Out of the mass have grown a number of two-year old shoots, none of which are more than 1½ inch long, and at the tips of these are to be seen the buds of the present year, which have never grown beyond the size of buds; in fact, the natural growth of the tree has, in this part at least, been entirely interrupted, and the whole power and energy thrown into the elaboration and growth of tubercular masses of wood.



The agent which has produced this disease is a species of aphid nearly allied to the American blight of the Apple. At the present time the tubercles and adjacent part of the stem are clothed with a fine grey powder, and the former are thickly studded with minute white particles, which are the cast-off skins of innumerable aphids, which are of a very small size, and are seen crawling about the knobs. In the absence of the winged states of the insect we shall abstain from giving a technical description of the species, which may be named *Eriosoma pyri*. The small wingless individuals are greyish black, with white woolly matter exuding from the hind part of the body, the antennæ six-jointed, with a very small appendage or joint at the tip of the sixth joint, and the tarsi are two-jointed and terminated by two claws. The size of the largest of the individuals we have met with is shown near the * in our woodcut.

For the size of the insects the proboscis is remarkably strong, being at least twice as thick as the legs or antennæ; and it is this instrument which has produced all the disorganisation which we have described. It would lead us into a wide field to inquire into the effects produced on different kinds of plants by the punctures of insects, effected either by the proboscis, for their own food, or by the ovipositor, for the establishment of a situation for the safe deposition of the eggs. The question also involves the fact whether the growth of those and similar tubercles or galls are produced partially or entirely by the introduction of some irritating fluid discharged by the insect into the wound, or simply by the effect of the wound itself. How far also the state of the plant at the period of the infliction of the wound may tend to the greater or less development of these galls, is also to be determined; at all events it is perhaps certain that, under all circumstances, the attacks of this particular kind of aphid, upon any kind of Pear tree, would result in the formation of galls of a larger or smaller size, in which case, we may, perhaps, be correct in considering this aphid as a new importation, as dangerous as the American blight.

The specimen before us is further interesting, from showing that results, apparently identical, occur from wounds inflicted, whether by the proboscis or ovipositor of insects. Many instances are recorded of large woody galls being found on different trees; the large root galls of the Oak and Elm, caused by the deposition of the eggs of one of the Cynipids (see *Gardeners' Chronicle*, 1841, p. 732); the hard woody galls of the Willow, caused by a minute midge; and the galls of the Thistle, produced by Tephritis Cardui, are instances in which insects of different orders are found to be capable of causing the growth of hard woody masses; but in all these cases the effect is produced in order to afford a place of safety for the eggs, and the supply of a sufficient mass of food for the young insects when hatched; but in the instance before us the mass of matter is for the latter object only, and it is this kind of excrescence which RENNIE, in his "Insect Architecture," has termed pseudo-galls, giving several examples obtained from different trees, some of which, however, may have been the result of disease in the plants, independent of the attacks of insects.

The numerous minute aphids now on the branches of the Pear tree in question may be destroyed by hot water, or by washing the branches with the oily mixture used in killing the American blight.

One very curious circumstance attending this attack is, that the aphids in question have confined themselves to the Nelis d'hiver, and have touched no other Pear tree in Mr. WILMOT's extensive grounds. There are some analogous cases of predilection and aversion among insects, to which we may one day more particularly allude. *W.*

SEVERAL inquiries having been lately addressed to us concerning the possibility of TRANSPLANTING LARGE TREES, we may as well take the present opportunity of touching upon the subject, although, in the eyes of practised planters, it has long ago been exhausted.

In the "Theory of Horticulture" is the following passage:

"The value of great attention to the roots, in the operation of shifting, has already been pointed out, and transplanting is only shifting in another manner. It would be the duty of the gardener to save every minute fibre of the roots, if it were practicable; but, as that is not the case, his care must be confined to lifting his trees with the least possible destruction of those important organs; remembering always that it is not by the coarse old woody roots that the absorption of food is carried on, but by the youngest parts, and especially the spongioles. The mechanical means by which this is best effected do not belong to the present subject; I may however remark, without quitting the limits of theory, that, as the greater part of the young fibres is produced at the circumference of the circle formed by the root, the earth should be first removed at some distance from the stem, so as to insure, as far as possible, their being taken up entire; if this is not done, but the spade is struck into the earth near the stem, or if the rude nursery practice, justly enough called drawing, is employed, a large part of the most valuable roots must necessarily be cut off or destroyed by tearing. The greatest difficulty, beyond that of mechanical removal, in transplanting trees of considerable size, is this preservation of roots; and, if it were possible to carry without injury such heavy masses as old forest trees, there is no physical obstacle to transplanting them, if the extrication of the fibrous part of the roots be secured, which is not impracticable. As, however, the latter is a troublesome and very difficult operation, even when trees are only 10 or 12 feet high, it has been, from time out of mind, the custom of skilful planters to prepare such trees for removal by cutting back their main roots one year before they are to be transplanted; if this very simple operation is properly performed, all the principal limbs, so amputated, will emit young fibres in abundance from their extremities, and the gardener,

from knowing where to find those roots, can easily take them up without material injury."

This statement, which was written nearly 10 years since, is, we believe, an exact explanation of the circumstances which most require attention in removing large trees. There is, then, no other difficulty in removing timber trees than what consists in the mechanical difficulties of lifting and transport from one place to another. Supply the tackle and machinery for so great a task, and a good gardener would carry the Oaks in Windsor Park to the lawn at Osborne. It might require the engineering skill of a Brunel or a Stephenson to move such masses; but the thing is to be done. We have within sight of the window at which this is written an old Mulberry tree, *removed, some years since, in the month of August*, in very dry weather, from ground so hard that it had to be broken up with pickaxes; and although the operation was conducted with little skill or care, the plant survived, and, after losing some of its branches, recovered, becoming what it now is—a tree in full bearing. One of our correspondents, who seems to be acquainted with a similar case at Woolwich, looks upon it as something which could only happen to a Mulberry tree. In that, however, he is mistaken: the same thing may be done with any tree; with different degrees of difficulty, however, on account of the variable amount of vitality proper to different kinds of trees. The fine old Palm trees, taken to Chatsworth from Walton, several years ago, are now among the most vigorous specimens in the great conservatory at the former place. They were carried on trucks in the summer time, the roots having so buried themselves in the soil that the walls of the hothouse at Walton required to be pulled down, in order to extract the roots without injury. We believe that much more remarkable instances than any of these have occurred under the Earl of Harrington's direction, at Elvaston, of which a full account will shortly appear in our columns.

We repeat, then, that trees of any size *may* be moved, in case of necessity, if proper care and sufficient engineering skill are applied to the task. It is a mere question of knowledge and money. The precautions to be taken are these:

1. To take out of the ground all the delicate roots, and to secure them against accident in transport. To tie them in parcels, as they are extracted from the soil, and to wrap each parcel in damp moss, has been resorted to with success.

2. To prune carefully all the main old roots which have been unavoidably broken in lifting. The reason for this operation, the importance of which is too often lost sight of, is thus explained in the "Theory of Horticulture:"

"Under all ordinary circumstances, the roots must necessarily be injured more or less by removal; in that case, all the larger wounds should be cut to a clean smooth face; not in long ragged slivers, as is often the case, and which is only substituting one kind of mutilation for another, but at an angle of about 45°, or less. If the ends of small roots are bruised, they generally die back a little way, and then emit fresh spongioles; but the larger roots, when bruised, lose the vitality of their broken extremity, their ragged tissue remains open to the uncontrolled introduction of water, decays in consequence of being in contact with an excess of this fluid, and often becomes the seat of disease which spreads to parts that would otherwise be healthy. When, however, the wound is made clean by a skilful pruner, the vessels all contract, and prevent the introduction of an excess of water into the interior; the wound heals by granulations formed by the living tissue, and the readiness with which this takes place is in proportion to the smallness of the wound. It may be sometimes advantageous to remove large parts of the coarser roots of a tree, even if they are not accidentally wounded when taken up, the object being to compel the plant to throw out, in room of those comparatively inactive subterranean limbs, a supply of young active fibres. This is a common practice in the nurseries in transplanting young Oaks and other tap rooted trees, and is one of the means employed by the Lancashire growers of Gooseberries, in order to increase the vigour of their bushes; in the last case, however, the operation is not confined to the time when transplantation takes place, but is practised annually upon digging the Gooseberry borders. The reason why cutting off portions of the principal roots causes a production of fibres appears to be this: the roots are produced by organisable matter sent downwards from the stem; that matter, if uninterrupted, will flow along the main branches of the roots, until it reaches the extremities, adding largely to the wood and horizontal growth of the plant, but increasing, in a very slight degree, the downward powers: but if a large limb of the roots is amputated, the powers of the stem remaining the same, all that descending organisable matter which would have been expended in adding to the thickness of the amputated part, is arrested at the line of amputation; and, unable to pass further on, rapidly produces granulations to heal the wound, and immediately afterwards young spongioles, which soon establish themselves in the surrounding soil, and become the points of new active fibres."

To this may be added what is now becoming better understood, that the decaying roots become the seat of dry-rot fungi, which, once established, rapidly introduce their spawn among the living tissues, and produce diseases which only end in death.

3. It is as well to remove a certain portion of the spray of large transplanted trees, so as to diminish the evaporating surface of the foliage, when the tree first begins to grow again. Many a fine tree has pushed satisfactorily for a few weeks, and then died; this has happened in consequence of the leaves consuming the liquid food in their neighbourhood too fast—quicker than the injured roots can replace it. An additional remedy for this is shade. When the Walton Palm trees were first observed to shoot at Chatsworth, their heads were enveloped in coarse cotton sheets; by which means light enough to preserve vitality was admitted to the leaves, but the exhausting effects of bright light were stopped.

4. It may sometimes be necessary to assist the tree still further, when it begins to grow, by syringing it with a water-engine, or by binding the main branches and stem with moss. The object of this is partly to stop evaporation through the bark, and partly to encourage absorption by the bark.

We have made no remarks upon the precautions to be taken in putting such trees into the ground. The principles to be attended to are well known to good gardeners, and we do not propose to occupy time by pointing them out, *unless our correspondence shall tell us that it is desirable to do so.*

ROSE GARDENS.

THE PLAN AND DESIGN OF THE BEDS AND BORDERS, THE CHOICE OF VARIETIES, AND BEST MODE OF PLANTING.

Roseries are gardens of Roses; that is, gardens in which Roses are the leading if not the exclusive plants, and sufficiently numerous to require nothing else. The various modes of displaying the Rose are resorted to in such cases, and we ought to have at one view dwarfs on the ground, standard and half standard trees, pillars, arches, and festoons. The figure depends much on fancy; a geometrical figure with a place to stand on in the centre, instead of the more common finish, a clump, may have the beds uniform, of various shapes, but, so that the entire figure is shown at a glance; these beds should be planted with Roses of various heights, the shortest all in the centre beds, the taller ones further off, so that when standing in the middle the heights gradually increase as the beds recede, until the most distant might be standards. Suppose, for instance, as one of the most simple of all designs, we have a common centre to a square plot, with paths like the stripes on a Union Jack, with the smallest dwarf Roses nearest the centre, and the plants to increase in height to 5 feet standards; and the most distant Roses of all were climbers on poles at 6 feet distance from each other, with chains from one to the other on which to train the plants festoon fashion, round the outer edge of the first plantation, where a 6 feet path should be formed on the four sides, with pole Roses to meet on the opposite sides. This would be one of the most simple and yet effective of Roseries, for we have seen them of many forms; but in none is the effect so striking as when the Roses increase in height as they recede in distance. This feature is as important when a Rosery is formed merely of parallel walks. Say that a square piece of ground has to be planted with Roses; let the paths be parallel all through the piece; let there be any distance between the paths you please, say 12 feet for the smallest distance; along each side of one path put two rows of Roses of the dwarf kind next the path, the first row 1 foot distance from the edge and 2 feet apart, and the second 2 feet distance from the edge and 2 feet apart, so that the plants show between the others; the third row may be taller bushes, and 18 inches further back. These will touch each other when in full growth. Behind these begin standards of different heights, 3 feet apart, and row after row increase in height till the back row of all, right and left, shall be climbing Roses on poles, and festooned, 6 feet apart. As another 6 feet wide path should be at each extremity, there must be pole Roses to match on the opposite side, so that every alternate path would be between dwarf Roses and a bank of higher ones; as they recede other alternate paths would be between tall pillars of Roses festooned on both sides. Leading to a Rosery of this kind there might be arches of Roses planted 6 feet apart and arched over the path. But there is nothing so easily diversified as Rose plantations; they are dignified with the name of Roseries only where they abound. There are so many beautiful dwarf Roses that they are now coming into general use in Dutch or geometrical gardens in preference to annuals and other dwarf subjects, chiefly on account of their permanent nature. A Rosery should be in all cases no part of the grand design in landscape gardening. The only portion of it that belongs to the general plan of a garden is the entrance. Like geometrical flower gardens they derive all their charms from their appropriateness to surrounding objects, and their exclusion from the landscape, and there is no such art in concealing them until you arrive at the spot as there is in creasing the fairy land by a well designed plan of planting.

In the formation of a Rosery, one of the primary objects is to contrive that Roses of all habits shall be displayed, and that tree Roses in particular should form a distinguished feature. With this view, paths approaching the grand assemblage are planted on each side in different ways—three rows of Roses occupying a 6-feet border on each side a walk, the back row 6-feet standards, and about 4 feet apart; the second row, 4-feet standards, the same distance, but alternating; and the front row, 2-feet standards, with proper attention to the training, are very effective; even two rows give a very fine effect, and perhaps there is not a better way of showing some of the best varieties in perfection. When gardens are laid out in straight walks, as many flower gardens are in front of conservatories, certain of the walks may be appropriated to Roses, planted and trained in all the different ways, but each walk should in that case be complete. There should be one uniform plan the whole length; whether it be arches, pillars, festoons, bank planting, or a display of standards, the plans should be distinct. Roses should not be dependent on any other flowers for a finish. It is better to have one good border of Roses than a dozen borders in which they are mixed with other subjects; and where the gardens are limited, and there is not room for a complete Rosery, there is always to be found some path leading to some place that can be appropriated to a moderate plantation of these noble flowers. They look nothing when isolated, or when mixed with all sorts of flowers, compared with the effect they produce alone. If, indeed, were there but a solitary clump on a lawn that could be spared for Roses, that clump should be planted with Roses exclusively.

In some establishments standard Roses are planted on the lawn at certain distances by the side of the path, and we have seen them look very pretty; but they seem to be frittered away if they are far apart, and formal when they are closer; besides, they appear so exposed when standing alone, that if they are not to be honoured with a place to themselves, we would rather see them rearing their heads among the evergreens than in a mechanical row without supporters, that is, without being backed up by one another. We, therefore, in all cases recommend that a portion of a garden should always be appropriated to the culture of the Rose exclusively. If it be but a few yards of border on each side of a walk, we would have it planted according to some distinct plan; if it be but 3 feet wide on each side, let there be two rows of standard Roses and a row of dwarf—close work we admit, but it is to be done, because although we say 3 feet border, it must not be against a wall, and therefore the head of the back row might overhang whatever happens to be beyond it. Even these three rows on either side will look far superior to any distribution of Roses about the ground; not only are the varieties improved in appearance by contrast, but, being all on the spot, as it were, they are much easier attended to in all states, and less likely to be neglected, though we are not quite sure that we ought to let that weigh with us when seeking to produce effect.

We have seen one place where there are three walks nearly 200 yards long, and standard Roses are planted 6 feet distant on each side in a single row; the effect is pretty but poor. So many Roses could not fail to interest, but there was nothing bold, nothing striking, except the singularity, and had 100 yards been properly planted with three rows on each side, the effect would have been noble. To walk between two banks of Roses is a luxury; but even this is tame compared with a well-arranged Rosery, so concealed from the general features of the place, as not to be seen till you come on it all at once. *Crito.*

DISEASES OF PLANTS.

(*Continued from p. 724.*)

Genus II.; *one species.* Moschosermantia, *that is, desiccation of the pistil.*—This disease has excited very little attention, although there is reason to believe that it is much more common than is generally supposed, and that it may cause much injury to fructification, especially in those plants where the female organs are not much protected. Linnæus has taught us that the upper or stigmatic portion of the pistil is always moist, which any one may verify in the Tulip and the large Amaryllis, so common in our gardens. If this moisture is dried up fertilisation cannot take place. Extreme drought, a strong hot wind, a slight smoke, a sudden rain, or any sudden change of temperature from hot to cold, may interrupt fecundation, by drying it up in the first instance, or washing it away, or impeding in some way or another the due course of the process. The weaker the plant the more danger of the evil. It will be seen, under *Necrosis*, that the female organs are less sensible to cold than the male.

There is no remedy to this disease. The gardener who is anxious about particular plants can prevent it by protecting them from the vicissitudes of the weather whilst in flower. Some who have duplicates of any favourite plant, always keep one of them protected.

Genus III.; *one species.* Anthorrosis, *that is, falling off of flowers.*—In some places the Apple blossoms, at the time their buds are ready to open, turn brown and

fall off. From the observation that a little worm is to be found inside each of them, it has been concluded that the insect was the cause of the fall of the flowers. It has also been observed, however, that in those years where the blossoming is not disturbed by sudden cold winds, or rains, or drying winds, or hot moist misty days, all the flowers set tolerably well; and that in every year the flowers that are late in coming forward are not affected; these facts tend to show that the mischief is not produced by insects. It is true, also, that such atmospheric states enable these creatures the more readily to penetrate into the buds. In trees I have observed the blossoms to fall in three circumstances. They fall at the moment they are ready to burst, at the coming on of fog, cold, or a dry wind. I have seen them fall when just expanded, chiefly when there blows a very hot wind with a thick sky. Finally, in those trees which had borne much fruit the preceding year, or had become weakened by age or ill treatment, the blossoms fall off as soon as they are fully out. In herbs I have observed the last-mentioned fall in the case of newly-transplanted individuals, which have nevertheless expanded their flowers; therefore let any one who has to transplant herbs already in flower, follow my advice, and cut off all the flowers, unless, indeed, the transplantation has been effected in a manner not to disturb the roots in the least, otherwise he will lose not only all the flowers, but perhaps even the plant itself.

It is clear, therefore, that this evil may be the effect of two opposite causes. Where it is caused by the weakness of the plant, or by the superabundance of nutriment, for I have seen it take place in trees placed in the richest as well as in the poorest soils, it clearly appears what should be done to prevent it. But where it is the result of the vicissitudes of the season, the thing becomes for the most part impossible. Some, indeed, may be saved by sprinkling with well or spring water, at the moment when the sun is bursting out, the plants in flower struck by the morning mists. So also the burning some combustible matter, so that the wind shall carry the smoke into the orchard, vineyard, or garden, may certainly preserve many. Over-pruning is another cause of the mischief, quite as frequent as these mists or winds. When it is from old age that the tree sheds its flowers, I have already stated what is to be done.

Vines are, amongst all trees, those which in some places are the most subject to the shedding of their flowers, and this is the *coulure* which in France causes so much annoyance to the Vine-growers. The French, however, include under the same name whatever description of malady either prevents the germ from being fecundated, or, when fecundated, from forming the mature fruit. The *anthonteris* of the Vine is produced by the same causes as that of other trees. To prevent it, if it be reasonably thought to be owing to weakness or want of sap, it will suffice to remove a ring of bark about two lines broad from the wood of the preceding year. If it is taken from older branches the ring must be still narrower, and care must be taken not to touch the wood. The operation must be performed eight or ten days before the flower expands. The reason of the success of this practice appears to me to consist in its causing the descending sap to be better distributed and to flow into the flower-stalks, instead of being dispersed over the other parts of the plant.

I have taken the pains to examine a very great number of flowers at the moment of their fall both from trees and from herbs. I have seen some with a shrivelled stalk, as, for instance, those which fell this year from some Pear trees in the University garden, which had borne much fruit last year. Again, I have seen others, especially in the case of two very vigorous Apricot trees, which had the flower stalk strong and healthy. This further convinces me I am not wrong in attributing the disease to two opposite causes.

RELATIVE AMOUNTS OF EVAPORATION AND FALL OF RAIN.

A CORRESPONDENT, who signs himself, "J. H. S.," states, at p. 694, that he finds, by reference to Daniell's "Meteorological Essays," that from the result of 17 years' observation at Chiswick, the average amount of evaporation for the year exceeds that of the fall of rain by 4.569 inches; and he then asks, and with good reason, "whence is the supply derived by which the quantity carried off in floods is furnished, and from which the perennial supply of springs and the flow of rivers is preserved?" Having registered the observations alluded to, I beg to offer some remarks which may tend to explain the difficulty in question.

The amount of evaporation is not estimated in the meteorological journals published by the Horticultural Society from observations made in their garden at Chiswick; but the indications of Daniell's hygrometer are given, and also the force of vapour as deduced from them; and from these data the amount of evaporation has doubtless been calculated for Daniell's "Meteorological Essays," according to tables founded on Dalton's experiments. But it must be observed that these tables refer to the evaporation from the surface of *water* and not from the *earth*. That from the former may be greater than the amount of rain; that from the latter must be as much less as to afford a supply equal to the quantity drained from the land by rivers to the sea. This general fact, I presume, will be readily admitted; but the experiments that have been made, in order to determine the relative amounts of evaporation from water and land, have been very few; although I believe the subject is well deserving of investigation, both in a horticultural and agricultural point of view. This being the case, I have concluded that some excellent observations on the evaporation of the soil, by the Comte de Gasparin, in his "Cours d'Agriculture," might prove interesting. He states, that when the surface of the soil is moistened, whether by rain or by an inundation, the water penetrates it by its gravity; the watery particles are gradually absorbed, and introduce themselves into the pores of substances of which the soil is composed. When the upper portion of the soil is saturated, then the excess of water descends into the next layer of soil, and thus the whole of the water may be absorbed. To this first effect, which is comparatively rapid, a new order of things succeeds: presuming that the lower stratum is dry, and not yet reached by the moisture from above, it takes a portion of the water in the saturated layer immediately above it until it is in an equal degree of humidity with it; and this diffusion goes on till an equilibrium as regards moisture is established from top to bottom.

But whilst this is going on interiorly the air which rests on the surface of the ground, and which is imperfectly saturated, tends also to take from the upper layer a portion of its humidity; evaporation takes place. The upper layer, dried in consequence, draws moisture from that which is more moist beneath, and this moisture, in its turn, is also taken up by the atmosphere.

Having observed for several days the relative amount of evaporation from a surface of water, and that from earth completely saturated, in the month of August, and under a temperature of 72° to 75°, the following are the results:

	Evaporation from the Water.	Evaporation from the Earth.
1st day	.590 inch	.161 inch
2d ,,	.531 ,,	.097 ,,
3d ,,	.159 ,,	.070 ,,
4th ,,	.472 ,,	.051 ,,
5th ,,	.460 ,,	.051 ,,
6th ,,	.433 ,,	.047 ,,
7th ,,	.370 ,,	.031 ,,
	3.503 ,,	0.528 ,,

We see from the above with what rapidity evaporation goes on when the soil is completely saturated. On the first day it is more than one-fourth of the evaporation from a surface of water; but it diminishes, and at the end of seven days it is scarcely one-seventh When the surface becomes dry, the evaporation is almost inappreciable. On the second day the upper layer of soil is dried, under the above temperature, to the depth of one-tenth of an inch; and at the end of eight days, plants of which the roots extend only to the depth of 4 inches begin to suffer, and require watering.

From some observations made by Hales on the amount of evaporation from soil, he concluded that it was in the proportion of 3 to 10, as compared with that from a surface of water. Experiments on the same subject of research were carried on for two years by M. Maurice of Geneva; and for a similar period by the Comte Gasparin, at Orange; the results, reduced to English measure, are exhibited in the following

TABLE of the average amount of Evaporation from the surface of Water, and from Earth, and the depth of Rain at Geneva, in the years 1796 97; and at Orange, 1821-22.

	Geneva.			Orange.		
	Evaporation from Water.	Evaporation from Earth.	Rain.	Evaporation from Water.	Evaporation from Earth.	Rain
	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
Jan. ..	0.177	0.922	2.101	2.262	0.484	1.815
Feb. ..	0.195	1.054	4.796	3.172	2.204	2.074
March..	1.811	1.402	0.408	6.259	3.031	1.624
April ..	5.364	0.914	6.364	7.750	1.929	2.267
May....	4.287	1.252	0.942	8.964	2.677	2.421
June ..	4.573	2.602	5.807	11.692	1.378	1.850
July....	5.708	2.291	3.117	14.881	0.854	1.196
Aug. ..	8.650	4.866	1.687	12.051	0.696	1.993
Sept. ..	6.438	1.314	1.567	7.113	1.393	4.135
Oct.....	7.549	1.895	2.756	7.133	2.992	3.996
Nov. ..	2.495	0.799	1.68	4.066	1.771	3.252
Dec.. ..	0.275	0.704	1.893	1.513	1.417	1.941
	47.532	15.815	25.724	90.776	20.826	28.411

From the above it appears that at Geneva about $\frac{6}{10}$ of the rain which fell on the earth was carried off by evaporation; but the quantity evaporated from the surface of water, was three times as much as that from earth. At Orange, the evaporation from the earth was about $\frac{7}{10}$ of the rain which fell, but scarcely one-fourth of the evaporation from water, that from the latter being more than equal to three times the quantity of rain. We may therefore conclude that a lake in the South of France, if fed only by the rains, would soon be completely dried up, and that if evaporation from land were as great as from water, the earth would soon be rendered unfit for vegetation.

In conclusion I may remark that although by means of the hygrometer, we may form an approximate estimate of the quantity of evaporation from a surface of water, yet there are not sufficent data for estimating the amount from the earth in this country. It must be exceedingly variable according to the nature and aspect of the soil, and the various kinds of vegetation which it supports. Many direct experiments are necessary. Some crops exhale much more than others; and most trees require fully more moisture than the quantity which falls in the space of ground they occupy. The results of experiments on this subject might assist in determinating whether certain grounds would require to be drained or merely trenched. *R. Thompson.*

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(*Continued from p. 735*)

Sept. 18.—Section C, GEOLOGY.—The Dean of WESTMINSTER communicated his views on the cause of the general presence of phosphorus in strata and in all fertile soils; also on pseudo-coprolites, and the conversion of the contents of sewers and cesspools into manure. Since Liebig first suggested the application of fossil phosphates to the same purposes with recent bones and guano in agriculture, many inquiries have been directed to such localities as promised to afford a supply of bones, coprolites, &c., with abundance and facility; the bone-bed of the lias, though exposed on the shores of the Severn, has not yet been worked, but the red crag of Felixstow on the coast of Suffolk has afforded many thousands of tons of phosphoric pebbles, mixed with bones, especially the ear-bone of the whale (Cetotolites), and with flint pebbles, siliceous sand, and crag-shells; the phosphoric bodies showing upon analysis a composition nearly identical with that of the true coprolite. The origin of the pseudo-coprolites in this remarkable deposit must be sought for in a period long antecedent to the crag, when the soft and muddy bed of the Eocene sea received a perpetual accession of phosphoric compounds from the countless fishes and Mollusca which inhabited it for a series of ages. The remains of these creatures, decomposing in the mud, evolved those gases which, combining with the surrounding sediment, produced layers of septaria and smaller concretions. Over sea beds, consisting only of sand and shingle, no such combinations could take place, and hence the barrenness of all these tracts when converted into dry land. The phosphate of lime exists so largely in all organised creatures, and being soluble slowly in water charged with carbonic acid, we may assume that all sea water contains it; that it exists in all marine vegetation, in the herbivorous tribes; and, finally, in the carnivorous fishes and Mollusca. The process of conservation thus perpetually at work not only purifies the water of the ocean and maintains it in a state adapted for the existence of living things, it serves also to form a continually increasing store of fertility against the time when this sea-bed shall be elevated and converted into corn-fields and gardens and vineyards A further change has, however, taken place; the strata of London clay have been wasted by denudation; immense quantities of the hard phosphoric bodies dislodged by the sea and again accumulated with the shells and bones of a later period, now forming part of the dry land of Suffolk. It is possible that they may have absorbed a still further quantity of phosphoric acid since their accumulation as part of the crag sealed: it is possible, also, that the peroxide of iron which pervades all the pebbles and bones, though not essential to the production of the phosphorus, may have served as an accessory when all the ingredients were in a semi-fluid state at the bottom of the London-clay sea. The Dean then referred to the discovery by Mr. Paine of beds of pseudo-coprolites in the upper green-sand of Farnham. Here the sponges and other fossils appear to have served as recipients of the phosphoric acid; the Kimmeridge clay of Shotover Hill contains abundance of casts of the air-chambers of Ammonites, containing 20 or 30 per cent. of phosphate of lime. Since, then, all strata containing organic remains have more or less abundance of phosphoric acid; it must also be present in the soils produced from their decomposition, and will probably be most abundant in the clays. But there is another large class of soils produced from the decomposition of volcanic rocks and granite; in these phosphoric acid is present, either combined with lime (apatite), or as phosphate of iron, and here its presence is quite unconnected with organised remains. In Spain the apatite forms an immense vein in primary schists; and every specimen brought home by Dr. Daubeny has a radiated stalactite structure—showing that the whole was deposited from water, which must have taken it up previously from other rocks. In conclusion, it was suggested that, since clay and marl and lime are employed by Nature to absorb the phosphoric acid produced by the decomposition of organised bodies, so they might be applied artificially to deodorise and render both harmless and useful the ever-increasing sewage of large towns. —Dr. LYON PLAYFAIR said there was no doubt that if phosphate of lime dissolved in carbonic acid water were placed in contact with chalk the phosphoric and carbonic acids would change places, and phosphate of lime be again formed; but he had no hope that this process could be applied to sewage water, since the great object was to convey it away as quickly as possible with safety, and there was nothing in carbonate of lime to destroy its noxious effects; if, however, the carbonic acid of sewage water could be removed, the phosphate of lime in it would fall to the bottom as a powder, and this might be effected by the use of lime-water. Proto-carbonate of iron, which is also soluble in water, may answer the same purpose.—Prof. ROGERS remarked that in East Virginia the stable manure was sometimes allowed to rest on shell marl, which then became dark-coloured and charged with phosphoric acid.

VILLA AND SUBURBAN GARDENING.

ABOUT the first week in February, the buds of the Peach tree will begin to exhibit considerable prominency. Before the trees are fastened to the wall, I would therefore advise their being washed over with the following mixture: 1 lb. soot, 1 lb. soap, ½ lb. flowers of sulphur, ½ lb. of fine-chopped tobacco; put the whole into a vessel of boiling water, add unslacked

lime, and a sufficient portion of lamp-black to give it a grey colouring, until the mixture assumes the consistency of cream. Paint every portion of the tree over with this mixture, using a painter's brush, and *taking* care that the liquid is hot, and that it reaches every crevice. If applied in fine weather it will soon dry, so that a second careful inspection had better take place, and any parts omitted gone over with the brush. When this is completed, the trees may be *fastened* to the wall and trained in the manner already detailed.

Peach trees require some protection in spring, till the fruit is set. This may be effected in various ways, but the most simple plan is that of using woollen netting or thin canvas. The advantage of netting is obvious; it admits bees in sunny weather, and they fertilise the blossoms. It is an excellent plan, in arranging the coverings, to have them so contrived as to be able, with facility, to pull them up and let them down at pleasure. By this arrangement the trees can be fully exposed in warm, sunny weather, and covered as evening approaches. As soon as the fruit is set, and the young shoots are about an inch long, the coverings may be entirely taken away, and the trees disbudded. This latter operation should be performed with the hand, and take care always to leave the bud nearest the base of the shoot, as this, in most cases, will be the one to depend upon for next season's bearing. A second disbudding will be necessary three or four weeks later, when the minimum number of shoots *required* must be determined upon.

As the season advances, and during the progress of growth, I would recommend copious syringings with soft tepid water. When the evenings are cold, this should be done in the morning, but the afternoon is preferable in warm weather. This may be repeated twice every week in dry seasons until the fruit approaches maturity, when all waterings should be suspended. An important item in the culture of the Peach, and too frequently overlooked, is never to overload the tree; if this is done, the quality of the fruit will always be inferior both in size and flavour. The fruit should be regulated to about 10 inches from each other. Under all circumstances this will be an ample crop. The thinning should be effected at two different periods—the first when the fruit is about the size of hips, and the second immediately after stoning. During the whole period of culture keep the borders in a loose friable state, in order that the sun and air may reach the roots; and, if possible, never crop them with any kind of vegetable, how slightly soever it may be done. *Thane.*

Home Correspondence.

Victoria regia.—It is stated in your Leading Article (p. 739) that the Victoria was introduced from Bolivia by seed received in 1847 from Mr. Thos. Bridges, which is in part correct; but in justice to the exertions of others, I consider it but right that their names should be mentioned in connection with the introduction of this remarkable plant, the more especially as the seed that produced the plant at Chatsworth did not come from Bolivia. Mr. Bridges' seeds arrived in London in August 1846; on the 7th of that month we obtained by purchase 25 seeds; they were brought from Bolivia in a bottle containing a small quantity of moist earth. On examination, a number of our purchase were found to have lost their vitality, but we succeeded in raising two plants, which, by the month of October, were in a thriving condition, but soon after that time they began to show symptoms of decay, and by the 12th December they were both dead. As far as I could learn these two plants were the only ones raised from Mr Bridges' seeds. It was not until the summer of 1848 that we again had hopes of obtaining the Victoria; we then learned that several gentlemen residing in British Guiana were using means to procure plants or seeds from its native locality on the Essequibo, for transmission to this garden. Accordingly, on the 10th of October, 1848, we received a glazed case containing roots, that had been brought from the Upper Essequibo by Indians employed for that purpose by E. G. Boughton, Esq., M.D., of Leguan Island, but unfortunately on their arrival the roots were found to be completely decayed and rotten; by the mail of the following month, we received from the same gentleman three dry capsules containing seeds, and soon afterwards he forwarded seeds contained in a large bottle of muddy water; but in both cases the seeds were not in a state to vegetate. All this was very unfortunate, for we know that Dr. Boughton had been at much trouble and expense in endeavouring to introduce the Victoria to this garden; and although he has not gained that honour, yet it is but right to state that he has been most successful in introducing a number of rare Palms, which in due time will become conspicuous in the Palm house of this garden. While Dr. Boughton was thus engaged at Leguan Island, several gentlemen in George Town, Demerara, joined in defraying the expenses of sending an exp[illegible] [illegible] to obtain plants of Victoria; and in [illegible] Rodie, Esq., M.D., he says [illegible] we arrived in town (George Town, [illegible] be this [illegible] the [illegible] immediately on ponds [illegible] matter sent down [illegible] has grown [illegible] therefore no large[illegible] if uninterrupted [illegible] England alive. [illegible] of the roots, now I learned from C. Palmer, Esq., largely to the [illegible] plants growing in his garden at [illegible] but [illegible] believes a second [illegible] alive in heat, power[illegible] gentleman. Shortly after this, [illegible] putated, the [illegible]kie, Esq., forwarded seeds to this [illegible]signment arrived on the 28th Feb. [illegible] arrived by the next three following mails; they came to us in small phials filled with pure water, and on their arrival they were found to be quite perfect, and apparently ready to germinate. By the 23d March we had the satisfaction to see six plants in a thriving state (the plant at Chatsworth being one of them). Other seeds continued to germinate, so that by the end of summer we had raised upwards of 50 plants; of that number about half have been distributed amongst the principal cultivators of rare plants, who contribute to this garden. Such is the history of the plants at present in this country. From what we have seen of this remarkable plant, it appears to make a most rapid growth during summer; but as soon as the days begin to shorten, and dull weather comes on, it appears still to keep in a healthy growing state, but gradually becoming less; and it now becomes a question whether it will live throughout the winter. From many points in its character we were led to consider it to be an annual; but, judging by the description of the roots, as given me by a gentleman who saw it in its native lagoon, and by the account of those plants that arrived at George Town, it certainly must be a perennial; but for the guidance of those who are endeavouring to cultivate it, it may be as well they knew that during the dry season the place of its growth is destitute of water—so dry in some places that it can be walked upon—but full of rents caused by the heat; at that time there is no vestige of the plant to be seen above the surface. *J. Smith, Royal Botanic Garden, Kew, Nov 29.*—In order to keep the water in motion in which Victoria is planted, might I suggest any small, beautiful species of waterfowl, from a tropical climate *Enquirer.*——Your account of Victoria Regia is most interesting, and suggests to me what appears to be a beautiful adaptation of means to an end. I allude to the rim, or raised edge of the leaf, the use of which I imagine to be to prevent water from flowing, or being dashed over the upper surface, where, probably, the respiratory organs are chiefly situated If water could be readily splashed over the top of the leaves, the economy of the plant would be greatly interfered with; and also by its forming into powerful lenses, and acted upon by the powerful sun of South America, would be a great source of destruction to the plants. The young leaves of the plant at Chatsworth show their inherent tendency to form a rim, but finding as it were by experience, that a rim would be of no use, in their peculiar circumstances, discontinue its development. This must detract much from the noble appearance of the plant, and it would be a curious experiment to ascertain, whether by the occasional introduction of an artificial breeze, to agitate the water, the natural conditions would be complied with and a rim completed. If my conjectures are correct, it affords a singular illustration of the power, or more properly speaking the necessity for vegetation to conform to the conditions in which it is placed; and where the constitution of a plant does not admit of this adaptation, it must disappear from the scene. I hope these points will be elucidated by those who have the opportunity. I am only acquainted with the Victoria through the medium of your columns *Henry Chaytor, Croft, Nov. 26.* [We learn from Mr. Eyles that the leaves do turn up at their edges from their first expanding until they are a month or five weeks old. Upon all sunny days, the rim formed has been from 2½ to 3 inches deep. He also states that the young lady who stood upon the leaf is 9 years old instead of 3 years. This will make the buoyancy of the leaves equal to supporting about 100 lbs., instead of less than 60 lbs., as we computed.]

Woodlice, alias Sow bugs, Slaters, &c.—Most gardeners are much annoyed with woodlice. They breed in heat both winter and summer, and they possess an appetite of the most accommodating kind. It matters not whether it is the blossom of a Cucumber or that of a Pine-apple that comes in their way, the fruit of a Melon or that of a Cucumber; they will eat the nauseous leaves of the Lisianthus Russellianus with the same relish as they do Mushrooms, Carrots, Parsnips, Beet-roots, Scorzonera, and Salsify; they like for their salad Chicory leaves, which are not a bit too bitter for them. I have lost many an ounce of Strawberries through their depredations, and also many an early Cucumber that would have brought me 3s. 6d in the market. The means I have employed for their destruction have been toads, which are effectual; but they are expensive, being 1s. a dozen. Many of them die, and, except they are kept in quantity, the woodlice cannot be kept down. I have also tried pots with hay in them, Carrots, sliced Turnips, Cabbage leaves, bread, poisoned ditto, poisoned Turnips, and boiling water, when it could be used. As to the time for destroying them, we all know that if we kill a wasp in spring thousands are at once destroyed. It appears, then, that the best time to kill woodlice is towards August, when they have ceased breeding, and are spread all over the grounds; attack them then before they return to their winter quarters, to which they repair with alacrity when roused. I once formed a Mushroom bed parallel with an old deal fence; but, as might have been anticipated, I did not gather a single Mushroom; every time the bed was uncovered the woodlice made over the ridge for the fence with great speed. My object now, however, is to state that from some trials I have made, I am convinced that woodlice may be killed by the use of bantam fowls. This plan may be put in operation by any one, even at this time of the year. I first had a hundred woodlice caught at a rubbish heap, and gave them to three bantams; they ate them up in something less than two minutes. I had these birds in attendance when turning over a rubbish heap, and not a woodlouse was allowed to escape, nor any insect, the bantams devouring everything. It will thus be seen that, if bantams were encouraged and brought up in gardens, they would effect much good; and I am of opinion that it will soon be found to be as necessary to keep bantams to kill vermin as it is to keep cats to keep down rats and mice. They will save various crops from injuries to which they would otherwise be exposed. They would scratch a little, to be sure, but so do cats; and if the smaller kind of bantams are kept (those about the size of a partridge), their scratching would do little harm. Perhaps some plan might be found to envelope their feet in socks at certain times of the year. The reason why gardens are generally nurseries for all sorts of insects is, because they are guarded by cats, traps, nets, &c., in such a manner that no bird can approach them. If it were not for the wild birds of the fields the farmers' crops would be eaten up with vermin; and I think that birds have as much right to a little of the fruits of this earth as we have, for helping to keep destructive insects in check. If what I have stated be true, and I have proved that it is, it will be the gardener's own fault in future if he is much troubled with woodlice. *James Cuthill, Camberwell.*

Chirita Moonii.—I would advise "H. C." to permit his plant of C. Moonii to remain as it is until February or March. When he commences a genial, growing atmosphere for his newly potted plants, bulbs, &c., it may be cut down to 4 inches from the base, and allowed to remain in the same pot until the shoots are about an inch long; then shift it to a larger pot, using one-half friable, turfy, sandy loam (divested of its coarse fibre), and the remainder equal portions of heath soil, and dry, sifted, leaf mould, adding broken potsherds, or charcoal, about the bulk of split peas, to the amount of one fifth of the whole. This plant requires a situation well exposed to light, especially in the winter months, when partially at rest. In winter, water freely, but seldom; say alternately with other plants; and during its summer growth, a similar rule should be observed as to watering—a gentle syringing on one day will suit it, with watering freely on the following day, as required. From plants, exactly similar to those described by "H. C.," I have, by the above treatment, obtained a neat branching habit of growth. *W. Wood, Fishergate Nurseries, York.*——"H. C." had better not cut down his plant of Chirita Moonii: he should treat it during winter, like a Gesnera. Early in spring, pot it in equal portions of leaf mould, peat, and fibry loam, with a little sand; when started, remove it to a moist plant stove; with this treatment I have been able to grow and bloom this beautiful plant freely, and it retains its leaves well. My plant is 2 feet 6 inches high, and as much in diameter; it has been in bloom since July, up to the present time. The blossoms are of a deep blue colour, measuring 3 inches across, and on account of the light green foliage, the plant has a lovely appearance. *W. T., gardener to Charles Wilson, Esq., Beechley, Liverpool, Nov. 28.* [Along with the above we received a handsome bloom of this Chirita; although it was stated to be very inferior, both in size and colour, to what it was earlier in the season. It is certainly a very fine thing.]

Sugar.—What an important discovery in the manufacture of sugar appears to have been made by Professor Melsens, of Brussels—shortening the time and simplifying the process to such an extent as will materially diminish the cost, and consequently benefit both the producer and consumer. If you have not seen it you will find the details well worth looking at; I found it in *Le Courier de l'Europe* of Oct. 27th and Nov. 3d. *T.*

Animals.—Two or three weeks ago, one of your correspondents wished to get some information concerning certain mysterious holes or excavations in the ground, about which he was puzzled to come at the by whom, or the wherefore, and in last Saturday's *Chronicle*, "Addio" hints that they (the holes) are "found when the bird called the sand martin is seen," a widish margin truly to operate upon, considering that these birds are "seen" from early in April till late in October, or even November. However, if I understand "A. H." correctly, the holes or burrows he refers to are only seen for two or three weeks in autumn, and are made by much smaller deer than martins. Some years since, I was greatly perplexed to find out who the excavators of these small tunnels were, that I was so continually meeting with in dry banks, and frequently under trees, in the end of September and October, and for a long time I examined carefully all that came in my way, with the same unvarying result—not at home. At last, towards the end of October, I had the satisfaction to find one occupied by what at the time I was not prepared for, namely, a large humble or earth bee; and in subsequent examinations, I have found the same kind of occupant ensconced in the further end, apparently with the intention of staying there until the advent of brighter suns and warmer weather; and I am the more inclined to that opinion from having found them in that numbed, half-frozen-like, dreamy state, that we generally find them in the winter when grubbing or trenching old hedge banks or similar places favourable for the hybernation of bees or solitary wasps, and where queen bees are not unfrequently met with. Still, should those humble bees not have been the legitimate tenants of those underground mansions, but merely temporary residents, I should feel greatly obliged if some correspondent, learned in those matters, would say who the rightful owners are. *J. B., Tooting.*

Calla æthiopica.—When visiting the gardens at Bell, near Dunbar, N. B., in the autumn of 1845, Mr. Street showed me several plants of the Æthiopian Calla quite healthy and blooming, in a sedgy pool, in company with Iris pseud-acorus, and many more native aquatics. He told me that they had been many years in the situation they then occupied, without the least protection. *D. S. Mackenzie.*

The Rosa Afanetii, which you state to be "famous as a stock," is unknown to gardeners in the Isle of Wight. Pray allow me a little space, just to hint to nurserymen, who may have stocks of this Rose for sale, to advertise them at once in your columns, stating price. They would doubtless meet a ready sale, and save much trouble in grubbing stocks from copses; they would be invaluable in town gardens, where the soil is usually light and dry, in which it appears they would flourish. *Amateur Rose grower.*

Phillips' Fire Annihilators.—If you or some of your correspondents could give some further information about Phillips' fire annihilator, I have no doubt you would oblige many of your country readers. At the office I found a gentleman who had come there, like myself, in consequence of your article, and who was in an equal state of perplexity, whether to purchase or not. The doubtful points appeared to us; 1st, how it could be possible, within a room, for the gases to put out flame, and not put out life in the holder of the machine; 2d, granting as certain that the gas would extinguish flame, what is there to prevent the heated materials bursting out fresh, as soon as the stream of gas ceased? Does the machine emit gas for such a length of time, that the materials cool? This leads to the third point; whether a single machine would be sufficient to extinguish a fire in a house. The man in the office hinted that two or more machines would be desirable, but this makes the whole thing very expensive. *C. R. D.* [The following experiment, tried last Monday evening in the garden of the Horticultural Society, will probably answer this inquiry. A heap of combustibles, consisting of very dry deal, shavings, tar, &c., was formed upon a wire-flooring, resting on bricks placed on the ground. When set on fire, it formed a formidable blazing pile. A No. 2 annihilator was let loose upon it. In a few minutes the flames were subdued, and all was darkness. But the charge in the annihilator was exhausted, and then the heated materials burst again into flame. Had the apparatus been again charged, the fire would have been extinguished. The stream of gas acts immediately, but it cannot remove the heat which keeps alive large masses of combustibles, unless its action is long continued. In the case in question, far greater difficulties were presented artificially than would have been likely to occur under ordinary circumstances. A strong draught setting through a blazing mass, in a clear dry night, produces a permanent combustion which is seldom represented in casual fires. As to a room, it is merely necessary to place the "annihilator" in it, and leave it there: the operator need not remain. In such a place it will act of itself; in the open air there is no difficulty; we could perceive nothing offensive while we were attacking the fire above described. We believe the apparatus to be invaluable in stopping fires on their outbreak; what it might do, if of power enough, in a raging fire when at its height, we have no means of knowing. But three-fourths of all the fires that occur are inconsiderable in the beginning, and quite within the control of a No. 2 annihilator.]

The Fire at Blenheim (*see* p. 358, Newspaper).—I am the only person publicly censured in this affair, and that only upon suspicion, for nobody knows the cause of the conflagration; but I consider that there are people here equally as much to blame, if not more so, than myself—I mean the grooms at Blenheim, who have been in the habit of throwing both cinders and wood-ashes indiscriminately over the dung-heap in the stable-yard to my certain knowledge for several years back. Now, I leave the public to judge which of the two probabilities were most likely to cause ignition—these ashes, or the lawn sweepings. *W. M. M., gardener at Blenheim, Nov. 27.*

Hylurgus piniperda.—I know not the habits of this insect, but I find in most of the shoots of Scotch Fir—when freshly fallen to the ground, in consequence of its ravages — the living beetle, so that, when thought desirable, multitudes of the insect might be destroyed by collecting and burning these twigs. *T.*

Societies.

BOTANICAL, OF EDINBURGH, *Nov.* 8.—The President in the chair. The following papers were read:—1. Notice of Plants found in the neighbourhood of Durham and Lancaster. By J. Townley, Esq. 2. Notice of plants found in the neighbourhood of Lincoln. By B. Carrington, Esq. Mr. Carrington noticed the occurrance of *Anacharis alsinastrum* in great abundance in Lincoln, and exhibited specimens to the meeting. 3. Account of Excursions last Autumn, with notices of localities for some rare Scotch plants. By Dr Balfour. This paper embraced a short notice of an excursion made in August with botanical pupils to Braemar and Clova, during which many of the rare alpine species of Scotland were gathered. Dr. B. also noticed the following plants as having been gathered by him on the west of Scotland:—*Impatiens noli-metangere* in Castle Milk Glen, near Glasgow; *Hymenophyllum Wilsoni*, near Dunoon; *Rephanus maritimus*, and *Cnanthe Lachenalii* near Toward Point; *Elatine hexandra* in Loch Fad in Bute; and *Hymenophyllum tunbridgense* in woods in Bute. A growing specimen of *Elatine hexandra*, from Bute, was also shown.—Mr. Evans exhibited a dried specimen of *Aconitum ferox*, which had flowered in the experimental garden during the past summer; also the ripe seeds and carpels of the plant.—Dr. Balfour showed a specimen of roots which had penetrated drains, and remarked that the plant whose roots had entered drains in the Carse of Gowrie was Polygonum amphibium and not P. bistorta, as stated at a former meeting.—Mr. Alex. Christison exhibited a large specimen of Cucumis colocynthus covered with ripe fruit, which had been grown in Prof. Syme's garden at Milbank. When growing the plant had been observed to possess a musky odour.—Dr. A. G. Melville, Queen's College, Galway, was elected a non-resident Fellow.

Reviews.

A Guide to Port Stephens, in New South Wales. By Alex. Harris. 24mo. Orr. Pp. 223.

A VERY useful book, which the settler would do well to study. The information which it contains is to be depended upon, and consists of just that which an emigrant wants to gain. The following paragraph conveys, we suspect, intelligence which few of our readers are prepared for.

"*Water.*—This is another point on which considerable misapprehension prevails with respect to Australia. Water, in Australian phraseology, means surface water only; in England it means both surface water and well water. When it is said, 'Water is scarce,' there is really no more meant than this—'There is not a constant running stream or large pond every mile or two.' But, is it not likewise so in England? As yet it may be said there are no wells in the colony; but experiment has shown that they can be successfully constructed almost everywhere. Deprive England of its wells, and how universal immediately would become the same cry. Again, plentitude of excellent stone and the abruptness of the banks of the watercourses, often themselves of the most solid materials, afford the most ample facility for the construction of dams. If there exist a natural deficiency, there exists also as ample means of counteracting it by art. Meantime the simple experimental fact is this. The human race is not found to sustain any injury from it where they once settle; great herds of cattle and flocks of sheep seriously exhaust the water of a district; but that is merely an intimation to the grazier not to overdo the land with stock. Occasionally, also, the first explorers of an unknown tract lose themselves in some sterile plain, or high bewildering ranges, and suffer severely; but (often have I known it) if they meet with a tribe of blacks, and make known their wants, they are conducted to water in half an hour. So that, on the whole, my impression gradually changed from belief in the dogma to a conviction that it was largely erroneous. I have travelled 500 miles in a direct line, in the interior (often 100 miles), and through parts very thinly settled, and have never been dead beat for water more than four or five times in 16 years. What a thirsty journey might not a first explorer have taken through the Blue Mountains! Now splendid stone tanks of the most crystal water stand overflowing by the road side, for man and beast. The first experience of man in a country in its natural state is not to be expected to be as pleasant as the habitual life of a provident and laborious race after some years of artificial change. Unfortunately, people are prone to see everything at its best or its worst, as their mere feelings may incline towards or against it. During the period above named I recollect two severe droughts in New South Wales; one of them extended throughout the whole colony, the other was much more partial. There were also lesser ones. But it is a perfect certainty that they did not destroy one tenth as much animal life, or cause one-hundredth part so much human pain, as the average weather of the American continent in the same period. A few of a man's cattle had better die of drought than half his family be swept off by ague and fever."

The Working Man's Handbook to South Australia. By G. B. Wilkinson. Murray. 12mo. Pp. 110.

ANOTHER excellent work for emigrants, and one which they all should read. Its advice is such as a wise man will follow; its warnings are such as none but block-heads will neglect. We often bear bitter complaints of the worthlessness of our best columns; but they are all traceable to thoughtless improvident people, who carry a little capital to the antipodes, and expect to find a paradise ready made to their lazy hands. "Sir," said a worthy country gentleman to a rough and prosperous New Zealand settler, who had returned for a few months to England; "Pray tell me the name of the best hotel at New Canterbury. I should wish my son to stay at the best hotel there." And he was thunderstruck when informed that the largest house in the place would be a hut made of boughs, if there happened to be so much.

The way in which trees lay the foundation of colonies in which wise men thrive, is sketched by Mr. Wilkinson in the following striking paragraph, which we have reason to know is a perfectly true picture of what has occasionally happened in other places besides the city of Adelaide.

"The city of Adelaide was surveyed, and beautiful plans, with squares, terraces, and promenades, might be seen at the surveyor's office. On the land itself, posts and sign-boards were erected, to distinguish Hindley street from East-terrace, and King William-street from Victoria-square. Other ships with moneyed people had by this time arrived, and the town acres being put up to auction, a scramble immediately ensued as to who should get the best lots; every man who bought land tried to turn the business-part of the town thither. For this purpose they commenced building houses and shops, and whole rows of pisé or mud huts, so that continuous streets of houses arose amongst the surrounding trees. The value of the town land rapidly got up from 3*l.* to 4*l.* per acre to 1000*l.* or 2000*l.*, and new comers were constantly arriving with more money and goods. Flocks of sheep and herds of cattle were brought from Van Diemen's Land, and supplied fresh meat to the townspeople; for as yet no one had thought of going into the bush. Every man wanted to have town lands and to build houses. Carpenters, masons, bricklayers, and such like mechanics, were worth any money; and when these were all engaged, whoever could drive a nail, or put one stone or brick upon another, or was adroit in the art and mystery of making mud walls, was instantly engaged at 20*s.* or 30*s.* a day. There never was such a time for labourers; sawyers and splitters could earn enough in two days to be drunk all the rest of the week, and they did both, although rum was 1*s.* a glass, and porter 3*s.* 6*d.* per bottle. These liquors, however, were too common for many, for the bullock drivers and others could drink nothing but champagne or claret, smoke cigars, and stake from 20*l.* to 50*l.* on the toss of a halfpenny. One publican, after keeping a house for three years, came back with 10,000*l.* Gentlemen kept open house, and the sound of fun and hilarity scared away the solitude of the bush. The adventurous bushmen of New South Wales started with flocks and herds to the place where the people had more money than management, and, overcoming all the difficulties of a 500 miles unexplored route, they appeared in Adelaide, much to the wonder of the townspeople. Cows now sold at 40*l.* each, bullocks 100*l.* a pair, and sheep 3*l.* to 4*l.* per head. Provisions were also imported, and fetched an enormous price; meat, 1*s.* 6*d.* to 2*s.* per lb.; bread, 2*s.* 6*d.* a 4-lb. loaf; flour, 100*l.* a ton; and Potatoes 30*l.* a ton."

At last the bubble burst.

"Commercial distress, depreciation in the value of property, scarcity and even threatened famine, and the wasting of private capital, were the bitter fruits of the land jobbing and building mania which had taken possession of the people of Adelaide."

"At the period of Governor Grey's arrival in 1841, every one was almost ruined, all credit was gone, persons who had been luxuriously floating upon paper money, promissory notes, I O U's, and all kinds of bills and means of obtaining notice as credit, in fact all who had been living on the gullibility of their fellow colonists, at once were ruined, absconded to other parts, or delivered up their bodies to their executors."

Then came the reaction; the prudent profited; the improvident disappeared.

"The colonists who possessed capital had all turned into the country; lands were bought, fenced, and cultivated, and the crops grew with such richness that the people were delighted. This turned the scale, and all who could flocked into the bush. Fences sprung up along the roads, and houses and cottages appeared in every direction. Cattle, which had fallen to 3*l.* and 4*l.* a head, and sheep to 5*s.* and 10*s.*, grazed upon the hills and plains, the voice of the reaper and the flail of the thresher gladdened the before lonely bush, and a prospect of honourable livelihood, if not of rapid fortune-making, presented itself."

In two years affairs settled down into a state of prosperity, which we trust we believe will be permanent, unless a mining mania should come on and ruin everything.

Glenny's Garden Almanac improves. It contains a good deal of information useful to small gardeners, who constitute the mass of the public, especially to florists, and it presents fewer of the peculiarities which spoiled the earlier issues. The following is not a bad hit.

"TEXT AND COMMENTS. —*Text*: 'Give a little water.' *Gardener's Journal.* — *Text*: 'Water sparingly.' *Cottage Gardener.* —*Comment*: There is not, in all the foolish books on gardening, a more mischievous piece of advice than is contained in these silly injunctions; and if all the florists and nurserymen in the kingdom had combined to destroy the plants in private hands, they could not have hit upon more effectual means than enforcing such lessons. 'Giving a little water' destroyed as fine a sample of Heaths as was ever seen in a private grower's hands. The advice is pernicious. 'Water seldom' will apply to many things; but common sense should tell us, that the object of watering is to feed the roots, and if the water does not reach the extreme points, or spongioles, it is useless or mischievous. In the very depth of winter, when plants want less than at any other time of the year, the watering of plants should be as copious as in the hottest summer. Never 'give a little water'—never 'water sparingly.' Every atom of the soil in a pot should be wetted, and that is all it wants in summer; the only difference is, that in summer it may want watering twice a day, because the water is absorbed and evaporates rapidly, and in winter, perhaps, only once a month, because it is absorbed and evaporates so slowly. We once saw a quantity of Heaths looking very poorly, and observed to the owner, that there was something wrong; they had been just been watered; we observed, that they must have had too much or too little water. On turning out one of the balls, it was not just

half an inch down the pot, and below this it was as dry as snuff. 'Who waters these plants?' we asked. 'I do.' 'How often?' 'When they get towards dry.' 'One more week at this rate,' we observed, 'would have killed the whole collection.' The grower said, 'he never could grow Heaths; he had, first and last, had hundreds die. Yet he had attended strictly to the directions he had read, and that had been given by nurserymen.' He had been always told to 'give but little water' in winter, and none while they remain damp, and these had not been wetted lower than half an inch down for two months. We cannot, therefore, too strongly urge our amateur friends to act upon this assurance, that 'plants in pots always, winter and summer, want the same quantity of water at every watering; the entire soil should be wetted. The only difference is this, that, as they only require watering when the soil is getting dry, it may get dry twice a day in summer time, and be three weeks or a month getting dry in winter.' Men of very small intellect read old books, and write over again, very imperfectly, and in other words, what they have read; these are the description of men who are always 'rushing into print.' They are ambitious to see their names published; and they have done more real mischief to horticulture than any other of the thousand ills that cross a science in its advance."

Miscellaneous.

Potatoes and Salt.—Last spring I took a bushel of yellow Potatoes from among the diseased ones which had still a few good buds left. I put them into water saturated with salt. A pound was used; a larger quantity of water might have been saturated with the same quantity of salt. These tubers were set near other Potatoes, not diseased. When taken up I had 3 bushels of good Potatoes, and half a bushel diseased. This is a satisfactory result; inasmuch as the good Potatoes set in the vicinity were half diseased. In two previous years I have had the same result; and I therefore think myself entitled to assert that the Potato disease may be stopped by soaking the sets in brine. A pound of salt to 2 bushels is enough: the salt must be dissolved before the Potatoes are put in, and the soaking must last for half an hour. *Acumana.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Orchidaceous Plants.—To assist such of these plants as have completed their growth in going quietly to rest, the atmosphere of the house should be kept gradually cooler; and at the same time excess of damp must be studiously avoided by carefulness in watering, and by admitting sufficient air to dry up and expel the superabundant moisture. Let the roof-sashes be made perfectly clean, that the rays of light may be impeded as little as possible; but while the house is under cool treatment in winter it is not advisable to allow the tender species to hang too near the glass, as the temperature there is more liable to variation, and the foliage of the evergreen varieties is often injured thereby. Let drip be carefully guarded against, for if it fall upon the roots of the plants it will injure, if not destroy them; or it will excite them into growth, which is scarcely less objectionable. Dendrobiums, Renantheras, Cœlogynes, &c., should now be removed to a cool dry house, to prepare them for flowering. Any plants which are unfortunately producing young growths out of their natural season should be placed at the warmer end of the house, but the temperature even there must be very moderate, as the object is not to stimulate them, but merely to keep them in such a state of gradual progression as shall prevent their perishing. Conservatory.—Those late autumn flowering creepers which were formerly left unpruned, such as Mandevillas and Ipomœas, are now sufficiently ripened for the purpose, but little more should be done after removing the changed leaves than to prune the weakest shoots; their final pruning should be deferred till March or April. If larger and stronger shoots are cut now, they are apt to commence growing, in spite of the moderate temperature, and thus expend the strength which ought to be reserved till spring. The shoots of Maurandyas should be considerably reduced in bulk, as they are affected by the slightest damp during winter. If any of the late growing Passionflowers or other creepers impede the ingress of light, they should on this account be reduced; deferring, however, their final pruning until they are about to commence their new growth in spring. Forcing Plants.—The free admission of light and air is indispensable to these, and especially the latter, in order that the plants may be kept moderately hardy, and thereby better enabled to bear moving about during cold weather.

FORCING DEPARTMENT.

Peach-house.—Those who intend to have Peaches in their first house ripe by the middle of May, should commence forcing immediately. If the greater part of the roots are in the outside border, it should be covered with dry litter, Fern, or tree leaves, which in their turn should be kept in their places and nearly concealed by a slight sprinkling of earth. The interior temperature should be very moderate at first, commencing at 40° as night temperature, and increasing very gradually till the season is fairly turned; the day temperature may rise 10° by fire-heat, and 15° to 20° by sun-heat. Unless the weather is very damp, a slight syringing may be given every day with tepid water; and when the weather turns out very fine, the operation may be repeated. It must, however, be distinctly understood that these syringings are not to be construed into delugings, but that the water is to fall on the plants like fine dew. The early Peach-house or a pit under similar treatment will be excellently adapted for starting Strawberries to produce a very early crop; but the latter should if possible be plunged in a bed of leaves or some other material, to give a gentle bottom-heat; and if such can be introduced into the Peach-house, the warmth and moisture therefrom will be beneficial to the Peaches also. The pit, however, is better for the Strawberries, as they can have the mild bottom heat and still be near the glass.

FLOWER GARDEN.

As nearly all the large trees have now lost their leaves, advantage should be taken of all suitable weather for clearing them away, especially from the turf and gravel walks, that the first good shower of rain may do away with the dirty and smeared appearance consequent upon the use of the besom or leaf-rake. After a sufficient quantity of leaves has been secured for fermenting purposes, and for decomposing into compost, the residue may be drawn into open spaces in the clumps, and covered with a little soil to prevent their being blown about with the wind. In the course of the next 12 months these leaves will rot, and next autumn they may be used as a top dressing or mulching for newly planted trees. Advantage should be taken of frosty weather to prepare the ground for planting trees or shrubs, by trenching well the clumps or spots which they are designed to occupy; and by carting or wheeling any necessary material on to the ground while it is hard enough to bear the traffic. Actual planting, however, must be deferred till the weather is more favourable, as the roots cannot with safety be exposed to the frosty air. All plants recently removed should be well mulched with half-rotten leaves, or some other similar material, which will serve to dig in as a sort of manure in spring. Let all such plants be securely staked, as nothing injures them more than allowing them to be rocked about by the wind.

FLORISTS' FLOWERS.

It will be absolutely necessary, during the present severe weather, to protect Pinks and Pansies. As for Auriculas, provided they have a sufficient circulation of air, protected from heavy rains, and kept free from green fly (which in mild weather is apt to be troublesome), they will be well enough. Carnations and Picotees.—If there is one thing more than another at this time of the year detrimental to this class of plants, it is the desire of the amateur to preserve them from frost; the consequence is, that the frames are often shut down, even at variance with good cultivation; if this system is persevered in, a black spot, with mildew, will be the inevitable result, and the destruction of the stock is quite certain. As we have often said, nothing is more hardy than the Carnation, but, if nursed "and smothered up," no other florist flower is so unsatisfactory. Dahlias perhaps just now require attention; they of course have been some time out of the ground, but before they are finally stored away, it will be necessary to examine the crowns. If these are right, the best way is to pack them downwards; by this means the "exuding" sap is prevented from filling the cavity, caused by the removal of the stem, and thus the destruction of the root is in a great measure guarded against.

KITCHEN GARDEN.

Pits and Frames.—While this severe weather continues, these will require very watchful care, as it will often be necessary to keep them closely covered during the greater part of the day. But if due attention has been paid to our frequent instructions to keep their contents dry, they are in little danger of being injured, provided that two other points are also borne in mind, one is to let the covering be ample, excessive rather than otherwise; and the other is to take advantage of every favourable opportunity of admitting light, even if it be for an hour only in the middle of the day. A little caution, however, must be observed in exposing them to the direct rays of the sun, as that can never be done with safety if their leaves are in a frozen state. In such cases, light should be admitted on the north side only, that they may be thawed gradually by the moderate warmth of the atmosphere. Globe Artichokes should now be divested of their decaying leaves; and after the ground has been lightly forked over, a mulching of half rotten manure should be laid round the plants, and covered with a little soil, for the sake of appearance. The decayed foliage may be dug into the alleys, along with a sufficient quantity of manure. Asparagus Beds.—As a portion of these will be broken up for forcing during the winter, a sufficient quantity of seed should be collected to supply them with young plants next spring, and thus to keep up the stock for future years. The old tops should then be removed, and any vacancies filled up at once, either from the seedling bed, or from one of those which are to be emptied to supply plants for forcing. All the beds, excepting the latter, should then be covered 3 inches thick with well rotted dung; and at the same time, the paths should be well dunged, and dug as deeply as it is possible to do, without injury to the roots, which extend into them. By performing this latter operation now, it not only forwards the spring work, but prevents any disturbance of the roots after they have commenced growing.

State of the Weather near London, for the week ending Nov. 29, 1849, as observed at the Horticultural Garden, Chiswick.

Nov.		Moon's Age.	Barometer. Max.	Min.	Thermometer. Max.	Min.	Mean.	Wind.	Rain.
Friday	23	[illegible]	29.877	29.835	[illegible]	[illegible]	[illegible]	N.	.36
Satur.	24	[illegible]	29.781	[illegible]	[illegible]	[illegible]	[illegible]	S.E.	.00
Sunday	25	10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	.00
Monday	26	11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	N.E.	.00
Tues.	27	12	30.124	[illegible]	[illegible]	[illegible]	[illegible]	N.W.	.00
Wed.	28	13	30.031	[illegible]	[illegible]	[illegible]	[illegible]	W.	.00
Thurs.	29	14	29.973	29.932	[illegible]	[illegible]	[illegible]	[illegible]	.16
Average			29.981	29.870	46.0	31.1	39.5		0.62

Nov. 23—Overcast throughout; rain at night.
— 24—Foggy; dense dusky haze in London; very foggy.
— 25—Foggy; cloudy; clear; frosty.
— 26—Foggy; cloudy and cold; clear; sharp frost.
— 27—Severe frost; clear; foggy; sharp frost.
— 28—Foggy and frosty; clear; frosty throughout; foggy; cloudy.
— 29—Overcast; fine; slight frost; rain at night.
Mean temperature of the week, 6½ deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Dec. 8, 1849.

Dec.		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday	2	48.0	36.3	42.2	11	0.31 in.	1	2	1	1	9	8	2	6
Mon.	3	47.9	36.9	42.4	10	0.47	1	2	2	1	3	7	7	1
Tues.	4	47.2	35.0	42.0	10	0.28	4	2	–	3	3	2	4	1
Wed.	5	47.0	35.5	41.2	12	0.12	–	1	4	1	1	8	7	4
Thurs.	6	46.5	35.2	40.8	11	0.12	1	1	1	1	8	9	6	1
Friday	7	47.2	36.5	[illegible]	11	0.01	2	1	3	1	4	4	6	4
Satur.	8	46.0	34.6	40.3	12	0.36	1	[illegible]	2	–	[illegible]	[illegible]	7	2

The highest temperature during the above period occurred on the 2d, 1847—therm. 57 deg.; and the lowest on 5th and 8th, 1844—therm. 20 deg.

Notices to Correspondents.

Cold Pits: *A B.* It does not signify what pitch you give the roof provided it throws off the water. It is all a matter of convenience.‡

Daphne japonica: *H E R.* It is proverbially a shy bloomer. The same treatment usually given to Camellias will suit it. See that the roots are healthy, and that the drainage acts properly.‡

Greenhouses: *A Sub.* We never risk legal opinions. You had better make it a matter of agreement. We believe that if your greenhouse merely *stands* on the ground, it is removable; but if it is fixed to the freehold it is an irremovable fixture. Why not consult your solicitor? Depend upon it newspaper opinions, in matters of law, are of little worth.

Heating: *W S G.* Mr. Hood's is the best known authority, and by his advice you may safely abide. We see no difficulty in heating two houses on different levels with the same pipes and boiler at the same time, especially if the stove has the lower level.

Insects: *J G H.* The beetles reared from the seeds of the wild Vetch are Bruchus affinis. B. pisi is as large again. *W.*

Manure: *T W.* Coal ashes, the refuse of furnace fires would be useful alone, but especially if mixed with farm-yard manure, to your garden and Grass land, which is a light sandy loam.—*R A H.* Manure should always be diluted and fermented before application; composts are also useful. It is doubtful whether a manure of much strength will be formed by "house slops" alone, if urine and similar matters form part of the slops, yes. If not, no.

Monsters: *F W.* Such sports as that exhibited by your Fuchsia bloom are not at all uncommon.‡

Names of Fruits: *W Nash.* 6, Hawthornden; 6, 1? Beauty of Kent; 17, Yorkshire Greening; 18, Waltham Abbey Seedling; 19, Kentish Codlin; 20, Embroidered Pippin; 21, Lemon Pippin; 23, Franklin's Golden Pippin; 28, Reinette du Canada; 30, London Pippin; 31, Fearn's Pippin; 32, 35, Sweeney Nonpareil; 22 is probably the Cockle Pippin; and 25, French Crab.—*J R.* 1, 8, 9, Blenheim Pippin; 3, Scarlet Nonpareil; 4, Scarlet Crofton; 5, King of the Pippins; 6, Sweeney Nonpareil; 11, Dutch Mignonne; 14, Hubbard's Pearmain; 16, Gravenstein; 17, Golden Harvey; 18, Court of Wick.‖—*H M M P.* 1, Lemon Pippin; 4, Worthless; 5, 7, King of the Pippins; 6, Court of Wick; 8, French Russet; 9, Golden Knob.‖—*V F.* Your Apple is the King of the Pippins.‖

Names of Plants: *J K G.* Fuchsia bacillaris.—*Pyro.* All As. pennum Adiantum nigrum. *S.*—*C F T.* Cerinthe major.—*A Z.* We cannot name plants that are not in flower. 1, Hendamia fragrans, see p. 645; 2, some Myrtaceous plant; 3, apparently Chelone obliqua, or glabra; but who can tell from such a specimen?

Pine-apples: *An Old Sub.* Each pip is a flower; if the flower is blighted, or otherwise injured, it will be black although the surrounding pips are not; there is some fault in your management, no doubt; but the cause cannot be ascertained, except by those on the spot.—*D Hawkesford.* They are wintered in pots at Meudon, but this is done with a view to economise space. At Trentham, Chatsworth, Elvaston, and many other places, they are grown in the open soil, no pots being used in their culture whatever. *Mirabile dictu.*

Plunging Material: *Rusticus.* Soaking the leaves, which you find give the steadiest heat, in boiling water, before they are put into the forcing bed, would effectually kill not only all insects, but their eggs, which is also important. Messrs. Henderson's address is Pine-apple-place, Edgeware-road, London.‡

Rhubarb: *N B.* You may transplant both Prince Albert and Victoria Rhubarb with safety now.‡

Roses: *R R R.* If you winter your newly budded dwarf Roses under inverted flower pots as you propose, you had better perhaps heap round the pots ashes or some other material. The pot itself, we fear, would hardly afford sufficient protection.‡—*Q.* Pillar Roses should be trained to strong poles (young Larch trees do very well, with the branches pruned not too closely off), some 10 or 12 feet high, according to the kind of Roses to be trained on them. Some use three poles placed in the form of a triangle at the bottom, and meeting at the top.‡—*A Lady.* You may shift your Roses now, and prune them just before you start them into growth in spring.‡

Misc.: *K K.* Nothing will answer so well as common Laurels for planting along the side of your paling. We should think that they might be kept within bounds by a little management.‡—*D N.* Any respectable nurseryman can procure Gaultheria Shallon for you, if he chooses.‡—*Sub.* Arbutus procera and Andrachne are perfectly hardy.‡—*G B N.* The bulbs and seeds from Rio Janeiro will require a stove heat. The leaves you have sent us are covered with Torula fumago or soot fungus. You had better, perhaps, wash them as you propose.‡

SEEDLING FLOWERS.

Chrysanthemums: *W P, Bromley.* A very fine large white flower, with incurved petals, and very double. It is very like an old kind called Goliah.*

Petunias: *Sub.* 5, tube long and slender; colour violet purple; size rather long, outline and texture good, a nice distinct-coloured variety, which no doubt will be very much better in the proper season.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Professor SIMONDS, Lecturer on Cattle Pathology to the Royal Veterinary College, and Professor WAY, Consulting Chemist to the Royal Agricultural Society of England, have each kindly consented to deliver a Lecture before the Members, at the House of the Society, in Hanover-square, on the occasion of the ensuing December General Meeting, namely—

I. Professor SIMONDS: "On the Anatomy and Diseases of the Feet in Domesticated Animals, with particular reference to the 'Foul Rot' in Sheep." At 3 P.M., on Tuesday, the 11th December.

II. Professor WAY: "Elementary Illustrations of the Chemical and Physical Conditions of Water." At 3 P.M., on Wednesday, the 12th December.

The General Meeting of the Members will be held on Saturday, the 15th of December, at 11 o'clock in the forenoon.

By Order of the Council,

London, Dec. 1, 1849. JAMES HYMAN, Secretary.

AGRICULTURAL CHEMISTRY.—The Consulting Chemists of the Royal Agricultural Society (Mr. WAY) will be happy to receive into its Laboratory, from the 1st of January, 1850, two Students in Agricultural Analysis.

22, Mollis-street, Cavendish-square, London

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic Power, to raise from 1 gallon to 1000 per minute to a height of 300 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LOSH, Cheltenham.

IMPROVED FOUR-HORSE PORTABLE STEAM ENGINES AND BOLTING OR THRESHING MACHINES.

FREEMAN ROE AND HANSON, Southwark Iron Works, and 70, Strand, beg to call attention to their Steam-Engines and Threshing Machines, which are more economical in fuel, for the quantity of work done, than any before the public. They may be seen any day at their works, Summer-street, Southwark Bridge road.—Water rams for raising Water Deep Well Pumps; Baths; Hot-water Apparatus; Fountains Towns supplied with Gas or Water

WIRE-WORK, HOT-WATER APPARATUS, GREENHOUSES &c.

ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS on improved and economical principles.

Parties waited on in Town and Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised and to recommend them to apply either to ourselves, to our agents, Messrs Gibbs, Bright, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

London, December 1.

WHEAT SOWING.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure sent out by them shall be free from the slightest adulteration. Peruvian Guano direct from Importer's Warehouses, London Manure Company's Wheat Manure and Dusts, Sulphate Ammonia, Phosphate of Ammonia, or Ammoniacal Phosphate, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone Saw Cust, and every other Artificial Manure.

EDWARD PURNELL, Secretary, Bridge-street, Blackfriars.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

FRENCH invites the attention of Gentlemen about to erect Hothouses, &c. to the great superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 14 feet wide, 8 feet long, furnished, and the Houses when completed charged from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; one principle the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint from 7d. to 8d. per ft.

HEATING BY HOT WATER.

CLARK'S METALLIC HOTHOUSE WORKS, 56, Lionel-street, Birmingham.—Proprietor, Mr. THOMAS CLARK; Manager, Mr. JOHN JONES.

Mr. CLARK presents his grateful thanks to the Nobility and Gentry for their liberal patronage of the above Establishment, during a period of thirty years, and begs to state that the repeal of the duty on Glass enables him to offer his METALLIC HOTHOUSES at a greatly reduced price. These Houses are glazed with British Sheet Glass, in panes of from 24 to 30 inches in length, and of such thickness as to preclude all danger of accidental breakage, whilst that which arises from the action of frost is effectually prevented by the peculiar mode of glazing adopted. As a sample of his Metallic Hothouses, in which all the most recent improvements are happily combined, Mr. CLARK refers to the magnificent range erected by him in the new Royal Gardens at Windsor, admitted by competent judges to be the most complete of its kind in the world.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

AGRICULTURAL DRAINING: THE DERBY LEVEL.—A Very Superior Draining Level, of great simplicity, price 3l. 5s., to be had of the Maker, JOHN DAVIS, Optician, Derby. The above is securely packed and sent to any part of the empire.

The Agricultural Gazette.

SATURDAY, DECEMBER 1, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY,	Dec	6	Agricultural Improvement Society of Ireland.
TUESDAY,	—	11	Agricultural Society of England.
TUESDAY,	—	11	
WEDNESDAY,	—	12	Meeting and Annual Show of the Smith Field Club, at Baker-street, London
THURSDAY,	—	13	
FRIDAY,	—	14	
TUESDAY,	—	11	
WEDNESDAY,	—	12	Exhibition of Fat Cattle and Poultry at Birmingham.
THURSDAY,	—	13	
FRIDAY,	—	14	
THURSDAY,	—	17	Agricultural Improvement Society of Ireland.

FARMERS' CLUBS.—December 6 Tavistock December 7. Newcastle—December 12; London.

"THE PRESS—THE AGRICULTURAL PRESS."—It is by no means an uncommon toast now-a-days; and during the present season, at the annual meeting of more than one of our provincial agricultural societies, it has been offered and received with much good feeling. Let us endeavour to express to the members of these societies our sense of their courtesy.

Gentlemen, we thank you. The compliment you have paid is accepted, we are sure, by those who are gratefully sensible of the feeling it implies; and we willingly join our brethren of the press in offering our acknowledgments. But, in doing so we have no intention to follow a common example, and profess the unworthiness of those whom you have been pleased to honour. On the contrary, however bold the sentiment may be, or, at least however bold in us to express it, we believe that agricultural writers are not unuseful to agricultural practitioners, we believe that the existence of good feeling between thinkers and workers always beneficial to the latter in every department of action, is especially so in the case of agriculture, and particularly under its present circumstances. Every one values farm experience; but it is only in so far as it conveys with accuracy agricultural truths to the mind that it is really valuable. Now, while we readily admit that there are some sections of agricultural truth which words cannot convey to the mind, and which the press is thus unable to communicate, there are others of great importance which can be most perfectly and easily communicated in this way; and they are precisely those, as we believe, of which the agricultural mind is now in want precisely those which require to be pressed upon agriculturists at the present crisis of their affairs. Profit is no doubt the proper end of agriculture as of every other profession; and we readily admit that the absence, from the mind of the amateur farmer, of those truths in farming which words cannot convey, has generally hindered his attaining it: we readily admit that there is much truth essential to the attainment of farm profit, of which words are a very imperfect if not altogether incompetent vehicle—but the unprofitableness of book farming has arisen, not from its fallacies, but from its deficiencies. And while with the most practical amongst you we would insist on the necessity of an education in the field if, by farming, profits are to be attained, we also insist upon it, that much truth equally essential to a profitable result is to be learned in the class room and at the desk.

On this account a compliment to the agricultural press from the members of an agricultural society is, we are bold to say, no cause for surprise. Indeed, we will go farther, and assert the true cause for astonishment to be this—that the importance to agriculture of that truth which a merely field education does not convey is not more generally perceived—that the truths which the book and not the field-work conveys are not more generally sought after and valued. Surely there is no antagonism between the two: a knowledge of theory cannot supplant, it only explains experience. The theorist does not the less trust his eye, or any other of his senses, because he knows the cause of what they see or feel. Nor does he the less benefit by what they tell him. And even though a knowledge of causes should not avail to fill the purse, we would still plead for its importance, on the ground of its influence on the mind: those interests of the farmer which affect him as a MAN, are surely of at least equal importance with those which affect him as an agriculturist. We know that with some this kind of argument appears to be mere sentimentalism—quite beyond the matter-of-fact considerations which alone, they say, will guide our "men of business;" but we maintain its soundness notwithstanding; and we say that until the generality of farmers—not that 1 per cent. of them who will see this, but the great body of the cultivators of British soil, of whom the majority are still unacquainted with our agricultural literature—acquire the higher mental status which a wider intelligence than they now possess is alone able to confer, they will be continually treading, as they now are, on the brink of loss or ruin; and "agricultural distress" will remain the constant opprobrium of our profession. We are as ready as any one to insist on the importance of a practical agricultural education; but that does not hinder us from insisting on the importance of a scientific education as well. We are as confident as any that unless a master be able to say to his men, "*Come* and do this"—"I will show you how"—he need not expect to reap profit with his crops: but that does not affect the equal certainty we feel, that unless he have the intelligence and confidence in resource which a wider knowledge of agricultural matters, theoretical as well as practical, alone can inspire; he cannot cope with the untried circumstances of his profession, which have already utterly destroyed hope in Western Ireland and greatly diminished it here. Having for many years bought and sold, and ploughed and sown, and reaped and threshed, and paid rent and taxes, and taken stock and balanced accounts, and superintended those details of farm management, proficiency in which confers the character of a practical man, we will not allow these remarks, and others of a similar kind in this journal, to pass for those of an enthusiastic or inexperienced writer.* We are fully impressed with the necessity of caution and economy in the business of farming, in order to a profitable result; we are fully aware that much practical knowledge, which nothing but actual sight and experience can confer, is necessary in farm management; we have had ample experience that the cost of farm processes is increased, and their profit of course diminished, when the farmer himself is unable to lead and direct his workmen; but, beside all the practical skill which field-work alone can impart, we are perfectly confident that there is equally valuable and equally necessary truth to be acquired from the works of agricultural writers, and that book-farming, if it be not based on the whole of agricultural truth, is based upon much which is necessary to success in the business of the farmer.

We do not forget that we are addressing those agricultural societies who have been pleased to receive so kindly, as a toast, "The Agricultural Press;" and, while we thank them for their good-will, we have taken the liberty of justifying their courtesy, by insisting on the importance and usefulness of the interest which they have thus complimented

SCHLESWIG AND HOLSTEIN DAIRY MANAGEMENT.

I SHALL be glad if you will allow the accompanying description of the routine of management of an Holstein dairy to appear in your *Gazette*, to give the English dairymen an idea of the exertions made by foreigners to compete with them in the London market.

The pride and boast of the Holsteiner is his dairy; and as Holstein butter may well claim to be the best in the world, the following sketch of the management by which the dairy in that country is more especially distinguished, may not prove uninteresting nor useless to the English farmer.

A dairy consisting of 200 cows gives employment to the following number of persons; a dairy-man, a dairy-maid, a cook, a cooper, two cow-herds, an odd man, a cheese maid, and 10 dairy-girls. The dairyman's duty involves a general charge of the cattle, the calves, and the swine; he is responsible for their being regularly and suitably fed; that the cow herds do their duty; that hours of milking, &c., are punctually adhered to; and that everything and every person is in proper place and keeping. He must pay strict attention that the cows are milked thoroughly out, on which so much depends. The dairymaid has the superintendence of every work which belongs to the treatment of milk, butter, and cheese, from the moment that the milk is brought to the dairy room, and is answerable for the cleanliness of the whole dairy house; she is also housekeeper, and orders the extra work for the girls not included in the dairy, as gardening in summer, and spinning in winter. Her own particular work in the dairy is to skim the milk, to manage the process of converting the cream into butter, to beat the butter as will be afterwards described, to superintend the cheese making, to put in the proper quantity of rennet and salt, and to look after the cleanliness of the dairy utensils. The cheese-maid attends to the manipulation of cheese making, and has to measure the fresh milk as it is put into the tubs, to clean out the dairy room, and to rub dry and turn the cheeses. The 10 dairy girls have each to milk from 16 to 18 cows, to do all the work in cleaning the dairy utensils and the dairy house, and either to spin or work in the garden, or any other work which is ordered by the dairy-maid. The cooper repairs and renews the dairy utensils, and makes the casks to contain the butter for sale; he assists at the milking, and takes the duties of the dairy-man, in case of illness, as far as the care of the cows and pigs. The odd man milks his number of cows, feeds the pigs, and carries the skim milk out of the dairy room into the cheese tub. When the cows are in the stables, these two last persons assist the dairy-man, with the

* The *Mark Lane Express*, under a borrowed signature, amuses its readers with frequent sarcastic comments upon the leading articles of this journal. We mention the matter here, in order that our readers, if inclined to study the arguments for a stationary or retrograde policy in agriculture, may know where to look for them.

help of the cow-herds, to give the hay and corn to the cows. One cow-herd is kept for each 100 cows, their duty being to watch the cows as long as they are in pastures, and to collect them together at the milking times. In the winter, when the cows are housed, they have to give them straw and water, and to make up the beds four times a day, so that the cows always have clean straw to lie down upon. The dung is removed by a man whose time is fully occupied by that particular duty.

The routine of dairy work is regulated to follow in 12 hours, to leave exactly the space of time between each operation with the milk, cream, and butter. The morning work commences in summer at 2 o'clock, by the establishment being called by the girl whose duty for the week has been to remain up the night, preparing the hot water required for the first operations. On entering the dairy room, the dairy-maid, with the assistance of the cheese-maid and two of the handiest of the girls, skims the milk, which has stood in the tubs 36 hours; it is carried by the odd man into the cheese tub; the milk tubs, as they are emptied, are washed and cleaned in the following manner. The tubs, made of Oak wood, painted red inside, are placed upon the floor of the ante-cellar, and the girls are divided into two parties, so that two tubs at a time are undergoing the same process of cleaning. The first girl puts a ladle of boiling water into each of two tubs; next two girls follow with small Birch scrubbers, to remove the particles of adhering cream or milk, which is emptied in a pail for the pigs; the fourth and fifth girls, with boiling water and a hard round brush made of pigs' bristles, with which every hair's breadth is thoroughly scrubbed and polished, to remove all acidity. The sixth and seventh girls wash the outsides and bottoms of the tubs with cold water, and drain the insides well with cold water. The eighth girl gives them the final washing in a cold bath, and places them on a heap, when they are examined by the dairy-maid, and put out in the air to dry. During the time the dairy-maid is examining the tubs, the cheese maid washes the floor in the milk cellar upon which the tubs stood. As soon as the girls have finished the cleaning of the tubs, they carry the skimmed milk which has been heated into the cheese tub, to give the proper temperature to the whole before the dairy-maid adds the rennet and colouring. These preliminary operations being ended, the dairy girls dress, and having partaken of a piece of bread and butter, at 4 o'clock proceed with the men to milk the cows. The dairy-maid now commences the churning operations, which must be accomplished in not less than 50 or more than 60 minutes, by the power of either steam or horses. While the churn is in motion, she has time to beat the butter made the previous day, and to put it into casks, all attention being paid that no interstice shall remain either between the layers of butter or the sides of the casks. The cheese maid is now occupied in cheese making. At half past 6, the milkers have finished milking, the milk is conveyed in pails swung upon bars stretched across a waggon, to the dairy house, and carried into the cellar by the girls, where it is immediately strained through a hair sieve into the tubs, each containing a measured quantity; this duty is performed by the cheese-maid, who must have finished, with the assistance of the cook, cheese making on the return of the milkers.

The girls then carry the tubs placed out to air into the cellar, where they remain 12 hours. They then go to breakfast. After breakfast they wash out the milk pails and the conveyance pails, the churn, &c., and all other utensils that have been used that morning, and wash out the ante-cellar, and then they dress. At 9 o'clock they do any work unconnected with the dairy until 11 o'clock, when they are called to dinner; at 12 o'clock they lie down to repose until 2 o'clock, when the routine of work is repeated as above described, and completed at 7 o'clock, when they sup, and dispose of their time until 9 o'clock, at which hour they retire to bed.

The dairy-maid is by far the most important person in the establishment, as on her skill, attention, and diligence, depends in a great measure both the quantity and quality of the butter, and, by consequence, the profit of the produce. She must not only thoroughly understand but accurately observe the moment when the cream has attained the proper degree of acidity in the cream tub, also regard the temperature, adding either hot or cold water in the churning. The cream, when skimmed, is put into a large tub where it generally remains 24 hours, or until it has reached the first stage of fermentation before it is churned. When the butter "is come," it is placed in a trough and washed over with water as cold as possible, to separate the milk from the butter; the water is drawn off, and the butter is beaten so much that the milk is almost entirely pressed out; salt is then sprinkled upon it, and the mass loosely turned over, to give the salt time to extract any remaining particles of milk or moisture. After remaining 12 hours, the butter is again beaten, to squeeze out the brine, and after remaining 12 hours longer it is again beaten and placed in the casks.

Although it is an ascertained and undeniable fact that the quality of butter depends much upon the nature of the pasture, yet, to the untiring attention and experienced skill of the Holstein dairy farmer must in a great measure be ascribed the great reputation which their butter has of late years held in the London market, to which the greater part finds its way.

The qualities of first-rate butter are considered to be, first, a fine even yellow colour, neither pale nor orange tinted; second, a close waxy texture; third, a fresh fragrant perfume and a sweet kernelly taste; and fourth, good butter will, above all, be distinguished by keeping for a considerable time without acquiring a rancid flavour. *R. S. Graham, Bulteigh, Nov. 12.*

THE MODEL FARM AT FARNBOROUGH.

It has given me pleasure to notice this small farm, as it appeared a few years ago, on the borders of Hampshire. Being a model for the district, it is now wished to report progress, and speak on the success which has attended the spirited outlay. Every old hedge was grubbed, the fields made square, and redivided with new Quick hedges, which, by proper attention, have now become good divisions, occupying only one-tenth the former space. This land (part of Bagshot sand formation) has now become a desirable estate; although it was for many years wanting a customer. But does the outlay pay? does high farming answer the owner's desires? This is an inquiry often made by those who do not understand the principle, that if land does not answer for cultivation in the best manner, it will not do so for the worst management. The same rent and taxes pertain to either; the difference being, often, only a little extra labour and manure. It is the proprietor only who can know if his system of farming yields him a satisfactory return. It is interest only that can be asked on the improvements in the aspect of the estate, and for fancy purchases of competition animals. A gentleman has as much right to enjoy a hobby in farming as any one in horse-racing or fox-hunting. A few hundred pounds spent for the purpose of obtaining an appetite and good health is always commendable. The traducers, or those who feel jealous at seeing innovations made in old practices, and who are ready to say such expenses cannot pay, may be answered in this instance by the proprietor himself, who has very lately purchased another farm adjoining, and has treated it in a similar way, by putting many fields into one, effectually draining, ditching, and fencing; not content with draining his own land, but volunteering to drain other persons' adjoining, so the more completely to draw off the water from his own. Few professional gentlemen, like Joseph Tonn, Esq., the proprietor, would lay out money for the pleasure of expenditure alone; they expect a return for the outlay.

Those who feel jealous may therefore infer that the success attendant on the first model farm has induced a further expenditure on additional land upon the same principle. Not only has more land been purchased in a low situation, but a farm of 130 acres has been taken at a rental in a more elevated spot. The proprietor can now rear all kinds of stock, and fatten them also; the swamps have now become fattening land; such must be the case where 5 quarters of Wheat, 7 quarters of Barley, 30 tons of Swedes, 40 tons of Mangold, and 1 tons of Clover are grown per acre per annum. At this time may be seen barns full of corn and yards full of stacks, the produce of 130 acres of arable, 70 acres of Grass, some rough park and pasture under trees and on the hills of the estate. On the farms are being reared, and kept in the very best manner, eight farm horses, principally brood mares from Yorkshire, 15 colts, obtained by a cross with the sire Cleveland blood, famed for symmetry, bone, and action; there are 35 head of superior Durham shorthorn cattle, 330 Hampshire down sheep, 300 of which are brood ewes, with which have run some prize rams, from the stock of C. E. Rumbold, M.P. There are 70 swine, of the Large Yorkshire white breed. Thus is the land stocked, and the following produce will enable them to be wintered, the lambs reared or fattened for market, the neighbourhood supplied with fine animals of every useful kind; nor is the lesser farm produce neglected, for the assiduous housewife of the bailiff (Abraham Hutty) is no less careful of the crumbs than is the husbandman of the land and the valuable stock under his care; for she has poultry, eggs, and butter ever ready for the calls upon her for the same. The dairy room, also, is ever pleasing to behold, the utensils being as cleanliness commands.

In the stack-yard may be seen six stacks of Wheat, of a peculiar symmetrical form, three Barley stacks, one of Peas, three barns full of Barley, 10 hay-stacks; and there is on the farms 21 acres of Swedes, common Turnips, and Kohl Rabi, 7 acres of red and yellow Mangold Wurzel, 13 acres of Mustard after Peas and Barley; 28 acres of Clover have been cut, and the aftermath fed off by sheep. Scarce a weed is to be seen in the fields, nor can the hedger supply the fields with seed for another year's weeding; all have been cleaned, 46 acres of the stubbles have been scarified, and rubbish cleared from the surface, to supply a winter demand for litter, thus offering opportunities for the quick growing of Turnips and Mustard, so as to make an early and a late winter food, or a clean surface for any spring cropping. Much is said relative to farming not yielding a return for the outlay; this, as a fact, will soon cure itself, for the present will not be followed. Farms would become more plentiful, and hence cheaper, less rent will be demanded, tenants will have all their necessary expenses proportionably reduced, when food, on an average of years, becomes so; poor rates consist principally of food and raiment, as will all labour, either of the ploughman or the plough-maker, and tithe will necessarily be lowered by the averages, so that farmers will be attracted in the same advantageous position as formerly, except only in the instance of leases, at set rents, disproportionate to the times. It is the landlords only who will lose on the money they would have received for rent; but then they are of the community, and will have their living expenses reduced, as well as clothing, and everything emanating from labour. If more gentlemen farmers would rear fine animals, such as herein described at the model farm in Hants, than would the buying of these animals be less costly, because more plentiful, and farmers need not then, as now, have to give 100*l.* for a bull, 60*l.* for a cow, or 30*l.* for a ram. There has been as much madness to possess a fine animal with a long pedigree, as there has been for old and unique books (a bibliomania); a free importation and exportation will cure this madness. If rents are lowered to the proportionate average price of corn for the year, all will become right again. Rent is the consequence of the high price of farm produce.

A farm at Frensham, Surrey, was rented by Mr. G. Paine, at a sum three times greater than was paid by his grandfather. Rent is the effect, corn the cause; but now attempts are made to convert the effect into the cause—an effort to keep up the price of produce to the advanced rental of the land. The cry at agricultural meetings is, a commiseration with the labourers. They are much better off now than when the 4 lb. loaf was 1*s.*, bacon 11*d.* per pound, their Potato crop lost by disease, their pigsty empty, as in the year 1847. If farmers will not employ the labourers of a village, let them have a plot of ground, and they will be sure to employ themselves. The commiseration should be for those poor landlords who cannot afford to lower their rent, or who will not reduce their outgoings to their incomings. It is hypocrisy to cry out poor labourers, eight tenths of whose earnings are spent in the absolute necessity of staying the cravings for food, on the part of themselves or their families. Is the same proportion of the incomings of either landlords or tenants spent in a similar way for necessaries to sustain life? *E. J. Lance, Barossa, Bagshot.*

Home Correspondence.

Maize.—I am astonished to find that, after such a severe article as appeared in the *Gardeners' Chronicle* of the 10th Nov., against the culture of the Maize plant in England, my communication on the subject of the Forty-day Maize, with which I sent two cobs as specimens (and not the best), grown in a western county of England this year, has not been admitted into your paper. [It was in type the day after it arrived.] Whatever may be the result of the experiment; whether it be a failure as regards a profitable return or no (for it is certainly not a failure as regards growth), I think the foregoing cautioned article an unfair one. I cannot think Mr. W. Keene to be held answerable for Maize succeeding in England, or his character at all affected by a failure. He has nowhere, that I am aware of (how could he before a trial?) stated that it will, but that he knows of no ostensible reason why it should not grow and ripen in this climate; and I think throughout he has acted in a perfectly honest, fair, and unenthusiastic manner. Everybody must allow, though the quality of grain is not so good as that of Wheat, that it would be a great addition to our cereal crops. I think we need not be so very particular about its taste, when so many nations almost entirely subsist on it, and so many of our own people are starving. I am inclined to believe, from its roots penetrating to so small a depth in the soil, and its evidently receiving so much of its nourishment from the air, that a Wheat crop might follow it, without exhausting the fertility of the land more than any other succession. Mr Keene may not be the first discoverer, or rather introducer of the sort into England, but he is certainly the first to bring it prominently before the public, for as far as I can learn and judge from the results attained, I am fully persuaded that what was commonly sown as Cobbett's Corn was not the same, or of a kind so likely to ripen, as Mr. W. Keene's. Perhaps you may be right in warning farmers not to try the experiment; but as far as I have had experience of that sober and canny race, I do not think it likely they will be tempted to risk their fortunes in any trial which has not been already entirely successful. As regards climate, I am inclined to believe that there will be sufficient sun in any season to ripen the stalk and fruit, as there is to ripen Grapes in the open air; but it is the deficiency of heat in the soil which produces too gross and succulent a plant for this result; the temperature of which, as any person knows, can be wonderfully raised by thorough drainage and a proper culture. It is to this increase of temperature, produced by turning the soil, in a stiff and insufficiently drained clay, which I attribute what I cannot but think a successful crop of Maize. I went to no extreme expense in the cultivation, nor, owing to my absence, did I pay as much attention to it as I could have wished. Next year I hope I shall be able to give an account of the expenditure incurred, and the amount of produce, and what I think it worth. I suppose I shall plane myself, by this paper, under the denomination of enthusiast; and I am quite content to be called one, if it be commonly given to those persons who, regardless of public prejudice and scorn, are anxious, at their own cost, to introduce any improvement which they hope may benefit their fellow-creatures. *T. A.*

Domestic Poultry: the Shanghay re-imported.—A gentleman residing in the neighbourhood of Exeter directed the captain of one of his ships, about to touch at Batavia, to procure for him some choice specimens of poultry there. The captain, anxious to please his patron, was at considerable pains to obtain the most select breed which the island of Java afforded. His agent at Batavia sent into the interior of the island to

procure what was deemed the most valuable sort. The captain purchased about five or six couple, and landed alive in England about three couple—their cost in the island was about 10*s.* each. They were stated to be the real game breed; the common Malays, though of larger size, being to be had at a mere nominal price at Batavia." I believe a gentleman in the south of Devon and myself, each having been favoured with specimens from the importer, alone possess the unmixed breed. So much for the origin of the new breed, if new breed it be, and now for their qualities. They are large; I have a hen weighing 7 lbs. I have weighed a cock 8½ lbs. which had weighed 9 lbs, and in high condition would, I think, have weighed 10 lbs. The hens may be taken in good condition to average from 5 to 6 lbs., and the cocks about 7½ lbs. They are excellent for the table, with white flesh, rather pugnacious, and indifferent layers. The eggs of the pure breed are very small, brown, almost spherical, excellent, and nearly full of yolk. The colours of the birds vary; black with yellow or light hackle, white, and speckled, the latter predominating; the colours are often very brilliant, and the mixtures sometimes striking. There is some resemblance to the Malays both in size and carriage; but on comparing them with Malays from Baker's, there is a perceptible difference, in which I think the Javas have the advantage, as being of more noble carriage and larger. I regard the breed, from its size and the whiteness of its flesh, as identical with the lost Shackbag or Duke of Leeds' breed, if not consisting of the cross hereafter suggested. Those who have read the Rev. Mr. Dixon's book on Poultry, or who have studied the natural history of domestic poultry, will be aware that in Java and Sumatra are to be found various wild breeds of Galli, and particularly the Gallus giganteus of Temmeuck, of which a stuffed specimen, wild from Sumatra, is said to be in the Edinburgh Museum. The cocks of the breed I possess have sometimes low flat combs, like the wild specimen referred to, and the hen has a very small comb. Three of my birds have drooping tails like the pheasant, whether the result of accident or not I cannot say But this, as well as the fact of one of the hens with a drooping tail having proved barren, has suggested to my mind the possibility of the breed being a cross between the Gallus giganteus and the fire-backed jungle fowl, which latter noble bird is intermediate between the true jungle fowl and the pheasant, and as far as I know is found only in Java. The cross breed with the Malays or the true Spanish make most splendid birds, often larger than the pure breed, and are excellent layers. The pure breed are great consumers, are valuable to cross with others, and may be valuable as a large game breed; but unmixed are I think better adapted for show than profit. *R. T. H.*

Scotch Farming.—It is certainly a matter of curious inquiry, and highly important in the present state of agricultural prospects, to ascertain the means by which the high rents are paid in Scotland, as compared with our own. The fact itself is indisputable, not resting on vain premises or uncertain contingencies, but supported by irrefragable proofs.—The East Barnes farm, near Dunbar, pays 4*l.* 5*s.* an imperial acre on 480 acres: and did pay not very many years ago about 6*l.* the acre, or 2800*l.* a year; but having been taken in hand by the proprietor, who resided in Edinburgh the while, it got deteriorated, and so reduced. Well may your correspondent "W." be astounded at these marvellous rents, and class them as a paradox that requires explanation. In comparing them with our own, if it were in a country where the mixed husbandry was practised, it might be solved by land under the plough, properly managed, being infinitely more productive than that under Grass. But this is by no means the case. In Lincolnshire and some of the adjoining counties are to be seen the noblest specimens of arable culture; yet here the land is supposed not to pay more than about 25*s.* the acre. A glowing description of Lincolnshire farming is given in the Royal Agricultural Society's Journal; and from the admirable farming there pursued, although the land is of an inferior quality, it might be expected that the landlord's profits would have been larger than what they really are. In examining the high rents paid in Scotland, it is too frequently supposed that it is only near the large towns, or on some choice pieces of land, that such rents are paid; but going from Edinburgh to Berwick, and from thence by Coldstream to Dunse, a distance of about 100 miles, you pass through a beautiful arable country, with scarcely a bad field to be seen or a dirty crop of Turnips any part of the way; and it is therefore only fair to suppose, that although a distinction may be made, according to the quality of the land, yet the rents in general throughout this highly cultivated district are such as we know nothing of. In regard to the land near Dunbar, no one can doubt but it must be of a very good quality. It consists of a reddish loam, with a good deal of gravel or smallish stone in it; but it may be safely averred that it is not a bit better, if so good, as our alluvial soils in this country, many of them a yard deep; and yet for these only the small rent of 2*l.* an acre is generally paid. This shows most convincingly that it is not so much from the superiority of the land that the difference of rent arises, but from the superiority of their farming over our own; and it is therefore most important to inquire what peculiarities of management these are which operate so powerfully. The first and most important peculiarity is that all the Scotch farms which pay these high rents have a most complete set of farm buildings attached to them, with large courts for feeding cattle, with every convenience for facilitating the purposes of cultivation and economising labour. A powerful steam engine with its tall chimney is made applicable for a variety of purposes, and is a distinguishing feature that marks farming operations as you pass along the country. These structures have a valuable effect in causing to be made upon the farm vast quantities of manure, without which no high farming can be carried on; and this is strongly exemplified in Mr. Caird's case, from the immense number of loads of manure which he carried out to his green crop, besides his purchasing much artificial manure. His farm, as well as those near Dunbar, have a great advantage in this respect from having a command of kelp, which is gathered close by, on the sea-shore, and is very valuable, and perhaps is one cause of these farms letting so high. About 50 years ago Sir John Sinclair, who had penetrated so deep into the recesses of farming improvements, gave the following description of these farms: 22 cart-loads per English acre, he says, were applied to the Turnip land, whereas only 12 such cart loads are commonly given by the generality of farmers. The same quantity was also applied to the Grass land before ploughing. Yet, notwithstanding all these advantages, it was found that Wheat could not be grown with success on light lands every other year for any length of time. Mr. Grey estimates the average amount of produce on the Scotch farms as follows: 5 quarters of Wheat are reckoned a good average, and some fields turn out 6 to the acre; 10 or 11 quarters of Oats, 8 or 10 tons of Potatoes, and 20 to 30 tons of Turnips, are a good crop. This is a high standard, and so long as this is maintained, there need be no fear of a reduction of English rents from the reduction of English prices: as a proof of this, let the profits be calculated on Mr. Caird's farm, and it will be found not only that the high rent of 3*l.* or 4*l.* the acre may be maintained, but that in addition there will be a fair and handsome profit to accrue to the tenant. A few shillings per acre more or less in rent is of little consequence, compared with the immense difference that may be made betwixt a bad crop and a really good one. In one of your late numbers a correspondent from East Lothian enumerates various reasons for the high rents in Scotland. These are highly deserving the consideration of English proprietors. Amongst others, one reason is the economy of management in every department. It is too common in England to place the principal superintendence of a large farm in the hands of a bailiff. This not only entails a heavy expense in itself which must all come out of the farm; but be he ever so trusty, it is scarcely in human nature that he should look after things so well as the tenant himself would do, who is most interested in the matter. There are always in every branch of the business a number of small outgoings, which appear of little import, but which, when taken in the aggregate, mount up in the year to a large sum. This it is which makes gentlemen's farming seldom answer—indeed the failure is proverbial. A Scotch farmer lives amongst his labourers, has neat cottages for them, forming part of the range of buildings; pays them part in money and part in kind, allowing them perhaps so many perks of Potatoes; and does not shift them yearly, but gives them an interest in their places by a continued residence. Added to these reasons, the Scotch farmers are intelligent and prosperous. Education commenced earlier with them, from the establishment of parochial schools; is spread through all ranks, and has been the means of supplying other countries with the best stewards, the best bailiffs, and the best gardeners. By their industry, and the liberal covenants they have enjoyed, they have most of them amassed considerable fortunes, and have thus a larger capital at command to undertake an expensive improvement, or to keep up their farms to their proper mark. A well authenticated case may be mentioned of a farmer making 8000*l.* during his term. Many there are who have grown rich on their farms, and there is no doubt that English tenants might in many cases do the same, if, with the low rents they now pay, they could bring to bear on their undertakings the same intelligence and capital which the Scotch possess and turn to the best advantage. *Lanc. Rawstorne.*

Small Farms.—In your Paper of Nov. 3 a correspondent, "A. M. A.," asks your opinion as to the expediency of taking 16 acres of glebe into his own hands. I hold exactly that amount of land, under precisely similar circumstances. If he wishes for an amusement he may find it in farming his land, but the probabilities are that he will not realise a rent of 46*l.* by doing so. Certainly not, if he cannot grow more than 20 bushels of Wheat per acre. I grow more than that, and cannot make 30*l.* rent The difficulties I meet with are, first keeping one horse for all purposes; I find it difficult at times to hire or borrow a second to plough, &c. I have laid down a small part in Grass, but as the land is a sandy loam, it fails in dry weather. I am obliged to grow artificial Grasses, and, with the best management that I can adopt, I find it difficult to provide good food for my cows throughout the year. I believe that if I was very near a large town I could grow roots to advantage, selling them, and buying manure in exchange. I consume all that I grow either by my own family or by stock I keep two cows, about 20 ewes, sometimes more; I fat two bacon hogs, keep one horse for all purposes, and am content to lose about 5*l.* a year for the convenience of dealing with myself for Wheat, Oats, milk, &c., and for the pleasure and amusement of farming my land, as I am told, as well as anyone in the parish. If your correspondent wishes for further information I shall be glad to give it him *An A. M. and Small Farmer.*

Price of Bread.—In your Paper of the 3d inst. "A Miller and Farmer" attempts to show that the farmer, miller, and baker, are barely making a living with bread at 5*d.* per 4 lb. loaf; and at this price your correspondent, who does not hesitate to state of a fellow contributor to your journal, "that he is a person who has no idea what he is writing about," says, the loaf is selling at now. Although the writer of the former article so despised by the "Miller and Farmer" is quite unknown to me, I venture to say he is quite alive to the price of the bread as sent in by his baker. You would much assist public inquiry and truth, Mr. Editor, by occasionally letting us know what the market quotation may be. I can hear of no price under 6*d.* through a great part of Kent, although second bread may, with rare exceptions, be found at 6*d.*; but I do not know where to go for it myself. Where it is sold at this price, it is by some new baker, who is trying to run down others. Under these circumstances, as you admit strong articles on all sides, will you favour us with some editorial remarks on what bread ought to be in comparison to the price of flour. I much fear the consumer generally does not yet get the reduced price. *A Free-trader.*

Malt v. *Barley.*—Your correspondent, "P.," says, "Malt for feeding purposes has been proved by abundant experiments to be of no value." "W." asks for information. I fatted three pigs, one on Barley-meal, one on malt, and one on a mixture of from one-sixth to one-fourth of malt to Barley meal; in each case the meal was mixed with water for some days before being used. I did not keep any account of it, nor was I very particular, but I saw enough to satisfy me that the Barley-meal by itself fattened the pig sooner and better than the malt by itself, but that both of them separately were very inferior to a mixture of the two. Malt is at present at too high a price for me to try experiments with, but "W" can try it. *A. K.*

Labourers' Cottages.—The Royal English Agricultural Society has lately given a prize of 50*l.* to Mr. Goddard, architect in Lincoln, for the plan and cost of construction of a pair of cottages for agricultural labourers. I am not an architect, but having had a very long and extensive experience in all country matters, I use the liberty of making some few remarks on the prize models of cottages. The ground floor contains only one living room and a scullery, with a pantry and cellar The author reckons one living room to be most consonant to the "wants and means" of the labourer, and for preventing any letting off for the accommodation of lodgers or another family. The means of labourers are small enough in all conscience, but his wants are those of common humanity. Mr. Goddard's plan improves nothing upon the pinfold rooms of Tweedside and Northumberland, where a family of a number of ages and sexes, being huddled together, forms a blot of no small magnitude on the social system of those celebrated counties, where the genius of agriculture has been truly said to have fixed its chosen residence. Every domicile very justly claims two apartments on the ground floor, one rather better than the other, which will serve the occasions of visits or family occurrences. In the prize plan, the door is placed in the north east corner of the cottage, which must be cold; and there being no other door, the house never can be clean, with the filth being carried out where the family enters the cottage. It must be vastly preferable to place the door in the front of the cottage standing to the south, and protected by a porch, with a back door opening behind from the scullery. No house can be clean with only one door. The scullery is placed in the front of the cottage, a most unusual position, and is even dignified with a verandah before the window. The filth must be carried from the scullery through the living room; surely this apartment should occupy a back position. The second floor is divided into three bedrooms, a necessary but very large proportion to one sitting room. The doors of the three bedrooms open all together at the head of the stairs, and there are four doors meeting in a square space of some few feet in the area. It looks very awkward. However correct may be the calculations of the expense, and the explanatory observations, it cannot be said that Mr. Goddard's prize plans have added one mite to improvements in the plan of cottages, being confined and injudicious, too low in the walls of the apartments, and otherwise inconvenient. *J. D., Nov. 14.*

Agriculture.—Nothing tends so much to the advancement of the agricultural interest as such good humoured discussions as took place at the Witham society, reported in the *Agricultural Gazette* of the 17th inst. Whatever promotes the welfare of the farmer will improve the condition of the labourer. To suppose that the use of implements in the cultivation of the land injures the working man, is a mistake; it only changes his occupation, from hoeing and planting, to draining, road making, hedging and ditching, on every well regulated farm The utility of draining on stiff soils is beyond dispute, and the only question appears to be as to their depth and distance apart. On clay lands they should be not much less than 3 feet deep, where a fall can be obtained, and 21 from drain to drain. Common tiles, or 3 inch pipes, should be laid in the bottom. This plan will be found the most satisfactory and economical in the end. Smaller pipes are liable to accidents. During a hot summer, where the drains are shallow, the earth becomes parched up; whereas if they are of a certain depth, although the water is carried off, yet there is a moisture below the influence of the sun's rays, which rises (by capillary attraction), and refreshes

the roots of the plants. Clay when once moistened and excluded from the air is impervious to water; hence its sterile condition when undrained (comparatively speaking). Admit the atmosphere below the surface, and its action will, in the course of time, render the stiffest land, if assisted by cultivation, quite capable of throwing off by percolation all superfluous water. Thus we find scientific draining keeps land warm in winter and cool in summer. If the drains are too distant from each other, the air is longer in performing its task, and often partially fails in loosening the soil. The admission of air is of as much consequence as the expulsion of water. Mr. Mechi deserves all praise for the liberal manner in which he has carried out his agricultural experiments, and also for his willingness to show a Dr. and Cr. account of his farm proceedings. The public should not be too hard upon Mr. Mechi, and expect, when he tells us his system *is* remunerative that he receives interest for the whole of the capital laid out on his property; allowance must be made for enthusiasm in the cause he had taken up, and the style of erections is probably more expensive than would be necessary on a common farm. If a calculation was made of the necessary outlay for buildings, &c., to farm a certain number of acres on the plan adopted at Tiptree Hall, it would answer every purpose, without diving into experimental failures, which must necessarily attend zeal, in carrying out a favourite scheme. Mr. Mechi seems desirous to prove that farming conducted on sound principles is not a losing concern, provided landlord and tenant act fairly towards each other. The former not asking too high a rent, and the latter being willing to pay a just demand. I may be wrong, but I think Mr. Mechi will make out a good case, and convince both landlords and tenants that they may live without ruining each other. The sale of the produce of a farm, being left to the discretion of a tenant, requires grave consideration; there are provident and improvident individuals in that particular class of society, and owners would require to have some control over men who might be troublesome. What that should be must be decided by parties concerned. Compelling individuals to use that which could be more profitably sold, is an insane restriction, sapping the foundation of all improvements. Yard muck is often all the mainstay of the agriculturist, when well saved, which it may be, by allowing it to accumulate in a large pit, and covering the manure as it increases with layers of either ashes, road dirt, sand, or saw-dust. Thus the greater portion of its valuable properties are retained. When removed it should be immediately ploughed into the land, and it will form a lasting dressing, superior to anything else, as it contains a greater variety of food for vegetation. What can be more beneficial to Grass land than liquid from the tank carted on in damp weather? Guano is no doubt a most valuable acquisition to farm resources, both from its portable nature and its forcing qualities (when genuine), but we should endeavour to render ourselves independent of foreign aid, by manufacturing a powerful fertiliser from night-soil. How comes it fatting cattle, so far as the carcass of the animal is concerned, is considered a dead loss? There must be some truth in it, as all farmers agree on the point; for the credit of our country let us hope soon to hear that beef pays as well as mutton or pork. I would suggest, as an incentive to exertion, that the Agricultural Society should offer 100*l.*, to be given at the next meeting for the six best oxen ready for the London markets, each returning to the owner a fair profit for his maintenance—a Dr. and Cr. account to be produced. Nothing should be reared or fed on a farm without the prospect of gain. *Falcon.*

Sex of Eggs.—During the last summer, I wanted to raise a stock of poultry from a favourite hen and cock. They were of the black-breasted red game breed. The cock was purely bred, but the hen was a little crossed. The eggs she laid were of a deep buff colour, and as she was the only hen I had which laid yellow eggs, they were easily collected. When I had 26 eggs, I put 13 of the largest under a brood hen to be hatched; one egg got broken, the other 12 had chickens in them; one however died in the shell, and so the number was reduced to 11. Of these one died before I could ascertain its sex; of the 10 remaining, 8 were cocks and 2 were pullets. The 13 smaller eggs I also put under a broody hen, and she hatched me 10 chickens. Of these eight were pullets and two were cocks. There is no difference in the shape of the eggs laid by the same hen, in size they vary but little. I observe this peculiarity, that although the hen has yellow legs and the cock black, yet throughout four broods which I have had from the same hen and cock this summer, every yellow-legged chicken has proved a cock, and every black-legged one a pullet. *Nomen fictitium.*

Forty day Maize.—I sent to the *Gardeners' Chronicle* an account of my sowing some of Mr. Kerner's sorts of Maize, and perhaps the result will be acceptable. Half of the seed (consisting of three sorts), which I mentioned as having been sown in newly burnt soil, perfectly ripened, and a full fortnight sooner than the rest. That sown in the unburnt soil, which is a stiff cold clay, grew more luxuriantly, and the cobs were mostly larger, but it did not ripen so perfectly. My corn also, from some mismanagement, threw out from the same plant several cobs, which I observed did not occur in the crops of Indian Corn grown in Switzerland and Italy (in the former in very elevated and pent up valleys); and which I believe had the effect of producing imperfect cobs, though one at least in all cases I believe came to maturity. I should think a light sandy loam of no great depth the best adapted to its growth, for its roots grow in a ball and do not pierce downwards. A dry and open soil is certainly required, for in wet and strong land there will be too much moisture and luxuriance of growth, in proportion to the ripening power of the sun in our climate. I send two of the cobs, one of white, one of yellow grain. The yellow ripens the best. *F. A*

[See the leading article of Nov. 10 in the *Gardeners' Chronicle.*]

Smithfield. — It appears by the Smithfield-market article, in the *Times* of November 6, 1849, that the average number of beasts sold at Smithfield, in the last three years, on the first Monday of November, has been 4035, and the average number of sheep 24,470. But this year (1849) there were 422 beasts fewer than in 1847, and 4110 sheep fewer. The total number of sheep imported from abroad into London, from January 1 to October 27, 1849, has been 98,252, which is 372 more than a number equal to four weeks' supply, at an average of 24,470. The number of sheep imported elsewhere than to London has been only about 1000 in the same time. As I am one of those who think farmers are in a state of needless panic, and have run down the value of their produce by their fears, I could wish you could explain some questions which arise from the above facts. The decrease in the sale of sheep at Smithfield is much larger than the number of sheep supplied from abroad; is it that the consumption of mutton in London is less, or that London is this year supplied from some other sources than Smithfield? The price of mutton in November, 1847, was from 4*s.* to 5*s.*—in 1849, from 3*s.* 2*d.* to 4*s.* 4*d.*, so that the consumption of meat does not appear to have increased, as is usual, by reduced price. There has been no importation to affect the country, and yet the price of sheep has fallen in the country. A similar state of facts exists as respects beef, and is equally unintelligible, unless something has occurred to diminish the consumption of meat; or unless forced sales of produce are taking place. Can you explain this, or suggest an explanation? In my part of the country the farmers have become perfectly dizzy, and their brains are affected with fright. I omit no opportunity to console them. *T. F*

Assistance by Landowners.—Allow me to call attention to a plan which has been adopted by a most liberal landlord in South Hants, in giving relief to his tenants in such a way, as whilst the tenant receives the full amount of benefit, the land at the same time is kept in good heart, and indeed still further improved. This gentleman has allowed his tenants, for the first half of the present year, manures for the Turnip crop, to the value of 25 per cent. of the half year's rent, and for the latter half year oil-cake to the value of 20 per cent. The system is not less distinguished by generosity than by sound wisdom, for it must be evident that it is only by abundant crops that the effects of low prices can be anywise met. It is to be hoped that an example so worthy of imitation will be extensively followed. The principle of "live and let live" is in the end sound policy. *S.*

Ireland.— The letter which has lately appeared in the public journals, from a farmer on his return from visiting the county of Galway, with a view, not only of taking land himself, but of inducing others to follow his example, provided he found landlords willing to let on favourable terms, requires some explanation on the part of owners of property, otherwise it may mislead the agricultural world, and effectually prevent the tide of emigration from England setting towards Ireland. Some of the daily journals have noticed the subject of settlement in unfavourable terms, it is incumbent upon men of influence to bestir themselves and ascertain how far landlords are disposed to encourage English and Scotch yeomen, to try their fortunes on Irish soil. A report drawn up by responsible persons, showing fairly the condition of various districts, the nature of the land, size of farms, accommodation and capabilities of improvement, would at once check erroneous opinions from getting abroad, and prove how far a man would be justified in risking his capital. It is admitted on all sides that an importation of steady and industrious farmers, possessing money, is the grand panacea for many of the miseries of the country; and yet we unfortunately witness the opposition of part of the daily press, on the ground that Englishmen will not meet with all the luxuries of a home farm! This idea would make one laugh were not the subject too serious for jokings, and did not the happiness of a gallant people inhabiting a magnificent island (productive to a proverb), depend upon substantial assistance from England. Nothing can ensure the prosperity of Ireland so speedily as a thorough reformation in the agricultural interest, both as regards the tenure of land and the mode of cultivation. How is this to be brought about under present circumstances? Landlords are almost bankrupt and tenants refuse to pay rent. Can anything be more wretched for a country to endure? How is it possible for the labourers to exist in the impoverished state of those who should employ them? Under such a load of misery, with society disorganised, the country cannot recover itself by its own unassisted exertions. It would therefore be more in the spirit of Christian charity to lighten the weight crushing our sister country, than increase the burthen by blaming substantial men, who are willing to cross the Channel. "It is the last ounce that breaks the camel's back." If party spirit ever yields to anything, it should succumb to the wants of Ireland; for, after all, what can reconcile any man, or body of men, for the sake of gratifying their spleen, to prolonging the disease under which Ireland labours (the want of money profitably laid out), and bringing destruction upon a large body of their fellow creatures? The repetition of facts may be tiresome, but it is in vain we shut our eyes to danger when it is near, we only run the greater risk. Who, if he sees his friend sinking under the treacherous stream, would leave him to his fate, when stretching out a hand would save him? It will remain a blot in the history of England, not easily expunged, if she permits Ireland to fall a sacrifice to prejudice and ill feeling, when it is in her power to raise her sister from her disastrous position, and at the same time enrich her own sons, and rivet firmly the bands of mutual esteem and good fellowship. One of two things must happen, ere many summers pass away—either England must lay the foundation of a better system in Ireland, or she will be lost to this country. It is devoutly to be hoped the former resolution will guide the powers of the United Kingdom. *Falcon.*

Profits of Farming.—As I have just taken to 90 acres of strong land in a wretched state of cultivation (the late tenant not having cultivated a part of it since the crops taken in autumn 1848), everything interests me in the shape of balance sheet, farm accounts, &c., and, reading your *Gazette* constantly, one is really bewildered at the numerous conflicting statements made by your correspondents. For instance, in your last number, "Philo-agricola" gives a fair debtor and creditor account of cultivating an acre of land; it may be too high or too low on several soils, but there it is. On the other side "R. F. W.," who strangely heads his communication "High farming and low prices," writes his profit down a loss of 1*l.* 6*s.* 6*d.* on cultivating 100 acres. All these statements, to be of any use or slightest weight, ought to go more into particulars; unless they do, neither private ends nor public good will be served. "R. F. W." grew last year 30 bushels of Wheat per acre, which he sold for 5*s.* 8*d.* per bushel, and received 204*l.* 3*s.*, which, if I calculate correctly, gives, in round numbers, about 24 out of his 65 arable acres under Wheat. What did he grow on the 41 acres remaining? Then there is 35 acres of Grass, which was the produce consumed by the farm horses, sheep, pigs, and poultry, for which little more than 100*l.* (scarcely 30*s.* per acre) is returned? If so, 76 acres out of 100 seem almost wasted; at all events, no high farming seems to have been displayed. Let us, Mr. Editor, have a balance sheet, with the produce of every acre accounted for, the stock kept and sold, and the expense; then the profit or loss is seen at once, and some idea can be formed on the subject. I hope no one will take these few remarks amiss, they are only intended to point out a common deficiency of information, in the hope of having it in future more complete. *G. W.*

Societies.

TRAFALGAR AGRICULTURAL, *Oct.* 22.—The annual meeting of this Society was held at Trafalgar Inn, on Monday, Oct. 22. After the Secretary had distributed upwards of 70*l.* of sweepstakes among the successful competitors for live stock and growing crops, a discussion was entered into with regard to the merits of *Thick and Thin Sowing.* Mr. HAXTON, Drummod, addressed the meeting, and said:

The subject of "Thick and Thin Sowing" presents two important aspects. First, it is highly useful to the progress of agricultural art to establish a scientific principle; and, secondly, it is of the greatest importance to practical men to know what is the proportion of seed which will, under ordinary circumstances, yield the largest return. It is, however, with the latter of these points that we have at present to deal. Hitherto the practice in this district, and, I may add, of Scotland generally, has been to sow broadcast at the rate of 5 bushels of Wheat and Barley and 6 bushels of Oats respectively to the Scotch acre. Our enterprising neighbours to the south of the border—in South England especially—have in many instances broken through the old conventional rules which experience had established in this respect, and succeeded in a great measure in wholly revolutionising the entire system of sowing corn. Where we sow with 4 bushels to the acre they would sow with only 2 bushels; so that if their crops, when reaped, be equal to ours, a clean saving of 2 bushels is effected. But the saving of seed is but a small item in the catalogue of advantages derivable from this sowing, and the increased produce per acre is of itself a sufficient inducement for every farmer to adopt it. A great deal of discussion has appeared from time to time in the agricultural papers of the day on this question, which, if it has not settled it satisfactorily, has at least aroused attention, and led to many useful experiments. The question has travelled northward, and within the last few years the members of agricultural societies have begun to inquire how far the present practice in Scotland is in accordance either with economy or sound principle. This is the second year that it has been discussed by the Trafalgar Society, and it is to be hoped that some progress has been made since our last meeting in determining the point so far as it refers to ourselves, or at least in accumulating additional evidence regarding it. My mind has been so completely made up on the subject, so far as it refers to my own case, that, as I said before, I have not during the past year thought it necessary to make any experiments sufficiently exact to exhibit a pounds, shillings, and pence view of the merits or demerits of any particular mode of sowing grain. During the last half-dozen years I have never intentionally sown more than 4 bushels of Wheat per Scotch acre at any season of the year. Last Martinmas I ploughed and press-rolled 4 acres of soft green crop land after a crop of Swedish Turnips, the shaws of which were turned under the furrow for manure, and which was then sown broadcast with 3 bushels to the acre. The larger proportion of the seed fell into the pressed furrows, so that when the plants appeared they were as regularly rowed as if sown by a drilling machine. The braird was decidedly too thick, and several gentleman who saw it pronounced it so. The Wheat was the "red chaff" variety. Other 4 acres in the same field were sown broadcast with 4 bushels to the acre, and when the plant appeared above ground it was decidedly more straggling and unequal than the pressed and thinner seeded portion. The press-rolled Wheat kept the lead in appearance throughout the winter; and in spring, it was decidedly too thick on the ground. It was then hoed between the rows with a Dutch hoe, at a cost of 2*s.* 4*d.* per acre, by which many of the plants were cut up and destroyed, notwithstanding which the crop suffered throughout the whole season from being too thickly planted. At harvest it was strong and clean strawed,

and otherwise so unsatisfactory as to prove to my mind the great advantage to be derived from thin sowing, drilling, and hoeing Wheat. Another part of the same field, where the soil was rather thin and inferior, was sown broadcast at Martinmas with white Irish Wheat, at the rate of 4 bushels per acre, part on the pressed furrow and part on the rough furrow. Owing to some defect in the seed, the latter was a very bad one—the worst I ever saw; and when spring arrived, it came to be a question whether it should or should not be ploughed up. I determined to give it a chance, and top-dressed it in the beginning of May with 1 cwt. of Peruvian guano, ½ cwt. of nitrate of soda, and ½ cwt. of sulphate of ammonia per acre, and afterwards harrowed it well with a "break" of six Grass harrows. The result was as bulky a crop of Wheat as I ever reaped. This was indirectly a proof on the side of thin sowing, inasmuch as the whole of the plants that ever appeared above ground could certainly have been supplied by 1 bushel of sound seed per acre. With regard to Oats, my usual quantity of seed per acre ranges from 4 to 5 bushels, and generally the best results have been obtained from the smaller of these quantities. In 1849 I dibbled Oats at the rate of 1 bushel to the acre, and the result was a bulkier and thicker crop than 4½ bushels yielded, sown alongside of them. As to Barley, I have sown from 2½ to 5 bushels per acre; and in one instance, the crop from the smaller seeding was the bulkiest I ever reaped. In another instance this year, however, 4½ bushels to the acre gave a better crop than 3½ sown on alternate ridges. I am not able to account for this, unless on the supposition that severe frost happened just when the young braird was making its appearance above ground, and probably a good many of the plants were killed. At all events, the thickest seeded ridges were never so thick as might have been anticipated from the quantity of seed sown, while, of course, the thinner seeded ones were proportionally thinner also. In discussing the relative merits of thick and thin sowing, and so arrive at anything like a common principle that will apply to our general practice, it is necessary to take into account all the circumstances which, of themselves, would cause a divergence from a generally recognised rule. Thus, for example, the physical nature of the soil—its chemical condition as affected by cultivation—its aspect as regards exposure to the sun's rays—and also the temperature of the climate; all contribute to render uniformity of practice impossible. In a good climate, such as East Lothian and many parts of Fife enjoy, and where the land is naturally fertile and also in good order from proper cultivation, a thin seeding is undoubtedly to be preferred, especially if the operation of sowing be early attended to. On land possessing average advantages, what is put in before Martinmas should not certainly be sown thicker than 4 bushels to the acre broadcast, or 2½ to 3 bushels if drilled or press rolled. Early Oats should not exceed 5 bushels per acre, and I have no doubt that, taking one year with another, 4 bushels is abundantly sufficient. Barley may range from 3½ to 4½ bushels, according to circumstances, and I am inclined to regard a larger quantity as unnecessary waste of seed. I believe that most farmers are agreed that not much more than one-half of the seed usually sown produces plants which live to attain maturity. The struggle for existence that takes place among over-crowded plants results in the death of the weakest, so that it is only the strongest that reach maturity. The advocates of thin sowing, desiring to avoid this injurious process, sow only as much seed as will produce plants which, when properly tillered, will fill the ground. This, however, can only be accomplished by depositing the seed in such a manner as will ensure an equal and healthy germination. Broadcasting is too precarious a mode of sowing to admit of small quantities of seed being used. Drilling and pressing provide a better seed-bed, and hence the reason why so much less seed is required. As long as broadcast sowing prevails, little progress can be made in reducing the quantity of seed to anything like the extent advocated and practised by Mr. Hewit Davis and Mr. Mechi. In Scotland we trust to the strength and closeness of the braird to smother annual weeds, whereas, in the drilling and dibbling districts of England they have recourse to the horse and hand hoe to extirpate them during the earlier stages of the plant's growth. In sowing broadcast we lose nearly all control over the cultivation of the ground after the seed is committed to it; but when, on the contrary, the drilling and press-rolling systems are followed, many subsequent opportunities of stirring and working the soil are afforded, so as to develop its fertility, and at the same time keep down weeds, all of which tend to rob the cultivated plants of their full and proper nourishment. So far as I understand the subject of "thick and thin sowing," it appears that there are a vast variety of circumstances to be taken into account, before anything like a general rule of practice can be established. The question has several distinct sections under which it should be studied. First, the old and still common system of broadcasting: secondly, drilling and pressing: and, lastly, dibbling. When the first mode is adopted, a large allowance must be made for a very considerable quantity of the seed never vegetating at all, some of it being too near the surface, and thus exposed to destruction from various sources, and part of it being so deeply buried as either never to spring at all, or to send up a feeble struggling stem, which frequently dies out. In drilling and dibbling uniformity of depth is more complete, so that the loss, if any, arises from inherent weakness in the seed itself. On all level farms, whether light or heavy, the drilling system under one or other of its forms should certainly be practised, light lands being pressed and heavy lands drilled. On hilly, rocky farms, a light press-roller might be used very advantageously. The time is not far distant when such practices will become more common. In the meantime, the subject must run the gauntlet of criticism, and it is certainly one great advantage of a society like this that such questions can be revived year after year, and discussed anew, with a fresh and accumulating mass of evidence.—Mr. Russell, Kelloe, said: I am well aware that no rule can be laid down in this matter which will be applicable to all circumstances, but as I conceive the exchange of opinions betwixt us tends to enlarge the boundary of our practical knowledge, and will ultimately lead us to estimate aright the conditions which render either thick or thin seeding advisable, I will only state my own practice and the principles by which I am guided. In looking over the statements of Wheat sown by me last year up to 1st December, I find that over 80 imperial acres the average quantity of seed sown was 7 pecks per acre, drilled at 9 inches apart, on light land, after green crops; one acre in the field was sown at the rate of 4 bushels per acre, and, although the crop was not threshed separately, it was decidedly inferior at harvest. I have come to the conclusion that, when Wheat is sown on very light lands, in good condition, thin seeding is quite indispensable, for, if you adopt the opposite practice, a great amount of manure may be expended to little purpose, as these seeds, under such circumstances, are very apt to become too densely planted in spring, and the plants change their healthy colour with a few days' drought. It is otherwise when they have space to grow; and we find that it is the practice to sow late in autumn, or rather in winter, on light lands, which has merely the effect of giving a thinner plant in spring—at least I am unable to give any other rationale for the practice. The greater part of my spring-sown Wheat was sown with 2 bushels per acre, and part with 4 bushels, but I knew little difference betwixt the two when they were cut at harvest. My Oats were all sown broadcast, at the rate of 5 bushels per imperial acre. My Barley was drilled at the rate of 7 pecks per acre, about the middle of March; part of the field was gravelly, and part was peaty; on the former variety of soil this secured quite sufficient, but on the latter, where there is less tendency of the plants to tiller, it might have been advantageous to have increased the seed a little; but so far as I am enabled to judge from what I have threshed, the yield is greater than ever I had on the same field. I would not advocate the adoption of thin seeding under all circumstances: but where the land is in good condition, and provision made for clearing the weeds, I am inclined to follow it, as I think it is the only system that we can safely adopt early sowing on light land, and have both quantity and quality, whereas if thick sowings follow, you must sow late and thick in spring to obtain quantity, but this is often at the expense of quality.—Mr. Russell, Demperston, had made no experiments on the subject, and held that a variety of special circumstances, besides soil, climate, and season, must be taken into consideration before any man could give a decision on the subject.—Mr. Dingwall said his experiments went rather in favour of thin sowing, though he thought that a great deal depended on the way of putting in the seed. The Wheat for which he had got the prize that day was sown with 2 bushels an acre, all pressed; and from an experiment he had made with Oats, the following was the result: with 2½ bushels of seed per acre, the produce was 67 bushels; with 3½, 4½, and 5½, the produce was 72, 73, and 70 bushels respectively.—Mr. Brown said that the whole depended on how the land was used, and on climate; and if a farmer did not understand these, he should not have a farm.—The greater part of the members expressed their opinions on the matter, which were so very various that it was impossible to arrive at any definite conclusion. In the course of discussion, a sweepstakes of a sovereign was taken up between Mr. Gulland, Wemyss, and Mr. Hall, Luthrie—the former holding that more Oats would be raised on poor land, by sowing 4 bushels per acre, than by double the quantity; the latter gentleman holding the contrary. The management of the experiments to be left to the committee.—Mr. Haxton, in attempting to embody the opinions of the meeting, proposed the following resolutions: 1st, "That it is the opinion of the members that the nature and condition of the soil, the climate in which it is situated, and the season of the year, determine entirely the quantity of seed necessary to be sown," which was seconded by Mr. O. Russell, and unanimously agreed to. 2d, "That, in the opinion of the members of this Society, too much seed is in general employed, and that, individually, the members have been benefited by sowing thinner than they have been accustomed to do," which was seconded by Mr. Dingwall.—Mr. Russell, Demperston, thought that nothing could be more admirable than the first part of the resolution, which reflected the greatest credit on the care and pains of Mr. Haxton; but he would object to the latter part, which mentioned a determined quantity of seed. After the declaration in the first part, the second was perfectly absurd. After telling us that the whole thing depended on the quality and condition of the soil and climate, and so on, it was humbug to talk of the quantity of seed that should be sown on any land; and he moved, as an amendment, that "the previous resolution is quite sufficient for the guidance of the Society," which was seconded by Mr. Brown.—Mr. Haxton said he proposed no resolution of his own, but only endeavoured to embody what he had gathered as the opinion of the meeting.—On the vote being taken, 17 voted for Mr. Haxton's motion, and seven for Mr. Russell's amendment. Several members declined to vote.—Mr. Haxton, on the closing of the discussion, said that he had the prerogative of calling on another member to open up some other matter for discussion next annual meeting. He fixed upon Mr. Russell, Demperston, who, seeing the members so urgent, kindly consented to do so. *R. R.*

Miscellaneous.

Death of James Ransome, Esq.—Death, during the past week, has summoned from among us a devoted Christian, an exemplary parent, an enlightened master, and an honourable man!—Ransome had several times anticipated the stroke of death; on Thursday last, however, it was evident that his life was fast ebbing away, and at three o'clock in the afternoon his closing eyes took their last gleam of time, amidst a scene of Christian resignation and peacefulness that can only accompany the transit of a just man's spirit. We have used the word "just," because to the lamented deceased it is peculiarly applicable. From his intimate connection, for about half a century, with that large establishment of which for more than 20 years he was senior partner, he had abundant means, if he so decreed, of exemplifying the qualifications of a grasping and selfish employer; in place of this, however, his great study was to seek the moral and religious enlightenment of the workmen, who, in the dispensations of Providence, had been committed to his care: and while they were required to do their duty, he never forgot that he was responsible to God to do his duty towards them. This was the beautiful secret that united the employer to the employed, and this it was that helped to shed a lustre over the dying scene. The admirable management that Mr. Ransome so materially helped to maintain in the establishment, tended much to insure its success; so that whilst its manufactures have found their way into almost every niche of the world where there are tillers of the soil, there have gone with them a tribute to the worth and integrity of the manufacturers. As a townsman, the deceased was an exemplary member of society; the various local movements that tended to advance the interests of the town, to enlighten the people, and to ameliorate poverty and suffering, had his hearty and consistent support. He had a smile for worth, wherever it manifested itself; and talent, however humble, received from him a cheering encouragement. In this life there is a rich return to him who does his duty, and the deceased was spared long enough to reap this grateful reward. The desires of his heart and the works of his hand had prospered, and he sunk to rest, knowing that his mantle would be worn by sons, of whom nothing better need be said, than that they are worthy of such a father. Mr. Ransome was in his 67th year.—The following lines from "Pawsey's Ladies' Repository for 1850," ascribed to Mrs. Arthur Biddell, of Playford, who is sister to the lamented deceased, deserve quotation on this occasion.

THE OLD FOUNDRY."

The furnaces fires are out, the lathes are still,
The engine puffs its fiery breath no more;
No longer now is heard the grunting mill,
No busy feet are trampling on the floor.

Some three-score years ago, an anxious man
Beside that furnace took his earnest stand,
Marking the fiery flood when first it ran
Flaming and sparkling o'er the sable sand

From its hot prison, to its destined mould,
As from his bosom burst the father's prayer,
That he might prosper, and his sons behold
And share the fortune which he founded there.

His was a hopeful spirit—he had felt
The bitter pangs of unrequited care,
Like his own metal, though his heart might melt,
'Twas but a brighter, better form to wear.

He lived to prove how industry may tread
A height proud indolence may never claim;
His sons have prospered, as their father sped,
And far and wide resounds that father's name.

For sixty years those furnace fires were glowing,
The Old Man sleeps—his children's children now
See on another spot their engines going,
A cloudy coronet on Orwell's brow.

Yet ere those fires were quench'd, the iron tower
Begirt by dusky forms, a peaceful band,
Saw its last stream the ancient furnace pour,
And the last ploughshare glittering in the sand.

Silent and sad they saw the metal gleam,
The 'melting mood' their simple hearts confess'd,
Some tear-drops hallowed that last parting stream,
And transient sorrow touched each rugged breast.

Old Foundry! I have known thee long and well,
And childhood's memories haunt thy blacken'd walls,
Hark to the sound! it is thy passing bell,
How many a thought its iron tongue recalls.

Of once and thine!—thy curfew notes have pealed—
The fires are out—and silence reigns alone,
Where busy hundreds thy dark chambers filled,
And great engines gave a stirring tone.

Change we the scene—where Orwell's waters glide,
Bright with the fires surrounding banks display,
While sail and steamer crown the flowing tide,
Rich with materials brought and borne away.

There toy successor boldly rears its head,
Long may it flourish, and its memory be
As dear to kindred hearts, when years are fled,
As thine, Old Foundry, ever will to me. J. B.

Ipswich Paper.

Calendar of Operations.

NOVEMBER.

Dobbie Farm, Nov. 26.—Since our last report we have been sowing Wheat at such times as the weather permitted, which upon the whole has been very favourable; we have still a little to sow after Turnips, and as the ground is rather interior we put in 4 cwt. of rape dust per acre, mixed with about 20 bushels of coal ashes, which we purchase at 1½d. per bushel; they contain a large proportion of night soil and other materials common in the cleanings of a town, and added to the rape-dust might be expected to tell favourably on the crop. The Wheat that was sown earliest is looking well; perhaps it looks thick at present but I do not think it will turn out by any means too thick. We use about 2 bushels per acre, drilled 6 or 7 inches apart. If the land is not very clean perhaps it might be drilled at a wider distance, to admit of hoeing in the spring, but still if the season should prove wet, and prevent the horse-hoe being used, it will be better for the drills being pretty close together, for let the land be ever so free from perennial weeds, still land in good order will grow some sort of crop, and, like the human race, if not fully occupied to good purpose, will assuredly not be idle; and on the whole I would say, let the land be clean, and the drills close together, and their less will depend on the spring hoeing. We have been engaged getting up our Mangold Wurzel, which turns out a very good crop; we are also engaged in ploughing up the land for next year's Turnips, &c.; and as the Turnips are cleared we are putting in the Wheat, which we hope to be able to finish this week. We may sow a little spring Wheat on the land that is cleared too late for the winter sort. We have to men pulling, topping, and loading the Mangold Wurzel into the carts, which they do at 7s. 6d. per acre; and Turnips, if pulled, topped, and the shaws root cut off, and thrown into the carts, cost about 3s. per acre. We shall not be far from the mark in average crops of Turnips and Mangold Wurzel to say 8s. for pulling, adding 2s. for cutting off the tops, 2s. for cutting off the fibrous roots, 2s for loading. This I have found by trial to be such a piece that a man may earn 2s. in a day of 10 hours. The weather has been very mild all the autumn, but it now appears to be turning colder. *G. S.*

South Hazelrigg Farm, Nov. 24.—We have to record one of the finest sowing seasons for Wheat ever known, indeed, the weather has been so uniformly fine during the past three months, that scarcely a day has been lost for agricultural operations, which has brought the farm-work into an unusually forward state. We have finished sowing what may be termed our autumn Wheat, but shall continue to sow Wheat at intervals during the winter when the weather permits, as fast as the land can be cleared of the Turnips fed off by sheep. During the past month the horse labour upon the farm has been working at the thrashing machine, dung-carting and ploughing for Wheat, carting Carrots, cleaning the land in readiness for Wheat sowing, also ploughing and subsoiling for next year's Carrot crop, and preparing for Potatoes, in readiness for spring planting, by carting the manure on the land and ploughing in crossways, thus to remain during winter. Our labourers have been employed in various kinds of farm-work, attending the thrashing-machine, drawing in the meadow hay, lifting the Carrot crop, the produce being abundant; a portion of them weighed, gave after the rate of 25 tons of roots per acre, and 7½ tons of tops. We find the Carrot greens very nutritious for our dairy cows and young cattle, having fed them with it for some time past, and, for the sake of economy in their use, we commenced raising the crop earlier than usual. The work for the men during the next fortnight will in a great measure depend upon the weather; but, the general work of the farm being in a forward state, the threshing machine will be nearly constantly employed. The sheep and cow stock have generally done well lately, indeed, much has been the mildness of the weather, that upon most farms there is more than sufficient food for the stock during the winter months, and plenty of good Turnips may now be had for feeding, without payment for them. Our shepherds have now full employment in tending the flocks, our horned ewes have nearly finished lambing, the

short of bulk and now kept on full feed on Swede Turnips. We are using white Cheviots for our early lambs, cut with Garland's machine and given intermingle, and we find they eat them in preference to the Swedes; indeed, whilst they can get Regrets we find they refuse Swedes altogether, and we think it likely the Cheviot will make a very choice lamb. Our South-down ewes are beginning to show for lambing, and we expect a good number to fall in about a fortnight; we should say the best Scotch or Down ewes are full a fortnight earlier in lamb than last year. The Turnip crop seems to continue to fill up and improve in weight, in consequence of which we expect an excellent display of roots at the ensuing Root Show and Annual Meeting of the Botley and South Hants Farmers' Club, to be held on the 17th of December next. *J. H.*

Notices to Correspondents.

Beech-mast, Scarcity of: *E M C.* says, having the care of a large stock of pigs, and, being anxious to make the most of them, I was on the look out for the falling of the Beech-mast, to take advantage thereof for feeding; but find there is not a single one to be seen here in a large plantation of Beech. May I ask is this general?

Black Barley: *Cornwall.* They say it may be sown before winter. At all events the first dry time after winter will not be too early. Sow from 6 to 8 pecks per acre.

Cumberland Carts: *J.P.* John Hogg, or John Postlethwaite, Keswick.

Dairy Farming: *Subscriber.* The main profit depends upon seeing that your cows are milked thoroughly. The details of cheese making are too long to give here, but you will find them in the reports of Cheshire and Gloucestershire—the former published in a late volume of the "English Agricultural Society's Journal," the latter about to be published. If the thing is not customary with you, you will, at all events at first, find it cheaper to buy than to make.

Farm Calendar: *S S.* We know of no good one.

Forage: *L B S.* We doubt if the green tops would be rotten by spring, if mixed with lime. If there are a lot of them, they would be more likely to be rotten laid in a heap without lime. But if woody they should be burnt.

Gutta Percha: *C J W C.* Tubing of this material buried in the earth, has really been found to endure, and has been applied to the conveyance of liquid manure from a tank.

Hungarian Turnip: *J Black.* Thanks. It is a round flat bulb, with scarce erect growing leaves, said by Lawson to deserve further trial.

Lambs: *Cymro.* We should rear to put them on Rape alone, even though they had been on Turnips already. But give them some hay too, and you may do it safely.

One Acre: *A Sub.* In the ordinary course of farming, your land having been pastured two years, would come in for Oats or Wheat, without manure.

Shaded Ground: *Pea-and-dab.* Cabbages will grow. Jerusalem Artichokes will grow.

Pickling: *Cleriens.* The saltpetre is said to open the flesh to receive the salt. The sugar, we imagine, is added to affect the taste. We don't know the particular purpose of bay salt, unless its excellence be affected by the size of its crystals, which may make it act more slowly, and therefore, possibly, more surely. Common salt alone will pickle pork. Fresh pickle should be applied at intervals. How long pork may be thus preserved we do not know.

Pigs: *H T.* Bleeding and purging is certainly the best treatment for the symptoms you describe. The brain is evidently affected, but whether primarily or through the medium of the stomach, the absence of any post mortem account prevents us from determining. We would recommend some modification of the diet as a precautionary measure. *W. C. S.*

Spade Husbandry: *Midlothian.* We know of no published Calendar of Operations for a spade farm; but will see that the forthcoming Cyclopædia of Agriculture contains one sufficiently full for the purpose. Dr. Yellowly published a pamphlet on the subject.

Wheat after Peas: *J F A.* We know no reason why Barley should succeed better than Wheat after Peas. But there may be reasons in some localities which do not exist in others, and it is well to have great respect for opinions based upon local circumstances. That is to say, the circumstances should be altered before the local practice be materially altered. And it is possible that the little respect often exhibited by Scotch agriculturists for opinions based on English experience, may have something to do with the want of good feeling towards them which they sometimes suffer.

Winter Beans: *East Anglian.* Six pecks per acre, in rows 26 inches apart, will place the seeds about 1½ or 2 inches apart. To drill them is a perfectly satisfactory method. If manured the preceding year, the land will not need manure for the Bean crop. Pasture, broken up and subsoiled, the turves being now rotten, will not need farm manure—your questions were too late for last week.

*** Communications reaching town after Wednesday cannot be answered till the following week.

Markets.

COVENT GARDEN, Dec. 1.

Hothouse Grapes continue to be well supplied, considering the season. Pine-apples are hardly sufficient for the demand. Filberts and Walnuts are abundant, Chestnuts plentiful, Oranges and Lemons more abundant. Good table Pears are scarce. Pomegranates may be obtained at 4d. each. Among Vegetables, Turnips are good and plentiful; Carrots the same. Cauliflowers and Broccoli are sufficient for the demand. Potatoes have not altered since our last account. Lettuces and other salading are plentiful. Mushrooms fetch from 1s. to 1s. 6d. per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropæolums, Chrysanthemums, Fuchsias, Primulas, Camellias, Cinerarias, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Oranges, per 100, 5s to 12s
Grapes, hothouse, p. lb., 3s to 6s	Almonds, per peck, 6s
— Portugal, per lb., 9d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 2s to 4s	Walnuts, p. 180, 1s 6d to 2s
— per half sieve, 3s to 12s	— p. bush., 16s to 24s
Apples, kitchen, p. bsh., 2s to 4s	Filberts, per 100 lbs., 45s to 60s
Lemons, per doz., 1s to 2s	Nuts, Bar., p. bush., 20s to 22s
— per 100 14s to 12s	— Brazil, p. bsh., 12s to 16s
Oranges, per doz., 9d to 1s 6d	Kent Cobs, 60s to 65s p. 100 lbs.

VEGETABLES.

Cabbages, p. doz., 6d to 1s	Onions, p. bushel, 3s to 4s
Cauliflowers, p. doz., 2s to 4s	— Spanish, p. doz., 1s 6d to 4s
Broccoli, p. doz. bundl., 4s to 6s	Shallots, per lb., 4d to 9d
Greens, per doz., 1s 6d to 2s 6d	Garlic, per lb., 4d to 6d
Brussels Sprouts, p. hf. sieve, 3d 6d to 1s	Artichokes, p. doz., 1s 6d to 3s
Sorrel, p. hf. sieve, 6d to 9d	Lettuce, Cab., p. sc., 4d to 9d
Potatoes, per ton, 80s to 100s	— Cos, do., 6d to 1s
— per cwt., 3s to 4s	Endive, per score, 1s to 1s 6d
— per bush., 2s to 3s	Tomatoes, p. hf. sieve, 3s to 4s
Turnips, p. doz. bun., Leadenhall 2s 6d	Mushrooms, p. pot, 1s to 1s 3d
Red Beet, per doz., 1s to 2s	— per bush., 3s to 4s
Horse Radish, p. bdl., 2s to 4s	Small Salads, p. pun., 2d to 3d
Cucumbers, each, 9d to 1s	Fennel, per bunch, 2d to 3d
Leeks, per bunch, 2d	Savory, per bunch, 2d to 3d
Celery, p. bundle, 3d to 1s 3d	Thyme, per bunch, 2d to 3d
Radishes, p. 12 bunches, 1s to 2s	Parsley, p. doz. bun., 3s to 4s
Watercress, per doz. bunches, 4d to 6d	— Roots, p. bdle., 1s to 1s
Carrots, per bun., 4d to 6d	Marjoram, per bunch, 2d
Spinach p. sieve, 1s 6d to 2s	Mint, per bunch, 2d
	Basil, per bunch, 2d

SMITHFIELD, Monday, Nov. 26.

There was a much larger number of beasts taken room for than were actually in the market, this caused a slow trade at commencement for all kinds; but the choicest qualities and being over abundant were eventually freely bought at about late rates. Several secondaries, however, remain unsold, and sales effected for this description were at rather lower prices. The number of Sheep is not excessive; a large supply to the dead markets caused a very slow trade, and late quotations cannot be fully realised. Calves are sold slowly, but are not lower. From Holland and Germany we have 503 Beasts, 2550 Sheep, and 58 Calves; from Spain, 122 Beasts: from France, 60 Sheep and 14 Calves; from Leicester and Northampton, 2700 Beasts; and 100 from Cambridge.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	10 to 4	0	
Best Short-horns	3	8 — 3	10	
2d quality Beasts	3	8 — 3	4	
Best Downs and Half-breds	4	0 — 4	2	
Ditto Shorn				
Beasts, 4220; Sheep and Lambs, 25,700; Calves, 106; Pigs, 298				

Per st. of 8 lbs.	s	d	s	d
Best Long-wools	3	4 to 3	8	
Ditto Shorn				
Ewes & 2d quality	3	8 — 4	2	
Ditto Shorn				
Lambs				
Calves			4	4
Pigs			4	4

FRIDAY, Nov. 30.

The number of Beasts is again larger, and trade is excessively bad; the changeable weather is bad for slaughtering; all kinds are about 2d. per 8 lbs. lower, and several remain unsold. We have also a larger supply of Sheep, and but few wanted; prices are consequently lower. Calves and Pigs also meet with a dull sale at lower rates. From Holland and Germany there are 384 Beasts, 1870 Sheep, and 150 Calves; from Scotland, 80 Beasts; from Leicester and Northampton, 350; and 150 Milch Cows from the home counties.

Per st. of 8 lbs.	s	d	s	d
Best Scots, Herefords, &c.	3	8 to 3	10	
Best Short-horns	3	6 — 3	8	
2d quality Beasts	2	6 — 3	2	
Best Downs and Half-breds	3	10 — 4	0	
Ditto Shorn				
Beasts, 1182; Sheep and Lambs, 5,440, Calves, 263; Pigs, 280.				

Per st. of 8 lbs.	s	d	s	d
Best Long-wools	3	4 to 3	8	
Ditto Shorn				
Ewes & 2d quality	2	6 — 3	0	
Ditto Shorn				
Lambs				
Calves	2	8 — 4	0	
Pigs	3	0 — 4	0	

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Nov. 29.

Prime Meadow Hay	65s to 70s	Clover	60s to 80s
Inferior ditto	50 60	New Clover	— —
Rowen	50 55	Straw	21 24
New Hay	— —		J. Cooper.

Trade exceedingly dull.

CUMBERLAND MARKET, Nov. 29.

Prime Meadow Hay	68s to 72s	Inferior	60s to 75s
Inferior ditto	50 63	New Clover	— —
New Hay	— —	Straw	26 30
Old Clover	84 90		Joshua Baker.

WHITECHAPEL, Nov. 29.

Fine Old Hay	60s to 68s	New Clover	—s to —s
Inferior ditto	50 55	Inferior ditto	50 63
New Hay	— —	Straw	20 24
Old Clover	75 88		

HOPS.—Friday, Nov. 30.

Messrs. Pattenden and Smith report that the demand continues good for new Hops at improved prices. Yearlings and old Hops are more in demand.

Present prices:			
Mid. and East Kents	p. cwt. 160s to 252s	Farnhams, p. cwt.	210s — 252s
Weald of Kents	140 — 168	Yearling Kents	60 — 110
Sussex	126 — 147	Yearling Sussex	50 — 100
		Old Hops	20 — 40

POTATOES.—Saturday, Nov. 30.

The Committee report that the arrivals during the past week have been considerable, particularly from the Continent, which exceeds 3000 tons. All Potatoes have been heavy during the last week, with the exception of choice York Regents, which still command a high figure. The following are this day's quotations:—York Regents, 90s. to 100s. per ton; Wisbeach 60s. to 70s.; Scotch, 60s. to 70s.; Scotch cups, 50s. to 60s. French whites, 60s. to 70s.; Flemish do., 50s. to 60s.; Belgian do., 50s. to 55s.

MARK LANE.

Monday, Nov. 26.—The supply of English Wheat by land carriage samples this morning was moderate. Essex white realised the prices of this day se'nnight, which were barely supported for the red. Kent whites must be written 1s. and red 1s. to 2s. per quarter lower. Holders of fine old foreign inquired upon former prices, but inferior qualities, as also new, could only be disposed of in retail, at a decline of 1s. per qr. upon the prices of Monday last.—English malting Barley must be noted 1s. to 2s. per qr. lower; distilling qualities fully as dear, but inferior grinding is rather cheaper.—Beans and Peas are unaltered in value.—The Oat trade is heavy, but we observe no variation in prices.

Friday, Nov. 30.—The arrivals of English Grain during the week have been small, foreign Wheat good, Barley and Oats very large, and having but a small attendance of buyers, trade was heavy for all articles. In Wheat so little was done that prices are nearly nominal.—Grinding and secondary malting Barley are 1s. per qr. cheaper; other qualities unaltered in value.—Beans and Peas remain as last quoted.—All but the finest qualities of Oats are a slow sale, at a decline of 2d. per qr. —The Flour trade is very heavy.—Floating cargoes of Galatz Indian Corn are held firmly at 27s.; Ibraila at 28s.—The Wheat trade has continued dull throughout the country since the 23d inst., and a decline of 1s. to 2s. per qr. has been pretty general, particularly on home-grown and inferior qualities. Barley has also declined fully 1s. per quarter in the principal markets.

Liverpool, Friday, Nov. 30.—There was a poor attendance at this day's market, and the business was of the most retail character. In prices we make no change; having, however, a small show there was a firmer look for the best quality of Irish Wheat. Indian Corn offered very sparingly made extreme prices. Oatmeal 20s. 9d. to 21s. 3d. per 240 lbs. Arrivals are very moderate.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas
Oct. 20	41s 1d	28s 2d	17s 8d	24s 9d	29s 5d	31s 7
— 27	41 7	28 5	17 2	23 8	29 11	29 7
Nov. 3	41 6	28 7	16 10	22 9	29 10	30 11
— 10	40 7	28 8	16 11	22 6	29 4	30 7
— 17	40 6	28 8	16 11	23 7	29 7	31 8
— 24	40 4	28 3	17 0	24 0	29 8	30 7
Aggreg. Aver.	40 11	28 5	17 0	23 6	29 5	30 7
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

Prices.	Oct. 20.	Oct. 27.	Nov. 3.	Nov. 10.	Nov. 17.	Nov. 24
41s 7d	...		...	...	...	...
41 6	...		...	...	...	...
41 1		...	...	...	...	...
40 7		...	...	...	...	...
40 6	...	...	...	...	...	...
40 4	..	..	..	...	...	..
	...	...	...	...	...	

PRICES CURRENT.	London. Nov. 19 qr.	London. Nov. 26 qr.	Liverpool. Nov. 20. 70 lbs.	Liverpool. Nov. 27. 70 lbs.	Wakefield. Nov. 16 qr.	Wakefield. Nov. 23 qr.	Boston. Nov. 21 qr.	Boston. Nov. 28 qr.	Birmingham. Nov. 22. 62 lbs.	Birmingham. Nov. 29. 62 lbs.
Wheat—										
New, red ...	40 to 43	40 to 43	5 10 6 3	5 10 6 3	36 to 44	35—44	32 to 39	32 to 38	5 0 5 6	4 9 5
„ white ...	42—48	42—48	6 4 6 8	6 4 6 8	41—45	41—48	36—45	36—45	5 4 6 1	5 2 5
Old, red ...	38—43	38—43	6 3 6 7	6 3 6 7	39—43	39—43	—	—	5 1 5 7	4 10 5
„ white ...	43—45	43—45	7 0 7 4	7 0 7 4	—48	—48	—	—	5 6 6 0	5 6 5
Foreign ...	36—52	35—52	4 4 7 2	4 4 7 0	36—48	36—48	—	—	4 8 5 8	4 8 6
			480 lbs.	480 lbs.						
Rye—Old ..	20—21	20—22	—	—	—	—	—	—	—	—
Foreign ...	20—23	20—23	—	—	—	—	—	—	—	—
Foreign meal	54.—6/	54.—6/	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	24—26	24—25	—	—	20—22	20—21	21—23	21—23	20—24	19—23
Malting ...	26—28	25—27	30s—31s	30s—31s	26—31	24—29	—	—	25—31	25—30
Foreign ...	18—26	18—25	—	—	21—26	21—25	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	35—38	35—38	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White ...	18—24	18—24	3s 2d 3s 3d	3s 2d 3s 3d	—	—	13—18	13—18	18—25	17—25
Black ...	16—22	16—22	2 2 2 7	2 2 2 7	—	—	—	—	17—18	16—17
Foreign	13—20	13—20	2 3 2 4	2 3 2 4	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	28—32	28—32	33s—	33s—	26—30	26—32	—	—	30—36	30—36
									196 lbs.	196 lbs.
Grinding ...	—	—	27 —28s	27 —28s	—	—	—	—	11—12	11—12
Foreign ...	24—32	24—32	29 —30	29 —30	—	—	—	—	—	—
Beans—										
New, small ...	24—30	24—30	—	—	30—31	29—30	32—34	22—37	11—12	11—12
Old	—	—	33 —37	32 —37	32—33	32—33	32—34	32—34	14—15	14—15
Foreign ...	23—36	23—36	25 —34	25 —34	26—28	26—28	—	—	11—15	11—15
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	41—48	37—45	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9l. 12s	9l. 12s	7l. 15s—8l.	7l. 15s—8l.	—	—	—	—	—	—
Foreign ...	7l.	7l.	—	—	—	—	—	—	—	—
Indian Corn—	22—26	22—26	27s—29s	27s—29s	—	—	—	—	12—13	12—13
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	32—40	32—40	30—32	30—32	—	—	30—36	30—36	31—34	30—33
Weekly Averages and Imports.	Aver. Nov. 27	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	45 4	16570	40 6	11462	41 5	10820	37 5	3860	41 2	805
BARLEY ...	30 11	31590	28 3	1919	27 6	6623	23 11	322	27 3	2586
OATS ...	17 5	44810	16 11	6083	17 10	406	14 4	1498	17 7	—
RYE	22 0	—	23 7	—	—	—	—	—	—	—
BEANS ...	27 8	—	29 7	2143	31 7	798	26 5	487	32 2	1403
PEAS ...	31 9	—	30 7	522	33 0	289	—	—	33 0	1191
Signed {	*Kingsford and Lay.*		*Regar and Tunnicliffe.*		*Sanders and Dunns.*		*Thomas Wright.*		*T. and C. Stubbs.*	

Sales by Auction.

BROMPTON PARK NURSERY.

MESSRS. PROTHEROE AND MORRIS are favoured with Instructions from Mr. JOHN RAMSDEN and Mr. ROBERT DONALD, trustees to the above estate, to submit to an unreserved Sale by Auction, on MONDAY, Dec. 3d, 1849, and six following days, at 11 o'clock, the whole of the extensive and valuable STOCK of the BROMPTON PARK NURSERY, riding over 80 acres, lately carried on by GRAY, ADAMS, and HOGG, consisting of the well-known and celebrated Collection of Standard and Dwarf Maiden and Trained Fruit Trees, a rich assortment of Evergreen and Deciduous Shrubs, Ornamental Trees, American Plants, &c., together with the Greenhouses (with new and approved hot-water apparatus), Pits, Frames, Carts, and Utensils; also the stock of Seeds, Shop-counters and Drawers, Counting-house Desks and Fittings, Iron Safe, &c.—May be viewed prior to the Sale. Catalogues will be forwarded on application, by letter enclosing 12 postage stamps, to PROTHEROE and MORRIS, Leytonstone; they may also be had 1s. each (returnable to purchasers), on the premises; and of the principal Seedsmen in London.

TO GENTLEMEN, BUILDERS, NURSERYMEN, and Others.

MR. D. A. RAMSAY has received instructions to sell by Auction, on the premises, the Brompton Auction Ground, Brompton Nursery, Fulham-road, one mile from Hyde-park Corner, on MONDAY, Dec. 3, at 12 o'clock, from the Stock of a country nurseryman declining the business, a large quantity of Ornamental Trees, Deciduous Shrubs, Evergreens, Standard Roses, &c., with a quantity of Dutch Bulbs, Camellias, &c.—May be viewed the day prior and morning of Sale. Catalogues may be had the principal Seedsmen, and of the Auctioneer, Brompton.

TO NOBLEMEN, GENTLEMEN, FLORISTS, and OTHERS.

MR. D. A. RAMSAY has received instructions to sell by Auction, on the premises, the Brompton Auction Ground, Brompton Nursery, Fulham-road, London (1 mile from Hyde Park Corner), on THURSDAY, December 6th, at 12 o'clock, a very choice Assortment of Pinks, Picotees, and Carnations; also a quantity of Chrysanthemums, specimen Camellias, &c.; a quantity of Dutch Bulbs of the usual sorts, about 200 Standard Roses, a few large Rhododendrons, variegated and green Holly, 100 Magnolia grandifloras, &c.—May be viewed the day prior and morning of sale. Catalogues to be had of the principal Seedsmen, and of the Auctioneer, Brompton Nursery, Fulham-road, Brompton, London.

MR. HASLAM will sell by Auction, at the Auction Mart, on TUESDAY, December 4, WEDNESDAY, December 5, FRIDAY, December 7, some fine specimens of Camellia, Standard, Weeping, and Pillar Roses, Rhododendrons, Azaleas, Epacris, Shrubs, Greenhouse Plants, Trained Fruit Trees, Currants, Gooseberries, &c., the surplus stock of an English florist; also, on each day, a case of Dutch Bulbs.—Catalogues at the Mart, and of the Auctioneer, Epping.

GREY GOOSE FEATHERS. 1s. per lb. — Bed Feathers were never so cheap as at present.

HEAL AND SONS' Present Prices are:—

Poultry	0s 8d	Best Grey Goose ...	1s 10d
Grey Goose	1 0	White ditto ...	2 2
Foreign ditto	1 6	Best Dantzic ditto	3 0

Purified by Steam, and warranted sweet and free from dust.

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December 8. 97, Farringdon-street.

THE SEASON FOR PLANTING BULBS.

H. GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to remind the Nobility, Gentry, and Amateurs, that this is the Season for Planting Bulbs generally, and that he can supply the following kinds of the best quality, and at moderate prices:—TULIPS, HYACINTHS, LILIUMS, GLADIOLUS, and CROWN IMPERIALS. RANUNCULUSES and ANEMONES are best planted in the Spring. He has also a fine Collection of GERANIUMS, AURICULAS, and NEW PLANTS. He begs to recommend the varieties of LILIUM LANCIFOLIUM for planting in SHRUBBERIES, as they are quite hardy and highly ornamental.—His Catalogue of Bulbs, &c., may had on application.

FREE TRADE IN THE SEED TRADE AT LAST.

J. G. WAITE begs to inform his country friends that during this week there has been a great reduction in the prices of Seeds; in consequence, fresh Catalogues will be forwarded, and can be had on application.

J. G. W. has just received 50 tons of Brown Deptford Onion, of very superior quality—grows 90 per cent. Sample and price of which can be had on application; lower than any house in London.

N.B.—J. G. W recommends those who buy White Onion Seed to try the growth before sowing it, as it is well known there is a great deal of very inferior quality of last year's in the market. The White Onion J. G. W. has purchased this year is grown from selected bulbs, and warranted to insure a good crop.

J. G. WAITE, Seed Merchant, 181, High Holborn, London.

MESSRS. PLATZ AND SON beg to inform the readers of the *Gardeners' Chronicle* that their LIST of FLOWER, KITCHEN-GARDEN, and other SEEDS, is now ready for delivery, and that copies of the same may be had at the Office of this Paper.—Erfurt, Prussia.

BENJAMIN R. CANT, St. John's-street Nursery, Colchester, has now ready for delivery, strong well-established plants of the following:

GERANIUM, HOYLE'S CRUSADER ... ... 7*s.* 6*d.* each.
,, TOPPING'S BRILLIANT ... ... 7*s.* 6*d.* ,,
FUCHSIA SPECTABILIS ... ... 7*s.* 6*d.* ,,

The Three for 18*s.*, carriage and package free to London. Post-office orders, or reference, requested from unknown correspondents. The usual discount to the trade.

NEW GERANIUMS AT VERY LOW PRICES.

BASS AND BROWN beg to refer to their Advertisement of New Varieties last sent out, of which they have still fine strong plants, see *Gardeners' Chronicle*, dated October 20th and 27th. They also beg to refer to their Advertisement of CHOICE FLOWER ROOTS, of the same dates. Their Descriptive Priced Catalogue of Flower Roots, Select Roses, Hardy, Herbaceous, and Climbing Plants, &c., may be had on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER has much pleasure in announcing he has published a Descriptive Catalogue of his extensive collection of RHODODENDRONS and other American plants, &c., which will be forwarded on application.

JACKSON'S IMPROVED KIDNEY, THE MOST PROLIFIC OF EARLY POTATOES.

THOMAS JACKSON AND SON have much pleasure in announcing that in consequence of their having a very heavy crop of their IMPROVED KIDNEY POTATO, they have reduced its price from 15*s.* to 10*s.* per bushel. All orders of one bushel or more delivered free in London, or at any station on the South Western Railway.

Nursery, Kingston, Surrey, Dec 8.

JAMES WHOMES takes this opportunity to thank his Patrons for their kind favours, also to inform his Correspondents that, finding HOYLE'S "SPARKLER" GERANIUM a source of great disappointment, he purposes sending FREE to each and all who kindly purchased it of him last season a plant of Crusader, or any one plant of either kind named in his Catalogue of this autumn (with the exception of the eight last named on the first page of his List, beginning from Arnold's Virgin Queen), to compensate in a degree for the failure of Sparkler, by writing to signify the sort they wish to be sent

Royal Pelargonium Nursery, Windsor, Dec. 8.

AMERICAN PLANTS.

HOSEA WATERER begs to announce he has just published a New and Complete Catalogue of his AMERICAN and CONIFEROUS PLANTS, which may be had on application, inclosing two stamps for postage to

HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

"PRINCE ALBERT" SEEDLING GOOSEBERRY.

THOMAS WATSON begs to inform the trade and the public generally, that he is now prepared to send out fine strong plants of this splendid Seedling GOOSEBERRY, at 4*s.* per plant. For every dozen ordered, 17 plants will be sent, 8 plants for half-dozen, but no allowance below that number. Post-office orders payable to THOMAS WATSON, Sputal, Heaham, Northumberland, will meet with prompt attention.

T. W. begs to refer the public to extracts from the Gardeners and Farmers' Journal, for the 18th August, 1849, also the *Gardeners' Chronicle* of the same date.

From the Gardeners and Farmers' Journal.—GOOSEBERRIES: *T. W.* Your seedling, which we noticed last year, and had occasion to speak highly of, we have again examined, and can now report confidently with respect to flavour, and therefore say it belongs to the class of first-rate dessert Gooseberries. As we stated before, the colour is red, resembling the Warrington Red, but larger, and round rather than oval. We think this is likely to become one of the most useful and popular of our Gooseberries.

From the *Gardeners' Chronicle*.—GOOSEBERRIES: *T. W.* Your seedling, about the size of the Red Warrington, round, hairy, dark red, has a good appearance, but, owing to long carriage, we cannot form a correct opinion of its flavour.

The Sputal, Hexham, Northumberland.

MESSRS. J. & H. BROWN offer to the Nobility and Gentry the following desirable plants, which they will forward to any part of the Kingdom or the Continent.

HARDY AMERICAN PLANTS.	s.	d.
Andromeda floribunda, fine established plants, well set with bloom, per dozen	20	0
25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort, by name	20	0
25 American Azaleas, do. do. do.	15	0
6 Andromedas of sorts, including floribunda	8	0
6 Kalmias, one of a sort, by name	6	0
6 Ledums, do. do.	6	0
25 Hardy American Shrubs, one of a sort, by name	10	6
12 Rhododendrons, including scarlet, white, and rose, hardy varieties	12	0
New Hardy Yellow Rhododendrons, each 7*s.* 6*d.* to	10	6
Hybrid Rhododendrons, extra fine, with 30 to 50 bloom buds, each 2*s.* 6*d.* to	3	6
6 Fine Hardy Magnolias, one of a sort, by name	10	6
Hardy Heaths and Vaccinums, ditto ditto, per doz.	8	0
50 Dwarf Roses, on their own roots, by name	16	0
12 Tea-scented Roses, one of a sort, by name, in pots	9	0
Standard and half-standard Roses, per dozen, 12*s.* and	15	0
Moss Roses, per 100	25	0
New Crimson Moss Rose, per doz.	6	0
Bourbon Roses, superior sorts, Rose La Reine and Perpetual Queen, per dozen	10	6
12 Greenhouse Azaleas, one of a sort, blooming plants	25	0
12 Choice Camellias, by name, ditto ditto	30	0
50 Choice Greenhouse Plants, one of a sort, by name	45	0
24 Choice Ericas, one of a sort, by name	15	0
Chrysanthemums of newest and best kinds, per dozen	6	0
* First rate Show Pinks, per dozen 6*s.* and	9	0
* First rate Carnations and Picotees, per dozen 9*s.* and	12	0
First rate Pansies, per dozen 6*s.* and	9	0
* Cinerarias and Calceolarias, show varieties, per dozen, 6*s.* to	9	0
* 6 bulbs of the following beautiful Lilies, viz., Lancifolium album, punctatum, rubrum speciosum, intermedium, venustum, sanguineum, eximium, superbum, belladonna, longiflorum, and japonicum, for	12	0

CHOICE FRUIT TREES.

Fine Dwarf and Standard Trained Peaches, Nectarines, Apricots, Plums, Pears, and Cherries; the best and most approved sorts of these respective kinds, true to name, 2*s.* 6*d.* each, or, per dozen	24	0
Untrained or maiden ditto, 1*s.* 6*d* each, or, per dozen	15	0
Fine Gooseberries, Currants, and Raspberries, per dozen	3	0
Strong Vines, Figs, and Apples, per dozen	15	0
Filberts, new, thin shell and red skin, per doz.	3	0
Cryptomeria Japonica and 3 Choice Hardy Pines, for	10	0
Glycine sinensis, extra fine in pots, 15 to 30 feet each	3	6

Those marked thus * can be sent by post; also Lists of Greenhouse, Stove, and Orchidaceous Plants, and Garden Seeds of all kinds.

Albion Nursery, Stoke Newington, London, Dec. 8.

MOSS ROSE, "LANEII."—Standards 3*s.* 6*d.* each Dwarfs 2*s.* 6*d.* each.—The Catalogues of Roses may be had by enclosing two penny stamps.

The Nurseries, Great Berkhampstead, Herts.

NEW AND ESTEEMED FRUITS, which ought to be in every collection.

PEARS.	Pyramids on Quince Stocks.	Dwarfs on Pear Stocks.
1 Belle de Noel, December and January	2*s.* 6*d*	2*s.* 6*d.*
2 Bergamotte d'Esperen, April and May	3 6	2 6
3 Beurré Bretonneau, May and June	5 0	5 0
4 Beurré Giffart, August	2 6	1 6
5 Beurré Gris d'hiver Nouveau, February	2 6	1 6
6 Beurré Winter (Rivers's) Feb. and March. A seedling from Easter Beurre, free shriving and very hardy	10 6	10 6
7 Cassante de Mars, April to July	5 0	5 0
8 Crassene d'hiver, Brunsau, March	2 6	1 6
9 Doyenné d'été, July, the best early Pear	2 6	1 6
10 Doyenné d'hiver, Nouveau, Jan. to May	2 6	2 6
11 Doyenné Goubault, January to March	3 6	2 6
12 Josephine de Malines, February to May	3 6	2 6
13 Onondaga, or Swan's Orange, October	3 6	2 6
14 Soldat d'Esperen, January	3 6	2 6
15 Suzette de Bavay, March to May	3 6	2 6
16 Triumphe de Jodoigne, very large, Dec.	3 6	2 6

The above, with the exception of No 7, are all melting Pears of first-rate quality, full descriptions are given in Descriptive Catalogue of Fruits, sent per post, free, for four stamps. They are all hardy, and succeed well as Pyramids.

APPLES.	Pyramids.	Dwarfs.
1 Autumn Compote (Rivers's), October	2*s.* 6*d*	2*s.* 6*d.*
2 Belgian Purple, or pomme	....	3 6
3 Cloth of Gold (Esperen), September	....	5 0
4 Early Favorite* (Rivers's), July	2 6	1 6
5 Early Prolific* (Rivers's), end of July	2 6	1 6
6 Hulme's Superb*, very large, Sept.	2 6	2 6
7 Jefferson*, most excellent, September	3 6	3 6
8 Quetsche St. Martin's*, October	2 6	2 6
9 Reine Claude de Bavay*, September	2 6	2 6
10 Reine Claude d'Octobre*, or October Green-gage, October	2 6	2 6
11 Coe's Late Red*, October to November	2 6	1 6
12 De Montford*, August	2 6	2 6

The above are all hardy varieties, and bear well as Standards or Pyramids. Of trees marked thus *, dwarf trained trees can be supplied at 3*s.* 6*d.* each

THE LARGE FRUITED MONTHLY RASPBERRY.

Fruit of this fine autumnal bearing Raspberry were exhibited at the meeting of the Horticultural society, November 6th, and obtained a Certificate of Merit. Like other Raspberries, it will not give a full crop of fruit the first season after planting, but requires to be established one year, after which it will bear most abundantly from August to November. Canes 6*s.* per dozen, or 40*s.* per 100

Belle d' Orleans, a new and fine very early Cherry, 3*s.* 6*d.* each.

SHRUBS &c., FOR SEA SIDE PLANTING.

Buplevrum fruticosum, a beautiful evergreen,	25*s.*	per 100.
Tamarix Africana, from the Atlas, a new and beautiful species	25*s.*	,,
Tamarix indica	25*s.*	,,
Tamarix hibernotica	25*s.*	,,
Tamarix gallica	12*s.* 6*d.*	,,
Evergreen Oaks (Quercus Ilex) from pots	25*s.*	,,
Pinus maritima, from pots	25*s.*	,,
New Lucombe Oaks, 2 to 3 feet	12*s.* to 18*s.*	per doz.
Ditto ditto, from pots	24*s.*	,,

THOMAS RIVERS, The Nurseries, Sawbridgeworth, Herts.

ORCHIDS.—Any person having duplicates of ORCHIDS to dispose of, may hear of a purchaser by addressing a note, with a list of names and prices, to A. B., care of Mr. Pybus, Stationer, &c., Barnsley, Yorkshire

MANNINGTON'S PLARMAIN.

JAMES CAMERON, NURSERYMAN and FLORIST, returns his best thanks to his friends and the public in general for their liberal support, and begs to say he has now for sale a sufficient quantity of the above valuable APPLE, and is thus enabled to offer them at so reduced a price as to ensure them extensive cultivation. It is a middle-sized variety, and different from any in cultivation, and remarkable for its rich sugary and aromatic flavour, superior in every respect to the Ribstone Pippin. It is in its height of flavour from January till the end of May, and a very good bearer. Strong dwarf maiden plants 5*s* each; the usual allowance to the trade. Remittances from unknown correspondents, previous to the trees being sent, by Post-office orders, made payable to JAMES CAMERON, Nurseryman, Uckfield, Sussex.

J. C. has also an extensive stock of Fruit and Forest Trees, Quicks, Evergreens, and Roses of first rate quality.

TO NURSERYMEN, PLANTERS, &c.

THOMAS KENNEDY AND CO., NURSERYMEN, Dumfries, beg to intimate to the Trade and others, that a part of their extensive Nursery Grounds being shortly wanted for building and other purposes, and in order to raise the ground cleared, they have commenced selling off (except their stock of fine healthy and well rooted transplanted TREES at reduced prices, viz:

200,000 Larch Fir, 1 to 2 feet,	20,000 Oak, 3 to 4 feet.
200,000 Do. do., 2 to 3 feet.	10,000 Alder, 3 to 4 feet.
250,000 Do. do., three transplant'd, 1½ to 2½ feet.	10,000 Birch, 2 to 3 feet.
10,000 Norway Spruce, 9 to 12 inches.	50,000 Hollies, 14 to 24 feet.
50,000 Norway Spruce, 1 to 2 ft.	10,000 Do., 2 to 3 feet.
50,000 Scotch Fir, 3 years old.	50,000 Horsebeans, 2, 3, and 4 feet.
50,000 Do. do., 4 years old.	10,000 Sycamore, 2, 3, and 4 ft.
50,000 Silver Fir, 9, 12, and 18 inches.	500,000 two years old White-thorn Quicksets.
10,000 Balm of Gilead.	500,000 six years old White-thorn Quicksets, extra strong.
30,000 Oak, 1½ to 2½ feet.	

A large Stock of Standard and Dwarf Fruit Trees, Gooseberry and Currant Trees, Evergreen and Flowering Shrubs, &c. Prices and samples will be furnished on application.

There is steam communication from Dumfries via Annan to Liverpool and Belfast twice a week, and railroad communication daily to all parts of the Kingdom.—Dumfries, Dec. 8.

MITCHELL'S ROYAL ALBERT RHUBARB still maintains its supremacy over every other kind, it being the earliest, finest-flavoured, and best coloured ever yet grown; a most prolific bearer, and free grower. For early forcing, it far surpasses all other kinds. If planted in a wine-cellar, or any place where the frost and light are kept from it, it will produce large stalks, of a magnificent red colour, in five or six weeks' time. W. M. has a large stock of roots, 1s. 6d. each; also Myatt's Linnæus, 1s. 6d., and Victoria, 9d. The usual allowance to the trade. Post-office orders made payable to WILLIAM MITCHELL, Enfield Highway, Middlesex, will meet with prompt attention.

TO PLANTERS AND THE TRADE.

THE SUBSCRIBERS beg leave to call the attention of Planters and the Trade to their extensive Stock of all sorts of FOREST, ORNAMENTAL, AND FRUIT TREES, EVERGREEN AND FLOWERING SHRUBS, particularly to their 1 and 2 years seedling and 1 and 2 years transplanted LARCH, grown from seed from the Tyrol; as also 2 years seedling and 1 and 2 years transplanted true native SCOTCH FIR, with a large stock of 2 and 3 years transplanted Thorns or Quicks. All of the finest quality and will be sold cheap.

Application may be made to either of their establishments. Catalogues will be sent when applied for, and references will be required with orders from unknown correspondents.

DICKSON and TURNBULL, Nurserymen, &c., Perth and Brechin, N.B. - Dec. 6

THE ROPE NURSERIES, near BEDALE, YORKSHIRE.

WILLIAM MAY, F.B.S., begs to offer, at Free Trade prices, the Plants, Shrubs, &c., as below, which he assures purchasers are all of the best quality—young, healthy, strong plants, free and well grown. His collection of Herbaceous Plants has long held a high celebrity for correctness and quality, and comprise upwards of 700 species and varieties, selected by W. M. for display in the flower garden, as also his stock of Hollyhocks, which he has been collecting and selecting for upwards of 20 years. The Hardy Shrubs are extensive in variety, being upwards of 500 species and varieties, and comprise all that is new and valuable, both deciduous and evergreen. To gentlemen forming Arboretums, this offers a very advantageous opportunity. The nomenclature adopted is after Loudon.

	s.	d.
Hardy Showy Herbaceous Plants, by name—per 100	30	0
Hardy flowering Deciduous & Evergreen Shrubs, do. „	40	0
Hardy Dwarf Garden Roses, of select sorts, do. „	30	0
Hollyhocks, fine double sorts, all shades of colour, do. „	20	0
Do., finest double, for exhibition, do. per doz.—	20	0
Heaths, fine Greenhouse sorts, bushy plants, do. „	12	0
Hard-wooded New Holland Plants, fine young bushy, do. per doz.	15	0
Indian Azaleas, splendid varieties, do. do. per doz.—	18	0
Calceolarias, very select show varieties, do. „	20	0
Do., very good of older sorts, do. „	12	0
Cinerarias, including Henderson's 1848 & '49 vars., do. „	15	0
Currants, May's large late Victoria or Ruby Castle „	6	0

The Selection left to W. M.

Also Seeds collected from the best sorts of 1849 of Pansy, Hollyhock, Antirrhinum, Cineraria, and Calceolaria, in packets at 2s. 6d. and 5s. each.

N.B. A general and extensive supply of every description of Nursery Stock, at very reduced prices.

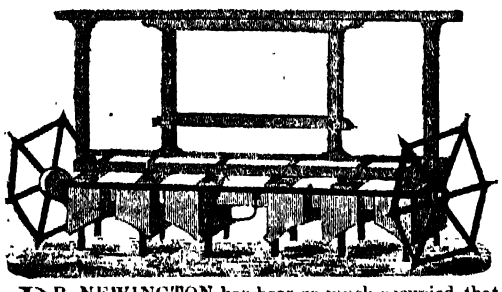
AGRICULTURAL ROOTS.

JAMES GROVE, Great Baddow, Essex, who obtained Prizes at the Chelmsford and Essex Agricultural Show for nine years in succession, begs to call the attention of gentlemen visiting the Smithfield Club Show to his stand of roots, No. 116.

POLMAISE HEATING.

J. LEWIS'S IMPROVED POLMAISE STOVES are delivered to the Railways in London, with Plans for fixing. For a Greenhouse 20 feet by 12, 6l. 10s., 30 feet by 14, 8l. 10s.; 60 feet by 18, 10l. 10s. Stoves for Churches, Schools, and Halls, according to size.—Hothouse Works, Stamford-hill, Middlesex.

DR. NEWINGTON'S WHEEL DIBBLE



DR. NEWINGTON has been so much occupied, that he has had no time to attend to Mr. J. Ross's Advertisement; he will refer to it, however, next week, if he has leisure. He regrets that Mr Ross should have had recourse to a false representation of the conduct of the judges at Norwich, and the performance of the implements in question. Mr. Mitchell, of 67, Charing Cross, is no longer Dr. NEWINGTON'S London Agent; it will be stated next week whom he has appointed.

Knole, Tunbridge Wells.

DR. NEWINGTON'S IMPLEMENTS.—Messrs. E. NOAKES and PENFOLD, manufacturers of Dr NEWINGTON'S Agricultural Implements, will exhibit at the Smithfield Show, at stands 61 and 62, six different kinds of Dibbling Machines, with and without wheels. It is particularly requested that the public will minutely examine these Dibbles, as it was stated in an advertisement of last week's *Chronicle*, that the cups did not deliver an even number of grains, and likewise that the depositors caught the grain before it escaped from the instrument; let the public judge for themselves, and let them examine JESSE ROSS'S implements, and compare them with Dr. NEWINGTON'S, let them then pronounce which are the faulty implements, which implements get stopped up with mud, and which catch the grain. In addition to these, Messrs. NOAKES and PENFOLD will exhibit the model of a lately Patented Drop-Drill, to render which one of the most simple and efficient implements of its kind, Dr. N. has bestowed much time and ingenuity. Another implement, which has just been patented, and with which the Doctor expects to banish altogether the unscientific and wasteful process of broadcasting or sowing by hand, will no doubt meet with that attention it deserves. It is calculated that as this implement will sow from three to four grains or more in a required, in every few inches in length, and in straight rows to admit of hoeing, that half the usual quantity of seed sown by hand may be dispensed with, and as a lad has nothing to do but see that the boxes be not empty, and to run as fast as he likes with the machine, it being remarkably light, and on wheels, he could get over 8 or 9 acres a day; and if he saved only 1 bushel to the acre the cost of the implement would be earned in two or three days by the saving in the seed alone. A high Horse Plough, a Hand Plough, and a Hand Subsoiler for small holders and allotments, together with a collection of all the lately improved Hand Drill Hoes, Cultivators and Scarifiers, with their various fittings, specimens of Straw, Corn, and Roots, sent from different parts, cultivated under Dr. NEWINGTON'S system, will also be exhibited.

VIOLETS.

THE SWEET-SCENTED "VIOLA ARBOREA," OR, PERPETUAL TREE VIOLET.—This Violet has proved itself to be the best yet in cultivation; the blooms are as large as the double blue Hepatica, and it possesses the following superior qualities over all others of the class to which it belongs: one bloom is quite as large as half-a-dozen of the single variety, one plant will produce 10 times the quantity of flowers; it will bloom for eight months, and also very long stem to the flower, which is a great advantage in picking; the plant itself will make a beautiful specimen for the greenhouse or conservatory, as they grow to a very large size when grown in pots. I saw a plant in March last, in a conservatory, which had the almost incredible number of 385 expanded blooms on it at one time, with hundreds of buds then to come; it had then been in bloom the whole of the winter. It scented the conservatory so much, that had a person not seen the plant, they would have thought a bed of Violets was growing there. The head of this truly beautiful plant measures 3 feet 8 inches in circumference, and 16 inches in height; the branches do not hang down, but stand out straight from the plant. It is worth notice, that many hundreds of the old double Violet, and others, have been sold for the Viola Arborea, which have turned out a great disappointment to the purchasers. Large bushy plants, 6s. per dozen, smaller ones, 3s. per dozen, or 20s. per 100.

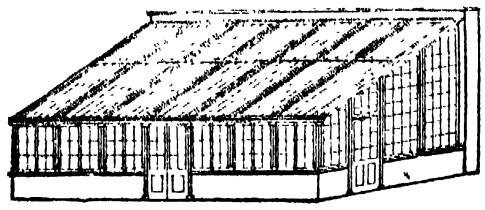
A remittance must accompany the order, either in cash, or in 1d. postage stamps to the amount. Any quantity of the above will be sent, postage and package free, to any part.

Sold by EDWARD TILEY, Nurseryman, Seedsman and Florist, 16, Pulteney-bridge, Bath, Somersetshire.

HEATING BY HOT WATER.

J. WEEKS AND CO., King's-road, Chelsea, Patentees and Manufacturers of HOT-WATER APPARATUS, Economical Boilers of all sizes; the fire warranted to last 15 hours without attention. To be seen in extensive operation at their Show Establishment, King's-road, Chelsea; and also at most of the Nobility and Gentlemen's Seats in the country, the London Nurseries, &c

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, FERNS, &c.



J. WEEKS AND CO., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. They have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing pits, &c., all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. By means of these houses, they are enabled to grow Stove, Greenhouse, Ferns, and other Plants, in such immense numbers, that they are sold at LESS THAN HALF-PRICE. Mats, Mushroom Spawn, and everything connected with the Nursery and seed departments; Plans, Estimates, and Catalogues forwarded on application.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority; or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c

THE IMPROVED "FLUE BOILER," AND FURNACE.

W. HILL begs respectfully to inform the numerous applicants for his "FLUE BOILER" of a small and intermediate size, that he shall be prepared, early in December, to supply sizes to suit every description of Apparatus, from that of 100 feet of 3-inch pipe to 2000 feet of 4-inch pipe. A List of Sizes and Prices will shortly be published. W. HILL guarantees his Boilers to be the most effective and economical of any in use.

Horticultural Works, Greenwich, Dec. 8

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15l. 10s.; a do. do. 15 by 10, 22l. 10s.; a do. do. 18 by 12, 28l. 10s.; a do. do. 21 by 12, 32l. 10s, including a plan for brickwork. 1½-inch Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 11½d. per foot; 2-inch do., 1s. per foot.—J. LEWIS'S Machine Hothouse Works, Stamford-hill, Middlesex.

GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 37, Soho-square, London.

See the *Gardeners' Chronicle*, first Saturday in each month.

"PEARL" BLACK GRAPE.

MR. JARVIS is disposed to Sell the above GRAPE, raised from an Eye received from Portugal six years ago, and the second of its bearing. It has been grown in a Vinery with plants, and as the plants were the first consideration, fires were not kept to bring it to that perfection as if it had been in a forcing-house. A bunch of Grapes, of a pound-and-a-half, was sent to Mr. Marnock, of the Royal Botanical Gardens, Regent's Park, for his opinion thereon; and he, being unable to identify it with any of the kinds in general use, sent it to a friend of his for his inspection, and the following is what he says of it:—"I cannot give you any information respecting it, excepting that I consider it new, or at all events not common in this country. It is new to me. The lobes of the leaves are remarkably deep. The bunch long and loose, well adapted for ripening with little heat. The berries resemble those of the Black Prince, and are sugary and rich." Such is the description of one of the best judges of fruit in this country. The stock to be disposed of, Twenty Vines raised from Eyes this year, and about Eighty Eyes to be taken from the parent Vine, the whole being in my possession; and to a purchaser will agree not to dispose or propagate it for a time to be agreed upon. All offers to be made to me, prepaid, and no offer will be replied to that is not satisfactory in amount.

Linnæus-street, Hull, December 8.

TO GENTLEMEN, GARDENERS, AND FLORISTS.

TO BE SOLD, by Private Treaty, at the Victoria Garden, Bury, Lancashire, either altogether or in lots, upwards of 3000 pairs of CARNATIONS and PICOTEES, 3000 PINKS, 300 AURICULAS, and 300 POLYANTHUSES, all of named varieties. The whole are in the best condition, and will be open to view, on the premises, every day till sold, from 10 o'clock in the forenoon till 4 o'clock in the afternoon. Persons residing at a distance will be furnished with the price of any of the varieties, or any other information respecting them, on application, by letter or otherwise, to Mr. JOHN DEWSBURY, Grocer, Bury, Lancashire.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.				SHEET SQUARES.	
16 oz. from 2d. to 3½d. per foot.				In boxes of 100 feet.	s. d.
21	„	8½ „ 5	„	Under	6 by 4...12 6
26	„	8½ „ 7½	„	6 by 4 and under 7 by 5.	16 6
32	„	4 „ 9½	„	7 by 5 „ 8 by 6..	18 6
				8 by 6 „ 10 by 8	20 6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size.

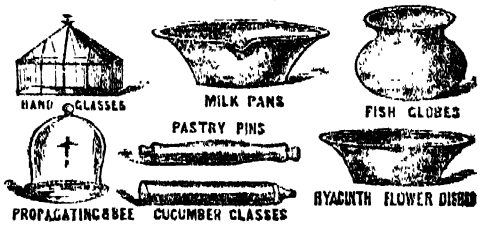
HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ..	10s. 6d.	7 by 5 and 7½ by 5½ ..	12s. 0d.
8 by 6 „ 8½ by 6½ ...	13 6	9 by 7 „ 10 by 8 ...	15 0

MILK PANS, from 2s. to 6s. each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2d. each; Grape Glasses; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 3s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7s. 6d.; 6 tubes, 10s. Self-Registering Thermometers for Greenhouses.

Estimates and List of Prices forwarded on application to their Warehouse, 116, Bishopsgate-street Without, London.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



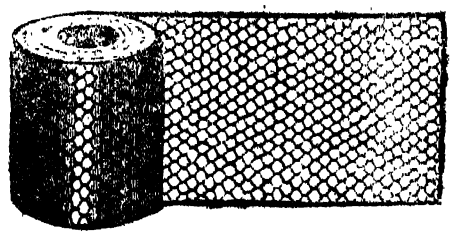
T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 2d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

NORWICH PRIZE ROLLER MILL, for Linseed and Corn, manufactured solely by HURWOOD and TURNER, Engineers and Agricultural Implement Makers, St. Peter's Foundry, Ipswich.

N. B. The above Mill, for which H. and T. were awarded the R.A.S.E. Prize at Norwich in July last, will be exhibited by them at the ensuing Smithfield Club Show, on the 11th, 12th, 13th, and 14th instant. Stand No. 88.

THE GREAT MIDLAND CATTLE SHOW will take place at Birmingham, on Tuesday, Wednesday, Thursday, and Friday, the 11th, 12th, 13th, and 14th of December.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...		7d. per yd.	5d. per yd.
2 inch „ strong „ ...		9 „	6½ „
2-inch „ extra strong „ ...		12 „	9 „
1½-inch „ light „ ...		8 „	6 „
1½-inch „ strong „ ...		10 „	8 „
1½ inch „ extra strong „ ...		14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

NEW GARDEN SEEDS, OF HOME GROWTH, AT LOW PRICES.

MESSRS. SUTTON AND SONS, growing their Seeds themselves, and taking great care in proving all the new kinds introduced, are enabled to supply their customers with the best kinds in cultivation at very moderate expenses, and of such quality as will prevent disappointment in the crops. Catalogues will be sent, post free, on application to JOHN SUTTON and SONS, Reading Seed Warehouse, Reading, Berkshire.

*** Goods delivered free by rail to London, Oxford, Gloucester, Bristol, or Basingstoke.

JOSLING'S ST. ALBAN'S GRAPE.—Plants may be had 5s. each on the receipt of a Post-office order.
ROBERT JOSLING, General Seed Warehouse, St. Alban's.

ESTABLISHED 1786.

EARLY PEAS.—WILLIAM E. RENDLE & Co. have a fine stock of the following excellent kinds.

Dancroft Early Rival, 2½ feet.	Warner's Early Emperor, 3 ft.
Early Prince Albert, 2 to 3 ft.	Fairbeard's Surprise, 4 feet.
Fairbeard's Champion of England, 4 feet.	Early Kent, 3 feet.
Early Warwick, 3 feet.	Early Frame, 3 feet.
	&c., &c.

These will be sold at their usual low prices. For Catalogues and prices, apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

We are now laying in a most excellent assortment of New and Choice Seeds for the ensuing season.

CEDRUS DEODARA.

WM. MAULE AND SONS beg to remind Noblemen, Gentlemen, and the Trade, that they can still supply any quantity of various sizes of this most ornamental and desirable tree. They have also large supplies of the other Himalayan Coniferæ, and the beautiful new Rhododendrons from the same country. Priced Lists will be forwarded on receipt of one postage stamp.

The Pamphlet on the Natural Habits and Quality of the wood of Cedrus Deodara, can still be had by enclosing three postage stamps.—Stapleton-road Nurseries, Bristol.

TO SEEDSMEN AND MARKET GARDENERS.

W. J. EPPS begs to offer the following SEEDS, which have been grown from the finest selected stocks possible, and may be depended on as neat and genuine. The prices are exceedingly low, which will be sent on application; also samples if required.

Skirving's Purple-top Swede	BROCCOLI.
White Belgian Carrot	Early Purple Sprouting
Parsnip	Grainge's Early White
Long red Mangold Wurzel	Brimstone. Invisible
Yellow Globe ditto	Winter Imperial
PEAS.	Danish
Knight's dwart white Marrow	Chappell's Cream
Do. do. blue do. do.	Adams' fine Early White
Burbridge's Eclipse or Stubbs' Dwarf	Shilling's Queen Cabbage
Scimetar	Cress
Indented Marrow	Green curled Savoy.

High-street, Maidstone, Dec. 8.

ROSES.

E. DENYER begs to inform his friends and the public in general that he has a very large stock of Standard Roses, the prices much reduced, 15s to 20s. per dozen; also Fruit Trees, Evergreen Shrubs, and Ornamental Trees of the finest growth, in large quantities, at low prices. A Catalogue sent on application, on receipt of two postage stamps, to EDWARD DENYER, Nurseryman, Loughborough-road, Brixton, near London.

E. D. informs his friends that he has no Seed-shop in London.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 8, 1849.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	Dec.	10	Medical, 8 P.M.
			Geographical, 8½ P.M.
TUESDAY,	—	11	Syro Egyptian, 7½ P.M.
			Civil Engineers, 8 P.M.
			Medical and Chirurgical, 8½ P.M.
			Zoological, 9 P.M.
			Literary Fund, 1 P.M.
WEDNESDAY,	—	12	Society of Arts, 8 P.M.
			Microscopical, 8 P.M.
			Graphic, 8 P.M.
			Ethnological, 8 P.M.
			Pharmaceutical, 8 P.M.
THURSDAY,	—	13	Royal Society of Literature, 4 P.M.
			Antiquarian, 8 P.M.
			Royal, 8½ P.M.
FRIDAY,	—	14	Astronomical, 8 P.M.
			Philological, 8 P.M.
SATURDAY,	—	15	Asiatic, 2 P.M.
			Westminster Medical, 8 P.M.

WE have for some time past occasionally pointed out the value of ROUGH PLATE GLASS for Garden Buildings, in consequence of its superiority to sheet glass, as a medium through which light is admitted into plant-houses. Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of gardening purposes. This being so, it becomes our duty to point out what is meant by rough plate, so that buyers may not be deceived by dealers interested in palming upon them a spurious article. This has become the more necessary in consequence of an extraordinary award lately made by Professor HOSKING, the particulars of which we collect from an article in a recent number of an excellent contemporary, the *Builder*.

It appears that Messrs. LOCKE and NESHAM contracted to glaze the new county jail at Winchester with *rough plate glass a quarter of an inch thick*. The justices required this glass to be used in order to prevent the inmates of the prison from seeing through the windows. "The windows," says the *Builder*, "were glazed, when the magistrates, one fine morning, discovered that the glass with which these windows were filled was not the 'rough plate' which they looked for, namely, that thick cast glass recently introduced, with a roughened surface, through which roughness there is no transparency, although the glass remains translucent—and which indeed is the condition of all cast plate glass before it is ground and polished. The glass really used was plain on the surface, generally transparent, and, as admitted by the contractors, was produced by blowing." A few of the windows were however glazed with rough plate. The magistrates were justly dissatisfied at the substitution of blown glass for plate glass, and required the contractors to execute their agreement; the contractors maintained that blown glass was plate glass, that glass through which you can see is the same as glass through which you cannot see, and that, therefore, they had executed their contract; whereupon Professor HOSKING was called in, took evidence, and determined *that the contractors were right*. The particulars of this marvellous decision are thus stated.

"The question of thickness was waived or withdrawn by the justices, so that the only point of inquiry was,—is the glass used 'rough plate?' On the part of the magistrates, Mr. JAMES HARTLEY, of Sunderland, a well-known manufacturer, stated positively that the glass used was *not* rough plate, but sheet glass manufactured to imitate it, one side being slightly burnt to diminish its transparency. This witness, as we gather, set forth some particulars which may interest our readers. He said that all the various descriptions of window glass are manufactured from the same materials—sand, soda, and lime—the various qualities of glass being produced by the differing proportions and purity of these substances. Glass is formed into flat surfaces in three different ways:—1. By blowing it into a globular form and then throwing it into a flat plane—this is crown glass. 2. By forming cylinders, which are cut open and then flattened,—this is called cylinder glass, broad glass, blown plate glass, &c.: and 3. By pouring melted glass upon a metallic surface, and passing over it a heavy roller, to reduce it to an even thickness,—this is termed rough plate glass, cast plate glass, rolled glass, &c. It is the contact with the cold surface on which it is cast that causes the roughness, by unequal contraction. Mr. HARTLEY asserted that the glass in dispute belonged to the second process, and that the term 'rough plate' had never been applied to such by the trade. He was astonished that any person conversant with the glass trade could call the glass used 'rough plate,' or that there could be any difference of opinion as to a material now so much used and so well known. Mr. HARTLEY also quoted other specifications, containing precisely the same description, 'rough plate ¼ inch thick,' for which, as a matter of course, the cast glass had been supplied."

Mr FINCHAM, of the Ravenhead Glass Works, at St. Helen's; Mr. SOUTER, secretary to the Thames Plate Glass Company; Mr. CHRISTIE, agent for the Union Plate Company; Mr. WILSON, of the British Plate Glass Company; and Mr. GOSLETT, of the Soho Plate Glass warehouse, *all denied that the material used could be called rough plate, or bore any resemblance to it.*

One would have supposed that this evidence, given by *manufacturers* of plate glass, might have decided the question; for if those who make glass do not know what rough plate is, it is hard to tell who are capable of forming an opinion. We should also have thought that the learned arbitrator might have trusted his own eyes—for nothing can be more unlike rough plate than the material actually employed at Winchester, a sample of which was produced before the Horticultural Society on Tuesday last. But no; Professor HOSKING preferred other eyes to his own, and called in the advice of sundry *builders* and glass *dealers*, whose testimony is said to have been this:

"Mr. YOUNG, *of St. Martin's Lane*, had no hesitation in saying the glass in question had always been considered by the trade rough plate, and, though in the business 50 years, had never seen or heard of any other description of glass so called. Mr SWINBURNE, *of Thomas-street*, said it was 'blown rough plate glass.' Mr. BRACKMAN, *a practical man of many years' standing*, had sold it as 'rough plate' when foreman of the London Works. Mr. CHATER, *of St. Dunstan's-hill*, had supplied both cast and blown as 'rough plate' for 30 years. Mr. R. COBBLETT, *of Northumberland-street*, considered both kinds 'rough plate.' Messrs. FOORD, who hold the contract for glaziers' work *under the Office of Woods*, considered that both cast and blown were equally entitled to be called rough plate, and thought that the specification would be strictly followed out by supplying either one or the other. The blown rough plate was made in this country before cast rough plate, and was therefore more entitled to the term. They said, moreover, that, as there was no difference in the price, the contractors *had no motive to use one in preference* to the other beyond that, for smaller sizes (under 30 inches by 20 inches) the blown could be obtained more quickly than the cast. Professor DONALDSON, who appeared on the same side, referred to the volume in 'LARDNER'S Cyclopædia' on porcelain and glass, in the introduction whereof two descriptions of plate glass, blown and cast, are recognised. Messrs. PIPER, Messrs. LAWRENCE and SON, Messrs. EDWARD and NIXON, and Mr. W. CUBITT, considered that the glass fully met the requirement of the specification; and Mr. G. POWNALL said it was 'rough plate glass,' and that it could not be described in any other way."

We heartily thank the *Builder* for preserving the names of these witnesses; and we gladly aid in conferring upon them the notoriety they so richly deserve. It is of the first importance to the public to know who the parties are that consider themselves justified in selling one article under the name of another. It is a candid admission that of Mr CHATER, that he has been doing this for six-and-thirty years; we only wonder that he should have thought it to his interest to make the avowal. Did he, and the other witnesses on the same side, fondly hope that this affair would be a hole-and-corner proceeding, of which the public would hear nothing?

"In considering his award," we are told, "Mr. HOSKING declined to consider, as not within the question before him, an argument on the part of the contractors, that any objection to the glass ought to have been taken when it was first put into the work, and one on the part of the justices, that 'rough plate' was specified for the express purpose of obtaining absence of transparency, while the greater part of the glass used *is* transparent. The justices had put their objections on three grounds, thus expressed.—First, that the words *rough* and *plate* in the specification were to be held each to have a certain meaning; secondly, that the article objected to did not come under the description, inasmuch as it was blown glass, smooth on both sides, but afterwards slightly roughened on one side; and thirdly, that it was not what is ordinarily understood and known in the trade by the term 'rough plate.' The arbitrator shaped his award to meet these heads; and set forth.—First, that the words *rough* and *plate* in the specification are not to be held to have each a certain meaning, but that they are to be taken together, as denoting a certain condition of plate glass, that is to say, in its unground and unpolished state; secondly, that, inasmuch as the glass objected to possesses the characteristics of plate glass, and is made and used as and for the purposes and under the name of plate glass, the circumstance of its being produced by blowing, and having a smooth surface when first produced, does not prevent it from coming under the description given in the specification; and thirdly, that the article objected to—that is to say, blown plate glass in its unground and unpolished state—though not universally known in the trade by the term 'rough plate,' is so far known by that term in the glass trade and among builders—the immediate consumers of plate, sheet, and other glass, as window glass—as to justify its recognition by that term."

This decision deserves the same immortality as the evidence of the glaziers; and we trust it will enjoy it. The learned arbitrator thinks the object of the justices was immaterial. In his eyes it is nothing that they should have bargained for rough glass, because it cannot be seen through, and have been furnished with smooth glass which can be seen through. Transparent glass is the same as non-transparent, in short, glass is glass, and there is an end of the question, in the opinion of Prof. HOSKING.

But let us not do injustice to the arguments employed on this memorable occasion. There was another reason or two which influenced the decision. Some glaziers said that they were in the habit of selling their customers sheet glass for plate *glass*, blown glass for cast glass, smooth glass, called rough, for glass actually roughened in the process of manufacture—*therefore* the contractors were right, sheet glass being plate glass. Some builders, too, were found who admitted that when they pretended to put plate glass into windows they only used sheet glass—therefore sheet glass is plate glass. And, finally, because in a *certain book* (!) two sorts of plate glass, blown and cast, are recognised, therefore smooth sheet glass (*for the article used was not rough in the customary sense of the word*) is the same as rough plate. We earnestly commend this award to the study of Professor DE MORGAN and other writers on logic.

We must say that reasoning like this is a direct encouragement to fraud. It justifies the man who sells gypsum for wheaten flour, for he can plead that it is called flour by some of the trade. It countenances the vending of Rhatany root, brandy, and sugar under the name of port wine, because people can be found to swear that they have sold it under the name of port wine "for the space of six-and-thirty years." It accepts as just the sale of mountain limestone, Epping loam, burnt stones, under the name of guano, because such stuff is known in the trade as British guano; in short, it sanctions every one of those frauds and falsifications which are the disgrace of this ingenious age.

We cannot but suppose that Professor Hosking was influenced in his decision against the Hampshire justices by the assertion that the contractors had no motive to use one sort of glass in preference to another; if this were so, it must be regarded as an overstepping of the learned gentleman's prescribed duty. He had not to consider *why* a man had done a thing, but *whether* he had done it. Facts alone were within his consideration; reasons or motives he had no right to look at. If, however, he had investigated that point he *might have found a sufficient motive.*

We shall, however, be no parties to declaring a sham to be a reality, or a counterfeit a genuine article. We, therefore, draw particular attention to this case; and we warn our readers to take care that they too are not placed in the position of the Hampshire justices. The rough plate glass which we have recommended for garden use is not that which the glaziers above mentioned tell us *they call so:* but the cast glass made at Sunderland and elsewhere; and we recommend everybody wanting this glass, at once to address themselves to the manufacturers, who, although they may not supply it, will no doubt, for their own sakes, point out the glaziers from whom it can be obtained. As for the article substituted for rough plate, and which is actually in the market for the purpose of imposing upon gardeners, it is wholly unfit for any horticultural purpose. The true kind varies more in quality than is desirable, yet the worst will answer the purpose. The best sample of it which we have yet seen was manufactured by Messrs. Hartleys, and sold by Mr. James Phillips, of 116, Bishopsgate-street.

One word more before we quit the subject. Among other attempts is one to persuade buyers that thin and genuine rough plate ⅛ of an inch thick, cannot be made; and consequently to compel the public to buy a thicker glass at a higher price. There is no truth in the statement; and if a glazier will not supply the ⅛ inch glass, which is strong enough, we can only say, have no dealings with him.

Are Leaves of any use, or are they not? One would have thought such a question superfluous. Persons with only the usual amount of intelligence have long since come to the conclusion that nothing was made in vain, and that if the Creator had not intended leaves to answer some important purpose, trees would have been produced without them. Physiologists have agreed in assigning to leaves the all-important office of preparing the food, out of which every other part is gradually constructed under the mysterious influence of vital force, and also of elaborating, or of preparing for final elaboration elsewhere, whatever gives perfume to the flower, sweetness to the fruit, colour to the skin, and strength to the solid fabric of a tree.

"How manifold are thy works, O Lord! In thy wisdom hast *thou made them all*," are the words of the Psalmist. It is only among the most ignorant of men that we find a denial of this truth; it is only with the thoughtless that we see it practically disregarded. We hardly dare venture to name some among the thoughtless—the hand almost trembles while we write the dangerous name of —— Gardeners. Yet, it is among the remnant of ancient gardeners that we find a practical, though very unintentional, disregard of the most notorious purposes for which plants are constituted. They it is who fly in the face of reason, fact, and their Bible.

The following letter, from a well-known correspondent, tells its own tale, and shows to what horticultural offences we are now alluding:

"On visiting a few gardens in Lancashire, early in October, I called at an old establishment, when, on entering the kitchen-garden, the naked, leafless appearance of the Peach and Nectarine trees arrested my attention. On inquiring the cause of their nudity so early in the season, the gardener, who has been in charge some 30 years or more, informed me that he 'always made a point of getting off their jackets in good time.' A little further conversation gave me to understand that, towards the end of September, those trees are regularly stripped of every leaf, 'for the purpose of allowing the wood to ripen.' I confess that this information took me by surprise, for in no other part of the kingdom did I ever see or hear of this system being practised. I have since, however, learned that it is not uncommon in many parts of Lancashire. Perhaps Sir, you, or some of your readers, will favour us with an opinion on this important branch of horticulture?"

The remarks with which we have introduced this subject express, we hope, our own opinion in a manner not to be mistaken. We, therefore, substitute, for further comment of our own, the words of the same experienced and intelligent gardener, who, though not what is called a "practical," has had as much practice as most men.

"It is said, that in the art of gardening Nature should be imitated as far as practicable; but under no circumstances that I am aware of do we see Nature stripping trees of their leaves while still actively employed in performing the offices for which they were called into existence. In the 'Theory of Horticulture,' page 42, we read that 'the functions of respiration, perspiration, and digestion, which are the particular offices of leaves, are essential to the health of a plant; its healthiness being in proportion to the degree in which those functions are duly performed. Consequently, whatever tends to impede the free action of leaves tends also to diminish the healthiness of a plant.' With a judicious system of summer pruning, trees will ripen their wood quite as well as when subjected to the barbarous plan of plucking off the leaves while still green and healthy. When disbudding, in the early part of the season, I am particular not to lay in any more shoots than what I think will absolutely be required at the following winter's training; and as soon as the fruit is all gathered, I give these branches all the benefit of the sun I can, by going over the trees and cutting out the branches that have carried fruit, and which would have to come out at the winter pruning. At the same time I pinch off the points of the remaining ones, and fasten all close up to the wall; so that when winter comes there is little or nothing to prune, instead of having two-thirds to cut away, as must of necessity be the case with the trees I have first alluded to. This is the system I pursue with the trees under glass, as well as those against the open wall."

A Correspondent at Camberwell has sent us the monstrosity represented in the following cut. It is a case in which the common Cabbage produces from its midrib on the upper side, a pitcher-shaped expansion, seated on a stalk, on which a deformed leaf is seen to grow.

This appearance was figured many years ago in the "Transactions of the Horticultural Society," by the late Professor De Candolle, who called such expansions *nepenthiform.* They are of great theoretical interest, because of the light they throw upon some very obscure points of regular structure among plants; as, for instance, the cup of the Rose, the pitcher of Nepenthes, and the like. They also prove that branches and their appendages may, under certain anomalous conditions, be generated without any reference to an axillary position.

GESNERA ZEBRINA.

A more useful plant than this for decorating the stove and conservatory during the autumn and winter months can hardly exist. The long period which it remains in beauty, the richness of its blossoms, and the elegantly marked velvet foliage, form altogether a very rich effect. The only disadvantage attending its growth arises from its brittleness and consequent liability to damage in a crowded house of plants. If you can grow it well, and afford it ample room for display, it will abundantly repay all attention you can give it.

To produce it in the noble form of which it is capable, one plant only must be grown in a pot. By so doing, plants more than 2 feet high may be easily obtained, crowned with a magnificent raceme of flowers, 12 or 14 inches in length. There is one peculiarity about this plant which requires attention. When it is put into its blooming pot it should be placed an inch deeper than before, and for this reason: Like the noble Japan Lilies, it throws out the greater part of its roots (*i. e.* its true roots, by which nourishment is obtained; the parts by which the Gesnera is propagated are strictly speaking stems), if left to itself, immediately at the surface of the soil; and if advantage is not taken of such a peculiarity, all the resources of the plant are not developed.

The following will be found a tolerably successful course of culture: When it is thought desirable to start the dormant plants in spring, turn them out of the pots they had previously occupied, and, selecting the most promising "roots," plant four round the inside of a 4 or 5-inch pot, using a soil chiefly composed of leaf-mould and sand, and place them in a gentle bottom-heat, as a Cucumber frame in which young plants are being raised. As soon as the young plants are an inch high, or when they have two fully formed bases, give each a separate pot, say a 4-inch, replace them in the bed, and at the expiration of a day or two give them a good watering. As soon as they are somewhat established, they must be removed to another pit or frame, in which they can be supplied with plenty of air to keep them robust, as one great beauty of the plants will be to enable them to support themselves without the assistance of a stake. Immediately sufficient roots are formed to enable you, repot them, without breaking the ball; put them in their blooming pots—9 inch pots are a very good size—handsome plants may, however, be grown in 8-inch pots. The soil this time should have an addition of one-third very fibrous loam, to give it consistency, and to enable it to retain moisture, as they absorb much. The plants will be much benefited if kept in an airy pit or frame till their growth is nearly completed, and the pots filled with roots, when they may be removed to the stove, and supplied with liquid manure, while the flowers are forming, and till they expand, when the plants may be removed to the drawing-room or conservatory, to either of which they will form beautiful ornaments, remaining as they do for whole weeks and almost months in perfection.

It may not be generally known that there are two varieties of this plant, and that one is very superior to the other in every respect. Had I not grown them side by side for two seasons, I should have believed that treatment must have had something to do in the matter, but I am convinced that it is otherwise. One of the varieties is of a more compact, more robust habit than the other, and its foliage is much larger and more richly and beautifully marked, and bears a raceme of larger flowers, which are set closer upon their axis, and the whole appearance of the plant is much superior to the other. This plant is very liable to be infested with the mealy bug; they congregate in the flower-heads when forming, and if not removed will seriously detract from their ultimate beauty. The most desirable, and at the same time most effectual mode of getting rid of them, is to remove them with a small brush. Never crush them on these plants — wherever you do so the stem at those places assumes a black decayed appearance, and is very unsightly to look upon. *G. L.*

DISEASES OF PLANTS.

(*Continued from page 757.*)

Genus IV.; *one species.* Carpoptoris.—The trees are seen loaded with fruit, whose advanced growth seems to insure to the cultivator an ample harvest. Suddenly they are observed to fall, so as to leave scarcely one or two here and there on the boughs. All this is immediately ascribed to the fury of the winds, or more particularly to the *mist*, which, although no one can tell exactly in what manner, is made to account for a vast number of diseases of plants. It is true that winds and mists cause fruit to fall, but there is another agent also in the matter. To me it appears that it may depend on three causes. It is well known that there is a constant circulation between the body of the plant and the peduncle, by means of which nutriment is conveyed to the fruit, and causes it to attain its natural size and perfection. Anything that retards, stops, or hurries too much the circulation of this sap, may occasion *carpoptoris.* A sudden cold, especially in May, when vegetation is considerably advanced, checks the stimulants of plants. The subtraction of caloric is the most sensible in the peduncle, thence it is disabled from performing its accustomed functions. The fruit falls, because probably the circulation is stopped by the choking of some of the vessels. On the contrary, heat enough to anticipate beyond measure the ordinary course, increases the stimulus, causes the fruit to grow immoderately, and its own weight will bring it down, the peduncle not having had time to acquire a proportionate increase of strength.

A glance given occasionally to the soil and to the temperature of the season, will reveal another cause of this malady. Some individuals in a very rich soil, by favour of an extraordinary spring, regularly mild and warm, and moistened by gentle rains, will grow with great vigour. The production of sap is very considerable; it stimulates highly the vessels through which it passes, and is forced with great rapidity into the peduncle, and before it has had time to undergo a proper elaboration, it is carried in vast quantities into the fruit, which falls from over-repletion.

What I have now stated appears to me the more probable, as in examining the fresh fallen Apples and Pears, I have sometimes found the stalk of an unusual size, but soft and full of sap; at others quite shrivelled up. On a closer investigation the phenomenon has appeared to me to occur usually in dry summers where the soil is poor, or in soils where at some depth the alimentary substances are scarce; whence it happens

that if the plant has grown vigorously in the early part of the year, from the peculiarly favourable season, it now, at the coming on of the dry summer, wants for sustenance, and the fruit falls.

These observations may in some instances guide the cultivator in the endeavour to prevent the evil. He must, in the first place, carefully observe the symptoms. In as far as my experience goes, an unusually deep green foliage and a precocious increase of size in the fruit are indications of a superabundance of sap, whilst in the opposite case of its deficiency a slight diminution of the green colour of the leaves precedes the fall of the fruit. In the first case the evil may be counteracted by heading the branches, which may be regarded as a general rule to be observed in the cultivation of fruit trees in rich soils. In the second case, the use of copious irrigations, mixing some rich substances with the water, may be of great advantage.

Trees trained in espalier or against walls are subject to *carpoptoris*, from the excessive stimulus of the sun's reflected rays. On that account let the cultivator always select for espaliers such varieties of each tree as are the longest in ripening their fruits, as well in the spring as at the close of the season.

Sometimes fruits fall on account of the nutriment being carried off from them to some other part of the tree. The usual remedy for stopping the fall of Figs seems to prove it. As soon as they perceive a tendency of the Figs to detach themselves from the tree, they immediately prune off the branch next to the fruit, considering that this branch draws away the sap from it. A similar treatment is given to Vines, which often shed their Grapes after they are set. But I must confess that I have not seen the desired effect produced, for when the ends of the shoots are cut off, in order to force the sap into the bunches, instead of that the sap flows to the wound, and there causes the development of fresh shoots, and the evil continues. But the worst *carpoptoris* is undoubtedly that which is owing to cold and other causes that weaken the plant.

ELVASTON CASTLE, THE SEAT OF THE EARL OF HARRINGTON.

This is situated about four miles from Derby, on the London road. Those who have travelled that way will be ready to admit that it is anything but a promising country for the effective introduction of ornamental gardening. There is in this locality none of that bold rugged scenery, with its rocks and natural woods, for which Derbyshire is so famous. Flat level pasturage is the chief characteristic of the district. The eye stretches over the surface for miles without interruption, unless it be from occasional scattered plantations. Travellers in search of the picturesque would find little of interest in this immense agricultural plain. In the middle of so uninviting a tract, there nevertheless stands the greatest work of gardening skill, both in extent and design, which perhaps any man ever accomplished in one life-time before; but being kept strictly private, it is scarcely known to exist. Through the kindness of the Earl of Harrington we are enabled to give some details of this interesting place. An assemblage of the most valuable trees and shrubs of all countries that will endure our climate forms an evergreen garden here of more than 100 acres, and this is intersected with about 11 miles of evergreen hedges, shorn as smooth as an Axminster carpet. It will be perceived how much Lord Harrington has accomplished when we state that in 1831 only 25 evergreens in all existed at Elvaston, viz., two old Yew trees, three large Silver Firs, and three or four Portugal Laurels, the remainder being Hollies, common Spruce, and common Laurels. The forming of the present ornamental gardens was begun in the year just mentioned, but little was done in earnest until 1835. The time between these two dates we were informed by Mr. Barron was occupied with draining, trenching, and preparation for planting.

In travelling along the London road, through apparently endless meadows, we come suddenly upon plantations which flank both sides of the road, and these plantations are composed of Deodars, Hemlock Spruce, large Yews, Pinus austriaca, and P. Laricio. In the midst of them stands an old baronial entrance, with closed high gates mounted with antique lamps. The gates, as the style demands, are fastened together with large bolts, the heads of which are gilt with gold, giving them the appearance, in fact, of huge bronze gates with golden bolts; the gate lodge itself being partially hid among Ivy. When these gates are thrown open an extensive line of straight avenue is presented. In the distance, and beyond an intermediate entrance, is seen, towering above all other trees, an avenue of Limes, almost the only existing feature produced by a deciduous tree. Through this avenue the castle is seen in the distance. It is exactly half a mile from this entrance by the main road to the garden entrance. Where the dressed ground commences, between the two entrances, the road is perfectly straight, and flanked on each side by a row of Horse Chestnuts, which are intended to be removed, for behind them are planted rows of Douglas Firs in direct lines, from entrance to entrance; these being as yet only about 7 feet high, the effect intended to be produced by them can only be inferred; nevertheless it is not difficult to conceive what ultimate grandeur such an arrangement must create; the style of the entrance, the straight approach road, and the tameness of the country, all combine to justify —nay, to demand such an arrangement, upon the clearest defined principles; no other mode of planting, if admissible at all, could produce half the effect. Other kinds of trees, however, might have been employed with equal propriety, such as Cedars of Lebanon; but the rapidity of growth which distinguishes the Douglas Fir may have given it the preference.

Having traversed the avenue just described, we approach the garden entrance, which is clothed on each side with large Hollies, and some of the rarest Pinuses. The gates are of the most elaborate and exquisite workmanship, exceedingly massive, and gilded in the most costly style. They were originally in the possession of Napoleon Bonaparte, and were obtained from the Petite Trianon by the father of the present Earl. These gates open on a scene of great magnificence; for whether the eye turns to the right or to the left, the same charming effect is beheld. Irish Yews, from 8 to 11 feet high, within a few feet of each other, form an irregular outline to the plantation. These are backed by Cedars of Lebanon, Deodars, and Hemlock Spruces from 20 to 30 feet high, in countless numbers. On the right and left of this entrance is the Pinetum, occupying 16 acres of ground, in two great divisions; that on the right being appropriated to the section of true Pinuses, and the other, on the left, to the Abies and Picea tribes. The Pinus wing is divided by an avenue through its centre of smooth, green turf, 50 feet wide and extending 1200 feet in length. This avenue is thus planted:—In front is a row of Irish Yews, perfectly uniform in growth, from 10 to 14 feet high, and standing 10 feet from each other. These are backed by a row of Golden Yews, opposite the openings. The next line, similarly arranged, consists of Araucaria imbricata; then, behind this, are two rows of Deodars; the latter are grafted on the Cedar of Lebanon, and are now upwards of 20 feet high. The branches of the last named Cedar are allowed to extend 3 feet up the stem, and contrast singularly with the silvery green of those of the Deodar. The union of the graft with the stock seems as perfect as it possibly can be, the Lebanon swelling in the stem even more rapidly than the Deodar; these were of course grafted when seedlings were scarce. The same arrangement is observed on both sides, and behind it are the Pinuses. This avenue, it must be remembered, has been formed many years, and every plant at that time employed in the arrangement was as perfect a specimen, of its kind, as could be procured; they all bear in size a relative proportion to each other, and the aspect which each file of plants presents, together with the gradations to the centre, from the Deodars to the smooth green sward, is in the highest degree imposing. If any artificial assemblage of trees can reach the sublime in gardening, this, we imagine, is no mean example of one. *R. G.*

(To be continued.)

VILLA AND SUBURBAN GARDENING.

When a little judgment and ingenuity are brought to bear upon any favourite pursuit, more satisfactory results are often obtained than could be accomplished by unlimited means. The villa gardener may consider it to be profitless work to attempt the culture of many important garden rarities, because the means by which such things are produced in large gardens are not within his reach. But if he was merely to turn his cellar, his tool house, or any other protected or partially occupied lumber house into account, he might have the power of placing upon his table during winter numerous culinary luxuries, and amongst them the Mushroom. This is so readily and certainly produced, that with a very little care and still less expense, a constant supply may be obtained.

The first thing is to secure a vacant place in either of the houses alluded to, and then to procure some stable litter with all the loose straw shaken out of it; this should be carefully kept from wet, spread out about 12 or 15 inches deep, fully exposed to a draught, and turned over every two or three days in order to prevent its heating too much; the fermentation should proceed slowly and quietly until the heat begins to decline, when the bed may be formed. A layer of this partially exhausted material should first be made about 6 inches thick, then beat this down into a perfectly solid cake, add another layer and proceed as before until the bed is 15 or 18 inches in depth. Be certain that the whole is firmly beaten, for on this much of the success depends. Then thrust a couple of sticks into the bed, which may be felt every other day, in order to ascertain the state of the fermentation, which will not in any case be very great, provided the manure has been sufficiently prepared previous to the formation of the bed. When these trial stakes indicate a decline in the temperature, which can be readily determined by feeling them with the hand, procure some good Mushroom spawn from any nurseryman, break it into small pieces about the size of bantams' eggs, and insert these all over the bed 10 inches apart. Then procure some rather stiff loam, which must be also in good working order—that is, between the wet and the dry. Cover the bed over with this 1½ inch thick, and beat it down perfectly firm. Examine the trial stakes, and if the heat begins further to decline, spread some dry litter or hay 6 inches thick all over the bed; and should the weather become severe, this may be increased, or some dry straw may be used instead of it. The Mushrooms will begin to appear in the course of five or six weeks, and will continue for months; should the surface of the bed become dry, and the weather be warmer, remove the covering, and give it a good watering with warm water, such as you can suffer your hand to be in.

Various expedients are sometimes resorted to in cultivating the Mushroom, such as large pots, tubs, boxes, or old casks cut in two, and placed under shelves in greenhouses, or in sheds and cellars; but the material employed, and the *modus operandi* here set forth, should in all cases be adhered to, as near as circumstances will admit. *Pharo.*

TRADE MEMORANDA.

John Handford. The proprietor of the Thirsk Nursery, is desired to forward a "quantaty of Frute Trees, order as at futt," to Warwick-house Park, Liverpool, consisting of "Standerd Pairs" and "Traned Plumbs," with "Corrants" and "Goose breys," by the hundred; also "duzeus" of "Holey Oaks asorted," on "recipt" of which a remittance is promised. No reference accompanied the order, nor was any inquiry made (as is usual in these hard times) about price.

Home Correspondence.

Plumbago Larpentæ.—I am glad to see at last that Mr. Masters has come forward and vindicated the opinion I gave some two or three months ago in your Paper, as to the capabilties of that much calumniated flower, Plumbago Larpentæ. I then said that I should be much surprised if it were not found to be one of the prettiest flowers in the garden by the time the autumn came; and as we approached that season, it certainly did promise more and more to realise my hopes of it, till I found, as your correspondent states, that it is "one of the most attractive autumnal flowering plants that we have;" and my own specimen of it has fully borne me out in the opinion I formed of it from the first, for it has been for a long time past in great vigour and beauty—in splendour I may say. What Mr. Masters' peculiar treatment of this plant may be, I trust, for the instruction and benefit of others, he will, as you request, be good enough to communicate through your Paper; but I shall be much astonished if there should be anything in it more than any one might have discovered with common care and forethought. I planted my own tender cutting (just fresh from the forcing-pit, no doubt), with its half-dozen slender roots, in the same border with Phloxes, Salvias, Fuchsias, &c, only selecting for it a spot sheltered from the winds and screened from the sun; and there it has repaid me abundantly indeed for the little consideration that I have had for it; and had others who have spoken so ill of it only done the same, they would have been spared their vexation, and this little gem, by this time, would have stood where it ought in the estimation of the gardening world. But it will soon rise above all the prejudices that it has had to encounter; and aided, if needful, by Mr. Masters' treatment, you will hear of it, I dare say, before 12 months have passed by, as the admired of all admirers of the parterre. And here, let me add, that it would be well, before putting out their plants, and new ones especially, if gardeners would consider a little what their peculiarities may be. But it is rather the custom to put plants in *secundem artem* (as it is well called), where they may happen to have a vacant place for them; and "willy, nilly," there they must do all they require, or take the consequences. So with this Plumbago. I doubt not it has been exposed to blasting winds and scorching suns in many gardens, and no wonder it has failed; and therefore it is that we hear it so condemned as it has been, and still is by many, perhaps. *Addio, Hurlow.*

Potatoes Sound in Peat.—In consequence of reports in your Paper as to the security against the Potato disease afforded by planting in peat, I laid down 8 acres this year in pure peat, manured with sea-weed. The tops were destroyed by the disease, and my bailiff prophecied the roots would also be lost; but he was agreeably surprised to find that out of the 8 acres there was not a bushel of bad Potatoes, and they are continuing perfectly sound in the pit, while around us, about two-thirds of all Potatoes planted on loam, &c., are entirely lost. If any of your readers will be kind enough to state their experience of growing Potatoes with guano spread on the surface of the heath and Grass, covered with the slop from the furrow-drains, and the sets dibbled on this, by which mode sea-weed gives such fine crops, they will greatly oblige a multitude of poor people as well as myself. *J. Mackenzie, M.D., Eileanach, Inverness, Dec.* 6.

Zinc.—A year or two ago I directed your attention to the utter worthlessness of zinc for various purposes to which I had applied it, such as gutters, ornamental chimney tops, the lining of cisterns, &c.; and as another instance of its inutility, I now beg to hand you a small portion of a pipe of this material which was fixed here about 18 months ago, to carry off the waste water from a cistern. Such has been the effect produced by the action of the water passing through the pipe, that nearly the whole of the metal has been decomposed, and all that remains is a thin rough net-work, which I suspect to be some other substance with which the zinc was alloyed. The water was analysed some years ago by Professor Phillips, who describes it as being "a very good and soft water, containing no lead, and only about 11⅛ grains of saline and earthy matter in the gallon. The impregnation consists of small portions of common salt, carbonate, and sulphate of lime, which are the usual substances." *W. B. B.* [We quite agree in the opinion here expressed, that zinc is wholly unfit for gutters, pipes, pans, lining of cisterns, or any other purposes where durability is required. It is a striking example of the dearness of cheap articles.]

Salvia splendens.—At p. 710 some account is given

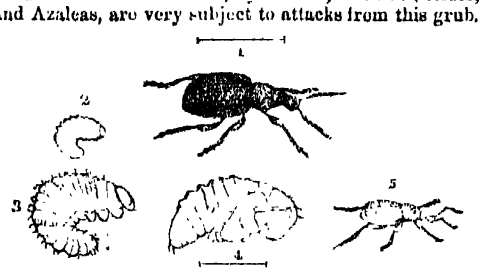
of the mode of managing Salvia splendens; but as the article I refer to does not appear to me likely to be understood by those who are unacquainted with the plant, I beg to give the method by which it is cultivated here. We put in the cuttings in May, three or four round the edge of a 6-inch pot. As soon as they are rooted, we pot them off into pots of about the same size as those they came out of. When these are filled with roots, they are then shifted into the pots they are intended to flower in. All that the plants afterwards require is plenty of water, with some liquid manure occasionally. When they are in their flowering pots, they should be grown in the greenhouse, and their tops should be pinched off frequently, but not later than August, or the bloom will be deficient. This plant is not particular as to soil; loam, leaf mould, and sand suit it well. Treated in this manner we produce bushy plants from 6 to 8 feet high, which bloom profusely from the end of October to Christmas. In places where it is required to keep the conservatory gay during the time I have specified, this showy Sage will be found exceedingly useful. *T. Blair, Largo House, N. B.*

Sale of Orchidaceous Plants.—The collectors of Orchids derive much advantage from the sales at Mr. Stevens', in King-street, Covent-garden, both as regards imported plants, and those consisting of duplicates of growers, or as the stock of some one giving up the cultivation of these plants. I, however, suffered from making purchases at the last sale, which were advertised as belonging to, or being imported by, Mr Low. No notice was given that they were brought to the sale-room immediately from the hothouse, and the result was that a Pitcher plant purchased at the sale, though brought away in a bag and put into the stove the next morning, lost nearly all its leaves, and probably will not recover: and the same misfortune happened to a Vanda, bought at the same sale. I find, also, that other purchasers were equally unlucky. This evil would have been avoided if at the sale the state of the plants had been described by Mr. Low's direction. Of course Mr. Stevens could know nothing of the matter. *A Subscriber.*

Successful Transplanting a large Cedar tree in 1836.—This operation took place when I was gardener at Dyrham Park. The tree stood in front of a new conservatory that was being built; it was 30 years old, 20 feet high, 2 feet in circumference at 1 foot from the ground, and 18 ft. round the extremities of the branches. I cut the roots all round to the very bottom, 4 feet from the stem, in April, in order to cause it to produce young fibres to support the ball, as well as to secure the life of the tree. In the following November it had made roots 6 inches long; but I am now of opinion that before large trees are moved the whole of the large roots ought to be cut two years previous to lifting. The next point is to make a puddle for planting: this ought to be so thick that the ball will make its way slowly to the bottom of it. Then guard against high winds; the most effective way of doing this, perhaps, is to join cross pieces of wood enclosing the stem, and to drive down a post at each end of such pieces, 3 or 4 feet into the solid earth, nailing their tops firmly to the cross pieces just mentioned. If this is properly done no wind will overturn the tree. When I was at Castle Toward, in the years 1820 and 1821, all round the new castle, to the amount of many acres, was planted with trees of various sorts 30 and 40 years old, from the thickest parts of the woods. They were planted, without preparation, 10 to 50 feet apart. Of these, I was told by the late owner Kirkman Finly, Esq., that only a third died. I believe that a tree of any age may be removed; but according to its age, corresponding care must be used, both in the previous and after-management of it. *James Cuthill, Camberwell.*

Management of Peach Trees.—"Pharo's" instructions on this subject are admirable, and those whom he attempts to lead would do well to bear them in mind. My plan, however, though neither new nor original, differs from his in some respects, and I believe that it is a point in advance. When the trees are received from the nursery, and before planting, they are thinned out to four of the most even and best grown shoots; they are then planted and left loose as late in the spring as the buds will admit, in order to give the fresh-made ground time to settle down; the shoots are then trained to the wall at full length, as left in the winter, and as near as possible to the shape and as wide as a person can uniformly extend the four fingers of his hand. From this vertical position each of the shoots receives nearly an equal portion of sap to become established with, and as the tree fills up it is gradually widened, until the wall is finally covered; the tops of the young shoots being imperfectly ripened, the buds in consequence break weak to those that have been better matured, and generally make growth in proportion. Should any, however, get away too fast, the top is pinched off early, in order to allow the others to advance upon them; by a little timely management in this way I have generally succeeded in getting all to go on uniformly, having a good supply of young wood to the bottom. In this plan there is the combined advantage of uniformity and early bearing, as I seldom fail in getting fruit the second year after planting. Early planting in autumn, mulching with well rotted dung, and attention to watering in dry weather in the growing season, are the principles to which I attribute success. Those who may feel dubious as to the results of this recommendation, can easily satisfy themselves of its advantage by trying one tree against another of those shortened back, and they will soon find that it is the branches that induce the roots to make growth. They ought, however, to caution the nurserymen they deal with not to mutilate their roots so much as they generally do. I have frequently sent my own men, when I have any large trees from the nursery, to assist in lifting and saving the roots; and have always been repaid for the trouble, in getting an earlier crop of fruit. *Argo, Chichester, Dec.* 4.

Rotted Camellia Stem.—I send you a grub belonging to a family that has lived at my expense for nearly 30 years, and I have no doubt but some of the race have found their way to your Camellia correspondent (see p. 708). [No, no.] I have lost hundreds of Camellias by their attacks. I was a long time in discovering what the cause was; but having noticed a quantity of stocks looking yellow, with two or three in the centre of them quite dead, I made a minute examination of them. I took out the dead ones, and the bark had, as I thought, rotted away; but by degrees I found the adjoining plants were a little fresher, and appeared to have been eaten; and I at last discovered the depredators at work on plants looking quite fresh in the leaf, and forming a regular ring round the dead plants; from this I concluded that the eggs had been laid in the centre pot, and, that after eating the bark off the larger roots and what portion of the stem was under ground (for they do not eat much of the smaller roots), they removed to the next plant. Subsequent observation has confirmed this opinion. The Camellia will not show the injury, perhaps, for six months after its infliction; and on that account the cause of it is not discovered, the plant having made an attempt to root again; and I have often succeeded in saving plants by plunging them in sand. Chinese Primulas, Cyclamens, Fuchsias, Roses, and Azaleas, are very subject to attacks from this grub.



Otiorhynchus sulcatus, the Black and clay-coloured Vine weevil. 1, the perfect insect, the natural size indicated by the line above the insect; 2, the larva of the natural size; 3, the same magnified; 4, the pupa magnified, the line below showing the natural size; 5, the patchy-legged weevil, Otiorhynchus picipes, of the natural size.

I have found that the grub turns to a small brownish black beetle, very slow in its motions, and rough on the back—embossed as it were. I have no doubt I imported it from London. The first plants I lost were three new ones, for which I paid two guineas each; they had stood together and died at the same time. *C. J. Preston.* [The insect is the larva of the Otiorhynchus sulcatus or picipes. Salt, tobacco-water, aloes, quassia, or gas-tar water applied to the roots, would probably drive the insects away.]

Destruction of Woodlice and Slugs in Mushroom-houses.—These are two of the most formidable enemies to the Mushroom-house. The one here was so infested with woodlice, that the crop was eaten and disfigured to such an extent as to render it next to impossible to procure a dish of Mushrooms fit for table. I resorted to every means that were likely to destroy them, but with no good effect. At last I tried strong salt and water, which I prepared and strained into the crevices where they harboured. This I repeated two or three times, and there is now not an insect to be seen. If the walls of the house are syringed once a month, not a single slug will enter the house. Care must be taken however, in using the liquid, not to allow any of it to fall on the bed, or it will prove fatal to the spawn. *W. M.*

Phillips's Patent Fire Annihilator.—The questions asked by "C. D. R.," in your Paper of the 1st inst., are—1, whether the vapour given off from the fire annihilator is injurious to life? 2, whether the stream of vapour will last a sufficient time to prevent the fire from breaking out again? and 3, whether a single machine is sufficient to extinguish a fire in a house? Although the observations which are appended to the inquiry of "C. D. R.," and which detail the result of an experiment made at the Garden of the Horticultural Society with a No. 2 fire annihilator, afford a satisfactory answer, I may state from my own experience in the use of the machines that, under the circumstances in which they are used, there is nothing in the vapour given out injurious to human life, having been myself completely enveloped in it on many occasions, without experiencing the slightest inconvenience. So much for the first question. To the 2d and 3d I reply, that the vapour from a No. 1 machine lasts nearly three minutes, and that from Nos 2 and 3, four minutes each. Whether one machine will be sufficient to extinguish a fire in a house, or prevent its revival, is altogether a question of degree, and depends upon the size of the house, the extent of the fire, and the time it has been burning. You may conquer a body of men in the open field with small arms, but, if they are entrenched in a fortress, you must have artillery. The number and size of the machines required for any house or other description of property depends entirely upon the nature and extent of property requiring protection. It is not recommended in any case to trust to one machine alone, as a second ought to be in readiness in case of necessity. In most cases at the outbreak of a fire the flame, heat, and smoke would burn or suffocate the person attempting to subdue it in the ordinary way by water, or drive him away to let the fire take its course of destruction; whereas the vapour given off from the fire annihilator would not only shield the individual from personal injury, but after having killed the flame and taken away the heat, would so far neutralise the effect of the smoke as to render the surrounding atmosphere cool and respirable, which before was destructive to life, and thus afford the means of stopping further mischief, and preventing the rekindling of any embers that may remain. These machines are equally effectual in putting out fires in chimneys, from which more serious fires often arise. Another point deserves remark. In putting out a fire by water the latter causes much injury to property unhurt by the fire; after the application of the vapour of the fire annihilator, although the fire is extinguished, the furniture, books, or other property in the room will have received no injury from it, and the floors below are not saturated with water, and the property in them destroyed also. *Vindex, Dec.* 5.

Societies.

HORTICULTURAL, *Dec.* 4.—J. R. GOWEN, Esq., Secretary, in the chair. The Duke of Hamilton, S. R. Hoseltine, Esq., and T. Henry, Esq., were elected Fellows, and the following gardeners home corresponding members—Mr. H. Bailey, gr. to G. Harcourt, Esq., M.P., Nuneham; Mr. R. Errington, gr. to Sir P. G. Egerton, Bart., Oulton-park; Mr. T. Ingram, gr. to her Majesty, at Frogmore; and Mr. A. Toward, gr. to her Majesty at Osborne. Among subjects for exhibition, Mr. Plant, gr. to J. H. Schröder, Esq., sent three charmingly-bloomed plants of the beautiful rosy-purple flowered Barkeria Skinneri, each plant bearing from 12 to 13 flower-spikes. The plants were growing on blocks of Willow and Maple, without sphagnum or other material about their roots. The same establishment also contributed Vanda tricolor, the starry, white-flowered, graceful, two-lobed Angræcum, and Lycaste Skinneri. A Knightian medal was awarded for the Angræcum, Vanda, and Barkerias.—From Mrs. Lawrence, of Ealing-park, came a specimen of the extremely rare Vanda violacea, having two gracefully pendent spikes of lovely, purple-stained, delicate white, waxy flowers; also plants of Vanda tricolor and the sweet-smelling V. suavis, a well managed Saccolabium denticulatum, a variety of the autumn-flowering Lælia (L. autumnalis), Cypripedium barbatum, Barkeria Skinneri, a Lycaste, and Stenorhynchus speciosus. A Banksian Medal was awarded for these, but more especially for Vanda suavis and tricolor, and the toothed Saccolabium. The same garden also furnished three small plants of the beautiful orange flowered Aphelandra (A. aurantiaca), which promises to be a very fine thing.—Mr. Munnock, gr. to E. Druce, Esq., of Camberwell, sent a well cultivated specimen of Cypripedium insigne, for which a Certificate of Merit was awarded. It had 27 perfect flowers on it.—From Messrs. Jackson, of Kingston, came three varieties of the beautiful Lælia autumnalis, for which a Certificate of Merit was awarded; also Lycaste Skinneri, a small plant of the charming Odontoglossum membranaceum, Sophronitis cernua, Oncidium hastatum, and a specimen of the seldom-seen Vriesia speciosa, bearing a long feather-like spike of crimson floral leaves, from among which the flowers spring, and in which all the beauty of the plant consists. Messrs. Jackson stated that the flower-spike, after it had somewhat advanced, was much improved, both in size and beauty, by keeping the heart of the plant, out of which it issued, full of water. A Certificate of Merit was awarded it.—Mr. Summerfield, gr. to J. S. Venn, Esq., of Highbury-park, produced a plant of Zygopetalum Mackayii.—Mr. Henderson, of the Wellington-road Nursery, exhibited a seedling Heath, called Erica elegantissima, a cross between E. Hartnelli and E. hiemalis. It is pretty, as all Heaths are, but its short, shining, rosy-purple flowers, tipped with white, are no improvement on those of either of its parents.—Mr. Moore, of the Apothecaries' Garden, Chelsea, sent a dwarf Chrysanthemum, measuring 20 inches high and the same across. It had 31 stems or branches, of which 28 bore one or more blossoms each. It had been raised from a cutting put in in March last, and shifted on and topped in the usual way.

Mr. Wilmot, of Isleworth, produced a Blood Pine-apple, weighing 3 lbs. 12 oz., and a little-known kind, named Black Prince, weighing 5 lbs. 6½ oz. It resembled the sort called Buck's Seedling, or an Enville; but it was stated to be better flavoured than the latter, to keep better, and not to be so liable to decay at the core. A Certificate of Merit was awarded it.—Mr. Nash, of Bishop's Stortford, again sent beautiful examples of Cannon Hall Muscat Grapes.—Mr. Rauch, of Turnham Green, produced a specimen of the kind of tally used in the Derby Arboretum. It was made of some sort of hard earthenware, and faced, where the name was written, with a lighter-coloured and finer description of the same sort of material. The name is inscribed while the label is soft, and it is then burned in. This kind of label was stated to be durable, and not very liable to break; but it is rather expensive, the price being 1*s.* 3*d.* each. It will be figured in the next Number of the Society's Journal.—Mrs. Dorvell, of Oxford-street, exhibited some beautiful wax flowers. Very fine ripe fruit of Benthamia fragifera, some of it measuring 6 inches in circumference, was furnished by H. W. Stephens, Esq., of Bishop's Teignton, Devon. The plant which produced it was stated to be trained

on a trellis against the wall of a house, where it bears abundantly. It is to be regretted that such handsome fruit is worthless for eating.—Sir W. J. Hooker, of Kew, communicated a charming water-colour drawing of the country where the Sikkim Himalayan Rhododendrons are found, and of the costume of the natives.

Dr. Lindley produced a specimen of counterfeit rough plate glass, some account of which will be found in another page; and Mr. Wilmot, of Isleworth, sent two branches of his Nelis d'Hiver Pear tree, attacked by the new blight called Eriosoma Pyri, which was described in our columns of last week.—From the garden of the Society came various Orchids, four varieties of Epacris, a large specimen of Manettia bicolor, covered with its bright red, yellow-tipped, tubular blossoms, Aphelandra cristata, a good specimen of the winter-flowering Heath, the now pretty well known Abronia umbellata, various Chrysanthemums, and one or two other plants.

Review.

Principles of Scientific Botany; or, Botany as an inductive Science. By Dr. J. M. Schleiden. Translated by E. Lankester, M.D. 8vo. Longmans; pp. 616.

This book is an elaborate explanation of the botanical opinions of the author, and an unmeasured attack upon those of others. The manner in which the first part is worked out is admirable; the latter is unjustifiable. We say this with the less hesitation because English writers are treated with civility by Prof. Schleiden, whose uncalled for language is chiefly directed against his own countrymen. It would seem indeed that this author's mind is constituted like that of Dr. Johnson, who "could not understand how a sarcasm or a reprimand could make any man really unhappy. 'My dear doctor,' said he to Goldsmith, 'what harm does it do to a man to call him Holofernes?' 'Pooh Ma'am,' he exclaimed to Mrs. Carter, 'who is the worse for being talked of uncharitably?'" (*Macaulay.*)

It is much to be regretted that a man of such unquestioned talent as the learned author should treat his fellow labourers in a very difficult subject with so little consideration, employing towards them an arrogant tone, which, we must be permitted to say, that he is as far from being entitled to use as they are from deserving. Surely Prof. Schleiden would not claim for himself exclusive accuracy and unerring sagacity: he cannot seriously mean that in his view botany, especially vegetable anatomy, ought to have suddenly sprung up like another Pallas, perfect in all its parts; he cannot have forgotten how recently microscopes have become capable of application to minute anatomy, how short a time has passed away since chemistry became an aid to optics, and that it is but a very few years since the progress of development was thought of or its observation possible. Nor can he underrate the difficulty that still exists of understanding the true purport of many microscopical appearances, and of escaping from their misinterpretation. Knowing these things so well as he does, we are wholly at a loss to understand why his hand should be eternally raised against his predecessors and contemporaries. No doubt they have committed great mistakes; it must be confessed that their logic is sometimes bad and their observations worse; nor can any one deny that conjecture has often taken the place of investigation. But when the present modes of investigation were unknown or unattainable, conjecture, founded upon fair analogical reasoning, was the fertile parent of discovery; and even if it were otherwise it ought not to be forgotten that truth is often arrived at through error. Prof. Schleiden himself would not have been in a condition to write this book had he not raised it upon the knowledge that had been accumulated by the conjectures and errors, or, if he will have it so, the blunders of others. It is not error that demands scientific castigation, but a wilful persistence in error. The author of the book before us is as open to criticism as other people, as we must endeavour to show, although we trust in another and a better tone.

Conjecture is this gentleman's aversion; he deals with an hypothesis as if it were a crime; nevertheless there is no want of conjecture in his own pages. Take the following:

"On the great Fucus bank of Corvo and Flores we might yet find, floating about, plants of *Sargassum* which had been cut into strips by the bark of Columbus; and in the northern drift we might expect to discover Lichens that had been transported, with the soil in which they grew, from Scandinavia. On the primitive rocks we may find frequently examples of Lichens which, from a knowledge of their slow growth, we might regard as at least a thousand years old. The majority of the *Fungi*, on account of the delicacy of their tissue, are more easily destroyed, especially through decomposition, than other plants, so that we can hardly say that they die a natural death. Amongst high trees we often find the so called magic circles, formed by *Boletus bovinus*, *B. edulis*, &c., having so great a circumference that the plant to which their spore-fruits (sporocarpia) belonged could not be less than from 10 to 20 years old, the solid *Polyporus igniarius*, *Dædalea quercina*, &c., must frequently reach an age of above a century before they, Dryas-like, fall to the ground, which they do not because they are dead, but because the dwelling-place with which a hard fate has united them can no longer exist. The fact is otherwise in the remaining groups of plants, which, by a definite modification of the process of development, form various organs essential to the idea of their existence. One of these plants can be said to exist only so long as it continues to form organs necessary to the idea of its existence." P. 538.

Can anything well be more conjectural than this: or as some would say, more opposed to probability, if not fact. In another place he says:

"H. Mohl has given us minute anatomical observations on the Fern stems, but we are unfortunately still wholly deficient in a history of their development." P. 211. Nevertheless, in speaking of a view of their structure, of which he does not approve, these are his words:

"The attempt to represent the stem of the Fern as merely composed of leaf-stalks grown together is so entirely at variance with the law of its development, and, consequently, so totally devoid of foundation, that we do not deem it worth while to contest the point." P. 197.

So that, according to Prof. Schleiden, the attempt in question is entirely at variance with the law of development, concerning the history of which law we are unfortunately still wholly in the dark!!

The rage for introducing new words into science is thus fiercely attacked:—

"The vanity of wishing to be referred to is the parent of most useless words; and this disease will not come to an end until the catalogue of synonymes is understood to be a botanical pillory, wherein a man becomes abased lower for every time he stands in it: then people will be careful of making new words, without sufficient scientific grounds." P. 306.

To us this sounds more like a desire to catch the votes of unuformed persons, by joining in the vulgar outcry against new names, than the deliberate assertion of a man of science. The needless creation of new names is, undoubtedly, an excessive evil, but the necessary creation of them accompanies the onward march of discovery. It is curious enough to find Prof. Schleiden himself standing in the pillory he proposes for others; for what is the word "seed-bud," which he continually substitutes for ovule, but a new name, as needless and worthless as any that he criticises. To the word ovule, a well understood term, there is no serious objection; it is the small ovum in which eventually is hatched the plant. To call it a bud is not even a tenable hypothesis; for it has only one of the attributes of a bud, namely, the intrinsic power of further development; a property in which it merely corresponds with cells; while it wants the peculiar structure of a bud, and especially that property of multiplying the individual in all its similitudes. The Professor remarks at p. 365, about "perianth," and "accessory corolla," are other sins which would consign him to that botanical pillory which he charitably recommends as the receptacle of his brother delinquents.

This dogmatism is the vice of the author, as we have already stated, and, together with his confused style, which Dr. Lankester, with all his skill and knowledge of the subject, has sometimes vainly endeavoured to render intelligible, ruins one of the best books in modern science. As examples of dogmatism, we take the following:

"I will here, in passing, remark that the style is never a continuation of the mathematical axis of the flower, as Link says (El. Phil. Bot. ed. 2, p. 247), but always a prolongation of the wall of the cavity of the germen proceeding out from it. The investigation of every course of development of the gerunce proves the contrary. Just as little does any process of the axis exist in the *Geraniaceæ* (Link, ibid.): the five germens originate at once, separate and free, and become blended together; no other organ whatever appears among them." P. 375.

From this we entirely dissent. No doubt *can* exist about the axile nature of the style of most Myrtleblooms, for it proceeds directly from the placenta, the axile nature of which is one of the most useful discoveries of Prof. Schleiden himself. Nor can we admit the accuracy of the other statement about Geraniaceæ. If our author will study Geranium, Malva, Knaibelia, and Malope, we confidently believe that he will arrive at a conclusion diametrically opposite to that which he now holds.

The following is a case of a similar kind:

"The *formal* mania for discovering antheridia in the *Cryptogamiæ* for a long time failed to find support in the class of the Ferns; for stomates and the groups of spiral cells in which the spiral vessels of the leaf-nerves terminate, the indusium, and other parts, although termed anthers, could not for any length of time be maintained to be such. Fortunately for those who delight in sporting with words without affixing any definite ideas to them, a few glandular hairs (cells, of which the last, which was spherical or ovate, contained some gum and mucus) were found near the capsules in some specimens of Ferns, they were pronounced to be anthers, and the discoverers rejoiced in the self-satisfaction of having followed the course of science. *Habeant sibi!* I can corroborate the fact of there being glandular hairs in many Ferns, and, indeed, on the very peduncle of the sporocarps, but they are decidedly wanting in the case of a great many others. For my part, I am surprised that no one has as yet insisted upon the presence of the organs of sense, as eyes and ears, in plants, since they are possessed by animals; such an assumption would not be a bit more absurd than the mania of insisting upon having anthers in the *Cryptogamia*, simply because they are found in the *Phanerogamia*." P. 196.

No one has more steadily than ourselves objected to the analogy which many botanists have endeavoured to discern between *antheridia* and *anthers*, and *pistillidia* and *pistils*. We have always regarded the arguments as fallacious. Nevertheless, it is to be recollected that Griffith, who was certainly second to no botanist as an observer, thought the comparison a just one, and attempted to prove it such in his most elaborate memoir upon Azolla and Salvinia. The question is still an open one, and we are bound to add, that if Prof. Owen's views of impregnation are sustained, it will have to be decided against Prof. Schleiden and ourselves. "The essential conditions of the act," says this great physiologist, "appear to be a nucleated cell, and the product of a nucleated cell, with the combination of the two." (*Parthenogenesis*, p. 1.)

We have alluded to the confusion in which much of this book is involved; the following is not a bad specimen of it:

"I cannot repress here a teleological observation, which I own is not scientific. We do find the discoid and cup-like form in other axial organs, but nowhere so frequently as in the internodes of the flower: this is, however, unquestionably the simplest means to produce a condition of things favourable to a great multiplicity of structures, without injury to the dimensional connection and apparent individuality and completeness of the flower." P. 324.

What this may mean we cannot undertake to decide. Unfortunately, on the other hand, such sentences as the following cannot be misunderstood:

"Nothing can be more groundless than the assertion, that chemistry could never succeed in producing actually assimilated substances from inorganic matter. But the discussion of this possibility has been entirely fruitless." P. 371. The plain meaning of this is, that man may be able to create organic beings; a sentiment which we trust will find few advocates in this country.

Prof. Schleiden claims to himself credit for the most undoubted accuracy; if this is not done in direct terms, at least it is by implication, not to be misunderstood. The want of accuracy in others is the continual theme of his unmeasured condemnation. We doubt, however, whether he is more free from error than his neighbours. His minute anatomy of the pollen tubes, and their action upon the apex of the ovule is, we need not say, much distrusted. It is one of those subjects in which an observer may venture to say a great deal which it is difficult to disprove: we therefore pass that question by, and merely direct attention to the following statements:

"A fungus, as I believe, very seldom consists solely of roundish cells. *I cannot regard the true Uredines, &c. (Coniomycetes) as independent plants.* I must also regard many other supposed species of plants, as Puccinia, Cæoma, &c., *as decayed of individuality and simply as diseases of plants.*" And yet, with this inconceivable want of acquaintance with fungi, Prof. Schleiden compares systematical writers on fungi to the French emigrants who "forget nothing and learn nothing." We confess our inability to discover what the unfortunate mycologists *can* learn from Prof. Schleiden. At all events, after this we hope to hear no more of his unrivalled accuracy of observation. It is clear that he is as fallible as other men.

These remarks are made with great regret that they should be necessary in noticing the work of a man for whose talents and skill in observation we have a very high regard. Let us now produce an example or two of the manner in which he treats subjects of popular interest. Among the observations on vegetable food we find the following paragraph:

"The absorption of fluid matters occurs probably mostly, if not always, in connection with a simultaneous excretion of smaller amount, according to the laws of endosmose. In reference to endosmose, there are three relations of the plant to the media in which it vegetates to be distinguished. The simplest and most natural case is the vegetation of plants in water, or in a soil perfectly saturated with water (as in bogs). In this case, the cell-walls are in immediate contact with the fluid, and receive it by endosmose, so long as no covering prevents it. A trifling difference between the chemical or physical contents of the cells and the surrounding water is sufficient to sustain the endosmotic process. The second case is that in which the cells come in contact with solid matter, endowed with the property of absorbing water. In this case the contents of the cells will vary from the absorbed water much more than in the former; for the endosmotic attraction must overpower the resistance with which the water is held in the soil. The most common and important medium in this case is found in the decomposition of vegetable substances rich in carbon, which are known by the collective names of garden-soil, mould (*humus*). It is often found also in inorganic substances, endowed with similar physical properties. The greater or less facility with which they are able to absorb and condense water, carbonic acid, and salts of ammonia from the atmosphere, is important. For this purpose mould is the best possible medium. The great aim of culture should be to endow the earth as richly as possible with the physical qualities requisite to serve the plants that are to grow in it. The third case is that in which plants vegetate only in the air. It has only recently been discovered with certainty, that this case actually exists in the vegetation of the tropical *Orchidaceæ*. In such plants, the root-sheath appears to supply the place of soil, and they draw their nourishment from the surrounding air." P. 491 5.

This is further pursued in the succeeding page.

"When," says Prof. Schleiden, "we examine the

tropical *Orchidaceæ*, as they grow luxuriously in our hothouses, and find that only one or two of their roots adhere by their sides to the bits of cork on which they grow suspended, and consider that the peculiar covering of their roots distinguishes them from all other roots, and that this is composed of a spongy cellular tissue, resembling in its physical properties those bodies which, like wood-charcoal, absorb gases and moisture from the atmosphere, the expression of the fact in the text seems natural and warranted. This subject suggests a beautiful series of experiments for the purpose of determining the facility possessed by the root-sheaths of absorbing gases and vapour from the atmosphere, and introducing the same to the roots." P. 496.

In another place we have these just observations upon adaptation, which only make us regret that the author should not apply the powers of his vigorous understanding to the composition of a special work on the subject.

"The dependence of the life of the plant upon the life of the earth is in the highest degree interesting. We must here assume, that in the agencies on which the meteorological phenomena, the formative principle in the embryo, &c., depend, is to be found the cause why, at the blooming time of a particular plant, a particular kind of insect is produced, whose life again depends upon the nectar in the flower of the plant, and by the sucking up of which the transference of the pollen to the stigma is effected. For particular plants other agencies are needed: as, for example, it is requisite that wind should occur at the flowering time of the *Abietinæ*, that there should be undulatory motion of the water at the time of the flowering of the *Vallisneria*, and rain with the development of the capsules of *Ambrosinia Bassi*. These phenomena may appear accidental, but they are necessary consequences of the primary powers which are seen in the formative processes of the earth. The rain could not fall at the appointed time, and under the existing circumstances, without at the same time causing the internal formative energy of the earth to bring forth an *Ambrosinia*; and the meteorological relations would at the same time be so arranged, that on the developed spathe rain should fall. The spathe of the *Ambrosinia* is boat shaped, and floats upon the water. By means of the capsule, whose wing-formed appendages, uniting with the spathe, form a little cavity, the spathe is divided into an upper and under chamber. In the upper one is found one single ovary, in the under one exclusively the anthers. The pollen cannot reach the stigma without the assistance of rain, which filling the under chamber and the half of the upper one, lifts the floating pollen to the level of the stigma, and hence the pollen-tubes can pass along. This may be taken as one of the least known examples of the dependance of plants upon the assistance of external natural phenomena. The operations of wind and weather are more generally known, as also is the aid rendered by insects, on which subject we find some interesting observations by Conrad Sprengel, on the Secrets of Nature discovered in the Structure and Impregnation of Flowers; Berlin, 1793." P. 459.

The following sentence is, we believe, the best answer that can be given to the common inquiry of *what is a species?*

"Where we have not long-continued observations, embracing thousands of individuals, as in long-cultivated plants, to lay an inductive foundation, it is mere child's play to endeavour to determine what is a species, a sub-species, or variety. But on such questions much time and paper have been wasted. It is, however, important for the progress of science that every form that presents itself, whether it be a species, a sub-species, or a variety, should be described in the most accurate manner possible, in order that it may assist in constituting the definitions of a more advanced science. Every definition of a species must, in individual cases, be without any possible application, and all disputes purposeless, where every one must acknowledge there can be no result, because we possess no laws of distinction." P. 527.

With this we conclude for the present. Hereafter we may examine the soundness of some of the physiological doctrines which are to be found in Professor Schleiden's book, the appearance of which in an English dress is an incalculable gain to the naturalist who is familiar with the subjects of which it treats; but which is, we fear, not to be included among the elementary works by which mere students can seriously profit.

Calendar of Operations.

(For the ensuing week.)

FORCING DEPARTMENT.

VINERIES.—Let forcing be carried on with great caution at this dull season of the year; but take advantage of every fine day to allow the temperature to rise 15° or 20° higher than that at which it is kept during the night. Where the buds are not yet broken, the rods may be syringed three times a day in fine clear weather, with water of which the temperature is about 70°; and, after the buds break, it should be used 10° to 15° warmer. Admit air on every favourable opportunity; and proportion the amount of moisture in the atmosphere to the strength of daylight. Be careful that the fermenting material over the roots does not get too hot—a moderate warmth, not exceeding 75° or 80° in the dung, is sufficient; but, at the same time, it should be frequently examined, that it does not fall too low during cold weather, or the check will injure the roots. Where the Grapes are still hanging, remove the faded leaves, which are no longer of any service to the Vines, and prune all the shoots on which there is no fruit.

PINERIES.—It will be a trying task just now to manage these structures with no other heating material than fermenting litter. Every favourable opportunity should be taken to turn the linings, and add to them if required. Let them at least be protected by some kind of covering from the rain and snow; and if possible let them be entirely inclosed, that they may of themselves supply a sufficient amount of heat to do away with the necessity of keeping the pits covered during any portion of these very short days.

FLORISTS' FLOWERS.

Excessive moisture and sharp frosts are highly detrimental to Tulips, and though we do not advocate covering the bed immediately the bulbs are consigned to the ground, yet after they have made some growth, and the spikes are nearing the surface, they ought then to receive protection; therefore we would advise the amateur to take his measures accordingly: at all events, a light covering after this period will be beneficial, whenever the weather is likely to be severe. We should like to have the opinion of our Tulip growing readers, who by any chance may have, during the few past years, kept breeder Tulips out of the ground for some time after the usual period of planting; our experience leads us to suppose, that when this is the case many change their colour, or become rectified at the next period of blooming. Our late-struck PINKS, and those we obtained after the middle of November, are not, by any means, doing well. All planting of this kind must be postponed, and great attention paid to those already in. The early frosts we have had will loosen them; and when this is the case, they are much more liable to injury than those which were planted earlier, and have therefore greater hold of the ground. The same may be said of PANSIES; and seedlings planted out late will require considerable care. Those which are now weakest will (should they survive the winter) often throw the best and most prizable flowers. AURICULAS and POLYANTHUSES have, during the past autumn, exhibited a greater tendency to flower than we have recollected for years past. The plan adopted, in order that the plants may not be weakened, has been to rub the buds between the finger and thumb, taking care not to injure the stalk; for experience has taught us, when this has happened, that it has gradually decayed, and as it neared the heart of the plant, great danger has arisen: in some cases it has caused its destruction.

KITCHEN GARDEN.

Before the general manuring and trenching of vacant ground, it is necessary to decide on the rotation of crops which are to be cultivated upon it during the ensuing summer, that these operations may be ordered with special reference thereto. This arrangement should be made, not for one year only, but for a series or cycle of years. One of the first principles to be attended to is, that no annual crop be grown for two successive years in the same plot of ground. Another variation should be made by taking care that those crops which immediately succeed each other are not such as are liable to be preyed upon by the same kind of insects; as their increase is encouraged to a fearful extent by thus putting into their way the species of food which they are most fond of. It is important that both the manuring and the depth of the trenching be regulated by the requirements of the crops; and their rotation should be so arranged that the ground be not trenched to the same depth for two successive seasons, but so that the different portions of the soil be brought to the surface in turns. The perennial or permanent crops will, of course, form a class by themselves, as they do not require a change of situation for many years; but when this is necessary with any portion of them, the ground from which they are removed will fall into the ordinary rotation in the way of a regular exchange. But we will take a future opportunity of recurring to this part of the subject, and confine ourselves for the present to the annual crops. By cultivating the Celery and Cardoon on the Scotch or wide bed system, a large ridge of soil is thrown up between the trenches; and upon this will be cultivated the greater portion of the crops of Peas, Beans, and Spinach. The earliest crops will find a place on a warm border; but unless a very considerable quantity of Celery and Cardoons is required, a portion of ground must be allotted to the late crops, making in all about one-third of the available surface of vegetable ground. The extensive turning over which the Celery and Cardoon soil undergoes, acts admirably in preparing the ground for very deep rooting plants, such as Turnips, Carrots, Onions, &c., and in the following year may be devoted to the cultivation of the Cabbage family, whose roots are confined more nearly to the surface. The ground which should now be first trenched, is that from which the deep rooting vegetables have been recently removed. As the next crop will be of shallow rooting, very exhausting plants, the ground should be well dunged, and trenched two spits deep. We shall, in a future *Chronicle*, allude to the preparation of the ground for the other classes.

State of the Weather near London, for the week ending Dec. 6, 1849, as observed at the Horticultural Gardens, Chiswick.

Nov. and Dec.	Moon's Age	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday 30	[illegible]	29.891	29.781	46	28	38.0	S.W.	.23
Satur. 1	16	30.116	29.944	48	24	38.5	W.	.12
Sunday 2	17	29.821	29.419	50	40	45.0	S.	.46
Monday 3	18	29.521	29.415	40	31	35.5	N.E.	.06
Tues. 4	19	29.512	29.321	39	19	29.0	S.	.00
Wed. 5	20	29.379	29.275	47	29	38.0	S.	.10
Thurs. 6	6	29.722	29.640	52	34	43.0	S.	.00
Average		29.712	29.569	46.2	30.0	38.1		0.97

Nov. 30—Rain throughout.
Dec. 1—Clear; very fine; cloudy.
— 2—Rain; heavy rain throughout.
— 3—Rain; drizzly and cold.
— 4—Hazy; cloudy and fine; slightly clouded; frosty.
— 5—Sharp frost early A.M.; sudden thaw; rain with fog.
— 6—Clear, with slight low fog; exceedingly fine; clear; cloudy.
Mean temperature of the week, 4 deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Dec. 15, 1849.

Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 9	45.6	35.6	40.6	10	0.03 in.	2	4	1	1	1	9	4	1
Mon. 10	46.7	34.7	40.7	8	0.20	—	2	2	1	4	7	4	3
Tues. 11	46.0	32.4	39.2	8	0.62	—	2	1	3	6	6	4	3
Wed. 12	45.0	34.9	40.4	7	0.26	2	2	1	—	5	7	5	1
Thurs. 13	46.5	32.0	39.3	6	0.58	1	4	1	1	7	7	2	1
Friday 14	45.0	34.9	40.0	11	0.32	2	2	1	2	7	5	4	—
Satur. 15	46.2	35.7	40.9	13	0.50	1	2	1	3	7	4	3	1

The highest temperature during the above period occurred on the 13th 1842—therm. 62 deg.; and the lowest on 13th, 1846—therm. 11 deg.

Notices to Correspondents.

ASPARAGUS: *J Abell.* If your beef pickle be very strong reduce it, before you apply it, to about the strength of sea-water. Guano may be applied at the rate of about 3 cwt. per acre with advantage. It should be given just when the plants begin to grow in spring.‡

BOOKS: *Tyro.* Mrs. Somerville's "Physical Geography."

FRUIT TREES: *Philo.* The following Vines will probably suit you:—2 Muscat of Alexandria at the warmest end, 2 Black Hamburgh, 1 Sweetwater for the earliest, 1 Chasselas Musqué, 1 Black Frontignan, 1 White ditto, for the middle; 2 Black Hamburgh, 1 Black Prince, 1 Royal Muscadine, and 2 Oldaker's St. Peter's, for a late compartment. You may prepare your border, 2½ to 3 feet deep, with rich fibrous turf, bone manure, and cow-dung. Good young plants struck from eyes are likely to succeed better than others of a larger description. Cannot say where. The nurseryman with whom you deal can either furnish the above himself or easily procure them. You may have some Peaches and Nectarines on the back wall of your Vinery; but you had better erect a small house or allot a separate compartment. The Royal George, Bellegarde, and Noblesse Peaches; and the Elruge and Violette Hâtive Nectarines are proper for forcing. Mr. Rivers, Sawbridgeworth, has the stock of the Stanwick Nectarine under his care.‡—*J P M.* In forming an orchard of 100 trees, variety being not so much an object as good eating, keeping, and baking fruit, you may have 45 Apples, 30 Pears, 10 Cherries, and 15 Plums. Of Apples you should have the Golden Reinette, Ribston Pippin, Court of Wick, Pearson's Plate, Old Nonpareil, Boston Russet, Golden Harvey, Sturmer Pippin, Court-pendu-plat; and for kitchen use: Alfriston, Bedfordshire Foundling, Dumelow's Seedling, and Waltham Abbey Seedling. Of Pears: Marie Louise, Passe Colmar, Thompson's, Knight's Monarch, Eyewood, Broom Park, Winter Nelis, Ne Plus Meuris, March Bergamot, Easter Beurré, and Beurré Rance; for baking: the Catillac. Cherries: Mayduke, Elton, Downton, Knight's Early Black, Bigarreau, Florence, Kentish, and Morello. Plums: Greengage, Purple-gage, Royale Hâtive, Jefferson, Washington, Coe's Golden Drop, Ickworth Imperatrice, Shropshire Damson, and Early Orleans.||

INK FOR ZINC LABELS: *Jonas.* Verdigris, in powder, 1 drachm; sal ammoniac, ditto, 1 drachm; lamp black, ½ a drachm; and water 10 drachms.‡

INSECTS: *O b.* The worms which you have sent are the common earthworm (Lumbricus terrestris), which are easily destroyed with lime-water. We suspect, however, that your lawn is infested with the grub of the cockchaffer, in which case it should be pared off and ducks turned in for a time. *W.*

KITCHEN GARDEN: *A Constant Reader.* Divide the Grass from the vegetables by an evergreen hedge of Laurels, or Yew, or American Arbor-Vitæ. If your wall is to bear fruit trees, your walk should not be nearer it than 12 feet, unless it is a mere pathway, in which case the distance is immaterial, because the roots of the wall-trees will go under a mere path.

MOSSY TREES: *A Z.* Drain your land properly, and make your trees grow; the moss will soon disappear, but not till then. The moss does not hurt the tree, but the bad land does.

NAMES OF FRUITS: *W D.* 101, 104, Glout Morceau; 111, Beurré Rance; A, Blenheim Pippin; G, Norfolk Storing; 35, King of the Pippins; 36 b, Northern Greening; 42 appears to be Kerry Pippin; 43, Norfolk Beaufin; 45, 50, 52, Stagg's Nonpareil or Hicks' Fancy; 49, Barcelona Pearmain; 51, Dutch Mignonne; 56, Reinette Grise; 67, 77, Rymer; 75, Reinette du Canada; 86, Boston Russet; 99, Winter Nelis; 91, Lamb Abbey Pearmain; 100, Court of Wick; 110, Margil.||—*T W T.* 1, Ne Plus Meuris; 2, Glout Morceau.||—*W L.* We are not aware that the Dunmore Pearmain is known under that or any other name in the neighbourhood of London.

NAMES OF PLANTS: *R L.* 1, true D. chrysanthum; there is nothing much like it except D. ochreatum (*alias* Cambridgeanum) and Paxtoni; 2, probably some Cape Myrica, not determinable, but allied to M. quercifolia; 3, Lycaste, apparently new, unless it be a green variety of macrophylla; the species are much alike, and cannot be always identified by a mere flower; it may possibly be L. lanipes; 4, not Pellitory of the wall, which is Parietaria officinalis, but some Sisymbrium like plant; it may be a shrivelled morsel of Diplotaxis tenuifolia. The fungus is Elaphomyces muricatus.—*B C.* Daphne odora, Zygopetalum brachypetalum, Achania Malvaviscus.—*Tyro.* Gladĭolus, Clemătis. In pronouncing such words always remember that if the last syllable but one is short, the accent goes to the last syllable but two.—*J R.* Some of the specimens are so mutilated, and without fructification, that they cannot be made out. We admire the off-hand way in which you set about learning Ferns, but if you have another batch to send us, we beg of you to fix the paper so as we can see the number on it without entailing upon us the loss of time in unfolding a lot of slip-finger bits of paper; it takes more time to see what the number is than to write the name, and time is to us precious. 1 is Doodia caudata; 2, Adiantum pubescens; 3, Pteris serrulata; 4, Cassebeera pedata; 5, Nephrolepis? 6 or 9, Phlebodium aureum; 7, Pteris tremula; 8, Nephrodium molle; 9 or 6, Phlebodium aureum; 10, cannot tell by this; 11, Cassebeera hastata; 12, Doodia aspera; 13, Cassebeera hastata; 14, crushed; 15, has no fructification; 16, 17, Cystopteris tenuis. *S.*

PIGS' FACES: *A S N.* In the "Vegetable Kingdom," by Dr. Lindley, it is stated that this name is given by the natives of Australia to the fruit of Mesembryanthemum æquilaterale. You will generally find answers to such questions in that book. We don't understand how a country which produces the excellent Quondang, can be said to have no eatable fruit. There is also the little Cucumber described by Sir T. Mitchell.

SUGAR: *A Colonist.* It is a long story—much too long for our columns. We will, however, try to condense it by next week.

VINES: *A Middlesex Man* may plant them when he finds it most convenient, except late in autumn or in mid-winter.

MISC: *Otter.* The Vinegar Plant is the spawn of a fungus called Penicillium glaucum; there is not a yellow Moss Rose.—*Ebor.* Fruit sent to 5, Charles-street, will receive attention, provided it comes "carriage paid."‡—*Matutae.* You should apply to the Curator of the Botanic Garden, Kew.‡—*X Y.* The Damask and Provins Roses are what Rose-water is made from. You may take up your Yucca, divide it, and replant it now with safety.‡

THE FIRE ANNIHILATOR COMPANY.
PHILLIPS'S PATENT.

MR. PHILLIPS'S invention for extinguishing fire supplies the ready means of saving not only Property but Life from that destructive element. The Machines sold according to the scale of prices below, are available for Houses, Ships, Manufactories, and Warehouses, as well as for Farming Property, viz., Out-buildings and stacks of Hay or Corn.

The vapour given out from the Machines is producable at pleasure in a few seconds after any fire has been discovered, and extinguishes not only the flames arising from the ignited materials of property in general, but also has the same power over those caused by tar, turpentine, oil, sugar, and other highly inflammable substances upon which, when in combustion, water has no effect.

Stationary Machines fixed for the protection of Mansions, Manufactories, Theatres, Dockyards, and other large premises.

Size of Machine.	Price, including one Charge.	Price of each spare Charge.
1st, or A	£3 0 0	£0 5 0
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4th, or D	6 0 0	0 12 0
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Applications to be addressed to the Secretary of the Company, 150, Leadenhall-street, London.

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THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure sent out by them shall be free from the slightest adulteration. Peruvian Guano direct from Importer's Warehouses, London Manure Company's Wheat Manure and Urate, Sulphate of Ammonia, Phosphate of Ammonia, or Ammoniacal Phosphate, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone Sawdust, and every other Artificial Manure.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.

London, December 8.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

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BENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.

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CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the Nobility, Gentry, and Clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 400 and 500) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice. Lists of Colours and Prices, together with a copy of the testimonials, will be sent on application to WALTER CARSON, 15, Tokenhouse Yard, back of the Bank of England.—No Agents.—All orders are particularly requested to be sent direct.

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BY HER MAJESTY'S ROYAL LETTERS PATENT.

F. M'NEILL AND CO., of Lamb's-buildings, Bunhill-row, London, the Manufacturers and only Patentees of THE ASPHALTED FELT FOR ROOFING Houses, Farm Buildings, Sheddings, Workshops, and for Garden purposes, to protect Plants from Frost.

At the Great National Agricultural Shows, it is this Felt which has been exhibited and obtained TWO SILVER MEDAL PRIZES, and is the Felt SOLELY patronised and adopted by

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It is half the price of any other description of Roofing, and effects a great saving of Timber in the construction of Roofs. Made to any length by 32 inches wide.

PRICE ONE PENNY PER SQUARE FOOT.

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Patent Felt Manufactory, Lamb's-buildings, Bunhill-row, London, where roofs covered with the Felt may be seen.

The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

NOTICE.

SMITHFIELD CLUB PRIZE CATTLE SHOW, and Exhibition of Seeds, Roots, Implements, &c., 1849, commences on Tuesday instead of Wednesday, and closes on Friday evening instead of Saturday as heretofore, 11th, 12th, 13th, and 14th December.

Bazaar, King-street, Portman-square.

The Agricultural Gazette.

SATURDAY, DECEMBER 8, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

TUESDAY,	Dec.	11—Agricultural Society of England.
TUESDAY,	—	11
WEDNESDAY,	—	12 Meeting and Annual Show of the Smithfield Club, at Baker-street, London.
THURSDAY,	—	13
FRIDAY,	—	14
TUESDAY,	—	11
WEDNESDAY,	—	12 Exhibition of Fat Cattle and Poultry
THURSDAY,	—	13 at Birmingham.
FRIDAY,	—	14
THURSDAY,	—	13—Agricultural Imp. Society of Ireland.

FARMERS' CLUB December 12, London.

THE liability of drain tiles to stoppage, and the thus temporary character of what has hitherto been generally considered a permanent improvement, is matter of serious importance. It has generally arisen from one of three causes.

1. The growth of root fibres within the pipe, which has already been alluded to in the *Gardeners' Chronicle*. One way of preventing it is to lay the tiles at a greater depth in the ground; another may be to use tiles of such size as shall hinder the possibility of a *continual* current through them, excepting where they become the vehicle of spring water.

2. The deposit of earthy matter, which is attributable wholly to bad management—to shallow draining, which gives no opportunity of filtering the surface water laden with particles of the soil—to an impervious subsoil, which causes rain water to flow over the surface of the land and find its way into the drain by the loosened earth in the drain trench—to carelessly laying the pipes, so that any sediment that is possible accumulates in those which are below the general level

3. Chemical processes in the drain water itself. And here we give the following instance. A correspondent from Tavistock writes as follows:

"The enclosed substance, which I send for your inspection, was taken from some tile drains which were laid in February last. The soil is a peat, varying from 6 feet to 4 feet in depth, lying upon a sharp gravel, into which gravel the tiles were laid, from 1 to 3 feet—as deep as the outfall could be had. We find the substance not deposited at the bottom of the tiles, but adhering round the concave of the tile, in some places to almost the entire exclusion of a course for the water, of which there has all along been a large quantity. We lifted a portion of the main drain, and had the water from the river brought into it, expecting to remove this sediment by a heavy pressure of water. We have not succeeded, and now feel quite at a loss how to act without lifting and relaying, when doubtless the same thing would occur. Could you furnish us with any information as to how to proceed, we should feel deeply obliged. *J. P.*"

The adhesion of the deposited particles to the inner surface of the pipe, instead of their subsidence to the bottom, makes this look very like a case of the third class of instances, to which we have alluded. Had the several atoms of this deposit been particles of the soil brought downwards by the water, they would have sunk to the bottom of the water as soon as it was free to form a stream in the pipe: but, if, as we believe to have been the case here, they had been held in solution by the water, and appeared in the solid form only on reaching the air, then the fineness of the particles formed would enable the water to hold them in suspension for a long time, and they would ultimately adhere to all parts of the inner surface of the pipe, as, we are told, has happened in the peaty soil near Tavistock.

The explanation we have to offer of this case is this. Iron, where existing in a vegetable soil or in peat, is said to possess a very low degree of oxidation; the vegetable matter, being so powerful a deoxidising agent, will not readily permit it to assume the state of a higher oxide. Now it is in the form of protoxide—its lower state of oxidation—alone that it will unite with the carbonic acid with which rain is charged; and the carbonate of iron thus formed, being soluble in water, is carried into the drain. As soon as there, another change takes place; as soon as the water holding it in solution comes in contact with the air, it absorbs oxygen, and becomes the higher oxide we spoke of, which has no affinity for the carbonic acid with which the iron was in union, and that, therefore, escapes; and the peroxide formed, being insoluble in water, appears in the solid form, and ultimately coats the inner surface of the pipe; and accordingly the matter sent by our correspondent is evidently, for the most part, peroxide of iron.

The remedy for this mischief, or rather the method of preventing it, must evidently include some plan either for removing the protoxide of iron from the soil, or for converting it into peroxide where it is. The first result would ultimately be effected by drainage; and in peat soils, accordingly, it is well to intersect the land with deep, open ditches for a year or two before the under drainage of the soil is commenced. The second is generally believed to be effected by the application of lime. Thus, in the laboratory, lime will precipitate the protoxide of iron from the solution of its carbonate; and, by long exposure to air, this protoxide becomes a peroxide, and is no longer soluble in carbonic acid water. And in the soil too, no doubt, one effect of lime is to decompose the iron salts that may be there, and to keep the protoxide of iron, thus detached, in an uncombined state long enough to permit it to absorb the oxygen of the air, and lose its tendency to dissolve in rain water, and thus to enter the drain pipes and block them up with ferruginous deposit. Our correspondent will, no doubt, have to take up and relay the tiles of his drains; and we advise him, in addition to this, to try the application of a large dressing of lime to the land.

THAT the editor of a periodical is immediately responsible for the character and tendency of what he himself writes in its pages, no one will venture to deny. But the degree of his responsibility in the case of the anonymous communications which he receives and publishes is not so obvious. Let us endeavour to define it. In some journals a paragraph is published by their conductors, disclaiming responsibility for the expressed opinion of their correspondents; but we imagine that responsibility is not to be escaped in this way. If a man be really answerable for mischief done, or creditable for good performed, his character *will* stand accordingly, whatever the earnestness of the disclaimer he may have published. And we believe, therefore, however he may seek to escape it, that with the editor (on whom the character of the periodical necessarily, in great measure, depends) some degree of responsibility must lie, even in the case of statements not written by himself, but which he has laid before his readers. He is certainly not responsible for the strength of argument they may exhibit—no one will give *him* the credit of their accurate and skilful reasoning—no one will lay at *his* door the false logic they may develope. It is not the presence or absence of intellect which they display that will at all connect them with himself. He is no doubt answerable thus far, even in this aspect of the subject, that the topics discussed in these published communications must be appropriate to the object for which the journal was established. But, supposing this to be the case, it is not then *intellectual* aspect at all, it is not their intellectual strength nor their intellectual weakness which his readers will visit upon him. It is the *morale* of the matter out of which his responsibility arises; and though neither the soundness nor the weakness of the reasoning which these essays of his correspondents may exemplify, will in the least injure *his* character for controversial skill or intelligence, yet we have no doubt that the very first obvious departure from honesty or courtesy *they* may display will immediately damage *him* in the eyes of his readers.

And thus it is that while we readily acquit the *Mark Lane Express* of all responsibility for the intellectual character of certain strictures by "A Farmer," which have appeared in its columns, we hold it to be directly responsible for all the insolence they contain. It may not be the *Mark Lane Express* which argues in them so cleverly, but it is the *Mark Lane Express* which quotes in them with such obvious dishonesty, and misstates facts so boldly—and, so far as it is concerned in this way, we understand that "A Farmer" is decidedly a borrowed name, as we last week asserted it to be.

Our contemporary regrets extremely our "want of discretion" in charging *him* with that, for which, if chargeable at all, he supposes his correspondent to be alone responsible: but we imagine our theory of responsibility to be at least as plausible as his own. Want of *discretion!* We had affirmed so *clumsy* an untruth. Had the thing been done more "discreetly," *appearances* might have been saved. Was that the idea? If so, we have no sympathy with it: it has not been to want of discretion that our remarks on his conduct have been attributable; they fairly express the opinion we hold of his writings and of his courtesy. And we engage that every respectable person who thinks it worth his while to read the "Farmer's" trash, lathered by the Editor of the *Mark Lane Express*, will be of the same opinion as ourselves.

LANDLORD AND TENANT.

TO MR. MECHI.—Amongst the many gentlemen who now figure before the public at the various agricultural meetings, as instructors of the present race of farmers, perhaps no one has said more or advanced his arguments more energetically than yourself; neither has any one of the new school (if I may be allowed the expression) been listened to with more attention, simply

because your speeches and arguments have been made to bear more on the general business of farming, and that you have avoided riding your particular hobby with such desperation as the thin seeding, anti box-feeding, and other new-scheme advocates have done. But there is a great fault in your mode of making your statements; you urge farmers to copy you, and assure them of success, but you never properly define which part of the improvements done by you come under the head of landlord's and which of tenant's improvements, and have hitherto advanced what you have done in both capacities as a proper proceeding for tenants, forgetting that had you taken Tiptree Hall Farm as a yearly tenant, that you would never have expended the capital you have done without some better guarantee for the safety of your outlay than the great majority of the farmers of the present day have. In a speech made by you the other day, you stated that many farmers were struck with the expensive appearance of your farm buildings, but that when you stated the various advantages you derived, they always agreed that you were justified in your outlay, and that they would pay. True, Mr. Mechi, but you are the landlord, and it is a great advantage to find a man, as you state yourself to be, of most accurate habits of book-keeping, which your success as a tradesman warrants us in believing, who can come forward and tell the landlords of this country who are quite as much behind in their generation as their tenants, how at the present critical state of farming business they can materially assist their tenants. It was stated at the same meeting that your success had been quoted by landlords when their tenants complained of being unable to make both ends meet. Do pray tell them where the main cause of your success lies. At present it tells much against the farmers that you, an amateur, should come down from London, purchase a poor, hard working, ill-conditioned farm, and that you have had a satisfactory return for your outlay. And now, whilst we digest that part of the business which does belong to a farmer to do, pray use your influence and eloquence in endeavouring to induce landlords to build their tenants some of those excellent buildings where you make that quantity of corn, cake, &c., into manure without the risk of having it exposed to all weathers, and a large per centage of the best parts of the manure washed away; to give drain tiles where wanted, to allow tenants to clear hedgerows of superfluous timber, particularly Ash; to remove from leases and covenants many absurd regulations and clauses binding tenants to unprofitable systems of farming; to regulate with more justice to the occupier of the land the quantity of game kept thereon, which is not only a nuisance for the injury it does the cropping, but more particularly for the temptation it holds out for labourers to poach, the expense of whose prosecutions, and the maintenance of whose families in the union, the farmer must pay; but above all induce them to relax that kind of copyhold and arbitrary system under which we all suffer, and which, of all things, prevents tenants doing what they would wish to do, simply because at some future day, seldom far off, he must pay his landlord, in the shape of advanced rent, that interest for his outlay to which he is entitled, or leave his farm.

Could I see your farming accounts, I feel sure I should find two statements of outlay—the buildings and many other improvements placed with the original cost of the farm, and the rent you value your farm at placed as interest for the outlay; and if, as you state, it is satisfactory to you as a landlord, surely the same system would answer in other places. With game you have, I am sure, too much sense to be annoyed with; covenant you have none, excepting that one which every man resolves on who intends to succeed, viz., to work his land to the best advantage for himself and landlord; knowing, as every farmer does, that both their interests are bound up in the principle of doing it well.

If my suppositions are correct as to the above, which your speeches induce me to believe them to be, do, as I before stated, address yourself to our landlords, and prove to them how much to the advantage of all parties it would be if they would come forward and do their part in carrying out such of the above improvements as are required on their respective estates; they are for many reasons the only persons who can be expected to do them. When once the necessary outlay is made, they or their descendants have the advantage of the increase of rent, and do not, like the farmer, lose the outlay and still have to pay an increase of rent for the improvement, because he has increased the market value of his occupation; and if he does not agree to pay the extra rent, some other person will. Moreover, men now begin seriously to look out to their own interest, and not to depend on the security of any speculation made on the aspect of things present. The loss of protection has destroyed all confidence, as it has done the value of men's property; and those who are now fortunate enough to have saved ready money by farming will be more than ever careful how they again employ it in the improvement of their landlord's property; so that if we are still to go-ahead, it is very evident who are to lead the way; then, perhaps, when the owners of the land have increased their interest in it, they may be induced to imitate the free trade party, and strain every nerve to regain that necessary amount of protective duties, without which the present high rents, taxes, and daily increasing poor-rates can never be paid. They may depend on the hearty co-operation of the tenantry. But whilst the owners of the land look on the wreck of property with apathy, only hoping for better times, all the exertions of the tenantry are useless. *E. Compton, Water Newton.*

FARMERS' PROSPECTS.

MAY I offer for your consideration, and for insertion in your Paper, a few remarks on "the condition of our country," as affected by the two opposite principles of protection and free policy. Permit me to add that if in the main the following views are correct, the Duke of Richmond and Sir Robert Peel might easily harmonise the factions, and ultimately establish our national interests on a sound and therefore lasting basis.

I would commence with the position that a kingdom, however constituted, considered apart from labour, is of no practical worth. Let labour enter, and any given produce be obtained, and at once we have an available value. Constituted, however, as society comes to be, we find in it other elements than those merely physical; we have, in full, labour uninformed, skill equivalent to occupation, a proprietary, and, lastly, special institutions. The ratio in which these shall severally be supported is the first thing to be determined by society, the means of support for all being drawn from the first, that is, from labour. Now, the produce of labour for any given term is necessarily determinable both as to quantity and value. Take Wheat, the great necessary of life, at what may be called a natural value, 5*s.* per bushel, and wages, occupation returns, rents, and taxes can evidently be calculated upon some assumed (though, of course, just) proportion; and all parties will be respectively equally well off. If taxes, however, from whatever cause (whether war or official extravagance), shall rise in amount one-third, simultaneously everything is in confusion, unless the result of labour shall rise equally. This may be effected in two ways, increased production or increased value. Adopting the latter alternative, protective laws are established, which have for their object to give an artificial value to the bushel of Wheat, and this increased value meets at once the increased tax. If such tax be submitted to, the consumer pays the original tax and its increase on all he consumes; if rejected, unquestionably the grower pays all the increase. It is evident, therefore, that if taxes are to be high, the value of labour must be high also; and as we cannot by talking and writing turn 4 quarters of Wheat into 6 quarters (at least, not time enough for the emergency), we must of necessity raise the price of the quarter from 40*s.* to 60*s.*, and in strict truth no party is thereby injured while dealing at home. If in the course of trade, however, the English merchant find himself—and he soon does find himself—unable to compete with the lighter taxed foreigner, he must not condemn the dear rate of Wheat in England, but the dear rate of taxes which makes the dear Wheat necessary; and if he wants cheap Wheat, let him get it by making taxes cheap, and this he can do by bringing official expenditure from 7*s.* 6*d.* to the 5*s.* rate. If he only lowers the high Wheat he leaves the farmer (his friend, perhaps!), to pay the difference between 5*s.* and 7*s.* 6*d.* in taxes, and this will ruin the farmer.

As respects the first mode of meeting a rise of taxes—increased production—such does, without doubt, take place, though slowly, in all countries and at all times; but I waive the consideration thereof in this connection, because, speaking generally, I believe one part of such increase to be the legitimate reward of labour, skill, and landlord, and the remainder to be (if I may say so), the providential provision for that steady growth of population which we all see and acknowledge. Increased production ought not, except to a very small extent, to be a margin for increased taxation. Besides we must not forget the enhancement in value of any fixed sum, consequent upon a decline in the value of labour. Let the sum be 50 millions a year; this sum at a given price per bushel (7*s.* 6*d.* say) requires the sale of a certain definite quantity of Wheat, a quantity, perhaps, not constituting any very serious burden. Lower the price of Wheat, however, one-third, leaving the sum of tax unaltered, and the farmer must sell one-third more Wheat than he did before the alteration, to meet that tax. Meanwhile the tax receiver prospers to exactly the amount the tax payer suffers; with a salary of 50 he can purchase 75 of produce; with a nominal tax of 50 the farmer is called upon to sell 75 instead of the 50 which he had to sell previously. Any ordinary exertion or economy of labour must fail to make up such a deficiency, and the means of extraordinary effort have passed away, as far as the tenant is concerned, with high prices. Nor must the want of capital be charged upon the farmer; he had enough, but is suddenly placed in a situation for which that capital must prove unequal. Fixed charge, therefore, obviously ought not to coexist with varying value of produce.

Of consequence, in such circumstances, an equitable adjustment should be instituted. All our fixed charges should be converted into bushels of Wheat at 7*s.* 6*d.* per bushel, and that number of bushels converted back again to money, reckoning the bushel at 5*s.*, and then all parties fare alike. The farmer receives less, but then pays less; and in like manner the landlord and Government receive less, but have also to spend less. In short, the system is nothing more than the principle of the tithe commutation applied to all burdens—a most just principle, and if applicable to any, equally applicable to all. The occupier cannot more easily accommodate himself to the cheapness of the times, than can the landlord; nor is there any injustice in subjecting the fundholder to the same rule as the church, and for the civil list and official salary, these may well imitate the labourer's decline. It is commonly supposed that reduction of taxes is not indicated at the present moment, because no special burdens on land can be pointed out.

This is to take a wrong view of the working of taxation. Supposing taxes reduced one-third, the farmer individually will have to pay one-third less, and having to deal with a surgeon, a lawyer, a grocer, a linendraper, a saddler, a blacksmith, a wheelwright, and various other persons, all of whom enjoy the same reduction as himself, he receives from them one-third discount on all their dealings with himself, and in return can well afford his Wheat one-third cheaper to them. I might add the clergy and labourer to the above list, save that the church does accommodate herself to our income; and, for the labourer, I could desire to exempt him from all reduction whatever.

In conclusion, such I believe to be the correct exposition of our present state, such the only complete remedy for our present alarming depression. If adopted, all may yet be well. It matters nothing to the occupier whether Wheat is at 7*s.* 6*d.* or at 5*s.*, if other things are in true proportion; but if he is put at 5*s.*, and his obligations are left at 7*s.* 6*d.*, if his receipts are those of 1750 and his payments those of 1850, ruin must sooner or later come upon him, and the English labourer sink into an Irish degradation. The proprietary will then suffer, fiscal difficulty beset the Government, and all end in national bankruptcy. I shall subscribe to the earnest hope that our rulers may seek while there is time—and the time for adjustment is the moment of transition—seek to avert so serious a catastrophe, and with a happy concert of all parties establish our national affairs upon a sound and therefore lasting basis. *J. B., J. N.*

QUALIFICATION OF LAND AGENTS.

IN my former remarks I made allusion to the advantage to be derived by landowners appointing fit persons for their agents; and I see no reason why parties seeking this occupation should not be as regularly initiated, as for that of any other business or profession. If, as it has hitherto been imagined, any one selected at random is able satisfactorily to perform these duties, it produces the natural conclusion that agricultural economy can be understood at a glance, and that, without talent or education. When it is known that a large portion of those engaged as agents are men totally destitute of the first rules of grammar and orthography, this impression is inevitable; and who then can be surprised that science is so far removed from the cultivators of the soil? If the rudiments of learning are so entirely absent from the managers and directors of great concerns, they will remain in perfect ignorance of all modern improvements, and are not likely to admit arguments, however correct, of the most judicious advocate, and change only reaches them by force. A tenantry seeing a person of this class holding a place of great trust, and controlling large interests, are led to the conviction, that as education is in no way essential for directing agricultural operations in its main points, it must, therefore, be of much less use in carrying them into effect.

This feeling is imparted from the farmer to the labourer, and hence the gross ignorance prevailing among those connected with land. If landlords then think their agents sufficient, with so few advantages in this particular, the farmers remain satisfied of their own perfections; no wonder then that knowledge travels slowly when clogged with these weighty impediments. Let those having power set better examples, and prove to the world at all events that some qualifications are needed, and the most favourable results will, without doubt, follow. I am not pleading for college degrees, or high classical attainments; but every person taking these situations should be competent to put a case clearly in writing, and capable of corresponding efficiently with all those with whom business may bring him in contact, and able to carry out his own views and intentions upon all points in course of his employment. Unless the old beaten track on this head be forsaken, it is ridiculous to expect science to march hand in hand with practice. Numerous agents think it useless to read any periodical work on agriculture, and I will venture to state that three-fourths of those called land-agents never see the Journal of the Royal Agricultural Society of England. If this be so, how can skill make any rapid advancement? These remarks, I feel, apply accurately to the majority; and it is doubtless a very large one.

In the commercial world all those engaged are acutely alive to every duty connected with their office, capable of stating a principle and explaining it, and are in no way wedded to the antiquated movements of their predecessors; but each is seeking the way to amendment. A landed proprietor should insist upon his agents having gone through some regular course of study; and in all cases require proof of their having been articled or employed by a person practising the business; from which I feel satisfied great benefit would ensue, and prejudice would soon disappear from among the farmers of the kingdom.

In point of expense, persons of proved fitness would produce considerable saving; for where a lawyer is the chief actor he usually employs a secondary agent, to whom a small remuneration is given; and this man is often a worn-out gamekeeper, or perhaps unsuccessful farmer. The opinion of the latter is taken upon the cultivation of the estate, but his judgment is commonly guided by the degree of respect he receives from

the tenantry, or the intimacy existing between them and his own family. The most respectable part generally fare worst. If the lawyer has no such representative, then he resorts for occasional aid to a land-valuer in the neighbourhood; but the advice of the latter is often unsought till difficulties have overcome many industrious and deserving tenants. Sometimes the owner himself assumes the superintendence, and of course business is then second to his pleasures: the most urgent demands are postponed till leisure permits; the delay, of course, is injurious to himself; and affairs when disposed of are so clumsily performed that a law-suit often arises, or some ulterior disaster, equal to the pay of a capacitated man for 10 years.

An agent having the conduct of estates, ought to dispatch all matters appertaining to his office, without reference to the attorney; and this, in the long run, will show a great gain to the owner, and which may be easily proved by a proprietor who has acted as before described referring to his law bills, or other extraordinary charges, and comparing them with the accounts of other noblemen or gentlemen who have had stewards in all respects equal to their duties. The legal functionary, who has possessed the family confidence for years, by no means looks on the existing state of things with disapprobation; but, on the contrary, is deeply interested in its continuance, and is, on that account, the most improbable of all people to suggest any remedy; notwithstanding, should any alteration be requisite, or necessity compel the appointment of a new agent, he is sure to be consulted on the best mode of effecting the object, and upon the fitness of any applicant for the vacancy; he at once recommends adhering to the old plan, and, in his views, the more illiterate the man the better, taking care, at the same time, that whoever it may be, he shall clearly understand that the selection has been made upon his intercession, and the place obtained through his influence, thereby implying that, independent of him, there can be no power. This position of affairs being fairly established, the machine is once more set in motion, the lawyer's saddle is again firmly buckled on, himself safely seated, and the good old doings of our forefathers are in the best channel for handing down to their successors. *B.*

THE FORTESCUE TENANTRY.

THE following letter has been addressed by Earl Fortescue, to his tenantry:

"*London, Nov. 2, 1849.*

"I regret that the state of my health prevents my meeting my North Devon tenants, as I usually have on my rent day. The present low prices of corn and stock, and the desponding language held by many persons respecting our agricultural prospects, render it more than ever necessary for the welfare of the labourer, the farmer, and the landowner, that the mutual relation between landlord and tenant, and the obligations which that relation imposes on each, should be clearly and fully understood. Let me warn you, in the outset, not to expect any change in the Corn-law. My firm conviction is that none will take place, but that the British agriculturist must henceforth lay aside all hope of aid from what is called Legislative protection, and *depend* wholly *on himself for* making the land so to yield her increase as to afford *an adequate remuneration* for his toil and his capital. I believe that the farms you hold are generally capable of doing this without a reduction of rent; but I am satisfied that, in most cases, it can only be done by such improved management as shall greatly augment their present produce. To such tenants, therefore, as have not the ability, or the disposition, to improve their husbandry, *I would earnestly recommend a withdrawal from business*, and I SHALL BE READY TO TAKE THEIR FARMS OFF THEIR HANDS, NOT ONLY ON JUST, BUT ON LIBERAL TERMS; and to those, on the other hand, whom I see exerting themselves with industry and skill to develope more effectually the productive powers of the soil, *I shall gladly lend my aid*, by draining or other improvements, on such conditions as may, I hope, through our joint exertions, counteract the effects of low prices, by the greater abundance and superior quality of the saleable produce of their farms. This object, however, can in no case be effected without increased labour. I shall, therefore, afford *no assistance* or encouragement *to any tenant whom I find discharging any of his accustomed hands;* because, as has been well expressed lately by Mr. Turner, a tenant-farmer like yourselves, and, though a zealous advocate for protective duties, one of the best practical agriculturists in the country: 'High farming is the only thing to keep the labourer employed; and it must be preferable to improve the land with a hope of a partial repayment, than to crowd our workhouses, which are already nearly full, with able-bodied labourers. And I at once publicly declare, as a practical man, that the only chance of a farmer obtaining a livelihood is by good farming, and that all those who farm otherwise must very soon go to decay.' (Signed) "FORTESCUE."

To every word in this excellent letter we cordially assent. The italics and capitals are our own. It is to be hoped that Lord Fortescue's advice will be taken, and his example followed, by all to whose cases they are applicable.

Home Correspondence.

Wheat continues a low figure.—What causes the price to rule so low? is it the large quantity of old Wheat in the hands of the growers? No, that was nearly all consumed at the commencement of harvest. Is it caused by a superabundant crop this year? No, we have not more than an average crop. Is it caused by very large importations from abroad, or large stocks in the merchants' stores? Nothing of the kind. Then what keeps down the price? Simply rumour, which destroys that confidence that should prompt the factor, the miller and baker, to purchase to-day, believing that the price will be higher to-morrow. To show that such is the case, I beg to call your attention to what took place two years since, when a rumoured scarcity sent up the price of Wheat from 7*s.* to 16*s.* per bushel, and in the short period of three weeks, the same jade blowing her powerful trumpet in another direction, caused the price of Wheat to fall from 16*s.* per bushel to 6*s.* As an humble individual, I have done all in my power to point out to the Protectionists the sure and certain result of their past and present proceedings, and I have also endeavoured to ward off the effect of their suicidal acts, by disabusing the public mind with regard to the pretended low price which they maintain the foreigner can afford to sell for. *J. B., Somerset, November* 18.

Cobbett's Corn.—I take the liberty of stating, for the information of your correspondent "Milho," that I have this season grown a few rods of true Cobbett's Corn, which was perfectly ripened by the middle of September. It was sown the 5th day of May, part on a sandy soil, and part on a stiff soil, and the result has fully realised the expectations of both my employer and myself. I purpose growing next year the dwarf variety of Messrs. Page, at Southampton, who have ripened not less than 10 sorts this season, although I consider it advisable to grow only the dwarfest kinds, including Cobbett's, of which sufficient seed for an acre may be purchased for the small sum of 6*s.* *W. Hocking, Gardener to J. J. Briscoe, Esq., Fox Hills, Chertsey, November* 23.

On Breeding Stock.—In reference to the leading article of the 17th November, with regard to breeding and feeding on your own farm, I may remark that I have had some little experience in breeding from shorthorns by crossing with Ayrshire cows, and I have reared young calves by the continued feeding from the time they are calved, as I believe, the most profitable way for the farmer. The cattle you purchase at market are generally stinted in their growth by being badly kept when they are young; it is just like any crop which is stopped in its growth by cold. By continued feeding with a little cake and Turnip in winter and Grass in summer, till they were 22, 24, and 26 months old, I have sold them from 20*l.* to 24*l.* a piece; and although I have been in the habit of purchasing others, and feeding them, I have never been able to obtain that price for the ones bought in. *Thomas Sadler.*

Sheep on Turnips.—I beg to submit for your perusal (fearing it may escape your editorial eye) the following extract from the speech of the Rev. N. Bond, delivered at a meeting of the "Wareham and Purbeck Labourers' Friend Society," held at Wareham, on the 10th of April, 1849. "He had heard it said, you cannot have too much of a good thing, but he believed he could prove an exception to that rule. Now he had cultivated a piece of poor land for Turnips, and thinking he could not use too much artificial manure to make the land good and productive, he put upon it 3 cwt. of superphosphate and the same quantity of guano to the acre, and his friends told him they never saw such a beautiful piece of Turnips. Well, but he paid very dear for this beautiful piece of Turnips. He put 35 sheep, nearly fat, upon this piece, and very shortly afterwards he lost 11 of them by death. He thought at the time this might have been owing to the land being damp, or something else, but did not at that time attribute his loss to the right cause. During the hard frost in the month of December, the ground being very hard indeed, he turned the whole of his brood ewes upon this Turnip ground; when the sheep had fed during the first night on these Turnips, his shepherd came to him, and told him if he (Mr. Bond) did not take the sheep away immediately, he would not remove half of them alive. They were all immediately removed, and it was a fortnight before they recovered their health. He communicated this fact to a neighbour, and offered to let him turn his sheep upon these Turnips if he please, making him at the same time fully acquainted with what had happened to his own. His (Mr. Bond's) neighbour did try the effect on his sheep. They did not do well upon them, and were all soon afterwards affected in the same way as his (Mr. Bond's) sheep had been, with a sort of brown purge. He had no doubt his sheep had been poisoned by the heat of the Turnips, in consequence of too much manure being put upon them. He was therefore satisfied that, in the case of manure, he had had too much of a good thing."—From the *Sherborne, Dorchester, and Taunton Journal*, November 8, 1849. Now, the vague expression of the heat of the Turnips causing the mortality, I do not presume to understand, and I should wish to have your opinion of the cause of the disaster. I am not aware that such manures, in any quantity, will render plants poisonous, but do you not think it probable that the superphosphate and guano was or were taken into the stomach directly with the roots? I am unacquainted with the effects of either on the animal system. This is an interesting case for inquiry, and of great practical interest to the farmer. *Inquirer.*

[We are of opinion that neither the quantity nor the quality of the manure applied had anything to do in producing the disease in question, and for these reasons; we know many parties who have been in the habit of employing the manures in question in pretty nearly the same proportions, with no such bad results; one party in particular, for the last 3 or 4 years, has raised his Swede crop by means of 3 cwt. Peruvian guano, and 2½ cwt. superphosphate of lime per acre, and the very abundant crops which were invariably produced, were always fed on the land by ewes and lambs, and without any bad result. Good hay, Peas, and sometimes oil-cake were given at the same time. With regard to the quantity of manure causing the Turnips to be poisonous or to have too great heat, as it is termed, if the quantity of manure applied could produce this result, how very poisonous must be a crop of Turnips raised by means of 20 tons of rich dung, and in some cases guano to boot. The fact is, the plant will take up just as much food as it really requires; and if more is supplied, it will leave it behind in the soil. We do not think it possible that any manure could have been taken directly into the stomach, but are rather disposed to attribute the disease to the land being unhealthy for sheep, perhaps from being wet naturally, superadded to a wet season. *W. C. S.*]

Practice with Science.—The question of high farming *versus* low farming has been mooted in the "New Husbandry," page 38. It is there shown that whilst the one impoverishes the land, and along with it both landlord and tenant; the other, if properly applied, will enrich all three. The great fault in the letting of land has been the want of proper consideration in the choice of a tenant. The qualifications requisite for a good one are intelligence, enterprise, and capital. It is in vain to expect any great success in an arduous undertaking, unless it is conducted by a wise head and an enterprising spirit. However vigorous may be the understanding, yet there is no question this may be greatly improved by education and study. It is this which leads to the examination of different systems, and applies that which is most conducive to its own purpose. With our northern neighbours the cultivation of the mind preceded the proper cultivation of the soil. With us the case has been different, and the want of the former has kept the latter in a backward state. But even intelligence and a right spirit will not suffice of themselves. It is necessary that there should be ample means at command to carry into execution any useful work. It is perhaps more from a deficiency in this respect than from any other cause that so many failures have taken place in farming projects, and that agriculture in many parts has so long remained at so low an ebb. The late Mr. Coke of Norfolk used very properly to enquire, when a person came to offer for a farm, what capital he possessed, and would then only let him a farm proportionate to the means he could command. In the present low state of farming produce, low farming can never answer. It must be equally injurious to the landlord, tenant, and labourer. If a make-shift system is pursued on an estate, if no foresight is at hand to meet future contingencies, no money to carry out any extensive system of improvement, rents must inevitably be ill paid, arrears will accumulate, and the owner see his land retrograding in value, and himself perhaps in difficulties, if not ruined. By a wise and liberal arrangement, he will find his property progressively improved, and though he may not reap the immediate benefit of it, yet by a temporary sacrifice he will eventually obtain a more certain and permanent income. But that which is most gratifying to a feeling heart will be effected by it—he will place those dependent on him in easy and prosperous circumstances, and thus not only enable them to come up well with their rents at the time they are due, but hold out an inducement to them to exert themselves in increasing the value of his land. To the labourer, high farming must be of immense advantage, not only in its requiring more hands, but those who are employed are generally better attended to. As the whole land must be under arable culture, the amount of labour must be necessarily greatly increased, compared with what it would be if it were kept upon the old plan of grazing. But if this arable system is to be worked out in the best possible way, additional labourers will be required for the numerous operations constantly going forward. Accordingly we see in Mr. Caird's statement, that

The money actually expended in labour amounted to	£142	8	0
The labour account for the year 1848 amounted to	417	3	8
Being nearly three times the former sum, and showing an increase of	£274	15	8

We now come to the practical part of low farming. Any one who has had under his care strong clayey land, undrained, will know full well the knowledge, the skill, the labour, the expense it will take to bring this into proper order for bearing crops, even under an able and experienced artist. What, then, must it be under one who is destitute of the principal qualifications of farming practice. When land is undrained, the work of the plough is difficult, uncertain, and expensive. In that state the land can only be come upon with the plough at certain times; as, if it be thoroughly saturated with wet, the plough will do more harm than good. One ploughing on drained land will go as far as two or more in wet. The growth of weeds is propagated by a redundancy of wet, and it is only by laying the land dry that these can be thoroughly eradicated. The fallow system is the necessary consequence of undrained land. In this every third year there is a dead loss sustained of 33 per cent. The difficulty of working even a fallow in all weathers is often so great, that much more labour is required. If a continued drought prevails, the clods get so consolidated and hard, that nothing less than a very ponderous clod-crusher can break them down; if continued wet prevails, the ground becomes so retentive of water that the seed time is deferred until the winter, and

this most important process takes place under very disadvantageous circumstances, the crop suffering in proportion from it. In land in this state there is no possibility of having even a tolerable crop of Turnips, which require a loose friable mould for the enlargement of their bulbs. The best plan that can be pursued in this land for a green crop is to have Beans in drills. These require a strong soil, and may answer well, even where the soil is not minutely pulverised; but if manure is used when the ground is wet, much of its strength will be spent by its lying in that state, and thus, its fermentation being checked, the waste of manure from its lying wet and starved is so great, that this of itself is a serious loss; but in many cases the manure applied does more harm than good, from its encouraging the growth of weeds, which rob the growing crop of the sustenance which it would derive from the ground being perfectly clean and friable. All these considerations and circumstances lead to the conclusion, that a system of farming carried on without science, or without those improvements which modern discoveries have introduced, cannot bring to the landlord such a return, as his possession, capable of better things, ought to do; it is equally clear that the tenant cannot make any large profits, when he has to cultivate his land to so great a disadvantage; and if he, by his bad management, becomes impoverished, it is quite out of his power to employ any considerable number of labourers on his farm. His only chance of keeping his head above water, or his pockets with any money in them, is to have as much as possible of his land in Grass. Ploughed land, under the circumstances just described, will never do him any good; and, as it was once said of Ireland by Sir Joseph Yorke, that if it were put at the bottom of the sea, it would be doing us a service, so the same thing with his ploughed land—might be doing him the greatest kindness that could befall him. Self interest, therefore, as well as a regard for character, call most loudly upon the landowners and farmers of the present day to co-operate with each other in bringing about a more improved and enlightened state of things, and by so doing they will better their own condition and confer a great benefit on the public. *Law, Rawstorne.*

Farming without Ploughing.—Every vegetable growth, of any kind or degree, is the result of the combined efforts of the terrene particles and of the atmospheric elements that exert their action upon them; and the quantity or bulk, and also the quality of the produce, wholly depend on the kinds of the earthy ingredients that are exposed to the atmospheric action, the state or condition in which they exist, and on the way or mode in which the combination is promoted The fertility of land consists in the quantity and quality of the remains of organised bodies that have lived and died on the surface of the earth, and which, being mixed with the upper stratum of the earthy formation, constitutes the part of the ground which undergoes cultivation, and from which every produce is obtained. The operations of life are upon the surface of the earth, and are wholly caused by the stimulating force of the atmospheric agents that exist in a state of refined subtility being exerted upon the grosser materials of the earth. Observation and experience, which are by far the most powerful of all the teachers of the human race, have shown and settled the fact, that exposure of the soil to the sun very much destroys the fertility, and that the covering of it very much promotes the opposite effect, and also most effectually destroys every kind of vegetable life. A partial decomposition is promoted on the surface of the ground, which, on being exposed to the light, produces a wonderful fertility. As a proof, the sites of hay and corn ricks may be mentioned. These facts being undeniable, it remains to cover the ground instead of ploughing it, and so thickly as to kill every vegetation. This may be done by means of thick mats of flax or hemp, and mixed with coarse wool; and on clay lands, to remain from the October of one year to the same month of the next year, and then removed. The farm-yard dung in a reduced state, by the straw being cut into short lengths when used for litter, will be spread on the surface and mixed with the soil in the depth of 2 or 3 inches, by means of scuffling done longitudinally and crosswise; or, as Wheat likes a firm hold of tough ground, the land may be ploughed by one furrow: and this expediency may be tested by experience. The Turnip soils will be covered from harvest to the season of sowing the seeds in May and June. On the coverings being removed, the surface must be scuffled to the depth of 2 or 3 inches, the manure incorporated, and the Turnip seed sown, and rolled on this surface of finely comminuted particles, on which success of germination will be certain. The moisture contracted during winter will remain unevaporated by reason of the land not being exposed by ploughing, and the damp and cool nature of it, differing in that respect very much from the moisture of fallen rains, will insure the safety of the Turnip. The tap like root of the Turnip does not require a deeply stirred soil to allow its descent—the top growth being encouraged, the root will find its way. As a proof, there is seen the equal success of Turnips on lands pared and burned, and not ploughed, as when the seed is sown on the soil that has been ploughed and finely harrowed. This fact is undeniable. This substitute for the fallowing of lands will kill weeds far more effectually than any process of arable cultivation, and will bring the soil and the manures into contact in the proper condition of minute cohesion. Chemical combination can only happen between the ultimate elements of matter, and at insensible distances; in aggregated bodies, no action can be exerted by reason of the force of the power of cohesion, and the efficacy of composition is inversely as the attraction. No action can take place unless bodies are mixed in the most intimate manner, and placed at insensible distances: hence the necessity of reducing the soil and the manures to a very fine mixture, and to a most intimate relationship. This most important object is the aim of the theory now stated. It may be suggested as an extension of this theory, that after the manures are mixed in the soil by scarifying as has been now described, the land be again covered for a definite time, and that the Turnip seeds be immediately sown when the covering is removed. The damp surface will form a most favourable bed to the young germinations, and a further extension may be made by trying if the occasionally repeated coverings of the land would not dispense with manures altogether. The substitute would be the partial decomposition that would be effected during each time that the land was covered. Such a finale may possibly succeed. *J. D.*

Capabilities of Land and Labour.—In a previous number of the *Agricultural Gazette*, a writer who signs himself "G," rates farmers very roundly for not making more of their land. He states that the produce may be doubled, and repeats all that sort of thing which is now so common in the mouths of those who do not live by their farms. He gives a case which seems very strong. Mr. A hires land at 25*s.* an acre and fails, and a labourer hires the same kind of land at 60*s.* and succeeds. In solving this problem he makes an egregious blunder; he says the labourer receives good remuneration for his capital—labour. Now this is true and it is false; the time which the labourer spends in his allotment, would otherwise be spent at the ale-house, or in muddling his time away, and consequently any remuneration would be better than this. Will "G." assert that if the labourer keeps an account of all the hours he spends in his allotment, that his produce will allow him, for this time, as much money as he would have received from a master for the same time? And if he does find on positive inquiry, or keeping a register for 12 months, that the labourer's time in his allotment pays as well as working for his master, there is still another consideration that turns the scale in favour of the allotment. The labourer in his allotment is working for himself, and that simple circumstance will make the spade go into the stubborn soil more deeply and more quickly, and one half more work will be done in the same time, with half the fatigue. The manufacturer is also brought in again, to show the ignorance of the farmer, and even his procedure is not correctly stated. The fact is, when the manufacturer finds that there is a fall in the price of any of his fabrics, instead of paying 8*s.* for a certain quantity of work, he pays 7*s.*, and this causes his work-people either to get up an hour earlier, work an hour later, or be more industrious during the time they do work, to keep up their wages. More capital alone is not the farmer's remedy; but more capital and giving the labourer an interest in every operation, by paying him according to his quantity of work, would not only benefit the farmer, but render the labourer more contented. Every one who has ever looked after workmen, knows that there are men who will do half as much more work than another set, and is it right that the good working man should have all his energy go to make up for the ignorance or laziness of his mate. At many of our farmers' associations we have heard various benevolent parties recommending the farmer to employ as many labourers as possible; and on the other hand we have heard farmers say that they could not employ the labourers under present circumstances. Now in our apprehension this is sheer nonsense from both parties. The farmer has no more business to employ labourers, for the sake of employing them, than the grocer, or smith, or wheelwright. The farmer never employs labourers for the mere sake of keeping men out of the union; he employs them to do his work, and he cannot get on a step without them; and all he requires will, on consideration, be a better way of paying for work done; the farmer gets infinitely less labour for his money than the manufacturer, and if he could get the labourers to work with as much spirit for him as they do for themselves, there would be some chance of his doubling his crops; for, after all, science will not drain the ground nor "scratch its surface," much less tend the stock and gather in the crops. *Pen-and-ink.*

"Duty towards our Neighbours."—Do persons who employ hundreds of men, women, and children, take an interest in their welfare by establishing places of worship, schools, and self-supporting clubs, exclusively for their benefit? or do they consider paying wages exonerates them from further responsibility. The advantage conferred on each other by master and man, is so evident in the common daily intercourse of life, that it proves the fact that one cannot exist without the other. They should, therefore, acknowledge a mutual interest, and prove their sincerity of feeling by an honesty of purpose. The master should recollect that although he pays his workmen a certain sum of money for so many hours' toil, he yet owes to them a heavy debt as having been the means of making his fortune; he should, therefore, set apart a portion of the wealth accruing to him from their labours, for the education of the young, and ignorant, and for teaching all his people lessons of prudence and morality. The statistics of crime will show how much the lower orders are neglected, and the profligacy and mischief consequent upon the want of proper superintendence in large establishments, as well as small. It is shocking to read of the early depravity of boys and girls who are left to their own guidance at a tender age; having nothing but bad examples before them, they follow in the steps of iniquity, incredible to those who have not investigated the matter. When we hear of 40 or 50 males and females, averaging the ages of 15 and 16 years, sleeping together in one large room, the mind is filled with horror at the idea of such atrocious habits prevailing in a professing Christian country. To deny this state of things is impossible; to mitigate the serious evil is not so. It is surely not more difficult to organise a body of artisans than it is to discipline a corps of soldiers. The latter are no doubt under military law, which facilitates the duties of officers. Why not place civilians under the more binding ties of obligation and respect for those above them? A man who has wealth, which is power, may introduce and insist upon certain regulations to be observed by those whom he supplies with daily bread; this is managed with regard to the observance of the hours of work, &c.; and the principle might be carried further by holding out periodical rewards to the well-conducted, and by granting a few annuities to the most sober and industrious, to be enjoyed after a certain number of years' servitude. Children and young persons engaged in any laborious occupations should have an opportunity of attending school twice a week, exclusive of Sunday. A close and personal inspection, by the head of the establishment, of the progress made in their useful studies by the youth of both sexes in their employment, should be regularly made. The result of such benevolent conduct in the cause of humanity would show itself in a more cheerful obedience, and better regulated conduct of those who would then feel they were not forgotten in the pursuit of wealth. The account men will one day have to give of those committed to their charge will be most solemn. All the riches amassed by the toil and misery of their fellow creatures will then rise up against them. With what apathy too many look upon the distress of their neighbours, which might so often be alleviated by a little self-denial of small moment when compared with the happiness of hundreds! It is the duty of all to give up some of their time and substance for the general good; but it is more incumbent on those who are so largely engaged in the worship of mammon, and whose very existence depends upon the exertions of their servants, to devise projects for the improvement of their moral and spiritual condition; leaving the management of a vast number of work people to agents and sub-agents is a grand fault; their chief anxiety is generally to finish an order, without thinking of the human suffering required to fulfil the contract for the market. These men are not more cruel than their fellows, but they consider it their duty and interest to act for what they deem the credit of the house; worldly motives quite superseding all others—it is the fashion—individuals are not so much to be blamed as the system. There is a limit to the time which children are allowed to slave—10 hours are allotted for young creatures to toil in a poisonous and over-heated atmosphere. After undergoing such fatigue, day after day, no wonder the poor things are anxious to drown their cares in what to them appears simply amusement, or excusable indulgence. The health of thousands thus immolated on the altar of wealth and luxury is appalling—pain and sorrow endured in this life, without even the hope of attaining to a better existence in another world—days of toil and nights of profligacy following each other in quick succession; till both mind and body give way to desolating disease, and either the hospital or the workhouse receive the emaciated form and broken spirit. Education is supposed to be a panacea for the evils which encompass the lower orders of society—gratuitous instruction is a great blessing to those who cannot afford to pay for the schooling of their offspring; but the importance of teaching is often magnified beyond what it deserves. Every child should be able to read and write, and be well grounded in religion; beyond this there is no occasion to go. Entering upon subjects which can be of little benefit to those who in after life will have to dig and hoe, only renders the recipients discontented and above their work. The great want in England is occupation for boys and girls from 9 to 18 years old, now wandering about streets and lanes in idleness, and ready for mischief. What a number may be pointed out in any town who have no certain means of gaining a livelihood, but scramble on from day to day as chance directs! Had the youths at an early period been accustomed to earn their bread, we should see less vice and wickedness stalking through the land. Education, without the opportunity of producing fruit, is the shadow without the substance. *Falcon.*

The Value of a Ton of Turnips.—The price paid in the neighbourhood of Colchester for good crops of white Turnips and of Swedes, to be fed off on the land, without oilcake or any other food, is as follows: white Turnips, 30*s.* to 40*s.* per acre; Swedes, 40*s.* to 60*s.* per acre. This will give an average of about 3*s.* 6*d.* per ton for Swedes, and 2*s.* 6*d.* per ton for white Turnips. A large sheep dealer in this neighbourhood tells me he has from 800 to 1000 sheep consuming Turnips at the price per acre which I have named. What the Turnips cost to grow is another affair; but the price singularly confirms Mr. Lawes' experiment, that one ton of Turnips (without any other food) only produced 5 lbs. net dead weight of mutton. *J. J. Mechi, Tiptree Hall, Essex, Nov. 28.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Monthly Council was held at the Society's house, in Hanover-square, on Tuesday last, the 4th of December; present, Mr. Raymond Barker, Vice-President, in the Chair; Lord Camoys, Hon. Captain Dudley Pelham, R.N., M.P.; Sir Thomas Dyke Acland, Bart, M.P.; Mr. C. Barnett, Mr. H. Blanshard, Mr. Brandreth, Mr. Burke, Col. Challoner, Mr. Garrett, Mr. Brandreth Gibbs, Mr. Grantham, Mr. Fisher Hobbs, Mr. Jonas, Mr. Kinder, Mr. Milward, Professor Sewell, Mr. Shaw (Lond.), Mr. Shaw (Northampton), Mr. Villiers Shelley, Professor Simonds, Mr. W. Simpson, Mr. Hampden Turner, and Professor Way.

The following new members were elected:

Rendle, William Edgcumbe, Plymouth, Devon
Heathcote, Eustace Penn Blanshard, Lyndhurst, Hants
Clayton, Nathaniel, Melville-street, Lincoln
Boucher, Charles, Greenway House, Wivelliscombe, Somerset
Shuttleworth, Joseph, Pelham-street, Lincoln
Bond, Thomas James, Perry Elm, Wellington, Somerset
Griffith, George David, Berry Hill, Haverfordwest, Pembrokeshire.
Stainsby, Mark, Jun., Lady Pitt Lane, Leeds
Raunsby, Rev. Edward, Raithby, Spilsby, Lincoln
Baily, George, Brixton Hill, Surrey.
Aston, Right Hon. Sir Arthur, G.C.B., Aston Hall, Cheshire
Wren, Adderley Bacton, Lenwood, Bideford, Devon
Robson, John, Whitwell Grange, Durham
Molesworth, Walter Hole, Plympton, Devon
Bence, Henry Alexander, Edinburgh
Buckmaster, J. C., Parkhurst, Isle of Wight
Lundie, C. Syston, Grantham, Lincoln
Braithwaite, Septimus, Powell Villa, Weymouth, Dorset
Greenwood, Richard, Towne House, Ludford
Newman, Sir Robert, Bart., Mamhead, Exeter
Dawson, Richard, Epworth, Lincolnshire, near Bawtry
Wray, Sir Bouchier, Bart., The Chase, Ashburton, Devon
Tomkinson, William, Newcastle, Staffordshire
Boys, John, Totham, Maldon, Essex
German, George, Measham Lodge, Ashby-de-la Zouche
Chettins, William, 62, Moorgate-street, London.

Finances.—Colonel Challoner, Chairman of the Finance Committee, presented the monthly report on the accounts of the Society, from which it appeared that the current cash balance in hand on the last day of the month just ended was 400*l.* The Council ordered, agreeably with the suggestion of the Committee, that a separate list of those members in arrear of their subscription, who had been addressed by the Society's circular, for payment, but who could not be found, should be made out and suspended on the walls of the Council room of the Society. Colonel Challoner took that opportunity of reporting to the Council the progress made by the Committee in considering and enforcing those just claims of the Society in reference to members in arrear, who disputed that claim and demurred in making the payments required of them, on various grounds of excuse. He informed the Council that within a few days past a governor of the Society, in arrear of subscription, on receiving the circular issued by the Chairman of Finance, and containing the legal opinion of Sir Frederick Thesiger and Mr. Warren, had expressed his doubts of the validity of the Society's claims against him, and firmly (but with every gentlemanly courtesy) conveyed his determination to resist it, referring the Committee to his solicitors for the legal settlement of the question. He had however the pleasure of stating that the Committee having authorised Messrs. Tooke, Son, and Hallowes, of Bedford-row, to act as solicitors on the part of the Society, and confer with the solicitors named by the governor in this case, the result had been most satisfactory, the claim on the part of the Society being pronounced by the defendant's legal advisers to be so clear that they did not hesitate at once to recommend him to pay the arrears demanded. Colonel Challoner added that the arrears had accordingly immediately been paid to the Society's credit.

Member of Council.—On the motion of Mr. Shaw, London, seconded by Sir T. Acland, Mr. Sillifant, Coombe, (Vice-Chairman of the General Exeter Committee, and late High Sheriff for the County of Devon), was unanimously elected a member of the Council to fill the vacancy occasioned by the decease of Mr. Hillyard.

Day of Meeting.—On the motion of Mr. Shelley, seconded by Colonel Challoner, the Council decided to revert, after the Christmas recess, to Wednesday, their original day of meeting, instead of continuing their meetings on the Tuesday, under the change made on the 3d of May, 1848.

Specimens of Wheat.—Mr. Brandreth reported to the Council the completion of the arrangements he had undertaken respecting the collection of the Wheats presented to the Council by Miss Molesworth, Col. le Couteur, and Prof. Henslow. These specimens had been carefully arranged in guard books, and placed in a cabinet prepared for them in the Council Room, for the ready access and convenient inspection of members of the Society. He thought it only just to allude to the attention paid to his directions by Mr. Henry Wright, who had executed the manipulatory part of the task assigned. Mr. Brandreth added that space had been purposely left in the guard-books for the purpose of receiving further specimens, and in the catalogue for their due registration. On the motion of Mr. Fisher Hobbs, seconded by Mr. Jonas, the best thanks of the Council were given to Mr. Brandreth for the great pains he had taken in carrying out the wishes of the Council and House Committee on this interesting subject.

Lectures.—Mr. Raymond Barker reported the arrangements made in the rooms of the Society for the delivery of lectures in the ensuing week before the members of the Society. It was decided that at the lectures the chair should be taken at half-past 8 o'clock precisely.

Farm Accounts.—Colonel Challoner, Chairman of the Farm Account Committee, reported to the Council the various comments and suggestions made by Members of Council on the specimens sent round to them of the forms of accounts recommended by the Committee. These communications, and those made additionally by members then present, were taken into mature consideration. The forms were adopted with certain alterations, and leave given for their publication (by Mr. Sanford, the stationer of the Society, 315, Oxford-street) at a reduced rate to members of the Society, on condition that the following announcement should be printed and inserted on the inside cover of each book respectively of the series:

"The Council of the Royal Agricultural Society of England, feeling the importance of accounts being kept by farmers upon as simple a plan as possible, and having appointed a committee to examine the various forms in use, now submit this book No. 1, together with Nos. 2, 3, 4, and 5, to the members of the Society as the result of their investigation: which they recommend for present adoption, in the hope that, by the use of them, suggestions may be offered that may render them more complete."

On the motion of the Hon. Captain Pelham, the best thanks of the Council were expressed to the Farm Account Committee, for the great attention they had paid to this question, referred to them by the Council.

Exeter Meeting.—Mr. Raymond Barker presented the Report of the General Exeter Committee, which was adopted. The following points were decided:

1. That the Exeter Meeting of the Society should be held in the week commencing Monday, the 15th of July, the principal day of the Show being Thursday, as formerly.

2. That there should be no Council Dinner, but a Pavilion Dinner, to accommodate 900 guests.

3. That Mr. H. Stafford Northcote's name should be added to the list of the General Exeter Committee.

Steward of Implements.—The Hon. Captain Pelham's motion for a Steward Elect of Implements, to be appointed at the May Monthly Council, who should have access to the operations carried on in the Stewards' departments at the ensuing country meeting, but who should not come into actual office as a Steward in rotation until the country meeting of the following year, was seconded by Mr. Garrett and carried unanimously. Mr. Shaw (London) expressed the great satisfaction it gave him to witness the carrying of a measure so essential, in his opinion, to that great object of the Society—the progressive improvement in the trial of agricultural implements at its country meetings. The measure was one too in accordance with principles of action he had long advocated; he considered it the most important step taken by the Council for some time, and he gave it his cordial support from experience, which led him to estimate its value. The increase in number and importance of agricultural implements rendered the proposed preliminary training indispensable for all parties who had the immediate superintendence and control over the trials for determining their comparative value and efficiency.

Badges.—On the motion of the Hon. Capt. Pelham, it was also decided that the Consulting-Engineer of the Society and the Judges of Implements and Stock, should have the privilege of wearing badges of office at the country meetings of the Society.

Exhibition of Stock.—Mr. Milward's motion, that the Judges of Stock should be requested to commence at 6 o'clock in the morning, in order that admission might be given on the same day to the show-yard by 1 P.M. (or as soon after as the Judges had completed their awards), was carried unanimously.

Committees.—The Standing Committees for the ensuing year were then re-appointed; the name of Mr. Brandreth being added to the Finance Committee, and those of Mr. Milward and Mr. Shaw (London) to the Journal Committee.

Miscellaneous.

Improvement of Bog Land.—The first matter to be considered is the main drains, and these must be determined on with reference to the extent, form, and situation of the moss, to the levels of the lands by which the moss is surrounded, and likewise to the levels of the subsoil on which the moss rests. Roads, having open drains on each side, must be made as a general rule 7 yards wide, and must be laid out so that the fields and their divisional drains run at right angles with the lines of the roads. The open drains on each side of the roads are made for the first year 3 feet wide at the top, 1 foot wide at the bottom, and 1 feet deep; but in the second year, when the moss is sufficiently consolidated, it is desirable to make these drains 6 feet wide at the top; at 18 inches from the surface this width of 6 feet is contracted to 3 feet by a square ledge of 18 inches on each side. This additional cutting may increase the cost 2*d.* a rood; but it has been found that ditches so cut stand better than the old drains 3 feet wide, inasmuch as the superincumbent weight being removed, the drain is not so likely to spew up at the bottom, for it is not so much the sides falling in from the top as the pressure from the bottom that injures a ditch of this kind. The stuff taken out of the drain is thrown into the centre of the road, and when tolerably dry and ready for sanding, the road is formed, and sand or gravel laid on, 12 feet wide, 4 inches thick in the centre, and 7 inches on each side, the object of this additional weight at the sides being to keep them down. The moss should be laid out in fields of 300 yards long, and 66 broad. This form contains 19,800 square yards, or 440 square yards more than 4 statute acres, a little more than 2½ acres customary, of 7¼ yards to the perch. Each field takes two end drains and one side drain; and the covered drains in the fields should be 10 yards apart, so that one field of about 4 acres has one side drain, two end drains, and 28 covered drains. The expenses of draining are calculated after the rate of 8 yards to the rood, as follows:

Two end drains	16½ roods of 8 yards.	
One side drain	37½ do.	
	54 roods.	

These end and side drains to be—

3 feet wide at the top,
1 foot do. at bottom,
4 feet deep,

being the size of the open drains at the sides of the roads, &c., for the first year, and the mode of work and price as follows:

Inches.		£ s. d.
1st and, deep 14 } 2d do. do. 10 } 24	5½*d.* per rood, for 54 roods ...	1 1 9
3d do. do. 12 } 4th do. do. 12 } 48	3*s.* 6*d.* per 100 yards, for 54 roods	0 15 2
		£1 19 11

The 5½*d.* per rood includes the throwing the stuff from the sides of the drains on to the road, or into the field, and chopping it.

Cutting the lenges, 3*d.* per rood, for 54 roods, 2d year 0 9 0

£2 8 11

The form of a covered or field drain is—

14 inches wide at the top,
6 do. bottom,
4 feet deep,

and to be worked thus—

1 sod, 14 inches deep ...	7*d.* per drain.	
2d do. 10 do. ...	6 do.	
3d do. 12 do. ...	11 do.	
36 inches.	24*d.* per drain.	

The first sod makes the wedge-sod, and when dry will be 9 or 10 inches thick; when taken out it is put on its side on the right of the drainer to dry, and the second or third sods are thrown out to the left, and chopped to fill up the drains when wanted; pattens are used by the workmen, as on Chat-moss. The breadth of field is already fixed at 66 yards; but it is calculated as 8 roods, or 64 on payment, so that one covered drain cost 2*s.*, or 3*d.* per rood, and the 11*d.* being the third charge, includes the returning and fixing the wedge-sods, and filling up the drain, &c. The whole expense of draining a moss field, rather more than 4 statute acres, will be as follows:

1 side drain, 37½ roods of 8 yards.
2 end drains, 16½

	£ s. d.
54 roods	2 8 11
28 covered drains at 2*s.*, being 10 yards apart ...	2 16 0
Total expense for 19,800 square yards	5 4 11
Per statute acre, 4,840 do. about	1 6 2
Per customary do. 7,840 do. do.	2 2 0

The expenses of the main drains and the roads must be charged to the whole moss drained. For the above particulars, and any others connected with these mosses, I am indebted to the kindness of Mr. Wilson Ffrance, of Rawcliffe Hall. This gentleman had allotted to him, about 19 years ago, 736 statute acres of moss, which he immediately set to work to improve; it is now all under cultivation, producing beautiful crops of Oats and Potatoes, except 8 acres, upon which the drainers are now employed. He has drained it all on the plan given above, made roads, &c., and after draining, marl, which is found under the moss, is laid on the top at the rate of 150 to 160 tons per customary acre, by means of a moveable railway as on Chat-moss. *Journal of the Royal Agricultural Society of England.*

Calendar of Operations.

DECEMBER.

Berkshire Farm, *Dec.* 3.—Men and horses have lately been employed in getting up and securing Mangold Wurzel and Carrots. The Mangold Wurzel cost about 8*s.* per acre for pulling, trimming, and stacking; the Carrots about 12*s.* per acre, including the various operations. Both Mangold Wurzel and Carrots were put in long stacks about 6 feet wide and 5 high, tapered to a point, and thatched with straw, to exclude both frost and rain. The dung from the yards has been carted out as made, laid upon the stubble intended for green crops, and ploughed in with a furrow about 7 inches deep. We prefer applying green dung from the yards to the land at once. When impracticable to lay down, it is carted in a heap, each load passing over the dunghill, which is at last secured from loss by a plaster of earth, made on the spot, from the wooding of the heap. The Turnip land, after sheep, is always ploughed as quickly as possible, to prevent loss by evaporation or washing. The fatting sheep receive a daily allowance of 1 lb. of corn, with as many Turnips and as much chaff as they can consume. The fatting cattle receive daily about 6 lbs. of corn each, a bushel, or rather more, of Turnips, with about 20 lbs of hay and straw chaff. The whole is mixed and given in a prepared state. One man and two boys attend to 32 beasts in the stalls, and 45 stores in the yards, which have some Turnips along with their dry food. The store cattle have a few hours' run in the fields daily, when fine. The milch cows also get into the fields in good weather, and live principally upon hay and a few roots. The horses have a weekly allowance of 3 pecks of Beans, 1 bushel of Rice-meal each, with as much hay and straw chaff as they can consume. Every man feeds, grooms, and works two horses on all ordinary occasions. Both labourers and horse-keepers breakfast now before going out at 7 o'clock. The chief employment of the horses and men for some time prospectively will be ploughing and carting dung, according to the weather, threshing and dressing corn, cleaning out water-courses, &c. Labourers are as yet pretty generally employed, at wages ranging from 8*s.* to 11*s.* per week. All rent paying farmers complain most desperately of the times. The outgoings have not yet adapted themselves to the low prices of all kinds of farm produce, we must, like Mr. Mechi, place our "hope in the future." *R. T.*

Lammermuir Sheep Farm, *Dec.* 1.—Since our last communication, with the exception of a week, the weather has been unusually mild for the season, though the atmosphere was rather too moist to be agreeable; indeed on hills were enveloped in mist for a fortnight. The average temperature for the last 21 days has been 39° at 8 o'clock in the morning, 45° at mid-day, and 40° at 9 o'clock in the evening. With the thermometer so high, pastures keep fresh, a matter of great importance on a sheep farm. The bathing of the sheep was completed on the 17th ult., and the jackets were all got on the hogs by the 22d, on which day the rams were turned out to the ewes. As we do not hirsel

our sheep, but allow them to distribute themselves equally over the ground, we only allow 45 or 50 ewes to each ram. With more than this number, barren ewes are apt to be too numerous. We think it better not to put a ram to the *same* ewes more than one season, experience showing that the first cross takes most to the sire, and the second to the dam, and as the former is supposed to have been well selected, and to possess at least some properties superior to the ewes, it is well to avoid whatever may retard the general improvement of the stock, especially when it can be so easily avoided, even on our open ground, by the shepherd putting a sheep to those ewes which graze the opposite side from where he was the previous season. As the progeny of a *shearling* ram are considerably more vigorous than those of a *three* or *four shear*, we endeavour to have the majority of our number of the former age, though a really superior sheep will never be laid aside until he is inefficient from age. Such of the cast ewes as were unfit to be sold for breeding are getting Turnips, and about half-a-pound of Oats daily, with the view of fattening them, and getting them off as quickly as possible. During severe weather, their allowance of Oats will be increased. Our horses, besides ploughing, have been engaged in carting stones for stalls. These, if intended for shelter during snow, should be circular, and about 12 yards in diameter, but if for black weather, those built with three equidistant legs are perhaps the best, affording convenient shelter from every point. The walls of both kinds ought to be 5 feet high. The ploughing of the stubble is nearly completed, and would have been so ere this, had we not, for the sake of getting it well turned up, ploughed it with one furrow over the hill, the steepness of the ground rendering it almost impossible to do those parts sufficiently which are thrown against the hand. As soon as the weather permits, we will cover up the Turnips to protect them from frost, by throwing a plough furrow over each drill. During frost, carting out dung will occupy some time. *A Lanarkshire Farmer.*

Notices to Correspondents.

APPLE WASTE: *A Farmer.* We have no analysis, but believe it to be rich in mineral matter. It is very difficult of decomposition. It rots very slowly, and therefore is of very little use as manure. The decay of it might be hastened by using it in compost with some rapidly decaying substance, as horse dung, and then it would no doubt exhibit whatever useful properties it has.

DELAYED PUBLICATION: *T A and Inquirer* will have seen that their correspondence has been published

FARM BUILDINGS AND COTTAGES: *H T H.* See Low on the Management of Landed Property.

FOOD FOR CATTLE: *H W Middleton.* The solid cakes were made of the mixed meals alone, without chaff, and we do not think you would prefer them to the ground meal uncooked. The chief merit of Mr. Warnes' method of preparing cattle food is, that by means of it the less nutritious and less palatable portions of farm produce may be rendered both nourishing and palatable by being soddened or soaked in liquor containing more savory ingredients. The Linseed soup, or thin porridge of Linseed and Bean meal is thus more useful than the meal unboiled. It soaks into the chaff, a little of the former being sufficient to render a great deal of the latter palatable to the cattle. We have published your inquiry in another part of the Paper, as it may perhaps procure further information.

HAY-MAKING: *Cerera.* A good crop will cost generally 10*s.* an acre to make and stack. This is beside the horse labour and thatching.

MANURE: *Owen Glendower.* In a cold stiff soil, it is not the better way to apply the manure from the boxes in an unfermented state. Fern will keep the cattle dry, and absorb their urine, and in both these respects, if not as regards its own composition, as well, it is quite equal to straw.

MR. KERNE: *John Dixon.* It is our business to discuss facts not motives. The unsuitableness of Maize for our climate has, we think, been abundantly established; and therefore it is unnecessary to discuss the matter further.

TRENCH PLOUGH: *B B.* Probably the best for very deep work is the great Jersey trench plough described by Col. Le Couteur in the English Agricultural Society's Journal.

TURKEYS: *North Briton.* The turkeys sold at Christmas in London are very seldom the same year's birds. *Dixon.*

VEGETABLE LIFE: *J R.* Urine will no doubt ultimately destroy life in Dock roots, so will water if they be immersed in it long enough. They might be thrown into a liquid manure tank and ultimately used as manure. We do not know what length of immersion would be necessary to kill them.

WEDGE DRAINS: *A A.* They would not be permanent enough to justify such deep work, unless the subsoil be extraordinarily stiff, and the fall not so great as that the water would work holes in the channel of its flow. If you resolve to make wedge drains you had better make them shallower and more frequent. They may not be so efficient, but the benefit of them will be more cheaply purchased, as you will with such a fall require to remake them probably once in 10 or 15 years.

*** Communications reaching town after Wednesday cannot be answered the same week.

Markets.

SMITHFIELD, MONDAY, Dec. 3.

The number of Beasts is large, but many are of very inferior quality; consequently a few choice things have made 4*s.*, this is, however, rather too high to quote as average of best descriptions. The supply of Sheep is far beyond the demand, lower prices are taken, and several remain unsold; 4*s.* 2*d.* is an extreme quotation for best Downs. Calves meet with a slow sale, and prices continue low. From Holland and Germany we have 650 Beasts, 3720 Sheep, 78 Calves, and 10 Pigs; from Scotland 100 Beasts; from Leicester and Northampton, 2900; and from Cambridge, 100.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	3	8	to 3	10
Best Short-horns	3	4	— 3	8
2d quality Beasts	2	6	— 3	0
Best Downs and Half-breds	3	8	— 4	2
Ditto Shorn				

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	3	4	to 3	6
Ditto Shorn				
Ewes & 2d quality	2	6	— 3	0
Ditto Shorn				
Lambs			—	
Calves	2	8	— 4	0
Pigs	3	0	— 4	0

Beasts, 4567; Sheep and Lambs, 27,170; Calves, 187; Pigs, 295.

FRIDAY, Dec. 7.

We are very scantily supplied with good Beasts, in consequence they are pretty readily sold, and 4*s.* is freely given; but trade is exceedingly dull for second-rate, and in this description there is no improvement from Monday. Although the number of Sheep is small they cannot be sold; very few indeed are disposed of at about Monday's quotations. Trade is exceedingly flat for Calves and Pigs; prices remain unaltered. From Holland and Germany there are 90 Beasts, 730 Sheep, 127 Calves, and 15 Pigs; from Leicester and Northampton, 200 Beasts, and 136 Milch Cows from the home counties.

Best Scots, Herefords, &c.	3	10	to 4	0
Best Short-horns	3	6	— 3	8
2d quality Beasts	2	6	— 3	2
Best Downs and Half-breds	3	8	— 4	2
2nd Quality			—	

Best Long-wools	3	4	to 3	6
Ditto Shorn				
Ewes & 2d quality	2	6	— 3	0
Ditto Shorn				
Lambs				
Calves	2	8	— 4	0
Pigs	3	0	— 4	0

Beasts, 431; Sheep and Lambs, 3,100; Calves, 211; Pigs, 300.

HOPS.—FRIDAY, Dec. 7.

Messrs. PATTENDEN and SMITH report that the market continues firm at late prices.

COVENT GARDEN, Dec. 8.

Hothouse Grapes are plentiful considering the season. Pine-apples are hardly sufficient for the demand. Filberts and Walnuts are abundant, Chestnuts plentiful, Oranges and Lemons abundant. Good table Pears are scarce. Amongst Vegetables, Turnips are good and plentiful; Carrots the same. Cauliflowers and Broccoli are sufficient for the demand. Potatoes have not altered since our last account. Lettuces and other salading are plentiful. Mushrooms fetch from 1*s.* to 1*s.* 3*d.* per pottle. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropæolums, Chrysanthemums, Fuchsias, Primulas, Camellias, Cinerarias, and Roses.

FRUITS.

Pine-apples, per lb.,	4*s.* to 6*s*	Oranges, per 100,	5*s* to 12*s*
Grapes, hothouse, p. lb.,	3*s* to 6*s*	Almonds, per peck,	6*s*
— Portugal, per lb.,	9*d* to 1*s*	— sweet, per lb.,	2*s* to 3*s*
Pears, per doz.,	2*s* to 4*s*	Walnuts, p. 100,	1*s* 6*d* to 2*s*
— per half sieve,	8*s* to 12*s*	— p. bush.,	16*s* to 24*s*
Apples, kitchen, p. bsh.,	2*s* to 4*s*	Filberts, per 100 lbs.,	45*s* to 60*s*
Lemons, per doz.,	1*s* to 2*s*	Nuts, Bar., p. bush.,	20*s* to 22*s*
— per 100,	6*s* to 12*s*	— Brazil, p. bsh.,	12*s* to 16*s*
Oranges, per doz.,	9*d* to 1*s* 6*d*	Kent Cobs,	60*s* to 65*s* p. 100 lbs.

VEGETABLES.

Cabbages, p. doz.,	6*d* to 1*s*	Onions, p. bushel,	3*s* to 4*s*
Cauliflowers, p. doz.,	2*s* to 4*s*	— Spanish, p. doz.,	1*s* 6*d* to 4*s*
Broccoli, p. doz. bundl.,	6*s* to 10*s*	Shallots, per lb.,	4*d* to 8*d*
Greens, per doz.,	1*s* 6*d* to 2*s* 6*d*	Garlic, per lb.,	4*d* to 8*d*
Brussels Sprouts, p. ht. sieve,	1*s* 6*d* to 2*s*	Artichokes, p. doz.,	1*s* 6*d* to 3*s*
Sorrel, p. hf. sieve,	6*d* to 9*d*	Lettuce, Cab, p. sc.,	4*d* to 9*d*
Potatoes, per ton,	60*s* to 100*s*	— Cos, do.,	6*d* to 1*s*
— per cwt.,	3*s* to 6*s*	Endive, per score,	1*s* to 1*s* 6*d*
— per bush.,	2*s* to 3*s*	Tomatoes, p. hf. sieve,	3*s* to 4*s*
Turnips, p. doz. bun.,	1*s* 6*d* to 2*s* 6*d*	Mushrooms, p pot.,	1*s* to 1*s* 3*d*
Red Beet, per doz.,	1*s* to 2*s*	— per bush.,	3*s* to 6*s*
Horse Radish, p. bdl.,	2*s* to 4*s*	Small Salads, p. pun.,	2*d* to 3*d*
Cucumbers, each,	9*d* to 1*s*	Fennel, per bunch,	2*d* to 3*d*
Leeks, per bunch,	2*d*	Savory, per bunch,	2*d* to 3*d*
Celery, p. bundle,	3*d* to 1*s* 3*d*	Thyme, per bunch,	2*d* to 3*d*
Radishes, p. 12 bunches,	1*s* to 2*s*	Parsley, p. doz bun.,	3*s* to 4*s*
Watercress, per doz. bunches,	4*d* to 6*d*	— Roots, p. bdle.,	1*s* to 1*s*
Carrots, per bun.,	4*d* to 6*d*	Marjoram, per bunch,	2*d*
Spinach p. sieve,	1*s* to 2*s*	Mint, per bunch,	2*d*
		Basil, per bunch,	2*d*

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Dec. 6.

Prime Meadow Hay	65*s*	to 70*s*	Clover	—	—
Inferior ditto	50	60	New Clover	—	—
Rowen	50	60	Straw	21	25
New Hay	—	—		J. COOPER.	

Trade dull.

CUMBERLAND MARKET, Dec. 6.

Prime Meadow Hay	68*s*	to 72*s*	Inferior	60*s*	to 75*s*
Inferior ditto	50	60	New Clover	—	—
New Hay	—	—	Straw	24	28
Old Clover	84	90	JOSHUA BAKER.		

WHITECHAPEL, Dec. 6.

Fine Old Hay	60*s*	to 68*s*	New Clover	—*s*	to —*s*
Inferior ditto	50	55	Inferior ditto	50	63
New Hay	—	—	Straw	20	24
Old Clover	75	88			

POTATOES.—SOUTHWARK, Dec. 3.

The Committee report that the market continues to be well supplied, particularly from the Continent, all of which are selling heavily, with the exception of choice Yorkshire Regents, which are inquired after. The following are this day's quotations:—York Regents, 80*s.* to 110*s.* per ton; Wisbeach, 60*s.* to 70*s.*; Scotch, 60*s.* to 70*s.*; Scotch cups, 30*s.* to 60*s.*; French whites, 60*s.* to 70*s.*; Rhenish and Belgian do., 50*s.* to 65*s.*; Dutch do., 45*s.* to 55*s.*

MARK LANE.

MONDAY, Dec. 8.—The supply of English Wheat by land carriage samples this morning was larger than of late, and met a slow sale at a decline of 1*s.* to 2*s.* per qr. upon the prices of this day se'nnight. In foreign, business was of the most limited and retail character, and in the few sales effected a decline of 1*s.* to 2*s.* per qr. was generally submitted to.—Best English malting Barley must be written 1*s.*, secondary and foreign 2*s.*, and grinding qualities 1*s.* per qr. cheaper.—Beans are unaltered in value.—White Peas are 1*s.* per qr. lower.—Oats are a slow sale at Friday's quotations, being a decline of 6*d.* to 1*s.* per quarter.

FRIDAY, Dec. 7.—The arrivals of English Barley and foreign Grain of all kinds continue large. This morning's market was thinly attended, and Monday's prices were with difficulty obtained for any article, business in all being very limited.—During the last eight days Wheat has slightly declined in value throughout the country, with the exception of new in Leith. Barley of all descriptions is also purchaseable on somewhat reduced terms. The trade for Peas and Oats has been heavy, but the value of Beans is unaltered. The late frost closed the Baltic ports, and gave a dullness to the trade generally, but the subsequent thaw, according to the last accounts, will probably admit of many vessels getting to sea. The Belgium markets are dull, and prices unaltered. In France the Wheat trade appears to be heavy, and late rates are barely maintained.

LIVERPOOL, TUESDAY, Dec 4.—At this day's market there was a moderate attendance of dealers, but a very slow retail demand. Wheat made full prices, but other kinds were neglected, and the small business in foreign Wheat was at rather less money.—Beans rather lower.—Barley and Peas steady.—Indian Corn sold slowly at an advance of 6*d.* per qr.—The market was bare of fine Oats, but other sorts were 1*d.* per bushel cheaper. The quantity of Oatmeal was moderate, and we make no change in value.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Oct. 27.....	41*s* 7*d*	28*s* 5*d*	17*s* 2*d*	23*s* 4*d*	28*s* 11*d*	29*s* 7*d*
Nov. 3.....	41 6	28 7	16 10	22 9	29 10	30 11
— 10.....	40 7	28 8	16 11	22 6	29 4	30 7
— 17.....	40 6	28 3	16 11	23 7	29 7	31 8
— 24.....	40 4	28 3	17 0	24 0	29 8	30 7
Dec. 1.....	40 2	28 1	16 4	24 1	28 6	30 2
Aggreg. Aver.	40 9	28 5	16 10	23 5	29 4	30 7
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.

PRICES.	OCT. 27.	NOV. 3.	NOV. 10.	NOV. 17.	NOV. 24.	DEC. 1.
41*s* 7*d*—		...	...	...	.	...
41 6	...		...	...	...	...
40 7	...	...		...	...	...
40 6	..	...	...		...	...
40 4	...	..	...	...		..
40 2	...	...	...	...	...	

PRICES CURRENT.	London. Nov. 26	London. Dec. 3.	Liverpool. Nov. 27	Liverpool. Dec. 4.	Wakefield. Nov. 16	Wakefield. Nov. 23	Boston. Nov. 28	Boston. Dec. 5.	Birmingham. Nov. 29.	Birmingham. Dec. 6.
	qr.	qr.	70 lbs.	70 lbs.	qr.	qr.	qr.	qr.	62 lbs.	62 lbs.
Wheat—	*s.* *s.*	*s.* *s.*	*s.* *d.* *s.* *d.*	*s.* *d.* *s.* *d.*	*s.* *s.*	*s.* *s.*	*s.* *s.*	*s.* *s.*	*s.* *d.* *s.* *d.*	*s.* *d.* *s.* *d.*
New, red ...	40 to 43	40 to 43	5 10 6 3	5 8 6 2	36 to 44	35—41	32 to 38	32 to 37	4 9 5 3	4 8 5 2
„ white ...	42—48	42—47	6 4 6 8	6 4 6 8	41—46	41—48	36—45	34—44	5 2 5 7	5 2 5 6
Old, red ...	38—45	—	6 3 6 7	6 3 6 6	39—43	39—43	—	—	4 10 5 4	4 9 5 3
„ white ...	43—45	—	7 0 7 4	7 0 7 4	—48	—48	—	—	5 6 5 9	5 6 5 8
Foreign... ...	35—52	35—52	4 4 7 0	4 4 7 4	36—48	36—48	—	—	4 8 6 2	4 8 5 8
			480 lbs.	480 lbs.						
Rye—Old ...	20—22	20—22	—	—	—	—	—	—	—	—
Foreign...	20—23	20—23	—	—	—	—	—	—	—	—
Foreign meal	5*l.*—6*l.*	5*l.*—6*l.*	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	24—25	25—25	—	—	20—22	20—21	21—23	21—23	19—23	19—23
Malting... ...	25—27	25—26	30*s*—31*s*	30*s*—31*s*	26—31	24—29	—	—	25—30	24—29
Foreign... ...	18—25	18—25	—	—	21—26	21—25	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	35—38	35—38	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	18—21	18—24	3*s* 2*d* 3*s* 3*d*	3*s* 2*d* 3*s* 3*d*	—	—	13—18	13—18	17—25	17—25
Black...	16—22	16—22	3 2 2 7	2 2 2 6	—	—	—	—	16—17	16—17
Foreign ...	13—20	13—20	2 3 2 4	2 3 2 4	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	28—32	28—31	33*s*—	33*s*—	26—30	26—32	—	—	30—36	30—36
									196 lbs.	196 lbs.
Grinding...	—	—	27 —28*s*	27 —28*s*	—	—	—	—	11—12	11—12
Foreign ...	21—32	24—30	29 —30	29 —30	—	—	—	—	—	—
Beans—										
New, small ...	24—30	23—30	—	28 —32	30—31	29—30	22—27	22—27	11—12	11—12
Old	—	—	32 —37	32 —36	32—33	32—33	32—34	32—34	14—15	14—15
Foreign ...	23—36	23—36	25 —34	25 —34	26—28	26—28	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	37—45	37—45	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9*l.* 12*s*	9*l.* 12*s*	7*l.* 15*s*—8*l.*	7*l.* 15*s*—8*l.*	—	—	—	—	—	—
Foreign ...	7*l.*	7*l.*	—	—	—	—	—	—	—	—
Indian Corn—	22—26	22—26	27*s*—29*s*	27*s*—30*s*	—	—	—	—	12—13	—
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	32—40	32—40	30—32	30—32	—	—	30—36	30—36	30—33	30—33
Weekly Averages and Imports.	Aver. Dec. 4.	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. *d.*	qrs.	*s.* *d.*	qrs.	*s.* *d.*	qrs.	*s.* *d.*	qrs.	*s.* *d.*	qrs.
WHEAT ...	45 0	17340	40 4	14748	41 5	10620	36 11	4204	41 1¾	2295
BARLEY ...	28 7	18610	28 3	1134	27 6	5023	23 6	275	27 4¼	1890
OATS... ...	17 8	18980	17 0	3439	17 10	406	14 11	1476	17 6¾	—
RYE	35 1	—	24 0	—	—	—	—	—	—	—
BEANS ...	28 10	—	29 8	4179	31 7	758	24 4	669	—	4186
PEAS... ...	33 1	—	30 7	584	33 0	289	—	—	31 6¾	83
SIGNED	*KINGSFORD and LAY.*		*SEGAR and TINNICLIFF.*		*SANDARS and DUNNS.*		*THOMAS WRIGHT.*		*J. and C. STURGE.*	

BROMPTON PARK NURSERY, KENSINGTON ROAD, MIDDLESEX.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions from Mr. JOHN SAUNDERS and Mr. ROBERT DONALD, trustees to the above estate, to submit to an unreserved Sale by Auction, on the premises, on MONDAY, Dec. 10, at 12 o'clock, the whole of the valuable GREENHOUSE PLANTS, together with the Greenhouses, with new and approved Hot-water Apparatus, Pits, Frames, Carts, and Utensils; also the stock of Seeds, Shop Counters and Drawers, Counting-house Desks, Fittings, Iron Safe, &c.—May be viewed till the Sale, Catalogues may be had on the premises; of the principal Seedsmen; and the Auctioneers, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition, by Auction, at the Auction Mart, Bartholomew-lane, on THURSDAY, December 18th, a select assortment of Standard and Dwarf ROSES, consisting of Hybrids, Perpetuals, Bourbons, &c.; choice AMERICAN PLANTS, comprising Ghent Azaleas, Rhododendrons, Kalmias, Andromeda floribunda, &c.; a first-class collection of DUTCH BULBS, consisting of the finest double and single Hyacinths, Narcissus, Jonquils, Crocus, Snowdrops, Gladiolus, Anemone, Ranunculus, &c. May be viewed the morning of Sale, and Catalogues may be had at the Mart, and of the Auctioneers, Leytonstone, Essex.

Standard, Weeping (on 8 ft. stems), and Pillar Roses, Azaleas, Rhums, Camellias, Vines, Dutch Bulbs, &c., &c.

MR. HASLAM will sell by Auction, the above, at the Mart, London, on WEDNESDAY, December 12th, and FRIDAY, December 14th, 1849. Catalogues at the Mart, and of the Auctioneer, South Essex Nurseries, Epping, Essex.

NURSERY AND GREENHOUSE STOCK.

MR. VALLET will sell by Auction, on TUESDAY, December the 18th, and following days, until the whole is disposed of, commencing each morning punctually at 11 o'clock (unless the whole be in the meantime disposed of by private treaty, of which due notice will be given), at the Nursery and Gardens now occupied by Mr. CHARLES JACKSON, who is retiring from business, the whole of the Stock of EVERGREENS and other SHRUBS, FRUIT TREES and PLANTS, GREENHOUSES and FRAMES. The Hardy Stock consists of an immense number of fine Rhododendrons, Variegated Hollies, Portugal and common Laurels, Laurustinus, Yews, Araucarias, Deodars and other Pines, Aucubas, Box, Azaleas, and other American Plants, Roses, and other Deciduous Shrubs, and Evergreens of all sorts and sizes. The Greenhouse Stock comprises a large quantity of fine Camellias, Geraniums, Fuchsias (some 6 to 10 feet high, for lawns), China Roses, Azalea indica, Rhododendrons, &c. The Greenhouse Frames and Plants will be sold the second day; and all the stock will be divided into lots to suit purchasers. Mr. John Ainslie, late with Mr. Taylor, gardener, is residing upon the premises, and will show and dispose of the stock by private arrangement, at very reduced prices, until the day of sale; and further particulars may be had from him, or at the office of Winstanley and Charnley, Solicitors, Preston.

TO GENTLEMEN, BUILDERS, NURSERYMEN, AND OTHERS.

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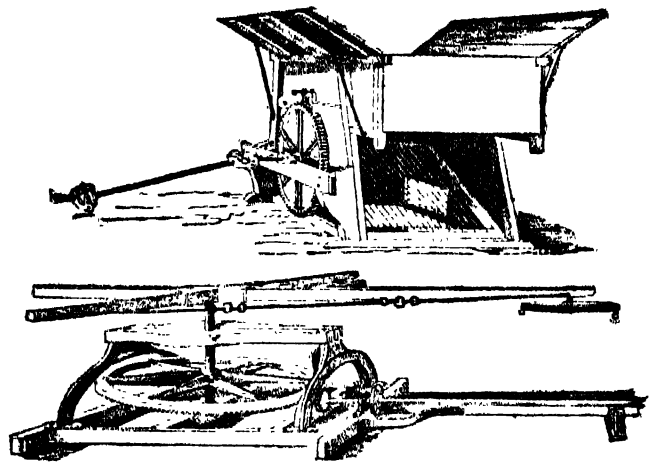

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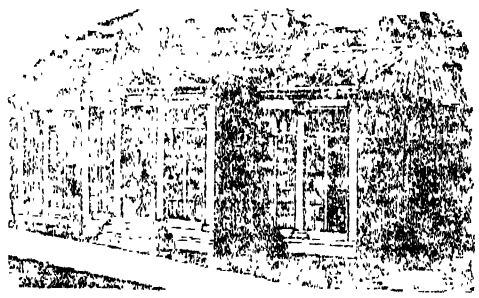

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	[illegible] ... 790 c

ROSES.

E. DENYER begs to inform his friends and the public in general that he has a very large stock of Standard Roses, the prices much reduced, 15s. to 20s. per dozen also Fruit Trees, Evergreen Shrubs, and Ornamental Trees of the finest growth, in large quantities, at low prices. A Catalogue sent on application, on receipt of two postage stamps, to EDWARD DENYER, Nurseryman, Loughborough-road, Brixton near London

E. D informs his friends that he has no Seed-shop in London.

BENJAMIN R CANT, St. John's-street Nursery, Colchester, has now ready for delivery, strong well-established plants of the following

GERANIUM, HOYLE'S CRUSADER ... 7s. 6d each.
TOPPING'S BRILLIANT ... 7s 6d. „
FUCHSIA SPECTABILIS ... 7s. 6d „

The Three for 18s, carriage and package free to London Post-office orders, or reference, requested from unknown correspondents The usual discount to the trade.

CEDRUS DEODARA.

WM MAULE AND SONS beg to remind Noblemen, Gentlemen, and the Trade, that they can still supply any quantity of various sizes of this most ornamental and desirable tree They have also large supplies of the other Himalayan Coniferæ, and the beautiful new Rhododendrons from the same country. Priced Lists will be forwarded on receipt of one postage stamp.

The Pamphlet on the Natural Habits and Quality of the wood of Cedrus Deodara, can still be had by enclosing three postage stamps.—Stapleton-road Nurseries, Bristol

TO SEEDSMEN AND MARKET GARDENERS

W. J. EPPS begs to offer the following SEEDS, which have been grown from the finest selected stocks possible, and may be depended on as neat and genuine The prices are exceedingly low, which will be sent on application, also samples if required

Skirving's Purple-top Swede	BROCCOLI
White Belgian Carrot	Early Purple Sprouting
Parsnip	Grange's Early White
Long red Mangold Wurzel	Brimstone Invisible
Yellow Globe ditto	Winter Imperial
PEAS.	Danish
Knight's dwarf white Marrow	Chappell's Cream
Do. do blue do do	Adams' fine Early White
Barbridge's Eclipse or Stubbs' Dwarf	Shilling's Queen Cabbage
Scimetar	Cress
Indented Marrow	Green curled Savoy.

High-street, Maidstone, Dec. 15

KENSINGTON'S PEARMAIN.

JAMES CAMERON, NURSERYMAN and FLORIST, returns his best thanks to his friends and the public in general for their liberal support, and begs to say he has now [illegible] a sufficient quantity of the above valuable APPLE, [illegible] enabled to offer them at so reduced a price as to [illegible] extensive cultivation. It is a middle-sized variety, [illegible] in cultivation, and remarkable for its [illegible] superior in every respect to [illegible]. It is in the height of flavour from January [illegible] and a very good bearer Strong dwarf [illegible] each; the usual allowance to the trade Remittances from unknown correspondents, previous to the trees being sent, by Post-office orders, made payable to JAMES CAMERON, Nurseryman, Uckfield, Sussex.

J. C. has also an extensive stock of Fruit and Forest Trees, Quicks, Evergreens, and Roses of first-rate quality.

"PRINCE ALBERT" SEEDLING GOOSEBERRY.

THOMAS WATSON begs to inform the trade and the public generally, that he is now prepared to send out fine strong plants of this splendid Seedling GOOSEBERRY, at 1s. per plant. For every dozen ordered, 17 plants will be sent, 8 plants for half-dozen, but no allowance below that number. Post-office orders, payable to THOMAS WATSON, Spital, Hexham, Northumberland, will meet with prompt attention.

T. W. begs to refer the public to extracts from the Gardeners and Farmers' Journal, for the 18th August, 1849, also the *Gardeners' Chronicle* of the same date.

From the Gardeners and Farmers' Journal.—GOOSEBERRIES T. W. Your seedling, which we noticed last year, and had occasion to speak highly of, we have again examined, and can now report confidently with respect to flavour, and therefore say it belongs to the class of first-rate desert Gooseberries As we stated before, the colour is red, resembling the Warrington Red, but larger, and round rather than oval. We think this is likely to become one of the most useful and popular of our Gooseberries.

From the *Gardeners' Chronicle*.—GOOSEBERRIES. *T. W.* Your seedling, about the size of the Red Warrington, round, hairy, dark red, has a good appearance, but, owing to long carriage, we cannot form a correct opinion of its flavour.

The Spital, Hexham, Northumberland.

RENDLE'S NEW SEED CATALOGUE

RENDLE'S NEW BOOK CATALOGUE OF SEEDS *is just published*, and entered at Stationers' Hall. It will be found of much value to all purchasers of Kitchen Garden, Agricultural, and Flower Seeds.

PART 1 contains a descriptive Catalogue of the best CULINARY VEGETABLES *in cultivation, with the time of sowing, height, and other useful particulars, as well as the quantities furnished by* WILLIAM E. RENDLE & CO. *for their collections.*

PART 2 *contains a descriptive Catalogue of all the choicest and best varieties of* AGRICULTURAL SEEDS.

PART 3 *contains a most excellent descriptive List of all the newest and choicest* FLOWER SEEDS, *giving—1st, the hardiness and duration of each variety; 2d, the colour; 3d, the height; and 4th, the time of flowering. Also some useful information and advice relating to the proper mode of culture, with the manner of testing the quality of good seeds. It gives also a full detailed list of all the best German seeds, such as Stocks, Asters, &c., as well as the quantities furnished by* WILLIAM E. RENDLE & CO. *for their collections.*

Copies of this valuable Catalogue can be obtained on application *gratis*, by inclosing two penny stamps to pay the postage.

KITCHEN GARDEN SEEDS.

COLLECTIONS OF GARDEN SEEDS

Containing all the choicest sorts, offered at the following prices

	£	s	d
No 1.—Complete Collection of 20 quarts of Peas and all other Seeds in proportion for one year's supply ..	2	10	0
No 2 - Complete Collection in smaller quantities	1	10	0
No. 3 —Ditto ditto	1	0	0
No 4 —Ditto ditto	0	12	6

Complete Lists of the sorts contained in each collection will be found in our new Book Catalogue

FLOWER SEEDS.

We have a very superior stock of all the newest kinds and as some of the choicest varieties are grown under our own inspection, we can warrant them to be quite new and correct to name

SCALE OF PRICES SENT POSTAGE FREE

No 1 —100 packets choice sorts, including all the best Hardy, Half Hardy, and Greenhouse Annuals, Biennials and Perennials .... 18s larger packets, 25s
No 2 —50 Ditto ditto ditto 10s. „ 15s.
No. 3 —25 Ditto ditto ditto 6s „ 8s

Complete Lists of the sorts contained in each collection will be found in our new Book Catalogue.

All orders above £2 will be delivered free of carriage to any station on the Great Western, Bristol and Gloucester, Bristol and Exeter, or South Devon Railways, or to any town in Devon and Cornwall; or to Cork, Dublin, or Liverpool, by Steamers.

Railway and Steam communication to all parts of Great Britain and Ireland

For Catalogues and further particulars apply to

WILLIAM E RENDLE & CO. Union-road, Plymouth.
ESTABLISHED 1780

JAMES WHOMES takes this opportunity to thank his Patrons for their kind favours, also to inform his Correspondents that finding HOYLE'S "SPARKLER" GERANIUM a source of great disappointment, he purposes sending FREE to each and all who kindly purchased it of him last season a plant of Crusader, or any one plant of either kind named in his Catalogue of this autumn (with the exception of the eight last named on the first page of his List, beginning from Arnold's Virgin Queen), to compensate in a degree for the failure of Sparkler, by writing to signify the sort they wish to be sent

Royal Pelargonium Nursery, Windsor, Dec. 15

MITCHELL'S ROYAL ALBERT RHUBARB still has its supremacy over all other kinds for its extraordinary earliness delicious flavour and splendid red colour also a most prolific bearer and free grower, with large stalks For early forcing it far surpasses every other variety For making wines, preserves and all culinary purposes, it is an inestimable production Strong one year planted roots 1s 6d each, also Myatt's Linnæus, 1s 6d and Victoria 9d The usual allowance to the trade Post-office orders made payable to WILLIAM MITCHELL, Enfield Highway, Middlesex, will meet with prompt attention N B The above is from four to five weeks earlier than the well-known Victoria.

"PEARL" BLACK GRAPE.

MR. JARVIS is disposed to Sell the above GRAPE, raised from an Eye received from Portugal six years ago and the second of its bearing. It has been grown in a Vinery with plants, and as the plants were the first consideration fires were not kept to bring it to that perfection as if it had been in a forcing-house. A bunch of Grapes of a pound-and-a-half, was sent to Mr Marnock, of the Royal Botanical Gardens, Regent's Park, for his opinion thereon, and he, being unable to identify it with any of the kinds in general use, sent it to a friend of his for his inspection and the following is what he says of it —"I cannot give you any information respecting it, excepting that I consider it new, or at all events not common in this country. It is new to me. The lobes of the leaves are remarkably deep. The bunch long and loose, well adapted for ripening with little heat The berries resemble those of the Black Prince, and are sugary and rich." Such is the description of one of the best judges of fruit in this country. The stock to be disposed of, Twenty Vines raised from Eyes this year, and about Eighty Eyes to be taken from the parent Vine, the whole being in my possession, and to a purchaser will agree not to dispose or propagate it for a time to be agreed upon. All offers to be made to me, prepaid, and no offer will be replied to that is not satisfactory in amount.

Lindsey-street, Hull, December 15.

TO THE SUBSCRIBERS TO THE

GARDENERS' BENEVOLENT INSTITUTION.—The case of JOHN SHEPHERD, No. 11 on the list for the next Election (the 17th January, 1850), and the third application, is most respectfully and earnestly recommended to the Subscribers by Mr. GATEHELL, of New Palace Yard, Westminster, who will thankfully again receive Proxies. Mr. GATEHELL hopes, with the assistance of the Subscribers, that JOHN SHEPHERD will be successful at the next Election.

AMERICAN PLANTS

HOSEA WATERER begs to announce he has just published a New and Complete Catalogue of his AMERICAN and CONIFEROUS PLANTS, which may be had on application, inclosing two stamps for postage to

HOSEA WATERER, Knap Hill Nursery, Woking, Surrey.

ROSA MANETTII.—An Amateur not having sufficient room, wishes to dispose of 300 or 400 ROSES, principally autumnals and the best varieties, both Standards and Dwarfs. The Dwarfs are either on their own roots, or on Manettii stocks, they will be sold at half the usual price. Also, if required, a few dozen Manettii plants —For particulars, apply per pre-paid letter to H. H. T., 9, Wellington-street North, Strand, London.

GRAPE VINES AND PINE PLANTS.

THOMAS PAPE begs to say that he can supply strong VINES, from 5 to 7 feet, in pots, raised from eyes, and well rooted. Also White Providence and Montserrat Pine Plants clean and healthy, at moderate prices.

Undercliffe Nursery, Bradford, Yorkshire.

NEW GARDEN SEEDS, OF HOME GROWTH, AT LOW PRICES

MESSRS SUTTON AND SONS, growing their Seeds themselves, and taking great care in proving all the new kinds introduced, are enabled to supply their customers with the best kinds in cultivation at very moderate expense, and of such quality as will prevent disappointment in the crops Catalogues will be sent, post free, on application to JOHN SUTTON and SONS, Reading Seed Warehouse, Reading, Berkshire

*** Goods delivered free by rail to London, Oxford, Gloucester, Bristol, or Basingstoke.

CUCUMBERS.

THE THREE BEST CUCUMBERS EVER YET SENT OUT.

EDWARD TILEY begs to remind the public generally, that he has now ready to dispose of good sound seed of his VICTORY OF BATH GORDON'S WHITE SPINE, and LORD KEYNON'S FAVOURITE (this last is the best for winter cultivation). These CUCUMBERS have been thoroughly proved to the satisfaction of hundreds of growers, to need any comment on their superiority. Victory of Bath, 1s per packet Gordon's White Spine, 1s. 6d do., Lord Keynon's Favourite, or Winter Cucumber, 2s 6d do., or one packet of each of the above Cucumbers, 5s.

E T begs to mention that he has the whole stock of the seed of that unequalled Melon, "Brougham Hall," Green-flesh; it has surpassed all others this season at the London exhibitions. It is as much superior in flavour to all other Melons as the Greengage is to all other Plums Sold in packets of 7 seeds, 2s 6d. each —Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney bridge, Bath A remittance (either in cash or in postage stamps) must accompany the order.

NOW SENDING OUT, SPLENDID NEW GERANIUMS, FUCHSIAS CARNATIONS, PINKS, PANSIES, &c

HENRY WALTON begs to offer 10 of the following GERANIUMS last sent out for 1l. 10s., with a plant of his first-rate Seedling "Antagonist," now sending out at 10s. each. One over for carriage The plants are well established in 4 inch pots

	s	d		s.	d.
Abd-el-Kader (Hoyle's)	5	6	Lallah-Rookh	5	6
Belle of the Village	5	6	Norah	5	0
Prometheus	5	0	Plutarch	5	0
Terpsichore	5	0	Jenny Lind	3	6
Alonzo (Foster's)	5	0	Sparkler	5	0

Any 20 of the following first rate varieties for 1l. 7s., or 12 for 18s, with a plant of Hoyle's Prometheus for carriage, viz Avenger, Ariel Aurora, Aurantia, Black Prince, Cassandra, Centurion, Conspicabunda Distinctus, Desdemona, Forget-me-Not, Flora's Flag Gustavus, Gulielma, Hebe's Lip, Honora, Jenny Lind, Lady Ebrington, Luna refulgens, Mercury Mary Queen of Scots Miss Holford Orion, Prince Alfred, Purpurea, Multiflora, Queen of Kent, Rosa Mundi, Star of the West, Scarlet Defiance Telegraph and Vulcan.

12 first rate show Pinks, for 6s, 9s, and 12s.
12 first-rate Carnations and Picotees, 12s and 18s.
12 first-rate Pansies, 6s, 9s and 12s. Can be sent by post.

Descriptive Catalogues can be had for one postage stamp. All orders are requested to be prepaid, and made payable at Burnley —Edgend, Marsden, near Burnley Lancashire.

HEATING BY HOT WATER.

J. WEEKS AND Co, King's-road, Chelsea, Patentees and Manufacturers of HOT WATER APPARATUS, warrant their Boilers to be the most efficient and economical of any yet invented at prices from 3l. to 15l., the fire warranted to last 15 hours without attention To be seen in extensive operation at their Show Establishment, King's-road, Chelsea, and also at most of the Nobility and Gentlemen's Seats in the country, the London Nurseries &c

SLATE WORKS, ISLEWORTH.—The following articles, manufactured in Slate for Horticultural purposes by EDWARD BECK, may be seen in use at WORTON COTTAGE, upon application to the Gardener Sundays excepted Orange Tubs, Plant Boxes, Tanks, Cisterns, Shelves, Garden Path Edging, Hot Water Tank Covers Flower-beds for Balconies, Shelves fitted to hold water for Orchidaceous Houses, &c

Estimates given for Work as shown upon Drawings and in Specifications. A large stock of Slate Slabs, of all sizes and thicknesses, kept on sale.

H[illegible] PATENT ROUGH PLATE GLASS [illegible] attention [illegible] [illegible] [illegible] some alterations [illegible] in the mode of manufacturing this description of Glass, the quality is greatly improved, and we now supply it [illegible] and, by an arrangement with Messrs. HARTLEY and Co., precisely at their prices. Cut to order in [illegible]

1s by 12 under [illegible] foot, [illegible]d.	1½ foot under 3 feet...[illegible]
3 feet „ 4 feet, [illegible]d.	4 feet „ 5 feet. [illegible]
5 feet „ 6 feet, 17½d.	6 feet „ 8 feet. [illegible]

We would recommend, if possible, all squares about 20 inches long; 20 inches by 9 would be considered a good size.

PACKED IN BOXES of 50 feet each.

6 by 4 and 6½ by 4½...10s. 6d.	9 by 6 and 8½ by 6½...12s. 6d.
7 by 5 and 7½ by 5½ ..12s. 0d.	8 by 7 and 10 by 8 ...15s. 0d.

Milk Pans from 2s. to 6s. each, Metal Hand-frames, Tiles, and Slates; Propagating and Bee Glasses from 2d. each; Cucumber Tubes, 1d. per inch; Peach Glasses, 10d. each; Wasp Traps, 2s. 6d. per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. *Lactometers* for trying the quality of Milk, 4 tubes, 7s. 6d.; 6 tubes, 10s. Self-registering Thermometers for Greenhouses, Horticultural Glass, &c.

JAMES PHILLIPS and CO., 116, BISHOPSGATE STREET WITHOUT, LONDON.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of gardening purposes. * * The best sample of it which we have yet seen was manufactured by Messrs. HARTLEYS, and sold by Mr. JAMES PHILLIPS, of 116, Bishopsgate-street."

See Leading Article of Gardeners' Chronicle of Saturday last.

GLASS FOR CONSERVATORIES, &c.

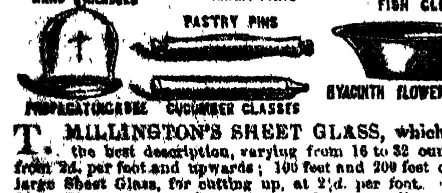
HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the Gardeners' Chronicle first Saturday in each month.

GLASS PIPES.

MESSRS. COATHUPES AND Co., GLASS MANUFACTURERS, of Bristol, and of Nailsea, Somerset, beg to inform Engineers and others, that they are prepared to supply GLASS PIPES of from 1 to 4-inch bore, in lengths of from 3 to 7 feet—the lengths being less as the diameters of the bores increase.

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2d. per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½d. per foot. British Plate Glass, from 1s. 3d. to 2s. per foot, according to size. Patent Rough Plate Glass, from ⅛ to 1 inch in thickness, from 4d. per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2s. to 5s. each. Cucumber Tubes, from 12 to 24 inches long, at 1d. per inch. Lactometers, 7s. 6d. each. Wasp Traps.—Lists may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 10l. 10s.; a do. do. 15 by 10, 22l. 10s.; a do. do. 18 by 12, 28l. 10s.; a do. do. 21 by 12, 32l. 10s., including a plan for brickwork. 1½-inch Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 11½d. per foot; 2-inch do., 1s. per foot.—J. LEWIS'S Machine Hothouse Works, Stamford-hill, Middlesex.

POLMAISE HEATING.

J. LEWIS'S IMPROVED POLMAISE STOVES are delivered to the Railways in London, with Plans for fixing. For a Greenhouse: 20 feet by 12, 6l. 10s.; 30 feet by 14, 8l. 10s.; 60 feet by 18, 10l. 10s. Stoves for Churches, Schools, and Halls, according to size.—Hothouse Works, Stamford-hill, Middlesex.

HOT-WATER PIPES AND TROUGH PIPES, with all the usual connexions.

J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, keeps a very large stock of Hot Water and Trough Pipes, with Elbows, Syphons, Tee Pieces, Collars, Flange Sockets, and Spigots, Throttle Valves, &c., of excellent quality, and at very low prices. Parties requiring the work to be done can have good workmen sent to any part of the kingdom, with everything requisite for the heating, &c., at a stated sum. Rain-water pipes, Gutters, Sash-weights, Railing Bars, Air Bricks, and numerous other castings are also kept at J. JONES'S, Iron Bridge Wharf, No. 6, Bankside, London.

THE COLD WEATHER.

SELF-REGISTERING SIXIS THERMOMETER for HEAT and COLD, of the best construction, and not liable to get out of order.

Fourteen-inch Thermometer ... ... 1l. and £1	1	0		
Ten-inch ditto ... ... 15s. „	0	18	0	
Day & Night Thermometers, for Heat & Cold 10s. 6d. „	0	12	6	
Night Thermometers, for Cold only ... 4s. 6d. to	0	8	6	
Eight-inch Boxwood Thermometers, for greenhouses &c.	2	0		
Mason's Hygrometers, for showing the humidity of the Air in Hothouses, Sick-chambers, &c., &c., with Tables (this is an invaluable instrument)	0	15	0	
Hydrometers, for ascertaining the quality of Sulphuric Acid ... ... 5s. to	0	16	0	

No purchaser of this acid should be without one, as it is often sold highly diluted.

Lactometers, by which the quality of Milk may be [illegible]n, whether for Curd or Cream, with instru[illegible] how to use it, and also the result of experi[illegible] on different Milks ... ... 5s. and 0 7 6

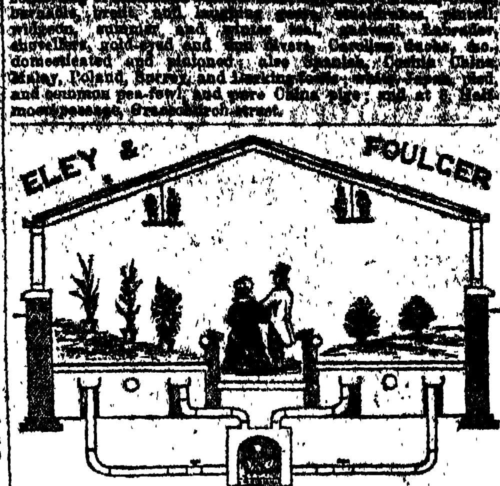
SU[illegible] of Barometers, Thermometers, and Philosophical [illegible] made by HENRY BAKER, 90, Hatton-garden, [illegible] sent on the receipt of a Post-office Order for [illegible] and no [illegible] are charged extra.

to the [illegible]

London

B[illegible]

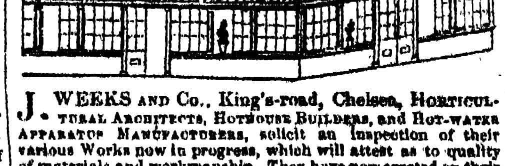
[illegible] domesticated and pinioned; also Spanish, Dorking, China, Malay, Poland, Surrey, and Hamburgh fowls [illegible] and common pea-fowl, and pure China pigs; and at 2, Half-moon-passage, Gracechurch-street.



BEG to acquaint the Nobility and Gentry that they, being practical and working men, are enabled to offer their works at very low prices. They are the inventors and manufacturers of the double saddle cast-iron boilers, well known to be superior to all others, and at much less cost; viz., 14 inch boiler, 2l.; 16 inch, 2l. 10s.; 18 inch, 3l.; 24 inch, 4l. strong double door and frame, 25s.; 4 inch hot water pipe, 1s. per foot; 3 inch ditto, 10d.; 2 inch ditto, 8d. Tank work for pits, 1s. 9d. per foot; superior valves, and all other connections, equally low. Buildings, or hot water apparatus, can be supplied and arranged that any gentleman's labouring man will be enabled to fix them; or our own services at very trifling expense for fixing. Can be highly recommended by several Noblemen and Gentlemen, for whom the most complete buildings have been erected. A handsome Span-roof Greenhouse or Conservatory, 20 feet by 10, quite new, complete, with improved hot water apparatus, for 50l. It requires no brickwork.—Address, City-road, near the Toll Gate, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, FERNS, &c.



J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship. They have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. *By means of these houses, they are enabled to grow* Stove, Greenhouse, Ferns, and other Plants, in such immense numbers, that they are sold at LESS THAN HALF-PRICE. Mats, Mushroom Spawn, and everything connected with the Nursery and Seed departments; Plans, Estimates, and Catalogues forwarded on application.

STATUES, VASES, FOUNTAINS, GARDEN ORNAMENTS, COATS OF ARMS, and ARCHITECTURAL EMBELLISHMENTS in Imperishable Stone, by VAUGHAN and Co., 60, Stones End, Borough, London. T. J. CROGGON, late of Coade's, Superintendent. Specimens may be seen at CROGGON and Co.'s, 2, Dowgate-hill, City. A pamphlet of Drawings forwarded on application.

LIGHT, CHEAP, AND DURABLE ROOFING.

CROGGON'S PATENT ASPHALTE ROOFING FELT is perfectly impervious to rain, snow, and frost, and has been tested by a long and extensive experience in all climates. Saves half the timber required for slates; can be laid on with great facility by farm-servants, or unpractised persons. Price 1d. per square foot. CROGGON'S PATENT NON-CONDUCTING FELT, for Steam Boilers and Pipes, saves 25 per cent. of fuel. Samples and Testimonials sent by post on application to CROGGON and Co., 2, Dowgate-hill, London.

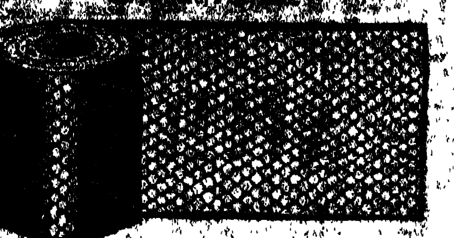
CORN MANURE.—BLASHFIELD'S PATENT COPROS, a New Manure for Corn and other crops, prepared from the nitrogenous matter deposited on the banks of the Thames, in combination with Superphosphate of Lime, &c. Sold in a finely ground state, at No. 3, New London-street, Mark-lane, London; also at the works, Mill Wall, Poplar; Waterloo Dock, Lambeth; and No. 1, Praed-street, Paddington Basin. Patent Copros for Corn crops, also for Turnips, &c. Superphosphate of Lime, Gypsum calcined and saturated with liquid manure. Cement for liquid manure tanks, malt-house floors, barn floors, drain-tiles, pipes, &c.

FISH MANURE.—The ROYAL PATENT SUB-MARINE MANURE COMPANY are prepared to grant Licenses for London, or any part of the United Kingdom or the Colonies (places where Licenses are already granted excepted), for the Manufacture and Sale of their Manure. This Manure, prepared from offal fish and other marine substances, is equal to Peruvian Guano in its fertilising qualities, and can be rendered at a much less cost to Agriculturists.—Application to be made to the Company, at their Offices, 116, Fore-street, Devonport, Devon, where Prospectuses and Testimonials may be procured, and orders for the Manure are received.

TO NOBLEMEN, GENTLEMEN, AGRICULTURISTS, &c.

READ'S FIRE AND GARDEN ENGINES, &c., upon his new patent principle, which for power, portability, and simplicity of action, surpass anything of the kind hitherto invented. May be worked with two-thirds the labour required for any other engines of the same power. Also Read's New Garden Engines, Machines, and Syringes, of every description. Patent Veterinary Injecting Instruments. Improved Hollow Probangs for relieving hoven, or choked bullocks, sheep, calves, &c.—Manufactured only by RICHARD READ, Instrument Maker (by appointment) to her Majesty, 35, Regent-circus, Piccadilly, London. Exhibited at the Smithfield Club Cattle Show, Stand 1[illegible].

[illegible]

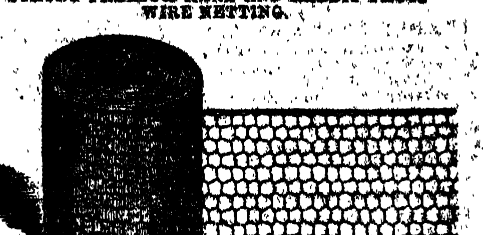


		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide	...	7d. per yd.	5d. per yd.
2-inch „ strong „		9 „	6½ „
2-inch „ extra strong „	...	12 „	8 „
1½-inch „ light „	...	8 „	6½ „
1½-inch „ strong „	...	10 „	8 „
1½-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 1d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market-place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG), MANUFACTURERS OF IRON AND WIRE WORK, &c., 22, PARLIAMENT-STREET, WESTMINSTER, LONDON; CASTLE-BUILDINGS, DERBY-SQUARE, LIVERPOOL; 138, HIGH-STREET, EDINBURGH; and 52, ST. ENOCH-SQUARE, GLASGOW, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness, attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, completely impervious to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PRICES.—18 ins. high, 9d.; 24 ins., 1s.; 30 ins., 1s. 3d.; and 36 ins., 1s. 6d. per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	...	£3	15	0
Do. of 100 yards, 24 ins. wide	...	5	0	0
Do. of 100 yards, 30 ins. wide	...	6	5	0
Do. of 100 yards, 36 ins. wide	...	7	10	0

If more or less than a web is required, it would be charged at the same rate per yard.

This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s. is equal to [illegible] yards of another article in the market, the same width, at 6d. per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

DIETETIC COCOA.

HOMŒOPATHIC PATIENTS, DYSPEPTICS, and Persons of Delicate Constitutions, are strongly recommended to use TAYLOR BROTHERS' [illegible] COCOA, as being very superior to any preparation of the Cocoa Nut hitherto introduced. This article is manufactured on a peculiar principle, by which the oily portions of the nut are neutralised, at the same time its flavour, purity, and nutritious properties are maintained. It is an essential article of diet for those under Homœopathic Treatment, agrees with the most delicate digestive organs, is agreeable and soothing to the nervous system, and proves at the same time both invigorating and refreshing.

Sold wholesale by TAYLOR Brothers, at their Mills, Spitalfields, London, and retail, in ¼ lb., ½ lb., and 1 lb. sealed packets, at 1s. 4d. per lb., by most respectable Grocers and Tea-dealers in the kingdom; of whom also may be had Taylor Brothers' original SOLUBLE COCOA [illegible] of Coffee), the consumption of which article exceeds ONE MILLION POUNDS per annum—a fact which has induced many parties to manufacture spurious imitations, which, although somewhat resembling the appearance, are totally devoid of the essential and peculiar properties of the original and only genuine article. To guard against these counterfeits, Taylor Brothers recommend the purchase of their article in packets only which bear their name, with directions for use. Sold by all Grocers and Tea-dealers.

TWO HUNDRED STEEL ENGRAVINGS for 6s. 6d. These beautiful plates consist of finely executed Views, Portraits, and Figures, from the various Annuals. The impressions are perfect, all different, and admirably adapted for Albums, Scrap-books, Screens, or fancy purposes, and form an elegant present. Sent free by post immediately on receipt of post-office order. James Reynolds, Print Warehouse, 174, Strand, London.

H[illegible]

[illegible]

Do. Do. PUNCTATUM, 3s. to 10s. 6d. each.
Do. Do. ROSEUM, 3s. 6d. to 10s. 6d. each.
Do. Do. CRUENTUM, 5s. to 10s. 6d. each.
Do. Do. RUBRUM, or SPECIOSUM (true), 3s. 6d. to 21s. each.
H. G.'s Catalogue of Bulbs, &c., may be had on application.

BECK'S PELARGONIUMS, and other raisers' Flowers.—Now ready for selection and going out. Twelve of the following varieties, including box and carriage to London, will be forwarded in exchange for post-office order on Brentford for Two Guineas. They are well-rooted in 3-inch pots, and ready for an immediate shift into a larger size:
Bianca, Centurion, Cracker, Forget-me-not, Ariel, Cassandra, Crusader, Gustavus, Gulielma, Grandiflora, Junii, Negress, Rosamond, Sundown. Or Nine of the above, and Hoyle's Crusader, or Foster's Victory.
HOWARD BECK, Worton Cottage, Isleworth.

ESTABLISHED 1785.
EARLY PEAS.—WILLIAM E. RENDLE & Co. have a fine stock of the following excellent kinds:

Dancroft Early Rival, 2½ feet.	Warner's Early Emperor, 3 ft.
Early Prince Albert, 2 to 3 ft.	Fairbeard's Surprise, 4 feet.
Fairbeard's Champion of England, 4 feet.	Early Kent, 3 feet.
Early Warwick, 3 feet.	Early Frame, 3 feet.
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These will be sold at their usual low prices. For Catalogues and prices, apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.
We are now laying in a most excellent assortment of New and Choice Seeds for the ensuing season.

TO PLANTERS AND THE TRADE.
THE SUBSCRIBERS beg leave to call the attention of Planters and the Trade to their extensive Stock of all sorts of FOREST, ORNAMENTAL, AND FRUIT TREES, EVERGREEN AND FLOWERING SHRUBS, particularly to their 1 and 2 years seedling and 1 and 2 years transplanted LARCH, grown from seed from the Tyrol; as also 2 years seedling and 1 and 2 years transplanted true native SCOTCH FIR; with a large stock of 2 and 3 years transplanted Thorns or Quicks. All of the finest quality and will be sold cheap.
Application may be made to either of their establishments. Catalogues will be sent when applied for, and references will be required with orders from unknown correspondents.
DICKSON and TURNBULL, Nurserymen, &c., Perth and Brechin, N.B.—Dec. 15.

AMERICAN NURSERY, BAGSHOT, SURREY.
JOHN WATERER has much pleasure in announcing he has published a Descriptive Catalogue of his extensive collection of RHODODENDRONS and other American plants, &c., which will be forwarded on application.

JACKSON'S IMPROVED KIDNEY, THE MOST PROLIFIC OF EARLY POTATOES.
THOMAS JACKSON AND SON have much pleasure in announcing that in consequence of their having a very heavy crop of their IMPROVED KIDNEY POTATO, they have reduced its price from 15s. to 10s. per bushel. All orders of one bushel or more delivered free in London, or at any station on the South Western Railway.
Nursery, Kingston, Surrey, Dec. 15.

NEW GERANIUMS AT VERY LOW PRICES.
BASS AND BROWN beg to refer to their Advertisement of New Varieties last sent out, of which they have still fine strong plants, see *Gardeners' Chronicle*, dated October 20th and 27th. They also beg to refer to their Advertisement of CHOICE FLOWER ROOTS, of the same dates. Their Descriptive Priced Catalogue of Flower Roots, Select Roses, Hardy, Herbaceous, and Climbing Plants, &c., may be had on application.
Seed and Horticultural Establishment, Sudbury, Suffolk.

FLOWERING BULBOUS ROOTS, &c.—HYACINTHS, TULIPS, GLADIOLUS, IRIS, NARCISSUS, JONQUILS, CROCUS, RANUNCULUS, ANEMONES, LILIES, &c., may be had, of sound quality, from WM. HAMILTON, Seedsman and Florist.
HYACINTHS, superior varieties (named), 9s., 12s., and 18s. per dozen; common (named), 6s. per dozen; mixtures, 3s. per dozen. TULIPS, 1s.; JONQUILS (large), 1s.; NARCISSUS, 4s. to 6s. per dozen. Mixed CROCUS, 1s. 6d.; in colours, 2s. 6d. per 100. SNOWDROPS, 2s. 6d. per 100. GUERNSEY LILIES, 6d. each. A Priced Catalogue may be had GRATIS on application.
[illegible] varieties of Hardy Annuals, for autumn or early spring sowing, [illegible] 12 varieties, 2s. 6d.; free by post, 6d. extra.
CALCEOLARIA, GERANIUM, and PRIMULA SINENSIS FIMBRIATA, saved from the best varieties, and warranted everywhere. Vegetable Seeds of all kinds, Garden Implements, [illegible]
WM. HAMILTON takes this opportunity of recommending his IMPROVED FLOWER SUPPORTER for Hyacinths, Narcissus, &c. The "Florist's Directory" remarks—"A more simple, useful, and cheaper support for Hyacinths, Narcissus, &c., whether grown in pots or water, can hardly be imagined." Price 6s. per dozen.—Address, 156, CHEAPSIDE, LONDON.
A Post-office order required from unknown correspondents.

TO NURSERYMEN, PLANTERS, &c.
THOMAS KENNEDY AND CO., NURSERYMEN, Dumfries, beg to intimate to the Trade and others, that a part of their extensive Nursery Grounds being shortly wanted for building and other purposes, and in order to have the ground cleared, they have commenced selling off a part of their stock of fine healthy and well rooted transplanted TREES at reduced prices, viz.:

200,000 Larch Fir, 1 to 2 feet.	20,000 Oak, 3 to 4 feet.
200,000 Do. do. 2 to 3½ feet.	10,000 Alder, 3 to 4 feet.
250,000 Do. do. twice transplanted, 2½ to 3½ feet.	10,000 Birch, 2 to 3 feet.
50,000 Norway Spruce, 8 to 12 inches.	20,000 Beech, 1½ to 2½ feet.
50,000 Norway Spruce, 1 to 2 ft.	10,000 Do., 2 to 3 feet.
50,000 Scotch Fir, 3 years old.	20,000 Hornbeam, 2, 3, and 4 feet.
50,000 Do. do. 4 years old.	10,000 Sycamore, 2, 3, and 4 ft.
50,000 Silver Fir, 9, 12, and 18 inches.	500,000 five years old White-thorn Quickset.
10,000 Balm of Gilead.	500,000 six years old White-thorn Quickset, extra strong.
30,000 Oak, [illegible]	

A large Stock of Standard and Dwarf Fruit Trees, Gooseberry and Currant Trees, Evergreen and Flowering Shrubs, &c. Prices and samples will be furnished on application.
There is steam communication from Dumfries via Annan to Liverpool and Belfast twice a week, and railroad communication daily to all parts of the Kingdom.—Dumfries, Dec. 15.

[illegible]

The Gardeners' Chronicle.
SATURDAY, DECEMBER 15, 1849.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, Dec. 17	Pathological	[illegible] P.M.
	Chemical	8 P.M.
	Medical	8 P.M.
	Statistical	8 P.M.
	British Architects	8 P.M.
TUESDAY, — 18	Linnean	8 P.M.
	Civil Engineers (Anniversary)	[illegible] P.M.
WEDNESDAY, — 19	Society of Arts	8 P.M.
	Geological	8½ P.M.
	Numismatic	7 P.M.
THURSDAY, — 20	Antiquarian	8 P.M.
	Royal	8½ P.M.
SATURDAY, — 22	Westminster Medical	8 P.M.

WHILST great and deserved attention has been of late years paid to the improvement of horticulture, and to the best methods of growing plants, far too little has generally been given by gardeners to the art of grouping their productions so as to set them off in the best and most pleasing manner. And yet what can be more important? A man may have a fine plant whose flowers are not of the most agreeable colour; he may have exhausted his skill in improving its quality, and have failed; he is ready to condemn that which has caused him infinite trouble and anxiety as ugly and good for nothing; would he then give nothing to know that, although when isolated and looked at individually, the effect produced by his plant on the eye was not pleasing, yet, by skilfully backing it up with other plants, it would not only gain by the contrast, but be no longer unpleasant to the sight? Would he give nothing to know how to set about such a proceeding scientifically and with a reasonable chance, not to say certainty, of success? We have taken only one instance where a knowledge of the laws governing the contrast of colours would be of use, a hundred others will offer themselves to the minds of every intelligent observing man.

It is with a view of remedying the evil just noticed that we proceed once more to lay before our readers, and in much more detail than formerly, the great principles relating to the contrast of colours, as given by M. CHEVREUL, in his treatise "*De la loi du contraste simultané des couleurs.*" This eminent philosopher having been employed by the French Government to ascertain the cause of a supposed deterioration of the dyes employed in the national manufactures, satisfied himself that, in fact, no deterioration whatever had taken place; but that the want of brilliancy complained of arose from loss of skill in the art of blending colours. Hence his famous treatise, of which we propose to give a very short abstract.

Every ray of white light is composed of a certain number of red, yellow, and blue rays combined in certain proportions. Red, yellow, and blue, are called SIMPLE COLOURS; other colours, being produced by a combination of two or all of these, are called COMPOUND COLOURS. When white light falls upon any surface it is either wholly absorbed, or wholly reflected, or partly absorbed and partly reflected by that surface; in the first case the surface looks black, in the second white, and in the third, it takes the colour of the reflected ray or rays. In the last case it is evident that the effect of the absorbed and of the reflected rays, if combined, would be the reproduction of white light. Now this property possessed by rays of different colours, or, in other words, by different colours, of producing, when combined in certain proportions, white light, is expressed by saying that such rays or such colours are COMPLEMENTARY the one to the other. Thus, we say that

Red is complementary to green, and *vice versa*
Orange „ to blue „
Greenish yellow to violet „
Indigo „ to orange yellow „

because red and green, orange and blue, greenish yellow and violet, indigo and orange yellow, produce white light by their respective combinations.

By the *simultaneous contrast of colours* is meant the effect produced on the eye by two different coloured bodies placed side by side; by *contrast of tone* is meant the modification in depth or intensity of colour, and by *contrast of colour* the modification in the optical composition of each contrasted colour.

The first great point to remember with regard to this subject is, that whenever the eye perceives at the same time two substances, differing from each other in appearance, it sees them as dissimilar as possible, both as regards their optical composition and the depth or tone of their colour.

With respect to the tone or intensity of colour, it is universally true, that, if two colours of different intensities, or if two portions of one and the same colour differing only in intensity, be placed side by [illegible] where the contrast is strongest, and least where it is weakest; or in other words the difference is greatest about the line of contact, and grows less and less as we recede therefrom.

As to contrast of colour it is found by experiment, and it may also be proved by *à priori* reasoning, that, whenever the eye regards two or more different colours at one and the same time, the colour of each is so modified that it appears by the contrast to be of that colour which would be produced by the addition of itself to the complementary colours of its neighbours; and this modification is, as above, greatest where the contrast is strongest, and least where that is the weakest.

Thus it will be seen by a reference to the following Table, drawn up by M. CHEVREUL from actual experiments, that in No. 1, which is a contrast of orange and red, blue, the complementary of orange, when added to red makes it violet or amaranth coloured; and green, which is the complementary of red, added to orange, gives it a yellow tinge. So again with No. 2, red and yellow; green, the complementary of red, added to yellow, gives it a greenish tinge; and violet-coloured indigo, being the complementary of yellow added to red, gives it a violet tinge, and so with all the others.

The following Table, showing the modifications produced by the simultaneous contrast of different colours of as nearly as possible the same tone, illustrates the above law, and may be otherwise useful to our readers:

	Colours contrasted.		Modifications produced.
1.	Red appears tinged with		violet.
	Orange ...	„	yellow.
2.	Red	„	violet, or appears less yellow
	Yellow ...	„	green, or appears less red.
3.	Red ...	„	yellow.
	Blue ...	„	green.
4.	Red ...	„	yellow.
	Indigo ...	„	blue.
5.	Red	„	yellow.
	Violet ...	„	indigo
6.	Orange ...	„	red.
	Yellow ...	„	brilliant green, or appears less red.
7.	Orange ...	„	brilliant red, or appears less brown.
	Green ...	„	blue.
8.	Orange ...	„	yellow, or appears less brown.
	Indigo ...	„	blue, or appears clearer.
9.	Orange ...	„	yellow, or appears less brown.
	Violet ...	„	indigo.
10.	Yellow ...	„	brilliant orange.
	Green ...	„	blue.
11.	Yellow ...	„	orange.
	Blue ...	„	indigo.
12.	Green ...	„	yellow.
	Blue ...	„	indigo.
13.	Green ...	„	yellow.
	Indigo ...	„	violet.
14.	Green ...	„	yellow.
	Violet ...	„	red.
15.	Blue ...	„	green.
	Indigo ...	„	deep violet.
16.	Blue ...	„	green.
	Violet ...	„	red.
17.	Indigo ...	„	blue.
	Violet ...	„	red.

When colours that are as nearly as possible complementary to each other are contrasted, the colour of each is rendered more intense, or its tone is deepened. This follows immediately from the general principle last laid down, and is fully confirmed by experiment. Colours, when contrasted with white, are deepened in tone, and at the same time appear more brilliant, the white itself being tinged very slightly with the complementary of the contrasted colour. Contrasted with black, colours appear of a higher tone or less intense, and the black is feebly tinged with the complementary of the contrasted colour. Grey, being intermediate between black and white, produces an intermediate effect on colours with which it is contrasted; this is seen in the following results, obtained by placing different colours in contact with a grey ground:

Red and grey.—The grey appears greenish, in consequence of its receiving the complementary of red; the red appears purer—less orange-coloured perhaps.

Orange and grey.—The grey appears bluish; the orange purer—more brilliant, and perhaps a little yellower.

Yellow and grey.—The grey is tinged violet; the yellow appears more brilliant, and, at the same time, less green.

Green and grey.—The grey is reddish; the green is more brilliant, perhaps yellower.

Blue and grey.—The grey is tinged with orange; the blue appears more brilliant, and a little greenish.

Indigo and grey.—As the last.

Violet and grey.—The grey becomes yellowish; the violet purer and less dull.

When two compound colours, having one and the same simple colour for a component, as them both, are contrasted, the common colour loses its effect in a greater or less degree. For example, take orange (composed of yellow and red) and green (composed of yellow and blue); their common colour (yellow) being lost by the contrast, the orange appears redder, and the green bluer.

When a compound colour is contrasted with one of its own elementary or simple colours, the compound colour loses that which is common to both, and the simple colour is modified by receiving the complementary of the compound colour with which it is contrasted. Thus with orange, composed of *yellow* and red, and pure red, the orange loses some of its red and appears yellower, whilst the red, receiving the complementary of the orange (namely blue, as has been already shown) appears bluish.

If two simple colours are contrasted, we find that the general principle before laid down still holds good. If we contrast, for example, 1, *red and yellow*, it will be found that the red appears tinged with purple, and the yellow with green, because violet, the complementary of yellow, is added to the red; and green, the complementary of red, to the yellow; 2, *red and blue*, the red has a tendency to become orange, and the blue, green, because orange, the complementary of blue, is added to the red; and green, the complementary of red, to the blue; 3, *yellow and blue*, the yellow has an orange, and the blue a violet tinge, because orange, the complementary of blue, is added to the yellow; and violet, the complementary of yellow, to the blue.

Such are the great principles on which the whole art of combining colours in an agreeable manner depends; anyone, with ordinary powers of thought and a little practice, can, with a knowledge of the above general facts, tell pretty nearly what effect two or more colours when contrasted will produce on each other. He has only to remember that each one appears as if its own colour were added to the complementaries of its neighbours; he has only to recollect what those complementaries are, and then, by his reason alone, he can tell what effect ought to be produced. Whether such effect will be pleasing or not is another question; that is a matter of taste, and is governed by the laws of the harmony of colours, which will be explained in a future article.

It will be learned by many with great satisfaction, that Victoria has already ripened seeds, under Mr. Paxton's care, at Chatsworth.

VILLA AND SUBURBAN GARDENING.

Few amateurs cultivate the Grape Vine with satisfaction; there is occasionally, however, here and there a striking example of success, as, for instance, at Mr. Nash's, of Bishop's Stortford, whose excellent Grapes have been so often mentioned in this Journal; but this is the exception, not the rule, and the success in this case may be attributed to a well made border. This is indeed a primary point in the cultivation of this fruit. The border, whether for a Vinery, for Grapes grown in a greenhouse, or for the open wall, requires to be made upon the same principle; what will answer in one case will be equally suitable in another. Drainage is the first point to consider, for on this the whole secret hinges. In preparing a Vine border, some individuals excavate a large pit 3 or 4 feet deep, in front of their house, and perhaps 20 feet wide. Now this appears to me to be a great error, for it is clear that were the border formed entirely upon the existing surface, taking it to be level with the ground in the immediate neighbourhood, a great evil would be avoided, and much expense saved thereby. A point of much importance is to give the border an inclination to the south, then have a drain to carry off the water that not only runs off the surface, but also that which will of necessity be found to percolate through the artificial border, although the less that finds its way in this latter direction the better. Borders are scarcely known to suffer from drought, for should they require moisture, this is easily given them artificially; but, there are few borders that do not show ample evidence of suffering from stagnant water. Finally, drain well. If I were asked what is meant by perfect drainage, my answer would be, that I never knew it overdone yet. Shanking, shrivelling, red Black Hamburghs, puny bunches, half-ripened straw-like wood, owe their origin more to a wet border than to all other causes to which such evils have been imputed. The amateur may enquire how deep the drainage must be, and how wide the border? My answer is, never think of being satisfied with less than 18 inches in depth, and 12 feet in width; any variation from these instructions should be an increase in both directions, but by no means a decrease.

The material which ought to constitute the drainage is not of so much moment, provided always that essential particular is completely established; stones of any kind, brickbats, lime rubbish, if it is screened and the rough portion only used, will do, but if fine sand or lime is permitted to mix with the rubble employed when the drainage is put in, the whole object here so emphatically insisted upon may be defeated. I shall next point out some particulars respecting the border itself.—*Flora.*

A [illegible] plant [illegible] interest in [illegible] with it the [illegible] donor to its possessing the singular property in common with the old and well known *Cereus grandiflorus*, of flowering at night instead of in the day-time—a circumstance which tends, in my opinion, to render them both remarkable and exceedingly interesting.

The plant of it at this place, of which the accompanying is a sketch, was imported from Honduras in 1839, and for the last seven years it has never failed to ornament the house in which it is kept with a constant succession of its large and elegant blossoms during the months of September and October, which appear to be its natural time of flowering. In its general appearance it has a great resemblance to *Cereus grandiflorus*, but it has a very different habit, being far more loose and straggling in its growth, with broader and thinner leaves dependant from near the top of a small, round, woody stem, which rises to the height of 6 or 8 feet.

The flowers are produced towards the extremity of the leaves, and issue on the underside from one of the large indentations of the margin. They are solitary, slightly tinged with red on the outside, but of a rich cream-colour when expanded, and about 6 inches in diameter. They begin to open about 8 or 9 o'clock in the evening, and remain in perfection until daybreak, when they gradually close and droop. I have seen as many as 20 flowers open at once, and a finer floral display can scarcely be imagined.

If the flowers are cut off just when they are about to expand, and placed in a glass of water, they will open and be seen to great advantage. I have had them for three days in this state, by merely laying a circular piece of wire over the petals, to prevent them from contracting. *Wm. B. Booth, Carolew.*

ON THE PROPAGATION AND CULTIVATION OF GREENHOUSE AZALEAS.

I have succeeded best in propagating them between July and August, when their wood is about half ripe, or rather more. I fill the cutting-pots half way up with broken potsherds, upon which I place a small quantity of rough peat, in order to prevent the mould from filling up the interstices between the drainage. I then fill up with a mixture of two-thirds peat and one-third sand, sifted through a fine sieve to within a quarter of an inch of the rim of the pot. After the soil has been pressed lightly down with a small round gas, which I find preferable to the fingers, I fill up level with the rim of the [illegible] will be [illegible] may be given by [illegible] of wood. In a week [illegible] house, where they may stand [illegible] February, when they will require [illegible] pots, in a mixture of peat and sand. I then place them in a hot-bed of about 60° for three weeks or a month, and afterwards remove them to the front of a warm house for a short time. About the beginning or the middle of May they will require fresh potting into 3-inch pots in the same mixture as before, pressing the soil rather firmly round the ball of the plant. They may then be removed to a cold pit and kept close for a week or ten days, and well shaded from the burning rays of the sun until they are well established, when you can admit air and light by degrees. About this time I carefully look over them, and stop all that require it. I find it very beneficial to continue shading young plants all the summer until they have finished their growth, after which, it will be judicious to give them all the light possible, in order that they may perfectly ripen their wood; they will not require any more potting until the following spring, when they should have one or two shifts, according to the strength of the plant. About the middle of June, if they have done well, they will be much improved by another shift, for I prefer repeated shifts to one large one; the following spring they will be fine young flowering plants in 5-inch or 6-inch pots. I find, as the plants get older, they flower freer by adding a small portion of loam, say one-sixth loam, and the remainder peat, with a sufficiency of sand to keep the soil porous.

Although most Azaleas root freely, some require to be grafted to succeed well in their cultivation. A. variegata, lateritia, Gledstanesii, and all the delicate growing sorts, need this treatment, by which, their flowers come double the size of those on plants on their own bottoms. A. phœnicea makes the best stock, being a strong free grower. The best time to graft them is in July and August, though I have succeeded very well in spring; in fact, you may succeed any time when the wood is ripe. I generally select young well ripened wood about 1¼ inch long for my scion, and the stock one year old. I make an incision on the latter, about a quarter of an inch long, and cut my scion to fit it; if it touches both sides of the bark, so much the better. I then tie securely with matting or worsted, but I find the latter much more convenient to tie small grafts with than matting, and it does not cut the graft so much as matting when the stock begins to swell. The smaller the wound the quicker the union takes place. After the grafts are securely tied, I plunge the plants in ashes or old tan in a warm house, and cover with a hand-light, taking the glass off two or three times a week for an hour in the morning, in order to dry up any damp that may accumulate on the graft. In the course of three weeks or a month they will be united, when they will require a little air by tilting the light. In about a week you may take them from under the glass, and place them in front of a close house, occasionally syringing them lightly overhead. If the stocks begin to grow, rub off all shoots as soon as they appear, for by allowing them to grow they rob the graft. If the grafting takes place in August the scion will not start much, if any, before Christmas, when you should encourage it to grow, by potting into a pot a size larger, carefully looking over your grafts, to see that the ligatures are not too tight. When you find the graft begin to swell, loose the tie, but do not remove it too suddenly, as the graft is apt to grow itself off. I find it much better not to heat the stock down until the graft has made considerable growth, as by so doing you are very likely to injure the roots of the plant, by not allowing it sufficient top to carry off the superabundance of sap; in fact I have found plants to die by so doing. After this time, the grafted plants may have the same treatment as recommended for plants on their own bottoms.

After the second year the plants may be potted into a pot a size or two larger, after flowering, according to the strength of the plant, and grown in a Vinery, using the syringe freely; but observe caution in watering. I find it of great advantage to employ heat in the cultivation of this tribe of plants, for by making an early growth, they have time to thoroughly ripen their wood before the autumn, which is of much consequence in so changeable a climate as that of England. When the plants have finished their growth, remove them to a greenhouse for a short time previous to placing them in the open air, when they may have the benefit of all the sun and air possible. While out of doors, take care that none suffer from the want of water. *E. F., Colchester.*

NEW PROCESS FOR EXTRACTING SUGAR FROM THE SUGAR CANE.

By M. Melsens.

The following account of the new and important method of extracting sugar from the Sugar Cane, is abridged from the first of two long articles recently published in the *Comptes Rendus*.

The great difficulty which has been experienced up to the present time in the preparation of sugar, has

[illegible] in water [illegible] it must [illegible] Cane [illegible] [illegible] a long time in [illegible] [illegible] [illegible] [illegible] may be obtained [illegible] an artificial solution of sugar may [illegible] for a considerable [illegible] time; or in other words, why water should not be used for the purpose of dissolving the sugar out of the crude juice expressed from the Cane.

The difficulties, indeed, are not owing to the sugar or to the water, but to the air, and the ferments produced by its action on the crude sap of the Sugar-Cane. The object of M. Melsens was, then, to exclude the air from the sap when extracted from the Cane, and to prevent the formation of any ferments which might change the character of the saccharine matter. This he has succeeded in doing by availing himself of the well-known affinity of sulphurous acid for oxygen gas. Sulphurous acid, however, alone was found not to answer the purpose; the sulphuric acid, produced by the absorption of oxygen by sulphurous acid, acting on the sugar, converts it into Grape sugar. This difficulty has been overcome by using sulphurous acid combined with a powerful base, which, as the sulphurous acid is converted into sulphuric acid, combines with the latter and forms an insoluble salt.

The acid sulphites, and more especially the bisulphite of lime, were employed by M. Melsens for the double purpose of preventing fermentation by the action of the sulphurous acid, and of neutralising the sulphuric acid as fast as it formed by means of the lime.

Sugar candy dissolved in cold water containing bisulphite of lime, even in excess, crystallised entirely, and without undergoing any change, by spontaneous evaporation, at a low temperature. Several other experiments of the same nature, but differing in their details, always gave the same result; in each the sugar crystallised out by spontaneous evaporation, without any loss either in quantity or in quality, and without any appearance of molasses. In these experiments the sugar dissolved in water, containing bisulphite of lime in excess, was boiled, and then left to evaporate, sometimes after being filtered, sometimes without any filtration at all.

From the experiments which M. Melsens has made with bisulphite of lime, it is probable that if a cold solution of this salt were to be poured on the Sugar Cane grinder, so as to mix with the juice the moment it is expressed from the Cane, the sugar might be kept for some time, and might be exposed to the heat necessary for its clarification without any sensible loss or deterioration.

But this same salt also possesses the property of coagulating, at a temperature of 212°, milk, white of egg, blood, and yolk of egg mixed with water. At a temperature of 212°, bisulphite of lime acts as a clarifier. It separates the albumen, caseum, and other similar azotised matters which are found in the Sugar Cane. This separation is effected without appreciable loss in the quantity, or deterioration in the quality, of the sugar.

Bisulphite of lime, moreover, rapidly and tolerably effectually bleaches the coloured substances found in the Sugar Cane; it prevents the formation of other coloured matters produced by the action of air on the pulp of the Cane; it also stops the production of those which are formed during evaporation, and above all of those which require for their development the joint action of air and a free alkali.

It seems that coloured substances which, under ordinary circumstances, are formed spontaneously by the exposure of the pulp of the Sugar Cane to the air, never make their appearance when bisulphite of lime is employed. By evaporating, at a low temperature, bisulphite of lime mixed with—1, a common solution of sugar; 2, the crude sap of the Sugar Cane; 3, the juice of Beet-root; no coloration was produced. By an evaporation of the same substances at a high temperature, the coloration was scarcely visible; indeed, with red Beet-root the colour was completely destroyed, and the sugar obtained was perfectly white.

It seems, then, that bisulphite of lime can be employed in the extraction of sugar; 1st, as an antiseptic, preventing the production and action of any ferment; 2d, as a substance greedy of oxygen, opposing any alteration that might be caused by its action on the juice; 3d, as a clarifier, coagulating at a temperature of 212° all albuminous and other coagulable matters; 4th, as a body bleaching all pre-existing coloured products; 5th, as a body opposing itself in a very high degree to the formation of coloured substances; 6th as a base capable of neutralising any hurtful acids which might exist or be formed in the juice, and substituting in their place a weak inactive acid, namely sulphurous acid.

M. Melsens is of opinion that sugar can be obtained from the Sugar Cane with no other source of heat than a tropical sun, excepting only for the purpose of clarification; indeed, the bisulphite of lime prevents the crude juice of the Cane, or the syrup obtained therefrom, from undergoing any changes; great rapidity in the process of crystallisation, indispensable at present, becomes by using this salt unnecessary; and more than this, the quantity of sugar which is now lost in the bagasse, in consequence of the impossibility of washing it out unchanged, can be all collected by being dissolved in water charged with bisulphite of lime.

The only objection that can be made to the above [illegible] of lime [illegible] [illegible] [illegible] which [illegible] is converted into [illegible]; 2d, by exposing the sugar to an atmosphere containing ammonia; if this is done the sugar acquires a very agreeable flavour of vanilla, but is apt to become a little discoloured; 3d, by clarifying it until it loses 10 per cent. of its weight; by this process a pure white sugar can be obtained, which will bear comparison with any sample produced at present. The last is the process recommended to be used on a large scale. The quantity of sugar fit for the market which can be obtained from the Sugar Cane by adopting bisulphite of lime, as above recommended, is at least double that obtained by the usual processes.

In consequence of M. Melsens having made all his experiments on the Sugar Cane at Paris, and therefore on a small scale, he is not able to state how bisulphite of lime can best be used in the large colonial sugar manufactories, but is compelled to leave the application of the principles on which his method depends to the intelligence of the manufacturers themselves.

In the preparation of Beet-root sugar bisulphite of lime is quite as useful as in the extraction of cane sugar; the way in which it is to be employed in the former is fully explained in the second article published in the 507th Number of the *Courrier de l'Europe*, to which we must refer those among our readers who desire any further information on the subject.

ELVASTON CASTLE, THE SEAT OF THE EARL OF HARRINGTON.

(Continued from p. 773.)

ALTHOUGH the avenue described in my last article stands as a feature without a parallel in any other English garden, it nevertheless has one, and that at Elvaston itself; for it will be remembered that on the left wing of the main entrance is situated the Abies and Picea division of the Pinetum, where a breadth of lawn 50 feet wide and 1200 feet long is planted precisely as the other, with specimens of equal beauty and size, every plant being a picked specimen. It is difficult—nay, impossible—to convey any adequate idea of the impression which a first sight of this noble plantation produces upon a stranger, particularly one who admires this style of gardening.

It is unnecessary to state what this Pinetum contains, for we are of opinion that there is no species, or even variety, of Coniferous plant, known or obtainable in European gardens, that is not to be found in it. Some of the most rare and valuable kinds are to be seen here in quantity, and many of them are of great size for their age. Mr. Barron, the gardener, protects the leading shoots of the Picea Webbiana, cephalonica, and others which are liable to sustain injury from spring frosts, by suspending a green bell-glass over the leading shoot in autumn. This prevents moisture from settling on its top, and maintains a more equal temperature round that part. Mr. Barron puts on the glass thus early because he is of opinion that much of the injury is done in autumn, for he frequently finds, by cutting transversely through the incipient bud, that it is brown, and in some cases quite dead; hence these glasses are suspended before the autumn frosts occur. No stronger proof of the value of this precautionary measure could be adduced, than that trees so protected at Elvaston are never injured, while others left to take their chance are stunted, miserable looking bushes.

Returning from the Pinetum on the north side through enormous Yews, we enter the Alhambra summer-house, a building enriched in the most gorgeous oriental style, gilded and otherwise embellished in a manner peculiar to the age it represents. From this house an imposing view of the castle is obtained through the Alhambra garden, where statuary and trees—both works of art—one of the chisel, the other of the shears, rise in bold relief in the foreground to the massive building. Leaving this, we land upon a terrace leading to the Moorish temple and Alhambra garden, passing into the latter through a highly embellished Moorish arch of considerable proportions.

The Alhambra garden is bounded on three sides by Portugal Laurel hedges 10 feet high, cut square on the top and perpendicular in the side; the north side is inclosed with Yews. This garden is laid out in the oriental scroll style, all the walks are paved with octagon tiles, and the steps ascending the various terraces are of stone. No visible change is effected by the ever varying seasons in this garden, unless it be a greater profusion of Heath blossoms at particular periods; all the plants employed here are evergreens, and of every hue from the frosted silvery-looking Cineraria maritima to the golden Holly and sombre Yew. On the north terrace stand three immense plants of the latter. The centre plant is trimmed into a perfect column nearly 40 feet high; the two side plants have square plinths 2 feet high and 14 feet square; out of this springs a secondary base, which is circular; the plants then take a tapering form, and are cut into five other divisions, terminating in the shape of the point of an arrow. These grotesque Yews are shorn quite smooth, and the forms they represent are thus rendered as perfect as if they were hewn out of stone or marble. In the centre of this garden stands a splendid Golden Yew on a raised bed, surrounded with architectural edgings of stone, or tile, which it represents; all the beds having a similar edging next the walk. Inside this bordering, a second edging of common Yew is planted. This is about 1 foot high and 1 foot wide, and trimmed perfectly square.

Several beds form circles with raised edgings; some of these have marble statuary in the centre, and the other part of the beds carpeted with clipped Golden Hollies. Similar beds, arranged in this manner, have instead of Hollies, the Golden Yew dressed as above. Others, again, have gilded statuary representing figures in gold; four of these are placed so as to contrast with the marble decorations, and are carpeted beneath with shrubs, contrasting in like manner. Among the various shrubs used for beds are hardy Heaths, Sedums, Helianthus, and Cineraria maritima; the hoary effect of the latter is very striking, as contrasted with the beautiful foliage of the other shrubs.

In front of the large antique Yews already described, and on each side of them, are arranged files of the Irish and common Juniper, amongst which, at regular distances, are placed four singular antique statues on stone bases; these stand about 7 feet high, and produce a suitable effect amongst the fastigiate plants drawn out in military order in front of them. This part of the garden is backed by five enormous Yews, nearly 40 feet high and of similar breadth. One of these large trees was brought from Staffordshire, another from Nottinghamshire, and the remainder from Matlock in Derbyshire. Numbers of large plants employed in the formation of this fine garden had to pass in their journey to it through the town of Derby, and so large were they that the windows on both sides of the street were much broken by them.

Leaving the Alhambra garden, we reach a terrace which supports two other gardens, distinct in character and decorative style. This terrace is 600 feet long, and is planted with specimens of shrubs of matchless proportions. It leads to the great east front avenue. The walk is constructed of turf, and is 15 feet broad. In front, and forming a margin to the Grass, is a border of common Yew, 2½ feet high and 18 inches broad, clipped smooth. Behind this Yew margin are arranged on each side two lines of Irish Juniper; the plants forming the first line are 5 to 6 feet high, and those in the second from 7 to 10 feet, and perfectly uniform in appearance. The third line is formed of red Cedars alternately with Cupressus thyoides variegata. The red Cedars are dressed into columns 10 feet high, with a crown on each. The fourth row consists of huge Chinese Junipers, which contrast admirably with the fifth row, which is common Yews, from 30 to 40 feet high, constituting a screen to the whole. The termination of this terrace is very remarkable, on account of the size of the specimens used in it. The form is that of a semicircle, extending the breadth of the whole terrace, and planted with four rows of Chinese Juniper. These plants are perfect specimens, 25 feet in height; and in looking down the terrace they produce a gorgeous finish to an assemblage of trees which, for size and beautiful development, are unequalled anywhere else. An individual plant may, no doubt, occasionally be seen here and there of similar dimensions, but we apprehend that when size is taken into consideration, together with the numbers employed in forming this terrace, no such examples of Chinese and Irish Junipers are to be found elsewhere in this country. *R. G.*

(To be continued.)

DISEASES OF PLANTS.

(Continued from p. 773)

GENUS V.; *one species.* OLIGOSPERMIA, *or abortion of seeds.*—Some plants as the period of ripening the seeds approaches, promise a good harvest, their well-conditioned pericarps announce well-ripened seeds. But when they are gathered in and threshed out, separating the chaff, the seeds are found to be ill formed, of a much smaller size than they ought to be, for the most part incapable of germinating, or they perish very soon after. As the most apparent symptom of this disease is the unusually small size of the seed, I have given it the name of Oligospermia.

The disease is the same that others have called abortion. The cerealia, and particularly Wheat, have frequently seeds known by our peasantry by the name of *grano voto* (empty grain), or *grano trascorso* (run or failed grain). All those who have been used to the cultivation of a variety of plants in gardens must have seen very frequent examples of these ill-formed and small seeds. The causes of it are of opposite natures. Everything which tends to check or delay the course of vegetation, so that the plant cannot supply the already fecundated germ with the necessary sap, or keep it up in that rapid and constant circulation which is indispensable for its perfection, will give rise to *oligospermia.* The cold moist weather, which sometimes comes on in May will produce it. So also the hot dry winds of summer will have the same effect, though by a process exactly the reverse. From a remote antiquity this disease has been known, one of the most pernicious in its effects of those which are as yet without remedy.

Home Correspondence.

Roses, &c.—What's in a name? We have now many varieties of the Rose (la Rose, I fancy I should say) to cheer us, and beautify our gardens almost all through the summer and autumn months; aye,—and even now, spite of this "nipping frost," here and there one will peep out at us; and these are called "perpetuelles!" But last week, at a cottage-door, in a village on the borders of Suffolk and Cambridgeshire, I saw the "summer Rose," or, as the cottager called her plant, the "June Rose," in full flower—as rich in colour, and

as fragrant as "my Rose in June" should be! And the good woman said, "My Rose always does the same, Sir, every year." Now what would the hybrids, "et id genus omne," say to this—the numerous family of "Les Roses perpetuelles?" For if this be not a perpetual, what is it? It is not of the family "perpetuelle" most assuredly; for it is thorough English, bred and born, and brought up, I have no doubt, under that lowly cottage-roof; and there it faces the due north-west, as simple and unpretending as its humble owner. And I say of it—"*Esto perpetua:*" for there were four or five buds ready to come on in succession—"weather permitting!" And here let me add, whilst in that neighbourhood last Saturday (the 24th ult.), about 10 o'clock A.M., I saw what appeared to me to be the aurora borealis; for it certainly presented all the peculiarities ordinarily attending that remarkable phenomenon. In the N.W. was a dusky (not very dense) cloud, from which were emanating many fine feathery streaks, shooting up to the zenith, and some of them were slightly curved and reversed at the upper ends. I observed them continually fanning and flickering up and down, and at times almost disappearing in places; then shooting out again as bright as ever, and then a deeply-tinted hue of violet colour would come over these, as they assumed various forms, alternately distending and contracting, rising and falling. I was particularly struck with this rich violet tinting; and I have no doubt, but for the brilliancy of the sun, all the prismatic hues would have been as distinctly seen as that was. If this was not the aurora borealis, then what else could it be?

> "What mean those coloured streaks
> In heaven distended?" MILTON.

Here was every feature peculiar to that remarkable phenomenon most distinctly observable. The heavens were of an intensely dark blue; and all around seemed still, as if mute with wonder. And this effect generally appears to accompany the aurora; may be, the influence of one's own mind. Then presently came a slight disturbance, and, almost imperceptibly, a repose came over the scene, and all was soon as if nothing had been there to disquiet it! This all passed in about 20 minutes; and here let me observe, the aurora is ordinarily the forerunner of cold and frost. *Voici! Addio.*

Choked-up Drains.—I have received the following, mentioning an accident to which I fear all the tile pipes, and especially those without collars, will at all times be liable. I have found pipes in a field, where Turnips were grown, choked with the fibres of that root, though fully 3 feet below the surface. "I am sorry to inform you that the collar pipes we laid down in the spring are quite choked with roots; not a drop of water can pass through. The pipes were laid 18 inches under the surface, yet the roots of Grass pushed down to the pipes and entered at the collars, although great care was taken to prevent this by stopping the joinings with tempered clay. The same thing has taken place at Chidgley, where pipes were laid to convey water to the village. These instances should teach us not to use pipes for the conveyance of water, unless in places where they can be laid at a depth of 3 or 4 feet at least." *W. C. T.*

Green Maize a Substitute for Green Peas.—Notwithstanding your wholesale condemnation of Indian Corn as an agricultural crop, I would beg leave to remind you of its immense importance as a horticultural crop. "What," you will say, I fear, "do you mean that men will be induced to eat green Maize leaves as cows eat Vetches?" No; it is not the grass of the Maize but the grain that I eat, and not the yellow cobs picked out of the husks after harvest by labourers labouring till midnight for nothing. Not at all. And now let us grapple with the question. You know that Pea-meal is inferior in quality to Wheaten flour. Why then do the upper classes, aye, and the middle and even the lower classes of society, occasionally indulge themselves as they do with eating green Peas? It is not for want of flour, which is the better article. It is because green Peas make such a delicate dish that few, if any, of our garden vegetables can equal it; and it is difficult to appease cooks (proverbially cross), when this vegetable is not forthcoming, in season and out of season; and let me tell you that a regular supply of green Peas requires considerable skill and a great extent of ground. Maize meal is evidently no favourite of yours, and I do not wonder at it; and I question very much if you could find one individual in a hundred of upper, middle, or lower class that would cheerfully eat Pea porridge or Pea bannocks; but try them with delicate green Peas as a cooked vegetable, and see the change. The Maize eaten green as a boiled vegetable in the state in which this article will take with English palates; and I need not say a word about its cultivation, for every one knows that it is a plant of the easiest culture, and that the summers in the north of Scotland will produce green Maize cobs plentifully. I recollect it 30 years ago in a grocer's garden in Aberdeenshire in good cob. As the season begins to decline for Peas, the green Maize comes in, and when hot weather ripens the green Peas too rapidly, it has not the same effect upon the Maize, which is altogether a different habit of plant. You will therefore do well to give the green Maize a trial in this character before you condemn it. Many of your readers can give you information upon this point, especially those who have sojourned in America. Who would imagine that Tomatoes, which seldom ripen in English gardens, and when they do ripen well find few that know how to appreciate their value—who would think that this vegetable is a staple article every day in a gentleman's bill of fare for dinner in America, as I am assured it is by a clergyman who used it for years. *Alexander Forsyth, St. Mary's Church, Torquay.* [We are not aware that we have condemned green Maize. We cannot say that we like it much; but that is matter of taste.]

Vine Borders.—As I find from the many different methods recommended by your correspondents that a great variety of opinions exists as regards Vine borders, I beg to refer all such waverers to Mr. C. Hoare's small work on "Vine Roots," which I think, being based on the right principles of nature, is sufficient to set at rest the much disputed questions of deep or shallow borders, and the materials which ought to compose them. I only dissent from him in one particular, that is, the employment of carrion, which I think is likely to produce the gross and unripened wood, and in consequence fruit, which we should wish to avoid. The smaller, short-jointed, slowly-growing, and harder wood we can obtain, the better chance there is of ripe fruit. Under Mr. Hoare's system I was able to ripen Black Hamburgh Grapes against a wall in the open air, both this season and the last, although the Vines are young ones. *T. A.* —— Carrion cut into small pieces, and added to a compost such as Mr. Whiting has stated, omitting the manure, may be used with assurance of success, if the following method be pursued. When the materials are all collected and well mixed together, previous to making the border, let the heap be frequently turned, for the space of 12 months, exposing as much surface as possible to the winter's frost and summer's sun. Care should be taken in making the border to do it when the mould is in a dry state, for much of the future success depends upon that, particularly when the soil is of a heavy close nature. To renovate an old border, road scrapings mixed with soil from a cesspool, if done with judgment, are better than stable manure. If the border is in an impoverished state blood may be given in moderate quantities, but by no means put in fresh carrion. *G. R.* [These statements are, considering the quarters whence they come, quite astounding.]

Bantams and young Ducks v. *Insects.*—It gives me much pleasure to bear most willing testimony in confirmation of the useful observations of your correspondent, Mr. Cuthill, both as to theory and practice, where the means are applicable; and speaking, as he does, from his own experience of the destruction of troublesome insects. Mine is a suburban garden of about 2 acres, and in most respects similar to what may be everywhere met with; it had been for many years greatly neglected by its former owner, and, when it came into my possession, was swarming with woodlice, earwigs, hundred-legged worms, beetles, and creeping animals of various descriptions, and afforded me constant opportunity of trying all the common modes of getting rid of them, but with very little effect; an accident, however, induced me to give the *entrée* of my garden to a small family of bantams, and it was amusing and curious to see with what earnestness they hunted, and with what rapidity they filled their crops with all the insect tribe, worms, and grubs; also how very little mischief they did, or had any disposition to do, and how easily this may be at all times guarded against by a small wire fence or common net. They have done me effectual service, and I now keep them equally for use and for ornament. I may mention that my bantams are of a pure white breed, and to be commended for their social qualities, as well as their beauty. They never quarrel, and this alone is a virtue which many breeds do not lay claim to; they give very little trouble, but require shelter in wet weather, and a warm dry roost. So much for bantams; and now, as connected with the same subject, and perhaps more important in its way, allow me to say a few words upon the destruction of snails and slugs; here, also, I have had some practice, and am satisfied that no means, no traps are so effectual, and certainly none so economical, as a few young ducks, when circumstances allow of their being employed. They also give very little trouble, and do no mischief; with very little management they become extremely docile, and are always ready when or where their services are required. I think with Mr. Cuthill that the use of such aids are not sufficiently appreciated, and may be well worth attention in many garden establishments. *E. Brande, Turnham Green, Dec. 6.*

Nepenthiform Expansion in Cabbage Leaves.—I have every now and then had examples shown me of the nepenthiform expansions noticed and figured at p. 772; and this description of monstrosity was peculiarly abundant here during the past summer. My attention was called to more than one instance in the cottage gardens, and I especially examined a bed of Cabbages in which the majority of the plants were thus affected. The immediate cause of the phenomenon appears to originate in the unequal development of contiguous portions of the leaf, whereby one part ceasing to extend, those next it are carried forward and produce a folding and crumpling of certain portions, which in their early stages of growth had become detached from the rest, and these afterwards developing apart assume many fantastic forms, and among these, that of the cup-shaped appendages of which you have figured an example. I have not observed the margin of the cup in its fresh state to be at all reflexed as your figure represents it; the form is usually more strictly conical. In all these examples of cristated parts the under surface of the leaf is the outermost, and the upper the innermost of each detached fragment. In some there is very little or no parenchyma developed, and the growing fragment (if I may use the expression), is a mere modified mass of the midrib or of a lateral nerve. A healed scar may be seen upon the main body of the leaf at the spot from which the fragment was originally detached. In all this I doubt if we can trace an analogy to the formation of the cup of the Rose, or pitcher of Nepenthes; nor yet to the formation of branches without reference to axillary position. Whether we have here any indication of a partial tendency in the leaf to assume the condition of one or other of the floral appendages, I do not feel prepared even to suggest. It is very common to find a bract on the flower-stalk of a Tulip one-half of which remains green, whilst the other half has become petaloid. In such cases a curious result is sometimes produced upon the flower-stalk. This stalk on the side, and immediately above the coloured portion of the bract, has a tendency to stop growing, whilst on the other side, and above the green portion, it continues to extend as usual. The stalk in consequence curves, and cracks in several places, and sometimes so violent a snap ensues that the flower is fairly decapitated. Of this description of self-immolation I possess an excellent example or two in my herbarium. *J. S. Henslow, Hitchin.*

Standard v. *Dwarf Peach Trees.*—I have observed this autumn, in the north of England, and particularly in Scotland, that the Peach trees had suffered from the cold during the previous spring and summer to a great extent; indeed, so much so, that many are completely killed or worthless. This, I was informed, has not occurred to a similar extent for many years; the frosts during spring and early summer having been unusually severe. It struck me, however, that standards had not suffered to the same extent as dwarfs, under precisely similar circumstances. On mentioning this to several very intelligent gardeners, I found that it had not escaped their observation. Many opinions have been advanced on this subject. One preferred dwarfs, because the sap has not so far to travel before it had the protection of the wall, and was besides not so long exposed to the low temperature in its passage. My reply to this was, that the watery fluid, in its ascension, passed through a stock (generally the Mussel Plum) constitutionally hardier than the Peach, and one that was never known to receive injury from cold. This is one reason why I prefer a hardy stock to that of the Peach itself. When the sap had reached the Peach part of the tree, it was then removed a considerable distance from the surface of the earth, which is not the case in the dwarf, and consequently to a warmer and drier position, where it is well known frosts do not effect the same amount of injury. I also remarked that the effects produced by the cold was in the elaboration of the fluid in the flowers and foliage; perhaps not in its upward progress. Will you be so good as to throw some light on this knotty matter. *R. Glendinning.* [We will try.]

Ink for Zinc Labels.—The best ink for zinc labels is a rather weak solution of chloride of platinum or gold, mixed with a little gum-arabic, to prevent it running too freely in the pen. *W.*

Animals.—As far as "Addio" goes, I am disposed to think that he is perfectly right in what he says about the sand martin and the holes in sandy and chalky banks. But there are so many birds and animals of various kinds frequenting the water-side, that it is difficult to fix the making of those holes on any one or other of these numerous artificers. What "J. B.'s" humble bee would do, with a bank of chalk or sand before him, without some help or other, I cannot pretend to say, though I am much disposed to think he will call in the aid of some one stronger than himself to provide him with his winter-quarters there. But when the waters have been high, I have occasionally seen the tail of a fish protruding from such holes in river-banks, and when pursued the water-rat will hide himself in them; and in the absence of the rightful owner any temporary occupant would be unmolested, whether above water or below, in sandy or chalky banks; for when once the sand martin has left them for the season, which I believe occurs as soon as the brood is hatched, the door is open for any that will come in, so that I really do not see that "J. B." has thrown any additional light on the subject; and, if "A. H." is not satisfied with "Addio's" suggestion, perhaps he will say so, as I should be as much gratified as "J. B." himself with the opinion of "some correspondent learned in these matters," if he should have any additional information for us on the subject of "A. H.'s" enquiry. *Vortex.*—After the stricture of your "Tooting" correspondent on the surmise that I ventured to offer for the solution of "A. H.'s" question, in the article headed "Animals," page 694, I have waited awhile to see whether any further suggestions were offered on the subject. None appearing last week, I now beg to give the authority of those who may justly be considered "learned in such matters," and leave others to judge how far they go to support the opinion sneered at by "J. B.," at page 758. Bewick, for one, says of the sand martin, "It frequents the steep sandy banks of rivers, in the sides of which it makes deep holes," &c. And another (a certain Sir W. Jardine, F.R.S.E., F.L.S., no mean authority) tells us, under the head, "Sand Martin—Hirundo riparia: As the spring advances, the various colonies arrive, and take up their stations for rearing their brood. These are chosen in some sandy and easily-pierced bank of a river or sea shore, some quarry or sand-pit, and the sides are seen bored with innumerable holes from 2 to 3 inches diameter. They enter the bank for a considerable length, and are pierced by the birds themselves, scraping with the feet, assisted by the bill," &c. So

much for what the sand martin does, and I said no more of it, it indeed so much; nor do I yet know whether that meets the inquiry of "A. H." As to the "bread margin" however, on which "J. B." is pleased to place me, and whereon he seems to disport himself with so much self-complacency, he will find, if he will consult the type of your Paper of the 24th ult., close to the "bread margin" of page 744, an "erratum"—the more remarkable for the rare occurrence of such a thing in your Paper—which told him, before he printed his article of the 1st instant, that "in the paragraph headed 'Animals,' page 626, 3d line, instead of 'these are *formed when* the bird called,'" &c, he was to read "these are *found where* the bird called," &c. And for my own part, I can see nothing in the original paragraph of "A. H." to warrant any restriction in regard to the period of year when these holes are found, though "J. B." says, "If I understand 'A. H.' correctly, the holes or burrows he refers to are only seen for two or three weeks in the autumn," &c. Very convenient this for his "humble bee" to pop into, but not so pleasant for him unless those who stopped the holes up will be kind enough to open them for him again next spring! If "A. H." means such holes as I do, they are to be found all the year round. *Addio.*

Vegetable Marrows.—I am delighted with Mr. Burnett's account of Pumpkins (see p. 726). Instead of people endeavouring to grow Maize, which every gardener knows will not ripen once in five years in this country, they should turn their attention to the cultivation of Vegetable Marrows, which afford a large and certain acreage of nutritious food, not only for man, but for pigs. Experience has proved to me that such food suits pigs perfectly. The Vegetable Marrow is very prolific. I grew a rod or two this season, in order to ascertain what tonnage I could obtain from an acre, and I find it to be considerably above 20 tons of ripe fruit, saying nothing of the numbers that were eaten in a green state. My mode of cooking ripe Vegetable Marrows for my table is to cut them into manageable lengths, to take the pith and seed out, and to boil them in plenty of water, with salt. When well done, I scrape out all the marrow, put it between two dishes, and squeeze out all the water; I then mash it well, and add salt, pepper, a little butter, and a little milk, and it is then "a dish fit for a queen." Cooked in this way, all who taste it say "it's delicious." This may sound feminine, but I can assure you the expression is *bonâ fide* masculine. But it is for pig food that I would more particularly recommend it—they eat it boiled with other things. Why, then, not grow it largely for that purpose? I grew it this year under all circumstances—on the level ground, up sticks, and over arches which spanned the walks of my garden, and I am bold enough to state that covered arches over walks would not look amiss in our kitchen gardens generally. Scarlet Runners, Vegetable Marrows, and various sorts of Gourds, &c, would form good coverings for them, and I may add, very useful ones. *James Cuthill, Cambermell.*

Water Plants.—Where can I obtain the aquatic plants forming the list in your Leading Article at page 741? [Of any of the large nurserymen.] I have a piece of water in my garden, which is kept quite warm, by a constant supply of hot water during the day. Two or three years ago a friend sent me some plants of the Limnocharis Humboldtii, and the double white Water Lily. The Limnocharis has spread over a space of 20 yards by 30, and this year began flowering the first week in May, and continued until November; and that space (viz. 20 by 30 yards) has been continually and completely covered by its beautiful yellow blossoms, scarcely ever less than from 15,000 to 20,000 in flower at one time. I had also flowers of the double white Lily 7½ inches in diameter. If you would like some plants of the Limnocharis, I will send you them with pleasure. *D. Hawkesford, Bilston.* [No, thank you. Victoria will not flower with the water at a temperature below 84°.]

Vipers.—This year all the vipers seem to have been terrified at the idea of having their throats tied up, if they dared to be Nepiophagous, if I may coin the word. I suppose my friend, who offered to produce his 50 cases at any time, has only succeeded in procuring 49 of them; and not being able to substantiate his words, has been following the viper's example, and eat them. *X.*

Keene's Forty-day Maize.—Among your numerous readers, is there one who has cultivated the above, and measured or weighed the crop? I cultivated it myself according to the directions of Mr. Keene, and found his prognostics as to blooming, &c., fully realised; but I never thought of keeping the cobs, or any proportional part of them, until they were scattered over the empire. *A Looker-on.*—I take this opportunity of making some observations upon your Leading Article, at p. 707, against the Pyrenean Maize. I had some planted in the garden at the end of May. The ground was not manured, except that a few ashes of soil were strewed in the rows with the seed; yet the produce has been at the rate of more than 80 bushels per acre, and the tops are greedily eaten by cattle. The grain weighs only 54 lbs. a bushel; but it is larger than Cobbett's corn, which I have grown for several years, and the cobs are better filled. The season was certainly unusually favourable; but I mean to try it again, for it is very valuable as food for poultry and game, because it is too large for the little birds who usually carry away a large proportion of the grain destined for their superiors; but what is most remarkable in the growth of this corn is the great dislike it has for Potatoes. The ground being already occupied before I sent down the seed from town, it was necessary, for want of space, to sow some between rows of Potatoes, which were 22 inches apart; these, too, were put into the ground very late, so that both had a fair start. In other respects they were treated precisely like the others, but they never throve; they were miserably started and bore hardly anything. The same fate attended some of Cobbett's corn, which had the advantage of being raised in a hotbed and planted out. The Potatoes grew so slowly that I should have thought any interference was impossible. Our Potatoes have been just examined, and about 4 bushels out of 100 were found to be diseased. *I. V. H., Chichester.*

Societies.

ENTOMOLOGICAL, *Dec.* 3.—G. R. WATERHOUSE, Esq., President, in the chair. The Secretary announced that Mr. Stainton had offered, as a second prize for a monograph of a genus of Tortricidæ, the three volumes of the "Linnæa Entomologica." The same gentleman exhibited a number of specimens of Tinea ferruginella, which had been found in old worked-out parts of coal mines near Glasgow, at a depth of at least three quarters of a mile. It was supposed that their larvæ fed upon fungi growing there. The specimens, contrary to what might have been expected from such a locality, were remarkably bright in their markings and colours. Mr. Stainton also exhibited the larvæ of Tinea Lappella, which feed within the seeds of the Burdock.—Mr. Shepherd exhibited a very extensive series of specimens of Peronea hastiana reared from the larvæ which feed upon Sallows, proving that several supposed species were only varieties thereof.—Mr. Westwood exhibited a box of exotic Coleoptera, containing a further series of Australian Prelaphidæ, a Brazilian species of Articerus possessing only a single joint in the antennæ, and several species of Cryptodus from Australia, from the collection of A. Melly, Esq. He likewise exhibited specimens, in all its stages, of Barudius trinotatus, Say, an American weevil, about the size of the corn weevil, which had been communicated to him by Mr. Josiah Forster, having been observed by Miss Morris, of German Town, to attack the Potatoes in America to such an extent, as to have led to the belief of its being the real cause of the Potato rot. The eggs are deposited on the leaf-buds, and the larvæ feed within the stems, descending to the root of the plant.—A paper was read by W. W. Saunders, Esq., F.L.S., containing descriptions of several remarkable New Holland longicorn beetles.

SOCIETY OF ARTS, *Dec.* 5.—B. ROTCH, Esq., V. P., in the chair. The reading of Mr. Leon's prize essay on the Cultivation and Manufacture of Sugar was resumed by a description of the great improvements in sugar manipulations arising from the application of animal charcoal for manufacturing and refining sugar; the discovery of revivification of the carbon enables the refiner to produce the best quality of sugar from the raw material by a single operation; and by improving on this principle of filtration, colonial manufacturers will obtain refined sugar direct from the cane, thereby dispensing with the secondary manipulation in Europe. The author states that concentrated cane juice, containing more than 50 per cent. of saccharine matter, if boiled in vacuo, may be rapidly concentrated at a low temperature; and he has himself constructed a double evaporation apparatus, operating—1st, without altering the saccharine liquid; 2d, without borrowing any water 3d, without requiring active attendance, and saving fuel to a large amount. Mr. Leon then proceeded to describe the various apparatus made use of in the condensing and evaporating processes, and also the manner in which he advises that a sugar manufactory should be built, and is of opinion that nothing but a total change of the present system can ever restore the British colonies. To prepare for this, two things are necessary: 1st, a thorough knowledge of the modern art of manufacturing sugar; 2d, regular theoretical and practical information in sugar manipulation for the instruction of colonial factory managers, given in a London laboratory furnished with the necessary utensils; the sugar for experiment should be extracted from the Beet-root. The paper was accompanied by models and drawings illustrating the apparatus and processes in use. Many new members (amongst whom was the Marquis of Douro), were elected and proposed.

Reviews.

Fruits from the Garden and Field.
Longman. Small 4to.

To our taste this is the most beautiful of the decorated books which Messrs. Longmans have issued. Its cover is a marvel of exquisite art. The plates of flowers and fruit are charming specimens of the united taste of Mr. Owen Jones and Mr. Bateman. Each is a study; and one by which the many lovers of flower painting may profit more than by anything we have seen. The representations of the Orange—the type of Affection, the Pomegranate of Ambition, the Wheat and Hop of Strength and Health, are probably unrivalled among modern coloured plates. Surely this must be THE CHRISTMAS BOOK of 1849.

The Gardeners' Almanack for 1850. By G. W. Johnson.

If people wish to be misled they cannot do better than furnish themselves with this. For example, Dr. Henderson is said to be the secretary of the Horticultural Society; he has not been so for many years. The "Botanical Register" is said to have "died during the year;" it ceased to appear at Christmas, 1847. Mr. Beck's beautiful "Florist" is said to have "symptoms of death about it;" we are happy to say that its sale, large as it was a year ago, has been steadily increasing up to the present time. We suppose it has fallen into discredit with this author since the time when one of the contributors to it ventured to speak of "Mr. Johnson in an arm-chair article *composed of other people's materials.*" It must be confessed that such a rebuke was not agreeable, although richly deserved.

These are trifles no doubt; but they are as straws which tell how the wind lies, and serve to show that Mr. Johnson professes to enlighten the public upon subjects he knows nothing about. This is apparent in every page of his almanack, of which the following is a glaring proof. Part of his plan is to inform his readers what plants to secure for every month, and here is the list furnished for September. The capitals and italics are ours:

"SEPTEMBER.
Ruddy September, with wide wicker-mannds,
Treads the full orchards now, and at all hours
Gathers delicious sweets.

"For, besides his fruit harvest, even HIS FLORAL BEAUTIES continue numerous and dazzling. There are—*In Borders.*—Aster, *Calsia*, Chelone, Liatris, Colchicum, Solidago, Eupatorium sessilifolium, Lobelia, *Boltonia asteroides*, Helianthus divaricatus, *Glycine monoica*, Phlox pyramidalis, Saffron Crocus, Epilobium, *Dodonæa*, Gentiana, Lilium, Mirabilis, *Cassia orientalis*, Zonna, *Senecio*, Polygonum orientale, Rudbeckia, Dahlia, *Azalea glauca, serotina, and variegata*; Aralia spinosa, Gordonia pubescens, *Vitex agnus castus, Salvia erecta and triloba*, Kalmia angustifolia serotina, Arbutus unedo rubra, Ligustrum lucidum, *Ephedra monostachya, Salsola fruticosa*, Magnolia, Wisteria, Eucalionia, *Asphodelus, Lobelia glandulosa*, Muligedium macrorhizum, Convolvulus Italicus, *Macromeria erecta*, Salvia patens and its white variety, *Zygadenus glaberrimus*, and Plumbago Larpentæ."

Without criticising this preposterous list too severely, we will merely ask, what is to be thought of a public adviser who coolly recommends as FLORAL BEAUTIES of September such things as Boltonia asteroides and Glycine monoica, which are two weeds; Dodonæa (which?), some one of a race of the ugliest of *greenhouse* shrubs; Groundsel or Senecio (kind not specified); Azaleas which flower in the spring; Ephedra monostachya, a hideous shrub which rarely flowers at all, and whose *floral beauties* are not equal to those of the common Horsetail which everybody grubs up; Salsola fruticosa, another worthless weed, the floral beauty of which can only be discovered with an achromatic microscope, and so on; the group of Johnsonian beauties being completed by Zygadenus glaberrimus, a scarce, green-flowered, herbaceous plant, interesting to none but botanists. We might as well enlist the old shrimp fishers and fishwives of Calais, and advise their importation to Winchester, in order to increase the *beauties* of that fine old town.

Who can do otherwise than agree with Mr Beck in calling such articles "arm-chair" rubbish! We, however, entirely acquit Mr Johnson of having used up other people's materials on this occasion. The matter we have quoted is, we firmly believe, entirely his own.

A Handbook of British Ferns: intended as a Guide and Companion in Fern Culture. By Thos. Moore, F.B.S., Curator of the Apothecaries' Garden, Chelsea. Groombridge; and W. Pamplin, London.

A good account of the British Ferns, accompanied by characteristic drawings of all the species and the principal varieties, neatly engraved on wood. The descriptions of the plants are full, and, as far as we have tested them, accurate; and we notice a commendable feature in an analytical table of the genera, and in similar tables of the species, given under each genus. The modern nomenclature is used. Added to the main feature of the volume is a short account of the structure, classification, and geographical distribution of Ferns. It will form a cheap and very useful pocket companion for those who are interested in the British species of this charming race of plants; but it should have been better printed, and on better paper. To Fern cultivators it will be especially useful, as the proper management of each species is explained.

Miscellaneous.

Use of Gutta Percha in Repairs.—It is a well-known and admitted fact, that most of our small modern dwelling-houses in or near the metropolis are built of inferior materials, with bad workmanship, yet readily find purchasers, or at least tenants. It requires, however, but a short tenancy to find out the miseries to be endured; woodwork shrinking, and thereby the rooms becoming filled with draughts, smoky chimneys, thin walls, weak floors, with the vibration so great that you are afraid to see the children run about, and the joints of the floor boards so wide apart, that the space between becomes the receptacle, for dirt, dust, pins, needles, and halfpence, besides the impossibility of properly cleaning the floor, without injuring the ceiling beneath. The greatest evil results, perhaps, from the timber employed in the joiner's work not being sufficiently seasoned, and hitherto the remedy to make good the defects occasioned by the shrinking, &c., as in the floor boards, has been to let in between the joints slips of wood, putty, &c.; but this cannot be depended upon, as in case of further shrinking it drops through,

neither is it waterproof. I propose that gutta percha be used. Thus:—warm the gutta percha till it become glutinous, then with a heated iron or chisel point all along the joint, and it will be found that the adhesiveness of gutta percha is such, after two or three minutes, that the whole surface becomes as one board, the great merit being that there is no occasion to use any solution or cement to make the gutta percha unite to the woodwork, as is the case when applied to leather and other purposes; but there exists such an affinity between the two, that, for example, supposing a hole 6 inches square were cut in the flooring, with nothing underneath for support, and to make good the same a new piece were let in, well set all round in gutta percha, it will so unite with the boards, as to enable that portion to bear as great a weight as any other part. What has been said of making good the space between the floor boards, will equally apply to all joiner's work, as in the panels of doors; and a shake in them has hitherto been without any effectual remedy. Also to the skirting running round the rooms, which is often to be found leaving the floor boards, &c. &c. The great feature gained is, that gutta percha not only fills up the space, but at the same time hardens and unites the whole. *F. Cross, in the Builder.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

As the festive season is approaching, when every one looks forward to home for their chief enjoyments, and as this feeling is not less universal with regard to the noble halls of England than to her humble cottages, let it be the particular business of the gardener to contribute, as far as lies in his power, to the gratification and pleasure of his employers and their friends. In this respect the plant houses and their occupants will be of the first importance at this dull season; and they should be arranged in such a manner as to display themselves to the best advantage. Every care should be taken of those plants which are now in flower, that they may be preserved in that state as long as possible; and due attention should be paid to bringing others forward, in order to keep up the display. Let perfect order and neatness be evident in everything, that the eye may nowhere rest upon aught that might offend it. Let a healthy atmosphere be kept up, avoiding the extremes both of heat and moisture, that the leaves may not suffer with damp, nor yet be shrivelled and dried up. If our advice, with regard to striking Gloxinias in summer, has been followed, and if they have been kept on growing, they will now be nice healthy young plants, and should be repotted in rich soil, in 4 or 5 inch pots, and placed in a brisk bottom heat. These, if properly encouraged with heat and moisture, will flower towards the end of February, when they will be invaluable for decorative purposes. We may mention, as a proof of this, that many of ours so treated are already showing flower. Those who have an abundance of Achimenes may excite a few of that part of their stock which was first put to rest; no stove plants are more easily cultivated, and few are more beautiful when in flower; and it is worth while to make their season commence early, and continue as late as possible.

FORCING DEPARTMENT.

Peaches in pots that are in a condition for forcing, being well established in pots of a suitable size, which they were shifted into last season, with plenty of fresh turfy loam, and the wood being well ripened and well supplied with fruit buds, may be introduced into a mild temperature, and plunged into a bed of tan, leaves, or some other material which will supply them with a gentle bottom heat. Great care must be taken not to hasten too rapidly the swelling of the buds, as they will either drop off, or be so weakly when they expand, that not one in ten will set. At the first commencement 45° will be high enough for the night temperature, and during the day a rise of 10° or 12°, if the weather be fine and clear; 60° of bottom heat will be sufficient to commence with, and after the buds show signs of growth, a very slight increase of top and bottom heat may take place. Vines in pots may, on their introduction, be treated in the same manner, giving gentle syringings twice or thrice a day, according to the state of the weather. The same treatment will apply to the starting of Figs, Cherries, and Apricots for the first few weeks, but after that the Cherries will require to be kept much cooler than the other kinds of fruits. The advantage of growing these fruits in pots is, that an early supply can be obtained, and even a succession kept up early in the season, without starting an entire house of established trees at a period of the year which is unfavourable for their growth, and thus reserving the energies of these more valuable plants till a time of year more favourable for their development.

FLOWER GARDEN.

In this department also, let perfect neatness prevail, to compensate for the absence of more brilliant attractions. Let all the fallen leaves be carefully removed, and the surface of the soil in the borders and clumps forked over, or made clean with the rake. The walks should be put into perfect order, and receive a slight sprinkling of clean fine gravel where necessary. Let the drains and grids be examined and cleaned; and, if in very rainy weather the water lies on any parts of the walks, let the defect be remedied by introducing a new drain, or by filling up the low places with new gravel; nothing interferes so much with the enjoyableness of any place, at this season, as damp dirty walks. If the turf is wet in any part of the pleasure-ground, this is an excellent time for remedying the defect, by cutting drains wherever they are required. In doing this, keep the drains at the greatest possible distance from trees, to prevent them being choked up by the roots; but in parts where the proximity of trees is unavoidable, let the drains be filled with broken rubble to within 12 or 15 inches of the surface, that a passage may be secured for the water, even if the roots do enter the drains. In filling the drains up with soil, let it be well rammed in, to prevent any after sinking of the surface.

FLORISTS' FLOWERS.

PINKS.—The late frosts have given us considerable trouble with our Pink beds; not only have the plants been raised, but in some instances the pegs also; and we find it absolutely necessary, if health of stock as well as correctness of nomenclature is a desideratum, that they should be looked at daily. We do not say this to frighten the amateurs (for a glance is often sufficient), but to guard him against forgetfulness; for we have often seen, after a severe frost, Pinks which have not got good hold of the ground brought completely out, and their roots exposed to all weathers. Now, though this may happen in a night, yet if a vigilant look-out is adopted, they will be replanted, and every precaution taken that such a mishap should not again occur. CARNATIONS AND PICOTEES will want all the air possible; we sometimes hear complaints from various parts of the country that the plants in frames are looking bad—the foliage is turning yellow, and in some cases spotted with black; now this arises from the determination of cultivators to take too much care of the plants. They are hardy enough if they were not "coddled too much;" nothing is so bad for this class of plants as that continued "shutting up" (if we may so express it), that they are often subjected to; stagnant air is death to them. AURICULAS AND POLYANTHUSES.—Our former observations still hold good. The latter, in the open ground, will require an occasional dressing, and particular care should be taken of the crowns, as they are often at this season exposed.

FRUIT GARDEN.

If it be intended to graft any young Apples or Pears, the scions should be gathered before the Apple and Pear trees are pruned, and laid into the moist soil behind a north wall, till the proper season of grafting. They should, of course, be selected from those varieties which are most useful in the locality, as there is a great difference in this respect as to the applicability of any variety to a particular district. Above all things, let the scions be taken from clean, healthy trees, perfectly free from canker, which is by many supposed to be hereditary; and also free from insects, which, if thus communicated to the young trees, are particularly injurious to them, and not unfrequently cause many failures. Cuttings of Gooseberries and Currants should also be planted in nursery rows. Proceed actively with the retraining of the fruit trees against the walls; and as soon as any portion is completed, let the covering be immediately applied: it is not less necessary during the next two months for the purposes of shade, than it will be afterwards as a shelter.

State of the Weather near London, for the week ending Dec. 13, 1844, as observed at the Horticultural Gardens, Chiswick.

Dec.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday . . 7	22	[illegible]	[illegible]	49	41	[illegible]	S.E.	.11
Satur. . . 8	23	[illegible]	29.892	49	25	37.0	S.W.	.00
Sunday . 9	24	30.016	29.816	[illegible]	26	[illegible]	E.	.00
Monday 10	25	30.179	30.158	[illegible]	[illegible]	37.0	N.E.	.00
Tues. . . 11	26	[illegible]	30.089	41	34	37.5	N.E.	.00
Wed. . . 12	27	30.050	29.879	36	30	33.0	E.	.02
Thurs. . 13	28	[illegible]	29.866	47	30	39.5	E.	.00
Average. .		[illegible]	29.792	43.7	31.9	37.7		0.13

Dec. 7—Slightly overcast, cloudy; rain at night.
— 8—Overcast, very fine; cloudless; clear and frosty.
— 9—Frosty and foggy, very fine; dense fog at night.
— 10—Foggy, uniform haze; overcast.
— 11—Overcast throughout.
— 12—Foggy, cloudy and cold; overcast.
— 13—Foggy with slight drizzle, hazy and foggy.
Mean temperature of the week, 2½ deg. below the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Dec. 22, 1849.

Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 16	46.0	38.0	42.0	12	0.68 in.	–	3	2	2	1	7	4	3
Mon. 17	40.8	31.9	40.6	13	0.37	3	2	1	2	3	7	3	2
Tues. 18	[illegible]	[illegible]	40.3	10	0.33	2	6	–	1	4	9	5	–
Wed. 19	[illegible]	37.1	41.4	11	0.68	1	4	2	1	9	8	3	–
Thurs. 20	41.7	34.6	38.6	9	0.76	–	6	1	2	8	4	1	1
Friday 21	48.8	31.4	44.0	7	0.20		5	2	1	2	7	3	3
Satur. 22	45.7	34.6	40.2	12	0.38	2	3	2	1	2	6	5	2

The highest temperature during the above period occurred on the 22d 1839—therm. 57 deg.; and the lowest on 17th, 1846—therm. 15 deg.

Notices to Correspondents.

TO OUR CORRESPONDENTS.—May we beg it to be understood that *we cannot answer inquiries privately through the post*. We are ready to give reasonable information through our columns, but we cannot consent to the labour of writing letters.

BLANCHING: We have received from Mr. Roberts, of Eastcheap, some good specimens of Cardoons, blanched, without earthing up, by means of his registered sockets. They serve to show that the sooner the process of earthing vegetables up is abandoned or modified the better for the gardener. Two draining tiles placed edge to edge, so as to form a tube, would answer the same purpose.

BOOKS: *Const. Reader.* Hooker's "Muscologia Britannica," Moore's "British Ferns," Greville's "Algæ Britannicæ."

CHRYSANTHEMUMS: *Const. Reader.* Gem of Versailles, Hector, Fœtus, Diamant de Versailles, Innocenza, Le Reine d'or, Madame Camerson, Madame Chauviere, Polar Star, Thalia, Sulphurea pallida, and Augenore. The above are all Salter's.*

CLIMBERS: *A Sub.* You give no residence, and therefore we can only guess that your climate may be unfavourable. The rule with all such plants, where they will not flower, is to starve them, by poorness and dryness of soil, and to meet them with as much sunshine as can be procured. As for the Rose, it is a shy bloomer at all times. We have seen it best when only one stem has been trained upon a high wall, and not allowed to branch till it was 10 or 12 feet long. Prune as with other Roses.

CLUB IN CABBAGES: *Amicus.* You cannot do wrong in giving your waste ground, highly manured as it is, a slight dressing of lime; but the usual remedy for Club is to put wood-ashes into the holes in which the Cabbages are planted.‡

CROCUSES: *A Beginner.* The frost will do them no harm. If you really dread it, just protect them with cinder ashes or sand.

FILBERTS: *Diss.* You may expect your Nuts to grow, provided they are not too deep or eaten by vermin.‡

FRUIT TREES: *A Market Gardener.* With great care, Pear trees 18 inches or 2 feet in circumference may be moved successfully; but young trees, well managed, will be more valuable stock in eight or ten years. Pears of the above size on Quince stocks will move very well. The shoots of Plum trees against walls need not be shortened in pruning, unless to obtain more shoots, where such are wanted.‡

GLAZING: *J W.* Hartley's patent rough plate glass. The size of the squares is immaterial.‡

GOOSEBERRIES: *Ignoramus.* The following are good varieties, that will form a succession, for eating and for tarts:—Rob Roy, Early Sulphur, Early Green Hairy, Early White, Keen's Seedling Warrington, Rumbullion, Red Champagne, White Fig, Woodward's Whitesmith, Red Turkey, Leigh's Rifleman, Melling's Crown Bob, Raspberry, Yellow Champagne, Small Dark Rough Red, Pitmaston Green-gage, Red Warrington, Farrow's Roaring Lion, and Collier's Jolly Angler.‖

HARES, &c.: *A Border Sub.* A mixture of soot and old milk, or butter-milk, made the consistency of thick paint, will answer your purpose. Mr. Rivers says he keeps them off his trees by surrounding the latter with sulphured rags, elevated on short sticks, stuck into the ground.‡

HEATING: *Redwood.* If you wish to grow Cucumbers well, you should study a very nice little book called Moore on the Cucumber. The notion of your man that iron is better than lead, is simply absurd. The only question is, whether you have heat enough.

LUCULIA: *A Lover, &c.* It possibly received a check when you moved it from the warm frame to your Peach-house. It flowers every year beautifully, planted out in the bed of the large conservatory in the Garden of the Horticultural Society at Chiswick, where it has no heat in winter beyond what is given to keep out frost. It should be treated like a greenhouse plant.‡

MUMMY POMEGRANATE: *P T O.* It appears to be dead—dead—dead. We will have it tried by being sown in a hothouse, where the temperature is most even. The best way will be to place it between two turves, such a situation giving very little or no water.

NAMES OF FRUITS: *F J D.* Scarlet Crofton.‖

NAMES OF PLANTS: *Vella.* What you have sent is not a Fern, but small leaves of one of the two British species of Pedicularis. §.—*A Kenrick.* Lælia albida, and a new Pholidota, which we call P. clypeata—curious but ugly.—*J S P.* Clavaria corniculata *Schæffer* and Sphærophoron coralloides *Turner.* Pray do not send us cryptogamic plants for names.—*Joseph Ellis.* Oncidium excavatum, a nice thing.—*S. N.* A curious species of Coix; either C. arundinacea or new. We should like to see a better specimen.—*W B H.* There is no difference whatever between the true Highland Pine and the common Scotch Fir, except that which is caused by soil, situation, and climate; the name is merely applied for the purposes of sale. ¶—*G M G.* We consider this to be an elongated state of Asplenium lanceolatum, no doubt brought about by its contiguity to the hedge; for short specimens, or such as grow in dry exposed places, the pinnæ (leaves) are almost always opposite; but when growing in places favourable to a more rapid and prolonged growth, the fronds lengthen, and then the pinnæ pass from opposite to alternate. More perfect specimens would be acceptable. §.—*A B C.* A few flowers of some Acacia—perhaps A. lophantha.—*G L.* Phylica capitata. *Lady C L.* 1, Lactarius deliciosus, *Fries*; 2, Agaricus saponaceus, *Fries*, as far as can be judged by description, the specimens being a mass of corruption; 3, Agaricus nudus, *Bulliard*; 4, Agaricus cyathiformis, *Fries*; 5, Agaricus terreus, *Schæff.*, *Sow.*, t. 76; 6, Agaricus pyriodorus, *Pers.*; 7, Agaricus rutilans, *Schæff.* All in a horrible state of decay. The names are given according to the Epicrisis of Fries. Pray do not send us any more of these things.

PROTECTED TRELLISES: *r.* Your plan of making the sashes slide down, so as to cover both the roots and trees, is good; their having been so placed during the last two months is good also; during the winter and spring, no further protection for the trees is required than what is afforded by the sashes.

RHODODENDRON LAYERS: *P T O.* They will strike all the better for being "slit" or tongued; but they may root without it.‡—*Amateur.* Sow your Rhododendron seed in pans of light soil, pressing it gently into the latter, but not covering it; then place the pans in a very gentle heat, and cover them lightly with Moss, which should be gradually and carefully removed when the seeds begin to germinate.‡

SILVER SAND: *H I Yeatman.* We are not quite satisfied with the sand. It is mixed with some impurity, the nature of which we have not yet had time to ascertain. It may be of no consequence. Next week we shall mention the sand again.

VINERIES: *M H.* Yes. We would certainly build on arches and obtain an interior border; 20 ins. or 2 feet are deep enough for the border—the object should be to keep the Vine roots near the surface. Use the 16 oz. patent rough plate glass, which must overlap, unless you use it in very long squares. It is not even enough to fit edge to edge. Do not permit your glazier to persuade you to substitute other or heavier glass.—*A Young Gardener.* Excess of all kinds is injurious. You are however hardly likely to have fermenting material enough at command to hurt your Vines. Of course you know that it must be removed when the summer comes.—*W M.* There is no great objection to placing your border inside, and there are some advantages. We do not recommend you, however, to grow any except the hardier Grapes, such as Hamburghs, &c.

VINE EYES. Received from an anonymous correspondent, eyes of the Grape called Rogers's Seedling, which are sent to the Garden of the Horticultural Society.

WALLS: *G W H.* Your bricks must have been badly burnt, or they would not "crumble down every time you syringed the trees, or after a heavy shower, spoiling the fruit and leaves with dust." We know of no remedy, except you face them with some kind of cement.‡

WEEPING YEW: *J G W P.* Your Weeping Yew, judging from the specimen sent, is a very distinct and desirable variety. It is superior to the Dovaston Yew. ¶

MISC.: *J D.* We would recommend you to apply to the postmaster.—*Leeds.* We thought our plan of placing your letter in "Pharo's" hands was the best for your purpose. Since, however, you are of a different opinion, we will see what can be done otherwise.—*H J.* All kinds of European vegetable seeds are useful in South Australia. Seeds travel better than cuttings.‡—*Ravenswood.* Tobacco smoke is the best remedy for green fly. You had best winter your Fuchsia corymbiflora dry, and repot it and prune it in spring, making cuttings of the pieces cut off. Roots of F. fulgens may be wintered successfully in dry sand, as Dahlias are. Pot and start them in spring.‡

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is unavoidably delayed.

THE IMPROVED "FLUE BOILER" AND FURNACE.

W. HILL begs respectfully to inform the numerous applicants for his "FLUE BOILER" of a small and intermediate size, that he shall be prepared, early in December, to supply sizes to suit every description of Apparatus, from that adapted of 3-inch pipe to 2000 feet of 4-inch pipe. A List of Sizes and Prices will shortly be published. W. HILL guarantees his Boilers to be the most effective and economical of any in use.
Horticultural Works, Greenwich, Dec. 15.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.
E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1s. 3d. to 1s. 6d. per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.
HEATING BY HOT WATER.

PERUVIAN GUANO.—As Agents of the Peruvian Government for the importation and sale of this valuable MANURE, we think it right, for the protection of consumers and respectable dealers, to apprise them that the adulteration of the article is still extensively practised, and to recommend them to apply either to ourselves, to our agents, Messrs. GIBBS, BRIGHT, and Co., of Liverpool and Bristol, or to dealers of established character, in whose honesty and fair dealing they can place implicit confidence. ANTONY GIBBS and SONS.
London, December 15.

WHEAT SOWING.
THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure sent out by them shall be free from the slightest adulteration. Peruvian Guano direct from Importer's Warehouses, London Manure Company's Wheat Manure and Urate, Sulphate of Ammonia, Phosphate of Ammonia, or Ammoniacal Phosphate, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone Sawdust, and every other Artificial Manure.
EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane, London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained in Messrs. NESBIT'S Academy, in addition to a good modern education.
Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co., and may be had of all Booksellers.
The terms of the School can be had on application either personally or by letter.

AGRICULTURAL DRAINING: THE DERBY LEVEL.—A Very Superior Draining Level, of great simplicity, price 3l. 5s., to be had of the Maker, JOHN DAVIS, Optician, Derby. The above is securely packed and sent to any part of the empire.

STEPHENSON AND CO., 61, Gracechurch-street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority, or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.
S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.
Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

WIRE-WORK, HOT-WATER APPARATUS, GREENHOUSES, &c.
ST. THOMAS BAKER, MANOR-HOUSE, MANOR-PLACE, KING'S-ROAD, CHELSEA, Manufacturer of INVISIBLE WIRE FENCE, to resist Grazing Stock, and rendered Rabbit-proof. WIRE-WORK in Trainers, Arches for Walks, Bordering, Flower Stands, Pheasantries, &c. HORTICULTURAL BUILDINGS, Green and Hothouses, Conservatories, &c. The same heated by HOT-WATER APPARATUS on improved and economical principles.
Parties waited on in Town and Country, and Drawings and Estimates free. Work for the Trade as usual.
Ward's Cases, or Domestic Greenhouses.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN INCE, Cheltenham.

IMPROVED FOUR-HORSE PORTABLE STEAM-ENGINES AND BOLTING OR THRESHING MACHINES.
FREEMAN, ROE AND HANSON, Southwark Iron Works, and 70, Strand, beg to call attention to their Steam-Engines and Threshing Machines, which are more economical in fuel, for the quantity of work done, than any before the public. They may be seen any day at their works, Sumner-street, Southwark Bridge-road.—Water-rams for raising Water. Deep Well Pumps; Baths; Hot-water Apparatus; Fountains. Towns supplied with Gas or Water.

The Agricultural Gazette.

SATURDAY, DECEMBER 15, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
TUESDAY, Dec. 18—Agricultural Society of England.
THURSDAY, — 20—Agricultural Imp. Society of Ireland.

NOT having seen both the FAT CATTLE EXHIBITIONS of the past week, we cannot of course undertake to compare them in detail. Nevertheless we can speak with some confidence on their relative merits on the whole, from memory of past Shows in Baker-street; and we can, to some extent, contrast individual animals too, having obtained measurements of all the cattle shown at both places. We may here express our surprise that no record of this kind seems to have been kept by the Smithfield Club, of even the prize animals at each succeeding exhibition. It would have served to determine the progress of breeds in their aptitude to fatten; and thus to measure the influence of the Society itself, a point on which one would imagine it must feel sufficient interest. The measurements of the sheep shown at succeeding exhibitions of the English Agricultural Society, which we gave in our report of the Norwich meeting, are interesting, as proving the gradual increase of all the breeds of sheep in size of frame; and similar interest would attach to similar information in the case of fattened animals. Whatever the value of the information which such exhibitions supply, it would be greatly increased if greater precision were conferred upon it. It is out of the generality and want of definiteness which belongs to it, that "a little knowledge is a dangerous thing." We must postpone, however, a detailed examination of the measurements we have obtained, merely observing now that the superiority of the Baker-street exhibition is apparent in the greater evenness of the animals shown—more in the absence of inferiority than in the greater excellence of the prize animals.

We have one more remark to make on the methods of classification adopted at Birmingham and Baker-street respectively. In the former the animals are classified according to their breeds, as well as sex and age; in the latter, breeds are not considered. We prefer the latter, not for the greater likelihood of accurate judgment which it gives (the former is greatly superior in that respect), but because, as adopted by the Smithfield Club, it is almost the only remaining opportunity for competition among different breeds. The rivalry amongst the patrons of any one breed is amply sustained by exhibitions without number in which different animals of the same breed are pitted against one another. The rivalry between the breeders of different breeds is quite as deserving of encouragement, and it seems a pity that the only opportunity for determining the relative aptitude to fatten of the different breeds should cease, because it is difficult to obtain an unprejudiced judgment of their merits.

THERE is no reason to believe that much advancement will be made in agriculture without extended application of labour—the discoveries of the geologist and the chemist, when rightly interpreted, only point more unerringly in the same direction—the grateful earth will only yield up her increase to the well-plied nerves and sinews of her sons, and the new wants of a rising and prosperous community for more refined products, re-act on the producers, and demand greater exertions to extract more liberally, to meet the tastes and requirements of the period.

In rightly directing and applying the available physical force on a farm, in whatever form it may exist, much of the success of the agriculturist depends. Hence the practical man can advantageously meet the amateur adventurer, and turn the facts to advantage, which the latter by chance may excavate. The diversities which exist over Britain, in the modes and acts of husbandry, are much greater than the circumstances will allow us to vindicate, and should impress upon us the truth that anything like perfection in this department of our art has not been attained.

The common and characteristic practices of husbandry in Scotland are well diffused over the length and breadth of the land, and are readily adapted and suited to the varied conditions of its rugged surface. In economy of power it must be acknowledged that the Scotch system is pre-eminent, and among other particulars that might be enumerated, which have given a vast superiority in the details of farm management, are the early introduction of ridge cultivation for green crops, whereby horse power could be freely applied; fixed threshing machines; neat, light, one-horse carts, adapted to every description of farm work; two-horse ploughs, and large fields with no hedgerow timber. To rightly working out these simple elements, the Scotch farmer mainly owes his celebrity.

England is a much more extensive field of agriculture, and affords interesting illustrations of its diversified condition, amid the inveterate customs which have grown up and now impede the progress of the art, in its required development to meet the new circumstances which have arisen. Wide districts may be pointed out as successful examples of what capital and skill can accomplish; but these, unfortunately, only render the contrast greater when compared with others where the husbandry is of the most primitive description, and deeply-rooted prejudices maintain their ascendancy in the minds of the cultivators, who cannot entertain the idea of advancement; or at least, the greater number of suggestions having that end in view, would be met with the reply, that the principle of "*letting well alone*" is always adhered to.

Even in some of the English counties which have highly advanced in some departments of the art, there appears a laxity in some of the practices which is rather to be wondered at; thus, broadcast and drilled Turnips struggle side by side, in Suffolk; and on the old experiment ground of ARTHUR YOUNG, at Bradfield, might be seen, in July 1849, two fields of Turnips, the one ridged wide, on the Scotch system, the other having one-half drilled narrow on the flat, while the rest was sown broadcast; so that a stranger would be unable to determine whether it was still the subject of experiment or matter of mere indifference.

Detailed calculations, which have for their object the estimation of the expenses of any particular crop, should be received with caution. If a slight error is committed, it is magnified to a great extent when summed up. It is quite notorious what fallacious guides farm accounts have been in this respect; but if the total expenditure in any department is taken throughout the year, and made matter of comparison, there is less risk of being deceived. Let us take one example, which will readily show the economy of the Scotch system in one important item, that of horse-power. RAYNBIRD, in the Agriculture of Suffolk, states, that on a light land farm of 240 arable acres, 10 horses would be kept; the same number of horses in Scotland would only be required for 340 acres of land of the same description, farmed on the 4-course shift, although the grain was all threshed out by horse-power; this is not easily accounted for where the manual labour is also much greater. How far the employment of the gigantic waggon and the cumbrous tumbril, conjoined with small enclosures, may have an influence in furnishing these contrasts, it is not for us to determine.

We recollect passing through a light land district, in Lincolnshire, a few years ago; it was one to which Mr. PUSEY'S spirited description of the farming of that county was particularly applicable, where the cattle are looked upon only as "machines whereby to make manure," and certainly we could point to no district, north of the Tweed, where finer grain crops are grown on land of similar quality. But—

"What boots it at one gate to make defence,
And at another to let in the foe?"

Here we observed two glaring instances of ill-directed labour—in one field a waggon-load of manure was being emptied over the land of its contents by one man, while all the horses had to stand idle until this was so slowly accomplished; on another farm a portable steam-engine was threshing Wheat, which was also separated from the chaff by hand-power, and 19 men, women, and boys were engaged in the two operations. The same amount of work would have been accomplished in Scotland by a fixed threshing machine, costing no more money, with half the number of hands.

The produce of a district is not to be arrived at by selecting a few instances which will not represent a fair average. Agricultural statistics are difficult to obtain, but it may confidently be asserted that land in Scotland, rented at 2l. per acre, will not average, in a series of years, more than 27 bushels of Wheat per acre (perhaps only sown over one-seventh of the farm), 40 of Barley, and 44 of Oats—where the farming is as good, under the circumstances, as in the Lothians. In the latter, rents are not so great as the higher returns of grain would lead us to expect, especially where the landlord's quota is entirely dependant on the produce of corn crops; but, through drainage of the land, root crops have been introduced, which have either become a source of profit or a valuable substitute for bare fallow in maintaining the fertility of the soil. New sources of riches have thus been opened up. On the other hand, land well adapted for roots has brought relatively higher rents; according to the yield of grain, as profitable returns are obtained from these. In the same manner, the rent of land is higher in the Provinces of the Lower Rhine than it is in Lincoln, although the produce of Wheat per acre is, perhaps, 12 bushels less; and however suitable the soil and climate may be for its growth—it is only cultivated to a small extent, as other products yield a more profitable return. The great crops of grain which are raised on the high-farmed land of the eastern counties of England, under the 4-course shift, are only accomplished by a vast expenditure of money for manure, and taking advantage of the adaptability of the climate for Turnip culture. It would be an immense boon to the farmer if the root

crops were as profitable as the grain, instead of being, as is too frequently the case, entirely sacrificed to the production of the latter. There is certainly a tendency at the present time to endeavour to avoid what may actually be an unprofitable extreme in our practice in this respect.

Let us next examine the system of disposing of the green crops in Scotland, where a moderate profit is always expected to be realised, whether they are consumed by cattle or sheep, and compare it with that in the South. *R.*

MR. WILKINS ON THIN-SEEDING, &c.

Nothing has occurred since I last wrote to you to shake the opinion I have long formed of the correctness of the principles I have all along laid down, and on which I have practised; on the contrary, every day I live, every experiment I make, every information I receive, tends only to convince me more firmly that I am pursuing the right course, and spurs me on to perseverance in it.

Not, however, I would again and again assert, that I have ever considered thin seeding to be a substitute for slovenly or negligent cultivation; but just the reverse. I have never urged it upon any person who did not thoroughly drain his land and deeply and completely cultivate it; by thorough draining, I mean the kind of draining recommended by Mr. Parkes; and by deep and complete cultivation, I mean such as we see practised by cottagers and market gardeners. I have never yet substituted the spade for the plough; but I am convinced that were the former entirely used—except upon light soils—and the latter entirely thrown aside or converted into ashes, England would have no need of importations of agricultural productions, but that she would feed all her sons and have a considerable surplus to spare for other nations. There would also be full employment for all labourers able to work, and at remunerating wages; and much fewer horses would be kept, and consequently the great expense now required to purchase and feed them would be saved, or spent on manual labour. Or, I should rather wish to see some machine worked by steam-power, which would do far better still; but it must not be a plough, but a cultivator of a very different kind. But time, or perhaps accident will some direct such a mighty change as this; but should it ever be accomplished, the tide of emigration will flow to and not from our shores; land will vastly increase in value, and instead of some solitary individual being seen at work, as now, in some 30 or 40 acre field, perhaps a dozen workmen would find constant employment in it, and at fair wages.

But I have often been taunted with being a garden farmer, and lanarmore something like this has often been applied to me, "You are no farmer; what can a clergyman know of land, or of farming? your's is a garden, and not a farm; you may grow great crops on a few acres of land but we cannot cultivate 500 or 800 acres as you do 8 or 10 acres only:" but what does this prove? what, but one of two things, either that garden cultivation, as I have stated, is the correct one, or that those who use such language have not the means or ability to cultivate skilfully the large farms they occupy. But there is something so grand and imposing in the occupation of a large farm, it gives the farmer so much dignity in his own, and consequence, as he thinks, in the estimation of others: Mr. Peter Matthews, for example, treated with contempt my friend Mechi's 170 acres, and signed his letter against him thus, "A Farmer of 800 acres;" but, although I have never seen Mr. Matthews' farm, I dare exhibit many cottagers' gardens in my parish against it, or against any other 800-acre farm in the kingdom, both as to skilful cultivation and production.

But I must not forget that my friend Mr. Mechi's practice last year, and Mr. Thedan's experiments, were not in favour of thin seeding, or the result, as exhibited at the Witham Farmers' Club by those gentlemen, made them appear not to be so; and as those results are important, I must trespass a little to examine them. First, as to the experiments of Mr. Thedan, which I saw and examined closely about the middle of June; *they had been made and were watched over by Mr. Thedan with minute care and attention, on his part, therefore, there was everything to be praised.* But I expressed my opinion at that time that the experiments would not be favourable to very thin seeding. The temperature of his ground, from an excess of water in it, was too low for healthy vegetation; some Peas in an adjoining field were suffering very much from this cause, many of their roots being decayed, and the Potatoes in his garden were diseased from the same. In my own neighbourhood, also, hundreds, I believe I may write thousands, of acres of thickly drilled Wheat perished entirely in the ground and never germinated, and so it was with Mr. Thedan's experimental crop, many of the grains planted rotted in the ground, owing to the low temperature of it, and the remainder threw up but one shoot, and the plants that grew did not tiller. Should Mr. Thedan renew his experiments on well-drained land, and I hope he will, I have no doubt but the results will be in favour of the thinnest seeded.

With reference to my friend Mr. Mechi's practice, that is a more serious concern, the result from his own showing has given a check to thin-seeding; but I am convinced it is only a temporary one. From my friend's first coming to reside in this county, or rather to farm in it, I have been one of his principal advisers: it has been my unvarying opinion that no other living man has done so much service to agriculture as he has, but I am sure his candour will excuse me, if I publicly state that there are important points in which I have frequently disagreed from him, one of which I here state has been his management of cattle, but the other has been his want of care in the carrying out of his own advocated principles. For an example as to the latter, my friend is an eloquent and convincing advocate of thin-seeding, and his writings in its favour have staggered some of the most prejudiced thick-seeders; but for want of care he has failed, he states, where with care he would have been perfect. Last spring, to continue the example, I examined all his growing Wheat crops, and in the thinnest seeded fields, as well as in the thickest, I pulled up handfuls after handfuls of Wheat plants growing from nearly or quite 20 grains of seed huddled into a space of about 2 square inches, and then came a long gap in the row without a single plant. I earnestly drew my friend's attention to this, fearing what would happen in consequence of it. The quantity professed to have been drilled in the thinner was 1 bushel an acre, and this quantity would allow 10 or 11 grains for every 144 square inches, or for every square foot more than double the quantity that can come to perfection. But, if 20 grains were deposited in 2 square inches, it is clear the next 286 square inches must have been destitute of any seed at all; since the 20 grains were the full allowance for the 2 square feet, or 288 square inches. I lay it down as a rule, that in seeding land every seed should be separately deposited; I would rather broadcast the seed than drill or dibble 10, 15, or 20 grains in one place, and none in another, for wherever such a practice is pursued, it is quite evident that, to secure a crop, two, three, or four times the requisite quantity of seed must be used.

I am aware, that by the common mode of dibbling and hand-dropping, and seeding by the common drills, admirable as they are for thick seedings, such irregularities are scarcely to be avoided, as I myself have frequently experienced; but if dibbling be preferred, Dr. Newington's patented dibble is an admirable instrument for correcting this evil: since, if properly used, it will deposit with certainty enough any required quantity of seed of any kind of grain, on a given quantity of land. But if drilling be preferred, I shall be glad to lend my friend the drill I have lately invented and made, which is so simple and accurate in its operation, that one grain of seed only can be deposited in one place, unless two or three or more be preferred; and I have no doubt but I shall very soon have it in such perfection as to be enabled to count the number of grains drilled in any given quantity of land: at present I can put as little as a pint, or as much as 4 bushels of seed upon an acre, or I could put in half the smaller and double the larger quantity. I have used it entirely for my Wheat this season, and have done some for a friend at the same rate, except a small quantity dibbled. The quantity of seed for myself was 12 pecks for two small fields, one 3¼ acres, and the other 2? acres; I began with 1½ peck per acre, and ended with a little over 2 pecks. With reference to my last year's operations, I had a small field of Beans, a plot of Barley, and a plot of Wheat, the two former are still in the straw. The quantity of seed per acre for the Wheat was a little over 1½ peck, that for the Barley exactly 2 pecks, and for the Beans the quantity generally used, as I took no pains about them. As soon as the whole shall be threshed, I shall be happy to communicate the results, and I regret that I cannot do so at the present time, except as to the Wheat. This, I observe, was not planted till very near Christmas, and then under as unfavourable circumstances as could possibly occur, the ground being so wet that it was like dragging the drill through a mud-pool; I had waited till so late for a peculiar kind of Wheat, which I could not obtain earlier. The crop astonished me beyond measure, though not a quarter of the seed grew, as was the case also of most of my neighbours (many of whom sowed twice, and some ploughed the land again and sowed spring corn in it), yet I had nearly enough plants. But what so greatly astonished me was this, I could count my field anywhere, in the dark or blindfolded, and pull up root after root which had produced 2600-fold, and I pulled up some roots producing 3500-fold and upwards; for, be it remembered, that every seed was planted separately. Should this increase appear rather incredible, I add that from 20 to 30 ears to a root was a very common quantity, and plenty of ears contained 120 grains, some 130, and I found a few containing 150 grains each. I have sent samples of the straw, and unthreshed and threshed corn, to Dr. Newington's Depôt of Agricultural Implements, 62, Trafalgar square, and I will bring some more with me to the Baker-street Cattle-show, and if any gentleman has grown anything curious like wise, I shall be obliged if he will, in a friendly manner, take samples also, in order that we may compare them together; I mean, of corn in the straw, as well as some dressed.

I just add, that I took several roots of Barley to Norwich, from single grains, also containing 46 ears each, and many ears had 61 grains to them of fine corn. *George Wilkins, Wix, Nov. 22.*

P.S. Since writing the foregoing, I have seen my old opponent, Mr Robert Baker's last attack upon me as published in the *Agricultural Gazette* of November 24. I allude to it now just to observe that it is another, and I suppose, in Mr Baker's imagination, an amended edition of a letter which some time since was industriously circulated through this county. I will look up the original document, and my answer to it, and send them to you for the edification of the numerous readers of your journal; but in the meantime I must now take permission to say a few words on the amendment.

Mr. Baker, in this article, recommends "the reverend gentleman to give us a statement of facts," and very soon afterwards, my kind adviser changes my published fact of 3500 grains into 35,000, thus converting my truth into an untruth.

And again, my candid instructor writes that the Wheat I grow "is a variety never cultivated in England for sealing purposes." But is that a fact, Mr. Baker? I have sent samples of it to some of the first corn factors in this kingdom, and it has been inspected at my house by a very eminent one, and others, and all of them have spoken and written of it in the highest praise. I was likewise applied to for the whole of it by a very excellent judge, who offered me a handsome price for all I had. I was also applied to for considerable portions by two millers, and by several persons for small quantities, so that I could have sold more ears if I had had them, than I had bushels, indeed, although I determined to send it out in small quantities, to accommodate individuals, I was obliged to disappoint several. But, as I before stated, samples of the Wheat will be exhibited at the Cattle-show, and I have no doubt but *they will excite general admiration. My own opinion has always been that it is the most valuable species of Wheat ever* introduced into this country. I also inform Mr. Baker that I have now none to sell; and that, although I was pressed to sell the whole I grew to one individual at a high price, I sold it to several at less than two thirds of that sum, in order that I might accommodate as many as I could. But my friend Mr. Baker has made some experiments, and numbered his hits professionally, I presume; for, as he never forgets to remind me of mine when he favours me with his advice, I conclude he expects me to return him the compliment. There is Lot 1, Lot 2, Lot 3, and then comes his clerk, Mr. Johnston, and his men, William Paul and Sons, sorting and weighing, and measuring them on a cloth. Now, if I required puffers to help to knock down my arguments I could, if I would, pit my clerk, Mr. Thompson, against Mr. Johnston; and my man, Bob Fuller, against William Paul and Sons; but I fear they would have but a small chance of success against professors whose practice herein has probably made them perfect. And besides, I never rest my experiments before my servants as witnesses, nor do I ever appeal to them in such matters, but to educated and disinterested gentlemen, who can be induced by neither fear nor interest to deviate from the truth. In all cases of lotting, measuring, weighing, and appraising on cloths, I consider Messrs. Baker, Johnston, Paul and Sons, as but one individual, or but one firm. *G. W., Nov. 27.*

Home Correspondence.

Winter Beans.—At page 766 you say that 6 pecks per acre, in rows 26 inches apart, will place the seeds 1¼ or 2 inches apart. I conceive that you will require twice the quantity to ensure 3 inches apart. An acre is 22 yards wide and 220 long. The 22 yards wide will give $\frac{66}{2\frac{1}{2}}$ rows, 26 inches apart, which $= \frac{396}{13}$. The number of feet in a row $= 660$, and therefore the number of seeds (6 in the foot) will be 3960 in a row. Therefore total number of seeds $= \frac{396 \times 3960}{13} = 120,627\frac{9}{13}$. But 6 pecks $= 48$ quarts, and by countin' I find that a quart contains 1390 Russian, or Winter, Beans; and $48 \times 1390 = 66,720$, or about half of the $120,627\frac{9}{13}$. No doubt 6 pecks are enough, but the Beans will be 3 or 4 inches apart, which they ought to be. *'Αριθμητικὸς.* [A bushel of our Beans contain 90,000, *i. e.* 1500 per lb.]

London Sewers.—It seems the determination of the London people not any longer to allow old Father Thames to be made a stinking sewer by allowing all the horrid filth to run into it; this subject I consider well worthy the consideration of the *Agricultural Gazette*, if it was for nothing else but the manure wasted, and run into the sea, instead of making it a national good. My very simple ideas, three years ago, were laid before a committee of the House of Commons; they were considered an extravagant impossibility. My plans were as follows; to sink a sewer on each side of the Thames, either made of iron or brickwork, to continue onwards down the river, until a flat part of the counties of Essex and Kent presented itself for the purpose of making very large reservoirs, say from 40 to 50 acres. There must be two on each side of the river. When the first reservoir was pumped, by engine, full and settling, the other would be filling; when the first had sufficiently deposited its heavy matters, means would then be taken to have it immediately emptied. A canal must be cut from the Thames to the works, for allowing the clear water to run off, as well as for the vessels to come up to the works. As for the value of this manure, no one can doubt it, and in order to make it greater, as well as to help the drying of it, large quantities of charred peat might be brought from Ireland as well as Scotland. I have been no plan so easy and simple as the one I proposed, and there are difficulties in that—the dipping under the entrance to the several docks is the greatest; everything else is easy and simple. When the sewer water arrives at its destination, no doubt but engines must be employed to pump it up into the reservoir to settle. Then how is it to be dried? By the simple process of hot-water pipes, and other processes, as well as by mixing it with charred peat from other countries. Professor Johnston analysed the charred peat, and found that it contained very rich ingredients, to the number of five. Now if this was brought to the sewer works in the Thames, and mixed with the solid sewer matter, it would not only prove an excellent deodoriser, and a good drier, but it would also very much enrich the whole mass, much more rich than guano, and would employ a vast number of people in every direction, and would be easily moved by water or rail to the most remote and poorest districts, where manure cannot be had at any price. *J. Cuthill, Florist, Camberwell.*

Balance Sheet.—Through your Paper I should much wish to see a balance sheet from some of your nobility or gentry from January 1st, 1849, to December 31st, 1849, especially on a grazing farm. He must, of course, bring forward 1848—capital, *i. e.* stock in hand on the 1st January, as follows:

		£.	s.	d.	£.	s.	d.
Stock in hand, Jan. 1, 1849:							
Live and Dead		2000	0	0			
Advanced to Farm		500	0	0			
					2500	0	0
Interest					125	0	0
					£2625	0	0
Bought in the Year:							
Cows							
Sheep							
Pigs							
Horses							
Wheat							
Mangold Wurzel							
Swedes							
Hay							
Wages							
Rent and Taxes							
Property Tax							
Tradesmen's Account							

Depreciation in value of horses after 7 years old, 10 per cent.; *Wear and Tear of Implements, 10 per cent.*; Subscriptions, &c., in your Parish; 4 Reserve Fund to meet the 1850 year's deaths, &c., say 10 per cent. on your profits.

Mr. Huxtable, in his balance sheet, forgot many of the above items, which are of importance, if you want to see how your farm pays you, and to enable you to make your farm your bank. Some folks say a 5 per cent. on your capital, and a five over to live upon, ought to be the farmer's profit; be it so, yet he must make a 15 or 17½ per cent. to meet the above expenses. Query: Should a tenant-farmer keep an improvement account? I mean, if he takes to a farm this year, and lay out extra in hedges, ditches, cleaning ponds, &c., say 100*l.*, should he divide it or charge it in this year's? I should be obliged if a correspondent, through your Paper, would state what an acre of land costs to get a crop of Wheat into the market, or rather when it is sold? If rental and taxes are 30*s.*, there is more trouble to work the land than if you gave 50*s.*, hence a few shillings an acre is of little consequence. The question is (and I do not care whether it is a high or a low farmer) this, do you grow 5 quarters of Wheat per acre on your land, *i. e.* saleable Wheat? if not, whether you are a high or a low farmer, you had better at once go to Australia by the next ship that offers. Oh, ye farmers! up and bestir your yourselves. *H. H. M. R., Weston Town Farm, Bridlington.*

Cumberland (Crosskill) Sledge Harrow or Clod-crusher.—I was very glad to see this primitive but effective implement, which I first had the pleasure of introducing to your readers, so well described by your Cockermouth correspondent, and to observe the drawing, previously declined from me, given by him. I was still more pleased to see Mr. William Dickinson's communication, though his explanation of the origin of the implement was at variance with the opinion I had formed, and, I believe, expressed in your columns on that subject. So rude and primitive looking a tool, introduced to me by a worthy old world patriarchal mountain farmer, seemed likely to be, as he thought it, as primeval as it looked. Coming from the old Flemings, it might indeed well be as ancient as it seems, yet, in its present form, it is evidently not only a modern importation into Cumberland, but, from Mr. Dickinson's statement, a new "invention altogether. The Flemish "rainass" seems to have been only a flat heavy sledge, whereas the chief excellence of the Cumberland clod-crusher is the rasping, triturating effect of the peculiar disposition of the cross bars. I am very glad Cumberland owes so useful an implement to so worthy a source; and, rude as seems this "clod compeller," I believe, when

its merits become known, it will find its way across the country, or at least the clayey and cloddy part of it, with great rapidity. It is more worthy of a patent than many a more refined piece of mechanism, and is a real boon to farmers, especially to small farmers, as the majority of the "honest grey coats" of Cumberland are. "Triumph" would be a very good name. I observe many of your correspondents are asking for further descriptions, and are not getting them. The descriptions already given are perhaps sufficient to enable any handy and sensible workman to make one; but unless no other person may furnish you with the further particulars which seem required, I send you a few dimensions. I mentioned in your Number for July 14, p. 443, with reference to the weight of the implement, "a pair of the light horses of the country are just now passing with an easy step over a fallow the second time, and leaving the ground in a fine state of tilth." This implement, so adapted to two horses, is 4 feet 8 inches broad by 6 feet long, and consists of 13 cross bars of Ash, 3½ inches square, nailed strongly down to two longitudinal pieces of stout Ash, 7 inches deep and 5 inches thick. For double draughts the implement is made of larger size, 6 feet square, and then of course the number of the cross bars or breakers is increased to 16 or 18. That the front part of the implement may rise a little above the clods as it passes forward, the fore-part of the longitudinal pieces must be sloped away thus. To make the cross bars for one of the smaller sized implements, take pieces of stout Ash, 3½ inches square, and cut off one of the angles to the depth of 1¾ or nearly 2 inches, so as to form a level surface or bed for it to rest on the frame-work; and, in order that the apex of the angle may be presented somewhat forward, so as to strike or "clip" the clods, a little more must be taken off one side of the square than the other, thus: A stout nail at each end secures the transverse to the longitudinal pieces. About 12 inches from the front of the longitudinal bars, and on their outside, a strong staple is driven in, to which a couple of links, terminating in a ring, is attached. To these rings the drawing gear is applied in the usual way, a cross bar with appropriate notches being used for the adjustment of the whipple trees when more than one pair of horses is employed. I hope, if no one sends you a more accurate description, that this may enable any tolerable workman to construct this really very valuable implement of the best materials for 30s. *L. V. R.*

Cattle Feeding.—I am endeavouring to adopt the "compound" system of feeding fat cattle, as recommended in your Paper, and can compose a food much relished by the animals; but if my memory does not deceive me, one or more of your correspondents described a way of mixing the ingredients, so as to cool into a solid cake, capable of being cut into slices; this would be most desirable for me, as I want to manufacture the food here, and send part of it to an adjoining farm, which has no chaff cutter or boiling apparatus. I should be greatly indebted to any of your correspondents who could communicate the method of making the chaff and liquid combine in a solid form. I have adopted boxes, but mine are constructed in my cow houses, by excavating the stalls intended for 2 cows tied up; and railing them round. I think there is no difference in the fattening of the stock, but I am satisfied they enjoy more comfort, and young or sick animals thrive much better in boxes. But for producing first-rate manure, I have found the most advantage from sheds built opposite the range of cow-houses, wide enough to admit a cart to back easily in, and high enough to allow a load of dung to emerge under the tie-beam of the end gable, and long enough to contain some months' cleanings of the houses. They consist of a low parapet rough stone wall, banked up inside with gravel to form a basis, surmounted by a tiled roof on Larch posts; the wood-work found by the landlord, the tiles costing about 2*l.* 10*s.* This answers all the end of boxes, as casks are provided to receive the liquid excretion, which are poured over the heap when full; the manure is as good as what comes out of boxes, there is I think on the whole, less trouble, and more cattle can be accommodated *Henrietta Wharton Middleton, Grinkle Park, Guisboro.*

Profits of Farming.—Suffer me, as a reader of your amusing and instructive journal, to make a few remarks on the calculations contained in a letter signed "Amicus Tall," as I think, like many other amateur agriculturists, he has made a calculation for the future prospects of his farm which neither his previous four years' experience nor the experience of any one will bear out. In the first place, he calculates the produce of 60 breeding ewes at 108*l.* per annum, or 60 fat sheep at 36*s.* each. If he has been fortunate enough to rear as many lambs as he had ewes, and keep them alive until they were ready for the butcher, he has been more than fortunate; 20 years' experience has taught me not to expect it. He has also made no allowance for the death of ewes during the yeaning season, although in the former part of his letter he acknowledges that his 60 ewes, in four years, dwindled down to 50; the wool I pass over for the present. He gives himself, in the next place, 30*l.* profit on 100 hogs fattened. We have no account of the expense of keeping the sows which produce these said 100 hogs, or on what the young pigs are kept until they are old enough to put up for fatting; but I think he is a bold man who will venture to assert that he can make 30*l.* profit of 100 hogs, bred by himself, fatted, and sold at 8*s.* per score. I should like to know, 1st, how many sows are kept, and on what fed; 2dly, on what their produce are kept from the time they are weaned until they are put up for fatting; and 3dly, how far 30 qrs. of Barley will go towards fatting them. We have next 8¼ of Wheat, at 5 qrs. per acre. If your friend "Amicus" live in a land which is never subject to blight; if there are no grubs, slugs, or wireworms, to injure it; if he never had storms of wind and rain during the blooming season; if, in fact, his peculiarly happy locality be saved from the numerous casualties that others less favoured are subject to, then may he calculate on 5 qrs. per acre of Wheat; let him inquire in the best parts of Lincolnshire and Norfolk if any man dare take a farm on such a calculation; and I think I can anticipate the answer. He next gives two cows credit for producing him 27*l.*, by selling skim milk, and turning everything into money. They may have made as much, but this would only answer where very few cows are kept, or I think people would be crying out that they would have the milk, from the usual calculation, in 10*l.* per cow, which I believe will be found the outside value of any dairy, taking good and bad milkers together. I am not speaking of cheese-making, but of suckling calves and making butter. He now puts on the credit side of his account the keep of a riding horse; as it is necessary on almost all farms to keep one, this cannot be allowed as part of his profit. My calculation, in prospective, of such a farm, taking the produce, &c., from his own data would be:

60 fat sheep at 36*s.*			£108	0 0
Wool			21	0 0
Profit on 100 hogs (nil)			0	0 0
8¼ of Wheat at 4 qrs. at 2*l.* (being 1 sack above the average)			70	0 0
Produce of two cows			20	0 0
			222	0 0
Labour	£90	0 0		
Ashes, &c.	37	10 0		
Seed	17	10 0		
Tithes and rates	28	0 0		
Tradesmen's bills	10	0 0		
Loss of ewes from yeaning, and other causes	4	10 6		
Ditto horses, and wear and tear of	5	0 0		
			192	10 0
Left for rent and interest on capital, housekeeping, &c.			£29	10 0

Omicron.

Mr. Wilkins' Wheat.—I have now before me some bread, pudding, and pastry made from the Mummy Wheat, the flour of which came from the mill this morning. Never did I eat better, sweeter, or pleasanter bread; the pudding and pastry are, also, equally as good. In general, flour is not so good directly from the mill; but I repeat that I never eat better than this: it is unusually pleasant to the taste. There is also another characteristic about the Wheat; although my field in which it grew was surrounded with Wheat fields, the birds infested mine alone; so much so, that I was obliged to employ a man constantly to keep them off. And another thing. I left in my barn about a dozen sheaves, unthreshed, for samples; to-day I wanted them, but to my grief every ear had been eaten off and carried away by vermin. *Not a grain is left: and this has been done, though I have other Wheat and Barley in straw and in sacks, in the same barn, which appear not to have been meddled with.* Do not these examples show that birds and vermin prefer the mummy Wheat to other kinds? And is not that a proof that the Wheat is of a superior kind? *G. Wilkins.*

Holidays in Ireland.—I have read a paper in your *Agricultural Gazette* of Nov. 24, signed by "N. Y. Z.," in which he speaks of the impossibility of making Roman Catholics labour on any of their holidays, and adds, that "no one farms in Ireland without being annoyed" by this circumstance. On the farm which I now hold this is by no means the case. The men are all, without one exception, attached to the Romish Church; but so far are they from neglecting their work upon their holidays that they content themselves by, in preference, neglecting their dinners! Their religion requires their presence during one mass; they, therefore, quit their work at 12 o'clock and repair to their prayers, returning from chapel to their usual occupations at 1, instead of going to their homes, as on other days, to spend the hour from 1 to 2. I believe the secret here has been good wages regularly paid, and consistent kindness in the plan of treatment pursued towards them. I cannot but think that the Roman Catholic priests would not systematically oppose those who were simply endeavouring to effect the temporal good of the poorer classes; and this must be the effect, if they force them to withdraw whole days of their labour from those employers who pay them good wages and give them regular work. *J. C. S.*

SMITHFIELD CLUB SHOW OF FAT CATTLE.

This splendid exhibition of the refined specimens of the organised works of Nature, as they exist in the highest and most useful degree, was opened on Tuesday last, the 11th inst., and lasted for four days, closing on the night of Friday, the 14th. It has been well observed that labour is useful "only" when exerted along with the laws of Nature, and that in every primary proceeding the success will wholly remain with the degree of attention that is paid to this universal law. The processes of Nature may be improved, but the laws cannot be subverted; the productions may be very much altered, but the original type will remain. In no case in the history of the improved natural world has this great truth been more clearly exemplified than in the show of fat animals, of which we have now the pleasure of recording the 49th anniversary. The ultimate result of any undertaking forms the most important of the many considerations that attend a process of any kind; the means that are necessary, the cost of the materials, and the advantages that will accrue when the end of the business is reached. Pleasure is ever most gratifying when felt at the end of the journey, and contemplation becomes most intensely pleasing when used on the objects of laborious attainment.

The yearly show of fat animals exhibits the products of care and labour in the finished state of utility. The first impress of refinement has been through several years nurtured with attention, and provided with proper food in order to reach an object of pleasure, utility, and profit. The splendid frames and the points of outlined symmetry afford an ample gratification to the amateur employment of connoisseurship, the portion of secreted fat, the vast quantity of flesh, and the comparative smallness of the quantity of offal, bones included, and the high price of remuneration both to the feeder and the butcher, all contribute to impose a vast interest on the present occasion. The breeders and feeders of animals are instructed by seeing comparisons and making remembrances; the butchers are busy in purchasing and improving the knowledge of their business; while the public of every grade and profession have a sight, of many others the most gratifying and instructive. To a person who is capable of viewing Nature's works in the mirror of reflection, no sight can be more lovely, useful, or inviting; nor can any more profitable or pleasurable entertainment be devised in making an object generally satisfactory. Animal flesh has from the first records of time constituted, in more than a general degree, the food of the British people, and consequently the production and preparation of it become the subject of very primary attention. The cultivation of it, as well as of the soil, must ever mark the advances of an enlightened agriculture in Britain.

The arrangements of every year show an indefatigable care and industry, and reflect much credit on the proprietor of the place of exhibition and the honorary secretary of the show. Though no blame whatever can be attached to these quarters, the very strong fundamental objection always remains—a want of room and of light. The cattle want space to allow the full inspection and examination, and the extra stock are huddled almost out of sight, and depend on the dark touch of the hand to estimate the qualities. The sheep are not much better provided, and the pigs are in the same predicament. It is also inconvenient that any animals should enter a thronged city, and much more that a show be held for any specific purpose of the kind that is now entertained. We hope the day is not far off when the monster nuisance of Smithfield market will be swept away by a statutory act, and take refuge in the very ample provision in the Lower-road, Islington, where room and shelter are at command. And the present show will meet with similar improvement in that locality, having the area roofed over like the terminus of a railway. Branch railways leading to it from every terminus in the metropolis will convey the animals to the general rendezvous, without travelling over hard roads, or incurring the expense of conveying caravans. This improvement or alteration is much wanted. This year the press was admitted by ticket to view the show on the evening of Monday the 10th, after the judges had finished the task of fixing the prizes. For this very especial favour the council of the Club is entitled to much applause, as it affords to the editors or reporters an undisturbed opportunity of examining the animals which are to form the subject of description. On the days of public exhibition the bustling crowd prevents the proper examination, and allows no leisure for reflective description. The well-known urbanity of Mr. Gibbs, the honorary secretary of the Club, did not fail to forward the tickets of admission to the proper quarter in due time, and his attention on this point adds much to the favour that has been granted. Our own visit was most agreeably indulged with the noiseless and leisurely examination of the show on Monday night.

A most commendable change must not be forgotten to be noticed in the show being closed this year on the night of Friday, instead of Saturday, as heretofore. By this alteration there is avoided the necessity of performing any labour on Sunday in removing the animals to the respective destinations, which is unavoidable in the former case. Our humble approbation must never be wanting in such cases of respected propriety. The prizes of this year were adjudged as follows.

OXEN OR STEERS.

Class 1.—Oxen or Steers of any breed, above 4 and not exceeding 5 years old, without restrictions as to feeding, yet the kind or kinds of food must be certified. 1st prize of 30*l.*, and silver medal to the breeder, and gold medal as the best Ox or Steer in 1st, 2d, 3d, 4th, 5th, and 6th classes, to Mr. Richard Jones, of Woodstone Lodge, near Peterborough, Huntingdonshire, for a 4 years and 10 months old Hereford Ox, bred by Mr. James Cartwright, of Wistanstow, near Church Stretton, Salop, and fed on Grass, Clover, cake, Turnips, Carrots, Bean and Wheat meal. 2d prize of 15*l.* to Mr. Stephen Gooch, of Honingham, near Norwich, Norfolk, for a 4 years and 10 months old short-horned Ox, bred by himself, and fed on white Turnips, Swedes, Mangold Wurzel, Linseed cake, Barley, Bean meal, and hay. 3d prize of 5*l.* to Mr. Thomas Batson, of Kynaston House, near Ross, Hereford, for a 4 years and 3 months old Hereford Ox, bred by Mr. Thomas Finck, of Didley, near Hereford, and fed on Swede Turnips, Carrots, Parsnips, Mangold Wurzel, Pea meal, Bean meal, Linseed meal, and hay.

Class II.—Oxen or Steers of any breed, above 3, and not exceeding 4 years old, without restrictions as to feeding, yet the kind or kinds of food must be certified. 1st prize of 30l., and silver medal to the breeder, to the Most Noble the Marquis of Exeter, of Burghley-park, near Stamford, Lincoln, for a 3 years and 4 months old short-horned Ox, bred by his Lordship, and fed on hay, Linseed cake, Carrots, and meal. 2d prize of 15l. to Mr. James S. Butt, of Dodhill House, Kingston, near Taunton, Somerset, for a 3 years and 11 months old Devon Steer, bred by himself, and fed on Barley, Flax-seed, Beans, hay, Grass, and roots. 3d prize of 5l. to his Royal Highness Prince Albert, of Windsor Castle, for a 3 years and 11 months old Hereford Ox, bred by Mr. William Vaughan, of Cholstrey, near Leominster, Hereford, and fed on cake, meal, roots, and hay.

Class III.—Oxen or Steers of any breed, above 2 and not exceeding 3 years old, without restrictions as to feeding, yet the kind or kinds of food must be certified. 1st prize of 25l., and silver medal to the breeder, to Mr. Richard Stratton, of Salthorp, near Swindon, Wilts, for a 2 years and 11 months old short-horned Steer, bred by himself, and fed on Grass, hay, Swede Turnips, and Linseed cake. 2d prize of 15l. to Mr. Harvey Coombe, of Downside Farm, near Cobham, Surrey, for a 2 years and 6 months old short horned Steer, bred by himself, and fed on hay, oilcake, Swede Turnips, and Bean meal. 3d prize of 5l. to Mr. Thomas Bond, of Bishop's Lydeard, near Taunton, Somerset, for a 2 years and 10 months old Devon Steer, bred by himself, and fed on hay, Grass, roots, Beans, Barley, and Flax-seed.

Class IV.—Oxen or Steers of any breed or age, above 80 and under 95 stones in weight, without restrictions as to feeding, yet the kind or kinds of food must be certified. 1st prize of 20l., and silver medal to the breeder, to the Right Hon. the Earl of Leicester, of Holkham Hall, near Wells next the Sea, Norfolk, for a 3 years and 8 months old North Devon Steer, bred by his Lordship, and fed on Turnips, Mangold Wurzel, hay, Linseed cake, Oat meal, Barley meal, Lentils, Pea meal, and malt. 2d prize of 10l. to Mr. John Tucker, of Abbey Print works, Stratford, Essex, for a 4 years and 1 week old Hereford Ox, bred by Mr. Benjamin Rogers, of the Grove Farm, near Pembridge, Hereford, and fed on hay, Turnips, Carrots, Bean and Barley meal, oilcake, and Corrob Beans.

Class V.—Oxen or Steers of any breed or age, not exceeding 80 stones in weight, without restrictions as to feeding, yet the kind or kinds of food must be certified. 1st prize of 15l., and silver medal to the breeder, to the Right Hon. the Earl of Leicester, of Holkham Hall, near Wells next the Sea, Norfolk, for a 4 years and 7 months old North Devon Ox, bred by his Lordship, and fed on Turnips, Mangold Wurzel, hay, Linseed cake, Oat meal, Lentils, Pea meal, malt, and Barley meal. 2d prize of 5l. to the Right Hon. the Earl of Aylesford, of Packington, near Coventry, Warwick, for a 4 years and 2 months old North Devon Steer, bred by his Lordship, and fed on Grass, hay, Vetches, Turnips, Mangold Wurzel, oilcake, and Bean, Barley, Oat, and Linseed meals.

Class VI.—Oxen or Steers of the Scotch, Welsh, or Irish (Kerry) breed, of any age, without restrictions as to feeding, yet the kind or kinds of food must be certified. The prize of 10l to Mr. John Rob, jun., of Thorpfield, near Thirsk, Yorkshire, for an about 4 years old West Highland Ox, breeder unknown, and fed on Grass, Turnips, oilcake, and meal.

Class VII.—Fattened Cows or Heifers, under 5 years old, without restrictions as to feeding, yet the kind or kinds of food must be certified; spayed heifers are not qualified. 1st prize of 20l., and the silver medal to the breeder, to Mr. William Fletcher, of Radmanthwaite, near Mansfield, Nottingham, for a 4 years and 6 months old improved short-horned Cow, bred by himself, and fed on Tares, Grass, hay, Turnips, Swedes, Linseed cake, and Bean meal. 2d prize of 10l. to Mr. John Weston Peters, of South Petherton, Somerset, for a 4 years and 8 months old Devon Heifer, bred by himself, and fed on Grass, hay, Turnips, Mangold Wurzel, and Bean meal. 3d prize of 5l. to Mr. Bowley, of Siddington House, near Cirencester, Gloucester, for a 4 years and 2 months old pure short-horned Cow, bred by himself, and fed on hay, roots, oilcake, and Barley meal.

Class VIII.—Fattened Cows, of 5 years old and upwards, without restrictions as to feeding, yet the kind or kinds of food must be certified; freemartins and spayed heifers are not qualified. 1st prize of 20l., and silver medal to the breeder, and gold medal as the best Cow or Heifer in the 7th, 8th, and 9th Classes, to Mr. Samuel Wiley, of Bransby, near York, for a 7 years and 2 months old short-horned Cow, bred by himself, and fed on Grass, hay, oilcake, Bean meal, and Turnips. 2d prize of 10l. to Mr. Edward Newbatt, of the Old Place, Sleaford, Lincoln, for a 7 years and 5 months old improved short-horned Cow, bred by Mr. Richard Dudding, of Panton, near Wragley, Lincoln, and fed on Grass, Clover, seeds, hay, Swede Turnips, Barley and Bean meal, and oilcake.

Class IX.—Fattened Cows of 5 years old and upwards, that shall have had at least two live calves at [illegible] births, without restrictions as to feeding, yet [illegible] kinds of food must be certified. 1st prize [illegible] silver medal to the breeder, to Mr. Richard [illegible] of Hougham, near Grantham, Lincoln, for a [illegible] short-horned Cow, bred by himself, and fed [illegible] cake, Bean meal, Swede Turnips, hay, Carrots, and Clover. 2d prize of 10l. to Mr. Robert Beman, of Moreton in the Marsh, Gloucester, for a 3 years and 7 months old Durham Cow, bred by Mr. J. Harrison, of Greenlade, near Moreton in the Marsh, from the stock of the Rev. C. James, and fed on Grass, hay, Mangold Wurzel, Turnips, oilcake, and flour.

Extra Stock.—Silver medal to Mr. Stephen Gooch, of Honingham, near Norwich, Norfolk, for a 4 years and 9 months old short-horned Ox, bred by himself, and fed on white Turnips, Swedes, Mangold Wurzel, Bean and Barley meal, Linseed cake, and hay.

SHEEP.

Class X.—Fat Wether Sheep, of any long-woolled breed, 1 year old, without restrictions as to feeding. 1st prize of 20l., and silver medal to the breeder, and gold medal, as the best pen of long-woolled Sheep in the 10th, 11th, and 12th classes, to Mr. George Walmsley, of Rudston, near Bridlington, Yorkshire, for a pen of three 21 months old Leicester Wethers, bred by himself. 2d prize of 10l. to the Most Hon. the Marquis of Exeter, of Burghley Park, near Stamford, Lincoln, for a pen of three 20 months old Leicester Wethers, bred by his Lordship from the stock of Mr. William Sandy.

Class XI.—Fat Wether Sheep, of any long-woolled breed, 1 year old, without restrictions as to feeding. Each sheep not to exceed 220 lbs. live weight. 1st prize of 20l., and silver medal to the breeder, to Mr. G. S. Foljambe, of Osberton Hall, near Worksop, Nottingham, for a pen of three 20½ months old pure Leicester Wethers, bred by himself. 2d prize of 10l. to Mr. John Stokes, of Ruddington, near Nottingham, for a pen of three 21 months old new Leicester Wethers, bred by himself. 3d prize of 5l. to Mr. Fisher Hobbs, of Boxted Lodge, near Colchester, Essex, for a pen of three 21 months old improved Leicester Wethers, bred by himself.

Class XII.—Fat Wether Sheep, of any long-woolled breed (not Leicesters), 1 year old, without restrictions as to feeding, silver medal to the breeder, to Mr. Robert Beman, of Moreton in the Marsh, Gloucester, for a pen of three 21 months old Cotswold Wethers.

Extra Stock: Long-woolled Sheep.—Silver medal to Mr. George Walmsley, of Rudston, near Bridlington, York, for a 21 months old Leicester Wether, bred by himself.

Class XIII.—Long and short-woolled, cross-bred, fat Wether Sheep, 1 year old, without restrictions as to feeding. 1st prize of 10l., and silver medal, to Mr. John Hitchman, of Little Milton, near Wheatley, Oxford, for a pen of three 21½ months old long and short-woolled Wethers, bred by himself. 2d prize of 5l. to Mr. Charles Howard, of Biddenham, near Bedford, for a pen of three 21 months old Leicester and Southdown Wethers bred by himself from the stock of Mr. Samuel Bennett, of Bickering Park, near Woburn, Bedfordshire.

Class XIV.—Long and short-woolled, cross-bred, fat Wether Sheep, 1 year old, without restrictions as to feeding. Each sheep not to exceed 220 lbs. of live weight. The prize of 10l., and the silver medal to the breeder, to the Right Hon. the Earl of Leicester, of Holkham Hall, near Wells next the Sea, Norfolk, for a pen of three 20 months old Southdown and Leicester Wethers, bred by his Lordship, from the stock of the late Mr. Harvey.

Extra Stock: Cross-bred Sheep.—Silver medal to the Right Hon. the Earl of Leicester, of Holkham Hall, near Wells next the Sea, Norfolk, for a 20 months old Southdown and Leicester Sheep, bred by his lordship, from the stock of the late Mr. Harvey.

Class XV.—Fat Wether Sheep of any short woolled breed, 1 year old, without restrictions as to feeding. 1st prize of 20l., and silver medal to the breeder, and gold medal, as the best pen of short-woolled Sheep in the 15th, 16th, and 18th, classes, to Mr. Rigden, of Hove, near Brighton, Sussex, for a pen of three 21 months old Southdown Wethers, bred by himself, from the stock of Mr. Jonas Webb. 2d prize of 10l. to Mr. G. S. Foljambe, of Osberton Hall, near Worksop, Nottingham, for a pen of three 20 months old Southdown Wethers, bred by himself, from the stock of Mr. Jonas Webb.

Class XVI.—Fat Wether Sheep, of any short woolled breed, 1 year old, without restrictions as to feeding. Each Sheep not to exceed 200 lbs. live weight. The prize of 10l., and silver medal to His Grace the Duke of Richmond, of Goodwood, near Chichester, Sussex, for a pen of three 21 months old Southdown Wethers, bred by his Grace.

Class XVII.—Fat Wether Sheep, of any short-woolled breed, 2 years old, without restrictions as to feeding. 1st prize of 20l., and the silver medal, to his Grace the Duke of Richmond, of Goodwood, near Chichester, Sussex, for a pen of three 33 months old Southdown Wethers, bred by his Grace. 2d prize of 10l. to Mr. John Wentworth, of Beckhampton, near Marlborough, Wilts, for a pen of three 33 months old Southdown Wethers, bred by himself, from the stocks of Mr. Northeast and his Grace the Duke of Richmond.

Class XVIII.—Fat Wether Sheep, of any short-woolled breed (not Southdowns), 1 year old, without restrictions as to feeding, the prize of 10l., and silver medal to the breeder, to Mr. William Humfrey, of Oak Ash, Chaddleworth, near Wantage, Berks, for a pen of three 21 months old west country Down Wethers, bred by himself.

Extra Stock: Short-woolled Sheep.—Silver medal to Mr. William Sainbury, of West Lavington, near Devizes, Wilts, for a 21 months old Southdown Wether, bred by himself.

PIGS.

Class XIX.—Pigs of any breed, above 12, and not exceeding 26 weeks old. 1st prize of 10l., and the silver medal to the breeder, to Mr. W. Fisher Hobbs, of Boxted Lodge, near Colchester, Essex, for a pen of three 25 weeks and 6 days old improved Essex breed Pigs, bred by himself, and fed on Rye, Barley, Oatmeal, Potatoes and milk. 2d prize of 5l. to His Royal Highness Prince Albert, of Windsor Castle, for a pen of three 25 weeks and 6 days old Suffolk Pigs, bred by His Royal Highness, and fed on meal, milk, and Peas.

Class XX.—Pigs of any breed, above 26, and not exceeding 52, weeks old. 1st prize of 10l., and the silver medal to the breeder, to Mr. Samuel Druce, jun., of Eynsham, near Oxford, for a pen of three 39 weeks and 1 day old improved Oxfordshire Pigs, bred by himself, and fed on Barley meal, wash, and skimmed milk.

Class XXI.—Pigs of any breed, above 12, and under 18, months old. The prize of 5l., and the silver medal to the breeder, and gold medal as the best pen of pigs in the 19th, 20th, and 21st classes, to the Right Hon. the Earl of Radnor, of Coleshill, near Farringdon, Berks, for a pen of three 74 weeks old Coleshill Pigs, bred by his Lordship, and fed on meal, pollard, and whey.

Extra Stock: Pigs.—The silver medal to Messrs. Bearblock, of Hornchurch, near Romford, Essex, for an 83 weeks and 4 days old Pergo Park Pig, bred by the Rev. Richard Battercombe, of Hacton House, Upminster, Essex, and fed on off-corn Wheat and Barley, ground Rye and meal.

The chief attention among the animals was placed upon the Hereford Ox which gained the 1st prize in Class I., and the gold medal as the best animal in the six classes of that denomination. In this respect, we think the public opinion was never better bestowed in any case that has come under our inspection. The bulk of the carcase formed the very proper size of containing the greatest weight in the least "possible" compass, and that without destroying the necessary symmetry, either by an overgrown coarseness, or a puny diminution. The girth measured 9 feet 4 inches, and the length 5 feet 4 inches. Beyond all exception, the length of the body was uniformly covered with useful flesh, and not in lumpy fatness, but in a regular covering from the shoulder to the tail. The only defect, and that not a large one, was the bareness of the upper fore point of the shoulder, which appeared more visibly, owing to the very great superiority of all other points. The ribs, fore and middle, were covered in the thickness of inches, and the hook bone was completely hidden. We think the Show never at any time exhibited a better, and very seldom an equal, animal to the one now mentioned. The animal was purchased by Messrs. Righton and Farrow, of Reading.

The second prize, a short-horned ox, showed a large bulk in not the handsomest shape or colour of that celebrated breed. The legs were coarse in bone and the head disproportionately large. But the carcase was very symmetrically square, with the proper convexity, the shoulder was well covered, and ribs provided with covering. The animal formed a good carcase with a coarse appearance. Girth 9 feet 9 in.—length 6 feet. The third prize, a Hereford ox, showed a symmetry that was in some parts superior to the two before mentioned. The upper fore-point of the shoulder was much better covered than in either, and a more fleshy fulness behind the shoulder. The hind quarters were very deficient, and dwindled into a narrowness of twist, than which nothing more tends to destroy the fulness of symmetry. Girth 8 feet 4 inches, length 5 feet 1 inches.

In Class I. the white short-horned ox of Earl Fitzwilliam was noticed, but showed only a large coarse bulk, which very much attends that breed, when bred without attention to symmetry. The short-horned ox of Earl Cowper was of the same description, and also that of Mr. Tingey. No good short-horn appeared. Mr. Overman's short-horn and Ayrshire cross was a very good ox, but heavy with offal.

The first prize in Class II., a short-horn of Lord Exeter formed an animal of the true utility—a lengthy, round, fleshy carcase, well covered, and without any lumpy secretions of oily fat. The fore point of the shoulder was rather bare—but the girth was full, and the posteriors deep and lengthy. Dimensions, in girth, 8 feet 6 inches, in length 6 feet 2 inches. Sold to Mr. Jeffrey of Regent street. A very fine animal—back shoulder rather high, and the twist perhaps unduly contracted. The second prize, a Devon ox of Mr. Butt, was the largest specimen of that breed which we remember to have seen. The animal formed a very fine carcase, with the usual fault of the Devons of losing the fulness in the hind quarters. With this exception, no better animal appeared. The shoulder and back could not be surpassed. The girth was 8 feet 5 inches, length 5 feet 4 inches. The third prize, a Hereford ox, belonging to his Royal Highness Prince Albert, was a very respectable animal of the secondary grade. Girth 8 feet, length 5 feet 4 inches. Sold to Mr. Jeffrey, of Regent-street.

In Class II. our observation was early arrested by a Hereford ox of Mr. Webster, Peterborough. The animal was one-fourth too small in size, but in every other point the show contained no equal. The face was mottled, the horn tapering and finely smoothed, and of medium length; the eye quick, and the ear agile. The carcase in the whole extent was wholly faultless—the fore ribs, middle ribs, loin and rump, were of the finest quality, and the last covered parts, on the point and top of the shoulder,

showed the [illegible] ripeness of the animal frame. The back [illegible], and the tail plumbed the buttocks, as the index of the posterior squareness of the carcase. It was much and justly admired, and had no equal in the show, though it got no prize, nor attracted any commendation. Girth 8 feet 3 inches, and length 5 feet; age 3 years and 11 months.

In Class III. the first prize showed a small sized short-horn of a pure white colour, of much symmetry; head and horn very much emasculated, which is a very large attainment in breeding oxen. The paunch was heavy, and the general offal rather bulky. The shoulder, loins, and back were unexceptionable. Girth 8 feet 2 inches, and length 5 feet 4 inches. The second prize showed a small ox of the same breed, and of greater merit. The head and horn were stronger, and the body showed more vigour. The twist was very wide, and the thigh deep. The youth of the beast would have advanced to much improvement. Girth 7 feet 6 inches, and length 5 feet 3 inches. The third prize exhibited a Devon ox, of very much merit, but of no noticeable peculiarity. Girth 7 feet 7 inches, and length 4 feet 9 inches. Sold to Mr. Waite, Wormwood-street, City.

In Class IV. the first prize rested with the Earl of Leicester's Devon ox, which exhibited a very neat symmetry in small compass, which failed much in the hind quarters. This defect is often seen in the Devons, and very much at Holkham. Girth 7 feet 9 inches, length 5 feet. The second prize, a Hereford Steer, showed the most compact carcase in the exhibition, was not unusually fat, but very fleshy and uniformly covered. Girth 8 feet 7 inches, length 5 feet 6 inches. Bulk considered, the show possessed no such depth and rotundity of carcase. Sold to Mr. Guerrier, Islington.

In Class V. the first prize was a Devon steer from Holkham, of much merit. The shoulder of the Devons beats any other breed in the covering and taper of the upward slope. Girth of this beast, 8 feet, and length, 5 feet 2 inches. Sold to Mr. Waite, Wormwood-street, City. 2d prize, a Devon steer, of the Earl of Aylesford, possessed very much merit, and deserved a higher place. Girth 8 feet 3 inches, and length 5 feet 2 inches.

In Class VI. the Scotch bullock was of very prime beef, but we have seen more handsome and better coloured specimens of the western breed.

In Class VII. the short-horned cow of Mr. Fletcher showed a very uncommon specimen of that breed. The length and squareness of the splendid frame, the rotundity of the girth, the levelness of the back, width of hooks, and the perpendicular uprightness of the posteriors, have never been exceeded in our practice among cattle of upwards of 30 years. Seldom does such an animal appear. Girth 8 feet 9 inches, and length 5 feet 9 inches. The second prize showed a Devon cow of very fine parts, and possessing all the points of the most symmetrical of all British cattle. Still, the narrowness behind adheres to every animal of that sort. Girth, 7 feet 9 inches, and length, 5 feet. Sold to Mr. Glass, Lambeth. The third prize was a bulky animal, and wanting in the essential points. The carcase was very fleshy and useful. Girth 8 feet 4 inches, and length 5 feet 2 inches Sold to Mr. Lawrence, Windsor.

In Class VIII., the cow of Mr. Wiley merits a very distinguishing notice. In no case of animal life have we ever seen so much weight in the same length of carcase, nor the same width of parts. The top of the shoulder was a full circle, and the hooks seemed a yard asunder. The ribs had no appearance, and the hook bones were invisible. We have often noticed the extreme breeding practised by Mr. Wiley, and we would think it may be pushed beyond fecundity. At all events, the fed specimens are beautiful. The girth of this cow was 8 feet 7 inches, and length 5 feet 6 inches. Sold to Mr. Butter, Leather-lane, Holborn. The second prize was a white short-horned cow of large bulk, but much coarser than Mr. Wiley's, and bare in the fore shoulder blade. The body was larger and more lumpy in the parts, girth 8 feet 7 inches, and length 5 feet 9 inches. Sold to Mr. English, Chelsea.

In Class IX., the first prize to a short-horned cow, showed a bulky case, but wanting in the proportions of the former class, the shoulder wanted covering, and the flanks were not well filled. It was a carcase of greater advancement. Girth 9 feet 2 inches, and length 6 feet. Sold to Mr. Harman, Shoreditch. The second prize showed a figure of a cow not surpassed in the show, in the head, horn, length, and height of body, and the square rotundity of the carcase. As a useful animal it excelled the others in our opinion. Girth 8 feet, and length 5 feet 6 inches.

Extra Stock.—The silver medal showed an animal of good carcase and very useful parts. The head was very unpleasing in the horn. Next to him stood a light dun-coloured West Highland Scotch ox, which possessed more merit, in our opinion, than the prize ones, which often happens in extra matters.

In the department of Cattle of the show of this year, our opinion leads to the conclusion that the cows or heifers never were better, Mr. Wiley's being in itself very sufficient to stamp the class with superiority. The other animals very strongly supported the excellence of the leading prize. The Hereford breed vindicated its reputation in the gold medal ox, and the smaller unnoticed one, which was mentioned in Class II. We omitted to mention the fleshy flank of that animal, which formed a very visible point of excellence. We like a full flank, and prominent rather than hanging loosely; as that formation of it shows a tendency to progress to a roundness rather than flatness of body, which is essential to form the most useful parts. The Devons headed the animals of Mr. Quartly, as the Holkham animals are too small. We hope Mr. Quartly will come forward next year. The short-horns are falling off since the decease of Earl Spencer.

In the classes of long-woolled Sheep, the chief prize showed animals not to be surpassed in Britain. The body long and wide, fore-flank very full, shoulders wide, back straight, head long and small, and nose projecting forward; the twist was wide, legs straight, and the wool very sufficient. No judges could hesitate in giving the prize to Mr. Walmsley. Mr. Foljambe's prize showed very much merit, and excelled the first class in the head and ears, which latter organs were long and very agile. In some points they were the superior animals, being more active, closer in the wool without being matted, and with a finer bone in the leg. Everything of the animal kind bred by Mr. Foljambe is stamped with excellence. Lord Exeter's sheep were coarse in the head, but possessed many good points. The coat of wool was equal, if not superior to the foregoing prizes. Mr. Fisher Hobbs' sheep were very deficient in the symmetry of the head, though otherwise good animals. Mr. Stokes' were also coarse in the head, but superior in the wool to all the other long-woolled sheep that were shown. The Cotswold sheep improve yearly with Mr. Beman. In general the long-woolled sheep never were better exhibited. The extra stock showed specimens equal to the prizes, in the wethers of Messrs. Walmsley, Twitchell, and Ollard. The gold medal prize of the southdown sheep showed animals in appearance capable of beating all competition. The best judges allowed that nothing superior had ever appeared at the show. They exceed the Duke of Richmond's in the fineness of the head, the width of the back, and also in the quality of the wool. The latter animals were eminent specimens of southdowns. Mr. Wentworth's sheep were visibly coarser than the two preceding prizes, chiefly in the head. The Earl of Chichester's sheep were much commended, which is equivalent to a prize. Mr. Humfrey's showed a large coarse head, but otherwise were good animals. Mr. Foljambe's sheep supported his character as a breeder. The carcase showed a more uniform width than any of the other prizes. The head is rather wide at the top. The Earl of Leicester's sheep have lost the proper black face, and have been removed from the pure stock. The animals are well formed, and form good carcases. Mr. Overman's cross breed of down and Leicester deserve much commendation. The silver medal in the extra stock showed a wether sheep superior to many of the prizes.

The Pigs of this year exceeded, in our opinion, that of any show within the reach of our remembrance. The gold medal animals of Lord Radnor were a specimen of the larger breed of pigs, such as seldom comes into the notice of the public. The size of the Coleshill breed has been very judiciously reduced from the bulk of former years, and we think a further reduction would very materially improve the general utility. The white colour is pleasing, and the pile of strong hair, not too thickly set, is a sign of an improved structure. The head is small, and the bone fine, compared with the size of the carcase. Lord Radnor has adopted the true mode of breeding, to select the materials, and by energy and perseverance, to produce a breed of one's own. Varieties may be produced in abundance—the great difficulty is to stamp them with the permanent qualities. The club never before boasted such animals. The large pigs of Mr. Druce were also a very excellent specimen. The body was more lengthy than the former, in proportion to the depth and weight of carcase, and formed a more justly proportioned figure of the breed of swine. The head was larger and more seemly to the body. In many points, the palm of merit might be doubtful between them and Lord Radnor's. In the class of the pigs of the small breed, no better can possibly be found than the specimens shown by Prince Albert and Lord Radnor, for the purposes of fresh pork and small bacon; the use is most amply supplied. The distinction may be termed impossible to be drawn between the two specimens. A smaller pen of Lord Radnor's defied all competition in the way of fresh pork. The pile of hair pleased us extremely. The black pigs of Mr. Fisher Hobbs supported their reputation. The square form exceeds any in the show, and the length is proportionate. But we like to see white pigs, as the flesh being dressed for use, with the skin unremoved, is more pleasing in the white colour than in the black. As was observed before, the pigs of this year have never been exceeded.

The exhibition of Implements showed the usual abundance; draining-tile-making machines, tools for draining, chaff cutters, and drill machines, showed the usual perfection. Carts and ploughs were numerous, and most useful travelling steam machines for threshing and for other purposes were not wanting; and the usual exhibition of roots. Mr. Skirving's Turnips were large, but coarse in the neck. Mr. Gibbs' Mangold Wurzel, red and yellow globe, were large and well shaped, and beyond the common exhibitions; also the Turnips and Parsnips. The Kohl Rabi was unusually medium sized, and uniform in shape; some fine varieties of foreign Pines were shown by Noble and Standish, of Bagshot, Surrey. The Forty-day Maize showed a novelty, if not a merit. Edgington showed his tarpaulins, and Biggs the sheep-dipping apparatus in the usual way. The modern machinery becomes yearly more and more cumbered with a number of appendages, and loses the very first recommendation of easy application. Our parting attention was arrested by Dr. Newington's dibble, which sows an acre per day with the work of one man. The frame is set on two wheels, which are pulled backwards, as the work is done; the rows are sixteen number and 9 inches apart. The frame is pulled up by hand, and lifts the seeds; the downward pressure pushes an iron rod into the ground, and forms the hole for the seed. The implement is certainly the best of dibbles, and might be extended to a horse frame, and wrought by a man sitting on the top, or regulated by machinery from the axle.

In our concluding remarks, we are satisfied that the cows or heifers, long-woolled sheep, and pigs, never have been better exhibited, and that the other classes are at least an average. We are much pleased to see that the animals progress yearly from the lumpy secretions of oily fat to the level bulk of useful flesh, and the fat thoroughly diffused and inspissated over the quantity of muscular fibre. In this respect, our taste was completely gratified with Lord Exeter's short-horned Ox in Class II., and Mr. Webster's Hereford Steer in the same class. The carcases were evenly covered from the fore-point of the shoulder to the posterior rump, and no tendency to lumps was observable. The public taste almost universally now leads to this consummation, which is certainly the most truly useful and the most easily attainable. If the unnoticed Hereford ox above mentioned had been one-fourth of his bulk of more weight, the carcase would have formed, in our opinion, the *ne plus ultra* of animal breeding.

By some inadvertence, neglect, or misunderstanding, the reporters of the press did not receive the usual gratis ticket of admission to the show of this year, for the four days of the holding. The omission is small, but still noticeable.

THE BIRMINGHAM AND MIDLAND COUNTIES EXHIBITION OF FAT CATTLE, &c.

We must congratulate Mr. Wright, of the *Midland Counties Herald*, to whose energy we understand this exhibition is mainly due, upon the success which has this year attended his efforts and those of his colleagues. A most extraordinary collection of Pigs and Poultry, and a very fair show of Fat Cattle and Sheep—most extraordinary collections ever seen in one place; and about 240 lots of Poultry. A very fine exhibition indeed, as shall be hereafter stated in detail, was collected under this roof. The place was thronged with visitors, and the arrangements of the whole affair were excellent. The following is the prize list.

The prize Hereford Ox, shown by Lord Warwick, was a remarkably well made animal, well fattened all over; and there were some well bred animals shown in the class of short-horns. The cow shown by Mr. Beman, which won the prize as the best cow in the yard, was a remarkably good animal; but there was a good deal of inferior stock shown in some of the classes, and we have no doubt that great improvements will be evident in the future exhibitions. Two enormous brutes were shown in the class disqualified from exhibiting in other classes; their girths, respectively, 9 feet 10 inches and 8 feet 11 inches, and their lengths 6 feet 3 inches and 6 feet 1 inch; but excepting enormous size and weight, they were not particularly commendable, being both, and especially the larger one, of very coarse build.

The show of Pigs was extraordinary both for number and merit, the breeding stock, however, not so good, in our opinion, as the fat. This part of the exhibition is only in its second year, and has already attained, we imagine, a status far beyond that of any other thing of the kind in existence. The Sheep were not a remarkably good show—but deficient in number more than in quality.

OXEN OR STEERS.

Class I. : Herefords.—10*l.* to the Earl of Warwick, and silver medal to the breeder, Mr. John Wheeler, Trippleton, near Lintwardine, Ludlow.—5*l.*, to Mr. H. Chamberlain, Desford, near Leicester. Highly commended.

Class II. : Devons.—10*l.*, to Prince Albert, and a silver medal to the breeder, Mr James Quartly, Molland, Devonshire.—5*l.*, to Mr. Thomas Newbold, Baggington, near Coventry.

Class III. : Short-horns.—10*l.*, and the gold medal for the best fat Ox or Steer in the yard, to the Duke of Rutland, Belvoir Castle, Lincolnshire, and silver medal to his Grace as breeder.—5*l.*, to Mr. Thomas Pulver, Broughton, near Daventry, Northamptonshire.

Class IV. : Scotch and Welsh Breeds.—10*l.*, to Mr. Joseph Rob Thorpfield, near Thirsk, Yorkshire.—5*l.*, to the same.

COWS AND HEIFERS.

Class V. : Herefords (Cows).—10*l.*, to Mr. Joseph Lester Hassall, Packington, near Ashby-de-la-Zouch.—5*l.*, to Mr. Edward Gough, of Gravel Hill, Shropshire. Highly commended.

Class V. A : Herefords (Heifers).—5*l.*, to Lord Hatherton, Teddesley, near Penkridge.—A Heifer exhibited by Sir Francis Lawley, Bart., Tamworth, was highly commended.

Class VI. : Devons (Cows).—10*l.*, to the Earl of Aylesford, and silver medal to his lordship as breeder.—5*l.*, to Mr. Thomas Newbold, Bagginton, near Coventry.

Class VI. A. : Devons (Heifers). —5*l.*, to the Earl of Aylesford.

Class VII. : Short-horns (Cows).—10*l.*, and the gold medal for the best fat cow or heifer in the yard, to Mr. Robert Beman, Moreton-in-the-Marsh, and a silver medal to the breeder, Mr. Stephen Clemans, Churchill, Oxfordshire.—5*l.*, to Mr. Joseph Lester Hassall, Packington, near Ashby-de-la-Zouch.—A cow exhibited by William Woodward, Esq., Bredon's Norton, near Tewkesbury, and one exhibited by Mr. George Graham, Yardley, Worcestershire, were both highly commended.

Class VII. A : Short-horns (Heifers).—5*l.* to Mr. Thomas Harris, Stoney-lane, Tardebigg, near Redditch.—A Heifer exhibited by Sir Charles Knightley, Bart., M.P., Fawsley-park, Northamptonshire, was commended by the judges.

Class VIII. : Oxen or Steers, for the best animal of any breed, not qualified to exhibit in the preceding classes.—10*l.*, to Mr. Charles Wilson, the Hill Farm, Claines, near Worcester; and a silver medal to the breeder, John E Vernon, Esq., Himbleton, Worcestershire.—5*l.*, to Mr. Richard Harvey, Sheldon, Warwickshire.

Class VIII. A : Cows.—10*l.*, to Mr. Edward Lythall, Snitterfield, near Stratford-upon-Avon, and a silver medal also to Mr. Lythall, as breeder.—5*l.*, to Mr. Richard Warner, of Weston-hill, near Nuneaton.

Class VIII. B : Heifers.—5*l.* to the Right Hon. Lord Hatherton, Teddesley, near Penkridge.

SHEEP.

Class IX. : Leicesters.—5*l.* to Mr. Francis Robbins, Stoneleigh, Warwickshire, and a silver medal also to Mr. Robins, as breeder.—3*l.* to Mr. Robert William Payne, Dordon, Warwickshire. Highly commended.

Class X. : Long-woolled Sheep, not being Leicesters.—5*l.* to Mr. Robert Beman, Moreton-in-the-Marsh, Gloucestershire, and a silver medal also to Mr. Beman, as breeder.

Class XI. : Southdowns.—5*l.* to Earl Howe, Gopsall Hall, Leicestershire, and a silver medal to his lordship, as breeder,

Class XII.: Short-woolled Ram lambs.—*5l.* to the Earl of Aylesford, Packington, Warwickshire, and a silver medal also to his lordship, as breeder.—*3l.* to Mr. John Baker, Croydon, near Atherstone. Commended.

Class XIII.: Cross-bred.—*3l.* to Mr. Richard Adcock, Stonehouse Farm, Inkberrow, Worcestershire, and a silver medal also to Mr. Adcock, as breeder.—*2l.* to Mr. William Shipway, Hanley Castle, Worcestershire.

Class XIII. A.: Best pen of three Long-woolled Wethers, not exceeding 24 months.—*5l.* to Mr. John Henry Lees, Raven's-end, near Coleshill, and a silver medal also to Mr. Lees, as breeder.—*2l.* to the same. Commended.

Class XIII. B: Best pen of three Short-woolled Wethers, not exceeding 24 months.—*5l.* to the Earl of Aylesford, and also a silver medal to his lordship, as breeder.—*2l.* to Mr. Edmund Herbert, Powick, Worcestershire.

Judges of Cattle and Sheep.—Mr. John Outhwaite, Bainesse, Catterick, Yorkshire; Mr. R. Lucas, Gratton Manor, Worcestershire; and Mr. R. Swaffield, Chatsworth, Derbyshire.

FAT PIGS.

Class XIV.: Not exceeding nine months old.—*5l.* to Mr. David Mace, Chatteris, Isle of Ely.—*3l.* to Mr. Joseph Hardwick, Camp-hill, Birmingham.—Pigs exhibited by Mr. William Adams, Spring-street, Birmingham; James Taylor, Esq., Moseley-hall, near Birmingham; Mr John Lowe, Camp-hill, Birmingham; Mr. George Vincent, Sherlock-street, Birmingham; and Messrs. Henry and James Cooper, Small-heath, near Birmingham, were commended by the judges.

Class XV.: Fat Pigs, exceeding 9 and not exceeding 14 months old.—*3l.* to Mr. Thomas Dobbs, Edgbaston.—*2l.* to the same. Highly commended.

Class XVI.: Fat Pigs, exceeding 14 and not exceeding 18 months old.—*5l.* to Mr. Arthur Parks, Kingsbury, Warwickshire.—*3l.* to Mr. Thomas Padmore, Dean-street, Birmingham. Highly commended.

Class XVII.: Fat Pigs, exceeding 18 months old.—*5l.* to Mr. James Baldwin, King's Norton, near Birmingham.—*3l.* to Mr. H. Lowe, Comberford Mill, near Tamworth. Commended.

STORE PIGS.

Class XVIII.: For Breeding Sows of a large breed.—*5l.* to Mr. Joseph Tuley, Exley Heath, near Keighley, Yorkshire.—*3l.* to Mr Edwin Eddison, Headingley, Leeds.

Class XIX.: For Breeding Sows of a small breed.—*5l.* to Mr Richard Ashwin, Aldington, Worcestershire.—*3l.* to Mr. Charles Randell, Chadbury, Worcestershire.

Class XX.: For pens of five Store Pigs of one litter, not exceeding 7 months old.—*5l.* to Mr. Moses Cartwright, Stanton-hill, near Burton-upon-Trent.—*3l.* to Mr. Matthew Pemberton, Gibraltar, Leeds.

Class XXI.: For a Sow of a large breed, with litters of pigs not exceeding 8 weeks old.—*5l.* to Mr. Moses Cartwright, Stanton-hill, near Burton-upon-Trent.—*3l.* to Mr. Charles Eley, Beaver's Farm, Hounslow, Middlesex.

Class XXII.: For Sows of a small breed, with litters of pigs not exceeding 8 weeks old.—*5l.* to Mr. George Edward Taylor, Oatlands, near Leeds.—*3l.* to the same.

Class XXIII.: Brawns of a large breed.—*5l.* to Mr. Edwin Eddison, Headingley-hill, Leeds.—*3l.* to Mr. J. Cartwright, Longton, Staffordshire Potteries.

Class XXIV.: Brawns of a small breed.—*5l.* to Mr. Thomas Alkin, Croudon, near Atherstone.—*3l.* to Mr. Edwin Eddison, Headingley-hill, Leeds.

Judges of Pigs.—Mr. Carmichael, Sowerby-park, near Thirsk, Yorkshire; Mr. Harris, Fletchampstead, near Coventry; Mr. Ball, Bretforton, near Evesham, Worcestershire.

Calendar of Operations.

DECEMBER.

Sussex Farm, *Dec. 10.*—We have had a good deal of wet weather lately, but still we have had seven ploughs at work every day for some time, and will continue so as long as the weather remains open. We are much forwarder, having the land drained, as we turn the ploughs into the drained fields when wet—a great advantage at this season of the year in getting the work forward. The odd horses are engaged carting earth from road sides and ditch cleanings, carting straw and Turnips to the cattle and sheep. Men are engaged threshing Oats and Peas, cleaning out ditches, making and repairing hedges, draining, &c. Our growth of Flax-seed is very good in quality, and the quantity per acre is 18 bushels; the hemp is also very good, and will return a profit for growing; it has now gone through the process of stooping, and is dried in excellent order. I shall soon begin to break and swingle it. *J. S.*

Notices to Correspondents.

Augur: *G. D. E.* Any agricultural "machine-maker" will supply you with a drain auger, by which you can ascertain the nature of your subsoil to a depth of 12 to 20 feet.

Cabbages. *A. B. W.* We have no analysis of the Cabbage. But that though inferior per ton, they are better per acre, than any other green crop we believe. We can suggest no other way of preserving them than stripping the outer leaves and putting the hard Cabbages in the usual way; and this we have heard has been done so as to keep them for a month or two successfully.

Cyclopædia of Agriculture. *T. R. M.* It is the one we alluded to. We do not know what is meant by "supplied to subscribers only." You should address the publishers.

Expenses and Profits of Feeding Pigs: *A very old Sub* would very much oblige us by information on this subject, as well as on farm accounts. He will see that we have published his communication in another column.

Gas Lime: *W. Barlow.* If it has been already exposed for some months you may make a compost of it with vegetable mould, ditch scrapings, &c., and spread it over your Grass land at the rate of 2 or 3 tons per acre.

Invention: *An Old Sub* should write to a patent agent—for instance, Messrs. Newton, Chancery-lane—and obtain instructions from them. The registering costs, we believe, between 5*l.* and 10*l.*

Lethargy, &c.: *X.* We imagine the disease to consist in impairment of the functions of the stomachs and liver. From the rapidity of its progress there appears little chance of treatment, but as a preventative we advise a dose of salts each for all the flock, and a change of food. In the absence of all knowledge as to whether the sheep are fat or lean, young or old, ewes or wethers, high fed or low fed, kept on roots or on Grass, we cannot suggest anything further. *W. C. S.*

Manure: *Green Gleaner.* In answering your question last week your own manuscript was sent to the printer, the question being converted into an answer by the addition of a word or two. Unfortunately the word "not" was not scored out as it ought to have been, and the sense of the answer is thus directly the reverse of our intention. Cole clay soils certainly would be the better of the manure being added before it was rotten.

Small Farms. *An A.M. and Small Farmer.* If he will describe his treatment of the 20 ewes he keeps on his extent of land from the 1st of December to the time when the lambs are sold, he will much oblige another of your correspondents, "An East Anglian."

Yew: *A Sub* relates that two heifers died in his neighbourhood within a few minutes of each other, having been put into a field during the night where there was a small Yew tree in the hedge, and they had fed upon it. They were opened after death in a competent person, and he said the paunches were very much affected with the Yew, apparently as if they had been furnished with something so that you might almost crumble them to pieces with the hand.

Erratum: At p. 752, col. of line 25 from the bottom, for "turning the soil" read "burning the soil."

Markets.

COVENT GARDEN, Dec. 25.

Grapes are plentiful for the season, Pine-apples sufficient for the demand, Filberts and Walnuts abundant, Chestnuts plentiful, Oranges and Lemons abundant, good table Pears scarce. Amongst Vegetables, Turnips are good and plentiful; Carrots the same. Cauliflowers and Broccoli are sufficient for the demand. Potatoes have not altered since our last account. Lettuces and other salading are plentiful. No alteration in the price of Mushrooms. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropæolums, Chrysanthemums, Fuchsias, Primulas, Camellias, Cinerarias, and Roses.

FRUITS.

Pine-apples, per lb., 4s to 6s	Oranges, per 100, 8s to 12s
Grapes, hothouse, p. lb., 3s to 6s	Almonds, per peck, 6s
— Portugal, per lb., 9d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 2s to 4s	Walnuts, p. 100, 1s 6d to 2s
— per half sieve, 8s to 12s	— p. bush., 16s to 24s
Apples, kitchen, p. bsh., 2s to 4s	Filberts, per 100 lbs., 45s to 60s
Lemons, per doz., 1s to 2s	Nuts, Bar., p. bush., 20s to 22s
— per 100, 6s to 12s	— Brazil, p. bsh., 12s to 16s
Oranges, per doz., 9d to 1s 6d	Kent Cobs, 60s to 65s p. 100 lbs.

VEGETABLES.

Cabbages, p. doz., 6d to 1s	Onions, p. bushel, 3s to 4s
Cauliflowers, p. doz., 2s to 4s	— Spanish, p. doz., 1s 6d to 4s
Broccoli, p. doz. bundl., 6s to 10s	Shallots, per lb., 4d to 6d
Greens, per doz., 1s 6d to 2s 6d	Garlic, per lb., 4d to 6d
Brussels Sprouts, p. hf. sieve, 1s 6d to 2s	Artichokes, p. doz., 1s 6d to 3s
Sorrel, p. hf. sieve, 6d to 9d	Lettuce, Cab., p. sc., 4d to 9d
Potatoes, per ton, 60s to 100s	— Cos, do., 6d to 1s
— per cwt., 3s to 6s	Endive, per score, 1s to 1s 6d
— per bush., 2s to 3s	Tomatoes, p. hf. sieve, 3s to 4s
Turnips, p. doz. bun., 1s to 2s 6d	Mushrooms, p. pot., 1s to 1s 3d
Red Beet, per doz., 1s to 2s	— per bush., 3s to 6s
Horse Radish, p. bdl., 2s to 4s	Small Salads, p. pun., 2d to 3d
Cucumbers, each, 9d to 1s	Fennel, per bunch, 2d to 3d
Leeks, per bunch, 2d	Savory, per bunch, 2d to 3d
Celery, p. bundle, 8d to 1s 3d	Thyme, per bunch, 2d to 3d
Radishes, p. 12 bunches, 1s to 2s	Parsley, p. doz. bun., 3s to 4s
Watercress, per doz. bunches, 4d to 6d	— Roots, p. bdle., 1s to 1s
Carrots, per bun., 4d to 6d	Marjoram, per bunch, 2d
Spinach p. sieve, 1s to 2s	Mint, per bunch, 2d
	Basil, per bunch, 2d

POTATOES.—Southwark, Dec. 10.

The Committee report that the arrivals from the Continent are so large that less prices have been submitted to with all foreign Potatoes, particularly inferior samples, which are nearly unsaleable. Choice Yorkshire Regents still command a high figure. The following are this day's quotations:—York Regents, 80s. to 110s. per ton; Wisbeach do., 60s. to 75s.; Scotch do., 60s. to 75s.; Scotch cups, 35s. to 40s.; French whites, 60s. to 65s.; Rhenish and Belgian do., 30s. to 60s.; Dutch do., 40s. to 50s.

HOPS.—Friday, Dec. 14.

Messrs. Pattenden and Smith report that the market is firm, although, as usual at this season, but little is doing. New Hops are very scarce.

SMITHFIELD, Monday, Dec. 10.

The number of Beasts is considerably less than of late; choice qualities are especially scarce; these are readily disposed of at advanced prices. In some instances rather more than our top quotations are realised. The supply of Sheep is much smaller, and trade more cheerful; a few choice Downs make 4s. 4d., but it is too high to quote. A better demand is generally effected. Calves being scarce, 4s. 4d. is pretty freely given for choice lots. Trade is improved for Pigs.

Tuesday, Dec. 11.

The supply of Beasts is considerable, although the number is not excessive for the time of year. The demand is considerable, and the choice qualities make fully 2d. per 8 lbs. more than on Monday, and in a few instances rather more. Sheep are not very plentiful for the day; trade is fully as good, and for choice descriptions rather better. The weather being unfavourable causes slow sale for second-rate meat. Trade for Calves and Pigs is about the same as on Monday.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c. ...	4	2	to 4	4
Best Short-horns	3	10	— 4	0
2d quality Beasts	3	0	— 3	6
Best Downs and Half-breds	4	0	— 4	4
Ditto Shorn				

Per st. of 8 lbs.—	s	d	s	d
Best long-wools	3	8	to 4	0
Ditto Shorn				
Ewes & 2d quality	3	0	— 3	6
Ditto Shorn				
Lambs				
Calves	3	4	— 4	4
Pigs	3	0	— 4	4

Beasts, 2035; Sheep and Lambs, 5,200; Calves, 270; Pigs, 290.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Dec. 13.

Prime Meadow Hay	65s to 70s	Clover	60s to 80s
Inferior ditto... ...	50 60	New Clover	— —
Rowen	50 60	Straw	21 24
New Hay	— —		J. Cooper.

A very dull trade.

CUMBERLAND MARKET, Dec. 13.

Prime Meadow Hay	65s to 70s	Inferior	65s to 75s
Inferior ditto... ...	50 60	New Clover	— —
New Hay	— —	Straw	26 28
Old Clover	84 88		Joshua Maren.

MARK LANE.

Monday, Dec. 10.—The supply of English Wheat from the neighbouring counties this morning was small, and the condition generally bad; nevertheless factors succeeded in realising it on about the terms of this day se'nnight. In foreign the business done was limited, and chiefly confined to low qualities of old red and the finest.—Barley meets a fair sale at late rates. Beans and Peas of all sorts are 1s. per qr. lower.—The Oat trade is firm, but we observe no alteration in price.

Friday, Dec. 14.—We have to report large arrivals of foreign grain during the week, but of English the quantity is small. The English Wheat on sale commanded the price of Monday, as did also foreign, in retail only. Spring corn of all descriptions is unaltered in value.

Liverpool, Tuesday, Dec 11.—At this day's market there was a fair demand for Wheat; good Irish made an advance of 1d. to 2d. per bushel, the supply being scanty; other kinds and foreign brought the full prices of last Tuesday.

Fluctuations in the last six weeks' Corn Averages.

Prices.	Nov. 3.	Nov. 10.	Nov. 17.	Nov. 24.	Dec. 1.	Dec. 8.
41s 6d	———	..	..	..	..	..
40 7	...	———	...	...	...	...
40 6	...	...	———	...	...	...
40 4	...	...	...	———	...	..
40 2	...	...	...	...	———	..
39 4	...	...	...	...	..	———

PRICES CURRENT.	London.		Liverpool.		Wakefield.		Boston.		Birmingham.	
	Dec. 3. qr.	Dec. 10 qr.	Dec. 4 70 lbs.	Dec. 11. 70 lbs.	Nov. 23 qr.	Dec. 7. qr.	Dec. 5. qr.	Dec. 12 qr.	Dec. 6. 62 lbs.	Dec. 13. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	40 to 43	38 to 43	5 8 6 1	5 8 6 2	35 to 44	35—43	32 to 37	32 to 38	4 8 5 2	4 9 5 3
„ white ...	42—47	42—47	6 4 6 8	6 4 6 8	41—46	41—48	34—44	34—44	5 2 5 6	5 3 5 7
Old, red ...	..	..	6 3 6 6	6 3 6 6	39—43	39—43	—	—	4 9 5 3	4 10 5 4
„ white ...	—	—	7 0 7 4	7 0 7 4	—48	—48	—	—	5 6 5 8	5 6 5 9
Foreign	35—52	35—52	4 4 7 4	4 4 7 0	36—48	36—48	—	—	4 8 5 8	4 8 6 2
			480 lbs.	480 lbs.						
Rye—Old ...	20 22	20—22	—	—	—	—	—	—	—	—
Foreign...	20—23	20—23	—	—	—	—	—	—	—	—
Foreign meal	5*l.*—6*l.*	5*l.*—6*l.*	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley—										
Grinding ...	23—25	23—25	—	—	20—21	20—21	21—23	21—23	19—23	19—23
Malting... ...	25—27	25—26	30s—31s	30s—31s	24—29	23—28	—	—	24—29	21—29
Foreign... ...	18—25	18—25	—	—	21—25	20—24	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	35—38	35—38	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White...	18—21	18—21	3s 2d 3s 3d	3s 2d 3s 3d	—	—	13—18	13—18	17—25	17—25
Black...	16—22	16—22	2 2 2 6	2 2 2 6	—	—	—	—	16—17	16—17
Foreign ...	13—20	13—20	2 3 2 4	2 3 2 4	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	28—31	28—31	33s—	33s—	26—32	26—32	—	—	30—36	30—36
									196 lbs.	196 lbs.
Grinding...	—	—	27 —28s	28 —29s	—	—	—	—	11—12	11—12
Foreign ...	24—30	23—30	29 —30	29 —30	—	—	—	—	—	—
Beans—										
New, small ...	23—30	23—29	—	28 —32	29 - 30	27—28	22—27	22—27	11—12	11—12
Old	—	—	32 —36	32 —36	32—33	32—33	32—34	32—34	14—15	14—15
Foreign ...	23—36	23—36	25 —34	25 —30	26—28	26—30	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ...	37—45	37—45	—	—	—	—	—	—	—	—
Linseed Cakes										
British ...	9*l.* 12s	9*l.* 12s	7*l.* 15s—8*l.*	7*l.* 15s—8*l.*	—	—	—	—	—	—
Foreign ...	7*l.*	7*l.*	—	—	—	—	—	—	—	—
Indian Corn—	22—26	22—26	27s—30s	27s—30s	—	—	—	—	12—13	—
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	32—40	32—40	30—32	30—32	—	—	30—36	30—36	30—33	31—33
Weekly Averages and Imports.	Aver. Dec. 11	Impts.	Averages.	Imports.	Aver.	Impts.	Aver.	Aver.	Gloucester. Averages.	Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ..	45 0	14510	40 2	1564	39 6	12373	36 2	4374	36 7½	3014
BARLEY ...	27 6	17650	28 1	661	25 5	4134	22 5	176	26 2½	—
OATS... ...	17 11	13660	16 4	2574	18 4	259	13 5	931	17 1½	—
RYE	—	—	24 1	—	—	—	—	—	—	—
BEANS ...	28 0	—	28 6	541	28 0	549	24 8	703	28 10½	5137
PEAS... ...	30 8	—	30 2	542	34 0	550	—	—	—	—
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THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 51—1849.] SATURDAY, DECEMBER 22. [PRICE 6*d*.

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GARDENERS' BENEVOLENT INSTITUTION.—NOTICE is hereby given, that the ANNUAL GENERAL MEETING of the Subscribers to this Institution will be held on Wednesday, the 16th January next, at the London Coffee House, Ludgate-hill, for the purpose of receiving the Accounts of the charity for the past year, and electing Officers for the ensuing year; also to consider a Report from the Committee recommending certain alterations in the Rules of the Institution.

An Election of TWO PENSIONERS will also take place from among the following Candidates, whose cases have been examined and approved of by the Committee

Name	Residence.	Applic.	Age
Edward Marshall	London	8th	70
Mary Brown	Do.	6th	84
John Skeates	Brixton	6th	70
Thomas Mills	Dulwich	5th	72
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John Cocks	Brixton	3d	64
[?]ard Rudland	Sutton-at-Hone, Dartford	3d	77
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[?]m Brown	Andover	2d	71
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Thomas Fitzgerald	Fulham	1st	64
John Hopkins	Nuneaton, Warwickshire	1st	6[?]
Henry Schneider	Colerne, Wiltshire	1st	84

The chair to be taken at 11 o'clock precisely. The ballot will commence at 12, and close at 2 o'clock precisely. No person will be allowed to vote whose subscription for the current year is unpaid on the day of election. By order,

E[?] R. Cutler, Secretary,

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From the Gardeners and Farmers' Journal.—*Gooseberries*: *T. W.* Your seedling, which we noticed last year, and had occasion to speak highly of, we have again examined, and can now report confidently with respect to flavour, and therefore say it belongs to the class of first-rate desert Gooseberries. As we stated before, the colour is red, resembling the Warrington Red, but larger, and round rather than oval. We think this is likely to become one of the most useful and popular of our Gooseberries.

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THE THREE BEST CUCUMBERS EVER YET SENT OUT.

EDWARD TILEY begs to remind the public generally, that he has now ready to dispose of good sound seed of his VICTORY OF BATH, GORDON'S WHITE SPINE, and LORD KEYNON'S FAVOURITE (this last is the best for winter cultivation). These CUCUMBERS have been thoroughly proved to the satisfaction of hundreds of growers, to need any comment on their superiority. Victory of Bath, 2*s.* per packet; Gordon's White Spine, 1*s.* 6*d.* do.; Lord Keynon's Favourite, or Winter Cucumber, 2*s.* 6*d.* do., or one packet of each of the above Cucumbers, 5*s.*

E. T. begs to mention that he has the whole stock of the seed of that unequalled Melon, "Brougham Hall," Green-flesh; it has surpassed all others this season at the London exhibitions. It is as much superior in flavour to all other Melons as the Green-gage is to all other Plums. Sold in packets of 7 seeds, 2*s.* 6*d.* each.—Sold by EDWARD TILEY, Nurseryman, Seedsman, and Florist, 16, Pulteney-bridge, Bath. A remittance (either in cash or in postage stamps) must accompany the order.

THE COLD WEATHER.

SELF-REGISTERING SIXIS THERMOMETER for HEAT and COLD, of the best construction, and not liable to get out of order.

Fourteen-inch Thermometer	1*l.* and	£1 1 0
Ten-inch ditto	15*s.*	0 18 0
Day & Night Thermometers, for Heat & Cold	12*s.* 6*d.*	0 12 6
Night Thermometers, for Cold only ...	4*s.* 6*d.* to	0 6 6
Eight-inch Boxwood Thermometers, for greenhouses &c.		2 0
Mason's Hygrometers, for showing the humidity of the Air in Hothouses, Sick-chambers, &c., with Tables (this is an invaluable instrument)		0 15 0
Hydrometers, for ascertaining the quality of Sulphuric Acid	5*s.* to	0 10 0
No purchaser of this acid should be without one, as it is often sold highly diluted.		
Lactometers, by which the quality of Milk may be shown, whether for Curd or Cream, with instructions how to use it, and also the result of experiments on different Milks	5*s.* and	0 7 6

All kinds of Barometers, Thermometers, and Philosophical Instruments, made by BENAR BAKER, 90, Hatton-garden, London, will be sent on the receipt of a Post-office Order for the amount. Boxes are charged extra.

NEW AND SPLENDID SEEDLING POTATO, THE "STOKE COLLEGE SEEDLING."

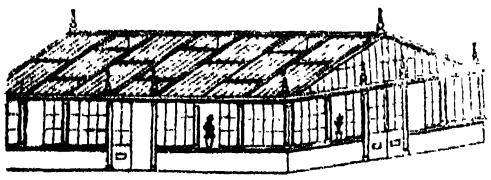
MESSRS. DILLISTONE have to offer the above POTATO, raised by Mr. H. SHERMAN, who strongly recommends this truly prolific, fine-flavoured, and valuable variety; it has never been once tainted with disease. See Dr. Lindley's opinion of it, Nov. 10, p. 712 of this Paper:—"H. S., Stoke College. Your Seedling is of excellent quality, and reminds us of what Potatoes used to be." As there is but a limited quantity, it will be sold in Pecks, upon receipt of 6*s* 6*d.* cash or stamps. Mr. S. recommends January as the planting time for this variety.

Sturmer Nurseries, Haverhill, Dec. 22

☞ Please copy the above, as it will not be repeated.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

ALSO THE CULTIVATION OF THE CHOICEST PLANTS, VINES, FERNS, &c.



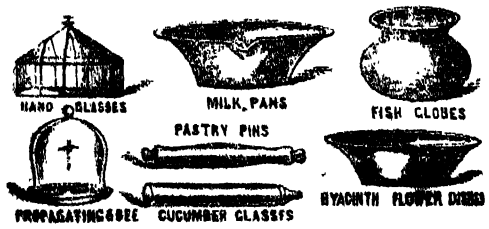
J. WEEKS AND Co., King's-road, Chelsea, HORTICULTURAL ARCHITECTS, HOTHOUSE BUILDERS, and HOT-WATER APPARATUS MANUFACTURERS, solicit an inspection of their various Works now in progress, which will attest as to quality of materials and workmanship They have now erected on their Premises, for inspection, a great variety of Hothouses, Greenhouses, Conservatories, Forcing-pits, &c., all heated by HOT WATER in various forms, showing the most improved methods of Building, Heating, and Ventilating all Horticultural Erections. By means of these houses, they are enabled to grow Stove, Greenhouse, Ferns, and other Plants, in such immense numbers, that they are sold at LESS THAN HALF-PRICE. Mats, Mushroom Spawn, and everything connected with the Nursery and Seed departments; Plans, Estimates, and Catalogues forwarded on application.

THE IMPROVED "FLUE BOILER" AND FURNACE.

W. HILL begs respectfully to inform the numerous spectators for his "FLUE BOILER" of a small and intermediate size, that he shall be prepared, early in December, to supply sizes to suit every description of Apparatus, from that of 100 feet of 3-inch pipe to 2000 feet of 4-inch pipe. A List of Sizes and Prices will shortly be published W. HILL guarantees his Boilers to be the most effective and economical of any in use.

Horticultural Works, Greenwich, Dec 22

GLASS FOR CONSERVATORIES AND HORTICULTURAL PURPOSES, &c.



T. MILLINGTON'S SHEET GLASS, which is of the best description, varying from 16 to 32 ounces, at from 2*d.* per foot and upwards; 100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s* 2*d.* to 2*s.* per foot, according to size. Patent Rough Plate Glass, from ¼ to 1 inch in thickness, from 4*d.* per foot upwards. Glass Slates and Tiles. Milk Pans from 12 to 24 inches diameter, from 2*s* to 5*s.* each. Cucumber Tubes, from 12 to 24 inches long, at 1*d.* per inch. Lactometers, 7*s* 6*d* each. Wasp Traps.—Uses may be had, on application at the Warehouse, 87, Bishopsgate-street Without, same side as the Eastern Counties Railway.

GLASS FOR CONSERVATORIES.

JAMES PHILLIPS AND Co. have the pleasure to hand their New List of Prices of GLASS for Cash.

CUT TO SIZE.		SHEET SQUARES.	
16 oz. from 2*d.* to 3½*d.* per foot.		In boxes of 100 feet.	*s. d.*
21 " 3½ " 5 "		Under ... ... 6 by 4 ...	12 6
26 " 3½ " 7½ "		6 by 4 and under 7 by 5 ...	16 6
32 " 4 " 9½ "		7 by 5 " 8 by 6 ...	18 6
		8 by 6 " 10 by 8 ...	20 6

100 feet and 200 feet cases of large Sheet Glass, for cutting up, at 2½*d.* per foot. British Plate Glass, from 1*s.* 2*d.* to 2*s.* per foot, according to size.

HARTLEY'S PATENT ROUGH PLATE, packed in boxes of 50 feet each:

6 by 4 and 6½ by 4½ ...	10*s.* 6*d.*	7 by 5 and 7½ by 5½ ...	12*s.* 6*d.*
8 by 6 " 8½ by 6½ ...	13 6	9 by 7 " 10 by 8 ...	15 0

MILK PANS, from 2*s.* to 6*s.* each; METAL HAND-FRAMES, Glass Tiles and Slates, Propagating and Bee Glasses from 2*d.* each; Grape Glasses; Cucumber Tubes, 1*d.* per inch; Peach Glasses, 10*d.* each; Wasp Traps, 3*s.* 6*d.* per dozen; Pastry Slabs, Hyacinth Glasses and Dishes, Shades for Ornaments, Fish Globes, Plate and Window Glass of every description, and Lamp Shades. Lactometers for trying the quality of Milk, 4 tubes, 7*s.* 6*d.*; 6 tubes, 10*s.* Self-Registering Thermometers for Greenhouses.

Estimates and List of Prices forwarded on application to their Warehouse, 116, Bishopsgate-street Without, London.

HARTLEY'S PATENT ROUGH PLATE GLASS FOR CONSERVATORIES, &c.

See Article in THE GARDENERS' CHRONICLE of Saturday, December 8, 1849.

"Continued experience leaves us no room to doubt that this is the best material yet produced, and that it will in time supersede glass of all other kinds for the greater part of Gardening purposes." . . . "As for the article substituted for Rough Plate . . . It is wholly unfit for any horticultural purpose." . . . "The best sample of it which we have yet seen was Manufactured by Messrs. HARTLEYS, and Sold by Messrs. JAMES PHILLIPS and Co., 116, Bishopsgate-street."

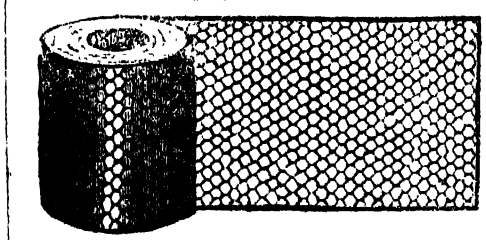
GLASS FOR CONSERVATORIES, &c.

HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2*d.* to 8*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square, London.

See the *Gardeners' Chronicle* first Saturday in each month.

GALVANISED WIRE GAME NETTING.—

7*d.* per yard, 2 feet wide.



		Galvanised.	Japanned Iron.
2-inch mesh, light, 24-inch wide ...		7*d.* per yd.	5*d.* per yd.
2-inch " strong " ...		9 "	6½ "
2-inch " extra strong " ...		12 "	9 "
1⅝-inch " light " ...		8 "	6 "
1⅝-inch " strong " ...		10 "	8 "
1⅝ inch " extra strong " ...		14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 3*d* per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

GRAY, ORMSON, AND BROWN, Danvers-street, Chelsea, solicit the attention of the Nobility, Gentry, and Gardeners, to their superior manner of Erecting and Heating every description of Building connected with Horticulture. The work done by them at the Right Hon. the Earl of Kilmorey's, to which they have had the honour of referring so long, still continues to give perfect satisfaction. Mr. Kinghorn will be happy to show the work and give any information.

They also beg to refer to the houses built by them during the past season, for the Worshipful Apothecaries' Company of London, in their Botanic Garden at Chelsea. Mr. Moore, the Curator, will kindly show the work, and answer any enquiries. They beg also to say the building only is referred to, as the Heating Apparatus was not erected by them.

GRAY, ORMSON, and BROWN, have also the honour of referring to many of the nobility and gentry in the country, and to several of the London Nurseries.

N.B. Plans and Estimates furnished free.

CORN MANURE.

BLASHFIELD'S PATENT COPROS. — A new Manure, for Corn and other crops, prepared from the nitrogenous matter deposited on the banks of the Thames, in combination with Superphosphate of Lime, &c. Sold, in a field-ground state, at No. 3, New London-street, Mark-lane, London: also at the Works, Millwall, Poplar; Waterloo Dock, Lambeth; and No. 1, Pratt-street, Paddington Basin. Patent Copros for Corn Crops, also for Turnips, &c.; Superphosphate of Lime; Sulphate of Ammonia; Sulphate of Lime, Gypsum, calcined and saturated with liquid manure; Cement for liquid manure tanks, malt-house floors, and barn floors; Drain-tiles, pipes, &c.

HEATING BY HOT WATER.

J. WEEKS AND Co., King's-road, Chelsea, Patentees and Manufacturers of HOT-WATER APPARATUS, warrant their Boilers to be the most efficient and economical of any yet invented, at prices from 3*l.* to 15*l.*; the fire warranted to last 15 hours without attention. To be seen in extensive operation at their Show Establishment, King's-road, Chelsea; and also at most of the Nobility and Gentlemen's Seats in the country, the London Nurseries, &c.

STATUES, VASES, FOUNTAINS, GARDEN ORNAMENTS, COATS OF ARMS, and ARCHITECTURAL EMBELLISHMENTS in Imperishable Stone, by VAUGHAN and Co., 60, Stones End, Borough, London. T. J. CROGGON, late of Coade's, Superintendent. Specimens may be seen at CROGGON and Co.'s, 2, Dowgate-hill, City. A pamphlet of Drawings forwarded on application.

EMIGRATION TO THE AUSTRALIAN COLONIES.—By a regular line.—For ADELAIDE, PORT PHILLIP, and SIDNEY, the fine British frigate-built ship COUNTESS OF YARBOROUGH, A 1, coppered and Copper-fastened, 700 tons, JOHN BENNETT, Jun., Commander, lying in the St. Katherine Docks; will sail the last week in December, with leave to call at Plymouth. This superior ship has just returned from the Colonies. She made the last passage out in 95 days, is fitted up expressly for the comfort of passengers, with enclosed cabins, and separate ones for married couples; has ample height in the 'tween decks, which are admirably ventilated and lighted, and the dietary scale will be most liberal; there will also be a library on board. The passage money is 20 guineas, which will include bedding and mess utensils. She has a very handsome poop and saloon, with elegant accommodation for cabin passengers; carries an experienced surgeon. This vessel will be the first fitted with Wells's Patent Apparatus, which acts as a perfect ventilator, fire-engine, and fog signal.—For Freight or Passage, apply to JOHN WHITTAKER'S, 78, Mark-lane; or W. R. BRAYTON, 39, Great Tower-street.

NEWSPAPERS FOR THE NEW YEAR.—THE EVENING MAIL will be found to be an exceedingly good and cheap Newspaper for country circulation, it being an evening edition of the Times, and contains all the important news of that journal. Published three times a week, price 5*d.*, or 1*s.* per quarter, cash. The TIMES, HERALD, CHRONICLE, and POST, forwarded by the evening mails on the day of publication, at 25*s.* per quarter; also on the day after publication 15*s.* 6*d.* Clean papers and punctuality may be relied on. A new and corrected list for 1850, of all the London Newspapers and Magazines, with price, politics, &c., may be had gratis of JOHN NASH and Co., Newspaper Agents, 3, Saville-place, Regent-street; and 4, Upper Weymouth-street, Portland place.

Established 1800

GREY GOOSE FEATHERS, 1*s.* per lb. — Bed Feathers were never so cheap as at present.

HEAL AND SONS' Present Prices are:—

Poultry	0*s* 8*d*	Best Grey Goose ...	1*s* 10*d*
Grey Goose	1 0	White ditto	2 2
Foreign ditto	1 6	Best Dantzic ditto ...	3 0

Purified by Steam, and warranted sweet and free from dust.

HEAL and SONS' List of Bedding, containing full particulars of weights, sizes, and prices, sent free by post, on application to their Factory, 196, Tottenham-court-road, London.

DIETETIC COCOA.

HOMŒOPATHIC PATIENTS, DYSPEPTICS, and Persons of Delicate Constitutions, are strongly recommended to use TAYLOR BROTHERS' DIETETIC COCOA, as being very superior to any preparation of the Cocoa Nut hitherto introduced. This article is manufactured on a peculiar principle, by which the oily portions of the nut are neutralised, at the same time its flavour, purity, and nutritious properties are maintained. It is an essential article of diet for those under Homœopathic Treatment, agrees with the most delicate digestive organs, is agreeable and soothing to the nervous system, and proves at the same time both invigorating and refreshing.

Sold wholesale by TAYLOR Brothers, at their Mills, Spitalfields, London, and retail, in 1 lb., ½ lb., and ¼ lb. tin-foil packets, at 1*s.* 4*d.* per lb., by most respectable Grocers and Tea-dealers in the kingdom; of whom also may be had TAYLOR Brothers' original SOLUBLE COCOA (only one-third the price of Coffee), the consumption of which article exceeds ONE MILLION POUNDS per annum—a fact which has induced many parties to manufacture spurious imitations, which, although somewhat resembling the appearance, are totally devoid of the essential and peculiar properties of the original and only genuine article. To guard against these counterfeits, TAYLOR Brothers recommend the purchase of their article in packets only which bear their name, with directions for use. Sold by all Grocers and Tea-dealers.

METCALFE AND Co.'s NEW PATTERN TOOTH-BRUSH and SMYRNA SPONGES.—The Tooth-Brush has the important advantage of searching thoroughly into the divisions of the teeth, and cleaning them in the most extraordinary manner, and is famous for the hairs not coming loose.—1*s.* An Improved Clothes-Brush, that cleans in a third part of the usual time, and incapable of injuring the finest nap. Penetrating Hair-Brushes, with the durable unbleached Russian bristles, which do not soften like common hair. Flesh-Brushes of improved, graduated, and powerful friction. Velvet-Brushes, which act in the most surprising and successful manner. The genuine Smyrna Sponge, with its preserved valuable properties of absorption, vitality, and durability, by means of direct importations, dispensing with all intermediate parties' profits and destructive bleaching, and securing the luxury of a genuine Smyrna Sponge. Only at METCALFE, BINGLEY, and Co.'s Sole Establishment, 130 B, Oxford-street, one door from Hollies-street.

CAUTION.—Beware of the words "From METCALFE'S," adopted by some houses.

CHRISTMAS PRESENTS. — The season having arrived, wherein by exchange of presents we confirm the stability of friendship, all classes of the community who would successfully cultivate regard by acceptable offerings, will avail themselves of ROWLANDS' Toilette Articles. In creating and sustaining luxuriant silken tresses, Rowlands' MACASSAR OIL is highly appreciated by Rank and Fashion, and patronised by all the Sovereigns of Europe; Rowlands' KALYDOR is a preparation of unparalleled efficacy in purifying the skin, protecting it from the baneful effects of inclement weather, and suffusing the complexion with transcendent brilliancy; and Rowlands' Odonto, or Pearl Dentifrice, is invaluable for its preservative and beautifying effects on the Teeth and Gums. No presents can be more worthy of recommendation, or in more general use.

BEWARE OF SPURIOUS IMITATIONS.

The only GENUINE of each bears the name of "ROWLANDS'" preceding that of the Article on the Wrapper or Label, with their Signature at the foot, in Red Ink, thus,

A. ROWLAND & SONS.

Sold by them at 20, Hatton-garden, London, and by respectable Chemists and Perfumers.

AMERICAN PLANTS.

HOSEA WATERER begs to announce he has just published a New and Complete Catalogue of his AMERICAN and CONIFEROUS PLANTS, which may be had on application, inclosing two stamps for postage to
ROSEA WATERER, Knap Hill Nursery, Woking, Surrey.

BENJAMIN R. CANT, St. John's-street Nursery, Colchester, has now ready for delivery, strong well-established plants of the following:
GERANIUM, HOYLE'S CRUSADER ... ... 7s. 6d. each.
" TOPPING'S BRILLIANT ... ... 7s. 6d. "
FUCHSIA SPECTABILIS ... ... 7s. 6d. "
The Three for 18s., carriage and package free to London. Post-office orders, or reference, requested from unknown correspondents. The usual discount to the trade.

QUICK FOR SALE.

SAMUEL COCKING, SEEDSMAN, &c., Biggleswade, has to dispose of a large quantity of WHITETHORN QUICK, of two years' growth, at 2s. 6d. per 1000, very strong. Ditto, three years' growth, at 4s. per 1000, delivered free within 20 miles.

QUICK THORN, four years transplanted, extraordinarily fine, both in root and top, 2 to 3 feet. If 20,000 are taken, 8s. per 1000; any less quantity, 10s. per 1000. Carriage free to any railway station in London, for cash only.
ROBERT JOSLING, Seed Warehouse, St. Alban's, Herts.

ESTABLISHED 1786.

EARLY PEAS.—WILLIAM E. RENDLE & Co. have a fine stock of the following excellent kinds.
Dancroft Early Rival, 2½ feet.
Early Prince Albert, 2 to 3 ft.
Fairbeard's Champion of England, 4 feet.
Early Warwick, 3 feet.
Warner's Early Emperor, 3 ft
Fairbeard's Surprise, 4 feet.
Early Kent, 3 feet.
Early Frame, 3 feet.
&c., &c.
These will be sold at their usual low prices. For Catalogues and prices, apply to WILLIAM E. RENDLE and Co., Union-road, Plymouth.

We are now laying in a most excellent assortment of New and Choice Seeds for the ensuing season.

TO PARENTS AND GUARDIANS.

A LADY, residing near Eccleston-square, Pimlico, begs to offer a Comfortable Home to one or two Young Ladies, who may require the care and attention of a mother. Good references given and required.—Address, H. D. D., care of W. Parkins, Stationer, 25, Oxford-street, London.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 22, 1849.

In our last Number we pointed out the principles which, according to M. CHEVREUL, govern the contrast of colours; we now proceed to a subject quite as important, namely, the harmony of colours; we shall point out the results which have been obtained by placing different colours in juxta-position, and shall notice what combinations are most generally agreeable, and what disagreeable, to the eye. It must, however, be observed that, with respect to the present subject, allowance must be made for differences in taste, and that of two combinations nearly alike, one may please one person most, and the other another. The following propositions, however, are allowed to be almost universally correct by persons of cultivated taste, and who have made the harmony of colours their special study.

1. The complementary arrangement is superior to any other for harmony of contrast. To produce the best effect, the colours should be as nearly as possible of the same tone. White comes in best in the complementary arrangement of blue and orange, and worst in a combination of yellow and violet.

2. The simple colours, red, yellow, and blue, combined in pairs, go together better than one simple colour and one binary colour containing that simple one. For example:

Red and yellow harmonise better than red and orange.
Red and blue " " red and violet.
Yellow and red " " yellow and orange.
Yellow and blue " " yellow and green.
Blue and red " " blue and violet.
Blue and yellow " " blue and green

3. In an arrangement of one simple colour with a binary colour containing the simple one, the brighter the latter is when compared with the former, the better the contrast. Or, in other words, in arrangements of this sort, the tone or intensity of the simple colour ought to be lower than that of the binary colour. For example:

Red and violet contrast better than blue and violet.
Yellow and orange " " red and orange.
Yellow and green " " blue and green.

4. When two colours harmonise badly, they had better be separated by something white.

5. Black never produces a bad effect when combined with two bright colours. In such cases, indeed, it is often better than white, especially when separating the one colour from the other. For example: Black produces a harmony of contrast with the following binary arrangements, viz., red and orange, red and yellow, orange and yellow, orange and green, yellow and green.

6. Black associated with dark colours, such as blue and violet, or with bright colours of a deep tone, produces harmonies which often have a good effect. For example: An arrangement of black, blue, and violet, is better than one of white, blue, violet, white, &c.; the latter being too violent.

7. Black with two colours, one bright and the other dark, is not so good as when the two colours are both bright; and in the first case the brighter one of the colours the worse the effect produced. Thus in the following arrangements black is inferior to white.

Red and blue.	Yellow and blue.
Red and violet.	Green and blue.
Orange and blue.	Green and violet.
Orange and violet.	

Lastly, with yellow and violet, if not inferior to white, black at all events produces but a middling effect.

8. Grey with two luminous colours, though it perhaps does not produce a decidedly bad effect, makes the arrangement look flat, and is inferior to black or white. With red and orange perhaps grey may be better than white; but it is inferior to it as well as to black when placed with red and green, red and yellow, orange and yellow, orange and green, or yellow and green; it is also inferior to white with yellow and blue.

9. Grey associated with dark colours, such as blue and violet, and with bright colours of a deep tone, does not produce so good an effect as black in the same cases; if the colours do not look well when together, it is better to separate them.

10. Grey and two colours, one bright and the other dark, is better than white if the latter produces a contrast of too deep a tone, and better than black if the latter increases the proportion of dark colours too much. For example: Grey is better than black, with

Green and violet.
Green and blue.
Orange and violet.

11. When two colours harmonise badly, they had better be separated by white, black, or grey; but in so doing attention must be paid to the tone of the colours, and to the proportion of light and dark colours. For example: As to the tone of the colours; the effect of white with red and orange is lessened in proportion as their tones are deepened.

Black, on the contrary, does very well with the same colours at their normal tone; that is, when without containing any black they are as intense as possible.

Lastly, grey is not so good as black with red and orange; nor does it produce so violent a contrast as white.

Then, again, with regard to the proportion of light and dark colours; whenever the colours differ too much, either in their tone, or by the brilliancy of the black or white associated with them, the arrangement in which each of the two colours is separated by black or by white is preferable to that in which the black or the white separates each couple of colours.

Thus the arrangement white, blue, white, violet, &c., is better than the arrangement, white, blue, violet, white, &c.: so black, red, black, orange, black, &c., is better than black, red, orange, black, &c.

We give in another column what M. CHEVREUL considers the best combinations of colours with white, black, and grey. In a future Number we shall produce this author's practical observations on the method of distributing flowers in gardens, so as to produce the most pleasing appearance by the contrast of their colours.

THE Southern Mahratta country, to which we directed attention in our last article on Cotton, became a portion of the Bombay Presidency in 1818. The experimental culture of American Cotton was introduced there by Dr. Lush in the year 1829, and continued until 1836, when the principal collector reported that "no natives, not even those in the vicinity of the farms, had embarked in the cultivation of any of the foreign Cottons." The various experiments, moreover, which, for a period of 30 years, had been made within the limits of the Bombay Presidency were likewise pronounced to have uniformly failed. But as the details of the experiments were not published, and we have not been favoured with anything like reasoning on the causes of failure, we are unable to say whether these were of a political, commercial, or physical nature. In some cases we have no doubt that failure resulted in a want of adaptation of the methods of culture to the soils and climates in which the experiments were made; for we can adduce very satisfactory proofs that the American species of Gossypium do not refuse to grow within the limits of the Bombay Presidency, even when left to themselves. Thus the species which yields the Pernambuco and other South American Cottons, has become so completely naturalised in many villages as to have a native name (*deo kupas*) assigned to it. So Mr. ELPHINSTONE, lately collector at Rutnagherry, cultivated a Cotton plant which he called *Concanee*, from supposing it to be a native of the Concan. Of this the Cotton was pronounced by the Bombay Chamber of Commerce, "to be superior to the New Orleans." It was afterwards ascertained that the seeds were those of the "Bourbon variety perfectly naturalised;" that is, a variety of the common American species, which had been introduced during former experiments into the maritime district of the Concan. Dr. BURNS again, in the year 1839, sent some Cotton from Kaira to Bombay, which the same Chamber of Commerce pronounced equal to the best New Orleans Cotton. The seed from which this was grown was collected in the hedge of an old garden, whence Mr. Assistant-Surgeon GILDER had long before made a very successful experiment in growing American Cotton. Mr. G., in 1816-17, considered the obstacles to be exclusively physical which had prevented the cultivation of Bourbon Cotton, and stated that the soil and climate of the district lying between the Subermuttee and the Myhee promised a more favourable result. He not only recommended but grew Cotton, which was pronounced "fully equal to any produced in the Isle of Bourbon," and, in England, that it was "the best specimen imported from Bombay raised from Bourbon seed." As it was 20 years afterwards that Dr. BURNS collected the seeds which produced such superior Cotton, we have not only a strong proof of Mr. GILDER'S sagacity in selecting a site, but also of the permanence in character of the introduced Cotton. With regard to the failures of the farms in Goozerat, we need not be surprised when we consider, with Mr. PELLY (*vide* Cotton Papers, p. 57), that "the three successive superintendents placed over the farms were highly estimable and intelligent men, but two of them were country captains, and one a gentleman just retired from a counting-house, neither of whom pretended to possess competent knowledge of practical agriculture in general or of Cotton cultivation in particular." We have no doubt that a gardener of the present day, who had studied the principles, and was acquainted with the practice of his art, would in a very short time make a much better experimentalist than any of those who have been employed. Surat and Broach have long been famous for the good quality of their indigenous Cotton, and which, when sent in a clean state, is well fitted for many of our manufactures. But the culture of the American Cotton has not succeeded, even in the recent experiments under Dr. BURNS, apparently in consequence of the hot dry weather which succeeds the rainy season, as on the Bengal side.

With regard to the Southern Mahratta country, failure is stated to have attended all the first experiments. Yet we have heard that Mr. MERCER picked out from among the samples of experimental Cotton preserved in the India House, some grown near Dharwar, as being nearly equal to the best New Orleans Cotton; and Dharwar has in the recent experiments been the district where the greatest success has been attained; for though the plants were small, and the quantity of Cotton per acre not large, yet the natives were induced to take up the cultivation of New Orleans Cotton on their own account; the expenses of culture, following in a great measure their own method, were not greater than for the indigenous Cotton; while the quantity of seed-Cotton obtained per acre was larger, at the same time that the proportion of Cotton to seed was higher in the proportion of 31 to 24 per cent. The price was 65 rupees per candy, at a time when their own sold for 40 rupees. In the Bombay market it sold for 113 rupees per candy of 500 lbs., and in Manchester for 5*d.* and 6½*d.* a pound, not having cost much above half the latter sum.

The advantages seemed to be appreciated by the natives, for the quantity cultivated was reported as yearly increasing, as from 10 acres to 25,000, and, in 1847, 50,000 acres were prepared for sowing, but the season was very dry. Nothing then seemed likely to impede its extensive diffusion over the district. But we have heard that last year the cultivation did fall off to a considerable extent, though it is again reviving under Mr. BROWN'S superintendence. Though our limits will not allow us to allude to all the causes of this fluctuation, it is necessary that we should investigate those of a physical nature.

The position of Dharwar does not at first appear very favourable, for it is situated on the table land of India, elevated there probably about 2000 feet; but we have been unable to ascertain its exact height, nor have we been able to learn that any register of the weather has been kept there either by the experimentalists or by any other person. Though the soil does not seem better than that of many other parts of the peninsula or of central India, there are certain advantages of climate, which would seem to be the causes which facilitated the cultivation of American Cotton, in addition to the energy of the collector, Mr. SHAW, and the judicious management of the planter, Mr. MERCER. Dharwar being situated about 40 miles from the western Ghauts and 70 from the sea, enjoys some of the advantages of a maritime climate, especially in a

greater degree of, and a more uniform state of, atmospheric moisture. The Ghauts, it is well-known, rise abruptly on their western face from the comparatively narrow strip of land which intervenes between them and the sea. The monsoon expends itself in a great measure on this mountain range, so that the fall of rain (which in the interior is not 30 inches, at many places) along the coast varies from 120 to 150 inches, and on the Mahabhuleshwar hills has extended to 250 and even to 350 inches in the year. But places above and in the vicinity of the Ghauts experience some of the effects of the monsoon. Dr. T. CHRISTIE has related that in two different years much rain fell at Dharwar in July and August, while none fell 15 miles to the eastward. Mr. MERCER has described the climate as being mild and pleasant, especially when the effects of the sea breeze are experienced in the afternoon, and to this mildness he ascribed the success of the culture of American Cotton in the district. Dr. WIGHT has criticised this expression, and concludes that "by this term he means a cool climate." This however does not appear to have been the case, for the temperature neither of Dharwar nor of the nearest stations, such as Belgaum and Bellary, can be considered cool; but Mr. MERCER having in Bundlecund and the Doab experienced the effects of a dry burning heat, and some of the other planters those of excessive moisture, applied the word *mild*, where *moderately humid* would have been more appropriate. But we require observations both of the thermometer and hygrometer in Dharwar and other situations where the culture of American Cotton has succeeded, before we can be sure that we draw correct conclusions. It is probable, however, that the culture might be successfully carried on along the line of country within the influence of this monsoon, as for instance in Belgaum and the Sattara country. Mr ELPHINSTONE produced excellent Cotton in the maritime district of Rutnagherry as Mr. HALE had formerly done at Malwan, and Mr. GILDERS at Kaira. It is probable that it may be produced in the moister parts of Candeish as well as of Guzerat, and at the head of the Gulf of Cambay, as well as in parts of Cattywar.

EFFECT OF COMBINATIONS OF COLOURS, AS DETERMINED BY M. CHEVREUL.

I. Colours and White.

A. *Binary Combinations.*—All the simple colours are improved by being contrasted with white; binary colours, however, in similar circumstances, are not equally agreeable, and it is found that the effect produced depends very much on the tone of the colour contrasted.

The following binary arrangements are placed in the order of their beauty, the best being the first:

1. Clear blue and white.
2. Rose and white.
3. Deep yellow and white.
4. Bright green and white.
5. Violet and white.
6. Orange and white.

B. *Ternary Combinations of Colours complementary to each other with white.*—As it is impossible to arrange binary combinations of simple complementary colours, we shall merely state the effect of white interposed, either between the binary complementary arrangement, or between each of the complementary colours.

Red and Green.

1. Red and green alone is perhaps better than
2. White, red, green, white; and this is better than
3. White, red, white, green.

Blue and Orange.

1. Blue and orange.
2. White, orange, blue, white is agreeable, and so is
3. White, orange, white, blue.

Yellow and Violet.

1. Yellow and violet are better together than
2. White, yellow, violet, white; and these than
3. White, yellow, white, violet.

C. *Ternary Combinations of non complementary Colours with White.*

Red and Orange.

1. Red and orange look very ill together.
2. White, red, orange, white is hardly better.
3. White, red, white, orange is better, but not agreeable.

Red and Yellow.

1. Red and yellow are not amiss, especially if the red inclines to purple rather than to scarlet, and the yellow to green rather than to orange.
2. White, red, yellow, white, is better than the above.
3. White, red, white, yellow, is still better.

Red and Blue.

1. Red and blue do pretty well together, especially if the red inclines rather to scarlet than to amaranth. Deep tones are preferable to light ones.
2. White, red, blue, white, is better than the above, and
3. White, red, white, blue, is better than either.

Red and Violet

1. Red and violet do not do well together.
2. White, red, violet, white, is not so bad as the first.
3. White, red, white, violet, is better than either.

Orange and Yellow.

1. Orange and yellow do infinitely better than orange and red.
2. White, orange, yellow, white, is agreeable.
3. White, orange, white, yellow, is not so good as the last, nor, perhaps, as the first; there is too much white.

Orange and Green.

1. Orange and green are not amiss.
2. White, orange, green, white, is better, and
3. White, orange, white, green, is perhaps better still.

Orange and Violet.

1. Orange and violet do pretty well, but are not so good as orange and green.
2. White, orange, violet, white, is better than No. 1.
3. White, orange, white, violet, is better than No. 2.

Yellow and Green.

1. Yellow and green are rather pleasing, but
2. White, yellow, green, white, is more so.
3. White, yellow, white, green, is not so good as No. 2, nor, perhaps, as No. 1.

Yellow and Blue.

1. Yellow and blue are better together than yellow and green, but are less lively.
2. White, yellow, blue, white, is perhaps better than the first.
3. White, yellow, white, blue, is perhaps inferior to the last.

Green and Blue.

1. Green and blue, especially if they are both dark, are middling.
2. White, green, blue, white, is an improvement on the preceding, and
3. White, green, white, blue, is better still.

Green and Violet.

1. Green and violet, especially if they are both light, do better together than green and blue.
2. White, green, violet, white, is not much better than the preceding.
3. White, green, white, violet, is scarcely better than the last.

Blue and Violet.

1. Blue and violet do not do at all.
2. White, blue, violet, white, is little better.
3. White, blue, white, violet, is not so bad as the last.

II. Colours and Black.

A. *Binary Combinations.*—All the simple colours look well with black.

Blue and black, or violet and black, may be placed together with advantage, if dark colours are wanted; the first arrangement is better than the second.

The following is the order of beauty of a combination of black with light colours:

1. Red or rose and black.
2. Orange and black.
3. Yellow and black.
4. Bright green and black.

With respect to No. 3, the yellow should be brilliant and intense.

B. *Ternary Combinations of Colours, complementary to each other, with Black.*

Red and Green.

1. Red and green.
2. Black, red, green, black; this arrangement is so totally different from the first, that it is difficult to decide on their relative beauty.
3. Black, red, black, green, is inferior to No. 2; there is too much black.

Blue and Orange.

1. Blue and orange.
2. Black, blue, orange, black, not so good as the first.
3. Black, blue, black, orange, is not equal to No. 1.

White is better than black with blue and orange.

Yellow and Violet.

1. Yellow and violet.
2. Black, yellow, violet, black, not so good as the first.
3. Black, yellow, black, violet, not so good as the last.

C. *Ternary Combinations of non-complementary Colours with Black.*

Red and Orange.

1. Red and orange.
2. Black, red, orange, black, better than the above.
3. Black, red, black, orange, better than either of the former.

Black is better than white in these combinations.

Red and Yellow.

1. Red and yellow.
2. Black, red, yellow, black,
3. Black, red, black, yellow, } Both better than No. 1.

Black is, in many people's opinion, better than white in the above arrangements.

Red and Blue.

1. Red and blue.
2. Black, red, blue, black.
3. Black, red, black, blue, is inferior to No. 2.

White is better than black in combinations of red and blue.

Red and Violet.

1. Red and violet.
2. Black, red, violet, black.
3. Black, red, black, violet.

Both of the last are preferable to the first, but it is difficult to say which the better of the two last.

White produces a better effect than black with red and violet.

Orange and Yellow.

1. Orange and yellow.
2. Black, orange, yellow, black.
3. Black, orange, black, yellow.

The first is inferior to the last; in No. 2, white would be perhaps better than black, but not in No. 3.

Orange and Bright Green.

The same observations made on the arrangement of orange and yellow are applicable here.

Orange and Violet.

White is decidedly preferable to black with orange and violet.

Yellow and Green.

1. Yellow and bright green.
2. Black, yellow, green, black.
3. Black, yellow, black, green.

The two last are better than the first; white may be better than black in No. 2, but not in No. 3.

Yellow and Blue.

1. Yellow and blue.
2. Black, yellow, blue, black, not so good as the first.
3. Black, yellow, black, blue, not equal to No. 2.

White may be preferable to black in this arrangement.

Green and Blue.

1. Green and blue.
2. Black, green, blue, black.
3. Black, green, black, blue.

The first is not over good, and it is not quite clear that 2 and 3 are better. White produces a better effect than black, with green and blue.

Green and Violet.

1. Green and violet.
2. Black, green, violet, black.
3. Black, green, black, violet.

Black may be better with green and violet than with green and blue; at the same time the ternary are inferior to the binary arrangements, and white succeeds better than black in both, with green and violet, and with green and blue.

Blue and Violet.

1. Blue and violet.
2. Black, blue, violet, black.
3. Black, blue, black, violet.

None of these are very good; 2 and 3 may be useful in case different tones and no brilliancy are required; black produces a better effect than white with blue and violet.

III.—Colours and Grey.

All the simple colours gain both in purity and brilliancy by being contrasted with grey.

A. *Binary Combinations.*

1. Grey and blue or grey and violet are both agreeable, but not so good as black and blue or black and violet.

2. Grey and orange, grey and yellow, grey and light green, are also agreeable to the eye; they may be, by some, thought inferior to black with the same colours.

3. Grey and rose are rather flat, and not so good as black and rose.

In all binary combinations, orange alone perhaps excepted, grey is inferior to white.

B. *Ternary Combinations of Colours, complementary to each other, with Grey.*

Red and Green.

1. Red and green.
2. Grey, red, green, grey.
3. Grey, red, grey, green.

These three are pretty nearly equally agreeable, the last perhaps is not so good as black, red, black, green.

Blue and Orange.

1. Blue and orange.
2. Grey, blue, orange, grey,
3. Grey, blue, grey, orange, } Both inferior to No. 1.

Yellow and Violet.

1. Yellow and violet.
2. Grey, yellow, violet, grey.
3. Grey, yellow, grey, violet.

The first is perhaps the best of these three; in Nos. 2 and 3, grey is preferable to black.

C. *Ternary Combinations of non-complementary colours with Grey.*

Red and Orange.

1. Red and orange.
2. Grey, red, orange, grey; better than the first.
3. Grey, red, grey, orange; better than either of the other two.

With red and orange, grey produces a better effect than white, but is not so good as black.

Red and Yellow.

Grey does pretty well with red and yellow, but is inferior to black with the same colours.

Red and Blue.

1. Red and blue.
2. Grey, red, blue, grey.
3. Grey, red, grey, blue.

No. 2 is better than No. 3, and possibly than No. 1. White is better than grey in this arrangement.

Red and Violet.

1. Red and violet.
2. Grey, red, violet, grey; better than the first.
3. Grey, red, grey, violet; better than either 2 or 3.

It is hard to say whether grey is better than black with these colours—it is certainly inferior to white.

Orange and Yellow.

1. Orange and yellow.
2. Grey, orange, yellow, grey.
3. Grey, orange, grey, yellow; better than the last—the contrast is not so strong as where black replaces the grey. Grey is in this case better than white.

Orange and Green.

Grey does very well with orange and green, but does not produce so pleasing a contrast as black or white.

Orange and Violet.

1. Orange and violet; better than either 2 or 3.
2. Grey, orange, violet, grey; better than 3.
3. Grey, orange, grey, violet; not so good as either of the others.

YELLOW AND GREEN.

1. Yellow and green.
2. Grey, yellow, green, grey.
3. Grey, yellow, grey, green.

Grey with yellow and green is agreeable, but rather flat, and is not so pleasing as black with the same colours.

YELLOW AND BLUE.

1. Yellow and blue.
2. Grey, yellow, blue, grey, } Inferior to No. 1.
3. Grey, yellow, grey, blue, }

Grey with these colours is rather flat, and is inferior to white, and perhaps to black.

GREEN AND BLUE.

Grey is better than black, but not so good as white with these colours.

GREEN AND VIOLET.

It is not advisable to use grey with green and violet; white is better, and so perhaps is black.

BLUE AND VIOLET.

The remarks made with the combination of black with blue and violet are applicable in the present cases, allowances being of course made for the difference of tone in black and grey.

ROSE GARDENS.

THE PLAN AND DESIGN OF THE BEDS AND BORDERS, THE CHOICE OF VARIETIES, AND BEST MODE OF PLANTING.

We come now to the choice of plants, or rather the choice of varieties. In a general way, the Rose nurserymen only want to know your object, and they will supply you properly; but there is one error into which many puerile Rose cultivators fall, and that error baffles the dealer. People are very apt to fancy that if they are to grow 100 Roses, they ought to have 100 different varieties, and this holds good up to 1000, if the catalogue in their hands happen to contain so many names. This leads to one inevitable consequence—they must have many bad ones. We recommend earnestly those who wish to grow Roses on a moderate scale to order continuous bloomers; never mind what they are called, whether hybrid this, that, or the other; have those which begin to flower in June, and do not leave off till the frost cuts them off. Those who only grow a hundred or two cannot spare room for Roses that bloom but three weeks, or for others that leave off for a month or six weeks at a time. The summer Roses, so called, are the first, and the perpetuals, so called, are the second. The garden dependent on either of these looks desolate or ugly a great part of the year. The Rose grower will know what is wanted, and there is no danger of a respectable man deceiving anybody who gives such an order. Be not anxious for a great variety, get as many as you can to answer your description, but use 20 of a sort rather than put up with bad ones. It is of the greatest importance that you make this stipulation, not only for the dwarfs and standards, but also for climbers, because there are many of the best pillar Roses in all other respects that are not continuous bloomers, and pillars of Rose trees out of bloom look very miserable. It is true that some of the most noble Roses in cultivation are short-lived, or rather their bloom is short-lived, but the gratification of a week or two's flower, however beautiful, is not equal to the continued beauty of the less striking, but nevertheless very handsome varieties. In a fine Rosery, with many compartments, there may be an exception, because there might be a compartment for the varieties of Briar and another for summer Roses, which includes Moss Roses, because when these cease to gratify there may be plenty of other compartments in full beauty. Those who grow upon a large scale may do anything, but the person whose means are limited must make the best of the advantages he has, and as such, adopt those varieties which give him the longest period of bloom. It will, however, be necessary to order the Rose dealer to send as many different colours as he can, and to mark them with their colours, because, on planting, an eye must be kept to the necessary contrast to produce the best effect; there will be no difficulty in procuring red, pink, lilac, light rose, white, straw colour, and yellow of various shades; and in planting you must endeavour so to group those that they shall form a varied mass of colour, not to have two reds together nor two whites, nor two of any shade; and if among climbers you are rather embarrassed for particular colours, have duplicates. There would be no evil in having every other or alternate Rose in a row white, and the other alternate ones any other colour; indeed Roses would look extremely well if there were none but red and white, but it is absolutely necessary for good effect to have alternate dark and light, whatever be the colour; and supposing we are planting three rows, and the letters D and L express dark and light, the arrangement should be thus:

D L D L D L D L
D L D L D L D
L D L D L D L D

But with the great variety that may be introduced the arrangement can be made perfect, for the lights and darks may be varied so as to form rich contrasts in themselves, so far as crimsons and purples and yellows and whites are contrasts to each other.

A few words on planting will be in place here, for on good planting depends much of the success that attends the progress of a Rosery. When the plants arrive, let all of them be examined, and the roots pruned, not that you can afford to lose any of them, but with all the care that can be given they will receive some injuries in taking up and travelling. Let every bruise and damage be removed with a sharp knife. Rather lose half your root than allow a damaged piece to remain, for the part damaged will turn mouldy, or commence a sort of dry rot in the ground; and although this will not kill a Rose, it materially affects its general health. Having prepared all the roots, you may shorten all the branches; or if they be maiden trees one year budded, and with a single shoot, shorten it to half its length. Then dig in one good spit of rotten dung into the ordinary soil of the garden—for notwithstanding much pains have been taken, and are directed to be taken in preparing the soil, the Rose is not a dainty plant—and completely mix it with a patch that shall be 18 inches across: then take out as much soil as will make room for the root in width, and place it high enough to allow of the treading it down to its place, which is with the collar of the root even with the soil. See that the root is spread out as well as it can be spread: fill in the soil, treading it very firmly all round about the extremity of the roots; but not close round the stem, and when in its place, and the soil regulated a little, drive down strong upright stakes behind the stem, tall enough to reach to the under side of the head, and fasten so that the tree is held in its place. Leave the pruning till the proper season, which is the spring, just before the sap begins to fill out the buds. The objection to close pruning in autumn is, that in very hard frost sometimes it kills back the branches two or three joints; and if they were pruned back to two joints in the autumn, it would spoil the tree altogether to kill any of them back a single joint. Roses have roots with more fibres than the Briars have on which standards are worked; therefore all Roses with their own roots should be removed, if possible, without losing any; but if there be any bruised or broken ends they must come off. The planting is the same, but there are more fibres to spread out, and it is necessary to be particular in pressing the earth in among the fibres without violence. The spit of dung which is necessary for standards will do for two dwarfs, but it should be well mixed with the soil on the spot where the plant is to go in; but if any one should happen to be without dung, the Rose will grow without it, and at any future time the earth may be forked up all round, and rotten dung be placed round the stem for the rains to wash below; and the effect, even if it is not placed at all, and the ground is poor, is not an unhealthy but a less vigorous growth, and somewhat smaller flowers.

For Roses on lawns there should be a 2-feet circle unturfed, because Roses have not done so well in their earlier years, with turf close up to their stems, as others have that had the soil uncovered; and experience teaches us all that the occasional stirring of the surface of the soil, and even forking it to some depth, when it can be done without injuring roots, is beneficial to almost everything growing therein. The principal care required for the management of the Rosery is to prevent any of the stocks from growing, for, strange as it may appear, if that one makes a shoot, and it is not discovered, it soon gets such an advantage over the head that it usurps everything—the worked part grows no longer, the Briar makes rapid way, and would, if unchecked, completely kill the head; they should therefore be constantly watched, and the instant they show a bud, it should be rubbed off; the ground also should be examined, and if there be a sucker coming up from any of the roots, it should be cut off close to its base, or with all the new part of the old root attached to it, for these Briars will shoot 5 or 6 feet from the ground in an incredibly short time, and although it is not so fatal as a shoot from the stock above ground, it is very injurious. The other part of the care must be bestowed on the keeping of climbing Roses and dwarfs within proper limits, removing all decayed flower-stems, and destroying the vermin that will occasionally attack the parts. *Crito.*

ELVASTON CASTLE, THE SEAT OF THE EARL OF HARRINGTON.

(*Continued from p. 780.*)

In passing from the Alhambra garden by the terrace already described to the garden of *Mont Plaisir*, clipped Yews of gigantic dimensions bound the way until we enter a parterre of evergreens surrounded by Douglas Firs; this is divided into three sections, with raised turf embankments, in which are arranged fine specimens of Cryptomeria japonica and Picea nivea. Forming a terminus to the garden of *Mont Plaisir* is a recess in which stands a valuable specimen of Juniperus thurifera 12 feet high, in the shape of a perfect pillar, and behind it is a columnar Pinus insignis 25 feet high, symmetrical in form and proportion.

The garden of *Mont Plaisir* is immediately under the south front of the castle, from the windows of which its general expression and singular design are seen to great advantage. It is enclosed on two sides (right and left), by Yew hedges in the form of walls, the sides being quite perpendicular, and the tops cut off as square as if they were pieces of masonry. The central portion is a covered walk, the direction of which is the outline of a square pincushion having rounded corners, and gently pressed on the four sides. This walk is 8 feet wide in the clear, and 8 feet high to the centre of the arch. American Arbor-vitæ is planted on each side of it, and now completely envelopes the walk, excluding the sun's rays, and rendering it a delightful retreat in fierce sunshiny weather. Its exterior effect is striking, more especially when viewed from an elevated position in conjunction with the other garden embellishments. At a little distance it presents the appearance of an even light green velvety nap, having various openings and loopholes, which are formed and arranged with architectural exactness. To persons on the walk these loopholes or representations of windows present occasional opportunities of viewing the garden, which has a rich and singular appearance, from the extraordinary character and colouring of the numerous subjects employed in its embellishment.

It must be observed that this garden is nearly a square, of which the castle may be said to form one of the sides. The object evidently aimed at has, in some measure, been to produce effect from some of the principal rooms, and this has certainly been most successfully attained. The covered way only constitutes an outline to the centre, having other arrangements within it, the whole being surrounded at right angles with a raised terrace 30 ft. wide. On the terrace next the castle there stands in the centre a sun-dial of singular workmanship, and on each side of this two Irish Yews in the form of half-circles, 8 feet high. The back of these is towards the garden. In the concavities facing the castle are pedestals in gold, supporting richly-carved figures in gold also. These contrast advantageously with the dark green of the Yews. Eight covered seats placed in regular positions here represent the form of an old hall chair. The bases of these, as well as the covered walk, have variegated Box, 18 inches high, out of which spring the American Arbor-vitæs, which are dressed in like manner. The raised terraces right and left are thus arranged: Irish Yews and Gold Yews alternating. In front are Gold Yews and Irish Junipers, similarly planted; they are all as nearly as possible 10 feet high. The Gold Yews are trimmed into columns bearing crowns of the same.

A second terrace rises above this on the north side, on the centre of which stands an enormous columnar Yew, 30 feet high, with a gigantic crown 8 feet across. The Gold Yew has been grafted in various parts of the crown, and with good effect; this Yew has a trimmed square base of 30 feet on the side, and 3 feet high, and, again, out of this rises a second circular base 18 inches above the former, out of which springs the column. Right and left of this noble plant are two pillar Yews upwards of 40 feet high, and then 12 similar Yews of large dimensions; all these have been brought from a distance of upwards of 30 miles. Right and left, again, are Araucaria imbricata, at regular distances, 12 feet high; on this raised terrace there are 30 of this size. The recesses formed by the apparent compression of the sides of the covered walk are inclosed with variegated Box hedges, 2 feet high, cut square on the top, which is 2 feet wide. Within these, on each side, are noble plants of Araucaria, supported by Cryptomeria, Irish Yews, and Irish Junipers. The terraces are approached at right angles by stone steps facing the entrances, with covered walks which lead to the interior parterre, and which may be said to be formed of a combination of angular beds. In the centre stands a remarkable plant of Araucaria imbricata, which measures 26 feet 4 inches high, and 13 feet in the diameter of the branches. Its manner of growth has the appearance of the Norfolk Island Pine, the branches to the ground assuming the pendant frond-like habit of that plant, and it is no doubt a very distinct variety; for, amongst the multitude of specimens of this Araucaria at Elvaston, no other plant exhibits this peculiarity of growth. It has been planted 13 years, during which period it has grown 22 feet 3 inches, or 20½ inches on an average annually since it was planted. The Araucaria is often set down as a tree of extremely slow growth, but we have here a striking example to the contrary, and not only in this particular specimen, but in hundreds of others which are making equally rapid progress. In the divisions of this central department are other fine specimens of Araucaria and Cyptomeria japonica, the character of the whole being fully maintained by an arrangement of Gold Yews, Irish Yews, and Irish Junipers, planted so as to produce that same peculiarly striking effect which the exterior arrangement so amply discloses.

The large Araucaria, as has been observed, stands in the middle of the interior compartment, which represents a circle of 50 feet diameter, this being subdivided into beds which form an eight-pointed star. These eight beds are planted with the best variety of Gold Holly, which are not permitted to grow higher than 9 inches. These beds are relieved and contrasted by eight other beds, planted with the common Yew, of the same height, the whole being broken up by narrow asphalte walks. The internal recesses, at angles of the pincushion form, have each a circle 20 feet diameter, with an Araucaria in the centre; and surrounding these are beds in scroll pattern filled with variegated and scarlet Pelargoniums, Lobelias, Calceolarias, &c. Surrounding the central circle are eight recesses of Arbor-vitæ and Box, the same height as the covered way, with circular seats under each capable of holding six persons in each recess; these again are united to the bower walk, with converging lines of variegated Box hedges. All these covered walks, seats, Gold Yews, hedges, &c., present a perfectly smooth surface, being in the highest possible state of artificial management. The whole must be viewed, therefore, as a work of art, and one which we believe has no equal elsewhere. *R. G.*

(*To be continued.*)

DISEASES OF PLANTS.

(*Continued from page 789.*)

GENUS VI.; *one species.* ACAULOSIS, *that is, privation of trunk, stem, or stalk.*—The greatest number of

vegetables are furnished with a trunk or stem, woody or herbaceous, which supports the parts of fructification at its extremities. Sometimes this stem, especially in herbaceous plants, remains very short, scarcely showing itself above ground. Some plants, indeed, are formed naturally without stems; but I do not speak of course of those; I allude now to such as in the ordinary course of nature grow with stems. I have frequently observed this phenomenon among spring flowers in gardens, and at this moment I have an instance before my eyes whilst writing. Hyacinths and Ranunculuses placed under a south wall open out their flowers very rapidly, but without stalks, so that you cannot hold them in your hand without injuring the petals. I had conjectured that it was owing to dry precocious heats, which had overstimulated the flowers and forced them open prematurely, and this year I have assured myself of it. A cold March was succeeded by great heats in the beginning of April, so that the thermometer, which on the 5th of April was at 3° (39° Fahr), rose on the 8th to 11° (57° Fahr.), and remained between 14° and 15° (63½° and 65¾°) till the 14th. Some Hyacinths of the variety called Coralline grown under a wall, which scarcely showed their buds above-ground, opened their flowers, which had their usual vivid colours, but scarcely any stalk at all.

On the contrary, in barren soils, plants are often observed with an exceedingly reduced stem. This must be attributed to the want of proper vigour. The same may also be seen in plants always kept in the shade, or which have the sun only for a very short time. This kind of *acaulosia* is most frequent in plants removed from our rich plains to the hills.

I consider as a mere variety of this disease, the want of peduncles or stalks to those fruits which are usually provided with them. And to the same head I would refer the phenomenon detailed in the memoirs of some academy, which causes certain plants which usually shoot forth a high much branched stem, to remain perfectly dwarf, spreading in a circle on the soil, and instead of a main trunk, having nothing but a great number of very short stalks, with their flowers spread on the ground. This phenomenon was observed as early as in 1735, a very rainy year, by M. Moehring, in the case of the Papaver Rhoeas, or Field Poppy, which had at the same time the leaves streaked with white, thus giving certain indications of the state of debility of the plant. After reading this statement, I examined several times this plant, which is very common in our fields, and I have found it to exhibit frequent examples of this malady, under both the above mentioned causes.

This defect disfigures the flowers very much, and it must therefore be a great object with the gardener to prevent it, and to give to his plants long and well-proportioned stalks. Therefore he must always take care in planting Hyacinths, Ranunculuses, and other such roots sufficiently deep, especially when near a south wall, that the bulbs or tubers should always be covered with at least two or three inches of soil. Experience has shown me that these roots, and others of a similar constitution, if planted too near the surface, are very liable to acaulosia; and the soil should not be too light, or in proportion as it is irremediably light, the roots should be deeper planted. Irrigations also must not be spared, especially in dry seasons; sometimes I have prevented the deformity by commencing to water even in February. It may also be useful to protect the plants from premature and excessive heat, screening them for some time from the immediate action of the sun's rays. If, on the contrary, the evil arises from want of light or deficiency of sap, it must be prevented by manures, or by removing the plant to a better situation. But if the deformity is once developed it cannot be cured. So, if it is the effect of climate, there is no use in attempting any other remedy, when the plant cannot be cultivated under more favourable circumstances.

Where trees are so affected they may be cured by cutting down the branches, leaving one only to train up, so as to replace the old trunk, the ground being first properly prepared, so as to supply the necessary nutriment. This operation, to be successful, requires to be performed by an experienced cultivator, and in such case the tree will often resume its natural beauty. In general, however, acaulosia is produced wilfully, and arises almost always from amputations, which made either intentionally (for pollarding) or by ignorance in pruning, prevents the main branch from forming.

REPORT UPON THE BOTANIC GARDEN, CAMBRIDGE.

Christ's College Lodge, *December* 15, 1849.—The New Botanic Garden Syndicate beg leave to make the following Report to the Senate: The parts of the New Botanic Garden ground, upon the planting of which the Vice-Chancellor was authorised by grace of the Senate on Nov. 8, 1848, to expend a sum not exceeding 100*l.*, have been planted, and the trees and shrubs upon them are in a flourishing condition. The trees in that part of the Arboretum forming the belt, which had been previously planted, have made remarkable progress, and show in a striking manner the advantage resulting from the deep drainage and trenching to which the land was subjected. In addition to the 1776 herbaceous plants removed from the old Garden, and the donations of 890 species mentioned in the last Report of the Syndicate, there have been about 1200 specimens presented to the Garden, and planted in the herbaceous division. Also in the Arboretum there are now specimens of 1589 species or varieties of trees and shrubs, of which number 688 have been purchased under the authority of the grace of the Senate abovementioned, and 123 have been presented to the Garden by private liberality. The Syndicate desire to direct the especial attention of the Senate to these large donations, consisting in all of 2258 plants, of which the great majority were new to the collection; and which have placed the Garden, containing as it now does about 5000 species of hardy plants, in a high relative position with regard to that department amongst the Botanic Gardens of this country. The Syndicate have pleasure in acquainting the Senate with the names of the donors to whose liberality the Botanic Garden is so largely indebted. W. Borrer, Esq., Henfield, Sussex; Mr. J. Denson, Waterbeach; Mr. J. Atkin, Priory Cottage, Northampton; Messrs. Whitley and Osborn, Fulham, Middlesex; Miss Catharine Molesworth, Cobham, Surrey; the Curator of the Botanic Garden, Oxford; the Curator of the Royal Botanic Garden, Kew; the Curator of the Botanic Garden, Copenhagen; the Curator of the College Botanic Garden, Dublin; the Curator of the Botanic Garden, Glasniven, Dublin; the Curator of the Botanic Garden, Liverpool; the Curator of the Royal Botanic Garden, Edinburgh; Dr. Patrick Neil, Cannonmills, Edinburgh, R. Dundas, Esq., Arniston, Edinburgh; Rev. A. Bloxam, Twycross, Leicestershire; R. Bevan, Esq., Bury St. Edmund's.

(Signed) — James Cartmell, *Vice-Chancellor*; R. Tatham, Robert Phelps, W. Whewell, H. Philpott, John Haviland, W. H. Stokes, Charles C. Babington.

THE POPLAR OF SCRIPTURE.

"And Jacob took him rods of the *Green Poplar*, and of the Hazel, and Chestnut Tree, and pilled white streaks in them, and made the white appear which was in the rods."—*Genesis* xxx. 37.

"They sacrifice upon the tops of the mountains, and burn incense upon the hills, under Oaks, and *Poplars*, and Elms," &c.—*Hosea* iv. 4.

What was the Poplar of which mention is thus made in the Holy Scriptures? which caused "cattle to be ringstraked, speckled, and spotted," and *under* which sacrifices were offered up upon hills?

It was *a* Poplar, said the translators of the Bible, and as such it stands in our version. It was the white Poplar, was added, which the Greeks called *leuke*, and the Jews *Libneh*. But other critics, among whom is to be mentioned no less an authority than Dr Royle, have suspected that the Storax tree (Styrax officinale) was intended. I have not room for the learned arguments upon which this conjecture rests; but I may remark that there is nothing in the context of the passages here quoted from the Bible to authorise the opinion that some tree yielding incense, as Storax does, must have been intended (the statement is, that incense was burnt *under* the Poplar trees); that, if it were so, the young twigs of a Poplar are sufficiently fragrant for the purpose; that the Storax is not a hill tree, which Poplars may be; and that the abundance of the latter tree in the regions where the events described in the Bible occurred, and its application to useful purposes, justify the belief that a Poplar was really intended. As to the Storax tree, I do not find it recorded as an Assyrian tree, and if it be, its habits are not likely to be mountainous; the tops of the mountains are the last place in which it would *à priori* be expected to occur. On the contrary, Poplars are amongst the commonest of all trees in those eastern regions. Dr. Layard tells us that "the only trees within the limits of Assyria sufficiently large to furnish beams to span a room 30 or 40 feet wide are the Palm and the *Poplar*; their trunks still form the roofs of houses in Mesopotamia (II. 258). This is again referred to by the same great discoverer (II. 274); and in another place (II. 381) Dr. Layard states that the boats now employed on the lower part of the Tigris and Euphrates, are constructed of planks of Poplar wood. Hence it appears that a Poplar is still common in the regions to which the scriptural language applies; on the other hand we have no evidence about the Storax tree growing there at all, or at least so commonly as to be subject of familiar employment.

But the question remains, which was the kind of Poplar here alluded to. I believe that the observations made in Colonel Chesney's voyage down the Euphrates, affords the necessary evidence. Among the plants collected by that gallant and most ill-used officer, was a Poplar, of which dried specimens were distributed under the number 116, certainly quite distinct from any of the species named by botanists, and which I have seen in Dr. Lindley's herbarium, under the name of P. euphratensis. This tree resembles the Aspen, but the leaves are not distinctly 3-nerved at the base, and in lieu of the silky down of that plant are covered, when young, with a copious glaucous bloom; they are moreover differently shaped, larger, and their toothings are so sharp and curved as to resemble spines. In like manner it differs from the hybrid Poplar, the toothings of whose leaves are remarkably coarse and blunt, the veins strong and prominent, and the racemes of fruit long and slender. In addition to this, Colonel Chesney's Poplar is very remarkable for having its fruit invariably 3-valved, instead of 2-valved; a character which is quite exceptional in other Poplars, being here the rule. I therefore call this the Poplar of the Scriptures, and give it the following definition.

P. euphratensis; foliis subrotundis dilatatis glabris junioribus glaucis adultis subaequaliter dentatis: dentibus incurvis acutissimis subspinosis, venis subaequalibus, petiolis eglandulosis, floribus trigynis, racemis fructuum foliis brevioribus, ramulis novellis minutissime pubescentibus.

Any one in communication with Dr. Layard might obtain cuttings of this Poplar, *by post*, in time for striking in the ensuing spring. *Jael.*

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(*Continued from p.* 787.)

Sept. 18.—Section D. Natural History.—Dr. Lankester gave a report of the proceedings of the committee appointed by the Association for the registration of the periodic phenomena of plants and animals. Since the last meeting the committee had forwarded tables for the observation of periodic phenomena to upwards of 50 individuals. Of these only two had been returned—one from Mr. Matthew Moggridge, of Swansea, with very complete observations on the various phenomena suggested by the committee—and another on the foliation and defoliation of plants, by T. L. Lloyd, Esq. A list of the arrival and departure of birds at Llanrwst, in Wales, had also been sent by Mr. Blackwall, and observations on periodic phenomena for 1848, at Polpero in Cornwall, by Mr. T. E. Couch. As the year had not terminated since the tables were sent out, it was probable that many more tables would be sent in in the course of a few months. New tables would be issued to all who would undertake to observe. In the course of a few years the committee hoped to collect a sufficient amount of information to reduce the whole into such a form as would show the relation between meteorological and organic phenomena.

Mr. Austen exhibited a specimen of a Fern from the English coal measures, in which the fructification was very evident. He believed that to find fossil Ferns in this condition was very rare; indeed, so rare was it that he had been induced to infer from the absence of any appearance of fructification in the British fossil Ferns that during growth they had been exposed to a temperature lower than was suspected, which had prevented the development of their reproductive cells.

Professor Buckman of the Agricultural College, Cirencester, read a paper on fairy rings, with notes on some of the edible fungi by which they are caused. The author gave an account of the first development of these rings and their subsequent disappearance. He had observed several species of fungi growing on the same ring at different seasons of the year. The Agaricus prunulus, which is one of the most delicious of edible Mushrooms, was found in May, but this was succeeded in the later months of the year by entirely different species. This led the author to suspect that the mycelium of the fungus might be only a nidus in which the sporules of the various kinds of fungus were enabled to grow. The rich luxuriant Grass that springs up in the interior of fairy rings, generally consisted of three Grasses, Dactylis glomerata, Lolium perenne, and Poa pratensis. In adverting to an explanation of these phenomena, the writer referred to a paper read before the Association last year by Mr. Way. The author referred to Dr. Badham's book as affording evidence that many species of fungus now neglected were edible and fit for human food.—Mr. Henfrey stated that he had published some remarks in the *Gardeners' Chronicle* in reference to Mr. Way's experiments, which were upon the ashes of the plants, whilst the fertilising effects of the fungi ought to be looked for in the nitrogenous constituents. If the mineral matters were the most beneficial, there was no reason why the Grass should not derive them from the soil as well as the fungi. The observation of Prof. Buckmann, that the successive crops in the same ring were different species of fungi was very curious, and deserved further investigation.—The Prince of Canino, in explanation of the curious fact that the Agaricus campestris, our common Mushroom, is regarded as poison-

ous at Rome, stated that it so closely resembled a species that was poisonous that it was thought safer to prevent the sale of them altogether.—Professor ALISON said that he thought it was wrong to infer that the same species of plant was alike edible under all circumstances. There were many plants which, grown in other countries, were poisonous, but not so when cultivated with us, and *vice versâ*.—Dr. LANKESTER spoke of the desirableness of our knowing some single character which would at all times distinguish the harmless from the deleterious kinds. He knew a gentleman who, after reading Dr. Badham's book, had collected some Mushrooms which he thought harmless, but which turned out to be poisonous, and he was made ill by them for a fortnight after.

With this paper we close our report of the proceedings of the Association. Although the papers do not contain any new generalisations which will alter the future condition of science, yet they contain a number of observations very indicative of the rapid progress of many departments of science, and the tendency to apply the principles of science to the practical purposes of human life.

Home Correspondence.

The Victoria.—The account which you gave of the Victoria regia reminds me of a few experiments which I have made on some tender aquatics, and which lead me to hope that this splendid novelty, instead of being confined to our stoves, may probably be found to thrive in the open air. In April, 1836, I removed a pot of Limnocharis Humboldtii from a small aquarium in the stove to a pond in my garden, and placed it a few inches below the water, so as to allow the leaves to float on the surface, and in about two months afterwards it began to blossom without appearing at all to have suffered by the change. The winter, though more than usually severe, did not destroy it; and the same plant, without having received any sort of protection whatever, has been all this summer, and still continues, beautifully in flower, and the flowers are generally larger and of a richer colour than those in the stove. At the same time I placed loose in the pond a plant of Pontederia azurea (Bot. Mag., 2932), and at the ends of short horizontal stems or runners, which it threw out on the surface of the water, other plants were produced so rapidly as to form, before the summer was over, a floating island of large handsome leaves, which, with every change in the breeze, was driven from one side of the pond to the other. As these plants perished in the winter, I supplied their place with another from the stove this spring, and it has continued to increase and flourish like its predecessor, but with me the species has never flowered either in the stove, greenhouse, or open air. I also in April, 1836 placed a pot of Calla æthiopica, which was just coming into flower, with the base of the petioles an inch deep in the same pond, and the flower-buds expanded, and the plant threw through out the summer, without being at all affected by the change. In this situation it has ever since remained; from some injury which the leaves sustained in the winter, they soon recovered in the spring, and they still look as healthy as possible, but no flower-buds have been formed since the plant was taken from its dry situation in the greenhouse. I hope these observations may induce amateurs to try similar experiments on other species. *D., Swansea.*

Dr. Newington's Hand-cultivators.— Almost all the deductions drawn from your last inquiries on the effects of different modes of culture in aggravating or diminishing the Potato disease have been verified by this year's experience, and none more so than the necessity of aiming at early maturity. Of the different methods used to attain this desideratum, there is one which, I think, has not generally been sufficiently attended to; this is, frequently stirring the ground. Having provided myself with one of Dr. Newington's hand-cultivators, I had it constantly used on the Potato ground, merely with the view of thus most easily destroying annual and other weeds. I was not aware how much I was accelerating the formation of the tubers, until I was informed of it by the rooks. These gentry having, by the dry weather of June, been deprived of their usual animal food, began to forage for a vegetable repast, and, by industry or instinct, at once discovered where the ripest Potatoes grew. This was on plots where the cultivator had been at work, and, upon examination, it appeared that the maturity was unexpectedly most materially advanced. *Sigma.*

Garden Mats and Glazed Sheds.—There are few matters in garden economy more objectionable than "garden mats." Every year demands a fresh supply, and at the best they do not afford much protection; and when wet through or hard frozen, I suspect do more harm than good. I find that a substitute, and a very efficient one, may be made at a small cost, and which will afford more protection than a double mat, viz., shutters made with half-inch deal: I nail three or four boards together by an inch thick deal lath, top and bottom, and in the middle; the half-inch deal may be had at Mr. Montgomery's saw-mills, Brentford, delivered at any London railway station for 8*s.* per 100 square feet, and say that the carriage and the laths to nail these shutters together costs 1*s.*, you have 100 square feet of board covering for frames, &c, for 9*s.* I have good authority for stating that these shutters, if put away dry in the summer, will last from 8 to 10 years: as the wood at the saw-mills is cut with a fine saw, these boards require no planing, and I believe they will be found thicker than the half-inch board usually purchased. My gardener tells me that one of these board shutters is equal to four mats. As I trust that cheap glass and board sheds for growing Grapes, Peaches, Strawberries, Salads, &c., which I have already described in the *Chronicle*, will come into use, those who wish to form them may judge of the cost of the boards, viz., 8*s.* per 100 feet; the Larch poles to nail the boards to may be had at from 8*d.* to 10*d.* each, and the asphalte felt is 1*d.* per foot, and if this be nailed on the side of the post opposite to the board, there will be an interval of at least 3 inches, and this will make the back as warm as a 9 inch brick wall. The back being formed, all that is wanted is a front, of a foot or 18 inches high, boarded in a manner similar to the back, and a plate of deal board 1½ inch thick for the back and front, to which the rafters are to be nailed: these rafters are also to be obtained at the same mills, and the necessity of a rebate is done away with by nailing a strip of half-inch deal down the middle of the rafter, leaving space on each side to receive the glass and putty. As I know many persons are desirous of trying these glazed sheds, I wish Mr. Montgomery would state the prices of the rafters, per foot run, and the different strengths which he considers necessary for the different lengths, viz., of 12, 14, 16, or 18 feet rafters. I find that these may be made much lighter than those in ordinary use, by nailing a transverse lath of inch deal, 1½ inch wide, along the middle of the rafters inside the house, and adding three or four Larch posts as a support. Mr. Rivers finds a small brick Arnott's stove sufficient to heat a small house, so as to force his Roses. I however have not been able to keep the frost out of one of these houses, 50 feet by 11 feet, with one of the stoves, but I have not yet tried the addition of zinc gutters for hot water from the top of the stove, as recommended by Mr. Rivers, but I shall do so this winter, and will send you the result As the lights are not moveable, it will be requisite to cut holes of about 18 inches by 6 inches, at intervals of about 6 feet in the back and front wall, with a sliding board over these, for the purpose of ventilation. The glass, 1 foot by 18 inches; may be obtained at Mr. Hetley's, Soho-square, at 3*d.* per foot. *Dodman.*

Roots in Drains.—Many years ago my attention was directed to the choking of drains with roots. Water at one place was conveyed through a kitchen-garden in tile pipes, jointed with well-worked clay, and, if I recollect rightly, the pipes were laid about 3 feet deep in the soil, yet they had to be lifted from time to time to be cleared of the accumulation of roots within them. The soil was somewhat light and sandy, and a constant supply of moisture in the pipes. The roots must have been those of the Apple-tree or Gooseberry and Currant bushes; they were the only permanent plants that grew in the vicinity of the pipes. We have also been at the opening of very old drains made with stones, and nothing apparently to prevent roots from going into them, and yet the water was running without any interruption from roots, although there were plenty near them, and had been for about 50 years before. But we are informed by Professor Johnston that rubble drains have been found choked by the roots of the Nettle, and tile drains by those of the Willow. Ochrey deposits, however, are more common, and very large tracts of country, the soils or subsoils of which are much impregnated with iron, are liable to have their drains choked by accumulations of this kind It also appears that the drainage from dunghills placed in fields getting into drains is not a good thing for keeping a clear run, as slimy matter found in such drains was sent to Dr. Greville to examine, and the following is his report: "The substance which you gave me to examine is, as I suspected, an Alga, and I have little hesitation in naming it Conferva bombycina, Ag (Conferva sordida of Dillwyn). The filaments are excessively fine, and the whole acts as a cobweb in catching and retaining minute insects and larvæ and floating atoms of inorganic matter, which is the cause of your specimens looking like a mass of soft jelly like mud. The filaments themselves are almost colourless or slightly greenish. These plants pass rapidly into putrescence." *P. Mackenzie, West Plean, Stirling.*

The Vine Weevil—When I was at the Botanic Garden, Birmingham, in 1841, the insect alluded to by your correspondent made its appearance on the standard Rose trees there, and threatened their destruction. The trees at the time being entrusted to me, and finding them not looking so healthy as usual, I examined them, and found something was barking them all round the branches; but their first depredation was eating the bud out, and after that the bark, which I proved on further examination. I named it to the late Mr. Cameron; he examined the trees, but could not conceive what insect did the mischief. I paid frequent visits to the buds during the day, but they were of no avail. I then concluded that the depredations were committed at night. Accordingly I took a light and examined a few trees, but could find nothing. I continued my researches at night, and at last caught a sight of something fall from one of the trees. I looked under the tree, and after a rigid search I found one. A little attention soon proved that the depredator did not like to encounter light, for the moment the candle was introduced, or the tree touched, that moment they fell to the ground, and then it was "catch me if;" you can but after a little consideration I hit upon a plan, which proved to be everything I desired, and that was, a piece of white cloth, about a yard square, taken by the four corners, one holding two corners and another one the other two, taking the precaution to secure the whole tree; the tree was then touched after the cloth had encircled it, and the weevils fell on the cloth. The business being rather extensive, having about 400 trees to examine, and all more or less attacked with the weevil, therefore I had a light a little distance from the clumps, and after shaking a few trees we repaired to the light and destroyed them. To show the immense quantity there was, I counted those that fell from many trees at one time, and they varied from 10 to 30 on each tree. A few nights' attention ridded us of the pest. There were many complaints from ladies and gentlemen in the neighbourhood the same spring from losing their Rose trees, and I have no doubt the weevils destroyed them by taking out every bud as fast as it germinated, until the tree was entirely exhausted. *J. Cole, gr. to J. Willmore, Esq., Old Ford.*

Peach Trees.—In the autumn of last year I covered some Peach trees with a few spare lights some time before the fruit was ripe. The benefits I expected from so doing were, first, finer fruit in size and flavour; and second, well ripened wood for a future crop. In both instances I was, however, disappointed. The fruit was not so well coloured, and otherwise inferior to some not protected, and the young wood never ripened properly. It is but right to state that the situation where they grow is low and very damp, and they are now quite green, while all the other trees are stripped of their foliage. It will be seen that imperfect drainage is the cause of all this, and it would be well if "Dodman" would remind masters that, without draining where it is wanted, manuring or anything else will not produce superior fruits or good crops of any kind. *Fortuna.* [*Remind!* why we are continually *reminding* our readers.]

Balsam Dye—The fresh leaves of the common garden Balsam, pounded together with a small quantity of alum, impart an orange coloured dye to wool, hair, and the human skin, similar to that of the "henna" or "kina" so much used in eastern countries, and the Balsam-leaves are sometimes employed as a substitute. The dye is applied in the form of a paste, and is left on for more or less time, according to the depth of the hue required. *H. H. C.*

Animals— I have often seen what I understood to be martin's nests, formed in great numbers on the face (sometimes perpendicular), of sandy banks. But what I observed this autumn (which date I only affix to my observation, not to their existence), were holes in the common earthy road side banks, and in a chalk-pit. They gave me the idea of field mouse holes from their bore, and the mode of scratching out the earth in front. But some that I examined came to an end immediately, that is, in from 2 to 4 inches. Two that were from 1 foot to near 1½ foot long, and which I opened (sending a stick in to keep open the line of direction), ended in nothing. No nest, remnants of food, or other sign of animal life. They were not all on banks—a few in the chalk were nearly on flat ground. I think I saw and examined seven. My own impression was, that they were preparations for the nests of mice, capriciously (or rather, for some unknown reason) abandoned while unfinished. *A. H.*

What is the best Time for Felling Larch?— You have had some discussion in your columns respecting the relative advantage of Oak timber, whether fallen in the winter or the spring; but no opinion has been given with respect to the most judicious time for felling Larch, now becoming one of the most useful woods grown in connection with a farm. The common notion is, that this wood, together with all the Fir tribe, endures longer if fallen in the summer, when the sap, partaking so much of turpentine, is fully up, and when the bark, being easily peeled off, exposes the wood to the drying process more readily; but is this opinion warranted by careful experiment? and may not the so-called preserving properties of the turpentine exist in the winter-fallen tree to a more beneficial extent than in the summer-fallen one? The opinion of some of your correspondents on these points would oblige *A. B.* [Our own opinion is against summer felled timber of all sorts.]

How are we to find the Drains of our Predecessors?—The observations you have made, and the facts you have stated from time to time in the *Chronicle*, proving the great change thorough draining produces in the temperature of the soil, will, I have no doubt, induce many to examine the state of their drains, and to form others where they may be required. I have frequently seen in gardens a great deal of labour wasted, besides cutting up of lawn, uprooting of plants, &c., in searching for drains which it was necessary to find. To obviate this, I would suggest that every gardener furnish himself with a map of the gardens under his management, with all the drains he may make laid down in their true position on the said map, so that if at any time there is occasion to examine any drain, by finding its distance from any place on the map, then measuring its distance from the corresponding place in the garden, the drain can be found without trouble. Although all this may seem obvious to every one, still ample experience has proved to me that something like the plan here suggested is wanted in many places. *A. B.*

Drains choked up by Roots.—Two years ago my son drained a small meadow on his farm with pipes. The carriage gutter was laid with 1½ inch pipes, and all the joinings secured with stiff clay; six months ago he discovered that something was wrong, and last week had the pipes taken up, when they were found to be full of Oak roots (!) from a tree which grows in a hedge at least 60 feet from any part of the drain, which is full 3 feet deep. *J. E., N——, Somerset, Dec. 7.*

Glazing.—Having had occasion to re-paint and glaze our greenhouses, at the suggestion of the glazier we had, I think, an additional coat of paint to what is generally applied, viz: after the glass was bedded, and before the front putty was applied, the brush was drawn over the edge of the glass and sides of the light the putty was to cover, the front putty was then applied. The advantage of this I take to be the entire exclusion of water from the wood and interior of the house, and to cause the putty to adhere more firmly and lasting than without it. I might also add that the glass was putty lapped, except a few left in each light to carry off the water condensed on the glass. This I consider necessary on the score of prevention of breakage by frost, it being an easy matter to admit currents of air to make up for the loss caused by this process. *Edgar Sanders, Egham Lodge, Surrey, Dec.* 14. [The plan is a good one and well known; but this mode of explaining it is not very clear.]

Societies.

Linnean, *Dec.* 4.—A special meeting was held, for the purpose of electing a President, in the room of the deceased Bishop of Norwich. As it had been publicly announced that Mr. Brown had acceded to the wish of the Council that he should be nominated as President, an unusual number of Fellows assembled, for the purpose of expressing their feelings on the occasion. A ballot first took place for a member of Council, when Dr. Charles Lemann was unanimously elected. Mr Brown was also unanimously elected President of the Society. The Rev. Mr. Yates exhibited a flowering specimen of the *Canna edulis*, grown in his conservatory at Highgate.

Dec. 18.—Robert Brown, Esq., President, in the chair. In taking the chair the President made a few remarks on the circumstances which had led him to hesitate before accepting the post to which he had been recently elected, and the motives which prompted him to undertake the duties which now devolved upon him. Mr. Westwood exhibited specimens of a Pear covered with gall like protuberances, produced by the attack of an insect. A letter was read from Mr Hogg, describing a double variety of the Scabiosa (Knautia) arvensis, found in a field at Norton, Durham. The inner florets had assumed the size of the outer ones, but the stamens were perfectly developed. A continuation of Dr. Huxley's observations upon the anatomy of the Diphydæ, and the unity of organisation of the Diphydæ and Physophoridæ, was read.

Reviews.

General Catalogue of Garden, Agricultural, and Flower Seeds sold by W. E Rendle and Co, Plymouth.

This contains lists of good Vegetables, with useful notes appended to the names of many of the sorts. In the list of Peas we observe "Bishop's Early Dwarf; very good sort, requires no sticks." The above *was* reckoned a very good sort, but it ought to be entirely superseded by Bishop's New Long podded. Shilling's Early Grotto may also be dispensed with; it does not fill well. Rendle's First Early Green is stated to be the earliest of all, good bearer, and fine flavour. There is no note to the Paris Cos Lettuce, although it is unquestionably the best of all Cos Lettuces for summer use. The "London Market Cabbage" is certainly not a good name, for many varieties find their way to the London market. The London Battersea is the same as the Fulham Cabbage; at all events, Fulham Fields supply the Battersea growers with seeds and plants of Cabbages. But these are trifles. On the whole it is a well arranged Catalogue, and will be found of service to purchasers of seeds.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory.—The description of plants grown in this denomination of plant structure is very various; no name can be more indefinite In very extensive gardens, it is generally applied to the largest or finest house, whether it be used for the cultivation of tropical wonders, or the half hardy beauties from Australia or the Cape. In many instances it is applied to the intermediate house, which contains plants requiring a temperature and treatment half way between those of the stove and the greenhouse. But in a far greater number of cases it signifies the house of the amateur; and is used to cultivate many choice plants, and to display, during their flowering season, many others which have been grown in pits or frames For houses of the latter description the following remarks are chiefly intended. It is presumed that the plants consist of those which require a greenhouse temperature; and that the larger species, and species with ornamental or fragrant foliage, such as Acacias, Myrtles, Oranges, Magnolias, Camellias, &c., either in pots, or planted out, are those which constantly remain in the house; and that smaller plants are cultivated in other places, and introduced during the season of blooming. The latter will consist of Heaths, Epacrises, and dwarf-growing New Holland plants, with Geraniums of the fancy and show kinds, for various seasons; Primulas, Chrysanthemums, and Cinerarias, for autumn, winter, and early spring; with Balsams and other tender annuals for summer and early autumn. After deciding upon the proportion of space to be occupied by the permanent plants, the next thing should be to settle upon the order in which the smaller plants are to succeed each other, and that a sufficient quantity of the different kinds may be provided for their respective seasons. The special treatment of these plants will be periodically treated of in future Calendars; and for the present we shall give a few remarks for the guidance of the amateur at the present season. In regard to watering, which of all things requires most attention at this season, adhere strictly to the simple directions we have several times given; viz, to water no plants (aquatics excepted) till the soil is sufficiently dry beneath the surface to admit of the plants receiving a full supply. This particular point of dryness can only be distinguished by the practised eye; no description on paper can convey the idea justly. Keep the houses as dry as the state of the external atmosphere will admit of; not by the excessive use of fire-heat, but by avoiding as much as possible the creation of unnecessary moisture by spilling water, &c.; and by admitting such a quantity of fresh air as shall, in connection with moderate firing, remove any superabundant moisture which is produced by the necessary operation of watering, &c. Along with other remarks for the amateur's greenhouse conservatory, we shall take an early opportunity of introducing a few hints for the management of his intermediate conservatory, and also for his stove conservatory.

FLOWER GARDEN.

It is to be hoped that advantage has been taken of the late mild weather for the planting of trees and shrubs, and that the operation of mulching, which we before pointed out the necessity of, has been duly performed. If it has not, it should be immediately attended to, that the roots may be shielded from the effects of frost. In continuing the operation, let the soil be made as suitable as possible to the peculiar wants of the plants. When it is not naturally good, let pains be taken to make it so, by adding loam, dung, leaf-mould, peat, sand, or anything else which will improve its condition chemically or mechanically. The late severe frosts will have tested many new plants, of the hardihood of which doubts were previously entertained. The careful observations of such facts will be useful in the present planting season, by pointing out some which may be freely exposed in more open situations, and others for which it will be prudent to select dry sheltered spots, where they will be guarded against the injurious effects produced by a combination of cold and damp. If the experiments have been extensive, there may be others which are evidently too tender for further consideration. In anticipation of the Christmas festivities, there is everywhere a demand for evergreen branches; and in taking them, let the trees be properly and systematically pruned, with a view to the formation of a handsome symmetrical tree

FLORISTS' FLOWERS.

Ranunculuses—These have rather been lost sight of during the few past months, but a general supervision will not be out of place. If there is any one sort of florists' flower more unsatisfactory than another, it is this; they are extremely apt to mildew at the crown, and when this is the case, inevitable destruction is the consequence. We are not particularly fond of manure to this class of flowers, yet some great authorities advise old manure. Whether our manure has been sufficiently old or not we cannot say, but we have lost valuable roots by applying it. Our advice is to give as much decayed leaf soil as possible; but nothing strong to come in immediate contact with the roots. Pansies, Pinks, and Polyanthuses will require going safely over this *spring*. What with the wet weather and what with frost, they have suffered severely. The Polyanthuses will require well covering up round the crown—the Pansies top-dressing, and should a new or scarce sort throw out a long stem, it will be advisable to peg it down to the surface. We would shelter all the sorts on the open border by either a net or branches of Fir trees; but it will be evident to all that severe winds are highly detrimental to them as well as other florists' flowers.

KITCHEN GARDEN.

To prevent any difficulty in digging up Celery or Cardoons, when the ground is frozen very hard, let a portion of each, about as much as will suffice for a couple of weeks, be always under protection, either by means of loose litter, Fern, or thatched hurdles, or some other convenient material which will exclude frost. These coverings should be put on while the ground is in an uncongealed state, as it would do harm rather than good, if put on while the ground is hard, by preventing the sun and air acting upon it in case of a change of weather. It must, however, be understood that the portion which is covered up is not to be left untouched till the arrival of frosty weather, but used in the regular rotation; and as the covering is taken off the part for present use, it is to be moved forward to a similar space beyond, so that a supply for the next ensuing fortnight shall always be under protection, excepting of course when the ground beyond is in a frozen state. If, by means of spare frames or other contrivance, a portion of such crops as Parsley, Spinach, Sorrel, &c., can be protected, they will be found very convenient, when the ground is covered with snow. Some Horseradish, Jerusalem Artichokes, Parsnips, &c., should be got up and laid in moist soil for present use.

State of the Weather near London, for the week ending Dec 20, 1849, as observed at the Horticultural Gardens, Chiswick.

Dec.	Moon's Age.	Barometer. Max.	Barometer. Min	Thermometer. Max	Thermometer. Min	Thermometer. Mean	Wind	Rain.
Friday 14	●	[illegible]	29.[illegible]08	5[illegible]	48	51.[illegible]	S	.09
Satur... 15	1	29.9[illegible]1	29.[illegible]73	57	42	49.5	S W	.0[illegible]
Sunday. 16	2	29.911	29.[illegible]61	58	46	52.0	S W	.00
Monday 17	3	[illegible]	[illegible]	53	40	46.5	W	.00
Tues .. 18	4	[illegible]	29.[illegible]23	52	42	47.0	S W.	.11
Wed. .. 19	5	30.216	29.[illegible]78	45	32	38.5	N W.	.03
Thurs... 20	6	30.312	30.231	41	30	35.5	N.W.	.00
Average....		[illegible]	29.7[illegible]7	51.5	40.0	45.8		0.32

Dec. 14—Rain; drizzly throughout.
— 15—Rain; clear at night.
— 16—Stratum of low clouds scudding from S. W.; very fine.
— 17—Boisterous, with heavy dark clouds; fine; clear at night.
— 18—Densely and uniformly overcast; rain at night.
— 19—Densely clouded; fine; clear; rain at night.
— 20—Clear and fine; cloudy; frosty at night.
Mean temperature of the week, 5 deg. above the average.

State of the Weather at Chiswick during the last 23 years, for the ensuing week, ending Dec. 29, 1849.

Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 23	44.7	33.0	38.9	12	0.25 in.	4	5	1	1	1	7	1	2
Mon. 24	43.2	32.1	37.6	5	0.36	3	3	3	1	1	9	1	2
Tues 25	42.8	29.0	35.9	4	0.22	2	4	3	—	2	5	4	3
Wed. 26	42.3	31.9	37.1	8	0.39	1	4	2	3	3	7	—	2
Thurs. 27	4[illegible].3	30.6	3[illegible].4	8	0.40	2	4	1	—	5	3	6	2
Friday 28	41.7	30.4	36.0	8	0.16	2	3	2	3	2	1	6	4
Satur. 29	42.8	34.4	38.6	10	0.17	2	4	1	3	4	9	5	3

The highest temperature during the above period occurred on the 26th 1827—therm 58 deg: and the lowest on the 24th, 1830—therm. 10 deg.

On the average of 23 years the nights of the 25th Dec, and 15th Jan. are colder than any other throughout the year.

Notices to Correspondents.

Andalusia: *H S W.* Send your correspondent anything in the shops from Chili, Mexico, or California, or the Southern States of North America; also, if you can get them, seeds of all sorts of New Holland and Cape plants. They will be acceptable and will find an European home in that climate.

Books: *B.* The following is what you want: "A Series of Botanical Labels for the Herbarium," edited by a corresponding member of the Botanical Society of London, published by Messrs Longmans, Paternoster-row.—*J S.* We have frequently been obliged to say that there is no work on foresting of which we wholly approve. Perhaps Brown's "Forester" may answer your purpose. A *good* book has to be written.

Camellias: *T F* They generally produce far more flower buds than they can expand, and the consequence is if not thinned artificially many will always drop off. If the plant be healthy as many will remain on as it should bring forward in one season ‡

Coffee: *Coffee.* We will tell you next week.

Concreting Vine Borders: *J Abell.* You will find ample instructions on this subject in the early part of the present year's volume, more especially at pp. 68 and 118.‡

Daisies *Sub* It is a long job, but if you will *persevere* in grubbing them up, the moment they appear, you will certainly eradicate them in time.‡

Forsythia: *E S.* It forces well and is handsome. The flowers are bright yellow.

Fruit-tree Borders: *J S H.* If the wall is not more than 10 feet high, the width of a border of forced soil need not exceed 10 feet; but as this must include a walk of 3 or 4 feet wide, owing to the ground rising in front of the wall, the walk must be formed as shallow as possible, not deeper than from 4 to 6 inches of hard materials, and below this the ground should be prepared the same as the rest of the border for the roots The depth of soil should not be less than 2 feet, under the circumstances 2½ feet, on a bottoming of 5 inches of broken stones and lime rubbish, as you propose, should answer well. Manure moderately in the first instance; scarcely any if the soil is naturally rich, afterwards add, to keep the Apple and Pear trees growing with sufficient vigour, mixing well the manure and soil together. ‖

Green-fly *P W I* Nothing kills it so speedily or effectually as tobacco-smoke We should think you might cover your tree, even on a wall, with some material sufficiently close to keep the smoke about it long enough to kill them. It is worth a trial next year ‡

Greenhouses: *H J W.* We cannot advise. A solicitor is the only person whose opinion you ought to take. The responsibility of giving legal opinions ought not to be assumed by newspapers. Our un-legal opinion is that the building is not removable, unless there is some agreement.

Insects: *A Sub.* No one can advise you well without inspecting the house. There can be no real difficulty in clearing the house by some means or other, but you will probably have to turn out the plants and *burn* all your soil. Such a swarm of enemies as you describe must be attacked in good earnest. Fire, boiling water, and turpentine are all useful helpers in such a case

Ivy: *Inquirer.* Ivy is not injurious to timber. The reason you did not ripen your Grapes under your frame was, no doubt, that you did not put it on soon enough. The end of February is the latest. The question about hot air is not intelligible to us. It is a matter of experience when plants require water; we do not know how to explain the signs unless by saying that the balls should never be wet in winter; slightly damp is all that is required. All the Cupheas are fibrous tender-rooted things, and easily suffer from drought. No general rules are possible in such cases. Thought and experience must be your guides.

London. *An Apprentice.* We have not the book at hand, but will answer you next week. By itself your question is unintelligible. Always endeavour to state your meaning clearly—whether you ask a question, describe a fact, or express an opinion.

Names of Plants: *F G T.* Lastrea Filix-mas *S.—S N.* Certainly, quite a new Coix, and very curious. Many thanks.—*A N* Saccolabium denticulatum.—*Tyro.* 1 looks like Asplenium lanceolatum, but the specimen, being small and imperfect, is not sufficient to determine by; 2, 3, 4, and 5, are all Asplenium Adiantum nigrum. *S.—P B.* Never received.‡

Plants for the Sea-side: *N C.* Try the different kinds of Crocuses, Narcissi, Fritillaria, Ornithogalum, Scilla, Dog-tooth Violets, Alstrœmerias, Statices, Armerias, Hemerocallis, Œnothera, Campanula, Saxifragas, Iberis sempervirens, Lathyrus grandiflorus, Alyssum saxatile, Phloxes, Poppy Anemone, Hyacinths, and double Pinks. Shrubs: Tamarix gallica and germanica, Spiræa salicifolia, Leycesteria formosa, Colutea cruenta, Sambucus racemosa, Coronilla Emerus, and Pyrus japonica ‡

Public Museums: Will the writer of a letter signed "A Scottish Naturalist," and dated Edinburgh, favour us confidentially with his address. The subject is too serious for an anonymous communication.

Scale: *Inquirer.* Destroy it now, when the leaves are off your trees, with water of the temperature of 150°, or better 160°.

Sand: *J. Yealmon* We cannot ascertain what ails your sand without a chemical analysis, which is, for us, out of the question. In the absence of knowledge of the real nature of the impurity found in it, we must not recommend it.

Vinegar: *A Subscriber.* Dissolve sugar or molasses in water, so as to make a sweet fluid; put in a bit of the plant, and let it stand in a warm place till sour.

Vines in Pots: *C A A Lloyd.* See p. 253 of our vol. for 1847.‡

Worms: *Sub.* Send us a specimen, and then we may be able to tell you what it is and how to kill it ‡

Zinc Labels: *G.* The letters are perfectly distinct; but not more so than those traced with other zinc inks.

Misc. *A H.* Funkia grandiflora is considered hardy; it would, however, be all the safer if so covered in winter as to be kept from wet. We are unacquainted with such a plant as Pittosporum Mayii; whose name is it? All the Pittosporums are, however, too tender for this climate, except P. *Tobira*, and that is hardly an exception.—*W Smith.* Sow your Crinum seeds in February in a pot or deep pan, and plunge them in bottom-heat in a stove or warm seed pit ‡—*S.* Your plant has been given to you under a wrong name; what you have sent us is a capsule of some Mesembryanthemum ‡

POLMAISE HEATING.

J. LEWIS'S IMPROVED POLMAISE STOVES are delivered to the Railways in London, with Plans for fixing. For a Greenhouse: 20 feet by 12, 6l. 10s.; 30 feet by 14, 8l. 10s.; 60 feet by 18, 10l. 10s. Stoves for Churches, Schools, and Halls, according to size.—Hothouse Works, Stamford-hill, Middlesex.

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J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, keeps a very large stock of Hot Water and Trough Pipes, with Elbows, Syphons, Tee Pieces, Collars, Flange Sockets, and Spigots, Throttle Valves, &c., of excellent quality, and at very low prices. Parties requiring the work to be done can have good workmen sent to any part of the kingdom, with everything requisite for the heating, &c, at a stated sum. Rain-water pipes, Sutters, Sash-weights, Railing Bars, Air Bricks, and numerous other castings are also kept at J. JONES's, Iron Bridge Wharf, No. 6, Bankside, London.

WHEAT SOWING.

THE LONDON MANURE COMPANY beg to offer as under, and pledge themselves that every Manure sent out by them shall be free from the slightest adulteration. Peruvian Guano direct from Importer's Warehouses, London Manure Company's Wheat Manure and Urate, Sulphate of Ammonia, Phosphate of Ammonia, or Ammoniacal Phosphate; Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone Sawdust, and every other Artificial Manure.

EDWARD PURSER Secretary, Bridge-street, Blackfriars.

STEPHENSON AND CO., 61, Gracechurch street, London, and 17, New Park-street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority, or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood, erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

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BENCH invites the attention of Gentlemen about to erect Hothouses, &c, to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1s. 4d. to 1s 9d per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle, being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.

HEATING BY HOT WATER.

CHEAP AND DURABLE ROOFING

BY HER MAJESTY'S ROYAL LETTERS PATENT.

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The new Vice-Chancellor's Courts, at the entrance to Westminster Hall, were roofed with F. M'NEILL and Co.'s Felt about two years since, under the Surveyorship of Chas. Barry, Esq., R.A. Her Majesty's Commissioners of Woods and Forests are so satisfied with the result that they have ordered the Committee Rooms at the Houses of Parliament to be roofed with their Felt. Quantity altogether used, 24,000 feet.

NOTE.—Consumers sending direct to the Factory can be supplied in lengths best suited to their Roofs, so that they pay for no more than they require.

Every information afforded on the construction of Roofs, or any proposed particular application of the Felt.

The Agricultural Gazette.

SATURDAY, DECEMBER 22, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.
THURSDAY, Dec 27—Agricultural Imp. Society of Ireland.
FARMERS' CLUB.—December 26. Furness.

WE were particularly struck, not merely with the generally utilitarian eye with which the public regarded the POULTRY department of the late Show at Birmingham, but also with the engrossing interest with which the cocks and hens were regarded, to the great neglect of the turkeys, geese, ducks, &c. The particularly beautiful pair of Carolina ducks, which set us longing, were scarcely looked at; the same of the pure and of the half-bred (with game-fowl) jungle cocks, both remarkable and valuable birds; the same too of the golden, silver, and pied pheasants, as well of the excellent black East India ducks, which, however, had not sufficient daylight to call forth their beauties. A common heron, hatched with a batch of chickens, and living with them amicably, attracted somewhat, and not a great deal more notice. It was curious to see the pullets making away with the animal food intended for the heron. In short, the cocks and hens were the principal performers, the cynosure of every eye, the observed of observers. All this is good: this principle of preferring actual usefulness to the attempt to illustrate any department of mere natural history instead of agriculture, or to get together an ornithological collection, in the place of strictly a poultry show, is real good sense—if it be not carried too far. But it seems clear that upon the Birmingham exhibition will be thrown, in succeeding years, the responsible task of guiding public opinion in these matters, as well as the agreeable and popular one of following and rewarding it; and therefore, as strangers who really feel a friendly anxiety that a high position may be maintained by the meetings which have commenced so well, we will advise that the promoters, as soon as possible, take high ground, and instruct the judges to set aside all specimens that are of inferior merit, even though they be the only ones of the class exhibited. Year after year good prizes should be offered for good pea-fowl (which might be easily accommodated in lofty pens fitted with perches), guinea-fowl, Muscovy ducks, white fronted geese, common ducks and geese, and all truly domesticated birds, and also for any birds illustrating the most interesting and important theory of domestication, withholding all marks of approbation from whatever is undeserving to receive it. It goes much against the conscience of judges to be compelled to affix a mark of excellence to things that they would, on their own premises, immediately consign to the spit or the stew-pan, if they were in a proper state to go there, which is not always the case. Perfection, both practical and scientific, is the consummation to be aimed at, even if not quite attainable according to the current aspect of circumstances. And therefore, as the Birmingham Poultry Show has already had its "Rules," &c., adopted by other similar exhibitions, and is likely for the future to be taken as a standard example, we will suggest one or two points desirable to be observed on such occasions.

In the first place, the birds differ from the animals exhibited, in the circumstance that the latter are mostly slaughtered soon after the show is closed, while the former are purchased or kept on for breeding purposes. It is therefore of importance that they should contract no seeds of future disease during the time that they are exposed to the inspection of the public. If it were possible, the time of their confinement in the pens should be much shortened; but as this department is the most popular and generally attractive of all, such an arrangement can scarcely be expected, at least not in Birmingham. The next alternative, then, is to increase the comfort of the birds. Remembering that the exhibition takes place in December, they ought to be kept considerably warmer, and this can easily be arranged in the vast permanent building, roofed with rough plate glass, which it is proposed to erect. Every pen should be provided with thick, rough perches, which even the Muscovy ducks would be found to use thankfully. All the birds, except the common ducks and geese, kept for a whole week in the (to them) unnatural position of standing, instead of roosting on perches, at night, must have felt it painfully, and suffered. Before the show commences, a large stock of green turves, a cart-load or two, should be laid in by the managers, so that each pen may be daily supplied with a portion, as long as the fowls are kept incarcerated. The greediness with which they will fall to upon it, and eat nearly the whole of it, mould and all, shows how instinctively they long for what is necessary to keep them in health. Only a moderate supply of corn should be given by the attendants—much hard grain is death to fowls in confinement—but a sufficiency of soft food, *i. e.*, Barley or Oat meal, mixed with water, with the addition of a little fine pollard. If the pens are cold, a handful of Hemp seed may be thrown in daily. Plenty of fresh water and gravel, of course. Shred Cabbage, even if coarsely cut with a chaff-cutter, will be found beneficial. Some of these hints are derived from the successful practice of Mr. BAILY, of Mount-street; and we are sure that the mention of them, so far from giving offence, will confer real aid by the suggestion of improvements to be adopted hereafter. Tables, or something on the level of the eye, are required to receive pigeons, baskets of eggs, and the smaller poultry, in which an interest has to be excited, if it does not yet exist.

But faultless arrangements are not to be arrived at in a day, nor in a year, nor in two; and the wonder is that so much has been achieved already. It just shows what energy, singleness of purpose, and a sincere desire to gratify and benefit our neighbours can effect. A few gentlemen, who are well known to, and ought to be honoured by their fellow townsmen and by those of the neighbouring districts, have succeeded in founding a vast exhibition of the live produce of agriculture, which promises to be, from year to year, most convenient, useful, and profitable.

The effect of such a collection as has just been brought together must be to raise and improve the branch of rural economy which it has been intended to illustrate. We would particularly instance the facility for selection which it affords to those gentlemen and farmers who keep but one breed of fowls at their homesteads, by enabling them to raise their troop of cocks and hens from well bred parents, till their poultry yard shall be as perfect in its way as their flock of Southdowns, or their dairy of Herefords or short-horns. The larger the stock of poultry kept on this principle, the greater, of course, will be the chance of obtaining choice specimens. Those who have once seen the principle of selection well carried out, on a large scale, will afterwards hardly tolerate the rabble of winged creatures that are so frequently met with on farming premises. By indulging in this mode our taste for the poultry fancy, we have the great advantage of combining usefulness with beauty, and uniting profit with amusement. On the town and its environs, too, the effect, we are assured, will be good; such meetings as these must have a tendency to convert the competition of the agricultural and manufacturing communities into a friendly rivalry, a good-natured and mutually instructive, mutually indulgent strife after excellence. The manufacturer will amuse his leisure with attempts at farming; and the agriculturist, during his visits to such a town as Birmingham, will become interested in the results of mechanical skill and scientific industry.

The diversity and excellence of the whole show will appear from the fact that a sum, approaching to 50*l.*, has been awarded in money prizes, of small amount, to deserving specimens in the Poultry department alone, and besides these, as already mentioned, two beautiful medals have been executed for the occasion by Mr. THOMAS OTTLEY, of Snow hill, who has quite succeeded in his endeavour to make them worthy specimens of local skill. The larger one, awarded to the breeders of sheep and cattle, contains groups of those animals, the breeds of the latter selected for representation being the Durham, the Hereford, the Devon, and the old Long horn; and of the sheep, the Leicester and Southdown, the distinguishing characteristics of each being accurately preserved. Of this, the promoters of the exhibition at present retain the copyright; the same ability, however, may be expected to produce equally admirable results, if required by other parties. The smaller medal, of the excellence of which the reader can judge from the illustration in another column, represents a variety of poultry well grouped. Upon the die of this Mr OTTLEY has laboured at his own risk; and it is particularly suitable for the object which the artist had in view, namely, for presentation as a prize at the various Poultry shows which are likely to be instituted in different counties of England and Scotland. *D.*

THE course of legislation in this country has never presented a fairer opportunity than the present, for a calm and searching inquiry into the operation of any causes that may be found exercising an influence, direct or indirect, upon practical Agriculture, and upon the condition of Land generally in a commercial point of view. After a century of alternations, in the shape of War-prices, Bounties upon Export, Restrictive duties upon Import, Home-gluts arising from a succession of good harvests, or Scarcity from bad ones—and no longer tempted, or distorted, from its natural channel by the operation of any or all of these causes—our Husbandry is thrown upon its own resources. It can afford to speak plainly: it may justly claim a fair consideration of its true position, for the encounter it has entered. If any trammels still hang upon it incidental to a state of things which has passed away; if there be any baulk or hindrance which shortens the arm of Industry at home, or interferes with our productive energy, let it be fully and carefully examined into, and if proved to exist, receive its proper remedy.

Yet how can the 'manufactured article' be produced at the lowest cost where the raw article (so to describe that which most truly deserves the name) is not only limited, but is under the long-descended

influence of laws which narrow the development of its powers in the hand of a present owner, and its transferable capacity to that of another? how, in a word, can land be made to produce its utmost, if it be found to present an unsafe or an unwise investment to its reputed owner, or is tied inextricably to an owner who is unable to make the investment it demands?

We have before, from time to time, adverted to these questions, for we have long foreseen the necessity that would arise for their consideration: time and events have fully realised our expectation. The subject is not new; but its importance is newly disclosed and derives fresh clearness from every advance made in agricultural question and experience. We have lately received a most striking and valuable pamphlet,* addressed to the Chancellor of the Exchequer by FREDERIC CALVERT, Esq., Q.C., in which the subject is handled with a simplicity of language, and clear insight into the facts of the case which are never so welcome as in *mixed questions*—questions in which the knowledge of the Lawyer must combine with the perception of practical results produced by the Law upon the Art or Business it affects. It is in such questions that the remedy of evil is always slowest, simply from the rareness of that *compound* intelligence of facts separate and distinct in their nature—which must be brought to bear upon the judgment of them. Writing from Buckinghamshire Mr. CALVERT says

"You are probably aware, that in this part of the country a great deal of land requires draining, manure is scantily applied, the fences are bad, the buildings insufficient and ill-arranged, and that altogether our agriculture is far from being in an advanced state. It is with reference to a country in this peculiar condition, that these suggestions are offered to your notice."

What is to be the remedy? 'Reduction of local taxation,' in order to meet low prices of produce, that loudly urged panacea, is set simply forth by the writer side by side with Drainage. The comparison, to any one familiar with its effects upon lands requiring this primary and fundamental process in agriculture, scarcely deserves the name of a comparison. It resolves itself virtually into a question between a pecuniary remission of some three or four shillings per acre on the one side, and the value of at least a quarter of Wheat on the other, minus 6*s.* 6*d.* for interest. But—

"A landowner who is only tenant for life, is continually told, that he must meet the difficulties of the times by improved systems of cultivation. He naturally answers, that such improvements cannot be effected without the application of capital, and inquires how he is to obtain the capital. Even if he possesses wealth independent of land, it by no means follows that he can use it in agricultural improvements. Few men, who have several children, can afford to spend large sums of money for the exclusive benefit of the eldest. Were the landowner a tenant in fee, he would borrow upon security of the land the money required for the improvement of it. He would make the land provide the capital, of which the land is to receive the benefit. But if he is tenant only for life, the nature of his tenure prevents him from raising money, except upon the exorbitant terms which attend loans upon a life interest. Thus although he wishes to undertake agricultural works, *which would be beneficial to his successors, as well as to himself*, and which may possibly be the *only means of preserving the value of his property*, he is defeated in his intentions by the restricted character of his rights over the soil. It is in order to maintain other rights created under settlements that the restrictions of his tenure are imposed upon him. They may be useful and important with a view to that object; but they certainly impose a check, in many cases insurmountable, to the improvement of land."

This difficulty the Drainage Act (9 & 10 Vic. c. 101) has removed; as the writer shows. But what follows? The act of Drainage is the foundation and commencement of a new system of dealing with the land, which implies the outlay of fresh capital at every step.

"If a given estate or any part of it has been drained, there is the *stronger reason why money should be advanced for the erection, enlargement or improvement of farm buildings*. The expenditure already incurred in draining, as it increases the produce, creates the want of more farm buildings, and thus renders it necessary to incur further expenditure."

It is in vain that you attempt to treat Land as a mere *heir-loom*, to be locked up, and handed down as the prudent *purpose*, or the vanity, of man may prescribe. It must either go with, or sink under, the progress of improvement around it; it is a Talent that refuses to be wrapped up in a napkin. It has a resilient power for good or ill, upon its owner, that compels him to become either its efficient and active partner—the agent of its development—or its victim. Its character and nature are exactly prefigured in the fable I story of those Gems who either obeyed the master who could rightly wield the talisman—or crushed the possessor of it. "Observe," says Mr. CALVERT,

"The position of the tenant for life of a much encumbered estate. Ostensibly he is the owner of a territory, carrying with it rank and influence; and he is expected to confer great benefits on all around him, by acts of charity, by acts of kindness and liberality, and by an independent exercise of the different kinds of authority which belong to his position. The reality is, that a large proportion of the proceeds of his estate pass to mortgagees and creditors, who beyond the mere safety of investment, care not whether the property is well or ill managed, and who are probably entire strangers to all who dwell upon it. That, for whatever purpose funds are required, for charities in his parish or in his county, for improvements of his property, for assistance to tenants, for any of those innumerable acts of beneficence by which men of wealth can contribute to the welfare of others, his funds are always deficient. On the one hand there is the nominal possessor, managing the estate most imperfectly, but deriving from it very little benefit: on the other the creditor, who enjoys the proceeds, but never troubles himself about the management. It is hard to conceive a state of things more injurious to all parties. Yet the evil may possibly go further. The difficulties of the landowner may be so great as to render him unable to reside upon his property. Forbidden by the law to part with any portion of it, he may be compelled, however unwillingly, to inflict upon the neighbourhood all the enormous moral evils of absenteeism."

The picture is true to the life. And perhaps the most painful part of it, as far as the individual is concerned, is that this same moral evil is *reciprocal*: it not only affects the neighbourhood, the condition of the Tenantry, the Laborer, and the Soil; but it reacts, if it does not most frequently act primarily, upon the individual: it renders him a sort of unattached wanderer, and begets *a class* of such—the very class with whom it consociates him. It would be difficult to trace throughout its whole course the moral wound inflicted upon Society by such a state of things. It reaches from the highest to the lowest. It is the secret cause which lies at the root of the otherwise inexplicable phenomenon of the willing laborer standing idle by the side of a field untilled and rank with weeds. The history of its growth is well sketched by Mr. CALVERT as follows:

"The tale of misfortunes, which have occurred in great families during this century, is very uniform in character, and may be briefly narrated. The father lives beyond his income, incurs a debt, and is prevented by the widely-extended duties of his position, public as well as private, or perhaps by vanity or false pride, or by a want of energy, or of a correct knowledge of the state of his affairs, from making a reduction in his establishment and expenses. The son comes of age, and is persuaded to saddle the inheritance with the father's debt. He in his turn imitates his father, constantly exceeds his income, augments the debt, and persuades the grandson once more to load the inheritance. But if the son or the grandson had possessed *the power of selling a portion of his property*; if either of them, when his judgment had arrived at maturity, could have relieved himself from that irresistible temptation to expense, which arises from the vastness of territorial possession, there would have been at least one additional chance of *rescue in the road to ruin*."

To enable the Tenant for life, under proper safeguards for the inheritance, to avail himself of this sole emancipation from the false position in which he is placed, forms one of the principal suggestions of the author.

There is however another subject appended to it—that of a proposed REGISTER of TITLE DEEDS—a subject of such vital and growing importance, that we hesitate to damage it by the necessarily short notice to which the length of our foregone remarks will confine us. It is one which has lain out of sight to the Community at large, and therefore out of remedy,—simply for the want of proper explanation. Briefly, but most truly, it may be said, that if the Agricultural Interest of this country, including Owners, Tenants, and *Laborers*, were only practically aware of the amount of evil indirectly inflicted upon the soil by the artificial obstacles which clog its transfer and its commercial use, the mischief would not be allowed to live out another session of Parliament. The too commonly received notion, indeed, is that it is 'The Law of the land' which favours and keeps in existence this state of things: the very reverse is the truth. The Legislature of the country has attempted again and again, though not in the most efficient way, to correct the growing evil, and to shorten and simplify the absurd restrictions and impediments, which have at last nearly made *the purchase* of a field as costly as *its price*, and the Interest of money borrowed upon land even for its own improvement, nearly half as much again, as it would universally be, but for *the expense of proving the Security*.

Once let the Title to land be made matter of Public Register,—once let a legally *proved title* be made *permanent* by the simple act of public Record,—and there is not an acre in England that need pay in interest on mortgage a higher rate than the Funds. To every Real-property Lawyer the reason is perfectly intelligible: it is the parties most deeply interested, the agricultural class alone to whom, through mere want of knowledge, there is any mystery in the subject. If extraneous proof be wanted, of a kind most intelligible to them, they have it in the fact that Government has, in the Drainage Act, overleapt the whole difficulty—that it has lent money on landed security at the lowest rate of interest, taking *de facto* ownership as evidence of title. The extent to which the Labour market and the Money market might be relieved of their idle abundance, and employed most productively and upon the best of all security,—the extent to which the enormous aggregate amount of interest now paid on mortgage might be reduced to the rates paid on Government Securities, by a Registration giving permanence to proved titles—it is startling to calculate. The subject has been ably written upon, and simplified, by eminent real-property Lawyers, now living. Mr. PAGE WOOD, Mr. JAMES STEWART, Lord BROUGHAM, Mr. VANSITTART NEALE, the SOLICITOR-GENERAL, and many others might be named, if clear exposition or authority be wanted, to assure the Landed Interest, on a question of the first importance to them, and which needs only for its accomplishment their understanding, and their co operation.

We shall return to this most important subject, and to a fuller examination of many points which want of space has compelled us to merely glance at and epitomise; but we cannot deny ourselves the satisfaction of adding to our quotations the concluding remarks of Mr. CALVERT'S practical and comprehensive Letter, which we recommend to the careful perusal—and more than a first perusal—of every one directly or indirectly interested for the full development of the resources of our own soil, or the employment of our redundant Capital, and Labour.

"It has evidently been intended in all recent legislation affecting agriculture, that the application of science, capital enterprise, and activity, shall bring all the inherent powers of the soil into action, and extract from it the largest possible amount of produce. But while a considerable portion of our landowners, crippled by the present restrictions of a tenancy for life, are checked in their attempts at improvement by a want of power to raise capital, our cultivation must remain in an extremely defective state. The evil consequences will continue to be felt by all classes; by the landlord in the amount of his rent, by the tenant in the amount of his profits, and by the labourers in the precarious supply of employment and in the very low scale of wages. Were our law altered in the particulars which I have mentioned, I should venture to hope that a great amelioration would take place in the condition and prospects of all these classes. The tenant for life would be enabled to raise funds for permanent improvements, or else to grant a term to improving tenants; improvements in cultivation would produce an increase, not only immediate, but also permanent, in the demand for agricultural labourers. At the same time all dealings in landed property would be rendered easy and inexpensive by a SECURITY OF TITLE, HITHERTO UNKNOWN IN ENGLAND."

THE MALT TAX.

SURELY this question of tax or no tax comes within the scope of a discussion on the art of profitable farming. The profitableness of fattening on malt can hardly be settled until experience has shown what would be the price of the untaxed article; but I have no intention to meddle with this matter. An able writer in the *Agricultural Gazette* of the 10th ult. asserts, "that the public burdens which unduly bear on the cost of cultivating land, though we hear so much said of them, are, in fact, so trifling as little more than to justify the shilling per quarter already chargeable on the importation of grain from abroad." And this assertion has been over and over again repeated of the malt tax alone, but not a shadow of proof has been attempted to be offered on any one occasion of the assertion. I will endeavour to show that a repeal of the tax would be a greater relief than any protective duty we are likely to get, and more than any we can claim, for I cannot see how public burdens justify protective duties. If they are unfair burdens, that is merely a reason for removing them.

Now for the question. The price of a quarter of Barley is, say, 30*s.*; the duty on a quarter of malt 21*s.* 8*d.* Just fancy a Manchester man bringing his cotton from Liverpool, not daring to set his spinners to work till he had given notice to the exciseman, and then only at a certain hour, the work to continue only according to the regulations of the exciseman, with such processes required or forbidden as suited the exciseman, without any consideration of the exigencies of the art, the whole to be concluded with payment of a duty of 21*s.* 8*d.* for every 30*s.* worth of cotton wool. Should we not be told, and most justly, that this was a gross violation of freedom of trade—a monstrous interference with the employment of capital—an undue discourage-

* "A Letter to the Right Hon. Sir CHARLES WOOD, Bart., M.P., upon certain Laws affecting Agriculture, by FREDERIC CALVERT, Esq., Q.C. RIDGWAY.

ment of cotton spinning,—a hothouse protection of flax, and wool, and silk? And if it was proposed to repeal this excise duty on cotton spinning, would any Manchester man say—it is useless, there will be such an excessive importation of cotton, such an enormous diversion of capital from other trades to that of cotton spinning, such increased competition for mills, that he should gain nothing by the removal of the duty? Or, again, would the seller of cotton say, the supply of cotton from America will be so overwhelming that cotton will be no dearer after the removal of cotton yarn than before? No; the Manchester or Liverpool man would say nothing so absurd. He would say, both justice and expediency demanded the repeal—he would know that for some few years, at all events, the supply could not be sufficient to reduce the price by the whole amount of the tax—he would be content with the real, the certain, though not perpetual rise in the price of cotton—and most probably would wisely not trouble his head at all with the distant future, which he might never live to see.

Let us return to the malt tax and its effects on agricultural profits. The tax is 21*s.* 8*d.* per quarter. Eight bushels of Barley make nine of malt, and the ninth would pay for the malting if there were no duty. It will be sufficiently correct for our argument to assume the prices of Barley and malt are 30*s.* and 55*s.* Now suppose the duty repealed, and a law effectively carried out that no more Barley or any other substance should be converted into malt after than before the repeal of the duty. There would be the same inclination and power to buy malt; or, in other words, the same demand for malt; there being no increase of supply, the same price would be given for it. But maltsters would compete for possession of the Barley, whose supply we assume is effectively prohibited from being increased. The consequence must of necessity be that the price of Barley would approach very closely upwards to the price of malt, and not that malt would fall one farthing towards the price of Barley, just as we now see flour and bread so closely approach each other. Under this hypothetical case it is impossible to deny that Barley would rise by something very close upon 25*s.* a quarter. If instead of the supposed legal obstacles to the increased supply of Barley there should be equally effective natural obstacles, the effect would be the same. In the cases supposed, the tenant farmer would get the whole benefit of the rise as long as his lease lasted—the landlord would get it as soon as the lease expired—the farm labourer would be only indirectly benefited in proportion as the consequent great gains of the farmer induced him to spend more money in labour; the consumer would be benefited only in proportion as he should obtain increased dealings with the agricultural classes. The losers would be the former recipients of the tax, supposing it repealed without a substitute. Thus far, then, the state of the question is clear. Our hypothetical case shows that the malt tax is a burden on the landlord or tenant, so far at least and so long as the price of Barley should rise after the removal of the tax.

Now what would be the practical case arising on a simple abolition of the malt duty? The price of Barley would be kept from rising to the present price of malt only by increasing the supply of Barley for malting; but in doing this you diminish the supply of Barley for other purposes. The price of bacon would therefore rise, because the supply of bacon would fall until the price covered the increased price of Barley. Beer would fall and bacon would rise in price. Next the number of acres under Barley would increase, and this would diminish the number of acres of Wheat, Oats, or other produce, and therefore increase the price of other produce in proportion as it kept down Barley from rising. Thus, then, if no foreign corn were imported, the farmer or landlord would gain the entire tax, when removed, just as in our hypothetical case; only, instead of gaining it wholly in the price of Barley, he would gain it partly in the price of Barley, partly in that of Oats and other produce. Free trade, then, is the only obstacle to the entire tax going, on its repeal, into the pockets of either the farmer or the landlord. Free trade would enable the consumer to get some of the benefit of the removal of the tax; and hereupon in the wildness of despair the agriculturists cry, "It is nought, it is nought," instead of looking at the facts and seeing if a very pretty thing cannot be got out of this repeal, for at least a few years, until they have better adjusted themselves to the new position of their art. Now, what are the facts? First, no more malt is consumed now than 100 years ago, when the population was just one-third what it is now, but the duty little more than nominal. Here, then, is a market for malt requiring a supply three times as great as at present. Filthy adulterations of beer, poisonous wines and spirits, worthless mixtures miscalled tea—such are the substitutes for beer, while numbers only abstain from the pure article because they cannot afford the price.

But making all allowance for change of habits, still a threefold increase of population must admit of an immensely new market—say two-fold. The consumption of malt is now about 5,000 000 qrs.; double the market and you have a demand for 5,000,000 more quarters. Nay, more than that; for the present supply already consists of the best Barley. An additional supply must in some degree consist of Barley not yielding so much malt, and therefore must be proportionally greater in quantity, more bulky and more costly to be imported. Moreover, as malt became cheaper, there would be an increasing demand for beer for export. And this is no trifling matter; for late years have indicated that a very extensive trade is possible for the unsurpassed skill of Englishmen in this manufacture. How childish, then, with these prospects of much more than doubling the market for Barley, is it on the part of the landed interest to fold their hands in despair, and cry out, "It is no use, the foreigner will supply all we want." He manifestly cannot do so for many years, without diminishing the imports of some other grain, until such lapse of time as shall have made the farmers better prepared for carrying on their business with low prices. The more reasonable supposition is that no such increase as doubling the supply could take place at all, as the effort to do so would so diminish the quantity and raise the price of other produce, as to render this equally profitable. There would be a valuable and permanent rise in the price of Barley, and a fall in the price of malt. And if Barley should rise 8*s* and malt fall 17*s.* a quarter, while this would cause a great demand, that would be a valuable boon to one who grew 5 or 6 qrs. per acre.

I contend for the repeal on free trade principles—on the ground of the impropriety of so grossly interfering, as this enormous tax, with the employment of capital in growing or manufacturing one thing rather than another. I believe it would tend to keep the labourer at home instead of plotting mischief at the beer shop. But mainly I conceive it is a tax upon the land rather than on the consumer, and if its removal were honestly contended for principally on the former ground, I believe it would be more attainable than by the aid of something often too much like canting clap trap about the labourer "enjoying his pipe and his pot of home-brewed at his own cottage door." There is nothing like the open truth. Perhaps it would diminish the revenue derived from spirits as well as malt, which of course would render its adoption more difficult. Be it so. As a free trader I contend for its justice; as an agriculturist that it is a grievous burden—an unjust burden, and therefore one we ought not to bear. If the state wants money, let it raise it justly. But if we will submit to the injustice, it can form no ground for taxing bread, that we have already taxed beer. I am confident the repeal of this tax would be ample compensation for the expired duties on foreign corn.

After I had written thus far, it appeared but due to that most cautious of experimentalists, Mr. Lawes, to read again his experiments on this question. The result of those experiments is decidedly unfavourable to the notion that malt may be substituted for Barley in fattening sheep, though, says Mr. Lawes, "its occasional employment in admixture or alternation with other articles of food, may have a favourable influence upon the progress of the animal; and, indeed, when used as a relish rather than as a staple article of food, it is as such an useful and genial auxiliary." It appears likely also that, besides the cost of the malting process, the manure resulting may not be so valuable. But still, as a free trader, I protest against a final decision until the malting process has been freed from the interference of legislation. Mr. Lawes thus describes that process: "The grain first remains for a certain time in a cistern under water, where it swells considerably, having absorbed a large quantity of water, and lost by solution a considerable amount of saline matter and of organic substance containing nitrogen." Now could not this saline and organic matter be converted either into manure or food, if a farmer or maltster had perfect control over his own malt house? Again, the grain being sufficiently grown, then, "provided it has been in progress as long as is required by the rules of the Excise, it is dried in the kiln." But are the rules of the Excise the rules of nature? May there not be waste again unnecessarily at this point? In the kiln some of the young shoots or dust passes through a frame of wire gauze, and "being contaminated with the ashes from the furnace is rendered unfit for food." Here again, we ask, with free trade in the malting process, might not a mode be discovered of preventing this contamination and waste? Lastly, "the remainder of the young shoots still adhering to the grain is separated by treading and screening, and the dust thus obtained is distinguished as malt-dust, and is valued for feeding purposes." Suppose the ingenuity of the manufacturer were freed from the rules of the exciseman, might there not be an improvement here in the treading and screening? Such, I think, are questions to be settled prior to a final decision on the comparative merits of malt and Barley. A similar train of argument is applicable to the duty on soap produced from fat. *Amicus Tull.*

Home Correspondence.

Small Farms.—Fearing that "A. M. A." may be discouraged by a "Small Farmer's" letter in the *Gazette* of 1st inst., I cannot refrain from again, with your permission, giving a short statement of what I, a novice in farming, am able to do from three acres of ground. My stock consists of one horse (I kept two until within a few months past), two cows, and, on an average, six pigs. My cattle are soiled the year round; in the summer evenings the cows are occasionally turned out for an hour to stretch their legs, but they are always anxious to return to their shippon. My field I divide into three sections, on one of which I sow, in early spring, Oats and Tares, and along with them Italian Rye-grass and red Clover, for green feed during the summer. Should the Oats and Tares become coarse and old I then make them into hay; before the end of the year I have a fine rich cutting from the Italian Rye-grass and Clover. Now, this Italian Rye-grass and Clover form a second section of my field the following year, and from them I obtain my hay. I make hay twice at least, May and July, and, if the the weather be suitable, could have three hay makings. I afterwards obtain two or three cuttings before the year runs out, when I break it up and prepare for my root crops, which forms my third section. Upon this I grow Potatoes, Skirving's Purple-top Swede, Mangold Wurzel, Orange Globe, and Long Red; Carrots, Altringham Red and Belgian White, and Drumhead Cabbages. I get a vast amount of food from the tops and leaves; indeed, they supply me with green food until the old year expires, for at this time whilst I write, the first week in December, I am using the tops of the Swedes, which, with about two tons of Cabbages, and some cuttings still of Italian Rye grass, will bring me into the new year, without touching my winter store, and this will last me until June; but in April, if the spring be kindly, I shall be cutting my winter Tares and Rye when my neighbours have not a blade of Grass for their cows or ewes to bite at; this is a stolen crop, and I thus obtain at. As soon as I get up my Potatoes (I plant them in February in dry and fresh ground, and have no disease worth mentioning), I work the ground and sow my winter Tares and Rye, and in early spring, when my cows have done luxuriating upon them, the spring sown Oats and Tares are ready. When I have cleared the ground of winter Tares and Rye (which, by the bye, at the close of the cutting are 7 feet tall), I then plough the ground, work it, and manure it well, and either sow it with Oats or Barley and Tares, and Italian Rye-grass and Clover, or I transplant Swedes, Mangold Wurzel, and Cabbages. Whatever straw and corn I need I have to purchase, but this would not be the case if I had 2 acres more. I have grown Swedes above 17 lbs. weight, and I weighed an Orange Globe Mangold Wurzel the other day which was above 12 lbs., and this I consider very fair, when you take into the account that my locality is in the midst of the Cumberland mountains, and 400 feet above the sea. Now, this mode of cultivation requires industry, care, thought, a little skill, and all the manure you can muster, and a determination by every means to extract the greatest possible quantity of produce, never to place a limit, but year after year to aim at obtaining an increase; for who shall presume to place a limit to the capabilities of that earth which God has made and not man? I have drained to the depth of 4 feet wherever I could obtain a fall, and have, so far as I am able, laid the ground dry. I have subsoiled the whole, and one part of my field, which, when I first began to plough, was not more than 5 inches deep in soil, is now a foot deep. Whenever the plough is at work I desire that a small portion of fresh soil from below be brought up, and thus I go on increasing the depth of the soil. I am continually preparing composts; the soil I get from the headlands, inequalities of the field, and road scrapings—these mixed with lime and salt, turned several times and well pulverised, and now and then saturated with the contents of the manure tanks, give me a nice store of food with which to top dress my young Grasses. Nothing is allowed to be wasted that will decay and can be converted into manure, not a leaf from the trees, not even the dish washings, all are enlisted and rendered useful. It is now about seven months since my two cows calved, and they now yield me jointly from 10 to 12 lbs. of butter a week. I hope your correspondent will take courage; for what may he not be able to do from his 16 acres, when he learns that from my three I am maintaining one horse, two cows, and six pigs, besides the household in Potatoes? *Ullswater, Dec.* 4.

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A Weekly Council was held at the Society's House, in Hanover-square, on Tuesday, the 11th inst.: present, Mr. Thomas Raymond Barker, V. P., in the Chair, Hon. H. W. Wilson, Colonel Austen, Dr. Calvert, Colonel Challoner, Mr. Bell Crompton, Mr. Dyer, Mr. C. E. Frere, Mr. Fisher Hobbs, Mr. Kinder, Mr. W. Perkins, Prof. Sewell, Mr. H. A. Smith, Mr. C. Steward, Mr. C. Stokes, Mr. G. Turner, Prof. Way, and Mr. Jonas Webb.

The following new Members were elected:

Farish, James, Dormanstead, Carlisle, Cumberland
Harvey, Thomas Chapman, Coburg-terrace, Sidmouth, Devon
Hudson, Rev. George Townshend, Hart-hill, Rotherham, Yorkshire
Buswell, John, Iver, Buckinghamshire
Parson, Rev. W. H., Lynchmere, Liphook, Hants
Thexton, John Yeates, Ashton House, Milnthorpe, Westmoreland
Saltmon, Richard, Watton, Norfolk
Walker, George J. Alexander, Norton, Worcester
Abraham, Thomas, Dunster, Taunton, Somerset
Lakin, Henry, Newland, Worcester
Price, Fowler Boyd, Huntington Court, Hereford
Raper, Henry, Chapel-street, Grosvenor-square, London
Allies, Robert, The Hill, Worcester
Batley, William, 110, Strand, London
Thursby, Rev. J., Abingdon Rectory, Northampton
Darling, Charles, St. John's Abbey, Colchester, Essex
Stevens, Rev. Thomas, Bradfield Rectory, Reading, Berks.

The names of nine candidates for election at the next meeting were then read.

Adulteration of Guano.—Mr. Pusey, M.P., transmitted to the Council a communication he had received on the subject of the extensive adulteration of guano carried on at the present time, by intermixture with a fine light yellow earthy powder, of an ochreous character, obtained by the calcination of a stone found near the line of the Greenwich Railway, and ground down into powder for the express and sole purpose of effecting the adulteration in question. Mr. Pusey transmitted to

the Council a sample of the powder thus prepared, along with an intimation, on the part of the gentleman who had furnished him with it, that "he scarcely knew a greater service which could be rendered to cultivators than a series of papers upon the adulterations of manures, oil-cake, &c., published in the Society's Journal." This communication led to an interesting discussion on this important subject, and to interesting details of practical experience from Colonel Challoner, Professor Way, Hon. H. W. Wilson, Mr. Fisher Hobbs, Mr. George Turner, Mr. E. Parkins, and Mr. C. Stokes. Reference was made during the discussion to the valuable paper of Professor Way on guano, published in the last part of the Society's Journal, and which the Spanish Government had ordered to be translated into that language for distribution throughout their South American dependencies. It was considered that there were only two modes by which a farmer could avoid the disappointment and loss he would incur in purchasing spurious guano, namely, either by a chemical analysis to ascertain its actual composition, or by his obtaining the article of dealers on whose commercial integrity perfect reliance could be placed.

INDIAN CORN.—Specimens of Indian Corn, of different varieties, and grown this season in different parts of England, along with detailed statements connected with their respective cultivation and produce, were received from Mr. J. P. Cobbett, of St. James's-square, Manchester; Messrs. Knott and Panzera, of Little Canford, Dorset; Messrs. Cooper and Co., of Covent-Garden, and Mr. John Spencer, of Bowood Gardens, Wilts. Mr. Krone also transmitted additional specimens of his Forty-day Maize. The Council having directed their thanks to be conveyed to the several parties who had thus so kindly taken the trouble of favouring the Society with their results of cultivation, gave orders that the specimens then presented to them, along with the details by which they were accompanied, should be exhibited to the members in the rooms of the Society during the current week of their general meeting.

PERUVIAN POTATOES.—Mr. HENRY MANNING, of 251, High Holborn, favoured the Council with the following result of his cultivation of Potatoes from South American seeds, with a supply of which Mr. Miles, M.P., had kindly favoured the members on the 15th March last year:

The Peruvian Potato seed was set in ordinary garden-ground at Shacklewell in 1848, and in due course showed fair stems and leaf; but on opening the ground last autumn the result was found to be only a few small bulbs, about the size of very small marbles, which, consequently, were disregarded. This year, however, from the seed left accidentally in the ground, there sprung up several vigorous stems, some of which had leaves of extraordinary size; the plants flowered in a variety of colours. The yield from these, considering the small set, was large, and the size of tubers considerably increased.

The Council ordered their thanks to Mr. Manning for the favour of this communication, and for the sample of Potatoes by which it was accompanied.

Communications were also received, with the thanks of the Council: from his Grace the Duke of Rutland, K.G., on keeping Farm Accounts; from Dr Lambe, of Henwood, on the construction of Labourers' Cottages; from Mr. Brandreth, a report of his trial of Brown's Anti attrition Grease for carts and waggons; and from Messrs. Brown, a statement of its mode of manufacture; from Dr. Calvert, specimens of Grasses bearing affinity to the Tussac Grass, with a statement of their cultivation, and a reference to his Geometrical Roofing-tiles to be used instead of slates or other covering for buildings; from Mr. Rogers, V.S., on diseases in Cattle; from Mr. Harris, of Braunston Mill, a drawing of a new cultivating implement of his own invention; from Mr. Donaldson, on his farming without ploughing; from Mr. Robertson, on restoring decayed trees; and from Mr. Pond, of Edinburgh, a copy of his table for distances in Draining. The ordinary meetings of the Council were then adjourned over the Christmas recess to the first Wednesday in February.

A SPECIAL COUNCIL, on the state of the Finances of the Society, was held on Wednesday, the 12th inst.: present, the Right Hon. Lord PORTMAN, Trustee, in the Chair, Hon. H. W. Wilson, Colonel Austen, Mr. Raymond Barker, Colonel Challoner, Mr. Fisher Hobbs, Mr. Hudson (Castleacre), Mr. Jonas, Mr. Kinder, Mr. Shaw (London), Mr. Villiers Shelley, Mr. Robert Smith, Mr. Thompson, and Mr. George Turner.

Colonel CHALLONER, Chairman of the Finance Committtee, laid before the Council the state of the arrears of the Society, and reported the various steps taken by the Committee, acting under the authority of the Council, for their recovery. The Council then took this important question into their serious consideration, and unanimously agreed to the following resolution:

"That the Finance Committee be directed to proceed in the County Courts, and that notice be sent by the Secretary to each person more than two years in arrear, that unless the money is paid on or before the 1st of February next, process will issue from the County Court of his respective district, the Finance Committee being desired to proceed in each case in such order as they may determine, and to report at each monthly council the proceedings taken in furtherance of this order."

A SPECIAL COUNCIL, for deciding on the Live Stock Prizes for the Exeter Meeting, was held on Thursday, the 13th inst.: present, Mr. THOMAS RAYMOND BARKER, V.P., in the Chair, Hon. H. W. Wilson, Mr. Grantham, Mr. Fisher Hobbs, Mr. Hudson (Castleacre), Mr. Shaw (London), Mr. Shaw (Northampton), Mr. Villiers Shelley, and Mr. Robert Smith. The Council finally agreed to the terms and conditions of the Prizes to be offered for Live Stock at the Exeter Meeting.

The half-yearly AUDIT OF ACCOUNTS was held on Friday, the 14th of December, at eleven, a.m.; present, Colonel CHALLONER, Chairman, and Colonel Austen, and Mr. Raymond Barker, members of the Finance Committee; Mr. Thomas Knight, of Edmonton; Mr. Robert Beman, of Donnington, Gloucestershire, and Mr. John Bell Crompton, of Duffield-hall, near Derby, auditors on the part of the Society. The accounts were duly examined and certified to be correct.

A SPECIAL COUNCIL for agreeing to the report of Council to the ensuing General Meeting, was held on the same day, at one, p.m.; present, Mr. RAYMOND Barker, V.P., in the chair; Hon. Captain Dudley Pelham, R.N., M.P.; Colonel Challoner, Mr. Grantham, Mr. Jonas, Professor Sewell, and Mr Jonas Webb The Council considered and agreed to the report to be made by the Council to the ensuing General Meeting.

The half-yearly GENERAL MEETING was held at the Society's house, in Hanover-square, on Saturday last, the 15th of December, his Grace the Duke of RICHMOND, K.G., trustee, in the chair.

Mr. Hudson, the Secretary, by direction of the Chairman, read the following report from the Council:

REPORT.

The Council have to make the following Report to the Members of the Society on the occasion of their present General Meeting. During the past half year, 2 Governors and 189 Members have been elected, 3 Governors and 71 Members have died, and the names of 4 Governors and 236 Members have been removed from the list. The Society now consists of the following numbers:—90 Life Governors, 173 Annual Governors, 607 Life Members, 4199 Annual Members, 19 Honorary Members; making a total of 5388 Members. This total amount, being 124 less than at the former General Meeting does not indicate so much a reduction in the actual Members of the Society, as a removal of those names from the list, which were put down for temporary and local purposes only, at the early country meetings of the Society: the new Members now joining the Society consisting of those steady friends to agricultural improvement, who, on higher grounds, take a permanent interest in the advancement of its objects, and in its continued prosperity. The Council have directed a new list of the Governors and Members of the Society to be printed and published as an appendix to the ensuing part of the Journal. Among the deaths recorded, the Council regret to specify that of their venerable Member, Mr. Hillyard, one of the founders of the Society, and a constant attendant to within a very short period of his decease at their various meetings. The Council have filled up the vacancy in their body occasioned by his lamented loss, by the election of Mr. Sillifant. They have also elected Mr. Simpson a Member of Council, in the place of the Earl of Lovelace (whose present engagements prevent his due attendance), and Lord Camoys a member of their body, in the place of the late Mr. Umbers. The Council reported at the General Meeting in May, last year, that they had altered the Bye-law regulating the week-day of their ordinary meetings from Wednesday to Tuesday; they have, however, after experience of that change, decided to revert, after the end of the current year, to the original day for their meetings, namely, to the Wednesday, as more generally convenient to all parties.

FINANCES.—The Council have had under their most serious consideration the question they have been so often under the painful necessity of bringing under the notice of the members—namely, that of the arrears of subscription remaining unpaid to the Society. The Council have taken every ordinary means in their power to awaken the members, from whom these arrears are due, to a sense of their engagements to the Society, by repeated circular letters, by an attempted system of local collection, by personal communications kindly made to the parties by zealous members of the Council, by suspension of their names in the public Council room, and in some cases by application made to them by the Solicitors of the Society. These means having proved successful only to a certain extent, the Council have requested a scrutiny to be made into the circumstances of the individuals who thus neglect to comply with the just claims of the Society; and they find that no plea, in the great majority of the cases, can be set up on the ground of inability to discharge their obligations—a plea to which the Council have always most considerately attended in the case of those members who, from adverse circumstances, have unfortunately been unable to meet even the small demands of the Society. The Council have never for an instant doubted, under all this forbearance, the just and legal claim the Charter of the Society gave them to recover these arrears in a Court of Law; but thinking that many of the defaulters might regard the payments due from them as simply optional, like those of an unchartered club or association, held together by motives merely of personal convenience, and with advantages enjoyed only while the voluntary subscription is yearly paid, they conceived that the opinion of eminent Counsel on this point, if obtained and transmitted to them, would at once remove such doubts, and lead to the instant payment of the arrears due. Accordingly, such legal opinion was obtained from Sir Frederick Thesiger and Mr. Warren, in the following terms, and a copy of it addressed in a letter by the chairman of the Finance Committee to each member in arrear, namely:

"We can see no difficulty whatever in this case. No member of the Society can legally cease to be such, simply by discontinuing the payment of his subscription. By so doing, he may disentitle himself to the privileges of the Society, but unquestionably remains liable to pay all arrears of subscription which may be due, till he shall have legally withdrawn from the Society in the manner provided for in the bye laws. The subscriptions are by no means voluntary donations, but legal dues, and, as such, legally recoverable by the Secretary for the use of the Society. Every member is clearly apprised of his legal liabilities by the circular sent to him, announcing his election. We are, therefore, of opinion that none of the grounds suggested in the case are available for resisting payment of the subscriptions in arrear.

"(Signed) FREDERICK THESIGER, SAMUEL WARREN.
"Inner Temple, May 7, 1849."

Of the parties thus addressed, only about one-half favoured the Chairman with an answer, either by paying the arrears or entering into explanations by way of extenuation of claim; while the other half, to the present time, have refused him the ordinary courtesy of a reply. Under these circumstances, the Council feel that their duty to the Society places them under the painful necessity of resorting to the extreme measure of enforcing these payments by process issued from the County Courts in their district throughout the kingdom, against all Members who are more than two years in arrear; and they have accordingly directed their Secretary to address a letter to all such Members, informing them that unless the sums due are paid to him by Post-office order or otherwise, on or before the 1st of February next, immediate steps will be taken, without further notice, to recover such sums in the County Court of the district wherein they respectively reside. The Council have instructed the Finance Committee to proceed in each case in such order as they may determine, and to report at each Monthly Council the proceedings taken in furtherance of this order. When it is considered that the admission of Members into the Society is made by voluntary request on their part, and that provision has constantly to be made in advance by the outlay of a considerable amount of money to meet and supply their privileges, the Council feel assured that the Members of the Society will think they have only done their duty to the body at large by enforcing the regulations against those non contributing Members, and by bringing to a final issue this long-pending and agitated question of arrears; thus reducing the Society to an efficient body of contributing Members, and rendering the income of the Society a definite and legitimate amount, instead of its being, as at present, from the obstacle of the arrears, a loose estimate, founded on vague probabilities and unsettled claims.

COUNTRY MEETINGS.—The Norwich meeting of this year has proved eminently successful, in the amount and character of the live stock and implements, as well as in all the arrangements connected with their conveyance and exhibition. The Society are indebted to Mr. Thompson for a report on the exhibition and trial of the implements at Norwich, which will appear in the ensuing Number of the Society's Journal. His period of office, as one of the Stewards of the Implement yard at the Society's Country Meetings, expired at the close of the Norwich meeting, when he went out by rotation as Senior Steward, the vacancy being filled up by the appointment of Sir Matthew White Ridley as Junior Steward of that department, who has accepted that office. On the motion of the Hon Capt. Dudley Pelham, the Council have resolved in future to appoint a Steward-Elect of Implements, who being nominated a year in advance of that in which he comes into actual office, will have the opportunity of qualifying himself by attendance at the Steward's Departments, and careful examination into the numerous details and duties of his office, for the actual duties he will have himself to perform, and the operations he will have to superintend and direct, when he comes into office by rotation in the following year. The Council are assured that this important preliminary qualification will render the duties performed by the Stewards more valuable to the Society, whilst they will be more easy and satisfactory to themselves. The means for testing the power given off by agricultural machinery having this year been perfected in so striking and satisfactory a manner by the Consulting-Engineer, Mr. Amos (of the firm of Easton and Amos), as to render what had been previously a laborious and uncertain task nothing more than a simple registration of facts, or mechanical results, alike convincing to the Judges and to the implement makers themselves, the Council, on the recommendation of the stewards, decided to present to Mr. Amos the gold medal of the Society for having effected this important object. The Council before leaving Norwich conveyed to the Mayor and Corporation of that city, to the local committee, and to the owners and occupiers of sites of ground, and to the various other parties, who had so zealously co-operated with them on the occasion, their cordial thanks for the kind attention they had paid to the wishes of the Society, and the admirable manner in which they had made every arrangement required of them for promoting the success of the meeting. The Society were also indebted to the various Railway Companies for the great privileges and facilities they afforded to the Society's exhibitors, and particularly to the Eastern Counties' Company, for the great attention paid by them to the local requirements of the occasion.

The Council have fixed the period for the Exeter Meeting as the week commencing Monday, the 15th July—Thursday being, as usual, the principal day of the show. They have also determined the prizes to be offered for that meeting, and the various terms and conditions connected with the competition, all of which will

be found detailed in the Prize Sheets printed for the occasion, and to be obtained on application to the Secretary. They have decided not to have a Council Dinner at Exeter, but to have a Pavilion Dinner to accommodate 900 guests. They have resolved that the judges of stock shall be requested to commence their duties at 6 o'clock on the Wednesday morning, instead of 9 o'clock, in order that admission may be given to inspect the stock on that day by 1 o'clock in the afternoon, or as soon after as the judges may have delivered in their awards.

Lectures and Chemical Investigations.—The Society, at the Norwich Meeting, were favoured by Prof. Simonds, and the Rev. Edwin Sidney, with valuable lectures, which will appear, with interesting illustrations, in the ensuing Number of the Society's Journal. To Prof. Simonds, and Prof. Way, they have also been indebted at the present meeting in London, for the delivery of valuable lectures on topics of scientific and practical interest to the farmer. Agreeably with the arrangement made with Prof. Way, as the Consulting Chemist to the Society, important chemical investigations are in active progress in his Laboratory: of these some of the results will be given in the next Part of the Journal. He has also kindly offered to deliver before the Council, during the ensuing spring, a course of 12 familiar chemical lectures, after their weekly meetings, on topics of practical interest, and elucidated by experiments.

Veterinary Inspection.—The Council have received and adopted the following report from their Veterinary Committee:

Report of the Veterinary Committee.—With a view to the collecting and perpetuating a body of authentic information in regard to the diseases of Cattle, Sheep, and Pigs, and arresting their progress, the Society appoints a professional inspector for these purposes. Any Member of the Society who may desire a competent professional opinion and advice in cases of extensive or destructive disease among his stock, and will address himself by letter to the Secretary, will, by return of post, receive a printed list of queries, which he is requested to fill up and return immediately. On the receipt of such returned list the Secretary will convene the Veterinary Committee forthwith (two Members of which, with the assistance of the Secretary, shall be competent to act), and such Committee will decide on the necessity of dispatching the Society's inspector to the spot where disease prevails. The remuneration of such inspector shall be a professional fee of 2*l.* 2*s.* per diem, and 1*l.* 1*s.* per diem for personal expenses; and he shall also charge the cost of travelling to and from the localities where his services may have been required. The fees will be paid by the Society, but the travelling expenses will be a charge against the applicant for professional aid. This charge may, however, be commuted or remitted altogether at the discretion of the Council, on such step being recommended by the Veterinary Committee. The inspector, on his return from visiting the diseased stock, shall report to the Committee, in writing, the results of his observations and proceedings, which report will be laid before the Council. When contingencies arise that may prevent a personal discharge of the duties confided to the inspector, he may, subject to the approval of the Committee, name some competent professional person to act in his stead, who shall receive the same rates of remuneration.

(Signed) Thomas Raymond Barker, Chairman.

The Council have received with much satisfaction the cordial acquiescence of the Governors of the Royal Veterinary College in the request made to them by the Council that Professor Simonds should be allowed to act as the Veterinary Inspector of the Society.

Farm Accounts.—The Society having offered in 1846 a prize of 10*l.* for the best essay on Keeping Farm Accounts, the Council reported to the May general meeting in that year in the following terms:—"The Judges on the 16 Essays on the Keeping of Farm Accounts, having reported that none of the Essays are worthy of the prize offered by the Society in that class, the Council appointed a Committee to report on the best mode, in their opinion, in which a practical farmer may be enabled in the simplest manner to keep the requisite accounts connected with his farming establishment." The Committee having taken that important practical question into their mature consideration, and having examined the various forms transmitted at different times to the library of the Society, have laid before the Council the forms of accounts proposed by them for adoption. These forms having been sent round to each member of the Council, inviting their comments and suggestions, the Council took such communications into their consideration, and finally agreed to adopt the forms proposed, subject to certain alterations of headings and rulings, and conditionally that a statement should be inserted in the principal book (to be sold with the others at a reduced price to the members of the Society) that they were submitted to their notice only for present adoption, in the hope that such suggestions would be offered to the Council by practical men who might use them as might tend to their further improvement. The Council are fully aware that forms of accounts of any kind must be adapted to the different capacities or habits of business of those who are to use them, and bear a reference to the farmer's extent of occupation. They accordingly put forth these forms of accounts more as further means for improvement to be derived from experience of their practical use, than as offering them to the agricultural world as an exact or universal model by which all farm accounts are to be kept. They conceive the experience thus gained, and the simple fact of impressing upon farmers the necessity of keeping accurate records of outlay and income, and of profit and loss, in the several departments of their farming, will in itself be a great step towards that desired end. The habit of exact registration thus acquired in their money transactions will also extend to other objects, especially to that journalising of daily occurrences and operations on their farms which will become to them a valuable historical record for detecting the cause of failure or success in any particular mode of cultivation they may adopt, and thus furnish them with useful direction for future guidance.

Cottages and Farm Buildings.—The Society have been much favoured by his Grace the Duke of Bedford with a valuable contribution to their Journal, on the subject of Labourers' Cottages; and they are also indebted to Mr. Spooner, Mr. Sturgess, Mr. Ewart, and Mr. Tebbutt, the authors of the Essays on Farm Buildings commended by the Judges, for the kind manner in which they have placed their respective Essays at the disposal of the Journal Committee for publication.

Collection of Wheats.—Mr Braudreth has reported to the Council the completion of the arrangements he had undertaken, at the request of the House Committee, respecting the Collection of Wheats presented to the Society by Miss Molesworth, Colonel Le Couteur, and the Rev. Professor Henslow. These specimens have been carefully arranged in guard-books, and placed in a cabinet prepared for their reception in the Council Room, for the ready access and convenient inspection of Members of the Society; space having been purposely left in the guard-books for the insertion of further specimens, and in the Catalogue for their due registration.

The Council congratulate the Society on the improvements successively made each year in the various departments of its operations, and on the general recognition of the value of its influence in animating and sustaining the cause of practical farming; and they cannot entertain a doubt that, by the united exertions of all parties connected with agriculture, such a progressive improvement will be made in the cultivation of the soil, and the economy of British husbandry, as will promote the greatest production at the least cost, and thus be found contributing to the mutual interest of the parties more immediately concerned, and to the increased resources of the country.

By order of the Council, James Hudson, Secretary.
London, Dec. 14, 1849.

On the motion of Mr. Wingate, seconded by Mr. Dyer, this report was unanimously adopted.

Colonel Challoner submitted the Balance-sheet, on the part of the auditors, from which it appeared that at the end of the half-year ending 30th June, 1849, the balance in the hands of the Society's bankers was 1825*l.* He also reported to the meeting that the Norwich account made up to that day was very favourable, the expenditure exceeding the receipts by only 10*l.* The account was not finally closed, but the further payments on account of that meeting would not amount to more than a few pounds. On the motion of Mr. Shelley, seconded by Mr. Kinder, the thanks of the Society were voted to the auditors for their great care and kindness in auditing the accounts. On the motion of Mr. Mark Phillips, Mr. Knight, Mr. Beman, and Mr. Crompton were re-elected auditors for the ensuing year.

On the motion of the Hon. Captain Pelham, seconded by Mr. Raymond Barker, the thanks of the Society were voted to Professor Simonds and Professor Way for their kindness in delivering lectures before the members on the occasion of their present General Meeting. Professor Simonds acknowledged the compliment paid by the Meeting to Professor Way and himself.

On the motion of Mr. Shelley, seconded by Colonel Challoner, the thanks of the meeting were voted by acclamation to the noble Chairman, who expressed his assurance of the value of the Society, and his firm purpose of supporting it in its operations of usefulness to the country.

THE BIRMINGHAM AND MIDLAND COUNTIES EXHIBITION: THE POULTRY.

The general excellence of the exhibition extended also to the Poultry department. One or two breeds were but inadequately represented; for instance, the Polish, which, if good, are amongst the most elegant of their race, and, if bad, the shabbiest. The few well-bred individuals that were present lost caste by appearing in bad company. Other varieties could not fail to surprise by their variety and beauty, especially if seen at the opening of the show. The game fowls were particularly excellent. The prize birds displayed that almost crustaceous and enamelled closeness of plumage which marks the high bred, high conditioned specimen, whether in the richly-coloured black-breasted red, or in the more delicately tinted duck winged grey. Better black Spanish than those shown can hardly be produced; every pen was of a first-rate order. The Dorkings were also in great force; and the farmer who had decided to make that fine breed his main stock, would find here every opportunity of comparing the sub-varieties, whether white, speckled, grey, or red. That large family of perpetually-laying double-combed fowls, the Hamburghs, which are such especial favourites in the midland and northern counties, were, as might be expected, in numerous and close competition in their several branches of gold spangles, silver spangles, chittaprats, moonies, red caps, &c., affording to the student an opportunity rarely witnessed of observing their generic relationship, if we may so speak, and their specific diversity. The exhibition also contained fine specimens of an extra-sized variety of fowl called the American (and really introduced from America, but derived from what original source we cannot trace), which could not fail to strike the most inexperienced beholder by their bulk and stature. They found, however, no great favour in the eyes of the judges, inasmuch as they did not exhibit marks of much distinctness of race or purity of breed, but displayed traces of both the Malay and Cochin China type, inclining, in the best specimens to the latter, with a probable intermixture of other blood. Such birds, except during their early youth, would suit the purposes of Chinese cooks, with whom sinews and tendons form the great delicacies of the table, rather than of English artists, who prefer to exercise their skill on what will furnish a sufficiency of tender meat. Still they suggest the idea that it may be found more profitable, in crossing for the larder, to cross constantly two large breeds, than to go on with one pure breed; exactly as in raising a supply of sheep for the butcher, the first cross between the Leicester and the southdown answers so well. Touching these and a few other lots, we heard the song of Hecate pointedly quoted.

"Black spirits and white,
Red spirits and grey,
Mingle, mingle, mingle,
You that mingle may."

It seems curious that some of the most praiseworthy Nos. are in the class of half a dozen chickens, and in that for a single cock and hen; and we shall be surprised if those two classes have not met with what, after all, is the solid test of merit, namely, the most eager purchasers. The bantams were, perhaps, hardly so good as might have been expected; numerous fanciers will be astonished to hear that the judges were compelled to award a prize to single-combed specimens, for want of competitors; but another year may draw out from the secure retreats where they are treasured, a still superior collection of these pretty, curious, and useful little creatures; but it was remarkable to observe how well the beauties of those present (and indeed of all the poultry) came forth, and their defects disappeared, by the gas light with which the extensive building was at night illuminated.

The prize list saves us the task of particularising individual specimens of excellence. First-rate samples of Cochin China, cuckoo, Malay, and double-combed dun, are indicated by it, besides those to which we have already referred the reader. The geese, of which there were only three entries for competition, were all good. The turkeys, too, were good—though we must protest against the introduction of dissimilar birds into the same pen: it having, we presume, been understood by the framers of the prize list, though not actually so expressed, that the "turkey-cock and two hens" to be shown should be of the same breed. This is a hint for future exhibitors in other classes also. The winners of the first prize (21*l.*), shown by Sir G. R. Phillips, were handsome birds; but, though marked "Norfolk," were of what is known as the Cambridge breed. No real Norfolk turkeys were exhibited. The ducks, too, merit praise. The searcher after well grown birds could hardly make an erring choice, whether he took the Aylesbury, the Rouen, or the Warwick blues, here offered. Of the Guinea fowl we will say little, but look forward to another year. A few good pigeons were shown, amongst which we may specify the English carriers and the runts. Besides the competing specimens, several pens, to add to the interest of the meeting and afford opportunities to purchasers, were contributed by Mr. Baily, of Mount street, Grosvenor-square; Mr. Baker of Chelsea; Mr. Hewitt, of Sparkbrook, near Birmingham, Mr. Jessop, Mr Bissell, the Rev. E. S. Dixon, &c. These comprised black East Indian ducks, jungle fowl, Bernacle geese, guans, Carolina ducks, golden, silver, and pied pheasants, &c., besides the more usual varieties of poultry.

PRIZE LIST.

FOR THE BEST COCK AND THREE HENS.

Class I., Spanish.—15*s.* or silver medal, Mr. Edward Simons, Edgbaston; 7*s.* 6*d.*, Mr John W. Ward, Repton, 5*s.*, Mr. S. Bissell, Bradford-street, Birmingham.

Class II., Dorking.—15*s.* or silver medal, Mr J. Gough, Birmingham 15*s.*, or silver medal, Mr. G. Graham, Yardley, 10*s.* Mr T. Ash, Selly Oak; 7*s.* 6*d.*, Sir G. F. Philips, Bart., M.P., 5*s.*, Mr. C. Richards, Northfield, 5*s.*, Mr. J. Bissell, Bradford-street, Birmingham.

Class III., Cochin China.—15*s.* or silver medal, Mr. James Bissell, Bradford-street, Birmingham silver medal, Mr. George Hodgkinson, Moseley-green, 7*s.* 6*d.*, Mr. Thomas Mellon, New-street, Birmingham.

Class IV., Malay.—15*s.* or silver medal, Mr. James Bissell, Bradford-street, Birmingham; 7*s.* 6*d.*, Mr. S. H. H. Williams, Shrewsbury.

Class V., Pheasant Malay, or Moss Fowl.—15*s.* or silver medal, Mr. James Bissell, Bradford-street, Birmingham (as Moss Fowl).

Class VI., Game. 15*s.* or silver medal, Mr G. Lowe, Birmingham; 15*s.* or silver medal, Mr. James Wyley, Longdon, near Lichfield (equal), 7*s.* 6*d.*, Mr. D. Mould, Smethwick; 5*s.*, Mr. R. H. Chapman, Tipton; 5*s.*, Mr. R. H. Chapman, Tipton; 5*s.*, Mr. John Tartt, Brewood, Staffordshire.

Class VII., Golden Hamburgh.—15*s.* or silver medal, Bolton Bay, Mr. George Lowe Birmingham, 7*s.* 6*d.*, Mr. J. W. Ward, Repton, near Burton-on-Trent; 15*s.* or silver medal, Golden Spangled, Mr. James Dixon, Horton, Yorkshire; 7*s.* 6*d.*, Mr. James Dixon, Horton, Yorkshire.

Class VIII., Silver Hamburgh.—15*s.* or silver medal, Mr. J. Bissell, Bradford-street, Birmingham; 7*s.* 6*d.*, Mr. R. Cox, Broad-street, Birmingham, 15*s.* or silver medal, Silver Spangled, Mr. R. Cousenman, Bloomsbury, 15*s.* or silver medal, Mr. J. Winlock High-street, Birmingham (equal); 7*s.* 6*d.*, Mr. T. B. Wright, Great Barr; 5*s.*, Mr. T. B. Wright, Great Barr.

Class IX., Cuckoo.—15*s.* or silver medal, Mr. G. A. Beck, Bloomsbury, 7*s.* 6*d.*, Mr. J. W. Ward, Repton, under-sized; 5*s.*, Mr. G. Lowe, Birmingham, under-sized.

Class X., Poland.—15*s* Mr. G. Lowe, Birmingham.

Class XI., Poland (Silver and Gold).—15*s.* or silver medal

Mr. J. W. Ward, Repton; 7s. 6d. Mr. James Bissell, Bradford-street, Birmingham.

Class XII., New or Distinct Variety.—15s. or silver medal, Mr. Joseph Hardwich, Camphill, Birmingham; 7s. 6d., Mr. W. Hodgkinson, Birmingham; 5s., Mr. W. Marrian, Buckstreet, Birmingham.

FOR THE BEST PEN OF CHICKENS OF 1849.

Class XIII., Chickens, Spanish.—10s., Mr. James Bissell, Bradford-street, Birmingham.—Dorking: 10s. Mr. George Graham, Yardley; 10s., Mr G. Lowe, Birmingham. (Equal.) —Cochin China: 10s., Mr. George Hodgkinson, Mosely Wake Green.—Malay: 10s., James Oldham, Nether Whitacre; 10s., Mr. James Bissell, Bradford-street, Birmingham.—Game: 10s., Mr. W. Princep, Newton, near Tamworth; 10s., Delta. —Golden Spangled: 10s., Mr. James Dixon, Horton, near Bradford.—Silver Hamburgh: 10s., Mr. James Bissell, Bradford street, Birmingham; 10s., Mr. William Hodgkinson, Birmingham.

FOR A COCK AND ONE HEN.

Class XIV, Spanish.—7s. 6d., Mr. R. Cox, Broad-street, Birmingham.—Dorking: 7s 6d., Mr. W. Sutton, Handsworth; 7s. 6d., Mr. G. Lowe, Birmingham.—Cochin China: 7s. 6d., Mr. J. Harrison, Edgbaston.—Malay: 7s. 6d., Mr. George Alcock, Birmingham.—Game: 7s. 6d., Mr. George Blythe, Edgbaston Toll-gate.—Golden Hamburgh: 7s. 6d., Mr. James Bissell, Bradford-street, Birmingham.—Silver Hamburgh: 7s. 6d., Mr. J. W. Ward, Repton.—Black Poland: 7s. 6d., Mr. G. Lowe, Birmingham.—Silver Poland. 7s. 6d., Mr. James Bissell, Birmingham.—Dums: 7s. 6d., Mr. W. Sutton, Handsworth.

FOR THE BEST COCK AND TWO HENS.

Class XV., Bantams, Gold-laced.—5s., Mr. James Bissell, Bradford-street, Birmingham. Silver-laced.—5s., Mr. Edward Hewitt, Sparkbrook. White.—5s', Mr. W. H. Birchall, Bradford, Yorkshire. Black.—5s., Mr. W. H. Birchall, Bradford, Yorkshire. Partridge.—5s., Mr. J. Stubbs, Perry Bar.

PIGEONS.—Class XVI., Tumblers.—5s., Mr. Armfield, Edgbaston. Carriers.—5s., Mr. Henry Grant, Coulstone, Wilts, 5s., Mr. R. Cox, Broad street, Birmingham. Fan-tails.—5s., Mr. Henry Grant, Coulstone, Wilts. Runts.—5s., Mr. T. Beetenson, Birmingham. Trumpeters.—5s., Mr. T. Beetenson, Birmingham. Antwerp. 5s., Mr. Henry Grant, Coulstone, Wiltshire. Black-headed Nuns.—5s., Mr. Edward Armfield, Edgbaston.

GEESE.—Class XVII.—10s., Sir G. R. Philips, Bart., M.P.; 7s. 6d., Mr. E. Hewitt, Sparkbrook, 5s., Mr. J. Shackell, Small Heath.

DUCKS.—Class XVIII., Aylesbury.—10s., Mr. F. Ash, Northfield; 10s., Mr. W. Van Wart, Northfield (equal), 7s 6d., Mr. G. Lowe, Birmingham; 5s., Mr. F. Mole, Small Heath. Ducks.—10s., Mr. E. Hewitt, Sparkbrook; 10s, Mr. H. Parker, Handsworth; 7s. 6d., Mr. G. Lowe, Birmingham; 5s, Mr. E. Hewitt, Sparkbrook.

TURKEYS.—Class XIX., Cambridge Breed.—15s, Sir G. Phillips, M.P.; 10s. 6d., J. Naylor, Esq., Moseley-hall; 10s. 6d., Hon. Lord Hatherton; 7s. 6d., Hon. Lord Hatherton

GUINEA FOWL.—Class XX.—7s. 6d, Mr. E. Hewitt, Sparkbrook; 5s., Mr. E. A. Lingard, Snow-hill.

EGGS.—Class XXI.—5s., Mr. Prosser, King's Norton; 2s 6d., Mr. J. W. Ward, Repton; 2s. 6d., Mr. J. Shackel, Small Heath.

COTTAGERS' PRIZES.—Class XXII.—10s., T. Goodhall, Showell-green; 7s. 6d., T. Jabet, Highgate, 5s, E. Tattersall, Gower-street Ducks.—10s., Jos. Greenwood, Kingsbury.

JUDGES OF POULTRY.—The Rev. E. S. Dixon, M.A., of Crinigleford hall, near Norwich; Henry Huxman, Esq., of Durnford-house, near Salisbury; and Mr. John Baily, of Mount-street, Berkeley-square, London.

Notices to Correspondents.

ARSENIC. *O H.* Will any one accustomed to use arsenic in pickling Wheat be good enough to state his method, specifying the quantity used per bushel of seed prepared and the plan of applying it.

BARLEY: *Thomas Topham.* If your land is dry you may sow, the first week in March (Chevalier Barley), 5 pecks per acre, in drills 9 inches apart. If it is not dry, delay till first week in April, and sow 10 pecks.

BEANS: *Constant Reader.* You may dibble Beans on newly ploughed up Grass land; there is nothing in *that* to diminish your prospect of a crop.

CALVES. *R* The Berwickshire method, which has already been given in this Paper, will perhaps suit you. They are water and Oatmeal porridge as diuents of the milk.

CYCLOPEDIA: *C Hormail.* The second advertisement gave, we think, all the information you ask.

DR. NEWINGTON'S SOWING MACHINE: *D Esdale.* We have not seen the machine by which "a lad can drill 9 acres a day with one horse." Perhaps some of our correspondents can speak of it. The hand sowing machines are good.

KOHL RABI. *Inquirer.* It should be consumed after the common Turnips are done. They and the Swedish Turnips are alike as regards keeping properties. There is a real economy in diluting Barley meal with Swedes rather than with water. The Swedes are themselves nutritious, and their nourishment is in a more nourishing *form* than any artificial mixture can have. We believe that the meal boiled is more likely to undergo a thorough digestion than meal unboiled.

MUSCOVY DUCKS: *E B A.* Two have been curiously affected within the last year by a kind of cramp, which seems to paralyse them, and prevents them from moving their heads or eating; and if they try to move, they either fall over or keep going round. One of them died of it in the spring, and the other one has just recovered. Some decoy ducks and golden bantams have also the cramp so bad in their legs, that they walk as if they had the stringhalt. "E B A." would be much obliged if anyone would suggest some remedy.

ORCHARDS: *S B* says, "In the *Gardeners' Chronicle* of Aug. 25th, a correspondent enquires whether Apple orchards are rendered unfruitful if sheep are allowed to graze in them. I think the question has not been answered, and as I am interested in the same subject, I should be obliged if some one, who has practical experience, would state his opinion. The same idea prevails in America, as my brother who resides there has informed me."

PIG KILLING. *W Smith.* Certainly a very extraordinary relation. The merits of the "knocking down system" however are not affected by such a set of cruel blunders as you describe.

SOIL: *C W M* The peculiarity of running together in wet weather to which you allude is probably owing to the texture rather than the composition of the soil. The peroxide of iron is present in wonderfully large proportions; but we do not suppose it to be injurious. You had better drain it and apply chalk. There appears to be but a small per centage of alumine present, otherwise burning might be beneficial.

WAGES. *Exeter.* We shall make the enquiries you refer to.

WINTER BEANS: *East Anglian* Mr. Davis recommends common Turnips as an intervening crop. Carrots are as suitable; and more so under the circumstances you name, as, sown in April, they are deep enough to be less liable to injury by June droughts. If grown to allow of an intervening crop (two rows of Beans 15 inches apart might be placed at a distance 6 or 7 feet from a corresponding couple, an interval wide enough for two rows of Carrots properly cultivated. We doubt if deep sowing in light soil is any protection from mice: but your experience regarding acorns (were they sown on *light* land) is some encouragement.

Markets.

POTATOES.—SOUTHWARK, Dec. 17.

The Committee report that the arrivals from the Continent during the last week were quite as large as they were the former three weeks, which, with our usual English supply, tends to lower prices of all sorts of Potatoes, particularly second-rate samples. Our market has been heavy at the following quotations:—York Regents, 80s. to 120s. per ton; Wisbeach do., 60s. to 75s.; Scotch do., 60s. to 70s.; Scotch cups, 80s. to 90s.; French whites, 60s. to 65s.; Rhenish and Belgian do., 50s. to 60s.; Dutch do., 40s. to 50s.

COVENT GARDEN, Dec 22.

Hothouse Grapes are scarcer. Pine-apples are sufficient for the demand, Filberts and Walnuts are abundant, Chestnuts plentiful, Oranges and Lemons abundant, good table Pears scarce. Amongst Vegetables, Turnips are good and plentiful; Carrots the same. Cauliflowers and Broccoli are sufficient for the demand. Potatoes have not altered since our last account. Lettuces and other salading are plentiful. No alteration in the price of Mushrooms. Some Asparagus and Sealkale have made their appearance. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropeolums, Chrysanthemums, Fuchsias, Primulas, Camellias, Cinerarias, and Roses.

FRUITS

Pine-apples, per lb., 5s to 8s	Oranges, per 100, 8s to 12s
Grapes, hothouse, p. lb., 3s to 6s	Almonds, per peck, 6s
— Portugal, per lb., 9d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 2s to 4s	Walnuts, p. 100, 1s 6d to 2s
— per half sieve, 8s to 12s	— p. bush., 16s to 24s
Apples, kitchen, p. bsh., 2s to 4s	Filberts, per 100 lbs., 60s to 65s
Lemons, per doz., 1s to 2s	Nuts, Bar., p. bush., 20s to 22s
— per 100, 6s to 12s	— Brazil, p. bsh.. 12s to 16s
Oranges, per doz., 9d to 1s 6d	Kent Cobs, 60s to 65s p. 100 lbs.

VEGETABLES.

Sealkale, per punnet, 2s to 3s	Onions, p. bushel, 3s to 4s
Asparagus, per bundle, 4s to 6s	— Spanish, p. doz., 1s 6d to 4s
Cabbages, p. doz., 6d to 1s	Shallots, per lb., 4d to 8d
Cauliflowers, p. doz., 3s to 6s	Garlic, per lb., 4d to 8d
Broccoli, p.doz. bundl., 7s to 15s	Artichokes, p. doz., 1s 6d to 3s
Greens, per doz., 1s 6d to 2s 6d	Lettuce, Cab., p. sc., 4d to 9d
Brussels Sprouts, p. lit. sieve, 1s 6d to 2s	— Cos, do., 6d to 1s
Sorrel, p. hf. sieve, 6d to 9d	Endive, per score, 1s to 1s 6d
Potatoes, per ton, 60s to 100s	Mushrooms, p. pot., 1s to 1s 3d
— per cwt., 3s to 6s	— per bush., 3s to 6s
— per bush., 2s to 3s	Small salads, p. pun., 2d to 3d
Turnips, p.doz.bun., 1s6d to 2s6d	Watercress, p. 12 bun., 4d to 6d
Red Beet, per doz., 1s to 2s	Fennel, per bunch, 2d to 3d
Horse Radish, p. bdl., 2s to 4s	Savory, per bunch, 2d to 3d
Cucumbers, each, 3s to 3s 6d	Thyme, per bunch, 2d to 3d
Leeks, per bunch, 2d	Parsley, p. doz bun., 3s to 4s
Celery, p. bundle, 8d to 1s 2d	— Roots, p. bdle., 1s to 1s
Radishes, p. 12 bunches, 1s to 2s	Marjoram, per bunch, 2d
Carrots, per bun., 4d to 6d	Mint, per bunch, 2d
Spinach p. sieve, 1s to 2s	Basil, per bunch, 2d

HOPS.—FRIDAY, Dec. 21.

MESSRS. PATTENDEN and SMITH report that the market continues the same.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, Dec. 20.

Prime Meadow Hay	60s to 72s		Clover	60s to 80s	
Inferior ditto	50	60	New Clover	—	—
Rowen	50	60	Straw	21	24
New Hay	—	—		J. COOPER.	

Trade rather better.

WHITECHAPEL, Dec. 20.

Fine Old Hay ...	65s to 65s		New Clover	—s to —s	
Inferior ditto ...	50	55	Inferior ditto ...	55	60
New Hay	--	—	Straw	21	24
Old Clover	80	84			

SMITHFIELD, Monday, Dec. 17.

This is the annual "great market." We have a large number of good oxen on sale. The weather is mild but fine; the best Beasts are not selling so well as was expected, still a few make nearly 7d. per lb. The number of Sheep is not excessive, although large for the day. Trade is very heavy, and big Sheep are selling very badly. Calves are not plentiful, and a little dearer. From Holland and Germany we have 115 Beasts, 1120 Sheep, and 17 Calves; from Ireland, 200 Beasts; from Scotland, 280; from Norfolk and Suffolk, 300; from Leicester and Northampton, 3500; and 900 from the western counties.

Per st. of 8 lbs.—	s	d	s	d
Best Scots, Herefords, &c.	4	4	to 4	6
Best Short-horns	4	0	— 4	4
2d quality Beasts	3	8	— 3	8
Best Downs and Half-breds	4	4	— 4	6
Ditto Shorn	...	...	...	...

Per st. of 8 lbs.—	s	d	s	d
Best Long-wools	3	8	to 4	0
Ditto Shorn	...	...	...	...
Ewes & 2d quality	3	0	— 3	4
Ditto Shorn	...	...	...	...
Lambs	...	...	—	...
Calves	...	...	3	4 — 4 6
Pigs	...	...	3	0 — 4 0

Beasts, 5785; Sheep and Lambs, 24,930; Calves, 103; Pigs, 240.

FRIDAY, Dec. 21.

We have to-day a large supply of Beasts, and scarcely any buyers. It is difficult to give any quotations, but what few are sold must be stated at about 4d. per 8 lbs. lower. The number of Sheep is not excessive, but far beyond the demand; those few that are sold suffer a like reduction. The trade is heavy for Calves, at about 6d. per 8 lbs. less money, and there are very few buyers for Pigs; indeed this may be almost termed a holiday market. From Holland and Germany there are 241 Beasts, 690 Sheep, and 201 Calves; from Scotland, 300 Beasts; from Leicester and Northampton, 300; and 121 Milch Cows from the home counties.

MARK LANE.

MONDAY, Dec. 17.—The supply of English Wheat by land carriage samples this morning was moderate, and quickly disposed of on the terms of this day se'nnight.—Fine malting Barley maintains our quotations, but low descriptions were the turn cheaper.—New Beans are a heavy sale, and rather lower. —White Peas are 1s. to 2s per qr. cheaper.—The Oat trade is slow, but prices are unaltered.

FRIDAY, Dec. 21.—The arrivals of English grain since Monday have been small, those of foreign moderate. This morning's market was not well attended, nevertheless all descriptions of corn were held firmly at former prices, and a moderate business only resulted. Foreign attracted rather more attention.—The Flour trade is heavy.

IMPERIAL AVERAGES.	WHEAT.	BARLEY.	OATS.	RYE.	BEANS.	PEAS.
Nov. 10.....	40s 7d	28s 8d	16s 11d	22s 6d	29s 4d	30s 7d
— 17	40 6	28 3	16 11	23 7	29 7	31 8
— 24	40 4	28 3	17 0	24 0	29 8	30 7
Dec. 1	40 2	28 1	16 4	24 1	28 6	30 2
— 8.....	39 4	27 5	16 6	25 9	28 4	30 1
— 15	38 9	26 9	16 0	22 6	27 8	28 11
Aggreg. Aver.	39 11	27 11	16 7	23 5	28 10	30 3
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0
PRICES.	Nov. 10.	Nov. 17.	Nov. 24.	Dec. 1.	Dec. 8.	Dec. 15.
40s 7d			...	...	...	...
40 6			...	...	...	...
40 4	...	...	...	...	...	...
40 2	...	...	...	...	...	...
39 4	...	...	...	...	...	...
38 9	...	...	...	...	...	...

PRICES CURRENT.	London. Dec. 10 qr.	London. Dec. 17 qr.	Liverpool. Dec. 11 70 lbs.	Liverpool. Dec. 18. 70 lbs.	Wakefield. Dec. 7. qr.	Wakefield. Dec. 14 qr.	Boston. Dec. 12 qr.	Boston. Dec. 19 qr.	Birmingham. Dec. 13. 62 lbs.	Birmingham. Dec. 20. 62 lbs.
Wheat—	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
New, red ...	38 to 43	38 to 43	5 8 6 2	5 8 6 2	35 to 44	36—44	32 to 38	32 to 38	4 9 5 3	4 9 5 3
„ white ...	42—47	42—47	6 4 6 8	5 10 6 8	41—48	42—49	34—44	34—44	5 3 5 7	5 3 5 7
Old, red ...	—	—	6 3 6 6	6 3 6 6	39—43	40—44	—	—	4 10 5 4	4 10 5 4
„ white ...	—	—	7 0 7 4	7 0 7 4	—48	—49	—	—	5 6 5 9	5 6 5 9
Foreign	35—52	35—52	4 4 7 0	4 4 7 3	36—48	37—48	—	—	4 8 6 2	4 8 6 2
			480 lbs.	480 lbs.						
Rye—Old ...	20—22	20—22	—	—	—	—	—	—	—	—
Foreign...	20—23	20—23	—	—	—	—	—	—	—	—
Foreign meal	5l.—6l.	5l.—6l.	—	—	—	—	—	—	—	—
			qr.	qr.					qr.	qr.
Barley— Grinding ...	23—25	23—25	—	—	20—21	20—21	21—23	21—23	19—23	19—23
Malting... ...	25—26	25—26	30s—31s	27s—29s	23—28	23—28	—	—	24—29	24—29
Foreign... ..	18—25	18—25	—	—	20—24	20—24	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	35—38	35—38	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White..	18—24	18—24	3s 2d 3s 3d	3s 2d 3s 3d	—	—	13—18	13—18	17—25	17—25
Black...	16—22	16—22	2 2 2 6	2 2 2 6	—	—	—	—	16—17	16—17
Foreign	13—20	13—20	2 3 2 4	2 3 2 4	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	28—31	26—28	33s—	33s—	26—32	26—32	—	—	30—36	30—36
									196 lbs.	196 lbs.
Grinding...	—	—	27 —28s	28 —29s	—	—	—	—	11—12	11—12
Foreign ...	23—30	22—29	29 —30	30 —31	—	—	—	—	—	—
Beans— New, small ...	23—29	23—29	28 —32	28 —32	27—28	27—28	22—27	22—27	11—12	11—12
Old	—	—	32 —36	32 —36	32—33	32—33	32—34	32—34	14—15	14—15
Foreign ...	23—36	23—36	25 —30	25 —34	26—30	26—27	—	—	11—13	11—13
Linseed—Feed	—	—	40 —42	40 —42	32—40	32—40	—	—	—	—
Foreign ..	37—45	37—45	—	—	—	—	—	—	—	—
Linseed Cakes British ...	9l. 12s	9l. 12s	7l. 15s—8l	7l. 15s—8l.	—	—	—	—	—	—
Foreign ...	7l.	7l.	—	—	—	—	—	—	—	—
Indian Corn—	22—26	22—26	27s—30s	28s—30s	—	—	—	—	—	—
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	32—40	32—40	30—32	30—32	—	—	30—36	30—36	31—33	31—33

Weekly Averages and Imports.	London. Aver. Dec 18	London. Impts	Liverpool. Averages.	Liverpool. Imports.	Wakefield. Aver.	Wakefield. Impts.	Boston. Aver.	Birmingham. Aver.	Gloucester. Averages.	Gloucester. Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs	s. d.	s. d.	s. d.	qrs.
WHEAT ...	42 1	6280	39 4	21582	38 11	15007	37 3	39 0½	39 0½	1421
BARLEY ...	27 3	5240	27 5	2030	24 10	4301	19 9	25 1½	25 1½	—
OATS... ...	17 2	530	16 6	2960	18 0	677	13 9	17 3½	17 3½	—
RYE	26 0	—	23 9	—	—	—	—	—	—	—
BEANS ...	27 5	—	28 4	2266	27 5	1236	25 6	37 8½	37 8½	2813
PEAS... ...	30 9	—	30 1	1932	—	469	—	30 0	30 0	906
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Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn-place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church-row, Stoke Newington, both in the County of Middlesex, Printers, at their office in Lombard-street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles-street, in the parish of St. Paul's, Covent-garden, in the said county, where all Advertisements and Communications are to be addressed to the Editor.—SATURDAY, DECEMBER 22, 1849.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 52—1849.] SATURDAY, DECEMBER 29. [PRICE 6*d*.

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TO THE SUBSCRIBERS TO THE

GARDENERS' BENEVOLENT INSTITUTION.—The case of JOHN SHEPHERD, No. 11 on the List for the next Election (16th January, 1850), and the third application, is most respectfully and earnestly recommended to the Subscribers by Mr. GRISSELL, of Palace-yard Westminster, who will thankfully again receive proxies. Mr. GRISSELL hopes, with the assistance of the Subscribers, that JOHN SHEPHERD will be successful at the next Election.

QUICK FOR SALE.

SAMUEL COCKING, SEEDSMAN, &c., Biggleswade, has to dispose of a large quantity of WHITETHORN QUICK, of two years' growth, at 2*s*. 6*d*. per 1000, very strong. Ditto, three years' growth, at 4*s*. per 1000, delivered free within 20 miles.

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HETLEY AND CO. supply 16-oz. Sheet Glass of British Manufacture, at prices varying from 2d. to 9d per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery. Lists of Prices and estimates forwarded, on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE-GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY and Co., 35, Soho-square London.

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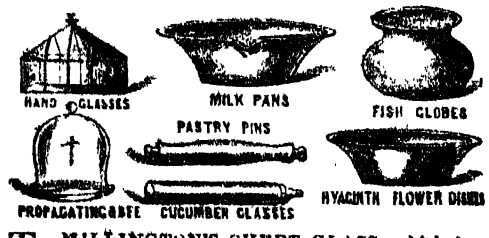

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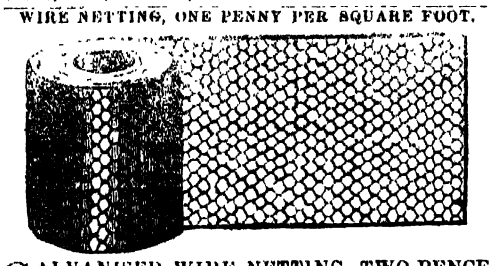
WIRE NETTING, ONE PENNY PER SQUARE FOOT.



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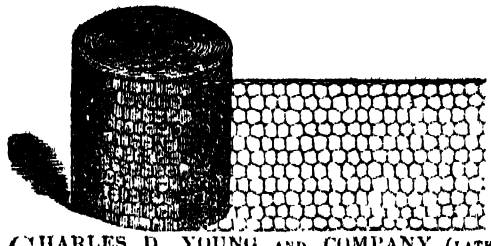
12 inches wide	3d.	per yard		30 inches wide	7½d.	per yard	
18 ,, ,,	4½d	,,		36 ,, ,,	9d.	,,	
14 ,, ,,	6d.	,,		48 ,, ,,	1s.	,,	

Galvanised do., 1d. per foot extra.

Extra strong Imperial Wire Sheep Netting, 3 feet, 1s. 6d. per running yard; if galvanised, 2s. Also every description of Wire Nursery and Fireguards, Wire House Lanterns and Shades, Fly-proof Dish Covers, Meat Safes, &c., Window Blinds, 1s 10d. per square foot, with bolts complete, in mahogany frames; Gothic Garden Bordering, 6d per running foot; Flower Trainers, from 3d each; Garden Arches, 20s each; Flower Stands, from 3s 9d each; Galvanised Tying Wire for plants and trees, Dahlia Rods, and every description of Wire-work; Weaving, for the use of paper makers, millers, &c.—At the Manufactory of THOMAS HENRY FOX, 44, Skinner-street, Snow-hill, London.

STRONG PREMIUM HARE AND RABBIT PROOF WIRE NETTING.



CHARLES D. YOUNG AND COMPANY (LATE W. AND C. YOUNG),

MANUFACTURERS OF IRON AND WIRE WORK, &c., 22, PARLIAMENT-STREET WESTMINSTER, LONDON, CASTLE-BUILDINGS, DERBY SQUARE, LIVERPOOL; 128, HIGH-STREET, EDINBURGH; and 32, ST ENOCH-SQUARE, GLASGOW, beg respectfully to call the attention of Landed Proprietors and others to their strong Wire-Net Fence, for excluding Hares and Rabbits from Gardens, young Plantations, Nurseries, &c.

This Net was exhibited at the Show of the Highland and Agricultural Society of Scotland, held lately at Inverness, where its Efficiency, Great Strength, and Exceeding Cheapness attracted general attention, and had awarded from the Judges the Society's Silver Medals, with high commendations.

The immense damage done by Hares and Rabbits in Gardens and Young Plantations is often so great, that in the course of a year or two it will amount to more than the entire cost of protecting them with this Net. It is so durable, that when Plantations are sufficiently advanced to be independent of its protection, it can be removed to other exposed situations with the greatest facility, by any labourer. As a Fence against Hares and Rabbits, it is of itself quite sufficient, having only to be unrolled and attached, with small wire sent for that purpose, to wooden stakes driven into the ground, about every six or seven feet apart. It is, besides, peculiarly adapted for rendering Hedges, Paling, or other existing Fences, *completely impervious* to such vermin; and by being cut up into small pieces of three or more feet, as required, it forms a most efficient guard, at little expense, for individual Plants and Shrubs.

PATCHES.—18 ins. high, 9d.; 24 ins., 1s.; 30 ins., 1s. 3d.; and 36 ins., 1s. 6d. per lineal yard.

Or a web of 100 yards, 18 ins. wide, will cost	..	..	£3	15 0
Do. of 100 yards, 24 ins. wide	..	..	5	0 0
Do. of 100 yards, 30 ins wide	..	..	6	5 0
Do. of 100 yards, 36 ins. wide	..	..	7	10 0

If more or less than a web is required, it would be charged at the same rate per yard.

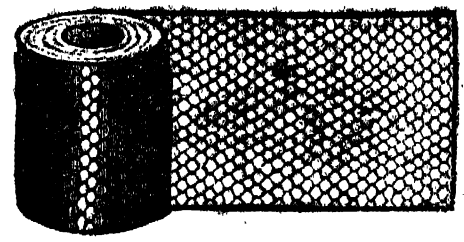
This Netting is also admirably adapted for Pheasantries and Poultry-yards, and is charged at the same rate. As carriage has, in many instances, been an obstacle to parties at a distance requiring this Net, C. D. Y. and Co. have made arrangements by which they will undertake to deliver it at any of the principal ports of Scotland, England, and Ireland, for One Halfpenny per lineal yard.

C. D. YOUNG and Co. cannot give a better idea of the great strength of their Premium Wire Netting than by stating that the weight of one yard of their 24-inch at 1s. is equal to 2½ yards of another article in the market, the same width, at 9d. per yard. Samples for inspection sent free of expense.

C. D. YOUNG & Co. manufacture every description of IRON and WIRE WORK required for this and foreign countries.

Workmen sent to all parts of Scotland, England, and Ireland.

GALVANISED WIRE GAME NETTING.—7d. per yard, 2 feet wide.



			Galvanised.	Japanned Iron.
2 inch mesh, light, 24-inch wide	...		7d. per yd.	5d. per yd.
2 inch ,, strong ,,	...		9 ,,	6½ ,,
2-inch ,, extra strong ,,	...		12 ,,	9 ,,
1½-inch ,, light ,,	...		8 ,,	6 ,,
1½-inch ,, strong ,,	...		10 ,,	8 ,,
1½-inch ,, extra strong ,,	...		14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised sparrow-proof netting for pheasantries, 8d. per square foot. Patterns forwarded post-free.

Manufactured by BARNARD and BISHOP, Market place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

GREEN AND HOTHOUSES made by machinery, warranted best materials.—A Lean-to Greenhouse, 12 feet by 8 feet, glass ends, 1 door, and 3 feet of glass in front, glazed with 16 oz. sheet glass of a large size, and painted three coats of best oil colour, delivered to any railway or wharf in London, for 15l. 10s.; a do. do. 18 by 10, 22l. 10s.; a do. do. 18 by 12, 28l. 10s.; a do. do. 21 by 12, 32l. 10s., including a plan for brickwork. 1½-inch Greenhouse Lights, glazed with 16 oz. sheet glass, painted three times, 11½d. per foot; 2-inch do., 1s. per foot.—J. LEWIS'S Machine Hothouse Works, Stamford-hill, Middlesex.

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Parties waited on in Town and Country, and Drawings and Estimates free. Work for the Trade as usual.

Ward's Cases, or Domestic Greenhouses.

HYDRAULIC ENGINES, WATER RAMS, &c., on Improved Principles; Engines worked by Steam or Hydraulic power, to raise from 1 gallon to 1000 per minute to a height of 500 feet, and from a depth of 900 feet. Douche, Vapour, Hot-air, and all other kinds of Baths. Buildings, Conservatories, &c., heated by Steam, Air, or Water. Boring, Sinking, and Collecting of Water, &c. Towns supplied.—Direct to JOHN LEGG, Cheltenham.

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HOMŒOPATHIC PATIENTS, DYSPEPTICS, and Persons of Delicate Constitutions, are strongly recommended to use TAYLOR BROTHERS' DIETETIC COCOA, as being very superior to any preparation of the Cocoa Nut hitherto introduced. This article is manufactured on a peculiar principle, by which the oily portions of the nut are neutralised, at the same time its flavour, purity, and nutritious properties are maintained. It is an essential article of diet for those under Homœopathic Treatment, agrees with the most delicate digestive organs, is agreeable and soothing to the nervous system, and proves at the same time both invigorating and refreshing.

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BEWARE OF SPURIOUS IMITATIONS. The only GENUINE of each bears the name of "ROWLAND'S" preceding that of the Article on the Wrapper or Label, with their Signature at the foot, in Red Ink, thus—A. ROWLAND and SONS. Sold by them at 20, Hatton Garden, London, and by respectable Chemists and Perfumers.

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GERANIUM, HOYLE'S CRUSADER	... ...	7s. 6d. each.
TOPPING'S BRILLIANT	... ...	7s. 6d. "
FUCHSIA SPECTABILIS	... ...	7s. 6d. "

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JOHN WATERER has much pleasure in announcing he has published a Descriptive Catalogue of his extensive collection of RHODODENDRONS and other American plants, &c., which will be forwarded on application.

BECK'S PELARGONIUMS, and other raisers' Flowers.—Now ready for selection and going out. Twelve of the following varieties, including box and carriage to London, will be forwarded in exchange for post-office order on Brentford for Two Guineas. They are well-rooted in 3-inch pots, and ready for an immediate shift into a larger size:

Blanche, Centurion, Cracker, Forget-me-not, Ariel, Cassandra, Cruenta, Gustavus, Guilelma, Grandiflora, Junii, Negress, Rosamond, Sundown. Or Nine of the above, and Hoyle's Crusader, or Foster's Victory.

EDWARD BECK, Worton Cottage, Isleworth.

FLOWERING BULBOUS ROOTS, &c.—HYACINTHS, TULIPS, GLADIOLUS, IRIS, NARCISSUS, JONQUILS, CROCUS, RANUNCULUS, ANEMONES, LILIES, &c., may be had, of sound quality, from WM. HAMILTON, SEEDSMAN and FLORIST.

HYACINTHS, superior varieties (named), 9s., 12s., and 18s. per dozen; common (named), 6s. per dozen; mixtures, 3s. per dozen. TULIPS, 1s.; JONQUILS (large), 1s.; NARCISSUS, 4s. to 6s per dozen. Mixed CROCUS, 1s. 6d.; in colours, 2s 6d per 100. SNOWDROPS, 2s 6d. per 100. GUERNSEY LILIES, 9d. each. A Priced Catalogue may be had GRATIS on application.

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CALCEOLARIA, GERANIUM, and PRIMULA SINENSIS FIMBRIATA, saved from the best varieties, and warranted very fine. Vegetable Seeds of all kinds, Garden Implements, Bird Seeds, &c.

WM. HAMILTON takes this opportunity of recommending his IMPROVED FLOWER SUPPORTER for Hyacinths, Narcissus, &c. The "Florist's Directory" remarks—"A more simple, useful, and cheaper support for Hyacinths, Narcissus, &c., whether grown in pots or water, can hardly be imagined." Price 6s. per dozen.—Address, 156, CHEAPSIDE, LONDON.

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The Gardeners' Chronicle.

SATURDAY, DECEMBER 29, 1849.

MEETINGS FOR THE ENSUING WEEK.

THURSDAY,	Jan. 3	Zoological	8 P.M.
		Antiquarian	8 P.M.
FRIDAY,	— 4	Botanical	8 P.M.
SATURDAY,	— 5	Asiatic	2 P.M.
		Westminster Medical	8 P.M.

In the two articles already devoted to the subject of colours, we have laid before our readers the laws of contrast, and a few general rules relating to harmony. On the present occasion we shall show how, according to M. CHEVREUL, a knowledge of those laws and principles may be applied practically in the grouping of flowers in gardens.

In the first place, plants may be isolated, so that the whole of them are distinctly seen, separate from any neighbouring object; or they may be grouped together, so as to present a mass of flowers, producing a combined but not any individual effect on the eye. In the next place, flowers are either of totally different colours, or of the same colour but of different shades or tones. These distinctions are important, and they will serve for a classification of the rules we are about to lay down.

A. *Plants distinct from each other.*

I. OF DIFFERENT COLOURS.

The best arrangement is that in which flowers whose colours are complementary are seen together; for example:

Blue flowers should be placed near orange-coloured
Yellow " " violet.

As to red and rose flowers, they contrast with their own leaves.

The next best arrangements are the following:

Yellow flowers, especially if they are a little orange, go very well with blue ones. Yellow flowers, with a tinge of green rather than of orange, contrast well with flowers of a rose colour, inclining more to amaranth than to orange. Deep red and deep blue flowers look well together. Orange and violet-coloured flowers are not at all amiss when placed near each other. White flowers added to the above combinations always produce a good effect, although it is better in some cases than in others.

II. OF THE SAME COLOUR, BUT OF DIFFERENT SHADES.

It is so difficult to succeed in getting a pleasing arrangement of different shades of the same colour, that it is better, as a *general rule*, to avoid bringing flowers of one colour but of different tones together. It is better, then, to separate—

Red flowers from amaranth, rose, or orange flowers.
Yellow " " greenish-yellow
Blue " " violet-blue
And even red from orange
Rose " violet
Blue " violet.

It must be remembered that this is only a general rule; arrangements similar to those here condemned may, at times and in certain cases (impossible to describe on paper), be very advisable.

B. *Plants crowded together, so as to produce a Combined, but not Individual Effect.*

I. FLOWERS OF DIFFERENT COLOURS.

A very good effect may be produced by sowing the seeds of several varieties of the same species of an annual or biennial plant thickly in patches or borders As an example, we may take the seeds of Larkspur or China Asters; or, indeed, any which produce short stems, with a great many coloured flowers—white, rose, red, blue, violet, &c.

CHEVREUL recommends a crowd of plants for patches or borders, not for beds; if it is wished to have beds presenting nothing but flowers to the eye, the colours must be arranged according to the laws of contrast already laid down, and the plants must be far enough apart from each other to be capable of a greater degree of development than in the preceding case; their stems must also spread out and hide the ground under their flowers.

II. COLOUR THE SAME, BUT SHADES DIFFERENT.

Flowers presenting nothing but a contrast of tone, when crowded together, are not open to the same objections as the same flowers when planted apart.

We cannot dismiss the subject of the contrast of flowers, without observing and pressing upon our readers the fact, that there is a very great difference between an arrangement in which the flowers are all pretty nearly in the same plane, and one in which they are in totally different planes, some being much higher than others; for example, in a line of flowers at the same distance from the eye, nothing can produce a worse effect than a blue or lilac coloured flower placed next a clear violet or lilac coloured one. But now, if we add to these two some tufts of the Rock Alyssum, Persian white Candytuft, and red Tulips, in such a way that the golden yellow, the white and the deep red are in one plane, and the dark blue and clear violet or lilac are in another more distant plane, a most agreeable effect will be the result.

So, again, plants which produce a disagreeable contrast in tint, when seen together in one plane, produce a very good effect when contrasted with colours strongly opposed to each other and in different planes.

The repetition of a good combination of colours is often very agreeable to the eye. When, for example, a line of plants presents a repetition of the same species a certain number of times, and presents them regularly at the same intervals, a very pleasing effect is produced. The repetition of the same arrangement of colour is what pleases. It is as well, in repetitions of this sort, not to introduce too great a variety of colour; for example, a repeated arrangement of three colours, including black and white, is as a general rule more agreeable than a repeated arrangement of five colours.

To the preceding remarks on the contrast of the colours of flowers an objection may be made, namely, that the green colour of the leaves, serving as a back-ground for the flowers destroys the effect which would otherwise be produced by the contrast of the latter. This, however, is not so; as soon as the eye perceives at the same time with distinctness two well-defined colours on any ground, its attention is almost entirely absorbed by them, and surrounding objects, especially if of a dark colour and in a distant plane, produce but a feeble impression.

With regard to foliage, there is great difficulty in obtaining a good contrast of colour; the greatest contrast that can be produced is that of green with red, or of green with the colour nearest allied to red which can be found. A contrast of tint can be obtained by planting trees with a bluish green foliage near others whose leaves are yellowish green; or by placing those with a bluish brown appearance near those with clear yellowish green leaves, &c. Lastly, a contrast of tone can be produced with trees of a silvery foliage, in which there is always a sensible tinge of green, with others whose foliage is of the same green colour, but more intense.

However important it may be to produce a good particular effect, however desirable it may be to make this or that object look well, it is no less important, no less desirable to produce a good general effect, so that the eye, after being pleased with viewing a part, may not be disgusted when taking a general view of the whole. In obtaining a good general effect, the principles already laid down must still be resorted to, there is no new one to be offered, at least so far as relates to the harmony of colours. In order, however, to render this part of our subject the more complete and practically useful to our readers, we subjoin the following rules laid down by M. CHEVREUL for producing a general harmony between the different parts of a garden.

Masses of shrubs, trees, &c., isolated, in whole or in part, close to or far from each other, must be connected together by the same form of plant as that of which they are composed, or by analogous forms, or by the same arrangements of several species, or lastly, by the same colours of flowers or of leaves. By the same means a house should be connected with the different parts of the garden. If neighbouring clumps, especially those near buildings, do not run enough into each other, or are out of perspective, recourse should be had to a line of plants different from and cutting the first, which will add to the general harmony of the whole.

On a future occasion we shall endeavour to find room for some of the practical arrangements which are found to bear out the views of this philosopher, now, we trust, sufficiently explained.

THE CHOLERA has happily in great measure, if not entirely, left us, a circumstance for which we can scarcely be too thankful, and with it have vanished almost as completely all notions as to its FUNGOUS ORIGIN. A few lingering cases, however, have given occasion to many persons of examining more accurately the very peculiar bodies which have occurred in a multitude of instances, in the west of England more especially, and which have given rise to the theory in question, but without affording any precise views as to their nature.

When our previous observations were written, though we had seen bodies, which we believed to be organic, existing in great quantities in cholera evacuations, we had not been so fortunate as to meet with any of the larger organisms which were supposed by their first observers to be the ultimate development of the smaller. There was, unfortunately, some ambiguity both in the language and figures which first appeared; cells were described as annular; bodies of various kinds, as those peculiar to chalk, parts of spiral vessels, the constituent cells of various kinds of flour, &c., were more or less confounded with one another, or at least not sufficiently distinguished; and the structure of the larger and more conspicuous bodies was not exactly ascertained; there was, however, something so very anomalous in the supposed mode of propagation of these bodies, that it was scarcely possible to accede to the notion of their identity with the smaller and more simple cells, much less to consider them as fungi. Yet in such doubtful matters it is the part of prudence to speak cautiously and with due consideration of the very unexpected structures which occasionally occur in the different branches of Natural History.

The smaller bodies, such at least as could with any reason be considered as independent vegetables, and not the mere component parts of more complicated organisms, consisted in every case of a single cell. A few unseptate spores of the common *Cladosporium* were, in one instance indeed, observed by Mr. BROOME, but from circumstances connected with the matter examined he satisfied the parties who called his attention to their occurrence, that they were purely after-growths, and not original denizens of the fluid. But not only were the smaller bodies simple cells, but their walls were perfectly smooth and even, and there was no trace of any colour, except occasionally of the very palest yellow. The larger bodies were also, up to a certain stage of growth, unicellular, and the central cavity never exhibited any septa. The external walls, however, consisted of several distinct layers, the external one of which was studded with little tubercles projecting strongly from its surface, and these at length were connected by veins, indicating a multicellular cuticle like that of the sporidia of the common Truffle, the earlier and simply tuberculated state resembling strongly those of a *Genea*. The colour was a more or less deep reddish brown, and in one case we observed the veins so strongly developed as to project greatly from the surface, and to overlap each other, so that for a moment we conceived that it was something analogous to the spongy growth which surrounds the eggs of the common leech. The central cavity in most cases contains a single nucleus, which, like the spore of an Alga, is at length surrounded by a distinct wall.

Considerations as to the structure of these bodies, their nucleus, and their supposed mode of development, made it highly improbable that they should be fungi, developed like the *Torula* of Diabetes, while the fluids are yet within the human frame, and no fungus is known, with identical reproductive organs, which could have been swallowed with the food. It was once indeed stated confidently that

they were the spores of the common bunt, but they are many times larger and of a totally different form and structure; and we know of no other species of *Uredineæ* to which they can with any probability be referred. Some circumstances in their structure, viz., the stratose outer walls and the invested nucleus, seem to indicate *Algæ*, but we know of no species to which they can be referred, and the ultimately cellular coat is against the supposition. We have once, indeed, seen the spores of an Alga which resembled somewhat the earlier state, but they were globular and not elliptical, and the species has occurred once only in Devonshire; and if the cholera bodies are to be identified with the spores or sporidia of some Alga or Fungus, it must clearly be with those of some species very widely diffused; and the West of England has been so diligently and acutely searched, and by observers of such extensive knowledge, that the supposition is not for a moment tenable that any very widely-diffused species could have escaped their notice. It has finally been suggested that the bodies in question may be the pollen grains of some Cardnus. We have not been able at present to examine this point for ourselves; but the figure published by Mr. Hassall, in the "Annals of Natural History," and the account given by Mohl in his work on the subject of pollen, do not seem to favour this notion. The only remaining theory, as far as we are aware, is that they may be the eggs of some Entozoa; but no one seems able to point out any particular genus to which they can be referred.

That the bodies are extraneous we have not the slightest doubt, and we are very curious to ascertain the solution of the enigma, which seems effectually to have puzzled everybody. *M. J. B.*

We have to direct attention to a plan which has been proposed, in Edinburgh, of obtaining seeds of rare Conifers from the west coast of North America, by means of a special subscription for that purpose. The projectors of this scheme are George Patton, Esq., Advocate, and David Smith, Esq., W.S., of Edinburgh. A meeting was held in the Botanical Gardens, Edinburgh, on the 22d November, 1849, Prof. Balfour in the chair. On the motion of Lord Murray, seconded by Mr. George Patton, the following resolutions were passed:

1. That it would be of great benefit to the interests of arboriculture and horticulture in Scotland to secure the introduction of the seeds of such of the hardy trees, shrubs, and flowers, from the western parts of North America, as are suited to the climate of this country.

2. That, considering the successful result of the labours of the late Mr. Douglas in the collection of the seeds of useful trees and fine flowers and shrubs in that portion of the American continent, the best method of attaining the benefits desired would be by securing the services of a botanist of zeal and experience, who might be induced to follow in the steps of Mr. Douglas, to complete his researches, and to extend them into those parts of the country not fully explored by him.

3. That the meeting being satisfied, from the statement of Professor Balfour, that a party, peculiarly qualified for the undertaking, may be induced to carry out these views, are of opinion that an effort should be now made for collecting funds sufficient to defray the necessary expenses.

4. That, with the view of raising the necessary funds, each person willing to support the proposal shall subscribe the sum of 5*l*., or so many sums of the like amount as they may please, each Subscriber being entitled for every such sum of 5*l* to a corresponding share of the plants and seeds which may be collected, and from time to time sent home. No Subscriber to be liable for anything beyond the amount subscribed by him.

5. That the names of Subscribers be received by Professor Balfour and Mr. James M'Nab, Royal Botanical Gardens; Mr. Evans, Caledonian Horticultural Society's Gardens; Mr. Charles M'Intosh, Dalkeith; Mr. Archibald Turnbull, Perth; and Mr. Charles Lawson, George the Fourth Bridge, and that a Meeting of Subscribers shall be called so soon as a sufficient number of names is obtained, at which a Committee will be appointed to arrange the necessary details.

We should hope that a great accession of English subscribers might be expected, provided the collector to be appointed should be a person in whom reliance can be placed. At least there can be no doubt that it would be to the interest of all who collect Conifers on a large scale to assist the undertaking: for it is impossible now to obtain, in Europe, seedling plants of many of Douglas' noblest species, such as Abies nobilis and grandis, or Pinus Sabiniana and macrocarpa, nor can we hope for English grown cones of them and many others for years to come. The grafted plants now on sale are well enough as substitutes for seedlings, but for permanency and vigour of constitution they do not bear a moment's comparison.

We would not, however, have the subscribers to the Edinburgh plan entertain expectations of much novelty to be found on the west of the Rocky Mountains. This is, indeed, of little real importance; for if the best species are, as we suspect, already known, nevertheless, an abundant supply of seeds of the old ones would richly reward the parties to the enterprise.

If we might advise, we would say that the best points for examination are the upper limits of Oregon, south of the English boundary, and the Spanish peaks in southern California, or new Mexico. It was there, on the Rio de los Animos, which issues from the Raton mountains, that Mr. Fendler found his magnificent *Pinus* (Abies) *concolor*, a species as yet unknown in Europe, along with his *P. brachyptera*, which seems to be the same as *P. Benthamiana*. And on the high mountains near the city of Santa Fé, the same traveller found his *Pinus flexilis*, of which the name alone has reached us.

Novelty, therefore, to some extent, is to be hoped for, though, perhaps, not to the degree which some sanguine minds imagine.

ON DRYING PLANTS SO AS TO PRESERVE THEIR COLOURS.

No science, perhaps, requires so much practical knowledge as botany; in its study, botanical ramblings and the preservation of gathered specimens are of the greatest assistance. The usual method, however, of drying plants is generally long and troublesome, and, above all, very uncertain. Indeed, whatever quantity of papers is employed to separate the plants, and even if the damp papers are replaced by dry ones every 12 hours, 10 days are required before the plants are properly dried, and at the end of that time they are so discoloured, and their characters are so altered, that a great deal of practice is requisite to enable one to make them out. I have made several attempts to remedy these inconveniences, and I take the liberty of laying their result before the Academy.

In a botanical excursion, I arrange my plants between sheets of grey paper, which immediately absorbs any free water arising from rain or dew. In this state the plants can be preserved for 24 hours without alteration. The next day, I place them in very dry paper; then I put them in an apparatus of my own invention, in which they are completely dried in 24 or 30 hours, preserving the colour of their leaves and the brilliancy of their flowers.

The following is the theory of my method: The water of composition and interposition evaporates but slowly in ordinary cases. It, however, struck me that by raising the temperature and diminishing the atmospheric pressure I should probably arrive at a good result. I accordingly made a copper cylinder half a yard high and 2 feet in diameter. In this vessel I place a packet of papers containing 100 specimens. I then put about 8 lbs. of lumps of unslaked lime in the spaces between the paper and the side of the cylinder and fix the top of the cylinder on. I then put the whole into a small tub, and raise the temperature to about 125° or 130° by means of boiling water poured into the tub. The air is then exhausted from the copper cylinder by means of a small air-pump screwed into its lid. I make use of no manometer, because, at this temperature, as the air is drawn out its place is filled by aqueous vapour, and besides in such an operation as this no precision is requisite. The vacuum once made, that is to say after having pumped at intervals for two or three hours, the apparatus is left to itself for 24 or 30 hours; at the end of this time, on opening the apparatus, the plants are found dry and like the specimens I have the honour to lay before the Academy. *Gannal in Comptes Rendus.*

DISEASES OF PLANTS.

(*Continued from p. 806.*)

Genus VII.; *one species.* Phyllorisia, *withering of leaves; and*—Genus VIII.; *one species.* Stellcorisia, *or withering of branches.*—If plants are attentively observed in the heart of summer, we shall sometimes see the leaves alone, sometimes only the young shoots, or both at once wither and shrivel up. Even the most ignorant of cultivators will say that it is the excessive heat that produces this effect. If it is taken early it is not difficult to remedy it, by prompt irrigations at the moment when we see that the heat has produced a slight fading. Even when such a state has gone on till it seems to threaten the vitality of the plant, a slight rain may restore it. But I have seen, especially in delicate and exotic plants, that the long duration of the withering ends in the drying up and death of the whole plant.

Cold also will produce the same effect, and it will be seen to cause the leaves and young shoots to shrivel up. In this case, with herbaceous plants, there is no remedy, especially if the whole surface of the plant is injured. It is easier to restore woody-stemmed plants and such as can be protected in winter. The withered parts must be cut away, and the plant well protected from further injury. The consequences of the evil are, however, in most instances fatal, and the cases of recovery very few. Generally, I think, I am warranted in affirming, that the evils produced by privation, or only diminution of heat, are amongst the worst that befal the vegetable creation.

Genus IX. Necrosis, *thesis, a kind of burning which shews itself by a dry black consuming of the affected parts of the plant, like what would be produced by fire.*—The heat of the solar rays, the extreme abundance of electricity, and a subtraction of caloric, may produce diseases of this genus, of which there are several species. Their enumeration and character will clearly show that they are correctly placed in the present class.

First species. Solar Necrosis.—The effects of the solar rays upon plants are often most injurious, and burn them up. The fact related by Adanson is well known, of a plant burnt up by the sun's rays reflected through the panes of a hothouse. Plants trained against a wall, especially those which under an ignorant or unskilful cultivator lose their leaves too early, or are imprudently stripped of them, are subject to this necrosis, which, however, of itself alone, is not sufficient to cause the death of the plant. The upper extremities—the leaves, young shoots, and fruits, suffer the most. A good arrangement of the branches, economy in cutting off the leaves, and occasional precautions in not keeping the branches too close against the wall, or the practice adopted in some cases of colouring the wall green, may prevent the evil.

Young plants scarcely developed from the seed, if struck by the sun's rays when at their hottest, may be hurt by them, even to death. This I have not unfrequently witnessed to my cost. On this are founded the rules for covering young plants or earthing them up when first they show above ground.

Solar necrosis does much more injury to herbs than to trees. The greatest evil that may happen from it to the latter is when it is accompanied by a hot wind. Thus we know that on the parched coasts of Guinea, a hot wind called *harmattan* blows from the interior of the country, and prevails periodically over the Atlantic during the months of December, January, and February, which burns up all vegetation; and if we may believe travellers' reports, will even set fire to articles of wood.

There are some who would call the present as well as the following species of necrosis by the name of sudden death. If they mean by this expression to establish some kind of resemblance between it and the apoplexy which kills animals, they are wrong, and their assertion has not the slightest foundation. In the disease of which we are now treating, it commences by an excessive energy in the development of the vital functions, by means of which the first period of vegetation is most rapid. Whilst the force of the heat expands beyond measure, the vessels and the fluids are by the same cause forced to combine rapidly with the solids, or to issue forth from the plant in the form of gas, the oxygen increases in the interior and produces the combustion; and I now ask how this can bear the slightest analogy to any sudden death among animals. In their case a redundancy of matter suddenly arrests the vital functions, and causes instantaneous death. In plants no such suddenness has been observed. The vegetable perishes, in the necrosis we are treating of, because it becomes disorganised, but that is always more or less gradual.

Second species. Electric Necrosis.—The cases are frequent where plants are entirely or partially burnt by lightning. The trees whose summits rise the highest towards the clouds, are the most subject to such accidents. To such maladies I give the name of *electric necrosis.*

These two species of *necrosis*, especially the latter, are seldom confined in their results to the partial burning of the individuals. The neglect in cutting away the branches struck, causes the adjoining parts to suffer, either by the gradual spread of the decay, or by the introduction of insects or wet through the dead wood. A gradual disorganisation enlarges the wounds of the tree, which in time suffers more from the neglect of the necrosis, than from the necrosis itself. Therefore it is of the greatest importance to the cultivator on the occurrence of such necrosis, to cut away to the quick the injured parts, or even rather lower down. Thus only can the plant be saved. In herbs and dwarf plants, frequent irrigations may prevent necrosis of the first species.

ELVASTON CASTLE, THE SEAT OF THE EARL OF HARRINGTON.

(*Continued from p. 805.*)

We have stated that the terrace already described runs parallel with the gardens of the Alhambra and *Mon Plaisir.** An approach also leads, by a flight of stone steps, from it to the Garden of Fairstar. Previous to descending the steps, every way the eye can turn the scene is most enchanting, closing with the bower of Fairstar in the distance, and realising as nearly as possible the poet's description—

> "Ye Amaranths and Roses like the morn,
> Sweet Myrtles, and ye golden Orange groves,
> Joy-giving, love-inspiring, holy bower."

From this position the plan of the garden and its embellishments, the whole of which are of the most costly kind, are completely discovered to view on each side of the steps; and descending with them is a bank carpeted with Daphne pontica kept dwarf. On two sides of the garden, right and left, are similar deep banks covered with low, close cut Yew. The effect of this is exceedingly good. On the north or farthest off side of the square is erected the bower of Fairstar, mentioned above. It consists of Moorish architecture in its most finished and highly embellished

* This was erroneously printed *Mont Clapin* in our last.

style. It is entered at the sides under arches of iron; the whole of which, however, as well as the interior decorations, are gilt in gold. It stands in the centre of a crescent, and is enveloped in an exterior bower of Roses. This crescent is backed by a high bank covered with large Cedars and Yews. In front of the bower are arranged marble statuary of a costly and antique kind, as may be conceived when a thousand guineas have been refused for a single specimen; they are in perfect keeping with everything around them, although merely employed as garden ornaments; for it would be out of character in ground of this kind, embellished and ornamented in the most costly and elegant manner, to employ trumpery works of art in any part of the arrangement. Placed at regular distances from these are marble busts on stone bases; the plinths, however, are neatly covered with Roses and Cotoneaster microphylla.

In the other divisions of this garden a marble figure of appropriate size is placed in the centre of each compartment. A beautiful screen of Chinese tile connects the two ends of a semicircular bower. The beds (in scroll pattern) are relieved by straight lines, and filled with various coloured Verbenas; other beds contain dwarf Dahlias, variegated Pelargoniums, Salvias, Lobelias, shrubby Calceolarias, &c., and the whole pegged close to the ground. These are arranged and contrasted so as to work out the idea of a richly embroidered carpet, which they entirely represent; baskets about 6 feet across, gilded in gold, and filled with scarlet Pelargonium, are placed in the four divisions of this garden. They are margined with the silver edged Geranium, and the Ivy-leaved kind with Lophospermums, is introduced so as to hang over and dangle in the air in front of the gilding; at the scroll heads, and at the termination of straight lines, are Irish Yews, Gold Yews, and Chinese Junipers, cut into different forms and strictly artificial. The flower-beds are all relieved with broad walks of Grass of ample size, which obviate any appearance of crowding, or anything approaching confusion. The manner in which the different coloured shrubs, which are cut into form, are disposed and contrasted with the marble statuary is cleverly done, great judgment and taste being required to obviate the appearance of repetition and tameness. To effect the utmost harmony and to blend the various sculptured ornaments with the ornamental shrubs, it became necessary that these shrubs should also partake of an artificial character; hence they have been dressed into various forms representing columns, pedestals, minarets, &c.; on some of these columns crowns of the same plant are made to grow out of the top of each, and these are formed in the most perfect manner.

It must be observed here that picturesque gardening has nothing whatever to do with the subject under consideration. The grand object, as must be apparent, has been to attain the most eminent position which the materials used could possibly command; these materials themselves have been selected with every regard to their appropriateness, and without any regard as to their costliness or the difficulty by which they could be procured, as we shall more fully show in the sequel. *R. G.*

(To be continued.)

RESEARCHES ON THE SUGAR-CANE.

By M. Casaseca.

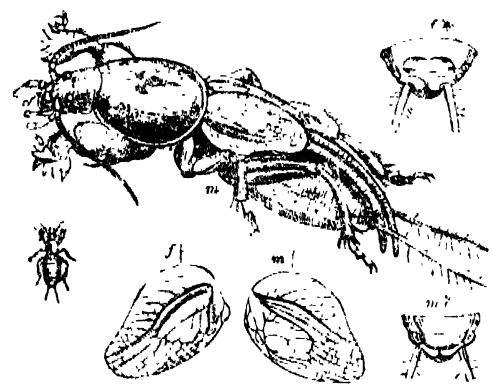
The following are the conclusions to which the author has been led by his researches on the Sugar-cane:—1. That the white or Otaheitan Cane degenerates on red and intermediate (*midtres*) soils, especially if they are to a certain extent run out. This Sugar-cane then becomes more woody and less sweet; nothing then but crystalline and ribbon Canes ought to be set in such soils. 2. That a serious error has been fallen into in all the analyses of the Sugar-cane made up to the present time; inasmuch as, being made on variable quantities of Cane, without any distinction as to the part of the plant analysed, they never give the true mean saccharine richness of the individual examined, and are thus very likely to mislead the planters. 3. That to form an exact idea of the chemical composition of the Sugar-cane, it must be examined throughout its whole length. From such an examination it is found—1. That in the Canes from Otaheite the quantity of water increases in arithmetical progression from the bottom to the top of the plant; and that, if in the other species of Sugar-cane this is not rigidly exact, it is so nearly so as to lead one to infer that such a mathematical distribution of the water is an organic law in the Sugar-cane. 2. That the quantity of sugar is greater at the bottom than in any other part of the Cane. Also that the quantity diminishes as we approach the top of the lower third part of the Cane's length; but if we take the mean quantity of the central third, and also of the upper third; we find that in them the quantities of sugar are nearly equal. It follows from this that from and after the first appearance of the central third, the distribution of the sugar is nearly uniform. 3. That in the lower two-thirds of the Cane the mean quantity of ligneous matter is pretty well the same; the same quantity, or very nearly so, being present in each of the lower and middle thirds; but in the upper third it diminishes rapidly as we get nearer the top; and it is for this reason that the mean quantity of woody matter in the upper third is much less than that of the two lower. 4. That the quantity of sugar in the middle third is pretty nearly the mean quantity in the whole Cane. 5. That if it were not for the knots, there would be, in certain cases, a constant proportion between the sugar and the woody matter throughout the whole length of the Cane. 6. The knots do not, as asserted by M. Peligot, contain the same quantity of water as the rest of the Cane. There is a difference of nearly 4 per cent.; but if the water increases in arithmetical progression from the bottom to the top of the Cane, the same is true with regard to the joints; for there is the same difference between the quantity of water in two joints at different heights as there is in the two corresponding internodes of the stem. That, in future, to estimate the value of a Sugar cane, the middle third of its length must be analysed, since the quantity of sugar in this third indicates to a great degree of accuracy the mean saccharine richness of the entire Cane. 8. That if a planter knowing how to weigh dry and boil the Sugar-cane in water, either distilled or condensed in the steam engine belonging to the mill, would attend to the above rules, he might by means of a simple calculation, consisting of nothing but the multiplication and division of decimals, always ascertain with sufficient accuracy the mean saccharine richness of any Cane brought before him. *Comptes Rendus.*

ENTOMOLOGY.

The Mole Cricket.

This is one of the most remarkably formed species of the entire tribe of insects, and it is remarkable that the British species, like the British dragon flies, equal in size those of tropical regions, for it is a curious feature in the geographical distribution of these animals, that various species of this group occur in every quarter of the globe, whereas, in general, groups of species remarkable in their form like this, are of very limited geographical range.

This insect belongs to the family of the crickets, several species of which possess the power of boring into the places they inhabit; thus the common house cricket burrows into the mortar and crevices round our fire places, and the field cricket into the ground; but the mole cricket is a pre-eminent borer, its fore legs being expressly adapted for such habits. They are, in fact, short and very powerful, the tibiæ are very broad and armed with several teeth (differing in number in the different species), and at once calling to mind the structure of the fore legs of the mole. Another peculiarity is, that the fore tarsi, although broad and three-jointed, are so affixed on the tibia that they can fold back upon it, so as not to be injured whilst the insect is engaged in burrowing in the earth.



Our figure represents a male mole cricket (Gryllotalpa vulgaris) of the natural size, and it will be seen that the fore wings, or rather wing-covers, are small and oval, whilst the wings, which are very large, and when expanded cover somewhat more than a quarter of a circle, fold up in the most beautiful manner into two long and very narrow fillets lying along the back, and reaching beyond the extremity of the body, which is terminated by two long and slender filaments clothed with slender setæ, which doubtless act like a pair of posterior antennæ, and convey intelligence of anything approaching the insect in its subterranean retreat from behind. The wing covers of the two sexes are represented detached beneath the insect, that of the male (*m* +) having the middle portion towards the base divided into more areas or cells than that of the female (*f* +). It is in fact only the male which makes the loud dull chirrup, which is heard to a very great distance, especially in summer evenings, when the insect quits its burrow and comes to the surface, and it is by the friction of the elevated nerves of the upper wing covers against those of the lower that the sound is produced. This peculiarity, together with the differences existing in the form of the terminal segments of the body (*m** representing this part in the male and *f** that of the female), will enable us at once to distinguish the two sexes, which in other respects closely resemble each other, the female in the genus Gryllotalpa not being provided with a long sabre-shaped instrument for the purpose of depositing her eggs in the earth, another peculiarity dependent on the subterranean habits of the species, which of course render such an instrument unnecessary. The female forms a large cavity in the earth by means of her strong fore legs, within which she deposits her eggs from which the young are hatched in the form of their parent, except that they are entirely destitute of wings and wing-covers. A larva recently hatched is represented in the accompanying woodcut.

Much discussion has taken place as to the real habits of this insect, one class of writers contending that it is a carnivorous animal, whilst others assert it to be a vegetable feeder, and to be very destructive in gardens by devouring the roots of vegetables; thus, M. Leféburier has endeavoured to prove that it is upon subterraneous insects, and not upon plants, that this insect feeds. (*Nouv. Cours. d'Agricult.*, v., p. 163); Gould kept a specimen for months, feeding it on ants, and Mr. Wighton kept six of different ages in a box of soil for a considerable time; and he states that they refused to eat the roots of different plants given them, but attacked each other; they also ate grubs offered them, and hence he concludes that they are certainly beneficial to the gardener. According, however, to Gilbert White, "they commit much damage among the plants and roots, by destroying whole beds of Cabbages, young legumes, and flowers"; and Dr. Kidd, who published an admirable essay upon the anatomy of this insect in the "Philosophical Magazine" for 1825, states that "the digestive organs of this insect more closely resemble those of a granivorous bird than of any other animal, and that of all kinds of food they preferred the Potato, while Cucumber they seldom touched; but if raw meat were offered to them they attacked it in preference to anything else, with great greediness, and that when kept even for a short time without food, they attacked each other, and the victor devoured the vanquished. He also states that he found the horny and indigestible parts of insects within the stomach upon dissection. From some observations published in the second number of the "Revue Agricole," we learn that Dahlias and some other plants have been ascertained to be attacked by these insects at the roots, and not only perforated so as to allow a passage for the insect (as suggested by Latreille), but the interior of the stems also consumed to a considerable height. M. Turpin also observed that some specimens placed in a box devoured leaves for several nights, but on the fourth the largest specimen attacked the others.

One of the species, which inhabits the West Indies, occasionally commits great ravages upon the young Sugar-canes in those islands, of which an account has been communicated to the Entomological Society by Mr. Johnstone.

From these various accounts it is quite evident that the insect is both herbivorous and carnivorous, and that it occasionally commits much mischief among plants. *J. O. W.*

ON THE CONDITIONS ESSENTIAL TO THE MOST PERFECT CULTIVATION.—No. XI.

We are ever accustomed to link together and to consider as twin arts horticulture and agriculture. In theory this may possibly appear correct, but in practice much of the analogy is lost; and when we come to pursue the subject in its relation to the cultivation of plants in glass structures, the connection is lost altogether. The agriculturist can only take the climate as it is, he is entirely a creature of circumstances at the mercy of the seasons, and his operations must be ever subservient to them. Not so with the gardener. Give him well appointed structures,

"With all appliances, and means to boot,"

And if he cannot make a climate, he will at least modify one to suit his purpose; and it is well for him if he can, for he is expected to set seasons at defiance, and to control circumstances. That this is often done, those conversant with the skill of our best gardeners can abundantly testify. This success is to be attributed in a great measure to a knowledge of the connection between light, heat, air, and moisture, in their relation to the development of vegetable life. Air and light are undoubtedly the more essential agents—and the most abused.

It would appear that many persons consider a plant-house as an illuminated prison, in which plants may grow sickly for their own especial gratification. They forget it is only a protection and not a prison. It is a circumstance worthy of remark—confirming, as it does, the fact that the gardener should be conversant with the leading principles of physiology—that in proportion as these principles are known and recognised, so is the gardener more liberal in his system of cultivation. And to be successful he must be liberal in affording his plants those elements for which their constitution is peculiarly adapted. It is well for plants, as well as for men, that the atmosphere is capable of insinuating itself where it is often intentionally excluded. Bearing as it does to all organic beings the very elements and stimuli of life, how beautifully is it adapted to its purpose! Could we control its action entirely, how woeful would be the results of our own kindness! Losing sight of the fact, or not caring to recognise it, that the leaf of a plant is at once its stomach and its lungs, and that light and air are the only agents by which the two-fold functions of that organ can be performed, is productive of much ill success in plant growing. If we needed lessons in this principle of physiology, the woods and hedges contain thousands more eloquent in their appeal than the most elaborately worded precept. Search amongst the underwood, and watch the blanched and wiry stem struggling into light and air; its leaves half developed, and their office a sinecure. Look at the corn by the hedge side, where Farmer Hodge, a century behind his time, leaves his hedgerows to obstruct the light, and present a barrier to the moving air. Descend into the sheltered plantation and match the young Oak, "drawn" into a thin wiry rod, blanched and sickly, scarcely enabled to sustain its scanty head in an erect position, and you will be able to form some notion of the losses sustained by plants, and the injuries they suffer from lack of air. Yet this

latter mode of treatment is, with some slight modifications, the practice with some planters of Oak, in which a future generation are to seek substance and durability for their "wooden walls," and support for their peaceful homes—Alas! how will they be disappointed. But to return to our plant-house—I firmly believe that much disappointment in the blooming of exotics arises from a lack of light and air, and especially the former. I imagine that we sometimes attribute failures to circumstances in connection with air when a deficiency of light is the actual cause. I will relate a case in point. A plant of Inga pulcherrima had occupied a low dark stove for some time, without exhibiting any symptoms of bloom. Circumstances changed its situation to a place of an opposite character, and glazed with white sheet glass. Here it made and matured a season's growth, and the following year it blossomed freely and ripened its seed, from which young plants were procured. No particular treatment was afforded it; it was merely treated like other miscellaneous plants amongst which it stood, and I can only account for its change of habit by the increase of light enabling it to elaborate more effectually the fluids necessary for the formation and development of its blossums.

From an absence of a due amount of light and air, the foliage of plants becomes flaccid, the stems elongated and etiolated, and as a natural consequence imperfectly organised. Now it is a physiological fact, admitting of no exception, that an imperfectly organised bud cannot produce perfect flowers and fruit, if such are produced at all; and it is equally true that a plant making and maturing its wood under unfavourable circumstances cannot produce perfect wood or buds, which are the embryos of future growth. In plant culture, the results of ill treatment does not terminate with the current season; but as one season's growth of wood bears a certain relation, and exercises a certain influence over that which is to succeed it, it follows that good or ill treatment, as the case may be, extends its influence in a corresponding ratio.

I would impress upon all who peruse this essay, that garden operations, however trivial they may appear, may derive much assistance from being performed in accordance with recognised principles of scientific deduction. I always endeavour to impress upon the young gardener that physiology, as a light for experience, will work miracles; and that in the present advanced state of gardening, it must form part of the gardener's education. The days of pure practicalism are gone; science must be wedded to the art. I shall take up this subject again in my next paper. *G.*

VILLA AND SUBURBAN GARDENING.

If the amateur gardener was to consult half the authorities which have written upon the Vine, and was to attempt, from their directions, to form a compost suitable for its successful culture, my opinion is that he would have one of the most difficult and perplexing tasks he ever encountered; the more that has been written upon this subject, the more abstruse and mysterious it has become. Now let it be kept constantly in view, that to obtain successful results, the most simple means only are required—diligence and application are more valuable than far-fetched recipes, which only lead to disappointment, and involve experimentalists in endless expense. Without, therefore, attempting to investigate the conflicting opinions now existing on the subject, I shall content myself by giving instructions founded upon extensive experience which has been attended with the most satisfactory results.

Commons and old pastures are the places from whence turfy loam is to be obtained. Select such as is neither too stiff nor too sandy—let it be as full of fibre as can be obtained; this rooty matter is of much importance. It takes a long time to decay, and prevents the soil from becoming close and adhesive. Keep this latter remark always before you in making Vine borders. It is on this porous condition that lengthened success mainly rests. In order, therefore, that this object should be secured, never cut the turf thicker than 2 inches, because in this way a greater portion of fibry matter is obtained. Get as much together as the size of the border may require, making, at the same time, allowance for the other ingredients constituting the compost.

It is also desirable to procure this turf in dry weather, when it is neither in a perfectly dry nor wet state, but between the two conditions; procure, also, some rough lime or plaster rubbish, and some stable manure, not too much decomposed. These latter should constitute about one half of the compost in equal parts. A ton or two of crushed bones will do good. These not only are of themselves a first-rate manure, but the process of decay in them is very protracted; and therefore they keep the soil from becoming adhesive and greasy—the chief evil which afflicts half the Vine borders in the country. When these materials have been got together, commence building them into a narrow ridge, the base of which may be 6 feet, laying the turf and the other ingredients in layers alternately. The heap should remain untouched for about four months, when, without any other turning, it may be chopped down perpendicularly with a sharp spade, and removed in this rough state to the border, having the drainage secured as already directed.

Four years ago I made a border exactly as above described, and the result has been most satisfactory. The wood produced is of medium size and well ripened; the crop has been abundant, and the berries large and well coloured. The final results, therefore, of a border formed upon this principle, and with these materials, which are within the reach of any amateur, and readily understood, admit of neither question or doubt, provided the instructions are strictly attended to. *Pharo.*

Home Correspondence.

Dr. Newington's Cultivator.—I have been much pleased with the working of this tool as a stirrer of the soil, and recommend it to the notice of allotment landlords. But they must, at the same time, provide themselves with the "jacket," or "harness." This is a belt of broad webbing passing round the loins, and having the ends attached to the handle of the cultivator. The belt is kept in its place by being suspended from the shoulders; and by a simple contrivance it can be heightened or lowered, lengthened or shortened at pleasure. By means of this belt the instrument is drawn along by throwing upon it the weight of the body; without it there is too much strain upon the muscles of the arms and hands. My tenants were, during the hoeing time, very fond of borrowing it, using it and the common hoe alternately. One of them for trial omitted the use of the cultivator on one-half of a crop of Peas, and not only was there an evident superiority in the other half, but also, he assured me, the labour of using the common hoe was so much diminished, from the loosening of the soil by the cultivator, that he consulted his own ease by giving his land these intervening stirrings. My own crops upon which it was tried were Wheat, Carrots, Potatoes, and Cabbages. It was of great service to all, and was thought to have hastened the maturity of the Wheat by about a week. *Sigma.* [No doubt the cultivator is a very useful contrivance. We understand that some of its details have been improved.]

Swarming of Bees.—In your Number for the 17th of November, "C. C. M." replies to some of my previous remarks on "An Old Apiarian's" observations concerning bees, whom he considered "shelved." Both agree that the cause of bees swarming is a provision of "an all-wise God to increase their pasturage." This may appear feasible; but the fact is that swarms do not fly beyond their usual feeding places, or what is termed a "bee's flight"—a distance not well defined. By some it has been limited to 2½ miles, while Huish records an instance of his having seen bees on the Isle of May, on which there was no hive, and from which the nearest land, the Fifeshire coast, is distant about 4½ miles—a distance surely sufficient to satisfy "C. C. M." As to both his queries, whether "I can suppose that it is the intention of bees to take up their abode in a bush on which they first settle? or have I never seen or heard of the wild second flight for miles in search of a new home, if they are not quickly put into a suitable hive near at hand?" He adds also, by way of irony, "It might be as well asserted that an animal does not run away when you take especial pains to tether it to the ground." Now, it is only the first swarms that usually take these flights, and in such cases there is little or no chance of "tethering" the bees by putting them into a "suitable hive," for they will soon quit it and follow their scouts, already in possession of a home of their own selection. This fact is so well established as to need no further comment; and it is hardly necessary to observe that swarms frequently make combs in any bush or branch on which they first alight. I may, however, remind "C. C. M." that there must be of course a first swarm led by the old Queen before a second comes forth, and that will not happen, however hot the hive may be, except her successors are in a certain state of forwardness. This accords exactly with Huber, Dunbar, and Bevan; indeed, all apiarians who have carefully studied bees. Notwithstanding this, however, "C. C. M." advises me to refresh my memory by a reperusal of Huber. Were he himself to do so he would learn that the opinion he gave is applicable only to a second swarm, instead of a first, viz, that "the excessive agitation immediately preceding the exit of the bees is caused by the queen not being allowed to destroy the young queens as they successively arrive at a state of perfect existence." If "C. C. M." has any doubt respecting this, I refer him to Dr. Dunbar's interesting account of the calling of the queen bee, in reply to myself, in Loudon's "Gardeners' Magazine" for March, 1839, by which he may learn whether his own memory is not more "treacherous" than that of *J. Wighton.*

Town Shrubs, Wintering Plants, Law of Gardens, &c.—Like, I dare say, many of your readers, I have a small garden, which is managed almost entirely by myself and family. Though an amateur of long standing, my attention has hitherto been principally attracted to hardy shrubs, evergreen and deciduous, particularly the former. Of these, while I lived in the country, I had accumulated a great variety, and since I came to reside here (in Leeds), I have not altogether deserted my old favourites. I was told, as I suppose every one in similar circumstances is told, when I first came to reside in this smoky atmosphere, that such and such plants would never thrive, and amongst the prophets was a nurseryman who had had a garden close by for several years. However, I had been too often told the same tale by practical gardeners, and had found them at fault too often to be much influenced by such remarks, and I persevered, and am now very much inclined to think that with proper care, almost any plants may be grown and flowered even in a town as smoky as this, except, perhaps, the Fir tribe. Hitherto I have not succeeded with the Coniferæ; but am inclined to think exposure and winds are the cause of my failure quite as much as smoke. I shall be very glad to hear what some of your intelligent correspondents say on the subject; and perhaps some who have been longer at work than I have, and with more ample means, may be kind enough to give a list of shrubs, particularly evergreen ones, that will live in a town. A comparison of results would probably show a much better list than most people are prepared for. But I am losing sight of the principal object I had in addressing your readers, which is, how I am to preserve through the winter those plants which modern gardening has rendered indispensable—Pelargoniums, Fuchsias, Heliotropes, Verbenas, Petunias, &c.? 2dly, how am I, early in spring, to strike a sufficient stock of cuttings of these to supply my own garden, and have a few for a neighbour? I have a two-light frame, set on brick, and heated by a flue, but I find it difficult to keep the fire in without burning, and I contemplate enlarging this, both to gain additional space and more certainty; but I am tired of smoke flues, and should be glad to know whether hot-water pipes or tanks would not be better, even if a little more expensive at first; and also whether they would not require less attention. I have another reason for thinking of hot water, viz., that I contemplate heating part of the house, and should wish one fire to serve both purposes; for this reason—I mean the heating of the house—I cannot adopt the Polmaise plan, because I could not get my return current without great expense. I have said that I want to preserve my plants during winter, but I should also wish to have a supply of flowering plants for the rooms, and therefore, perhaps, what I want is a small greenhouse, against the house, and adjoining it a pit—so arranged in both cases as to admit of enlargement. Amongst your many readers there must be some, surely, whose case is similar to my own, and who would not grudge to let another benefit by their experience. If I mistake not, there was an inquiry in your journal, a few weeks back, on the law as relating to gardens, but not, I think, to garden structures. This is becoming a very important subject, and will be more so every day, in consequence of the low price of glass, and the increased desire for the possession of some sort of greenhouse or plant structure—and the efforts of the horticultural world should be directed to obtain a statutory relaxation o the old law on this subject. It might easily, I think, be shown that the present construction of the law is a word deduction, and not a sense deduction, from the old maxim, that whatever is annexed to the freehold cannot be separated from it. One by one common sense has wrung from our lawyers a relaxation of this principle; and there needs but a temperate discussion of the subject in the columns of a journal like the *Gardeners' Chronicle*, to direct attention to it and insure a remedy. From amongst the numerous landlords by whom your Paper is taken, I do not despair of finding one liberal enough to step forward and introduce into Parliament the necessary enactment. In the meantime I believe it might be shown that, in small structures, they might be so planned, at very little additional expense, as not to come within the scope of the present law, even as now laid down. My views on this subject I reserve until another occasion, and until I see what are the opinions of your readers on the propriety and probability of an alteration of the law. P.S. I open my letter, having just read your replies to correspondents, Sept. 15, where you profess your inability to say whether the white Azalea blooms in the open air, but you believe it will in the milder parts of England. This was one of the plants I brought here seven years ago, which my friend, the nurseryman, said would not live. It had previously flowered regularly 20 miles from this place, southward. It is still alive and flourishing, and flowered abundantly last summer. It is right however to say that it has not flowered for some years previously, but it has been removed to a better aspect. Then as to Camellias. I believe this is as hardy as the common Laurel; it will live well in Yorkshire, but not flower without some little extra attention. It is by thus comparing notes that we might soon furnish you with a list of acclimatised plants that the general gardening world do not dream of. *Leodiensis.*

The Highland Pine and Scotch Fir.—In answer to "W. B. H," you state (p. 792), that "there is no difference whatever between the true Highland Pine and the common Scotch Fir, except that which is caused by soil, situation, and climate; the name is merely applied for the purposes of sale." Now, I am of opinion that this statement is calculated to mislead people who are unacquainted with the nature and habits of the tree. It is true that both names are applied to the Pinus sylvestris, but the late Mr. Don, of Forfar, considered the true Highland Pine entitled to be termed Pinus sylvestris horizontalis. All who have paid attention to Fir plantations in Scotland must have observed a great difference in the tree when several generations of it are produced away from its native locality. It then varies much in figure, in foliage, and in the size, shape, and colour of its cones. But in the native Highland forests of Aberdeen, Moray, and Inverness, &c., such varieties are of very rare occurrence. The timber of trees from the native Highland Pine forests is red, hard, and resinous, while that of the low country plantations, where it is often propagated, is white and spongy, even when their ages are equal, and grown side by side. The plantation timber is usually termed common Scotch Fir, and though botanically both are the same, as regards value, they are very different, and, like many other plants, the Pine degenerates when repeatedly produced away from the soil and climate congenial to

its growth. It is therefore apt to mislead your readers to assert, that "the name 'true Highland' is merely applied for the purposes of sale." Had the Highland and Agricultural Society of Scotland such purposes in view in encouraging the growth of the tree by offering numerous premiums for seeds and plants produced from the native Highland forests in the north of Scotland during the last 20 years? I think they had not. Their object was to encourage the cultivation of the true Highland Pine, and to check the spread of the common Plantation Fir, which they knew had become degenerated throughout most parts of Scotland. *F. N., Aberdeen, Dec. 24.* [We are aware of all these circumstances—nevertheless we doubt the existence of any *intrinsic* peculiarity.]

Disease in Vines.—There has been much controversy respecting mildew on Vines. I have had many years' practice as a gardener, in Scotland, England, and Wales, and I am happy to say that I never had any of my Vines infested by this "plague spot." It is nevertheless my conviction that Vines are, like ourselves, subject to much disease. If we escape the small-pox, we are almost sure to have the measles; so if our Vines escape mildew, they will have the dry-rot, or some other rot equally as bad. I am constrained to think so from the sudden and complete change which has taken place in some late Hamburgh Grapes that I was anxious to save. And as I have been very fortunate hitherto in preserving my Grapes to a late period of the season, my surprise may be imagined when on entering the house one Monday morning, I found the Grapes that I had left the night before all right, covered with a blue mould, and the juice oozing from the berries as if they had been pricked with pins. You will ask what is your mode of treatment? I reply, that which I have successfully followed for upwards of 30 years, that is, to attend carefully to the air, fire, and water; in fact, I have treated my Vines as I treat my children, I do not heedlessly expose them, neither do I coddle them up in a corner. As I never was so disappointed before, I should be obliged to any of your experienced correspondents to state why this sudden change occurred. But oh! defend me from those "beardless critics," who know better how to write than to dig; who would not bother their heads about the practical part of the business, but jump at conclusions in a sort of a spring-heeled-Jack fashion, without one particle of reason What renders the case more singular is, that some Sweetwaters in the same house were not injured. *V. D., Stratford.*

The Silkworm.—The cause of former failures with this insect in England is to be easily accounted for. The black Mulberry tree, the only sort formerly cultivated in England, comes too late in leaf for the food of the insect in the earlier stages of its existence, and recourse was had to Lettuce leaves, which ended in disappointment. On the contrary, the white Mulberry tree is the foundation of the silk manufacture, the leaves of which are best adapted for the worm; and no substitute has yet been found with any advantage. In countries where silk is produced in the greatest quantities, the white Mulberry tree is exclusively cultivated, having the advantages of producing a superior silk and of coming into leaf much earlier than the black. The white Mulberry is as easily propagated as the Willow, thus affording an abundant supply of leaves at a small expense. *

Martynia lutea.—To the lovers of a combination of magnificent foliage and sweet scented blossoms, this Martynia will be most acceptable—without exception, it is the noblest annual with which I am acquainted; and from its robust habit and beautiful leaves of a foot in diameter, supported majestically upon a footstalk of a proportionate length and thickness, surmounted by a spike of sweet-scented yellow blossoms, it is well calculated either for a single specimen or a bed, if suitable to the taste of the grower. My plan of raising them is this: early in March I sow the seeds in pots filled with a light soil, and place them in shallow pans of water (in the hothouse) which by constantly evaporating softens the leathery epidermis of the seed, and enables the embryo to perform its functions; much disappointment will be caused if the pans of water are neglected, as it is almost impossible for the embryo to eject its coatings without it; other means have been resorted to, such as cutting it through with a knife, which is unnatural, and should, I think, be avoided. A Melon or Cucumber bed will suit admirably to get them up in. When about 2 inches high they are potted off, grown strong, and hardened by a colder atmosphere than that in which they were raised, and eventually planted out the beginning of May, from which time they will form subjects of admiration until Nature has performed her office, and when flowers and leaves cease to exist. The seed-vessel claims an equal share of praise for its curiosity. If I may use the phrase, it is more like a woodcock's head and beak than an ordinary seed-vessel; and most beautifully has Nature provided in this instance a powerful lever in the beak, for the ultimate expansion of the seed-vessel. One thing must not be forgotten; take care to procure seeds from a first source, for if the vital principle is ever so slightly impaired, your efforts to make it grow will be futile. *Elizabeth, Leicester*

Durability of Zinc.—My experience is altogether opposed to that of "W. B. B.," (see p 773), and to your own expressed opinion, in the matter of zinc. In 1830 I put a cistern, lined with zinc, in a forcing house in which the water was heated during the greater half of every year, and in 1845 it was perfectly good, and serviceable as ever, and I believe it continues so to the present time. This cistern, moreover, had not fair play; it was badly made in the first instance, the metal never properly fitted the wooden casing, so that parts of it bulged out, and caused a considerable strain; four 4-inch pipes were screwed in it, which from alterations were several times taken off and replaced, and yet it continued fully to answer its intended purpose for that length of time. I have used zinc for many other purposes and never knew it fail, except as a chimney-top, where it was soon destroyed. *A Devonian.* [We can only say that it has been necessary to take down every piece of zinc-work which we have seen put up.]

Sulphured Rags v. Hares.—I have frequently experienced the efficacy of the plan of keeping hares, &c., from barking trees, by means of rags dipped in brimstone. Persons subjected to this annoyance, and unable to avail themselves of the benefit of the hare destroying Act, will not regret trying the brimstone; the experience of the last few days induces me to recommend the trial. *S.*

Animals.—If "Vortex," "Addio," or any one else interested in the unknown animal excavators will take one more look at the question as put by "A. H.," at p. 694, I venture to affirm they will be able to determine for themselves, without the assistance of either Bewick or Sir. W. Jardine, that the holes there mentioned if not made by my humble bee, were certainly not made by either sand martins or water rats, nor even in the ordinary localities frequented by them, but "mostly on banks not on the level," says "A. H." Now, I need hardly say that sand martins make their holes under banks, never on them; and as to water rats, of course everybody knows their galleries run a little above ordinary water mark, with an occasional outlet to the surface of the ground. If "Vortex" will look at "A H.'s" paragraph, he will see that it reads "sometimes in brown earth, sometimes in chalky," *i. e.*, earth, not chalk banks, and "Vortex" knows but little of the persevering habits of bees if he imagines that a chalky soil would prove an insuperable barrier in their way when a winter's quarters and perhaps next year's nursery was the stake. I beg to inform "Addio" that the objectionable article was certainly written before the erratum he mentions came under my notice. Perhaps "A. H.," if this should meet his eye, will say whether the holes meant are not about large enough to admit one's middle finger, with generally about a handful of crumbly earth at the entrance, and at what time of the year they are most plentiful. *J. B.*

Societies.

Botanical of London, *Nov* 29 (Anniversary).—The President in the chair. W. Beau, Esq, was elected a corresponding member. Several donations were announced. The Secretary read the report of the Council, from which it appeared that 15 new members had been elected since the last annual meeting, and that the Society now consisted of 249 members. The distribution of the British duplicates had given the greatest satisfaction to the members, and increased exertions had been made this year to obtain the rarer and more interesting specimens, which had been attended with much success. Donations to the library had been considerable. The report was unanimously adopted, after which a ballot took place for the council, when the President was re-elected, and he nominated J. Miers, Esq, F.R.S., and E. Doubleday, Esq, F.L.S., Vice-Presidents. Mr. J. Reynolds, Mr. G. E. Dennes, and Mr. T. Moore were respectively re-elected Treasurer, Secretary, and Librarian. Mr. J. Coppin, M.A, Mr. G. Luxford, and Mr. J. L. Lawrence were elected new members of the council, in the room of Mr. A. H. Hassall, Dr. Cooke, and Dr. Ayres.

Botanical of Edinburgh, *Dec.* 13.—Dr Lowe in the chair. The following communications were read:—1. *On the Plants of the Valley of Fatana, Otaheite.* By Dr. Archibald Sibbald, R.N.—In this paper the author gave a list of the species observed by him in the Valley of Fatana, in Otaheite, with their native names, and remarks on their properties, and the uses to which they are applied by the inhabitants. The paper was accompanied by drawings, made on the spot, showing the manner in which the Tapa or native cloth is worn by the chiefs, together with specimens of the cloth, and an account of the mode in which it is prepared from the bark of the Bread-fruit tree, Artocarpus incisa. A sketch was likewise given of the Valley of Fatana, which contains many interesting species of plants, and a waterfall 400 feet high. 2. *On some Scotch Fresh-water Algæ.* By W. T. C. Thomson, Esq.—3. *On peculiar Cells found in the style and other parts of certain species of Grevillea, Banksia, Manglesia, and other Proteaceæ.* By S. Cobbold, Esq.—The author mentioned the occurrence in the stem, leaves, floral envelopes, and fruit of various Proteads of certain peculiar cells, which in their simplest stage of development are transparent, fusiform, and of variable size, but generally much larger than the cells composing all other tissues of the same organ, and containing in their interior cellules of various colours, and a nucleus attached to or bulging out from the cell wall. He considered that whatever be the function of these bodies, there is one special end to which they seem destined, viz., the formation of peltate hairs, which occur in great abundance over nearly all the organs of some of the species examined. 4. *On the plants used for forming Hedges and Fences in Southern India.* By Dr. Cleghorn.—Cæsalpinia sepiaria, Rox., Mysore Thorn, is invested with historical interest, Hyder Ally having encircled the village fortifications with this plant. The fences are handsome and almost impenetrable. This, with Pteroloblum lacerans, R. Br., and other species, grows rapidly from seeds. Capparis sepiaria, L., forms an excellent hedge round Shikarpoor. Prophis aspera, Retz, is well adapted for the same purpose, from its ramous branches and rigid character. Acacia latronum, Willd., was also pointed out, aptly designated by Will, denow Frutex horridissimus. This paper will appear in the Annals of Natural History, and in the Transactions of the Society. Dr. C. exhibited the fruit of Aristolochia indica, L., and the strange-looking tuberculated pod of Bignonia xylocarpa, Rox., 3 feet long—about the size of a walking-stick. When pendulous from the tree it is a conspicuous object on the Malabar Ghauts. 5. *On a supposed new species of Glyceria.* By F. Townsend, B A.—This paper contains descriptions of three Glycerias, viz, G. fluitans, G. plicata, and the supposed new species, which the author proposes to name G. podicellata. This plant he had described in his former paper under the provisional name of G. hybrida.

Reviews.

A Packet of Seeds Saved by an Old Gardener. Chapman and Hall. 12mo.

If gardeners will take our advice, they will read this book, think of it, and act upon it. They will find therein many things they have not thought of before, much that they have misunderstood, and something, no doubt, that will be wholly new. In a half-serious, half-bantering tone, the unknown author of this trifle—no, not trifle—it is something far beyond that—tells both masters and men of their faults in a manner that must do good, because all will acknowledge the justice of his reasoning, and none can be offended by it. We shall give one scrap by way of example, and refer the reader to the book for all the rest.

"After a while I asked the squire for a holiday to go and see my friends at the old place; and when he said 'Yes,' he told me he should not find fault if I got a wife, provided she was the right sort; for he said it didn't look well for a man to live single when he'd a comfortable place, and was a little ahead of the world. I'd thought the same thing; and, to tell the truth, that was just what I wanted the holiday for. Old friends at the old place shook hands very hearty, and Margaret, with all her fine clothes, hadn't forgotten me; and when we shook hands, hers was so soft, I could but look at it, and so white it was, and so small, but it set me thinking a deal more than I care to tell; but this I did, I went a few miles, and bought a golden hoop to have a leap through. 'You might have called before this,' said Elizabeth, 'to see an old friend,' as I opened her door one evening. 'I saw you pass; and I did think you'd have looked in.' I made some excuse, and we sat down, and talked over old times, over those dead and gone, and those still about; and we felt more like brother and sister than anything else. She told me all her troubles—how hard she had to work, and how she'd lost part of the washing at the hall through the lady's maid, though she couldn't learn why, only it was so; and then she said she meant to go to service; and if I should hear of anything likely to suit her, she'd thank me to let her know: she wasn't afraid of work, only she wanted to be comfortable,—for she wasn't at all so, as things were. 'Well,' said I, 'I know just the place for you, if you'll take it; but you'll have to work hard and live hard, and sometimes have to put up with a good deal; for the master's an obstinate man, and, right or wrong, he will have his way.' 'I don't mind that,' said she, 'if I can but be comfortable, and be let do my work;—but you'll see me again before you go, and then you can tell me more about it;' and she put out her hand, and said, 'good bye' 'But,' said I, 'there's no hurry; this hard hand of yours has done enough for to-day;' and I slipped the ring on her finger, and said, 'If you're of my mind, we'll make another move with the old washing-tubs, and the lines, and the pegs; and for fear you lose the place, say you'll take it, and I'll soon show you the way.' 'Tisn't worth telling; for nothing's easier than getting married, if you go the right way about it. And though the girls in the village said I was taking her home to scare the birds off my seeds, I knew what I'd got, and so did they, and none better than Margaret. But less said the better; only I'd have young men know, that there's more truth than they think for in the old saying, 'fine feathers make fine birds.' Ay, too fine by half; and 'tisn't till they're fixed for life that they find out how often 'a silk sock hides a sore toe.'"

Upon looking over our papers we find some books which are of too slight a texture to merit detailed notice, but which we are unwilling to pass by wholly without notice.——*Notes on the Cultivation of the Vine and the Olive, &c.*, by Sir T. L Mitchell (4to), is an excellent sketch, published at Sydney, of the methods now employed for that purpose in the South of Spain, and will be of great use to settlers, who should take care to provide themselves with it on their arrival in the Australian colonies.——*Dr. Cox's paper on the Destructive Powers of the Scolitus (Scolytus) destructor, &c.*, published by the Royal Botanic Society (4to), contains some useful observations and good woodcuts, which make it worth reading, notwithstanding its little originality and illiterate style.——*Mr. Walker* has published some *Practical Suggestions for the Establishment of National Cemeteries* (Longmans), in which he recom-

means the consecration of great "mortuaries," or burial grounds, in waste land abutting on the main lines of railways. His suggestions merit attention.——*Hall's First or Elementary Atlas for the use of Schools* (Longmans), is a small 4to, with 10 neatly engraved useful maps, extremely well suited for beginners. The first map, representing Canaan as divided among the Tribes, and Palestine, in the time of Our Saviour, are especially deserving of commendation, both for their completeness and accuracy.——*Drummond's Observations on Natural Systems of Botany* (8vo, Longmans) may be recommended to the anile portion of the reading public, and to no other.

Of foreign works we ought to notice the following. Dr. Blume's *Rumphia* is completed by the publication of a thin fourth volume, containing, among other things, figures of some of his little known Orchids, and botanical notes relating to them. We regret to see that this long-expected portion of so great a work, needing illustration more than any other, is dismissed with a few plates and an inconsiderable quantity of letter press: both, however, are valuable, as far as they go. We have also received the four first parts of the same author's *Museum Lugduno-Batavum*, an 8vo work, containing important botanical memoranda relating to the vegetation of the Dutch East Indies.—— *The Papers and Proceedings of the Royal Society of Van Diemen's Land*, vol. i., part 1, is wholly occupied by papers on the coal basins of that island.——The last part of the Nederlandsch *Kruid-Kundig Archief*, vol. ii., part 2, contains some critical notices of Goodeniads, by De Vriese, and an account of the third meeting of the "Leden van de vereeniging voor de Nederlandsche flora," in which are numerous observations upon the wild plants of Holland.——*Prof. Miquel* has published a special treatise *on the African species of Ficus* (over de Afrikaansche Vijge boomen, Amsterdam, 4to), with excellent figures of some of the more remarkable species.——We have before us the 2d, 3d, and 4th parts of Schærer's *Lichenes Helvetici exsiccati*.——Finally, the 1st volume of Walpers's *Annales Botanices Systematicæ* is now complete—a most useful work, notwithstanding its many errors.

Miscellaneous.

On the Chemical Constitution of Poppy Seeds. By M. Sacc.—The author of the memoir from which the present extract is made, has endeavoured to show that in order to obtain exact analyses of organic matters, it is necessary to determine both their ultimate principles, as well as their immediate constituents. He then gives the composition of the seed, the oil, and the cake of the Poppy. He points out the fact that Poppy seeds are perfectly harmless, useful as food, and that they contain a volatile fatty substance. The ashes of Poppy seeds, and it is a remarkable fact, yield very little alkaline matter, but in its place a great deal of lime and phosphoric acid; this composition, compared with that of the ashes of the fir, published by the author last April, in the "Annales de Chimie," seems to show that in calcareous soils, lime almost completely takes the place of the alkalies in the ashes of plants. By calculations made from analyses, it is proved too that the whole of the nitrogen contained in Poppy seeds, is not there in the form of organised matter. If this should prove to be generally true, it is clear that the nutritive value of organised substances cannot be ascertained by merely determining the quanity of nitrogen they contain. *Comptes Rendus.*

Calendar of Operations.

(For the ensuing week.)

FORCING DEPARTMENT.

Pineries.—Care should be taken during the next few weeks to limit the application of exciting influences, or the plants will be induced to grow at a rate very disproportionate to the amount of light which they are at liberty to enjoy. The object to be aimed at in Pine growing is not the producing of a large plant with gross exuberant foliage, but rather the production of small yet healthy plants, with short sturdy leaves, while the roots are revelling in the rich compost. This end is not to be attained through starving the plants by an inadequate supply of water and soil, but by affording, along with a proportionate quantity of these requisites, a free circulation of air at all times. If this point, in connection with a proper supply of water, be duly attended to, and if a healthy root action be secured, the plants, though small, will be filled with highly elaborated sap, and, as a natural consequence, will produce large well swelled fruit. Vineries.—It is a good plan to fork over lightly the borders in front of late Vineries, taking great care not to injure or expose the roots. The effects of the frost upon the soil will be beneficial, and for this reason they should not be top-dressed till the commencement of the growing season, when the roots can take immediate advantage of it. Let the fermenting material upon borders which are already in motion be examined, to see that it does not get either too hot or too cold; the former state of things will render it necessary to open it out or remove a portion of it; but in the latter case it should be turned over and a fresh portion be mixed up along with it. Peach-house.—A somewhat drier atmosphere must be maintained, and syringing avoided where the flowers are just expanding. Avoid a high temperature at night, and take advantage of every fine day to admit air till the fruit is fairly set.

FLOWER GARDEN.

When the ground is too frosty to admit of the transplanting of trees and shrubs being proceeded with, everything should be done which forethought can suggest in making such preparations as will facilitate the work to the greatest extent, when the weather is more favourable. To this end the stations for the plants may be prepared by conveying suitable soil, &c., to the spot, and by making holes or raising mounds for their reception. The value of the mowing machine is now becoming so well known as to be in little need of praise. Those who have had an opportunity of judging for themselves must feel perfectly satisfied of its great advantages; and those who have not enjoyed such an opportunity we would recommend to take our word for it, and procure one against the forthcoming season. We find that a 42-inch machine will do as much work as 24 men, and at an expense not exceeding 8*s.* per day. But to make the machine of the greatest service, and to ensure its work being of the best quality, the surface of the turf, whether level or on an incline, should be made perfectly even, and free from holes or other indentations. Any portion of turf, therefore, which is in this state should be taken up, and relaid, after the ground beneath has been brought to a firm uniform surface. Sharp sand and finely sifted coal-ashes are excellent materials for this purpose, as worms have a great objection to pass through a stratum of these, and the nuisance which these pests create is in a great measure avoided. Another advantage which these materials possess is in preventing grossness or undue luxuriance in the turf, and by this means the more delicate kinds of Grass are allowed to establish themselves, and even take the lead, instead of being smothered, as they generally are, by their brethren of a coarser nature. Look after the seeds of Rhododendrons and Azaleas, as soon as the capsules begin to burst.

FLORISTS' FLOWERS.

After the frosty weather we have had, and consequent closing of frames, in which Auriculas, Polyanthuses Carnations, &c., are wintered, it will be absolutely necessary to subject the stock to a searching scrutiny; everything will be better for abundance of air, whenever it can be given with safety. It is just possible that some leaves on the Auriculas will have turned yellow; that offsets which have been planted by the sides of the pots may have their roots laid bare, by the contraction of the soil; that green fly, which will keep its hold on the plants in all weathers, may again appear in force; that some of the drainage of the pots may have become defective, in each and every case immediate attention is necessary. Carnations and Picotees.—Some little dirt will, even with the best management, accumulate in the axils of the leaves; this must be carefully brushed or blown out, for when wet it is attended with deleterious consequences to the plant.—If Tulip beds must be covered at all in severe weather, and we contend that they are better for it, it should be now. Some florists will sow the seed at this season, and the best crop that ever we had, and from which we have a few splendid breeders, was sown on New Year's-day. We do not suppose (as some do) that it is necessary to put the seed in sideways—as well might they advocate sowing Parsnips thus—but if kept slightly moist, avoiding excessive wet, they will, in ordinary seasons, appear about March, when every help must be given them, recollecting that the larger and finer the foliage the larger the bulb, and consequently the amateur will have to wait a less time for the flower.

FRUIT GARDEN.

Fruit-room.—When this place is not furnished with a stove or a coil of hot-water pipes, considerable difficulty is experienced at this season in excluding the cold and damp. Of the two, perhaps, the latter is the greater enemy. It may, however, be remedied by spreading some unslaked lime in wide pans or drawers exposing as much as possible of its surface to the atmosphere, and exchanging it for fresh as soon as its absorbing powers are somewhat satisfied. Frost should be excluded if possible; but if this is to be effected by the aid of artificial heat, the latter should always be used in connection with ventilation, that the moisture evaporated may be allowed to escape. But if there are no such conveniences, the simple means of matting up the doors and windows must be adopted; and if, in spite of these precautions, the internal temperature falls below the freezing point, care must be taken to prevent a sudden thaw, by keeping the room close and shaded for a short period after the return of warmer weather. This points out the advantage of constructing such places on the north side of a wall, as they are thereby preserved from extreme heat in summer, and from sudden variations in winter.

KITCHEN GARDEN.

Let trenching of vacant ground be done with all convenient dispatch, unless when it is frozen; as the clods, if turned under in that state, will remain a long time ere they thaw; the loosening of the soil, by creating non-conducting cavities, checks the progress of heat either upwards or downwards. Instances have been recorded of ground being trenched during severe frost, and of the clods being found only partially thawed at Midsummer. In mentioning the protection of kitchen garden crops, last week, we omitted to recommend the branches of Spruce Fir, Yew, or other evergreens. These are quite as effectual, if used in sufficient abundance, as litter and other matters, which are too untidy to be seen in a well kept kitchen garden. Attend to the forcing of Rhubarb, Seakale, Asparagus, Chicory, &c., and keep up a supply, if possible, equal to the demand. Let Cauliflowers, Endive, and Lettuce, in frames, be frequently examined, and divested of decaying foliage; and protect from the ravages of slugs, by carefully sprinkling a little lime and soot upon the surface of the soil.

State of the Weather near London, for the week ending Dec. 27, 1849, as observed at the Horticultural Gardens, Chiswick.

Dec.	Moon's Age.	Barometer. Max.	Barometer. Min.	Thermometer. Max.	Thermometer. Min.	Thermometer. Mean	Wind.	Rain.
Friday .. 21	6	30.491	30.394	[illegible]	[illegible]	[illegible]	N.E.	.02
Satur. ... 22	☽	30.530	30.519	37	24	32.5	N.E.	.00
Sunday . 23	8	30.472	30.310	35	22	28.5	N.E.	.00
Monday 24	9	30.401	30.373	36	24	30.0	N.W.	.02
Tues. .. 25	10	30.550	30.328	38	20	[illegible]	N.E.	.01
Wed. .. 26	11	30.143	29.705	42	31	36.0	N.W.	.02
Thurs.... 27	12	29.493	29.134	41	24	32.5	N.	.00
Average....		30.309	30.1[illegible]	3[illegible]	27.0	3[illegible]		0.07

Dec. 21—Overcast, fall of very broad snow flakes, overcast.
— 22—Frosty, densely clouded; overcast at night.
— 23—Clear and frosty; cloudless; frosty.
— 24—Overcast, small hail and snow; sharp frost.
— 25—Frosty, cloudy; very fine; cloudy at night.
— 26—Drizzly, densely overcast.
— 27—Clear; some red clouds; clear and cold; sharp frost.

Mean temperature of the week, 8 deg. below the average.

State of the Weather at Chiswick during the last 24 years, for the ensuing week, ending Jan. 5, 1850.

Dec. and Jan.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 30	44.5	33.1	38.8	9	0.80 in.	1	4	2	2	2	3	6	1
Mon. 31	43.8	34.0	38.4	6	0.42		6	-	1	4	6	4	3
Tues. 1	42.4	30.2	36.3	8	0.70	3	4	2	1	3	8	4	4
Wed. 2	41.2	29.2	35.2	8	0.21	8	2	5	—	3	4	3	5
Thurs. 3	41.3	30.5	[illegible]	12	[illegible]	1	1	5	-	5	5	3	4
Friday 4	41.2	31.5	36.4	9	0.45	3	3	3	4	1	6	2	2
Satur. 5	41.0	29.9	35.4	10	0.40	0	2	5	—	1	8	1	1

The highest temperature during the above period occurred on the 30th 1833—therm. 56 deg., and the lowest on the 1st, 1837—therm. 12 deg.

Notices to Correspondents.

Books: *Polyommatus Adonis*. There is no such paper.‡

Coffee: *Coffea*. The great thing is to have the beans well roasted and used immediately. In England they are not half roasted, and are spoiled by after keeping. Get a roaster, roast your own every day, and grind it for daily use. Soyer says that the fault of English coffee may be cured by putting the ground material into a saucepan and heating it over a fire, stirring it well, so that it does not burn. The plan is worth trying by coffee drinkers, among whom we have not the honour to rank. A very nice French patent apparatus for making it in is sold in one of the shops in the Haymarket.

Conifers: *K*. They are best from seed. Cryptomeria and Taxodium may be struck from cuttings by inserting the half ripened short side shoots, taken off with heel, in sand under a bell-glass, and placing them in gentle heat. Autumn is the best time for the operation.‡

Fruit Trees: *A A*. You will find a list of good sorts of Gooseberries at p. 792. Of Currants, the Red Dutch, Knight's Large Red, White Dutch, and Black Naples are amongst the best.||

Heating: *J R M*. Either your external chimney is too low, which is probable, or the dampers do not act, or the elbows are choked with soot. We know nothing of the merits of the chimney-pot recommended; all the kinds which we have employed have been useless. The chimney mouth should be higher than the highest part of your house.

Lawn: *T W*. If it is so very weedy as you state, you had best pare and burn, and re-sow it in spring.‡

Names of Plants: *A Constant Reader*. Turmeric or Curcuma longa, and Pinus Cembra.—*P S*. Centropogon, *alias* Lobelia, surinamensis.—*P*. Cinnamomum zeylanicum or Cassia, and a very common looking leaf which we do not recognise. It is a mere accident whether such leaves can be identified without their flowers.—*A H*. It is Pittosporum tenuifolium, a New Zealand plant, from the Bay of Islands, and no doubt tender.—*M J B*. Carissa ferox, the Arduina bispinosa of Bot. Cabinet.—*B B*. Aristotelia Macqui.—*Medicus eboracensis*. It appears to be a bit of Nandina domestica.

Names of Fruits: *A G*. 1, the Stock, or some sweet cider Apple; 3, Carlisle Codlin; 8, 9, Golden Noble; 5, Pomme de Neige; 6, Alexander.||

Timber Measuring: *A Young Apprentice* asks why the divisor 2304 is used to find the cubic contents of timber, as given in London's "Self-instruction for Young Gardeners," p. 117? The rule at the above reference is, "Multiply the feet in the length by the square of the inches, and divide for cubic feet by 2304. Or when an 8 th, or 10th, for bark is allowed, by 3009, or 2845." The rules in Mr. London's useful work are generally very explicit, but the one referred to should have run thus: Multiply the feet in the length by the square of the girth in inches, and divide for cubic feet by 2304. Why this divisor is employed will appear evident from the following example: Suppose a piece of squared timber is 20 feet, or 240 inches in length and 6 inches square, then the area of its end will be 6 × 6 = 36 inches, which multiplied by 240, the number of *inches* in length, will give the solid contents of the piece in inches, and these divided by 1728, the number of inches in a cubic foot, will give 5, the contents in feet. Or we may multiply the area of the end in inches by 20, the *feet* in length; then divide by 144, and the quotient, 5, corresponding with the cubic contents in feet, will likewise be the result. Instead of squaring the quarter girth, 6, we may square the whole, or 24, according to the rule in question—24 × 24 = 576, and this is equal to 16 times 36; or, in other words, to 16 times the area of the end. Now it is plain, that if the area of the end, in inches, multiplied by the length in feet, requires to be divided by 144, then 16 times the area of the end multiplied by the length in feet will require to be divided by 16 times 144, that is, by 2304. But it must be observed that the above rules only hold good when the sides of the piece of timber are square, equal, and parallel. The more the piece differs from a square prism, the greater will be the error in using the quarter girth. If the transverse section is 24 inches by 8 inches, and the length 48 feet, the true contents are 64 cubic feet; but the quarter girth method gives 85 feet 3-tenths—a difference, or error, of upwards of 21 feet. The correct measure of a round tree of the above length and girth is a small fraction more than 108½ feet; but the quarter girth gives 23 feet 3-tenths less than the true contents. From these examples it is evident that this method ought not to be employed. It cannot be defended; its inconsistency is proved by its giving 21 feet too little in one case, and upwards of 23 feet too much in another. The measurement should be made on correct principles, and on these the necessary deductions for bark, squaring, &c., should also be made. The usual rule for measuring tapering timber is likewise fallacious, for a man can do this by it—he can measure a tapering tree, then cut a portion off the small end, measure the remaining portion of the thick end by the same usual rule, and find that he has more than he had in the entire piece; so that if any trust is to be put in this rule, it must be admitted that a part is greater than the whole.||

Misc: *Ravenswood*. With ordinary care your large Rhododendrons may be moved with success in September. It is too late now to layer Moss Roses; it should have been done in the end of summer, after they had made their young wood. You may winter Scarlet Pelargoniums by hanging them up by the heels in a dark *dry* cellar which is free from frost; but we should prefer the plan of packing them closely in boxes of *dry* earth. The same situation would then suit them equally well.‡—*Anon.* "Josling's St. Alban's" is an early Grape, but later than the Royal Muscadine.||

WHEAT SOWING.

THE LONDON MANURE COMPANY beg to offer as under, and assert themselves that every Manure sent out by them shall be free from the slightest adulteration. Peruvian Guano direct from Importer's Warehouses. London Manure Company's Wheat Manure and Urate, Sulphate of Ammonia, Phosphate of Ammonia, or Ammoniacal Phosphate; Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone Sawdust, and every other Artificial Manure.

EDWARD PURSER, Secretary, Bridge-street, Blackfriars.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

E. DENCH invites the attention of Gentlemen about to erect Hothouses, &c., to the vast superiority in every respect possessed by his PATENT HOUSES, which he will warrant superior in every respect to any others. Good Glass from 16 to 21 oz. per foot, 1 foot wide, 3 feet long, furnished, and the Houses when completed charged from 1s. 8d. to 1s 6d. per superficial foot, according to size and quantity; one principle, the roof being formed without wood or putty, and the other principle being wood rafters and the glass put in with putty. Patent Sashes, requiring no paint, from 7d. to 9d. per ft.

HEATING BY HOT WATER.

THE IMPROVED "FLUE BOILER" AND FURNACE.

W. HILL begs respectfully to inform the numerous applicants for his "FLUE BOILER" of a small and intermediate size, that he shall be prepared, early in December, to supply sizes to suit every description of Apparatus, from that of 100 feet of 3-inch pipe to 2000 feet of 4 inch pipe. A List of Sizes and Prices will shortly be published. W. HILL guarantees his Boilers to be the most effective and economical of any in use.

Horticultural Works, Greenwich, Dec 29.

STEPHENSON AND CO., 61, Gracechurch street, London, and 17, New Park street, Southwark, Inventors and Manufacturers of the Improved CONICAL and DOUBLE CYLINDRICAL BOILERS, respectfully solicit the attention of scientific Horticulturists to their much improved method of applying the Tank System to Pineries, Propagating Houses, &c., by which atmospheric heat as well as bottom-heat is secured to any required degree, without the aid of pipes or flues. S. and Co. have also to state that at the request of numerous friends they are now making their Boilers of Iron, as well as Copper, by which the cost is reduced. These Boilers, which are now so well known, scarcely require description, but to those who have not seen them in operation, prospectuses will be forwarded, as well as reference of the highest authority, or they may be seen at most of the Nobility's seats and principal Nurseries throughout the kingdom.

S. and Co. beg to inform the Trade that at their Manufactory, 17, New Park-street, every article required for the construction of Horticultural Buildings, as well as for heating them, may be obtained upon the most advantageous terms.

Conservatories, &c., of Iron or Wood erected upon the most ornamental designs. Balconies, Palisading, Field and Garden Fences, Wire-work, &c.

MESSRS. NESBIT'S CHEMICAL AND AGRICULTURAL SCHOOL, 38, Kennington-lane London.—A sound practical knowledge of Analytical and Agricultural Chemistry, Geology, Surveying, Levelling, Railway Engineering, &c., may be obtained at Messrs. NESBIT'S Academy, in addition to a good modern education.

Mr. NESBIT'S works on Arithmetic, Mensuration, Gauging, Land Surveying, English Parsing, &c., are published by LONGMAN and Co, and may be had of all Booksellers.

The terms of the School can be had on application either personally or by letter

The Agricultural Gazette.

SATURDAY, DECEMBER 29, 1849.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY,	Jan.	3—Agricultural Imp. Society of Ireland.
WEDNESDAY,	—	9—Highland and Agricultural Society
THURSDAY,	—	10—Agricultural Imp. Society of Ireland.

IT is right, at the close of the year, frankly to acknowledge that there has latterly been a good deal more of political discussion in our columns than is at all consistent with the character of a Journal devoted exclusively to the advancement of the Theory, the Art, and the Business of Farming. It is not our part, we readily confess, to expose political errors—we must confine our efforts to the correction of agricultural ones. And though it has been almost impossible during a period of unparalleled politico-agricultural excitement to avoid allusion to the controversies of the day, we must, for the future, confine our attention, and that of our correspondents, to the numerous topics arising out of the relationship of landlord with tenant, of tenant with labourer, and of all three with the land—and eschew discussions on legal enactments which aim at raising the prices of agricultural produce. We publish in our present Number all the communications we have in type which are at all chargeable with political bias; and shall endeavour, for the future, that "Farmers' prospects" be examined in our columns only from that point of view which exhibits the result of personal exertion. Those other aspects of the matter which furnish the pet topics of party politicians, we shall endeavour to avoid.

IF extensive EMIGRATION FROM IRELAND be a necessary element in the construction of a sounder agriculture there, and if it be desirable that the emigrants should be assisted and directed (in order to obviate the evils which result from the system of leaving pauper emigrants entirely to their own resources), the question is, how can this assistance be best afforded? The usual objection to the interference of the State is, that, by repressing individual exertion, it would check that stream of emigration which is now spontaneously flowing out of the country. Assistance by way of loan, to those who are destitute of the means of removal, would not be liable to this objection. It has not yet been tried, and is well worthy of a trial. We would make the experiment on a small scale in the first instance, and extend the operations if found to succeed; and, from our knowledge of the sources on which Irish emigration at present depends, we have no doubt of its success.

Emigrants from Ireland are of two classes—the cottier class, now reduced to pauperism by the failure of the Potato, who go to America in quest of work; and the class of farmers, possessed of some means, who emigrate with the intention of purchasing land. A considerable portion of the capital with which the latter emigrate is property of which they have defrauded their landlords. The greater portion of the cottiers emigrate by means of funds remitted by relations who have preceded them. During the summer of 1847 we were informed, on good authority, that an American mail usually brought to one small market-town in the North, near which we were stationed, not less than 100 letters containing such remittances. A frequent objection raised in the relief committees, by the rate-payers, against certain applicants was, that they were in the receipt of such aid; and we were informed, both by the peasantry and by those who are so well acquainted with their state and habits—the Roman Catholic clergy—that most emigrants begin to make these remittances before they have been in America three months. This readiness to assist relations is one of the bright features in the character of the Irish peasantry, which it will be well if the Poor-law does not destroy, and which it will be well to take advantage of in promoting the necessary work of emigration. We had practical proof of it many years ago, when employing some Irish labourers in England, who made us the channel for the remittance to Ireland of sums which astonished us by their magnitude, as well as by the remote degrees of relationship of those to whom they were made—degrees of relationship scarcely recognised in England.

We propose, therefore, to aid emigration by means of an association such as the British Association for the Relief of Distress in Ireland; to be empowered to receive contributions for the purpose of assisting destitute persons desirous of emigrating; to be incorporated by Royal Charter, and to have power to raise money by way of loan for the same purpose. There is no reason why its operations should be confined to Ireland. We propose that assistance shall be given to the emigrants only by way of loan, to be repaid within one or more years, according to the distance of the country to which they should proceed, and other circumstances rendering necessary the deviation from one fixed rule. It should be one object of such an association to circulate information respecting the different British colonies, similar to that of the Emigration Commissioners, leaving the choice to the emigrants themselves; and seeing how many of the Irish peasantry have connexions in the United States, it is a question well worthy of consideration whether assistance should be confined to those emigrating to our own colonies. Every subscriber should have the privilege of naming emigrants to double the amount of his subscription; and every person receiving assistance to emigrate should be required to find two securities at home for the repayment of the money. These would in Ireland be the relations of the emigrant, with his landlord or his priest. The party recommending the intending emigrant for aid to be always one of them.

In the case of emigrants to the United States, the security should be to a larger amount, and from more bondsmen than in the case of emigrants to our own colonies. Branch associations should be formed in the country, through which the emigrants would communicate with the central body; and also in the principal sea-ports, to superintend their embarkation; to provide depôts for them, while waiting for the vessels by which they are to sail; and to exercise some surveillance over their sanitary condition, by a little attention to which much suffering and loss of life on the voyage would be prevented.

The plan proposed, while it will greatly facilitate the emigration of the destitute, will operate, by the checks which it imposes, to maintain the voluntary character of the emigration, and to avoid the imparting of an undue stimulus to it. It may, perhaps, be objected that the emigrants will not repay the advances made to them. We have no doubt that they will. With regard to emigrants to our own colonies, stringent measures might be passed to compel repayment. But even in the case of emigrants to the United States, we have no fear on this point. The Irish peasantry are more amenable to the restraints of honour than of law, and they would know that, on the one hand, the repayment of the loan by which they had been enabled to remove from misery to prosperity, would, in many cases, afford to friends and relatives a similar advantage; while, on the other hand, their default would be visited on the friends who had been security for them at home. This security would indemnify the association against loss by the death of emigrants before they should have acquired the means of repayment.

We have proposed that subscribers to this association should have the power of recommending emigrants for assistance, to the extent of twice the amount of their subscriptions. The difference would be provided for from the funds raised by the association in the way of loan. It is more than probable that in order to enable them to contract such a loan the guarantee of the State would be required. This will be the least burthensome form in which the Government can meet those demands which will infallibly be made on them this year for aid to bankrupt unions in Ireland; and which, with much reluctance, and not without much opposition in Parliament, they will be obliged to grant. The aid of the colonial governments may also be expected, with the proviso that such aid shall be exclusively applied to directing the stream of emigration to the colony which furnishes the assistance.

While we write, it is announced that labourers are so much in demand at Sydney, that the local government are proposing to raise a loan of 50,000*l.*, for the purpose of promoting immigration to the colony, some are even advocating a return to the system of convict labour, though it meets, in general, with great opposition; and it is determined, if a supply of labourers cannot be obtained from the United Kingdom, to have recourse to China. Surely, under these circumstances, it is not too much to expect that the colonial governments would gladly apply the funds thus raised so as to insure their increase by an equal amount raised in the mother country, particularly if, by means of their agents here, they had some influence in the selection of the emigrants; and that, in order to maintain that which they so much require—a constant and regular influx of labourers—they would facilitate measures for insuring the permanence and self-supporting character of the institution, by adopting means for securing repayment, by the immigrants, of the funds, through the loan of which they had been enabled to remove to a country of high wages and cheap food. Surely, while there is this demand for labourers in our colonies, large districts in Ireland need not be lying waste, because the amount of poor's rates to which they are liable, for the miserable support of a pauper population in idleness, deters those possessed of capital from purchasing or renting them, and of converting a portion of the pauperised cottiers and small farmers into labourers for hire. *T.*

THE FARMERS' PROSPECTS

How to make farming profitable is the great problem of the day. With the fair prospects before us of universal peace, and the mind and spirit of all nations just now peculiarly bent on industrial pursuits, one can scarcely set bounds to our prospective advance in material prosperity—the foundation and essential precursor of moral and social progress. The great impediments to that advance—the vestiges of industrial superstition in the shape of legislative interferences—have been mostly swept away at home and shaken abroad, and an era of competition has commenced in which our natural aptitude for business, and our acquired advantages, cannot fail to ensure us the lion's share in the results. One only doubt darkens the prospect—the doubt how the farmers of England will enact their part in the race. They cannot any longer indulge the natural tendencies to repose. Exposure to free foreign competition, which, though constantly threatened, was for 31 years more or less staved off by legislative measures, has now reached them; its first pressure is being felt, and on the way in which that competition is generally met depends their prosperity as a class, and in some measure also our prosperity as a country.

The difficulties which the agriculturists are now enduring should have been borne by the last generation, and it is to be deeply lamented that at the termination of the wars of the French revolution, and the return to a metallic currency, agricultural prices had not been allowed to find their natural level. There would have been sacrifice of capital as there is now, but the loss would have fallen, as in justice it should fall, on the generation that had been enriched by prices artificially inflated. The many burthens on cultivation which those prices had so greatly enhanced; the tithes, the rates, and the rent, would have fallen with the fall in the price of produce; there would have been temporary inconvenience and distress, as in all great changes there must be, but things would soon have found their natural level, and agriculture would have become a favourite because a safe pursuit, and many of those millions wasted in Spain, in South America, and the United States, would have sought investment in the

purchase and improvements of our own soil. Instead of this, the legislative power of the landed interest was lavished and abused in successive efforts to put off the day of adjustment, and the present occupiers of land are consequently suffering that loss and that temporary depression which should have become by this time matter of history. Agriculturists, however, have no claim that I am aware of to be exempt from the common fluctuations of business. All callings have their ups and their downs, and there is scarcely an interest in the country which, within my limited recollection, has not sustained and overcome heavier depreciation of capital and far severer difficulties than are now suffered by the farmer. How did these interests triumph over their difficulties? Did they trust in appeals to the Legislature for protection? No; they sought relief as the manufacturers of food should seek it, in improved processes, in the application of greater skill and greater economy, and, by cheapening their products, extending the demand for them. Why should the cultivator of the soil look to other means for extrication from his difficulties? Why should he waste his energies, as he is invited to do, in delusive efforts to throw on others those local burthens which justice and policy alike require to be charged on realised property, and to fetter and embarrass general industry, in order that the landowner may possibly borrow 1 per cent. cheaper? Surely the tenant farmer will take a more rational and a more honest course. It must be evident to him that such schemes are not calculated or designed to make the cultivation of the soil a safe and profitable business, but simply to sustain rents; the tenant can have no interest in such schemes, except in so far as he is incumbered by a lease, and all he could fairly ask of the Legislature would be the power to determine his lease.

Let us for illustration sake suppose such a power conferred, and sketch the probable course of a tenant exercising it, and realising his capital. What would be his position? His capital, originally 3000*l*, would have become reduced, it may be, to 2000*l*.—an unpleasant thing, no doubt; but if it had been invested in mining industry, or in railways, instead of on the land, it would have been reduced still more, and what is neighbour's fare we cannot much complain of. Well, he has his 2000*l*. in his pocket, and being solely conversant with farming business, looks out about him for that desideratum "a farm at a fair rent." He determines not to go abroad, from natural distrust, and from learning that he would have, if not to purchase his farm, at least to supply it at his own cost with the buildings and other accommodation requisite for good farming. For similar reasons, and from the absence of a good home market, and dread of unlimited poor-rates, he shrinks perhaps from taking his capital to Ireland; and having been made by his reflections and inquiries more sensible of the money value of a good homestead with abundant accommodation, lands properly divided and fenced, and easy communications with good markets, it is not unreasonable to suppose he would finally decide on farming again in old England. When he began to calculate what extent of land his diminished capital would do for, he would find, with some surprise perhaps, that the depreciation of stock and other produce which so reduced his capital would admit of his stocking and paying for the dressings and implements of a farm pretty much the size of the one he threw up; that in fact the depreciation of his capital was more nominal than real, and he would probably determine to see if he could arrange with the landowner for retaking the old farm at a "fair rent." He sits down to calculate the free competition value of the expected produce, and sighs at the idea of 40*s*. for Wheat and 5*d*. per lb. for meat; he then proceeds to estimate the expenses of cultivation, and somewhat brightens up when he reflects that he will sow cheap seed, that tithes are payable in grain, that his horses and all the live stock will eat cheap provender, that, if money wages be not reduced, his labourers being better fed will be abler workmen, more zealous, and less given to pilfer; that it will cost less to maintain the pauper, and that all shop goods will be unusually low priced. He will begin to see clearer the importance, in estimating farm profits, of looking more to the cost of production and less to the price of produce, and that the expenses being reduced, and the market price of all produce consumed by his own family and by his stock being a matter of no concern to him one way or the other, he may, under free competition prices, make a comfortable living out of the farm, and have more surplus than he had imagined to hand over to the owner for the use of it. This surplus is legitimate rent, the return which the farmer can afford to make for the use of the landowner's capital (the farm and its improvements), and which he will be under the necessity of making, so long as engagements are regulated on the common principles of competition.

Our friend will now have arrived at that question so important to tenant and to landowner—what, under foreign competition prices, is the money value of that surplus which the owner of a farm is entitled to receive for the use it. Let us suppose his protection rent to have been 30*s*. an acre, and that his calculations have brought him to the conclusion that under free competition he can only afford to give 20*s*. The landowner may be supposed to say, "I don't like to reduce rent, show me how you make out that 20*s*. an acre is the full surplus after the costs of cultivation, and a fair return for your own skill, industry, and capital." Let us imagine the details gone into; he finds injury from excess of game and hedge-row timber put down at 3*s*. per acre, and determines to get rid of both; seed corn put down at 2 bushels for Wheat and 3 bushels for other grain and for pulse, and would argue by reference to neighbouring farms that with good farming larger crops may be got from the use of one-half that quantity of seed, thus admitting a saving of another 3*s*. per acre; finding an item for bought manures averaging 4*s*. per acre, he would point to the farm-yard and the enormous waste of fertilising ingredients, from the system of mixing together straw and cattle droppings, and leaving them to ferment exposed to air and water. Proceeding to the calculations of crop, he would find perhaps Wheat and pulse averaged 28 bushels, Barley at 34, Oats at 40 bushels, and the root crops at 12 tons; and he would endeavour to show, by crops obtained from land of similar quality, that by deeper ploughing, thinner sowing, more frequent horse-hoeing and rolling, the use of better protected manure, and more perfectly burying it in the soil, the averages of crops might be raised at least one-fourth, and that without any increased command of capital.

The investigation concluded, would not the landowner naturally say, "I will remove all excess of game and timber interfering with the proper cultivation of the farm, but I will not reduce the rent by one shilling; if you or some other competent party will not engage it at the old rent, I will at once take it into my own occupation. It is true the head-man I shall have to employ will halve the surplus with me, but I shall at least be spared the spectacle of neglectful cultivation and the risk of exhausted lands."

I put it to tenant and to landowner whether considerations such as the above be not those which, in the great majority of cases, should guide and influence them in forming and renewing engagements at the present time. Of course in the case of those farms where the state of the buildings, their inconvenient location, or the wet or exhausted condition of the land, precluded profitable cultivation, or involved such an outlay of capital as no tenant could be expected to undertake, the owner must take the outlay on himself; or the want of competition for such ill-conditioned farms must inevitably bring down the rent.

There are many tenant farmers who, perfectly aware how much may be done to increase the returns from land, and to render its cultivation more safe and more profitable, feel excessively angry that they should be compelled, in self-protection, to improve their system, when, by excluding foreign produce, or highly taxing it, they might have been preserved from such a disagreeable necessity; and there are some who really believe in their hearts that such protection is at no one's expense. Self-interest will close our eyes to the most obvious truths; and it is not in this journal that the principle of freedom of interchange can be discussed. The community has apparently decided on the matter, once and for ever; and amongst thinking men the principle is considered no more open to dispute than the law of gravitation, or any other established fact. No doubt political expediency may sometimes justify a departure from the soundest principle in the allocation of taxes, or for the purpose of introducing, or of fostering, some new or peculiar branch of industry; but whatever additional price the community is made in consequence to pay for the favoured commodity, must surely be put down in the same category with "interest on national debt," "cost of our armaments by land and sea," and I must leave to your Protectionist correspondents to make out the claim of our "poor farmers," or I should rather say of our "poor landowners," to a distinguished place in the list of our national burdens—it is a task I shrink from.

Is not protection demanded in order to raise prices? and I would ask the farmer who imagines that prices are increased at no one's cost, to try the question by a simple rule of three; if one million quarters of Wheat at 40*s*. will feed one million of people, how many people will the same quantity at 60*s*. feed? What answer does he get; are one-third to go without, are all to be put on short allowance, or are they to pay one million more for the same amount of food? He repudiates the idea of short allowance—it would lessen the demand for agricultural produce; but if these people have to pay one million more for their food, have they not just so much less to lay out in clothing, and in other articles of necessity and comfort? Do not the producers of clothing, &c., lose exactly so much as the producers of food have gained? If it be said the producers of food may throw the loss on some one else, how do we mend the matter? That somebody else must bear it? We do not by any such sophistry get rid of the difficulty, we merely remove it one step further back; and if we say "protect every interest," the utter unmeaningness of such protection becomes apparent, for where would be the value of an increased price for agricultural produce, if the price of everything for which such produce could be exchanged was increased in an equal degree?

Protection, therefore, to be of value, must obviously consist in a power conceded to the protected interest to make some other interest, or the community generally, pay more for the protected produce than otherwise would be paid; and it seems to me that the question we should ask ourselves is simply this—is there any ground on which we can claim the concession of any such power and privilege? There is but one that I am aware of, and that is in respect of local burthens. The cost of our social system has been thrown entirely on realised property, and reasons of state policy imperatively require it should be so. Much, however, of the outlay is purely national, and it is right and just that the community at large should bear a fair proportion of the burden, and this could be most conveniently effected by a small duty on the importation of agricultural produce. Foreign butter and cheese are still subjected to a duty of about 10 per cent.; and if instead of indulging in unmeaning menaces and objectless combinations, the agriculturists unitedly claimed from the legislature a fixed duty on other agricultural produce not exceeding in amount, say, 5 per cent., I believe they might accomplish that limited object this ensuing session, and so put an end to agricultural panic and depression, without appreciable detriment to any other interest in the state. Concession to this extent would be admitted as just and politic; agriculturists, however, are greatly mistaken, as experience must have taught them, if they imagine their prosperity depends on any concession from the Legislature; or on anything save only their own well-directed industry, and the bringing to bear on their business established improvements, and the teachings of science and experience. *P.*

CAN FARMING CONTINUE PROFITABLE WITH FREE TRADE PRICES?

No question at the present time is more important to all classes to have rightly answered than is that which is being practically worked out by the competition British farmers are now entering into with the whole world in the supply of food to this country. At first it will appear to admit of ready reply, and to be one of very simple calculation on data which every practical man can afford; for nothing seems plainer than if farming with past prices has admitted of only a fair proportion of profit; in future, with the reduction that has lately been made in the value of all its returns, it cannot but be productive of loss; for whilst the prices of all its returns have fallen a fifth, certain of the charges on land continue the same. And, with this view of the future, too many are contented to stop, not seeing how much farmers, with all classes, must be benefited by the reduction in their expenditure which will result from a cheaper supply of food. But I am not going to speak in favour of this sudden drop to free trade; I cannot do so, for this has deprived every farmer of a fifth of his capital, and must ruin a numerous class who are unable to withstand so large and sudden a deprivation of their means to work their farms. Nor am I going to build up the future profitable cultivation of land, as if it were dependant on the farmer's ability at once to enlarge their returns and so diminish the cost of production. Nor will I take credit to meet the future lower prices by showing that a reduction of wages, and therefore a diminished cost of production will be certain to result from a cheaper supply of food to the labourers, although this reduction in many ways acts and reacts in lowering the farmers' expenditure, and there can be no doubt that in both these ways they will be largely benefited; but I hope to lessen the alarm as to the future profitable cultivation of the land so many are feeling, by showing that farming has formerly been carried on profitably in this country at present prices, and, too, without the advantages that 80 years' progress in knowledge and improvement have brought to its aid. A reference to Arthur Young's farming tour and statistics, taken 80 years ago, shows that at that time the English farmers were cultivating their farms upon averages of prices that were even lower than the most gloomy anticipation of the future can lead us to expect. At the same time there was but very little difference in the scale of their charges, for the rate of wages they were paying their labourers appears to have been about what they are now settling down to, and their payment of rent, rates, and tithe were within 50 per cent., or 15*s*. or 16*s*. an acre of what are now being paid. From this will be seen that whilst farmers in future may expect at least to realise the prices of 80 years ago for their produce, their charges have increased only to the extent of the additions that have since been made to their rent, rates, and tithe, and which amounts to only about a tenth of the whole cost of corn at present prices. Were the farmers at this time in no better position with their farms than they were 80 years ago? That is to say, Were their farms not improved? Had they received no aid to enable them to cultivate their land cheaper—no advantage from the finer stock they now raise? And did their land give no larger return? It would be necessary for the farmers wholly to build on a reduction in their rents, rates, and tithes, to give them the ability to raise their produce at the prices of that period; but who is there, after looking at what was the comparatively uninformed condition of the farmers, and the ill state of their farms at that date, their inferior stock, and ruder means to work their land, but will see that the additions since made to these charges have been far more than met by the altered position of the farmers, and the assistance they have received in the cultivation of their farms from the improvements which have been made in that period. For instance, by the alterations made in the form and material of the ploughs, and in the better construction of their waggons and carts. By the creation of new and hard roads, and the greater facilities of access given to the market towns, two horses are now made to do the work that formerly required four, so that the number of horses on every farm has been reduced in proportion; and by the new implements and machinery that have been brought forward in this period to facilitate the tillage of the soil, the labour on the farm has been very considerably reduced. At the same time, from the better condition of their farms, the larger amount of live stock kept, the introduction of new

fertilisers, and the more economical use and efficient applications of manures, the amount of corn returned is known to have been increased at least one-third, whilst the breed of live stock has been so improved, that with less expenditure of food, and at a much earlier age, the animals attain maturity and realise a greater weight. These are advantages that are difficult to reduce into mere figures, and yet are so considerable, that they should at once go far to give confidence that at the present day we must be in a much better condition to produce at the prices of 80 years ago, even if the land has to be cultivated with additional charges amounting to 15*s.* or 16*s.* an acre to what were then paid.

The following table, taken from Arthur Young's works, shows what were the prices 78 years ago, from returns which he collected from all parts of England, viz., the price of provisions in 1771 were—Meat, 5½*d.* per lb.; cheese, 3¾*d.* per lb.; butter, 6½*d.* per lb.; and bread, 1½*d.* per lb. Labourers were paid—at harvest, man, 13*s* 1*d.* per week; woman, 7*s.* 3*d.* per week; at haymaking, man, 9*s.* 11*d.*; woman, 4*s.* 9*d.*; in winter, man, 7*s.* 10½*d.*; woman, 3*s.* 3*d.* The charges on land were—Poor-rates, 2*s.* 8*d.* in the pound, rent, 14*s.* per acre; tithe, 3*s.* 4*d.* per acre. A reference to Arthur Young's works will be not only amusing, by contrasting with the present the ruder habits and practices of his times, but will also be instructive, for they show that many improvements, commenced in his day, have yet scarcely been developed, and are not yet general.

The *Economist*, in its recent comments on my assertion that "Farmers by free-trade have lost a fifth of their capital," says, "This statement is preposterous." "Free-trade has had little to do with actual prices." It goes on further to say, "For all farming purposes, except the payment of fixed money engagement, the farmers' capital is as effective as ever, and can, with no propriety, be said to be lost." I readily admit that I see little cause to doubt the ability of the British farmer in future to compete with the foreign producer, and that a person entering on farming at the present day does so at considerable advantage to what he would have done under protection; but, I cannot admit that those already engaged in farming have not suffered from it. I think the low prices the farmers have been realising in 1848 and in 1849, will be generally admitted to have been caused by free-trade, and to have been the consequence of the large increase in the foreign supplies of corn, cattle, and food, which we have been receiving. I am at a loss, too, to understand how the farmers, having had the money value of their capital lessened a fifth, can be said not to have lost in proportion. The manufacturer, although told he may in future manufacture at a fifth less cost, would consider he had in the past year lost in proportion if on taking stock he should find, with the same quantity of stock, the money value had declined a fifth. It seems to me idle to say the farmer has not been losing on what he has been selling, merely because he may be replacing at lesser cost. *Hewitt Davis*, 3, *Frederick's-place, Old Jewry, London.*

Home Correspondence.

Contrivance to Clear Drains of Roots.—My drainer having given me some roots (of what I know not), which he has taken out of a tile-drain on arable land, brought to my mind a question asked a few weeks ago, alluding to a ferruginous matter that choked up the pipes or tiles. I am sadly tormented in the same way, and find my drains speedily stopped where I have not the means of allowing a tolerably sharp draught. I always drain as deep as I can get a fall—sometimes 4 and 5 feet—and find those drains work better than more shallow ones. Our subsoil varies very much; sometimes a head of clay stopping all passage of water, and of course keeping it on the surface; sometimes gravel and spongy places, which my men call "boot-jack," as they settle down, and it is as much as they can do to get their legs out of it. I am compelled to put in every drain, and have, for some years past, put thousands of feet of Alder plank, sawn, as the only means of keeping the tiles level, and preventing them sinking down. To take up the tiles when a drain stopped was very vexatious and expensive; and the plan I now adopt may be of use to the person who asked how to prevent the annoyance of the pipes being stopped up. At one end of a stiff wire, about 35 yards long, there is a wooden egg (small enough to go up the drain) that is pushed up. The men then step 35 yards, and dig down, take up a tile, and get hold of the egg-shaped piece of wood, having tied a little wisp of ling to the other end of the wire; it is pulled through, and effectually clears away every obstacle. I enclose a specimen of the roots taken out of a drain the beginning of this week. The drain had been made by a tenant, who formerly occupied the farm, and is laid with bottom brick (not plank), the land there being sound clay. The drain is nearly 4 feet deep, but I think it has been an open ditch 13 or 14 years back, which may account for the roots. *H. S. P.*

[The roots appear to belong to some kind of Grass.]

The Malt Duty.—Your several correspondents have doubtless in view the same common object—how to make the cultivation of land a safe and profitable business; but when they come to discuss the means of accomplishing this great object, embracing alike the owner, occupier, labourer, and the trader immediately connected with them, their notions appear wide as the poles asunder. In the several letters which you have done me the favour to insert in your valuable Journal, whilst frankly and fully admitting the difficulties in which the farmer has been involved by recent legislative changes, I have endeavoured to show that those difficulties, dispassionately viewed, amount simply to a necessity for increasing by one-fifth the produce carried to market, and that by attention to a few obvious and almost universal defects in the practice of agriculture, such an increase could be attained without additional expense or additional command of capital. To direct the farmer's attention in this direction, and to divert it from what appeared to me wild and delusive schemes, I took briefly in review the public burthens supposed to bear unduly on the cost of cultivating land, and came to the conclusion that they are "so trifling as little more than to justify the shilling per quarter already chargeable on the importation of grain from abroad." In adverting in that review to the malt-tax, I remarked that it "is borne by all who consume malt liquors, and only affects the farmer in particular, inasmuch as it lessens consumption. The price of Barley being regulated not by home demand, but by foreign supply, to gain from its repeal more than the common advantages, the farmer must first close the ports. The power to malt for feeding purposes has been proved, by abundant experiments, to be of no value; if the farmer thought otherwise, there is no law to prevent his sprouting his Barley or other grain, and so converting their starch into malt." Your correspondent, "Amicus Tull," disputes this view, and expresses his confident opinion that "the repeal of this tax would be ample compensation for the expired duties on foreign corn." I have re-perused with eager attention his letter, to master the facts and arguments which had brought him to a conclusion so full of promise, and have risen from the perusal with extreme disappointment. Of course we all feel and admit that taxation is an evil and a bore; the frugal housewife begrudges the duty which enhances to her the cost of her tea and sugar, and occasional drop of gin, and her gude man mutters anything but a blessing on the tax which doubles the cost of his tobacco and his beer. I am not rocking to defend the policy which imposes the burthens of the state so exclusively on articles of comfort and enjoyment, such as these, but simply to inquire into the effect on agriculture of a repeal of the duty on converting Barley into malt. "A. T." does not dispute my remark as to the relative value of malt and Barley as food for cattle, and in fact the whole pith of his letter, compressed into one sentence, is this: "a removal of the tax would double the consumption of malt; the demand for Barley being consequently doubled, its price would go up considerably, and more land being cropped with Barley, there would be less land for Wheat and Oats, and the supply of these grains being thereby diminished, they also would bring a better price. Few remarks, I imagine, are requisite to dissipate into air all these bright prospects. The 5 millions to be taken off malt must be levied on something else (until at least our financial reformers have made more progress in reducing expenditure), the increased price of Barley and other grain, which is to be the farmer's gain by this movement must of course be paid by all who consume such articles either in kind or converted into animal food, so that their loss is precisely the measure of the farmer's gain; and lastly comes the fact, so odious in agricultural eyes, that the price of agricultural produce is regulated, not by home demand, but by foreign supply, and as that supply comes from unbounded lands, and is only limited by the inadequacy of our prices to remunerate the cost of growth and of transportation, "A. T." must admit either that free-trade is not the cause of our present low prices, or that free trade must effectually prevent any such attempted return to high prices. An increased demand, suddenly created, would undoubtedly produce a temporary rise of price, but that is not what the farmer wants, or should desire, he has suffered sufficiently from temporary expedients, legislative promises which made cultivation costly, and seduced him into imprudent engagements, but which, in fact, made his business precarious, and always failed him at the pinch. No, his relief must come from far other sources; he can never be safe and permanently prosperous with home prices much beyond foreign averages; agricultural produce is too essentially a raw material, its cost enters too immediately into the cost of the products of general industry, and our country's well-being and pre-eminence are too absolutely dependant on her continued capacity to withstand by cheapness the competition of an advancing and wide-awake world, to admit of our prices for food being raised artificially much beyond the prices in the markets of the world. A certain amount of protection we have, and must always enjoy—our market is close at home, and our means of internal communication unrivalled; our competitors have to send their produce to a part more or less remote, from whence it must bear the risks and the expenses of a transportation from 300 to 3000 miles. Let us limit our demands to what is just and consistent with the general interest, and we must attain them. We are entitled to a duty of about 5 per cent. as compensation for excess of public burthens, locally charged. Let us unite in asking for it, and public interest unites with our own in demanding such legislative measures as will facilitate the circulation and the improvement of land, and ensure to the occupier more security for the property he invests or creates in it. But let not the pursuit of these legislative changes, valuable as they may be, divert us for one instant from that which constitutes the proper study and business of the farmer—how to reduce the cost of production, or, what comes to the same thing, how to raise at the same cost a greatly increased amount of produce. If any farmer deny that this can be done, let him invite discussion of the subject, and bring forward in support of his views all the statistical information and practical experience he may possess. *I'.*

The "Transition State," is the question, and the landlords will not be able long to blink it. The farmer must have time. The land will not give her "increase" in a day, and the tenant cannot become a scientific farmer at will. The landlord must submit to a present loss for a future gain. It has ever been the boast of the landowners, that they contrast most favourably with the manufacturer in their relation to their tenantry; they boast of the kindness and sympathy which exists between them—let them show kindness and sympathy now, by giving their tenantry a fair start; let them put their farm buildings, and particularly their farm yards, into an efficient state; let them encourage outlays on the part of the tenantry, by making it worth their while to make outlays, by securing a return to them for their venture; let them embark capital themselves, if the tenant has none, and let them lower their rents like liberal, open-hearted, open-handed gentlemen, if they are too high—and not turn adrift the present unfortunate tenant, to make room for a more speculative and enterprising one, for the sake of a few pounds. In the end rents will rise again, and increase, and the landlords can bear a present loss; but to the poor tenant, the present loss of his farm would in many cases be everlasting ruin. *F. R.*

State of Parish Roads.—At a time when so many of our agricultural labourers are vainly seeking employ, it behoves us to consider whether it is not our duty, as well as our interest, to repair and keep in order our means of inter-communication. It is impossible not to be struck with the present gross mismanagement of our cross-country roads. There are, of course, exceptions, but these are few and far between. First one sees the direction posts in a state of decay and illegibility—surveyors appearing to forget that these were intended to guide the wandering stranger, who knows nothing of the country; next we see the roads concave, instead of convex, having high shoulders covered with Grass, and which effectually retain the water in the road, much to its injury. As surveyor in this district, I have lately improved a mile of road, without carting stones, merely by removing the Grass and earth, under which I found gravel enough, when sifted, to raise the crown of the road to its proper convex form. This, including breaking of the larger stones, raking, levelling, and cutting frequent outlets for the water at various intervals, has only cost from 7*d.* to 8*d.* per rod of 5½ yards for the two sides. How frequently do we see a hilly road deeply furrowed in the middle by the descending force of the accumulated water (a sheet of ice in winter), for want of proper outlets all the way down the hill, beginning them near the top, and keeping the crown of the road higher than the sides. In fact, we have only to look to our turnpike roads to see how differently these things are managed. Generally speaking, the ditches, openings under gateways and pathways, are either choked up or insufficient for the passage of the water. Another nuisance is the projection of great round unbroken stones, like half a large cricket ball, sticking up just high enough to catch the toe and break the knees of a tired or lazy horse, or fracture an axletree in frosty weather. A strong man, with a heavy hammer, would smash a mile of them in a very short time. It would be well if our agricultural friends would trim some of their enormous roadside fences, for they ruin the roads by excluding sun and air, keeping them always wet and soft, whilst on an open heath they are almost always dry. Depend upon it all these neglects touch the farmers' pockets, for in roads, as in other matters, a stitch in time saves nine; many an old waggon and cart would creak on for years, but for the jogs, jounces, and staunces of our mismanaged cross-roads, the wheelwrights' best friends. *J. J. Mechi, Tiptree hall, Kelvedon, Essex, Dec. 15.*

The Farmers' Taxes.—Those who desire the re-imposition of a duty on foreign grain give, as one of their chief reasons, the heavy taxes which this country is called upon to pay. There would be some reason in this if agriculturists were the only parties who are taxed, or if they were more heavily burdened than the rest of the community; but as they have never been able to point out any taxes peculiar to their profession, their argument falls to the ground. But admitting, for argument's sake, that they are too heavily taxed, compared with the rest of the country, it would be much more reasonable to agitate for an equalisation of taxation, by abolishing or reducing the taxes that press unjustly on the agriculturist, than to take the roundabout method of enabling him to pay them by laying a duty on foreign grain. Who is to pay the duty? The merchant, the manufacturer, the artisan, the consumer in general, who is thus to have his ability to pay his own taxes reduced, in order that the farmer may be enabled to pay his with greater ease. Your correspondent, "J. B. J. N.," in an article on farmers' prospects, in the *Gazette* of Dec. 8th, makes a most original proposition for rescuing us from all our difficulties. Few will oppose him in his first demand, which is for a great reduction in the taxation. He next proposes that all fixed payments for public purposes, such as salaries of every description, and also the interest payable to the national fundholder, shall be reduced according to the price of grain. He assumes that all these salaries have been fixed, and the public debt borrowed, on a calculation of 7*s.* 6*d.* a bushel for Wheat, and he fixes 5*s.* (which he calls a natural price), as the price at which all their payments should henceforth be calculated. He also imagines that surgeons, lawyers, grocers, saddlers, blacksmiths, &c., will all very generously send in their accounts from this time forward, calculated on the new scale, "J. B. J. N.," as generously promising to leave the labourer precisely as he is at present. Does "J. B. J. N." really think that the rate of interest is regulated by the price of Wheat, and that consequently Government is at liberty to reduce the rate of interest payable to the fundholder because Wheat has fallen in price? And does he not know that the rates of payment of surgeons, saddlers, blacksmiths, &c., have no necessary connection with the price of Wheat, but are regulated, like everything else that is bought and sold, entirely by the supply and demand? He may as well propose to regulate them by the rise or fall of tobacco and snuff. Such proposals only serve to divert attention from the really practical objects to which the farmer ought and must direct his attention, viz., a reduction of rents, or an increase of returns, or a combination of both. *A Scotch Farmer.*

[We insert this as the last of a series, which we cannot continue in the ensuing volume; our business is to attempt the correction of agricultural, not of political, errors.]

Farm Capital.—As an amateur, I must confess myself puzzled—completely puzzled with the question, "What is agricultural truth." I read your paper most attentively, week after week, and hope to study the forthcoming "Cyclopædia," if the publishers will allow me; but if one week I fancy I have caught a pig by the ear in the agreeable communication of "Amicus Tull," I am sure to be thrown all aback by some such a crusher as "Omicron." One great problem not yet solved is certainly capital. Am I to infer that farmers engage to cultivate a farm, to buy implements, pay wages, keep themselves and families, and lay by for a rainy day, and yet employ no capital in their business? To expect success with such a system, is undoubtedly a folly that it will require no lengthened articles to prove.

But look at the balance sheets as revealed by the Court of Bankruptcy, of the great city firms who stopped in the panic of 1847. Nearly, if not all, had been trading with insufficient capital, and had been living up to what they made, hence when the crisis came, the degrading *exposé* and the dividends of 2*s.* 6*d* and 5*s.* in the pound. The question I want answered is, What capital per acre is required to cultivate a farm on sound principles? neither on those of Mr. Mechi or his bitterest opponents, for neither seem to pay. Mr. Mechi is a man of fortune. It cannot be expected that only men of fortune will engage in agriculture, nor can we expect, under present circumstances, that they will lend much of their money to those who are so engaged. These two parties appear the factions—the extremes of agriculture. As in all other things, the *in medio*, &c. must be the farmer's motto who will steer safely through the dangerous channel. Taking, then, an average farm in a state of old-fashioned productiveness, how much capital per acre will it require to bring that farm (say 50 acres), to the average of our own times? I should like to take a farm and try my luck, but although I have been reading up the subject for a whole year, at present I should hardly know which way to turn at starting, so conflicting are the statements. As, however, truth will prevail, we may hope for better things shortly. *E. O.*

Farm Profits.—Attempts have frequently been made by persons speaking publicly and writing in the public prints, to induce such experimental farmers as Mr Mechi, Mr. Huxtable, and others, to publish their farming accounts: very unfairly in a great measure, for no one living likes to submit his own money transactions to the eyes of all the world; and yet it is obviously wrong to insist upon plain working men like farmers, doing such or such things in the management of their farms without showing that it will be money in their pockets to do so: why say that a man is obsolete and stupid for not going to the expense of draining 5 feet deep, unless you also prove to him that it would bring money into his pocket? But I see that at the meeting of the Cirencester Society, Mr. Mechi hesitated not to say that as yet there had been no profits on his high farming system, but that he expected some. May we ask him through your columns, Sir, when, supposing Wheat to sell at 10*l.* a load, and mutton 5½*d* per lb. for the next 5 years, he will have paid himself 25*s.* an acre yearly rent, 7*l.* per cent. interest upon improvements, and 10 per cent. profit as farmer. Or if he should not be able to answer that, when he would be able so to repay himself, if Wheat were to rule 12*l.* per load, and meat 6*d* per lb.; giving, at the same time, his reasons for thinking that produce would range so high. Any such statements clearly given by such a practical man, would do more to sustain the flagging spirits of our farmers, than even disquisitions on the supposed iniquity or uselessness of Protection; or disputations with cotemporaries of opposite views. One thing we old-fashioned people, up country, cannot at all understand and, therefore, very much dislike, is being sneered at and abused for simply enquiring how we are to make any profit out of our produce at its present prices. *Sagitta.*

Farming without Ploughing.—On seeing, in the *Agricultural Gazette*, p. 780, an article headed "Farming without Ploughing," I (as most practical farmers would have done) imagined it to be intended to advise agriculturists to graze the whole of their farms, or to substitute spade husbandry for ploughing; but greatly was I surprised, after reading the introductory part, to find that "the exposure of the soil to the sun very much destroys the fertility." Now, from these observations and experience of practical farmers, the exposure of the soil to the action of the sun greatly increases its fertility, and by ploughing under the plants that grow upon its surface they become decomposed; and by cross ploughing and harrowing, the chemical ingredients become commingled with the soil. Covering the land with mats will have the effect of killing the Grass, but it cannot be believed that it will destroy all the indigenous weeds, for instance the Couch grasses, as Agrostis, Holcus, Triticum, &c. It has long been an established fact that burnt soil will produce good crops of Turnips; and as "J. D." states that it will do so without ploughing the land that was pared, he only proves that Turnips have an affinity for burnt soil, and that they have it in greater abundance than if it was worked into the soil to the depth of 3 or 4 inches; and at the same time this argument proves the fallacy of his theory. In paring and burning, the turf or earth is exposed to the action of the sun and air; the organic manure of the roots being evaporated by the heat, it only leaves the potash and other inorganic manures contained in the plants and the soil. With the land in this state you cannot expect the crop to flourish; but having an affinity for ammonia it absorbs it from the air in such a quantity as to be easily perceived. The difference between spade husbandry and ploughing is, that more labour is spent in pulverising and cleaning the land in the former than the latter system; and it will frequently produce 50 per cent. more in a white straw crop. Fallowing has hitherto been approved of, on strong clay land, as it enables the farmer to grow Wheat and Oats on a soil that will neither produce Barley, Turnips, nor Clover; and the more the land is worked the better will be the crop. On an adjoining farm part of a field was ploughed twice after Turnips, for Barley, and produced 30 per cent. more than the part that was only ploughed once. The alkalies and salts contained in the soil have the power of fixing the volatile gases evaporated from farm-yard manure, therefore it is quite unnecessary to have mats sufficiently large to cover the whole of an arable farm. *J. C. H., Croft Farm, Bridgnorth.*

Scotch Carts.—Your correspondent "X. Y. Z." mistakes in supposing that I am the advocate of Scotch carts, in preference to Cumberland and others. My only wish is to guard those whose knowledge on the subject may be superficial, from running away with the idea that there is anything necessarily valuable or new in those descriptions of carts which one occasionally hears puffed off under the name of Scotch carts, Devonshire carts, Cumberland carts, &c. It is somewhat amusing to those who know the history of cart making, and who have traced the progress of it from the rudest forms, which now only find their types in some of the counties of Ireland, or the most backward continental states, to hear gentlemen expatiating upon some new form suitable enough perhaps for one locality, or for one kind of load, but ill adapted in every way for general purposes, and for other districts. It has more than once been my lot to hear a mode of construction recommended as a novelty, which had long since been abandoned for something much better. I will now, with your permission, lay before your readers some facts which will show the danger of comparing things which are utterly unlike, and then show how unfair it is to assume, because the Cumberland cart is built for 12*l.*, that it is a cheaper cart than those built by respectable houses in England, who make quite a different article for about 2*l.* more. The Cumberland cart described in your Journal a few weeks ago, by Messrs Ransome and May, has wheels 4 feet 3 inches diameter, wood naves, and a 2½ inch tyre, and the body is said to contain without heaping 21½ cubic feet. Now since I wrote to you last, I have seen one of these Cumberland carts, and find that the body contains, without heaping, just 19 11 cubic feet. I have also weighed the axle, and found it to be 47 lbs. The price of this cart is 12*l.* I should observe that the cart has straight shafts, which are fixed immoveably to the body. The cart has no tipping sword, nor even a tipping sack, and in fact there is no means whatever of tilting it, except by detaching the horse from the shafts. Now I will take for comparison with this boasted Cumberland cart, a few styles built by a celebrated maker in the neighbourhood. *Improved Scotch farm cart*, with a body 5 feet 2 inches long, and 3 feet 6 inches wide, and 15 inches deep, with wing-boards 6 inches deep; cubical contents to top of wing boards, 31 feet; wheels 4 feet 6 inches diameter, and 2½ inch tyre. This cart has an excellent spring tipping sword in front, moveable wing boards, and a removable hay-frame or ladders, as preferred, price 15*l.* I make no comment, but simply ask your readers, is not the 50 per cent. extra capacity of body, with the apparatus for tilting the cart to any required angle, worth more than the extra 3*l.* I shall have something to say presently on quality of timber, weight of axles, &c. *Improved farm cart*, with bent shafts, about the same capacity of body as the last, with wheels 4 feet 2 inches diameter, and 2½ inch tyre. The bottom and frame-work of this cart are curved, the load is kept low down on the axle, not hoisted up, as in the Cumberland cart; the shafts are bent to suit the height of the horse, and give a proper line of draught, and this cart is also fitted with an improved tipping sword, removable wing-boards, and a hay-frame, or ladders; price 15*l.* Here again, I contend, the superiority of the cart amply justifies the extra cost. *A light agricultural cart*, with a somewhat smaller body, holding 24 feet without heaping. This cart has fixed wings, or dripple boards, and removable head and tail ladders; wheels about 4 feet diameter, with 2½ inch tyre; this cart has bent shafts, and tipping sword, like the preceding; price 14*l.* I now come to a cart absolutely cheaper than the famed Cumberland cart, namely a plain sided farm cart with the bottom framework of Oak, the sides of inch Deal, plated with iron, capacity of body exceeding 1 cubic yard. The body in this cart is placed on the axle, and is only 2½ feet from the ground, which I need not observe is a great convenience for filling. This cart, with wheels 4 feet 6 diameter and 2½ inch tyre, is only charged 11*l.* This cart tips with a stick in the usual manner. Now, when I assert and recapitulate that all these carts are built in the most durable manner of thoroughly seasoned timber; that their axles are more than one-third stronger than those of the Cumberland cart, and will bear nearly 50 per cent. more weight; that they are all provided with tipping apparatus, which the Cumberland has not; that they all contain nearly 50 per cent. more cubical capacity; and that, with one exception, they all have larger wheels, I ask, is it fair to institute a comparison between these carts and the gingerbread productions familiar to me under the name of the Cumberland carts? I should add that the Cumberland cart I have seen was sent home to a friend of mine without either back-band or belly-band chain; no name painted on it, and the shafts both too short and too narrow for an ordinary horse. Now the carts I have been describing are all provided with well made chains for back-band and belly-band, the name of the buyer is put on without extra charge, and the shafts are properly constructed so as to admit a horse between them. I have much more to say, did your space or my time admit of it, which would show most clearly to every one how very different are the kinds of cart which your correspondents have been comparing with the Cumberland cart and the Scotch cart of "X. Y. Z;" but will conclude by repeating what I said in my former letter, that the Cumberland cart, at 12*l.* will pay the manufacturer much better than his own elegant and convenient carts at even 15*l.* or 16*l.* I now leave your correspondents to judge which kind of cart they would prefer, admitting, however, that, in mountainous districts like Cumberland a light small cart may be very suitable for the country; still I think, even with these conditions, the Cumberland cart is capable of very great improvement, and no doubt would be very much improved in the hands of more skilful makers. *A. B. C.*

Cumberland One horse Carts.—It is very curious to observe how easy it seems for your correspondents, on carts, to put a plain tale down. I said that carts of 6½ and 7 cwt., capable of carrying a ton of coals or lime, were running upon the mountain roads and farms of Cumberland, and that, as this seemed a fair load for a horse, it was worth while for farmers to consider whether it was not desirable for them to give up or modify their ton weight waggons, and even their 9 cwt. "Scotch" and "Prize" carts. I said these Cumberland carts were found to do their work well, to last as long as a heavier vehicle, and, once introduced in a given place, were not readily abandoned. From a simple calculation based on Porter's statistics, and which no one has called in question, I showed that, from the unnecessary weight of the carts used, even on the borders and in Scotland, not to speak of the ton weight waggons of the south, there were at this moment 112,000 tons weight of cart lumber dragged about the roads and farms of this country to no profitable purpose whatever; in other words, that 200,000 horses were spending their labour for no more useful end than if they had been harnessed to protection, and, under Colonel Sibthorp's lash, were striving to tug that buried Colossus out of the slough of monopolist logic wherein it lies. Instead of disproving the facts I gave, or showing the error of the inference drawn from these facts; instead of showing that the Cumberland cart, carrying a ton, weighed more than 7 cwt., or that the Scotch cart did not weigh 9 cwt., or that, even if this were the case, a light cart was not preferable to a heavier one; instead of this, from both ends of the alphabet (A. B. C. and X. Y. Z.) we have objections and statements irrelevant enough. If the weights and capacities of the carts are fairly given, one would think that the inference in favour of the Cumberland carts was fairly drawn. A Liverpool cart proprietor who had more horses than sense, being asked if he could draw an inference, said, "*he* could not, but if it was anything under 3 ton weight, he had a bay mare that could." My inference, of only 7 cwt. however, though plain as A. B. C., is too much for even "X. Y. Z," it seems. As to your first correspondent whose chief argument against using a light cart to do the work of a heavy one, was that the light one could be made by Messrs. Ransome and May, I hope he has already satisfied his scruples by making some good light Cumberland carts himself; but, for "X. Y. Z.," to whom your readers are indebted for many a pleasant paragraph, one would think he had forgotten those humble remarks of mine which he criticises, or that he had never seen any but his own Scotch carts, which "are the admiration of everyone" (*hinc illæ lacrymæ!*) while running in Hampshire, though now they are run down by one whom he does "verily believe never saw a Scotch cart in his life." It would have been very unbecoming to have expressed the opinions I have ventured to give, had this been the case. But, would that have made the "prize" cart lighter, or that of Cumberland heavier? However, I may mention that I have been familiar with Scotch carts for 30 years, and have seen them habitually on some of the crack farms of Scotland and the borders. For certain purposes, on certain soils, the Scotch prize carts are no doubt admirable; for the general purposes of agriculture, however, the question I propose to farmers is, might they not with advantage be made lighter—as light as the Cumberland cart from which they originated? And though there may be little in a name, still, as Cumberland was the original country of one-horse carts, and as the best specimens are still to be found there, I put in a claim for "the beautiful county" to the honour of the fraternity. I strongly recommend implement makers to try whether "the Cumberland cart" will not make a good stock name, "warranted to run easily, to carry a ton, and to weigh only 7 cwt." The 26*l.* Scotch carts which "X. Y. Z." saw in London, I suspect were cockney Scotch; a Lothian farmer never saw such a commodity. Ten guineas is the customary price on the border, and, for 10*l.*, as good a Cumberland cart as can be made by a first-rate workman, with side pieces complete, may be had. Let these prices be collated with those of the prize carts. Messrs. Ransome and May, I understand, have made their Cumberland carts to tip or tilt; this will, no doubt, add somewhat to their price, and make them somewhat heavier: still, a notable weight will be saved by using them instead of the waggons of the South,* or even the famous carts of the Lothians and the border. The journeys of the carts of the Cumberland hills, for coal and lime, being long, the carts there are very generally made with fixed shafts, or as the Scotch call it, "dormant bodied." Perhaps we are making too much discussion about so

* The trial between waggons and one-horse carts in carrying a given number of acres of corn, wherein the waggon had a little the better of the carts, which made some noise of late, and which has been considered a weighty argument in favour of the waggon, is quite inconclusive as to the merits of the vehicles for general purposes. Fancy a waggon going with a single gate to the extremity of a farm, or engaged in many of the common details of agriculture. In carrying corn on suitable ground, the waggon is perhaps in the only employment on a farm in which it can compete with the one-horse carts.

simple an affair yet, if 2 cwt. or even 1 cwt. can be struck off the load of every farm horse in the country, this is an object worthy of every friend of the *Gazette*. *L. V. H.*

Hand Drills.—It is generally admitted that a shilling saved is a shilling gained; but if I can show that in sowing Wheat 5*s.* per acre may be readily saved, I think in these free trade times I shall be conferring a boon on my brother farmers. Some time since I communicated for the benefit of "An Enquirer" a plan and description of a small hand drill, which I made several years ago, and have found to answer perfectly for sowing Swedes, Mangold Wurzel, Carrots, and Parsnips either dry or steeped. With a little alteration I have applied it to another purpose, and found it answer equally well. I had the drill fixed on the beam of a plough, and worked by a light wheel with an universal joint on the axle, and have put in with it this autumn about 30 acres of Wheat on land that has produced Potatoes, Mangold Wurzel, Swedes, and some fallow. It comes up very well and strong in drills 3 inches wide, and with the exception of one furrow on the crown of the ridge, in which the seed is omitted, there are as many drills on each ridge as furrows. I plough in half-rod ridges, which are completed with five bouts of the plough, consequently there are nine drills on each ridge. The advantages of this method I consider are, 1st, a saving of at least 5*s.* per acre, as the plough completes the work as it goes, and the labour is not perceptibly increased; 2d, the Wheat comes up in wider drills than with the usual mode of drilling; 3d, they are sufficiently far apart to allow of hoeing; and, 4th, the seed being deposited at an uniform depth, and perfectly covered, all waste and the expense of a boy to keep off birds is avoided. Ploughing in is the most approved method of putting in Wheat in this neighbourhood, except on Clover leas, but when sown broadcast it is difficult to avoid having too much seed on the ridge, added to which is the impossibility of hoeing the crop effectually. The expense of such a drill completes, and ready to attach to any plough in five minutes, is only 30*s.* *Alfred Tuckett, Warmley, near Bristol.*

English Farming in Ireland.—I thank you for setting me right with one of your correspondents as to any design, "covert" or otherwise, on my part to depreciate the value of land in Ireland. Depreciation there undoubtedly is, but Irishmen must look at home, and not over the water, for the cause. They cannot deny that outrages have been committed, and in certain parts of Ireland are even now committed, disgraceful to the perpetrators, and repugnant to the best feelings of our nature. What is the cause? Land; the transfer of which to more intelligent and competent tenants has been regarded by the former wretched and incapable occupants as a deadly wrong, only to be expiated by the extermination, even unto death, of those who have taken land over their heads. Observe, these struggles are mainly amongst themselves; common sense would hardly anticipate a better feeling for a stranger, and that stranger a Saxon. Yet is it made matter of serious complaint against the latter, that in giving utterance to opinions which he believes to be based on truth, he is damaging the value of Irish property. That Irish property is damaged I, for one, do not deny; but who damaged it? The Irish themselves, in their insane squabbles to retain possession of it. In stating the bare fact, I am neither the author nor the abettor of the mischief thence arising. After all, why look to England for cultivators of Irish soil? My advice to Irish proprietors is, keep your own tenants at home, instead of sending them abroad; reform, but do not expatriate them. Judiciously treated, they will repay your kind exertions to improve their awkwardness and subdue their prejudices. Do this, and you will need no foreign aid in the goodly work. Look at the following extract from a late number of the *Times*. It well repays the trouble of a reprint, as confirming the opinion above expressed, that reform ought to begin at home. My Lord Lucan will find this out, or I am mistaken.

"A few years ago," says the writer, "I am informed that Sir Richard O'Donnell's estates in the county of Mayo were in as miserable a state as are so many other parts of this unhappy island; he, too, like Lord Lucan, had a pauper tenantry, and his estates were, in addition, heavily mortgaged. But he did not agree with Lord Lucan, that the only resource for producing a better state of things was the expulsion of his tenantry, and resuming the occupation of his lands, in order to put them in high condition, and then wait with folded arms until capitalists should come and bid for farms. Sir Richard, I say, preferred making an experiment of another nature—that of endeavouring to improve his tenantry, and through them his land, to educate and guide them till they should learn to stand alone, and not only feel an interest in the improvement of their farms, but perceive that they had the means within their own power of bettering their condition, so that they in their turn might influence others to exertion. The improvement of the land, with Sir Richard, was a secondary object, but one which he felt assured would go along with the improvement of the people. One of the chief means which Sir Richard O'Donnell employed to give a stimulus to agriculture on his estate was the encouragement of the growth of Flax. A few years ago he persuaded the Agricultural Society of Belfast to send a lecturer to his town of Newport, and endeavour to interest his farmers in this produce, and to give them some simple instruction as to the method of cultivation. Sir Richard himself then purchased a large quantity of seed, which he distributed amongst his tenantry at a price which merely repaid him the original cost. The first year showed an abundant crop, and the farmers were in great spirits; but, Irish-like, it must be confessed that neither they nor their landlord had hitherto fully considered where they should be able to find a market for the produce, which threatened to lie upon the hands of the farmers, who began at last to complain loudly of having been led into a snare. Sir Richard, however, nothing daunted, immediately determined on purchasing the whole crop from his tenants at the market price in the Flax-growing districts, and he set off to Belfast, where he sold his bargain at some loss, if the nominal price is considered, but at a positive gain in the shape of rent, which he had not been able to receive for many years before. Aware, however, that this mode of operation was unnatural, and could not last for ever, and desirous, if possible, to set matters upon a proper and healthy footing, he entered actively into negociations with the Flax Society at Belfast, for the establishment of a Flax mill at Newport, offering to give the site and an excellent water power, and he succeeded so well, that before the next year came round the mill was at work, and now gives employment to 200 or 300 people, all of whom are clean, well-dressed, and respectable. After a time, Sir Richard, whose pecuniary means are limited, discontinued the plan of furnishing the seed to the large farmers, who were by this time able to make their own purchases, and he devoted his means to helping forward in the world young men, of whom he proposed to make good farmers. To explain this part of his plan, I must mention that Sir Richard and his lady have a school for boys and girls (which they open alike to Protestants and Catholics), and which they themselves personally superintend. From amongst the most intelligent and best conducted boys of this school Sir Richard is in the habit of selecting one, of whom he makes a steward in a small way, giving him a limited trust at first, and under his own immediate superintendence. When this state of probation has been satisfactorily passed, and the youth has shown himself steady, honest, and industrious, and a good accountant, he is further intrusted to manage, as a bailiff at a salary, a small extent of land (of which enough always lies waste for the purpose). If there is no house on the land, Sir Richard sets his young *protege* to work to build one, finding him materials and assistance in the labour. If the house is there it probably requires much to make it a respectable habitation, but in all cases he insists upon the decency, repair, and cleanliness of the house, and that it should not be suffered to fall off in any of these particulars. Well, then, the youth farms for a few years as Sir Richard's deputy. If he is thrifty he saves a portion of his salary, and is at length enabled to farm on his own account as a tenant. He is at first assisted by small loans, to be laid out in judicious improvements, which yield him a great return upon the abundant bog soil, he extends his operations, and takes a larger farm, and, being at length thrown upon his own resources, is enabled to support his family in comfort, to pay his rent, and to make way for another recipient of his landlord's enlightened generosity. So well have the philanthropic schemes of Sir Richard O'Donnell (of which the above are only specimens) answered in his own neighbourhood (for I regret to say that his means are more limited than his will), that he has raised very many of his tenantry to a state which might vie with the better class of farmers in this country, and I have seen farm houses on his estates which for cleanliness, order, and comfort, could be surpassed nowhere, and which evidently bespoke the prosperous farmer; and yet this has been effected without the importation of English or Scotch capital or industry, and from the innate resources of the country, both as to intelligence and capital. If, therefore (as I maintain), Lord Lucan, instead of creating a desert and calling it order, and directing all his exertions and vast means to the mere improvement of the soil of his estates, had first attempted to improve the farmers, to assist on a proper cultivation, but to make them the instruments of the work, instead of taking the lands into his own hands, and sending them to go abroad or perish—if he had educated them and instructed them in the art of agriculture where it was required, and by means of judicious loans enforced the precept given if he had devoted his energy and capital to insuring a market for the produce of his tenants, and so given them confidence in their own exertions, he might have perhaps found the task at first more difficult and arduous than sweeping them off the ground, and commencing his operations upon a clear space, but when his efforts had succeeded, as in a few years Sir Richard O'Donnell's experience shows they must have done, his labours would then cease to be comparatively light, and he would not now have to complain that no capitalist will come and take his empty farms, and, I may add, that in the mean time not one labourer the less would have been employed on his estates, whilst on the other hand the labourers so employed would have been working under the stimulus of the immediate superintendence of their employer, and not under the more relaxing vigilance of a steward."

A few words more, and I have done. I will not quibble about this or that district being quiet or otherwise, nor whether the animosity of competitors for land be directed against Irish or English tenants. It is enough for me that the spirit is abroad; and whether in the north or the south, ought, in common prudence, to be guarded against. Neither shall I defend the rick-burnings and other agrarian atrocities of England. They arise, not from jealousy against their employers, but from an ignorant misconception of the nature of a remedy for their great grievance—low wages. Whether in England or Ireland, such proceedings are alike reprehensible, and only tend to aggravate the evil they profess to remedy. *S. Taylor, Barnwood, Gloucestershire.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Bog Land Cultivation.—The Right Hon. W. G. Hayter, M.P., Secretary to the Treasury, transmitted, as one of the Governors of the Society, striking specimens of the results of modern cultivation, for the inspection of the members during the period of their recent general meeting. These specimens consisted of magnificent Turnips and Swedes, grown this year on reclaimed bog land, the property of Lieut.-General Sir Robert Arbuthnot, near Hollymount, co. Mayo, Ireland, and received much attention from the members present. Mr. Hayter, for the information of the Society, had kindly addressed to Sir Robert Arbuthnot such inquiries connected with the reclamation of the bog, and the cultivation of these roots, as might prove interesting in explaining the circumstances of the case, and had obtained from him the answers required.

1. The situation and quantity of the land, and what fall there was to the river at or it was lowered? The situation of the land is low, but has a gradual descent to the river Robe, which, though not yet lowered so high up, still by sinking a deep drain there was a sufficient fall. The soil is of a moorish quality.

2. The nature of the soil, that is, the depth of bog before coming to the limestone gravel? The soil moorish, but at a depth of a foot to a foot and a half marl and limestone gravel appeared. The main drains were 5 feet, and the sub-draining ones 4½ feet, at, I believe, 20 feet apart.

3. The measures taken for reclaiming the bog, namely, the depth and plan of the drainage, and the trenching or other operations? The measures taken for reclaiming the bog, &c., have been chiefly remarked on in the preceding answer.

4. The nature of the top-dressing or other cultivation? The land, 20 Irish acres (32 English), consisted of a quantity of rushes and coarse Grass; was ploughed after being drained, was left to dry, when the roots and all were burnt and the ashes spread on the land, ploughed again, harrowed and sowed with Swedes, Turnips, &c.

5. What sown, and what results? Sown with Swedes, Turnips (Aberdeen purple and green tops), Oats, Barley, the large white Belgian Carrot, and Mangold Wurzel. All did well excepting the Barley.

6. What was the cost per acre of the drainage and subsequent labour? As near as it can be ascertained the cost was 5*l.* the English acre.

Wheat.—The Hon. George Agar, of Boyton, near Hayte sbury, favoured the members with an inspection of a specimen of Wheat grown on a neighbour's land, and which was considered a great curiosity even in that corn-growing part of Wiltshire. The variety was "Spalding's," and it was sown in Nov. 1848, by the Rev. Mason Anderson, of Sherrington, on a chalk soil, where there was not much depth of earth. The plants had ample space to branch, and in March they began to throw out their stems. Each plant had 32 stems.

Notices to Correspondents.

Answer to "East Anglian?" *An A.M. and Small Farmer* treats the 20 ewes he keeps on 16 acres of land as follows: 12 acres of arable are divided into four seasons, and each season is divided into four equal parts. One season, after Wheat of 1848, is cropped at present—two parts Swedish Turnips, one green round, one white Turnips. The ewes are now eating off the white Turnips in the field, then the green rounds, last the Swedish Turnips, of which a part are stacked at home, in case it should be necessary to remove the ewes from the land in bad weather. These will last till the end of March. A second season, after Wheat, 1849, is cropped as follows. 1, white Turnips after Wheat, the tops as food for the lambs, to be followed by Peas and white Turnips. 2, Rye, sown thick, the land well filled with manure; to be followed by Swedish Turnips. 3, Trifolium incarnatum; to be followed by Swedish Turnips. 4, Vetches; to be followed by green round Turnips. It is calculated that with a moderate quantity of bay chaff, and a few Oats and Peas when the Turnips are finished, the above will more than keep 24 ewes till the lambs are fit for the butcher. It will be seen that No. 1 gives three crops on the fallow, which may not succeed if the season be unfavourable. Any specific question will be readily answered.

Books: *Sub* The cheapest book on Farming is probably Mr. Jackson's, published in the series of educational works by Messrs. Chambers, of Edinburgh.

Cattle Shows. *Cogan and Co* They are held at least one and often four or five times every county in England, during the winter season. Shaw's Farmer's Almanac contains the names of their secretaries, and you had better apply to them individually, as we have no information as to dates.

Cows. *A Friend to the Dairy.* We cannot assign the cause for the fact you mention. The numerous complaints we hear of a similar nature from various parts of the country points to an atmospheric cause. We recommend a change, not only of the individual bull, but the breed to which he belongs, a short-horn will be a good cross. Your dairy appears to embrace everything that is desirable. *B. C. S. F. H. F.* The complaint you make is rather general, and we fear the cause is beyond our "ken." It is more frequently the fault of the male than the female. *B. C. S.*

Cyclopedia of Agriculture: *W. C. B. &c* We must be excused the task of answering here multitudinous questions on a work with which the Editorship of this Paper can have nothing to do. This column is devoted to matters connected with those questions on farming in which the *Ag. Gazette* is interested, and we cannot make use of it to answer inquiries which are properly the subject either of advertisements or of letters addressed to the publishers. If any one wants information connected with the sale of any work advertised in our columns, let him inquire of the publishers. With this explanation we give the following *last* replies. It is furnished to subscribers only (i.e., as we have lately understood, to those only who put their names down in the books of one or other of Messrs. Blackie's agents as purchasing all the parts as they come out. It is expected that 24 Numbers will complete the work, and these will be issued at monthly intervals.

Disease in Young Pigs: *Curious.* The circumstances you mention do not appear sufficient to produce the disease in question. As a remedy we recommend a seton in the chest, with only laxatives. As a preventative give the sow more exercise both previous and subsequent to farrowing, and so reduce her fatness. The disease appears to be pericarditis, or dropsy of the heart-bag. *W. C. S.*

Ducks. *Phil ducis.* Some common domestic ducks, entirely white, kept in the country, as usual getting their livelihood partly in a small orchard and partly by hand feeding with pollard, Barley meal, &c., have lately taken to laying eggs with dark coloured instead of yellow yolks as heretofore. The shell of these eggs is white as usual, but their interior is indeed anything but tempting to the eye, being of a brownish-green colour, but the taste is not at all different from that which ducks' eggs commonly have, except perhaps that they are not quite so strong flavoured. If any of our correspondents on poultry can state the reason of the fact above mentioned, or suggest a remedy, it will much oblige.

Farm Buildings: *M A.* Possibly Sir T. Tancred's paper in the Journal of the Agricultural Society," to be published either in the ensuing Number or the next to that, will meet your wish. Professor Low's work "On Landed Property" is a good authority.—*M A* says, "I presume the whole manufacture of the manure is conducted under cover by your correspondent Henrietta W. Mydolaton. She would be doing me, and probably others, a favour, if she would give some measurements of her sheds, and particularly explain how she avoids the dung burning dry—becoming fire-fanged. Is the dung in a pit?"

Fatting Hogs. *Dr Mackenzie* writes, "I should be much obliged by your intelligent correspondent, 'Amicus Tull,' explaining, I have found that 21*s* a score (feeding hogs) pays about 27*s.* per quarter for Barley.' By 'a score' I presume he means 20 lbs., and that 'hogs' are pigs? If so, will he kindly explain his plan of feeding them with Barley, with an example or two of the increase of weight, from a certain quantity of Barley, to show how 27*s.* per quarter may be turned out of it. If by 'hogs' he means young sheep (Scottice), the same explanation will oblige. It would be of great importance towards reaching the 'high farming' winning post, if your readers, who become your writers, would avoid the use of all local terms. I have frequently been prevented from trying experiments, from inability to find out the meaning of the local terms used by your correspondents. Now that grain has fallen so low in price, I think there is no subject to which your correspondents' pens could so profitably be turned as the results of feeding all kinds of stock with grain, explained by plain lr. and Cr. statements.

Galloway Farm: *Walter W.* We would not venture to fatten beasts under circumstances restricting us from growing Turnips and enabling us to purchase at only 1*l.* to 1*l.* 5*s.* a ton. You will not make this price of them. You might winter young stock on straw and linseed and a little hay, and summer young stock in the fields; and you will probably immat less expense and greater profit than if you attempted to fatten them. If you could grow green food, as a Turnip, and Turnips, for summer and winter food, you might fatten stock with as much probability of profit as Oxen else, but, being restricted to Grass and hay a food, you had better be satisfied with grazing in summer, Linseed and straw feeding in winter. And in the straw being the staple of their food, you wi

economise it by stall feeding rather than yard feeding, unless the stock is very young: but you may try three-year-old beasts, and turn them out just fit for summer feeding. Stall-feeding will be advantageous as rendering the manure more useful for surface application, which is the only method possible on Grass lands, on which fold-yard manure is liable to great waste. Drain your swamp and every other piece requiring drainage: we can give you that advice confidently. There is no manure but is wasted on undrained land. Lime will improve the produce in quality as well as quantity; and you may as well experiment in guano. A chaff-cutter and Linseed-bruiser are advisable purchases. Unless you have green food you will not need a steamer. A copper to boil water and make Linseed mucilage and soup in is necessary—and you throw this, first dissolving salt in it, over the straw and hay chaff; beat it down in a heap till somewhat sodden, and give it before it is cold.

Gutta Percha: *D S.* Address to the Gutta Percha Company, London. We imagine there is such a firm.

Hole in Bull's Nose: *P B.* Use a small round iron, made red hot. *W. C. S.*

Holstein Cow-feeding: *Mr Kinlock* may probably see an article on this subject. Our correspondent has kindly made inquiries in the country on the subject.

Irrigation: *Aquarius.* For the supply of how many acres of water meadow would a stream be sufficient, supposing the conditions of level favourable, which discharges 37,024,000 cubic feet of water in the 24 hours? [Calculate the water half-an-inch deep to move about three-quarters of a mile in an hour.]

Land and Labour: *G.* Thank you. Will you let us have your *facts*, for we really have no room for anything else. The illustrations given show that such a crisis as you are now experiencing was to be expected. What we want are the facts which are to help us out of it.

Malt-dust: *B A, Cantab.* It is a very good diet for milch cows. It contains a large proportion of the azotised portion of the Barley. We know a party who gives his cows Oats through the winter, and is very successful as regards the quality and quantity of the butter. A moderate por ion of Beans is very productive of milk, and improves the quality. The annoyance you speak of has been very general; we have three complaints before us of a similar kind. Your garden ground would certainly be benefited by the mode you mention; and if there is no crop in the ground, the liquid may be applied undiluted. Lime would certainly much improve the mud compost. *W. C. S.*

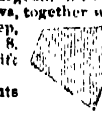
Mr. Cobden's Speech: *F R.* The truth will be more influential from you than from it; and we have therefore taken the liberty of giving only the latter part of your paper.

Newly Dug Land: *Cox.* You will probably grow too much straw for a good crop. Grow Carrots or Mangold Wurzel, feed part off and part on the land, and sow Wheat next autumn. Seed per acre, at this season, at least 6 pecks.

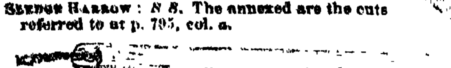
Peas: *B B.* Sow 10 pecks per acre, hoeing them in in rows 18 inches apart, towards the beginning of March. The white Charlton Pea is a good sort. The return depends upon whether you can grow boilers; and that depends upon the soil as much as on the sort. You may get 30 bushels at 4s. or 30 bushels at 6s., according as they boil.

Scour in Cows and Calves: *S W.* Tincture of opium, ½ oz.; pimento, powdered, 2 drs.; prepared chalk, 2 oz., powdered catechu, 1 dr; may be given once a day to a cow, in thick gruel, and one-sixth the dose to a calf. With regard to your second question, as the treatment must depend on the cause, we recommend you to consult a veterinary surgeon. *W. C. S.*

Shed: *Constant Reader.* Three Shetland cows, together with a pony, and a horse, and half a score of sheep, will want three divisions, each about 12 feet by 8. We should prefer an exposure to rain drift rather than a snow drift.



Seed Harrow: *S S.* The annexed are the cuts referred to at p. 795, col. a.



Small Farm. *A B.* You may harrow your Turnip ground and dibble the seed, with perfect confidence; but we would not sow the guano till April, and then sow 2 or 3 cwt. broadcast in wet weather. Potatoes may be put in the drills after the latter have been sprinkled with guano. We imagine you will find it necessary to turn the dung, in order to reduce it to a condition for mixture with the soil, notwithstanding the care you have taken in collecting it.

Small Farms in Ireland for Small English Capitalists: *G B K.* Our opinion is that you would find men, having capitals varying from 100*l.* to 1000*l.*, would greatly prefer farming in Australia or Canada to taking farms in western Ireland. Such men, in the majority of cases, would greatly prefer the risks of a sea voyage, and the certainty of profit and abundance at the end of it, to the risks attendant on the cultivation of land at home and the certainty of poor rates and heavy taxes. You will get large capitalists more easily than small ones to leave England for Ireland.

Smithfield Report: *Z Y.* We quite agree with you. The facts shall be stated more simply hereafter.

Sugar Beet: *F S.* 7 lbs. of seed per acre will suffice; plant in rows 2 feet apart, dibbling the seed in 12 inches apart in the rows.

Markets.

SMITHFIELD, Monday, Dec. 24.

This, being so near Christmas day, may be termed a holiday market. The butchers generally are too busily engaged at home to attend here. A few purchasers are found for some of the choicest things; in other respects our quotations are only nominal. A very trifling amount of business is really transacted. From Holland and Germany we have 250 Beasts, 450 Sheep, and 62 Calves; from Scotland, 80 Beasts; from Norfolk and Suffolk, 100; and 700 from Leicester, Northampton, and Lincoln.

Per st. of 8 lbs.—	s. d. s. d.	Per st. of 8 lbs.—	s. d. s. d.
Best Scots, Herefords, &c. ...	3 10 to 4 0	Best Long-wools	3 6 to 3 8
Best Short-horns	3 6 — 3 8	Ditto Shorn	...
2d quality Beasts	2 8 — 3 2	Ewes & 2d quality	3 0 — 3 4
Best Downs and Half-breds ...	4 0 — 4 4	Ditto Shorn	...
Ditto Shorn	...	Lambs	—
		Calves	3 0 — 4 2
		Pigs	3 4 — 4 4

Beasts, 1545; Sheep and Lambs, 7090; Calves, 75; Pigs, 140.

Friday, Dec. 28.

The supply of both Beasts and Sheep is small, but the demand is equally so. The best descriptions are pretty freely sold; trade is, however, very dull for other kinds. Monday's quotations fairly represent the business of to-day. Good Calves meet with a ready sale, but the general trade is no better. From Holland and Germany there are 90 Beasts, 160 Sheep, and 58 Calves; from Scotland, 200 Beasts; Spain, 30; and 120 Milch Cows from the home counties.

Best Scots, Herefords, &c. ..	3 10 to 4 0	Best Long-wools	3 6 to 3 8
Best Short-horns	3 6 — 3 8	Ditto Shorn	—
2d quality Beasts	2 8 — 3 2	Ewes & 2d quality	2 10 — 3 4
Best Downs and Half-breds	4 0 — 4 4	Ditto Shorn	...
Ditto Shorn	—	Lambs	...
		Calves	3 0 — 4 2
		Pigs	3 4 — 4 4

Beasts, ...; Sheep and Lambs, 1850; Calves, 160; Pigs, 250

COVENT GARDEN, Dec. 29.

Notwithstanding the severity of the weather the supply of gardening produce generally is sufficient for the demand. Hothouse Grapes and Pine-apples are good for the season. Filberts and Walnuts are abundant, and Chestnuts plentiful. Oranges and Lemons are abundant, good table Pears are scarce. Amongst Vegetables, Turnips are good and plentiful; Carrots the same. Cauliflowers and Broccoli are sufficient for the demand. Potatoes have not altered since our last account. Lettuces and other salading are plentiful. No alteration in the price of Mushrooms. Some Asparagus and Seakale have made their appearance. Cut Flowers consist of Heaths, Pelargoniums, Gardenias, Bignonia venusta, Tropæolums, Chrysanthemums, Fuchsias, Primulas, Camellias, Cinerarias, and Roses.

FRUITS.

Pine-apples, per lb., 5s to 8s	Oranges, per 100, 5s to 12s
Grapes, hothouse, p. lb., 3s to 6s	Almonds, per peck, 6s
— Portugal, per lb., 9d to 1s	— sweet, per lb., 2s to 3s
Pears, per doz., 2s to 4s	Walnuts, p. 100, 1s 6d to 3s
— per half sieve, 8s to 12s	— p. bush., 16s to 24s
Apples, kitchen, p. bsh., 2s to 4s	Filberts, per 100 lbs., 60s to 65s
Lemons, per doz., 1s to 2s	Nuts, Bar., p. bush., 20s to 22s
— per 100, 6s to 12s	— Brazil, p. bsh., 12s to 16s
Oranges, per doz., 9d to 1s 6d	Kent Cobs, 60s to 65s p. 100 lbs.

VEGETABLES.

Seakale, per punnet, 2s to 3s	Onions, p. bushel, 3s to 4s
Asparagus, per bundle, 4s to 6s	— Spanish, p. doz., 1s 6d to 4s
Cabbages, p. doz., 6d to 1s	Shallots, per lb., 4d to 8d
Cauliflowers, p. doz., 3s to 6s	Garlic, per lb., 4d to 8d
Broccoli, p. doz. bundl., 7s to 15s	Lettuce, Cab., p. sc., 4d to 9d
Greens, per doz., 1s 6d to 2s 6d	— Cos, do., 6d to 1s
Brussels Sprouts, p. hf. sieve, 1s 6d to 2s	Endive, per score, 1s to 1s 6d
Sorrel, p. hf. sieve, 6d to 9d	Mushrooms, p. pot., 1s to 1s 3d
Potatoes, per ton, 60s to 100s	— per bush., 3s to 6s
— per cwt., 3s to 6s	Small salads, per punnet, 2d to 3d
— per bush., 2s to 3s	Watercress, p. 12 bun., 4d to 6d
Turnips, p. doz. bun., 1s 6d to 2s 6d	Fennel, per bunch, 2d to 3d
Red Beet, per doz., 1s to 2s	Savory, per bunch, 2d to 3d
Horse Radish, p. bdl., 2s to 4s	Thyme, per bunch, 2d to 3d
Cucumbers, each, 3s to 3s 6d	Parsley, p. doz. bun., 3s to 4s
Leeks, per bunch, 2d	— Roots, p. bdle., 1s to 1s
Celery, p. bundle, 8d to 1s 3d	Marjoram, per bunch, 2d
Radishes, p. 12 bunches, 1s to 2s	Mint, per bunch, 2d
Carrots, per bun., 4d to 6d	Basil, per bunch, 2d
Spinach p. sieve, 1s to 2s	

HAY.—Per Load of 36 Trusses.

Smithfield, Dec. 27.

Prime Meadow Hay	65s to 70s	Clover	60s to 80s
Inferior ditto	50 63	New Clover	— —
Rowen	50 60	Straw	21 24
New Hay	— —		J. Cooper.

Cumberland Market, Dec. 27.

Prime Meadow Hay	68s to 72s	Inferior	65s to 75s
Inferior ditto	50 60	New Clover	— —
New Hay	— —	Straw	24 30
Old Clover	80 88		Joshua Baker.

Whitechapel, Dec. 27.

Fine Old Hay ...	63s to 65s	New Clover	—s to —s
Inferior ditto ...	50 55	Inferior ditto	55 60
New Hay	— —	Straw	21 24
Old Clover	80 84		

POTATOES.—Southwark, Dec. 24.

The Committee report that the market continues to be well supplied both coastwise and Continental, which, with a dull demand, makes it difficult to clear ships in time to save demurrage. The following are this day's quotations:—York Regents, 80s. to 110s. per ton; Wisbeach do., 60s. to 75s.; Scotch do., 60s. to 75s.; Scotch ... ..s. to 60s.; French whites, 60s. to 70s.; Rhenish and Belgian do., 40s. to 60s.

HOPS.—Friday, Dec. 28.

Messrs. Pattenden and Smith report that the market continues firm, with but very few new Hops on offer. Yearlings and old Hops are in better demand.

MARK LANE.

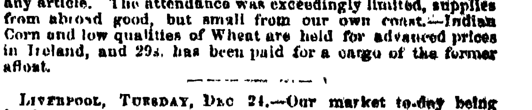
Monday, Dec. 24.—The supply of English Wheat by land carriage samples this morning was small, and cleared by the millers at the extreme rates of this day week; transactions in foreign were very limited, and prices unaltered.—Barley, with the exception of fine English malting, is a heavy sale, and our quotations are barely supported.—Beans and Peas are the same as last week, but the latter meet a limited inquiry.—In Oats there is little doing, and their value remains the same as on Monday last.

Friday, Dec. 28.—During the week prices of all articles have been firm, but owing to the holidays business has been extremely restricted. We observe no alteration this morning in any article. The attendance was exceedingly limited, supplies from abroad good, but small from our own coast.—Indian Corn and low qualities of Wheat are held for advanced prices in Ireland, and 29s. has been paid for a cargo of the former afloat.

Liverpool, Tuesday, Dec 24.—Our market to-day being held out of the usual course, was very thinly attended; there was, however, a limited business in Wheat and Flour, a fair demand for Oats, and some inquiry for good Oatmeal, all which made very full prices. Little was done in Barley, Beans, or Peas. A few parcels of Indian Corn were taken at the extreme quotations.

Imperial Averages.	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Nov. 17	40s 6d	28s 3d	16s 11d	23s 7d	29s 7d	31s 8d
— 24	40 4	28 3	17 0	24 0	29 8	30 7
Dec. 1	40 2	28 1	16 4	24 1	28 6	30 2
— 8	39 4	27 5	16 6	23 9	28 4	30 1
— 15	38 9	26 9	16 0	22 6	27 8	28 11
— 22	38 9	25 9	15 9	22 9	27 5	28 11
Aggreg. Aver.	39 7	27 5	16 5	23 5	28 6	29 10
Duties on Foreign Grain	1 0	1 0	1 0	1 0	1 0	1 0

Fluctuations in the last six weeks' Corn Averages.



Prices Current.	London. Dec. 17 qr.	London. Dec. 24 qr.	Liverpool. Dec. 18 70 lbs.	Liverpool. Dec. 24. 70 lbs.	Wakefield. Dec. 14 qr.	Wakefield. Dec. 21 qr.	Boston. Dec. 19 qr.	Boston. Dec. 26 qr.	Birmingham. Dec. 20. 62 lbs.	Birmingham. Dec. 27. 62 lbs.
	s. s.	s. s.	s. d. s. d.	s. d. s. d.	s. s.	s. s.	s. s.	s. s.	s. d. s. d.	s. d. s. d.
Wheat—										
New, red ...	38 to 43	38 to 43	5 8 6 2	5 8 6 2	36 to 44	36—44	32 to 38	34 to 40	4 9 5 3	4 9 5 3
„ white ...	42—47	42—47	5 10 6 8	5 10 6 8	42—49	42—49	34—44	38—45	5 3 5 7	5 3 5 7
Old, red ...	—	—	6 3 6 6	6 3 6 6	40—44	40—44	—	—	4 10 5 4	4 10 5 4
„ white ...	—	—	7 0 7 4	7 0 7 4	—49	—49	—	—	5 6 5 9	5 6 5 9
Foreign	35—52	35—52	4 4 7 0	4 4 7 1	37—48	—	—	—	4 8 6 2	4 8 5 8
			480 lbs.	480 lbs.						
Rye—New ...	20—22	20—22	—	—	—	—	—	—	—	—
Foreign ...	20—23	20—23	—	—	—	—	—	—	—	—
Foreign meal	5*l.*—6*l*	5*l.*—6*l*	—	—	—	—	—	—	—	—
Barley—			qr.	qr.					qr.	qr.
Grinding ...	23—25	23—25	—	—	20—21	20—21	21—23	20—22	19—23	19—23
Malting	25—26	25—26	27s—29s	27s—29s	23—28	23—29	—	—	24—29	24—29
Foreign	18—25	18—25	—	—	20—24	20—24	—	—	—	—
					6 bush.	6 bush.				
Malt—Ship ...	—	—	—	—	35—38	35—38	—	—	—	—
			45 lbs.	45 lbs.						
Oats—White ...	18—24	18—24	3s 2d 3s 3d	2s 6d 3s 3d	—	—	13—18	13—18	17—25	17—25
Black ...	16—22	16—22	2 2 2 6	2 2 2 6	—	—	—	—	16—17	16—17
Foreign	13—20	13—20	2 3 2 4	2 3 2 4	—	—	—	—	—	—
			qr.	qr.	qr.	qr.				
Peas—Boilers	26—28	26—28	33s—	33s—	26—32	26—32	—	—	30—36	30—36
									196 lbs.	196 lbs.
Grinding ...	—	—	27—29s	28—29s	—	—	—	—	11—12	11—12
Foreign ...	22—29	22—29	30—31	30—31	—	—	—	—	—	—
Beans—										
New, small ...	23—29	23—29	28—32	28—32	27—28	27—28	22—27	20—26	11—12	11—12
Old	—	—	32—36	32—36	32—33	32—33	32—34	32—34	14—15	14—15
Foreign ...	23—36	23—36	25—34	25—34	26—27	25—30	—	—	11—13	11—13
Linseed—Feed	—	—	40—42	40—42	32—40	34—44	—	—	—	—
Foreign ...	37—45	37—45	—	—	—	—	—	—	—	—
Linseed Cakes British ...	9*l.* 12s	9*l.* 12s	7*l.* 15s—8*l.*	7*l.* 15s—8*l.*	—	—	—	—	—	—
Foreign ...	7*l.*	7*l.*	—	—	—	—	—	—	—	—
Indian Corn—	22—26	22—26	28s—30s	28s—30s	—	—	—	—	—	—
	p. sack	p. sack	280 lbs.	280 lbs.			p. sack	p. sack	per sack.	per sack
Flour—	32—40	32—40	30—32	30—32	—	—	30—36	30—36	31—33	31—33

Weekly Averages and Imports.	London Aver. Dec. 18	London Impts.	Liverpool Averages.	Liverpool Imports.	Wakefield Aver.	Wakefield Impts.	Boston Aver.	Boston Aver.	Gloucester, Averages.	Gloucester, Imports.
	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.	s. d.	qrs.
WHEAT ...	12 8	11240	39 11	12903	38 9	10578	37 11	4628	39 10	469
BARLEY ...	28 2	10210	29 11	229	26 9	3748	21 2	309	23 6½	22
OATS	17 10	11570	16 7	8881	16 0	1324	13 7	1054	16 9½	189
RYE	24 9	—	23 5	335	22 6	—	—	—	—	—
BEANS ...	27 1	—	—	766	27 8	658	23 9	417	28 5½	87
PEAS	31 1	—	—	2297	28 11	374	—	—	30 0	6
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In his zealous endeavours for the promotion of education he had acquired such a mass of information, that his opinion was sought by eminent men in every department, and of different political views; and he was employed by the British Government to inquire into the systems of education on the Continent, in order to collect facts for the advantage of youth.

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From his career of usefulness and indefatigable exertion he has been suddenly removed by cholera; and has left a widow and four children (a son and three daughters, the eldest child 11 years of age and the youngest an infant), who have thus lost their protector and support—one from whose ability and industry they might have reasonably hoped (had he been spared) to have been placed in a state of independence.

The Committee trust that the children of one whose labours were so incessant for the improvement of the rising generation will be considered as having a strong claim on public sympathy; and that while encouragement and emoluments are liberally bestowed on those whose writings were designed merely to gratify the imagination, some tribute of regard will be paid to the memory of a man who preferred the graver walks of literature, as being of more general and solid utility.

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